Moody's
INVESTORS SERVICE

Moody's Public Finance Housing

Rating Methodology and Research Handbook

APRIL 2013

April, 2013

Dear Colleague,

I am pleased to present you with the sixth edition of the Moody's Public Finance Housing team's Rating Methodology and Research Handbook. As in previous editions, we have included rating methodologies and research on all of the sectors within housing. Recent additions to this book include a new section, Credit Trends, which is comprised of special comments on financial and performance trends of the various housing sectors and includes detailed data on individual credits. We have also included methodologies for all of our sectors, some of which were recently updated.

This book is the first to be published only in electronic form. This will allow us to update the Handbook on a regular basis thereby providing you with easy access to our most current methodologies and research.

I hope that you find this book to be a useful resource. As always, I welcome your comments, questions and suggestions and look forward to continuing to work with you.

Sincerely,

Florence Zeman

Associate Managing Director

Table of Contents

Analyst Contacts 5

Moody's Ratings Definitions 7

Methodologies 8

U.S. Housing Finance Agency Single Family Programs 9

US Stand-Alone Housing Bond Programs Secured by Credit Enhanced Mortgages 53

Global Housing Projects 88

Moody's Approach to Analyzing Pools of Multifamily Properties 111

Moody's Methodology for Assigning Issuer Ratings to Housing Finance Agencies 119

Moody's Approach to Evaluating State-Sponsored Mortgage Insurers 131

US Public Housing Authority Capital Fund Bonds 151

Variable Rate Instruments Supported by Third-Party Liquidity Providers 159

Variable Rate Instruments Supported by Third-Party Liquidity Providers Immediate Termination or Suspension Events Section 171

Rating Transactions Based on the Credit Substitution Approach: Letter of Credit-backed, Insured and Guaranteed Debts 183

Moody's Approach to the Moral Obligation Pledge 215

Research Articles 223

Housing 101: US Public Finance Housing Key Credit Features 224

Single Family **236**

Housing 101: Single Family Loan Prepayments 237

Housing 101: Single Family Program Open Indentures 245

Housing 101: PAC Bonds 249

Housing 101: HFA Single Family Bonds versus RMBS – Differences Lead to Variation in Performance 255

Management and Governance of US State Housing Finance Agencies' Single Family Programs: A Key Driver of Ratings 271

State Housing Finance Agency Single Family Programs in Run-off Likely to Maintain Credit Quality 279

Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks 288

Housing Bond Programs Secured by Credit Enhanced Mortgages 298

Key Downgrade Drivers of Stand-Alone Housing Bonds with Mortgage Enhancements 299

Failure to Adhere to Legal Documents May Result in Rating Downgrades for Local Housing Transactions 315

Housing Finance Agencies 322

Housing 101: State Housing Agencies 323

State Housing Finance Agency Financial Strength and Management Actions Mitigate Impact of Weaker Counterparties 331

Availability of Floating-Rate Debt Structures a Benefit for State Housing Finance Agencies 340

Rising Mortgage Fees Are Credit Positive for Housing Finance Agencies 346

Table of Contents continued on the following page

Table of Contents

Table of Contents continued from previous page

Swaps and Variable Rate Debt 349

Bank Liquidity Support and Variable Rate Financings Can Impact Underlying Long-Term Credit Ratings 350

Housing Projects 355

Basic Training on Assessing Base Essentiality for Military Housing Privatization 356

Military Housing Fundamentals: The Basic Allowance for Housing (BAH) 364

Special Forces: Factors Driving Demand for Military Housing 376

Privatized Student Housing and Debt Capacity of US Universities 384

Using Low Income Tax Credits In Affordable Housing Deals: Two Sides Of The Story 392

Credit Trends 400

Outlook for US State Housing Finance Agencies for 2013 Remains Negative 401

US State Housing Finance Agency Delinquency Rates Continue to Rise Despite Improvement in National Housing Market 414

US State Housing Finance Agency Fiscal Year 2011 Medians Show Resilience Despite Difficulties Posed by Low Interest Rates 446

Survey Highlights Credit Strength of State HFA Multifamily Mortgage Loans 485

Easing of Bank Liquidity Requirements is Credit Positive for Issuers of Municipal Variable Rate Demand Bonds 504

Credit Trends: Privatized Military Housing Sector Shows Stability 507

3.8% Increase in Basic Allowance for Housing Highlights Positive Trend for Military Housing Bonds 522

Credit Trends: Privatized Student Housing Financings Demonstrate Credit Stability 535

Glossary & Index 555

Glossary of Housing Terms 556

Index 564

Analyst Contacts

NEW YORK	+1.212.553.1653

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

William Fitzpatrick +1.212.553.4104
Vice President - Senior Credit Officer
william.fitzpatrick@moodys.com

Ping Hsieh +1.212.553.4461
Vice President - Senior Analyst
ping.hsieh@moodys.com

Gregory Lipitz +1.212.533.7782
Vice President - Senior Analyst
gregory.lipitz@moodys.com

Rachael Royal McDonald +1.212.553.4456
Vice President - Senior Analyst
rachael.mcdonald@moodys.com

Ferdinand S. Perrault +1.212.553.4793
Vice President – Senior Analyst
ferdinand.perrault@moodys.com

Eileen Hawes +1.212.553.4880
Assistant Vice President - Analyst
eileen.hawes@moodys.com

Omar Ouzidane +1.212.553.3892
Assistant Vice President - Analyst
omar.ouzidane@moodys.com

David Parsons +1.212.553.4537
Assistant Vice President - Analyst
david.parsons@moodys.com

Carlos Calderon +1.212.553.2737
Analyst
carlos.calderon@moodys.com

Dmitriy Plit +1.212.553.7463
Analyst
dmitriy.plit@moodys.com

contacts continued on the following page

Analyst Contacts

contacts continued from previous page

Thomas Song +1.212.553.4688

Analyst
thomas.song@moodys.com

Mia Gipson +1.212.553.4688

Associate Analyst
mia.gipson@moodys.com

Richard Kubanik +1.212.553.7823

Associate Analyst
richard.kubanik@moodys.com

Timothy Mone +1.212.553.4516

Associate Analyst
timothy.mone@moodys.com

Shane Mullin +1.212.553.4688

Associate Analyst
shane.mullin@moodys.com

Rishi Singh +1.212.553.4883

Associate Analyst
rishi.singh@moodys.com

Brendan Weber +1.212.553.4688

Associate Analyst
brendan.weber@moodys.com

Moody's Ratings Definitions

Visit Moodys.com for the latest edition of Rating Symbols and Definitions.

Methodologies

MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

U.S. Housing Finance Agency Single Family Programs

Table of Contents:

SUMMARY 1
OVERVIEW 2
RATING SCORECARD 2
Factor 1: Financial Position (45%) 3
Factor 2: Loan Portfolio (25%) 7
Factor 3: Bond Program Structure (15%) 10
Factor 4: Management and Governance (15%) 13
Factor 5: Legal Framework and Covenants 15
Other Credit Specific Risks or Considerations 17
How to Apply the Rating Methodology with the Scorecard 17
MOODY'S RELATED RESEARCH 18
METHODOLOGIES, RIGS, AND SPECIAL COMMENTS REPLACED BY THIS METHODOLOGY 18
APPENDIX A – SCORECARD 19
APPENDIX B: HFA FINANCIAL STATEMENT ANALYSIS 23
APPENDIX C: LOAN LOSS ANALYSIS FOR WHOLE LOAN SINGLE FAMILY PROGRAMS 27
APPENDIX D: PMI CLAIMS PAYMENT ASSUMPTIONS BY RATING LEVEL 29
APPENDIX E: APPROACH TO STATE HFA CASH FLOW PROJECTIONS 30

Analyst Contacts:

NEW YORK +1.212.553.1653

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

William Fitzpatrick +1.212.553.4104
Vice President - Senior Credit Officer
william.fitzpatrick@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

>>contacts continued on the last page

Summary

This rating methodology explains our approach to assigning ratings to single family housing bonds issued by Housing Finance Agencies (HFAs) in the United States. Our rating analysis for this sector covers credit factors that are common across all public finance sectors, such as financial strength and governance, as well as sector-specific factors such as loan portfolio characteristics and performance.

This publication provides an overview of the HFA sector and describes the process applied in rating HFA single family programs credits. It describes how the key ratings drivers are evaluated in the ratings process.

HFA single family program ratings are based on our analysis of five key credit factors:

» Financial Position

» Loan Portfolio

» Bond Program Structure

» Management and Governance

» Legal Framework & Covenants

This methodology updates and replaces "Moody's Rating Approach for Single Family, Whole-Loan Housing Programs" (May 1999), "Strength in Structure: Moody's Approach to Rating Single-Family Housing Bonds Secured by Mortgage-Backed Securities", (October 1998), and further consolidates and replaces several rating implementation guidance documents published subsequent to the original methodology and listed on page 18. In this new report we introduce a scorecard (Appendix A) which creates quantitative ranges for several key rating factors and assigns a weight to each of those factors. The scorecard does not provide an exhaustive treatment of all factors that we consider in arriving at a rating, but it is designed to assist the reader in understanding the qualitative and quantitative considerations that are usually most significant in arriving at ratings, as well as their respective weights. We do not expect any rating changes as a result of publishing this methodology.

We have also introduced several additional Appendices in which component aspects of the larger methodology are addressed in detail. These include financial statement analysis; evaluation of loan losses; PMI claims; and cash flow projections, along with incorporation of GIC and swap providers in cash flows.

Overview

HFAs are agencies established by state or local law to provide financing for affordable housing. HFAs play a role in the housing market through the furtherance of their mission to assist low- and moderate-income families attain affordable housing. Their primary activity has traditionally been the financing of single family mortgages for first-time homebuyers through the issuance of tax exempt bonds, but they also offer a wide range of affordable housing programs to families of low or moderate incomes, including both single family and multifamily products. Most HFAs maintain solid balance sheet strength by accumulating earnings over a long period through active and prudent management of their lending programs.

The HFA single family housing programs that are rated under this methodology typically issue bonds under trust indentures. Many of the programs are open, as opposed to closed, indentures, which means that multiple series of bonds are issued over time under the same indenture. These are also known as parity indentures, and HFAs manage their new lending and bond payments as part of a broad program, rather than as fully discrete stand alone or closed financings.

Bond proceeds are used primarily to finance mortgage loans, as well as to establish reserves. The mortgage loans and reserves remain pledged to the bond indenture and are the primary source of repayment for the bonds. The bonds may be secured by either the single family loans (whole-loans) or loans which have been securitized into mortgage-backed securities (MBS) guaranteed by Ginnie Mae, Fannie Mae or Freddie Mac.[1] This rating methodology applies to state HFA single family bond programs secured by MBS and/or by whole-loans, and to actively managed local HFA single family programs secured by MBS and/or by whole-loans.[2] We currently rate 281 state and local HFA single family programs to which this methodology applies.

Rating Scorecard

Our ratings result from an assessment of quantitative and qualitative credit factors. No quantitative model alone can fully capture the complex set of factors that determine the future performance of the programs, especially in light of active HFA management of loans. However, there are certain program attributes that provide important benchmarks for our analysis and will be important rating drivers. The methodology includes four key credit factors that are measurable to some degree: Financial Position, Loan Portfolio, Bond Program Structure, and Management & Governance. We have created a rating scorecard in order to present these credit factors in a useable format. An additional credit factor - Legal Framework and Covenants - is not incorporated into the weighted rating outcome, but rather describes the standards which, if not met, can result in a rating that differs from what would have otherwise been achieved.

1 Some HFA programs are rated based on the general obligation pledge of the HFA or the moral obligation pledge of the state. This methodology does not address these ratings.

2 This methodology also includes certain local HFA legacy single family programs secured by whole loans that are not actively managed.

FIGURE 1

US Housing Finance Agency Single Family Programs

Broad Rating Factors	Factor Weighting	Rating Sub-Factor	Sub-factor Weighting
Financial Position	45%	Balance Sheet Strength	20%
		Cash Flow Projections	15%
		Historical Financial Performance	10%
Loan Portfolio	25%	Portfolio Performance	10%
		Portfolio Characteristics	5%
		Mortgage Type	5%
		State and Local Real Estate Conditions	5%
Bond Program Structure	15%	Variable Rate Debt	10%
		Counterparties	5%
Management & Governance	15%		15%
Total	100%	Total	100%

Factor 1: Financial Position (45%)

Why It Matters

This factor assesses the financial strength of the program based on its balance sheet strength, future cash flow projections, and historical financial performance. Our ratings incorporate our expectations of future financial and operating performance, and both historical and projected financial results are assessed in the rating process. Historical operating results help us understand the pattern of an HFA's performance and how it compares to that of its peers. It also assists us in evaluating whether projected future financial results are realistic. A strong financial position affords an HFA flexibility in generating revenues that can mitigate risks that may arise from unforeseen economic and financial conditions, including periods of elevated losses due to mortgage delinquencies and foreclosures, as well as stresses to periodic cash flows arising from the debt structure and counterparty exposure. Cash flow projections provide a basis for assessing the future ability to pay debt service and maintain balance sheet strength under a variety of scenarios. The following describes the financial position sub-factors we include in the scorecard and their relative weights.

How We Measure Balance Sheet Strength (20%)

One of the most important metrics used to assess the financial position of a single family program is the program's asset-to-debt ratio (PADR). The degree to which a bond program is over-collateralized by loans and other assets, such as cash and investments, is one important measure of the program's ability to withstand financial stress. Depending on the characteristics of the program, stress can arise from a number of factors including high loan delinquencies that result in uninsured losses, rapid prepayments that result in negative arbitrage on the funds received before they are applied to redeem bonds or invested in other assets, cash flow stress from non-level debt structures, and stresses associated with variable rate debt.

PADR is calculated by dividing the program assets by the total amount of bonds outstanding plus accrued interest. This calculation is performed after making certain adjustments to the financial statements to eliminate all intangible accounting entries such as deferred costs, loan loss reserves and bond and loan discounts (see Appendix B). We also consider PADR net of loan losses (i.e. adjusted assets minus loan losses, divided by bonds outstanding plus accrued interest).

Whole loan programs are expected to maintain PADR levels above 1.0 throughout the life of the programs. The following additional criteria apply:

» In order to maintain a score on this factor consistent with an investment grade rating, single family whole-loan programs are expected to have at least a 1.00 PADR.

» Whole loan programs scoring at levels equivalent to Aa or higher for this factor should maintain the following levels of PADR net of loan losses.

  - 1.10 for Aaa
  - 1.04 for Aa1
  - 1.02 for Aa2
  - 1.00 for Aa3

» For an MBS program, in contrast, a 1.00 PADR may result in a score that is equivalent to the rating of the guarantor (currently Aaa) since our analysis relies on the assessment of the MBS guarantor and not the underlying mortgage portfolio[3].

In assessing the balance sheet strength of a program, we review both the current financial position as well as the projected strength as demonstrated in the cash flows.

It is important to note that low PADR levels may limit the overall program ratings despite the scores assigned to other factors. For example, a program with a PADR of 0.98 or below may not be assigned a rating higher than Baa, even if all other factors are strong.

Loan Loss Calculations

As more thoroughly detailed in Appendix C, loan defaults and losses within the program's portfolio need to be factored into the rating to properly incorporate these risks to bondholders. Moody's uses an internal "Loan Loss Calculator" to project monetary loan losses for the portfolio under stress-case scenarios appropriate to the rating being assigned. With loan portfolio inputs provided from program management, including mortgage insurance breakdown, loan-to-value ratios, and delinquency levels, we run the portfolio through the mechanics of a default, including the payment of any insurance claims and the resale of the defaulted property. We also incorporate any claims payments from pool insurance (see Appendix C).

Under our stress case scenario, some of the assumptions include:

» High levels of loan default based on the HFA's historical performance, the bond rating, and characteristics of the program

» House price depreciation based on historical peak-to-trough levels

» Less than 100% claims payment from PMIs depending on the rating levels of the insurer and the bond program (see Appendix D for PMI claims-paying assumptions by rating level)

[3] The scorecard currently assumes that the guarantor is rated Aaa, because the ratings of the primary guarantors of MBS are based on the rating of the US government. Were the rating of the US to be downgraded, the score associated with a 1.00 PADR for MBS would be moved with the rating (e.g. if the US government were rated in the Aa range, the score would be "2" instead of "1").

How We Measure Cash Flow Projections (15%)

Review of consolidated cash flow projections is critical part of our analysis. Consolidated cash flow projections should reflect updated loan, bond, and fund balances, with opening balances tied to the most recent audited financial statements.

Moody's approach to State HFA Cash Flow Projections is presented in Appendix E. In summary, however, cash flow projections measure the ability of the program to meet its debt service obligations and maintain asset-to-debt levels under a variety of potentially stressful interest rate, loan origination and prepayment scenarios. Stress scenarios may also include losses on mortgage loans, particularly for programs rated at or below the A level or programs with delinquency rates that are higher than the norm. We will assess the ability of the programs to demonstrate sufficient revenues to pay debt service and program expenses in these stressful scenarios, while accurately reflecting the program parameters set out in the indenture. Cash flows for programs scoring Aaa and Aa in this factor demonstrate robust ability to absorb future financial stresses by meeting stress tests under all scenarios while exhibiting a growing PADR that does not drop below the applicable benchmarks even after loan losses. If cash flows fail to meet one or more stress tests, the program would receive a lower score on this factor.

How We Measure Historical Financial Performance (10%)

As detailed in Appendix B, HFA Financial Statement Analysis, Moody's analyzes historical financial performance based on an HFA's audited financial statements to gauge a single family program's intrinsic strength. Historical performance also provides a basis for comparing the relative strength of different programs. We monitor the trend of historical financial performance by assessing a program's average net asset ratio (adjusted net assets as a percentage of outstanding bonds) as well as its average profitability (net operating revenue as a percentage of total operating revenue) over several years in order to understand the comparative performance of the programs through economic cycles.

In addition, we consider the HFA's available resources outside of the rated single family program. Unforeseen stresses resulting from financial turmoil and difficult times can substantially erode assets and impair a single family program's creditworthiness. Therefore, the level of resources for an HFA to support its various programs and its willingness to utilize these resources becomes an important consideration in evaluating a single family program's strength.

The balance sheet provides a snapshot of the assets (mortgage loans and reserves) and liabilities (bonds) of the program. We review each line item, analyzing reserves and asset valuations for items such as the HFA's loan loss provisions and investments. Investments are generally valued at par value, to provide a level basis for comparison among programs and over time. Unamortized, deferred and escrowed amounts are generally excluded to more closely reflect the asset and liability cash position of a program at a given point in time. Contingent liabilities, such as the mark-to-market value of a swap portfolio, are also excluded.[4] While all aspects of a program's financial statements may be reviewed, we rely most heavily on the following metrics to assess a program's financial strength:

- Program net assets
- Program net assets relative to program bonds outstanding
- Liquidity measures, such as cash and liquid investments relative to bonds outstanding

Ratios derived from the income statement provide critical information regarding the revenue stream and the management of program expenses:

- Net operating revenues (operating revenues less operating expenses)
- Program profitability (net revenues as a percentage of gross revenues)
- Net interest revenue as a percentage of gross interest revenue

[4] Contingent liabilities related to swaps are considered as part of Factor 3.

Methodology Factor and Weight			Credit Strength			
Financial Position (45%)	**Aaa (1)**	**Aa (2)**	**A (3)**	**Baa (4)**	**Ba (5)**	**B and Below (6)**
Balance Sheet Strength (20%)	Program Asset to Debt Ratio (PADR) above or equal to 1.10 net of projected stress case loan losses, 1.00 for Mortgage-Backed Security (MBS) programs (based on current US rating)[5]	PADR of 1.10 - 1.04 (Aa1); 1.04- 1.02 (Aa2); 1.02 - 1.00 (Aa3) net of projected stress case loan losses	At least 1.00 not incorporating projected stress case loan losses	At least 1.00 not incorporating projected stress case loan losses	1.00 - 0.98 not incorporating loan losses (also applies to MBS)	Below 0.98 not incorporating loan losses (also applies to MBS)
	Cash flows demonstrate that PADR + loan loss is maintained through the life of the bonds	Cash flows demonstrate that PADR + loan loss is maintained through the life of the bonds	Cash flows demonstrate that benchmark PADR net of loan loss will be met in the near term	Cash flows demonstrate that 1.00 is maintained under all scenarios, including loan loss scenarios	Cash flows do not achieve 1.00 under all scenarios, including loan loss scenarios	
Cash Flow Projections (15%)	Meets cash flow stress tests under all scenarios	Meets cash flow stress tests under all scenarios	Meets cash flow stress tests under all scenarios except for the most stressful scenarios	Meets most cash flow stress tests	Cash flows demonstrate that the program is able to cover debt service only under cash flow runs with limited stress tests	Cash flow scenarios demonstrate that revenues do not cover debt service
	Robust ability to absorb future financial stresses	Solid ability to absorb future financial stresses	Moderate ability to absorb future financial stresses. Any projected shortfalls are small and occur in the later years of the program (i.e. more than 10 years)	Limited ability to absorb future financial stresses. The extent of the shortfall, speed of the recovery and under which stress scenario it occurs will be considered	Very limited ability to absorb future financial stresses	No ability to absorb financial stress
Historical Financial Performance (10%)	Program demonstrates high and growing net asset ratios (e.g. above 15% combined fund balance as % of bonds outstanding on average over 3 years)	Program contains stable net asset ratios (e.g. 8% - 15% combined fund balance as % of bonds outstanding on average)	Program contains stable net asset ratios (e.g. 3% - 8% combined fund balance as % of bonds outstanding on average)	Program may exhibit declining net asset ratios but remains above 1% combined fund balance as % of bonds outstanding on average	Program has exhibited limited declines in net asset ratio but, net assets exceed liabilities	Program has exhibited declines and liabilities exceed net assets
	Consistently high profitability (e.g. 15% on average)	Consistent profitability over the long term (e.g. 10% - 15% on average)	Consistent profitability over the long term (e.g. 3% - 10% on average)	Profitability may average 1-3% or show periods of loss, but losses are offset by net assets and not expected to continue	Consistent losses but net assets are expected to cover such losses over the medium term	Consistent losses and net assets are not expected to cover losses
	Strong levels of resources for maintaining the creditworthiness of the program under stressful circumstances	Ample resources for maintaining the creditworthiness of the program under stressful circumstances	Satisfactory levels of resources for maintaining the creditworthiness under standard circumstances	Sufficient resources for maintaining the creditworthiness under standard circumstances	Limited resources for maintaining the creditworthiness under standard circumstances	Insufficient resources for maintaining the creditworthiness under standard circumstances

[5] The scorecard currently assumes that the guarantor is rated Aaa, because the ratings of the primary guarantors of MBS are based on the rating of the US government. Were the rating of the US to be downgraded, the score associated with a 1.00 PADR for MBS would be moved with the rating (e.g. if the US government were rated in the Aa range, the score would be "2" instead of "1").

Factor 2: Loan Portfolio (25%)

Why It Matters

Loans in a program's portfolio are typically the primary assets backing the bonds. We review a number of factors to assess how the portfolio will perform over the life of the bonds, including levels of delinquencies and foreclosures, characteristics of the portfolio and local real estate market conditions. The following describes the loan portfolio sub-factors we include in the scorecard and their relative weights.

How We Measure Portfolio Performance (10%)

We measure the performance of the loan portfolio in order to assess the volume of defaults that the portfolio may sustain over the life of the bonds. For whole loan programs, we measure the performance of the loan portfolio by tracking historical and current delinquency and foreclosure rates for the portfolio and by analyzing trends in performance. The metrics that we use to gauge the performance of the portfolio include the percent of loans (by number of loans) that are 90+ days delinquent and in foreclosure in aggregate for the portfolio and the trends in these delinquencies over a number of years. We also compare the performance to published statistics on state-wide delinquencies, particularly those related to Federal Housing Administration (FHA) fixed rate loans.

In order to facilitate this analysis, we may evaluate further breakdowns of the delinquency data by loan type, loan vintage, or other categories. In other cases, we may request loan-by-loan data for the portfolio in order to assess delinquencies, probabilities of default, and projected losses at a more detailed level.

How We Measure Portfolio Characteristics (5%)

We focus on two characteristics of an HFA mortgage loan portfolio in our analysis: 1) type and depth of insurance coverage for the loans, and 2) distribution of loan vintages contained in the portfolio. These two factors are described in more detail in the sections below.

Mortgage Insurance

We review the characteristics of mortgage insurance coverage for each whole loan program to determine the level of protection the insurance may provide against losses from delinquencies and foreclosure. HFA single family programs generally require mortgage insurance on each whole loan with a loan-to-value ratio (LTV) greater than 80%. Mortgage insurance generally covers a percentage of the outstanding principal balance of the loan, lost interest for a certain period, and allowable expenses incurred in obtaining title to and selling the property (legal fees, maintenance, and sales costs, for example). The depth and quality of coverage varies with the different forms of mortgage insurance available, which include insurance from U.S. government programs, private sector mortgage insurance (PMI), and in some cases, insurance from a state insurance fund.

Federal insurance programs include insurance or guarantees from the Federal Housing Administration (FHA), the Veterans Administration (VA), and the U.S. Department of Agriculture's Rural Development Program (RD). FHA insurance provides very deep coverage, including 100% of the principal balance of the indebtedness. At this time, we expect mortgage insurers backed by the federal government to pay their claims fully and on time for the life of the bonds, and therefore, we give full credit to the coverage as to the loans insured by each insurer, according to the terms of the insurance contracts.

PMI provides coverage for a specific percentage of lost principal (typically 20 to 35%) as well as specified levels of lost interest and expenses. The HFA programs generally have minimum requirements for the depth of PMI coverage, often expressed as an amount that brings the HFA's exposure down to a set percentage of defaulted principal, typically 72 to 80%. We give credit to the PMI based on the terms of the contract concerning depth of coverage for the HFA's loan losses as well as our assessment of an insurer's ability to pay claims over the life of the bond program. The percentage of credit given is a function of the rating of the HFA single family program and of the rating of the PMI provider, as detailed in Appendix D.

Some programs also benefit from pool insurance, which is additional insurance coverage on one or more pools of loans in the bond program. Pool insurance, which is written by PMI providers (or in one case by a State insurance fund), generally pays losses after recovery on the PMI and foreclosure of the loan, as specified in the pool contract. We subject pool coverage to the same haircuts that we apply to PMI.

Loan Vintages

Since HFA loans are pooled with all of the loans that have been previously financed under the trust indenture, the loans in the pool are typically a mix of both seasoned and new loans. All loans in the pool are cross collateralized, so bondholders benefit from a portfolio that is diverse in terms of loan vintage and seasoning. We will analyze the distribution of loan originations over the past five to 10 years, typically looking at the principal originated in a given year as a percentage of the entire program's loan principal outstanding. Generally, a high concentration of loans with vintages in years where housing prices were at high levels relative to current values may be a negative factor.

How We Measure Mortgage Type (5%)

Whole loans in HFA programs are primarily fixed-coupon, level-payment loans that amortize fully over 30 years. However, some HFAs also have originated loans with other amortization terms, including 40-year fixed-coupon amortizing loans ("40-year loans"), loans with interest rates that step up in stated amounts and at predetermined intervals over the first three to five years of the loan term ("step-rate loans"), and fixed-coupon loans that pay interest only for a fixed period (generally three to five years) and then amortize fully with level payments over their remaining terms ("interest-only" or "IO" loans).

We analyze differing risks in the loan portfolio by mortgage amortization periods, because we believe that 40-year, step-rate and IO loans add additional level of risk. Portfolios with higher percentages of MBS or of fixed-coupon, 30-year loans are awarded higher scores on this factor.

How We Measure State and Local Real Estate Conditions (5%)

We review economic data affecting the local housing markets across a state in order to include a forward-looking measure of potential trends in mortgage loan performance in the state where the HFA is located. We review data on house price appreciation or depreciation, including data from the Federal Housing Finance Agency. We also review employment and other indicators of stability in the housing markets.

In order to facilitate this analysis, we may request further breakdowns of the loans' geographic location within the state. In other cases, we may request loan-by-loan data for the portfolio in order to assess housing price changes and other real estate metrics at a more detailed level.

Methodology Factor and Weight			Credit Strength			
Loan Portfolio (25%)	**Aaa (1)**	**Aa (2)**	**A (3)**	**Baa (4)**	**Ba (5)**	**B and Below (6)**
Portfolio Performance (10%)	90+ days delinquent and in foreclosure rates are very low (i.e. less than 2%) Trends have been favorable Federal MBS programs (based on current US rating) [6]	90+ days delinquent and in foreclosure rates are low (i.e. 2% - 5%) Trends have been favorable	90+ days delinquent and in foreclosure rates are moderate to high (i.e. 5% - 8%) Trends display modest weakness	90+ days delinquent and in foreclosure rates are high (i.e. 8% - 12%) Trends reveal increasing weaknesses in the portfolio	90+ days delinquent and in foreclosure rates are very high (i.e. 12-20%)	90+ days delinquent and in foreclosure rates are extreme (i.e. above 20%)
Portfolio Characteristics (5%)	More than 75% of loans carry highest quality mortgage insurance or low Loan-to-Values (LTVs) Loan vintages are favorable and well distributed within portfolio Federal MBS programs (based on current US rating)	More than 65% of loans carry highest quality mortgage insurance or low LTVs Loan vintages are favorable and well distributed within portfolio	More than 50% of loans carry highest quality mortgage insurance or low LTVs Loan vintages are distributed within portfolio	Less than 50% of loans carry highest quality mortgage insurance or low LTVs Loans are concentrated in weaker vintages	High LTVs and low quality mortgage insurance Loans are concentrated in weaker vintages	High LTVs and a substantial portion of the portfolio does not have mortgage insurance
Mortgage Type (5%)	More than 90% of loan types are fixed-rate, level-payment Federal MBS programs (based on current US rating)	75%-90% of loan types are fixed-rate, level-payment	60%-75% of loan types are fixed-rate, level-payment	50%-60% of loan types are fixed-rate, level-payment	40%-50% of loan types are weak	A substantial portion of the portfolio's loan types are weak
State and Local Real Estate Conditions (5%)	Home prices have appreciated or declined modestly from peak (i.e. less 5%) and are projected to stabilize within the next 12 months Employment and other economic indicators support stability in local housing market Federal MBS programs (based on current US rating)	Home prices have declined from peak (i.e. 5% - 10%) and are projected to stabilize within the next 12 months Employment and other economic indicators support stability in local housing market	Home prices have declined significantly from peak (i.e. 10% - 15%) and are projected to stabilize within the next 18 months Employment and other economic indicators show some weakness in the local housing market	Home prices have declined substantially from peak (i.e. 15% - 20%) and are not projected to stabilize in the near term Employment and other economic indicators lead to concern about local housing market	Home prices have declined substantially from peak (i.e. 20% - 40%) Employment and other economic indicators are substantially inferior to national average	Home prices have declined substantially from peak (i.e. above 40%) Employment and other economic indicators are far inferior to national average

[6] The scorecard currently assumes that the guarantor is rated Aaa, because the ratings of the primary guarantors of MBS are based on the rating of the US government. Were the rating of the US to be downgraded, the score associated with a 1.00 PADR for MBS would be moved with the rating (e.g. if the US government were rated in the Aa range, the score would be "2" instead of "1").

Factor 3: Bond Program Structure (15%)

Why It Matters

Two factors relating to the bond program's structure are included in the scorecard: variable rate debt and counterparty strength. Each of these factors can add additional credit risks, as discussed below.

How We Measure Variable Rate Debt (10%)

Variable rate debt adds significant complexity to a single family program. While some of the effects of variable rate debt are, in part, captured in the cash flow projections, as discussed above under Factor 1, there are additional risks that could add volatility to a program. Therefore, we evaluate the presence of variable rate debt as a separate factor.

Historically, many HFAs issued variable rate debt instead of fixed-rate bonds in order to reduce their costs of funds and originate mortgages with interest rates that were competitive with or below mortgage rates offered in the conventional market, while at the same time achieving the full spread allowable between bond yields and mortgage yields allowed by federal tax law. Recently, HFA issuance of variable rate debt has been limited, however, a number of HFAs still have significant concentrations of variable rate debt on their balance sheets. Significant risks are associated with variable rate debt, including interest rate risk.

The majority of the variable rate bonds are variable rate demand bonds (VRDBs) which introduce liquidity risk to the programs.[7] Liquidity risk arises when a variable rate bond has a demand feature that allows borrowers to tender their bonds back to the issuers at various times, or if the bonds have bullet maturities, which adds further risk. HFAs generally obtain external liquidity facilities in the form of standby bond purchase agreements (SBPAs) from banks or other financial institutions. We give strong consideration to the risks of bondholder tenders resulting in unremarketed bonds being purchased by the liquidity provider (bank bonds). Bank bonds carry higher interest rates and require repayment of principal on an accelerated basis (often three to five years). Bonds that remain bank bonds for prolonged periods therefore impose additional stress on the program over time. The liquidity facilities also expose the program to rollover risk. Replacement may be at increased cost, and the VRDBs will become bank bonds if the liquidity facility expires and cannot be renewed or replaced, also requiring accelerated repayment at higher interest rates.

Some HFAs have entered into structures which help to facilitate the replacement of expiring liquidity contracts for VRDBs. These structures include floating-rate notes, direct purchase notes, direct loans, and index floaters. While these new instruments do not allow for optional tenders, which eliminates remarketing risk, they carry many of the same risks as VRDBs, such as interest rate risk, renewal risk, and the risk of bond acceleration under certain events.

Interest rate risk occurs because the funds for bond repayment are derived primarily from fixed-rate mortgage loans while the rate on the bonds can fluctuate. The majority of HFA variable rate bonds are combined with interest rate swaps that serve to hedge the interest rate risk. The HFA makes fixed-rate payments to a swap counterparty in exchange for periodic variable rate payments. However, a swap does not fully insulate the program from interest rate risk as there is often a spread between the cost of the bonds and the variable rate payments received from the counterparty.

7 "Availability of Floating-Rate Debt Structures a Benefit for State Housing Finance Agencies" published in June 2012

Swaps are generally subject to early termination on certain events; early termination requires a mark-to-market payment, and in some circumstances the HFA may be required to post collateral against its exposure to mark-to market risk. We evaluate the extent and the likelihood that the mark-to-market risk or the collateral posting would need to be covered by the bond program and the level of resources available to cover unanticipated terminations.

We also assess the portion of variable rate debt that is not combined with a swap or hedged with variable rate investments as it subjects the program to the risk of higher interest rates.

How We Measure Counterparties (5%)

Most single family bond programs rely on various types of financial support from outside counterparties. We determine the effect of counterparty performance on the programs in the cash flows where counterparties with lower ratings may not be given full credit for their performance (see Appendix E for more information). In addition, we assess the financial strength of the counterparties (as measured by their ratings), the program's exposure to these counterparties, as well as the diversification of the counterparties, as these are measures of the likelihood that the program will be affected by counterparty non-performance. Counterparties include mortgage insurers, investment providers, liquidity providers, SBPA providers, and swap providers.

Methodology Factor and Weight			Credit Strength			
Bond Program Structure (15%)	**Aaa (1)**	**Aa (2)**	**A (3)**	**Baa (4)**	**Ba (5)**	**B and Below (6)**
Variable Rate Debt (10%)	Variable rate debt as a percent of program bonds outstanding is 0% - 10%	Variable rate debt as a percent of program bonds outstanding is 10% - 25%	Variable rate debt as a percent of program bonds outstanding is 25% - 45%	Variable rate debt as a percent of program bonds outstanding is 45% - 70%	More than 70% of program debt is variable rate debt	More than 70% of program debt is variable rate debt
	Unhedged variable rate debt is no more than 5% of bonds outstanding or primarily hedged with variable rate investments	Unhedged variable rate debt is no more than 10% of bonds outstanding or primarily hedged with variable rate investments	Unhedged variable rate debt is no more than 15% of bonds outstanding or substantially hedged with variable rate investments	Unhedged variable rate debt is no more than 20% of bonds outstanding with a portion hedged with variable rate investments	More than 25% of bonds outstanding is unhedged	More than 50% of bonds outstanding is unhedged
	Program resources amply cover contingent liabilities (e.g. swaps)	Program resources are sufficient to cover contingent liabilities (e.g. swaps)	Program resources are substantial to cover contingent liabilities (e.g. swaps)	Program resources are adequate to cover contingent liabilities (e.g. swaps)	Program resources are not sufficient to cover contingent liabilities (e.g. swaps)	Program resources are not sufficient to cover contingent liabilities (e.g. swaps)
Counterparties (5%)	Majority of counterparties rated at or above A1/P-1 (Aa3 if no short-term rating)	Majority of counterparties rated at or above A2/P-1	Majority of counterparties rated at or above A3	Majority of counterparties rated at or above Baa3	Majority of counterparties are rated in the Ba category	Majority of counterparties rated below the Ba3 category
	Program financial resources can mitigate funds invested with providers at lower rating levels	Program financial resources can mitigate funds invested with providers at lower rating levels	Program financial resources can mitigate funds invested with providers at lower rating levels	Program financial resources may be able to mitigate funds invested with lower rated providers under most circumstances	Program financial resources are unable to mitigate funds invested at lower levels	
	Counterparty exposure is well distributed or not material to the credit	Counterparty exposure is moderately distributed and is expected to have minimal impact	Counterparty exposure is significant and may be material to the credit	Substantial counterparty concentration		

Factor 4: Management and Governance (15%)

Why It Matters

Given the dynamic nature of most single family programs and the benefit of program oversight, management and governance is a key rating driver for these programs.

How We Measure Management and Governance

We assess management's ability to administer their loan portfolio and the overall financial performance of their programs, and to implement strategies that minimize losses from delinquencies and defaults and to maintain credit strength of their loan portfolios over the long term. Management teams that take steps to reduce risks or plan for challenges are likely to increase bondholder security, while less effective responses may be incorporated as a lower assessment of bondholder security.

As part of our ongoing analysis of HFA program risks, we assess the depth and breadth of the management team. We consider the tenure and expertise of management, the depth of staff, succession planning, and "key man risk" when assessing management. In general, we assess the depth and variety of risk management practices followed by the HFA management team to anticipate and reduce risks of their lending programs. We analyze various factors including the issuer's loan underwriting process, asset management procedures, portfolio monitoring practices, and their understanding of the bond programs' strengths, challenges, and future direction and the risks that are being undertaken under various structures. Management's knowledge of and compliance with federal and state regulations and the implications of non-compliance is also an important factor. While we recognize that HFAs often use third parties to assist them in these tasks, we look at the level of management involvement in these activities as well as their oversight of the third parties and understanding of products provided to them from outside sources.

In addition, both the financial resources of the HFA and management's decisions about when to deploy these resources are credit factors, as an issuer with more financial resources will have more flexibility and tools to address the challenges that they may face. Management's record of ability and willingness to apply resources to support its bond programs may also be a factor. This could include depositing funds to a bond program facing difficulties, providing grants to mortgagors, maintaining staff levels to monitor programs even if revenue or activity from these programs has declined, or increasing staff to work out challenges.

As the role of the board is also an important part of the management and governance assessment, their makeup and the level of their involvement in the policies and activities of the HFA will be considered. Aspects of board oversight to be evaluated may include: the process of board selection and frequency of meetings, procedures for reporting and approving key decisions at the board level, experience level of board members, use of an internal audit function, and board-approved policies on investments, debt management and liquidity.

Methodology Factor and Weight	Credit Strength					
Management and Governance (15%)	Aaa (1)	Aa (2)	A (3)	Baa (4)	Ba (5)	B and Below (6)
Management and Governance (15%)	Superior management with substantial financial and personnel resources available to maintain and grow the financial position of the program	Strong management with significant financial and personnel resources available to maintain the program	Solid management with significant financial and personnel resources to maintain the program	Adequate management with sufficient financial and personnel resources to maintain the program	Limited management or oversight of the program by the Issuer, program is generally governed by the trustee following the terms of the legal documents	Poor management or oversight of the program
	Very deep understanding of program's strengths, challenges, and future direction	Strong understanding of program's strengths, challenges, and future direction	Solid understanding of program's strengths, challenges, and future direction	Understands financial strengths and challenges, but may be dependent on financial advisors/professionals		
	Ability and willingness to act swiftly and appropriately to address challenges	Ability and willingness to act promptly and appropriately to address challenges	Ability and willingness to act timely to address challenges	Ability and willingness to act appropriately to address challenges		
	Superior governance with highly experienced and involved board members providing oversight	Strong governance with very experienced and involved board members providing oversight	Capable governance with experienced and involved board members providing oversight	Capable governance with experienced involved board members providing oversight	Minimal board involvement	

Factor 5: Legal Framework and Covenants

Why It Matters

The legal framework and structure of the bond program is analyzed to determine the level of revenue and assets that will be available to cover bond debt service, redemption obligations, and expenses when due.

How We Measure Legal Framework and Covenants

This factor is not scored quantitatively in the scorecard, but rather is assessed separately according to standards which, if not met, can result in a rating that differs from what would have otherwise been achieved.

Our review of the program legal framework and covenants will incorporate *but are not limited to* the following aspects:

Type of Pledge

The security for the bonds is generally clearly defined, including a statement of assets and revenues pledged to repayment of the bonds, the terms of the pledge, and whether the bonds are special limited obligations or general obligations of the HFA. Generally, the mortgages or MBSs financed under the program and/or the revenues from the mortgages/MBSs are subject to the lien of the indenture. If mortgages or MBSs are not pledged, our evaluation will include a determination of the security for the program.

Flow of Funds

We review the flow of funds to assess the timing and priority of payment to bond holders relative to the payment of fees. In general, flow of funds which rank bond holder payments higher are viewed as credit positives.

Another area within the flow of funds that is a credit consideration is the ability of an HFA to remove excess funds above and beyond pre-determined expenses from a program. HFA programs generally use one of two flow of funds structures - closed or open loops. A closed-loop flow of funds retains excess revenues or uses excess revenue to redeem bonds which tends to grow program fund balances over time. However, an open-loop flow of funds allows revenues to be transferred out of the program, often, but not always, after an asset or cash flow sufficiency test as defined in the indenture has been met. The ability to remove funds is considered in the context of management's stated goals and plans for the program as well as their demonstrated actions in this regard.

Redemption Provisions

We review the redemption provisions of a bond program to assess whether the program's cash flow projections are consistent with the provisions of the trust indenture. We also assess whether these provisions can add potential stress to the bond program. For example, pro-rata redemptions, where all prepayments are used to strip call the bonds, tend to maintain the same structure of the assets and liabilities as when the bonds were issued, whereas redemptions provisions such as those for Planned Amortization Class (PAC) bonds or call-protected bonds, may offer additional stress to the bond programs as changes in prepayment speeds may result in a mismatch between the asset/liability mix of the program from the original projections.[8]

[8] "Housing 101: Single Family Loan Prepayments" published in September 2006

Reserve Funds

Reserve funds provide protection to bondholders if cash flow is temporarily disrupted. They are held for the benefit of bondholders in the event of a short-term disruption in the receipt of mortgage loan payments. We have seen reserve fund requirements range from 2% of loans outstanding to maximum annual debt service. The sufficiency of the reserve requirements will be assessed based on the characteristics and the rating level of the program.

Permitted Investments

The HFA's investment strategies and the types of investments permitted to be held in program funds are assessed as part of the legal review of the program. Investments generally conform to federal arbitrage and state statutory requirements, and are commonly Treasury and agency securities or guaranteed investment contracts. We assess the quality and liquidity of a program's investments taking a comprehensive view of the program's portfolio to determine whether funds are invested in a way that is consistent with the program's rating.

Factors Associated With Variable Rate Debt

We review key legal documents associated with the issuance of variable rate debt. The rating of the providers of SBPAs which are entered into to provide external liquidity is one of the drivers of short-term ratings assigned to VRDBs.[9] The terms of the SBPA or other documents pertaining to a variable rate structure are reviewed in light of the overall security provided to bond-holders, as reflected in the long-term rating on the bonds. Furthermore, the priority of principal and interest payments in the event of bank bonds as set forth in the SBPA and bond documents is an important factor for bank bond ratings.

Many programs with variable rate debt rely on interest rate swaps to manage the debt service paid on variable rate debt. While swaps can serve a useful function for certain programs, swaps also expose bond programs to risks that can be mitigated by the proper legal documentation. We review swap documents in order to understand the program's rights and responsibilities. The swap documents reviewed will likely include the ISDA Master Agreement, the Schedule to the ISDA Master Agreement, the Confirmation, the Credit Support Annex, and the Guarantee if applicable. Particular attention is paid to termination events, collateral-posting triggers, and rating level triggers that reference the rating of the program, HFA, insurer, swap counterparty, or other parties to the transaction.[10]

Cash Flow Certificates

We review the provision that requires the HFA to provide cash flow certificates on material events such as new bond issuance or unscheduled withdrawals of funds from the indentures. Generally, we consider whether cash flow certificates address the maintenance of certain asset-to-debt levels and the maintenance of sufficient revenues to pay debt service at each debt service payment date until final bond maturity.

Events of Default

We review the events of default, including the rights of the HFA to cure covenant defaults, and bondholder rights to direct exercise of remedies or acceleration.

[9] "Variable Rate Instruments Supported by Third-Party Liquidity Providers" published in November 2006

[10] "Evaluating the Use of Interest Rate Swaps by U.S. Public Finance Issuers" published in October 2007

Other Credit Specific Risks or Considerations

In addition to the factors listed above, we incorporate program specific considerations into our analysis that may not be otherwise captured and that can add considerable strengths or weaknesses to the program. These factors are assessed in combination with the scorecard and can result in a higher or lower rating for a particular program. These risks include, but are not limited to, the following:

- Demonstrated financial support from a strong HFA
- Very high or low PADR levels
- Very seasoned loan portfolio
- Small loan pool
- Introduction of substantially weaker loan types into a program

How to Apply the Rating Methodology with the Scorecard

As discussed in the beginning of the methodology, we are introducing a rating scorecard (see Appendix A) that generates implied ratings. The scorecard provides guidance for the factors that are generally most important in assigning ratings in this sector. It is a summary that does not include every rating consideration. The weights shown for each factor in the scorecard represent an approximation of their typical importance for rating decisions, but actual importance may vary significantly. Accordingly, we do not expect the scorecard-indicated rating to precisely match the actual rating in most cases.

The scorecard contains ten indicators with values mapped to a broad rating category based on the distribution of values in our current rated portfolio. The weighted average of the sub-factor ratings produces a grid-indicated rating for each factor. We convert each of the ten sub-factors into numeric values based on the scale below.

FIGURE 4

Aaa	Aa	A	Baa	Ba	B and Below
1	2	3	4	5	6

As discussed above, our assessment of the program's legal framework and covenants, together with other credit attributes, can account for differences from the output of the scorecard to the rating assigned to the program. Our analysis and rating assignment is further aided by comparative assessments across HFAs based on our extensive market coverage of the sector.

The methodology cannot anticipate every factor that may be important to a particular rating, or the relative weights that will be assigned in every case. The scorecard is not a substitute for the rating committee, and the rating ultimately will be based on the outcome of the committee deliberations. Therefore, some ratings may be positioned outside the rating range suggested by the methodology because of unusual attributes of a particular program that are not captured by the approach.

Moody's Related Research

Special Comments:

» Availability of Floating-Rate Debt Structures a Benefit for State Housing Finance Agencies, June 2012 (143161)

» Housing 101: Single Family Loan Prepayments, September 2006 (98961)

Rating Implementation Guidance:

» Evaluating the Use of Interest Rate Swaps by U.S. Public Finance Issuers, October 2007 (104186)

Methodologies, RIGs, and Special Comments Replaced by this Methodology

Rating Methodologies:

» Moody's Rating Approach for Single Family, Whole-Loan Housing Programs, May 1999 (45064)

» Strength in Structure: Moody's Approach to Rating Single-Family Housing Bonds Secured by Mortgage-Backed Securities, October 1998 (38066)

Rating Implementation Guidance:

» Updated Approach: Incorporating GIC and Swap Provider Ratings in HFA Programs, November 2012 (144915)

» Interest Rate Assumptions for State HFA Cash Flows, August 2012 (143768)

» Updated Approach for Incorporating Private Mortgage Insurers in HFA Single Family Ratings, September 2011 (135729)

» Methodology Update: Additional Cash Flow Tests for State Housing Finance Agency Programs, February 2009 (114598)

» Approach to State HFA Cash Flow Projections, August 2006 (97505)

» Moody's Use of Single Family Loan Loss Model Within Rating Analysis, December 2008 (35156)

Special Comments:

» Questions and Answers Regarding Moody's Approach to Rating Single Family Mortgage Revenue Bond Programs, January 2002 (73650)

» Moody's Financial Statement Analysis Methodology For State Housing Finance Agencies, March 2004 (81685)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Appendix A – Scorecard

Methodology Factor and Weight			Credit Strength			
Financial Position (45%)	**Aaa (1)**	**Aa (2)**	**A (3)**	**Baa (4)**	**Ba (5)**	**B and Below (6)**
Balance Sheet Strength (20%)	Program Asset to Debt Ratio (PADR) above or equal to 1.10 net of projected stress case loan losses, 1.00 for Mortgage-Backed Security (MBS) programs (based on current US rating)[11]	PADR of 1.10 - 1.04 (Aa1); 1.04-1.02 (Aa2); 1.02 - 1.00 (Aa3) net of projected stress case loan losses	At least 1.00 not incorporating projected stress case loan losses	At least 1.00 not incorporating projected stress case loan losses	1.00 - 0.98 not incorporating loan losses (also applies to MBS)	Below 0.98 not incorporating loan losses (also applies to MBS)
	Cash flows demonstrate that PADR + loan loss is maintained through the life of the bonds	Cash flows demonstrate that PADR + loan loss is maintained through the life of the bonds	Cash flows demonstrate that benchmark PADR net of loan loss will be met in the near term	Cash flows demonstrate that 1.00 is maintained under all scenarios, including loan loss scenarios	Cash flows do not achieve 1.00 under all scenarios, including loan loss scenarios	
Cash Flow Projections (15%)	Meets cash flow stress tests under all scenarios	Meets cash flow stress tests under all scenarios	Meets cash flow stress tests under all scenarios except for the most stressful scenarios	Meets most cash flow stress tests	Cash flows demonstrate that the program is able to cover debt service only under cash flow runs with limited stress tests	Cash flow scenarios demonstrate that revenues do not cover debt service
	Robust ability to absorb future financial stresses	Solid ability to absorb future financial stresses	Moderate ability to absorb future financial stresses. Any projected shortfalls are small and occur in the later years of the program (i.e. more than 10 years)	Limited ability to absorb future financial stresses. The extent of the shortfall, speed of the recovery and under which stress scenario it occurs will be considered	Very limited ability to absorb future financial stresses	No ability to absorb financial stress
Historical Financial Performance (10%)	Program demonstrates high and growing net asset ratios (e.g. above 15% combined fund balance as % of bonds outstanding on average over 3 years)	Program contains stable net asset ratios (e.g. 8% - 15% combined fund balance as % of bonds outstanding on average)	Program contains stable net asset ratios (e.g. 3% - 8% combined fund balance as % of bonds outstanding on average)	Program may exhibit declining net asset ratios but remains above 1% combined fund balance as % of bonds outstanding on average	Program has exhibited limited declines in net asset ratio but, net assets exceed liabilities	Program has exhibited declines and liabilities exceed net assets
	Consistently high profitability (e.g. 15% on average)	Consistent profitability over the long term (e.g. 10% - 15% on average)	Consistent profitability over the long term (e.g. 3% - 10% on average)	Profitability may average 1-3% or show periods of loss, but losses are offset by net assets and not expected to continue	Consistent losses but net assets are expected to cover such losses over the medium term	Consistent losses and net assets are not expected to cover losses
	Strong levels of resources for maintaining the creditworthiness of the program under stressful circumstances	Ample resources for maintaining the creditworthiness of the program under stressful circumstances	Satisfactory levels of resources for maintaining the creditworthiness under standard circumstances	Sufficient resources for maintaining the creditworthiness under standard circumstances	Limited resources for maintaining the creditworthiness under standard circumstances	Insufficient resources for maintaining the creditworthiness under standard circumstances

[11] The scorecard currently assumes that the guarantor is rated Aaa, because the ratings of the primary guarantors of MBS are based on the rating of the US government. Were the rating of the US to be downgraded, the score associated with a 1.00 PADR for MBS would be moved with the rating (e.g. if the US government were rated in the Aa range, the score would be "2" instead of "1").

Methodology Factor and Weight			Credit Strength			
Loan Portfolio (25%)	**Aaa (1)**	**Aa (2)**	**A (3)**	**Baa (4)**	**Ba (5)**	**B and Below (6)**
Portfolio Performance (10%)	90+ days delinquent and in foreclosure rates are very low (i.e. less than 2%) Trends have been favorable Federal MBS programs (based on current US rating)	90+ days delinquent and in foreclosure rates are low (i.e. 2% - 5%) Trends have been favorable	90+ days delinquent and in foreclosure rates are moderate to high (i.e. 5% - 8%) Trends display modest weakness	90+ days delinquent and in foreclosure rates are high (i.e. 8% - 12%) Trends reveal increasing weaknesses in the portfolio	90+ days delinquent and in foreclosure rates are very high (i.e. 12-20%)	90+ days delinquent and in foreclosure rates are extreme (i.e. above 20%)
Portfolio Characteristics (5%)	More than 75% of loans carry highest quality mortgage insurance or low Loan-to-Values (LTVs) Loan vintages are favorable and well distributed within portfolio Federal MBS programs (based on current US rating)	More than 65% of loans carry highest quality mortgage insurance or low LTVs Loan vintages are favorable and well distributed within portfolio	More than 50% of loans carry highest quality mortgage insurance or low LTVs Loan vintages are distributed within portfolio	Less than 50% of loans carry highest quality mortgage insurance or low LTVs Loans are concentrated in weaker vintages	High LTVs and low quality mortgage insurance Loans are concentrated in weaker vintages	High LTVs and a substantial portion of the portfolio does not have mortgage insurance
Mortgage Type (5%)	More than 90% of loan types are fixed-rate, level-payment Federal MBS programs (based on current US rating)	75%-90% of loan types are fixed-rate, level-payment	60%-75% of loan types are fixed-rate, level-payment	50%-60% of loan types are fixed-rate, level-payment	40%-50% of loan types are weak	A substantial portion of the portfolio's loan types are weak
State and Local Real Estate Conditions (5%)	Home prices have appreciated or declined modestly from peak (i.e. less 5%) and are projected to stabilize within the next 12 months Employment and other economic indicators support stability in local housing market Federal MBS programs (based on current US rating)	Home prices have declined from peak (i.e. 5% - 10%) and are projected to stabilize within the next 12 months Employment and other economic indicators support stability in local housing market	Home prices have declined significantly from peak (i.e. 10% - 15%) and are projected to stabilize within the next 18 months Employment and other economic indicators show some weakness in the local housing market	Home prices have declined substantially from peak (i.e. 15% - 20%) and are not projected to stabilize in the near term Employment and other economic indicators lead to concern about local housing market	Home prices have declined substantially from peak (i.e. 20% - 40%) Employment and other economic indicators are substantially inferior to national average	Home prices have declined substantially from peak (i.e. above 40%) Employment and other economic indicators are far inferior to national average

[12] The scorecard currently assumes that the guarantor is rated Aaa, because the ratings of the primary guarantors of MBS are based on the rating of the US government. Were the rating of the US to be downgraded, the score associated with a 1.00 PADR for MBS would be moved with the rating (e.g. if the US government were rated in the Aa range, the score would be "2" instead of "1").

Methodology Factor and Weight			Credit Strength			
Bond Program Structure (15%)	Aaa (1)	Aa (2)	A (3)	Baa (4)	Ba (5)	B and Below (6)
Variable Rate Debt (10%)	Variable rate debt as a percent of program bonds outstanding is 0% - 10%	Variable rate debt as a percent of program bonds outstanding is 10% - 25%	Variable rate debt as a percent of program bonds outstanding is 25% - 45%	Variable rate debt as a percent of program bonds outstanding is 45% - 70%	More than 70% of program debt is variable rate debt	More than 70% of program debt is variable rate debt
	Unhedged variable rate debt is no more than 5% of bonds outstanding or primarily hedged with variable rate investments	Unhedged variable rate debt is no more than 10% of bonds outstanding or primarily hedged with variable rate investments	Unhedged variable rate debt is no more than 15% of bonds outstanding or substantially hedged with variable rate investments	Unhedged variable rate debt is no more than 20% of bonds outstanding with a portion hedged with variable rate investments	More than 25% of bonds outstanding is unhedged	More than 50% of bonds outstanding is unhedged
	Program resources amply cover contingent liabilities (e.g. swaps)	Program resources are sufficient to cover contingent liabilities (e.g. swaps)	Program resources are substantial to cover contingent liabilities (e.g. swaps)	Program resources are adequate to cover contingent liabilities (e.g. swaps)	Program resources are not sufficient to cover contingent liabilities (e.g. swaps)	Program resources are not sufficient to cover contingent liabilities (e.g. swaps)
Counterparties (5%)	Majority of counterparties rated at or above A1/P-1 (Aa3 if no short-term rating)	Majority of counterparties rated at or above A2/P-1	Majority of counterparties rated at or above A3	Majority of counterparties rated at or above Baa3	Majority of counterparties are rated in the Ba category	Majority of counterparties rated below the Ba3 category
	Program financial resources can mitigate funds invested with providers at lower rating levels	Program financial resources can mitigate funds invested with providers at lower rating levels	Program financial resources can mitigate funds invested with providers at lower rating levels	Program financial resources may be able to mitigate funds invested with lower rated providers under most circumstances	Program financial resources are unable to mitigate funds invested at lower levels	
	Counterparty exposure is well distributed or not material to the credit	Counterparty exposure is moderately distributed and is expected to have minimal impact	Counterparty exposure is significant and may be material to the credit	Substantial counterparty concentration		

Methodology Factor and Weight			Credit Strength			
Management and Governance (15%)	Aaa (1)	Aa (2)	A (3)	Baa (4)	Ba (5)	B and Below (6)
Management and Governance (15%)	Superior management with substantial financial and personnel resources available to maintain and grow the financial position of the program	Strong management with significant financial and personnel resources available to maintain the program	Solid management with significant financial and personnel resources to maintain the program	Adequate management with sufficient financial and personnel resources to maintain the program	Limited management or oversight of the program by the Issuer, program is generally governed by the trustee following the terms of the legal documents	Poor management or oversight of the program
	Very Deep understanding of program's strengths, challenges, and future direction	Strong understanding of program's strengths, challenges, and future direction	Solid understanding of program's strengths, challenges, and future direction	Understands financial strengths and challenges, but may be dependent on financial advisors/professionals		
	Ability and willingness to act swiftly and appropriately to address challenges	Ability and willingness to act promptly and appropriately to address challenges	Ability and willingness to act timely to address challenges	Ability and willingness to act appropriately to address challenges		
	Superior governance with highly experienced and involved board members providing oversight	Strong governance with very experienced and involved board members providing oversight	Capable governance with experienced and involved board members providing oversight	Capable governance with experienced involved board members providing oversight	Minimal board involvement	

Appendix B: HFA Financial Statement Analysis

HFA financial statements are analyzed annually as part of our assessment of the financial position of the HFA and their programs. To get as true a picture as possible of the financial position of HFAs, we make certain refinements to many of the numbers found in audited financial statements. Rather than relying solely on numbers reported on a GAAP basis, we adjust certain entries to better assess the financial position of the HFAs and their programs as they relate to our credit assessment.

In general, we adjust all intangible accounting entries on both the statement of net assets (previously known as the balance sheet) and the statement of revenues, expenses and changes in net assets (previously known as the income statement), such as deferred issuance costs, amortization of bond discount, as well as custodial funds, certain assets relating to state-sponsored mortgage insurers, and public housing operations. The following includes the typical adjustments regularly made when reviewing financial statements.

Statement of Net Assets Adjustments:

The statement of net assets is where most of our adjustments occur. By making all of the following adjustments to an HFA's statement of net assets, the net numbers that reflect total assets, total liabilities, and ultimately net assets (previously known as fund balance) may be very different from what is reported in the financial statements. The adjusted numbers, however, give us a much clearer picture of a HFA's true financial position as it relates to our credit analysis. The adjustments include:

Bonds Outstanding

We use "*bonds outstanding*" in our calculations rather than what is generally found on the liability side of the statement of net assets - "*bonds payable*". While bonds payable is a standard accounting entry which nets out unamortized discount from the amount of bonds actually outstanding, we are more interested in determining the amount of debt that is truly owed. Specifically, we seek the aggregate amount of principal outstanding that bondholders would be due as of the audit date if all bonds were due and payable. Because "*bonds outstanding*" is often higher than the reported "*bonds payable*" accounting entry, the adjusted number results in a higher liability amount.

Custodial Funds:

Many state HFAs - particularly those with large multi-family portfolios - have sizable custodial funds, i.e. funds not owned by the HFA but rather held by the HFA on behalf of others. Examples of these custodial funds include monies being held on behalf of multi-family project owners for property taxes as well as for property and casualty insurance premiums.

Because property taxes and insurance are typically paid for by the owners as part of the mortgage payment, the HFA as servicer holds onto these monies until they are due to the taxing authority or the insurer. We adjust these escrow funds by subtracting them out of assets and not including them as liabilities.

Depreciation:

Unlike hospitals and universities that have significant investments in plant and equipment subject to "*depreciation*", state HFAs generally do not have many capital assets. Indeed, many state HFAs do not even own their own office buildings. And while HFAs have significant investments in mortgage loans, they are lenders, not owners. Hence, mortgage loans - even for multi-family projects - are not considered capital assets and therefore, are not subject to depreciation rules.

For those HFAs that do have depreciation reflected on their statement of revenues, expenses and changes in net assets and their statement of net assets, we disregard these intangible accounting entries as operating expenses as well as liabilities.

Investments:

The "*investments*" line item in the typical HFA's financial statements is the section of the audit with the most adjustments. We net out any unamortized discounts or premiums. In addition, we seek to undo the effects of GASB 31 (Governmental Accounting Standards Board Statement 31) - the rules implemented in 1997 that seek to establish fair value standards for investment reporting for public sector entities.

While GASB 31 is very useful for many public finance sectors, most investments held by HFAs for its bond programs are expected to be held until maturity. The annual or cumulative gain (or loss) in market or fair value, therefore, will not generally be realized. As a result, we do not include these GASB 31 gains or losses in our calculations.

Those HFAs heavily invested in U.S. Treasuries and mortgage-backed securities (MBS), including HFAs that purchase MBSs to finance their loan program, are far more affected by these GASB 31 adjustments than those HFAs with mostly guaranteed investment contracts (GICS) and investment agreements. Since most GICs and investment agreements have a fixed rate of return and are not negotiable or transferable, these investments are not affected by the GASB 31 fair value standards.

When reviewing financial statements, we specifically request data on the par amount of the investments in line with the audit date if it is not already included in the notes section.

Loans Receivable:

Another refinement affects the "*loans receivable*" entry. We use the par amount of loans rather than include the accounting conventions that increase or decrease the loans receivable based on premiums and/or discounts.

In cases where HFAs purchase mortgage loans at a discount, the amount reported on the asset side of the statement of net assets is lower than the actual amount of loan principal outstanding, as accounting rules generally require certain assets to be carried at the lower of cost or current value. This accounting convention often results in a reported understatement of assets. We use the actual amount of loans receivable, often resulting in a higher amount of assets than otherwise reported.

Another adjustment we make to the "*loans receivable*" entry is to disregard the effects of the loan loss set-aside. While some HFAs set-aside certain monies they believe are uncollectible, we add back in loan loss entries since we put the portfolio through our own loan loss calculations once we have a true picture of the par amount of outstanding loans. Our loan loss calculator projects the losses to the program by making very conservative default and recovery assumptions. By using the par amount of loans rather than the amount that reflects loss assumptions by the HFA, we avoid double counting certain losses in our analysis.

Segregation of Certain Funds:

A sometimes significant refinement made to the statement of net assets data is the exclusion of entire funds from the analysis. For example, for the handful of state HFAs that have state-sponsored mortgage insurers, we segregate the insurance assets and liabilities from the analysis of the state HFA's regular bond operations. This adjustment is made because these monies generally can only be used for

insurance claims and are not typically available for the purchase of mortgage loans or the payment of debt service.

Another adjustment that can add up to significant dollars is the exclusion in some cases of funds relating to public housing authority functions as well as other governmental activities. Generally, we exclude those funds labeled as "governmental funds" pursuant to GASB 34 (Governmental Accounting Standards Board Statement 34) - the rules implemented in 2002 that mandated sweeping changes to the presentation and content of government financial statements.

Specifically, if a state HFA also acts as a public housing authority (PHA), we will exclude those funds from the overall analysis of the HFA. Unlike the primary lending role of an HFA, the main functions of a PHA are to own and manage multi-family properties. Because the source of much of a PHA's revenues is the federal government's operating and capital subsidies, we generally exclude these funds as they need to be used for specific public housing purposes rather than for HFA bond-related activities. This reasoning is mirrored for certain state sponsored activities - such as grants and pass through programs - that the HFA manages on behalf of their parent government.

Derivative Instrument Adjustments:

A further adjustment to the statement of net assets relates to derivative instruments, including swaps and interest rate caps, that HFAs utilize in order to hedge the risk of rising interest rates on variable-rate bonds. We exclude the reporting of the changes in the fair value of derivative instruments that are classified as effective hedging derivative instruments on the statement of net assets pursuant to GASB Statement No. 53, which became effective in 2008 and imposes the accounting and financial reporting requirements for derivative instruments.

Statement of Revenues, Expenses and Changes in Net Assets Adjustments:

Our analysis of an HFA's statement of revenues, expenses and changes in net assets is to assess profitability and ultimately to determine its ability to meet its obligations, including of course, debt service. In addition, the *"Statement of Cash Flows"* which shows items not on the statement of revenues, expenses and changes in net assets such as principal payments made to bondholders as well as principal repayments received from mortgagors, is analyzed.

As noted previously under the statement of net assets discussion, we modify the accounting entries for depreciation, GASB 31 and other types of unrealized gains and losses, and loan loss adjustments as well as the exclusion of entire funds such as mortgage insurance vehicles, public housing activities, and certain state appropriations. These changes are made on both the statement of net assets for the cumulative effect as well as the statement of revenues, expenses and changes in net assets for the annual changes. We also exclude adjustments made in accordance with GASB Statement No. 53 for changes in the fair value of derivative instruments that are used for investment purposes or those reported as investment derivative instruments because they are deemed ineffective hedges. Other adjustments specific to the statement of revenues, expenses and changes in net assets include:

Operating vs. Non-Operating Revenues and Expenses:

In some cases, a statement of revenues, expenses and changes in net assets will include certain entries that are not regularly part of that particular issuer's revenues or expenses. Generally, the only items we consider as operating revenues are:

» mortgage loan interest;

» investment interest; and

» loan and program fees.

On the expense side, we consider the following items to be operating expenses:

» interest expense;

» administrative expenses; and

» pool policy fees.

Virtually all other revenue and expenses are classified as non-recurring or non-operating entries that are not considered part of ongoing operations. We will include these in total revenues or total expenses but will specifically place them in the non-operating revenue or expense line item.

One frequent example of non-recurring revenue is a realized gain on an investment. If an HFA happens to refund a particular series of bonds that has a high yielding U.S. Treasury as part of a reserve fund and that Treasury is sold at a premium, we would include that realized gain as part of total revenue but as non-operating revenue rather than operating revenue. This is because it is unlikely that the issuer will be able to regularly duplicate such a gain in future years. We use several ratios to assess financial position, and such an investment gain would be seen in the ratios that reflect total revenue but not those that reflect operating revenue.

Appendix C: Loan Loss Analysis for Whole Loan Single Family Programs

Because single family whole loan programs are exposed to the risk of losses from loan defaults and foreclosures, we assess a program's ability to withstand stressful loss scenarios while still continuing to meet debt service obligations and maintain levels of parity appropriate to the rating.

We use internal calculators to generate a loan loss appropriate to the rating assigned. The analysis incorporates stress case assumptions regarding the probability of default and loss given default of the loans in the HFA portfolio. The loan loss is then calculated as the product of default probability and loss given default. As higher rated bonds should be able to withstand greater loan loss stresses than those at lower rating levels, certain assumptions are generally more stressful for higher rating levels. The losses generated by our loan loss calculator are incorporated into our assessment of the program's financial position (Factor 1) as described in the Methodology.

Assumptions used in Loan Loss Calculations

The loan loss is driven primarily by two components: first, probability of default and second, loss given default (or loss severity).

Probability of default is the likelihood that a homeowner will default on a given loan. For calculating the loan loss, it represents the percentage of loans that are projected to default and enter foreclosure over the life of the program. We derive base-case probabilities of default from reviewing historical levels and trends in delinquency and foreclosure within the portfolio, as well as delinquency and foreclosure levels for FHA-insured loans within the HFA's state.[13] We apply internally derived multiples deemed appropriate for the rating level in order to generate stress default probabilities used in the calculator. We take into account the potential impact of the real estate cycle and economic conditions within the state.

Loss given default is the magnitude of the loss sustained on the defaulted loan. This loss equals the principal balance at default plus interest and costs between default and final recovery, *less* recovery from foreclosure sale and recovery from mortgage insurance. For the loans that are assumed to default, we measure loss on foreclosure based on the level of home price change of single family homes within the state from peak to trough within the current cycle, plus an additional stress factor reflecting the rating of the program. We add lost interest as well as legal fees and other costs of maintaining the property prior to sale. These additional costs are based on the timeline from default to foreclosure to disposition of the real estate owned (REO) experienced by the program, as well as published date for the state where the HFA is located. We reduce the loss by assumed recovery from mortgage insurance (including both primary insurance and pool insurance) based on the level of coverage provided by the insurance. We haircut the insurance coverage based on the rating of the insurer as described in Appendix D.

Data used for Loan Loss Calculations

The loan loss analysis for most HFAs is performed on a portfolio basis, although for some programs we may do the analysis on a loan-by-loan basis. To complete our analysis we look for the following information:

[13] FHA loans are considered in this analysis as HFA borrowers have many of the same characteristics as FHA borrowers.

Portfolio Analysis

- Principal balance of loans outstanding
- Number of loans outstanding
- Weighted average mortgage rate
- Mortgage insurance breakdown (percentage covered by insurance from each insurance provider as well as percentage uninsured)
- Original loan to value and current loan to value (calculated as the current loan outstanding to the purchase price of the home) by each mortgage insurance category

For certain portfolios we may request additional portfolio data for each loan type (e.g. 30 year level payment, interest only etc.) or for each vintage (year or mortgage origination)

Loan by Loan Analysis

- Mortgage type (interest only period, amortization term)
- Original amount, original appraised value and LTV
- Lien position
- Current balance
- Mortgage coupon
- Original underwriting data: FICO score, level of documentation, owner-occupancy
- Loan status (current or number of days delinquent)
- Location

Appendix D: PMI Claims Payment Assumptions by Rating Level

	Bond Rating Category				
Mortgage Insurer Rating	Aaa	Aa	A	Baa	Ba
Aaa	95%	95%	95%	95%	95%
Aa1	90%	95%	95%	95%	95%
Aa2	85%	90%	95%	95%	95%
Aa3	80%	85%	90%	95%	95%
A1	70%	75%	85%	90%	90%
A2	60%	65%	80%	85%	90%
A3	50%	55%	70%	80%	85%
Baa1	40%	45%	60%	75%	80%
Baa2	30%	35%	50%	65%	70%
Baa3	20%	25%	40%	55%	60%
Ba1	15%	15%	30%	45%	50%
Ba2	10%	10%	25%	35%	40%
Ba3	5%	5%	15%	25%	30%
B or below	0%	0%	0%	0%	0%

Rating committees may consider additional credit to potential claims payments representing current receivables because of the expectation of near-term payment; such credit will not exceed 70% for a provider rated in the Baa range, 50% for a provider rated in the Ba range, and 30% for a provider rated in the B range. Additional credit for receivables is not likely to be material factor in the ratings assigned in most cases because such receivables are a relatively small portion of potential future losses.

Appendix E: Approach to State HFA Cash Flow Projections

Overview

HFAs issue fixed and variable rate debt to finance fixed-rate mortgages at below-market interest rates in an effort to increase affordable homeownership in their respective state or locality. Because bonds are primarily repaid with mortgage and investment revenues, cash flow projections incorporating stresses of mortgage prepayments, originations and investment earnings are a key consideration. For a program with variable rate debt exposure, we review additional cash flow scenarios incorporating stress from high and low rate environments, remarketing spreads and bank bonds to assess the program's ability to meet payment obligation in these stressful settings.

As we review each of the scenarios and projections, we assess how program revenues cover payment obligations and the projected asset to debt ratios of the program going forward. Cash flows which demonstrate deficiencies or weak asset to debt ratios may result in assignment of a lower rating, as detailed in the Methodology. This Appendix outlines:

» Presentation of Cash Flows

» Cash Flow Assumptions

» Cash Flow Scenarios

We may request additional scenarios or scenarios with modified assumptions in order to properly assess a particular program depending on the profile of the program, the HFA's interest rate management strategy and interest rate forecasts.

Presentation of Cash Flows

Consolidated Cash Flows

For active parity programs, consolidated cash flow projections should be reconciled with information from the most recent audits of the program, at least annually. In the event that audited financial statements are not available, they may be reconciled to verifiable balances. Cash flows generally assume neither projected future bond issuance nor future lending beyond origination of proceeds of the bonds, and incorporate actual bond interest rates, redemptions, mortgage originations and investments in the program to the date of submission. More frequent consolidated cash flows may be requested for a program with tight financial performance or one that seeks to use new or complex structures.

Presentation of Series Cash Flows

Prior to assigning a rating, we generally review preliminary cash flows which assume market rates for bonds, swaps (if any), mortgages and investments. Final (post-pricing) cash flows incorporating actual rates achieved should be provided before the bond closing.

New series of parity debt often rely on the program fund balances to cover certain expenses such as negative arbitrage and costs of issuance, or to subsidize the mortgages to be financed with the new bond proceeds. As a result, stand-alone cash flows may not "work" without support from the parity indenture. We utilize two approaches to determine if the support from the parity indenture is sufficient to cover the new issuance.

In the first approach we simply review consolidated cash flows incorporating the new issuance to ensure there is no cash flow deficiency. Alternatively, we will also review stand-alone cash flows (showing shortfalls as an upfront one-time tap into the parity program or as a series of taps as they occur) in conjunction with the most recent consolidated cash flows. We compare shortfalls of the new bond series to fund balances and parity levels in the consolidated cash flows to determine overall sufficiency. Assumptions used in the stand-alone series cash flows should be consistent with those used in the consolidated cash flows.

Programs That Do Not Provide Consolidated Cash Flows

We prefer to have consolidated cash flows for all programs. Under certain circumstances, such as inactive established programs with very strong performance or brand new programs, consolidated cash flows may be waived although it should be noted that the absence of a consolidated cash flow may limit program flexibility or potential rating upgrades.

In the event consolidated cash flows are waived, we will review stand alone-cash flow projections incorporating all appropriate stress scenarios for each individual series of bonds at the time we rate those bonds. Each of the stand-alone cash flows should "work" on its own (not relying on the general resolution for contribution), and demonstrate sufficient revenues as well as asset-to-debt ratios that are consistent with the rating levels. In addition, in order to be exempted from preparing consolidated cash flows the individual bond series should be structured as a stand-alone series allowing no cross calling or recycling from parity debt in the general resolution. All cash flows should incorporate the assumptions presented in this Appendix and display the stress scenarios appropriate to the program.

Cash Flow Assumptions

Cash flows should indentify assumptions used. The following are the standard assumptions we see in stress cash flows.

Bond Interest Rate Assumptions

Fixed Rate Bonds

Cash flows should incorporate the actual bond rates or the expected bond rates in the event of pre-pricing cash flows.

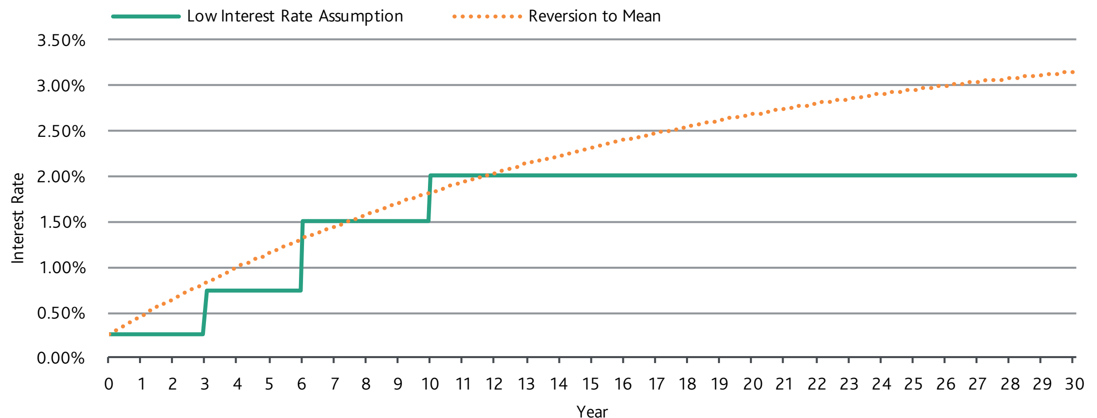
Variable Rate Bonds

We review scenarios using the following interest rate assumptions to assess the program's ability to withstand interest rate risk:

Low Interest Rate Scenario

In this scenario, we assume LIBOR starts at 0.25% and gradually increases to 2.0% over 10 years (Exhibit E1). This approach is based on an analysis of historical LIBOR levels since 1992 which was a period of relatively low interest rates. Our analysis measured, among other things, the potential speed of LIBOR reverting to the mean from its current level. The results are shown in the "Reversion to the Mean" curve in Exhibit E1.

EXHIBIT E1
LIBOR assumptions for the low interest rate scenario



SIFMA rates are derived as a percentage of the LIBOR level for each period. Variable rate bonds are assumed to pay interest at SIFMA (with additional expended for trading spread discounted later in the Appendices. Correspondingly, we incorporate a higher SIFMA/LIBOR ratio to reflect compression between tax-exempt and taxable rates when interest rates are low. The SIFMA/1-month LIBOR ratio stays at 105% for the initial 5 years and decrease to 95% thereafter.

Additionally, we assume a flat SIFMA/3-month LIBOR ratio of 80% for the life of the VRDOs. This is applicable to HFAs who utilized swaps based on 3-month LIBOR rates in the last few years.

High Interest Rate Scenario

In this scenario, we assume LIBOR starts at the current level, increases to 10.5% over 5 years, remains at 10.5% for an additional 5 years before decreasing to the post-ramp-down holding rate of 8.25% over the next 7 years. We based these assumptions on historical data analysis of the average LIBOR level during the high interest rate period between 1970 and 1992. The data indicate that it took approximately 7 years for LIBOR to reverse to the mean from 10.5% (Exhibit E2). Additionally, we apply a flat rate assumption (SIFMA = 75% of LIBOR) to SIFMA/1-month and SIFMA/3-month LIBOR ratios.

EXHIBIT E2
LIBOR assumptions for the high interest rate scenario

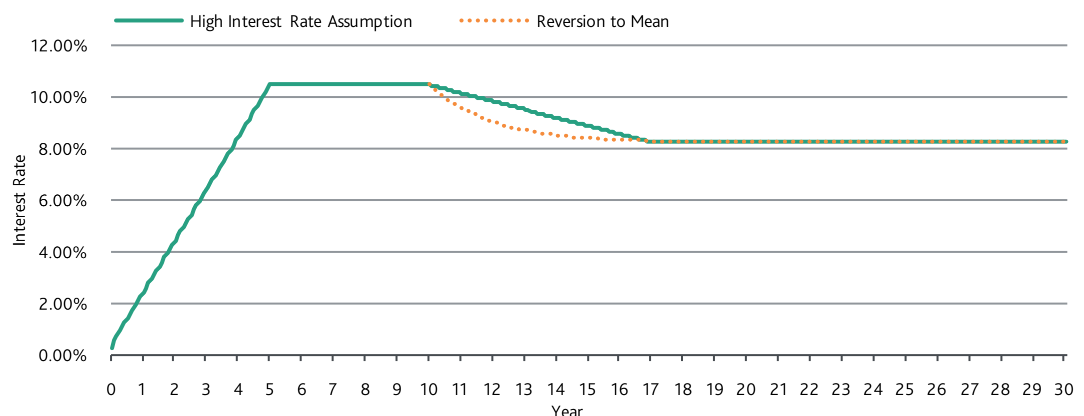


Exhibit E3 summarizes bond interest rate assumptions for programs with variable rate debt:

EXHIBIT E3

Interest Rate Assumptions for Programs with Variable Rate Debt in the High and Low Interest Rate Environments

		Low Interest Rate Environment		High Interest Rate Environment	
LIBOR Rates	Curve	*Year 1-3*	0.25%	*Year 1-5*	Ramp up from current to 10.5%
		Year 4-6	0.75%	*Year 6-10*	Hold at 10.5%
		Year 7-10	1.50%	*Year 11-17*	Wind down to 8.25%
		Thereafter	2.00%	*Thereafter*	Hold at 8.25%
SIFMA / LIBOR Ratio	1-month LIBOR	*Year 1-6*	105% of 1-month LIBOR	75% of 1-month LIBOR	
		Thereafter	95% of 1-month LIBOR		
	3-month LIBOR	80% of 3-month LIBOR		75% of 3-month LIBOR	

Expense Assumptions

Program Expenses

Cash flows should reflect all program expenses as defined by the bond resolution or HFA practices, including any minimum or maximum fees. Expenses should include but not limited to the following fees, if applicable:

» Mortgage servicing

» Trustee

» Mortgage insurance

» Credit enhancement and/or bond insurance

» Remarketing and/or auction agent

» Liquidity facility

» Broker/dealer

» Rebate analyst

» Issuer

» Arbitrage rebate, yield reduction payments and other payments required by federal tax law

VRDO Spread Levels

The variable rate bond interest rate assumptions for variable rate debt stated earlier are based on historical LIBOR data from 1970 to the present. Tax-exempt bonds are modeled assuming that SIFMA equals certain percentages of LIBOR. However, individual bonds may trade with a premium to this index. Therefore, variable rate bonds should be modeled at assumed SIFMA plus the trading spreads described below.

Our VRDO spread assumptions for Non-AMT, AMT and taxable VRDOs are 5-, 15- and 40-bps, respectively. We will consider exceptions if an HFA provides historical evidence of narrower spreads by tax status on its VRDOs.

Furthermore, for the initial year, an additional 30 bps spread should be assumed on VRDOs supported by the largest private-sector liquidity provider (Exhibit E4). Demand for VRDOs supported by any private sector liquidity providers may weaken at any time due to unforeseen credit events and market saturation, resulting in extended higher interest rate resets for those VRDOs.

EXHIBIT E4

VRDO Spread Levels for Programs with Variable Rate Debt

Tax Status	Time Period	Largest Private Sector SBPA Provider	Remaining Providers
Non-AMT	*First Year*	35 bps	5 bps
	Thereafter	5 bps	5 bps
AMT	*First Year*	45 bps	15 bps
	Thereafter	15 bps	15 bps
Taxable	*First Year*	70 bps	40 bps
	Thereafter	40 bps	40 bps

Liquidity Facilities Renewal Expense

Cash flows for programs with variable rate debt should assume that the cost of liquidity facility increases at the first stated expiration date to the greater of (1) current market rates as specified by Moody's, (2) 100 basis points per annum *or* (3) 20% above the current cost of the existing facility.

Swap Expense

Cash flows should reflect the following swap expenses (for fixed to floating swaps):

1. The HFA makes a variable rate payment on the bonds.

2. The HFA makes a fixed payment to the counterparty based on the actual rate in the swap confirmation or a reasonably expected rate in the case of pre-pricing cash flows.

3. The HFA receives a variable rate payment from the counterparty based on the terms of the swap and the interest rate assumptions in Exhibit E3

Depending on the interest rate environment, the net stream of the above three payments may become revenues or expenses to the program. The cash flows can either reflect three separate payment streams, or one net payment stream as long as it is clear how all three payments are incorporated.

» Amortization Mismatch in the Minimum Prepayment Speed Scenario

In the minimum prepayment speed scenario, the swap may amortize faster than the bonds, causing the variable rate bonds to become under-hedged (the unpaid principal amount of bonds outstanding exceeds the notional amount of the swap outstanding). Cash flows would model the under-hedged portion as unhedged bonds.

Cash flows may assume the redemption of these under-hedged variable rate bonds if such redemption is consistent with the HFA's practice (from surplus or cross redemption) However, if that is not the current practice of the HFA, cash flows would assume that these bonds remain outstanding as unhedged bonds.

» Amortization Mismatch in the Rapid prepayment Speed Scenario

Conversely, in the rapid prepayments scenario, variable rate bonds may be over-hedged (the notional amount of the swap outstanding exceeds the unpaid principal amount of the bonds outstanding) if prepayments are used to redeem bonds. If this occurs the cash flows may reflect any of the following strategies consistent with legal requirements and actual practice:

1. The HFA uses prepayments to redeem the variable rate bonds in a fashion so that the outstanding amount of the bonds equals swap amortization, therefore not resulting in over-hedged bonds.
    a) Any excess prepayments would be invested in permitted investment at a rate as prescribed in Exhibit E6.
    b) Alternatively, the excess prepayments would be used to redeem other bonds in the same series or other series, depending on the HFA's cross-calling practice. These redemptions should be consistent with tax law
2. The HFA redeems the variable rate bonds but continues to make full payments on the swap. Cash flows assume that the HFA makes fixed rate payments to the counterparty in exchange for variable rate receipts (based on interest rate assumptions in Exhibit E3) from the counterparty.
3. The HFA redeems the variable rate bonds and terminates the swap at market value. Termination payment would be based on the interest rate assumptions applicable at the time. In the event that the swap contains a par termination option, the cash flows may assume the exercise of this option. Please confirm with us that it's the HFA's intended strategy prior to assuming par swap termination in the cash flows.
4. Lastly, an HFA may also recycle prepayments into new loans. Cash flows would only assume this if recycling has been a demonstrated practice of the HFA. The timing and the rates of the new mortgage loans would be determined on a case-by-case basis based on the HFA's recycling practice.

Bond Redemption Assumptions

Bond redemption assumed in the cash flows should reflect (a) the directives established in the legal documents for each series of bonds, including priority of maturities, frequency and limits of the redemption, as well as (b) actual practices and strategies if not specified in the legal documents. Bond redemption assumptions should also reflect consideration of federal tax law requirements. We recognize that an HFA's redemption strategy in the future may differ from what is assumed in the cash flows due to market conditions but would look for HFAs to identify their strategies and implementation timing and procedures. This is particularly important for programs with variable rate debt, as certain strategies may result in a dramatic change in the proportion of variable rate to fixed rate debt.

Mortgage Loan Assumptions

Rates and Terms

Cash flows would incorporate the actual terms and interest rates of mortgages pledged to program. For unexpended funds, cash flows would assume the expected lending rates and terms of the programs, including premium/discount purchase prices or points received or paid. Many HFAs modify their mortgage rates (both upwards and downwards) on a periodic basis in order to meet market demands. We expect that these modifications not result in a substantial change in the characteristics of the future mortgage origination assumed in the cash flows. In the event that there is a material change in the mortgage characteristics, we would look for revised cash flows reflecting such.

Loan losses upon foreclosure are generally covered by primary mortgage insurance (including insurance provided by the U.S. government such as FHA, VA and RD), secondary insurance and/or additional overcollateralization of assets to liabilities in the program. In general, we assume no loan losses in the cash flows but may request scenarios incorporating loan loss in certain cases such as lower rated programs and/pr programs with delinquency rates that are higher than the norm.

Payment lag

For parity programs, mortgage payments reflect a 30 day lag in the receipt of payment after the monthly mortgage payment is due. Loans securitized as Mortgage Backed Securities (i.e. backed by Ginnie Mae, Fannie Mae or Freddie Mac) would reflect the following lags based on the actual timing of the guarantee.

EXHIBIT E5

Mortgage Lag Assumptions for Mortgage Backed Securities

Credit Enhancement Provider	Payment Due Date	Typical Lag Assumption
Ginnie Mae I	15th of the month	20th of the month
Ginnie Mae II	20th of the month	25th of the month
Freddie Mac	15th of the month	20th of the month
Fannie Mae	25th of the month	30th of the month
Multiple providers	Multiple dates	Longest applicable minimum lag

Investment Rate Assumptions

Cash flows also incorporate actual investments in the program. Since many HFAs hold investments to maturity, we expect that assets will be valued at par.

Float or Reinvestment Rate

HFAs may use Guaranteed Investment Contracts (GIC) to provide a pre-determined rate of return on debt service reserve, acquisition and float funds under the bond indentures. GIC principal and earnings contribute to the program's ability to meet debt service obligation, therefore a GIC provider's paying ability is an important consideration in our rating and cash flow analyses. All funds that are invested in GICs should assume actual rates. Furthermore, cash flows should reflect material GIC terms including the maturity, restrictions on deposits and withdrawals or minimum and maximum balances.

Balances in excess of amounts permitted by the GIC and all funds not invested in GICs and that do not have any guaranteed rate of return should use the reinvestment assumptions below.

Fixed Rate Programs - the reinvestment rate assumption starts at 0.00% and increase in three steps to 1.50% over 11 years. This will apply to all housing fixed-rate programs with active management, regardless of their rating levels (Exhibit E6). Reinvestment rate assumptions for fixed rate programs without active management that utilize closed indentures will remain at 0% for the life of the bonds.

Variable Rate Programs - programs with active management that has variable rate debt exposure will assume 70% of LIBOR as the reinvestment rate for bonds that do not have any guaranteed rate of return.

EXHIBIT E6

Reinvestment Rate Assumptions for Bonds without any Guaranteed Rate of Return (Years Reflect Time Elapsed in Cash Flow Projections, not Investment Terms)

	With Active Management		Without Active Management
	Fixed Rate Programs	Variable Rate Programs	Fixed Rate Programs
Years	Rate	Rate	Rate
1 – 3	0.00%	70% of 1-month LIBOR	0.00%
4 – 6	0.50%		0.00%
7 – 10	1.00%		0.00%
11 – maturity	1.50%		0.00%

GIC and Swap Counterparty Assumptions

Single family bond programs rely on various types of financial support from outside counterparties. Financial counterparties include investment providers, liquidity providers, SBPA providers, and swap providers.

We determine the effect of counterparty performance on the programs in the cash flows where counterparties with lower ratings may not be given full credit for their performance (Exhibit E7). With this approach, we assume in cash flows that GIC and Swap providers rated in the A and Baa categories will be able to meet all or a portion of their payment obligations throughout the life of a bond program. Therefore, the amount of receipts assumed in the cash flows varies based on the ratings of the provider and the associated program. For example, credits given to GICs and swaps in a Aa-rated program declines to 65% when the provider rating falls below A2, whereas a Baa-rated program may continue to assume full credit for the same provider. Similarly, a Baa1-rated provider will receive 45% credit in a Aaa-rated or 65% credit in an A-rated program. Payments received from providers rated below the Baa category should not be reflected in the cash flows.

Because HFAs rely on swap receipts in high rate scenarios to pay debt service, it is important to measure potential liquidity pressure to the bond programs in the event of non-performing swaps. As a result, ratings on the bonds also incorporate ratings of the swap counterparties.

EXHIBIT E7

Detailed GIC and Swap Payment Assumptions by Rating Level

	Credit Given to Downgraded GICs and Swaps*			
Provider Rating	Aaa Program	Aa Program	A Program	Baa Program
A1 or higher	100%	100%	100%	100%
A2	65%	100%	100%	100%
A3	55%	65%	100%	100%
Baa1	45%	55%	65%	100%
Baa2	35%	45%	55%	65%
Baa3	15%	35%	45%	55%
Below Baa3	0%	0%	0%	0%

* Guidance provided for programs in each broad rating category. May be adjusted to suit specific program rating levels.

Cash flows for stand-alone programs or limited diversification that rely on investment earnings or swap payments to meet debt service should assume providers will no longer meet their payment obligations when their ratings fall below A1 for Aaa programs or A2 for Aa programs.

Additional Collateral Consideration

After a GIC provider is downgraded, most of GIC agreements require the downgraded provider to collateralize or reassign the GIC to a higher rated provider. Given questions about treatment of the collateral in the event of an insolvency of the provider we do not give credit to collateral posted under a GIC. However, if the downgraded provider replaces an existing unsecured GIC with a repurchase agreement (Repo), we would give additional consideration to collateral posted. The amount of additional credit will depend on:

» Terms of the repurchase agreement

» Types and terms of the collateral

» Over-collateralization level and frequency of marked-to-market

» Satisfactory bankruptcy opinion that indentifies the governing law and bond trustee's ability to access the collateral in the event of insolvency

If GICs With Downgraded Providers are Retained

If downgraded GICs are retained, we assume GIC provider's performance is impaired, with partial recovery. Therefore, the cash flows should assume the following:

» Reduced GIC principal – for debt service reserve (DSR) fund and acquisition fund, multiply invested principal by the appropriate partial credit (Exhibit E7); for float fund, the one-time upfront principal reduction would depend on the highest six-month fund balance which varies with the prepayment speed assumed;

» Decreased earnings – the on-going investment rate (for DSR and acquisition funds) or reinvestment rate (for float fund) assumed for the downgraded GICs should also reflect the same partial credit.

» If downgraded GICs are terminated, no principal loss is necessary but HFAs should use reinvestment rate assumptions for bonds without any guaranteed rate of return (Exhibit E6) when calculating investment earnings in the cash flows.

If Swaps With Downgraded Providers are Retained

If swaps with downgraded counterparties are retained, we assume the swap counterparty's performance is impaired, with partial recovery. Cash flows should assume the following:

» In the high interest rate scenarios where swaps are beneficial, HFAs continue to make full fixed-rate swap payments in exchange of full variable rate receipts from investment grade providers in the initial three years, followed by partial fixed-rate swap payments in exchange of partial variable rate receipts thereafter; and

» In the low interest rate scenario, HFAs continue to make full fixed-rate swap payments in exchange of full variable rate receipts.

» If downgraded swaps are terminated, cash flows should assume unhedged variable debt accordingly and reflect the termination payment, if any, owed by the issuer. If downgraded swaps are novated, cash flows should reflect terms of the novated swaps and incorporate expenses payable by the indenture/bond program, if any.

Cash Flow Scenarios

The following are the standard cash flow scenarios that we review. These scenarios address various interest rates, mortgage origination and prepayment speeds that a program may experience. As we review the cash flows, we assess how program revenues cover payment obligations and the projected asset to debt levels of the program going forward.

In addition, we may request additional scenarios or scenarios with modified assumptions in order to properly assess a particular program depending on the profile of the program, the HFA's interest rate management strategy and interest rate forecasts.

Programs with Variable Rate Debt

High interest rate environment cash flows

- Minimum prepayment – full loan origination
- 3 year average life – full loan origination
- Minimum prepayment – non-origination of funds in acquisition funds and new bond proceeds
- 3 year average life – non-origination of funds in acquisition funds and new bond proceeds
- Bank bond cash flows

Low interest rate environment cash flows

- Minimum prepayment – full loan origination
- 3 year average life – full loan origination
- Minimum prepayment – non-origination of funds in acquisition funds and new bond proceeds
- 3 year average life – non-origination of funds in acquisition funds and new bond proceeds
- Bank bond cash flows

Programs without Variable Rate Debt

- Minimum prepayment - full loan origination
- 3 year average life - full loan origination
- Minimum prepayment - non-origination of funds in acquisition funds and new bond proceeds
- 3 year average life - non-origination of funds in acquisition funds and new bond proceeds

Origination Scenarios

- Non-Origination

Changes in the conventional mortgage market may challenge an HFA's mortgage origination. These changes include shifts in mortgage rates, changes in types/terms of HFA mortgages or increased competition. Generally, cash flows assume unexpended bond proceeds (funds that have not been used or reserved by lenders prior to bond closing) would not be used for origination. Since no loans are originated, investment earnings on unexpended bond proceeds and reserves are the only source of revenue available to pay debt service and program expenses until the bonds are redeemed.

» Partial Origination

For certain stand-alone cash flows containing loans with varying interest rates and terms, we may ask for cash flow scenarios assuming partial originations.

» Full Origination

Assuming bond proceeds are fully used to originate mortgage loans, When mortgages prepay at various prepayment speed assumptions, we analyze the effects to a bond program. See Mortgage Prepayment Scenarios below.

» Additional Origination Scenarios for Programs Using Swaps

The use of a swap by an HFA complicates the non-origination or the partial origination scenario. When an HFA initiates a bond redemption pursuant to non-origination of mortgages, terminating the associating swap at the same time may not be economically feasible. Below outlines a few options an HFA has (subject to compliance with tax rules) in the event of non-origination:

1. ***Redeem the bonds and continue to make payments on the swap*** - cash flows assume that the HFA continues to make fixed rate payments on the swap in exchange of variable rate receipts from the counterparty.
2. ***Redeem the bonds and terminate the swap*** - swap termination payment assumed would be different in the high interest rate and low interest rate scenarios. If the par termination option (after certain times) for the swap is available to the HFA, cash flows may reflect the exercise of this option, if applicable.
3. ***Reduce the mortgage rate assumed for lendable proceeds*** - cash flows assume a lower, below-market mortgage rate that would reasonably lead to full origination of unused lendable proceeds.

» Last Day vs. First Day Origination

If the rate on the mortgage loans (net of any expenses) is higher than the investment rate on the acquisition fund, cash flows should assume that all loans are originated on the last day of the expected origination period. Any extension to this period would engage new cash flows. However, if the rate of the loans is lower than the acquisition fund rate, cash flows would assume that all loans are originated on the first day of the origination period if the net mortgage rate is lower than the investment rate of the acquisition fund.

Prepayment Scenarios

There is generally no prepayment penalty for single family mortgages. Therefore prepayments can occur at any time, impacting the revenue stream available to pay the bonds. We incorporate various prepayment stress assumptions into cash flows to assess if there is sufficient revenue to meet debt service at all times. The following lists our standard prepayment scenarios. We may request more or less scenarios depending on the bond structures.

» Minimum Prepayment Speed

This scenario assumes that only a minimal number of loans prepay over the life of the bonds. In general, this scenario assumes that no loans prepay (0% PSA). However, we understand that most single family portfolios experience some level of prepayments as a result of refinancing, home sales or loan defaults. Therefore, if an HFA is able to supply ten years of historical prepayment experience (20 semi-annual periods) by loan vintage for a program, we would consider a minimum prepayment speed

above 0% PSA. To date, the above-0% minimum prepayment speed assumptions for seasoned open indentures with active management range from 10% PSA to 30% PSA.

» Rapid Prepayment Speed

This scenario assumes that the loans prepay at a rate that results in an average life of three years of the entire loan portfolio. This is often 700% PSA for a new portfolio and 350-450% PSA for a seasoned portfolio, but should be the speed needed in order in achieve the three year average life.

Variation Based on Bond Structure

» Supersinker / PAC Bonds Stress Scenario

If a structure includes low interest rate supersinker or non-premium planned amortization class (PAC) bonds, we may seek a stress test in which loan prepayments occur at the super sinker/PAC structuring speed and are used to redeem those bonds until they have been paid in full. Thereafter, the prepayment speed falls to the minimum payment speed for the life of the transaction. This run is particularly important for stand-alone cash flows or smaller programs.

» Premium / Taxable / Capital Appreciation Bonds

If a transaction contains a high coupon bond that may not be redeemed until a portion or all of the other lower interest bonds are paid off, we would review an additional stress scenario in which loans prepay rapidly (three-year average life) until all lower coupon debt are redeemed, then prepay at the minimum prepayment speed thereafter. The high coupon debt often consists of capital appreciation bonds (CAB), premium bonds, or taxable bonds, but could include any bonds which have a coupon significantly above the weighted average mortgage rate. This run is particularly important for stand-alone cash flows or smaller programs.

Variation Based on Mortgage Portfolio Composition

» Mortgage Loans with Different Interest Rates

If mortgage loan with various interest rates (particularly if the spread between high and low coupon mortgages exceeds 100 basis points) and/or fees are to be originated within the same program, we would likely request another stress scenario. In this split prepayment speed scenario, the higher coupon loans prepay at the three-year average life speed, while the lower coupon loans experience minimum prepayments. The program quickly loses the revenues from the higher coupon loans and is left with the lower coupon mortgages for an extended period of time. It tests whether revenues from the lower coupon loans would be sufficient to meet debt service on the bonds timely. Lastly, we may request other runs evidencing the effect of partial origination (for example, only the lower coupon loans are originated).

» Mortgage Loans with Different Terms

If the mortgages include step rate loans or interest-only loans, where the borrower pays a lower monthly mortgage payment initially and a higher payment later, we may request a stress test assuming minimum prepayment speed on those loans during the initial lower payment period and rapid prepayment thereafter.

Bank Bond Scenarios

For programs with VRDOs using external liquidity facilities, we look for the following additional bank bond scenarios to test the ability of the program to (a) withstand a period of high interest rate spreads on variable rate debt (other than indexed bonds) and (b) repayment of bank bonds for one year. The basic parameters may require modification depending on the structure and legal terms of an individual program.

» **High rate stress** – cash flows incorporate our interest rate assumptions in the high rate environment (Exhibit E3, modified by the bank bond assumptions described below) in conjunction with the minimum prepayment speed on the mortgages.

» **Low rate stress** – cash flows would reflect interest rate assumptions in the low rate environment (Exhibit E3 modified by the bank bond assumptions described below) and the minimum prepayment speed on the program mortgages.

Assumptions for Bank Bond Cash Flows

Amount of bank bonds:

Cash flows assume the following amount of the program's VRDOs (supported by external liquidity) become bank bonds:

The greatest of (a) 25% of VRDOs outstanding, (b) the amount of bonds supported by the liquidity provider with the greatest percentage of exposure in the program or (c) the current amount of bank bonds.

A greater amount of bonds should be modeled as bank bonds where particular circumstances warrant. For example, if particular liquidity banks are downgraded or for other reasons are not supporting remarketings effectively, VRDOs supported by them would be included as bank bonds as well.

Time period:

Cash flows assume that the bonds become bank bonds upon submission of the cash flows and remain as bank bonds for one year thereafter (Bank Bond Period). If bonds have actually become bank bonds before the date of the cash flows, the Bank Bond Period should begin with the date when they became bank bonds and continue for another year from the date the cash flows are submitted. At the end of the Bank Bond Period, cash flows should assume that the bonds are remarketed and remain as VRDOs supported by the same liquidity facility (subject to increased cost upon the facility's expiration).

Payment on the Bank Bonds:

» **Principal Payment:** The program pays the full amount bank bond amortization, including term-out payments during the Bank Bond Period, in accordance to the terms of applicable SBPAs for the bonds selected to be become bank bonds.

» If the largest SBPA exposure covers less than 25% of VRDOs, the bonds associated with SBPAs requiring the largest amount of term-out payments during the one-year term should be selected.

» **Interest Payments on Bank Bonds:** In the cash flows, bank bonds bear interest at the Bank Rate, calculated as prescribed in the issuer's SBPAs including any step-ups during the first 12 months

» **Prime Rate**: Bank Rates are typically based on the levels of Prime Rate. Cash flows would assume:

 - In the high interest rate environment: 95% of LIBOR (Exhibit E3) plus 300 basis points
 - In the low interest rate scenario: 91% of LIBOR (Exhibit E3) plus 300 basis points

Swaps:

Cash flows would incorporate either (a) full on-going payments on the swaps associated with the bank bonds even after the bank bonds have been redeemed (unless par termination options are available to the HFA) or (b) swap termination at its market value, along with associating fees.

» contacts continued from page 1

Analyst Contacts:

NEW YORK +1.212.553.1653

Ping Hsieh +1.212.553.4461
Vice President - Senior Analyst
ping.hsieh@moodys.com

Rachael Royal McDonald +1.212.553.4456
Vice President - Senior Analyst
rachael.mcdonald@moodys.com

Eileen Hawes +1.212.553.4880
Assistant Vice President - Analyst
eileen.hawes@moodys.com

Ferdinand S. Perrault +1.212.553.4793
Assistant Vice President - Analyst
ferdinand.perrault@moodys.com

Omar Ouzidane +1.212.553.3892
Assistant Vice President - Analyst
omar.ouzidane@moodys.com

David Parsons +1.212.553.4537
Assistant Vice President - Analyst
david.parsons@moodys.com

Dmitriy Plit +1.212.553.7463
Analyst
dmitriy.plit@moodys.com

Carlos Calderon +1.212.553.2737
Analyst
carlos.calderon@moodys.com

Richard Kubanik +1.212.553.7823
Associate Analyst
richard.kubanik@moodys.com

Brendan Weber +1.212.553.4688
Associate Analyst
brendan.weber@moodys.com

Timothy Mone +1.212.553.4516
Associate Analyst
timothy.mone@moodys.com

MOODY'S INVESTORS SERVICE

Report Number: 142107

Authors
Florence Zeman
William Fitzpatrick
Ping Hsieh
Eileen Hawes
Brendan Weber

Senior Production Associate
Diana Brimson

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

US Stand-Alone Housing Bond Programs Secured by Credit Enhanced Mortgages

Table of Contents:

SUMMARY 1
OVERVIEW 2
KEY RATING FACTORS 4
APPENDIX A: FORMER METHODOLOGIES, RIGS, AND ARTICLES 16
APPENDIX B: DESCRIPTION OF MORTGAGE ENHANCEMENTS 17
APPENDIX C: THE GINNIE MAE CLC/PLC STRUCTURE 20
APPENDIX D: THE MONTHLY MBS STRUCTURE 22
APPENDIX E: LEGAL FRAMEWORK ANALYSIS 23
APPENDIX F: CASH FLOW PROJECTION ANALYSIS 26
APPENDIX G: BANKRUPTCY MITIGATION ANALYSIS 32
MOODY'S RELATED RESEARCH 34

Analyst Contacts:

NEW YORK +1.212.553.1653

Shane Mullin +1.212.553.4535
Associate Analyst
shane.mullin@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

Summary

This rating methodology explains our approach to assigning and maintaining ratings for US stand-alone housing bond programs secured by credit enhanced mortgages. The purpose of this methodology is to enhance the accuracy of the rating process, identify the key credit factors that affect our ratings, and explain how those factors are applied. It is not intended to be an exhaustive discussion of our rating analysis. One notable addition to this methodology incorporates into the rating the risks of administrative errors by parties designated with executing and adhering to mandatory provisions of the programmatic legal documents.

Stand-alone housing bond programs are typically financed under a single stand-alone indenture or other financing agreement. They do not benefit from active management or oversight by a housing finance agency and generally do not utilize a master indenture governing multiple bond issuances. Programs that do exhibit these features are instead rated under other appropriate methodologies.

The mortgage enhancement is the provider's obligation and ability to make mortgage payments. It is a stand-alone housing bond's primary source of credit strength because it provides insulation from any credit risk associated with the performance of the underlying mortgage(s). Therefore, the enhancement provider's credit rating acts as a ceiling for the bond rating (referred to as the "highest eligible bond rating"). The bond rating could be lower depending on our assessment of the four key credit factors discussed within:

» **Mortgage enhancement**

» **Legal framework**

» **Cash flow projection performance**

» **Investments**

This publication replaces and consolidates 17 existing methodologies, rating implementation guidance reports (RIGs), and other articles.[1] It also incorporates market feedback received in response to our request for comment published on March 19, 2012, *Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Deals with Mortgage Enhancements*.

[1] See Appendix A for a full list of publications that are replaced.

As of December 1, 2012, Moody's rated 687 stand-alone housing bonds with approximately $5.5 billion of debt outstanding. Concurrent with this publication 341 bond program ratings with approximately $2 billion of debt outstanding will be placed under review for downgrade due to changes in methodology, but primarily concerning the administrative error risk referenced above.[2] All impacted bond programs can be identified in the accompanying press release. It is expected that a majority of reviews will conclude in a one notch downgrade to Aa1 from Aaa.

Overview

This methodology applies to stand-alone housing bonds (hereafter "bonds" or "programs") secured by credit enhanced mortgages via a guarantee or insurance from the US government (generally through the Federal Housing Administration (FHA) or Ginnie Mae), a government sponsored enterprise (GSE) such as Fannie Mae or Freddie Mac, or a public entity such as State of New York Mortgage Agency (SONYMA) Mortgage Insurance Fund. These bonds, usually issued as tax-exempt securities by local or state issuers or housing finance agencies (HFAs), are a source of financing for (i) single family homeowners and (ii) developers of multi-family housing projects, hospitals, nursing homes, or health care facilities.

The underlying structure of these bonds is the same whether they are secured by one multi-family mortgage or a pool of single family or multi-family mortgages. In each case the borrower(s) makes monthly mortgage payments to a loan servicer, who then subtracts a servicing fee and any applicable enhancement fee from the monthly mortgage payments and subsequently forwards the net monthly payments (known as "pass-through payments") to the bond trustee. The trustee collects and invests these payments in accordance with the governing legal documents. The revenue from pass-through payments, along with any reinvestment earnings, is used to pay bond interest and principal. If the borrower(s) fails to fulfill its monthly obligations, the credit enhancement provider's guarantee or insurance (hereafter "enhancement") will make whole the *mortgage* principal and interest due. **The credit enhancement does not cover the payment *bond* principal and interest due.**

Under this methodology we currently rate bond programs secured by the following mortgage enhancements:[3] [4]

» Ginnie Mae, Fannie Mae or Freddie Mac mortgage-backed securities (MBS)

» Fannie Mae or Freddie Mac stand-by credit enhancement instruments (CEI)

» FHA standard-risk mortgage insurance ("FHA standard")

» FHA risk-sharing mortgage insurance ("FHA risk-share")

» SONYMA project pool insurance ("SONYMA insurance")

---

[2] Of the ratings placed under review for downgrade, 13 are due to our updated approach to reinvestment rates discussed on page 10.

[3] Appendix B elaborates on the providers and terms of each mortgage enhancement that we currently rate.

[4] This methodology could apply to new mortgage enhancements in the future,

Below are illustrations of the structures of single family and multi-family bond programs secured by credit enhanced mortgages:

EXHIBIT 1
Single Family Stand-Alone Housing Bonds Secured by Credit Enhanced Mortgages

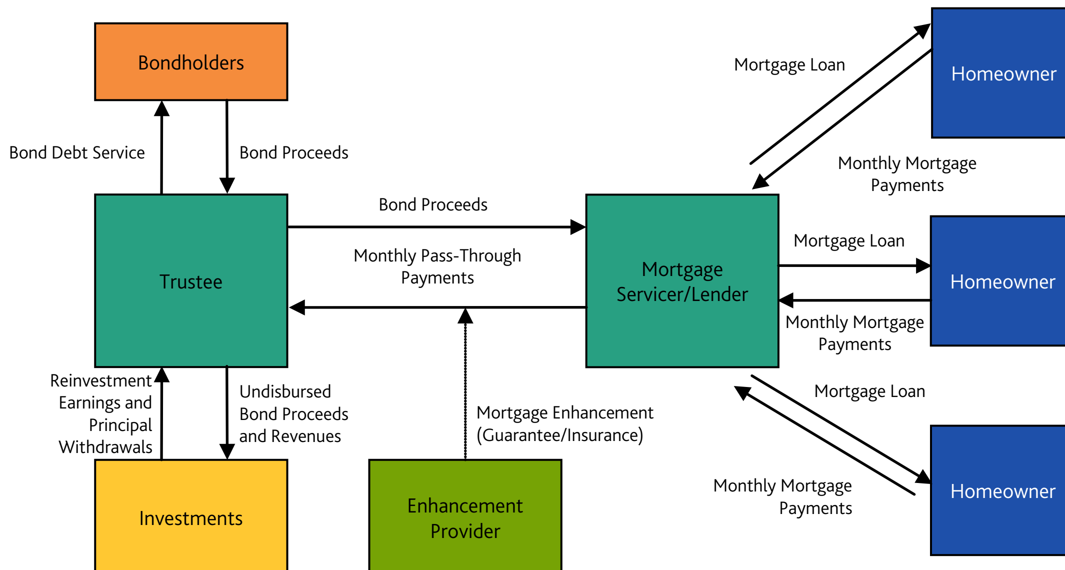
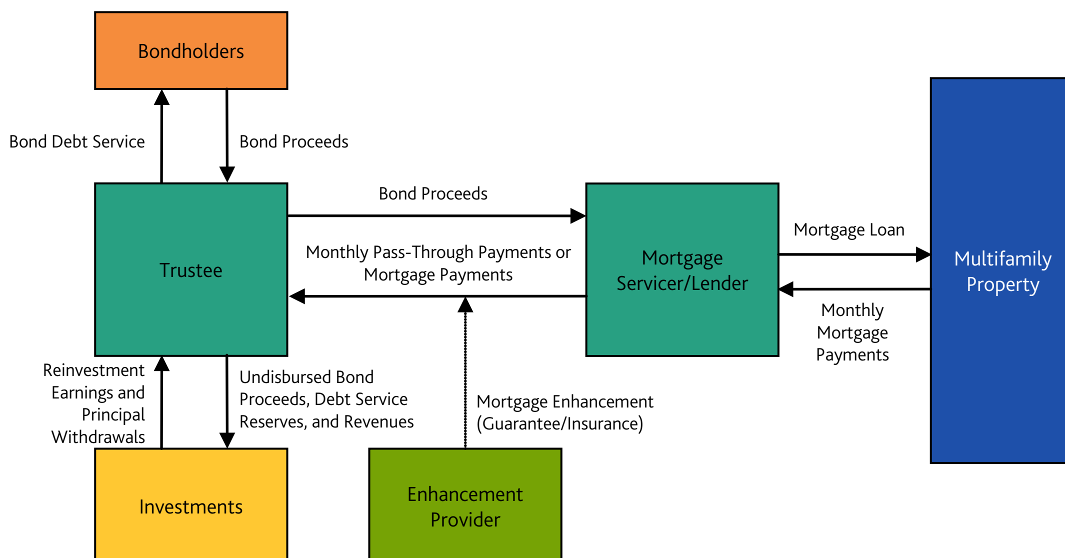


EXHIBIT 2
Multi-Family Stand-Alone Housing Bonds Secured by a Credit Enhanced Mortgage



Two Types of Ginnie Mae Multi-Family MBS Structures

There are two types of Ginnie Mae multi-family MBS structures. In the first type, bond proceeds are advanced for the purchase of the MBS only after project construction is completed (generally for an acquisition or refinancing). In the second type, bond proceeds are drawn upon to first fund project construction and then to fund the permanent long term loan in what is typically referred to as a construction loan certificate/permanent loan certificate (CLC/PLC) structure. This methodology focuses on the first structure as the issues relating to it are generally applicable to the CLC/PLC structure as well. Appendix C focuses on the special considerations for the second structure such as the incorporation of a PLC delivery date extension or a PLC reduction at conversion.

Key Rating Factors

Factor 1: Mortgage Enhancement

Why Mortgage Enhancement Matters

Mortgage enhancement is the pledge from an enhancement provider to either:

- provide full and timely payments of mortgage principal and interest to the bond trustee regardless of the actual performance of the underlying mortgage(s); or
- to make an insurance claims payment on a defaulted mortgage in a predetermined amount which is expected to be sufficient to pay off outstanding bonds.

This transfers bondholders' exposure to the credit of the enhancement provider(s) rather than that of the underlying borrower(s).

How We Measure It

Our analysis of mortgage enhancements includes:

- the enhancement provider's financial strength; and
- the mortgage enhancement's terms.

Enhancement Provider's Financial Strength

The enhancement provider's financial strength, as indicated by its credit rating, serves as the ceiling for the bonds' highest eligible rating. Changes in the enhancement provider's rating will usually result in a similar rating change to the bonds barring other unusual credit considerations that could alter the rating. For example, a rating change of the US government (Aaa negative) would result in a rating change for all equivalently rated bonds secured with mortgages enhanced by the US government or agencies with an implicit US government guarantee.

Mortgage Enhancement's Terms

The mortgage enhancement's terms contribute to the underlying security provided to bondholders in the event of a missed or late mortgage payment. Our assessment of these terms includes, but is not limited to:

- the amount of mortgage principal and interest payments that will be enhanced;
- if there will be any offsets to these payments;

- » whether the enhancement covers payments which have been subsequently recovered as a preference or subject to automatic stay as a result of the borrower's bankruptcy;
- » whether there is a definitive the time frame in which a missed or late mortgage payment will be paid by the enhancement provider[5];
- » funding source of the enhancement, like the US Treasury is to FHA mortgage enhancements;
- » the rating of the funding source; and
- » lien position of the enhancement.

Risk of Uncertain Time Period for Claims Payment Reflected in the Bond Rating

The rating of bonds secured by FHA standard mortgages is capped two notches below the US government's rating. This lower rating incorporates the risks of a two step claims payment procedure and the uncertainty associated with the timing of the claims payment, but also considers the level of reserves established to mitigate these risks. Conversely, bonds secured by FHA risk-share mortgages can achieve an equivalent rating as the US government due to a one step claims process, a program history of quick claims payments, and the presence of a sophisticated HFA in the claims filing process.

EXHIBIT 3

Overview of Mortgage Enhancements

Enhancement Provider	Description of Provider	Mortgage Enhancement	Highest Eligible Rating for Bonds	Primary Rating Rationale with Respect to Mortgage Enhancement's Credit Quality
Ginnie Mae	Wholly-owned US government corporation	MBS	US government's rating	Backed by the full faith and credit of the US government
Fannie Mae and Freddie Mac	GSEs	MBS or CEI	US government's rating	The GSEs are expected to move in lock-step with the US government because of their importance to the US economy and housing system, and priority in public policy
FHA	Government agency within the Housing of Urban Development (HUD)	Risk-sharing mortgage insurance	US government's rating	FHA's obligation to pay the insurance claim in one full payment and its history of claims payments, as well as the high level of sophistication of the HFAs serves to mitigate uncertainty of insurance claims payment timing
		Standard-risk mortgage insurance	Two notches below US government's rating	Backed by full faith and credit of the US government but rated lower due to uncertainty as to the timeliness of insurance payments
SONYMA Mortgage Insurance Fund (MIF)	Insurance fund	Pool insurance	SONYMA MIF's rating	Insurance claims paid by SONYMA MIF

[5] In cases where there is no definitive timing on claims payments, we assess the enhancement provider's track record of payments.

Ratings Provide Credit Distinction for Programs Susceptible to Administrative Error

Certain bond programs have had their financial positions impaired because a participant such as the trustee or servicer failed to fully carry out its duties detailed in the bond financing documents (such as failure to redeem bonds or improper investment of funds). We believe that a Aaa rating[6] is therefore not appropriate given this risk of administrative error. To address this risk, bonds vulnerable to insufficiencies caused by administrative errors are capped at Aa1 in order to provide credit distinction from Aaa-rated programs with significantly less susceptibility. Still, Aaa ratings could be assigned to certain bond programs that exhibit one or more of the following conditions:

1. Structures that inherently reduce the likelihood of administrative errors occurring. These include both single family and multi-family monthly pass-through structures (discussed in Appendix D), and any issues with oversight from an actively managed HFA, such as FHA risk-share programs.
2. Significant over-collateralization would likely represent a source of funds to offset lower revenue caused by administrative errors if the surplus assets are available to bondholders. Accordingly, we distinguish programs with a minimum asset-to-debt ratio of 103%. In general, the observed volatility associated with administrative errors, which we also consider to be a strong indicator of future occurrences, would have been insulated by this level of over-collateralization.
3. Certain legal provisions and cash flow assumptions can closely mirror bond program performance, security, and amortization to that of the underlying asset(s), and thereby reduce the degree of vulnerability to administrator errors at the bond program level. These provisions and assumptions include:
   - Surplus revenues are not remitted to the borrower unless those payments are solely comprised of reinvestment earnings;
   - $1 bond denominations;
   - Assume 0% reinvestment earnings in cash flow projections even if there are long-term investment agreements with financial institutions; and
   - Cash flow projections do not demonstrate negative net revenues during any interest payment period unless covered by a dedicated prefunded reserve.

The above three points notwithstanding, programs that exhibit complex structures may not qualify for a Aaa rating.

As previously mentioned, this methodology incorporates market feedback received in response to our request for comment published on March 19, 2012, *Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Deals with Mortgage Enhancements*. In particular, we've adopted several changes to our initial proposal for Aaa eligibility, such as a minimum over-collateralization and superior legal provisions and cash flow assumptions. We will initiate the review for downgrade of 328 Aaa-rated bond programs (approximately $2 billion of debt) listed in the accompanying press release. We will assess each program's legal framework, recent financial position including its over-collateralization, and cash flow assumptions to determine if at least one of the above-mentioned conditions is met. Pending the results, it is expected that each review will conclude with either a one notch downgrade to Aa1 or a confirmation of Aaa. Programs that experience downgrades as a result of this review may be considered eligible for an upgrade in the future if the minimum over-collateralization level meets our criteria.

[6] References to the Aaa rating reflect the rating of the US government. Our approach could be adjusted if the US's rating were downgraded.

Factor 2: Legal Framework

Why The Legal Framework Matters

As the bonds are not obligations of the enhancement provider(s), the program's legal framework provides a crucial link between the credit quality of the enhanced mortgage(s) and the credit quality of the bonds. The success of these programs is substantially dependent upon the continuous and effective performance by program administrators whose primary source of direction for execution comes from the legal documents (particularly the trust indenture). As previously discussed, a strong legal framework can eliminate or significantly reduce the likelihood of administrative errors and can also bolster program security.

How We Measure It

Our assessment of the legal framework is primarily based on the strength of the following sub-factors:

» Security pledge and collateral;

» Flow of funds;

» Mortgage prepayments;

» Bond redemptions; and

» Reserves

We look to see whether the parameters of the program and instructions to the trustee are set out clearly and without conflict in the bond documents. We also consider if the bond documents provide a sound legal structure that conforms with the enhancement type and cash flow projections. Further information on each sub-factor is provided in Appendix E.

Security Pledge and Collateral

Given the "stand-alone" nature of these programs, no additional security is expected from outside the trust estate. We look to see if the indenture's classification of security pledge and collateral establishes all pledged assets and revenues available to fulfill bond debt service.

Flow of Funds

Because legal directives related to the flow of funds prioritize pledged revenues used for debt service, we look to see where bond principal and interest falls in relation to other uses.

Mortgage Prepayments

Mortgage prepayments can be either voluntary or involuntary (for example, upon loan foreclosure), and the level of prepayments can create cash flow volatility that may create credit risk for bond payments. For our legal analysis, we look to see how the provisions protect bondholders from the volatility and reduced mortgage interest payments. Bondholder protection can be assessed by how the provisions direct the trustee to use prepayments.

Bond Redemptions

Bonds are typically redeemed because of loan prepayments, insurance claims, excess revenues, or non-origination. The redemptions primarily occur on bond interest payment dates, but could also occur on

other dates following a notice period established under the indenture. The regular frequency of redemptions reduces outstanding liabilities as the amortization of the mortgage loan(s) reduces pledged assets. Because both sides of the balance sheet are rebalanced regularly, the bond program is able to maintain a sufficient asset-to-debt ratio over time. Any deviation from the expected debt service schedule may result in a negative spread between interest earned on assets and interest paid on liabilities (known as "negative arbitrage") or a projected cash flow insufficiency.

Reserves

Reserves provide bondholders additional protection if expected cash flow is disrupted or not yet available. The size of a reserve will vary depending on the type of mortgage enhancement, the structure of the bonds, the purpose of the reserve, and the duration of time it is expected to provide liquidity for bond debt service. Two common reserves are the capitalized interest and debt service reserve funds (DSRFs). We look to see that the reserves are sufficiently funded to serve their purpose throughout the applicable time frame.

Other Legal Provisions

Other provisions that do not fall into the categories previously mentioned can still provide bondholders with additional security. We look to see whether these covenants, like all others, are written clearly, and we assess the level of protection afforded to bondholders. Further information on these other provisions is also provided in Appendix E.

Factor 3: Cash Flow Projection Performance

Why Cash Flow Projection Performance Matters

Monthly mortgage payments, along with mortgage prepayments, investment income, and trust accounts, are incorporated in cash flows that project revenue streams against liabilities due, such as bond debt service and program expenses. The primary purpose of these projections is to measure a program's ability to meet its debt service obligations. While cash flows accurately reflect the program parameters set out in the indenture and the enhancement, the precise size of future revenue streams cannot be known with total certainty due to unpredictable external variables such as prepayments and reinvestment earnings. As a result, we review cash flow projections utilizing various assumptions and under several scenarios in order to simulate potential performance and evaluate a bond program's future strength.

How We Measure It

We first review cash flow projections prior to assigning an initial rating and review updated reports based on recent trustee account balances on an as-needed basis. Within our cash flow analysis we incorporate two sub-factors: assumptions and scenarios.

1. **Assumptions**: We look to see that all assumptions are consistent with the terms of the legal documents and enhancements, and that these assumptions are presented in a manner so that the application can be identified. Assumptions include the size, terms, and rates on:
   - Mortgage loans and MBS ("mortgages");
   - Trust accounts; and
   - Investments

2. **Scenarios**: Depending on program specifics, we generally look for cash flow scenarios which are primarily based on:
   - Mortgage originations; and
   - Mortgage prepayments

Appendix F provides further guidance on our approach to cash flow assumptions and scenarios, although not all assumptions are applicable to all bond programs. Following our review of the assumptions employed and scenarios tested, we assess if the cash flow projections demonstrate "sufficiency" by meeting both of the following criteria:

» Sufficient cash flow from mortgage and/or investment revenues at all times to cover debt service obligations and any applicable expenses; and

» Asset-to-debt ratio greater than or equal to 100% at all times.[7] [8]

Assessment of Cash Flows Which Demonstrate Sufficiency

If cash flow projections demonstrate sufficiency while utilizing appropriate assumptions and under all applicable stress scenarios, a bond program may achieve the highest eligible bond rating provided that all other factors also support this rating.

Assessment of Cash Flows Which Demonstrate Projected Insufficiencies

A bond program which does not demonstrate sufficiency at all times (otherwise referred to as "insufficiency") may be assigned a lower rating than the highest eligible due to possibility of a missed bond payment in the future caused by the insufficiency. Our ratings analysis of insufficient cash flow projections is based on the probability of improved future performance sufficient to provide for full debt service payments. If corrective performance to achieve sufficiency is not possible, our analysis and rating focuses directly on the expected recovery rate. [9]

Probability of Improved Performance

Often, the probability of improved performance is dependent upon two variables: reinvestment earnings and mortgage prepayments. When a program's assets are invested in short-term securities[10], cash flow projections typically assume 0% reinvestment earnings because future returns are uncertain. Reinvestment risk for these programs is particularly visible in the current ultra low rate environment. In the event that a program requires a certain reinvestment rate to avoid an insufficiency, we assess the likelihood that future returns will produce sufficiently high earnings on investments (referred to as the "break-even reinvestment rate").

---

7 For purpose of this ratio, assets are comprised of all pledged assets, including the par values of the amortized enhanced mortgage and investments. Liabilities are comprised of the outstanding principal amount of bonds, previously accrued interest, and potentially accrued interest calculated with the maximum number of days for a notice of redemption given under the indenture.

8 For FHA programs, the enhanced mortgage value is 99% of par to reflect FHA's 1% assignment fee. In other words, the over-collateralization level is assessed excluding the amounts not covered by FHA.

9 For further information on this topic, please refer to Key Downgrade Drivers of Stand-Alone Housing Bonds with Mortgage Enhancements published in May 2012.

10 Common short-term securities are listed on page 15.

In addition, we assess several mortgage prepayment scenarios because the speed of future prepayments is also uncertain. If prepayments have an adverse impact on bond program performance, we assess the likelihood that future prepayments will be favorable enough to avoid an insufficiency (referred to as the "break-even prepayment rate").

The higher the likelihood of a program achieving its break-even rate(s), the higher its probability of improved performance. In general, if the probability of improved performance is high we look to the highest eligible rating category derived from the time until the first projected insufficiency, as shown below:

EXHIBIT 4

Highest Eligible Bond Rating Given Projected Insufficiency[11]

Duration Until First Projected Insufficiency	Highest Eligible Bond Rating Category
Greater than 18 years	Highest eligible rating
Greater than 13 but less than or equal to 18 years	Aa
Greater than 8 but less than or equal to 13 years	A
Greater than 6 but less than or equal to 8 years	Baa
6 years or less	Ba

A bond program can still achieve the highest eligible bond rating despite a projected insufficiency because our approach establishes higher rating caps for longer-dated first insufficiencies to reflect a greater potential for improved performance within a longer time horizon. This observation holds true for both elements of our probability of our analysis, considering that:

- interest rates on investments could only improve given our 0% reinvestment rate assumption; and
- underlying loan portfolios exhibiting extremely high prepayment speeds could return to normalcy if the economic climate and/or other conditions improve.

Bond programs with a low probability of improved performance, regardless of the first insufficiency's timing, will not be rated based on the table above. Rather, our analysis focuses on our expectations of bondholders' expected recovery as discussed in the following section.

Expected Recovery Rate

The expected recovery rate is calculated by comparing our assessment of cash flow projections against the cash flows promised to investors. [12]

$$Expected\ Recovery\ Rate = 100\% + \left(\frac{Present\ Value\ of\ Expected\ Loss}{Total\ Bonds\ Outstanding}\right)$$

[11] This methodology updates our approach from Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates published in 2009.

[12] In the equation, the present value of an expected loss is expressed as a negative number.

Expected recovery rates are then applied to the following table:

EXHIBIT 5

Ratings for Bond Programs In or Approaching Default

Description	Long-Term Bond Rating	Expected Recovery Rate if in Default, or if Default Probability Near 100%
Obligations rated Ba are judged to have speculative elements and are subject to substantial credit risk	Ba1	N/A
	Ba2	
	Ba3	
Obligations rated B are considered speculative and are subject to high credit risk	B1	99 to 100%
	B2	97 to 99%
	B3	95 to 97%
Obligations rated Caa are judged to be of poor standing and are subject to very high credit risk	Caa1	90 to 95%
	Caa2	80 to 90%
	Caa3	65 to 80%
Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest	Ca	35 to 65%
Obligations rated C are the lowest rated class and are typically in default, with little prospect for recovery of principal or interest	C	< 35%

Source: A Look at Speculative-Grade Local Governments in the Wake of the Recession

Factor 4: Investments

Why Investments Matter

Investment earnings can be critical to a program's overall cash flow adequacy if they are required to fulfill obligations such as bond debt service or program expenses. Bond proceeds may be invested during acquisition periods and/or monthly mortgage repayments and prepayments could be reinvested prior to bondholder distribution. However most issuers are not involved in the investment decisions made and rarely retain personnel to monitor investment activity over the life of these programs. Instead, a designated trustee is expected to follow investment responsibilities stated in the trust indenture. We typically see two types of bond program investments:

» **Long-term investment agreements:** Most commonly comprised of guaranteed investment contracts (GICs) or repurchase agreements (repos), these investments provide a predetermined, long-term fixed rate of return on funds invested with financial institutions, such as banks or insurance companies.[13]

» **Short-term securities**: Investments that do not guarantee a long-term fixed rate of return, such as US Treasury notes or money market funds. These securities expose bond programs to reinvestment risk over the life of the issue.

If the GIC provider is unable to perform in accordance with the contract's terms, there may be a debt service payment shortfall on the bonds due to a loss of interest earnings on or principal of the invested funds. A GIC's credit quality is contingent upon the provider's long-term and short-term ratings. As a result, the downgrade of a provider's rating could in turn adversely affect the security afforded to bondholders. Given that stand-alone bond programs are typically dependent on one investment

[13] This methodology primarily focuses on GICs, as the issues relating to them are more universal. Special considerations are given to repos (such as on page 14).

provider and rarely benefit from external support, there is the risk of a bond rating change due to a downgrade of the GIC provider. Furthermore, there may be the risk that the invested funds would not be recovered for bondholders in the event the provider declares bankruptcy (Appendix G details our analysis of bankruptcy mitigation). Therefore, the credit quality of the investment provider, as reflected in its rating, is an important component of the bonds' rating.

How We Measure Long-Term Investment Agreements

We determine the highest bond rating supported by the type of GIC. We distinguish between two types:

» **Acquisition fund GICs**: Used to invest during the initial project construction or mortgage acquisition/origination phase.

» **Float and reserve fund GICs**: Used to invest revenues in between bond debt service payment dates (known as "float") or amounts in reserve funds.

We treat the two differently because acquisition fund GICs have a greater impact on a bond program's credit quality than float and reserve fund GICs. During the acquisition/origination phase, all bond proceeds may be invested in an acquisition fund GIC which exposes bondholders to the risk of losing the entire amount of bond proceeds if the GIC provider unexpectedly goes bankrupt. In contrast, float fund GICs generally hold no more than six months of pass-through mortgage payments or prepayments, and reserve fund GICs only hold only a portion of funds that may be needed to pay down the bonds in the event of a default. Float and reserve fund GICs thereby expose bondholders to a much smaller potential loss relative to acquisition fund GICs if the investment provider declares bankruptcy.

Acquisition Fund GICs

The highest bond rating for programs utilizing this type of GIC is the provider's rating throughout the mortgage acquisition/origination period. Similarly, a bond program utilizing a letter of credit (LOC) that is drawn down throughout this period will also be held to these standards. If the GIC is employed as a float or reserve fund GIC when this period is over, we place the bond rating under review for upgrade based on our approach discussed directly below.

Float and Reserve Fund GICs

The following table outlines the highest bond rating a program can achieve given the rating of the float or reserve fund GIC provider. Providers rated A1/P-1 or higher (or Aa3 with no short-term rating) are eligible to support a Aaa-rated bond. As the provider's rating falls to A2 and below, the bond rating begins to converge. If the provider's rating falls even further to Baa1 or below, the bond rating will not exceed it.

EXHIBIT 6

Investment Provider Rating and Corresponding Highest Bond Rating

<table>
<tr><th colspan="4">Investment Provider</th><th colspan="2">Bonds</th></tr>
<tr><th>Long-Term Rating</th><th>Review Status</th><th>Short-Term rating</th><th>Review Status</th><th>Highest Long-Term Rating</th><th>Review Status</th></tr>
<tr><td rowspan="5">Aaa - Aa3</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td rowspan="2">Aaa</td><td rowspan="2">-</td></tr>
<tr><td>RUR</td></tr>
<tr><td>-</td><td rowspan="3">P-1</td><td>-</td><td rowspan="3">Aaa</td><td rowspan="3">-</td></tr>
<tr><td>RUR</td><td>RUR</td></tr>
<tr><td>-</td><td>RUR</td></tr>
<tr><td rowspan="5">A1</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td>Aa1</td><td>-</td></tr>
<tr><td>RUR</td><td>Aa1</td><td>RUR</td></tr>
<tr><td>-</td><td rowspan="3">P-1</td><td>-</td><td rowspan="3">Aaa</td><td rowspan="3">-</td></tr>
<tr><td>RUR</td><td>RUR</td></tr>
<tr><td>-</td><td>RUR</td></tr>
<tr><td rowspan="5">A2</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td>A1</td><td>-</td></tr>
<tr><td>RUR</td><td>A1</td><td>RUR</td></tr>
<tr><td>-</td><td rowspan="3">P-1</td><td>-</td><td>Aa1</td><td>-</td></tr>
<tr><td>RUR</td><td>RUR</td><td rowspan="2">Aa1</td><td rowspan="2">RUR</td></tr>
<tr><td>-</td><td>RUR</td></tr>
<tr><td rowspan="2">A3</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td>A2</td><td>-</td></tr>
<tr><td>RUR</td><td>A2</td><td>RUR</td></tr>
<tr><td rowspan="2">Baa1 and below</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td rowspan="2">Long-term rating of provider</td><td>-</td></tr>
<tr><td>RUR</td><td>RUR</td></tr>
<tr><td>Withdrawn (WR)</td><td>-</td><td>-</td><td>-</td><td>WR</td><td>-</td></tr>
</table>

If a provider is downgraded and is no longer eligible to maintain the rating on the bonds, we place the bond rating under review for downgrade to reflect the increase in counterparty risk. During the review period we will evaluate the issuer or borrower's plans for addressing the rating action on the GIC provider. Issuers could reduce counterparty risks through three common options:

» terminate the GIC exposure;

» replace the GIC provider with another sufficiently rated financial institution; or

» recast the GIC as a repurchase agreement.

Following such decision, we review revised cash flows utilizing appropriate assumptions discussed in Appendix F – in particular, those related to reinvestment earnings – to reflect any changes to the program. The issuer or borrower may also elect to take no action to reduce counterparty risk resulting in a bond rating corresponding to the table above *unless* cash flow projections demonstrate sufficiency throughout a GIC provider bankruptcy scenario (discussed in Appendix F).

Enforceability Against Providers Under Applicable Laws

To determine whether a GIC is enforceable against the provider under applicable state, federal, or foreign laws, we examine domestic and foreign enforceability opinions that state if the GIC is a legal, valid, and binding obligation. If the obligations of the provider are guaranteed by another entity under the agreement, we examine opinions addressing the enforceability of the guarantee.

Downgrade of a Repurchase Agreement Dealer May Impact Bond Programs Differently

A repurchase agreement is a collateralized loan involving an agreement between an investor and a repo dealer. The agreement consists of two simultaneous transactions, whereby the investor purchases securities, such as US Treasuries, from the repo dealer and agrees to resell them to the dealer at an agreed price on a future date. The agreed upon price determines the rate of return.

Each repo can be unique and each bond program can be impacted differently by a repo dealer downgrade. The impact is based on, among other factors, the collateral or security type, over-collateralization, and bankruptcy opinions.

How We Measure Short-Term Securities

For bond programs invested in short-term securities, we generally look for the following features of the indenture's definition of permitted investments:

» minimal credit risk of the security's provider given the rating of the bonds; and

» directions for the trustee to purchase investments with a maturity that is shorter than or equal to the date when the invested funds are needed under the indenture, such as the earliest possible bond redemption or the next interest payment date.

Commonly Permitted Short-Term Securities

US Government Obligations - Obligations or securities as to which the timely payment of principal and interest are guaranteed by the US government.

Direct US Treasury Obligations - Securities issued by the US Treasury and guaranteed by the US government, such as Treasury bills.

US Federal Agency Securities – Debt instruments issued by federal departments and federally related agencies that are fully backed by the full faith and credit of the US government. This group of issuers includes:

» Ginnie Mae

» FHA

» US Maritime Administration, which operates within the Department of Transportation

» Small Business Administration

» General Services Administration

And while GSE debt does not possess this full faith and credit of the US government, each agency has a loan entitlement or line of credit with the US Treasury. Furthermore, since these agencies play a major role as intermediaries, their debt is considered almost as secure as that of the US Treasury. The debt of the following GSEs are rated:

» Fannie Mae or Freddie Mac

» Federal Home Loan Bank (FHLB)

» Resolution Funding Corporation (REFCORP)

» Federal Farm Bank Credits

» Farm Credit System Financial Assistance Corporation (Farmer Mac)

» Tennessee Valley Authority

Money Market Funds - Money market funds with the highest eligible rating.

US Treasury STRIPS - Non-callable, non-prepayable zero-coupon instruments derived from selected Treasury bonds and notes with maturities of ten years or greater. STRIPS are created on request. The underlying bonds and notes are separated on the books of the Federal Reserve by the US Treasury into their component parts of principal and interest payments. In purchasing an interest coupon or principal portion of a US Treasury, the investor will own a direct obligation of the US Government.

Bank Deposits - Funds are deposited with banks (not holding companies or other related entities) with a short-term rating of P-1 and a long term deposit or rating at the level appropriate for the rating on bond program as outlined in Exhibit 6. FDIC insurance alone does not guarantee timeliness of payment and therefore we look to the short-term bank rating.

Appendix A: Former Methodologies, RIGs, and Articles

Bankruptcy Issues in Multi-family Housing Bonds

Fixed Rate Multi-family Housing Bonds Secured By Fannie Mae's Stand-By Credit Enhancement Instrument

GICs for Housing Transactions: Moody's Responds to Frequently Asked Questions

GNMA-Collateralized Multi-family Housing Bonds

Investment Practices of Housing Bond Issuers Impact Credit Ratings

Mandatory Redemptions in GNMA Collateralized Multi-family Deals

Methodology Update: Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates

Methodology Update: Ratings that Rely on Guaranteed Investment Contracts

Moody's Analytical Approach to Rating Single Family Monthly Pass-Through Housing Bonds Secured by Mortgage-Backed Securities

Moody's Anticipates Higher Bond Volume Associated with HUD's Risk-Sharing Program as a Result of Recent Congressional Actions: Structured Appropriately, Bonds Secured by Loans Insured Under the Risk-Sharing Program are Eligible for Moody's Aaa Rating

Moody's Approach to Acquisition Period Extensions in Single-Family Mortgage Revenue Bond Deals

Moody's Approach to Extensions in GNMA-Collateralized Multi-family Housing Bonds

Moody's Approach to Rating Fixed Rate Multi-family Bonds Supported by Fannie Mae Credit Enhancement Instrument (Stand-By)

Moody's Approach to Rating the Fannie Mae Single Family Forward Commitment Program

Moody's Currently Rates Standard FHA Multi-family and Health Care Deals Aa2; Risk of Non-Defined Time Period for Claims Payment is Reflected in the Rating

Payment of Fees in Housing Deals and their Potential Impact on Ratings

Strength in Structure: Moody's Approach to Rating Single-Family Housing Bonds Secured by Mortgage-Backed Securities

Appendix B: Description of Mortgage Enhancements

Ginnie Mae, Fannie Mae, or Freddie Mac MBS

Ginnie Mae is a wholly-owned government corporation within the Department of Housing and Urban Development (HUD). Fannie Mae and Freddie Mac are US GSEs which have been in conservatorship under the Federal Housing Finance Agency (FHFA) since September 2008. All three agencies were established to promote affordable housing and homeownership for low to moderate income Americans. Regardless of the actual performance of the underlying mortgage or pool of mortgages, these agencies guarantee the full and timely payment of MBS principal and interest.

In a typical bond deal secured by MBS, lenders originate mortgage loans which are then sold to a master servicer. The master servicer can issue an MBS in two ways. In one, the master servicer pools Ginnie Mae, Fannie Mae and/or Freddie Mac approved loans and subsequently issues an MBS. In the other, pools are delivered to Fannie Mae or Freddie Mac which will then issue its MBS to the master servicer. The trustee, acting on behalf of the bondholders, purchases the MBS with bond proceeds. Each month the master servicer collects mortgage payments, deducts its servicing fee from which it must pay the MBS guaranty fee, and passes through the remaining amount as the MBS payment to the trustee.

Fannie Mae and Freddie Mac Stand-by CEI

Fannie Mae and Freddie Mac stand-by CEIs enhance the mortgages originated to finance the construction, rehabilitation, or refinancing of multi-family housing projects for residents with low to moderate incomes. The stand-by CEI offers bond programs complete credit substitution on the mortgage, but differs from a Fannie- and Freddie-issued direct-pay which instead provides enhancement on the bonds. (Direct-pay issues are rated under Moody's Rating Methodology For Multifamily Housing Bonds Secured By Freddie Mac Direct Pay Credit Enhancement Agreement, Moody's Rating Methodology for Multifamily Housing Bonds Secured by Fannie Mae's Direct-Pay Credit Enhancement Instrument, or Moody's Methodology for Rating U.S. Public Finance Transactions Based on the Credit Substitution Approach.)

The stand-by CEI is drawn upon only if the borrower fails to make a mortgage payment as set forth in the mortgage note (typically the 1st day of each month) and after the predetermined grace period elapses.[14] Thereafter the GSE guarantees mortgage payments, including those that have been subsequently recovered as a preference or are unavailable due to the automatic stay in the event the borrower defaults or declares bankruptcy. The GSE may elect to cause a mandatory bond redemption for which it is responsible for such payment. These provisions ensure that a borrower default or bankruptcy will not have an impact on the bond program's credit quality.

FHA Mortgage Insurance

FHA, an organizational unit within HUD, provides multi-family mortgage insurance for mortgage loans which provide financing for the construction, rehabilitation, purchase, or refinancing of multi-family housing projects, hospitals, health care facilities, and nursing homes.

[14] The typical grace period for Fannie Mae and Freddie Mac is from the first day of the month through the eighteenth or the tenth day of the month (or next succeeding business day if such day is not a business day), respectively.

Standard Risk Insurance

A mortgage payment must be at least 30 days late in order to declare a mortgage loan default under an FHA program. Once a mortgage is declared in default, the mortgagee has 45 days to notify FHA in writing of its intention to file an insurance claim and its election to assign the mortgage to HUD/FHA or proceed to foreclosure and then convey the title to HUD/FHA. FHA insurance generally covers 99% of the outstanding principal balance of the mortgage loan (100% of the loan less a 1% assignment fee) at the time of default as well as post-default interest[15]. FHA is not required by statute or regulation to pay these claims within a defined period of time, and because of this, it is possible that the final claims payment could be delayed beyond expectations. FHA may only pay the final balance of the claims when it has obtained the legal documents that give it a perfected security interest in the mortgage loan and undertaken its final accounting and due diligence for the loan.

FHA standard insurance claims may be paid in either cash or debentures. The trust indenture will specify the payment method that the trustee will request if there is a choice. Claims are generally paid in cash unless the mortgagee requests payment in debentures.

Cash Claims Payments

FHA will pay approximately 90% of the claims within a few days of assigning the mortgage to HUD/FHA. The remaining 10% is generally paid after FHA has completed its due diligence in processing the claim and title passes to HUD/FHA. Post-default interest is calculated at the debenture rate.

Debenture Claims Payments

Debentures are financial instruments with 20-year terms issued by HUD/FHA which pay interest semiannually on January 1 and July 1, and principal upon maturity. The debenture's interest rate is established by HUD/FHA at the rate in effect on the date the commitment was issued, or the date of initial insurance endorsement of the mortgage, whichever rate is higher. The debenture is issued as of the date of default and interest on the debenture is paid shortly after resolution of the claim. The first debenture payment will reflect interest accrued from the date of default to the first January 1 or July 1 preceding the resolution of the claim, and the next payment will reflect a full six month period. These debenture interest payments are used to pay principal and interest on the bonds. If the debenture matures prior to the bonds maturity, debenture principal is used to call bonds at the end of 20 years. In addition, HUD has the option to call debentures early which would result in a redemption of the bonds.

Risk-Sharing Insurance

HUD's Risk Sharing Program for Insured Affordable Multifamily Project Loans was established in 1992 pursuant to Section 542(c) of the National Housing Act. HFAs must be approved to participate in the program and can assume risk from 10% to 90% of the loss on the insured loans. A greater share of risk allows an HFA to use its own underwriting standards and establish loan terms without HUD's approval.

[15] For example: A mortgage payment due on August 1 is missed. FHA insurance covers interest that accrues on the outstanding principal balance of the mortgage as of August 1, but does not cover the one month's mortgage interest that accrued during July and was due on August 1.

Under this program bondholders benefit from 100% insurance from the FHA, the claim payments from which are used to redeem bonds. The HFA's share of the risk acts as reinsurance for FHA. The reinsurance is paid directly to FHA within five years after the claim payment when the final loss is determined.

Although HUD procedures do not specify the timing for claims payments, there is a streamlined claims payment process which provides assurance of full and timely bond payment and redemption in the event of an underlying mortgage default. Unlike the standard insurance where FHA has historically paid up to 90% of the insured mortgage loan as an initial claims payment within a few days and the final 10% after the loan is assigned to FHA, risk share offers one payment in the full amount of the loan soon after the claim is filed.

The program has other benefits in addition to the more streamlined claim process. First, HUD generally selects sophisticated HFAs for participation in the program, which can reduce risks associated with incorrect insurance claim filings, poor loan monitoring standards, or administrative mishaps. Second, loan underwriting and monitoring standards are likely to be more robust because both parties are exposed to risk of non-performance of the loan; suggesting less default risk.

SONYMA Mortgage Insurance

SONYMA mortgage insurance, which is provided by the Agency's Project Pool Insurance Account, insures the entire outstanding mortgage principal balance and accrued interest. The lender may file a claim with SONYMA following a missed mortgage payment or the avoidance of a prior payment pursuant to the US Bankruptcy Code. SONYMA then has the option to either pay the claim with a lump sum payment or make monthly payments equal to regularly scheduled principal and interest on the mortgage loan. It may exercise its option to make a lump sum payment at any time even if it initially chooses to make periodic payments. A lump sum payment is expected to equal the total outstanding mortgage principal and accrued interest from the date of default, and is generally paid within 60-120 days of default.

Appendix C: The Ginnie Mae CLC/PLC Structure

A CLC/PLC structure can be utilized for financing the mortgage which covers both the construction loan and permanent loan phases of a project. As a developer builds or rehabs a project, FHA-insured construction draws are requested from the lender/servicer. Each disbursement is then securitized by an MBS which is referred to as a construction loan certificate, or CLC. CLCs are short-term Ginnie Mae securities which are issued throughout the construction process, and bear an interest rate equal to the mortgage rate established by FHA under the mortgage note, less the Ginnie Mae guarantee and servicing fee. The maturity date of all CLCs is typically set at a date at least twice as long as FHA's estimated construction period. The CLCs guarantee timely interest-only payments on the 15th day of each month and principal at maturity.

When the project is completed and the mortgage has received final endorsement from FHA, all CLCs are exchanged (prior to their respective maturity dates) for an MBS referred to as a permanent loan certificate, or PLC, on the PLC delivery date. The PLC represents the long-term Ginnie Mae security that guarantees the pass-through mortgage payments of principal and interest on the 15th day of each month.

Below we discuss special considerations for a CLC/PLC structure in addition to the traditional rating analysis for a Ginnie Mae MBS structure.

Construction Advances and Payment of Accrued Interest for Interim Advances

Construction advances may be funded by the lender/servicer from its own resources and the CLCs securitizing such advances are then issued and presented to the trustee for purchase. Alternatively, the bond program structure may allow the trustee to fund construction draws from bond proceeds before issuance of the MBS; but even in this structure, the lender/servicer always funds the first and last draws until the MBS issuance. The funding of the first draw by the lender/servicer ensures that Ginnie Mae will authorize the issuance of future CLCs even if the lender/servicer or borrower defaults after a construction advance has been made, but prior to the issuance of the corresponding CLC.

Except for the first and last draws which are funded by the lender/servicer, some CLC/PLC structures allow the trustee to disburse bond proceeds to fund construction draws prior to delivery of the CLC representing such disbursement. Since the trustee does not know when the CLC will be delivered and therefore the amount of accrued interest for that CLC is not known, the trustee's interim advance will be net of interest at the pass-through rate from the date of the advance up to and including the last day of the month in which such advance is made. If the CLC representing the interim advance is dated the first day of the month in which the advance is made, the trustee pays the lender/servicer a full month's interest on the CLC at the pass-through rate upon delivery of the CLC. Since the trustee will receive a full month's interest on that CLC on the 15th of the following month, this process is akin to purchasing the CLC on the advance date.

If the related CLC is dated the first day of the month following the month in which the advance is made, no further payment by the trustee is required upon delivery of the CLC. If the trustee does not withhold the amount described above, there will be a shortage in the amount of revenues received by the trustee equal to MBS income that would have been realized on the advance amount for the period from the date of advance through the end of the month. Under the financing documents, the lender/servicer is often obligated to deliver a CLC that is dated no later than the first day of the month following the month in which the advance was made, and the trust indenture states the source of

payment for accrued interest. When analyzing structures which permit interim advances, we generally look for a letter from Ginnie Mae stating that the CLC will still be issued even if the borrower or issuer defaults prior to the CLC issuance.

PLC Delivery Date Extension

Project construction could potentially be delayed beyond the original completion date. If that occurs, the trustee typically performs one of two actions. In one action, the trustee redeems bonds using the undisbursed bond proceeds and the maturing principal of the CLCs due to non-delivery of the PLC by the PLC delivery date. Otherwise, the indenture may instruct the trustee to request an extension of the CLC maturity date and the PLC delivery date, or even a change of commencement of amortization date.

If the construction/acquisition fund is invested in an investment agreement with a financial institution, its term generally extends beyond the PLC delivery date. However, the PLC delivery date does not extend beyond the CLC maturity date because the PLC is exchanged for outstanding CLCs.

In the event an extension is necessary to complete the construction, we may review cash flows in advance of the PLC delivery date and CLC maturity date extensions to see whether the bonds are secured by either a short-term CLC or long-term PLC at all times.

Loan Amortization Prior to PLC Issuance

As discussed previously, CLCs guarantee interest-only payments on the 15th day of each month with principal due at maturity. If the mortgage amortization begins prior to the PLC delivery date, the principal portion of the mortgage payments is held by the lender/servicer until the PLC is delivered. At final endorsement, the lender/servicer has the option of delivering the PLC either net of amortization (known as the "net PLC") or in an amount equal to the original mortgage amount (known as the "gross PLC"). If the net PLC is delivered, the trustee uses an amount equal to the mortgage amortization to redeem bonds in order to bring the asset and liability on par. If the gross PLC is delivered, only then can the mortgage principal payments be passed on to the trustee. This mechanism ensures that the mortgage principal payments passed on to the trustee are guaranteed by Ginnie Mae.

Loan Reduction at FHA Final Endorsement

In some cases the loan amount may be reduced by FHA at final endorsement (referred to as the "reduced PLC"). If the reduced PLC is *less* than the aggregate outstanding amount of CLCs, the lender/servicer pays the trustee an amount equal to such difference at the time of the CLC/PLC exchange from the lender/servicer. The trustee then applies that amount, along with remaining acquisition funds, to redeem bonds. If such reduced PLC is *equal to or greater than* the aggregate outstanding amount of CLCs, the trustee acquires the reduced PLC and applies remaining acquisition funds to the redemption of a like amount of bonds.

Appendix D: The Monthly MBS Structure

The monthly pass-through MBS structure, in contrast to the more traditional semi-annual bond debt service programs, pays interest on a monthly basis and pays down principal from mortgage principal payments and prepayments as they are received (no redemption period is required). This structure enables programs to more closely match the terms of the underlying MBS than do their semi-annual counterparts. Its features eliminate the potential for negative arbitrage and significantly reduces vulnerability to administrative error. As a result, monthly structures that exhibit these qualities are eligible for the Aaa rating.

Although our assessment of its legal framework is fundamentally the same as a semi-annual pay program, the cash flow analysis differs. We generally do not review cash flows with the exception of a non-origination scenario if the monthly structure exhibits the following characteristics:

» one mortgage rate and one bond rate; but in the event there are multiple mortgage and/or bond rates, the lowest net pass-through rate is greater than or equal to the highest bond rate;

» the trustee is directed to use MBS principal payments and prepayments to redeem bonds on the 1st day of the following month;

» the minimum authorized bond denomination is $1;

» absence of a minimum revenue fund balance;

» absence of a sinking fund redemption schedule;

» expenses paid from the trust estate, if any, are defined and expressed as a percentage of the MBS outstanding; and

» a cash deposit equal to one month of interest at the MBS pass-through rate is deposited with trustee at the bond closing.

Appendix E: Legal Framework Analysis

This Appendix provides further detail regarding our assessment of this credit factor based on the strength of the following sub-factors:

» Security pledge and collateral;

» Flow of funds;

» Mortgage prepayments;

» Bond redemptions; and

» Reserves

During our review we will primarily look to see whether the below mentioned provisions are in force.

Security Pledge and Collateral

» Delineation and priority of payment and liens of pledged revenues.

» Directions to enforce the mortgage enhancement mechanism are consistent with the terms of the enhancement agreement.

» The receipt of funds, release of liens on assets that are being transferred to the trustee, and execution of the investment agreement(s) occur prior to or simultaneously with the trustee's delivery of the bonds.

» Any contributions by the borrower are insulated from bankruptcy-related risks. Contributions will not be viewed as a preferential transfer by a bankruptcy court and will not be subject to the US Bankruptcy Code's recovery provisions, nor will they be frozen in the trust estate in accordance with the US Bankruptcy Code's automatic stay provisions. Please see Appendix G for a more detailed discussion on our assessment of bankruptcy mitigation.

» For MBS-secured bond programs:

- types of securities that may be purchased;
- the purchase price;
- from what accounts they are purchased;
- the pass-through rate(s);
- from what source and when the accrued MBS interest is to be paid, if applicable; and
- that the trustee holds the MBS at all times for the benefit of bondholders and the trust estate.

Flow of Funds

» Priority of pledged revenues given is to the payment of bond interest and principal, and premium if applicable, before payment of fees and expenses.

» Transparent disclosure of fee structure that:

- Clearly establishes fees and expenses paid from the trust accounts that are (i) capped by a percentage or a flat dollar amount on at least an annual basis, and (ii) ratably reduced in

proportion to a decrease in the outstanding enhanced mortgage(s) from anything other than a planned amortization.

- Does not reference fees paid from sources outside the trust estate in the indenture.
- Does not allow acceleration or event of default on the bonds in the event of a missed or late payment on any fee, whether it is paid from within or outside of the indenture.

» Investment practices in which all revenues are invested in permitted or specific investments within a defined period of time following receipt of applicable funds.

Mortgage Prepayments

» Mortgage prepayments are used to redeem bonds.

» In the event of a partial multi-family mortgage prepayment, revised cash flows (reflecting the modified loan re-amortization and updated sinking fund) are distributed in a timely manner to appropriate parties such as the trustee and rating agencies.

» A mandatory bond redemption occurs if there is any provision for early optional prepayment on the underlying mortgage.

» The redemption dates and premiums associated with underlying mortgage prepayments, if any, match those of the bonds and the MBS, if applicable. If they do not match, the loan is not prepaid later than or at a lower premium than the bonds to avoid any shortfall in the bond redemption.

Bond Redemptions

» Any amount in excess of regularly scheduled pass-through payments of principal and interest are used to redeem bonds.

» After an initial acquisition or construction period (defined in both single family origination and multi-family construction programs), unexpended bond proceeds are used to redeem bonds, pay purchase price, or be transferred in connection with a mandatory tender and remarketing of certain bonds.

» A definitive maximum time frame for notice and bond redemptions is established.

Reserves

» The capitalized interest reserve, if applicable, provides sufficient revenue for debt service throughout the intended duration, such as the acquisition or mortgage origination period.

» Based on historical observations and the structure and timing of claims payments, we generally see the DSRF funding levels expressed as the number of months during the year of maximum annual debt service (MADS):

EXHIBIT 7

Debt Service Reserve Funding by Mortgage Insurance Type[16]

Enhancement Provider	Mortgage Insurance Type	Typical DSRF Funding
FHA	Cash Payment	8 months of MADS plus 1 month mortgage interest[17]
FHA	Debenture	12 months of MADS plus 1 month mortgage interest[17]
FHA	Risk-Sharing	6 months of MADS plus 1 month mortgage interest
SONYMA MIF	Pool Project Insurance	2-4 months of MADS

Other Legal Provisions

» Ongoing information and notices of key events are provided to the rating agencies in order to maintain the bond rating.

» The trustee accelerates bonds upon a covenant breach or other non-payment default provided there is 100% bondholder approval, unless there are sufficient funds to make bondholders whole and fulfill payment of required fees on the acceleration payment date.

» To ensure continuous program management, trustee resignation or removal takes effect after a successor is in place.

» A vast majority of indentures do not permit additional bonds. In the event they are permitted and issued within an existing bond program, the revised structure is consistent with the original legal provisions which, for example, may require a minimum over-collateralization prior to additional issuance. Revised cash flows reflecting the additional bonds are distributed prior to issuance to appropriate parties, such as the trustee and rating agencies.

» If there is a deposit on behalf of the issuer or borrower, the trust indenture often includes terms regarding such deposit, such as the amount, the account in which it is to be deposited, the trustee's date of receipt, and the permitted securities for which the deposit is to be invested in. We will consider the source of any deposits to determine bankruptcy implications, if any, as discussed in Appendix G.

[16] DSRFs are unnecessary for bond programs secured by MBS or CEI because receipt of mortgage payments is guaranteed before the bond debt service payment date.

[17] The 1% assignment fee may also be covered in the DSRF if the cash flows don't value the loan at 99%.

Appendix F: Cash Flow Projection Analysis

This Appendix provides further detail regarding our approach to the assumptions and scenarios incorporated in cash flow projections. Notwithstanding anything stated in this publication, we may modify the assumptions employed or review additional cash flow scenarios in order to properly assess the mix of strengths and risks embedded in an individual program.

Assumptions

All assumptions are consistent with the terms of the legal documents and enhancements, and cash flow projections present these assumptions in a manner so that the application can be identified. Not all assumptions can be applied to all bond programs. For any applicable bond programs, this methodology provides special guidance on the following assumptions:

» Mortgage loans and MBS ("mortgages");

» Trust accounts; and

» Investments

Mortgage Loans and MBS ("Mortgages")

If applicable, the following mortgage assumptions are reflected in the cash flow projections:

» In the event that multiple loan rate scenarios are possible prior to the actual mortgage origination(s), the lowest interest rate(s) permitted is assumed.

» The duration between when a borrower makes a monthly payment and when the trustee receives it is known as "lag". The lag assumed in cash flow projections depends upon the credit enhancement payment provisions *plus* an additional five days for the receipt of payment to reflect any delays in honoring the trustee's claims (due to weekends or holidays) should there be a missed mortgage payment. Common mortgage lag assumptions are detailed in the table below:

EXHIBIT 8

Mortgage Lag Assumptions for Cash Flow Projections

Mortgage Enhancement Type	Enhancement Provider	Payment Due Date	Typical Lag Assumption
MBS	Ginnie Mae I	15th of the month	20th of the month
MBS	Ginnie Mae II	20th of the month	25th of the month
MBS	Freddie Mac	15th of the month	20th of the month
MBS	Fannie Mae	25th of the month	30th of the month
MBS	Multiple providers	Multiple dates	Longest applicable minimum lag
CEI	Fannie Mae / Freddie Mac	1st of the month	1st day of the following month
Mortgage Insurance	SONYMA / FHA	1st of the month	1st day of the following month

» Given that Ginnie Mae, Fannie Mae, or Freddie Mac payments are made in the month following MBS issuance, MBS acquisition/origination cash flow projections assume an accurate payment delay from the first day of the month of MBS issuance to the date of first MBS payment.

Example of Ginnie Mae MBS Payment and Lag Assumptions

Consider a Ginnie Mae I security issued in September. The security's first payment would be due on October 15. Adding for at least a five day lag for guaranteed payment in the event of a missed mortgage payment, the cash flows would reflect an MBS payment (at the earliest) on October 20.

Trust Accounts

The opening account balances are equivalent to the deposits the trustee receives at closing. Updated cash flows (those run after bond closing) typically assume balances immediately following the most recent bond debt service payment.

Investments

For Aaa rated bond programs, float funds do not assume a reinvestment rate regardless of whether they are invested in a GIC or not.

For non-Aaa rated bond programs, funds invested in a GIC assume the appropriate fixed-rate until the investment's stated maturity. All remaining funds do not assume a reinvestment rate.

Scenarios

Depending on program specifics, we generally look for two standard cash flow scenarios for bond programs which are based on mortgage originations and prepayments. Additional scenarios may be reviewed given the circumstances of a particular bond program, which include program features and the occurrence of certain events. The scenarios we review are discussed in depth on the following pages and are illustrated in the table below.[18]

EXHIBIT 9

Cash Flow Projection Scenarios

Scenario	Specific Run	Bond Program Types
Mortgage Originations	Full origination (first day/last day)	All
	Non-origination	
	Partial origination	Case-by-case
Mortgage Prepayments	No prepayments	Single family MBS (semi-annual pay)
	3-year average loan life	
	Full and immediate prepayment	
	Multi-family default	Specific to multi-family program type
	Supersinker or PAC bonds	Specific to bond programs with relevant features
	Call-protected, premium, taxable, or CABs	
	Varying mortgage rates (split-rate)	
Events	Acquisition/construction phase extensions	Any bond program that experiences the relevant event
	GIC provider bankruptcy	

[18] Appendix D discusses why certain cash flow scenarios may not be relevant for monthly MBS structures.

Mortgage Originations

We typically review these fundamental mortgage origination scenarios:

» Full origination;

» Non-origination; and

» Partial origination (if applicable)

Full Origination

A full origination scenario reflects the least favorable time for acquiring the mortgage(s) and places the greatest amount of stress on the bond program. Loan originations occur on the last allowable day if the investment agreement rate on the acquisition fund is lower than the mortgage pass-through rate. As a result, bond debt service payments are not dependent on underlying mortgage revenues during the acquisition or construction period. Conversely, all loan originations occur on the first allowable day if the investment agreement rate on the acquisition fund is higher than the mortgage pass-through rate.[19] For multi-family bond programs, an early commencement of amortization could possibly result either in a smaller monthly loan payment or mortgage revenues ending earlier than anticipated.

Non-Origination

If no mortgages are originated, investment earnings on unexpended bond proceeds and capitalized interest reserves generally provide the only revenue to fulfill bond debt service payments and program expenses until the bonds are called for redemption or mandatory tender. As a result, the trustee is instructed to make these payments with only the amounts in the trust accounts.

Partial Origination

A partial origination isolates certain mortgages to assess whether they can support bond debt service independent of other mortgages with more advantageous features. We may review this scenario if the bond program is secured by mortgages with varying interest rates or terms.

Mortgage Prepayments

Single Family MBS

For bond programs secured by MBS comprised of residential mortgages, we assess cash flow scenarios incorporating prepayment risk. Prepayments, although covered by the mortgage enhancement provider, can reduce a program's expected net revenue stream and/or cause a reduction in the weighted average mortgage rate. Since future prepayments are uncertain, we generally review the following prepayment scenarios:

» No prepayments;

» Three-year weighted average loan life; and

» Immediate and full prepayment

[19] There may be situations in which the investment rate and the mortgage rate are similar. In such situations, the compounding effect of interest earnings on the monthly mortgage revenues is considered to determine whether the first or last day mortgage delivery scenario is appropriate.

The immediate and full prepayment scenario assumes that all mortgages simultaneously and fully prepay at the time of the lowest asset-to-debt ratio as projected by the two previous scenarios (no prepayments and three-year weighed average loan life). We generally assess this scenario while considering the probability of an immediate and full prepayment by looking at, among other things, MBS characteristics and the housing market and economy of the mortgages' geographic area.

On a case-by-case basis we may assess supplementary prepayment scenarios relevant to a particular bond program's historical or expected performance. The most common are: 100% PSA[20], as well as a break-even prepayment scenario. A break-even prepayment scenario is typically reviewed if an immediate and full scenario does not demonstrate sufficiency. From this, we can assess the highest prepayment rate a bond program can withstand.

Multi-Family Default

Multi-Family MBS and Stand-By CEI

The mortgage loan defaults on the date of the lowest asset-to-debt ratio. As a result, the entire mortgage balance and any accrued interest is due via the credit enhancement wrapping the bonds, and the bond program experiences negative arbitrage incurred during the maximum notice period prior to redemption.

FHA Standard Cash Pay Insurance

The mortgage loan defaults on the date of the lowest asset-to-debt ratio. As a result, the FHA insurance is called upon to cover the insured amount of mortgage principal and interest, and the bond program incurs negative arbitrage throughout the maximum notice period prior to redemption. Uncertainty as to the timing of FHA claims payments is reflected appropriately. An example of this scenario is given in the following text box.

[20] The PSA rate represents an increasing rate of prepayment each of the first thirty months relative to the then-outstanding principal balance of the enhanced mortgage(s). Beginning in the thirtieth month and in each month thereafter, the PSA rate assumes a constant rate. For example, a 100% PSA rate assumes an annual prepayment rate of 0.2%. The prepayment rate increases by 0.2% in each month until the thirtieth month, after which the prepayment rate is constantly 6.0% per annum.

Example of FHA Standard Cash Pay Default Cash Flow Scenario

FHA claims payments in the amount of 90% and 10% of the insured loan balance are received 90 days and 240 days after the mortgage loan is declared in default, respectively. We look to see if the bonds are called with the FHA insurance proceeds after the maximum notice period to bondholders and that the DSRF is tapped to pay debt service on the bonds prior to the receipt of the FHA insurance proceeds. The following is an example of the timeline for a default on an FHA mortgage loan where debt service is due February 1 and August 1.

August 15	Bond program closes.
September 1	Mortgage payment is missed (referred to as the "default date").
October 1	Mortgage is declared in default (referred to as the "declared default date").
November 15	The trustee has a maximum 45 days from the declared default date to give notice to HUD/FHA regarding intention to file insurance claim and election to assign the mortgage to HUD/FHA.
December 30	The mortgage is assigned to HUD/FHA. Shortly after HUD/FHA receives notice of intention to file claim and election to assign mortgage, HUD/FHA sends a letter authorizing assignment of mortgage within 30 days of receipt of the letter.
January 1	The bond program receives 90% of FHA benefits 90 days from the declared default date.
January 2	The trustee sends a 60-day notice of redemption to bondholders.
February 1	The DSRF is drawn upon for debt service.
March 2	Call bonds with initial claims payment.
June 1	Receive final 10% of FHA benefits 240 days from declared default date.
June 2	The trustee sends a 60-day notice of redemption to bondholders.
August 1	The DSRF is drawn upon for debt service.
August 2	Call remaining bonds with final claims payment.

FHA Risk-Share Insurance

The risk-share default scenario is similar to that of the standard cash pay insurance except one full insurance payment is received 90 days from the declared default date.

FHA Standard Debenture Pay Insurance

At the time of an underlying mortgage default, a debenture pays interest-only on the outstanding mortgage balance for a twenty year term with principal due at the debenture's maturity. A mortgage default could occur at a point when interest paid on the debenture (based on the outstanding mortgage principal balance) may not be sufficient to pay bond principal and interest due. As a result, the FHA debenture default scenario often reflects monthly defaults on the underlying mortgage each year through the maturity of the bonds. In other words, there is one set of cash flows reflecting a default for each month the bonds are outstanding.

A bond program secured by FHA-insured mortgages may be issued with an asset-to-debt ratio below 100%. In this case, the default scenario typically incorporates a debenture lock agreement where HUD

agrees not to call the debentures until the program's asset-to-debt ratio reaches at least 100%. This feature eliminates the possibility of a bond redemption during a period when pledged assets are less than liabilities. Utilizing a debenture lock agreement allows a program to potentially achieve the highest eligible bond rating despite demonstrating an asset-to-debt ratio less than 100%.

Supersinker or Planned Amortization Class (PAC) Bonds[21]

We may assess a scenario assuming loan prepayments occur at the speed at which the supersinker or PAC bonds are called in full pursuant to the redemption provisions. Then the prepayment rate is reduced to 0% PSA[22] to assess whether the program can support debt service on the bonds which have a higher weighted average coupon than at closing.

Call-Protected, Premium, Taxable, or Capital Appreciation Bonds (CABs)

In some instances, the legal framework does not permit a trustee to redeem high coupon debt until all or a portion of the lower coupon bonds are paid off. One scenario assumes mortgages prepay rapidly, generally at a three-year weighted average life, and the associated revenues redeem lower coupon bonds. The prepayment rate is reduced to 0% PSA after the lower coupon bonds have been paid in full or a higher weighted average bond rate is achieved.

Varying Mortgage Rates (Split-Rate)

In what is often referred to as a split-rate scenario, higher rate mortgages experience rapid prepayments, typically at a three-year weighted average life, while lower rate loans do not experience any prepayments. The program quickly loses the higher source of income and is left with the lower source for an extended period of time. A split-rate scenario is generally considered for bond programs with at least 100 basis points difference between underlying mortgage rates or if at least one mortgages rate is less than the bond rate(s).

Events

Acquisition/Construction Phase Extensions

The acquisition or construction phase of a program may be extended to allow more time to originate mortgages or complete project construction. In the event these phases are extended, this scenario assumes that the bond program will experience the maximum projected negative arbitrage for the remainder of the period.

GIC Provider Bankruptcy

A program invested in a downgraded GIC provider is still eligible for the highest eligible bond rating if cash flow projections demonstrate sufficiency in the event the GIC provider declares bankruptcy. To validate this, projections assume that the provider declares bankruptcy at a time when the maximum amount of funds is invested in the GIC – typically immediately before the upcoming debt service payment date, and for single family projections, in the midst of rapid underlying mortgage prepayments. The default assumes that all funds invested in the GIC, including principal and interest thereon, are not available for debt service and are not recoverable.

[21] See Housing 101: PAC Bonds for further information regarding these types of bonds.

[22] A 0% PSA rate assumes no prepayments.

Appendix G: Bankruptcy Mitigation Analysis

Borrower payments to a bond program can come in multiple forms. Most commonly they are mortgage payments. However, a borrower can also contribute funds to cover negative arbitrage, timing lags, or other shortfalls. The bond's rating reflects that bondholders are only assuming the risk of the enhancement provider and therefore any payments by the borrower, other than regularly scheduled mortgage payments, should be insulated from two bankruptcy related risks. First, upon the bankruptcy of the borrower, we seek to understand why funds contributed to the bond program will not be viewed as a preferential transfer by a bankruptcy court and will not be subject to the recovery provisions of the US Bankruptcy Code. Second, we look for assurances that contributed funds will not be frozen in the trust estate upon borrower bankruptcy in accordance with the automatic stay provisions of the US Bankruptcy Code. Each of these risks are described in more detail below.

Preference

Preferences are generally dealt with in Sections 547 of the Bankruptcy Code, and their treatment is further augmented by Section 550. To establish a preference the bankruptcy trustee must prove that:

» the transfer was "to or for the benefit of a creditor";

» the transfer was made for or on account of an antecedent debt;

» the debtor was insolvent at the time of the transfer;

» the transfer was made within 90 days prior to the filing of the petition, or within one year before the date of the filing of the petition if such creditor at the time of such transfer was an insider (a term that is defined in Section 101 of the Code); and

» the transfer has the effect of increasing the amount the creditor would have received in a Chapter 7 liquidation case.

For stand-alone housing bond programs, a transfer generally must occur within 90 days of the debtor's bankruptcy to constitute a preference. If the definition of a preference is met, all or some funds transferred into a bond program may be subject to a disgorgement by the bankruptcy trustee if the borrower declares bankruptcy. This risk is mitigated by:

» verifying that the borrower's parity (pari passu) debt is rated at least Baa3 or P-3 at the time the escrow is established;

» receipt of an opinion by a recognized bankruptcy counsel that provides the basis for why the transfer is not a preference; or

» having the applicable preference period (in most cases, 90 days) expire before the bonds are rated.

Automatic Stay

Section 362 of the US Bankruptcy Code provides that upon the filing of a petition under a chapter of the Code a stay becomes automatically effective, hence it is referred to as an "automatic stay". It halts actions by creditors and other parties against the debtor and its property, such as foreclosure actions, litigation, and demands for payments on debt obligations. While this provision does not void any lien or other third party property interest in the debtor's assets, it can freeze payments that are owed to that third party.

The automatic stay provisions prevent creditors from collecting on their claims and can shield a borrower from continuing to make debt service payments. But these provisions only apply to the borrower's property in bankruptcy. If the funds deposited into a bond program are considered property of the borrower, the automatic stay would apply upon a bankruptcy filing. We consider the following structures unlikely to be subject to an automatic stay.

Using Letters of Credit

A program can use an LOC issued by an independent financial institution to make payments with its own funds to cover negative arbitrage and/or lag. Importantly, it benefits from the court-tested status as a document independent of the rights and obligations of any parties involved in the bond program, making an automatic stay unlikely. The LOC may be either drawn down in full on the bond closing date or can be drawn down over a period of time. In the case of a full draw, the LOC issuer has at least an investment grade long-term rating or short-term rating. If drawn down over time, the LOC issuer's long-term rating acts as a ceiling for the bond's rating during the acquisition or construction period. The bonds may be eligible for an upgrade following this period based on our approach within this methodology.

Deposit by a Borrower

When funds are deposited by or on behalf of the borrower or another private party, we review the structure to assess the likelihood that the automatic stay could be asserted on the bankruptcy of the borrower or the depositing entity. The source of the funds and the structure of the trust indenture are paramount in determining if funds could be subject to an automatic stay.

Where appropriate, we review a legal opinion that addresses the issues of preference and automatic stay. We look for opinions that are well-reasoned and clearly states all assumptions. We generally see legal opinions that clearly explicate why the conclusion asserted is supported by the authorities that would govern in the jurisdiction within which the borrower's bankruptcy petition is likely to be adjudicated.

Selling Premium Bonds or Using Subordinate Bond Proceeds

The premium derived from a bond sale or the proceeds derived from a subordinate bond sale may be acceptable sources to fund negative arbitrage and/or lag. Generally, the premium is detailed in the bond purchase agreement and use of subordinate bond proceeds are detailed in the trust indenture.

Moody's Related Research

Request For Comment:

» Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Deals with Mortgage Enhancements, March 2012 (139421)

Special Comments:

» A Look at Speculative-Grade Local Governments in the Wake of the Recession, September 2011 (136199)

» Housing 101: PAC Bonds, July 2008 (109768)

» Key Downgrade Drivers of Stand-Alone Housing Bonds with Mortgage Enhancements, May 2012 (141326)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 147805

Authors
Shane Mullin
Florence Zeman

Production Associate
Ken Jiang

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Global Housing Projects

Table of Contents:

SUMMARY 1
INDUSTRY OVERVIEW 2
KEY CREDIT FACTORS 2
MARKET POSITION 4
FINANCIAL POSITION AND PERFORMANCE 6
OWNERSHIP AND MANAGEMENT 8
LEGAL FRAMEWORK, COVENANTS AND DEBT STRUCTURE 9
CONSTRUCTION AND LEASE-UP 10
RATING OUTCOME SCORECARD 10
APPENDIX I : OVERVIEW OF SECTOR (AS OF JUNE 1, 2010) 13
APPENDIX II: DEBT SERVICE COVERAGE AND PRO FORMA GUIDELINES 15
DERIVING DEBT SERVICE COVERAGE RATIO 15
STANDARD UNDERWRITING ASSUMPTIONS FOR REVENUE AND EXPENSE ASSUMPTIONS 16
APPENDIX III – LEGAL FRAMEWORK, COVENANTS AND FINANCE STRUCTURE 17
APPENDIX IV – CONSTRUCTION AND LEASE UP RISK 19
APPENDIX V: BASIC DOCUMENTATION MOODY'S REVIEWS IN CONJUNCTION WITH ITS RATING ANALYSIS 20
APPENDIX VI: HOW MOODY'S ECONOMY.COM ESTIMATES REGIONAL HOUSING AFFORDABILITY 21
MOODY'S RELATED RESEARCH 22

Analyst Contacts:

DALLAS 1.214.220.4350

Toby Cook 1.214.220.4352
Vice President-Senior Analyst
Toby.Cook@moodys.com

NEW YORK 1.212.553.1653

Florence Zeman 1.212.553.4836
Senior Vice President
Florence.Zeman@moodys.com

» *Analyst contacts continued on the last page*

Summary

This methodology report provides a detailed explanation of how Moody's assigns debt ratings to rental-based Housing Project Finance transactions. The purpose of the report is to provide market participants with deeper insight into the factors that we consider to be most important to our housing project finance ratings. This methodology applies to financings of existing properties, properties to be constructed and those undergoing substantial rehabilitation. This report serves as the primary methodology for all Housing Project Finance transactions; existing reports serve as supplements and further detail how this methodology is applied for specific housing sub-sectors.

Our ratings reflect an assessment of a combination of qualitative and quantitative factors. There is no quantitative model that can adequately capture the complex set of factors that would enable us to predict, at the outset of a project, the future performance of the financings. There are however certain project attributes, related to the market position of a given project and the amount of leverage relative to project cash flows that provide important guideposts for analysis and will be important rating drivers.

This report explains the key credit factors and the qualitative and quantitative elements that are considered in assessing the strengths and weaknesses of such credit factors. The key credit factors are:

- » Market Position
- » Financial Position and Performance
- » Ownership and Management
- » Legal Framework, Covenants and Debt Structure
- » Construction and Lease-up Risk

Moody's employs a weighted average credit assessment of the above factors to arrive at a narrow rating range. We then assign a precise rating based on a comparison with peers and additional qualitative considerations that may not be captured within the factors. Therefore, some ratings may be positioned outside the rating range suggested by the methodology because of unusual attributes of a particular project financing that are not captured by the approach. Unusual attributes include, but are not limited to, debt service reserve taps, frequent tenant turnover and bonds near final maturity[1]. Moody's does not anticipate current ratings will be impacted by the methodology as it reflects current rating practices.

To date, Moody's housing project finance ratings have been assigned to debt backed by housing projects in the U.S. As a result this methodology makes reference to types of projects, metrics, debt structures, etc. that are commonly used in the U.S. However, we would expect that the core principles of the methodology, including the credit factors analyzed, would be applicable globally with modifications to address the specifics of the jurisdiction in which the debt was issued.

Industry Overview

What is housing project finance?

Project finance in the housing sector is used to describe standalone, non-recourse financings of rental housing projects that are typically secured by a mortgage on the property or a leasehold mortgage and are repaid primarily from rental revenues. The main types of financings analyzed, to date, under the housing project finance umbrella are:

» **Affordable Multifamily Housing**: these transactions finance uninsured and unsubsidized multifamily properties which are generally required to have all or a portion of their units set aside for low-and moderate- income persons or families.

» **Privatized Military Housing**: these transactions finance rental properties which are primarily made available to military personnel in exchange for a housing stipend. The land for the project is typically owned by the military and leased to the project.

» **Privatized Student Housing**: these transactions finance housing for college students. The land for the project is typically owned by the University or an affiliated nonprofit foundation and leased to the project.

» **Subsidized Multifamily Housing:** these transactions finance multifamily projects where a government pays rental subsidies to owners of qualified housing on behalf of eligible tenants.

Key Credit Factors

Our fundamental analytical framework includes the following key rating factors and sub-factors which are incorporated into the rating grid:

I. Market Position

a. Target or special tenant base

b. Location

c. Local real estate prices

[1] For example, the scorecard outcome frequently diverges from the actual rating assigned to Student Housing transactions due to annual turnover of tenant base.

d. Occupancy

e. Rent levels

f. Property attractiveness

II. Financial Position and Performance

a. Debt service coverage ratio

b. Loan-to-value ratio

c. Rent growth history

d. Project size

e. Use of excess funds

III. Ownership and Management

a. Ownership

b. Management

Our fundamental analytical framework includes the following key rating factors and sub-factors which are not incorporated into the rating grid but are still essential in determining the rating outcome:

IV. Legal framework, Covenants and Financing Structure

a. Security pledge

b. Flow of Funds

c. Reserve and replacement

d. Senior/Subordinate

e. Ground lease

f. Management agreement

g. Insurance requirements

h. Debt structure

i. Debt service reserve funds

j. Investments

V. Construction and Lease Up

a. Letter of Credit

b. Existing units online

c. Public entity construction guarantee

d. Fixed price contract

e. Payment and performance bonds

Market Position

Moody's credit assessment of project finance housing transactions focuses heavily on an analysis of the fundamental market position of the property being financed. In assessing the market position of a property, we analyze local supply and demand characteristics, evaluate the physical condition of the property and measure more subjective factors, like neighborhood desirability and proximity to employment and amenities.

Targeted or "niche" tenant bases. The majority of housing projects covered by this methodology are intended to be rented by, or restricted to, a specific type of tenant, such senior citizens or military personnel. Targeting or limiting rentals to a specific tenant base can impact demand for the property's units positively or negatively. A key factor in our analysis is an assessment of how the potential tenant base could impact demand for the units.

A targeted tenant base can positively impact our assessment of demand for a property's units when that tenant base is substantially greater than the number of units in the project, particularly when the project offers rents at a discount to the market rental rate. As an example, in most military housing transactions the number of qualified renters greatly exceeds the number of rental units offered and the pricing of the units are typically below market. A requirement for the tenant population to live in the project, which sometimes occurs with student housing projects in which the affiliated university requires students to live in on-campus housing, can also positively impact our assessment of demand. However, a target tenant base may be a limiting factor when the number of prospective tenants relative the number of units requires a high capture rate (the percentage of potential eligible renters necessary to achieve full occupancy). This is often the case for a subsidized housing project for low-income, elderly persons in a rural area with a limited population that meets the qualifications for the targeted tenant base.

When evaluating the impact that a targeted tenant base could have on demand we pay careful attention to the ratio and trend of the targeted population to the number of units in the project. In most circumstances, higher ratios will be viewed positively in our assessment of the potential demand for a project. Low and/or shrinking ratios will typically have negative impact on our assessment of the potential demand for the project.

Location. We consider the desirability of the project's location to be an important factor. A property whose revenues support an investment grade transaction will likely be located in a desirable neighborhood with access to freeways and/or public transportation; employment and commercial centers are expected to be within a commutable distance and the project should be integrated in the community. Projects with a target tenant base, such as military or student housing project, should be on or in close proximity to the base or college to create a competitive advantage.

Local real estate prices. We believe demand for certain rental housing, most notably affordable housing and, to a somewhat lesser extent, military housing, is inversely linked to the single-family purchase market. When single-family houses in the market area served by the project are affordable, home purchasing provides direct competition for rental properties. The acuteness of this competition tends to be cyclical and is often closely linked with prevailing mortgage interest rates. Generally, rental properties are better positioned to withstand an economic downturn in markets where homes are less affordable. To incorporate local real estate prices into our credit analysis, we consider Moody's Moody's Economy.com's Single Family Housing Affordability Index in our analysis (for an explanation of the Index please refers to Appendix VI). This metric is considered in the context of the

fundamentals of the credit and may lead to changes in the debt service coverage expected for specific categories. For example, a project being constructed in an affordable single-family market may be expected to maintain debt service coverage ratios at the higher end of the range for particular rating category to account for potential volatility. The relationship between home price affordability and the demand for housing is less relevant in our analysis of debt supported by the revenues of student housing and subsidized housing projects because the tenant populations living in these properties, students and very low-income persons, are not likely to consider the tradeoff between renting a unit in this type of project and purchasing a home.

Occupancy. We analyze an existing property's historical physical and economic occupancy performance to determine future weaknesses in project cash flows associated with high vacancy rates. In addition we use this data to determine what base case occupancy assumption should be used in a pro forma financial statement (see Appendix II). In order to arrive at this assumption, we review the historical occupancy of a property over the past three to five years. We then add a stress factor based on the project's history and market conditions. Due to the effects of ongoing maintenance and tenant turnover, even the most popular rental-based housing projects typically don't exceed 95% occupancy on an annualized basis, therefore in order to provide a cushion for volatility; pro formas should typically assume a maximum of 92%. For projects that have a history of substantial economic vacancy - bad debt, for example - an additional stress factor (appropriate for the specific circumstance) will be added to the physical vacancy assumption.

In the event that a project has not yet been constructed, we review market data, including a market study, data on occupancy trends in the submarket as well as information on the construction pipeline to evaluate the potential for future project occupancy. Even with a strong market, those projects yet-to-be constructed that do not have one of the first three construction risk mitigants listed in Appendix IV will typically have ratings at no higher than low investment grade.

Rent levels. Generally to achieve an investment grade rating, the rent being charged at a project should be competitive with prevailing market rates. A discount to the market rate will typically be considered a credit positive and captured in the rating assignment. For a new financing, a market study should be provided that includes rent levels at comparable housing in terms of size, location, desirability in the market area ("market comparables"). For surveillance of existing projects, we will obtain information to evaluate comparable properties from third party market research firms or property management.

Property attractiveness. Moody's performs an on-site review of the property to assess the physical condition of the project and the market position of the surrounding area. We expect that a project seeking to achieve an investment grade rating on its bonds will be in satisfactory physical condition with minimal deferred maintenance and amenities comparable to the other properties in the related market.

Projects for niche audiences should have amenities that reflect the particular needs and desires of that population. For instance, projects targeted for senior citizens may offer additional services such as meal services or social workers, where as projects targeted for students will typically feature wireless internet, swimming pools and study lounges.

Older projects, which have not recently undergone significant rehabilitation, may have a more difficult time attracting renters over the life of the bonds than newer properties. Typically, older properties will need higher debt service coverage levels than newer properties to achieve the same rating and should incorporate higher costs of maintenance or capital repairs as determined by an engineer's report. We will look for bond documents to direct deposits to the reserve and replacement account to meet those costs.

FIGURE 1

Housing Project Finance Credit Strength - Market Position

CHARACTERISTIC	Aa	A	Baa	Ba
Target or Niche base	The tenant base is required to live in the project; the tenant base exceeds the number of units in the project and is stable or growing.	The target tenant base is at least three times the number of units and the project has limited competition. The tenant base is stable or growing.	The target tenant base is at least one and a half times the number of units in the project; or the project is facing moderate competitive pressures. The tenant base is stable.	The housing is limited to the target tenant base by legal documents or the market and the target tenant base is approximately equal to the number of units in the project; or the project is facing substantial competitive pressures.
Location	Possesses a monopoly on location. For example, the project is the only housing on a military base.	Has a strong competitive advantage due to location. For example, a student housing project located adjacent to campus.	Direct proximity to major transportation arteries and employment centers.	Does not have direct access to transportation arteries and employment centers.
Single-Family Affordability Index**	< 80	<100	<150	>150
Occupancy	95%+	93%-94%	90%-92%	<90%
Rent level	>25% discount to market	10%-25% discount to market	market rate-10% discount	Above market rate
Property attractiveness	Amenities including common space and construction are superior and reflect the particular needs and desires of tenants	Amenities including common space and construction are above average and reflect the particular needs and desires of tenants	Amenities including common space and construction are average but may not reflect the particular needs and desires of tenants	Below average amenities including common space and construction

** The Single-Family Affordability Index is measured by Moody's Economy.com

Financial Position and Performance

Moody's evaluates a project's financial position to determine its ability to support current and future debt service based upon its existing revenue generating capabilities. Ratings above low investment grade generally reflect existing projects with a history of net operating income (NOI – See Appendix II for calculation) ample to service debt, or projects with substantial construction risk mitigants (See Appendix IV). We review three to five years of audited financial statements of existing projects as well as the property's history of competitiveness in attracting tenants and increasing rents; and then we use the resulting data on occupancy, costs and rental rates to inform our assessment of future cash flows and coverage.

Debt service coverage ratio (DSCR). We use this ratio to measure a project's ability to repay principal and interest from NOI. It is a key factor used to assess financial performance. A stable or improving DSCR is an indicator of financial health; conversely a declining DSCR is likely an indication of financial stress which typically will have a negative impact on the rating assessment.

Debt service coverage ratio benchmarks by rating category vary for each sector of housing based on its exposure to market forces. The higher the exposure to market forces, the higher the expected DSCR in order to buffer the performance of the financing from the volatility of the market on the project. For instance, Affordable Multifamily Housing projects do not typically have a close association with a public institution and their financial success is very closely linked to market forces. In contrast, affiliated Student Housing, though still highly susceptible to market forces, benefit from a variety of positive fundamentals like being linked to a higher education institution that may partially insulate the project from market pressures by requiring students to live on campus. As such, the minimum debt service coverage ratio for an investment grade rating on an Affordable Multifamily Housing project is higher than the minimum requirement for Student Housing and Military Housing.

Due to the unique nature of the different types housing project financings, the assumptions for revenue and expense inflation that we base our analysis on will vary by type of project and may be adjusted to reflect market conditions and specific characteristics. Project developers and underwriters will continue to develop projects against their own criteria, but Moody's applies a consistent set of standard scenarios in order to achieve a high degree of rating consistency across the rated portfolio. Please see Appendix II for trending assumptions for each type of housing.

Loan-to-value. We use the loan-to-value (LTV) ratio to determine the project's market value relative to the debt outstanding. This ratio is informative as it provides insight into the amount of equity being contributed to the project at the onset and also assists in projecting the level of recovery should the bonds default and the project be sold. Investment grade affordable and subsidized projects are generally characterized by an LTV of no more than 80% while student housing projects are often fully leveraged.

Revenue stream. If a substantial portion of project's revenue stream comes directly from a highly rated government entity it can partially insulate a project from market forces and reduce the volatility of that revenue stream. This is the case for certain subsidized housing transactions where the U.S. Department of Housing and Urban Development commits to pay a specific level of rental subsides directly to owners of qualified housing on behalf of eligible tenants. Conversely, for most projects, the revenue stream is derived from leases by individual renters, which makes a project more susceptible to market forces.

Project size. Smaller projects would typically have lower ratings because they are more vulnerable to relative swings in vacancy rates and expenses. Investment grade ratings are typically assigned to financings secured by projects with at least 200 units or 100 units for a fully subsidized project . Higher minimum units may be looked for at properties with greater levels of occupancy volatility.

FIGURE 2

Housing Project Finance Credit Strength - Debt Service Coverage Benchmarks

CHARACTERISTICS	Aa	A	Baa	Ba
Highly susceptible to market forces no material association with a government entity. Example: Affordable	NA	1.7+	1.35 to 1.69	Below 1.35
Susceptible to market forces, but closely linked with a highly rated government entity; typically have a monopoly on location and a target tenant base. Example: Military	1.50+	1.20 to 1.49	1.10 to 1.19	Below 1.10
Largely insulated from market forces due to a direct subsidy from a highly rated government entity. Example: Subsidized	NA	1.15+	1.05 to 1.14	Below 1.05
Susceptible to market forces but partially insulated by close association with government entity or nonprofit; typically benefit from premium location and target tenant base: Example Student	NA	2.0+	1.20 to 1.99	Below 1.20

FIGURE 3

Housing Project Finance Credit Strength - Financial Position and Performance

CHARACTERISTIC	Aa	A	Baa	Ba
Loan-to-value	<65%	65%-74%	75%-80%	>80%
Revenue stream	Over 50% of the revenue stream is directly from a highly rated government entity		The revenue stream is derived from individual renters but lease terms are staggered	The revenue stream is derived from individual renters but the majority of lease terms expire within a short time period
Project size	250 units+		100-250 units	<100 units

* LTV does not apply to military housing because the long term competitive prospects are disproportionately influenced by the performance of the base

Ownership and Management

Ownership. Strength of ownership is primarily evaluated on whether a public sector entity is a participant, but experience/track record of participants are also considered. The presence of a public sector entity with substantial financial resources in the ownership structure is typically viewed as a credit positive. This type of ownership structure is the most significant when the public sector entity has either a financial or mission driven incentive for the housing to be maintained and operated. For example, in the case of privatized student housing, universities not only have a mission driven incentive, but frequently receive all or a portion of excess cash flow, so they have a strong financial incentive for the property to succeed. Conversely, affordable multifamily housing projects typically do not have a financially robust public sector entity in their ownership structure, and therefore lack the ability to mitigate challenges they may experience.

This approach is similar to that used for Government Related Issuers by certain other Moody's franchises, where the final rating might receive a degree of uplift due to the potential for extraordinary support to be provided by an appropriately-incentivized public sector stakeholder[2]. We see many of

[2] GRI does not formally apply to these credits because these projects tend not to be essential government services and any potential government support is more limited than what may be received for GRI.

the same potential circumstances in place for certain military credits, where the military stakeholder may have a substantial (if subordinated) equity or debt interest in a deal, and may have the potential to restructure its scope or indeed allow temporary diversion of funds from the recapitalization account to help avoid a default. An instance of such extraordinary support would be the major scope change at the Fort Leonard Wood privatized military housing financing which helped stabilize a credit that would otherwise have been subject to significant negative credit pressure[3]. But at the same time the recent downgrades in the sector due to declining credit quality of surety providers evidence the limitations to such support; a military stakeholder's long-term equity interest would persist through a short-term default because they are intrinsic to the issuer's long-term prospects – they are therefore not as incentivized to provide timely support to help avert a debt default as would be an arm's-length equity investor whose investment might otherwise be at risk of total loss.

Management. We review management's track record in conducting day-to-day operations, preventive maintenance, rent collection, unit turnaround, marketing, providing services for special audiences, implementing safety measures, and record keeping. We assess whether management experience is with the type of housing being offered and/or in the particular market where the project it located. If a property manager does not have experience in a particular sector, it will likely be considered a negative credit factor. For example, our experience with student housing transactions has demonstrated that managers without student housing experience are often less adept than those with prior experience. The same rule can be applied to military housing and affordable housing. A lack of experience in a specialized type of housing can be mitigated by substantial multifamily experience, but not completely.

FIGURE 4

Housing Project Finance Credit Strength - Ownership and Management

CHARACTERISTIC	Aa	A	Baa	Ba
Ownership	Public Sector entity with substantial resources is member in the ownership structure; Public entity receives portion of excess cash flows; Success of housing advances public entities mission.	Public Sector entity with substantial resources receives portion of excess cash flows; Success of housing advances public entities mission.	Public Sector entity with moderate resources receives portion of excess cash flows; Success of housing advances public entities mission.	Public Sector entity involved has modest resources or does not have mission driven or financial stake in project's success.
Management	Successful track record and experience with product type. Also has been successful managing through up and down cycles and has large portfolio in particular market.	Successful track record and experience with product type and market. Has been successful managing through up and down markets.	Generally has successful track record but has had some difficulty managing through up or down cycles; or does not have experience with particular product or market.	Track record is limited or blemished. Does not have experience with particular product or market.

Legal Framework, Covenants and Debt Structure

We review legal documents that pertain to the repayment of debt to determine the pledge available to and the rights of bondholders under both normal and stressful scenarios. This analysis also reviews any structural elements that may pose potential repayment risks. Strict legal covenants and solid debt structure alone will not lead to a specific rating outcome. However, the absence of solid legal covenants or a poor debt structure is a negative credit factor. For instance, the lack of a debt service reserve fund equal to maximum annual debt service (to the extent limited by law) will likely lead to a lower rating outcome. The standards for Legal Framework, Covenants and Debt Structure are stated in Appendix III.

[3] For more information on the Fort Leonard Wood scope change, please see the credit opinion dated May 30, 2008.

Construction and Lease-Up

Construction and lease-up risk can substantially limit the rating level a project can achieve because of the risk that the project may not be completed on time (or at all) and that units will not be leased as projected. In general, for new construction financing, projects that are not secured by a letter of credit, a guarantee from public entity or sufficient net income from existing units, ratings will likely be precluded from achieving an investment grade rating. Moody's reviews construction risk mitigants to determine how effective they may be under various scenarios. For a list of construction mitigants, please see Appendix IV.

Rating Outcome Scorecard

Moody's evaluates each credit factor previously listed in this methodology using one of two methods. Three key credit factors – Financial Position and Performance; Market Position; Ownership and Management – are assigned a "grade" based upon the analysis and matrices listed within each respective section. Those "grades" are then incorporated into the scorecard directly below. The rating outcome reflects a weighting of these assessment according to the weighting system listed in the rating scorecard below. The scorecard does not address ratings below the Ba category because those ratings incorporate expected recovery upon default.

Financial Position and Performance carries the greatest strength in our assessment of credit quality because it measures the financial viability of a project. Debt service coverage ratio is the primary driver of this category because it is a measurement of the sufficiency of revenues to meet debt service payments. The other factors are also considered, but they are secondary to debt service coverage ratio. Market Position carries the next greatest weight because it is an assessment of the project's competitiveness.

Ownership and management carries the lowest weighting, but nevertheless is still a significant part of the rating outcome. Affiliation with a Public Sector entity is the primary driver of the this category because public entities frequently have resources and tools to assist in a project's success. Management is of secondary importance but a factor considered in our assessment.

The remaining two credit factors – Legal Framework, Covenants and Debt Structure and Construction and Lease Up– are not incorporated into the weighted rating outcome scorecard, but rather are standards that if are not met can result in a rating that is lower than what would have otherwise been achieved. Examples include if construction risk is present and there are not sufficient mitigants, ratings are limited to low investment grade; also the absence of a highly rated debt service reserve fund surety or investment provider limits even the strongest projects to the high Baa or low A rating categories.

Rating Outcome Scorecard

HPF CHARACTERISTIC	Aa	A	Baa	Ba	WEIGHTING
Financial Position and Performance (50%)					
DSCR	Currently and consistently at:	Currently and consistently at:	Currently and consistently at:	Currently and consistently at:	35.00%
Affordable	NA	1.7+	1.35 to 1.69	Below 1.35	
Military	1.50+	1.20 to 1.49	1.10 to 1.19	Below 1.10	
Subsidized	NA	1.15+	1.05 to 1.14	Below 1.05	
Student Housing	NA	2.0+	1.20 to 1.99	Below 1.20	
Loan-to-value*	<65%	65%-74%	75%-80%	>80%	5.00%
Revenue Stream	Over 50% of the revenue stream is directly from a highly rated government entity		The revenue stream is derived from individual renters but lease terms are staggered.	The revenue stream is derived from individual renters but the majority of lease terms expire within a short time period.	5.00%
Project Size	250 units+		100-250 units	<100 units	5.00%
Market Position (30%)					
Target or Niche base	The tenant base is required to live in the project; the tenant base exceeds the number of units in the project and is stable or growing.	The target tenant base is at least three times the number of units and the project has limited competition. The tenant base is stable or growing.	The target tenant base is at least one and a half times the number of units in the project; or the project is facing moderate competitive pressures. The tenant base is stable.	The housing is limited to the target tenant base by legal documents or the market and the target tenant base is approximately equal to the number of units in the project; or the project is facing substantial competitive pressures	5.00%
Location	Possesses a monopoly on location. For example, the project is the only housing on a military base.	Has a strong competitive advantage due to location. For example, a student housing project located adjacent to campus.	Direct proximity to major transportation arteries and employment centers.	Does not have direct access to transportation arteries and employment centers.	5.00%
Single-Family Affordability Index**	< 80	<100	<150	>150	5.00%
Occupancy	95%+	93%-94%	90%-92%	<90%	5.00%
Rent level	>25% discount to market	10%-25% discount to market	market rate-10% discount	Above market rate	5.00%
Property Attractiveness	Amenities including common space and construction are superior and reflect the particular needs and desires of tenants	Amenities including common space and construction are above average and reflect the particular needs and desires of tenants	Amenities including common space and construction are average but may not reflect the particular needs and desires of tenants	Below average amenities including common space and construction	5.00%

Rating Outcome Scorecard

HPF CHARACTERISTIC	Aa	A	Baa	Ba	WEIGHTING
Ownership and Management (20%)					
Ownership	Public Sector entity with substantial resources is member in the ownership structure; Public entity receives portion of excess cash flows; Success of housing advances public entities mission.	Public Sector entity with substantial resources receives portion of excess cash flows; Success of housing advances public entities mission.	Public Sector entity with moderate resources receives portion of excess cash flows; Success of housing advances public entities mission.	Public Sector entity involved has modest resources or does not have mission driven or financial stake in project's success.	15.00%
Management	Successful track record and experience with product type. Also has been successful managing through up and down cycles and has large portfolio in particular market.	Successful track record and experience with product type and market. Has been successful managing through up and down markets.	Generally has successful track record but has had some difficulty managing through up or down cycles; or does not have experience with particular product or market.	Track record is limited or blemished. Does not have experience with particular product or market.	5.00%

* LTV does not apply to military housing because the long term competitive prospects are disproportionately influenced by the performance of the base
** The Single-Family Affordability Index is measured by Moody's Economy.com

Appendix I : Overview of Sector (As of June 1, 2010)

Moody's maintains ratings on debt backed by 127 housing projects, which have approximately $12 billion of debt outstanding. The number of projects rated is fairly evenly balanced between project types, but the amount of rated debt is heavily skewed to military housing because of the substantial size of those transactions.

FIGURE 5

Number of Housing Project Finance Senior Lien Ratings by Sub-Sector

Affordable	32	25.2%
Military	23	18.1%
Student	33	26.0%
Subsidized	39	30.7%
Total	127	

FIGURE 6

Number of Housing Project Finance Senior Lien Ratings by Sub-Sector

Affordable	367,985,000	3.1%
Military	9,555,155,000	79.6%
Student	1,954,855,000	16.3%
Subsidized	127,755,000	1.1%
Total	12,005,750,000	

Of the 127 senior lien ratings, 69% of the number of ratings are investment grade, and 31% are below investment grade. Even though Affordable Multifamily Housing only accounts for 25.2% of senior lien ratings, 46.2% of senior lien ratings below investment grade belong in this sub sector. Conversely, Military Housing accounts for 18.1% of senior lien ratings, but only account for 7.7% of ratings below investment grades. The divergence in rating quality between the project types is due primarily to varying degrees of exposure to market forces. The following charts show the rating distribution for the entire sector and the rating distribution for each sub sector.

FIGURE 7

Rating Distribution US Housing Project Finance Sector

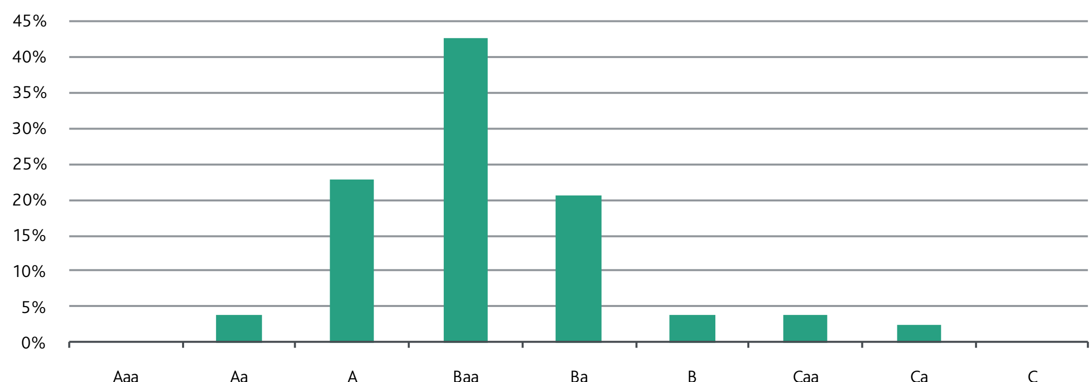
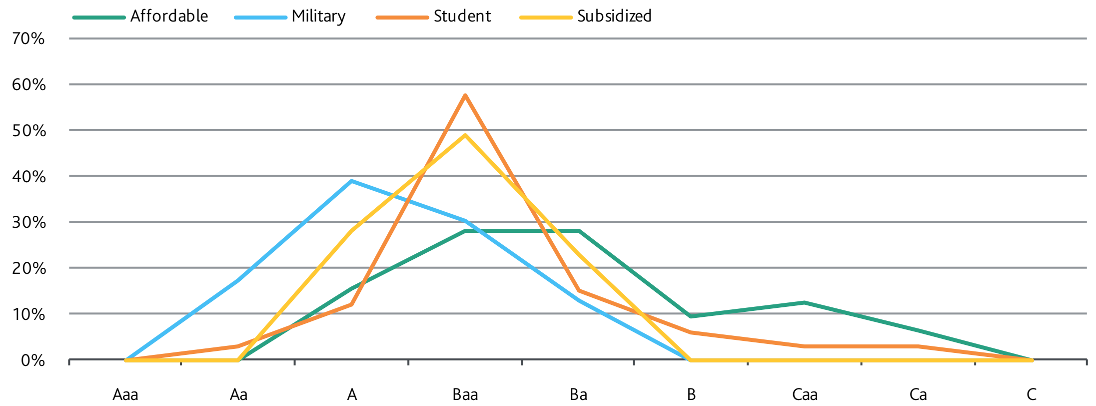


FIGURE 8

Rating Distribution by Project Type



Appendix II: Debt Service Coverage and Pro Forma Guidelines

The following is a general guideline for how Moody's calculates the debt service coverage ratio.

Deriving Debt Service Coverage Ratio

Revenues:

Gross potential rent

- Vacancy

- Credit losses

+ Other income

+ Earnings on debt service reserve and other investments

= Gross Operating Income

Expenses:

- Operating Expenses

- Above the line management fee

- Reserve for Replacement expense based higher of engineer assessment or $250 per unit per year ($175 per bed for student housing and unaccompanied military)

- Any "above the line" fees such as ground lease payments, trustee fees, issuer fees, asset management fees, rebate analyst fees, bond insurance premium

= Net Operating Income (NOI) = total revenues less total expenses / Debt Service = Debt Service Coverage Ratio

Where current year Debt Service is materially lower than MADS we will also consider NOI/MADS

Adjustments

1. Management fees that are subordinate to debt service do not need to be included as an expense.

2. Annual Reserve and Replacement deposits should be included as an expense regardless of subordination to debt service.

3. The NOI established from financial statements of existing projects may have maintenance expenses reduced by one-time capital expenses and for expenses reimbursed from the reserve and replacement fund.

The following are for pro forma financial statements:

4. The minimum vacancy to be applied is generally 8%, but Moody's may use a different rate depending on market and unique nature of property. Where merited we may consider scenarios reflecting lower vacancy rates.

5. For military housing, occupancy during the initial development period should follow construction schedule for units online, less an 8% vacancy.

6. Development team should provide Moody's with expense data from the Institute of Real Estate Management, or another source, to substantiate the expense assumptions.

7. Earnings on debt service reserves and other investments should be at a rate of 0% for 10 years, 1% years 11-17, and 2% for years 18 through maturity..

8. One time, nonrecurring capital expenses are removed from expenses as long as they are adequately funded.

Moody's applies a variety of stresses to the pro forma based on various economic and real estate stresses the property may experience. Moody's runs several scenarios in-house to stress the property's financial position; the scenarios include a breakeven occupancy; various levels of increases for revenues and expenses, including declines in rental revenues and increases in expenses. Under the scenarios, which are tailored to reflect the unique nature of the property, Moody's goal is to evaluate the impact of these stresses on the cash flows.

Standard Underwriting Assumptions for Revenue and Expense Assumptions

Due to the unique nature of the different types housing project financings, our assumptions for revenue and expense inflation will vary by type of project, market position, and actual and projected operating performance. The size of the inflator and duration for each type of project are presented below. These are base case assumptions for the purposes of developing a starting point of analysis. We may ask for different assumptions as warranted.)

FIGURE 9

Rent and Expense Growth Assumptions

	AFFORDABLE	MILITARY	SUBSIDIZED	STUDENT
Base Case	No increase for life of bonds	2% growth in housing stipend and 2% growth in expenses for 5 years and no increases thereafter	No increase for life of bonds	3% increase in rents and expenses for life of bonds
Examples of Stress Assumptions (other scenarios may be requested)	Specific level of expense growth with no revenue growth	1) No increase in revenue or expenses for life of bonds. 2) Expense growth in excess of housing stipend growth for 5 years	Specific level of expense growth with no revenue growth	1) No increase in revenue or expenses for life of bonds 2) Specific level of expense growth with no revenue growth

Appendix III – Legal Framework, Covenants and Finance Structure

The following is a description of legal provisions and covenants that Moody's looks for on investment grade financings.

1) Security Pledge

» Bonds secured by a first lien mortgage and rental revenue pledge.

» Collateral pledged under the mortgage can be either fee simple interest or leasehold interest.

2) Flow of Funds

» Gross pledge of revenues from the project. Debts service paid first in the priority of payment, followed directly by replenishment of the corresponding debt service reserve.

» A surplus funds release test. Funds not released unless a minimum debt service coverage level is met. An annual release of surplus funds is viewed more positively than a monthly release. Though not standard for an investment grade rating, the trapping of excess cash for an additional reserve or to redeem debt is a particular credit positive.

» The release of cash at a level no lower than the minimum debt service coverage ratio for a particular rating category.

» An additional bonds test (ABT) equal to the minimum debt service coverage ratio for a particular rating category should be present.

» A rate covenant requirement for setting rent levels sufficient to meet minimum debt service coverage in transactions where a ground lease mandates below market rents.

3) Reserve and Replacement Fund

» Deposits of at least $250, per unit, per year for new projects.

» Deposits of at least $175 per bed, per year for student housing and unaccompanied military housing. .

» Escalation of the deposited amount at least every five years at an annual rate equal to CPI or as outlined in an engineer's report.

4) Senior/Subordinate

» Default on subordinate debt should not cause a default on senior debt.

» Subordinate bondholders restricted from taken any action that would impair or compromise the senior bondholders.

5) Ground Lease

» Term of the ground lease extends at least 3 to 5 years beyond the term of the bonds.

» Early termination limited to substantial events of default such as lessee bankruptcy rather than including minor events of default such as failure to provide financial statements.

» Responsibilities of all parties clearly outlined in lease including terms of ground lease payments, limits on eligible tenants, and responsibility for expenses such as property taxes, utilities, insurance and maintenance.

6) Management Agreement

- Manager's duties clearly specified.
- Acknowledgement by the manager of any subordinate management fees as outlined under the Trust Indenture.
- Specific limitations on eligible renters established in bond documents.

7) Insurance Requirements

- Maintenance by the property of standard hazard insurance for a minimum of 80% of replacement cost or the full mortgage amount, whichever is higher.
- Maintenance by the property of rental interruption insurance to cover potential rental revenue losses for at least one year.

8) Debt Structure

- Fixed rate, fully amortizing 30-year debt is the preferred structure due to its level debt service payments.
- The amortization period of the debt before the end of the useful life of the asset being financed.
- One exception to the amortization period is military housing bonds which have terms of 40- to-45 years. This exception is allowed because they incorporate a project recapitalization account designed to finance the rehabilitation and replacement of units later in the life of the transaction

9) Debt Service Reserve Funds (DSRF)

- A DSRF sized at maximum annual debt service.
- Funding can be in cash, or provided by a surety policy.
- The minimum rating for surety policy and investment providers varies depending on the rating of the transaction. For further detail, please see the Moody's publication titled "Methodology Update: Downgrade of Surety Bond Provider Could Result in Review of Underlying Military Housing Ratings."

10) Investments

- High quality investments with terms that are in line to provide the needed funds for the payment of debt service or other disbursements. For further detail, please see the Moody's publications "GICs for Housing Transactions: Moody's Responds to Frequently Asked Questions," and "Methodology Update: Ratings that Rely on Guaranteed Investment Contracts."

Appendix IV – Construction and Lease Up Risk

When present in a housing project financing, a letter of credit, existing units online and public entity construction guarantees can mitigate construction and lease up risk such that full and timely debt service payment is not dependent on project completion. Projects in construction that do not have a way of mitigating these risks are likely to be rated below investment grade. Below we describe the types of construction risk mitigants that are common to housing project financings. A fixed price contract and payment and performance bonds are typically present in all investment grade rated transactions with construction risk, although the mere presence of them does not guaranty an investment grade rating[4].

1) Letter of Credit

- » Letter of credit (LOC) provider rated at least as high as the rating on the bonds
- » In order to release the LOC, the following stabilization factors have been achieved: issuance of a certificate of occupancy; minimum DSCR and occupancy assumed in pro formas for 12 consecutive months.
- » If the LOC cannot meet the release tests, then it should either be extended or the trustee should draw on the LOC to redeem the bonds

2) Existing Units Online

- » Previously constructed and occupied units conveyed to the project being financed at closing
- » The units online have a history of producing net operating income that covers all debt service payments
- » The development plan includes a provision requiring the minimum number of units remain online to achieve the necessary net operating income.

3) Public Entity Construction Guarantee

- » A rated public entity such as a university of the federal government guarantee the payment of debt service until the following stabilization factors are achieved: issuance of a certificate of occupancy; minimum DSCR and occupancy assumed in pro formas for 12 consecutive months. (In this case, the rating on the bonds will be limited to the rating of the public entity proving the guarantee.)

4) Fixed Price Contract

- » The total cost of the project is fixed or has a guaranteed maximum price.
- » The contractor is contractually responsible for any cost overruns unless they are approved by a change order.

5) Payment and Performance Bonds

- » The developer ensures that payment and performance bonds are procured for the entire scope of construction, including rehabilitation.
- » For the project to receive full benefit, the payment and performance bond provider is an entity with a rating that matches the requirements for DSRF providers.

[4] In housing projects, construction scope is typically at the simpler end of the project finance spectrum, with units disaggregated and only modest risk in respect of cost, quality and schedule, or contractor replacement. Projects may also receive rental revenues from Financial Close onwards, which may be a more material driver of credit quality even while construction work persists. There will likely not be the same clear distinction between construction phase risks and operational phase risks that characterizes PPP projects, so the methodology "Construction Risk in Privately Financed PFI/PPP/P3 Projects" will not generally apply, although we may draw on it in cases where housing project ratings are more materially exposed to construction completion risk and contractor credit quality and competence.

Appendix V: Basic Documentation Moody's Reviews in Conjunction with its Rating Analysis

This list is meant to be a reference tool, providing general guidance only. Given that each housing deal is unique, the specific documents needed to assess a transaction will vary on a deal-by-deal basis.

1) Legal Documents

» Official statement
» Trust indenture
» Investment agreement, including enforceability opinion
» All legal opinions
» Regulatory agreements, if any
» All mortgage notes
» Ground lease

2) Additional Financing & Property Information

Participant Information

» Moody's property-management questionnaire
» Moody's property-owner questionnaire
» Management contract

Project Financial Information

» Three to five years of audited financial statements
» Pro-forma cash flow projections
» Debt service schedule of proposed bond issue
» Information on all applicable subsidies
» Information on tax abatements, if applicable

Property Description and Rental Information

» Market demand study and appraisal prepared by an independent third party that includes at least five comparable developments for the area
» Photos of project (inside and outside, including inside of unit, common areas and all amenities)
» Third party physical inspection and structural engineering report
» Recent environmental review
» Three to five years of vacancy rates, presented monthly
» History of rent concessions (for existing projects)
» Current waiting list (for existing projects)
» Marketing plan for target tenants
» Local building authority certification stating that the building has no code violations
» Proof of all applicable insurance policies

Appendix VI: How Moody's Economy.com estimates Regional Housing Affordability

The housing affordability index (HAI) is designed to measure the degree to which a "typical" middle income family can afford the mortgage payments on the typical home.

A typical home is defined as the median-priced, existing single-family home in a particular metropolitan area as calculated by Moody's Economy.com. The typical family is defined as one earning the median family income as reported by the U.S. Bureau of the Census and estimated by Moody's Economy.com. The prevailing mortgage interest rate is the effective rate on loans closed on existing homes from the Federal Housing Finance Board. These components are used to determine if the median income family can qualify for a mortgage on a typical home.

To interpret the indices, a value of 100 means that a family with the median income has exactly enough income to qualify for a mortgage on a median-priced home. An index above 100 signifies that family earning the median income has more than enough income to qualify for a mortgage loan on a median-priced home, assuming a 20% down payment. For example, an HAI of 120.0 means a family earning the median family income has 120% of the income necessary to qualify for a conventional loan covering 80% of a median-priced existing single-family home. An increase in the HAI, then, shows that this family is more able to afford the median priced home.

The calculation assumes a 30 year maturity, a down payment of 20% of the home price and it assumes a qualifying ratio of 25%. That means the monthly P&I payment cannot exceed 25% of the median family monthly income.

Sample Calculation:

Median existing home price	$150,000
20 percent down payment	* 0.8
Loan Amount =	$120,000
Effective interest rate	8.50%
Loan Term	30 years
Monthly mortgage payment	$922.69
Months	* 12
Annual mortgage payment	= $11,072.28
Annual mortgage payment	$11,072.28
Qualifying ratio	/ 0.25
Minimum qualifying family income =	$44,289.12
Median family income	$40,000
Minimum qualifying family income /	$44,289.12
	* 100
Housing affordability index	= 90.32

Moody's Related Research

Special Comment:

- Weak Credit Fundamentals Continue to Drive Negative Rating Actions for Affordable Multifamily Housing Projects, November 2009 (120778)
- 2010 Military Housing Bond Update: Average BAH Increase of 2.50% Is Less Than In Previous Years, January 2010 (122581)
- Privatized Student Housing Review, September 2009 (119733)
- Moody's Expects Public Housing Authority Bonds to Remain Challenged in 2009-2010, July 2009 (119134)

Rating Methodology:

- Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates, November 2009 (120987)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

» contacts continued from page 1

Analyst Contacts:

NEW YORK 1.212.553.1653

Lisa Washburn 1.212.553.4133
Team Managing Director
Lisa.Washburn@moodys.com

Richard Kubanik 1.212.553.7823
Associate Analyst
Richard.Kubankik@moodys.com

Report Number: 125767

Author
Toby Cook

Senior Production Associate
Wendy Kroeker

© 2010 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ARE MOODY'S INVESTORS SERVICE, INC.'S ("MIS") CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MIS DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS DO NOT CONSTITUTE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS ARE NOT RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. CREDIT RATINGS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MIS ISSUES ITS CREDIT RATINGS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from reliable sources; however, MOODY'S does not and cannot in every instance independently verify, audit or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Moody's
INVESTORS SERVICE

October 2001 **Rating Methodology**

Contact	Phone
New York	
Florence Zeman	212.553.4836
Maura McGuigan	212.553.4443

MOODY'S APPROACH TO ANALYZING POOLS OF MULTIFAMILY PROPERTIES

The Whole is Greater than the Sum of its Parts

Rating Methodology

Summary

- Moody's approach to rating securitization of pools of multifmaily loans or bonds (at times known as a collateralized bond obligation or CBO) is based on the credit quality of each mortgage loan and adjusted for the expected loss of the entire pool. Our approach to analyzing these pools of multifamily loans, which are often financed and monitored under established underwriting and asset-management procedures, varies from our approach to rating stand-alone issues. In general, pools of multifamily loans are eligible for higher ratings than stand alone properties.
- Key factors of the analysis consist of individual property financial feasibility, overall portfolio characteristics, underwriting and asset management procedures and legal structure. Moody's will establish an adjusted debt service coverage ratio for each loan, which will be a factor in the likelihood of default and valuation of the properties.
- Moody's is experienced in assessing pools of affordable multifamily properties as we are often asked to assess large, multifamily loan pools managed by state and local housing finance agencies (HFAs) for both issuer (general obligation) ratings and individual bond ratings. In addition, Moody's has assessed pools of affordable multifamily bonds for the determination of the underlying risk for credit enhancers. In response to requests, we are issuing this article to define what factors Moody's will look for when reviewing a pool of loans or bonds for a public or underlying rating.

continued on page 3

Authors

Florence Zeman
Maura McGuigan

Senior Production Associate

Cassina Brooks

© Copyright 2001 by Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007. All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS COPYRIGHTED IN THE NAME OF MOODY'S INVESTORS SERVICE, INC. ("MOODY'S"), AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,000 to $1,500,000. PRINTED IN U.S.A.

Individual Property Financial Feasibility

Moody's assessment of the individual loans determines the credit quality of each loan and the expected loss on a loan specific basis. This analysis is primarily based on the adjusted debt service coverage of the property as compared to a rating specific benchmark. The assessment is reflected by a valuation of each loan. The overall assessment or credit enhancement levels of the pool is later adjusted for other factors such as pool characteristics, underwriting and asset management and legal structure.

We will request specific data points (see below) on each property including annual revenue and expense numbers. Moody's does not necessitate a comprehensive property-by-property review of each loan in the pool. However, to verify the validity of the data and to confirm that the issuer's debt service coverage calculations are consistent with Moody's approach, we will perform random data checks by requesting a significant sample of individual property audits. In addition, we may visit selected properties to verify the issuer's assessment of the property's physical condition.

Stresses will be added to the revenue and expense numbers. This includes the deduction of an additional vacancy stress of at least 3% from the revenue and adding a reserve and replacement deposit to the expenses. The resulting net operating income will be divided by the annual debt service to arrive at an adjusted debt service coverage number. In the event the loan is variable rate we will use the annual debt service at the maximum cap rate. The debt service coverage ratio will be measured against a benchmark for a given rating category and will result in a loan valuation. Bonds should be structured reflecting the loan valuation. The benchmarks may be adjusted to reflect factors such as the physical assessment of the property, status of construction and stabilization, and bullet maturities.

Moody's looks for an electronic spreadsheet that lists the following data for each individual loan:

- Property name
- Location (City, State)
- Number of units
- Outstanding principal loan balance
- Loan maturity
- Loan terms (fixed or variable)
- Cap rate (for variable rate loans)
- Original LTV
- Annual revenue
- Annual operating expenses
- Maximum annual debt service
- Security or subsidy type, if any, and maturity of subsidy, if applicable
- Physical and economic occupancy percentage for current year
- Property type (high rise, garden style)
- Year property was built
- Physical property assessment by issuer, or sponsor
- Status of loan (Current, delinquent)
- Number of times loan has been delinquent to date

Portfolio Characteristics

Moody's looks at the characteristics of the entire pool as that will also impact the potential volatility of the loan portfolio and the likelihood that a portion of the pool will not perform. Some of the key factors we will review are as follows

Size of a pool-A larger pool will provide more diversification resulting in a lower likelihood of default. Generally Moody's will look for a pool to include at least twenty properties. Pools with fewer properties will be subject to a stand-alone analysis on an individual loan basis.

Portfolio concentration-A portfolio with significant loan concentration loses much of the strength provided by the pooling of the loans. Moody's will review the size of the largest five loans to determine concentration levels.

Property types-Moody's expects that most of the properties in the pool will be affordable with tenant income restrictions for compliance with tax rules. A pool with a mix of property and subsidy types provides good diversity to the portfolio and mitigates potential loss on the property.

Geographic diversification-We will review the locations of the loans to determine the geographic diversity. Diversity mitigates against the risk of single market declines. Moody's recognizes that many pools are state specific but will factor in the diversity within the state. This analysis will also take into account loan concentration in a specific location.

Economic diversification-Moody's takes into account the portfolio's exposure to various sectors of the economy regardless of geographic diversity.

Seasoning of loans-Moody's will review the age of the properties to determine seasoning. In general, seasoning is a credit strength. Loans for properties that are under construction or in lease up should comprise no more than 25% of the pool of loans.

Portfolio performance-Moody's will review the performance of the portfolio. A portfolio that has not been performing well, as reflected in low debt service coverage on the loans or high delinquencies, are expected to continue to have challenges going forward. Moody's will assume a higher likelihood of loan default for these portfolios.

Underwriting and Asset Management Procedures

To determine the level of added strength provided by the pool and the issuer or the sponsor, Moody's seeks to ensure that the issuer or the sponsor has established underwriting criteria and asset-management procedures. Moody's will meet with key management to determine the strength and depth of the staffing in both areas.

Underwriting — A major component of assessing the issuer or sponsor quality is reviewing the entity's ability to underwrite a loan. They must be very familiar with its real estate markets, in terms of reasonable rental revenue and operating expenses. Its underwriting should have established guidelines including minimum debt service coverage requirements while incorporating vacancy assumptions and taking into account future capital needs. The property should not be overleveraged as reflected in a reasonable loan to value ratio. These factors take on additional significance when the pool structure allows for additional loans to be added to the portfolio. New loans should be subject to coverage benchmarks and guidelines to prevent the pool's strength from being diminished by the introduction of lower quality loans.

As part of its review, Moody's will also look for additional underwriting requirements specific to new construction loans to the extent these loans are part of the portfolio or are permitted going forward. In addition to the regular benchmarks that are associated with a multifamily loan, Moody's expects there should be additional enhancements to protect against construction delays or overruns and lease up difficulties.

Asset Management — Moody's favorably views the presence of an oversight entity or asset manager, which may be a third party, the bond issuer or a fund sponsor. Exceptions to this may occur when the oversight entity is not experienced or knowledgeable in managing multifamily portfolios and thus does not offer any value added to the process.

In assigning our rating, we review the entity's track record with the type of loans or bonds that are in the structure, as well as their success with loan workouts. We will also review its procedures and the performance levels of the multifamily portfolios, its record of historical defaults and losses, and its disposition process for defaulted loans.

We expect that a sponsor will have monthly and annual reporting requirements for each loan in the portfolio. On a monthly basis the manager should be collecting occupancy data and operating statements and on an annual basis it should receive audited financial statements and conduct a site visit. Moody's believes that the review of this data by an effective asset manager should provide early detection of potential problems with the loan. Additionally, asset managers usually employ a watchlist system that sets aside troubled loans to be more actively monitored.

Moody's believes there are certain mechanisms which can make an oversight entity more effective and views the presence of these procedures as a credit strength. An asset manager's ability to replace property management and the ability to control a property's reserves can serve as effective asset management tools. Moody's will review any history of the entity exercising these rights in the past.

An issuer or sponsor's ability to provide quality data for Moody's review is also a factor in assessing an entity's asset management capabilities. The presence or lack of discrepancies in data between a sponsor provided spreadsheet and specifically requested property back up may factor into determining the quality of an asset manager.

Legal Structure

The legal analysis of a pool or a CBO will comprise of two components, that of the individual loans in the trust or portfolio and that of the CBO or the resolution financing the pool itself. Any pool submission to Moody's for rating consideration should include a structure/term sheet which should include tranching and requested rating levels and also describe the type of debt instruments to be issued and backed by the underlying pool of assets. Moody's review will focus on the following factors. It should be noted that, given the evolving nature of bond structures, additional factors will be reviewed depending on the specific structure.

Debt Service Reserve Funds - Each loan should maintain a debt service reserve fund sized at maximum annual debt service. Transactions without any debt service reserve fund or reserves funded at less than maximum annual debt service may impact the expected loss in the underwriting of the entire pool.

Operating Reserve - This enhances property security and its presence would be considered a positive credit factor since the funds can be used to cover shortfalls in amounts necessary to maintain and operate the property.

Replacement Reserve Funds (R&R) - R&R funds are important for the maintenance and marketability of a property and the stability of a property's cash flow. Therefore Moody's expects individual loans to have annual R&R required deposits to address the ongoing capital expenditures for a property. Their presence alleviates the problems that occur when funds are needed for a property's capital expenditures and the money is not available from current cash flow. Moody's will review the amount of the R&R deposit requirement to ensure that it appropriately reflects the age and condition of the property.

Additional Bonds - Moody's will review whether the bonds in the portfolio legally permit the issuance of additional parity bonds. A structure that allows additional parity bonds without meeting established performance benchmarks could be a negative credit factor.

Bankruptcy-The potential bankruptcy of the various participants will be reviewed to assess whether these risks might impact the revenue stream of the property and the ability to pay bond debt service.

Flow of funds/surplus release -Bonds that allow for the release of excess cash are typically a neutral credit factor to the extent it is permitted after appropriate performance benchmarks have been met such as occupancy and debt service coverage. Structures that do not allow for the release of surplus cash can be a positive credit factor.

Redemptions - Moody's will review the general redemption provisions to ensure that a future redemption will not impact the credit quality of the transactions. Some issues that will be considered include the redemption priority, the source of funds for a redemption and not allowing bonds to be subject to mandatory redemption following a determination of taxability unless there are sufficient funds to effect such redemption

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 70700

Moody's Investors Service
Municipal Credit Research

May 2001

Rating Methodology

Contact	Phone
New York	
Wendy Berry	1.212.553.4104
Florence Zeman	1.212.553.4836

MOODY'S METHODOLOGY FOR ASSIGNING ISSUER RATINGS TO HOUSING FINANCE AGENCIES

Rating Methodology

Summary Opinion

- Moody's currently has Issuer Ratings, also known as general obligation ratings, on 30 housing finance agencies (HFAs). These 30 ratings represent a significant increase from the eight Issuer Ratings outstanding just a few years ago. Ratings range from A3 to Aaa.
- The key components to Moody's approach in assessing the creditworthiness of a housing finance agency include:
  1) financial position;
  2) management;
  3) portfolio performance and composition; and
  4) general underwriting criteria.
- HFAs have been using their Issuer Ratings more frequently and of more creative financings than ever before. Moody's believes the expanded role of housing finance agencies, particularly in the wake of the federal government's retrenchment from producing and financing affordable housing, has fueled much of the increased demand for, and use of, Issuer Ratings.

continued on page 3

Author

Wendy Berry

Production Associate

Phillip Stone

© Copyright 2001 by Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007. All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS COPYRIGHTED IN THE NAME OF MOODY'S INVESTORS SERVICE, INC. ("MOODY'S"), AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,000 to $1,500,000. PRINTED IN U.S.A.

What Is an Issuer Rating?

Moody's defines Issuer Ratings as "opinions of the ability of entities to honor long-term senior unsecured financial obligations and contracts". Moody's formally introduced these ratings in June 1998 to meet growing demand on the part of investors and other capital market participants for reliable, globally consistent credit risk assessments of entities that may have no ratable debt outstanding. While Moody's Public Finance Housing Group has had General Obligation Ratings on housing finance agencies since 1987, these ratings are now also known as Issuer Ratings. Issuer Ratings use the same Aaa through C rating scale traditionally applied by Moody's to specific long-term debt securities.

Introduction

State housing finance agencies (HFAs) represent a significant presence in the public finance market with very large and frequent debt issues. Today, over $83 billion of state-HFA-issued single family (69.7%) and multi-family (27.0%) debt is outstanding, up more than 28% from just five years ago. Moody's expects the state housing finance industry to increase its significance in the tax-exempt and the taxable capital markets, particularly as the federal government continues to push greater responsibility for housing programs down to the state and local levels.

After years of accumulating significant financial resources, gaining expertise in their respective housing markets, solidifying political ties, and establishing reputations in the capital markets, today, most state HFAs and some local HFAs have stronger than ever financial positions along with considerable influence over the implementation of new housing initiatives.

To deal with these increased housing responsibilities, state HFAs have shown a strong demand for Issuer Ratings, also known as general obligation ratings. Moody's Housing Group has been assigning these Issuer Ratings to housing finance agencies (HFAs) since 1987. Housing finance agencies - both state and local - use these Issuer Ratings in a variety of ways in order to address the continued critical demand for affordable housing, including making access to the municipal bond market easier and less costly. Today, Moody's has assigned ratings on 30 housing finance agencies that range from A3 to Aaa.

Moody's current HFA Issuer Ratings are as follows:

Housing Finance Agency	Rating/Outlook
Alabama Housing Finance Authority	Aa3 (stable)
Alaska Housing Finance Corporation	Aa2 (stable)
California Housing Finance Agency	Aa3 (positive)
Colorado Housing and Finance Authority	A1 (stable)
District of Columbia Housing Finance Agency	A3 (stable)
Florida Housing Finance Corporation	A2 (stable)
Hawaii Housing & Community Development Corporation	A1 (negative)
Idaho Housing & Finance Association	A1 (positive)
Illinois Housing Development Authority	A1 (positive)
Indiana Housing Finance Authority	Aa3 (stable)
Kentucky Housing Corporation	Aa3 (stable)
Louisiana Housing Finance Agency	A2 (stable)
Maine State Housing Authority	A2 (positive)
Maryland Community Development Administration	A2 (stable)
Massachusetts Housing Finance Agency	A2 (positive)
Minnesota Housing Finance Agency	Aa2 (positive)
Montana Board of Housing	A2 (positive)
Montgomery County, MD Housing Opportunities Commission	A2 (stable)
Nevada Housing Division	A1 (positive)
New Hampshire Housing Finance Authority	A2 (stable)
New Mexico Mortgage Finance Authority	A2 (stable)
Ohio Housing Finance Agency	A2 (stable)
Oregon Housing & Community Services Depart.	A1 (stable)
South Carolina State Housing Finance & Development Authority	A2 (stable)
South Dakota Housing Development Authority	A1 (stable)
Utah Housing Finance Agency	Aa3 (stable)
Virginia Housing Development Authority	Aa1 (stable)
West Virginia Housing Development Fund	Aaa (stable)
Wisconsin Housing & Economic Development Authority	Aa3 (stable)
Wyoming Community Development Authority	Aa3 (stable)

While the outlook appears bright for most state housing finance agencies, the future is not without risk. In many states, the emergence of administratively strong and financially healthy HFAs has led to increasing political pressures and greater demands on HFA capital resources to support new housing ventures.

Adding to these political pressures is the general retrenchment of the federal government's support for producing and subsidizing affordable multi-family housing. This federal retrenchment has resulted in greater responsibility being pushed down to the state HFAs, e.g. Portfolio Reengineering and Section 8 contract administration. Another consequence of the retrenchment has been that some housing finance agencies are taking on greater risk than what has been their historical norm.

These higher risks include: an increasing use of HUD Risk Sharing with its varying percentages of contingent liabilities, the financing of a greater amount of uninsured and unsubsidized affordable multi-family projects, and the more prevalent use of variable rate debt. Moreover, despite some high profile assisted living loan defaults under HUD's Risk Sharing Program, Moody's expects to see many HFAs looking to intensify efforts to finance assisted living projects for the elderly as the changing demographics require more specialized housing for the growing senior population.

Areas of Concern for the HFA Industry

1. **Increased exposure to uninsured, unsubsidized multi-family loans:** As state HFAs are looked upon to greater support in the area of affordable multi-family housing, many state HFAs are taking on greater risk that what has been their historical norm. Combined with the shift of federal policy away from subsidized housing, an increasing number of state HFAs are financing uninsured and/or unsubsidized multi-family housing. Where in the past, state HFAs financed a significant number of multi-family properties, most had subsidies including Section 236 or Section 8 or were covered under FHA's traditional insurance programs. Today, virtually all new multi-family projects are financed without subsidies. While many properties are insured under the HUD Risk Sharing Program and are therefore insured by FHA, the risk to HFAs is still present as any loan default and accompanying loss is shouldered in part by the HFA.
2. **Assisted Living:** To date, Moody' has identified 16 state housing finance agencies that have financed assisted living facilities or expect to do so in the near future - overwhelmingly through the issuance of bonds. Moody's sees the assisted living segment of the housing market having a significantly higher risk profile than traditional multi-family housing. These added risks include the emphasis on personal care and hotel-like services, greater operating expenses, and higher expected annual turnover rates. These added risk factors were evident in three recent defaults of state HFA-financed loans for assisted living facilities. Indeed, these three loans were all insured under HUD's Risk Sharing Program and represent the only three loan defaults reported under the seven-year-old program. To date, the Risk Sharing Program has insured more than 200 loans.
3. **Increased Use of Variable Rate Debt:** As many state HFAs try to meet the increasing demand for affordable housing, a growing number of HFAs have attempted to reduce interest costs and maximize revenues by issuing variable rate debt. Given that HFA portfolios are generally fixed rate loans, the mismatch between the fixed rate assets and the variable rate liabilities often results in interest rate risk to the bond program. Variable rate bonds can be structured in various ways, but Standby Bond Purchase Agreements (SBPA), swaps and caps are often utilized to offset liquidity and interest rate exposure. Increasingly, providers of these agreements rely upon the Issuer Rating to gauge the financial strength of the HFA, and to quantify unrestricted assets. Additionally, Moody's often looks to the HFA's general fund to cover any contingencies that may occur within these types of agreements, including any type of termination fees, or other embedded risks which are not factored into the payment schedule. Moody's often looks for these types of contingencies to be quantified in the cash flow scenarios and relies upon the resources available to the HFA to meet these stresses. (These contingencies may occur due to a swap amortization mismatch, tax rate risk, basis risk etc.)

What's more, Moody's expects to see more HFAs looking to partner with public housing authorities to develop innovative affordable housing. To that end, Moody's has recently released a Management Quality (MQ) rating product to help address the needs of PHAs and other housing entities in these new types of housing partnerships and financing ventures.

MQ Ratings for Public Housing Authorities

Public housing authorities (PHAs) are facing enormous challenges in toda3y's changing environment including a generally aging housing stock, a very low income tenant population, and the possibility of declining federal subsidies. At the same time, PHAs have opportunities to transform both their own agency operations as well as their stock of public housing with the help of new policy directions from Congress and the Department of Housing and Urban Development (HUD). These new policies include the increased flexibility in the use of federal assistance and additional resources such as HOPE VI.

To address these new PHA opportunities, Moody's has developed a new Management Quality (MQ) Rating for PHAs and other affordable housing providers as they confront these challenges in the days ahead. These MQ ratings are intended to be used by the PHAs and other affordable housing providers as an internal management tool as well as a tool when strengthening or establishing relationships with third parties or partners. The analysis will also include an "outlook" for the future that may be helpful to these housing providers in their strategic planning efforts.

Moody's PHA MQ ratings are as follows:

MQ1 - Housing providers judged to be managed in the highest quality manner.
MQ2 - Housing providers judged to be managed in a high quality manner.
MQ3 - Housing providers judged to be managed in a good manner.
MQ4 - Housing providers judged to be managed in an average manner.
MQ5 - Housing providers judged to be managed in a below average manner.
MQ6 - Housing providers judged to be managed in an unsatisfactory manner.

Finally, the risk of intervention by certain states into the finances of HFAs is ever present. While state governments have occasionally appropriated or diverted excess fund balances of HFAs - and in the case of Alaska and Hawaii it has become a regular occurrence - Moody's believes this risk will heighten if the generally robust national and state economies are significantly eroded. Moody's believes that this fact alone makes Issuer Ratings more volatile to rating changes, particularly downgrades, than typical single family or multi-family programs as Issuer Ratings generally lack the strong legal security and structure evident in most bond programs.

Indeed, the only negative outlook Moody's maintains on a housing finance agency is the A1 Issuer Rating on the Hawaii Housing and Community Development Corporation. This negative outlook is directly related to the transfer of $150.4 million over the last five years of Corporation assets to the State's General Fund in order to overcome budget deficits created by Hawaii's weakened economy.

EXAMPLES OF HOW HFAs USE THEIR ISSUER RATINGS

HFAs have benefited in various ways when using their Issuer Ratings. They include:

- creative financings;
- general financial flexibility;
- easier approval process and less onerous terms for HFAs participating in HUD's Risk Sharing Program for Affordable Multifamily Project Loans;
- use as a "stamp of approval" for banks, credit enhancers, and other third parties looking for risk assessment; and
- use as a management tool with HFA Boards of Directors and/or state government.

Creative Financings

TRIPLE TRAUNCHE STRUCTURE

A number of HFAs have used their HFA Issuer Ratings to receive higher ratings on certain bond transactions. One continuing example of this trend is the triple tranche structure for single family transactions. Under these bond structures, the last tranche reflects non-asset bonds under certain stressful prepayment scenarios. A number of HFAs have utilized this type of financing, including Idaho, Nevada, California, and Utah for their single family programs and Colorado for multi-family financings.

Because these HFAs all have Issuer Ratings, these agencies are able to legally pledge their general obligations to these subordinate bonds and, therefore, receive A1 ratings on these bonds in the case of Idaho and Nevada, and Aa3 in the case of California and Utah. In addition, the Colorado Housing and Finance Authority (CHFA) uses a two tranche structure on its single family bond issuances and pledges its general obligation solely to the subordinate bonds.

With ratings of A1 or Aa3, rather than no rating at all, these issuers are able to sell their subordinate bonds with lower interest rates. With approximately $200 million of subordinate bonds issued by these five HFAs over the last few years, the interest savings has been significant.

OFFICE BUILDING BONDS

Another key example of the increasing use of Issuer Ratings was the December 1999 offering from the Alaska Housing Finance Corporation (AHFC). This issuance of State Building Lease Bonds was done to refinance a number of capital projects for the State of Alaska including an office building in Anchorage leased by the State.

The primary security for these bonds was the unpledged assets of the Corporation, along with rental revenues from the State of Alaska, if received. Without the use of the Corporation's general obligation pledge, security for these bonds would have been weak. The Aa2 rating assigned to these bonds was based fundamentally on AHFC's Issuer Rating. AHFC's Aa2 Issuer Rating reflects Moody's evaluation of its extraordinarily strong financial position, the favorable portfolio performance of its single family and multi-family programs, and its very sound management abilities.

State HFAs have also issued building bonds for the purchase and/or construction of their own office buildings, including the New Hampshire Housing Finance Authority as well as the first to do it, the Virginia Housing Development Authority. Other HFAs are currently considering using their general obligation pledge to support the financing and/or construction of office buildings including: the Indiana Housing Finance Authority and the Louisiana Housing Finance Agency.

EASIER APPROVAL PROCESS, LESS ONEROUS TERMS FOR HUD'S RISK-SHARING PROGRAM PARTICIPANTS

The Department of Housing and Urban Development's (HUD) introduction of its Risk Sharing Program in 1993 spurred many HFAs to request Issuer Ratings without the anticipation of any planned debt issuance. This heightened demand for Issuer Ratings was due to the fact that HUD made participation in the program much easier for HFAs with Issuer Ratings of A or higher.

State HFAs That Have Participated in HUD's Risk Sharing Program

California Housing Finance Agency
Colorado Housing and Finance Authority
Florida Housing Finance Corporation
Idaho Housing and Finance Association
Illinois Housing Development Authority
Kentucky Housing Corporation
Maine State Housing Authority
Maryland Community Development Administration
Massachusetts Housing Finance Agency
Minnesota Housing Finance Agency
Missouri Housing Development Commission
Montana Board of Housing
New Hampshire Housing Finance Authority
New Jersey Housing and Mortgage Finance Agency
New Mexico Mortgage Finance Authority
New York State Housing Finance Agency
Oregon Housing and Community Services Department
Pennsylvania Housing Finance Agency
Rhode Island Housing and Mortgage Finance Corporation
South Dakota Housing Development Corporation
Wisconsin Housing and Economic Development Authority

Source: Department of Housing and Urban Development

HUD's Risk Sharing Program is designed to leverage FHA insurance moneys to finance affordable multi-family housing. The program permits certain HFAs to partner with HUD by assuming some of the financial risk - anywhere from 10% to 90% - in the event of a project loan default. Because HUD looks to participating housing agencies for reimbursement should a project loan default and result in losses, HUD needs to be confident of the ability of the agency to repay such an obligation.

To this end, HUD's regulations allow the loan loss set-aside requirement to be waived for those HFAs with an Issuer Rating of A or better. In addition, the approval process for the Risk Sharing Program is streamlined for those agencies with similar ratings. To date, 26 state HFAs have been approved by HUD for Risk Sharing, with 21 actually participating in the program. (Alaska, Connecticut, Indiana, Louisiana, and Michigan had not insured any project loans as of September 30, 2000.)

GENERAL FINANCIAL FLEXIBILITY

When structuring a bond transaction, an HFA occasionally looks to Moody's for an exception to our stated guidelines in the areas of investments, cash flow projections, debt service coverage, or insurance requirements. If the HFA is financially and administratively strong, and has a satisfactory Issuer Rating, Moody's is much more likely to broaden our typical guidelines.

One example of greater flexibility involved the California Housing Finance Agency (CHFA) and its increased use of variable rate debt within the Home Mortgage Revenue Bond Program, an increase of approximately $600 million since January 2000. In increasing its utilization of variable rate debt, the Agency has also taken on additional interest rate exposure and in some cases, other types of exposure such as tax rate risk and amortization mismatch associated with various swap agreements. Moody's believes that CHFA's Aa3 Issuer Rating provides important and necessary security to offset these types of risks to the program, providing a source of additional funds if contingencies arise, creating internal hedges with increased revenue generation, and providing a proactive monitoring and quantification of program exposure. Given these types of exposure, Moody's looks to the strength of not only the program, but also CHFA's general obligation pledge to address and manage any significant stresses which may occur to the program.

Opportunities for flexibility increase the higher the Issuer Rating, thereby allowing HFAs to maximize their resources to create affordable housing.

USE AS A "STAMP OF APPROVAL" FOR CREDIT ENHANCERS

As HFAs get more creative in their bond financings, there is a greater need for credit enhancement of these bonds. Such credit enhancement is typically in the form of either bond insurance or a letter of credit. Often, the credit enhancer - the bond insurer, the government-sponsored enterprise (such as Fannie Mae or Freddie Mac), or the letter of credit bank - will seek recourse from the HFA in the event the pri-

mary security for the bonds is insufficient, e.g. the revenues from a multi-family project. HFAs that have Issuer Ratings generally find it easier to access such credit enhancement as the bank or insurer is able to look to the Issuer Rating as an independent assessment of the creditworthiness of the HFA.

USE AS A MANAGEMENT TOOL

In a few cases, HFAs request Issuer Ratings even though they have no plans to issue debt secured by their general obligation pledge, enter into Risk Sharing Agreements with HUD, seek credit enhancement, or enter into partnerships with other entities. In many cases, these HFAs have received Issuer Ratings in order to be prepared for future, unplanned events. These events could include the need for more financial flexibility, or to fend off the state from a potential raid of excess funds.

Finally, some HFAs simply apply for Issuer Ratings in order to give their Boards of Directors and/or the state, an assessment of how Moody's views the HFA relative to other HFAs, including their relative strengths and weaknesses.

Moody's Key Credit Factors For Evaluating Housing Finance Agencies

Moody's considers each of the following key credit factors when assigning an Issuer Rating to a state housing finance agency:

- financial resources;
- management;
- single family and multi-family portfolio performance/composition and strength of economy; and
- general underwriting criteria.

Because each housing agency is unique, the absence of one or more of the specific examples describing HFA strengths does not necessarily preclude the assignment of an investment grade Issuer Rating.

FINANCIAL RESOURCES

A critical component in assigning an Issuer Rating to a housing finance agency is the HFA's overall financial position. Specifically, its financial strength relative to its outstanding obligations, as well as any new obligations it may be considering. Moody's looks for sufficient liquidity, in the form of cash or cash equivalents, for a portion of the general fund's assets. Certain bonds and other obligations or contingent obligations (such as HUD Risk Sharing, letters of credit, or commercial paper) are not generally secured by any specifically pledged assets, but rather by all assets of the agency that are not otherwise pledged or obligated. The agency's general or operating fund, therefore, provides the first source of repayment.

Moody's also looks at what portion of the general fund is considered undesignated. Many agencies restrict certain funds for capitalized interest, self-insurance, etc. Moody's regards undesignated moneys as unpledged funds that are not expected to be used for any purpose in the foreseeable future.

Moody's also incorporates the HFA's combined fund balance, which represents the total equity of the agency, when analyzing an HFA Issuer Rating. Much of the combined fund balance is typically earmarked and obligated under various single family and multi-family indentures. Often, however, a portion of these earmarked funds is available to the HFA for various purposes, including support for a general obligation pledge.

Why and How Does Moody's Adjusts Financials?

In an effort to get a true picture of the financial position of housing finance agencies, Moody's makes certain adjustments to many of the numbers found in audited financial statements. By analyzing adjusted numbers rather than reported numbers, Moody's is able to properly compare and contrast different HFAs as well as accurately review the financial trends of the HFAs over the past three to five years. In general, Moody's adjusts all intangible accounting entries such as deferred issuance costs, amortization of bond discount, as well as custodial funds, and certain assets related to public housing operations.

For example, Moody's focuses on "bonds outstanding" rather than what is typically found on the liability side of a balance sheet - "bonds payable". Bonds payable is a standard accounting entry that nets out unamortized discount from the amount of bonds actually outstanding. Moody's, however, is more interested in the amount of debt that is truly owed, i.e. the aggregate amount of principal outstanding that bondholders would be due as of the audit date if all bonds were to be due and payable. Because "bonds outstanding" is often higher than the reported "bonds payable", the adjusted number results in a higher amount of liabilities.

On the asset side, a number commonly adjusted by Moody's is loans receivable. In those cases where HFAs purchase loans at a discount, the amount reported on the balance sheet is lower than the actual amount of loan principal receivable as accounting rules generally require you to carry certain assets at the lower of cost or current value. This results in a reported understatement of assets. Moody's uses the actual amount of loans receivable, often resulting in a higher amount of assets than otherwise reported.

The implementation of the Governmental Accounting Standards Board's Statement No. 31, Accounting and Financial Reporting for Certain Investments and for Certain External Investment Pools (GASB 31) has created new intangible entries which has had an impact on the way in which HFA's report their investment balances. GASB 31 requires that governmental entities report investments at fair value on the balance sheet and any changes in the fair value of investments as investment income in the operating statement.

Given that the majority of investments in HFA portfolios are held to maturity to coincide with debt service payment dates and other known cash out-flow needs, Moody's believes that the implementation of GASB 31 provides an imprecise accounting of an HFA's financial position. Generally, gains and losses recorded due to the new fair value standards will, largely, not be realized, and therefore in Moody's view, should not be included in most calculations. As a result, Moody's requests that HFAs provide us with a par value assessment of its investments so that we can adjust for net increases or decreases in fair value, in order to make accurate comparisons to historical cost accounting representations. (For additional information on GASB 31, please consult Moody's Special Comment "GASB 31 and The Impact On State Housing Finance Agencies", published in March 2000.)

Examples of strong (Aa category) financial resources are:

- a combined fund balance in excess of 15% of the agency's total indebtedness;
- a general or operating fund balance in excess of 4% of the agency's total indebtedness;
- profitability - healthy generation of combined net income in excess of 10%;
- ample liquidity of unrestricted funds (case by case basis);
- ample asset to debt ratio or debt service coverage on all single and multi-family indentures; and
- conservative loan loss assumptions where necessary (case by case basis).

MANAGEMENT

An agency's overall administrative track record and management skills are very important factors in the assignment of an Issuer Rating.

When evaluating management, Moody's looks for a stable, capable, and experienced management team that is not overly reliant on one person. Historically, the state HFA industry has enjoyed generally stable senior management. In addition to assessing senior staff, Moody's looks for a satisfactory level of internal controls, including accounting and reporting functions, that we expect to be in place to secure an investment grade Issuer Rating.

Moody's also considers the relationship a state HFA has to its state government when evaluating an HFA's management. It is important that state HFAs and their respective state governments have a solid working relationship as state HFAs are created by their states and their goals and overall mission are determined by the respective governor and legislature. Many state HFAs also receive annual appropriations from the state to administer various programs. Similar issues arise with local HFAs and their "parent government", i.e. the county or city.

The absence of a solid working relationship may result in: the overall weakening of the agency through the increased likelihood of the state tapping a portion of HFA reserves; frequent turnover of staff — particularly top management; the cessation of certain appropriations; and/or the shifting of HFA responsibilities to other state agencies.

Examples of strong (Aa category) management are:

- stable, experienced management team with depth in personnel;
- strong working relationship with the HFA's parent government;
- comprehensive and timely dissemination of financial and performance information;
- successfully investing HFA funds;
- an appropriately conservative written investment policy;
- profitably servicing own loans;
- successfully running own cash flows;
- proven track record of underwriting and monitoring single family and multi-family loans;
- track record of successfully restructuring problem multi-family loans;
- proven track record of implementing strategic planning efforts to assist in agency policy and problem resolution; and
- successfully using up-to-date technology for portfolio monitoring as well as general agency needs.

OVERALL PORTFOLIO PERFORMANCE/COMPOSITION AND ECONOMY

The composition and performance of an HFA's overall portfolio is critical when evaluating the creditworthiness of a housing agency. Indeed, a portfolio composed of virtually all mortgage-backed securities guaranteed by a third party, such as GNMA or FNMA, has virtually no risk when compared to a portfolio composed mostly of single family whole loans or uninsured, unsubsidized multi-family loans. This is due to the fact that with third party guarantees, any and all loan losses are covered by the mortgage-backed securities guarantor.

In addition, a portfolio's level of overcollateralization, insurance provisions, and the percentage of loans that are fixed rate versus variable rate is generally indicative of the program's ability to withstand periods of high delinquencies and foreclosures. Moreover, because portfolio performance is driven in large part by the state economy, and in particular by the state's housing markets, Moody's takes the state's overall economic picture into account when assigning HFA Issuer Ratings.

Given the current vigorous economy found in much of the nation, very strong housing markets can be found in most states. Indeed, robust housing trends have been the norm now for a few years and have resulted in relatively low delinquency rates on both single family and mutli-family properties.

Favorable loan performance and composition usually enhance a program's financial performance, particularly for those programs that finance mostly uninsured multi-family loans or single family whole loans. Moody's looks for strong performance and composition within all of an agency's bond programs for two important reasons: first, positive financial results add to a housing agency's overall net asset position, which increases the strength of its full faith and credit pledge. Second, strong financial performance indicates that a program is not likely to become a drain on the agency's net assets in the foreseeable future, and therefore helps to maintain the integrity of the combined fund balance and the HFA's overall financial position.

Although many HFA programs are legally structured as limited obligations, rather than general obligations, it is likely that many HFAs would act decisively for the benefit of bondholders in the event of a critical weakening of one of its programs. A continuation of strong overall performance significantly reduces the likelihood that any of the programs would need a cash infusion from an agency's available resources.

Examples of strong (Aa category) portfolio composition and performance include:

- a high percentage of single family debt secured by mortgage-backed securities - in excess of 25% - and/or FHA-insured or VA guaranteed loans or strong private mortgage insurance with sufficient secondary coverage, e.g. pool insurance, overcollateralization, or letter of credit;
- delinquency and foreclosure statistics on single family whole loans below state and national norms;
- a asset-to-debt ratio of more than 1.02 on all non-MBS programs;
- highly rated mortgage insurance providers;
- a high percentage of multi-family debt - in excess of 50% - secured by mortgage-backed securities and/or FHA insured loans;
- occupancy statistics at, or close to, 100% for multi-family projects;

- Section 8 subsidized properties with co-terminous loan maturity and HAP expiration dates;
- Section 8 subsidized properties with debt service coverage levels above 1.20x; and
- Section 8 properties with rent levels below rents for comparable properties.

GENERAL UNDERWRITING CRITERIA

HFA underwriting criteria, particularly in multi-family housing, have become a critical credit factor in evaluating an HFA's Issuer Rating.

Historically, liberal single family underwriting has been compensated for by overcollateralization and/or and increased level of mortgage insurance. On the multi-family side, virtually all bond transactions have been either backed by FHA-insured loans or properties receiving Section 8 subsidies, thereby minimizing concerns over loan defaults or other serious problems.

With the increased usage of HUD's Risk Sharing Program for Affordable Multifamily Project Loans and with more and more HFAs financing uninsured, unsubsidized multi-family housing - including assisted living facilities, the possibility of large monetary losses to an HFA is greatly increased.

Strong management and prudent underwriting of these loans should produce high quality loans, thereby avoiding most potential problems. While Moody's recognizes the need to create affordable housing to as many households as possible, the presence of appropriately conservative underwriting remains a key factor when evaluating an HFA.

Examples of strong (Aa category) underwriting for multi-family project loans include:

- a comprehensive, written underwriting policy;
- an approval process which requires input by senior agency management as well as board approval;
- a first lien mortgage on the property;
- a fixed rate and fully amortizing loan of no more than 40 years for certain multi-family loans;
- loan to value ratios of no greater than 80%;
- debt service coverage ratios of greater than 1.20x for Section 8 subsidized properties and 1.40x for unsubsidized and uninsured projects;
- satisfactory feasibility, MAI appraisal, and Phase I environmental studies undertaken;
- appropriate level of project reserves for renewal and replacement;
- a formal policy and practice of performing physical inspections of projects during construction and at least annually after rent-up; and
- a formal policy and practice of monitoring properties regarding financial position and occupancy statistics

Conclusion

While housing finance agencies are now generally stronger financially and administratively than they have ever been, they are also faced with their greatest challenges in creating affordable housing. As a result, many more HFAs are now using Moody's Issuer Ratings to enter into creative financings to enable them to deliver much needed housing. Moody's also expects many more state and local housing agencies to apply for Issuer Ratings, and not-for-profits and public housing authorities (PHAs) to apply for MQ ratings as PHAs start to move toward greater entrepreneurialism, particularly in the area of project financing.

The ability of the 30 rated HFAs to maintain favorable Issuer Ratings will depend on their ability to successfully balance their strengths and resources with the political and economic challenges they are currently facing and will continue to face in the future.

To order reprints of this report (100 copies minimum), please call 800.811.6980 toll free in the USA. Outside the US, please call 1.212.553.1658.

Report Number: 66559

Moody's Investors Service
Global Credit Research

May 1999

Special Comment

Contact	Phone
New York	
Wendy W. Berry	1.212.553.4104
Florence Zeman	1.212.553.4836
Dennis Farrell	1.212.553.7780
Financial , Securities, & Insurance Group	
Stanislas Rouyer	1.212.553.1653
Jay Siegel	
John Kriz	

Moody's Approach To Evaluating State-Sponsored Mortgage Insurers

Summary Opinion

- Seven states currently sponsor nine mortgage insurance funds. Moody's ratings on these entities range from A2 up to Moody's highest rating of Aaa, with some funds unrated.
- Two of the nine state sponsored mortgage insurance funds have recently ceased writing new business or have announced intentions to cease writing new business in the near future. These decisions were based primarily on higher than anticipated losses.
- The key components to Moody's approach in assessing the creditworthiness of state mortgage insurance funds include:
  1) Capital Adequacy
  2) Size and Quality of Insured Portfolio
  3) Liquidity
  4) Profitability
  5) Loss History
  6) Management and Governance
- Moody's predicts credit stability for the near term for those state sponsored funds with ongoing businesses, particularly in the leveraging of insurance reserves as well as the performance of individual single family and multi-family loan portfolios. A significant downturn in any of the respective mortgage insurer's state economies, however, could result in increasing claims which could ultimately weaken the claims-paying ability of the insurer.

continued on page 3

Author

Wendy Berry

Sr. Production Associate

Garnetta Burton-Santiago

© Copyright 1999 by Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007. All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS COPYRIGHTED IN THE NAME OF MOODY'S INVESTORS SERVICE, INC. ("MOODY'S"), AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,000 to $1,500,000. PRINTED IN U.S.A.

Introduction

States and their housing finance agencies (HFAs) are continually seeking innovative ways to provide affordable single and multi-family housing. One such way is for the state or its HFA to operate a mortgage insurance fund. Currently, seven states sponsor nine mortgage insurance funds. Ratings on these legally separate state-sponsored mortgage insurance funds range from A2 up to Moody's highest rating of Aaa, with some funds unrated. Below is a brief summary of these funds and their ratings:

State Fund	Rating	Year Created	Net Risk In Force {000}	Net Risk To Capital Ratio
California Housing Loan Insurance Fund	Aa3	1977	345	8.4:1
Florida Affordable Housing Guarantee Fund	NR	1992	324	4.95:1
Maryland Housing Fund – Multi-family *	NR	1971	354	8.7:1
Maryland Housing Fund – Single Family*	NR	1971	418	11.7:1
Massachusetts Mortgage Insurance Fund	A2	1988	134	2.1:1
State of New York Mortgage Agency – Pool **	Aaa	1989	247	3.5:1
State of New York Mortgage Agency – Project **	Aa1	1978	1,860	3.97:1
Pennsylvania Housing Insurance Fund	NR	1990	107	2.1:1
Vermont Home Mortgage Guarantee Board***	Aa2 (State G.O.)	1973	116	30.1:1

**Maryland Housing Fund is no longer insuring new multi-family or single family primary business.*
*** Reflects SONYMA's recent changes to the structure of its Mortgage Insurance Fund.*
****Vermont Home Mortgage Guarantee Board has announced its serious consideration to cease writing new business in the near future and sell its current portfolio to a private entity.*

Most of these funds are administered within the respective state housing finance agency and most underwrite insurance loans exclusively for those loans purchased under their single family bond programs. It should be noted that these funds should not be confused with state HFA's that may self-insure mortgage loans by simply setting aside monies within its General Fund or within a bond indenture, i.e. formal mortgage insurance funds are legally distinct entities with dedicated reserves which are separate and apart from general HFA or specific indenture funds.

As represented in Chart #1, while all seven mortgage insurers have underwritten single family primary insurance business, three of the funds – the Florida Affordable Housing Guarantee Fund, the Maryland Housing Fund, and the SONYMA Pool Insurance Account – also underwrite single family pool insurance. In addition, three of the funds provide primary insurance on multi-family loans, and one – SONYMA's Project Pool Insurance Account – has provided primary mortgage insurance on various types of project loans including health care facilities, retail establishments, and office buildings, although it is currently concentrating its insurance activities almost exclusively on multi-family housing.

Chart 1

What Types of Loans Do State Mortgage Funds Insure?

Fund	Loan Types
California Housing Loan Insurance Fund	Single Family Primary
Florida Affordable Housing Guarantee Fund	Single Family Primary Single Family Pool Multi-Family Primary
Maryland Housing Fund	Single Family Primary Single Family Pool Multi-Family Primary
Massachusetts Mortgage Insurance Fund	Single Family Primary
New York State Mortgage Insurance Fund	Single Family Primary Single Family Pool Multi-Family Primary Project Finance Primary
Pennsylvania Housing Insurance Fund	Single Family Primary
Vermont Home Mortgage Guarantee Board	Single Family Primary Consumer Loans

Moody's Rating Approach To State Mortgage Insurance Funds

With only a handful in existence, Moody's rating approach for state mortgage insurance funds recognizes that each is a unique entity operating within the mortgage insurance industry. While similar to private mortgage insurers in some fundamental business respects, state mortgage insurers are different in that they are generally exempt from state insurance regulations. As such, Moody's believes public insurers are more insulated from current market changes that include the trend toward securitization.

While state mortgage insurance funds cannot compete amongst themselves, as all of them are limited to insuring loans secured by properties located in their home states, they do compete to a certain degree with private mortgage insurers on single family primary and pool insurance business.

Once considered the "insurer of last resort", when state funds could only insure a loan after the private mortgage insurers had declined to issue an insurance commitment, today competition often exists between state and private mortgage insurers in the affordable housing market. State mortgage insurers recognize that in order to have a balanced book of business in terms of quality, seasoning, and loan to value ratios, higher quality loans have to be insured as well.

Given the uniqueness of state mortgage insurers, Moody's analytical framework is a blended approach incorporating analytics from the private mortgage insurance sector and the public finance housing sector. Many factors can affect a mortgage insurer's business including regional trends in home prices, housing starts, interest rates, household formation rates, immigration, mortgage origination trends, and unemployment levels. When assessing the claims paying ability of state mortgage insurance entities, Moody's considers a number of quantitative and qualitative aspects of the insurer's business, with particular emphasis on the following areas:

- Capital Adequacy
- Size and Quality of Insured Portfolio
- Liquidity
- Profitability
- Loss History
- Management and Governance

Moody's Financial Strength Ratings are opinions of the ability of insurance entities to punctually repay policyholder claims and obligations.

What is Mortgage Insurance?

The role of primary mortgage insurance is to provide mortgage lenders with an added layer of credit protection should the property owner/borrower default on his or her mortgage loan. Most mortgage lenders require borrowers to make at least a 20% down payment on a house purchase, with the balance of the purchase price financed by the mortgage loan. This scenario results in an 80% loan-to-value ratio (LTV). Because this down payment represents the equity the lender has protecting its loan should a default occur, LTVs mortgage loans are considered riskier loans.

Many would-be homeowners, however, cannot come up with such a 20% down payment. Most lenders will agree, however, to lend money to borrowers with less than 20% equity, but usually only if mortgage insurance is purchased. The mortgage insurance effectively provides the lender with the " missing" borrower equity in order to bring the effective LTV down to 80% – or even lower for very high (e.g. 95%) LTV loans. For example, a lender may require that a borrower receiving a loan with a LTV of 95% purchase primary mortgage insurance covering 25% of losses. Should the borrower default, the lender would look to the mortgage insurer to cover losses on the property in addition to other related expenses that MIs are responsible for paying including; unpaid interest accumulated between the default and the foreclosure, legal fees, broker fees, physical maintenance of the property, and closing costs.

When a claim is made, the MI generally has the choice of paying the actual amount of the claim and taking title to the property (and mitigate its loss by selling the property), or paying the maximum claim amount payable under the policy (in this case, 25% of the loan), and granting title to the property to the lender. The avenue that is chosen by the MI is a function of the relative costs and benefits; managing and marketing foreclosed properties is typically expensive and factor heavily in the decision.

Pool mortgage insurance is insurance that covers credit losses in a pool of mortgage loans – over and above any primary mortgage insurance that may exist on individual loans. Pool policies are common credit enhancements on single family revenue bonds issued by state and local housing finance agencies. For example, a pool of mortgage loans with a principal balance of $50 million may have a pool policy that covers losses up to $3 million. Thus, if the aggregate loss on the pool of loans is $8 million, the pool policy would be obligated to pay $3 million – its maximum exposure. Pool insurance covers all losses on individual mortgage loans in the pool; there is no individual mortgage loss limit as in the case with primary insurance. Pool policies are typically depleted under high default scenarios.

CAPITAL ADEQUACY

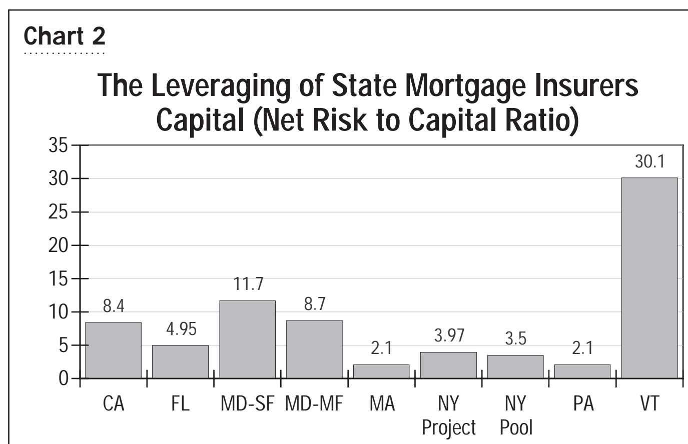
Capital adequacy is best measured by relating the insurer's overall loss potential to its equity base and any third-party support such as reinsurance or state back up. As represented in Chart #2, the net risk to capital ratio – which is a mortgage insurance fund's liability less any reinsurance it may have, divided by its capital or reserves – varies from a high of more than 30:1 (Vermont Home Mortgage Guarantee Board) to an extraordinarily low of 2:1 (Massachusetts Housing Loan Loss Reserve Fund and the Pennsylvania Housing Insurance Fund).

To clarify, if an insurer has a risk to capital ratio of 2:1 it means for every two dollars of risk the fund has, it has one dollar to cover any loss on its insured loans. Therefore, assuming the risks are equal, the lower the first number in the ratio, the stronger the insurance fund is.

In comparison, the overall state mortgage insurance industry's risk to capital numbers compare quite favorably to the typical ratios we see with the private mortgage insurers that can be as high as 25:1 but typically fall in the 15:1 to 20:1 range. This significant risk to capital ratio differential between public and private mortgage insurers (MIs) is due to a number of factors, including the somewhat riskier nature of the pool of loans that public MIs insure given that their portfolios are often composed of loans underwritten with more flexible criteria and are secured by properties with a high geographic concentration, i.e. all within one state. Given their somewhat riskier profile, Moody's looks for, among other factors, a net risk to capital ratio of 10:1 or below for investment grade ratings on state-sponsored single family mortgage insurance funds. For entities which primarily insure multi-family loans, Moody's believes a stronger reserve ratio is necessary for an investment grade rating given the added risks of multi-family housing.

LIQUIDITY

Liquidity is not a major risk for most private or state sponsored mortgage insurers because losses do not tend from emerge in huge, single events (as is true with property and casualty insurance, with losses caused by earthquakes or hurricanes). Rather, losses – even severe losses – emerge over several years. Furthermore, the insurers tend to have highly rated and liquid investments.

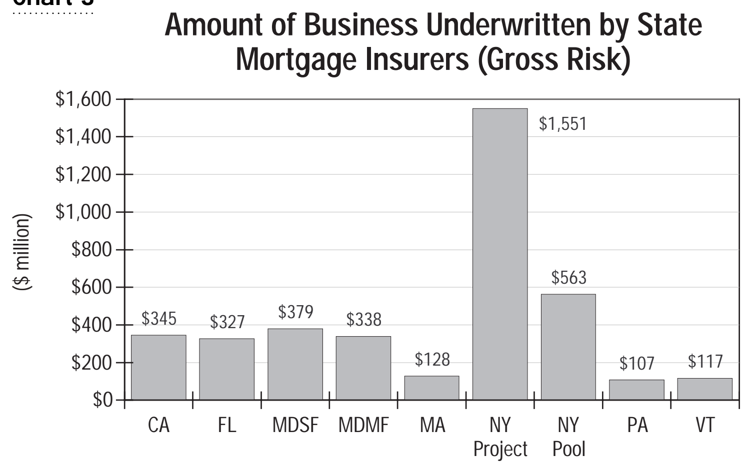


Indeed, the investment portfolios of state-sponsored insurance funds tend to be very conservative with short-term U.S.Treasuries the preferred choice of most funds. As a result, liquidity or marketability of these investments is very strong. This fact is significant given the need to have sufficient funds on hand at all times to make claims payments. The fact that most state-sponsored funds have portfolios composed exclusively of short-term Treasuries contrasts with those of private mortgage insurers which rely heavily on tax-exempt bonds and to a lesser degree on preferred stock. Moody's does not expect any material changes to the investment policies of these state sponsored mortgage insurance funds over the near to mid term.

PROFITABILITY

As with any ongoing business activity, profitability is an important financial factor. Profitability is measured by total operating income including premium income, interest income, and any other insurance fees, net of operating expenses and claims paid. Other sources of ongoing and predictable income such as state appropriations or a specific dedicated tax would be considered non-operating income. Moody's expects highly rated state-sponsored insurance funds to have strong operating profitability, i.e. upwards of 25%.

SIZE OF INSURED PORTFOLIO



State mortgage insurance funds have spent the last 20 years very successfully enabling the production of more affordable housing; in effect insuring many loans that private mortgage insurance companies would not insure or could not insure based on state insurance regulations and/or secondary market guidelines. Today, on a combined basis, these nine funds have over $3.5 billion of gross risk in force translating into close to $8 billion of mortgage loan principal because in most cases, these funds do not insure the full amount of the loan.

On an individual basis, however, these funds vary greatly in size. As indicated in Chart #3, New York's two mortgage insurance funds – the Single Family Pool Insurance Account and the Project Pool Insurance Account make up almost half of all state mortgage insurance total risk in force at more than $2 billion. Most of SONYMA 's Mortgage Insurance Fund risk is associated with multi-family loans, hospital, and nursing home loans. There are two reasons why New York's Mortgage Insurance Fund (MIF) dwarfs all of the others. One, the MIF has been in existence since 1978. More importantly, it has had a dedicated source of revenue from the state's mortgage recording tax for all of those 20 years. This outside source of income has allowed the fund to insure a tremendous amount of business over the last two decades.

In contrast, Pennsylvania Housing Insurance Fund has the smallest amount of gross risk in force at $107 million. While the relatively new Florida Affordable Housing Guarantee Fund's $324 million current book of business represents the median gross risk in force, it will likely continue to expand at a rapid rate given the Fund's aggressive growth rate over the past few years.

While mortgage insurance funds have various amounts of risk in force, Moody's believes the larger the pool of insured loans and the larger the amount of risk in force, the more predictable the portfolio is likely to be in terms of default rates and expected losses. For an investment grade rating, among other credit factors, Moody's looks for a book of business large enough to make such assumptions.

QUALITY OF INSURED PORTFOLIO

Moody's views the overall quality of state-sponsored mortgage insurance portfolios as generally favorable based on solid underwriting standards, the types of loans insured, the average loan size, geographic dispersion within the respective states, loan seasoning, and generally strong economic conditions, particularly as they pertain to real estate values.

Key credit risk characteristics of an entity's portfolio of insured mortgage loans include:

- *Overall risk exposure:* This is the amount of mortgage principal at risk, and policy limits outstanding.
- *Mortgage loan type*: For example, whether the mortgage is written with an adjustable-rate, a fixed-rate, or some variation, each of which may have a higher or lower risk of delinquency or default.
- *Loan-to-value ratio (LTV)*: This ratio can go as high as 100+ of the value of each property insured, with risks rising exponentially with LTV.
- *Homeowner equity*: Default incidence and severity tend to fall as home prices rise in value; this is due to the borrowers' "economic" equity growth.
- *Cost of dwelling:* More expensive houses tend to have greater price volatility and are harder to sell.
- *Quality of mortgage documentation:* So-called "limited documentation" mortgages often are riskier than loans that are fully documented.

- *Seasoning:* Mortgage loans that default tend to do so three to seven years after origination with job loss, death and divorce being the preponderant reasons, exacerbated by weak real estate markets that do not give a troubled borrower a way out.
- *Regional concentrations:* Risks are highest in states/regions where there are one or several of the following factors: recession, unemployment, overbuilding, and/or declining property values. Diversified portfolios mitigate an insurer's risk, but severe regional and state downturns can result in significant losses. To the extent that states are economically diverse – and state mortgage insurer portfolios are geographically diverse within their states – this internal diversification mitigates the fact that state-sponsored MIs are limited to operating and insuring within their own states.

LOSS HISTORY

The importance of strong underwriting for state mortgage insurers is critical as losses can quickly erode premium and interest earnings – the primary revenue producers for these funds. Despite the fact that many of the loans insured under these funds are considered relatively risky, the historical loss rates, particularly for most single family and multi-family portfolios have been surprisingly low.

For example, despite the dominance of multi-family housing and health care facilities, as of 10/31/98, SONYMA's Project Pool Insurance Account had only paid out approximately 1.5% of its current risk in force over its 20 year existence.

There have been funds, however, that have experienced higher than expected losses. As a direct result, two state sponsored insurance funds have decided to withdraw from the mortgage insurance business.

The first, the Maryland Housing Fund (MHF), ceased underwriting single family insurance (except for pool insurance for certain single family loans) as well as multi-family insurance in the spring of 1997 in response to concerns regarding its portfolio of multi-family loans. Claims experience on the multi-family portfolio had increased significantly and the expectation was that MHF would continue to experience increases in its allowances for future insurance losses. The termination of new insurance activity enables MHF to focus on asset management and devote its staff and financial resources to its existing risk.

The Vermont Home Mortgage Guarantee Board (VHMGB) is the second fund to announce its intention to exit the mortgage insurance business. As a result of the weak financial outlook of the VHMGB and the belief that Vermont residents could find comparable mortgage insurance from other providers, a bill was introduced in the State legislature to utilize a portion of a current State surplus to capitalize the sale of the Board's liabilities and close down the Board and its insurance activities.

To date, the Board has solicited proposals from private mortgage insurers to acquire its book of business. Legislation is also pending to repeal the statute creating the Board, upon closing of the sale of the assets and liabilities of the Board and certification by the Board of the Vermont Home Mortgage Guarantee Board to the Secretary of Administration that all outstanding liabilities and responsibilities of the Vermont Home Mortgage Guarantee Board have been satisfied, but in no event later than December 31, 1999.

Over the near to mid-term, Moody's does not expect other state sponsored funds to exit the business as the mortgage insurance funds that remain are very well capitalized relative to their risk in force. As a result, these relatively strong funds are profitable and provide a necessary component to the creation and financing of affordable housing. Indeed, rather than fewer state sponsored mortgage insurers, Moody's expects that one or two new states may enter the mortgage insurance business, with particular focus on multi-family insurance.

REINSURANCE

Most state mortgage insurers do not extensively utilize reinsurance, whereby the primary insurer cedes its risk to another insurer, i.e. the reinsurer, in exchange for a portion of the premium. Insurers use reinsurance for a number of reasons, but mainly to increase their capacity to underwrite new business. While reinsurance can be a useful tool from a risk transfer viewpoint, the risk is ultimately the primary mortgage insurer should the reinsurer fail to pay a claim. In addition, dependency on reinsurance is typically a business weakness. When analyzing a state insurer's use of reinsurance, Moody's examines its rating of the reinsurer, the business reasons for the use of the reinsurance, and the character of the risks being transferred.

MANAGEMENT AND GOVERNANCE

Most state mortgage insurers are managed by the same generally sophisticated management team that directs the HFA's very successful single family and multi-family programs. In large part because of the success of HFA single family programs, private mortgage insurance companies and their regulators have stretched certain underwriting criteria to conform with many of the state mortgage insurance funds. For example, up until a few four years ago private insurers could only insure loans up to a 95% loan to value ratio. Now they are permitted to go up to a 97% LTV. This increase was directly related to the success, i.e., the low delinquency rates experienced by the state mortgage insurers for these higher LTV loans.

CONCLUSION

As evidenced by the data shown on the following pages, state-sponsored mortgage insurance funds are unique entities. Indeed, these funds exhibit a tremendous range in many of the financial ratios which Moody's analyzes when assessing the financial strength of state mortgage insurance funds. As a result, credit quality is substantially diverse. Notwithstanding such diversity, Moody's sees relative stability in the credit quality of these insurers in the near to mid-term. A significant downturn in any of the respective state's economies, however, could result in higher foreclosure rates and thus increasing claims which in turn could ultimately weaken the claims-paying ability of the insurer.

Index: Summary of State Sponsored Mortgage Insurance Funds

California Housing Loan Insurance Fund

Financial Strength Rating – Aa3 (CHFA Issuer Rating)

Analyst:	**Michael P. Culnan** **(212) 553-4554**
Key Facts:	
Guarantee Fund Contact:	**John Schienle** **(916-322-8796)**
Year Established:	**1977**
Governing Document:	**Board Resolution**
Types of Insurance Underwritten:	**Single Family Primary**
Gross Risk in Force (12/31/97):	**$334.7 million**
Net Risk in Force (12/31/97):	**$160.5 million**
Reserve Amount (12/31/97):	**$19.2 million**
Gross Risk to Capital (12/31/97):	**17.4:1**
Net Risk to Capital Ratio (12/31/97):	**8.4:1**
Number of Insured Loans (12/31/97):	**6,726**
Outstanding Loan Principal Balance (12/31/97):	**$712 million**

Background

The California Housing Loan Insurance Fund was established in 1977 primarily to provide single family mortgage insurance for loans which did not meet the traditional FHA insurance guidelines. While its enabling statute allows for a broad range of insurance products, including multifamily loans and bonds, CaHLIF does not underwrite in these areas and currently has no intentions to enter those markets.

Until 1988, CaHLIF's primary activity was to provide secondary insurance to loans financed by the California Housing Finance Agency (CHFA). In 1993, its legislation was substantially overhauled, which among other actions, changed CaHLIF's management oversight. Until 1993, the CaHLIF director reported directly to an insurance committee of CHFA. After that time, CaHLIF staff was allowed to expand with the insurance director reporting to the Executive Director of CHFA. Historically, CaHLIF has been an insurer primarily for CHFA single family loans which are not FHA insured or VA guaranteed.

Book of Business

Currently, CaHLIF has total risk in force of $335 million covering 6,750 loans with $712 million of outstanding principal. In recent years CaHLIF has moved beyond insuring only CHFA loans and now works in conjunction with lenders for non-CHFA loans and with local redevelopment agencies (RDAs). As of March 31, 1998, 87% of risk in force was for CHFA loans. Current five-year plans may push this percentage down over the next few years and will likely stabilize thereafter.

Primary financial strength of CaHLIF is derived by a sizable pledge from CHFA along with CaHLIF capital. As of June 30, 1998, CHFA had $64.5 million reserved in the Insurance Security Reserve Fund pursuant to Agency board resolution. While these pledged funds comprise the predominant share of CaHLIF's fiscal strength, CaHLIF would likely need to deplete its own funds before utilizing CHFA pledged reserves. CaHLIF's own reserves totaled approximately $19.2 million as of December 31, 1997 providing the first line of financial strength. Of its total fund equity, $5 million represents continuously appropriated start-up funds from the State of California. The pledge underlying CaHLIF's support is pursuant to CHFA board resolution and has been in place since 1987.

Rating Rationale

The California Housing Loan Insurance Fund (CaHLIF) has a financial strength rating of Aa3. This rating is primarily derived from the sound general obligation support ofthe California Housing Finance Agency (rated Aa3) to fund CaHLIF shortfalls. CHFA's Aa3 Issuer Rating is based upon its sound General and combined fund balances which provide a stable source of credit security to meet a broad array of obligations. Active CHFA management enhances this credit position by carefully balancing risks with available resources.

Rating Outlook

The California Housing Loan Insurance Fund (CaHLIF) Aa3 rating is stable based directly on the stable Aa3 Issuer Rating of the California Housing Finance Agency (CHFA). CHFA has a sound blend of strong and liquid bond program and general fund balances to meet any reasonably stressful contingencies over the foreseeable future. While risks are embedded in some portions of the loan portfolio, Moody's believes that sound management planning with overall wealth levels provides for ongoing financial strength.

Florida Affordable Housing Guarantee Fund

Financial Strength Rating – NR

Analyst:	**Kelly O'Brien Wimmer** **(212) 553-4456**
Key Facts:	
Fund Contact:	**Thomas Tinsley** **Chief Financial Officer** **(850) 488-4197**
Year Established:	**1992**
Governing Document:	**Florida Statute**
Types of Insurance Underwritten:	**Multi-Family Primary** **Single Family Pool** **Single Family Primary**
Gross Risk in Force (8/31/98):	**$326.6 million**
Net Risk in Force (8/31/98):	**$326.6 million**
Reserve Amount (8/31/98):	**$66 million**
Risk to Capital Ratio (8/31/98):	**4.95:1**
Number of Insured Loans (8/31/98):	**37 multi-family; 2,989 single family**
Outstanding Loan Principal (8/31/98):	**$628 million**

Background

The Florida Affordable Housing Guarantee Program was created by the Florida Legislature as part of the William E. Sadowski Affordable Housing Act of 1992 for the purposes of: stimulating creative private-sector lending activities to increase the supply and lower the cost of financing or refinancing eligible housing; creating security mechanisms to allow lenders to sell affordable housing loans in the secondary market; and encouraging affordable housing lending activities that would not have taken place or that serve persons who would not have been serviced by for the creation of this program.

The Guarantee Program encourages affordable housing lending activities through the issuance of loan guarantees on multi-family and single family loans throughout the State of Florida. The Fund is managed by the Florida Housing Finance Corporation (FL HFC).

Book of Business

As of August 1998, the Guarantee Fund had total risk in force of $326.6 million covering over 3,000 single and multi-family loans with approximately $628 million of outstanding principal. Over 95% of the dollar amount of risk in force consists of multi-family construction and permanent loan guarantees. Generally, the Fund covers 99%-100% of a construction loan and 50% of a loan once it moves into the permanent phase. For 30 of the 37 multi-family loans, FL HFC is the insured lender with the remaining loans financed by various Florida county housing finance authorities. All insured single family loans are in FL HFC's bond programs.

The reserve corpus supporting the Guarantee Fund was derived from $75 million in capitalization bonds issued in 1993 and secured by a letter of credit. Bond proceeds were divided into the Fund's corpus and a Bond Debt Service Reserve Fund, the latter of which is pledged as security for the capitalization bonds. The reserve corpus and Bond Debt Service Reserve Fund are invested in qualified investments and serve to make debt payments on the capitalization bonds. As of August 1998, the Guarantee Fund had approximately $66 million in its reserve corpus to leverage against its insured portfolio. The Corporation recently passed a resolution which allows FL HFC to issue up to a total of $200 million in capitalization bonds, significantly increasing the potential size of the Fund; however, at this time, management has no plans of issuing any additional bonds for that purpose.

The Guarantee Fund receives state support in the form of an allocation of Documentary Stamp taxes which may be used to pay claims on defaulted loans under certain circumstances. After getting off the ground in the mid-1990s, the Guarantee Fund is now financially self-supporting.

Maryland Housing Fund

Financial Strength Rating – NR

Analyst:	**Portia Lee** **(212) 553-4029**
Key Facts:	
Fund Contact:	**Patti Konrad** **(410) 514-7326**
Year Established:	**1971**
Governing Document:	**Maryland Statute**
Types of Insurance Underwritten:	**Single Family Primary** **Single Family Pool** **Multi-family Primary**
Single Family Primary	
Gross Risk in Force (6/30/98):	**$218.5 million**
Net Risk in Force (6/30/98):	**$218.5 million**
Reserve Amount (6/30/98): **(includes both primary and pool)**	**$32 million**
Risk to Capital Ratio (6/30/98): **(includes both primary and pool)**	**11.7:1**
Number of Insured Loans (6/30/98):	**14,920**
Outstanding Loan Principal (6/30/98):	**$873.9 million**
Single Family Pool	
Gross Risk in Force (6/30/98):	**$160.4 million**
Net Risk in Force (6/30/98):	**$160.4 million**
Reserve Amount (6/30/98): **(includes both primary and pool)**	**$32 million**
Risk to Capital Ratio (6/30/98): **(includes both primary and pool)**	**11.7:1**
Number of Insured Loans (6/30/98):	**21,996**
Outstanding Loan Principal Balance (6/30/98):	**$1.3 billion**
Multi-family Primary	
Gross Risk in Force (6/30/98):	**$337.5 million**
Net Risk in Force (6/30/98):	**$337.5 million**
Reserve Amount (6/30/98):	**$38.7 million**
Risk to Capital Ratio (6/30/98):	**8.7:1**
Number of Insured Loans (6/30/98):	**291 (includes 51 single family loans and 125 group home loans)**
Outstanding Loan Principal (6/30/98):	**$337.5 million (includes $1.4 million in single family loans and $11.9 million in group home loans)**
Risk to Capital Ratio:	**6.8:1**

Background

The Maryland Housing Fund (MHF) was established in 1971 to encourage the investment in and the production of affordable single and multi-family housing and is the oldest state sponsored mortgage insurance fund in the nation. Unlike all other state mortgage insurance funds, however, the MHF is not managed by the state housing finance agency; rather, it is managed by the Division of Housing Credit Assurance, a sister agency of the Maryland Community Development Administration (CDA) which is the state housing finance agency. Both the MHF and CDA are divisions within the Maryland Department of Housing and Community Development – the parent housing agency for the State of Maryland.

The MHF is composed of five separate insurance reserve funds: the Multi-family Fund; the Single Family Regular Reserve Fund, the Revitalization Pilot Reserve Fund; the Home and Energy Loan Reserve Fund; and the Unallocated Reserve Fund. The multifamily and single family reserves are the active insurance programs. Once monies are deposited into a specific programmatic reserve fund, they may only be used for that purpose and may not be transferred for use by a different programmatic reserve fund. However, monies may be transferred from the Unallocated Reserve to any of the other reserves.

Book of Business

The Single Family Reserve Fund provides primary mortgage insurance and pool insurance for single family housing financed through CDA programs and the City of Baltimore. As of June 30, 1998, the Single Family Reserve had risk in force of $218.5 million on almost 16,000 loans with an outstanding loan principal of over $873 million. This risk in force was supported by $32 million of reserves. The Single Family Reserve also writes pool insurance on loans which CDA finances and is supported by the same $32 million reserve. Pool insurance is provided up to 10% of the initial principal amount of any pool of loans. As of June 30, 1998, the Single Family Reserve had risk in force representing a maximum liability of $160 million comprising almost 22,000 loans with an aggregate outstanding principal balance of $1.3 billion.

The Multifamily Reserve fund provides insurance for multifamily housing projects financed through: CDA, the Housing Opportunities Commission of Montgomery County, the Housing Authority for Prince George's County and Crestar Bank FSB. As of June 30, 1998, the Multifamily Reserve had risk in force of $337 million on 291 loans providing 100% insurance coverage. This risk in force is supported by $49.4 million in reserves. (This $49.4 million does not include an offset for negative retained earnings.)

Maryland Housing Fund (continued)

MHF's reserves were funded through five issues of State general obligation bonds aggregating $39.3 million and two State appropriations totaling $7.5 million. All fee and premium income flows to an Operating Account. Investment income from all the reserve funds (with the exception of a certain portion that earns interest for the State) flows to the Unallocated Reserve. Income generated from a particular activity is not necessarily allocated to that activity's reserve. Generally, if a claim is to be paid, it would first be paid from monies in the operating account. If sufficient monies were not available in the operating account, the claim would be paid from the Unallocated Reserve. Finally, if monies were not available in the Unallocated Reserve, the claims would be paid from the specific programmatic reserve.

MHF terminated all new insurance activity (except for pool insurance for certain single family loans) in the spring of 1997 in response to concerns regarding MHF and its portfolio of multifamily loans.

Massachusetts Housing Loan Loss Reserve Fund

Financial Strength Rating – A2 (MHFA Issuer Rating)

Analyst:	**Susanne Forsyth** **(212) 553-4836**
Key Facts:	
Fund Contact:	**Paul Burbine; Finance Director, MHFA** **(617) 854-1256**
Year Established:	**1988**
Governing Documents:	**MHFA Board Resolution and Escrow Agreement**
Types of Insurance Underwritten:	**Single Family Primary**
Gross Risk in Force (6/30/98):	**$127.7 million**
Net Risk in Force (6/30/98):	**$49 million**
Reserve Amount (6/30/98):	**$23 million**
Gross Risk to Capital Ratio (6/30/98)	**5.54:1**
Net Risk to Capital Ratio (6/30/98):	**2.12:1**
Number of Insured Loans (6/30/98):	**4,383**
Outstanding Insured Loan Principal (6/30/98):	**$388 million**

Background

The Massachusetts Housing Loan Loss Reserve Fund (Fund) was established in 1988 within the Massachusetts Housing Finance Agency (MHFA) in order to provide mortgage insurance for loans purchased by MHFA under its Single Family Mortgage Revenue Bond Program (rated Aa3). As of June 30, 1998 approximately 28.3% of the Agency's Single Family Mortgage Revenue Bond Program was insured by the Fund. The Fund is structured to function as a mortgage insurance company and is governed by the requirements of an Escrow Agreement among the Agency, State Street Bank & Trust Company and the Fund Manager. Although the Fund is separate from the Agency's single family program loan origination and monitoring operations, the Agency is currently serving as fund manager for the Fund.

Book of Business

Since its inception, the Fund has insured more than 4,000 loans with a outstanding principal amount of $388 million and gross risk in force of approximately $128 million. The Agency recently entered into a reinsurance agreement for the Fund with Commonwealth Mortgage Assurance Company (CMAC-rated Aa3), providing reinsurance on approximately $287 million in loans. The Fund, which is maintained within a subaccount of the Working Capital Fund, is responsible for the first $5.7 million of claim payments on the reinsured loans. The Agency may not provide additional primary mortgage insurance from the Fund if the risk to capital ratio, excluding reinsured loans, exceeds 7:1, or if the unpaid principal balance of outstanding loans exceeds $250 million. As of June 30, 1998 the Fund's net risk to capital ratio, excluding reinsured loans, was 2.12 x 1, falling well below the maximum risk parameters.

Rating Rationale

The Massachusetts Housing Loan Loss Reserve Fund (Fund) has a financial strength rating of A2. This rating is directly derived from the sound general obligation support of the Massachusetts Housing Finance Agency, rated A2. The MHFA's Issuer Rating is based on the Agency's proven ability to manage and oversee its programs and maintain its financial resources. MHFA, with over $3.5 billion of debt outstanding and a staff of nearly 300 persons, is one of the largest and most active and innovative HFAs in the country. The Agency's financial condition is satisfactory with a combined fund balance of $217 million, or 5.98% of debt outstanding as of fiscal year end 1998. This represents steady growth since 1995 when it was equal to $177 million or 5% of debt outstanding. In addition, the Agency's General Fund balance is strong at $213 million which is equal to 5.89% of debt outstanding.

Moody's views MHFA's own financial strength and general obligation pledge on the Fund as creating satisfactory security. We believe the Fund's current 2:1 net risk to capital ratio, prudent risk parameters, and the continued utilization of reinsurance agreements provide satisfactory asset protection and minimizes exposure to the Fund. The Fund utilizes substantially the same underwriting and terms of coverage as most nationally recognized private mortgage insurance companies. The Fund had a balance of approximately $23 million as of June 30, 1998 and continues to receive all fees, charges, and premiums collected from borrowers.

Rating Outlook

The outlook on the Massachusetts Housing Loan Loss Reserve Fund is stable based directly on the stable A1 Issuer Rating of the Massachusetts Housing Finance Agency. Indeed, Moody's expects that the Agency will continue to closely monitor the Massachusetts Housing Loan Loss Reserve Fund's risk parameters and utilize reinsurance to offset the Fund's exposure.

Given that much of the Fund's security is derived from the solid A2 Issuer Rating of the Agency, Moody's believes that most risks to the Fund would come from those risks which the Agency faces on a whole. While MHFA does not put its general obligation pledge on most of its bond programs, the Agency has closely surveilled and supported their programs regardless of performance. We expect that the MHFA will continue to fully support its bond programs and the associated loss reserves, including the Fund's provisions for any Single Family loan loss. Although the outlook for the MHFA Issuer Rating is stable, Moody's expects that the poor performance of certain multi-family loan programs will significantly draw on Agency resources.

New York State Mortgage Insurance Fund

Financial Strength Ratings:	***Project Pool Account – Aa1*** ***Single Family Pool Account – Aaa***
Analyst:	**Wendy Berry** **(212) 553-4104**
Key Facts	
Fund Contact:	**James Angley; Senior Vice President & Director** **(212) 688-4000**
Year Established:	**1978**
Governing Document:	**New York State Statute – Section 2425 of the Public Authorities Law**
Types of Insurance Underwritten:	**Single Family Primary** **Single Family Pool** **Multi-family Primary** **Health Care and Special Needs** **Community Service Primary**

Project Pool Insurance Account (Insures Multi-family primary, health care, special needs, and community service loans)

Gross Risk in Force (10/31/98):	**$1.5 billion (includes commitments)**
Net Risk in Force (10/31/98):	**$1.16 billion (excludes commitments)**
Reserve Amount (10/31/98):	**$390 million**
Gross Risk to Capital Ratio (10/31/98):	**3.97:1 (includes commitments and excludes appropriations)**
Risk to Capital Ratio -Policies in Force (10/31/98):	**2.96:1 (excludes commitments and appropriations)**
Number of Insured Loans (10/31/98):	**537 (excludes commitments)**
Outstanding Loan Principal (10/31/98):	**$1.2 billion (excludes commitments)**

Single Family Pool Insurance Account (Insures Single family primary and pool loans):

Gross Risk in Force (10/31/98):	**$563 million**
Net Risk in Force (10/31/98):	**$259.5 million**
Reserve Amount (10/31/98):	**$162.8 million**
Risk to Capital Ratio (10/31/98):	**3.46:1**
Number of Insured Loans (10/31/98):	**30,678**
Outstanding Loan Principal (10/31/98):	**$2.2 billion**

Background

In 1978, the State of New York established its own mortgage insurance fund to combat redlining and encourage the rehabilitation of deteriorating neighborhoods throughout the State. Thus, the Mortgage Insurance Fund (MIF) was created and administratively placed with the State of New York Mortgage Agency (SONYMA). The original statute authorized the MIF to provide primary mortgage insurance for single family, multi-family, and commercial structures in blighted areas as well as for public purpose facilities. In 1989, SONYMA's MIF was given the power to issue pool insurance on its own single family loans and certain multi-family loans. The Accounts of the MIF are strictly controlled by New York State statute, via the Public Authorities Law.

SONYMA's MIF is divided into three separate accounts: the Special Account which is a holding account for mortgage recording tax revenue and is now unrated (up until March 1999 it was rated Aa1), the Project Pool Insurance Account which was recently activated and is rated Aa1, and the Single Family Pool Insurance Account, rated Aaa. The activation of the Project Pool Account was the result of recent changes to the Mortgage Insurance Fund. These changes included: the transfer of all single family primary insurance business from the Special Account to the Single Family Pool Insurance Account; the activation of the Project Pool Insurance Account by transferring all non-single family business insured under the Special Account to the Project Pool Insurance Account; and the inactivation of the Special Account as an insurance vehicle.

Moody's believes that these changes actually strengthen the security of holders of SONYMA project insurance policies as unlike the Special Account, the Project Pool Insurance Account is permitted to retain interest earnings and earned premiums rather than submit excess balances to New York State's General Fund. Thus, mirroring the retained earnings ability of the Single Family Pool Insurance Account.

In contrast, Moody's believes that the security of the Single Family Pool Insurance Account is slightly diminished as a result of the transfer of approximately $300 million of single primary risk. This is due to two reasons. First, Moody's loan loss model shows that during a severe economic downturn, the average the loan loss on a primary insurance claim is higher than a pool insurance claim (due to the presence in the vast majority of cases of primary insurance which gets called upon before the pool insurance). As a result, Moody's loan loss model projects higher insurance claim activity than it would have had if the Account was only underwriting pool insurance.

Secondly, the single family primary risk that was transferred from the Special Account came with the concomitant reserves but at an approximate 5:1 ratio – not quite as strong as the 2.8:1 risk to capital ratio that was in place before the transfer. Indeed, the blended gross risk-to-capital ratio as of 10/31/98 – while higher than the pre-transfer ratio – was still an extraordinarily strong 3:46:1, or 2.18:1 if you include only risk associated with loans where there is an insurance policy in force, i.e. excluding commitments to insure. Moody's, however, believes these ratios will strengthen in the near future as for the first time, earnings generated from the MIF's single family primary business, which is now the bulk of this Account's business, will be able to be retained by the Single Family Pool Insurance Account. The gross risk-to-capital ratio will also strengthen as a direct result of a significant amount of expired commitments that SONYMA plans to cancel. Despite this slight diminution in security, the Single Family Pool Insurance Account still comfortably passes our Aaa stress tests.

New York State Mortgage Insurance Fund (continued)

Books of Business

The Project Pool Insurance Account provides primary mortgage insurance for various types of loans, including multi-family housing, and health care facilities. In addition, it has the authority to write primary insurance on retail and community service project loans such as day care centers.

As of 10/31/98, the Project Pool Insurance Account had risk in force, combined with commitments to insure, representing a maximum liability of $1.5 billion on over 750 project loans) with outstanding loan principal of over $1.77 billion. This risk was supported by $391 million of reserves. These numbers translate into an extraordinarily strong gross risk to capital ratio of 3.97:1. Moreover, if commitments are netted out – as commitments often expire – the risk to capital ratio for policies in force is an extraordinarily strong 2.96:1. These ratios get even stronger if available state appropriations are factored in. Moody's, however, assumes a worst case scenario regarding these state appropriations, i.e. we assume any state appropriations available today may not be available when the Special Account needs would be the greatest. The Single Family Pool Insurance Account writes primary mortgage insurance on single family loans as well as pool insurance on first lien loans which SONYMA purchases pursuant to its single family programs. Primary insurance is typically 25-30% of the loan amount while pool insurance is generally limited to 5% – 10% of the initial principal amount of any pool of loans. As 10/31/98, the Single Family Pool Insurance Account had risk in force, combined with commitments to insure, representing a maximum liability of $563 million comprising over 25,000 loans with an aggregate outstanding principal balance of $1.4 billion. This risk in force was supported by $163 million of reserves. These numbers translate into an extraordinarily strong risk to capital ratio of 3.46:1.

MIF's combined (Project Pool Insurance Account and Single Family Pool Insurance Account) insurance liability has grown to a significant $2 billion. Many of its multi-family and special needs projects are bond-financed and are credit enhanced with SONYMA's Project Pool Insurance Account (formerly insured under the Special Account) insurance policy. In addition, many of SONYMA's single family bond transactions rely on the Single Family Pool Insurance Account. The Mortgage Insurance Fund's significant growth over the last few years has been due, in large part, to statutory provisions which dedicate much of New York State's Mortgage Recording Tax (MRT) Surcharge to the Fund which has resulted in tremendous insurance capacity.

Rating Rationale – Project Pool Insurance Account:

Moody's Aa1 financial strength rating of the State of New York Mortgage Agency (SONYMA) Mortgage Insurance Fund's Project Pool Insurance Account is based in large part on our expectation of the continuance of the Account's exceptionally strong operating history. Throughout its 20 years of operation, the Project Pool Insurance Account – and its predecessor, the Special Account – has paid minimal claims despite the Account's relatively risky profile of insured business which includes project-type loans secured by multi-family housing, healthcare facilities, and retail and community service projects. Thus, the Project Pool Insurance Account has successfully operated during virtually every housing economic scenario – with the important exception of a true real estate depression. The Aa1 rating is further supported by the Project Pool Insurance Account's very strong risk to capital ratio of 3.97:1, well below its statutorily required risk-to-capital ratio of 5:1. The strength of these reserves provides significant funds to pay claims that would likely result during a severe economic downturn.

Credit strength is also derived from the Project Pool Insurance Account's extremely high level of liquidity, strong profitability, sound legal provisions embedded in New York State law, and favorable management. Moreover, the availability of New York State's Mortgage Recording Tax revenue as well as certain New York State dry appropriations act as a backup source of security should the Project Pool Insurance Account's reserves prove to be insufficient. While this Account's business is limited to insuring mortgage loans secured by properties in only one state, Moody's believes New York's large and diverse economy should reduce the likelihood of a severe and protracted real estate market slump.

Rating Outlook – Project Pool Insurance Account

Moody's outlook for the Project Pool Insurance Account's Aa1 financial strength rating is stable due to its very high level of reserves relative to its risk in force, and the high liquidity of such reserves. In addition, SONYMA's other substantial resources, i.e. the New York State mortgage recording tax surcharge and the New York State dry appropriations, are available to pay claims. Indeed, Moody's stress tests conclude that the Project Pool Insurance Account could survive and pay claims under extremely stressful default scenarios.

Rating Rationale – Single Family Pool Insurance Account

Moody's Aaa financial strength rating of the State of New York's Mortgage Insurance Fund's Single Family Pool Insurance Account is based primarily on our expectation of a continuance of its extraordinarily strong gross risk to capital ratio of 3.46:1 – well under its stringent statutorily maximum level of 5:1. The strength of these reserve levels provides exceptional protection against claims that would likely result during a severe economic downturn. Financial strength is further derived from the Account's extremely high level of liquidity, superior legal provisions embedded in state law, the limited risk profile of its insurance business which has resulted in historically low losses, strong profitability, and favorable management. In addition, its book of business is generally of high quality with roughly half of the loans well seasoned with relatively low loan to value ratios. Moreover, while the Single Family Pool Insurance Account's business is limited to insuring mortgages secured by properties in one state, New York has a large and diverse economy, thereby reducing the likelihood of a severe and protracted real estate market slump.

Rating Outlook – Single Family Pool Insurance Account

Moody's medium term outlook for the Single Family Pool Insurance Account is stable due to its extraordinarily high level of reserves relative to its risk in force, and the extremely high liquidity of its reserves. Indeed, Moody's stress tests indicate that the Single Family Pool Insurance Account could survive and pay all claims even under extremely conservative default scenarios without any reliance on the future revenue from the mortgage recording tax surcharge or any draw down of any State dry appropriation – although it would be seriously constrained from writing any new business.

Pennsylvania Housing Insurance Fund
Financial Strength Rating – NR

Analyst:	**Portia Lee** **(212) 553-4029**
Fund Contact:	**George Bemesderfer (717) 780-1802**
Year Established:	**1990**
Governing Document:	**Pennsylvania HFA Board Resolution**
Types of Insurance Underwritten:	**Single Family Primary**
Gross Risk in Force (4/30/98):	**$107.2 million**
Net Risk in Force (4/30/98):	**$49 million**
Reserve Amount (4/30/98):	**$23 million**
Gross Risk to Capital Ratio (4/30/98):	**4.6:1**
Net Risk to Capital Ratio (4/30/98):	**2.1:1**
Number of Insured Loans (4/30/98):	**6,976**
Outstanding Loan Principal (4/30/98)	**$375.1 million**

Background

The Pennsylvania Housing Insurance Fund or Risk Retention Program was established in 1990 by the Board of Directors of the Pennsylvania Housing Finance Agency (PHFA) in order to provide alternative credit enhancement to private mortgage insurance. Currently, the risk retained by the program is on loans that are purchased by PHFA for inclusion in the pool of loans under its Single Family Mortgage Revenue Bond Program.

Book of Business

As of April 30, 1998, the Risk Retention Program insured 6,976 loans with an unpaid principal balance of $375 million with a total risk in force of $107 million. Of the total 6,976 loans in the portfolio, approximately 3,900 loans with an unpaid principal balance of over $200 million has been reinsured by CMAC. Under the terms of the reinsurance agreement, the Risk Retention Program retains and is solely liable for $7.2 million of risk on this portfolio of reinsured loans. The Risk Retention Program's total portfolio of almost 7,000 loans represents $107 million of gross risk in force (including $58 million of risk ceded to CMAC).

The Risk Retention Program provides varying levels of risk coverage: 20% coverage for loans with LTV's from 80.1% – 85%; 25% coverage for loans with LTV's from 85.1% – 90.0%; and 30% coverage for loans with LTV's from 90.1% to 95%. Approximately 19.5% of the loans under PHFA's Single Family Mortgage Revenue Program are covered by the Risk Retention Program.

The Agency's Board of Directors set aside and restricted $10 million of the Agency's funds to provide the capital reserve for the Risk Retention Program when it was originally established in 1990. In addition to the reserve fund principal, fee and investment income of approximately $13 million had been generated as of April 30, 1998.

Vertmont Home Mortgage Guarantee Board

Financial Strength Rating – Aa2 (State of Vermont Issuer Rating)

AnalystL	**Erik Bresnahan** **(212) 553-1304**
Board Contact:	**Roger Schoenbeck** **(802) 652-3436**
Year Established:	**1974**
Governing Document:	**Vermont State Statute** **Title 10. Conservation and Development**
Chapter 18. Home Mortgage Guarantee Program	
Types of Insurance Underwritten:	**Single Family Primary**
Consumer loans for Energy Conservation On Site Septic Systems	
Gross Risk in Force:	**$117.1 Million**
Net Risk in Force:	**$117.1 Million**
Number of Insured Loans:	**8,215**
Outstanding Loan Principal:	**$511.8 Million**
Risk to Capital Ratio:	**30.1:1**

Background:

The Vermont Home Mortgage Guarantee Board was created by the General Assembly of the State in 1974 as successor to the Vermont Home Mortgage Credit Agency, created in 1973. The purpose of the Board is to guarantee, within express limits, the repayment of certain loans to assist low and moderate income Vermonters obtain housing or certain consumer loans, i.e. energy conservation improvements, onsite septic tank repairs and improvements to reduce lead-based paint hazard. The Board provides primary mortgage insurance for loans originated within the Vermont Housing Finance Agency bond program as well as conventional loans and is a Freddie Mac and Fannie Mae approved mortgage insurer.

The VHMGB operates under rules promulgated by the Vermont State Legislature. The administration of the VHMGB's programs was assigned to the Vermont Housing Finance Agency (VHFA) in 1994 and the VHFA has been operating the VHMGB programs since that time. The full faith and credit of the State of Vermont is pledged to support and redeem the certificates of guarantee issued by the Board to the extent that money in the special reserve fund is insufficient to do so.

In order to assist in balancing the State budget, the State transferred a total of $2.85 million of funds from the Board's special reserve fund to the Vermont State General Fund between 1989 and 1994. These payments, along with increased losses, totaling $4 million in claims over the past seven years, and a nearly 50% decrease in new business over the past year have significantly eroded the Board's assets. The Board currently has a risk to capital ratio of 30.1:1; well above industry standards. As a result, the Board projections indicate that it would not have sufficient assets to pay expected claims absent the State's General Obligation pledge.

As a result of the weak financial outlook of the VHMGB and the belief that Vermont residents could find comparable mortgage insurance from other providers, a bill is before the State legislature to utilize a portion of a current State surplus to capitalize the sale of the Board's liabilities and close down the Board. The Board has solicited proposals from private mortgage insurers to acquire its book of business. It is anticipated the assets and liabilities of the Vermont Home Mortgage Guarantee Board will be sold to PMI Mortgage Insurance Company (rated Aa2). Legislation is also pending that would repeal the statute creating the Board upon closing of any such sale.

Book of Business:

As of June 30, 1998, the VHMGB insured 8,215 loans with outstanding principal balances totaling $511.8 million and gross risk of $117.1 million. With adjusted reserves of approximately $3.9 million, the Board's risk to capital ratio is a weak 30.1:1. Approximately 99.6% of the loan balance represents primary insurance on mortgage loans with the remaining 0.4% representing guarantees on unsecured energy improvement loans. Approximately 61% of the primary insurance book of business covers loans issued under the Vermont HFA single family bonds programs. The remaining 39% are on loans originated by commercial banks that are either held in their portfolio or were packaged into mortgage backed securities.

Rating Rationale:

The Aa2 rating of the VHMGB is derived from the State of Vermont's full faith and credit pledge. The full faith and credit of the of the State of Vermont is pledged to support and redeem the certificates of guarantee issued by the Board to the extent that money in the special reserve fund is insufficient to do so. The State Treasurer is required by statute, without prior approval, to advance such State funds as necessary to enable the Board to meet its guarantee obligations in a timely manner. The statute further requires the Treasurer to issue full faith and credit bonds of the State as needed for such purposes. Moody's Aa2 rating of the State of Vermont's general obligation bonds, with a stable outlook, reflects improved financial condition; sound reserve levels; a history of spending control to balance finances when adverse circumstances require; relatively high levels of rapidly amortizing debt, with declining trends of debt issuance; and a modestly growing economy.

Rating Outlook:

Vermont's credit outlook is stable. Although the state economy has some vulnerabilities related to its dependence on foreign exports in the manufacturing sector, other segments of the economy remain strong, and the state has a history of taking prompt budget reduction measures to address weak revenue performance in times of economic slowdown. The stable outlook reflects Moody's expectation that the balance sheet improvement produced by recent positive fiscal trends will be steadily maintained. Although debt levels are high, the state plans to curtail debt issuance.

Key to Moody's Municipal Ratings

MOODY'S RATING SYSTEM

Moody's ratings provide investors with a simple system of gradation by which the relative credit qualities of debt instruments may be noted. Definitions for each rating category appear on the reserve side.

Long-Term Ratings

For long-term obligations, there are 19 possible credit ratings, ranging from **Aaa** (highest quality) to **C** (lowest quality). Moody's typically applies numerical modifiers 1, 2, and 3 to each generic rating classification from Aa to B, but none to rating categories **Aaa, Caa, Ca,** or **C**. Bonds within the **Aa, A, Baa, Ba,** and **B** categories are therefore usually designated by the symbols **Aa1, Aa2 Aa3; A1, A2, A3; Baa1, Baa2, Baa3; Ba1, Ba2, Ba3;** and **B1, B2, B3**. The modifier 1 indicates that the issue ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a low-end ranking.

Advance refunded issues that are secured by escrowed funds held in cash, held in trust, reinvested in direct noncallable United States government obligations or noncallable obligations unconditionally guaranteed by the U.S. government are identified with a hatchmark (#) symbol, i.e., **#Aaa.**

Moody's also assigns prospective ratings [identified with a (**P**) prefix] to refunded debt. The (**P**) prefix will remain in place for refunded debt until Moody's receives and reviews final signed documents and legal opinions.

Moody's assigns conditional ratings to bonds for which the security depends upon the completion of some act or the fulfillment of some condition. These are bonds secured by: (a) earnings of projects under construction, (b) earnings of projects unseasoned in operating experience, (c) rentals that begin when facilities are completed, or (d) payments to which some other limiting condition attaches. The parenthetical rating denotes probable credit stature upon completion of construction or elimination of basis of condition, e.g., **Con**. **(Baa).**

When applied to forward delivery bonds, the (**P**) prefix indicates that the rating is provisional pending delivery of the bonds. The rating may be revised prior to delivery if changes occur in the legal documents or the underlying credit quality of the bonds.

Issues that are subject to a periodic reoffer and resale in the secondary market in a "dutch auction" are assigned a long-term rating based only on Moody's assessment of the ability and willingness of the issuer to make timely principal and interest payments. Moody's expresses no opinion as to the ability of the holder to sell the security in a secondary market "dutch auction." Such issues are identified by the insertion of the words "dutch auction" into the name of the issue.

Short-Term Ratings

There are three rating categories for short-term obligations that define an investment grade situation. These are designated Moody's Investment Grade or **MIG 1** (best quality) through **MIG 3** (adequate quality). Moody's assigns the rating **SG** to credit-supported financings that have been identified as speculative quality investments. The **SG** designation applies to short-term debt instruments and tender features that derive full credit support from a financial institution whose short-term debt is rated **NP** (Not Prime) by one of Moody's financial institutions ratings groups.

Similar to our short-term rating **MIG** ratings are Moody's commercial paper ratings. Moody's assigns "Prime" ratings to commercial paper, ranging from **P-1** at the high end to **P-3** at the low end. Commercial paper issues not considered by Moody's to fall within these investment-grade categories are rated **NP.**

In the case of variable rate demand obligations (VRDOs), a two-component rating is assigned. The first component represents an evaluation of the degree of risk associated with scheduled principal and interest payments, and the other represents an evaluation of the degree of risk associated with the demand feature. The short-term rating assigned to the demand feature of VRDOs is designated as **VMIG.** When either the long- or short-term aspect of a VRDO is not rated, that piece is designated **NR,** e.g., **Aaa/NR** or **NR/VMIG 1**.

Short-term issues or the features associated with **MIG, VMIG,** or **SG** ratings are identified by date of issue, date of maturity or maturities, or rating expiration date and description to distinguish each rating from other ratings. Each rating designation is unique with no implication as to any other similar issue of the same obligor. **MIG** ratings terminate at the retirement of the obligation, while **VMIG** rating expiration will be a function of each issue's specific structural or credit features.

Definitions of Long-Term Ratings

Aaa
Bonds that are rated **Aaa** are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as "gilted edge." Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to change, such changes as can be visualized are most unlikely to impair the fundamentally strong position of such issues.

Aa
Bonds that are rated **Aa** are judged to be of high quality by all standards. Together with the **Aaa** group they comprise what are generally known as high grade bonds. They are rated lower than the best bonds because margins of protection may not be as large as in **Aaa** securities or fluctuation of protective elements may be of greater amplitude or there may be other elements present that make the long-term risks appear somewhat larger than in **Aaa** securities.

A
Bonds that are rated **A** possess many favorable investment attributes and are to be considered as upper medium grade obligations. Factors giving security to principal and interest are considered adequate, but elements may be present that suggest a susceptibility to impairment some time in the future.

Baa
Bonds that are rated **Baa** are considered as medium grade obligations, i.e., they are neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

Ba
Bonds that are rated **Ba** are judged to have speculative elements; their future cannot be considered as well assured. Often the protection of interest and principal payments may be very moderate, and thereby not well safeguarded during both good and bad times over the future. Uncertainty of position characterizes bonds in this class.

B
Bonds that are rated **B** generally lack characteristics of the desirable investment. Assurance of interest and principal payments or maintenance of other terms of the contract over any long period of time may be small.

Caa
Bonds that are rated **Caa** are of poor standing. Such issues may be in default or there may be present elements of danger with respect to principal or interest.

Ca
Bonds that are rated **Ca** represent obligations that are speculative in a high degree. Such issues are often in default or have other marked shortcomings.

C
Bonds that are rated **C** are the lowest rated class of bonds, and issues so rated can be regarded as having extremely poor prospects of ever attaining any real investment standing.

Definitions of Short-Term Ratings

MIG 1/VMIG 1
This designation denotes best quality. There is present strong protection by established cash flows, superior liquidity support or demonstrated broad-based access to the market for refinancing.

MIG 2/VMIG 2
This designation denotes high quality. Margins of protection are ample although not so large as in the preceding group.

MIG 3/VMIG 3
This designation denotes favorable quality. All security elements are accounted for but there is lacking the undeniable strength of the preceding grades. Liquidity and cash-flow protection may be narrow and market access for refinancing is likely to be less well established.

SG
This designation denotes speculative quality. Debt instruments in this category lack margins of protection.

To order reprints of this report (100 copies minimum), please call 800.811.6980 toll free in the USA. Outside the US, please call 1.212.553.1658.

Report Number:
44541

MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

US Public Housing Authority Capital Fund Bonds

Table of Contents:

SUMMARY 1
OVERVIEW 2
PHA Capital Fund Bonds 2
KEY RATING FACTORS 3
Factor 1: Coverage of Debt Service by Capital Fund Allocations 3
Factor 2: Pledge of Capital Funds 5
Factor 3: Legal Structure 6
Factor 4: Counterparty exposure 6
APPENDIX A 7

Analyst Contacts:

NEW YORK +1.212.553.1653

Brendan Weber +1.212.553.4688
Associate Analyst
brendan.weber@moodys.com

Dmitriy Plit +1.212.553.7463
Analyst
dmitriy.plit@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zemanmoodys.com

Naomi RIchman +1.212.553.0014
Managing Director–Public Finance
naomi.richman@moodys.com

Summary

This rating methodology outlines our approach to rating public housing authority (PHA) capital fund bonds issued in the US municipal market. The purpose of this methodology is to enhance the accuracy of the rating process, identify the key factors that affect our ratings and explain how those factors are applied. This methodology is not meant to be an exhaustive discussion of all factors considered by analysts as we rate public housing authority capital fund bonds.

Key factors in assessing PHA capital fund bonds include:

1) Coverage of debt service by federal capital fund allocations

2) Pledge of capital funds

3) Legal structure

4) Counterparty exposure

This new methodology replaces the following principal methodology: "Update on Moody's Approach to Rating Public Housing Authority Capital Grant Anticipation Bonds," published August 2001, and incorporates market feedback received from our Request for Comment published February 2012[1]. We currently rate 18 PHA capital fund bonds with approximately $1billion of outstanding debt. Their ratings, which currently range from Aa2 to A3, are currently on review for downgrade due to significant cuts in federal funding that is the primary source of repayment and that has resulted in lower debt service coverage (see Appendix A for a full list of rated financings). Concurrent with the publication of this new methodology, the ratings on 17 of these programs will be downgraded between 1 to 5 notches.

[1] Moody's Request for Comment on Proposed Change to Public Housing Authority Capital Fund Bonds Methodology.

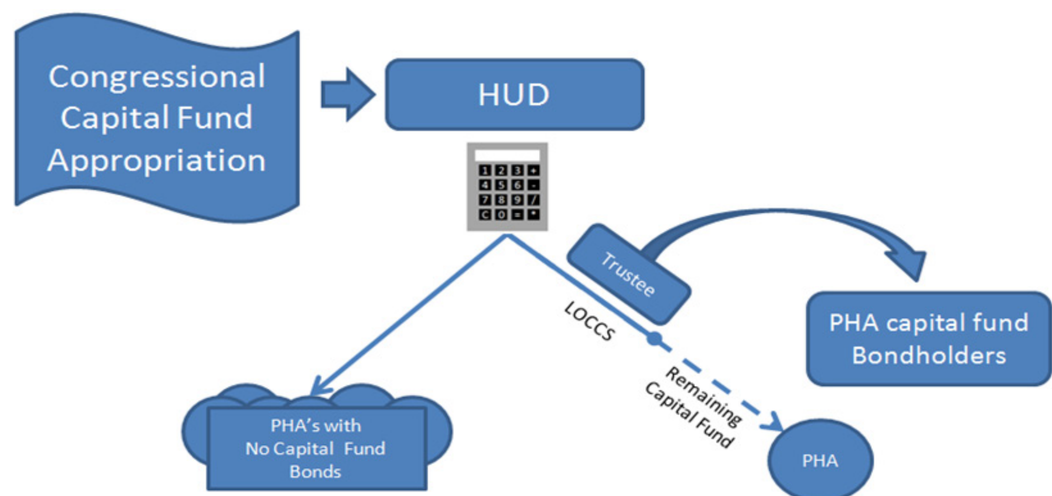
Overview

PHA Capital Fund Bonds

Public housing authorities are bodies created by state governments to own, maintain and operate housing projects for low income families. There are approximately 3,000 PHAs across the United States. The capital fund program was created by Congress in 1998, by the Quality Housing and Work Responsibility Act of 1998, to provide financial support for capital upkeep and modernization of PHAs' housing stock. Under the capital fund program, Congress appropriates a lump sum to the US Department of Housing and Urban Development (HUD) every year. This sum is then allocated by HUD to individual PHAs on a formula basis.

In order to finance large scale projects and capital improvements, many PHAs issue bonds which are secured by a first lien on their annual capital fund allocations from HUD. The capital fund allocations are the sole source of payment for debt service on the bonds, therefore the size of each PHA's annual allocation relative to maximum annual debt service (MADS) on the bonds is important to the strength of each bond program.

FIGURE 1



From 2001 through 2012, federal funding for the PHA capital fund declined substantially from $2.99 billion to $1.88 billion, a cumulative decrease of 37.4%. While the historical compound annual decline from 2001 through 2012 has been 4.2%, we have seen more severe declines in the past two years, when capital funding was reduced by 18.2% and 8.3%, in 2011 and 2012 respectively[2] (see Table 1).

[2] All years are federal fiscal years ending October 31 unless otherwise noted.

TABLE 1

Capital Fund Appropriation History 2001-2012

Federal Fiscal Year	Appropriation (in Billions)	% Change
2001	$2.99	-
2002	$2.84	-5.00%
2003	$2.71	-4.61%
2004	$2.70	-0.59%
2005	$2.58	-4.34%
2006	$2.46	-4.48%
2007	$2.44	-1.00%
2008	$2.44	0.00%
2009	$2.45	0.45%
2010	$2.50	2.04%
2011	$2.04	-18.24%
2012	$1.88	-8.27%

The decrease in appropriation for the PHA capital fund has had a direct impact on the debt service coverage levels, and therefore the credit quality, of PHA capital fund bond programs. In 2011, all 18 rated bond programs experienced a significant decline in funding. The median MADS coverage ratio for rated programs has declined to 2.84x (most recent annual capital fund appropriations equals 284% of debt service), as compared to 3.37x when the bonds were issued. The lowest coverage level of 1.91x in 2011 declined 13.6% from 2.21x coverage in 2010 and 26.8% from 3.02x coverage at bond issuance.

Some market participants believe that the severe 2011 funding cuts were a result of supplemental funding that the federal government provided to PHAs through the American Recovery and Reinvestment Act of 2009 (ARRA) stimulus program. While ARRA provided additional funds to the PHAs for their housing purposes, it does not mitigate the cuts that occurred subsequent to the funding as the ARRA funds, or any other annual appropriation, are not pledged to pay debt service. Given the history of the appropriations, we believe that the funding levels are vulnerable to broader federal budget considerations and do not offer the stable revenue stream associated with a Aa rating. Therefore, we have revised the rating levels that PHA capital fund bonds can achieve, which includes their ability to withstand future declines in capital funding.

Key Rating Factors

Factor 1: Coverage of Debt Service by Capital Fund Allocations

Debt service coverage is critical to the strength of PHA capital fund bonds because it provides a buffer against future declines in funding to the capital fund. We have established a guideline, set forth in Table 2, for MADS coverage levels associated with various rating categories. The guidelines reflect the capacity of bond programs at each rating category to absorb potential capital fund declines. For instance, a 20-year bond program with a debt service coverage of 3.0x at issuance can absorb a compound annual decline in capital funding up to 7.2% through maturity before its debt service reserve fund is depleted. Given this level of decline which exceeds historical levels by 3.0%, this program would be rated A2. In contrast, a 20-year capital fund bond program with a 1.75x coverage can absorb a compound annual decline of 4.2% in capital funding, which is the rate of the historical decline from 2001 through 2012, and would be rated Baa3.

TABLE 2

Rating Guideline: Maximum Annual Debt Service (MADS) Coverage Ranges

Rating	MADS Coverage Range	Compound Annual Decline in Funding That Can Be Absorbed over 20 Years
A1	> 10.00x	> 13.2%
A2	9.99x - 3.00x	13.1% - 7.2%
A3	2.99x – 2.50x	7.1% - 6.2%
Baa	2.49x – 1.75x	6.1% - 4.2%
Ba	1.74x – 1.33x	4.1% - 2.6%
B or below	< 1.32x	Cannot absorb 2.6% Cuts

Approach to Rating Pooled Financings

While most rated bonds are secured by the pledge of a single HUD allocation to one PHA, there are several bond financings which are pooled and are secured by the pledge of HUD allocations to more than one PHA. These pooled financings do not provide cross-collateralization of capital fund allocations from HUD, thus each PHA is obligated to pay their share of debt service. Therefore, our ratings for these pooled bond financings are based on our assessment of the PHA with the lowest debt service coverage in the pool to reflect the risks created from the weaker links in the pool.[3]

MADS coverage is calculated by dividing most recent capital fund allocation to an individual PHA by the PHA's highest debt service payment in any single year. In instances where Replacement Housing Factor (RHF) funds are also pledged to the bonds, the calculation includes the RHF funds.

In our surveillance of ratings, we will calculate each bond program's debt service coverage level and assess each bond program's current rating on an annual basis, following the capital fund allocations from HUD. We will take into consideration the PHA's plans for maintaining a steady number of units in their portfolio to support debt service coverage for the life of the bonds. Any reduction in a PHA's housing stock from a variety of factors including a demolition or conversion of the units out of the public housing program could reduce a PHA's funding under HUD's formula for allocating capital funds, which is based on a number of factors including the number of units that the PHA owns.

Furthermore, we will also evaluate each PHA's plans to issue additional capital fund bonds. When PHAs issue additional bonds, the increase in debt drives down the MADS coverage of the bonds. Rated PHAs have implemented Additional Bonds Tests (ABT) which limit the extent to which they can issue additional capital fund bonds.

When assessing new ratings or existing ratings, we collectively consider the current MADS coverage, the ABT, the number of units in the portfolio and the PHA's plans to issue additional capital fund bonds.

We believe that these guidelines reflect the ability of the financings to continue to cover the debt service on the bonds even if funding cuts continue. In the future, we will continue to assess the level of the capital fund appropriation and the appropriateness of our current methodology.

3 We do not use the Weak Link Plus Approach laid out in the methodology "Moody's Approach to Rating U.S. Municipal and Not-For-Profit Pool Financings" when rating pooled financings, since the credit risk is highly correlated; all pledged funds in pooled financings come from the same source.

Factor 2: Pledge of Capital Funds

The pledge of capital fund payments to the bonds is an important consideration because it ensures that bondholders have a valid security pledge in the payments, and that the risks of the PHA spending the funds for other purposes, or HUD withholding funds due to administrative sanctions, are remote.

In a typical transaction structure, the HUD appropriation is first used to pay debt service, before the PHA can spend funds for other purposes. HUD is involved in approving these transactions and gives assurances that the portion of capital fund allocations needed to pay debt service will be held harmless from administrative sanctions. These protections are documented in: 1) HUD approval letter, 2) Trust Indenture, and 3) Annual Contributions Contract (ACC) between HUD and the individual PHA (Under the ACC, HUD provides an allocation of public housing funds to a PHA and the PHA agrees to administer the program in accordance with its requirements). In cases where bondholder protections are materially weaker than the typical structure, the rating will be lower by one or more notches.

One of the key documents is the HUD Approval Letter, which addresses any areas where HUD practices will vary from those used to administer traditional pay-as-you-go modernization work. Among the key factors, we typically see the following in the HUD Approval Letter:

» Capital fund allocations to the PHA(s) are pledged to pay debt service.

» Bondholders have a first lien on capital fund monies and a perfected security interest in these funds.

» Successor programs of the capital fund are pledged to bondholders.

» Subsequent legal changes in the use of capital fund will not affect the ability to use PHA allocations to pay debt service.

» Capital fund monies flow directly to the bond Trustee through the LOCCS system or other methods established by HUD to ensure that the Trustee receives the monies in a fashion which protects bondholders.

» Amounts sent to the trustee are not subject to recapture.

» The covenants contained in the HUD Approval Letter also mirrored in the HUD ACC Amendment.

PHA Performance Risk

The hold harmless provisions in HUD's approval letter protect bondholders from the risk that HUD would withhold or reduce monies to the PHAs as an enforcement mechanism for poorly managed PHAs. Nonetheless, HUD still retains the ability to withhold capital fund allocations to PHAs that do not obligate and expend their allocation within 24 and 48 months, respectively, in accordance with Section 9(j) of the United States Housing Act of 1937 (and as detailed in the Code of Federal Regulations, Title 24, Section 905.120). To assess obligation and expenditure risk at the initial ratings, we review the PHA's history of obligated and expended federal capital funds to determine the ability of the PHA to meet this timing going forward. We also review each PHA's performance of timely obligation and expenditures during our annual surveillance process.

Factor 3: Legal Structure

A financing's legal structure establishes features that protect bondholders, such as a debt service reserve fund and additional bonds test. To the extent that the structure's features do not provide this level of bondholder protection, the rating could be lower by one or more notches than the rating implied by the other credit factors.

The key structural features are:

» The extent to which the language in the HUD Approval Letter is also mirrored in the legal documents.

» The length of the financing term. We typically see terms of 20 years. Longer financing terms are likely to result in a lower bond rating since there is a greater time period over which reductions in funding could occur. Shorter financing terms may result in higher ratings.

» The terms of the additional bonds test (ABT). ABTs at levels below current coverage levels may result in a lower bond rating if we expect further issuance.

» The funded level of the debt service reserve fund. A debt service reserve funded at lower than MADS is likely to result in a lower bond rating.

» If appropriate lags and reserve funds are built into the timing of debt service payments to reflect both the timing of the federal appropriation process and the HUD allocation process.

Factor 4: Counterparty exposure

The rating and outlook of various participants in the financing are important because the participants abilities to honor their obligations will affect the ability to make debt service payments to bondholders.

The US government is the primary counterparty as it appropriates the capital fund. Therefore, PHA capital fund bonds are linked to the rating and outlook of the United States government. The ratings referred to in Table 2 of this methodology are based on the current Aaa rating of the United States government. In the event that the rating of the United States government is changed, we would expect changes to some of the rating levels referred to in Table 2 of this methodology.

In addition, the rating of the debt service reserve investment or surety provider could impact the rating of the PHA capital fund bonds. The performance of the investment or surety provider is an important factor in assessing the rating of a capital fund bond because the reserve fund may need to be drawn upon in the event of a delay or shortfall in the appropriation. If the provider is unable to perform in accordance with the terms of the Investment Agreement, there may be a debt service payment shortfall on the bonds. Therefore, the credit quality of the investment provider, as reflected in its rating, is a factor in the rating of the bonds (For guidelines on how the ratings of investment providers can affect the rating of the bonds, see our Rating Implementation Guideline called "Methodology Update: Ratings that Rely on Guaranteed Investment Contracts," published in December 2008).

Appendix A

Collectively, we have rated 18 bond programs that are pledged HUD allocations from 92 individual PHAs. Of the 18 programs, 6 are pooled programs consisting of multiple PHAs. In addition, two bond programs (Providence Housing Authority and Philadelphia RDA) have multiple financings which are on parity. A complete list of 21 bond financings is shown below.

Moody's ID	Public Housing Authority	Bond Name
806666634	Alabama Public Housing Authorities	Capital Program Revenue Bonds, Series 2003-A
806666910	Alabama Public Housing Authorities	Capital Program Revenue Bonds, Series 2003-B
809504061	Chicago Hsg Auth Cap Prog Rev Bonds, IL	Capital Program Revenue Refunding Bonds, Series 2006
808317297	D.C. HFA - Capital Fund Program Bonds	Capital Program Revenue Bonds, Series 2005
820547191	Denver City & Cnty. Hsg. Auth. Cap. Fund Prog	Capital Fund Program Revenue Bonds, Series 2007 (Three Towers Rehabilitation Project)
806292180	East Providence HA-Cap Funds Hsng Rev Bonds	Capital Funds Housing Revenue Bonds, Series 2002
806930188	Ind. Dev. Bd. of New Orleans-Cap. Fd. Rev, LA	Capital Fund Program Revenue Bonds Series A of 2003
807663036	Knoxville CDC-Capital Program Rev. Bds, TN	Capital Program Revenue Bonds, Series 2004
806812699	Maryland CDA - Capital Fund Securitization	Capital Fund Securitization Revenue Bonds, Series 2003
807998467	New Jersey HMFA-Cap Fund Prog. Rev. Bds. 2004	Capital Fund Program Revenue Bonds, Series 2004A
820469590	New Jersey HMFA-Cap Fund Prog. Rev. Bds.2007	Capital Fund Program Revenue Bonds, 2007 Series A
808111947	New York City HDC-Capital Fund Prog Bonds, NY	Capital Fund Program Revenue Bonds (New York City Housing Authority Projects), Series 2005A
808856837	Pennsylvania HFA - Cap. Fund Securitization	Capital Fund Securitization Revenue Bonds, Series 2005A
806926088	Philadelphia RDA - Capital Fund Program Rev.	Capital Fund Program Revenue Bonds Series C of 2003 and Series D of 2003
806046795	Philadelphia RDA - Capital Fund Program Rev.	Capital Fund Program Revenue Bonds, Series 2002A
806253856	Philadelphia RDA - Capital Fund Program Rev.	Capital Fund Program Revenue Bonds, Series 2002B (Federal Appropriation)
820949289	Providence Hsg Auth Cap Fds Hsg Rev.	Capital Funds Housing Revenue Bonds, Series 2008
805758223	Providence Hsg Auth Cap Fds Hsg Rev.	Capital Fund Housing Revenue Bonds, Series 2001
806911115	Puerto Rico HFA - Capital Fund Program Bonds	Capital Fund Program Bonds Series 2003
805993263	Syracuse Hsg.Auth-Cap.Fds.Hsg.Rev.Bds. NY	Capital Funds Housing Revenue Bonds, Series 2002
806285679	West Haven HA- Cap Funds Hsing Rev Bonds	Capital Funds Housing Revenue Bonds, Series 2002

Report Number: 139990

Authors
Brendan Weber
Dmitriy Plit
Florence Zeman
Naomi Richman

Production Associate
Masaki Shiomi

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

November 2006

Contact	Phone
New York	
Joann Hempel	212.553.4743
Lisa Washburn	212.553.4133
Gail Sussman	212.553.0819
Naomi Richman	212.553.0014
Bruce Gordon	212.553.7499
Michael Loughlin	212.553.4066

Variable Rate Instruments Supported by Third-Party Liquidity Providers

Overview

This rating methodology outlines Moody's approach to rating non-insured, variable rate demand obligations (VRDOs) or commercial paper (CP) in which the liquidity for the demand or "put" feature of the bonds (or for maturing CP) is provided by a third-party liquidity provider. Commercial banks typically provide this third party liquidity support in the form of a line of credit, revolving credit agreement, standby bond purchase agreement (SBPA), or other similar agreement. Unlike letters of credit (LOC) or the insurance policy in an insured floater, these bank facilities do not cover regularly scheduled payments of principal and interest, which remain the responsibility of the primary issuer. Hence, bank liquidity facilities do not achieve credit substitution or provide credit enhancement, and the bonds' long term rating reflects exclusively the long-term credit quality of the issuer.[1]

Liquidity facilities are designed to be drawn upon only in the event of a failed remarketing following a mandatory or optional tender. Issuers purchase bank liquidity facilities to provide liquidity for these tenders, in lieu of maintaining their own internal liquidity source (e.g. cash or liquid investments) or paying the potentially higher cost for issuing insured floaters (i.e., VRDOs with bond insurance) or bonds supported by a letter of credit. These liquidity facilities typically include provisions that allow the liquidity provider's obligation to terminate under certain enumerated conditions related to the creditworthiness of the issuer.

Moody's currently maintains ratings on $113 billion of non-insured VRDOs supported by bank liquidity facilities. This represents 1,300 distinct bond issues generated by 404 issuers. Figure 1 highlights the breakdown of this debt issuance by sector, with housing accounting for over one-third of all rated bond issues.

1. *In this report, the term "issuer" includes obligors in conduit financings.*

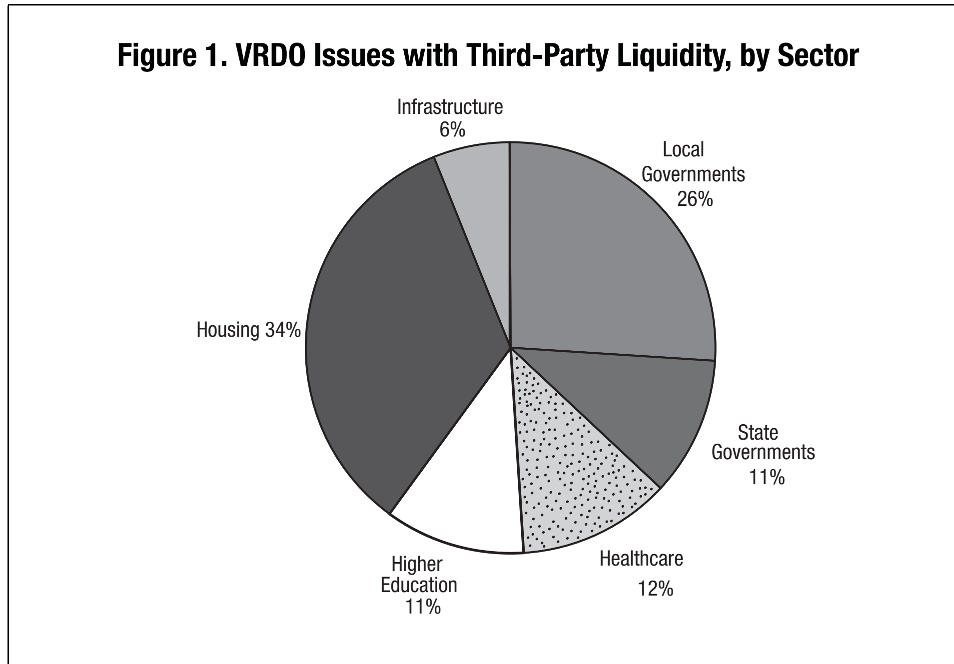


Figure 1. VRDO Issues with Third-Party Liquidity, by Sector

This methodology will focus on the structure and purpose of liquidity facilities as well as the ratings assigned to non-insured VRDOs. We will also discuss the mechanics and the automatic termination events commonly associated with external liquidity facilities.

Note: Adherence to this rating methodology does not ensure that a specific security will be eligible for purchase under Rule 2a-7.

Use and Structure of Bank Liquidity Facilities

BANK LIQUIDITY FACILITIES PROVIDE COST-EFFECTIVE FINANCING TOOL FOR MANY ISSUERS

Most issuers that make use of variable rate demand bonds are seeking to achieve a lower overall cost of capital, either by letting their rate float with the market or by hedging through a variable-to-fixed swap. In addition, unhedged variable rate demand bonds are popular bridge financing tools, since they allow issuers to pre-pay the debt at any time at par.

One of the important considerations facing issuers in deciding whether to issue a VRDO supported by a bank liquidity facility compared to issuing an insured floater or a bond supported by an LOC, is the issuer's relative interest costs and fees to third parties associated with the various types of liquidity or credit support. Generally, liquidity facilities without additional credit support are a less expensive option for higher rated issuers since the credit risk is not being assumed by an insurance company or LOC bank.[2]

Highly rated issuers who hold substantial unrestricted liquidity on their balance sheets must often choose between whether to issue a VRDO supported by a bank liquidity facility or supported by their own internal liquid assets. However, in order to achieve VMIG 1 or P-1 ratings based on internal liquid assets or "self liquidity", issuers must hold a sufficient amount of highly liquid assets and demonstrate their ability to access and liquidate investments in a time frame that enables them to provide funds in the event of a failed remarketing which can be as short as one day. This short time frame may limit the potential investment options for these funds. Many issuers prefer to preserve flexibility in their investment strategy or they may not have, or want, to invest in the management infrastructure necessary to maintain a high quality self-liquidity rating.[3]

Although failed remarketings for bonds of investment grade issuers are rare, if such an event were to occur, there is typically only a window of a few hours between notification of the remarketing failure and the deadline for the payment of the purchase price to bondholders. When issuers use a liquidity facility they do not need to manage their own investment portfolios to provide same day liquidity for the full amount of VRDO debt or CP outstanding.

2. *For more information on Moody's approach to rating LOC-backed bonds and insured floaters, please refer to "Moody's Rating Methodology for Letter of Credit Supported Transactions" (August 2005) and "Moody's Rating Methodology for Analyzing Insured Floating Rate Bonds" (November 2005).*
3. *For more information on Moody's approach to assessing self-liquidity, please refer to Moody's Rating Methodology "Variable Rate Debt Instruments Supported by an Issuer's Own Liquidity" forthcoming.*

MOODY'S APPROACH GIVES GREATER FLEXIBILITY TO ISSUERS WITH STRONG LIQUIDITY

When an issuer of VRDOs or CP is able to demonstrate that it has sufficient liquid resources to support a short-term rating on its own and its bank liquidity facility is one component within its broader liquidity profile, Moody's may provide greater latitude in considering exceptions to the methodology set forth in this report.

However, if Moody's believes that the primary or sole source of liquidity support for a VRDO is the liquidity facility, we assume that the liquidity facility is necessary to provide for the timely payment of the purchase price of tendered bonds or payment of the principal of maturing CP. Our short-term ratings do not incorporate the lower probability of an occurrence of a failed remarketing for issuers with stronger credit quality. Therefore, the mechanics and structure of the transaction must support the full and timely payment of purchase price from the liquidity facility, regardless of the issuer's long term rating, and should adhere to the tenets set out in this methodology.

LIQUIDITY FACILITIES COVER LIQUIDITY RISK, NOT CREDIT RISK

Unlike letters of credit, which are unconditional and irrevocable obligations of the bank provider, liquidity facilities are contingent obligations of the bank. Under certain circumstances, the bank may be able to immediately terminate or suspend its obligation to purchase bonds, prior to the stated expiration of the facility. Certain events of default may be designated as "immediate" termination or suspension events, which release the bank immediately from any purchase obligation, without the need for prior notice to the issuer, the trustee or bondholders, and without a mandatory tender of bonds. Upon the occurrence of one of these events, bondholders immediately lose their source of liquidity for tenders.

In order for CP and VRDOs to be eligible to achieve the highest short-term ratings, P-1 or VMIG 1, these immediate termination or suspension events[4] , often called "bank outs," must be limited to credit events indicating that the issuer is experiencing severe financial difficulty, or that invalidate the debt instrument or issuer's debt service payment obligation. Hence, the short-term rating on the bonds reflects not only the liquidity provider's short-term rating, but also the accessibility and availability of the liquidity facility, which is contingent upon the credit strength of the issuer.

In addition to these immediate termination events, the bank generally has broad latitude to declare an event of default under a liquidity agreement for numerous other defaults, notify the bond trustee[5] of such an event, thereby causing a mandatory tender of outstanding bonds. In such cases, bondholders will be paid the full purchase price plus accrued interest through the mandatory tender payable by the bank. The bank's obligation will then expire, and the issuer will be obligated to repay the bank for the full amount of the bonds, often on an accelerated schedule.

Bank liquidity facilities are typically structured to cover the full principal amount of VRDO bonds or CP outstanding and the maximum amount of accrued interest on a VRDO bond. The initial term, or commitment period, of the bank liquidity facility can vary widely, from as short as one year to as long as 10 years. This presents an element of renewal or rollover risk in the event that the issuer is unable to renew the facility or engage an alternate liquidity provider. In the event that the liquidity facility is not extended or substituted, most VRDO deals allow the conversion of the bonds to a fixed rate or other payment mode that does not have a demand feature and therefore would not need a liquidity facility. Prior to the conversion, variable rate holders will receive full purchase price through a mandatory tender covered by the expiring liquidity facility.

Exposure to Variable Rate Demand Obligation is a Factor in Issuer's Long Term Ratings

An issuer's exposure to variable rate debt may be an important factor in determining its long-term rating, since the use of variable rate debt introduces interest rate risk, liquidity risk, and in many cases, renewal risk.

- *Interest rate risk* is the risk that the issuer will be exposed to rising interest rates. This risk is particularly pronounced for issuers with thin cash flow or high fixed costs and limited revenue flexibility. These types of issuers may not be able to easily accommodate rising interest rates in their budgets unless they have already planned for such an event. Issuers can manage interest rate risk through conservative budgeting practices, matching variable rate liabilities with offsetting assets that will produce higher income in rising interest rate environments or by utilizing swaps.

4. *In this report, all discussion of immediate termination events also applies to suspension events and conditions precedent to the bank funding under the liquidity facility.*
5. *In this report "trustee" refers to the fiduciary responsible for handling the various administrative duties of the bonds including tender transactions. In some cases, these duties are assumed by multiple parties including a paying agent, tender agent and trustee.*

Exposure to Variable Rate Demand Obligation is a Factor in Issuer's Long Term Ratings

- *Liquidity risk* arises when a variable rate borrowing has a demand feature that allows bondholders to tender their bonds or notes back to the issuer at their option, or upon the occurrence of certain designated events. Most issuers purchase liquidity through a bank agreement, but some issuers may possess sufficient liquid assets of their own to provide a cushion for the demand feature of the debt (i.e., "self liquidity"). The terms of the bank agreement could require the issuer to repay the bank in a relatively short period, sometimes as short as three to six months although longer periods of up to five years are common.

- *Renewal risk* is the risk that the liquidity support for the variable rate demand obligation may not extend for the life of the bonds. In such a situation, the issuer may lose access to the liquidity facility and face the need to either identify an alternative provider, or convert the bonds to a payment mode that does not have a demand feature, potentially on relatively short notice. In some cases the fee associated with a new liquidity facility may rise significantly, or the provider may require more onerous covenants or repayment terms.

The Link Between Long and Short-Term Ratings

Since the intent of a bank liquidity facility is to provide liquidity and not credit support for the transaction, the bank's long-term rating is not a factor in the long-term rating of a VRDO transaction. Instead, Moody's long-term rating on a VRDO with bank liquidity reflects the issuer's own credit quality and therefore its own unenhanced long-term rating.

The short-term VMIG rating on a VRDO reflects the ability of the liquidity bank to provide timely payment of purchase price on optional or mandatory tender dates in the event of a failure to remarket the bonds. Moody's verifies that the bank maintains a P-1 short term rating (for assignment of a VMIG 1 rating), and that the mechanical and structural provisions of the relevant legal documents ensure timely payment of the purchase price of the bonds to bondholders. The VMIG rating on a VRDO would be reduced should the bank's P-1 rating be reduced.

The VMIG rating also reflects the likelihood of the occurrence of any event that would trigger a premature termination or suspension of the bank's obligations to provide liquidity under the agreement without a final payment by the bank. These opportunities for early termination are related to the issuer's own creditworthiness. Therefore the short-term rating on the bonds also reflects the issuer's own credit quality and long-term rating.

Generally, issuers rated A2 or above should be able to achieve the highest short term rating for VRDOs -- VMIG 1 -- assuming the bank's short-term rating is P-1 and the legal documents governing the bond issue contain the proper mechanics, as discussed below in "Structural Elements." A lowering of the issuer's long-term rating below A2 could potentially affect the short-term rating on the bonds, even if the liquidity provider's short term rating remains unchanged. As an issuer's long term rating declines, it may come closer to "triggering" the type of severe credit event that would allow the bank to immediately terminate its obligation to fund a tender (such as a termination event for a drop below investment grade). In this scenario we could lower the short term rating on the bonds below VMIG 1 even though the bank is still rated P-1.

Moody's has assigned VMIG 1 ratings in a few cases to VRDOs of issuers rated A3 or Baa1, when the bank has strictly curtailed its ability to terminate the facility prematurely without a mandatory tender of bonds. However, most liquidity agreements contain a provision allowing for immediate termination without a mandatory tender upon downgrade of the issuer's rating to below investment grade (Baa3). Since this "below investment grade out" is normally present and issuers rated A3 or Baa1 are closer to triggering this particular termination event than issuers rated A2, VMIG 1 ratings for these issuers remain rare, unless the "below investment grade out" is eliminated. The VMIG 1 ratings would continue to be subject to possible downgrade to VMIG 2 upon downgrade of the issuer's long-term rating, as the issuer grows closer to triggering other immediate termination events such as bankruptcy or default.

Due to the limited market for VMIG 2 or P-2 rated paper, many issuers of debt supported by bank liquidity choose to avoid a possible downgrade below VMIG 1 by converting their bonds to a fixed-rate mode or securing full credit substitution with a bank letter of credit, when faced with a possible downgrade below a long-term rating level consistent with a VMIG 1.

Structural Elements of the Liquidity Facility (When it Provides the Primary or Sole Source of Liquidity)

SUFFICIENCY OF COMMITMENT AMOUNT

The liquidity facility commitment should be in an amount sufficient to cover the full purchase price of all outstanding bonds covered by the facility, calculated at the maximum permissible bond interest rate. A liquidity facility which covers bonds is typically sized for the full principal amount of the bonds outstanding, plus the amount of interest that can accrue on the bonds between interest payment dates. As a result, full liquidity coverage will be available at the time of any optional or mandatory tender.

Figure 2 outlines general guidelines for interest coverage in specified interest rate modes and interest payment periods.

Figure 2: Amount of Interest Coverage Needed in Various Payment Modes

Interest Rate	Interest Payment Date	Accrual Basis	Interest Coverage
Daily	1st business day of each month	Actual/365 days	34 days
Weekly	1st business day of each month	Actual/365 days	34 days
Term	Semiannually	30/360 days	183 days
Flexible or CP Rate	The end of each period; periods range 1 - 270 days	Actual/365 days	270 days

Certain issuers with adequate self-liquidity and cashflow may be able to absorb the interest exposure on a VRDO. We have assigned VMIG 1 ratings to several bond issues in which the liquidity facility covers principal only and the issuer has responsibility for covering accrued interest from its own liquid resources. Similarly, a liquidity facility that covers CP typically is sized to cover only the principal portion of maturing CP, leaving the issuer responsible for the interest portion due on each maturity date.

REDUCTION & REINSTATEMENT OF THE LIQUIDITY FACILITY

Moody's analysts also evaluate the reduction and reinstatement mechanisms of the liquidity facility following purchase payments. If there is a failed remarketing of bonds upon an optional or mandatory tender, the trustee will draw on the liquidity facility to pay investors who have tendered their bonds, and the liquidity provider will become the owner of the bonds pending their remarketing (these bonds purchased by the bank are typically called "bank bonds"). Such a drawing results in a reduction of the amount available under the facility, reflecting the usage of a portion of the liquidity provider's commitment.

This reduction is subject to reinstatement by the liquidity provider when the bonds are remarketed and the liquidity provider is reimbursed with the proceeds. The liquidity facility outlines the circumstances under which the coverage will be increased, including the notices and/or transfer of funds required. It is important that the documentation clearly describes the process to be followed by the relevant parties to ensure that the liquidity provider is reimbursed and that the liquidity facility is increased in an amount sufficient to cover the bonds being released. Moody's reviews each transaction to determine that it is clear that the remarketed bonds cannot be released to the new owners before the liquidity facility coverage is increased to provide full liquidity support for these bonds.

TIMING OF DRAWS

Another important aspect of Moody's analysis is ensuring that the various legal documents direct the appropriate parties to provide notices and draw upon the liquidity facility in a timely manner. Moody's analysts review the documents to ensure there is sufficient time between events such as the bondholder's notice of tender, the remarketing agent's notice of the amount of remarketing proceeds received, and the trustee's notice to the liquidity provider of a request for funds. Figure 3 illustrates a timeline as an example of a schedule of events for bonds in a daily interest rate mode.

Figure 3: Typical Schedule of Events for Bonds in a Daily Mode

11:00 am - Bondholders give formal notice to tender bonds to trustee and remarketing agent

11:30 am - Remarketing agent notifies trustee of amount of tendered bonds successfully remarketed and transfers remarketing proceeds to trustee for deposit in the bond purchase account

12:00 pm - Trustee gives notice of draw on the liquidity facility in the amount of unremarketed bonds plus accrued interest (It should be clear in the bond documents that if trustee has not yet received remarketing proceeds or formal notification from remarketing agent of amount of bonds tendered but not remarketed by the prescribed time then trustee assumes a complete failed remarketing and draws on the liquidity facility for the full amount of such tender)

2:00 pm - Liquidity provider transfers funds equal to amount of requested draw to the trustee for deposit in the bond purchase account

2:30 pm - Bondholders are paid with proceeds of remarketing proceeds and/or liquidity draws

ADDITIONAL BONDS AND PARTIAL CONVERSIONS

The issuer will often reserve the right to issue additional parity bonds at a later date pursuant to the original bond documents. If provisions are not made for an accompanying increase in the liquidity support upon the issuance of additional bonds in the variable rate mode, the possibility exists that the liquidity facility support could be diluted if the trustee was to draw on the original liquidity facility for purchase price due on the new bonds. Moody's reviews document provisions to determine whether the issuance of additional bonds poses such a risk. Similar concerns exist when only a portion of the bonds convert to an interest rate mode not covered by the liquidity facility.

To address concerns related to the issuance of additional variable rate bonds, the transaction may provide for an increase in the commitment amount of the original liquidity facility, or provide for an additional, separate liquidity facility as a condition for the issuance of additional bonds. Alternatively, the transaction documents may provide for separate series designations for distinguishing between the original liquidity enhanced bonds and the new unenhanced bonds.

In the event of a partial conversion to an interest rate mode not covered by the existing facility, the transaction may provide for the existing liquidity facility to be amended to cover such interest rate mode prior to any partial conversion. Alternatively, as outlined above for additional bonds, the documents may provide mechanisms for separate series designations for distinguishing between the bonds in a covered interest rate mode from those in a non-covered interest rate mode. The trustee would maintain separate accounts for covered vs. uncovered bonds and should be prohibited from drawing on the liquidity facility for uncovered bonds. The liquidity facility typically prohibits draws for bonds in certain modes and thus the trustee is prohibited from drawing unless the liquidity facility has been amended.

ROLE OF FIDUCIARY

The documents should make clear the obligations of the various parties in the transaction - trustee, tender agent, remarketing agent. For instance, which agent receives notice of the exercise of an optional tender and how such notice will be communicated to the party charged with drawing on the liquidity facility if there is a shortfall in remarketing proceeds should be clearly outlined in the documentation. Provisions for a successor agent should be provided for any agent that is a recipient of notices that create payment obligations, such as optional tenders, in the event such agent is removed or resigns.

Moody's analysis includes an examination of the trustee's responsibilities with respect to the liquidity facility funds and remarketing proceeds. Such funds should be maintained in accounts separate from the trustee's other funds as well as from funds held for the benefit of bondholders to assure their availability when needed. There should not be any liens for fees of the transaction parties on these funds prior to the lien of the investors, because such a prior lien could result in a payment shortfall to investors that would not be consistent with Moody's highest short term rating.

Liquidity Facility Expiration, Substitution and Termination

Moody's carefully analyzes the circumstances under which a liquidity facility can expire, terminate or be substituted by another liquidity source. Generally speaking, these events can be divided into several broad categories, as follows:

SCHEDULED EXPIRATION OF THE FACILITY AT THE END OF THE STATED TERM

The initial term of a liquidity facility can run from as short as one year to as long as 10 years. When the facility will expire prior to the maturity of the bonds, we examine the relevant legal documents to ensure that a mandatory tender occurs at least one business day prior to the expiration date, to pay off bondholders before the facility expires. In this

scenario, the short-term bondholders will be paid in full, and the debt obligation will then typically convert to a term loan owed by the issuer to the bank ("bank bonds") unless the bonds are remarketed to new owners upon conversion to a longer rate mode such as fixed. In the case of bank bonds, we examine the repayment, or "term out" provisions of the loan owed to the bank to ensure that they are reasonable given the issuer's credit quality, liquidity profile, and ability to either refinance the bank obligation or liquidate investments to reimburse the bank. Repayment terms are generally at least three to six months, although much longer term out periods (sometimes as long as five years) are fairly common. In the event that we believe the repayment structure could have an adverse impact on the issuer's long term rating, the analyst will discuss these concerns with the issuer.

As an alternative to a mandatory tender of bonds upon the expiration of the facility, the issuer may opt to replace the expiring liquidity facility with a new bank agreement, utilize its 'self-liquidity' or convert the bonds to a fixed rate or other mode that does not need a liquidity facility. The legal documents should provide advance notification to the bondholders of these events and such events typically lead to a mandatory tender of the bonds.

SUBSTITUTION OF THE LIQUIDITY FACILITY

The issuer usually retains the right to replace the liquidity provider with a new provider or to convert to self-liquidity. There does not need to be a mandatory tender upon substitution, as long as the bond documents mandate confirmation of the short-term rating prior to the substitution becoming effective. When the bond documents do not direct rating confirmation, a mandatory tender should occur on or prior to the substitution date. Upon the occurrence of a mandatory tender on the date of substitution of the liquidity facility, the bond documents should instruct the trustee to draw on the current liquidity facility and the liquidity facility should not terminate until any draw for mandatory tender has been honored. If the mandatory tender occurs prior to the substitution date, the liquidity facility does not need to remain in place beyond the substitution date.

TERMINATION OF LIQUIDITY FACILITY *WITH ADVANCE NOTICE* UPON OCCURRENCE OF DESIGNATED EVENTS OF DEFAULT

Liquidity facilities usually have designated events of default which may lead to termination of the facility prior to the stated expiration date with notice. Moody's is comfortable with the bank's ability to designate any event as an early termination event, as long as the occurrence of such event leads to advance written notice (typically 30 days) to the trustee, issuer, and tender agent (if applicable) and a mandatory tender occurs at least one business day prior to such termination date.

IMMEDIATE TERMINATION OR SUSPENSION OF THE LIQUIDITY FACILITY *WITHOUT NOTICE* UPON OCCURRENCE OF DESIGNATED EVENTS OF DEFAULT

In addition to the termination events accompanied by a mandatory tender, the bank may also designate certain events as *immediate* termination or suspension events. These "immediate bank outs" allow the bank to automatically terminate or suspend its obligation to pay under the liquidity facility, without notice to any of the relevant parties in the transaction, and without a mandatory tender of the bonds. Immediate bank outs can appear in the liquidity facility as events of default leading to immediate termination or suspension of the facility, or as conditions precedent to the bank's obligation to purchase bonds. In all such events, bondholders immediately lose access to the liquidity facility and hence, lose their external liquidity source for tenders.

In order to achieve the highest short-term rating, immediate termination/suspension events must be limited to severe events of credit deterioration. Moody's has identified certain acceptable immediate termination and suspension events, which are discussed below.

Immediate Termination or Suspension Events

In order to be consistent with Moody's highest short-term ratings of VMIG 1 or P-1, immediate termination events must be linked to a serious deterioration in the creditworthiness of the issuer or an invalidation of the debt. Below, we identify those immediate termination events, suspension events and conditions precedent to the bank honoring an advance under its facility that Moody's believes are consistent with these fundamental tenets. Additional events and conditions may also be appropriate, so long as they are conceptually consistent with the list below.

A. The *issuer defaults on the payment of regularly scheduled principal or interest on the VRDO, parity debt, or debt senior to the VRDO or CP. (See explanation below on termination following CP payment defaults.)*

B. *The issuer enters voluntary bankruptcy or otherwise becomes insolvent.*

C. *A filing or petition of involuntary bankruptcy is entered against the issuer.*

D. *Moody's lowers the long term portion of the rating covered by the liquidity facility below Baa3.*

E. *An authorized representative of the issuer, a court, or other governmental agency with appropriate jurisdiction declares a moratorium on payment on the VRDO or CP, parity debt or on all debt of the issuer.*

F. *The issuer fails to pay a final, non-appealable legal judgment for $5 million (or otherwise defined higher amount) within a reasonable specified timeframe (at least 60 days) without staying enforcement of judgment. (This is not applicable to States, see explanation below.)*

G. *An authorized representative of the issuer contests or repudiates the validity of the VRDO or CP, parity debt or its reimbursement obligations to the bank.*

H. *A court or other governmental authority with appropriate jurisdiction issues a judgment that key legal documents (indenture, loan agreement, etc.) or material provisions of such key legal documents are unenforceable, non-binding or invalid. "Material provisions" in this circumstance means those relating to payment of, or security for, principal and interest on the VRDO or CP.*

I. *A court or other governmental authority with appropriate jurisdiction issues a judgment that the VRDO or CP was illegally issued and/or is unenforceable.*

Taxability Not an Allowable Automatic Termination Event

In primary market issues, Moody's does not think that an automatic termination due to a determination of taxability is consistent with the assignment of a short-term rating on a VRDO or CP issuance. In our view, the loss of a bond's tax-exempt status does not reflect the severe credit deterioration of an issuer.

Moody's has accepted a determination of taxability to result in an automatic termination event in secondary market municipal derivative transactions/tender option bonds. In order for secondary market municipal derivatives to pass through the tax-exempt interest of the trust asset(s), it is necessary for the certificate holders to be treated as owners of the trust asset(s). Demonstrating ownership of the trust assets by the certificate holders is usually accomplished by having the holders bear the benefits and burdens of the asset(s) held in trust. One key aspect of demonstrating that the holder has the burden of the underlying trust asset(s) is by subjecting them to the loss of the tender option when the trust assets are deemed taxable. When this automatic termination event was presented as part of the secondary market municipal structure in the early 1990s, it was carefully considered and accepted given its importance to the structure of these transactions.

Common Problems with Termination Events

While it is impossible to identify every variation of what constitutes an appropriate immediate termination or suspension event, we have encountered several recurring provisions found to be problematic in bank liquidity facilities supporting VRDOs or CP seeking the highest short term rating. In an effort to provide greater clarity to issuers, financial advisors, and counsel involved in the drafting of liquidity agreements that will meet Moody's highest liquidity rating standard, we have identified the common problems below. The examples are identified by the letter of the automatic termination event to which they most closely relate:

A. (1) *Failure to limit termination event to non-payment of principal or interest on the bond covered by the liquidity facility, parity debt obligations, or other closely related debt instruments.* One of the common problems we encounter is that the liquidity agreement may allow for termination of the facility upon payment default on any debt outstanding, without a clear definition of what constitutes "debt." In such cases, we request that the termination event be limited to payment default on the bond covered under the liquidity facility, to parity debt obligations, or to clearly defined closely related debt instruments, the security of which approximates that of the bond being rated. We would not be comfortable with non-payment of a trade account payable, subordinated debt or any derivative contract payment (unless such nonpayment is on parity swap payments of the swap(s) associated with the debt rated and issued under the applicable indenture) as an immediate termination event. For some issuers with substantial lease debt outstanding, additional issues may arise, as discussed in the sidebar, "Termination Events Linked to Lease-Backed Debt Obligations."

A. *(2) Incorporation of non-payment of accelerated bank obligations as an immediate termination event.* Typically, the automatic termination event for a payment default includes the nonpayment of bank bonds (i.e., bonds held by the bank subsequent to a draw under the liquidity facility). We are comfortable with the facility terminating without notice and without a mandatory tender (i.e. automatic termination) if the issuer does not pay regularly scheduled principal or interest on outstanding loans (or bank bonds) incurred with the liquidity provider as a

result of draws on the liquidity facility. However, it is important to note that the termination event should be limited to non-payment of regularly scheduled payments of principal and interest, and not be for non-payment of accelerated bank obligations. Generally, banks have broad latitude to accelerate bank loans, for reasons not always limited to the credit position of the issuer and in certain cases including the occurrence of a "minor" event of default.

A. *(3) Incorporation of non-payment of bank fees as an immediate termination event*. We do not consider the non-payment of fees owed under the liquidity facility to give rise to the same credit concerns as non-payment of scheduled principal and interest on rated debt obligations. The bank may incorporate non-payment of fees as a termination event with notice and a mandatory tender, but we do not believe this is appropriate as an immediate termination event, suspension event, or condition precedent to purchase of bonds.

A. (4) *Immediate termination upon the occurrence of any event that could lead to the acceleration of other debt instruments or upon acceleration of other debt for any reason*.

Sometimes the liquidity facility will include a termination which is tied to minor events of default, such as a failure to provide timely financial statements, under other legal documents which could lead to acceleration of other debt of the issuer. The potential acceleration of some other debt instrument in an unrelated transaction should not provide the bank the ability to immediately terminate the liquidity facility.

In addition, we have seen immediate termination of a liquidity facility upon acceleration of parity debt. This should be limited to an acceleration caused by a payment default on such parity debt or nonpayment of such accelerated parity debt, and should not include accelerations for other reasons.

Termination Events Linked to Commercial Paper

A. (5) Im*mediate termination upon non-payment of principal in a CP transaction.*

In most CP transactions, the sources of payment are (i) rollover proceeds; (ii) issuer funds; and (iii) proceeds drawn under the liquidity facility. Due to the structure of CP, the liquidity facility serves the purpose of providing funds if there are insufficient rollover or issuer monies to make the principal payments on the CP. Therefore, the liquidity facility should remain available to fund despite non-payment of principal by the issuer on the CP. Similarly, the liquidity facility should remain available to fund following a non-payment of principal by the issuer on other CP outstanding. Due to the short term nature of CP, the issuer's inability to make principal payments on maturing CP is not necessarily reflective of their credit situation; it is more an indication of their liquidity position.

B (1) *Any member of an "obligated group" filing for bankruptcy or declaring invalidity.* Particularly with regard to health care issuers, the documents may permit immediate bank termination when any member of the borrowing group files for bankruptcy or declares invalidity. In our approach, that "member" must be material to the credit position of the system, usually defined as representing at least 50% of the total system financial strength (e.g., revenues, cash flow). We do not want the failure of a small member with limited credit impact on the rated entity to cause the immediate release of the bank from its obligation.

C (1) If an involuntary bankruptcy filing is consented to by the issuer, Moody's is comfortable with the automatic termination of the liquidity facility. However, if the issuer does not consent to an involuntary filing, the bank can immediately suspend its obligations under the facility but should not terminate its obligations until 60 days have passed during which time the filing was not dismissed. If the filing is dismissed within such 60 day period, the bank's obligation to purchase bonds should be reinstated.

It is extremely unlikely that an involuntary filing without merit would be initiated. Involuntary bankruptcy filings are extremely rare. In 2005, there were close to 1.8 million bankruptcy filings of which less than 600 were involuntary. The US Bankruptcy Code places the burden of proof on the creditors filing against a debtor to prove that the entity is 'generally not paying its debts as they come due' rather than just not paying on specific debts - which is a higher threshold than just the non-payment on debts to specific creditors. Additionally, if the bankruptcy court concludes that the involuntary filing was done without merit, the creditors can be held responsible for the debtor's legal fees and subject to further monetary sanctions.

In the case of not-for-profit entities, while not free from doubt, it is the opinion of many municipal market participants that not-for-profits can not be the subject of an involuntary bankruptcy filing. Additionally, involuntary bankruptcy filings are not permitted against municipal issuers (states, counties, cities, etc.) under Chapter 9 of the US Bankruptcy Code. Therefore, in many cases, while this termination/ suspension event may be included in the liquidity facility, its applicability may be limited.

Moody's is not aware of any frivolous involuntary bankruptcy filing against a not-for-profit entity that had a Moody's rating on its debt.

D. (1) *Allowing the facility to terminate upon downgrade by any, but not all, rating agencies.* The issuer's rating needs to be downgraded to below investment grade by Moody's in order for it to constitute an immediate termination event in a Moody's rated deal. Therefore, when the bonds are rated by more than one rating agency, the language should clearly state that Moody's must lower its ratings below investment grade before the facility can terminate.

What's New

F. (1) General obligation debt of a state should not have an automatic termination event for nonpayment of a final judgment. As a state cannot be forced by a court of law to appropriate the moneys needed to pay a judgment, this termination event should not apply to states in GO transactions. However, this event can be an automatic termination event after 60 days for deals which are revenue secured or which have borrowers that are local municipal issuers, higher education institutions, healthcare related or 501(c)(3)s. The minimum amount of this judgment will be determined on a case by case basis based upon factors including financial strength.

H. (1) *Including of broad material event clauses or breach of "any material provision" of documents as immediate termination events*. We are comfortable when the bank can terminate the facility without notice and without a mandatory tender if material provisions of the bond documents relating to the payment of principal and interest on, or security for, the rated debt are breached. However, clauses which provide for termination of the liquidity facility due to other material events are overly broad.

Termination Events Linked to Lease-Backed Debt Obligations

Often, liquidity facilities provided to support VRDOs which are lease-backed debt obligations provide for immediate termination upon; (1) non-payment, (2) non-appropriation or (3) downgrade of the debt. Since the debt obligation backed by a lease is unique to that lease, there are limitations to establishing parity debt. In order for the VRDO to be eligible for the highest short-term rating, Moody's expects such termination event to be limited to the following:

1. The immediate termination upon non-payment of the debt should be limited to lease-backed debt covered by the liquidity facility or upon nonpayment of other lease-backed debt of the issuer which is rated by Moody's in the same rating category or higher.
2. The bank's ability to immediately terminate the liquidity facility upon nonappropriation of the lease-backed debt should be limited to nonappropriation of the lease associated with the covered debt only. Moody's notes that the termination event for non-appropriation is not meant to address the late passage of a municipal budget. Therefore the termination event should not occur due to the failure to budget, but instead should occur for non-appropriation in an adopted budget.
3. The immediate termination upon downgrade of a lease should be limited to downgrade below investment grade of the covered lease backed debt only.

Termination Events Linked to Revenue Bonds

Often, liquidity facilities supporting revenue bond VRDOs provide immediate termination upon the bankruptcy or insolvency of either the issuing enterprise or its related municipality. Since municipal enterprises have differing degrees of independence from their related municipalities, Moody's considers such termination provisions on a case by case basis. The greater the independence of the enterprise from the municipality, the less likely such an immediate termination event would be consistent with the assignment of the highest short term rating.

Enforceability of the Liquidity Facility and Other Legal Factors

ENFORCEABILITY

The enforceability of the liquidity facility is a fundamental part of the analysis in order to ensure that the obligation of the bank to provide payment of purchase price upon a draw by the trustee or other agent is a legal, valid, binding and enforceable obligation of the bank. Moody's will review an enforceability opinion to gain comfort on the legal status of the bank's obligation under the liquidity facility. Unlike an insured floater, the enforceability of the liquidity facility does not need to be limited only to the insolvency, reorganization, bankruptcy and liquidation of the bank, since the insolvency, reorganization, bankruptcy or liquidation of the issuer could affect the enforceability of the liquidity facility.

PARTICIPATION/ASSIGNMENT

The liquidity facility may provide that the bank can participate its obligations under the liquidity facility to other parties. In facilities where the bank may participate its obligation, the liquidity facility should be clear that such participation does not relieve the bank of its obligation to fund purchase draws and the bank remains solely obligated under the liquidity facility. This ensures that the bondholders remain exposed only to the credit quality of the bank providing the liquidity facility.

The liquidity facility may provide that the bank can assign its obligations under the liquidity facility to other parties. Unlike a participation, an assignment would result in the legal transfer of the obligations of the bank to the other party. Moody's treats an assignment like a substitution of the liquidity facility. In facilities where the bank may assign the facility to another party, Moody's asks that prior to any assignment the bank obtain written evidence from Moody's that the short-term rating on the bonds will not be reduced or withdrawn as a result of such assignment or that such assignment be treated as a substitution under the bond documents. This provision ensures that the current short term rating is maintained and the holders are not subject to a deterioration of the liquidity quality upon such assignment.

MONITORING OF THE SHORT TERM RATING COMPONENT OF VRDOS

Moody's short-term ratings on VRDOs generally expire upon expiration of the liquidity facility, an earlier termination of the facility, the substitution of the facility, or conversion of the bonds to an interest rate mode not supported by the liquidity facility. In order to maintain short-term ratings while the liquidity facility is in effect, we ask issuers or their designated representatives to provide us with copies of any facility extensions or renewal notices.

Within the bond documents, we also request that the trustee or other relevant party be directed to notify Moody's of any change in the liquidity provider or material amendment to any of the relevant bond documents or liquidity agreement. When document changes occur, we analyze them to ensure that the changes do not materially affect access to the liquidity facility or the timely payment of principal, interest, or purchase price on the bonds. We will also issue updated credit reports to notify bondholders of any material changes to the documents, access to the facility, or change in liquidity provider.

Related Research

Rating Methodologies:

Moody's Rating Methodology for Letter of Credit Supported Transactions, August 2005 (93865)

Moody's Rating Methodology For Analyzing Insured Floating Rate Bonds, November 2005 (95395)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 100230

Author	Production Specialist
Joann Hempel	*Cassina Brooks*

© Copyright 2006, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

This credit rating opinion has been prepared without taking into account any of your objectives, financial situation or needs. You should, before acting on the opinion, consider the appropriateness of the opinion having regard to your own objectives, financial situation and needs.

MOODY'S
INVESTORS SERVICE

RATING IMPLEMENTATION GUIDANCE

Variable Rate Instruments Supported by Third-Party Liquidty Providers Immediate Termination or Suspension Events Section

Table of Contents:

I. SUMMARY 1
II. AUTOMATIC TERMINATION OR SUSPENSION EVENTS 1
III. EXAMPLES OF AUTOMATIC TERMINATION EVENTS WHICH ARE NOT CONSISTENT WITH OUR METHODOLOGY FOR THE ASSIGNMENT OF THE HIGHEST SHORT-TERM RATING 1
IV. ADDING ADDITIONAL DEFAULTS/ TERMINATIONS BY INCORPORATION 1
V CONDITIONS PRECEDENT TO FUNDING & DRAW REQUEST 1
VI SHORT-TERM RATING TRANSITION 1
RELATED RESEARCH 1

Analyst Contacts:

NEW YORK 1.212.553.1653

Joann Hempel 212.553.4743
Vice President - Senior Credit Officer
Joann.Hempel@moodys.com
Robert Azrin 212.553.7436
Vice President - Senior Analyst
Robert.Azrin@moodys.com
Lisa Washburn 212.553.4133
Team Managing Director

I. Summary

The analysis of automatic termination events in a bank facility is an essential part of the assignment of short-term ratings to variable rate demand obligations ("VRDOs") and commercial paper ("CP"). This methodology update refines our published methodology on debt supported by third-party liquidity[1]. This report replaces the section titled "Immediate Termination or Suspension Events" in the publication titled "Variable Rate Instruments Supported by Third-Party Liquidity Providers", dated November 2006 and should be read in conjunction with the balance of that methodology which remains unchanged.

VRDOs are long-term debt instruments that include provisions that enable a bondholder to tender its bond for purchase upon demand. CP is a short-term obligation that has maturity dates which range between 1-270 days and is typically remarketed to new buyers at each stated maturity. Many issuers of VRDOs or CP obtain a bank standby bond purchase agreement ("SBPA") which provides funds to pay the purchase price of tendered VRDOs or maturing CP that is not remarketed. In addition, many issuers utilize "hybrid" bank lines to support their own obligations to purchase tendered bonds or maturing CP. A "hybrid" bank line is an agreement entered into by an issuer and a bank whereby the bank agrees to make a direct loan to the issuer[2] in the event that tendered bonds are not remarketed or roll-over proceeds are not sufficient to pay maturing CP[3]. The key difference between an SBPA and a hybrid bank line is that an SBPA is issued specifically to support an identified series of VRDOs or CP by providing funds to a fiduciary to purchase the VRDO or CP whereas in a structure that utilizes a hybrid facility, the bank makes a loan directly to the issuer, the funds of which are utilized to make payment on the VRDOs or commercial paper.

1 See "Variable Rate Instruments Supported by Third-Party Liquidity Providers" dated November 2006.
2 In this report the term "issuer" includes obligors in conduit financings.
3 See "Methodology Update: Hybrid Bank Lines As a Liquidity Source for Self-Liquidity Programs" dated March 2009.

Both SBPAs and hybrid bank lines typically contain automatic termination events which allow the bank to immediately terminate the facility without a final payment by the bank. VRDOs or CP can achieve the highest short-term rating when, the potential for a sudden loss of a liquidity facility in a VRDO or CP transaction is limited to the occurrence of certain credit events that would be reflective of a non-investment grade credit (below Baa3). Such events are typically limited to the following: (i) issuer nonpayment on the rated debt or similarly secured debt; (ii) issuer bankruptcy/ insolvency; (iii) downgrade of the issuer's long-term rating below investment grade; (iv) nonpayment of a judgment; and (v) invalidity of the bonds or certain key documents and/or provisions related to the security or payment of the bonds.

VRDOs are assigned both long-term and short-term ratings. The ratings are expressed as long-term/ VMIG ratings. The VMIG rating is defined as "Moody's evaluation of the degree of risk associated with the ability to receive purchase price upon demand". CP is assigned a "Prime" rating only. Prime, or P ratings are assigned to short-term instruments which mature within thirteen months. For more information on Moody's use of short-term ratings on various instruments please see Moody's Special Comment "Evaluating Market Access for Short-Term Municipal Market Products" dated November 2009.

The short-term rating (VMIG rating on a VRDO and P rating on CP) reflects not only the liquidity provider's ability to pay purchase price for tendered bonds or the principal of maturing CP but also the likelihood of the occurrence of an event which will terminate the bank's obligation to fund under the facility without a purchase or payment on the outstanding VRDOs or CP (an "automatic termination event"). As a result, when the long-term rating of an issuer changes the short-term rating on a VRDO transaction or CP transaction backed by a liquidity facility is also reviewed and may change. Generally, when the long-term rating of a municipal issuer falls below A2 the short-term rating on its VRDOs or CP supported by an SBPA or hybrid bank line will be downgraded to reflect the increased likelihood of the occurrence of an automatic termination event.

II. Automatic Termination or Suspension Events

Generally, VRDOs and commercial paper supported by an SBPA or hybrid line are eligible for the highest short-term ratings of VMIG 1 or a P-1 when the following parameters are met:

- Long-term rating of A2 or higher for the issuer;
- Bank facility from a P-1 rated bank;
- Automatic termination or suspension events in the bank line limited to those that are (i) indicative of an issuer/credit rated below investment grade or (ii) invalidity of the rated debt, closely related debt or the issuer's reimbursement obligation to the bank; and
- No additional conditions, beyond the automatic termination events outlined above, that would limit the bank's obligation to fund a draw.

Below, we identify those automatic termination events, suspension events and conditions precedent to the bank honoring an advance under its facility that are consistent with these fundamental tenets. We also identify some events that are commonly present in draft SBPAs or hybrid lines that are not consistent with Moody's methodology. Automatic termination events, suspension events and conditions precedent to an advance that are not discussed in this methodology update will be reviewed on a case by case basis and a rating committee will determine if they are events that would be consistent with the assignment of the highest short-term rating.

A. Termination for Non-payment

Non-payment of the Debt Being Rated

Non-payment of (i) principal or interest by the issuer on the VRDO or interest on CP supported by the SBPA or hybrid bank line; (ii) non-accelerated payments on bank bonds under the applicable SBPA or hybrid bank line; or (iii) parity debt, is not considered characteristic of an investment grade credit. Therefore, a VRDO or CP transaction that included any of these events as an automatic termination or suspension event or condition precedent to the bank funding a draw would be eligible for the assignment of the highest short-term rating.

Special Considerations when the Debt Being Rated is CP

While the non-payment of principal and interest by the issuer on a VRDO is generally straight forward, the priority of payment for commercial paper adds complexity when analyzing this automatic termination event in the context of CP. In most CP transactions, the sources of payment (in order of priority) for principal upon maturity are (i) rollover proceeds; (ii) issuer funds; and (iii) proceeds drawn under the liquidity facility. The issuer is frequently listed prior to the liquidity facility to allow the issuer the flexibility to reduce the CP program at a future date by utilizing its own funds. However, this priority creates an unusual situation with regards to automatic termination events. Because of the short term nature of CP, the issuer's inability to make principal payments on maturing CP does not necessarily reflect their credit position but is more a reflection of their short term liquidity and their ability to convert investments into cash quickly. Therefore, the liquidity facility should remain available to fund despite non-payment of principal by the issuer on CP (either on the CP being rated or on other parity CP outstanding). The issuer is usually the only party responsible for the scheduled interest payments on CP without further coverage under a bank facility. Therefore, if the liquidity facility only covers the payment of principal for maturing CP, the liquidity facility could include an automatic termination event for non payment of interest by the issuer on the maturity date of the CP and also be eligible for the highest short term rating.

Non-payment of Bank Bonds or Bank Loans

In transactions eligible for the highest short term ratings, automatic termination events for failure to pay principal and interest on bank bonds or loans are limited to non-payment of regularly scheduled payments and do not include non-payment of accelerated bank obligations or immediate repayment of interest due. Generally, banks have broad latitude to accelerate bank bonds and loans, for reasons not always limited to events that are related to the credit position of the issuer and, in certain cases, these events include the occurrence of any event of default under the bank agreement. In addition many liquidity facilities require that amounts drawn on the bank to pay the interest component of tendered bonds must be repaid immediately on the same date as the draw. Since the payment of the interest component may be on a date other than a regularly scheduled interest payment date and the issuer may not have advance warning of the need to make such payment until the day of a failed remarketing, we expect the documents to contain a two business day grace period (either that the interest portion of the draw does not need to be repaid for two business days or that the automatic termination does not occur for two business days following nonpayment of interest) to provide the issuer with time, from an administrative perspective, to make payment to the bank.

Nonpayment of Parity Debt

Moody's considers an automatic termination event or suspension event for a default in the payment of parity debt such as bonds, notes or similar instruments to be in line with our methodology. However, this particular termination provision often lacks clarity on what constitutes "debt", or is defined too broadly and encompasses financial products and instruments for which there may be reasons that are not credit related that could result in a delayed or missed payment. Examples of obligations that

Moody's believes may not carry the same level of payment behavior as rated bonds or notes (even if on parity) and therefore the non-payment of such are not expected to be included as part of an automatic termination event are; (i) trade accounts, (ii) subordinated debt, (iii) obligation for borrowed money (unless further defined as being evidenced by a bond or note or similar instrument), (iv) obligations to pay the deferred purchase price of property or services, (v) debt of others secured by a lien on any asset of the borrower, if such debt is not assumed by such borrower, (vi) guarantees by such borrower on debt of another party for which defenses to payment can be raised including, but not limited to, the right of set-off, counterclaim, or recoupment; and (vii) contract payments (other than regularly scheduled principal and interest payments due to a bank in the form of reimbursement).

One notable exception relates to an issuer's payment of regularly scheduled payments on interest rate swaps that are associated with the debt being rated or other parity bonds and which rank on parity with such debt. In this limited instance, Moody's considers the regularly scheduled interest rate swap payment (exclusive of any termination payment) as integral to and as important as the bond payment from the issuer's standpoint. Therefore, the non-payment of regularly scheduled payments on interest rate swaps as outlined above is, in our view, consistent with our standards for automatic termination events.

Special Consideration for Lease-Backed Debt Obligations

Liquidity facilities provided to support lease-backed VRDOs that are subject to appropriation typically have provisions which allow for the facility to automatically terminate upon; (1) non-payment of the obligation, (2) non-appropriation of the lease, or (3) downgrade of the debt below investment grade. Since the debt obligation backed by a lease which is subject to appropriation is unique to that lease, there are additional considerations when establishing parity debt. In VRDOs or CP with the highest short-term rating, such termination events are limited to the following:

1. The automatic termination upon non-payment of the debt should be limited to lease-backed debt covered by the liquidity facility or upon nonpayment of other lease-backed debt of the issuer which is rated by Moody's in the same rating category or higher (since appropriation backed debt may have different rating levels due to differences in essentiality).

2. The bank's ability to immediately terminate the liquidity facility upon non-appropriation should be limited to non-appropriation in an adopted budget and not due to the failure to budget by a certain date.

3. The automatic termination upon downgrade of a lease-backed obligation should be limited to downgrade below investment grade of the rated lease-backed debt which is covered by the liquidity facility.

B. Termination for Bankruptcy/ Insolvency

Voluntary Bankruptcy

An issuer that voluntarily files for bankruptcy or consents or fails to contest an involuntary bankruptcy filing would be inconsistent with the expectations for an investment grade credit and therefore, VRDO or CP transactions that are supported by SBPAs or hybrid bank lines that include these events as automatic termination events are eligible for Moody's highest short-term rating.

Special Consideration for Revenue Bonds

Often, liquidity facilities supporting revenue bond VRDOs provide automatic termination upon the bankruptcy or insolvency of either the issuing enterprise or its related municipality. Since municipal enterprises have differing degrees of independence from their related municipalities, Moody's considers

such termination provisions on a case by case basis. The greater the independence of the enterprise from the municipality, the less likely such an automatic termination event would be consistent to be eligible for the highest short term rating.

Involuntary Bankruptcy

Moody's views an involuntary bankruptcy filing that is either consented to by the issuer or not contested within 60 days similar to that of a voluntary bankruptcy filing. If the issuer does not contest to an involuntary filing, we believe that the passage of time - at least 60 days - is warranted prior to the bank's termination of the facility to permit the issuer time to contest the filing and have the case dismissed. However, since the issuer may not contest the filing it is in line with our methodology to permit the bank to suspend its obligation to purchase bonds or CP during this window of time and terminate at the end of such period. In the event that the filing is dismissed within this time period the bank's obligation to purchase bonds should be reinstated.

We believe that it is extremely unlikely that an involuntary filing without merit would be initiated based on the following considerations:

- Involuntary bankruptcy filings are extremely rare. In 2008, there were close to 1.1 million bankruptcy filings of which less than 800 were involuntary (according to www.uscourts.gov data).
- The US Bankruptcy Code places the burden of proof on the creditors filing against a debtor to prove that the entity is "generally not paying its debts as they come due" rather than just not paying on specific debts - which is a higher threshold than just the non-payment on debts to specific creditors.
- If the bankruptcy court concludes that the involuntary filing was done without merit, the creditors that initiated the involuntary filing can be held responsible for the debtor's legal fees and subject to further monetary sanctions.

Involuntary bankruptcy filings are not permitted against municipal issuers (counties, cities, etc.) under Chapter 9 of the US Bankruptcy Code. Therefore, in many cases, while this termination/ suspension event may be included in the liquidity facility, its applicability may be limited. In the case of not-for-profit entities, while not free from doubt, it is the opinion of many municipal market participants that not-for-profits can not be the subject of an involuntary bankruptcy filing.

Insolvency

Moody's views the concept of insolvency similarly to that of bankruptcy. Concepts such as those enumerated below are typically included in automatic termination provisions related to insolvency and are consistent with our views of an issuer that is not of investment grade credit quality: (i) the appointment of a receiver, liquidator, custodian or other similar official with respect to the issuer or any substantial part of its properties, (ii) the issuer shall consent to or acquiesce in any such relief or the appointment of or taking possession by any such official in an involuntary case, action or other proceeding commenced against it, (iii) the issuer shall make a general assignment for the benefit of creditors, (iv) the issuer shall declare a moratorium with respect to the payment of the principal or interest due on or in connection with the debt being rated, any bank bond or note or on parity debt, or (v) a debt moratorium or comparable extraordinary restriction on repayment of the debt being rated (or on all of the issuer's debt) shall have been declared or imposed by a governmental authority with competent jurisdiction.

We expect that when provisions are included for an automatic termination event that results from an outside party such as a court or a governmental authority declaring a moratorium or restriction on repayment that the provisions relate to either the specific debt being rated or on all of the issuer's debt. There is a remote possibility of a moratorium or restriction on repayment by a third party in

connection with other parity debt which could be the result of a technical issue that affects only such parity debt but may not affect the debt being rated. However, if the issuer themselves declares a moratorium or restriction on repayment it can be on the debt being rated or on parity debt as this is evidence of the issuer's willingness or unwillingness to pay the debt. In addition, for item (i) above the automatic termination event should be with respect to a substantial part of their property (versus any part of their property) to be consistent with the assignment of the highest short-term rating.

Special Consideration for Healthcare Issuers

Many healthcare organizations are made up of members of an "obligated group" or similar parent – subsidiary structures. Moody's reviews carefully the events which permit automatic bank termination when any member(s) of the borrowing group files for bankruptcy, declares invalidity or fails to make a payment on the debt being rated. To be eligible for the highest short term rating on a bank-supported VRDO or CP, that "member" is expected to be material to the credit position of the system to qualify as a credit event severe enough to result in the rated entity being rated below investment grade. Moody's reviews the organization and analyzes each member's contribution to revenues to determine whether the loss of the member's revenue or cash flow would result in the rating of the borrower being reduced below investment grade. Using this analysis, Moody's will review the proposed definition of material member on a case by case basis and evaluate whether it meets the standards described above. As an example, material member is frequently defined as representing at least 50% of the total revenues or cash flow of the system for organizations made up of many small members. In VRDOs or CP with the highest rating, the failure of a small member with limited credit impact on the rated entity is not expected to cause the automatic release of the bank from its obligation to purchase bonds or maturing CP.

E. Downgrade Below Investment Grade

An automatic termination event upon the downgrade of the long-term rating assigned to the VRDO or the long-term credit rating of the issuer of the CP to below investment grade clearly meets the guiding principles of our methodology. However, it is important to Moody's that the rating be downgraded to below investment grade by Moody's in order for it to constitute an automatic termination event in a Moody's rated transaction because of the link between our short-term and long-term ratings as described at the beginning of this report. Therefore, when the bonds are rated by more than one rating agency, we expect that this automatic termination provision clearly state that Moody's ratings are reduced below investment grade before the facility can terminate. In some instances commercial paper is issued which may have a subordinate lien to the issuer's other outstanding debt obligations. If Moody's does not have a public rating on the subordinate lien, a termination event linked to the publicly rated senior debt is in line with Moody's methodology. Alternatively if the credit events are linked to the subordinate lien and we maintain a rating on the senior lien debt, we may perform a credit analysis on the subordinate lien and evaluate that assessment along with the commercial paper rating each time we review the credit.

F. Nonpayment of a Judgment

An automatic termination event may occur if the issuer fails to pay a final, non-appealable monetary judgment for $5 million (or otherwise defined higher amount) within a reasonable specified timeframe (at least 60 days) without staying enforcement of judgment. The minimum amount of this judgment will be determined on a case by case basis based upon factors including financial strength of the issuer.

We look to see that the judgment is for the payment of money and not a warrant of attachment or lien against property of the issuer. The ability to comply with any judgment other than a monetary one may not be able to be complied with during the 60 day window because of non-credit related reasons

(i.e. property must be sold first), and therefore this type of event may not reflect a severe credit event for the issuer.

For healthcare systems, we expect the judgment to be on parity with and payable from the same source as the debt being rated. For instance, an automatic termination event for the nonpayment of a monetary judgment by a member of an obligated group when the larger system is not responsible for payment of such judgment, is not consistent with our methodology.

In addition, we would not expect to see nonpayment of a final judgment by a state on general obligation debt transactions as an automatic termination event since states cannot be forced by a court of law to appropriate the moneys needed to pay a judgment. However, this event can be an automatic termination event after 60 days for transactions which are revenue secured or which have borrowers that are local municipal issuers, higher education institutions, healthcare related organizations or 501(c)(3)s.

G. Invalidity

Invalidity Declared by the Issuer

Transactions supported by SBPAs or hybrid bank facilities that include an automatic termination provision for the invalidity of certain debt of the issuer or the issuer's reimbursement obligation on related bank facilities would be eligible for the highest short-term rating. The automatic termination provision may include many specific events and the following are those that have been included in transactions that have been assigned the highest short-term rating:

1. The issuer contests or repudiates the validity of the debt being rated, parity debt or its parity reimbursement obligations to the bank,

2. The issuer denies they have any or further liability with respect to the debt being rated, parity debt or its parity reimbursement obligations to the bank,

3. The bank liquidity facility, the debt being rated or the key supporting documents for the debt being rated cease to be valid and binding on the issuer,

4. A material provision with respect to the payment of principal or interest on the debt being rated or the parity reimbursement obligation to the bank ceases to be valid and binding on the issuer,

5. The security which is pledged for the repayment of the debt being rated or the parity reimbursement obligation to the bank ceases to be valid and binding on the issuer, or

6. Any governmental authority having jurisdiction shall find or rule that the bank liquidity facility, the debt being rated or any material provision within the bank liquidity facility or the governing bond documents with respect to the payment of principal or interest on the debt being rated or with respect to the security which is pledged for the repayment of such debt is not valid or binding on the issuer.

Moody's often sees automatic termination provisions included in draft liquidity facilities that include the invalidity of other related documents which are not governing documents for the debt. Inclusion of an automatic termination event for the invalidity of documents which are not related to the issuer's obligation to make payment on its debt is inconsistent with our methodology. Such documents include remarketing agreements, dealer agreements, fee arrangements, official statements or underwriter bond purchase agreements (unless the invalidity is limited to one directly related to the repayment of the regularly scheduled principal and/or interest of the debt within such document).

Another example of an automatic termination provision related to invalidity that is not consistent with the assignment of the highest short-term rating is when termination is permitted for invalidity of a material provision of a document without further explanation of what constitutes "material". In transactions with the highest short term ratings, the phrase "material" is defined as being related to the payment of principal and interest on the applicable debt in order for the automatic termination provision to be consistent with our standards for such events. Additionally, if invalidity is declared by a third party and not the issuer, we expect the event to be limited to the debt being rated (including the parity reimbursement obligation to the bank) but should not include other parity debt (unless issued under one master trust structure). In this example, the debt being rated may not be impaired if other parity debt was deemed invalid for a technical reason.

III. Examples of Automatic Termination Events which are Not Consistent with our Methodology for the Assignment of the Highest Short-Term Rating

Over the years banks have included a wide variety of additional automatic termination provisions in draft documentation we have reviewed. Below are a number of those provisions and an explanation of why they are not consistent with our methodology for a transaction to be eligible for the highest short-term rating. However, VRDOs or CP with the highest short term rating may include these provisions if they lead to termination with prior written notice from the bank and a mandatory tender before termination.

Taxability

The loss of a bond's tax-exempt status generally has no impact on an issuer's ability to repay its debts.

"MAC" Clauses

Material event clauses or breach of "any material provision" of documents are very broad and open to interpretation by the bank. Therefore, they may not reflect a severe credit event of the issuer.

Breach of Covenants/ Representations & Warranties

A breach by an obligor of a covenant or a representation or warranty being untrue may not represent a severe credit event of an obligor.

Nonpayment of Bank Fees

The obligation to pay bank fees owed under a liquidity facility may not carry the same level of payment behavior as rated bonds or notes even if on parity. For example, the fees could be in dispute by either party for business reasons and nonpayment may not reflect an issue with the credit.

Acceleration of Other Obligations

Acceleration of parity debt, in and of itself, may not be indicative of an issuer's credit quality being below investment grade. The reasons for an event of default and acceleration to be declared under a legal document can vary widely. An uncured covenant breach may result in the election of the bondholders to direct the trustee to accelerate the debt. Moody's believes that the acceleration of

parity debt, in and of itself, is not consistent with the tenets of our methodology as the issuer may be able to pay the accelerated payment.

IV. Adding Additional Defaults/ Terminations by Incorporation

Moody's has recently seen bank facilitates which contain the provision outlined below (typically in the covenant section):

"In the event that the borrower shall enter into or otherwise consent to any agreement or instrument (or any amendment, supplement or modification thereto) under which, a Person undertakes to make or provide credit or loans to the borrower, which agreement (or amendment thereto) provides such Person with more additional or restrictive covenants, additional or different events of default and/or greater rights or the remedies related thereto than are provided to the lender in this agreement, the borrower shall provide the lender with a copy of each such agreement (or amendment thereto) and, in any event, such additional or more restrictive covenants, such additional or different events of default and/or such greater rights and remedies shall automatically be deemed to be incorporated into this agreement."

This type of "automatic incorporation" of additional defaults and/or remedies is not consistent with our methodology without carving out defaults and/or remedies which affect the document's provisions related to automatic termination or suspension events or conditions precedent to funding section[4]. Therefore, transactions which include bank facilities with these provisions will not be eligible for an investment grade short-term rating.

V Conditions Precedent to Funding & Draw Request

As part of Moody's analysis of a bank facility, all conditions precedent to funding are reviewed to ensure that the bank's conditions for funding are consistent with the automatic termination and suspension events. For instance, typical conditions precedent to funding consist of (i) receipt by the bank of a request for funding, (ii) no automatic termination event has occurred and (iii) no suspension event has occurred and is continuing.

The condition precedent to funding section of the document will often state that a request for funding is deemed to be a representation and warranty by the issuer that the "conditions precedent to funding" have been satisfied. The inclusion of additional conditions or representations and warranties that are broader than those outlined in this methodology may result in the transaction not being eligible to receive the highest short-term rating.

Similarly, Moody's reviews draw certificates (typically these are exhibits to the bank agreement) under which requests for funding are made to ensure that the party drawing does not need to make any additional representations or fulfill any other conditions in order to receive payment under the bank facility.

VI Short-Term Rating Transition

There is a direct relationship between the assigned short-term rating and the issuer or issue's long-term rating on VRDO and CP transactions backed by SBPAs and hybrid bank lines that contain automatic termination and suspension events. As the long-term rating changes, Moody's opinion on the likelihood of triggering an automatic termination event may also change.

[4] See Moody's Special Comment "New Bank Provision Being Seen in Credit and Liquidity Facilities Used by Municipal Issuers" dated September 2009.

Below is the short-term rating transition chart which we utilize when an issuer's long-term rating is downgraded and there is a bank facility with automatic termination events linked to the issuer.

TABLE 1

Short term demand obligation rating transition for ratings linked to Municipal Issuers

OBLIGOR RATING	VMIG RATING	PRIME RATING
Aaa to A2	VMIG 1	P-1
A3	VMIG 2	P-2
Baa1	VMIG 3	P-3
Baa2-C	SG	NP

Related Research

Rating Methodologies:

» Variable Rate Instruments Supported by Third-Party Liquidity Providers, November 2006 (100230)

» Methodology Update: Hybrid Bank Lines As a Liquidity Source for Self-Liquidity Programs (115391)

Report Number: 122436

Author(s)
Joann Hempel

Editor(s)

Senior Production Associate
Wendy Kroeker

© 2010 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ARE MOODY'S INVESTORS SERVICE, INC.'S ("MIS") CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MIS DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS DO NOT CONSTITUTE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS ARE NOT RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. CREDIT RATINGS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MIS ISSUES ITS CREDIT RATINGS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

MOODY'S
INVESTORS SERVICE

Moody's
INVESTORS SERVICE

RATING METHODOLOGY

Rating Transactions Based on the Credit Substitution Approach: Letter of Credit-backed, Insured and Guaranteed Debts

Table of Contents:

SUMMARY 1
OVERVIEW 2
CREDIT SUBSTITUTION APPROACH SEEKS TO LIMIT BONDHOLDER RISK TO PERFORMANCE BY THE CREDIT SUPPORT PROVIDER 2
ELEMENTS OF CREDIT SUBSTITUTION 3
RATING GUIDANCE 7
CONCLUSION 8
ANNEX A: PUBLICATIONS REPLACED BY THIS METHODOLOGY 9
ANNEX B: APPLYING GLOBAL JOINT DEFAULT ANALYSIS TO LETTER OF CREDIT BACKED TRANSACTIONS IN THE US PUBLIC FINANCE SECTOR 10
ANNEX C: CONFIRMING LETTER OF CREDIT TRANSACTIONS 24
ANNEX D: DIRECT PAY LETTER OF CREDIT TRANSACTIONS INVOLVING MOODY'S RATED ISSUERS 28
ANNEX E: SPECIAL RATING CONSIDERATIONS WHEN LAYERING A LETTER OF CREDIT ON TOP OF AN EXISTING BOND INSURANCE POLICY 30

Analyst Contacts:

NEW YORK +1.212.553.1653

Joann Hempel +1.212.553.4743
Vice President – Senior Credit Officer
joann.hempel@moodys.com

Margaret Kessler +1.212.553.7884
Vice President – Senior Analyst
margaret.kessler@moodys.com

>>contacts continued on the last page

Summary

This rating methodology identifies the criteria required to achieve full credit substitution based on the following forms of explicit third party support to the security – financial guaranty insurance, letters of credit and third party guarantees.[1] Once those criteria have been met the rating assigned to supported securities will generally be the higher of the support provider's financial strength rating and the underlying rating, subject to the limitations described below.

This methodology consolidates our approach to credit substitution that was previously described in a combination of methodology, rating implementation guidance and special comment documents, listed in Annex A. The consolidation of these publications is designed to present a comprehensive guide to Moody's approach to credit substitution in cases where third party credit support is utilized. In addition to the key elements of credit substitution, Moody's adjusts its approach to the specific structure, mechanics, and legal considerations related to a given transaction, as follows:

» *Transactions backed by both a US municipal obligor and third party credit support.* We apply a joint default analysis (JDA) to certain transactions supported by third party credit support where both parties are jointly obligated to make payment, as described in Annex B. We generally do not apply joint default analysis where the underlying rating and the support provider rating are highly correlated or where there is no published underlying rating.

» *Confirming letters of credit.* While our approach to these structures is similar to that of letter of credit transactions, confirming letter of credit structures have additional mechanical and legal issues that must be considered when a primary letter of credit ("LOC") is confirmed by a second LOC. Considerations unique to confirming letters of credit is outlined in Annex C.

» *Certain US public finance direct pay letters of credit.* Moody's applies the higher of the rating on the municipal obligor and the LOC provider in transactions without preference risk, as described in Annex D.

[1] For the purposes of this publication, underlying rating will mean the rating of the security without any consideration for any third party support. Please note that for US municipal issuers Moody's analysis would also include any enhanced rating based on a state credit enhancement program.

» *Layering on a letter of credit to an existing transaction wrapped by bond insurance.* For transactions that are supported by an existing bond insurance policy and also supported by a third party letter of credit, Moody's applies credit substitution as described in Annex E.

As the substance of the approach in all material respects remains unchanged, no ratings are expected to change as a result of publication of this methodology.

Overview

Third-party credit support is typically provided by a bank, financial guarantor or corporate entity and is utilized by municipalities, not-for-profit entities, private companies and sponsors of structured finance securities to access the capital market at a lower cost with a higher credit rating than would be achievable on a stand alone basis. Generally, transactions that are rated based upon the credit substitution approach are assigned a rating consistent with the rating of the credit support provider as long as it is higher than the underlying rating of the guaranteed security.

The goal of a transaction utilizing this approach is to insulate investors from the issuer's[2] performance, default or bankruptcy and to provide for payment of principal and accrued interest on the debt when due (including a final payment prior to the expiration or termination of the credit support). In these types of transactions, investors accept primarily the credit risk of the support provider and therefore are exposed to the credit deterioration or improvement of such provider.

Given the differences in the forms of support, variation in legal structures, underlying relationships and specific circumstances surrounding each financing, rating assessments are made on a transaction-specific basis. Common transaction types that are rated using the credit substitution methodology are listed in Table 1 below. Additionally, the annexes included in this methodology and the methodologies cited in Annex A contain more information on the application of this approach to specific structure types.

Table 1: Common Forms of Support Applicable to This Methodology

» Letters of credit ("LOC")

» Direct-pay credit enhancement instrument/agreement from Fannie Mae or Freddie Mac

» Financial guaranty insurance

» Third-party guaranty

Credit Substitution Approach Seeks to Limit Bondholder Risk to Performance by the Credit Support Provider

When an issuer chooses to utilize third-party credit support on a capital market transaction, the goal is to substitute the credit risk of the support provider for its own credit risk. Credit substitution requires more than just the presence of a credit support instrument from a third-party credit provider. Full and effective credit substitution insulates the investor from the credit risk of the issuer. The transaction documentation provides clear instructions to ensure that payments under the credit support facility are made when due and that there are no impediments to the timely payment of debt service.

[2] The term "issuer" refers to the entity that is obligated on the debt which may be the issuer or may be the obligor in transactions in which debt is issued by a conduit issuer but secured solely by payments from the obligor.

Generally, the long-term ratings on credit supported transactions track the long-term rating assigned to the credit provider.[3] Subsequent to the initial rating, any change in the long-term rating on the transaction will reflect either a downgrade or upgrade of the long-term rating of the support provider or a change associated with the substitution of the support provider. When rating changes result in the security's underlying rating being higher than the support provider's rating, the higher rating will generally be applied. Certain debt instruments that Moody's rates utilizing the credit substitution approach also have short-term ratings assigned to them. In transactions backed by letters of credit, generally the short term ratings track the short-term rating assigned to the letter of credit provider.

Elements of Credit Substitution

Mitigation of Payment Default Risk on Underlying Obligation

Table 2: Key Elements of Credit Substitution:

- » Mitigation of Bankruptcy Risk of Issuer
- » Sufficiency of Credit Support
- » Structural Provisions Which Provide for the Payment of Timely Debt Service
- » Bondholders to Be Paid in Full if Credit Support Expiration or Termination Will Result in a Change in Credit Quality
- » High Quality Investments That Preserve Funds Held for the Payment of Debt Service
- » Legally Enforceable Credit Support

For credit substitution to be achieved, investors are insulated from the risk of payment default by the underlying obligor or an inability to pay principal and interest as due from the cash flows generated by securitization's collateral. Debt service payments made to investors in transactions that meet the standards for credit substitution are not eligible to be recovered as a preference in the event of the issuer's bankruptcy or, if such payments are able to be recovered, the credit support instrument provides coverage to repay any funds recovered from an investor. A preference is an issuer's pre-bankruptcy transfer of assets that is determined to treat one creditor more favorably than another. Consequently, if a payment is deemed to be a preferential transfer, it would be recovered by the bankruptcy trustee (or similar party) and returned to the issuer's bankruptcy estate for redistribution. Monies paid directly by the support facility, such as monies received under a direct-pay letter of credit, are generally viewed as "preference proof" in the event of the issuer's bankruptcy and are not expected to be recoverable since the funds used to make debt service payments were not received from the issuer. In a transaction structured to achieve credit substitution, the support provider utilizes its own funds to make payments under the support facility and there are no provisions within the transaction documents (such as a requirement that monies of the issuer be on deposit before a payment under the support facility is made) that could support a claim that the monies of the issuer were used to fund payments made under the credit enhancement facility.

[3] If the Joint Default Analysis (see Annex B) is applied, the rating may not track the rating of the credit support provider.

Issuer monies are considered to be "preference proof" when they have been provided by the issuer and have been on deposit ("aged") with the trustee[4] for the period of time during which such funds are at risk of being considered preferential payments. This period typically ranges for issuers other than municipalities from 90 days to one year prior to a bankruptcy of the issuer.[5] The aging period may vary from transaction to transaction depending on the identity of the issuer and the specifics of the transaction. If monies other than funds provided by the support facility or aged funds are to be utilized or if the transaction structure is new or unique, Moody's will review legal opinions provided by bankruptcy counsel to ascertain if the monies used to pay debt service are consistent with the rating to be assigned to the debt.

Sufficiency of Credit Support

The credit support provider's commitment under the support facility is considered sufficient when it covers full principal of bonds issued, the maximum interest accrual period, plus any other amount, such as premium upon mandatory redemption, which may be promised to investors. The necessary size of the interest coverage varies from transaction to transaction because the variables needed to calculate such coverage are derived from the documents governing the bonds.

The components of interest coverage are the sum of the following:

» the longest period of time interest can accrue between interest payment dates;

» the reinstatement period, if applicable, which is the length of time that the support provider reserves in the credit facility to determine whether it will reinstate the interest component after honoring a draw on an interest payment date; and

» if the support is subject to reinstatement, the remedy period which is the length of time the trustee has to pay bondholders in full (typically through a mandatory tender, acceleration or redemption of the debt) if the interest coverage component of the credit facility is not reinstated in full.

Document provisions are also reviewed by Moody's to determine how, if applicable, the issuance of additional bonds or the partial conversion of bonds to an interest rate mode not covered by the support facility is addressed. Issuance of additional bonds could dilute the level of support provided to the bonds if the new bonds are also entitled to the benefit of the support facility. Partial conversion of bonds in a structure with multiple interest rate modes to a rate mode not initially covered by the support facility could also result in insufficient support under the credit facility for all the bonds. For example, if the support facility is intended to cover bonds paying interest monthly and a portion of the bonds are converted to an interest rate mode that pays semiannually, there may not be sufficient interest coverage under the facility to support all the bonds.

One alternative to address this gap is for the transaction documents to provide for an increase in coverage of the credit facility prior to the issuance of additional bonds or conversion to a rate mode that requires additional interest coverage under the support facility. Alternatively, the transaction documents may incorporate other safeguards such as: a prohibition on drawing by the trustee on the credit enhancement for non–covered additional or converted bonds, establishment by the trustee of segregated bond fund accounts so monies for the payment of covered and non-covered bonds will not be commingled, and separate series designations or bond captions to distinguish covered versus non-covered bonds.

[4] The term "trustee" is used generically to denote the fiduciary that is the beneficiary of the credit support facility. The beneficiary may also be termed the tender agent, paying agent, or fiscal agent.

[5] Payments made by municipalities (as defined under the U.S. Bankruptcy Code) issuing bonds or notes for their own purposes are not recoverable as a bankruptcy preference.

Transactions with Mandatory & Optional Tender Provisions

Most variable rate municipal and corporate bonds supported by letters of credit are subject to both mandatory and optional tenders. Tenders are paid from remarketing proceeds and from a draw on the letter of credit if the bonds are not successfully remarketed. In these transactions the letter of credit will state that it is available to cover the full purchase price of all outstanding bonds at the time of any mandatory or optional tender. Therefore, pursuant to the credit substitution approach, the short-term portion of the rating on a letter of credit supported bond would reflect the short-term rating of the provider.

Mandatory tenders can occur for; (i) expiration of the credit support; (ii) conversion of the interest rate mode; (iii) substitution of the credit support; or (iv) early termination of the credit support following a default under the bank agreement.

In our analysis of transactions that include optional tenders, Moody's reviews the tender process to evaluate whether investors are exposed to credits other than the provider of the support provider and the timing and mechanics of the draws provide for timely payment of purchase price to tendering investors. Transactions that achieve full credit substitution involve a fiduciary as the party receiving tender notices from investors. In addition, the various legal documents direct the appropriate party to draw upon the letter of credit in a timely manner in order to pay purchase price. Moody's analysts review the documents to ensure there is sufficient time between events such as the bondholder's notice of optional tender, the remarketing agent's delivery of the amount of remarketing proceeds, and the trustee's notice to the letter of credit provider of a request for funds.

Structural Provisions Which Provide for the Timely Payment of Debt Service

In addition to adequate coverage under the support facility, a transaction structured for full credit substitution clearly outlines the mechanics and timing for submitting a draw or claim for payment under the credit facility and the timing for payment by the credit provider upon receipt of a draw or claim in the transaction documents. The instructions for submitting a draw or claim by the trustee to the credit provider under the governing document should conform to what is required under the credit facility. To avoid any interruption in draw responsibilities the credit facility is expected to be transferred to a successor trustee before its resignation or removal.

Since the funds which the credit provider is legally obligated to provide under the form of enhancement is typically finite in nature and may be sized to a certain dollar amount to provide payment of principal and interest on the bonds, it is essential that such funds be available and applied only for the timely payment to bondholders and not seized or encumbered by any other party to the transaction. Bond transactions that are fully supported by third-party credit enhancement have clear document provisions that prevent any transaction party from having a lien on funds provided by the credit enhancer, other than the trustee, acting for the benefit of the bondholders, to pay principal and interest on the bonds.

To prevent the possibility of a delay in payment to investors, the legal documents in an adequately structured transaction provide that the trustee is required to perform non-discretionary duties and actions (i.e. drawing on the credit support, making payments to investors, effecting mandatory redemption, mandatory tender, or acceleration of the bonds under the indenture) without first seeking and receiving indemnity or the consent of any other party. Such structural elements are important to ensure that the provisions related to the payment of debt service are carried out in a timely basis so that bondholders are exposed only to the credit risk associated with the credit support provider and not subjected to situations in which payments may be delayed or impaired by circumstances unrelated to the creditworthiness of the support provider.

Bondholders to Be Paid in Full if Credit Support Expiration or Termination Will Result in a Change in Credit Quality

Credit support instruments may be issued to the stated maturity of the debt or for a finite period with a stated expiration date prior to the maturity date of the bonds, which may be extended at the discretion of the credit provider. At the credit provider's discretion, certain credit support instruments may also be terminated prior to the stated expiration due to an event of default under the applicable credit documents. The expiration or early termination of the credit support is the most obvious event upon which a security may lose its credit support. It is important that the transaction documents provide that investors are paid in full from the credit support prior to its termination via a mandatory tender, mandatory redemption, or acceleration upon expiration or earlier termination unless the rating on the bonds will not be reduced or withdrawn following the loss of the existing credit support.

Transactions that utilize credit support typically permit the issuer to replace the original credit support provider with support from an alternate provider. Upon substitution of the credit provider, the original credit support facility will terminate or be surrendered for cancellation and a new credit facility will support the bonds. As in the case of expiration of the credit support, the substitution of one credit facility for another could have an adverse impact on bondholder security, depending on the credit quality of the new provider and the form of the replacement of the credit support instrument. In order to be considered for credit substitution, a transaction must therefore contain provisions for a mandatory tender upon substitution or provide that a substitution of the credit support be permitted only if the Moody's rating will not be reduced or withdrawn as a result of such substitution.

Defeasance or refunding of variable rate bonds poses a risk to bondholders in that the security and documentation supporting their bonds changes. Credit support provided by banks typically automatically reduce to zero when no bonds remain outstanding. After defeasance, bonds can be considered to be no longer outstanding resulting in termination of credit support. In addition, the governing bond documents are normally released upon defeasance eliminating tender rights and the procedures supporting those rights. In its analysis of puttable variable rate debt, Moody's considers protection for variable rate bondholders against loss of rights and support in the event of defeasance.

Special Considerations for Credit Supported Commercial Paper

» Commercial paper notes have maturities of 1-270 days and are typically not subject to mandatory tenders or redemptions. Therefore, notes are structured to mature no later than the business day prior to the expiration date of the credit support.

» Because commercial paper programs are designed so that various amounts of notes, maturing at various periods, may be outstanding simultaneously during the life of the program, it is important that the total amount of notes outstanding plus accrued interest not exceed the commitment amount available under credit support.

» Substitute credit support can become effective on a date following the maturity of all the outstanding notes and secure any notes issued after the effective date of the substitution.

» The credit support provider typically has the right to send a no-issuance notice upon an event of default under the bank agreement. The fiduciary should be instructed to cease issuing new notes and either: (a) draw on the credit support for the entire amount of notes outstanding and hold the proceeds until such notes mature; or (b) if the credit support remains in effect until all notes outstanding mature, draw on the credit support as required until all the outstanding notes are paid at maturity

High Quality Investments that Preserve Funds Held for the Payment of Debt Service

Governing bond documents often include provisions that allow the trustee to invest the proceeds of draws on third-party credit enhancement. As the rating on transactions discussed in this methodology only reflects the credit rating of the support provider, investments of such funds should not add additional risk to the transaction due to increased credit risk or market value risk. Only those investments that are limited to safe, conservative, and liquid investments which mature in order to be available on the payment date.[6]

Legally Enforceable Credit Support

Since the credit support is the main funding source relied upon for debt service payments, it is essential that the credit provider's obligation to make payments is legal, valid, binding and enforceable against the support provider. Moody's reviews the applicable legal opinions to ascertain that the obligation of the credit provider under the credit support facility is enforceable. In the legal opinion, Moody's expects that it will be clear that the only exceptions to the enforceability of the credit support be the insolvency, reorganization or liquidation of the support provider itself. For enhancement issued by non-U.S. entities, foreign counsel opinions are reviewed to establish that the obligation of the credit support provider is enforceable in the home country of the provider and to understand where the obligation ranks within the credit support provider's debt structure. Moody's will apply the appropriate rating of the credit support provider, based on the information provided in the legal opinions or other sources, to transactions that meet the standards for credit substitution.

Rating Guidance

In order to best reflect the credit risk on a fully supported security Moody's will apply the rating that is the higher of the support provider's rating and the published underlying rating for the issuer. For structured finance securities the rating applied will be the higher of the support provider's rating and the published or unpublished underlying rating. In the event of a downgrade of a financial guarantor's rating to below investment grade, Moody's expects to withdraw the rating for instruments that do not have published underlying ratings.

Moody's long-term ratings for fully supported securities express an opinion on the likelihood of timely payments of principal and interest on the supported securities. Or phrased in another way, the ratings address the possibility that the timely payment of principal and interest when due will not be made to holders of the securities. With respect to securities fully supported by third-party credit support, the obligation will be honored unless two events happen: (1) the underlying obligation defaults and (2) the support provider defaults. Therefore, when the published or unpublished (when applicable)rating on the underlying obligation of a wrapped security is higher than the support provider's financial strength rating, the rating of the transaction will be higher than the support provider's rating.

There are specific circumstances where the approach outlined above will not apply and the rating assigned will be based on different criteria. For example, when a letter of credit is layered on top of an existing financial guaranty policy, there may be structural considerations which will prevent the application of the higher of the rating of the bank, financial guarantor and underlying rating of the issuer. It will only be applied when all payments of principal and interest are to be due from or fully supported by each of the parties on the payment date.

[6] For additional information on Moody's investment guidelines, please refer to the Special Comment titled, "Guideline to Investment Options in Fully Supported Structured Transactions."

In transactions supported by direct pay letters of credit and other arrangements in which the support provider pays bondholders and is reimbursed, it is not always possible to apply the higher of the rating of the support provider and the underlying obligation to the credit enhanced debt due to risk that payments made by the support provider could be reclaimed as a possible preference in the event of support provider insolvency. For a more detailed discussion of these issues please see Annex C (Confirming Letters of Credit), Annex D (Direct Pay Letter of Credit Transactions Involving Moody's Rated Issuers) and Annex E (Layering a Letter of Credit on an Insured Transaction).

Conclusion

Generally, the rating assigned to a security benefitting from third-party support that meets Moody's criteria for credit substitution will be the higher of (i) the relevant rating of the support provider's rating and (ii) (a) the underlying published rating (public finance and corporate securities) and (b) the underlying published or unpublished rating (structured finance securities).

Annex A: Publications Replaced by This Methodology

Rating Methodologies:

- Moody's Methodology for Rating U.S. Public Finance Transactions Based on the Credit Substitution Approach, August 2009 (117841)
- Applying Global Joint Default Analysis to Letter of Credit Backed Transactions in the U.S. Public Finance Sector, October 2010 (127310)

Rating Implementation Guidance:

- Letter of Credit Supported Transactions, August 2005 (93865)
- Moody's Rating Methodology for Confirming Letter of Credit Transactions, September 2005 (94221)
- Special Rating Considerations when Layering a Letter of Credit on Top of an Existing Bond Insurance Policy, August 2008 (110450)
- Moody's Approach on Letter of Credit Supported Municipal Commercial Paper Transactions, December 2008 (100205)

Special Comments:

- Financial Guaranty Policies – What is Needed for Credit Substitution, March 2009 (55948)
- Direct-Pay Letter of Credit Transactions Involving Moody's Rated Issuers: Addressing Preference Risk and Transaction Mechanics Key to Assignment of 'Higher of' Rating, May 2010 (125305)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Annex B: Applying Global Joint Default Analysis to Letter of Credit Backed Transactions in the US Public Finance Sector

Introduction

Moody's applies the global JDA methodology to the long-term ratings of letter of credit-backed transactions that have a rated obligor or revenue pledge, a rated letter of credit (LOC) bank and where the mechanics and structure of the transaction support timely and full payment of principal and interest to investors. Under the JDA approach for letter of credit backed transactions, the credit risk of both the entity receiving support and the LOC bank are factors in determining the long-term rating of the bonds, as is the default dependence between the two entities.[7] The JDA approach recognizes the potential benefit of dual support and as such, transactions may achieve a long-term rating that is higher than either the obligor or the LOC bank. The range of long-term rating outcomes for transactions based on the JDA approach are generally 0 to 2 notches above the higher of the LOC provider's or obligor's long-term rating.

This methodology outlines a general framework for determining the joint default long-term rating. Factors and variables, other than those contained in this methodology, may be considered by rating committee in the assignment of a JDA rating.

JDA Methodology – Overview

In February 2005, we published our analytical approach, "The Incorporation of Joint Default Analysis into Corporate, Financial and Government Rating Methodologies" (JDA methodology), for arriving at ratings when the risk of default depends on the performance of both the primary obligor and another entity (secondary obligor). The secondary obligor may provide partial or full support for a transaction and the support may either be implicit or explicit. The JDA methodology takes into account the primary and secondary obligors' ratings (the stand-alone risk or default assessment); the probability that the secondary obligor would provide support to, or interfere with, the primary obligor; and the default dependence[8] between the two obligors. Appendix I provides a technical overview of the JDA approach.

Global JDA Methodology for LOC-Backed Transactions

The global JDA Methodology for LOC backed transactions considers the long-term rating of the obligor[9], the long-term rating of the LOC bank, the level of support of the LOC bank which is typically 100%, and the default dependence between the obligor and the LOC bank and the banking sector.

The framework for determination of default dependence takes into account the revenue overlap between the obligor and the bank and the financial/operational linkages between the two entities.[10]

[7] When a LOC-backed transaction is a variable rate demand bond, the short-term rating assigned to the bonds is based on the short-term rating of the LOC bank.

[8] For a detailed explanation of default dependence, please see the Special Comment titled, *Defining Default Dependence*, published in November 2006.

[9] The obligor in a LOC-backed transaction is typically a municipality, corporation or non-profit organization.

[10] Additional factors may be reviewed in transactions with obligors or LOC banks rated below investment grade (Baa3).

An LOC-backed transaction rated based on the JDA approach may achieve a long-term rating that is 0 to 2 notches above the higher of the LOC bank's or the obligor's long-term rating.[11] Appendix II displays a guideline for the rating outcomes based on the applicable determined default dependence.

We also review the transaction documents to determine if the structure and mechanics support the assignment of a rating based on the JDA approach.

The key determinants of the JDA rating for an LOC backed transaction are:

1. Standalone probability of default of the obligor and the LOC bank;
2. the default dependence between the obligor and the LOC bank;
3. the level of support of the letter of credit provider; and
4. the structure of the transaction.

The following is a discussion of each factor.

1. Probability of Default of the Obligor and the LOC Provider

An important determinant of the JDA rating is the standalone risk of the obligor and the LOC provider. These risks are represented by the individual probability of default of the obligor and LOC bank. Moody's utilizes the 4-year global idealized default rate table in our rating assessments of transactions rated based on the JDA approach. These default rates correspond to the global scale ratings assigned to the entities and are consistent with those used in the application of the JDA rating approach in other sectors.

2. Default Dependence[12]

Default dependence reflects both the degree to which an obligor's and the letter of credit provider's credit profiles share common risk factors, and the tendency of the entities to be jointly susceptible to adverse circumstances that simultaneously move them closer to default. Rating outcomes and default dependence are generally inversely related; generally, the lower the default dependence, the higher the potential outcome for the long-term rating.

In determining default dependence, we assess the linkages between the obligor and the LOC bank and the broader banking sector. Default dependence is scored on a scale of low, moderate, high or very high with corresponding quantitative values of 30%, 50%, 70% and 90%, respectively. The assigned default dependence value corresponds to the higher score of factors A(revenue overlap) and B(financial/operational linkages), as discussed below.

(A) REVENUE OVERLAP OF OBLIGOR AND LOC BANK

In determining default dependence, we consider the extent to which the obligor and LOC bank derive their revenues from the same geographic area, market base, or sources. This factor is scored on a low, moderate, high and very high scale. As the banks currently operating in the LOC provider market are relatively large and diversified with limited exposure to any specific U.S. public finance or corporate sector or any geographic area, we expect that this factor will be scored 'low' for most obligors and LOC banks. For example, when assessing the revenue overlap between a large national bank and a regional health care provider, we may assign a "low" score for this

[11] The long-term rating based on the JDA approach will not be lower than the higher of the LOC bank's or obligor's long-term rating.

[12] The default dependence framework detailed in this methodology is applicable when the LOC provider is a bank. The factors used in the default dependence analysis when a non-bank entity is the LOC provider will be determined on a case by case basis by rating committee.

factor due to the generally unrelated revenue drivers for health care and banking sector firms as well as the differences in geographic markets served.

(B) FINANCIAL/OPERATIONAL LINKAGES BETWEEN THE OBLIGOR & BANKING SECTOR

As a proxy for an obligor's exposure to the banking sector, we will review the obligor's level of bank-supported and bank-owned variable rate debt. This factor is scored on a low, moderate and high scale. Obligors with high levels of bank-supported variable rate debt are exposed to both the specific banks that provide credit and/or liquidity support on their variable rate debt, as well as to banking industry changes or stresses. Banking industry changes or stresses can result in increased debt service costs on variable rate debt and higher costs on or difficulty in obtaining credit and/or liquidity facilities.

Bank-supported variable rate debt introduces risks to obligors not typically present in traditional fixed rate debt. These risks include renewal or rollover risk associated with credit and/or liquidity facilities, restrictive covenants, or rating triggers under credit or liquidity agreements. An obligor with bank-supported variable rate debt also faces the possibility of significantly shorter repayment terms than the typical 20 to 30 year term of the bonds. This would be the case if its variable rate bonds are tendered and purchased by the bank as 'bank bonds' because they are unable to be remarketed. The failure to remarket bonds may be due to issues unrelated to the obligor, but rather due to credit concerns related to the bank providing the credit and/or liquidity support. The accelerated repayment of bank bonds could result in liquidity and/or credit pressure on the obligor and increase the probability of it defaulting on its debt.

Conversely, credit issues of obligors could result in pressure on LOC banks. Investors' perceptions about credit concerns in the municipal sector could lead to a large volume of bonds being put back to the LOC banks for purchase. At the same time, LOC banks may be experiencing financial stress of their own resulting from the same fundamental factors that are driving the credit concerns in the municipal sector. Widespread puts could exert or exacerbate financial stress on the LOC banks and may increase the likelihood that the LOC banks will need external support to avoid payment defaults on their debts and obligations, including funding commitments under their letters of credit.

Absent any mitigating factors, we generally consider obligors with bank-supported variable rate debt in excess of 50% of their debt outstanding as having 'high' financial/operational linkages with the banking sector. Those obligors with less than or equal to 20% bank-supported variable debt would be viewed as having a 'low' linkage.

Factors that may mitigate the risks associated with exposure to the banking sector through variable rate debt include (i) a high level of available liquid resources and (ii) the obligor's ability to access the capital markets.

(I) AVAILABILITY OF LIQUID RESOURCES

Obligors with available liquid resources equal to or greater than their bank-supported variable rate debt are less susceptible to the financial stresses that may arise with variable rate debt. For example, an obligor with 125% available liquid resources to bank-supported variable rate debt is expected to be well-equipped to handle an accelerated repayment of bank bonds. Conversely, an obligor with only 50% available liquid resources to bank supported variable rate debt could face financial pressure if its bonds were to become bank bonds.

All else being equal, obligors with higher levels of available liquid resources relative to their total bank-supported variable rate debt would have a lower default dependence than obligors with weaker own-source liquidity positions. We will assume a low level of default dependence if an obligor's available liquid resources are greater than their total bank supported puttable variable rate debt.

(II) ABILITY TO ACCESS THE CAPITAL MARKETS

Higher-rated obligors are more likely to have adequate credit strength to absorb the risks associated with variable rate debt. They are also expected to be well-positioned to access the capital markets in a timely fashion, if needed, to repay accelerated bank obligations. Generally, we would consider obligors rated A2 or higher to have a lower default dependence than obligors whose ability to access the market when needed is more uncertain.

DEFAULT DEPENDENCE SCORING

The default dependence score will be the higher of factor A (revenue overlap) and factor B (financial/operational linkages).

With respect to factor B, if an obligor's available liquid resources exceed its variable rate debt, we will score factor B low. If available liquid resources are less than an obligor's variable rate debt, we will then assess an obligor's ability to access the capital markets, if needed, to alleviate the financial pressure resulting from accelerated LOC bank repayment obligations. If we determine the obligor is likely to have market access, we will reduce the score resulting from the variable rate debt/total debt calculation by one category to determine the score for factor B.

Diagram 1 illustrates the process for determining default dependence for a municipal market obligor under the various circumstances detailed in Table 1. In this example, the obligor's high percentage of bank supported variable rate debt is used as a starting point and then the mitigants (available liquid resources relative to the bank supported puttable variable rate debt or our opinion regarding an issuer's ability to access the market) are considered. The result of evaluating these elements leads to a low, moderate or high default dependence score for Factor B. As mentioned previously, we expect that factor A (revenue overlap) will be low for most transactions. Table 2 details the default dependence outcomes based on the factor A and B scores.

TABLE 1

Evaluating Factor B – Financial/Operational Linkage

Default Dependence Factors and Mitigants	Example 1	Example 2	Example 3
Obligor Rating	A1	Aa2	A3
Factor: Bank Supported Puttable Variable Rate Debt/Total Debt	75%	75%	75%
Mitigant: Available Liquid Resources / Bank Supported Puttable Variable Rate Debt	150%	65%	50%
Mitigant: Credit Given for Market Access	Yes	Yes	No

FIGURE 1

Scoring Factor B- Financial/Operational Linkages

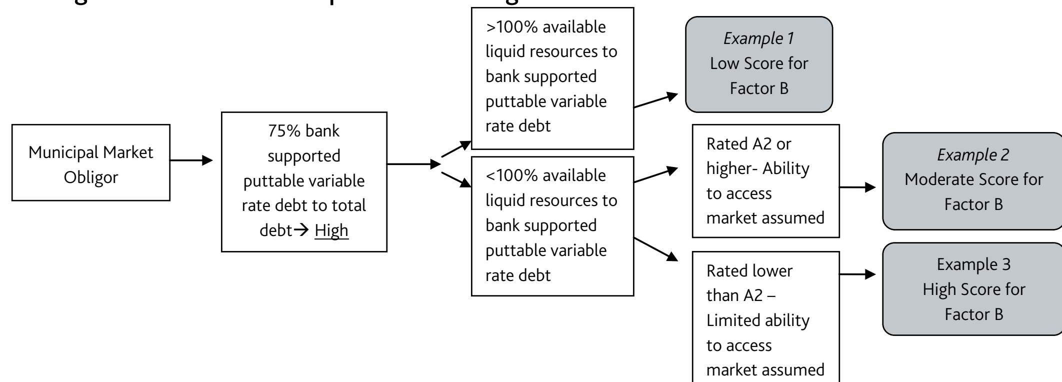


TABLE 2

Default Dependence Outcomes

	Example 1	Example 2	Example 3
Factor A Score (Revenue Overlap)	Low	Low	Low
Factor B Score (Financial/Operational Linkages)	Low	Moderate	High
Default Dependence→ (higher of factor A & B)	Low	Moderate	High

The dependence level generated by this approach acts as a reference point for rating committees decisions in applying JDA for the letter of credit-backed transactions.

3. Level of Support of the Letter of Credit Provider

A letter of credit is generally sized to provide full coverage of the principal plus interest on a debt. Therefore, the level of support from the LOC provider is typically 100%.

4. Adequate Structure and Mechanics

We analyze the transaction documents to confirm that the obligor is responsible for making debt service payments when due or upon the LOC bank's failure to honor a conforming draw to ensure timely payment of principal and interest to bondholders.

Transactions have two general types of payment arrangements to facilitate timely payment:

(I) AUTOMATIC TRANSFER OF FUNDS FROM OBLIGOR TO TRUSTEE

In the first, the obligor is unconditionally responsible to provide payment in full of principal and interest when due. The mechanics of this type of arrangement is the most straightforward. The bond documents (The Indenture, Trust Agreement or Resolution and the Loan or Lease Agreement) obligate the obligor to deposit funds with the trustee[13] sufficient to cover bond debt service payments prior to the time such payments are due. The funds are therefore immediately available to the trustee if needed and no further action is required by the obligor or trustee to provide for such funds.

(II) TRANSFER OF FUNDS FROM OBLIGOR UPON TRUSTEE'S REQUEST

The second type of payment arrangement directs the obligor to make debt service payments to the trustee if and to the extent the LOC provider fails to honor a draw on the letter of credit. In certain structures, the obligor may receive a credit toward payment obligations based on the LOC bank's obligation to pay. In such structures, we review the governing bond document to determine that the timing of payment by the bank for a draw on the letter of credit allows sufficient time for the trustee to give notice to the obligor if the LOC bank should fail to honor such draw and time for the obligor to deliver funds to the trustee to make debt service payments.

In addition to the structural, legal and mechanical issues discussed above, there are other important elements considered when applying the global JDA approach:

When assigning a rating based on the JDA approach, we would not expect the failure of the bank to honor a conforming principal or interest draw or the LOC bank's insolvency to lead to acceleration of the maturity or the redemption of the bonds. This is because the obligor may not have sufficient liquid funds to pay full principal and interest on bonds upon acceleration or redemption on a same day basis without prior knowledge;

The provisions detailed in the Credit Substitution Methodology are applicable to transactions rated based on this Global JDA methodology for LOC backed transactions. A discussion of structural, legal and mechanical issues relating to draw mechanics, LOC reinstatement and sizing provisions, additional bonds and partial conversions, LOC termination considerations and legal opinions can be found in the Credit Substitution Methodology.

Confirming LOC Transactions

In a confirming structure, a confirming letter of credit (CLOC) provider is obligated to pay bondholders in the event the provider of the underlying letter of credit (LOC) fails to make principal, interest, or purchase price payments when due. In transactions where both the LOC and CLOC providers are rated by Moody's, we have assumed a very high default dependence between the entities as the banks are in the same sector, share similar risk factors and are likely to be similarly adversely impacted in unfavorable economic environments. Under this structure, in the absence of preference risk relating to the LOC bank making debt service payments to bondholders, the rating on the bonds will reflect the higher of the LOC or CLOC provider's long-term rating. For more information on confirming letters of credit, please see Annex C to this publication.

[13] The term "trustee" is used generally to denote the fiduciary that is the beneficiary of the credit support facility. The beneficiary may also be termed the tender agent, paying agent, or fiscal agent.

Risks when LOC Bank Is a State-Chartered or Foreign Bank

Special issues may arise when the LOC provider is a state-chartered or foreign bank. It is possible that LOC payments made by state chartered and foreign banks may be subject to recovery as a preference upon the insolvency of the bank under applicable state or foreign law.[14] In these transactions, obligor monies as the second source of payment are utilized to pay bondholders if the LOC bank fails to honor a draw or repudiates its obligations under the LOC. If the LOC bank does honor a draw and the payment is subsequently recovered, bondholders will not necessarily be made "whole" as the obligor is not typically obligated to make a payment to bondholders once the LOC bank has paid bondholders. Because, in this theoretically possible situation, the bondholder is exposed to the credit risk of the LOC bank and may not receive additional support from the obligor, we may assign a rating lower than the JDA approach would otherwise imply, but no lower than the long-term rating on the LOC bank.

To determine whether preference or similar risks exist in a LOC transaction, we may ask to review a legal opinion outlining the circumstances under which LOC payments may be subject to recovery under the applicable state or foreign law. If recovery of LOC payments is not permissible under the laws applicable to the LOC provider, then preference risk will not be a factor in the application of the JDA methodology.

[14] Federal law governing nationally chartered U.S banks and savings and loan associations, which are Federal Deposit Insurance Corporation ("FDIC") insured, allow conservators or receivers of insolvent banks to disgorge funds the bank has paid, if a preference is deemed to have existed. However, based on an Advisory opinion provided by the FDIC, dated January 11, 1991, we believe this risk is extremely remote.

Appendix I- Technical Overview of JDA

Conditional Default Probabilities

The probability that two parties will jointly default depends on (a) the probability that one of them defaults, and (b) the probability that the second will default, given that the first has already defaulted. Expressed algebraically, one can write:[15]

$$P(A \text{ and } B) = P(A \mid B) \times P(B) \qquad (1)$$

Or equivalently,

$$P(A \text{ and } B) = P(B \mid A) \times P(A) \qquad (2)$$

We define A as the event "obligor A defaults on its obligations" and B as the event "obligor B defaults on its obligations". Likewise, "A and B" is the joint-default event "obligors A and B both default on their obligations".[16] The operator P(•) represents the probability that event "•" will occur and P(• | *) is defined as the conditional probability of event "•" occurring, given that event "*" has occurred.

Moody's ratings can be used to infer directly the probability that a particular issuer will default (P(A) and P(B)).[17] But in order to estimate the conditional default probabilities P(A | B) and P(B | A), one must take into account the relationship between the drivers of default for both obligors. Each of these four probabilities – P(A), P(B), P(A | B) and P(B | A) – are intended to represent unsupported risk measures. That is, they represent the likelihood of an obligor default in the absence of any joint support or interference.

Although this problem can, in theory, be tackled directly by estimating either one of the conditional default probabilities described in equations (1) and (2), it may be more intuitive to focus on the product of the conditional probability of default for the lower-rated, or supported, firm and the unconditional probability of default for the higher-rated, or supporting, firm. Using L to denote the event "lower-rated obligor L defaults on its obligations" and H to denote "higher-rated obligor H defaults on its obligations," we can rewrite equation (1) as:

$$P(L \text{ and } H) = P(L \mid H) \times P(H) \qquad (3)$$

It is not difficult to imagine situations where the conditional probability P(L | H) might be at its theoretical maximum (i.e. 1) or at its minimum (i.e. P(L)).[18] Let us consider these extreme outcomes in turn by way of example.

P(L | H) = 1. Suppose that the financial health of an issuer is crucially linked to the operations of another, higher-rated entity. For example, the default risk of a distributor in a competitive distribution market dominated by a single supplier may be highly dependent on the financial health of that supplier. In other words, the conditional probability of the distributor's default given a default by the

[15] Statisticians will recognize these equations as axioms of probability theory that underlie Bayes' Theorem.

[16] The implication here is that the default events occur simultaneously, but we require only that the timing be such that a holder of the supported obligation suffers credit loss within a specified horizon.

[17] Moody's ratings are defined as ordinal (or relative) measures of default risk and not in terms of cardinal (or absolute) default rates. However, as long as ratings can provide a constant measure of relative default risk, with actual default probabilities rising and falling proportionately by rating category over a credit cycle, the methods proposed here will produce logically consistent measures of jointly supported ratings.

[18] Technically, the conditional default probability P(L | H) could be as low as zero, a situation which would occur if the default correlation between the two obligors was at its theoretically maximum negative value. However, throughout this discussion, we follow the standard practice of ignoring the highly unlikely possibility that the default experience of the two obligors will be negatively correlated.

higher-rated supplier, P(L | H), is equal to one. In this case, events L and H are maximally correlated.[19] Under such a scenario, the joint default probability P(L and H) in equation (3) above is simply P(H). That is, the rating applied to such jointly supported obligations would equal the supplier's rating, without any ratings uplift, regardless of issuer L's standalone rating.

P(L | H) = P(L). Suppose a highly rated European bank provides a letter of credit to a lower-rated agribusiness in the US. While there may be circumstances in which the agribusiness might face financial difficulties on its own, its intrinsic operational health is generally unrelated to the circumstances that might lead the European bank to default on its obligations. Under this scenario, the conditional probability of a default by the agribusiness, given a default by the bank – i.e., P(L | H) – is simply the standalone default risk P(L) of the agribusiness. That is, events L and H are uncorrelated and independent of one another. In this case, their joint-default probability is the product of their standalone default probabilities, P(L)*P(H). The jointly supported obligation rating implied by such a relationship is generally higher than the rating of the supporting entity H.

In practice, the conditional default risk of the lower-rated entity, given a default by the stronger entity, will vary somewhere between these two extremes, maximum correlation (i.e. where P(L | H) = 1) and independence, (i.e. where P(L | H) = P(L)).

Intermediate Levels of Correlation

We propose here a simple tool for modeling intermediate cases of default risk linkage. Let us denote the variable W as a correlation weighting factor, where W = 1 corresponds to a maximum theoretical correlation between the default of the lower-rated entity and that of the higher-rated entity; and W = 0 corresponds to a complete independence (i.e. zero correlation) between default events. Fractional values of W indicate intermediate levels of correlation between the two default events.

Using the correlation weighting concept, we can express the joint-default probability between obligors L and H as:

$$P(L \text{ and } H) = W^* P(L \text{ and } H \mid W=1) + (1-W)^* P(L \text{ and } H \mid W=0) \quad (4)$$

Or more compactly,

$$P(L \text{ and } H) = W^*P(H) + (1 - W)^*P(L)^* P(H) \quad (5)$$

In other words, once we have determined standalone ratings for the two obligors, the task of assigning a rating to a jointly supported obligation may be reduced to the assignment of a correlation weight.[20]

[19] This use of the term "correlation" applies to default events that follow a binomial distribution and should not be confused with potential correlation in rating transitions (or default intensities). When the default profiles of two obligors are maximally correlated, P(L | H) = 1 and P(H | L) = P(H)/P(L). That is, the weaker entity always defaults when the stronger entity defaults, and the stronger entity will only default if the weaker entity also defaults. This leads to the result P(H | L) = P(H)/P(L). Note that maximum correlation will be less than 1 in cases where obligors have different ratings.

[20] While this derivation focused on P(L | H), it could also be approached through a focus on P(H | L). An alternative methodology is described in a paper published by Douglas Lucas, "Default Correlation and Credit Analysis," The Journal of Fixed Income, Vol. 4, No. 4, March 1995.

PARTIAL SUPPORT

In many cases, an obligation benefits from external support, but that support falls short of an iron-clad guarantee. Examples include bonds issued by a weak subsidiary of a relatively strong parent firm, or bonds issued by an issuer with partial government ownership. In the latter case, the government's incentive to bail the issuer out, should it run into difficulties, may be a function of the share of government ownership or of the importance of that issuer to the national economy.

It is helpful to think of the two extreme situations in which an investor faces losses. The first is where the issuer of the obligation defaults and there is no external support. The probability of this event occurring is simply P(L), the probability that issuer L will default on its own. The second is where there is full support, but both the issuer and the support provider default on their obligations. As above, this is given by P(L and H). The degree of support can also be thought of as a probability and can therefore vary between 0 and 1. We model the risk to the investor as a shifting probability between the two risk outcomes P(L) and P(L and H):

$$P(L \text{ and } H \mid S) = (1-S)*P(L)+S*P(L \text{ and } H) \qquad (6)$$

Here, the weighting parameter S represents the likelihood of support. Full support (i.e., S = 1) leads to the joint default outcome and no support (i.e., S = 0) yields the standalone default risk of the obligor, P(L).

Appendix II – Guideline JDA Rating Outcomes By Default Dependence Level

Low Default Dependence

Rating of the Higher- Rated Party:

	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C
Aaa	Aaa																				
Aa1	Aaa	Aa1																			
Aa2	Aaa	Aa1	Aa1																		
Aa3	Aaa	Aa1	Aa1	Aa1																	
A1	Aaa	Aa1	Aa1	Aa1	Aa2																
A2	Aaa	Aa1	Aa1	Aa1	Aa2	Aa3															
A3	Aaa	Aa1	Aa1	Aa1	Aa2	Aa3	A1														
Baa1	Aaa	Aa1	Aa1	Aa1	Aa2	Aa3	A1	A1													
Baa2	Aaa	Aa1	Aa1	Aa1	Aa2	Aa3	A1	A2	A2												
Baa3	Aaa	Aa1	Aa1	Aa2	Aa2	Aa3	A1	A2	A2	Baa1											
Ba1	Aaa	Aa1	Aa1	Aa2	Aa2	Aa3	A1	A2	A2	Baa1	Baa2										
Ba2	Aaa	Aa1	Aa1	Aa2	Aa2	Aa3	A1	A2	A2	Baa1	Baa2	Baa3									
Ba3	Aaa	Aa1	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1								
B1	Aaa	Aa1	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2							
B2	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A1	A2	A3	Baa2	Baa3	Baa3	Ba1	Ba2	Ba2						
B3	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A1	A2	A3	Baa2	Baa3	Ba1	Ba1	Ba2	Ba3	Ba3					
Caa1	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	A3	Baa2	Baa3	Ba1	Ba1	Ba2	Ba3	B1	B2				
Caa2	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	Ba3	B1	B2	B3			
Caa3	Aaa	Aa1	Aa2	Aa3	A1	A2	A2	A3	Baa1	Baa3	Ba1	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2		
Ca	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	
C	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C

Moderate Default Dependence

Rating of the Higher- Rated Party:

	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C
Aaa	Aaa																				
Aa1	Aaa	Aa1																			
Aa2	Aaa	Aa1	Aa1																		
Aa3	Aaa	Aa1	Aa1	Aa2																	
A1	Aaa	Aa1	Aa1	Aa2	Aa3																
A2	Aaa	Aa1	Aa1	Aa2	Aa3	A1															
A3	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2														
Baa1	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A2													
Baa2	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A2	A3												
Baa3	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A2	A3	Baa2											
Ba1	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	A3	Baa2	Baa3										
Ba2	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	A3	Baa2	Baa3	Ba1									
Ba3	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	A3	Baa2	Baa3	Ba1	Ba2								
B1	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba2							
B2	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	Ba3						
B3	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	Ba3	B1					
Caa1	Aaa	Aa1	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3				
Caa2	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa3	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1			
Caa3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa1	Baa3	Ba1	Ba2	Ba2	Ba3	B1	B2	B3	Caa1	Caa3		
Ca	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	
C	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C

High Default Dependence

Rating of the Higher- Rated Party:

	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C
Aaa	Aaa																				
Aa1	Aaa	Aa1																			
Aa2	Aaa	Aa1	Aa2																		
Aa3	Aaa	Aa1	Aa2	Aa3																	
A1	Aaa	Aa1	Aa2	Aa3	Aa3																
A2	Aaa	Aa1	Aa2	Aa3	Aa3	A1															
A3	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2														
Baa1	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3													
Baa2	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1												
Baa3	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa2											
Ba1	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa3	Baa3										
Ba2	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa3	Baa3	Ba1									
Ba3	Aaa	Aa1	Aa2	Aa3	Aa3	A1	A2	A3	Baa1	Baa3	Baa3	Ba1	Ba2								
B1	Aaa	Aa1	Aa2	Aa3	A1	A2	A2	A3	Baa1	Baa3	Baa3	Ba1	Ba2	Ba3							
B2	Aaa	Aa1	Aa2	Aa3	A1	A2	A2	A3	Baa1	Baa3	Ba1	Ba1	Ba2	Ba3	B1						
B3	Aaa	Aa1	Aa2	Aa3	A1	A2	A2	A3	Baa1	Baa3	Ba1	Ba1	Ba2	Ba3	B1	B2					
Caa1	Aaa	Aa1	Aa2	Aa3	A1	A2	A2	A3	Baa1	Baa3	Ba1	Ba2	Ba2	Ba3	B1	B2	B3				
Caa2	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa1	Baa3	Ba1	Ba2	Ba2	Ba3	B1	B2	B3	Caa1			
Caa3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3		
Ca	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	
C	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C

Very High Default Dependence

Rating of the Higher- Rated Party:

	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C
Aaa	Aaa																				
Aa1	Aaa	Aa1																			
Aa2	Aaa	Aa1	Aa2																		
Aa3	Aaa	Aa1	Aa2	Aa3																	
A1	Aaa	Aa1	Aa2	Aa3	A1																
A2	Aaa	Aa1	Aa2	Aa3	A1	A2															
A3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3														
Baa1	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1													
Baa2	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2												
Baa3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3											
Ba1	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1										
Ba2	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2									
Ba3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3								
B1	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1							
B2	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2						
B3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3					
Caa1	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1				
Caa2	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2			
Caa3	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3		
Ca	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	
C	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Caa3	Ca	C

Annex C: Confirming Letter of Credit Transactions

Summary

There are many types of credit support instruments utilized by municipalities, not-for-profit entities and corporations which serve to provide credit substitution for their debt. One form of credit support is to utilize a letter of credit.

A variation on the letter of credit structure is the use of a confirming letter of credit. In this transaction structure, there is an underlying letter of credit which is to be drawn upon for all debt service payments (principal, interest and purchase price, if applicable). If the underlying letter of credit does not make payment for any reason, the confirming letter of credit (or 'confirmation') is available to be drawn upon to make such payment. The confirming letter of credit provider is obligated to make debt service payments should the underlying letter of credit provider fail to do so. The use of a properly structured confirming letter of credit transaction can result in the rating of the confirming bank being applied to the bonds.

Borrowers may consider a confirming letter of credit structure when they want to maintain an existing relationship with a bank that is either unrated or has a rating which would not result in the desired market pricing on the bonds to be issued. By adding a confirming letter of credit, in addition to an underlying letter of credit, the borrower may be able to achieve more favorable pricing due to the substitution of the confirming letter of credit provider's rating for that of the underlying bank. Confirming letters of credit can also be added to an existing letter of credit transaction after initial issuance to provide additional support.

While Moody's rating approach for confirming letter of credit structures is similar to that of letter of credit transactions, confirming letter of credit structures have additional mechanical and legal issues that must be considered. In this report, Moody's outlines its analytic approach to rating debt securities with a confirming letter of credit based on the credit substitution methodology.

Structural Provisions are Critical to the Value of a Confirming LOC

Stand Alone Obligation

A confirmation should act as a stand alone credit obligation that would provide credit support in the event the beneficiary (usually the trustee) is required to draw upon it. Moody's will review a confirmation to ensure that it will be available to be drawn upon if the underlying letter of credit has not honored a conforming draw request or is otherwise unavailable for payment. Provisions that make it possible for investors to rely on a confirming letter of credit for timely payment include:

» a statement that the confirmation is irrevocable,

» clear draw mechanics for the beneficiary to follow,

» a statement that all payments will be made with the bank's own funds,

» an adequate commitment sized to cover full and timely payment on the bonds,

» draw certificates specific to the confirmation,

» provisions for reinstatement, and

» provisions for termination.

The structural provisions that Moody's evaluates in a standard letter of credit financing will also be evaluated for a confirming letter of credit transaction. These provisions include:

» draw mechanics,

» reinstatement,

» sizing considerations,

» termination,

» expiration; and

» substitution

Draw Mechanics

Draw mechanics included in the governing bond document are more complicated in a confirming letter of credit structure than in a standard letter of credit structure. The beneficiary must be able to draw under two letters of credit (the underlying letter of credit and the confirmation) and ensure timely payment to bondholders. The timing issues are addressed by carefully structuring the draw and payment times under both letters of credit as well as having specific instructions for the beneficiary to follow in the bond documents. Typically, the beneficiary will have to draw on the underlying letter of credit the business day prior to any interest, principal or purchase price payment date. This allows for the draw on the confirmation to occur on the bond payment date should the underlying letter of credit fail to pay.

Reinstatement Provisions

In some transactions, the confirmation can only be drawn upon once while in others, the confirmation can be drawn upon repeatedly if reinstated. In the circumstances in which the confirmation allows for multiple draws, it may reinstate immediately following a draw or after a set period of time unless the beneficiary has received notice from the confirming letter of credit bank of nonreinstatement. Similarly, the underlying letter of credit will also contain language indicating whether it reinstates immediately or after a set period of time unless a notice is received from the bank stating otherwise. The bond documents provide for a final payment for the bonds (mandatory tender, redemption or acceleration) following such notice of nonreinstatement from the underlying bank or the confirming letter of credit bank.

Alternatively, some confirmations provide for only a single draw equal to the entire amount of the bonds (par plus accrued interest). When this type of confirmation structure is used, a final payment for all of the bonds is structured into the bond documents in the event the confirmation must be drawn upon.

Sizing Considerations

Moody's will calculate the appropriate size of the interest component separately for the underlying letter of credit and the confirming letter of credit. If the confirmation reinstates after a set period of time following a draw (unless a notice of nonreinstatement is received by the beneficiary), this period of time between the draw and when the notice may be received will be included in sizing the interest component of the confirmation. Typically, both letters of credit in a confirming structure reinstate after a similar time period but that is not always the case. In instances in which the underlying letter of credit and the confirmation have different reinstatement periods, the interest coverage for each should be calculated using its own reinstatement period.

Other Termination Considerations

In addition to the takeout needed due to nonreinstatement of interest in the confirmation, there are other considerations if the confirming letter of credit bank can send any other type of notice resulting in a reduction or termination of the confirmation. For instance, the bond documents would contain a takeout if the confirming bank could send a notice that an event of default or termination had occurred under the confirmation agreement and such event would lead to the expiration or termination of the confirmation.

Other Structural Considerations

Similar to a traditional letter of credit transaction, many of the structural protections related to the underlying letter of credit must be applied to the confirmation. For example, a final payment or mandatory tender of the bonds is necessary prior to the expiration or substitution of the confirmation unless the documents provide for termination or substitution of the confirmation without final payment or mandatory if such termination or substitution will not result in a downgrade of the supported debt's ratings.

Risks when LOC Bank is a State-Chartered or Foreign Bank

Special issues may arise when the underlying LOC provider is a state-chartered or foreign bank. It is possible that LOC payments made by state chartered and foreign banks may be subject to recovery as a preference upon the insolvency of the bank under applicable state or foreign law.[21] In these transactions, underlying LOC monies are generally utilized to pay bondholders but the rating of the bonds is based on the confirming LOC. If the underlying LOC bank honors a draw, becomes insolvent and the payment is subsequently recovered as a preference, bondholders will not necessarily be made "whole" as the confirming LOC bank is not typically obligated to make payments to bondholders that have already been made by the underlying LOC bank.

Moody's rates only confirming letter of credit transactions in which the underlying bank is a state chartered bank in a state where that avoidance risk does not exist. Moody's will rely on an opinion of counsel for the bank or representation of the state banking department to advise us that there are no provisions for such avoidance. If counsel concludes that the avoidance risk does exist, this risk can sometimes be mitigated through structural provisions in the documents. For instance, some state laws have provisions similar to the original provisions of the National Bank Act that allow for the recovery of payments if there was inside knowledge of the bank's financial condition. For transactions using underlying banks from these states, there would need to be structural protections that prevent the trustee and the underlying bank from being the same entity for the duration of the transaction. In addition, in some instances counsel has concluded that the state law does provide for the ability to recover payments upon the bank's insolvency but has been assured by the state banking regulators that the recovery provisions were not intended to apply to letter of credit transactions. Under these circumstances, written assurance from the regulator would provide Moody's comfort that underlying bank payments to bondholders would not be subject to recovery.

When a state chartered, FDIC insured bank becomes insolvent, the appropriate state regulator can appoint itself, or the FDIC, as the bank's receiver or conservator. In addition, the FDIC can appoint itself as receiver or conservator in certain instances. A receiver or conservator would be empowered to utilize any avoidance powers available under state law. Since the confirmation would not be sized with

[21] Federal law governing nationally chartered U.S banks and savings and loan associations, which are Federal Deposit Insurance Corporation ("FDIC") insured, allow conservators or receivers of insolvent banks to disgorge funds the bank has paid, if a preference is deemed to have existed. However, based on an Advisory opinion provided by the FDIC, dated January 11, 1991, we believe this risk is extremely remote.

interest sufficient to cover any such accrued interest for the avoidance period, a risk would exist for bondholders.

If a U.S. bank is taken over by a receiver or conservator, obligations of the bank can be repudiated, including letters of credit. In the case of repudiation, the beneficiary must draw directly upon the confirmation as the underlying letter of credit is no longer available to be drawn upon. In the instance where the confirmation allows only one draw, the bonds must be paid in full (mandatory tender, redemption or acceleration) from a direct draw under the confirmation. The confirmation should not contain a provision requiring a draw to be made on the underlying letter of credit prior to a draw being made on the confirmation. Also, the confirmation cannot require a copy of the dishonored sight draft be delivered as a condition to the draw since no draw can be made on the repudiated underlying letter of credit.

Foreign Banks

When a foreign bank is the provider of the underlying letter of credit, Moody's considers the insolvency laws, in its country of origin, available to the bank. If the laws of a particular country are unfamiliar to Moody's, Moody's will request information from foreign counsel that outlines the insolvency laws available to the bank.

Annex D: Direct Pay Letter of Credit Transactions Involving Moody's Rated Issuers

Summary

In this report we discuss our approach to assigning ratings to LOC backed debt with rated issuers and determining whether the rating should be the "higher of" the issuer and letter of credit ("LOC") provider. In most cases these transactions will be rated based on a joint default analysis which can result in a rating higher than that of either the support provider or the underlying obligation. In some instances in which it is not possible to apply JDA it is possible to rate a transaction based on the higher of the support provider's rating and the rating of the underlying obligation. However, certain structural and legal issues that relate to direct-pay letter of credit transactions may preclude the assignment of the "higher of" rating to these types of transactions.

In a direct-pay LOC transaction the funds from the LOC are the first source of payment for regularly scheduled debt service. The issuer is also obligated to pay principal and interest on the debt. The issuer's funds are utilized to either reimburse the LOC bank for drawn amounts or to make payment if the LOC provider fails to make payment.

Our approach to assigning a "higher of" rating to these transactions, takes into consideration certain possible risks the direct pay LOC structure introduces, such as preference risk and transaction payment mechanics. If there is a risk that payments made by the LOC provider could be recovered as a preference in the case of insolvency of the bank or the transaction's payment mechanics do not support the timely payment of debt service to bondholders by the issuer, the LOC provider's rating will be assigned to the transaction rather than the 'higher of' the LOC provider and the issuer's ratings. The rationale behind this approach is that the assigned rating is intended to reflect the risk of (i) non-payment to bondholders; or (ii) the recovery from bondholders of any previously made debt service payments.

Assessing Which Long-Term Rating Will Apply to the Direct-Pay LOC-Backed Transaction

When an LOC is used to "wrap" a transaction, the letter of credit is typically a direct pay obligation which is used as the first source of payment on the bonds. In this case, the priority of payments for regularly scheduled principal and interest payments are; (i) monies received from a draw on the letter of credit and (ii) debt service payments made by the issuer. The long-term rating assigned to the bonds when an LOC wraps a bond depends upon:

» the presence of Moody's public ratings on the LOC provider and the issuer;

» whether payments made by the LOC provider could be recovered due to the bank's insolvency or receivership; and

» the payment mechanics in the transaction.

For a more detailed discussion of preference risk relating to insolvency of a support provider please see Annex C to this publication (Confirming Letter of Credit Transactions)

Risk of Recovery of LOC Payments

When there is the possibility of recovery of LOC payments from bondholders and the risk cannot be isolated, the long-term rating assigned to the transaction will be the same as that of the long-term deposit obligation rating or 'other senior obligation' rating, as applicable, of the bank providing the LOC.

Transaction Payment Mechanics

If the preference risk of the LOC provider can be mitigated, we will review the transaction's payment mechanics to determine if the fiduciary is instructed to use the issuer's payments to make timely payment to bondholders in the event that the LOC provider fails to provide funds to make a debt service payment. When these mechanics are clearly outlined in the transaction documents, the 'higher of' rating will be assigned. In some circumstances, however, the transaction documents may assume that the LOC provider has honored a draw for payment and direct the fiduciary to use the issuer's funds to reimburse the LOC provider. In this instance, the payment mechanics of the transaction could preclude the use of the "higher of" approach and result in a rating assigned to the bonds equivalent to the long-term deposit obligation rating or 'other senior obligation' rating, as appropriate, of the bank providing the LOC.

Annex E: Special Rating Considerations when Layering a Letter of Credit on Top of an Existing Bond Insurance Policy

Summary

Moody's has seen a number of restructurings of variable rate debt that have added a direct pay letter of credit on top of an existing bond insurance policy due to the downgrade of certain financial guarantors. This annex addresses the special considerations that arise when both an insurance policy and an LOC support a transaction.

Some of the risks these structures introduce, such as preference risk or that certain payments are covered only by the LOC and not the financial guarantor, will result in our assigning the LOC bank's rating to the transaction rather than the 'highest of' rating among the bank, the financial guarantor, and the obligor.

Assessing Which Long-Term Rating Will Apply to the VRDO

When an LOC is used to "wrap" an insured transaction, the letter of credit is typically a direct pay obligation which is used as the first source of payment on the bonds. In this case, the priority of payments for regularly scheduled principal and interest payments are; (1) monies received from a draw on the letter of credit, (2) debt service payments made by the borrower; and (3) payments made by the bond insurer. As with any LOC-backed transaction, Moody's reviews the transaction documents and assesses the transaction against our Credit Substitution Methodology for rating these types of securities.

The long-term rating assigned to the bonds when an LOC wraps a previously insured bond depends upon: (1) whether payments made by the LOC bank could be recovered due to the bank's insolvency or receivership; (2) if there are any principal or interest payments that would not be paid on the date of payment by the insurer, the bank or the borrower; and (3) the presence of public ratings on each of the insurer, bank and the borrower.

Risks when the LOC-bank is a State Chartered or Foreign Bank

LOC payments made by state chartered and foreign banks may be subject to recovery upon the insolvency of the bank under applicable state or foreign law. If the risk of recovery of a previously made bond payment exists upon the insolvency of the bank, bondholders are exposed to the credit risk of the bank. In this situation, we assign the LOC bank's rating to the transaction even if the insurer's or borrower's rating is higher.

To determine whether the risk exists that LOC payments are subject to recovery, Moody's will ask for a legal opinion outlining if, and when, LOC payments may be subject to recovery under the applicable state or foreign law. When recovery of LOC payments is not a possibility or when the circumstances that would render a payment recoverable can be isolated, it is possible that the highest applicable public rating of the bank, borrower or insurer may be applied to the transaction.

When there is the possibility of recovery of LOC-payments, the long-term rating assigned to the transaction will be the same as that of the long-term deposit obligation (or 'other senior obligation') of the bank providing the LOC.[22]

[22] For illustrative purposes we have not addressed the application of the joint default analysis. For further information on this approach, please see Annex B

Risk of Recovery of LOC-Payments Mitigated When LOC-Bank is a National Bank

If the letter of credit bank is a nationally chartered, domestic bank, Moody's believes the possibility of recovery of bank payments made under the letter of credit upon the insolvency is extremely unlikely.

Based on this assumption, when a direct pay LOC from a national bank wraps an insured transaction, the long-term rating assigned will reflect the highest applicable public rating of the insurer, the bank and the borrower, provided that all payments of principal and interest are due from or supported by each of the parties on the payment date.

Principal and Interest Payments Should be Made When Due by All Parties When the 'Highest of' Analysis is Applied

For Moody's to assign the 'highest of' the applicable insurer, bank and borrower rating to the long-term rating of the VRDO, Moody's expects all payments of principal and interest to be due from or fully supported by each of the parties on the payment date.

Typical bond insurance policies cover payments of regularly scheduled principal and interest as well as sinking fund payments. Most bond insurance policies do not cover other mandatory redemption payments or accelerated payments. Therefore, if the bond documents provide for a mandatory redemption (i.e. for an event of taxability or any other event) of the bonds, then the rating of the bond insurer would not be reflected in the long-term rating assigned to the VRDO.

Additionally, bond structures involving LOC support typically provide provisions that enable the bank to effect certain actions, such as redemption, tender or acceleration of the bonds, following an event of default under the reimbursement agreement or upon its election to not reinstate the interest component under the LOC. However, in insured transactions, acceleration of the bonds can usually only occur with the bond insurer's consent. Since this consent is required prior to acceleration of the bonds and failure to give such consent, which is discretionary, could result in the termination or insufficiency of the LOC to support the bonds, Moody's does not believe that the use of acceleration as a remedy by the LOC bank would be consistent with our approach to rating LOC backed bonds.

There are transactions in which the acceleration of the bonds could occur without the bond insurer's consent. However, in these circumstances the documents specifically stated that the insurer would not be obligated to make any accelerated payments. This structure does not, in Moody's view, support the factoring of the insurer's rating into the assessment of the applicable rating on the bonds, since the rating speaks to the likelihood of full and timely payment in all scenarios permitted under the financing documents. Similarly, if the bank's notice of nonreinstatement or notice of default under the reimbursement agreement was to result in a mandatory redemption of the bonds, Moody's would not incorporate the bond insurer's rating into the long-term rating assigned to the bonds since the insurer would not be responsible for timely payment of this redemption.

» contacts continued from page 1

Analyst Contacts:

NEW YORK +1.212.553.1653

Thomas Jacobs +1.212.553.0131
Vice President – Senior Credit Officer
thomas.jacobs@moodys.com

Anne Van Praagh +1.212.553.3744
Managing Director – CCO Public Sector Ratings
anne.vanpraagh@moodys.com

Nicolas Weill +1.212.553.3877
Managing Director – Chief Credit Officer Structured Finance
nicolas.weill@moodys.com

Mark LaMonte +1.212.553.0455
Managing Director – Chief Credit Officer Financial Institutions
mark.lamonte@moodys.com

Report Number: 149144

Authors
Joann Hempel
Margaret Kessler

Production Specialist
Kerstin Thoma

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

June 1999 **Rating Methodology**

Authors	Phone
New York	
Maura McGuigan	1.212.553.4443
Robert Kurtter	1.212.553.4453

Contacts	Phone
Renée Boicourt	1.212.553.7162
Dennis Farrell	1.212.553.7780
Steve Levine	1.212.553.4097
Chee Mee Hu	1.212.553.3665
Nicole Johnson	1.212.553.7780
Douglas Watson	1.212.553.0416

Moody's Approach To The Moral Obligation Pledge

Summary Opinion

This special comment discusses Moody's approach to the moral obligation pledge. In July 1997, we announced changes to our approach to this pledge in a Special Comment entitled "Moody's Reviews Its Approach to the Moral Obligation Pledge". This paper reviews the key components of Moody's analysis of bonds that are backed by an explicit moral obligation pledge and does not address other relationships where implied support may exist. This piece also offers several examples of how Moody's approach has been applied to recent rating assignments.

- Moody's views the moral obligation pledge as just one credit feature of a bond program, while the central focus of the analysis typically remains on the credit of the issuer and the revenues available to governmental units, projects or revenue generating systems. Moody's approach includes an analysis of the underlying credit of the debt obligor, rather than focusing solely on the strength and likely behavior of the provider of the moral obligation pledge.
- Moody's approach makes risk distinctions among credits on a case-by-case basis to best reflect the varied nature of transactions backed by a moral obligation pledge and allows for the recognition of the individual merits of a credit rather than a formulaic approach that "notches" a rating off of the entity offering the pledge. In Moody's view, like traditional debt security features, all moral obligation pledges are not the same and need to be viewed individually. Recent events surrounding the drawing on a moral obligation pledge to support a revenue bond in danger of default validate this view.
- The key components of Moody's approach to reviewing transactions backed by the moral obligation pledge and determining the weight of the pledge include an analysis of the following elements once the revenue system has been analyzed separately:
    1. essentiality;
    2. economic benefit or motive;
    3. reputation;
    4. history of the back-up entity's support;
    5. mechanics/timing.

This Special Report is being republished as a Rating Methodology. The content of the publication has not been changed or updated.

continued on page 3

Author

Maura McGuigan
Robert Kurtter

Sr. Production Associate

Garnetta Burton-Santiago

© Copyright 1999 by Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007. All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS COPYRIGHTED IN THE NAME OF MOODY'S INVESTORS SERVICE, INC. ("MOODY'S"), AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,000 to $1,500,000. PRINTED IN U.S.A.

Moody's Approach to the Moral Obligation Pledge

In 1997, Moody's reviewed its approach to analyzing the moral obligation pledge in order to clarify its position. Prior to that time we had generally not given significant weight to the presence of a moral obligation pledge in our analysis of bonds that included this provision as a secondary security feature. Today we consider a moral obligation pledge on a case-by-case basis while continuing to emphasize the importance of understanding and analyzing the underlying revenue system. Therefore, depending on the case at hand and all the factors discussed below, a moral obligation pledge can range from providing little or no support to being similar to a guarantee.

Moody's continues to establish risk distinctions among credits on a case-by-case basis and recognizes the individual merits of a credit. Moody's desired analytic goal is to accurately measure the likelihood of future payment by the entity pledging support.

The moral obligation pledge is not a legal guarantee. Furthermore, it is a credit support mechanism that is not legally binding. However, it can enhance a rating beyond the rating assessment which is based on the primary security in certain situations. This concept is embodied in our approach, which focuses on the careful analysis of indentures and the identification of distinctions in security features. Conversely, elements of risk or uncertainty in the primary security of the project may be so compelling that the moral obligation feature would not outweigh such project deficiencies and, thus, would not enhance the rating.

Key Components That Moody's Considers in Reviewing the Moral Obligation Pledge

What weight should the "moral" commitment have on the rating of a security? Moody's assesses five credit elements before we can ascribe any weight to a moral obligation pledge.

- Essentiality- how important is the project (housing project, hospital, etc.) to the entity providing the moral obligation pledge?
- Economic Motive/Benefit--what is the cost to the entity supporting the issue versus the cost of not supporting the issue in the event of potential/pending default?
- Reputation--did the entity's prior moral obligation bonds price based on the entity's support? Would the entity's reputation with investors be significantly damaged if support were withheld?
- History--has the entity demonstrated a commitment to honoring the moral obligation pledge when it has been called upon?
- Mechanics/Timing – are the mechanics for drawing on the moral obligation pledge structured to allow sufficient timing for the parent to act to make timely payment?

After weighing all of the above factors, Moody's assesses the likelihood of future payments by the entity/state in the event of potential/pending default. We also consider whether the entity's/state's current fiscal situation may limit its future ability or willingness to meet such moral obligations if called upon. In the final credit analysis, our focus is on whether future payments will be made.

RECENT RATING ASSIGNMENTS INCORPORATING MORAL OBLIGATION PLEDGES

New York State Housing Finance Agency Hospital and Health Care Project Revenue Bonds

After performing detailed analysis on both the underlying revenue systems and the parent pledging support, Moody's has been actively applying its approach to moral obligation pledges with recently rated bond programs. In August 1998, New York State Housing Finance Agency issued $42 million of Hospital and Health Care Project Revenue Bonds which carried the moral obligation pledge of the State of New York (rated A2). Moody's assigned a Baa2 rating to this issue based on the strength of the capital reserve fund makeup provision/New York State moral obligation pledge and the pledge of mortgage repayments of the seven hospitals and one nursing home securing the bonds. These bonds refunded all of the issuer's outstanding Hospital and Nursing Home bonds which also benefited from the state's moral obligation pledge. While this pledge on the refunded bonds was never called upon, Moody's recognizes New York State's proven track record in meeting its moral obligation pledges. From 1979 through 1986, New York State replenished approximately $156 million to the Debt Service Reserve Fund of the NYSHFA's Non-Profit Housing Project Bonds and nearly $5 million to the Capital Reserve Fund of the General Housing Loan Bonds. (For further information on these issues see Moody's Approach to the Moral Obligation Pledge, July, 1997)

Given the essentiality of these hospitals and the nursing home to the state, Moody's believes the State of New York would act to replenish the capital reserve fund to its required level if it was ever drawn upon. When Moody's analyzed the initial source of payment of debt service, the mortgage repayments, it found this revenue stream to provide weak security to bondholders due to the concentration risk of one hospital and its poor operating performance. Without the state's pledge, this system would not have received a Baa2 rating, however, the state's moral obligation pledge enhances the rating beyond the rating assessment based on the primary security in this situation.

University of Utah State Board Of Regents Auxiliary And Campus Facility System and Hospital Revenue Bonds

In June 1998, Moody's assigned two ratings which incorporated moral obligation pledges to two bond issues for the University of Utah State Board of Regents. Both bond issues, $120.9 million Auxiliary and Campus Facility System Revenue and Refunding Bonds and $25.5 million Hospital Revenue Bond issue, received Aa3 ratings and benefit from the Aaa-rated State of Utah moral obligation pledge. The state of Utah, whose debt has long been rated Aaa, provided a statutory moral obligation pledge to these bonds and Moody's believes this pledge will be honored if needed. Like most moral obligation pledges, the Legislature may be requested, but is not legally bound, to appropriate funds to replenish a debt service reserve fund or meet projected principal or interest deficiencies upon notice from the Governor and the Board of Regents. Since the act was passed in 1997, there is no history of demonstrated practice by the State to make these payments. However, Moody's believes that the State will provide support to the University if necessary since it is the flagship public university providing essential education services to the state. Moody's believes the University's hospital would also receive the same support based on the hospital's essentiality and role in providing health care to the residents of Utah, as well as the State's own conservative and prudent fiscal practices. Interesting to note is a 1997 Series of hospital bonds issued by the same entity which were not enhanced by the presence of a moral obligation pledge from the State and carry a A2 underlying rating based solely on the hospital's credit. The bonds are also Aaa rated on the basis of AMBAC insurance. The moral obligation pledge adds to bond holder security and enhances the 1998 bond issue rating to the Aa3 level.

Ohio Department of Transportation Major New State Infrastructure Project Revenue Bonds

In May 1998, Moody's assigned a Aa3 rating to the Ohio DOT's Major New State Infrastructure Project Revenue Bonds, which are payable from pledged federal highway aid receipts, with state gas tax funds and state general fund appropriations available as backup sources of repayment, but not pledged. The Aa3 rating reflects the strong history of federal highway receipts providing ample coverage levels, the security of a strong additional bonds test, the short term of the bonds, and the credit strength of the state of Ohio (general obligations rated Aa1) which offers its backup repayment support if necessary. Proceeds of the bonds will help fund the highly essential Spring-Sandusky Interchange Project.

As provided for in the legislation that specifically authorized the bonds, if Federal funds are unavailable or insufficient to pay debt service, ODOT is required to seek funds from the General Assembly. The

governing transaction documents require the ODOT director to request funds from the General Assembly if, six months prior to any interest payment date, ODOT has not already obligated (either from federal or state gas tax sources) sufficient funds to make the payment. Although the General Assembly has no legal obligation to honor the request, the clear intent of the authorizing legislation, together with the strong credit standing of the State of Ohio make it likely that it would.

This example also demonstrates strong timing mechanics for triggering this ultimate payment source. Look-ahead provisions provide sufficient time to seek the general fund appropriation: within the first 15 days of the federal fiscal year, federal funds availability must be determined for the next two state fiscal years. ODOT would obligate federal funds awarded in current federal fiscal year for debt service payments due in the state's next fiscal year, providing timing cushion against a delayed federal budget process. Should federal funding be in jeopardy at that time, ODOT could then begin to conserve and manage cash from its legally available gas tax funds, or, no later than six months before a debt payment date, trigger the moral obligation process. The year-long buffer built into the funding structure, along with ample ODOT reserves, would provide adequate time to take steps to seek state appropriation to honor this pledge, either through the general fund or the road funds. This small issue could easily be accommodated and honored in the event general fund appropriations were needed.

Case Study: State of Illinois – Example of a Parent Willing to Honor its Pledge

In January/February 1999, solid waste disposal revenue bonds issued in 1990 by Southwestern Illinois Development Authority on behalf of LaClede Steel Company came dangerously close to missing a debt service payment. The bonds, which were not rated by Moody's, carried a moral obligation pledge from the state of Illinois, and the proceeds were used to finance LaClede's Alton, Illinois plant with debt service to be paid by the revenues of the system. In November, 1998, LaClede filed for Chapter 11 bankruptcy protection due to the deterioration in steel demand and operating losses. Based on this filing, the bond trustee interpreted the bankruptcy judge's order freezing the company assets to include this bond issue's debt service reserve fund. Under this interpretation, no funds would be available to make the upcoming debt service payment.

Once the state learned of this situation it immediately petitioned the court to release the debt service reserve funds in time to make the upcoming payment. The state also made backup plans to loan the money directly to the issuer. This back up plan would have ensured that debt service was paid even if the reserve was not actually drawn upon by the trustee, thus triggering the moral obligation replenishment mechanics. Ultimately the trustee released the reserve funds, averting a bond default. The governor has included an appropriation request in the budget proposal submitted to the legislature to allocate funds to replenish the reserve in accordance with the moral obligation pledge.

This was not the first time the state of Illinois has been asked to honor its moral obligation pledge. Last year two other non-Moody's rated bond issues missed payments, tapped reserves and looked to the state for replenishment. The two series of bonds, one issued by the Southwestern Illinois Development Authority and the other issued through Upper Illinois River Valley Development Authority, were issued to finance tire shredding plants and were experiencing cash flow problems. Once these reserve funds were tapped to make debt service payments, the governor submitted an appropriation request to replenish the reserve funds that had been used to make the payments. Prior to the actual appropriation of funds, the plant's owner replenished the reserve funds and subsequently restructured the debt, thus freeing the state of its obligation.

While Moody's did not rate any of the Illinois moral obligation backed bonds mentioned above, it does recognize the commitment on the part of the parent to honor its pledge. With the most recent example (LaClede), the state demonstrated its active recognition of its moral obligation responsibilities by stepping in before a default actually occurred even when the pledge's mechanics had not yet been triggered. This history would figure favorably into the rating assigned to any future transaction carrying a State of Illinois moral obligation pledge.

Recent events surrounding the Southwestern Illinois Development Authority bond issue serve as a good example to illustrate several of the elements that Moody's assesses in weighing a moral obligation pledge. In applying its "bottom up" approach to moral obligation-enhanced bonds for a project such as a speculative start up steel plant, Moody's would begin its analysis with a recognition of the high element of risk in the underlying revenue supported project. We would then consider the likely political will in the

future to support this system if the pledge were called upon. At the time the bonds were initially offered, it is likely we would not have rated the bonds at a rating level approaching that of the state given the high degree of risk in the underlying project financing. Going forward, the credit quality of the bonds will depend on the timeline and viability of any turnaround or workout plans under consideration for the project, the magnitude of state financial support embedded in such plans, and the political consensus to continue such support. The state's current support of the moral obligation pledge would weigh heavily in the rating, but the underlying economics of the project, as well as the state's expectation and commitment regarding continuing subsidies, would also be relevant.

Additionally, the recent draw on the State of Illinois' pledge in the LaClede situation highlights two other important elements to consider. In the LaClede situation, the State of Illinois has acted in a responsible and timely manner to fulfill the moral obligation pledge. Nevertheless, the case demonstrates that a timing and mechanics risk may appear in moral obligation bond issues. In assessing the weight that a moral obligation pledge will carry in a rated transaction, the mechanics of drawing on the pledge should be reviewed to ensure that there is sufficient time for the entity pledging support to act to replenish the reserve fund in a timely manner before the next debt service payment date.

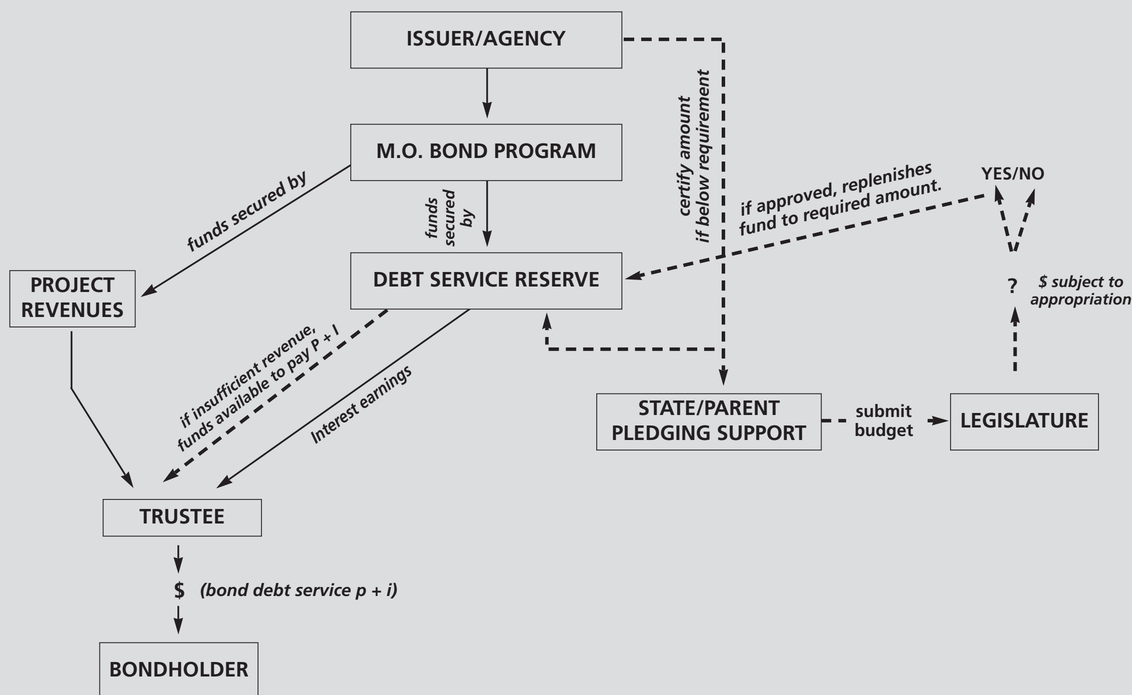
The other issue that this example raises is the importance of assessing the underlying bankruptcy risks of the owner of the revenue system that supports the bonds. In this situation the LaClede Steel Company filed for bankruptcy and a question arose as to whether the bankruptcy court would consider the bond issue's reserve funds as part of the company's frozen assets. The trustee did not release the reserve fund to make the debt service payment, and instead awaited an order from the court. While in this case the reserve funds were ultimately released on time as a result of the intervention of state officials, in reviewing future transactions, we will need to consider that in the event of bankruptcy of the system provider, there is a risk that reserve funds (which need to be drawn to trigger the moral obligation pledge) may be subject to a bankruptcy court's authority in allowing for their release. Thus, it is also important to understand the underlying system before assigning a rating.

While it is Moody's expectation that debt service reserve funds should be available for their intended purpose, several recent cases illustrate the potential for a timing risk. According to recent press reports, several issuers in addition to the Southwestern Illinois Development Authority recently missed or nearly missed making debt service payments as a result of the bankruptcy of the obligors. Moody's may consider a rating change in light of a bond payment delay resulting from a bankruptcy and the effects of this bankruptcy on the actions of a trustee in making debt service payments. Moody's will consider the following factors in its analysis: the probability of recovery, the likely amount of recovery including whether interest will be paid on deferred principal and interest, the likely timing of recovery, and the probability of a similar delay in payment reoccurring. (For further information on this issue see Moody's Special Comment, "The Rating Impact of Bankruptcy-Related Threats to the Prompt Payment of Debt Service Reserve Funds", April, 1999)

The History and Future of the Moral Obligation Pledge

The moral obligation pledge is often applied to revenue bonds issued by state housing finance agencies and state bond banks. Typically, moral obligation bonds are based on two elements of security. First is a pledge of the annual revenues from the project. Moody's analysis accordingly focuses on the primary revenue stream and project risks, including its essentiality and feasibility. The other focus is a pledge of a "back-up" or "deficiency makeup" by a supporting governmental unit, typically a state. The first is clear enough; and it requires the analytical approach present in other issues. The second provision implies, without clear legal responsibility, that the state or back-up creditor is ready upon notification, willing, and able to cover any shortfall or problem with the primary security. Mechanically, the arrangement typically involves the creation of a funded debt service reserve to provide coverage of debt service on outstanding bonds. The commitment by the supporting entity to provide such coverage is not legally binding on the state legislature, but can be considered a moral obligation for the state to restore any deficiency in the reserve fund to its legally required level. This arrangement has come to be referred to as the debt service reserve fund contingency makeup arrangement.

The mechanics of the "moral obligation" as described in the following chart generally involve the following steps: (1) a debt service reserve fund is created and funded; (2) any deficiency is certified by the chief officer of the issuing agency to the senior finance officials of the entity/state; (3) and the request on behalf of the entity's finance officers to restore the deficiency in the debt service reserve fund is legally non binding upon the legislature, but represents a moral obligation upon the state or entity to act. This third element is generally hedged, however, and the statement is usually in bold type so there can be no misunderstanding: (a) all moneys paid by the state or entity are subject to prior appropriation by the legislature; (b) the legislature is not obligated to appropriate the moneys, and the state or entity is not obligated to pay them; (c) but should a future legislature elect to appropriate such moneys, it may legally do so. These caveats and authorizations are usually addressed in the legal opinions. The divorce of the state or entity's legal obligations is completed by statements, that the state shall not be liable for the bonds and that the bonds shall not be debt of the State within the meaning of the state constitution that prescribes the contracting of debts.



To this set of conditions, the term "moral obligation" has been applied. The reasoning goes that the legislature, having created such a set of conditions, would not and could not "morally" deny the bondholder his payment, that is, an appropriation to make up any deficiency in the debt service reserve fund. The moral obligation pledge was created and applied to certain bonds since the 1960s because it was believed that the pledge could enhance the marketability of the bonds with this implied moral support of the state or backup entity and the support could be provided without a legally binding commitment or budgeted payment obligation on the part of the supporting government, thus avoiding being subject to the voter approval requirements or debt limits.

Looking ahead, we believe that governmental entities will continue to attach moral obligation pledges to publicly secured debt, but in limited and circumscribed situations. States have generally been reluctant to issue moral obligation debt, in part, because of the ambiguous nature of the financial commitments being made. One of the distinctions between direct debts and moral obligations is that the former are known and budgeted debt commitments, while the latter are contingent and unbudgeted. Good debt management seeks to avoid incurring unknown debt liabilities, by minimizing the issuance of contingent debt commitments such as moral obligations which could create financial, substantive, legal, or political problems at indeterminate and inconvenient times.

The development of municipal debt management practices have led to greater oversight and control of state or other issuer's debt commitments. These debt plans and practices have a goal; managing debt, both general and limited obligations, and appropriation-backed debt within prescribed limits of debt affordability and public policy. The existence of financial commitments outside these parameters, if not managed, could undermine the strength of these efforts and potentially weaken credit strength, particularly if the moral obligation is applied to non-essential projects or projects with relatively weak credit fundamentals.

Given these concerns, Moody's recognizes that the limited use of moral obligations by states and other issuers for projects that meet the criteria outlined in this report, can result in strengthened credit quality based upon the structure of the pledge and the credit fundamentals of the underlying credit. Moody's will identify and take account of moral obligations pledges in evaluations of an issuer's debt structure when assessing its debt burden and debt affordability.

To the extent that Moody's believes an entity will honor its moral obligation pledge, it may be counted in the debt statement of the entity depending on the individual assessment of the likelihood that the moral obligation will be called upon to provide funding. If the risk of backup support is deemed to be low then this debt may be listed as a contingent liability or a self-supporting liability. However, if there is either a history or high degree of risk that the moral obligation commitment will have to be utilized, then this debt may be counted on the debt statement.

To order reprints of this report (100 copies minimum), please call 800.811.6980 toll free in the USA. Outside the US, please call 1.212.553.1658.

Report Number:
45817

Research Articles

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Housing 101: US Public Finance Housing Key Credit Features

Table of Contents:

SUMMARY 1
HOUSING BOND AND SECURITY SUB-SECTORS BY CATEGORY 2
BONDS ISSUED BY ACTIVELY MANAGED STATE AND LOCAL HFAS 3
BONDS ISSUED BY CONDUIT ENTITIES WITHOUT ACTIVE ISSUER MANAGEMENT 5
BONDS ISSUED TO FINANCE HOUSING PROJECTS 7
BONDS ISSUED FOR OTHER HOUSING PURPOSES 9
MOODY'S RELATED RESEARCH 11

Analyst Contacts:

NEW YORK +1.212.553.1653

Omar Ouzidane +1.212.553.3892
Assistant Vice President - Analyst
omar.ouzidane@moodys.com

Florence Zeman +1.212.553.4836
Associate Manager
florence.zeman@moodys.com

John Nelson +1.212.553.4096
Managing Director
john.nelson@moodys.com

This is the sixth in a series of articles focusing on US public finance housing bond programs. This series is designed to provide an overview to market participants who may be less familiar with the intricacies of housing bond programs. In this article, we discuss the principal categories of US public housing finance and summarize their key credit attributes. In previous articles, we discussed topics such as loan prepayments, PAC bonds, and open indentures (please refer to Related Research Section at the end of this report for a full list of published Housing 101 articles).

Summary

The US public finance housing sector encompasses a broad range of bonds that finance mortgage loans for single-family homes or multifamily housing projects for low-income people, the elderly and the disabled, or tenants associated with the US military or non-profit institutions such as colleges and universities. The US public finance housing sector can be grouped into the following four categories:

- Bonds issued by actively-managed[1] state and local housing finance agencies (HFAs)
- Bonds issued by conduit entities without active issuer management
- Bonds issued to finance housing projects
- Bonds issued for other housing purposes with specialized security features

While all of these bonds share the common purpose of financing housing, they exhibit a wide variety of credit characteristics and different rating distributions. In this article, we discuss the credit distinctions among the various categories of US public housing finance bonds within the context of the following key factors:

- Security pledged to the bonds,
- Program financial position,
- Asset quality,
- Management and governance, and
- Legal and debt structure.

[1] Unlike bond issues where the HFA acts as a conduit and the trustee is responsible for managing the transaction, these bonds are actively managed by the HFA staff.

Housing Bond and Security Sub-sectors By Category

The following provides a list of sub-sectors comprising each category:

I. Bonds issued by actively managed state and local HFAs, backed by:

» Issuer rating

» Single family whole loan or combined program

» Single family MBS program issued under an open indenture

» Multifamily housing pool[2]

II. Bonds issued by conduit entities without active issuer management[3], backed by:

» Single family MBS program issued under a closed indenture

» FHA risk-share

» FHA insured multifamily / healthcare

» Ginnie Mae multifamily housing

» Fannie Mae multifamily housing

» Freddie Mac multifamily housing

» SONYMA multifamily housing

III. Bonds issued to finance housing projects:

» Privatized military housing

» Privatized student housing

» Subsidized multifamily housing (Section 8 and Section 202)

» Uninsured and unsubsidized multifamily housing ("affordable housing")

IV. Bonds issued for other housing purposes with specialized security features:

» Bonds Backed by the US government

» Public Housing Authority Capital Grants

» Low Income Housing Tax Credits

» Second mortgage loans

» Bonds secured by an escrow of Aaa investments

[2] May be whole loans or enhanced loans

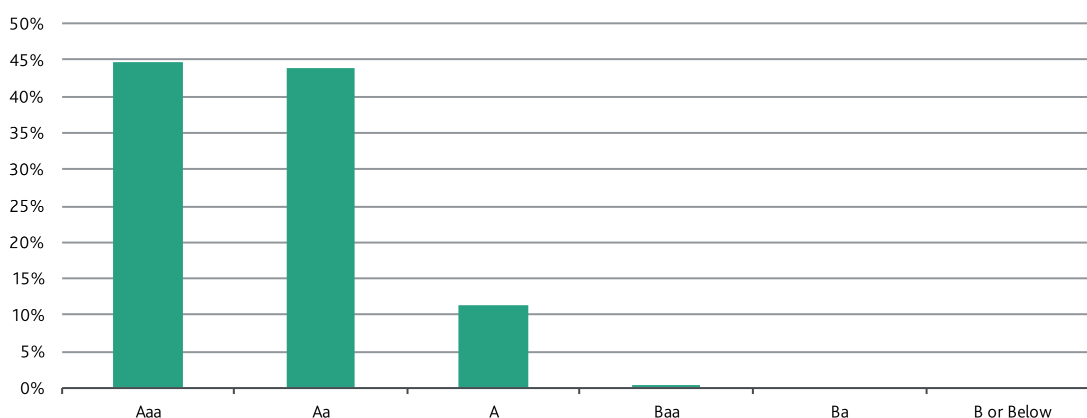
[3] Some of these bonds would also be considered in the actively managed HFAs category

Bonds Issued by Actively Managed State and Local HFAs

HFAs are public entities established by state and local governments to finance affordable housing. They are generally self supporting, primarily paying bond debt service and expenses from revenue generated by the loans they finance. HFAs sell tax-exempt and taxable housing bonds and use the proceeds to finance single-family mortgage loans for low- and middle-income, first-time homebuyers, or for the construction, acquisition and/or rehabilitation of multifamily apartments (rentals) targeted to tenants with incomes below certain thresholds established by government policy. Some HFAs have also been involved in other activities, such as issuing bonds for economic development, infrastructure, or privatized military housing.

EXHIBIT 1

Category 1: Bonds issued by actively managed HFAs possess strong credit quality



Source: Moody's

As shown in Exhibit 1, the vast majority of HFAs and their programs carry strong credit ratings in the Aaa or Aa range — only about 12% are rated in the A category, and none are rated Baa or below. Nearly 43% are rated Aaa reflecting the security of single family or multifamily loans which have been securitized into MBS guaranteed by Ginnie Mae[4], Fannie Mae or Freddie Mac, or of a senior class of a multi-lien program, or of multifamily loans insured under the FHA Risk-share program.

Key Credit Features

Security:

» Bonds are typically special or limited obligations of the HFA and are expected to be repaid by the loans financed by the program. In certain cases, bonds benefit from additional security, such as a pledge of the broad general credit strength of the HFA, know as a general obligation[5] (G.O.) of the HFA.

Financial Position:

» Although most actively managed HFAs' financial position has been pressured by the current economic downturn, they continue to maintain enough financial flexibility to manage the uncertainties facing them. The HFAs typically have strong balance sheets, demonstrated by high

[4] A wholly-owned government corporation of the Department of Housing and Urban Development

[5] HFAs have no taxing power but do maintain assets at the general fund level. They generate revenues from their lending activities such as origination fees and issuer fees and may receive income or asset transfers from their restricted bond programs. Some HFAs generate additional fees from other services such as loan servicing.

levels of overcollateralization[6] and fund balances, indicating the extent to which an HFA can absorb financial strain and continue to fulfill its obligations. For single-family programs, this overcollateralization is measured by program asset-to-debt ratio (PADR) that incorporates stress case loan loss assumptions[7]. For multifamily programs, it is evidenced by the presence of ample financial resources that offset reduced valuations of the loans supporting the bonds. We determine a loan valuation by comparing projects actual debt service coverage ratios (DSCR) to Moody's established benchmark per rating level.

» Moody's subjects these bonds to projected interest rate stress scenarios to test performance under different assumed rates. HFA single- and multi-family programs generally show strong ability to generate sufficient revenues to cover debt service and expenses under these interest rates stress scenarios over the life of the bonds. Single-family programs are also subjected to mortgage loan prepayment stress tests because of the impact of interest rates on asset (loans) performance. For example, falling interest rates can accelerate prepayments, diminishing expected mortgage revenues and possible changing the overall quality of the remaining assets.

» HFAs programs continue to be profitable despite confronting greater economic and financial stress since 2009, although at historically low levels. Profitability[8] for most single-family programs has been hurt by elevated mortgage delinquencies and foreclosures, lower earnings on investments, and low conventional mortgage rates, which have made it difficult for HFAs to issue bonds at low enough rates to finance competitive mortgage loans. In contrast, most multifamily programs remain profitable due to increased demand for rental housing, low delinquencies and foreclosures, healthy spreads between bonds and loans and lack of loan prepayments.

Asset Quality:

» Most single- and multi-family loans are fixed-rate, with fully-amortizing 30- to 40-year terms.

» The portfolios tend to be sizeable with the median[9] number of single-family loans at 8,844 and number of multifamily units at 2,200. Additionally, many of the loan programs have been operating since before the economic downturn and contain a large proportion of seasoned loans predating 2009.

» Single-family loans are generally covered by mortgage insurance, with substantial amount of loans insured by the federal government. Likewise, many multifamily loans are insured by the federal government and/or further enhanced by an MBS.

» Portfolios with significant amounts of uninsured multifamily loans generally benefit from additional support provided by the pledge of the HFA's G.O. or by substantial overcollateralization.

» Multifamily programs have experienced minimal delinquencies reflecting the high demand for rental housing and active asset management. In contrast, single-family programs have reached historically high delinquency rates, but default rates remain well below those assumed in our projected loan loss calculations for the program rating level. Increased delinquencies have not translated into the same degree of higher defaults because of diligent underwriting and active management of the loan portfolios by the HFAs.

[6] Amount of assets that exceeds liabilities

[7] Benchmarks, in each case after loan losses, are: 110% for Aaa, 104% for Aa1, 102% for Aa2 and 100% for Aa3

[8] Defined as net revenues as a percent of total revenues

[9] data as of 6/30/2011

Management and Governance:

» Actively managed HFAs are generally sophisticated public finance issuers, providing diligent management and oversight of their bond programs. They have a track record of successful control in monitoring risks and making decisions on issues that affect the creditworthiness of their programs.

» In addition to financing mortgage loans, some HFAs provide a number of other mortgage-related services and functions, including loan servicing, mortgage counseling, and allocation of Low-Income Housing Tax Credits (LIHTC). Some of these services allow them to engage delinquent borrowers at an early stage to mitigate losses and maintain program financial stability.

Legal and Debt Structure:

» Actively-managed state HFAs, and a handful of local HFAs, typically issue their debt under open parity indentures, which means that all bonds issued are secured by all of the mortgages financed under that indenture. This is in contrast to a single asset pool of loans securing a bond.

» In some instances, state HFAs have pledged their G.O. to certain bond indentures, thus providing additional resources for debt service payments.

» Some state HFAs have issued significant amounts of variable-rate debt under their single family programs. Most of this debt is associated with interest-rate swap agreements intended to mitigate the risk related with rising interest rates. The debt exposes the programs to a number of risks, including acceleration of bond principal, increased liquidity or credit facility fees, inability to roll-over expiring liquidity facilities, and rising interest rates if swaps are terminated prior to the bonds' maturity.

» Debt service reserve funds for these bonds are typically funded at 3% of outstanding loan principal and issuers generally have ability to remove excess funds out of the indenture if the asset-to-debt ratio (parity) test is met.

Bonds Issued By Conduit Entities Without Active Issuer Management

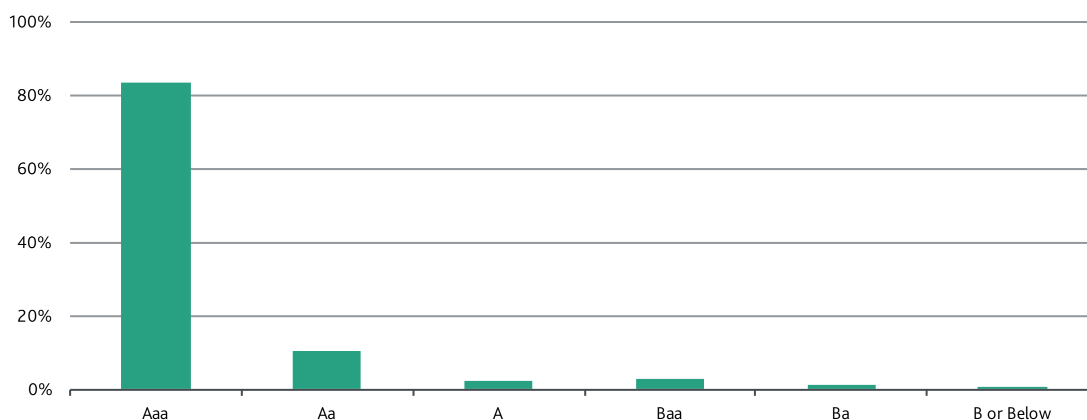
This category consists of bonds issued by conduit entities that do not actively manage the bonds, but the underlying risk of mortgage loans delinquency or defaults largely mitigated by a third party, such as the federal government or a mortgage insurer[10]. The credit quality is generally very high, with 81% rated Aaa. The bonds can be issued to finance nearly all types of mortgages, including for single-family homes, multi-family projects such as rental apartment buildings, nursing homes, assisted living facilities and even hospital financings covered by FHA insurance. The mortgage collateral supporting the bonds is usually guaranteed or insured. The ratings on the bonds (see Exhibit 2) are primarily based on the rating of the mortgage guarantor or insurer.[11]

[10] This category does not include fully-supported transactions, such as a letter-of-credit backed deals in which the issuer's credit risk is replaced by that of the enhancement provider.

[11] Bonds issued to finance FHA-insured mortgage loans (other than the FHA Risk-share) are rated below the rating of the federal government due to the timing of claim payments from FHA.

EXHIBIT 2

Category 2: Bonds issued by conduit entities without active issuer management typicaly reflect the rating of the enhancement provider



Source: Moody's

Key Credit Features

Security:

» These are primarily secured by mortgages insured or guaranteed by the U.S. government through FHA or Ginnie Mae, a government sponsored enterprise such as Fannie Mae or Freddie Mac, or a state entity, such as the State of New York Mortgage Agency's (SONYMA) Mortgage Insurance Fund - Project Pool Account[12].

Financial Position:

» Most bonds in this category show an asset-to-debt ratio of at least 100%.

» Projected cash-flows for both single- and multi-family transactions typically show sufficient coverage of debt service and expenses from loan payments and other pledged assets over the life of the bonds. Single-family cash-flow projections in this category are also subjected to mortgage loan prepayment stress tests.

» Some single- and multifamily bonds are currently rated lower than others with similar enhancement because cash flow projections have demonstrated insufficient revenues to pay debt service and/or an asset-to-debt ratio that is below 100%. This weaker than projected performance can be attributed to current low interest rate environment, affecting earnings, or trustee errors. Further, the ratings may have been lowered due to the downgrades of guaranteed investment contract (GIC) providers associated with the bonds .

Asset quality:

» The primary asset is enhanced loans. The performance of the underlying loan portfolio is not a credit factor because the mortgage enhancement insulates the bond transaction or "program" from loan losses.

» The ratings on the bonds would change if the rating of the mortgage insurer or enhancer changes indicating an increase in the risk that it would be unable to cover the principal and interest due in the event of a default of the underlying mortgage(s).

[12] This category excludes bonds financing loans insured or guaranteed by private entities.

» Asset quality has been moderately weakened in some cases by the prolonged period of unusually low interest rates, since the float from investment of reserve funds for the transaction no longer generates material added revenue to supplement the loan payments.

» The downgrades of GIC providers in the past several years has signaled an increase in the risk that the providers would be unable to meet their obligations.

Management and Governance:

» Bonds are generally issued by HFAs who act as conduit issuers and do not assume nor incur any additional risks or liabilities for the timely payment of debt service on the bonds. The transactions are not managed or monitored by issuers. The bond trustee is solely responsible for managing the transaction in accordance with the provisions of the indenture.

Legal and Debt Structure:

» Nearly all of the bonds in this category are issued as single bond transactions under a "closed indenture" with generally no option to issue additional debt secured by the same pledge.

» The bonds are not obligations of the mortgage insurer or the enhancement provider.

» The final legal provisions governing the trustee's responsibilities and actions are established at closing, including redemption provisions and release of potential excess funds.

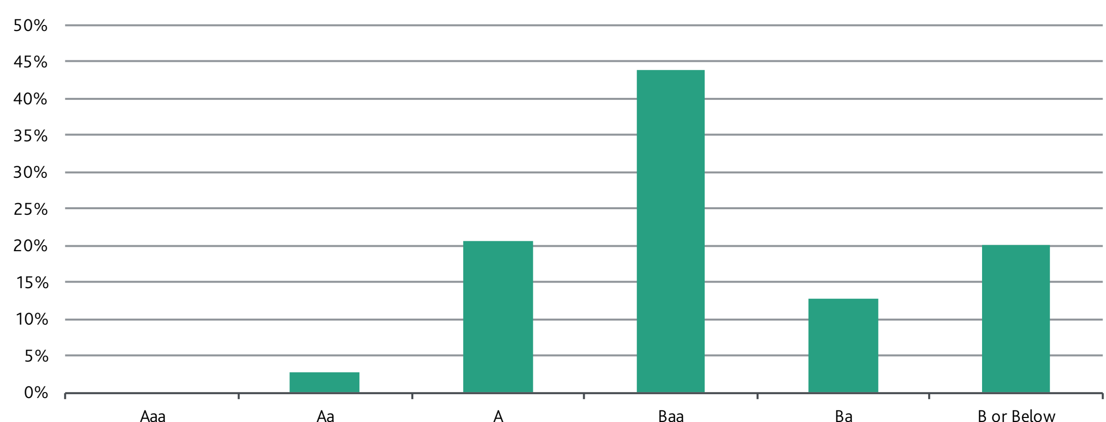
Bonds Issued to Finance Housing Projects

These bonds are issued to finance privatized military housing, privatized student housing at universities, subsidized multifamily housing, and affordable multifamily housing projects. The bonds are typically secured by a mortgage on the property or a leasehold mortgage often under a ground lease with a related party that is not legally obligated to support the bond repayment (e.g.: a military base or a university) Bonds are repaid from rental revenues and there is significant market risk that rentals won't generate adequate revenues to cover expenses and debt service. There is generally no recourse to another entity, although related entities often have a strategic interest in the success of the project that is financed.

Bonds in this category tend to be rated lower than the first two categories (see Exhibit 3) because of the volatility and vulnerability to the general real-estate market that is associated with the stream of rental revenues. Rental revenues are often the only source of repayment of debt service.

EXHIBIT 3

Category 3: Bonds issued to finance housing projects exhibit significant rental market risk



Source: Moody's

The relatively few higher-rated (Aa-A) projects in this category tend to benefit from a predictable revenue stream, little market competition, and minimal credit pressure from counterparties. At the lower end of the spectrum are projects which have weak economic or competitive position, and face uncertain net cash flows.

Key Credit Features

Security: These bonds are typically secured by a mortgage on the property or a leasehold mortgage under a ground lease, and repaid primarily from rental revenues that come from following sources:

» For privatized military housing transactions, which finance rental properties for military personnel, the rental revenue is in the form of a housing stipend known as Basic Allowance for Housing or "BAH" that comes directly from the US Department of Defense.

» Privatized student housing transactions, which finance housing for college students, are secured by rental revenues paid directly by the student to the project, although in some instances the payments are collected by the university directly.

» In the case of subsidized multifamily housing transactions, the U.S. government pays rental subsidies to owners of qualified housing on behalf of eligible tenants.

» In the case of affordable multifamily housing transactions, which finance uninsured and unsubsidized multifamily properties that require all or a portion of the units to be set aside for low and moderate income persons or families, rental revenues come directly from the tenants.

Financial Position:

» Financial position and performance, which is measured by the DSCR, varies by type of project. The DSCR reflects the project's ability to repay debt service from net operating income after the project's operating expenses are paid.

» The DSCR of projects in this category, compared to Moody's established benchmarks[13] shows that financial position of most projects remains stable and provides sufficient margins of protection against adverse economic conditions. The stable performance of most projects can be attributed to an established and predictable revenue stream and high levels of occupancy. However, some affordable housing projects and a few student housing projects have demonstrated weakening credit due to low occupancy, increasing expenses and declining revenues.

Asset Quality:

» The quality of the project asset is driven by local supply and demand characteristics, physical condition of the project as well as subjective factors such as neighborhood and project attractiveness.

» Asset quality in this category varies by type of project and strength in some of the credit factors are often offset by weakness in others. For privatized military housing projects for instance, military families' preference to live on base tend to be somewhat offset by moderate competitive pressures from local rental market. For student housing projects, their market advantage is tempered by volatile occupancy caused by the need to re-rent, or turn over, most units annually.

[13] Benchmarks vary by type of project and rating level, affected by exposure and vulnerability to market forces. Typically, the higher the exposure and/or the rating level, the higher the DSCR requirement.

Management and Governance:

» Asset management varies considerably within this category. Privatized military housing projects generally benefit from experienced development team and from the oversight provided by the military as a stakeholder. Likewise, student housing projects benefit from the frequently active involvement of the affiliated university or college. Stakeholders in these projects have mission and economic incentives to maintain and operate the projects as they share in excess cash flow. In some instances, they have restructured the scope and strengthened the project by injecting additional funds. In contrast, ownership and management of many affordable housing projects tends to reside with non-profit organizations that are committed to providing below market rents but are not financially strong enough to mitigate the challenges that the projects may experience.

Legal and Debt Structure:

» These are generally standalone financings for single projects where excess funds flow out of the indenture to the project owner when certain operating thresholds are met.

» Some of the bonds are issued in a multi-lien structure allowing for the shifting of the risk to the lower liens and the ability for more senior liens to achieve higher debt service coverage.

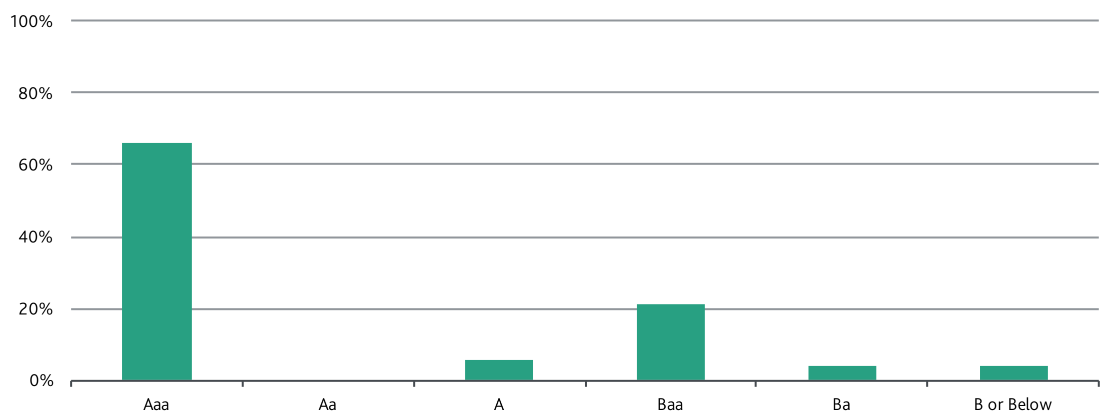
» A debt service reserve fund is typically funded at the maximum annual debt service. Some financings, particularly privatized military housing, have satisfied this requirement with a surety, exposing the bonds to the credit quality of the surety provider.

Bonds Issued for Other Housing Purposes

These are bonds that are issued for various housing purposes and do not fit into any of the categories above or share many of the key credit features we discussed. Many of these bonds are rated Aaa because of the direct backing of the US government.

EXHIBIT 4

Category 4: Two-thirds of other housing financings rated Aaa, but some have high credit risk



Source: Moody's

Our key observations about this category include:

» The majority of these bonds are issued by public housing authorities (PHAs) which are local government bodies created by state governments to own, maintain and operate housing projects for low income families. Bond proceeds provide financial support for capital upkeep and modernization of PHAs' housing stock. The PHAs bonds that we rate come in two types:

  i. New PHA Escrow bonds, which are directly backed by the U.S. government and rated Aaa with negative outlook, reflecting the US government rating, and

  ii. PHA Capital Grants which are strictly payable from Federal Capital Grant appropriations with no support from the issuing authority. Their ratings range from A to Baa.

» Low Income Housing Tax Credits ("LIHTC") bonds, which account for the second largest number of ratings in this category, are transactions that use tax credits in conjunction with tax-exempt private activity bonds to finance low-income multifamily housing projects. The role of LIHTC is to produce equity for the construction of the project and enable the developer to offer lower rents. The security for the bonds is rental revenues and the ratings range from A1 to B3. The rent levels are structured to be below market and are typically difficult to increase to keep up with expenses. Additionally, while general rents may be rising, LIHTC projects tend to be in weaker rental areas and may not benefit from this trend. LIHTC performance has been weakened in recent years by lower than projected occupancy, stagnant revenues and increasing expenses, resulting in tighter debt service coverage.

» Bonds backed by second mortgage loans are also included in this category. They are issued to finance down-payment assistance and closing cost assistance to credit-worthy low and moderate income homebuyers who do not have the required up-front cash necessary to purchase a home. The ratings on these bonds range from Baa to Ca, driven by key fundamental risks associated with the mortgage loans. Second mortgage loans tend to have very high loan-to-value ratio when combined with first mortgage loan and do not benefit from any mortgage insurance coverage. As such, they tend to have higher expected loss relative to standard FHA first-mortgage loans and require high levels of overcollateralization to absorb loan losses.

Moody's Related Research

Outlook:

» Sector Outlook for US State Housing Finance Agencies Remains Negative, September 2012 (145130)

Special Comments:

» State Housing Finance Agency Single Family Programs in Run-off Likely to Maintain Credit Quality, June 2012 (143182)

» Key Downgrade Drivers of Stand-Alone Housing Bonds with Mortgage Enhancements, May 2012 (141326)

» Credit Trends: Privatized Military Housing Sector Shows Stability, August 2012 (144441)

» Credit Trends: Privatized Student Housing Financings Demonstrate Credit Stability, February 2012 (139170)

» Housing 101: HFA Single Family Bonds versus RMBS – Differences Lead to Variation in Performance, June 2009 (117724)

» Housing 101: PAC Bonds, July 2008 (109768)

» Housing 101: State Housing Finance Agencies, December 2007 (103873)

» Housing 101: Single Family Program Open Indentures, February 2007 (102068)

» Housing 101: Single Family Loan Prepayments, September 2006 (98961)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 147494

Author
Omar Ouzidane

Production Specialist
Wendy Kroeker

Associate Analyst
Brendan Weber

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

Single Family

September 2006

Contact	Phone
New York	
Florence Zeman	1.212.553.4836
John Nelson	1.212-553.4096
William Fitzpatrick	1.212.553.4104
Ali Sistani	1.212.553.4356
David Parsons	1.212.553.4537
Maria Ting	1.212.553.4461
Rachael McDonald	1.212.553.4456
Ferdinand Perrault	1.212.553.4793
Nicole Addalli	1.212.553.7823
Dallas	
Toby Cook	1.214.220.4352

Housing 101: Single Family Loan Prepayments

This is the first in a series of articles focusing on specific aspects of single and multi-family housing bond programs. This series is meant to provide an overview to market participants who may be less familiar with the intricacies of housing bond programs by discussing and explaining in detail various factors and facets of bond programs and how they are incorporated into the structures. We hope you find this useful. If you have ideas about future "Housing 101" topics please contact us.

An important component of single family bond programs is the program cash flows that are generated to structure the bonds. These cash flows incorporate assumptions that forecast the cash flow of all assets and the timely payment of interest and principal on the bonds. These assumptions include bond and mortgage rates, fees for all bond- and loan-related expenses and services, and an estimation of loan payments and prepayments. Given that most programs allow mortgages to prepay their loans without a penalty, the level of prepayments adds to the volatility to the program and is an important credit factor.

This article will discuss what prepayments are, factors impacting them, how they are calculated, and how they are incorporated into the cash flows prepared for a bond transaction. Although prepayments are also an important factor in the pricing of single family mortgage revenue bonds, this discussion of prepayments focuses on their credit factors, and explore the impact that loan prepayments may have on the overall revenue stream, rather than market factors, which focus largely on bond yield and the likelihood of bond redemption.

Mortgage Loan Prepayments

A loan prepayment is the payment of all or part of the principal due on a loan prior to its due date. Homeowners, including those in mortgage pools supporting single family bond programs, may voluntarily prepay their existing loan for a number of reasons, including:

- Refinancing their mortgage loan to lower the rate and thereby the monthly payment,
- Increasing their mortgage loan to borrow against the equity in the home,
- Moving on to another location,
- Purchasing a larger home, or
- Change in family status.

Loan default and the subsequent foreclosure and sale of the property or receipt of insurance proceeds are also considered loan prepayments, albeit involuntary prepayments.

Trends That May Influence Prepayments

While the amounts of prepayments are hard to predict as they may occur due to a variety of reasons, the following are some of the key factors that influence prepayment behavior:

CONVENTIONAL MORTGAGE RATES AND TERMS

The propensity for a homeowner to voluntarily prepay a loan through refinancing is largely a function of the interest rate on their loan relative to current loan rates. Over the past few years refinancings have surged as a result of historically low interest rates, aggressive mortgage bankers, access to competitive information through vehicles such as the Internet, lower closing costs, and the proliferation of mortgage brokers. Traditionally accessible to jumbo and conventional mortgagors only, lower and moderate income borrowers are now more apt to refinance. Whereas the benchmark to refinance just a few years ago was a decline in interest rates by roughly 200 basis points, it is now more likely to be 100 or less bps for most borrowers.

ECONOMY

The state of the economy also helps determine the likelihood of prepayments. In a strong economic environment, low interest rates, low unemployment, housing price appreciation and consumer confidence combine to create a market in which many homebuyers are looking to trade up, which ultimately means paying off the mortgage on their existing home upon a sale. In addition, during a time of house appreciation, borrowers will often refinance in order to borrow against the equity in their homes that has been achieved through rising house prices. Conversely, in times of high unemployment and devaluing home prices, owners are often less likely to move. However, prepayments may also occur as the economy shrinks because the borrower may be more likely to default on an existing loan, which would also be considered an involuntary prepayment.

UNDERLYING LOAN PORTFOLIO

Loan characteristics such as type of loan, seasoning, fixed vs. adjustable rate, and geographic location can all affect the prepayment behavior of a pool of loans. For various reasons, loans in different parts of the nation prepay faster than others. Borrowers with high-rate loans that have experienced one or more periods of low interest rate environments without refinancing may not have the funds or credit profile to do so.

In certain instances, Ginnie Mae (Government National Mortgage Association or GNMA) pools (portfolios with GNMA mortgage-backed securities guaranteeing the loans) may prepay at slower rates than Fannie Mae and Freddie Mac pools because the latter pools include conventional loans and higher income borrowers, presumably with greater access to refinancing and moving opportunities. Theoretically, prepayment rates for the state housing finance agency (HFA) single-family bond programs should more closely resemble GNMA pools because the profiles of the borrowers are similar and GNMA pools consist of Federal Housing Administration (FHA) and Veterans Administration (VA) loans, as do many of the single-family bond programs. However, despite these similarities, Moody's does not expect the pools to prepay at the same rates consistently, as the HFA single-family bond programs often vary in a number of ways from GNMA pools, particularly with the inclusion of private mortgage insurance and highly seasoned, uninsured loans within the pools.

Prepayment Measures

There are three fundamental measures of prepayments that are widely used in the fixed income community - CPR, PSA and FHA. FHA and PSA rates are widely used within the tax-exempt housing bond market. Although the FHA index was once the most commonly used standard for both taxable and tax-exempt markets, it has been largely replaced within the taxable market by other indices, including the PSA index.

PSA

The Public Securities Association (now the Bond Market Association) standard benchmark, or the PSA rate, represents an assumed rate of prepayment each month relative to the then-outstanding principal balance of a pool of mortgage loans. The PSA rate assumes constant prepayment rates of 0.2% per annum of the then-outstanding principal balance of such mortgage loan in the first month of the life of the loan and an additional 0.2% per annum in each month thereafter until the thirtieth month. Beginning in the thirtieth month and in each month thereafter during the life of the mortgage loans, the PSA rate assumes a constant prepayment rate of 6% per annum.

A 100% PSA rate is the same as a 6% constant prepayment rate (CPR) and generally translated to a 10-year average loan life. A PSA of 50% indicates CPRs that are half those of 100% PSA while a PSA of 200% indicates CPRs that are twice those of 100% PSA. Please note that PSA indicates prepayment rates. While it assumes a constant rate after 30 months, the actual cash flows due to prepayment decline over time as outstanding principal is diminished.

FHA

The Federal Housing Administration or FHA rate is based upon data drawn from the actual prepayment experience on FHA-insured and VA-guaranteed loans. One of the reasons the FHA rate became widely used in the tax-exempt market is that a 100% FHA prepayment run is required to demonstrate yield compliance for tax-exempt bonds. FHA tables show the percentage of mortgages expected to remain outstanding from an original pool of 100,000 30-year mortgages at the end of each year. The rate of prepayment is constant within a given year, as opposed to changing monthly during the early portion of the PSA standard. These tables were updated nearly every year from 1981 through 1991, the last update

CPR

Although not widely used within the tax-exempt market, the CPR, or constant prepayment rate assumes some fraction of the remaining pool is prepaid each month. The CPR, which is also known as conditional prepayment rate, measures prepayments as a percentage of the current outstanding loan balance. It is always expressed as a compound annual rate—a 10% CPR means that 10% of the pool's current loan balance pool is likely to prepay over the next year. The CPR for a pool is based on characteristics of that pool and the current and expected future economic environment.

Modeling Prepayments in Cash Flows

Given that prepayment speeds, and, consequently, revenue streams cannot be known with total certainty, Moody's believes that cash flow projections should incorporate scenarios of stress case prepayment speeds. Prepayments on some loans may alter the weighted average mortgage rate of the portfolio. If the weighted average mortgage rate of the pool is reduced by the prepayment of higher rate mortgages, then the excess interest available to cover losses and provide liquidity may be reduced. Over time, this reduction in excess interest could reduce both overcollateralization levels and the capacity for redemption of high coupon outstanding debt.

Given the many variables that may impact prepayment revenue streams, Moody's believes that the following cash flow stress scenarios are instrumental in evaluating a bond structure's future strength:

MINIMUM PREPAYMENT SCENARIO

The minimum prepayment stress scenario assumes that only minimal prepayments are received throughout the life of the bonds. The projection is viewed as a significant stress to the program, allowing an analysis of the revenue stresses which occur as only minimal excess revenues flow in.

The minimum prepayment scenario examines the bond structure as the average life of the bonds are at their highest, requiring maximum debt service amounts, while the revenues are minimally composed of the spread between mortgage rate and coupon, and related interest earnings. Moody's generally expects this prepayment run to be one of the most stressful scenarios because, as the incoming revenues are devoid of any excesses, the average life of the bond is long and little or no surplus is available to redeem any higher coupon debt.

Historically, Moody's has looked for the minimum prepayment speed to be a 0% prepayment. However, we recognize that the likelihood that a portfolio will experience no loan prepayments, whether voluntary or involuntary is improbable. Therefore, certain HFAs that have provided Moody's with data on the historical prepayment speeds of the loans in their programs have been permitted to assume a minimum prepayment speed above 0%, generally in the 20% to 30% PSA range.

Issuers interested in pursuing the option of running cash flows with minimum prepayment speeds above 0% should provide Moody's with information on the historical prepayment performance of their portfolio. Prepayment rates, expressed as PSA rates, should be provided on a series-by-series basis for the entire indenture, semiannually for at least the past 10 years.

Open indentures, with their diverse portfolios of loans with varying ages and interest rates are, generally, better candidates for applying minimum prepayment speeds that exceed 0%. Programs with active HFA management are also more likely to obtain this flexibility as they will be able to manage bond redemptions and issuance of additional debt to address any prepayment concerns. Closed, stand-alone programs are not likely to be considered for a minimum prepayment run above 0%.

HFAs who Incorporate Minimum Prepayment Speeds Above 0% in Program Cash Flows

California Housing Finance Agency
Colorado Housing and Finance Authority
Idaho Housing and Finance Association
Illinois Housing Development Authority
Iowa Finance Authority
Maryland Community Development Administration
MassHousing
Montgomery County, MD, Housing Opportunities Commission
Ohio Housing Finance Agency
Pennsylvania Housing Finance Agency
Rhode Island Housing
Utah Housing Corporation
Virginia Housing Development Authority
Washington State Housing Finance Commission
Wisconsin Housing and Economic Development Authority

THREE-YEAR AVERAGE LIFE SCENARIO

The three-year average life prepayment scenario usually falls within a range of a 500% to 750% PSA prepayment speed depending on the interest rate of the mortgage loans. This stress assumes that prepayments will occur very rapidly, so that the average life of the pool of mortgage loans is only three years. It should be noted that this is a three-year average life, therefore some loans will be outstanding for longer while others will prepay almost immediately.

As the speed of prepayments increases and the average life of the bonds decreases, the risk becomes greater that the spread between the mortgage rate and debt service could shift early in the bonds' life, either from a change in the weighted average mortgage rate or a shift in the average interest cost of the bonds. Moody's views this shift as of particular concern early in the bonds' life since during the early years it is less likely that the program has significantly overcollateralized and has accrued enough interest revenue to offset a substantial narrowing in spread. Additionally, in some cases negative arbitrage may occur when large prepayment amounts cannot be immediately applied to bond redemption and must be reinvested at lower float return rates.

ADDITIONAL PREPAYMENT SCENARIOS

Depending on the structure of the bonds and the makeup of the loans, Moody's may look for additional scenarios including, but not limited to:

Supersinker / PAC Bonds Stress Scenario — If the structure includes low interest rate supersinker or planned amortization class (PAC) bonds, Moody's may seek a stress test in which loan prepayments occur at the speed at which the bonds are structured and are used to call those bonds pursuant to the redemption provisions of the indenture until they have been paid in full. Thereafter, the prepayment speed falls to the minimum prepayment speed.

Premium / Taxable / Capital Appreciation Bonds — If an issue is structured with high coupon debt that may not be redeemed until a portion or all of the lower interest bonds are paid off, an additional stress test may be included. The high coupon debt often consists of capital accretion bonds (CAB), premium bonds, or taxable bonds, but could include any bonds that have a coupon significantly above the weighted average mortgage rate. In this case, Moody's analyzes a scenario in which loans are prepaid rapidly (three-year average life speed) and are used to redeem all bonds except the high coupon debt. The prepayment speed is then reduced to the minimum prepayment speed.

Mortgage Loans with Different or Varying Interest Rates — If mortgage loan products with differing mortgage interest rates and/or fees are to be originated within the same program, Moody's may request a stress test with differing origination and prepayment scenarios. The higher rate loans are prepaid at a rapid speed, at least that of the three-year average life run, while the lower-rate loans experience

minimum prepayments. The program quickly loses the higher source of income and is left with the lower source for an extended period of time. This scenario tests whether or not the lower rate loan revenue will be sufficient to continue timely payment of debt service on the bonds. Other runs may be requested to test the effect of partial origination of the mortgage pool (for example, if only the lower rate loans are originated).

Related Research

Rating Methodologies:

Approach to State HFA Cash Flow Projections, August 2006 (97505)

Moody's Rating Approach For Single Family, Whole-Loan Housing Programs, May 1999 (45064)

Strength in Structure: Moody's Approach to Rating Single-Family Housing Bonds Secured by Mortgage-Backed Securities, October 1998 (38066)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

PAGE INTENTIONALLY LEFT BLANK

PAGE INTENTIONALLY LEFT BLANK

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 98961

Author

Florence Zeman

Production Associate

Tara Cheparev

© Copyright 2006, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

This credit rating opinion has been prepared without taking into account any of your objectives, financial situation or needs. You should, before acting on the opinion, consider the appropriateness of the opinion having regard to your own objectives, financial situation and needs.

Special Comment

February 2007

Contact	Phone
New York	
Ali Sistani	1.212.553.4356
Florence Zeman	1.212.553.4836
Jersey City	
Lisa Washburn	1.201.395.6368

Housing 101: Single Family Program Open Indentures

This is the second in a series of articles focusing on specific aspects of single and multi-family housing bond programs. This series is designed to provide an overview to market participants who may be less familiar with the intricacies of housing bond programs by discussing and explaining various factors and facets of bond programs and how they are incorporated into the structures. We hope you find this useful. If you have ideas about future "Housing 101" topics please contact us.

Introduction

State and local housing finance agencies (HFAs) issue single family revenue bonds in order to increase the availability of affordable home ownership. The bonds are issued pursuant to trust indentures (also called resolutions). In general, an indenture is a contract between the issuer of the bonds and a trustee acting on behalf of the bondholders. An indenture defines the issuer's obligations and limitations, the bondholders' rights, sources of payments for the bonds, flow of funds, and the security for the bondholders. In housing transactions, the bonds are generally secured by specified assets and the stream of revenues off these assets, namely payments generated from mortgage loans, are pledged to debt repayment.

Most state HFAs and a small number of local HFAs operate their bond programs under open indentures while others issue bonds under stand-alone closed-end indentures. Whether an indenture is open or closed refers to whether additional bonds maybe issued. Those programs that are "open" may legally issue additional bonds under the same indenture while "closed" programs are single bond issuances without the ability to issue bonds secured by the same pledge. Many of the open indentures have evolved and in addition to enabling HFAs to finance their future activities through issuance of additional bonds, offer operating flexibilities, as discussed below, which may not be available under closed indentures.

Moody's analyzes the structure in conjunction with the many other credit factors of the program and incorporates the risks and strengths of the particular indenture, whether open or closed, into the rating on the bonds[1].

1. *For more information on Moody's rating approach please see the following Moody's rating Methodologies: Moody's Rating Approach For Single Family, Whole-Loan Housing Programs, May 1999 and Strength in Structure: Moody's Approach to Rating Single-Family Housing Bonds Secured by Mortgage-Backed Securities, October 1998*

Open Indentures Offer Flexibility

Open indentures, in addition to permitting the issuance of additional debt, also, generally contain flexible legal provisions that allow broad parameters with respect to the mortgage loans in the portfolio (such as mortgage type, insurance level, loan to value ratio); permit the transfer of excess funds out of the program after meeting certain requirements; establish reserve levels by series; and permit fees without a specified limit, etc. Open indentures are commonly used by state HFAs since the flexibility they provide enable the HFAs to adapt to market conditions and compete with the taxable, privately funded single family mortgage loan market. For example, although most HFAs will establish the initial mortgage rate at the time of bond issuance, this rate will not be written into the legal documents. The flexibility to adjust the mortgage rates throughout the origination process enables the HFA to compete with conventional loans.

In addition, in the event that a program is not performing as well as expected, the flexibility of an open indenture could offer an issuer the opportunity to minimize future problems by issuing additional debt and restructuring the future debt service requirements.

While the flexibility provided by the open indenture may result in greater adaptability and program strength, it also requires strong program management to ensure that the credit quality of the portfolio is maintained. This could involve preparing cash flows on an ongoing basis to measure the impact of the issuer's actions on the future of the program.

Closed Indentures Offer Greater Certainty but Limit Flexibility

In contrast to open indentures, closed indentures, such as those used by a majority of local HFAs have pre-determined criteria and explicitly define the type of mortgages to be originated, rates, amounts, origination period, etc. Although there are exceptions, the pre-defined criteria usually can not be changed during the origination period. As a result, in the event of rapidly declining mortgage rates, the likelihood that unused proceeds will redeem the bonds at the end of that period is higher than for an open indenture program. In general, closed indentures limit the ability of the issuer to adapt to the changes in the conventional loan market, although they are free to make changes to their program in future series of bonds.

Closed indentures generally do not require much oversight by the issuer and therefore are preferred by issuers with limited staff. The structure of the program is based on the assumption that the trustee will operate the program in accordance with the documents. If the instructions in the indenture are followed, the program should perform as projected in the original cash flows and have sufficient funds to pay debt service. It should be noted however, that there have been instances of trustee's mistakes that can compound over time and cause credit deterioration. Given the characteristics of the closed indenture, it is difficult to correct these errors or other unexpected events which cause credit deterioration.

Since the portfolio criteria are pre-determined, closed indentures allow the bonds to be structured with no flexibility and limited ability to remove funds from the indenture. Only when a bond issue is paid off, do the remaining assets under the indenture go back to the issuer. Essentially, all issuer optionality is removed. These factors often make closed indenture bonds more attractive to buyers who do not want to rely on an issuer's management expertise and policies.

The following are some of the options and operating flexibilities available to issuers under open indentures.

CROSS-CALLING

The use of revenues from loans financed by one series of bonds to redeem bonds of another series is known as cross-calling. If the indenture permits, certain revenues relating to one series of bonds in excess of what is needed to pay principal, interest, and expenses on that series, may be used for the redemption of bonds of other series issued under the indenture. Cross-calling enables sophisticated issuers to call out higher rate debt with revenues from lower rate issues, thus saving on debt service payments.

Cross-calling can be a powerful tool for issuers, particularly since the positive effect of a cross-call gets compounded semiannually. It can also be an effective tool for HFAs with variable rate debt, particularly in a rising interest rate environment. In the event, that the issuer is concerned that rising interest rates will result in the variable rate bond cost exceeding the interest rate earned on the loans and investments, they may apply excess funds to redeem the variable rate bonds first. (This may be a less effective tool for issuers if they entered into swaps to hedge the variable rate risk.[2])

While cross calling provides benefits to issuers, it does introduce added call risk to investors due to the increased likelihood that debt with higher interest rates will be subject to early redemption.

2. *For more information on variable rate bonds and swaps, please see the following Moody's special reports: Moody's special comments State Housing Finance Agencies Issue Increasing Amounts Of Variable Rate Debt, July 2000 and State Housing Finance Agencies' Utilization Of Variable Rate Debt And Swaps Continues To Grow, September 2003*

RECYCLING

Recycling occurs when mortgage revenues that would otherwise be available to redeem bonds of a series are used to finance additional mortgage loans. Given the limitations of bond volume allocation, recycling can be a useful tool for issuers allowing them to originate new mortgages without issuing new debt and thus saving the volume cap allocation as well as some of the costs of issuance.

Recycling is also an efficient way of originating lower rate loans in a rising interest rate environment. If the existing bond rates are lower than the market, the issuer can take advantage of the lower debt service costs to offer mortgage loans that are also below market but still providing sufficient revenue to cover the debt service on these lower coupon bonds. This gives the HFA an advantage when originating loans. Recycling can easily be done in an open indenture, in part because prepayments and revenues from various issues can be combined to make recycling more efficient.

MORTGAGE RATE BLENDING

In general, under the tax laws, the effective rate of interest on the mortgages provided under a bond issue can not exceed the bond yield by more than 1.125%. However, there are instances, particularly when HFAs undertake economic refundings, where a higher spread exists. In order for the program to maintain compliance with the federal tax code, HFAs may originate zero percent loans (often known as zeros) to lower the overall yield on the loans. These zeros are blended with other bond proceeds to produce a lower interest rate loan. HFAs use this strategy not only as a means of meeting the tax code requirement but also as an effective way to help move their mortgage money quickly.

USE OF EXCESS FUNDS

Under a typical HFA open indenture bond program, the weighted average mortgage interest rate paid by home owners exceeds the weighted average coupon rate paid to investors on the bonds. The excess of the mortgage rate over the bond rate and expenses is considered excess spread and over time will result in an excess of assets to liabilities. In open indentures the excess assets can be used in a variety of ways such as meeting overcollateralization requirements, covering losses associated with a pool of mortgage loans, paying costs of issuance for new issues, or being transferred out of the program after meeting certain minimum asset requirements.

A number of HFAs use the excess moneys from their respective programs effectively to warehouse mortgages or to provide down payment assistance for homebuyers. In warehousing, the issuer uses the excess funds to purchase and hold mortgage loans in advance of a bond issuance. The trustee purchases the warehoused loans with the proceeds of a new bond sale. This enables the issuers to purchase a pool of fully originated mortgage loans from bond proceeds. In times of low interest rates, agencies that originate loans via warehousing can reduce negative arbitrage since bond proceeds do not have to be invested in low-return investments during the origination process and pre-originated loans are already generating revenue and positive spreads.

COSTS AND INVESTMENTS

Issuing debt under an open indenture generally costs less because it is not necessary to draft a new indenture each time. Additional bonds are issued pursuant to supplemental resolutions which determine the specifics related to the issuance such as bond terms, mortgage loan terms, and reserve fund requirements. Furthermore, the cost of issuance of an additional series of bonds is generally funded from the accumulated net worth of the indenture rather than requiring a contribution from the issuer or lender.

Large open indenture bond programs may also have more flexibility in their investment choices and may be able to obtain higher investment rates due to the larger amounts available for investment.

Potential Changes in the Profile of Open Indentures

The profile of a program issued under an open indenture may change over time exposing a bondholder who purchased earlier series of bonds to program characteristics enacted in later series of bonds that may not have been anticipated when they purchased the bonds. For example, the characteristics of the loan portfolio could shift with the changes in the mortgage market. Such changes include mortgage insurance requirements, loan to value ratios, mortgage type and interest rate, property type, underwriting criteria, and portfolio size and diversity.

Program liabilities may change as well. For example, the use of variable rate debt, both hedged and unhedged, is increasing among the HFAs. Given that most HFAs' portfolios are fixed rate loans, the mismatch between fixed rate assets and variable rate liabilities could result in additional risks to the programs as interest rates rise,

particularly if the variable rate exposure is unhedged. While swaps may be used under an open indenture to hedge variable rate risk, they do introduce new potential risks to bondholders such as counterparty risk, basis risk, tax risk and amortization risk.

Issuers have also used the additional bonds feature of an open indenture as a tool for changing legal requirements of an indenture. If an indenture permits that legal provisions may be amended with majority bondholder approval, the issuer may propose specific changes to the indenture in conjunction with the sale of new bonds. Buyers of the new bonds agree to the changes by purchasing the bonds. When the percent of these new bondholders exceeds the requirement needed for an indenture change, the change will take effect impacting all bondholders.

Related Research

Rating Methodologies:

Moody's Rating Approach For Single Family, Whole-Loan Housing Programs, May 1999 (45064)

Strength in Structure: Moody's Approach to Rating Single-Family Housing Bonds Secured by Mortgage-Backed Securities, October 1998 (38066)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 102068

Author

Ali Sistani

Production Associate

Petra Daley

© Copyright 2007, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Moody's U.S. Public Finance

Special Comment

July 2008

Housing 101: PAC Bonds

Table of Contents:

Introduction	1
What are PAC bonds?	1
How do PAC bonds work?	2
Why are PAC bonds issued?	4
How are PAC bonds rated?	4
Glossary	5
Moody's Related Research	5

Analyst Contacts:

New York 1.212.553.1653

Ross Gabrielson
Senior Associate

Florence Zeman
Senior Vice President

Lisa Washburn
Team Managing Director

Introduction

Planned Amortization Class (PAC) bonds are a popular bond structure that has been used by state housing finance agencies since 1986. PAC bonds alter the structural characteristics of a bond issue, but the changes do not necessarily affect the credit risk profile of the bonds. As part of our Housing 101 series, this article will describe PAC bonds, introduce the mechanics of the PAC structure, and explain reasons for their continuing use by state housing finance agencies (HFAs).

What are PAC bonds?

PAC bonds are debt instruments that are structured to stabilize principal payments to investors in mortgage revenue bonds by directing mortgage loan prepayments to certain tranches of a bond issue. Mortgage revenue bonds are collateralized by pools of mortgages which, if mortgage holders make scheduled payments, amortize steadily over the term of the mortgage. However, mortgage holders often make principal payments ahead of schedule, and these unscheduled prepayments are often used to redeem bonds. The uncertainty regarding the timing and amount of bond redemptions leads to uncertain investment returns for investors in mortgage revenue bonds.

Investors often make assumptions regarding the rate of prepayments, but the actual prepayment behavior of the underlying mortgage pool may differ from expectations. PAC bonds, issued as a separate tranche in a bond issue, help mitigate the uncertainty inherent in mortgage revenue bonds. The bonds are structured to stabilize cash flows to PAC bondholders by redeeming specific principal amounts on specific dates if the underlying mortgage pool prepays at certain rates. In other words, PAC bondholders can be reasonably assured of the timing and amount of bond redemptions under certain prepayment scenarios. The eligible prepayment rates and PAC principal redemption schedule are specified in the bonds' supporting documentation, including the indenture and the official statement.

While PAC bonds have structural features that reduce the likelihood of early principal payments, the structure does not completely eliminate prepayment risk to PAC bondholders. If the underlying mortgage pool prepays at a rate above or below the specified rate, PAC bondholders are no longer entitled to receive principal payments according to the original schedule. This feature of the PAC structure is discussed below.

Moody's Investors Service

How do PAC bonds work?

The PAC structure mitigates prepayment risk by distributing a specified amount of mortgage principal prepayments to the PAC tranche and distributing the remaining prepayments to other tranches. The other tranches are called “support tranches” or “companion tranches”. The amount of prepayments that is directed to PAC tranches is detailed in the redemption provisions of the bond indenture.

The scheduled prepayment distribution to PAC bondholders only occurs when prepayments on the underlying mortgages are made within a range of prepayment rates. The prepayment rate is measured by the PSA rate, a standard benchmark for expressing monthly prepayment rates. The range of prepayment rates which stabilizes principal payments to PAC bondholders is called the PAC collar, and varies from issue to issue. Figure 1 is an example of PSA rates found in a representative bond indenture.

Figure 1: 2008 PAC Bond Projected Weighted Average Lives

PSA Speed	Average Life (in years)
0%	17.2
25%	12.5
50%	9.4
75%	7.5
100%	6.3
125%	5.6
200%	5.6
300%	5.6
400%	5.6
500%	4.7

In Figure 1, the PAC collar is 125% PSA to 400% PSA. Within the PAC collar, the average life of the PAC bond is stable at 5.6 years. The PAC bond will amortize over 5.6 years if the actual prepayment rates on the underlying mortgages fall within the 125% PSA to 400% PSA collar. A stable average life is possible because principal payments to PAC bondholders are made up to an amount which makes the average life of the PAC tranche 5.6 years. Excess principal payments are distributed to support tranches. Outside the PAC collar, the average life varies from 17.2 years to 4.7 years. If the mortgage loans prepay at rates below the PAC collar, the average life of the PAC bond will increase as principal is redeemed less rapidly and bonds remain outstanding for longer periods. Alternatively, if the mortgage loans prepay at rates above the PAC collar, the average life will decrease.

If monthly prepayment rates remain within the PAC collar, principal payments will be made to PAC bondholders according to an amortization schedule. Figure 2 is an example of a PAC amortization schedule found in a representative bond indenture.

Housing 101: PAC Bonds

Figure 2: 2008 PAC Bond Amortization Schedule

	Column A	Column B	Column C (Column A + Column B)
Date	Cumulative Redemption Amount	Cumulative Sinking Fund Payment Amount	Planned Amortization Amount
July 1, 2008	$ 970,000		$ 970,000
January 1, 2009	2,645,000		2,645,000
July 1, 2009	5,175,000		5,175,000
January 1, 2010	8,490,000		8,490,000
July 1, 2010	12,470,000		12,470,000
January 1, 2011	16,505,000		16,505,000
July 1, 2011	20,330,000		20,330,000
January 1, 2012	24,125,000	$ 315,000	24,440,000
July 1, 2012	27,755,000	605,000	28,360,000
January 1, 2013	31,240,000	870,000	32,110,000
July 1, 2013	34,580,000	1,110,000	35,690,000
January 1, 2014	37,775,000	1,325,000	39,100,000
July 1, 2014	40,840,000	1,515,000	42,355,000
January 1, 2015	43,780,000	1,680,000	45,460,000
July 1, 2015	46,600,000	1,815,000	48,415,000
January 1, 2016	49,150,000	1,925,000	51,075,000
July 1, 2016	51,375,000	2,005,000	53,380,000
January 1, 2017	53,315,000	2,065,000	55,380,000
July 1, 2017	55,010,000	2,100,000	57,110,000
January 1, 2018	55,885,000	2,115,000	58,000,000

"Planned Amortization Amount" (Column C) is the column of interest. The PAC bond will amortize at the specified amounts on the specified dates if the prepayment rate is within the PAC collar each month. Once the specified amount is met, any excess prepayments above the planned amortization amount are distributed to the support tranches. PAC bondholders will receive principal payments in the planned amortization amount on the scheduled dates as long as the PSA rate of the mortgage pool remains within the PAC collar.

The strength of the PAC bond structure depends on how much support tranche principal is outstanding. Generally, the more support tranches available to absorb prepayments, the better PAC bondholders will be protected from prepayment risk. PAC tranche principal will be redeemed according to the indenture's redemption provisions only if prepayments are made at rates within the PAC collar. However, prepayment rates can be above the PAC collar for several periods without jeopardizing the planned amortization schedule as long as there is sufficient support tranches principal outstanding to absorb excess prepayments. When all of the support tranches have been redeemed, prepayments will flow to the PAC bonds and PAC bondholders will be directly exposed to mortgage prepayments, regardless of whether the prepayment rate is within the PAC collar. When no other tranches are available to 'support' the PAC bonds, the PAC tranche is said to be "busted".

Why are PAC bonds issued?

PAC bonds are issued to lower the overall interest rate on a housing bond issue. Distributing the variability of prepayments among different tranches of mortgage revenue bonds broadens the appeal of the bonds to investors with varying tolerance for prepayment risk. Several types of investors, including pension funds, are willing to invest in PAC tranches because prepayment risk is lower relative to a traditional mortgage revenue bond. Other investors, including hedge funds, are willing to assume additional prepayment risk and invest in support tranches. The PAC bond structure increases the appeal of mortgage revenue bonds to a larger investor base. The increased demand for housing bonds can lower the cost of debt for HFAs.

It is important to remember that the heightened demand for PAC bonds and support tranches is what reduces borrowing costs, not the elimination of prepayment risk. Prepayment risk does not dissipate if PAC bonds are added to the bond issue. Instead, a PAC tranche only affects how the prepayment risk is distributed among all the bond tranches.

How are PAC bonds rated?

Moody's ratings on PAC bonds are subject to the same rating methodology as other mortgage revenue bonds issued by state HFAs, which includes a review of portfolio composition, financial factors, state HFA management, legal structure analysis and cash flow projections. When a bond issue incorporates a PAC tranche, Moody's asks for cash flow projections that reflect prepayment scenarios in which all PAC bonds are redeemed rapidly. Because PAC bonds typically pay a low interest rate, the average interest cost of the bond issue will increase once the PAC bonds are redeemed. The additional cash flow projections will show the projected performance of the remaining bonds with a higher average interest cost due to the early repayment of the PAC tranche.

Glossary

- **PAC bonds:** Planned Amortization Class bonds are debt instruments that are structured to stabilize principal payments to bondholders. The structure distributes principal payments to different tranches according to redemption provisions in the PAC bonds' legal documentation.
- **PAC collar:** The PAC collar refers to the range of prepayment speeds which stabilizes principal payments to PAC bondholders. The PAC collar is stated in the PAC bonds' legal documentation and is typically stated in terms of a PSA rate.
- **PSA:** Prepayments on mortgage loans are commonly measured by a prepayment standard or model. The model used most commonly with PAC bonds issued by state HFAs is the Public Security Association (PSA) model. The PSA model is based on an assumed monthly rate of principal prepayment. It assumes the prepayment rate increases by 0.2% per month for 30 months and stabilizes at 6% per month for the remaining term of a level-amortizing, 30 year mortgage. 100% PSA signifies that actual prepayments are made in line with the standard prepayment rate; 75% PSA signifies prepayments are made 25% slower than the standard prepayment rate; 125% PSA signifies prepayments are made 25% faster than the standard prepayment rate.
- **Support Tranche/ Companion Tranche:** Support tranches (also known as companion tranches) are tranches of a bond issue that are separate from the PAC tranche. Support tranches receive excess principal payments which are not due to PAC bondholders. The support tranches absorb the variability of principal payments and allow the PAC tranches to amortize predictably, provided the prepayment rate is within the PAC collar.
- **"Busted":** PAC bonds are said to be "busted" when no support tranche principal remains outstanding. This may happen if the underlying mortgage pool prepays at rates above the PAC collar for a prolonged period of time. Principal payments will be distributed directly to PAC bondholders, since there is no longer any outstanding support tranche principal available to absorb prepayments on behalf of PAC bondholders.

Moody's Related Research

Special Comment:

- Housing 101: Single Family Loan Prepayments, May 2006 (98961)

Rating Methodology:

- Moody's Rating Approach for Single Family, Whole – Loan Housing Programs, May 1999 (45064)
- Moody's Approach to State HFA Cash Flow Projections, August 2006 (97505)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Housing 101: PAC Bonds

Report Number: 109768

Author	Editor	Production Manager
Ross Gabrielson	Florence Zeman	William L. Thompson

© Copyright 2008, Moody's Investors Service, Inc. and/or its licensors and affiliates (together, **"MOODY'S"**). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and MOODY'S, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER. Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MOODY'S have, prior to assignment of any rating, agreed to pay to MOODY'S for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Moody's Investors Service

www.moodys.com

Special Comment

Moody's

U.S. Public Finance

June 2009

Housing 101: HFA Single Family Bonds versus RMBS – Differences Lead to Variation in Performance

Table of Contents:

Summary Opinion	1
Background Information –RMBS and HFAs	2
Credit Factors Bolstering HFAs During the Economic Crisis	3
Key Differences Between HFA Bonds and RMBS	6
Conclusion	11
Appendix I	12
Appendix II	13
Appendix III	14
Moody's Related Research	15

Analyst Contacts:

New York 1.212.553.1653

Rachael Royal McDonald 212.553.4456
Assistant Vice President –Analyst
U.S. Public Finance

Florence Zeman 212.553.4836
Senior Vice President
U.S. Public Finance

Lisa Washburn 212.553.4133
Team Managing Director
U.S. Public Finance

Debashish Chatterjee 212.553.1329
Vice President – Senior Credit Officer
U.S. Asset Finance Group

Summary Opinion

The municipal bonds issued by State Housing Finance Agencies (HFAs) to finance single family loans and residential mortgage backed securities (RMBS) are both backed by pools of single family mortgage loans. Because of this similarity, Moody's analysts often receive inquiries from investors about how to compare them. This article provides a description of both State HFA bonds and RMBS and a discussion of the major differences between the securities and the loan pools that back them.

The contrasting features of these securities include:

- Types of loans backing the bonds
- Legal structure, including the issuance of multiple transactions under the same indenture
- Management and oversight of the loan pools and bond programs
- Mortgage insurance requirements
- Loan underwriting criteria
- Borrower profile

As a result of the differences in these securities, State HFA bonds have not experienced nearly the level of losses and defaults experienced by many RMBS loan pools and securities of recent vintage.

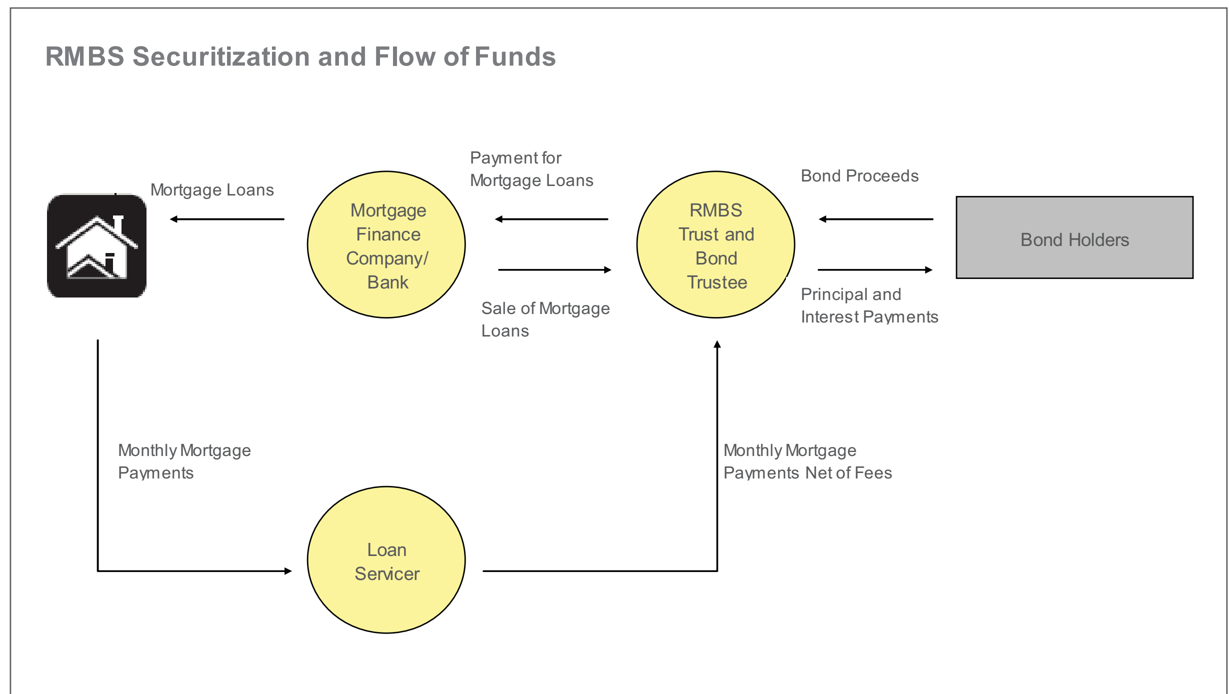
Moody's Investors Service

Background Information –RMBS and HFAs

Residential Mortgage Backed Securities

RMBS are debt obligations that represent claims to the cash flows from pools of residential mortgage loans. An RMBS is created when a number of residential mortgage loans (typically thousands) are identified for securitization by the entity (a bank, mortgage finance company or other entity) that owns the loans. Each loan obligates the borrower/homeowner to make monthly payments to the lender. The owner of the loans usually creates a trust and then sells the mortgage loans to that trust. The trust then sells RMBS to investors. The trust uses the monthly loan payments of principal and/or interest it receives from borrowers on their mortgages to make the monthly payments on the RMBS.[1] Figure 1 below describes a typical flow of funds for a RMBS.

Figure 1

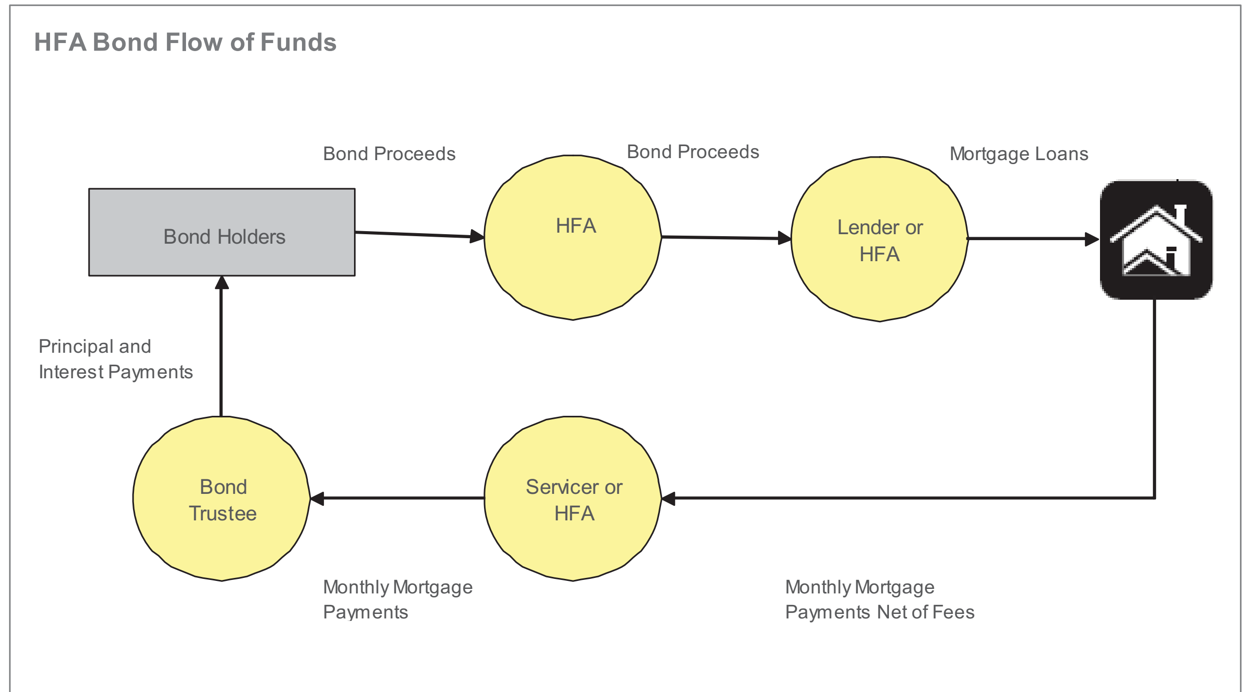


State Housing Finance Agencies

State HFAs are agencies or authorities created by state law that are charged with helping persons and families of low or moderate income attain affordable housing. State HFAs sell tax-exempt and taxable housing bonds. By issuing tax-exempt bonds, HFAs lower their borrowing costs and make below market rate mortgage loans to qualifying first-time homebuyers. After the mortgage loans have been made, either directly by the HFA or via a mortgage lender, the monthly mortgage payments flow to the bond trustee who distributes principal and interest payments to bond holders. This model, wherein HFAs issue bonds in order to raise funds to make loans, differs from RMBS, in which a trust typically issues bonds against a pre-existing pool of mortgage loans. Figure 2 below describes a standard flow of funds for an HFA issuing bonds to finance mortgage loans.

[1] Moody's Special Comment.. "Subprime Residential Mortgage Securitizations: Frequently Asked Questions." April 2007.

Figure 2



HFAs currently operate in every state as well as in the District of Columbia, the U.S. Virgin Islands and Puerto Rico. State HFAs are currently estimated to have over $90 billion of bonds outstanding composed of both single family and multifamily debt.[2]

Credit Factors Bolstering HFAs During the Economic Crisis

HFAs' Strengths and Challenges

While both HFA bonds and RMBS are backed by pools of mortgage loans, there are a number of differentiating factors which, to date, have resulted in generally stronger performance of HFA bonds than many RMBS of recent vintage.

These factors are summarized below and are also described in greater detail in later sections of this report:

- Bonds issued by State HFAs are part of open trust indentures with flexible provisions related to the direction of money under the indenture, allowing HFA management to use various strategies to maximize net assets and revenue for all of the bonds under the trust indenture.
- HFAs retain ownership of the loans that back their bonds, allowing them to provide oversight of the loan pools throughout the life of the loans and to engage delinquent borrowers at an early stage in order to mitigate losses.
- The majority of HFA bonds are backed by fixed rate, 30-year, fully amortizing loans.
- Some HFAs finance loans that are securitized into MBS which transfers loan payment risk to the federal agency guaranteeing the MBS.[3]

[2] Moody's Special Comment. "Housing 101: State Housing Finance Agencies." July 2007.
[3] Ginnie Mae, Fannie Mae and Freddie Mac provide these guarantees.

- For single family whole loans, HFAs generally require that a primary mortgage insurance policy from either a private company or from the US federal government be purchased on all loans that have less than a 20% down payment.
- Since HFA loans are pooled with all of the loans that have been previously financed under the trust indenture, the loans in the pool are typically a mix of both seasoned and new loans. All loans in the pool are cross collateralized, which provides the loan pool with a diversity of loan vintage and seasoning.
- HFAs typically require that the lenders adhere to underwriting guidelines that comply with Fannie Mae and Freddie Mac parameters for their whole loans and in all cases borrowers must provide normal and customary documentation of their income eligibility and net worth.
- HFAs typically offer mortgage counseling and outreach as part of their loan origination service.

There are also some features of HFA bonds that can negatively impact performance relative to RMBS, including those listed below:

- Since new bonds and loans are added to HFAs' open indentures, over time the nature of the assets and liabilities in the indenture may change, exposing a bondholder who purchased earlier series of bonds to loan types and security types (e.g. interest-only loans) enacted in later series of bonds.
- HFAs' loan pools are not geographically diverse since loans are made only to borrowers who live in the HFA's home state.

Impact of the Economic Crisis on HFA Performance

The current challenges in the credit and housing markets have tested the durability of the HFAs. However, most HFAs entered the stressful market conditions with strong financial positions and should be able to withstand a certain amount of stress. The stresses that have impacted HFAs include:[4]

- Changes in the capital markets have increased interest costs on long-term bonds. Higher interest rates may pose barriers to HFAs' ability to maintain the desired spread between bond costs and mortgage earnings.
- Volatile short-term markets and credit concerns surrounding several liquidity providers have made variable rate debt more expensive, caused difficulties in remarketing, and (for the first time) resulted in material levels of bond purchases by liquidity banks.
- Counterparty risk has been highlighted by downgrades of the private mortgage insurers (PMIs) that insure many of the HFA loans and downgrades of financial institutions involved in HFA financings.
- As the housing market continues to deteriorate and foreclosures increase, several HFAs are seeing growing foreclosures and losses upon foreclosures in their programs.

The downgrades within the PMI sector have put pressure on the ratings of some HFAs. Mortgage insurance provider quality is a key factor in HFA single family bond program ratings, as programs rely on mortgage insurance as the first level of protection against loan losses resulting from mortgage foreclosures. On February 13, 2009, Moody's downgraded the insurance financial strength ratings of 7 private mortgage insurance companies to rating levels between Ba3 and A3. These rating changes could result in downgrades to certain HFA programs with high concentrations of loans insured by PMI companies unless the impact of the PMI downgrade is mitigated by program overcollateralization. On March 24, 2009, Moody's placed the ratings of four HFA single family programs on watch for possible downgrade as a result of substantial exposure to the PMI companies.[5]

[4] The downgrades to the PMI providers and the deterioration in the housing market may also impact RMBS to varying degrees.

[5] Illinois Housing Development Authority, Homeowner Mortgage Revenue Bonds (currently rated Aa2); South Carolina State Housing Finance and Development Authority Mortgage Revenue Bonds (currently rated Aa1); Wisconsin Housing and Economic Development Authority Home Ownership Revenue Bond Program (1988 Resolution) (currently rated Aa2); Wisconsin Housing and Economic Development Authority Home Ownership Revenue Bond Program (1987 Resolution) (currently rated Aa2).

However, exposure to PMI rating changes for many HFAs has been mitigated by the use of government mortgage insurance. Insurance from the Federal Housing Administration (FHA), the Veteran's Administration (VA) or the Rural Housing Community Development Services Guarantee (RD) is backed by the US federal government. As of December 2008, federal government insurance covered approximately 46% of loans outstanding in HFA bond programs and nearly half of the programs had more than 50% of their loans covered by government insurance. Programs with substantial amounts of government insurance are less vulnerable to the rating changes of the PMI companies. In addition, HFAs that securitize loans into mortgage backed securities (MBS) issued by Ginnie Mae, Fannie Mae or Freddie Mac are not vulnerable to mortgage insurer rating changes. Those entities guarantee full and timely payments on the mortgage loans regardless of the performance of the underlying loans or the mortgage insurer.

Please refer to our March 2009 special comment "HFA Roadmap: Evaluating State HFA Single Family Program Ratings in the Current Economic Environment," for a list of the eight critical factors we use to evaluate HFAs in the current economic environment.

Impact of Housing Market Performance on HFA Loan Pools

While HFA loan pools have experienced increases in delinquencies and foreclosures in 2007 and 2008, these increases have not been as dramatic as the increases have been for many other types of loan pools, such as subprime pools.[6] The figure below compares HFA delinquency rates with delinquency rates of loans of varying types within their states.

Figure 3

Loan Delinquencies and Foreclosures for HFAs vs. Other Loan Types, December 31, 2008

12/31/2008	HFA Loans	FHA Loans	Prime Loans	Subprime Loans	Subprime ARM Loans	All Loans
60+ days delinquent	1.54%	1.90%	0.70%	4.29%	6.00%	1.43%
90+ days delinquent	1.81%	2.82%	0.87%	6.28%	10.83%	2.10%
Foreclosure	1.10%	1.48%	0.75%	5.45%	17.65%	2.21%
Total	4.45%	6.20%	2.31%	16.02%	34.48%	5.75%

Source: *Mortgage Bankers Association National Delinquency Survey Q4 08; Averages provided for FHA, Prime, Subprime and All Loans only include loans made in states containing Moody's-rated HFAs.*

For more information and analysis of HFA delinquency and foreclosure rates, please see the May 2009 Moody's Special Comment, "State HFA Single Family Whole-Loan Programs See Increasing Delinquency and Foreclosure Rates."

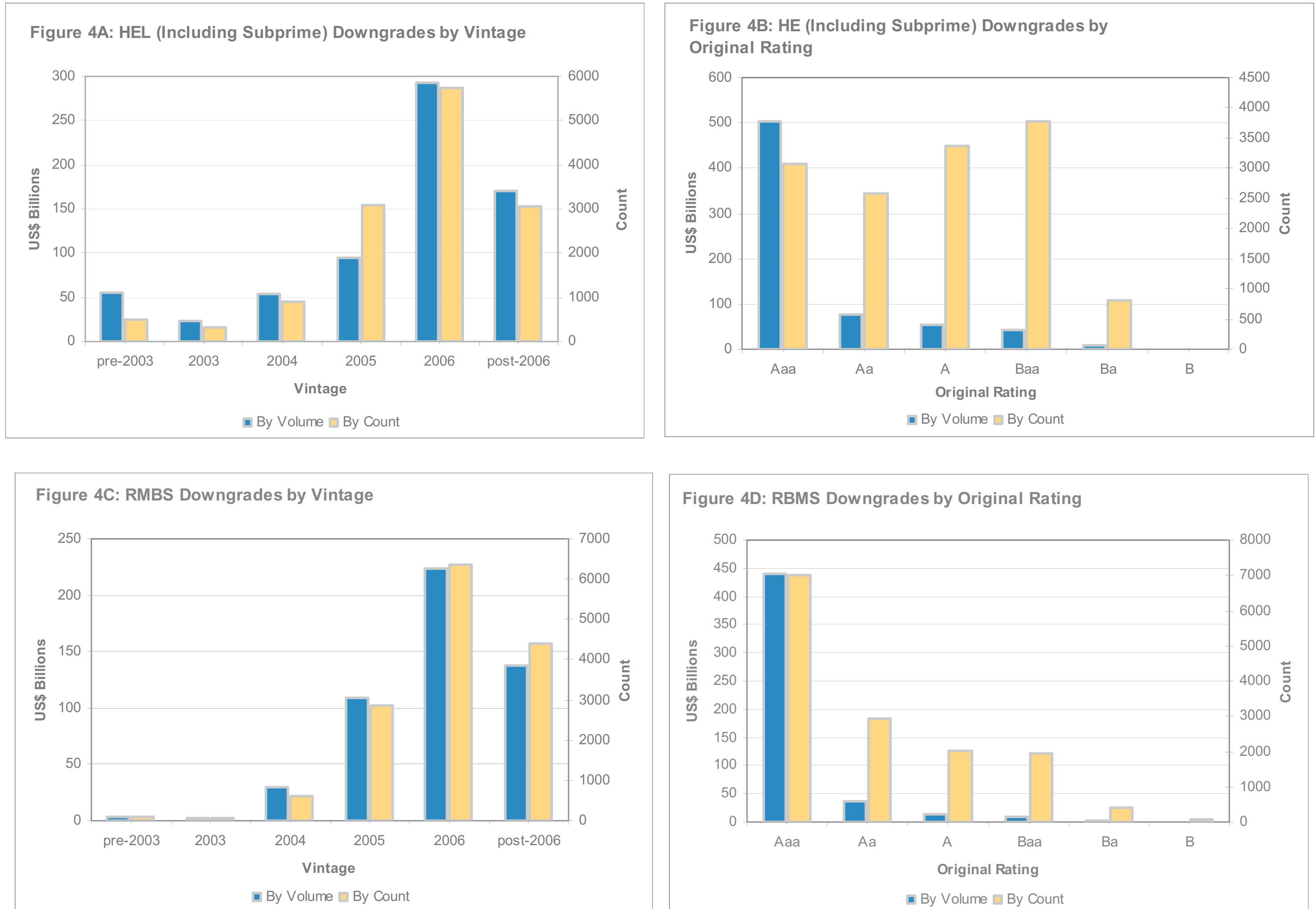
Impact of Economic and Housing Crisis on HFA Ratings

The HFA single family program sector is a highly rated sector relative to RMBS, with all ratings between the A and Aaa categories. HFA single family program ratings have been much less impacted by the stresses caused by the housing market and economic crisis than RMBS ratings. Between January 2006 and May 2009 the HFA sector experienced no rating transitions between the Aaa, Aa and A categories. However, as mentioned previously, 4 of the 32 (12.5%) HFA single family programs have had their ratings placed under review for downgrade by Moody's due to the downgrades of the PMI companies that insure portions of their loan pools. Please see Appendix III for a list of Moody's Ratings on State HFA Bond Programs.

[6] Charts containing delinquency and foreclosure rates for all Moody's-rated HFA single family programs can be found in Appendix I and Appendix II of this article.

In contrast, the RMBS sector has experienced a large number of rating transitions, as shown in the figures below.[7]

Figure 4: US Home Equity Loan and RMBS Downgrades by Vintage and Original Rating in 2008[8]



Key Differences Between HFA Bonds and RMBS

As discussed above, there has been a significant difference in the performance of HFA bonds and RMBS of recent vintage. The sections below provide an explanation of the major differences between HFA bonds and RMBS which largely have driven this difference in performance.

Management Involvement and Oversight

A key difference between bonds issued by State HFAs and RMBS is that unlike RMBS, the HFAs own and manage the loan pools that back their bonds. State HFAs are run by management teams with extensive experience in housing finance, mortgage loan underwriting and asset management. This management team is involved both in the loan origination process and also in monitoring the loans through their life. This close involvement allows the HFAs to engage delinquent borrowers at an early stage in order to work towards

[7] Moody's Special Comment. " Structured Finance Rating Transitions: 1983-2008." March 2009.

[8] The home equity loan or HEL sector includes securities backed by subprime (B&C) mortgage loans, home improvement loans, high loan-to-value (high LTV) loans, home equity lines of credit (HELOCs), and closed-end second-lien loans, as well as net interest margin (NIM) securitizations. It does not include securities backed by Alt-A mortgages, which are included in the RMBS sector.

mitigation of losses whenever possible. One downside to having such a high level of management involvement is that poor management could affect the performance of the bond program. However, management at the State HFAs is typically made up of strong and experienced housing and finance professionals.

In the case of RMBS, the mortgage institutions that originated the loans have sold and relinquished their legal right to the loans, leaving the monitoring of the loans to the loan servicer, who in some cases might not have the same legal ability as an HFA to work with borrowers to modify loan terms.

Trust Indentures, Bond Structure and Pledged Revenues

Another primary difference between bonds issued by State HFAs and RMBS is that HFA management advises the trustee in the management of the flow of funds for HFA-issued bonds whereas in an RMBS the trustee directs the funds strictly according to the structured bond documents. HFA management is able to play a role in managing their funds because bonds issued by State HFAs are part of trust indentures (also called resolutions or bond programs) with flexible provisions related to the direction of money under the indenture. Furthermore, the "open" nature of HFAs' indentures allows HFAs to issue multiple series of parity, cross-collateralized bonds under the legal pledge. Therefore, the debt service on each series of bonds can be paid using loan revenues associated with any bond series issued under the indenture. Since HFA management has the ability to help direct the funds for their bonds, they are able to use various strategies, such as cross calling, recycling, and mortgage rate blending, to maximize net assets and revenue for all of the bonds under trust indenture. [9]

In contrast, RMBS are operated out of closed, structured trusts managed by trustees. Based on the terms of the trust indenture, the trustee uses the monthly loan payments of principal and/or interest it receives from borrowers on their mortgages to make the payments to the bond investors, creating a pass-through structure. Since RMBS trust indentures are closed, the bonds in the trust are backed solely by the interest and principal payments from the pool of loans that make up the RMBS security. However, RMBS may also rely on derivatives, mortgage insurance proceeds, bond insurance proceeds, or credit enhancement for interest payments.

Since new bonds and loans are added to an HFA's open indenture, over time the nature of the assets and liabilities in the indenture may change, exposing a bondholder who purchased earlier series of bonds to program characteristics enacted in later series of bonds that may not have been anticipated when they purchased the bonds. For example, on the asset side, if an issuer decides to offer loans with a riskier profile such as interest-only loans, then all bondholders, including those who owned bonds prior to this decision, are exposed to the new loan types. On the liabilities side, an HFA's decisions about bond structures, including issuing variable rate debt, impacts the overall debt profile of the program. All of the bondholders are impacted by these decisions.

In addition to the differences in the trust indentures, HFA bonds and RMBS have many other contrasting features. The table below provides a summary of these differences including the bond structure, overcollateralization, and pledged revenues.

[9] Moody's Special Comment. "Housing 101: Single Family Program Open Indentures." February 2007.

Figure 5

HFA and RMBS Bond Structure and Pledged Revenues

Topic	Bonds Issued by Housing Finance Agencies	Residential Mortgage Backed Securities
Types of Bonds Issued	Tax-exempt and taxable bonds which may be fixed rate or variable rate. HFAs must structure and manage their programs to ensure that they meet the requirements for their tax-exempt bonds.	Taxable bonds which may be fixed or variable rate. The bonds are usually issued as REMIC certificates (which are treated as debt for tax purposes under the REMIC tax rules).
Bond Structure	The bonds may be serial bonds or term bonds and often include sinking funds or amortization schedules.	The bonds typically maintain a pass through structure. The structure can be complex, using either a shifting interest or over collateralization model.[10] RMBS typically have a legal final maturity of 1 month longer than the maturity of the loans. However, different classes within the structure may have different weighted average lives.
Pledged Revenues	Each bond series issued by an HFA is backed by the interest and principal payments from all of the loans financed under the HFA's single family master trust indenture. Therefore, the debt service on the bonds can be paid using loan revenues associated with any bond series issued under the indenture. Furthermore, the bonds may be general obligations of the HFA, providing them with access to funds in the HFA's general fund and the HFA's other trust indentures. HFAs may also rely on credit enhancement for interest payments in some cases.	RMBS are backed by the interest and principal payments from the pool of loans that make up the RMBS security. RMBS may also rely on derivatives, mortgage insurance payments, bond insurance payments or excess spread in some cases.
Over Collateralization	Within an open trust indenture, the ratio of assets to debt is generally greater than 1.0x (or, conversely, less than 1.0x debt to asset). In order to maintain various rating levels, Moody's looks for HFA's single family bond indentures to maintain minimum levels of over collateralization.[11]	For prime deals, the ratio of loans originated to bonds sold is typically very close to 1.0x asset to debt (or, conversely, debt to asset). For subprime deals, the ratio of debt to asset is typically less than 1.0x.
Subordination Structure	While the majority of HFAs do not have a subordination structure – they only issue one tranche of bonds per bond deal – a few HFAs structure their bonds with several tranches of debt.	RMBS are typically structured with multiple tranches of debt.
Timing of Bond Issuance and Mortgage Lending	HFAs issue bonds and then make proceeds from the bonds available to lenders to make loans to homebuyers.	The majority of RMBS trusts issue bonds against a pre-existing pool of mortgage loans. However, some issues also utilize prefunding.

Loan Pool

HFA bonds and RBMS also differ in the types of loans that secure them. The majority of HFA bonds are backed by fixed rate, 30-year, fully amortizing loans. To a lesser extent, the bonds may be backed by fixed rate interest-only or step-rate loans where the mortgage payment only changes once and the borrower knows at the closing of the mortgage what the higher payment will be.

HFA loans are generally high loan-to-value (LTV) loans with a primary mortgage insurance policy on nearly all of loans that have less than a 20% down payment. The predominant types of mortgage insurance and guarantees are either from the US federal government, such as Federal Housing Administration (FHA) Insurance, Veteran's Administration (VA), or Rural Housing Community Development Services (RHCDS), or from private mortgage insurers (PMI). In addition to these forms of primary mortgage insurance, HFAs often cover the risk of losses on the loans with secondary coverage in the form of pool insurance, self insurance or overcollateralization that has built up over time within the trust indenture.

[10] Moody's Special Comment. "Subprime Residential Mortgage Securitizations: Frequently Asked Questions." April 2007.
[11] Moody's Special Comment. "HFA Roadmap: Evaluating State HFA Single Family Program Ratings in the Current Economic Environment." March 2009.

Some HFAs also finance loans that are then securitized into mortgage backed securities (MBS). These securities are guaranteed by Ginnie Mae, Fannie Mae or Freddie Mac. The guarantee assures the HFA that it will receive timely payment of principal and interest on their MBS, even if borrowers in the underlying pool are delinquent or default on their mortgage payments.

In contrast, loans securitized into RMBS may be fixed- or adjustable-rate mortgages that fall into the Jumbo, Alt-A or Subprime categories. The mortgages backing RMBS have a variety of repayment terms including ones where principal and interest payments are likely to fluctuate in the future. In addition, the borrowers may not be required to purchase mortgage insurance to support their loan payments. Jumbo loans, which typically conform to Fannie Mae and Freddie Mac underwriting criteria but are too large to be wrapped by Fannie or Freddie, typically have mortgage insurance if the LTV is greater than 80%. Alt-A pools, which do not conform to Fannie Mae and Freddie Mac underwriting criteria, typically contain loans with mortgage insurance for those loans where the LTV is greater than 80%. Subprime loans, which may have more risky structures, less stringent underwriting criteria and/or borrowers with weak credit quality, generally do not carry borrower paid mortgage insurance. Some securitizations also utilize lender-paid mortgage insurance as a form of credit enhancement.

The chart below reviews the contrasting features between HFA and RMBS loan pools.

Figure 6

HFA and RMBS Loan Pools

Topic	Bonds Issued by Housing Finance Agencies	Residential Mortgage Backed Securities
Types of Assets Financed	HFAs finance both whole loans and/or loans that are securitized into MBS by Ginnie Mae, Fannie Mae or Freddie Mac.	RMBS are issued by private institutions that securitize whole loan mortgages into 'private-label' mortgage securities. These loans are not further securitized by Ginnie Mae, Fannie Mae or Freddie Mac.
Loan Products In The Loan Pool	The majority of loans made by HFAs are 30-year, fully amortizing, fixed rate, level payment mortgage loan products. Some HFAs have recently begun offering fixed rate 40-year amortization loans and interest-only loans. The interest-only loans typically have an interest-only period of 5 to 10 years and then the principal on the loan begins to amortize for the remaining term of the loan (anywhere from 23 to 30 years). HFAs may also offer step-rate loans, where the interest rate steps up based on a schedule determined when the loan closes. HFAs do not offer adjustable-rate loans or loans with bullet maturities.	Loans securitized into RMBS can be fixed or adjustable-rate loans with a variety of terms. The loans in the RMBS pools can be Jumbo loans (Fannie Mae/Freddie Mac conforming loans with loan amounts that exceed Fannie Mae/Freddie Mac guidelines), Alt-A Loans (non-conforming to Fannie Mae/Freddie Mac), or Subprime Loans (loans may have riskier structures, less stringent underwriting criteria and/or borrowers with weak credit quality).
Vintage Of Loans In Loan Pools	Since HFA loans are pooled with all of the loans that have been previously financed under the trust indenture, the loans in the pool are typically a mix of both seasoned and new loans. All loans in the pool are cross collateralized, which provide a loan pool with a diversity of loan vintage and seasoning.	As RMBS loan pools are static and determined at the time of the RMBS issuance, loans that back an RMBS are typically all from the same vintage. However, some securitizations are specifically made up of seasoned collateral from several different prior vintages.
Geographic Distribution Of Loans	Loans are made only to borrowers who live in the HFA's home state.	Loans were originated to borrowers nationwide, although some pools may have concentration to certain states.
Mortgage Insurance Requirements For Loans	For single family whole loans, HFAs generally require that a primary mortgage insurance policy be purchased on all loans that have less than a 20% down payment. Given that the majority of the loans in HFA portfolios have high LTVs, the use of primary insurance is prevalent. The predominant types of mortgage insurance and guarantees are from the FHA, VA, PMI, or RHCDS. In addition, HFAs often cover the risk of losses above and beyond this primary coverage with secondary coverage in the form of pool insurance, self insurance or over collateralization of the bond program.	Jumbo loans and Alt-A loans typically have mortgage insurance if the LTV ratio is greater than 80%. Subprime loans generally do not carry borrower paid mortgage insurance. However, some securitizations also utilize lender-paid mortgage insurance as a form of credit enhancement.

Loan Underwriting and Servicing

HFAs' loans and loans packaged into RMBS have different underwriting requirements. HFAs typically require that the lenders adhere to underwriting guidelines that comply with Fannie Mae and Freddie Mac parameters for their whole loans and in all cases borrowers must provide normal and customary documentation of their income eligibility and net worth. In contrast, the loans packaged into RMBS may have been originated by multiple originators who maintain different underwriting criteria. Prime jumbo loans generally conform with Fannie Mae and Freddie Mac other than the loan balance. Alt-A and subprime loans may have different underwriting standards and be underwritten with or without income or asset documentation.

HFAs and RMBS also participate at different levels in loan servicing and origination, as described in the chart below.

Figure 7

HFA and RMBS Loan Origination, Underwriting and Servicing

Topic	Bonds Issued by Housing Finance Agencies	Residential Mortgage Backed Securities
Underwriting Criteria	HFAs generally utilize Fannie Mae/Freddie Mac parameters, either for whole loan underwriting or for pooling loans into MBS structures. In the case of whole loans to be insured or guaranteed by the FHA, VA, RHCDS, or a primary mortgage insurer, the borrowers must comply with the credit and property standards of these entities. Borrowers must provide normal and customary documentation including income eligibility, credit and other criteria relating to the proposed mortgagor's ability to meet payments. HFAs may or may not implement FICO requirements.	Each loan originator uses its own underwriting guidelines. Prime jumbo loans typically use guidelines which conform with Fannie Mae and Freddie Mac other than the loan balance. Alt-A and subprime loans may be underwritten with or without income or asset documentation.
Loan Underwriters	Most loans are underwritten through retail channels (banks and mortgage companies). These third party originators must comply with the HFA's underwriting criteria. Some HFAs also directly underwrite and originate loans.	The loans in the loan pool can be underwritten through retail channels (banks and mortgage companies), wholesale channels (brokers), or correspondents (independent retailers).
Loan Servicing	Loans may be serviced either by the HFA or by third party servicers. The HFA closely monitors loans serviced by third parties. This provides them with information on the performance of their loans, enabling them to institute loss mitigation techniques early in the process.	The loans are serviced by independent servicers or the servicing arm of a bank. The servicer's ability to take action on a delinquent loan may vary and depend on the trust documents.

Borrower Profile and Counseling

Unlike RMBS, HFAs loan pools contain a very specific borrower profile. In general, US tax law requires that loans financed by HFAs' mortgage revenue bonds be made to first-time home buyers who earn no more than 115% of area median income (AMI) and also limits the price of homes purchased with mortgage revenue bond revenues to 90% of the average area purchase price. Homebuyers are required to reside in the homes that they purchase.

HFAs typically offer mortgage counseling and outreach as part of their loan origination service, while there are no requirements that borrowers of loans packaged into RMBS have to have received mortgage counseling. HFAs may offer the counseling services directly or through a non-profit partner.

Figure 8

HFA and RMBS Borrower Profile and Counseling

Topic	Bonds Issued by Housing Finance Agencies	Residential Mortgage Backed Securities
Borrower Profile	In general, the US tax law restricts HFAs' mortgage revenue bonds to first-time home buyers who earn no more than 115% of AMI and limits the price of homes purchased with MRB mortgages to 90% of the average area purchase price. Homebuyers are required to reside in the homes that they purchase.	There are typically no income or purchase price limitations for borrowers and mortgages that are part of RMBS. Homebuyers may be investors and are not required to live in the homes that they purchase.
Mortgage Counseling	HFAs typically offer mortgage counseling and outreach as part of their loan origination service which has led to improved performance of the portfolio. The counseling helps educate these individuals about the initial loan screening process as well as the costs and responsibilities of home ownership.	Mortgage counseling is not typically offered or required for borrowers during the origination process.

Conclusion

HFA bonds and RMBS differ in many key respects, including their legal structure, loan pool characteristics, underwriting, servicing, and management oversight. Many of these differentiating characteristics have led to more favorable performance for the HFAs during the recent economic and housing downturn.

While the HFAs have maintained their ratings to date, Moody's outlook for the state HFA sector is negative as we expect challenging conditions for HFAs over the next 12 to 18 months. Mitigating these challenges for many HFAs is their financial strength and management expertise. Most HFA bond programs are actively managed by an experienced staff that, in the past, has been able to respond to challenges. A proactive and forward-looking approach to resolving credit challenges may reduce the negative implications of the challenges facing HFA bond program ratings due to the current market environment.

Appendix I

Chart 1: Average Delinquency and Foreclosure Rates for State HFA Single Family Whole-loan Programs, December 31, 2005 – 2008

	12/31/08	12/31/07	12/31/06	12/31/05
Delinquency Type*				
60+	1.54%	1.30%	1.25%	1.35%
90+	1.81%	1.14%	1.14%	1.27%
Foreclosure	1.10%	0.94%	0.83%	0.98%
Total	4.45%	3.38%	3.22%	3.61%
One Year Percent Change				
60+	18.58%	3.55%	-7.43%	
90+	58.36%	0.05%	-10.26%	
Foreclosure	17.81%	13.19%	-15.58%	
Total	31.82%	4.78%	-10.64%	
One Year Basis Point Change				
60+	24	4	-10	
90+	67	0	-13	
Foreclosure	17	11	-15	
Total Basis Point Change, One Year	107	15	-38	

*To create these averages, weighted average delinquencies and foreclosures were calculated for those states with more than one active single family program

Appendix II

Delinquencies and Foreclosures for Moody's-Rated State HFA Single Family Whole Loan Programs (Percent by Total Number of Loans)

		As of 12/31/2008				As of 12/31/2007				As of 12/31/2006				As of 12/31/2005			
#	HFA Single Family Whole Loan Program	60+	90+	Foreclosure	Total	60+	90+	Foreclosure	Total	60+	90+	Foreclosure	Total	60+	90+	Foreclosure	Total
1	Alaska HFC - Home Mortgage Revenue Bonds	0.72%	0.24%	0.32%	1.29%	0.68%	0.24%	0.35%	1.27%	0.63%	0.20%	0.30%	1.14%	0.63%	0.22%	0.33%	1.18%
2	CalHFA - Home Mortgage Revenue Bond Program	1.99%	1.17%	3.61%	6.77%	1.05%	0.58%	1.38%	3.01%	1.01%	0.35%	0.63%	1.99%	0.91%	0.39%	0.75%	2.05%
3	Colorado HFA - Single Family Program	1.56%	2.88%	1.15%	5.58%	1.28%	2.27%	0.92%	4.46%	1.07%	2.44%	0.76%	4.27%	1.46%	2.96%	0.98%	5.40%
4	Connecticut HFA - Housing Mortgage Finance Bonds*	2.33%	3.18%	1.07%	6.58%	1.97%	1.14%	2.10%	5.20%	1.72%	1.18%	1.96%	4.86%	2.16%	1.29%	2.13%	5.58%
5	Idaho H&FA - Single Family Mortgage Bond Indentures	1.50%	2.37%	2.24%	6.11%	0.84%	2.03%	1.93%	4.80%	0.76%	2.30%	2.68%	5.74%	1.16%	2.59%	2.69%	6.44%
6	Illinois HDA - Homeowner Mortgage Revenue Bonds	1.33%	2.07%	0.87%	4.27%	1.14%	1.07%	0.83%	3.04%	1.00%	1.14%	0.59%	2.74%	1.10%	1.77%	0.52%	3.39%
7	Kentucky HC - Housing Revenue Bonds	2.18%	4.66%	1.14%	7.99%	1.79%	2.80%	1.07%	5.65%	1.45%	2.42%	1.05%	4.92%	1.62%	2.52%	1.18%	5.32%
8	Maine State HA - Mortgage Purchase Program	2.19%	2.67%	1.09%	5.95%	2.20%	1.63%	0.86%	4.70%	1.96%	1.36%	0.97%	4.29%	2.09%	1.22%	1.04%	4.35%
9	Maryland CDA - Residential Revenue Bonds	2.05%	4.05%	0.82%	6.92%	1.73%	2.07%	0.19%	3.99%	1.78%	1.83%	0.25%	3.86%	1.35%	2.93%	0.28%	4.57%
10	MassHousing - Single Family Housing Revenue	0.77%	0.65%	0.73%	2.15%	0.46%	0.25%	0.39%	1.10%	0.41%	0.31%	0.27%	0.98%	0.34%	0.21%	0.34%	0.90%
11	Minnesota HFA - Residential Housing Finance Bonds	1.88%	3.28%	0.85%	6.01%	1.51%	0.68%	2.31%	4.49%	1.32%	0.61%	1.44%	3.37%	0.98%	0.53%	1.15%	2.66%
12	Montana BoH - Single Family Mortgage (1977 Indenture)	0.70%	0.65%	0.57%	1.91%	0.39%	0.43%	0.48%	1.29%	0.31%	0.29%	0.35%	0.95%	0.43%	0.33%	0.57%	1.33%
13	Montana BoH - Single Family Program Bonds	0.65%	0.43%	0.45%	1.53%	0.29%	0.51%	0.68%	1.49%	0.68%	0.51%	0.32%	1.52%	0.33%	0.38%	0.51%	1.21%
14	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds**	1.39%	2.31%	0.96%	4.65%	0.97%	2.39%	NA***	3.36%	0.74%	2.40%	NA	3.14%	1.11%	2.04%	NA	3.15%
15	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	1.37%	1.11%	2.43%	4.91%	0.95%	0.90%	1.19%	3.03%	1.10%	0.95%	0.95%	2.99%	1.12%	0.87%	0.99%	2.98%
16	North Carolina HFA - Home Ownership Revenue Bonds (1998)	1.71%	1.81%	0.46%	3.98%	1.70%	1.22%	0.50%	3.43%	1.81%	1.22%	0.61%	3.63%	1.90%	0.97%	0.69%	3.55%
17	North Dakota HFA - Home Mortgage Finance Program	0.80%	0.61%	0.53%	1.94%	0.61%	0.62%	0.35%	1.58%	0.94%	0.76%	0.28%	1.97%	1.03%	0.84%	0.45%	2.33%
18	Oregon HCSD - Single Family Mortgage Revenue Bonds	0.60%	1.09%	1.35%	3.03%	0.50%	0.78%	0.91%	2.18%	0.34%	0.91%	1.06%	2.31%	0.46%	1.30%	1.41%	3.17%
19	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	1.64%	2.03%	0.68%	4.35%	1.55%	1.54%	0.56%	3.64%	1.74%	1.84%	0.63%	4.21%	2.21%	2.46%	0.82%	5.49%
20	Rhode Island HMFC - Homeownership Opportunity Bonds	1.19%	1.03%	0.19%	2.41%	0.94%	0.49%	0.19%	1.62%	0.92%	0.36%	0.08%	1.36%	1.00%	0.09%	0.09%	1.18%
21	SONYMA - Homeowner Mortgage Revenue Bonds	0.68%	0.35%	0.59%	1.62%	0.61%	0.24%	0.86%	1.70%	0.59%	0.32%	0.60%	1.51%	0.54%	0.32%	0.74%	1.60%
22	South Carolina State HFDA - Mortgage Revenue Bonds	3.92%	1.45%	1.91%	7.28%	4.04%	1.41%	1.94%	7.39%	2.99%	1.20%	1.81%	6.00%	4.31%	0.99%	2.72%	8.02%
23	South Dakota HDA - Homeownership Mortgage Bonds	0.66%	0.76%	1.40%	2.82%	0.51%	0.27%	1.10%	1.88%	0.60%	0.26%	0.93%	1.78%	0.55%	0.25%	1.15%	1.95%
24	Tennessee HDA - Homeownership Program Bonds	3.16%	4.58%	0.84%	8.59%	2.90%	4.02%	0.66%	7.58%	3.22%	4.57%	0.87%	8.65%	3.56%	5.78%	0.97%	10.31%
25	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	2.05%	3.01%	0.85%	5.91%	1.07%	0.80%	0.93%	2.80%	1.75%	1.19%	0.82%	3.76%	1.65%	1.25%	0.65%	3.55%
26	Vermont HFA - Single Family Housing Bonds	1.32%	0.62%	0.79%	2.72%	1.17%	0.55%	0.76%	2.48%	1.49%	0.44%	0.65%	2.57%	1.29%	0.69%	0.69%	2.66%
27	Virginia HDA - Commonwealth Mortgage Bonds	1.61%	1.87%	0.57%	4.05%	1.15%	1.05%	0.46%	2.66%	1.06%	1.00%	0.26%	2.32%	0.86%	0.58%	0.29%	1.73%
28	West Virginia HDF - Housing Finance Bonds	1.44%	0.93%	1.29%	3.65%	1.36%	0.63%	1.20%	3.20%	1.25%	0.57%	0.95%	2.78%	1.21%	0.78%	1.14%	3.13%
29	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	0.60%	0.39%	0.69%	1.68%	0.40%	0.33%	0.36%	1.09%	0.15%	0.07%	0.40%	0.62%	0.23%	0.08%	0.33%	0.64%
30	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	0.70%	0.40%	0.58%	1.68%	0.30%	0.23%	0.38%	0.91%	0.19%	0.10%	0.35%	0.63%	0.26%	0.08%	0.43%	0.77%
31	Wyoming CDA - Single Family Mortgage (1994 Indenture)	1.32%	0.72%	2.12%	4.15%	2.25%	0.71%	1.43%	4.40%	2.15%	0.58%	1.08%	3.80%	2.24%	0.70%	2.45%	5.39%
32	Wyoming CDA - Single Family Mortgage Revenue Bonds	1.17%	0.83%	2.00%	4.00%	2.53%	0.65%	1.01%	4.20%	1.76%	0.30%	0.97%	3.04%	1.20%	0.38%	1.91%	3.49%

* Data includes information on loans that were pooled into Ginnie Mae securities. ** Foreclosures are included in 90+ days. *** NA = Not available

Appendix III

Moody's Ratings on State HFA Single Family Bond Programs as of April 21, 2009

Whole Loan Single Family Program Ratings	Rating	Outlook
Alaska HFC - Home Mortgage Revenue Bonds	Aa2	Stable
California HFA - Home Mortgage Revenue Bond Program	Aa2	Stable
Colorado HFA - Single Family Program	Aaa/Aa2/A1	Stable
Connecticut HFA - Housing Mortgage Finance Bonds	Aaa	Stable
Delaware State HA - Senior Single Family Mortgage Revenue Bonds	Aa1	Stable
Florida HFC - Homeowner Mortgage Revenue Bonds	Aa1	Stable
Idaho H&FA - Single Family Mortgage Bond (2000 Indenture)	Aaa/Aa2/Aa3	Stable
Idaho H&FA - Single Family Mortgage Bond (2003 Indenture)	Aaa/Aa2/Aa3	Stable
Illinois HDA - Homeowner Mortgage Revenue Bonds	Aa2	Review for Possible Downgrade
Kentucky HC - Housing Revenue Bonds	Aaa	Stable
Maine State HA - Mortgage Purchase Program	Aa1	Stable
Maryland CDA - Residential Revenue Bonds	Aa2	Stable
MassHousing - Single Family Housing Revenue	Aa2	Positive
Minnesota HFA - Residential Housing Finance Bonds	Aa1	Stable
Montana BoH - Single Family Mortgage (1977 Indenture)	Aa1	Stable
Montana BoH - Single Family Program Bonds	Aa1	Stable
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	Aa2	Stable
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	Aa2	Stable
North Carolina HFA - Home Ownership Revenue Bonds (1988 Indenture)	Aa2	Stable
North Dakota HFA - Home Mortgage Finance Program	Aa1	Stable
Oregon HCSD - Single Family Mortgage Revenue Bonds	Aa2	Stable
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	Aa2	Stable
Rhode Island HMFC - Homeownership Opportunity Bonds	Aa2	Stable
SONYMA - Homeowner Mortgage Revenue Bonds	Aa1	Stable
SONYMA - Mortgage Revenue Bonds	Aaa	Stable
South Carolina State HFDA - Mortgage Revenue Bonds	Aa1	Review for Possible Downgrade
South Dakota HDA - Homeownership Mortgage Bonds	Aa1	Stable
Tennessee HDA - Homeownership Program Bonds	Aa2	Positive
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	Aaa/Aa2/Aa3	Stable
Vermont HFA - Single Family Housing Bonds	Aa3	Stable
Virginia HDA - Commonwealth Mortgage Bonds	Aaa	Stable
West Virginia HDF - Housing Finance Bonds	Aaa	Stable
WHEDA Homeownership Revenue Bonds (1988 Resolution)	Aa2	Review for Possible Downgrade
WHEDA Homeownership Revenue Bonds 1987 Resolution	Aa2	Review for Possible Downgrade
Wyoming CDA - Single Family Mortgage (1994 Indenture)	Aa1	Stable
Wyoming CDA - Single Family Mortgage Revenue Bonds	Aa2	Stable

State HFAs with MBS Programs	Rating	Outlook
Alabama Housing Finance Authority, Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program)	Aaa	Stable
Florida Housing Finance Corporation, Single Family Homeownership	Aa1	Stable
Indiana Housing Finance Authority, Single Family Mortgage Revenue Bonds	Aaa	Stable
Iowa Finance Authority, Single Family Mortgage Bond Resolution	Aaa	Stable
Louisiana Housing Finance Agency, Homeownership Program	Aaa	Stable
Ohio Housing Finance Agency, Single Family Mortgage Revenue Bond Program	Aaa	Stable
Oklahoma Housing Finance Agency, Homeownership Loan Program	Aaa	Stable
Texas Department of Housing and Community Affairs, Single Family Mortgage Revenue	Aa1	Review for Possible Downgrade
Washington State Housing Finance Commission, Single Family Program Bonds	Aaa	Stable

Moody's Related Research

Special Comments:

- State HFA Single Family Whole-Loan Programs See Increasing Delinquency and Foreclosure Rates. May 2009. (117308).
- HFA Roadmap: Evaluating State HFA Single Family Program Ratings in the Current Economic Environment. March 2009. (115376).
- Structured Finance Rating Transitions: 1983 - 2008. March 2009. (115157).
- Housing 101: State Housing Finance Agencies. July 2007. (103873).
- Subprime Residential Mortgage Securitizations: Frequently Asked Questions. April 2007. (SF96995).
- Housing 101: Single Family Program Open Indentures. February 2007. (102068).

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Housing 101: HFA Single Family Bonds versus RMBS – Differences Lead to Variation in Performance

Report Number: 117724

Author	Senior Production Associate
Rachael Royal McDonald	Wendy Kroeker

CREDIT RATINGS ARE MOODY'S INVESTORS SERVICE, INC.'S (MIS) CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MIS DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS DO NOT CONSTITUTE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS ARE NOT RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. CREDIT RATINGS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MIS ISSUES ITS CREDIT RATINGS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

© Copyright 2009, Moody's Investors Service, Inc., and/or its licensors and affiliates (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Moody's Investors Service

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Management And Governance Of US State Housing Finance Agencies' Single Family Programs: A Key Driver Of Ratings

Table of Contents:

SUMMARY OPINION 1
HOW WE MEASURE IT FOR THE SCORECARD: 2
EFFECTIVE UTILIZATION OF RESOURCES TO EXECUTE PROGRAMS 4
UNDERSTANDING PROGRAM'S STRENGTHS, CHALLENGES AND FUTURE DIRECTION 4
TRACK RECORD OF ADDRESSING CHALLENGES 5
BOARD LEADERSHIP AND OVERSIGHT AND DISCLOSURE PROCESSES 6

Analyst Contacts:

NEW YORK +1.212.553.1653

Eileen Hawes +1.212.553.4880
Assistant Vice President - Analyst
eileen.hawes@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

Summary Opinion

Management and governance are key factors in rating state housing finance agencies (HFAs) as these organizations face unprecedented credit challenges stemming from sustained historically low interest rates and ongoing weak economic conditions. HFA management teams are facing difficulty in competing with conventional lenders in financing mortgage loans even as they struggle with the effects of elevated unemployment and stagnant household incomes that cause elevated levels of loan delinquencies and foreclosures. Low interest rates also suppress investment earnings, which reduces HFA profitability.

Strong management and effective governance may enable a program to reach its full potential while avoiding financial stress even in difficult market conditions, while limited management may weaken the expected performance of the program. Strategy, financial health, counterparty relationships, and credit position are all fundamentally driven by decisions made by an HFA's board members and leadership team. This report identifies numerous indicators that are well correlated with effective management and governance, providing an analytical complement to traditional quantitative ratios that remain core components of our credit analysis. Over the longer term, non-quantitative indicators of management and governance are likely to provide increasing insights into credit quality given the changing housing market. The weight of management and governance in our analysis is particularly important when an HFA is facing strategic change, including: initiating a new financing mechanism to provide funding for the origination of new mortgage loans, realizing decreased profitability due to low investment rates, and experiencing higher-than-normal levels of delinquencies and foreclosures in loan portfolios.

The four broad factors we consider in our rating assessments are:

1. Financial and Personnel Resources
2. Understanding Program's Strengths, Challenges and Future Direction
3. Track Record for Addressing Challenges
4. Board Leadership and Oversight and Disclosure Processes

How We Measure It for the Scorecard:

The "U.S. Housing Finance Agency Single Family Programs" rating methodology[1] includes a scorecard, consisting of the following factors, to assess the impact of management of a single family program on the overall rating for the program.

Management and Governance (15%)	Aaa (1)	Aa (2)	A (3)	Baa (4)	Ba (5)	B and Below (6)
Management and Governance (15%)	Superior management with substantial financial and personnel resources available to maintain and grow the financial position of the program	Strong management with significant financial and personnel resources available to maintain the program	Solid management with significant financial and personnel resources to maintain the program	Adequate management with sufficient financial and personnel resources to maintain the program	Limited management or oversight of the program by the Issuer, program is generally governed by the trustee following the terms of the legal documents	Poor management or oversight of the program
	Very deep understanding of program's strengths, challenges, and future direction	Strong understanding of program's strengths, challenges, and future direction	Solid understanding of program's strengths, challenges, and future direction	Understands financial strengths and challenges, but may be dependent on financial advisors/professionals		
	Ability and willingness to act swiftly and appropriately to address challenges	Ability and willingness to act promptly and appropriately to address challenges	Ability and willingness to act timely to address challenges	Ability and willingness to act appropriately to address challenges		
	Superior governance with highly experienced and involved board members providing oversight	Strong governance with very experienced and involved board members providing oversight	Capable governance with experienced and involved board members providing oversight	Capable governance with experienced involved board members providing oversight	Minimal board involvement	

The assignment of the Management and Governance score incorporates the factors listed above. We do not expect that management teams will meet every requirement for the score that is assigned. However, a program receiving a strong score will typically meet the vast majority of the tests at that level. Furthermore, a severe deficiency on any one factor could receive significant weight and become a major driver of the score. For illustrative purposes, we included below profiles of a strong and solid management team for single family programs.

[1] "U.S. Housing Finance Agency Single Family Programs" published February, 2013.

Characteristics of a "Strong" HFA management team

Strong management will offer a bond program significant financial and personnel resources to oversee all aspects of program operations, foresee challenges and take swift and proactive steps to mitigate difficulties which may impact its future financial performance. Key characteristics include:

» Tenured staff with good or demonstrated succession planning
» Senior management which does not change when the governor changes
» Has detailed, written policies regarding investments, variable rate debt and counterparty exposure; policies are revisited regularly
» Understands all aspects of potential risks to a program and receives reports and data to monitor these risks
» Is deeply familiar with all aspects of their portfolio including performance of their loans, loan delinquencies, foreclosure mitigation efforts, and multifamily loan performance
» Participates in long-range strategic planning which is updated regularly
» Safeguards program financial security in meeting mission goals
» Maintains a strong relationship with the state and is able to demonstrate actions taken to educate state officials and legislators
» Has the authority to act quickly in the event of a crisis
» Able to quickly answer questions about their financial statements and provide more detailed back up information on a timely basis
» Extensive public disclosure is available
» Has demonstrated willingness to take steps to support program financial quality during periods of duress

Characteristics of a "Solid" HFA management team

Solid management oversees bond program operations and addresses challenges which may impact the financial strength of the program. Key characteristics include:

» Tenured staff without a documented succession plan in place
» Senior management may change when the governor changes
» Has written policies regarding investments, variable rate debt and counterparty exposure
» Demonstrates a solid understanding of potential risks to a program and periodically monitors these risks
» Is familiar with their portfolio including performance of their loans, loan delinquencies, foreclosure mitigation efforts, multifamily loan performance
» May or may not participate in long-range strategic planning, or strategic-planning process is not robust
» Program financial security and mission programs may be given equal weight in some cases
» Maintains a solid relationship with the state but is generally not proactive about educating state officials and legislators
» Has policies in place that prevent the management team from acting quickly in the event of a crisis
» Answers questions about financial statements and provides more detailed back-up information when necessary
» Satisfactory public disclosure available

Effective Utilization of Resources to Execute Programs

Through visits and regular discussions with issuers, we assess the depth and breadth of the management team. The strongest management teams have extensive experience in housing finance, mortgage loan underwriting and asset management. We examine several critical factors when assessing management, including the tenure and expertise of management, the depth of staff, succession planning and "key man risk". We consider senior management's ability to demonstrate a clear understanding of financial matters and programmatic risks. For example, we look for an issuer with variable rate debt to have sufficient expertise to monitor and address those risks, while one with all fixed rate debt may not need as high a level of expertise in that function.

Management's decisions on deploying its financial resources can have a large influence on credit evaluation because an issuer with more financial resources will have more flexibility and tools to address challenges. This could include depositing funds to a bond program facing difficulties, providing grants to mortgagors, maintaining staff levels to monitor programs even if revenue from these programs has declined, or increasing staff to work out challenges. An issuer with more limited means may wish to take comparable steps but not have the resources to fund them.

The following factors will be considered when assessing financial and personnel resources:

» Tenure of senior management

» Process/frequency of changing the executive director

» Agency's succession planning process, particularly for the executive director and finance director positions

» Senior management's ability to articulate a solid understanding of the financial risks facing the portfolio

» Appropriateness of the depth of the management and financial staff to address the scope of activities that the agency undertakes

» Determination of and responsibility for investment decisions

» History of agency transfer or potential transfer of funds to a bond program

» Process for evaluating and monitoring variable rate debt and swap mark to market exposure

» Monitoring of trustees and verification of the accuracy of key calculations that affect bond security

Understanding Program's Strengths, Challenges and Future Direction

We will consider several factors to determine how effectively the housing issuer manages its bond and loan programs. These factors include the issuer's loan underwriting process, asset management procedures, portfolio monitoring practices, and their understanding of the bond programs and the risks that are being undertaken under various structures. Management's knowledge of and compliance with federal and state regulations and the implications of non-compliance are also important factors. While we recognize that issuers often use third parties to assist them in these tasks, we look at the level of issuer staff in these activities as well as their oversight of the third parties and their understanding of the product provided to them from outside sources.

We will look for issuers to provide us with the following information:

» Determination and approval process for bond financing and key lending decisions

» Review and decision-making process for bond cash flows and scenarios considered

» Procedure and evaluation of bond redemption decisions

» Determination and evaluation process for decisions concerning debt structures

» Agency's loan asset management procedures

» Process for evaluating and selecting counterparties

Given that the housing issuers are public sector entities, we consider how each agency balances its missions and program goals with maintaining their financial strength. For example, issuers may strive to provide single family loan products to as large a population of first time homebuyers as possible while still maintaining the underwriting standards and mortgage insurance provisions required by their bond programs. Doing so may call for prudent marketing and product innovation or limiting participation in the program in order to maintain high standards of loan quality and security for bondholders. We evaluate how management teams strike a balance among these objectives based on, among other things, the following questions:

» Strategic planning process

» Setting of mortgage rates and frequency of adjustments

» Offering and financing of special loan programs

» Availability of foreclosure mitigation programs and the measurement of their impact on the borrowers and the bond program

» Evaluation of new loan programs and their costs and benefits

Track Record of Addressing Challenges

An HFA's track record in maintaining strong, well-performing programs is an important consideration when assessing management. We review the Agency's record of maintaining the program on a profitable basis through economic cycles through its program structures and internal controls, management of program expenses and losses, and approach to utilizing surplus program funds. Additionally, we consider the delinquency and loss experience of single family programs as we believe that they are to some extent linked to the ability of an issuer's management team, while acknowledging that housing market conditions play a substantial role as well.

We consider relationships that the issuer has established with federal government-related entities, such as the Federal Home Loan Banks, Fannie Mae, Freddie Mac, Ginnie Mae or the Federal Housing Administration ("FHA"), as these relationships can factor into the speed with which an HFA can draw upon federal resources to overcome challenges. In times of stress, an issuer with an established ability to access federal sources of liquidity or sell loans to government-sponsored mortgage corporations has been shown to relieve credit pressure.

We also consider the relationship the HFA has to its state or municipal government. Actions that we consider include requests for transfers of funds out of the HFA, replacement of high-level staff, the continued availability of appropriations that are used for HFA programs, or the shifting of responsibilities to or from other agencies. While management teams are not held responsible for the actions of outside officials, current and historic events are considered in this factor.

We consider the following questions in assessing an issuer's track record:

» Principal challenges faced by the agency over the past 10 years and how the challenges have been addressed

» Past incidents where the Agency was faced with external requests to modify programs and responses to those requests

» Process and timing for implementing management decisions and contribution to the performance of the bond programs

» Process and timetable for choosing financing teams

Board Leadership and Oversight and Disclosure Processes

As the role of the board is also an important part of the management and governance assessment, their makeup and involvement in the policies and activities of the issuer will be considered. Most HFAs are constituted as an instrumentality of the state, exercising public and essential governmental functions. The Board of Directors for most HFAs are selected by the governor and/or legislative leaders and are typically comprised of ex-officio members as well as public members with expertise in the areas of housing design, construction and operation; finance; urban development; or community relations. When assessing the board composition of an HFA, we review the professional background and years of tenure of individual members, considering the level of expertise in the areas of affordable housing policy, risk management, financial planning and investment strategies. We assess the structure of the board and its committees, the level of their involvement in policy decisions (such as program approval, transfers of assets and their impact on the HFA's overall financial strength), and when warranted, we request a conversation with key board members.

We believe that full and timely disclosure is an important component of an issuer's management practices and can reflect the quality and capacity of management. Typical housing bond disclosure includes audited financial statements, information on portfolio characteristics and performance, loan prepayment and bond redemption data and material event notices. In assessing the disclosure practices of issuers, we consider the timeliness and robustness of financial and programmatic data, the availability of the information and the ability of the issuer to respond to questions and requests on a timely basis.

Aspects of board oversight and disclosure which may be considered include:

» Process of board selection and tenure and frequency of board meetings

» Procedure for reporting and approving key decisions at the board level

» Experience level of board members in the areas of bond finance, urban redevelopment and housing development

» Existence of board-approved policies on investments, debt management, liquidity

- Frequency of submission of reports to the board regarding financial and portfolio performance
- Agency interaction with the state executive and legislature
- Use of internal audit function and lines of reporting
- Detailed disclosure on HFA website or publicly-available website regarding financial statements, loan portfolio information, counterparty exposure
- Level of detail in Official Statements, audits and on EMMA
- Responsiveness to information requests
- Proactive disclosure of material events

Report Number: 149996

Author
Eileen Hawes

Production Associate
Ken Jiang

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.

Moody's
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

State Housing Finance Agency Single Family Programs in Run-off Likely to Maintain Credit Quality

Low Short-Term Interest Rates and Variable Rate Debt Pose Special Challenges

Table of Contents:

SUMMARY OPINION 1
MANY WELL-ESTABLISHED HFA SINGLE FAMILY BOND PROGRAMS ARE LIKELY TO ENTER RUN-OFF 2
CREDIT CONSIDERATIONS FOR PROGRAMS IN RUN-OFF 3
1. Fundamental Financial Performance: Increased Overcollateralization Adds to Balance Sheet Strength; While Net Income Can Be Maintained through Bond Redemptions, Low Short-Term Rates will Decrease Earnings 3
2. Asset Quality: Changing Mortgage Loan Characteristics May have both Positive and Negative Aspects 5
3. Variable Rate Debt: Risks Associated with Variable Rate Debt and Swaps May Increase as Fixed Rate Bonds are Redeemed 5
4. Management: Unique Challenges of Programs in Run-off Underscore the Importance of Strong Financial Management 7
SOURCES REFERENCED IN THIS REPORT 8
MOODY'S RELATED RESEARCH 8

Analyst Contacts:

NEW YORK +1.212.553.1653

William Fitzpatrick +1.212.553.4104
Vice President-Senior Credit Officer
william.fitzpatrick@moodys.com

Florence E. Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Naomi Richman +1.212.553.0014
Managing Director-Public Finance
naomi.richman@moodys.com

Summary Opinion

State Housing Finance Agency (HFA) single family bond issuance has declined substantially over the past three years, as the current interest rate environment has reduced the effectiveness of mortgage revenue bonds as a source of mortgage funds. As this trend is likely to continue, we foresee an increasing number of HFA single family programs entering run-off. We believe that these programs will maintain stable credit quality during run-off, because their structure allows them to become stronger as no new mortgages are added, and we expect that HFA financial management teams will continue to make decisions that support credit quality. There are three key factors underlying this view:

» HFAs generally apply mortgage prepayments to periodic special redemption of bonds, so that mortgage assets and bonds decline at parallel levels and the ratio of assets to liabilities increases. This increases the protection against losses from mortgage loan delinquencies and foreclosures and other negative pressures on cash flows.

» As mortgages become more seasoned, their loan- to-value ratios decrease and they generally experience lower levels of delinquencies and foreclosure, reducing losses to the program.

» HFA managers in the past have avoided withdrawals of excess assets from single family programs that were not consistent with maintaining credit quality, and have continued to provide skillful financial management for their inactive programs.

At the same time, certain risks may increase as programs run off:

» As mortgage loans are repaid, program cash and investments often increase as a percentage of assets. If the current era of low short-term interest rates persists, low returns on these non-mortgage assets may reduce program profitability.

» Reduced diversification of mortgage loans by vintage may heighten the impact of adverse trends in loan performance as a result of economic cycles.

» For programs with variable rate debt, the percentage of variable rate debt may increase as high-cost fixed rate bonds are redeemed, magnifying the impact of variable rate risks including rollover, counterparty and interest rate risk. Reducing notional amounts of interest rate swaps in line with redemptions of variable rate bonds will be an additional factor in managing the variable rate programs.

In light of these risks, HFA management will continue to be a key factor in our assessment of individual credits. Program strength will be a function of the levels of excess assets retained to support bond indentures, as well as the level of resources devoted to management of bond programs. Skilled financial management will be important in areas such as selection of bonds for redemption, exercising refunding opportunities, and managing exposure to counterparties, variable rate debt and interest rate swaps.

Many Well-Established HFA Single Family Bond Programs are Likely to Enter Run-Off

Mortgage revenue bonds have provided the primary source of funding for state HFA single family mortgage loan programs over the past 30 years. These programs generally shared a basic structure that has contributed to credit stability. Basic features of the structure include the following:

» The HFA issues bonds periodically (several times a year for the more active programs), with each issue creating new series under a common indenture. Bond proceeds are used to finance single family mortgage loans, which remain pledged to the indenture to support bond repayment. Proceeds of each bond issue are applied to originate mortgages at a positive spread to bond costs, generally targeting the 1 1/8% maximum spread permitted by federal tax law.[1]

» The bonds are issued on parity, so that all of the bonds issued over time are secured by all of the mortgages financed over time

» Bonds are subject to special redemption at any time, at par, from mortgage prepayments. Special redemptions maintain mortgages and bonds at relatively even levels over time.

» Bonds are also subject to optional redemption, generally ten years after issuance, allowing for economic refundings that may replace higher cost bonds with lower cost bonds.

» Over time the programs became well over-collateralized, as a result of accumulation of excess revenues as well as HFA contributions. Since 2008, for example, median PADR for Moody's-rated programs has increased from 1.06x to 1.10x while new origination has been low.

Bond issuance under HFA single family programs has declined substantially over the past three years. Conventional mortgage interest rates have fallen to 40-year lows in line with falling levels of U.S. Treasury rates. Although yields on HFA mortgage revenue bonds are low, they have not experienced a level of decline parallel to that of Treasury and conventional mortgage rates. In the current environment, therefore, mortgage revenue bonds do not provide a cost of funds low enough to fund mortgage loans that are competitive with conventional rates, and HFAs have increasingly turned to other sources of funding for mortgages.[2] As we expect this interest rate environment to persist, we anticipate that mortgage revenue bond issuance will remain depressed over the near to medium term and an increasing number of HFA bond indentures will enter run-off.

[1] 1 1/8% spread between mortgage yield and bond yield, calculated as prescribed in the federal income tax provisions authorizing tax exemption of the bonds.

[2] Please see our Special Comment, *Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks* June 12, 2012 for a discussion of the interest rate environment and other sources of mortgage funding being used by HFAs.

Credit Considerations for Programs in Run-off

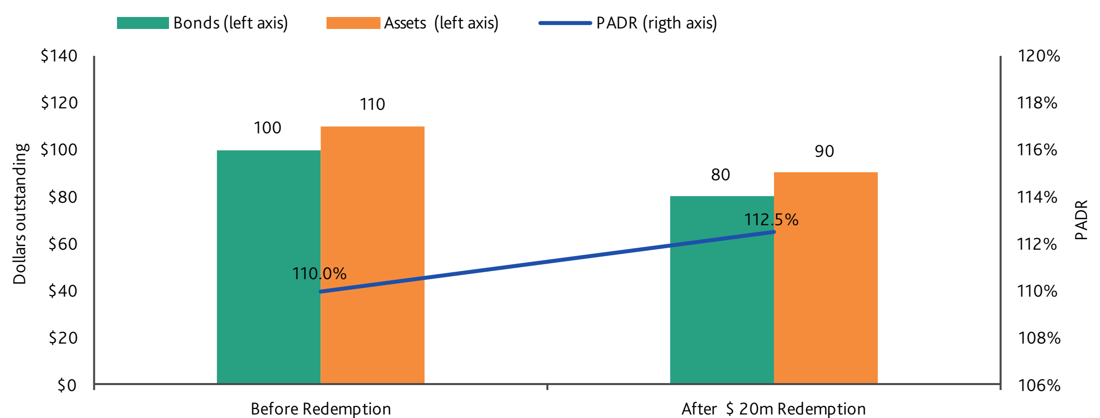
We believe that credit quality is likely to be maintained for programs in run-off, because fundamental financial performance should remain strong and because we expect the HFAs to continue sound financial management. The following four factors will be important for individual programs:

1. Fundamental financial performance: including increased balance sheet strength and stable net income levels
2. Asset quality: For whole-loan programs increased mortgage seasoning and other changing portfolio characteristics
3. Variable Rate Debt: For programs with variable rate debt and swaps, potential increases in variable rate percentages and related risks
4. Management: Continued allocation of resources to maintain bond program strength, as well as continued skilled financial management of programs,

1. Fundamental Financial Performance: Increased Overcollateralization Adds to Balance Sheet Strength; While Net Income Can Be Maintained through Bond Redemptions, Low Short-Term Rates will Decrease Earnings

Balance Sheet - Increased Over-collateralization: We consider over-collateralization to be an important source of credit strength for these programs. The excess of assets over liabilities provides an important cushion against losses from mortgage loan delinquencies or foreclosures and other potential sources of stress on future cash flows. Over-collateralization tends to increase during run-off. As mortgage prepayments are applied to redeem bonds, the levels of mortgages and bonds decline proportionately, and the excess of assets over debt increases as a percentage of debt. This concept is illustrated very simply in Figure 1, which shows the impact of a $20 million reduction through prepayment redemptions.

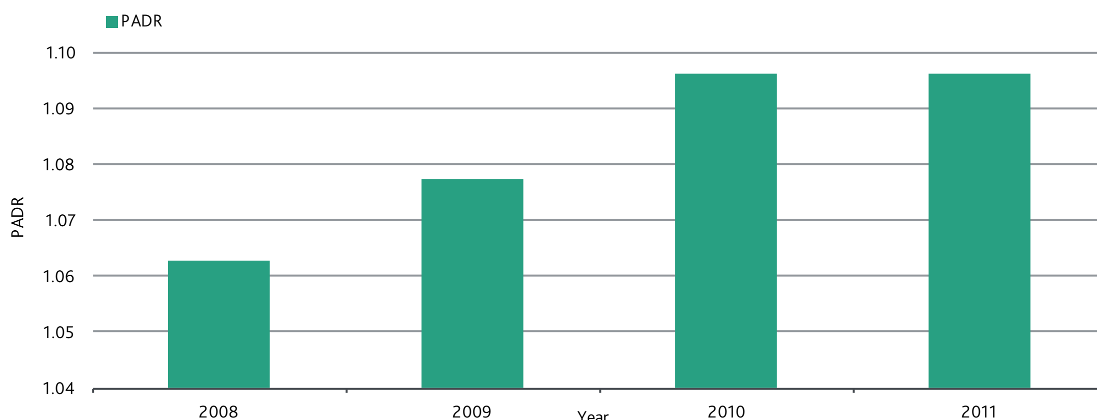
FIGURE 1
PADR Increases as Balance Sheet Declines



Trends in PADR (Moody's-adjusted asset to debt ratios) for single family programs rated by Moody's over the past four years, as shown in Figure 2, illustrate how PADR increases during periods when issuance is low.[3]

FIGURE 2

Asset-to-Debt Ratios Have Increased as Issuance has Declined



Source: Moody's databases; HFA audited statements

HFAs generally are permitted to withdraw excess revenues from the lien of the bond indenture, subject to meeting certain cash flow tests set forth in the legal documents. In the past, HFAs have limited withdrawals so as to maintain program credit quality, and we expect this practice to continue. However, the levels of any withdrawals will be a factor in our assessment of individual programs.

Program Net Income - Mortgage Spreads: As mortgage payments are the principal source of funds for repayment of bonds, maintaining positive spread between mortgage yields and bond yields is another key credit consideration. Through selection of bonds to call from prepayments, HFAs can maintain the spread between mortgage yield and bond cost, both within bond series and for the indenture as a whole. However, a number of factors limit flexibility in selecting bonds for redemption and in some cases may affect the impact of redemptions on future cash flows. These include the following:

» Bond series may have been structured with bond maturities shorter than mortgage maturities ("front loaded") or may have been structured with bond maturities that assumed certain mortgage prepayment speeds, with the goal of reducing bond costs.

» Bond series may have included special features such as PAC bonds, which commit to applying prepayments first to redemption of certain maturities in the bond structure.

» Federal tax law applies other constraints to bond redemption, such as a requirement that prepayments received after ten years be applied solely to redemption of bond of the original bond series (the "ten year rule").

When the program is growing the addition of new full-spread mortgages may partly offset the effects of cash flow mismatches that may develop in older series. In higher rate environments, some agencies have continued to add new mortgages to programs by "recycling" prepayments into new mortgages, providing another option for maintaining profitability. When no new mortgages are added, the impact of any mismatches may increase. We consider periodic review of cash flow projections as a significant practice in evaluating the impact of redemptions on future cash flows.

[3] Please see our Median Report, *State HFA Medians Reflect Stability Due to Federal Initiatives; Future Financial Performance Will be Weaker,* dated October 17, 2011

Program Net Income - Low Earnings on Cash and Investments: As the program's assets consist of cash and investments as well as mortgage loans, the current low-interest rate environment has had a negative effect on profitability due to lower investment rates on short-term assets and on reserve funds.

When a program is in run-off, the impact of low investment rates may be magnified as cash and investments may increase as a percentage of assets. Bonds and mortgage loan levels decrease proportionately, leaving excess revenues and reserves funds as a greater percentage of overcollateralization. These excess revenues are generally held in cash which incur negative arbitrage compared to bond costs in a low-rate environment. Regular and frequent special prepayment redemptions will be a factor in determining the effect on program profitability.

For both float funds and debt reserves, the form of investment is also a factor in the impact of investment rates. Assets invested in long-term guaranteed investment contracts (GICs) or repurchase agreements generally have fixed rates and are not affected by low current rates. The GICs frequently apply to the reserves and/or revenues of particular bond series, and were entered into at the time of issuance of those bonds. The maturity of a GIC or repurchase agreement, or its termination as a result a provider downgrade, may dramatically lower the investment rate on the funds affected.

2. Asset Quality: Changing Mortgage Loan Characteristics May have both Positive and Negative Aspects

For a program in run-off, changes in the composition of the mortgage loan portfolio may have both positive and negative credit aspects.

Over time, the existing mortgage loans become more seasoned. All things being equal, seasoned mortgage loans have historically tended to demonstrate lower levels of delinquency and foreclosure, as the homeowners' economic circumstances stabilize or improve. More seasoned loans tend to have lower loan-to-value ratios, which may decrease delinquencies and losses on foreclosure. However, the recent period of rising unemployment has been a contributor to a rise in delinquency and foreclosure rates among HFA loans, which may work against performance of loans of all vintages in the near term.[4]

Run-off may have negative effects on other aspects of the mortgage portfolio. Prepayments may tend to be concentrated among loans made in certain time periods (vintages), for example because rates were relatively high at the time of origination. Diversification of the portfolio as to vintage and mortgage insurers will tend to decline. This may magnify the impact of future economic trends on the remaining vintages.

3. Variable Rate Debt: Risks Associated with Variable Rate Debt and Swaps May Increase as Fixed Rate Bonds are Redeemed

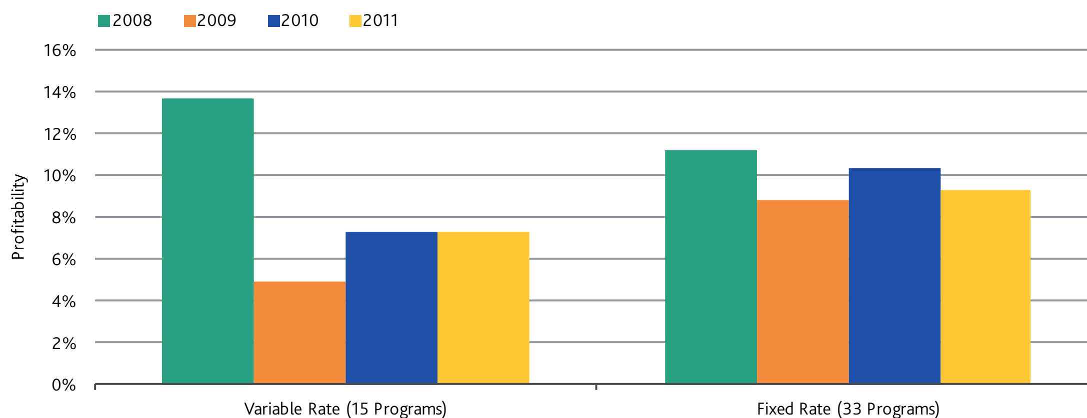
Certain HFA programs issued variable rate debt during the period from 2000 to 2008, often entering into interest rate swaps to hedge interest rate risk. As programs decline in size, the risks associated with variable rate debt may become more pronounced.

Percentages of Variable Rate Debt May Increase: To the extent feasible, HFAs select higher coupon bonds for redemption first in many programs. We have observed that this results in redemption of higher cost fixed rate bonds before variable rate bonds, potentially increasing variable rate bonds as a percentage of bonds outstanding. The impact of certain risks associated with variable rate debt may be magnified. These include the following:

[4] Please see our recent Special Comment, *Semiannual State HFA Delinquency Report: Seriously Delinquent Single Family Loans Continue to Rise*, May 30, 2011 for a review of trends in State HFA single family mortgage performance.

- Programs with higher levels of variable rate debt have proven less profitable in recent years, as costs of liquidity, combined with greater-than-expected basis spread between swap receipts and bond payments, have increased bond costs. As the percentage of variable rate increases in a particular program, this trend may become more pronounced.

FIGURE 3
Variable Rate Programs Are Less Profitable Than Fixed Rate Programs



Source: Moody's databases; HFA audited statements

- HFAs have obtained external liquidity support, generally in the form of standby bond purchase agreements, for VRDBs. Replacement of expiring facilities may become more challenging, although to date HFAs have been successful in renewing or replacing facilities. Higher cost of replacement liquidity facilities will increasingly impact program cash flow if the percentage of variable rate debt increases.

- Another key risk associated with VRDBs is the possibility that bonds will become "bank bonds" due to market disruptions, lower credit quality of the HFA, or inability to replace expiring liquidity facilities. Bank bonds typically bear higher interest rates and must be repaid over a short period of time ("term out"), placing stress of cash flows.

Interest rate swaps are a factor in variable rate bond redemptions: The majority of HFA variable rate bonds were combined with floating-to-fixed interest rate swaps to hedge interest rate risk. Swaps were typically structured with notional amounts that declined over time, to stay in line with expected levels of bond maturities and/or redemptions; however, swaps typically cannot be reduced at the option of the HFA in the same way that bonds are subject to special redemption from prepayments. Therefore, as prepayments occur, HFAs face the challenge of managing swaps so that swap notional amounts and bond variable rate bonds outstanding remain in balance:

- If prepayment levels are *higher* than contemplated when the swap was structured, bond levels may be lower than swap levels, so that the program will be paying for a hedge that is not needed unless the swap notional amount can be reduced.

- If prepayment levels are *lowe*r than contemplated, bond levels may be higher than swap levels, so that the bonds are unhedged and subject to interest rate risk.

With interest rates at all-time lows, the swaps have a negative market value to the HFAs, so that terminating the swap may require a substantial mark-to-market payment. Some HFAs purchased par termination options for the swaps, giving them a higher level of flexibility in reducing swap notional amounts as bonds are redeemed.

In the long term, as fixed-rate bonds are redeemed, prepayments must be applied increasingly to redeem variable rate bonds, potentially requiring swap termination payments or continued payments on hedges that are no longer needed.

Unhedged Bonds Will be Subject to Interest Rate Risk: Some programs incorporated variable debt that was left unhedged to take advantage of low interest rates. As discussed above, additional bonds may become unhedged as bonds are redeemed exposing the indenture to increasing costs if interest rates begin to rise going forward.

Interest rate levels have different effects on single family programs

Lower Interest rates	Higher Interest rates
High levels of prepayments	Low levels of prepayments
Low investment earnings	High investment earnings
GICs rates may be more favorable than market rates	GIC rates may constrain earnings
Low cost of unhedged variable rate bonds	High costs of unhedged variable rate bonds
Swap termination requires mark-to-market payment	Lower or no payment for swap termination

4. Management: Unique Challenges of Programs in Run-off Underscore the Importance of Strong Financial Management

HFA management is a key factor in our assessment of programs in run-off, including strategic decisions that support program credit quality, as well as overall financial management.

Specific areas requiring ongoing decision-making include the following:

» **Withdrawals of assets:** As parity levels increase, HFAs generally are permitted to withdrawn excess assets free and clear of the indenture for use in other programs, subject to constraints in the legal documents. Management's commitment to maintaining a level of excess parity in the program that is consistent with its rating level will affect future program credit quality.

» **Bond redemptions**: Regular and timely application of mortgage prepayments to special redemption of bonds maintain balance between bonds and loans and prevent excess revenues from generating negative arbitrage for extended periods. Careful selection of bonds for redemption assures that legal requirements are met and periodic cash flows continue to be positive over the long term.

» **Review of cash flow projections**: We generally review cash flow projections at least annually for each program. Management review of cash flows and demonstrated responsiveness to developing trends may affect rating levels.

» **Prudent management of variable rate debt:** We monitor renewal or replacement of liquidity facilities. Management of variable rate bond and swap portfolios, to maintain balance between swaps and debt and facilitate redemptions, will also be a factor.

» **Commitment to financial management:** As bond programs no longer provide the source of new mortgage loans, they may be less central to the Agency's program objectives. The continued commitment of resources maintaining highly skilled financial managers to oversee to the programs is an additional credit factor.

Sources Referenced in this Report

- Moody's Investors Service Databases
- HFA Audited Statements

Moody's Related Research

Outlook:

- Sector Outlook for US State Housing Finance Agencies Remains Negative, February 2012 (139858)

Rating Methodology:

- Moody's Rating Approach for Single Family, Whole-Loan Housing Programs, May 1999 (45064)

Rating Implementation Guidances:

- Approach to State HFA Cash Flow Projections, August 2006 (97505)
- Methodology Update: Additional Cash Flow Tests for State Housing Finance Agency Programs, February 2009 (114598)

Special Comments:

- Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks, June 2012 (143141)
- Semiannual State HFA Delinquency Report: Seriously Delinquent Single Family Loans Continue to Rise, May 2012 (142364)
- State HFA Medians Reflect Stability Due to Federal Initiatives; Future Financial Performance Will be Weaker, October 2011 (136360)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 143182

Author
William Fitzpatrick

Production Specialist
Wendy Kroeker

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks

Table of Contents:

SUMMARY OPINION 1
HFAS CONSIDER ALTERNATIVE STRATEGIES FOR FINANCING SINGLE FAMILY LOANS 2
THE SECONDARY MARKET IS A VIABLE ALTERNATIVE FOR HFAS 3
THE SECONDARY MARKET OFFERS HFAS OPPORTUNITIES BUT INTRODUCES VARIOUS RISKS 7
CREDIT IMPLICATIONS OF HFAS' NEW FUNDING INITIATIVES 8
WILL MRB ISSUANCE RECOVER? 9

Analyst Contacts:

NEW YORK +1.212.553.1653

Eileen A. Hawes +1.212.553.4880
Assistant Vice President - Analyst
eileen.hawes@moodys.com

Brendan Weber +1.212.553.4688
Associate Analyst
brendan.weber@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Naomi Richman +1.212.553.0014
Managing Director-Public Finance
naomi.richman@moodys.com

Summary Opinion

With conventional mortgage rates at 40-year lows, state Housing Finance Agencies (HFAs) have found that they are not able to offer competitive single family mortgage loan products utilizing their traditional financing method of issuing mortgage revenue bonds (MRBs). In order to continue meeting their mission of offering single family loans to first time home buyers, many state HFAs are now turning to the secondary mortgage market as a funding source – a strategy which brings with it certain benefits and challenges.

This Special Comment describes the secondary market, including the TBA (To Be Announced) program, the opportunities and challenges the State HFAs may face utilizing these financing strategies, and their implications for HFA credit quality. Our key conclusions are:

» In general, we view HFAs' expansion into secondary market activities as a positive step, although its challenges could be a negative if they are not properly managed.

» HFAs' participation in the secondary mortgage market is advantageous as it allows them to remain active in the mortgage market and opens up an additional avenue to earn revenue through increased loan servicing income, loan processing fees and positive carry on the loan warehousing facility.

» HFAs will continue their mission of providing loans to first-time homebuyers and maintain their presence in the lending community.

» Implementing a secondary market operation may entail considerable upfront costs to build the infrastructure necessary to initiate and maintain the program.

» The secondary market may expose HFAs to potential interest rate risk in the event the market shifts adversely against the hedges executed in secondary market trades.

HFAs Consider Alternative Strategies for Financing Single Family Loans

Since 2008, various factors have increased interest rates on fixed-rate bonds, including a premium demanded by investors for housing bonds. With certain classes of institutional buyers less active in the market, there is less overall demand for fixed-rate, long-term housing bonds, which in turn increases the yield demanded. This, in combination with other municipal market factors, has resulted in higher interest rates on fixed-rate bonds, particularly in relation to the mortgage rates that HFAs can offer. As fixed-rate, long-term housing bond costs have increased, Treasury yields have decreased (see discussion below). Treasury yields are used as a benchmark for mortgage rates. As Treasury yields decline, conventional mortgage rates typically decline as well.

As a result, MRBs yields are not low enough to allow HFAs to compete with the conventional mortgage market, which is enjoying historically-low rates. In 2009, a federal program called the New Issue Bond Program (NIBP)[1] offered HFAs very low financing by allowing HFAs to sell a portion of their bonds to the US Treasury at below market interest rates. The NIBP enabled HFAs to continue financing their programs with MRBs through the end of 2011. Although NIBP has been extended through the end of 2012, the majority of HFAs have depleted their NIBP allocation. With MRB financing currently not a feasible option, HFAs are pursuing alternative financing sources in order to continue providing single family loans to their constituents.

Why do conventional mortgages have lower rates than mortgages financed with tax-exempt bonds?

Historically, tax-exempt bonds have provided HFAs a competitive advantage since they have allowed HFAs to borrow money at lower rates than in the taxable market because of the associated tax benefit for the investor. For instance, the 10yr. US Treasury note, which is used as a benchmark for conventional mortgage rates, yielded between 4.62% and 4.90%[2] in January of 2007, whereas during the same period Aaa-rated 10yr. municipal bonds were yielding between 3.69% and 3.91%[3] (tax-exempt). However, such advantages have evaporated for HFAs since the disruption in the US financial markets in 2008. In April 2012, the 10yr. US Treasury note was yielding between 1.95% and 2.30%, and Aaa-rated 10yr. tax-exempt municipal bonds were yielding between 2.10% and 2.57% (Exhibit 1).

The heightened concerns over the housing market since 2008 have kept municipal housing bond yields high relative to other municipal securities. In contrast, US Treasury yields declined to ultra-low levels on the back of purchases of US Treasury bonds by the US Federal Reserve meant to stimulate the flagging economy, and increased investor demand for lower-risk investments. As US Treasury yields declined to historic lows, so did conventional mortgage rates, making it extremely difficult for HFAs to compete if they continued to finance mortgages with bonds. For example, last week, HFAs' breakeven bond-financed mortgage rate would have been approximately 4.5%, compared to the benchmark Freddie Mac 30-year, fixed-rate mortgage rate of 3.67%.

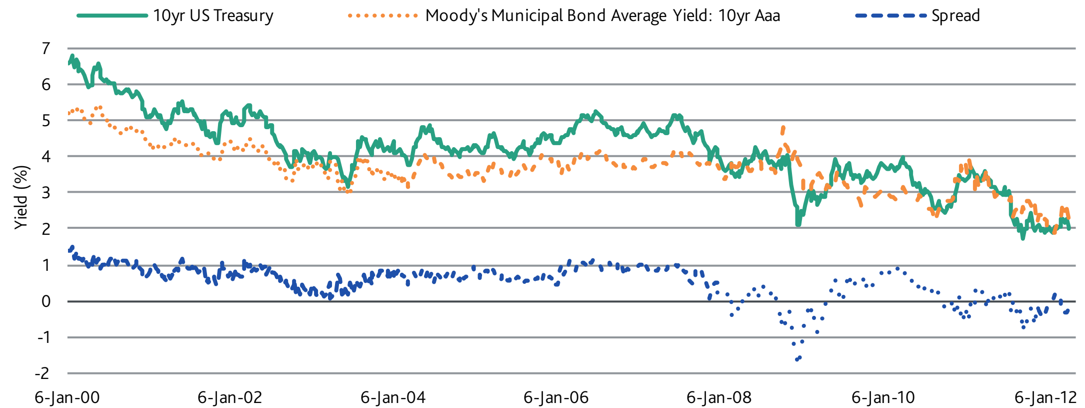
[1] US Treasury's Extension of Bond Purchases is Credit Positive for State Housing Finance Agencies, December, 2011.

[2] Source: US Department of the Treasury

[3] Source: Moody's Economy.com

EXHIBIT 1

Comparison of Trading Levels of the 10-Yr. US Treasury to the 10-Yr. Aaa Municipal Bond Average



Sources :US Department of the Treasury and Moody's Economy.com

The Secondary Market is a Viable Alternative for HFAs

With the current tax-exempt bond market not a feasible funding source, many HFAs are turning to the secondary market. While the secondary market is relatively new for HFAs, conventional lenders have participated in this market for many years. There are several approaches that an HFA can take; some HFAs will employ all of these, and those who are very new to the market may choose only one type of transaction.

All of the approaches allow HFAs to continue to originate mortgage loans to their traditional customer base. In addition, they offer HFAs the opportunity, to the extent permitted by their enabling legislation, to expand their business model since the loans do not need to meet the MRB requirements for the homebuyer, which include: being a first-time homebuyer of a primary residence purchased below a certain price, and having an income below a certain level. Several HFAs using the secondary market are already offering products for loan refinancings, mortgages for second homes and other non-MRB products.

Cash Window Sale of Whole Loans to Fannie Mae and Freddie Mac (the GSEs): Loans that conform to the GSEs' requirements are originated as whole loans and are sold directly to them. Funds acquired through the sale of the loans allow for the origination of additional loans by the HFA. Often, HFAs are able to obtain special terms or pricing levels for their loans which enable them to offer a competitive mortgage rate.

The GSEs will purchase most types of mortgages provided the loans meet their eligibility and underwriting guidelines. There is no minimum delivery amount for whole loan sales, which makes it possible for HFAs to package and deliver loans one at a time as they are closed. Additionally, the delivery execution can be on a best efforts or mandatory basis. With a mandatory commitment, an HFA agrees to sell a specified dollar amount of mortgage loans at an agreed-upon price within a specified timeframe. If the loans are not delivered, a fee may be incurred. This option will result in more favorable pricing. A best efforts commitment, conversely, allows an HFA to enter into an agreement to sell loans, but if the loans do not close, there is no fee for non-delivery. Best efforts is ideal for HFAs that prefer not to manage their pipeline interest rate or loan fallout risk.

Cash Sale of Mortgage-Backed Securities: This option enables HFAs to securitize their loans into mortgage-backed securities and then sell the MBS directly into the secondary market, which provides immediate liquidity. A mortgage-backed security (MBS) is a pool of mortgages of similar rate and amortization type which is guaranteed as to full and timely payment of principal and interest by the GSEs or Ginnie Mae regardless of the actual performance of the underlying pool of mortgage loans. Each security bears interest at a "pass-through rate" equivalent to the composite interest rate on the underlying pool of home ownership mortgage loans, less servicing fees and the guarantee fee payable to the GSE. Each mortgage loan underlying an MBS must meet the GSEs' requirements.

Depending on the interest rates on the mortgage loans relative to the then current rates, HFAs may be able to sell the MBSs at a premium. This provides HFAs with a funding source for first-time homebuyer initiatives, such as downpayment and closing costs assistance.

TBA Market: The "To Be Announced" (TBA) market is a futures market for MBSs which facilitates the forward trading of MBSs. It is called TBA because only a few characteristics of the underlying pool of mortgages are known at the time the contract is entered into. The buyer, generally a financial institution, agrees to purchase a mortgage coupon under a particular program on a specified delivery date.

HFAs enter into a TBA contract to deliver MBSs on a date, generally 60 to 90 days in the future, at agreed-upon terms (such as maturity, coupon, par amount and settlement date), effectively hedging their exposure to rising interest rate risk from the time a loan reservation is accepted to the time the MBS is delivered. HFAs will determine the mortgage rate to be offered based upon the terms of the TBA contract. Since the HFAs are pricing the trade in the same market as conventional lenders, they are able to offer competitive mortgage rates.

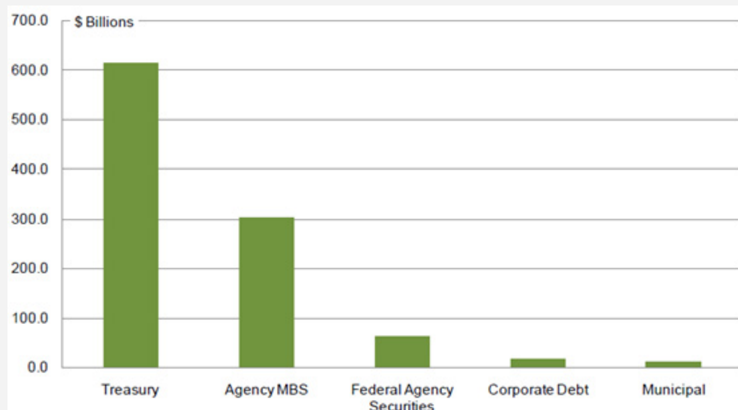
What is the TBA Market?

TBA = To Be Announced

Established in the 1970s, the TBA market facilitates the forward trading of MBSs. The TBA market creates parameters under which mortgage pools can be considered fungible and thus do not need to be explicitly known at the time a trade is initiated. This is where the name for the product "To Be Announced" comes from. The TBA market is based on one fundamental assumption -- homogeneity; at a high level, one MBS pool can be considered to be interchangeable with another pool.

The TBA market is the most liquid, and consequently the most important, secondary market for mortgage loans.

EXHIBIT 2
U.S. Bond Market Average Daily Trading Volume
2011: Q2



Source: The Securities Industry and Financial Markets Association (SIFMA), TBA Market Fact Sheet 2011

TBAs facilitate hedging and funding by allowing lenders to pre-arrange prices for mortgages that they are still in the process of originating, thereby hedging their exposure to interest rate risk. In the US, lenders frequently give successful mortgage applicants the option to lock in a mortgage rate for a period of 30 to 90 days. Lenders are exposed to the risk that the market price rises in the period between when the rate lock is set and the time the loan is eventually sold in the secondary market. The ability to sell mortgages forward through the TBA market hedges originators against this risk. This is critical for originators to offer applicants fixed-rate loan terms before a mortgage actually closes, which greatly facilitates the final negotiations of house purchases and the overall viability of the 30-year fixed-rate mortgage as a business line.

How does a TBA trade function?

Trades allow loans of $100-400k to be aggregated into pools of up to $10 million. There is no need to value each individual security, only the set of risks associated with the parameters of each TBA contract. This helps encourage market participation from a broader group of investors which translates into a greater supply of capital for financing mortgages and thus, lower rates for homeowners.

Terms of a TBA trade: Issuer, Maturity, Coupon, Par Amount, Price, Settlement Date; the actual identity of the securities to be delivered at settlement is not specified on the trade date. These trading conventions are set forth in the “good delivery” guidelines published by the Securities Industry and Financial Markets Association (SIFMA), an industry trade group whose members include broker-dealers and asset managers.

The Secondary Market Offers HFAs Opportunities But Introduces Various Risks

Benefits to participation include increased revenue potential, furtherance of mission, and programmatic advantages

HFAs have the potential to realize financial gains through increased loan origination in the secondary market, providing additional revenue at a time when HFAs are experiencing decreased profitability due to low reinvestment rates[4]. The additional revenue may be achieved through servicing income, loan processing fees, the gain on the sale of the securities to the cash market and the positive carry on the warehousing facility.

HFAs have the option of performing the loan servicing in house, which, if properly structured and managed, can be a profitable undertaking. Alternatively, HFAs may outsource the servicing under a sub-servicing agreement under which they retain a portion of the interest payment as a fee or sell the servicing for a fee to a master servicer.

Additionally, revenue will be generated through increased loan origination fees, the premiums realized on the sale of an MBS to the cash market, and possibly through the positive carry on the warehousing facility used to temporarily fund the loans until the loans are either sold, pooled and delivered into the secondary market. Also, since the HFAs' involvement in the secondary market does not necessitate the issuance of bonds, costs of issuance will not be incurred.

An HFA's participation in the secondary market is also beneficial to the furtherance of their mission by allowing them to maintain a presence in the single family mortgage market. In order to reach the largest group of potential homebuyers, HFAs try to remain active with their lending partners by offering competitive loan products on a continuous basis.

Furthermore, the HFAs' ability to potentially sell the MBSs to the market at a premium provides funds to continue offering down payment and closing costs assistance, a critical component to facilitating home ownership for first-time homebuyers.

HFAs that fail to originate loans over a long time period may suffer operationally. For example, without growth in the program, the staff administering these programs may become costly to maintain. While the loan origination through the secondary market may require HFAs to modify their current loan origination system, many HFAs have the ability to retrain existing staff.

Lastly, as discussed above, the secondary market offers HFAs a programmatic advantage over MRB financing since the loans do not need to meet the MRB requirements.

Drawbacks include financial consequences, possible interest rate risks and potential program implications

An HFA's secondary market operations may negatively affect their financial position, especially with respect to any necessary upfront costs and the funding of any required reserves. The upfront costs may include: a) fees for a consultant with industry expertise; b) technology costs; c) the need to hire additional staff with the required expertise to manage a sophisticated portfolio; and d) the considerable amount of time required to convert loan origination operations.

[4] Sector Outlook for US State Housing Finance Agencies Remains Negative, February 2012.

There are additional financial consequences associated with counterparty risks, warehousing costs for non-delivery of loans, and costs related to loan delivery failure. HFAs utilizing the TBA market are susceptible to the risk that their trading counterparty will not be able to take delivery of the loans. Additionally, in the event an HFA is not able to deliver a loan, there is a cost associated with maintaining the loan in their own portfolio.

Furthermore, if an HFA fails to deliver loans, fees may be due for the undelivered amount, depending on market conditions. Participation in the secondary market enables HFAs to hedge the risk that rates will change between the time a borrower locks the rate and the HFA sells the loan. However, if an HFA enters into either an MBS or TBA forward commitment and fails to deliver any portion of the loans, they will be required to pay a fee on the undelivered amount in a falling interest rate environment.

Credit Implications of HFAs' New Funding Initiatives

While new strategies can help HFAs earn revenue and remain active in the mortgage market, they also bring with them a new set of credit risks. Since the scope of each HFA's involvement in the secondary mortgage market varies considerably, we will review each HFA's secondary market undertaking to quantify and evaluate all the risks as they relate to any necessary balance sheet adjustments. Participation in the secondary market will be considered as part of the issuer rating and will be incorporated into the financial strength and management assessment. The important elements that Moody's takes into account are discussed below. The determination as to the impact, if any, to an individual HFA's issuer rating will depend on the outcome of the assessment.

HFA's Secondary Market Strategy: Factors That Could Impact Rating

» Whether the HFA is servicing the loans in house and the associated costs

» "Key man" risk: staffing levels and expertise

» Monthly volume of market participation

» Extent of expansion of borrower base

» How an HFA manages its loan pricing and pipeline

» What options are utilized in the event of a failed delivery of loans

» Does the existing risk management system provide real time information on the pipeline, outstanding trades and whole loan sales

» What type of loan warehousing facility is utilized and the costs associated with the facility

» The amount of time needed to determine the financial feasibility of implementing a secondary market program

» The ability to decide when to activate the program and possibly deactivate the program if a determination is made to return to the MRB market

Will MRB Issuance Recover?

HFAs' inability to achieve favorable financing through the MRB market has necessitated the adoption of new financing approaches. If and when the disparity between bond rates and mortgage rates reverses, we anticipate that many HFAs will resume financing through MRB issuance. A number of factors may influence their ability to do so, including whether they have maintained sound working relationships with their lending community or if they have determined that the secondary market approach is more effective.

Report Number: 143141

Author
Eileen Hawes

Senior Production Associate
Diana Brimson

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

Housing Bond Programs Secured by Credit Enhanced Mortgages

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Key Downgrade Drivers of Stand-Alone Housing Bonds with Mortgage Enhancements

Table of Contents:

SUMMARY OPINION 1
OVERVIEW OF PORTFOLIO 3
KEY DOWNGRADE DRIVER #1: CASH FLOW PROJECTIONS WHICH DEMONSTRATED INSUFFICIENT REVENUES TO PAY DEBT SERVICE OR AN ASSET-TO-DEBT RATIO (PARITY) BELOW 100% 4
KEY DOWNGRADE DRIVER #2: REDUCED COUNTERPARTY CREDIT QUALITY 10
APPENDIX A 13
APPENDIX B 14
MOODY'S RELATED RESEARCH 15

Analyst Contacts:

NEW YORK +1.212.553.1653

Shane Mullin +1.212.553.4535
Associate Analyst
shane.mullin@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Naomi Richman +1.212.553.0014
Managing Director – Public Finance
naomi.richman@moodys.com

Summary Opinion

Since the beginning of 2009, we have downgraded 85 stand-alone housing bonds secured by mortgage enhancements, some by multiple notches, accounting for approximately 8%[1] of the sector's ratings. This report provides insight into the analytical considerations that led to these downgrades[2].

The two key downgrade drivers were:

» **Cash flow projections which demonstrated insufficient revenues to pay debt service or an asset-to-debt ratio (parity) below 100%.** Reasons for weaker-than-expected performance included:

— *Lower interest earnings on investments.* We lowered our reinvestment assumptions for housing bonds without an investment agreement given the persistence of low interest rates.

— *Failure to adhere to legal provisions*. Improper administration introduced stressful elements which the bonds were never intended to withstand.

» **Reduced counterparty credit quality.** Rating deterioration of an investment provider signals an increase in the risk that a counterparty would be unable to meet its obligations.

This report also discusses two issues which have not led to downgrades to date, but could in the future:

— *Rapid prepayments of underlying single family mortgage loans.* Unpredictably high prepayments could diminish expected mortgage revenue streams.

— *Rating deterioration of the credit support provider*. Indicates an increase in the risk that the mortgage enhancer would be unable to cover the principal and interest due in the event of a default of the underlying mortgage(s).

[1] Based on 1,070 total bonds rated as of January 1, 2009 or rated thereafter.

[2] In March 2012 we proposed changes to our methodology for rating these bonds in the Request for Comment Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Transactions with Mortgage Enhancements.

Housing Bonds Secured by Credit Enhanced Mortgages

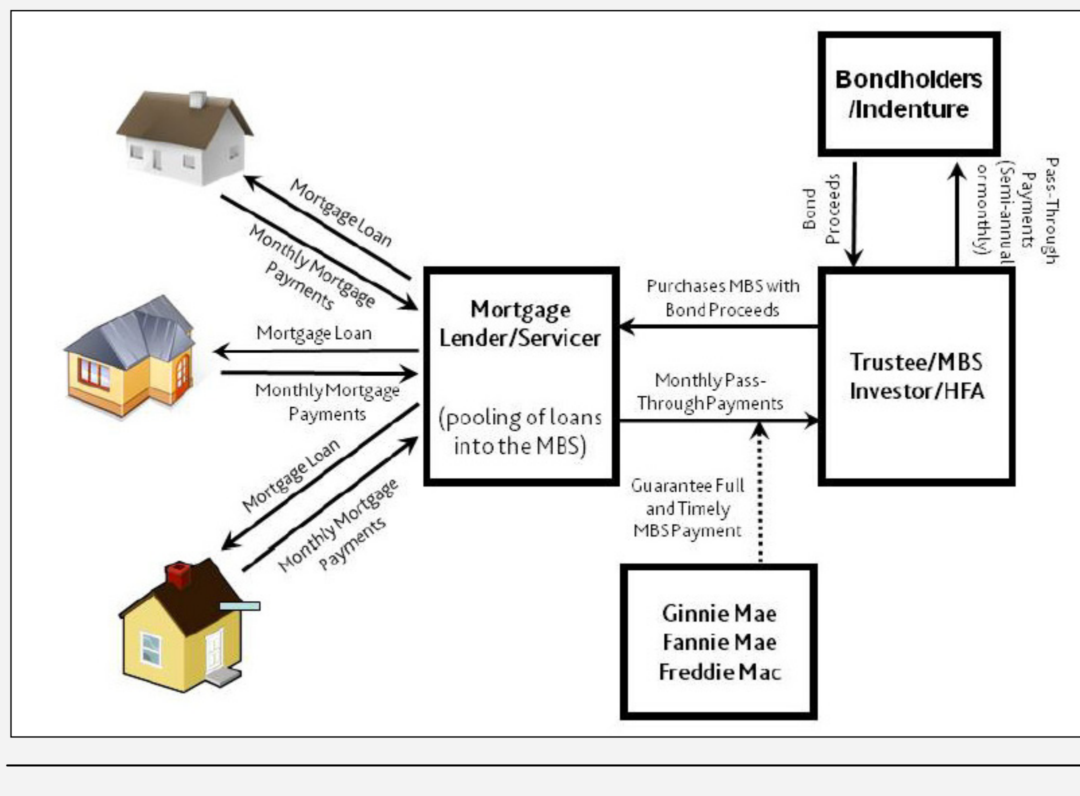
The housing bonds discussed in this report are secured by mortgages guaranteed by the US government, a government sponsored enterprise (GSE) such as Fannie Mae or Freddie Mac, or a state entity such as SONYMA. These bonds, usually sold as tax-exempt securities, are a source of financing for (i) single family homeowners and (ii) developers of "multi-family" projects such as hospitals, nursing homes, assisted living facilities, and rental units. The issuers are municipalities and local and state housing finance agencies.

Whether the bonds are secured by a pool of single family mortgages or a sole multi-family mortgage, the underlying structure is the same. In each case, the borrower(s) makes monthly mortgage payments to a loan servicer. After subtracting its servicing fee and any applicable guaranty fee from the monthly mortgage payments, the servicer forwards the net monthly payments to the trustee. The trustee then collects and invests these payments in accordance with the governing documents. These funds, along with any investment earnings and after taking out fees and other expenses, are used to pay bondholders. If the borrower(s) fails to fulfill its monthly obligations, the credit support provider's guarantee or insurance will make whole the principal and interest due.

Below is an illustration of the structure of a single family mortgage-backed security (MBS) bond program:

EXHIBIT 1

Single Family MBS Bond Program Structure

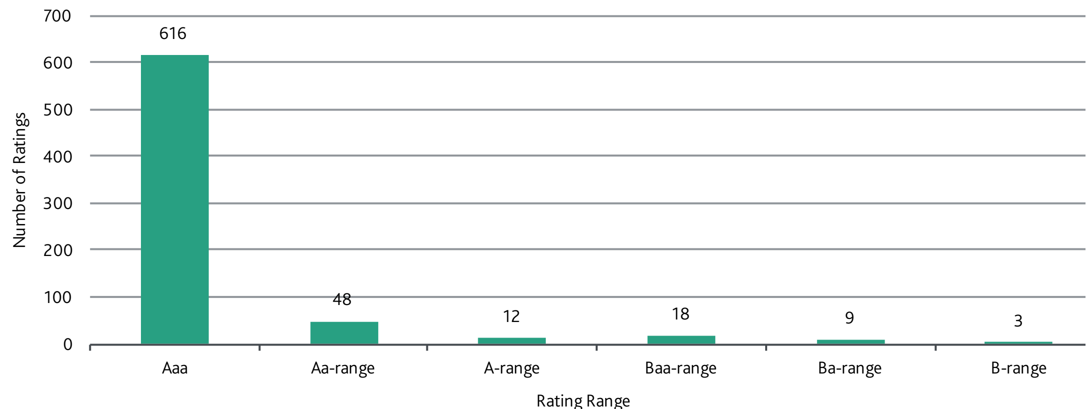


Overview of Portfolio

As of May 1, 2012, our rated portfolio consisted of 706 bonds with approximately $6.1 billion in outstanding debt. A majority are rated in the Aaa to Aa-range, as illustrated below[3]:

EXHIBIT 2

Rating Distribution of Housing Bonds with Mortgage Enhancements

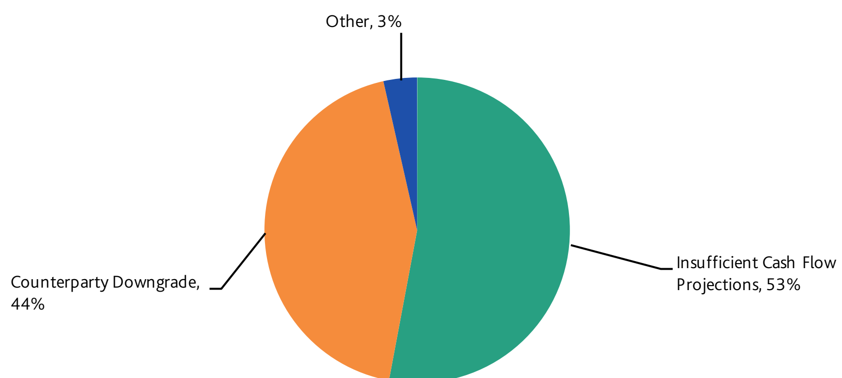


Source: Moody's Investors Service

Since January 1, 2009 there have been 85 downgrades within the sector.[4] Of those, 45 were due to cash flow projections which demonstrated insufficient revenues to pay debt service or an asset-to-debt ratio (parity) below 100%, while 37 resulted from counterparty downgrades. The remaining three downgrades were due to other reasons.

EXHIBIT 3

Rationale for Downgrades



Source: Moody's Investors Service

[3] 15 of the 48 rated in the Aa-range were downgraded from Aaa while the remainder were initially rated in the Aa category and never downgraded. Two bonds were downgraded from Aaa then upgraded back to Aaa subsequent to bond program modifications.

[4] Of the 85 bonds which experienced downgrades, 26 are no longer outstanding,

Key Downgrade Driver #1: Cash Flow Projections Which Demonstrated Insufficient Revenues to Pay Debt Service or an Asset-to-Debt Ratio (Parity) Below 100%

Cash flow projections are a critical tool in analyzing housing bonds secured by credit enhanced mortgages. They simulate the performance of mortgage loans and invested funds under various assumptions, and demonstrate whether revenues will be sufficient to make all debt service payments on a full and timely basis. We first review cash flow projections prior to assigning an initial rating, and review updated reports as needed. Hereafter, the term "insufficiency" refers to any projection which demonstrates either insufficient revenues to pay debt service or parity below 100%. The program is expected to maintain a minimum parity of 100% throughout the life of the bonds to ensure that there are sufficient funds to fully compensate bondholders in the event that assets are liquidated. For example, if the bonds are accelerated or if there is a mandatory redemption of the bonds as a result of a mortgage prepayment or default, the trustee would rely on mortgage proceeds, along with any other assets held in the trust estate, to pay bondholders.

Reasons for Weaker-Than-Expected Performance

Lower Interest Earnings on Investments

BOND PROGRAMS ORIGINALLY INVESTED IN MARKET RATE INVESTMENTS

Initial cash flow projections for transactions rated before 2009 usually assumed some level of reinvestment earnings, even for bond programs that did not invest funds in a guaranteed investment contract (GIC). In 2009, we lowered our reinvestment assumptions to 0% given the persistence of low interest rates. To reflect this revision, we reviewed updated cash flow projections for all programs without GICs that had assumed higher reinvestment rates. A number of these bond programs could not demonstrate the ability to withstand the new stress and were downgraded accordingly[5].

Monetary Policy Strains Many Bond Programs Relying on Market Rate Investment Earnings

The prolonged period of unusually low interest rates has strained the overall financial position of many housing bond programs that invest in market rate short-term securities. However, the Federal Reserve's expectations that rates will increase during the second half of 2014 could alleviate this pressure for some programs.

BOND PROGRAMS ORIGINALLY INVESTED IN GICs

Bond programs with funds invested in GICs are exposed to counterparty risks of the investment providers. The programs' exposure to this risk increases as the investment provider's credit quality decreases. When providers were downgraded and no longer eligible to maintain the rating on the bonds, we placed the affected bonds' ratings under review (RUR) to reflect the increase in counterparty risk. Issuers could take action to avoid a downgrade by reducing counterparty risks through two options: terminating the GIC exposure or replacing the GIC provider with another financial institution.

[5] For an overview of multi-family bond programs subject to this analysis, refer to Moody's Completes Review of Housing Transactions Affected by Low Reinvestment Earnings (125098).

EXHIBIT 4

Issuers' Options to Address an Investment Provider Downgrade[6]

Decision	Result	Revised Cash Flow Assumptions
Terminate GIC	Float funds are invested in money market funds or other eligible securities	0% reinvestment rates on all float funds
Replace GIC[7]	Issuer enters into an investment agreement with another provider with a rating eligible to maintain the desired rating on the bonds	New reinvestment rate on all float funds

Given that both options modified the initial reinvestment rate assumptions, updated cash flow projections were prepared in congruence with the issuers' final decisions. Of the issuers that terminated their exposure, the majority demonstrated sufficient cash flow projections and the bonds' ratings were subsequently confirmed. The remainder exhibited projected insufficiencies and were downgraded accordingly. All bond programs that entered into new investment agreements with eligible providers had their ratings confirmed following cash flow analyses incorporating new reinvestment rate assumptions.

Failure to adhere to legal provisions

A number of bond program trustees failed to properly adhere to legal provisions and thereby weakened the programs' financial positions. Of these, 9 bonds experienced downgrades. Cases of improper administration, as detailed in previous publications[8], include:

» *Failure to redeem bonds from excess revenues.* Several administrators did not partially redeem bonds when expected as per the legal provisions. Over-collateralization deteriorated as surplus funds were invested in low yield securities instead of being used to redeem higher rate bonds.

» *Erroneous distribution of funds.* In one event, expenses intended to be borne by the borrower were paid from trust account funds and reduced the pledged funds available to bondholders.

» *Poor investment practices.* If there is a GIC, bond program management needs to invest the mortgage receipts in that security within a reasonable time in order to realize the expected GIC investment earnings. Poor investment practices, including extended periods of delay or investment in lower yielding market rate securities, have reduced programs' net revenues.

Rapid prepayments of underlying single family mortgage loans

While we have not seen downgrades for this reason to date, mortgage prepayments are a potentially risky aspect of single family housing bond programs, particularly given the weak economic conditions. Prepayments can be either voluntary – for example when a borrower refinances the mortgage – or involuntary, upon foreclosure or homeowner abandonment of the property. Involuntary prepayments occur because the credit support provider pays the full principal and accrued interest of the mortgage at the time of the borrower's default. Poor economic conditions can contribute to rapid rates of the involuntary type[9].

When prepayments occur, the bond documents generally direct the trustee to use funds from prepaid principal to call bonds at the earliest possible date. Nonetheless, prepayments can reduce a program's expected net revenue stream in two ways:

6 As discussed on page 11, issuers could also opt to maintain the investment but this strategy would not reduce counterparty risk.

7 Some agreements may allow recasting as a repurchase agreement with certain levels of over-collateralization.

8 This topic was most recently highlighted in Failure to Adhere to Legal Documents May Result in Rating Downgrades for Local Housing Transactions (126504).

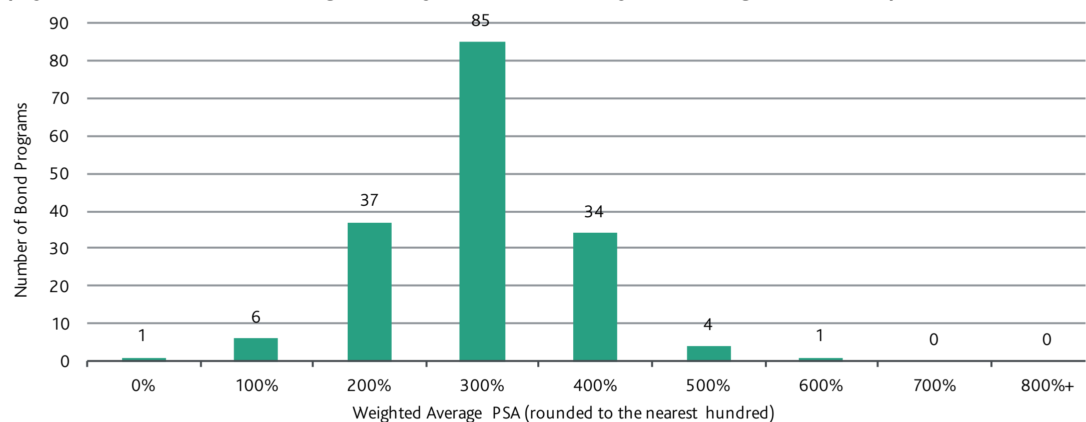
9 For a more detailed overview of prepayments, refer to Housing 101: Single Family Loan Prepayments (98961).

1. **Negative arbitrage due to redemption provisions.** Redemption provisions require that the trustee give specified notice to bondholders before the bonds are redeemed. In the time between prepayment receipt and the date of bond redemption, prepayments are generally reinvested in securities earning a lower rate than the mortgage assets. The negative spread between interest earned on assets and interest paid on liabilities, known as "negative arbitrage", reduces a program's over-collateralization. Additionally, redemptions are typically in $5,000 minimum denominations (for semi-annual pay bonds), which may further delay redemptions of a portion of the prepayment below $5,000.
2. **Reduction in the weighted average mortgage rate.** Many single family bond programs are comprised of numerous MBSs earning different interest rates. If higher rate MBSs experience faster prepayments, the programs' weighted average mortgage rate could be reduced. Over time, this could diminish the programs' expected over-collateralization.

To assess these risks, single family cash flow projections assume several prepayment stress scenarios[10], including extremely low (0% PSA[11]) and high prepayment rates (3-year weighted average loan life, generally ranging from 700-750% PSA at issuance). The single family semi-annual pay bond portfolio is subject to a prepayment analysis in which we calculate the weighted average lifetime PSA for each bond program based on the original MBS balances. As illustrated by the distribution below, 100% of the portfolio is within our high rate stress scenario, and 97% lies between 0% PSA and 449% PSA.

EXHIBIT 5

Prepayment Distribution for Single Family Semi-Annual Pay Bond Programs as of April 1, 2012



Source: Bloomberg

In the past, several bond programs exceeded – or were at risk of exceeding – our high prepayment stress scenario and were subject to further review. Some of those successfully withstood an immediate and full prepayment scenario (at the point of lowest projected parity) and thus were determined to be impervious to insufficiencies caused by prepayments. In all other instances, we requested greater stresses than our original cash flow assumptions as well as a break-even PSA scenario to determine the highest prepayment rate that could be tolerated. No downgrades occurred, as all affected bond programs demonstrated the ability to withstand robust prepayment rates.

[10] Assumptions subject to change as per Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Transactions with Mortgage Enhancements (139421)

[11] The PSA rate represents an increasing rate of prepayment each of the first thirty months relative to the then-outstanding principal balance of mortgage loans. Beginning in the thirtieth month and in each month thereafter, the PSA rate assumes a constant rate.

Rating Determination of Programs Demonstrating Projected Cash Flow Insufficiency

Once we identify a bond program demonstrating projected cash flow insufficiency, our ratings analysis is based on the probability of improved performance and, if applicable, the expected recovery rate.

Probability of Improved Performance

In general, two factors influence the probability of improved performance – reinvestment rates and prepayment speeds.

1. *Reinvestment Rates*: When a program's assets are invested in market rate securities, we assess the likelihood that interest rates will rise and that the investments will earn a sufficiently high rate to avoid a shortfall (break-even reinvestment rate). A higher break-even reinvestment rate is determined to have a lower probability of improved performance.

   Conversely, a program invested in a GIC experiences zero probability of improved investment earnings because the earnings are restricted to the contractual rate, regardless of changes in the interest rate environment.

2. *Prepayment Speeds:* For single family housing bond programs, we estimate the likelihood of several prepayment scenarios based on characteristics of the credit enhanced mortgages securing the bonds, such as:

   — *Historical Performance*

   — *Expected Performance*

   » *Real estate and economic conditions*. The external environment generally has a strong correlation with the performance of the underlying loans. Distressed areas are more likely to experience involuntary prepayments from its mortgages due to defaults relative to better performing areas. Conversely, an area with high home appreciation can experience high levels of voluntary prepayments if homeowners choose to buy larger houses or refinance existing mortgage loans.

   » *MBS vintage.* The likelihood of default is generally greater for loans with high susceptibility to home price depreciation, such as those originated during 2007-2008.

   » *Interest rates.* Loans paying a higher rate than what is currently available in the mortgage market are more susceptible to voluntary prepayments.

   In general, if the probability of improved performance is sufficiently high, our methodology looks to a maximum rating category derived from the time until the first projected insufficiency, as shown below:

EXHIBIT 6

Rating Cap Based on Insufficient Cash Flow Projections

Duration Until First Projected Insufficiency[12]	Maximum Rating Category
15 years or longer	Aaa or initial rating
Greater than 10 but less than 15 years	Aa
Greater than 5 but less than 10 years	A
Greater than 3 but less than 5 years	Baa
3 years or less	Ba or lower

Source: Methodology Update: Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates (120987)

Our approach, which establishes higher rating caps for longer-dated first insufficiencies, reflects a higher probability for the operating environment (and therefore the bond program's performance) to improve given the time horizon. This observation holds true for both elements of our probability of improved performance analysis, considering that:

» The interest rate environment could only improve given our 0% reinvestment rate assumption; and

» underlying single family loan portfolios exhibiting extremely high prepayment speeds tend to return to normalcy if the economic climate improves.

Expected Recovery

Bond programs with sufficiently low probability of improved performance, regardless of the first insufficiency's timing, are rated in the B-range or below[13] based on our expectations of bondholders' recovery. The expected recovery rate is calculated by comparing our assessment of cash flow projections against the cash flows promised to investors.

$$Expected\ Recovery\ Rate = 100\% + \left(\frac{Present\ Value\ of\ Expected\ Loss}{Total\ Bonds\ Outstanding}\right)$$

Expected recovery rates were then applied to the table as shown below:

[12] Durations may be extended an additional 3 years in the future per our Request for Comment published in March 2012, Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Transactions with Mortgage Enhancements (139421).

[13] For more information on bonds that are in default, refer to Moody's Approach to Rating Structured Finance Securities in Default (121070)

EXHIBIT 7

Placement of Ratings for Bond Programs In or Approaching Default

Rating Category	Description	Rating	Expected Recovery Rate if in Default, or if Default Probability Near 100%
Ba	Obligations rated Ba are judged to have speculative elements and are subject to substantial credit risk	Ba1	N/A
		Ba2	
		Ba3	
B	Obligations rated B are considered speculative and are subject to high credit risk	B1	99 to 100%
		B2	97 to 99%
		B3	95 to 97%
Caa	Obligations rated Caa are judged to be of poor standing and are subject to very high credit risk	Caa1	90 to 95%
		Caa2	80 to 90%
		Caa3	65 to 80%
Ca	Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest	Ca	35 to 65%
C	Obligations rated C are the lowest rated class and are typically in default, with little prospect for recovery of principal or interest	C	< 35%

Source: A Look at Speculative-Grade Local Governments in the Wake of the Recession (136199)

Housing Bonds Secured by Credit Enhanced Mortgages

Case #1: GIC Limits the Probability of Improvement

Updated cash flow projections for Aaa-rated "Bond A", a multi-family housing bond program, demonstrated insufficiency even though the trust accounts were invested in a GIC. Upon further investigation, it was revealed that the trustee misused $55,000 from the Revenue Account over a three year period to pay fees that were outside of the Indenture. The foregone funds were not replenished nor are they expected to be. Given that a multi-family program's probability for improved performance is dependent upon its capacity for greater reinvestment earnings, the GIC in this situation eliminated any chance that interest earnings would improve. As a result, Bond A was downgraded to the B-range based on our expectations of the recovery rate.

Case #2: Future Loss Could Be Mitigated by Future Reinvestment Earnings

The trust accounts of the Aaa-rated multifamily housing program "Bond B" are not invested with a GIC. Cash flow projections, subject to 0% reinvestment rate assumptions, demonstrated insufficiency within 13 years and a <1% break-even reinvestment rate. The break-even reinvestment rate is plausible given the extended time horizon, and therefore we concluded that there was a sufficient likelihood of improvement. The bonds were subsequently downgraded to the Aa-range based on the duration until the projected first insufficiency as per the rating ceiling that we look to. Over time we will continue to assess cash flow projections to see if the break-even rate or the duration until the first projected insufficiency changes, and will adjust Bond B's rating as needed.

Key Downgrade Driver #2: Reduced Counterparty Credit Quality

Credit Support Providers

With enhanced mortgages, the credit support provider makes full and timely payments of mortgage principal and interest regardless of the actual performance of the underlying loan(s). These guarantees, otherwise known as the mortgage enhancements, are the primary source of security for stand-alone housing programs and the foundation for their ratings. The table below outlines the forms of mortgage enhancements utilized in municipal housing bond programs.

EXHIBIT 8

Overview of Credit Support Providers

Credit Support Provider	Description of Provider	Type of Mortgage Enhancement	Highest Eligible Rating for Bonds	Primary Rating Rationale with Respect to Enhanced Mortgage's Credit Quality
Ginnie Mae	Wholly-owned US Government corporation	MBS	Aaa[14]	Backed by the full faith and credit of the US Government
Fannie Mae and Freddie Mac	Government sponsored enterprises (GSEs)	MBS or Credit Enhancement Instrument (CEI)	Aaa[14]	The GSEs are expected to move in lock-step with the US Government because of their importance to the US economy and housing system, and priority in public policy
Federal Housing Administration (FHA)	Government agency within the Housing of Urban Development (HUD)	Mortgage Insurance	Aa2	Backed by full faith and credit of the US government but rated lower due to uncertainty as to the timeliness of insurance payments
FHA Risk-Share	FHA and Housing Finance Agency (HFA)	Mortgage Insurance	Aaa	FHA's obligation to pay the insurance claim in one full payment and its history of claims payments, as well as the high level of sophistication of the bond issuers serves to mitigate uncertainty of insurance claim timing
State of New York Mortgage Agency (SONYMA)	SONYMA Mortgage Insurance Fund	Pool Insurance	Aa1	Insurer's rating

Rating deterioration of a credit support provider would indicate increased risk associated with the inability to cover principal and interest due on a loan or mortgage backed security in the event of a default of the underlying mortgage(s). To date, no credit support providers have been downgraded.

US Government Rating Actions Have Considerable Impact on Housing Bonds

In July 2011, all housing bonds with mortgage enhancements directly linked to the US government's rating were placed under review for downgrade as a result of the corresponding rating action on the US. The following month, the bonds' ratings were confirmed following the confirmation of the US government's rating. These bond ratings would be affected by any future revision of the US government's rating.

[14] Ratings may be capped at Aa1 in the future per our Request for Comment published in March 2012, Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Transactions with Mortgage Enhancements (139421).

Investment Providers

Investment agreements, such as GICs or repurchase agreements, provide a predetermined rate of return on float funds deposited with the trustee typically derived from monthly mortgage payments. If the provider is unable to perform in accordance with the contract's terms, there may be a debt service payment shortfall on the bonds due to a loss of interest earnings or principal of the invested funds. Furthermore, if a provider were to declare bankruptcy there is the risk that the invested funds would not be recovered for bondholders. Therefore, the credit quality of the investment provider, as reflected in its rating, is a factor in the bonds' rating.

To date, the sector has weathered downgrades[15] to a majority of the 29 financial institutions serving as investment providers[16]. As previously mentioned, many bond programs avoided downgrades by replacing the exposure with investments from eligible financial institutions, or terminating the exposure following a demonstration of cash flow sufficiency assuming lower reinvestment rates. Since the beginning of 2009, though, 38 housing bonds experienced downgrades because the exposed funds were maintained with downgraded providers' investment agreements.

Bayerische Landesbank Downgrade Sparked Review of Exposure

The downgrade of Bayerische Landesbank (BLB) to Baa1 from A1 in November 2011 affected 9 stand-alone housing bonds. The funds of 6 bond programs (with $57 million of outstanding debt) remained invested with BLB, and as a result the ratings were downgraded to Baa1 from Aaa in the first quarter of 2012.[17] Conversely, 3 bond programs (with $27 million of outstanding debt) avoided downgrades because the issuers chose to terminate the affected GICs and provided cash flow projections which demonstrated sufficiency assuming 0% reinvestment rates.

Rating Determination of Programs Which Experience Counterparty Downgrades

Rating Action on a Credit Support Provider

In the event of any rating action to a credit support provider, all applicable bond ratings are capped at the provider's new rating.

Rating Action on an Investment Provider

The following table outlines the maximum rating that stand-alone housing bonds can achieve given the rating of the investment provider. As detailed in prior methodologies, providers rated A1/P-1 or higher (or Aa3 with no short term rating) are eligible to support a Aaa-rated bond. As the provider's rating reaches A2 and below, the bond rating begins to converge. If the provider's rating falls even further to Baa1 or below, the bond rating will not exceed it.

[15] A detailed discussion of this topic is covered in Most Local Housing Credits with Downgraded Guaranteed Investment Contract (GIC) Providers Have Maintained Their Ratings (134517).

[16] Appendix A lists all financial institutions that serve as investment providers for the sector.

[17] Appendix B contains an overview of bond programs affected by the November 2011 BLB downgrade.

EXHIBIT 9

Rating Level for Investment Provider and Corresponding Maximum Bond Rating

<table>
<tr><th colspan="4">Investment Provider</th><th colspan="2">Bonds</th></tr>
<tr><th>Long Term Rating</th><th>Review Status</th><th>Short Term Rating</th><th>Review Status</th><th>Maximum Long Term Rating</th><th>Review Status</th></tr>
<tr><td rowspan="5">Aaa - Aa3</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td rowspan="2">Aaa</td><td rowspan="2">-</td></tr>
<tr><td>RUR</td></tr>
<tr><td>-</td><td rowspan="3">P-1</td><td>-</td><td rowspan="3">Aaa</td><td rowspan="3">-</td></tr>
<tr><td>RUR</td><td>RUR</td></tr>
<tr><td>-</td><td>RUR</td></tr>
<tr><td rowspan="5">A1</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td>Aa1</td><td>-</td></tr>
<tr><td>RUR</td><td>Aa1</td><td>RUR</td></tr>
<tr><td>-</td><td rowspan="3">P-1</td><td>-</td><td rowspan="3">Aaa</td><td rowspan="3">-</td></tr>
<tr><td>RUR</td><td>RUR</td></tr>
<tr><td>-</td><td>RUR</td></tr>
<tr><td rowspan="5">A2</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td>A1</td><td>-</td></tr>
<tr><td>RUR</td><td>A1</td><td>RUR</td></tr>
<tr><td>-</td><td rowspan="3">P-1</td><td>-</td><td>Aa1</td><td>-</td></tr>
<tr><td>RUR</td><td>RUR</td><td rowspan="2">Aa1</td><td rowspan="2">RUR</td></tr>
<tr><td>-</td><td>RUR</td></tr>
<tr><td rowspan="2">A3</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td>A2</td><td>-</td></tr>
<tr><td>RUR</td><td>A2</td><td>RUR</td></tr>
<tr><td rowspan="2">Baa1 and below</td><td>-</td><td rowspan="2">None</td><td rowspan="2">None</td><td rowspan="2">Long Term Rating of Provider</td><td>-</td></tr>
<tr><td>RUR</td><td>RUR</td></tr>
</table>

Source: Methodology Update: Ratings that Rely on Guaranteed Investment Contracts, December 2008 (113914)

Appendix A

Investment Providers in the Stand-Alone Housing Sector
AIG
Assured Guaranty Municipal Corp.
Bayerische Landesbank
Bayerische Landesbank (State Guarantee)
Berkshire Hathaway
Credit Agricole CIB
Dexia Credit Local[18]
DEPFA Bank plc
General Electric Capital Corporation
Goldman Sachs
Grand Central Funding
HSBC
IXIS Corporate and Investment Bank
IXIS Financial Products Inc.
IXIS Funding Corp.
MBIA Inc.
MBIA Insurance Corporation
NATIXIS
NATIXIS Funding Corp. Investment
Pallas Capital Corp.
Rabobank Nederland
Royal Bank of Canada
Societe Generale
Transamerica Life Insurance Co.
Trinity Funding
Trinity Funding Company, LLC
Trinity Plus Funding Company, LLC
UniCredit Bank AG
WestLB AG (State Guarantee)

[18] No longer an active investment provider for housing bond programs.

Appendix B

Review following November 2011 Bayerische Landesbank Downgrade

Bond Issue	Previous Rating	Current Rating	Amount Outstanding as of Q1 2012	Issuer Response
New Orleans Finance Authority, LA, Qualified Mortgage Revenue Bonds (Hurricane Katrina Recovery Project), Series 2006A (AMT)	Aaa	Baa1	12,020,000	No Action
District of Columbia Housing Finance Agency FHA-Insured Multi-Family Housing Bonds (Wesley House Apartments Project) Series 2006 A	Aaa	Baa1	9,195,000	No Action
San Antonio Housing Finance Corporation, TX, Multi-Family Housing Revenue Bonds (GNMA Collateralized Mortgage Loan - MidCrowne Senior Pavilion Apartments Project), Series 2006A & Series 2006B	Aaa	Baa1	6,915,000	No Action
North Charleston (City of) SC, Housing Authority, Multi-Family Housing Revenue Bonds, (Horizon Village Project), Series 2006A	Aaa	Baa1	8,675,000	No Action
District of Columbia Housing Finance Agency Multi-Family Housing Revenue Bonds (Golden Rule Apartments Project) GNMA Collateralized, Series 2006	Aaa	Baa1	12,025,000	No Action
Harford (County of) Maryland, Multi-Family Housing Revenue Bonds, (GNMA Collateralized - Affinity Old Post Apartments Project), Series 2005	Aaa	Baa1	8,740,000	No Action
Miami-Dade County Housing Finance Authority, FL, Home Ownership Mortgage Revenue Bonds, Series 2006A (AMT)	Aaa(sf)	Aaa(sf)	10,155,000	Terminate GIC; Demonstrated Cash Flow Sufficiency
Orange County Housing Finance Authority, FL, Homeowner Revenue Bonds (Multi-County Program), Series 2006A-1 (AMT) & Homeowner Subordinate Revenue Bonds (Multi-County Program), Series 2006 A-2 (AMT)	Aaa	Aaa	6,770,000	Terminate GIC; Demonstrated Cash Flow Sufficiency
Pinellas County Housing Finance Authority, FL, Single Family Housing Revenue Bonds & Subordinated Revenue Bonds (Multi-County Program), Series 2006 A-1 (AMT) & Series 2006 A-2 (AMT)	Aaa	Aaa	9,890,000	Terminate GIC; Demonstrated Cash Flow Sufficiency

Moody's Related Research

Special Comments:

» Most Local Housing Credits with Downgraded Guaranteed Investment Contract (GIC) Providers Have Maintained Their Ratings, September 2011 (134517)

» Housing 101: Single Family Loan Prepayments, September 2006 (98961)

» Failure to Adhere to Legal Documents May Result in Rating Downgrades for Local Housing Transactions, October 2010 (126504)

» A Look at Speculative-Grade Local Governments in the Wake of the Recession, September 2011 (136199)

» Moody's Completes Review of Housing Transactions Affected by Low Reinvestment Earnings, June 2010 (125098)

Rating Methodology:

» Methodology Update: Ratings that Rely on Guaranteed Investment Contracts, December 2008 (113914)

» Methodology Update: Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates, November 2009 (120987)

Rating Implementation Guidance:

» Moody's Approach to Rating Structured Finance Securities in Default, November 2009 (121070)

Request For Comment:

» Proposed Changes to Methodology for Stand-Alone US Public Finance Housing Transactions with Mortgage Enhancements, March 2012 (139421)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 141326

Author
Shane Mullin

Production Associate
Masaki Shiomi

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Failure to Adhere to Legal Documents May Result in Rating Downgrades for Local Housing Transactions

Table of Contents:

SUMMARY OPINION 1
IMPACT OF NOT REDEEMING BONDS FROM EXCESS REVENUES OR PREPAYMENTS 2
IMPACT OF PAYING FEES FROM WRONG TRUST ACCOUNTS 3
IMPACT OF INVESTMENT DECISIONS FOR FUNDS IN TRUST ACCOUNTS 3
IDENTIFYING POTENTIAL PROBLEMS THROUGH SURVEILLANCE 4
MOODY'S RELATED RESEARCH 5
APPENDIX 6

Analyst Contacts:

NEW YORK 1.212.553.1653

Thomas Song 1.212.553.7159
Analyst
Thomas.Song@moodys.com

Gregory Lipitz 1.212.553.7782
Vice President – Senior Analyst
Gregory.Lipitz@moodys.com

Florence Zeman 1.212.553.4836
Senior Vice President
Florence.Zeman@moodys.com

Lisa Washburn 1.212.553.4133
Team Managing Director
Lisa.Washburn@moodys.com

Summary Opinion

When we assign a rating to a housing bond, the rating is based on the assumption that the provisions in the legal documents will be followed as outlined. Local housing bonds, both single family and multifamily, rely on bond trustees' performance of critical functions on a regular basis such as: the movements of money between trust accounts, the investment of funds, the purchases of securities, the release of funds, and bond redemptions. When these functions are not performed as outlined in the legal documents, bondholder security can be negatively impacted and may result in the downgrade of the rating assigned to the housing bonds. This article is an update to the series of special comments regarding the role of bond trustees in housing bonds.[1] In previous articles, we identified common problems that were encountered during our surveillance of housing bonds and the potential they had to negatively impact credit ratings.

During our surveillance over the past year, we reviewed 198 local housing transactions affected by low reinvestment earnings.[2] For the vast majority of these transactions, provisions in the legal documents were being followed as outlined. However, seven transactions had their ratings downgraded primarily due to a failure to adhere to legal document provisions relating to: (i) the redemption of bonds, (ii) the payment of fees, and (iii) the investment of funds. In these cases, the misapplication of revenues had a material impact on the transaction's credit rating by diminishing future revenues and/or decreasing the asset-to-debt ratio of the transaction. This special comment provides examples of how these three problems contributed to the rating downgrades of several transactions and describes how we identify and investigate potential problems through our surveillance of local housing transactions.

[1] Please see section on Moody's Related Research for a list of special comments relating to this topic.
[2] See "Moody's Completes Review of Housing Transactions Affected by Low Reinvestment Earnings," published June 2010

Impact of Not Redeeming Bonds from Excess Revenues or Prepayments

Failure to adhere to legal provisions on the redemption of bonds from (a) excess mortgage revenues, and (b) prepayments on the mortgage can impact the financial performance of a transaction by diminishing future revenues and/or decreasing the parity level between the assets (the mortgage and investments) and the liabilities (the bonds).

Redemptions from Excess Revenues

The application of excess revenues after debt service and fees have been paid on each interest payment date varies in housing transactions based on the governing legal documents. Some transactions have "open loops" where funds are remitted back to the borrower above a certain threshold while others have "closed loops" where the trustee is instructed to retain excess revenues for future payments or apply excess revenues to redeem bonds. In most cases, if a transaction contains provisions that require bond redemptions from excess revenues, the redemption must take place in a timely manner in order to maintain strong financial performance of the transaction. In our surveillance over the past 12 months, we identified several instances where the failure to redeem bonds in accordance with the legal documents had a negative credit impact on the transactions. (Please see the Appendix for additional information on the transactions cited in this special comment.)

The failure to redeem bonds from excess revenues in accordance with legal documents adds stress to the transaction by diminishing net revenues because future debt service payments are higher than they would be if bonds were redeemed as planned. For some transactions, cash flow sufficiency can only be achieved when excess funds are applied to reduce liabilities and lower future debt service payments. The current low interest rate environment worsens the problem for transactions that do not have an investment agreement with a guaranteed rate of return. Monies remaining in the revenue fund will earn interest at market rates, currently near 0.1%, instead of being applied to the bonds outstanding which are accruing interest at the bond rate (between 4.75% and 7.25% in the examples cited below).

In the example of the Herriot Street Housing bonds,[3] the failure to redeem bonds as directed under the trust indenture was the primary factor in the transaction demonstrating future cash flow shortfalls and a decline in the parity level to below 100%. Consequently, the rating was downgraded to Ba1 from Aaa.

Failure to redeem bonds from excess revenues may also impact financial performance by decreasing the parity level of the transaction. When a transaction's parity level falls below 100%, we no longer consider the credit investment-grade, because in the event of a special mandatory redemption due to condemnation of the project or foreclosure of the loan, bondholders would receive less than the full principal and accrued interest on the bonds.

The Marcy Village[4] (currently rated Ba2) and Sharon Green Townhomes[5] (currently rated Ba1) financings currently have parity levels below 100%. The declines in parity levels for both transactions were primarily due to the failure to redeem bonds from excess funds as directed under the indenture. In these transactions, the mortgages began to amortize before the related bonds began to amortize. The revenues received by the trustee, representing payments of both principal and interest, exceeded

[3] Yonkers Industrial Development Agency, NY, Multifamily Housing Revenue Bonds (Herriot Street Housing, L.P. Project) Series 2004
[4] Indianapolis (City of), IN, Multifamily Housing Mortgage Revenue Bonds (Marcy Village Apartments Project) Series 2001
[5] Ohio Housing Finance Agency, OH, Multifamily Housing Revenue Bonds (Sharon Green Townhomes) Series 2005G

debt service on the bonds which were in the interest-only period. Excess revenues were not used to redeem bonds as was directed under the bond documents, and as a result, the bonds outstanding exceeded the mortgage outstanding. Over time, as the bonds continued to accrue interest at the bond rate while earnings from surplus revenues hovered near 0%, the asset-to-debt ratio decreased to below 100%.

Redemptions from Prepayments

In most local housing transactions, the legal documents contain provisions that require prepayments to be used to redeem bonds equal to the amount of principal reduction on the mortgage. Failure to effect a redemption in a timely manner when a prepayment is received, can impact the long-term performance of a bond transaction. For example, the Pelican Bay bonds[6] received a small prepayment in 1996 that was not used to redeem bonds as directed under the indenture. Over a period of several years, the parity level of the transaction decreased as the earnings on the prepayment were smaller than the bond interest rate. The transaction was downgraded to Ba1 from Aaa after the parity level dropped below 100%.

Impact of Paying Fees from Wrong Trust Accounts

Revenue from mortgage payments and reinvestment earnings are typically available to pay debt service and certain expenses such as trustee fees, issuer fees, and rebate analyst fees as provided for under the trust indenture. The trust indenture and financing agreement outline which fees are paid from the revenue fund and which fees are paid directly by the borrower. When the legal documents require fees to be paid directly by the borrower, instead of being taken from the cash flows of the transaction, failure to adhere to these provisions can weaken the financial performance of the transaction. In the example of the Countrywood Village Apartments bonds,[7] rather than invoicing the borrower for issuer fees as outlined in the financing agreement, monies in the revenue fund of the bond indenture were used to pay the issuer fees, and the borrower was invoiced for the deficiency in bond debt service payments. The transaction was downgraded to Ba3 because shortfalls in the revenue fund to pay debt service are paid by the borrower, and any failure to cover the shortfall for any interest payment period may cause a default on the bonds.

Impact of Investment Decisions for Funds in Trust Accounts

Many housing bond transactions have an investment agreement with a defined investment rate. The investment agreement permits the issuer to use the defined investment rate in the cash flows, instead of a lower rate that we would look for as a stress-case assumption in the cash flows.[8] Cash flow problems can arise when funds are not invested in the investment agreement, but instead invested in other assets (for example, money market funds) since the transaction is exposed to potentially lower earnings than originally planned on retained revenues.

The incorrect investment of trust accounts is especially problematic in a falling interest rate environment such as the one that has taken place over the past decade. As an example, consider a transaction that has an investment agreement from several years ago with a defined investment rate of 5%, but instead of investing funds in the agreement, funds are invested today in a money market fund.

[6] Alabama Housing Finance Authority, AL, Multifamily Housing Revenue Refunding (GNMA Collateralized – Pelican Bay Project) Series 1995 C & D

[7] Sacramento (City of), CA, Multifamily Housing Revenue Bonds (Countrywood Village Apartments) Series 2000 F & T

[8] The current investment rate assumption for Aaa rated housing bonds is 0% for the life of the transaction. See "Methodology Update: Change in Interest Rate Assumption for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates"

Money market funds are currently yielding about 0.1%, which would result in a loss of 4.9% on invested funds compared to the projection. Since the cash flows for the transaction assumed an investment rate of 5%, the transaction is unlikely to maintain the required level of cash flows to pay debt service with funds earning 0.1%.

The Bristol Village financing[9] is an example where monies in the bond fund were not invested in the guaranteed investment contract as directed under the trust indenture. Monies in the bond fund were being invested in a money market account receiving a variable interest rate for several years. The bonds were downgraded to A2 after cash flow projections assuming a 0% reinvestment rate projected a parity shortfall by 2017 and a revenue shortfall by 2020.

The HHDC Affiliates bonds[10] is another example of a financing where the withdrawal of funds from a guaranteed investment contract resulted in the downgrade of its credit rating to Baa3 from Aaa. When revenues are pulled from the guaranteed investment contract, we assume a 0% reinvestment rate when analyzing the transaction. If there is a projected revenue shortfall or parity level below 100%, the rating is downgraded in accordance with our methodology, "Methodology Update: Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates," published November 2009.

Identifying Potential Problems through Surveillance

The ratings assigned to housing bonds assume that the provisions outlined in the legal documentation for a transaction are followed. Our surveillance efforts measure the financial performance of the transaction, and we compare it to historical performance. Weakening financial performance can be a red flag that the terms of the legal documents are not being followed. When weakening financial performance is observed, we expand the scope of our review to include a detailed review of cash flows, and seek additional information from the issuer, underwriter, or trustee to understand the drivers of the weakened performance. Rating actions are taken when the impact of non-compliance with legal documentation materially affects the credit strength of the transaction or our expectation of future performance of the transaction.

[9] Town of Clarence, Erie County, Industrial Development Agency, Civic Facility Revenue Bonds (GNMA Collateralized –Bristol Village) Series 2002

[10] Illinois Housing Development Authority, IL, Multifamily Housing Revenue Bonds (GNMA Collateralized-HHDC Affiliates) Series 2001 A1 & A2

Moody's Related Research

Special Comments

» The Role of the Bond Trustee in Housing Bonds and Its Potential Impact on a Bond's Rating, December 2002 (77100)

» Payment Of Fees In Housing Transactions And Their Potential Impact On Ratings, December 2003 (80848)

» Housing Bond Trustees - A Review of 2004, December 2004 (90833)

» Housing Bond Trustees - One Year Later, December 2003 (80847)

» Moody's Completes Review of Housing Transactions Affected by Low Reinvestment Earnings, June 2010 (125098)

Rating Methodology

» Methodology Update: Change in Interest Rate Assumptions for Housing Transactions Which Rely on Investment Earnings Prompted by Unprecedented Low Interest Rates, November 2009 (120987)

Rating Update Reports

» Alabama Housing Finance Authority, Multifamily Housing Revenue Refunding (GNMA Collateralized – Pelican Bay Project) Series 1995 C & D

» Illinois Housing Development Authority, Multifamily Housing Revenue Bonds (GNMA Collateralized – HHDC Affiliates) Series 2001 A1 & A2

» Indianapolis (City of) IN, Multifamily Housing Mortgage Revenue Bonds (Marcy Village Apartments Project) Series 2001

» Ohio Housing Finance Agency, Multifamily Housing Revenue Bonds (Sharon Green Townhomes) Series 2005G

» Sacramento City Housing Authority, CA, Multifamily Housing Revenue Bonds (Countrywood Village Apartments) Series F & T

» Town of Clarence Industrial Development Agency, NY, Civic Facility Revenue Bonds (GNMA Collateralized – Bristol Village) Series 2002

» Yonkers Industrial Development Agency, NY, Multifamily Housing Revenue Bonds (Herriot Street Housing, L.P. Project) Series 2004

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Appendix

Issuer	Transaction	Debt Outstanding	Previous Rating	Current Rating	Reason for Rating Action
Alabama Housing Finance Authority, AL	Multifamily Housing Revenue Refunding (GNMA Collateralized – Pelican Bay Project) Series 1995 C & D	$1,525,000	Aaa	Ba1	Parity Under 100%
Illinois Housing Development Authority, IL	Multifamily Housing Revenue Bonds (GNMA Collateralized-HHDC Affiliates) Series 2001 A1 & A2	$18,190,000	Aaa	Baa3	Cash Flow Insufficiency
Indianapolis (City of), IN	Multifamily Housing Mortgage Revenue Bonds (Marcy Village Apartments Project) Series 2001	$7,225,000	Aaa	Ba2	Parity Under 100%
Ohio Housing Finance Agency, OH	Multifamily Housing Revenue Bonds (Sharon Green Townhomes) Series 2005G	$5,900,000	Aaa	Ba1	Parity Under 100%
Sacramento (City of), CA	Multifamily Housing Revenue Bonds (Countrywood Village Apartments) Series 2000 F & T	$2,230,000	Aaa	Ba3	Cash Flow Insufficiency
Town of Clarence, Erie County, Industrial Development Agency	Civic Facility Revenue Bonds (GNMA Collateralized –Bristol Village) Series 2002	$9,340,000	Aaa	A2	Parity Under 100%
Yonkers Industrial Development Agency, NY	Multifamily Housing Revenue Bonds (Herriot Street Housing, L.P. Project) Series 2004	$14,565,000	Aaa	Ba1	Cash Flow Insufficiency

Report Number: 126504

Author
Thomas Song

Production Associates
Ginger Kipps
Amanda Ealla
Judy Torre

© 2010 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ARE MOODY'S INVESTORS SERVICE, INC.'S ("MIS") CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MIS DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS DO NOT CONSTITUTE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS ARE NOT RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. CREDIT RATINGS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MIS ISSUES ITS CREDIT RATINGS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources Moody's considers to be reliable, including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

MOODY'S
INVESTORS SERVICE

Housing Finance Agencies

July 2007

Contact	Phone
New York	
Rachael McDonald	1.212.553.4456
Florence Zeman	1.212.553.4836
Lisa Washburn	1.212.553.4133

Housing 101: State Housing Finance Agencies

Introduction

State Housing Finance Agencies (HFAs) play a significant role in the municipal housing market and the municipal bond market at large and are currently estimated to have over $90 billion of bonds outstanding. The first State HFAs were established by state governments in the 1960s and began issuing bonds to finance the purchase of homes by first-time homebuyers. Since that time, State HFAs have grown to offer a wide range of affordable housing programs to families of low or moderate incomes in their respective states, including both single family and multifamily products. Some also provide a number of additional mortgage-related services, including loan servicing, loan origination, mortgage counseling, allocation of low income tax credits, and other functions.

What Is A State Housing Finance Agency?

State HFAs are agencies or authorities created by state law and are charged with helping persons and families of low or moderate income attain affordable housing in their respective state. State HFAs sell tax-exempt and taxable housing bonds and use the proceeds to finance below market rate mortgages for low and middle-income first time homebuyers and for the construction, acquisition and rehabilitation of multifamily apartments targeted to tenants below the area median income. HFAs currently operate in every state as well as in the District of Columbia, the U.S. Virgin Islands and Puerto Rico.

State HFAs are run by management teams with extensive experience in housing finance, mortgage loan underwriting and asset management. In addition to their in-house staffs, HFAs commonly employ outside consultants to provide professional legal, credit underwriting and financial advisory services. State HFAs have proven to be capable program and asset managers and to a large degree, control decision making on issues that affect the creditworthiness of their bond programs.

Moody's Investors Service
Global Credit Research

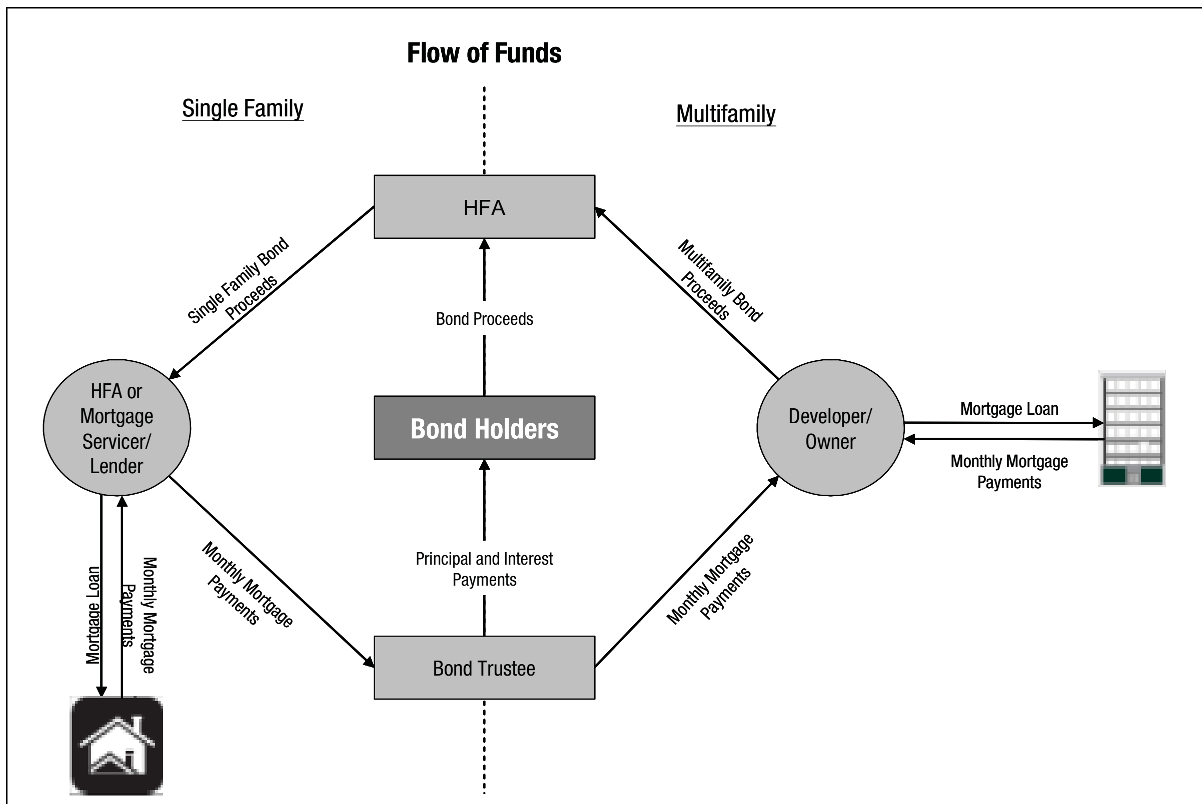
What Is The Relationship Of State HFAs To Their Respective State Governments?

Most HFAs are independent entities with varying degrees of financial and political relationship with their state government. HFAs are financially self supporting and do not receive tax revenue from the state to support their lending programs. However, they may be at times asked to release revenues to the state or to provide other programs and services on behalf of the state. Some states also provide a moral obligation pledge to provide a "back-up" or "deficiency make-up" for the HFA's debt service reserve. However, the pledge is not a legal obligation of the state and is subject to legislative approval at the time of funding.

The governor and legislature often have a political relationship with the agencies and are responsible for establishing the goals and mission of the HFA. The governor, and at times the legislature, appoints the members of the HFA governing board which appoints the HFA's executive director. When a new governor is elected, the governor may take the opportunity to appoint a new executive director, depending on the term of the executive director and the staggered terms of the board. The board typically contains some "ex officio" officers who may be members of the executive or legislative branch of the state government. In general, however, the managers of the various departments, e.g. finance, homeownership, remain in place through changes in administrations.

How Do State HFAs Finance Their Mortgage Loan Programs?

State HFAs sell tax-exempt and taxable housing revenue bonds to investors to raise money for their mortgage loan programs. HFAs use the tax exemption received from their tax exempt bonds to lower their borrowing costs. They pass the interest savings from the lower borrowing costs on to middle and lower income families by making below market rate mortgages. The below market rate mortgages are generally underwritten by private lenders and purchased by the HFA. HFAs in most states also administer federal Low Income Housing Tax Credits, Home Investment Partnerships (HOME) grants, and the Section 8 Housing Choice Voucher Program and operate a multitude of other affordable housing programs as part of their mission to provide affordable housing.



What Is Private Activity Volume Cap And How Does It Limit HFAs?

Private activity bonds are municipal bonds where either the proceeds are used to make loans to non-governmental borrowers or more than 10% of the bonds are used for any private business use. Single family mortgage revenue bonds and most multifamily bonds are private activity bonds. The Tax Reform Acts of 1984 and 1986 curbed the issuance of private activity bonds in the United States by establishing a "volume cap" or ceiling for the amount of private activity bonds that can be issued each calendar year. By limiting the annual issuance of these tax-exempt bonds, the federal government minimizes the amount of revenue it will lose from offering tax exempt bonds. However, issuing authorities can elect to carry forward the unused volume cap of a calendar year for three years.[1]

The federal government sets the private activity bond volume cap for each state on an annual basis based on the size of the State's population. The calculation for calendar year 2007 is equal to the greater of $85 multiplied by the State's total population or $256,235,000.[2] The state government allocates bonding authority, a portion of the state's volume cap, to the various issuing entities within the state, including HFAs. The types of bonds that are subject to volume cap include facility bonds (e.g. mass commuting facilities, water facilities, sewage facilities, residential rental projects, and many others), mortgage revenue bonds, student loan bonds and industrial development bonds.

Many HFAs have such strong demand for their loans that they exhaust their volume cap. Therefore, they issue taxable debt and blend the taxable and tax exempt rates to offer low rate loans. In addition, state HFAs issue refunding bonds and recycle loans in order to make new single family loans while maintaining their volume cap.

How Much Debt Is Issued by State HFAs?

State HFAs represent a significant presence in the public finance market with large and frequent debt issuances. HFAs compete with conventional mortgage lenders, whose mortgage loan rates vary throughout the year. To stay competitive, HFAs issue as often as six times a year and make or purchase mortgage loans with rates that reflect the current interest rate environment. Average issuance amounts are typically $50 million - $125 million per issue. Moody's currently has ratings outstanding on approximately $70 billion of State HFA debt which consists of primarily single family bonds (76%) and multifamily bonds (22%).

How State HFAs Differ From Local HFAs

Local housing bonds are issued by municipalities or HFAs set up by municipalities which have the same missions as State HFAs. Local HFAs are often, but not always, conduit entities with tax-exempt issuing authority. They generally issue under "closed indentures" (no option to issue additional bonds) whereas State HFAs are generally large and highly sophisticated issuers issuing under "open indentures" and exercising varying levels of program management and discretion. Local issuers often do not have staff members and the programs do not allow for management flexibility. As a result, the legal documents for local deals with closed indentures are significantly more rigid, establishing at closing many of the procedures, such as redemption provisions or release of excess funds, that State HFAs may have flexibility on. At the local level the trustee is responsible for executing the deal, while at the State HFA level the trustee often looks to the HFA for direction.

What Types Of Bonds Are Issued By State HFAs?

The majority of bonds issued by State HFAs are tax exempt, fixed rate bonds. These bonds can either be AMT bonds, which means that the interest earned on the bonds is subject to the alternative minimum tax, or Non-AMT bonds, where the interest is not subject to the alternative minimum tax. After August 8, 1986, HFAs were no longer allowed by the IRS to issue new money Non-AMT bonds. However they are allowed to issue refunding bonds that are Non-AMT if the bonds that are being refunded were originally issued before August 8, 1986. HFAs also issue a smaller but growing amount of taxable fixed rated bonds, which do not count against the HFAs volume cap allocation.

Historically HFAs have issued fixed rate debt to finance their fixed rate loans. However, many HFAs increased their issuance of variable rate debt during the first half of the decade. Issuing variable rate debt allows HFAs to lower their bond costs and offer mortgagors a lower loan rate. HFAs also use variable rate debt to hedge against variable rate investments that they hold in their portfolios. Some HFAs also issue taxable variable rate debt, and blend the taxable and tax exempt rates to offer low rate loans. HFAs typically hedge their variable rate debt with swaps to mitigate the risk associated with increases in the interest rates on the bonds.

1. *"Tax-Exempt Private Activity Bonds Compliance Guide." Internal Revenue Service.* www.irs.gov
2. *Internal Revenue Bulletin: 2007-11. "2007 Calendar Year Resident Population Estimates." March 12, 2007.* www.irs.gov

What Types Of Bonds Programs Are Offered By State HFAs?

State HFAs typically have several open trust indentures that allow them to issue parity debt. The largest indentures, or "bond programs," are typically for the HFAs' single family and multifamily bond programs. Single family programs provide affordable mortgage loans to first time home buyers that meet specific income requirements and whose homes meet specific purchase price limitations. Multifamily programs provide financing for multifamily apartment projects targeted to tenants below the area median income. Some of these projects receive rental subsidies under the HUD Section 8, Section 236 and Section 202 programs, Low Income Housing Tax Credits, or other federal or state subsidies. The bonds may be general obligations, special obligations or limited obligations of the HFA. In each case, the bonds are expected to be repaid by the loans financed by the program, although additional resources may be obtained from the general obligation of the HFA, if it is pledged to the bonds.

State HFAs may also offer general obligation debt, which may or may not be fully repaid by the loans financed with bond proceeds. This debt is typically a small percentage of the HFA's portfolio. General obligation debt is primarily secured by the assets of the HFA and can be used for a variety of projects, including building office buildings or making subsidized loans that are not part of one of the agency's trust indentures. In addition, some agencies serve as economic development agencies in addition to housing agencies, and may issue economic development or infrastructure bonds as general obligation debt.

To a small extent, State HFAs have participated in privatized military housing bond deals. Most military bonds are taxable, private placements. Some HFAs, including New York City Housing Development Corporation, Utah Housing Corporation, and Colorado Housing and Finance Authority, have financed these loans. The security for these bonds is revenue from the military housing privatization projects, with no additional support from the HFA. Furthermore, some HFAs may have issued public housing authority (PHA) bonds which are solely backed by the anticipated receipt of federal Capital Fund appropriations.

What are the Key Differences Between Municipal Housing Bonds and Other Municipal Bonds?

HFAs Do Not Have the Ability to Raise Taxes or Fees

Unlike many other municipal bonds, the pledged revenues of housing bonds are fixed with no ability to raise taxes or fees. If there is a problem with a housing bond issue, the issuer cannot raise revenue, i.e. the mortgage rate. The only way to address the problem may be to infuse cash or assets from their general fund, obtain third party funding, such as a line of credit, or restructure the transaction.

High Levels of Debt Can Be a Positive Credit Factor for HFAs

Since HFAs, in essence, are lending institutions, issuing properly structured debt is an integral part of an HFA's business model. HFAs use their debt to finance mortgage loans which in turn produce revenue for the HFA. For example, HFAs may borrow money with long-term bond rates at approximately 5% but lend out these proceeds at 6% to borrowers in the form of a subsidized mortgage loan. The subsidized mortgage loan rates are still attractive to the borrower who would be paying more than 6% in the conventional market. After bond fees and other expenses, HFAs are still able to make a profit on the loans.

Housing Bond Issuance is Counter Cyclical to Interest Rates

Unlike most segments of the municipal capital markets, municipal housing volume is counter cyclical to interest rate changes. When interest rates are high, HFA's relatively low subsidized mortgage loans are appealing to first-time homebuyers, leading to increased bond issuance. During low interest rate periods the difference between conventional mortgage loan rates and HFA's mortgage loan rates is compressed, decreasing the demand for the HFA's product and leading to less issuance.

Housing Bonds Are Subject to Early Calls

As opposed to typical municipal bonds which are call protected for ten years, municipal housing bond indentures typically contain redemption previsions that allow HFAs to redeem outstanding bonds with funds generated from prepayments, unexpended proceeds, or surpluses. These types of calls can occur at any time. In order to alleviate the uncertainty of early calls, some housing bonds are structured with planned amortization class (PAC) bonds or supersinker bonds which absorb a predetermined share of prepayments before other bonds. Housing bonds offer a higher yield than most other types of municipal bonds to compensate for the higher probability of early calls.

What Types Of Single Family Mortgage Loan Products Are Offered By State HFAs?

HFAs have traditionally offered a 30-year, fully amortizing, fixed-rate, level payment mortgage loan product. More recently, some HFAs have begun offering some nontraditional mortgage loan products such as 40-year amortization loans and interest-only loans. The forty-year loans being offered have a fixed-rate and stable monthly payments. HFA interest-only loans are loans in which the borrower pays only interest on the mortgage for a set period of time (generally 5 to 10 years) and then the principal on the loan begins to amortize for the remaining term of the loan (anywhere from 23 to 30 years). Unlike some conventional mortgage products, the mortgage payment only changes once and the borrower knows at the closing of the mortgage what the higher payment will be. Some of the HFAs that

offer this product maintain regular contact with the borrowers to ensure that they are aware of the upcoming increase in their monthly mortgage payment.

What Types Of Multifamily Mortgage Loan Products Are Offered By State HFAs?

HFAs typically offer 30 or 40-year loans for multifamily projects. Generally, the loans are fully-amortizing, with level principal and interest payments throughout the life of the loan. Occasionally, there will be a bullet payment at the end of the loan although this risk is generally covered by a third party "takeout." These loans are usually fixed rate although variable rate loans are also financed, generally with enhancement covering both credit and liquidity. The loans can be for the construction period or for the permanent mortgage loan, or for both.

Are an HFA's Loans Insured?

For single family whole loans, HFAs generally require that a primary mortgage insurance policy be purchased on all loans that have less than a 20% down payment. The predominant types of mortgage insurance and guarantees are:

- Federal Housing Administration (FHA) Insurance
- Veteran's Administration Guarantee
- Private Mortgage Insurance (PMI)
- Rural Housing Community Development Services Guarantee (RHCDS)

In addition to these forms of primary mortgage insurance, HFAs often cover the risk of losses on the loans with secondary coverage in the form of pool insurance, self insurance or overcollateralization of the bond program.

Some HFAs also finance loans that are then securitized into mortgage backed securities (MBS). These securities are guaranteed by Ginnie Mae, Fannie Mae or Freddie Mac. The guarantee assures the HFA that they will receive timely payment of principal and interest on their MBS, even if borrowers in the underlying pool are delinquent or default on their mortgage payments.

What Services Do HFAs Provide In Addition To Financing Mortgage Loans?

In addition to the HFAs core services, many of the HFAs have increasingly taken on a variety of additional mortgage services, such as loan origination and loan servicing. A number of HFAs have found that providing these services in-house can provide both greater control over loan underwriting and performance as well as an additional source of unrestricted revenue.

Single Family Loan Servicing

Increasing numbers of state HFAs have established single family loan servicing operations. Servicing is a function which entails processing mortgage payments, managing borrowers' escrow accounts, providing collection efforts on delinquent loans and ensuring that insurance and property taxes are paid on the property. The servicer is also required to commence foreclosure proceedings and manage the property in the event a loan does not perform and the borrower does not honor their obligation to the loan.

There are many benefits to HFAs self-servicing their single family loans. The primary benefits are the ability of the HFA to closely monitor its loan portfolio in order to have a better grasp on the performance of their loans and to detect the non-performing loans quicker which enables them to institute loss mitigation techniques. Another benefit of such practice is that the HFA can earn profitable servicing fees. Typically, a mortgage servicing fee is anywhere from 1/4 to 3/8 of 1% of the unpaid mortgage balance. Servicing fees can produce a steady revenue stream, but there are costs associated with starting up and maintaining servicing operations within the HFA. Training expenses, staffing expenses and costs associated with the installation of necessary software may prevent HFAs from achieving economies of scale resulting in lost revenues.

Multifamily Loan Servicing

Most HFAs have chosen to service all of the loans within their multifamily portfolio. Generally, multifamily loans are riskier than single family loans, and HFAs tend to prefer to monitor the performance of these loans closely and to make sure that they are able to detect non-performing loans as early as possible. When a non-performing loan is detected, the HFAs will work with the owner of the project to come up with a plan for improving the property's performance.

Direct Loan Originations

Some HFAs directly originate mortgage loans to new borrowers. The practice of direct origination provides a potential alternative source of revenues and ensures a more consistent stream of mortgage loans. HFAs benefit from direct origination by retaining fees that would typically paid to mortgage lenders. In addition, by directly originating loans, HFAs can focus on providing mortgages to individuals in areas which are typically hard to reach and underserved by conventional mortgage lenders. In some cases HFAs originate loans in areas where there are a large number of conventional lenders and these lenders are not marketing the HFAs products.

Mortgage Loan Counseling

HFAs also offer mortgage counseling and outreach as part of their loan origination service which has led to improved performance of the portfolio. These services may be offered directly by the HFA or through a non-profit partner. The agencies provide mortgage counseling to first time home buyers to help educate these individuals in the initial loan screening process as well as the costs and responsibilities of home ownership. HFAs perform background checks on the individuals seeking mortgage loans and classes are often offered to these individuals. The counseling and outreach services may have helped HFAs and their mortgagors avoid the rash of delinquencies experienced in the conventional sub-prime market in 2006 and 2007.

Section 8 Contract Administration

As state HFAs continue to face reduction in Section 8 administrative fees due to the expiration of certain Housing Assistance Payment (HAP) contracts, many HFAs have continued to look for opportunities to maximize multifamily staff experience and increase other multifamily administrative income. Potential opportunities have included both the Participating Administrative Entity (PAE) designation, with state HFAs taking the lead in restructuring Section 8 loans with their respective states, and the Contract Administrator (CA) designation. Many of the state HFAs who have been designated CAs had previously been designated PAEs, administered Section 8 in the past, or have actively managed their own portfolio of multifamily properties. However, in some cases, the HFA must increase staffing to fulfill the increased Contract Administration responsibilities.

Conduit Financing

HFAs may generate additional revenues by serving as a conduit issuer on bond issuances. When HFAs serve as a conduit, they lend their name and bonding authority to a particular financing, but do not assume nor incur any additional risks or liabilities for the timely payment of debt service on the bonds. Often, conduit financings are credit enhanced thereby providing third party support in the event of a mortgage default. The HFA benefits from this structure because they are able to charge administrative fees to the parties of the financing. Although there are no costs or obligations incurred by the HFA, the association of its name to any problems that occur with the bonds can potentially have a negative impact and may tarnish the reputation of the HFA. Clear disclosure about the HFAs' responsibilities and effective screening of the participants including credit enhancers and investors can offset this risk.

Low Income Housing Tax Credits

In order to address a shortage in affordable multifamily housing, Congress created the Low Income Housing Tax Credit in 1986. The Housing Credit provides a 10-year credit that can be used against the tax liability for owners or developers of low income rental housing. Many state HFAs serve as the allocating agency and monitoring agent for the program. Generally, they put each development through a rigorous financial evaluation to ensure that it receives only enough Housing Credits to make it viable as long-term, low income housing. The HFA evaluates every source and use of funds, any government subsidy, reasonableness of costs, and developer and builder profit. Only investors in properties that pass these reviews, complete their developments, and rent them to low income renters can claim Housing Credits. The HFAs also monitor all Housing Credit apartments' physical condition and compliance with the federally required tenant income and rent restrictions. The HFAs must report noncompliance to the Internal Revenue Service, which can recapture Housing Credits from noncompliant owners.

Related Research

Special Comments:

State Housing Finance Agencies in Context, March 2001 (64821)

State Housing Finance Agencies Change With The Times: They No Longer Just Issue Bonds, November 2001 (72228)

Housing 101: Single Family Program Open Indentures, February 2007 (102068)

Single Family Mortgage Revenue Bonds -Very Different Credit Characteristics Than Other Municipal Bonds, November 2000 (61441)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 103873

Author	**Senior Production Associate**
Rachael McDonald	*Wing Chan*

© Copyright 2007, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

State Housing Finance Agency Financial Strength and Management Actions Mitigate Impact of Weaker Counterparties

HFA Housing Program Ratings Remain Unchanged Despite Bank Counterparty Downgrades

Table of Contents:

SUMMARY 1
COUNTERPARTY EXPOSURE IS AN IMPORTANT FACTOR WHEN ASSESSING HFA PROGRAMS 2
HFAS HAD CONSIDERABLE EXPOSURE TO DOWNGRADED COUNTERPARTIES 3
HFAS TOOK ACTION TO REDUCE EXPOSURE TO WEAKENED COUNTERPARTIES 4
MOODY'S RELATED RESEARCH 6
APPENDICES 7

Analyst Contacts:

NEW YORK +1.212.553.1653

Brendan Weber +1.212.553.4688
Associate Analyst
brendan.weber@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

John C. Nelson +1.212.553.4096
Managing Director – Public Finance
john.nelson@moodys.com

Summary

The downgrade of many bank ratings earlier this year did not result in significant credit deterioration of State Housing Finance Agency (HFA) programs or issuers due primarily to a combination of agency financial strength and management actions[1]. The HFA sector maintained its credit strength despite reliance on the performance of counterparty banks to provide support or revenue through a variety of contractual commitments including:

» $16.2 billion in interest rate swaps (swaps)

» $15.6 billion in standby bond purchase agreements (SBPAs)

» $1.8 billion in guaranteed investment contracts (GICs)

Counterparty exposure is a material credit risk facing HFAs, but it can be mitigated by other factors, particularly the strength of the issuer or program's balance sheet and projected cash flows. Management actions, including canceling or converting contracts, can also help to mitigate counterparty risks.

In February 2012, a substantial number of banks were placed under review for downgrade[2,3]. Following these actions, we reviewed each state HFA program to assess the potential impact of a counterparty downgrade on program credit quality. Although many of the banks were ultimately downgraded, the overall credit profile of HFA programs remained at levels that sustained their current ratings.

1 This article addresses the long term underlying rating of State HFA bonds, not the short term ratings or supported ratings of State HFA bonds which continued to move with the bank ratings

2 Moody's Reviews Ratings for Banks and Securities Firms with Global Capital Markets Operations, February 2012

3 Moody's Reviews Ratings for European Banks, February 2012

Counterparty Exposure Is an Important Factor when Assessing HFA Programs

The level and concentration of counterparty exposure is an important factor in our assessment of HFA programs. Credit deterioration of the HFAs' counterparties increases the risk that these counterparties will not perform as expected and will stress the financial condition of bond programs. In order to assess the impact of this credit deterioration on HFAs, we compare the rating levels of the counterparties to the existing rating on the bonds and the level of exposure that each HFA has to the impacted counterparties. The counterparties that most often impact HFAs include:

» Swap counterparties

» SBPA providers

» GIC providers

Swaps are utilized to hedge the risk of rising interest rates on variable-rate bonds. Many HFAs issued variable-rate bonds to finance fixed-rate mortgage loans. In the event that interest rates on the bonds rise, the variable payment due to bondholders may become greater than the fixed amount received on the loans. "Fixed-for-floating" swaps hedge this risk by allowing the HFAs to effectively pay a fixed-rate to the swap counterparty and receive a variable-rate payment that they will use to pay debt service on the bonds[4]. If a swap provider is unable to pay, the variable rate debt effectively becomes unhedged and the HFA may need to cover unexpected debt service costs when interest rates rise.

Our analysis of programs with swaps incorporates the rating of the swap provider as well as the terms of the swap. To assess the impact of the downgraded counterparties, we reviewed cash flow scenarios where the payments from these counterparties were discounted in a high interest rate scenario to reflect the risk that they may not be able to perform for the life of the bonds[5,6].

SBPA providers commit to purchase variable-rate demand bonds (VRDBs) that have been tendered by investors and not successfully remarketed [7]. As bondholders rely on the SBPA provider's financial strength to purchase their bonds, a downgrade of an SBPA provider can result in reduced demand for the bonds and higher costs to the program from higher reset rates and/or failed remarketings. In the event of a failed remarketing, when SBPA providers purchase the bonds they become "bank bonds" which, pursuant to the terms of the SBPA, amortize over a shorter period of time and carry much higher interest rates.

In our assessment of the effect of weaker SBPA counterparties on HFA programs, we review several cash flow stress scenarios which include failed remarketings, bank bond scenarios and/or higher interest resets to determine how the program can cover the higher debt service costs[6,8].

GICs are used by HFAs in housing transactions to provide a pre-determined rate of return on program investments such as debt service reserve, acquisition, or revenue/float funds. As the interest earnings and repayment of principal of a GIC contribute to the program's ability to meet its debt service obligation, the GIC provider's ability to pay on a timely basis, as reflected in their ratings, is an important consideration in the rating of an HFA program.

---

[4] It should be noted that the payment received from the swap provider is based on an index such as LIBOR or SIFMA, not the actual rate on the bonds, and may not be sufficient to cover all of the payment due on the bonds. In that event, the issuer is still responsible to cover any shortfall.

[5] Updated Approach: Incorporating GIC and Swap Provider Ratings in HFA Programs, November 2012

[6] Additional Cash Flow Tests for State Housing Finance Agency Programs, February 2009

[7] State Housing Finance Agencies Issue Increasing Amounts of Variable Rate Debt, July 2000

[8] Interest Rate Assumptions for State HFA Cash Flows, August 2012

Our analysis of programs with lower rated GICs includes a review of cash flows that incorporate partial non-performance assumptions for those investments[5].

HFAs Had Considerable Exposure to Downgraded Counterparties

While HFAs generally chose to only work with highly rated counterparties at initial contract, many of these counterparties have been subsequently downgraded. As of late 2011, over 93% of State HFA housing program counterparties were either rated P-1 or had P-1 equivalent ratings[9] (Table 1). However, following the bank downgrades in 2012, the proportion of swap, SBPA, and GIC providers rated P-2, P-2 equivalent, or below would have nearly tripled to 18.2% from 6.1% if no actions were taken by the HFAs (Exhibit 1).

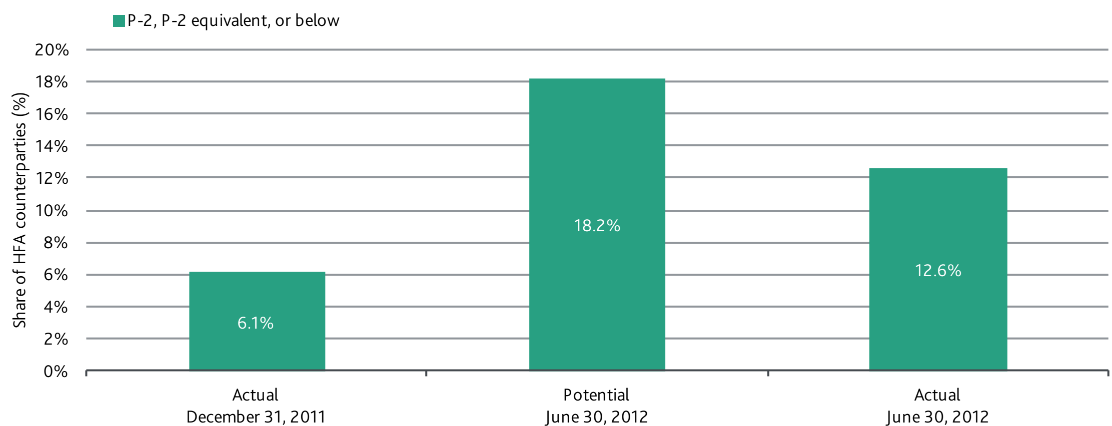
TABLE 1

For our analysis of the data, we have separated ratings into 2 categories by the following criteria.

Categorization	LT Rating	ST Rating	Other Inclusive Criteria
P-1, or P-1 equivalent	Aa or above	P-1	GIC Repurchase Agreement
	A1		
	A2		
P-2, P-2 equivalent, or below	A3	P-2	Not Rated
	Baa or Below	P-3	

EXHIBIT 1

The concentration of counterparties rated P-2, P-2 equivalent, or below doubled between December 31, 2011 and June 30, 2012 however, it would have been greater if no actions were taken by HFAs.



Note: The column labeled "Potential June 30 2012" uses HFA counterparty data as of December 31, 2011 and assumes that no actions were taken to change the composition of counterparty providers.
Source: Moody's surveys

[9] The data discussed in this article were obtained from Moody's surveys that were received from rated US Housing Finance Agencies only.

HFA exposure to counterparties rated P-2, P-2 equivalent, or below has grown primarily as a result of downgrades to certain key counterparty providers.

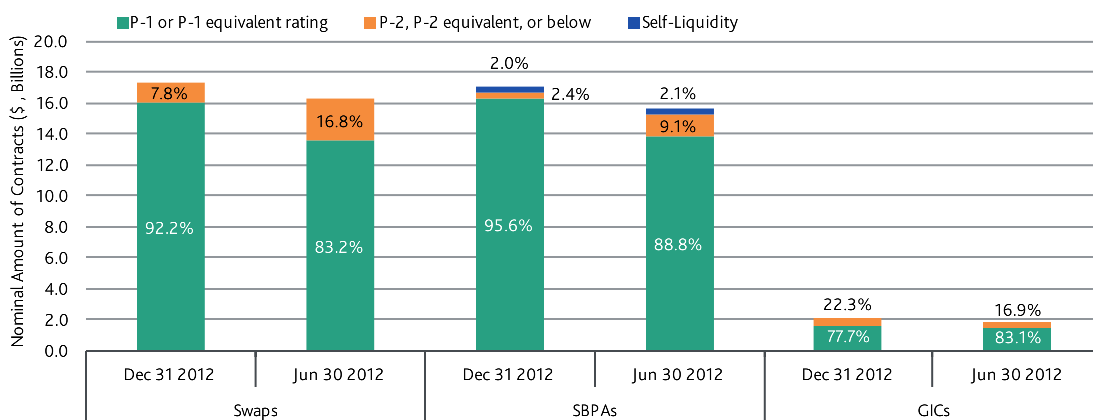
» The increase in the concentration of swap counterparties rated P-2, P-2 equivalent, or below increased from 7.8% to 16.8% between December 2011 and June 2012, respectively (Exhibit 2), primarily due to the downgrade of the rating of Bank of America N.A., which provided 8.0% of the swaps to HFAs in December 2011, to A3/P-2 from A2/P-1 (Appendix A).

» The concentration of SBPA counterparties rated P-2, P-2 equivalent, or below increased from 2.4% to 9.1% between December 2011 and June 2012, respectively, primarily due to the downgrade of the short-term ratings of Bank of America N.A. and KBC, which provided 12.2% of the SBPAs in December 2011, to P-2 from P-1 (Appendix B).

» The 22.8% concentration of GIC providers rated P-2, P-2 equivalent, or below in December 2011 was quite significant. A total of 14.7% of GICs were provided by Bayerische Landesbank, which was downgraded on November 16, 2011 to Baa1/P-2 from A1/P-1 (Appendix C).

EXHIBIT 2:

HFA exposure to counterparties rated P-2, P-2 equivalent or below has grown



Source: Moody's surveys

HFAs Took Action to Reduce Exposure to Weakened Counterparties

HFA counterparty exposure and risk would have been greater if management did not take steps to mitigate the impact of weaker counterparties by either replacing them, terminating or converting contracts, or obtaining additional guarantees. Some of the actions HFAs took included:

» Strengthening existing swap contracts by adding a guarantee from Merrill Lynch Derivatives Products (MLDP), rated Aa3, to swaps with Merrill Lynch Capital Services, Inc (MLCS), rated Baa2/P-2 (Appendix A).

» Terminating SBPAs with downgraded providers and replacing them with P-1 rated providers. HFAs terminated many of the SBPAs from Bank of America N.A., KBC, and Dexia Credit Local, which provided 14.6% of the overall share of SBPAs across HFAs in December 2011 and only 7.0% of the share of SBPAs in June 2012 (Appendix B).

» Converting GICs with Bayerische Landesbank into collateralized repurchase agreements (Appendix C). In the case of repurchase agreements, the collateral may be liquidated in the event of a nonpayment by the counterparty. The agreements, their terms, the levels of collateral as well as supporting legal opinions, were incorporated into our review of the investment to determine how much, if any, value to assign to the investment.

In cases where no actions were taken by HFAs, we reviewed cash flows incorporating appropriate partial non-performance assumptions, as mentioned earlier[10].

[10] Updated Approach: Incorporating GIC and Swap Provider Ratings in HFA Programs, November 2012

Moody's Related Research

Announcements:

» Moody's Reviews Ratings for Banks and Securities Firms with Global Capital Markets Operations, February 2012

» Moody's Reviews Ratings for European Banks,

Rating Implementation Guidance:

» Updated Approach: Incorporating GIC and Swap Provider Ratings in HFA Programs, November 2012 (144915)

» Additional Cash Flow Tests for State Housing Finance Agency Programs, February 2009 (114598)

» Interest Rate Assumptions for State HFA Cash Flows, August 2012 (143768)

» Updated Approach: Incorporating GIC and Swap Provider Ratings in HFA Programs, November 2012 (144915)

Special Comment:

» State Housing Finance Agencies Issue Increasing Amounts of Variable Rate Debt, July 2000 (58498)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Appendices

Appendix A

Key interest rate swap counterparties to US HFA single family and multifamily programs, including top 5 providers at respective time.

($ 000's)	December 31, 2011				June 30, 2012			
Counterparty	Swap Amount	% share	LT Rating	ST Rating	Swap Amount	% share	LT Rating	ST Rating
Bank of America, N.A.	1,384,285	8.0%	A2	P-1	1,423,578	8.8%	A3	P-2
Bank of New York Mellon	1,452,680	8.4%	Aaa	P-1	1,514,815	9.3%	Aa1	P-1
Barclays Bank PLC	2,509,292	14.5%	Aa3	P-1	2,468,959	15.2%	A2	P-1
Goldman Sachs Mitsui Marine Derivative Products, L.P.	2,014,241	11.6%	Aa1	-	1,784,527	11.0%	Aa2	-
JPMorgan Chase Bank N.A.	2,797,957	16.1%	Aa1	P-1	2,506,296	15.4%	Aa3	P-1
Merrill Lynch Derivative Products AG	2,171,265	12.5%	Aa3	-	2,155,603	13.3%	Aa3	-
% share provided by key counterparties		***71.0%***				***73.0%***		
% share provided by top 5 counterparties		***63.0%***				***64.2%***		

Source: Moody's surveys

Appendix B

Key SBPA providers to US HFA single family and multifamily programs, including top 5 providers at respective time.

($ 000's)	December 31, 2011				June 30, 2012			
SBPA counterparty	SBPA Amount	% share	LT Rating	ST Rating	SBPA Amount	% share	LT Rating	ST Rating
Bank of America, N.A.	957,868	5.6%	A2	P-1	672,563	4.3%	A3	P-2
Bank of Tokyo-Mitsubishi UFJ, Ltd.	349,225	2.0%	Aa3	P-1	774,220	5.0%	Aa3	P-1
Dexia Credit Local	417,160	2.4%	Baa1	P-2	-	0.0%	Baa2	P-2
Federal Home Loan Banks	2,485,500	14.6%	Aaa	P-1	2,647,260	17.0%	Aaa	P-1
Government Sponsored Enterprises / Temporary Credit Liquidity Program	5,242,827	30.8%	Aaa	P-1	4,738,014	30.4%	Aaa	P-1
JP Morgan Chase Bank, N.A.	1,057,706	6.2%	Aa1	P-1	1,092,995	7.0%	Aa3	P-1
KBC Bank N.V.	1,119,985	6.6%	A1	P-1	414,915	2.7%	A3	P-2
State Street Bank and Trust Company	905,995	5.3%	Aa2	P-1	891,840	5.7%	Aa2	P-1
% share provided by key counterparties		***73.6%***				***72.1%***		
% share provided by top 5 counterparties		***63.8%***				***65.1%***		

Source: Moody's surveys

Appendix C

Key GIC providers to US HFA single family and multifamily programs, including top 5 providers at respective time.

($ 000's)	December 31, 2011				June 30, 2012			
Counterparty	GIC Amount	% share	LT Rating	ST Rating	GIC Amount	% share	LT Rating	ST Rating
Bayerische Landesbank	304,891	14.7%	Baa1	P-2	139,621	7.7%	Baa1	P-2
Bayerische Landesbank - Repurchase Agreement	-	0.0%	Baa1	P-2	107,232	5.9%	Baa1	P-2
Natixis Funding Corp	522,813	25.2%	Aa3	P-1	442,457	24.4%	A2	P-1
Societe Generale	210,819	10.2%	A1	P-1	203,046	11.2%	A2	P-1
Transamerica Life Insurance Company	254,114	12.2%	A1	P-1	247,711	13.7%	A1	P-1
Trinity Plus Funding Company	161,622	7.8%	Aa2	P-1	116,217	6.4%	A1	P-1
% share provided by key counterparties		***70.1%***				***69.3%***		
% share provided by top 5 counterparties		***70.1%***				***63.4%***		

Source: Moody's surveys

Report Number: 148221

Authors
Brendan Weber
Florence Zeman

Production Associate
Kerstin Thoma

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Availability of Floating-Rate Debt Structures a Benefit for State Housing Finance Agencies

Structures eliminate remarketing risk but retain other risks inherent in VRDB

Table of Contents:

SUMMARY OPINION 1
HFAS USING ALTERNATIVE FLOATING-RATE STRUCTURES AS VRDB LIQUIDITY EXPIRES 2
LACK OF OPTIONAL TENDERS IN FLOATING-RATE BONDS ELIMINATES REMARKETING RISK, ALTHOUGH MANY VRDB RISKS REMAIN 2
RISK OF BOND ACCELERATION CAN IMPACT LONG-TERM CREDIT OF HFA PROGRAMS 3
SAME METHODOLOGIES USED TO EVALUATE ALL VARIABLE RATE STRUCTURES 4
MOODY'S RELATED RESEARCH 5

Analyst Contacts:

NEW YORK +1.212.553.1653

Rachael McDonald +1.212.553.4456
Vice President - Senior Analyst
rachael.mcdonald@moodys.com

David Parsons +1.212.553.4537
Assistant Vice President - Analyst
david.parsons@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Naomi Richman +1.212.553.4133
Managing Director – Public Finance
naomi.richman@moodys.com

Summary Opinion

In the past several years, State Housing Finance Agencies (HFAs) have sought new bond structures to help facilitate the replacement of expiring liquidity contracts for variable rate demand bonds (VRDBs). These structures include floating-rate notes, direct purchase notes, direct loans, and index floaters. These new instruments carry many of the same risks as VRDBs, such as interest rate risk, renewal risk and the risk of bond acceleration due to an event of default. However, they do not allow for optional tenders which eliminates remarketing risk, one of the key risks inherent with VRDBs. While we view all variable rate debt, including these structures, as riskier than fixed rate bonds, we believe that the use of these alternative structures as a potential credit positive for HFAs if they use them to replace traditional VRDB structures.

Although remarketing risk is eliminated with these instruments, the financial impact of a bond acceleration for an individual floating-rate bond could be more or less severe than the VRDB that it is replacing. In order to assess the level of risk to the program's long-term credit, we use the same fundamental methodology for all variable rate structures.[1] Our analysis incorporates a determination of the quantitative impact of certain events of default – as determined by cash flows – and the likelihood that they would occur.

[1] This article discusses the potential impact of the issuance of floating-rate bonds on the long-term rating of the bond program. Our analysis of short-term ratings for VRDBs is discussed in the moody's Rating Methodologies, "Variable Rate Instruments Supported by Third-Party Liquidity Providers", November 2006, Report Number: 100230 and "Methodology Update: Variable Rate Instruments Supported by Third-Party Liquidity Providers Update to Immediate Termination or Suspension Events Section", January 2010, Report Number: 122436

HFAs Using Alternative Floating-Rate Structures as VRDB Liquidity Expires

In the next 18 months, HFAs will work their way through a large volume of bank liquidity support expirations associated with the heavy issuance of VRDBs prior to the economic downturn in 2008. Currently, Moody's-rated HFA programs have $17 billion in VRDBs (20.4% of bonds outstanding) of which 29% have liquidity facilities that expire in 2012 and 2013. As the number of banks that provide liquidity facilities has declined, replacement of expiring liquidity facilities has become increasingly difficult and expensive. Therefore, HFAs have looked to floating-rate alternatives to VRDBs.[2]

Floating-rate bonds, which include products commonly referred to as floating-rate notes, direct purchase notes, direct loans, and index floaters, share many characteristics with VRDBs but also have their own unique features. Floating-rate bonds pay variable interest rates based on a market index, such as SIFMA or LIBOR plus a determined spread. Interest rates on VRDBs are not indexed but set by the remarketing agent at levels expected to clear the market. Unlike VRDBs, floating-rate bonds are not subject to regular remarketing or optional tenders by bondholders. Furthermore, most floating-rate bonds have a term of 3 to 5 years.

While some floating-rate bonds are self-amortizing, many may have a significant amount of principal outstanding when the bonds mature. The final principal payments may come in the form of a stated maturity or a mandatory tender. HFAs expect to refinance these payment by with a new capital markets transaction. In general if a floating-rate bond issued by an HFA does not fully amortize and the issuer cannot refinance the bullet payment, the structure allows for the remaining bonds to be redeemed over a set period of time comparable to the term out periods of VRDBs,

Variable Rate Debt Adds Risks to HFA Programs

In the run-up to the credit crisis in 2008, many HFAs issued VRDBs instead of fixed-rate bonds in order to reduce their costs of funds and originate competitive, full-spread mortgages. As a result, significant risks were introduced into the programs that had not existed before, such as liquidity risk and interest rate risk. Liquidity risk arises either when a variable rate borrowing has a demand feature that allows borrowers to tender their bonds back to the issuers at various times or if the bonds have a bullet maturity. Interest rate risk occurs because the mortgage loans which pay off the bonds are fixed-rate while the rate on the bonds can fluctuate. HFAs attempted to offset these risks in a variety of ways, including obtaining a third party liquidity facility and/or interest rate swaps. However, each of these offsets introduced further costs and potential risks to the programs, such as counterparty risk or the risk of nonrenewal of a liquidity facility. These risks can lead to increased interest rates and accelerated principal payments from bank bonds or mandatory redemptions.

Lack of Optional Tenders in Floating-rate Bonds Eliminates Remarketing Risk, Although Many VRDB Risks Remain

Unlike VRDBs, floating-rate bonds are not subject to optional tenders and regular remarketings, which eliminate the need for HFAs to contract with third-party liquidity banks to buy the bonds in the case of failed remarketings. As a result, the HFA is not exposed to credit deterioration of the liquidity bank or market dislocation, both of which can lead to higher debt service costs due to

[2] Moody's Special Comment "Direct Bank Loans Carry Credit Risks Similar to Variable Rate Demand Bonds for Public Finance Issuers", September 15, 2011, Report Number: 135849

increased interest reset rates or, in the event of a failed remarketing, the payment of bank bond interest and principal term outs.

However, floating-rate bonds do share many features with VRDBs, subjecting the HFAs to comparable risks. These risks include variable interest rate risk, renewal risk upon expiration of the liquidity facility or mandatory redemption or bullet maturity of the floating-rate bonds, and the risk of bond acceleration due to certain events of default. Figure 1 below compares the risks associated with VRDBs and Floating-Rate Bonds.

FIGURE 1

Risks of Floating-Rate Bonds and VRDBs Can Have Financial Impact

Risk	VRDB	Floating-Rate Bonds	Potential Financial Impact
Remarketing Risk	Yes	No	Failed remarketings can lead to bank bonds with accelerated repayment periods and higher interest rates.
Renewal Risk	Yes	Yes	Failure to raise funds to pay a bullet maturity or a mandatory redemption or failure to replace a liquidity agreement can lead to bond acceleration and higher interest rates. Renegotiating a liquidity agreement can result in higher fees.
Interest Rate Risk	Yes	Yes	Increased interest rates lead to increased bond debt service. VRDB interest is set by remarketing agent and can be affected by counterparty risk as well as issuer-specific factors, whereas floating-rate bonds are generally pegged to an index.
Counterparty Risk Associated With the Liquidity Bank	Yes	No	If a liquidity bank is downgraded, there is a greater likelihood of a failed remarketing or higher interest cost on the bonds.
Event of Default Risk	Yes	Yes	Certain events of default can lead to bond acceleration and higher interest rates.

Risk of Bond Acceleration Can Impact Long-Term Credit of HFA Programs

Bond acceleration can have a major financial impact on an HFA program and therefore is a credit factor in its long-term rating. As mentioned in Figure 1 above, for floating-rate bonds an event of default, including the failure to pay a mandatory redemption or bullet maturity, can trigger bond acceleration. For a specific deal, the trust indenture terms outline the types of events that can cause bond accelerations and increased interest rates. While we believe that the occurrence of some events of default, such as bankruptcy and insolvency, are remote for most rated HFA debt, it is more probable that other events that we have seen in various floating rate or VRDO documents could occur. These include:

» Non-payment: A failure by the issuer to make any timely required payment, including fees.

» Ratings downgrade: The downgrade or failure by the issuer to maintain a certain rating level on the bonds. The likelihood of this occurring is dependent on the distance of the rating trigger to the current rating on the bonds.

- Material adverse change (MAC): The definition of what constitutes a MAC is typically left up to the discretion of the bank. The vague nature of this clause increases the risk that this event of default could occur.
- Events of default under a related document that is not cured: Any default under a related document, such as a remarketing agreement or fee agreement. Defaults could include covenant defaults, such as financial requirement that the program maintain a certain asset-to-debt ratio level.

Same Methodologies Used to Evaluate All Variable Rate Structures

We use the same fundamental methodology to analyze the risks that all variable rate structures (VRDBs or floating-rate bonds) bring to the HFAs' long term credit. This analysis includes a determination of the financial impact of bond accelerations and the likelihood that they would occur. As part of this assessment, we review cash flow projections that simulate various events of default and bond accelerations based on the terms of the agreements. The impact on the program will depend on factors such as:

- Amount of bonds accelerated
- The timing and duration of the term-out period
- The level of increase in interest rates

The cash flows that we review may be in addition to the standard variable rate and bank bond cash flow runs we see for VRDBs.[3]

In general, for investment grade-rated programs, we expect each cash flow scenario to demonstrate that available revenue will be sufficient to pay debt service and expenses throughout the life of the bonds. In addition, the ability of the cash flows to maintain certain asset-to-debt ratios is one of the key factors in determining the rating on the program.

Another factor that we consider in addition to cash flows is the length of the cure period, which determines how much time an HFA has to remediate an event of default before bonds are accelerated. As many of the cures, such as replacing the liquidity provider, refunding the bonds, or sourcing funds for a missed principal or interest payment, may take time to implement, a longer cure period limits the likelihood of an acceleration.

Finally, an evaluation of the HFA management team's ability to react effectively if an event of default occurs is an important factor in our assessment. In order to determine management's effectiveness, we evaluate the processes that they have put in place to prepare for mandatory redemptions or liquidity draws, their use of liquidity to address problems in the past, and their ability to access the market when needed.

[3] Moody's Implementation Guidance. Approach to State HFA Cash Flow Projections, August 2006, Report Number: 97505
Methodology Update: Additional Cash Flow Tests for State Housing Finance Agency Programs, February 2009, Report Number: 114598

Sources Referenced in this Report

» Moody's Investors Service Databases

Moody's Related Research

Rating Methodology:

» Variable Rate Instruments Supported by Third-Party Liquidity Providers, November 2006 (100230)

Rating Implementation Guidances:

» Methodology Update: Variable Rate Instruments Supported by Third-Party Liquidity Providers Update to Immediate Termination or Suspension Events Section, January 2010 (122436)

» Approach to State HFA Cash Flow Projections, August 2006 (97505)

» Methodology Update: Additional Cash Flow Tests for State Housing Finance Agency Programs, February 2009 (114598)

Special Comment:

» Direct Bank Loans Carry Credit Risks Similar to Variable Rate Demand Bonds for Public Finance Issuers, September 2011 (135849)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 143161

Author
Rachael McDonald

Production Specialist
Wendy Kroeker

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SECTOR COMMENT

Rising Mortgage Fees Are Credit Positive for Housing Finance Agencies

From Weekly Credit Outlook

Analyst Contacts:

NEW YORK +1.212.553.1653

Ping Hsieh +1.212.553.4461
Vice President – Senior Analyst
ping.hsieh@moodys.com

Recent news reports have noted rising single-family mortgage fees such as origination fees and closing costs, a result of reduced competition among banks and tougher lending standards. Nationwide, fees on a $200,000 purchase mortgage totaled $4,070 in mid-2011,[1] an 8.8% increase from the 2010 average of $3,741. We expect these upfront mortgage fees to continue to rise in 2012. This trend is credit positive for state Housing Finance Agencies (HFAs) because higher conventional mortgage fees buoy demand for down-payment assistance offered with HFA mortgages, and thereby boost HFAs' profitability.

HFAs finance single-family mortgage loans to low- and moderate-income first-time homebuyers, and offer down-payment assistance with their mortgage loans. Over the past four years, HFAs have struggled to originate loans because conventional mortgage rates declined to historical lows: the benchmark Freddie Mac 30-year, fixed-rate mortgage rate fell to 3.83% on 10 May, a record low. Eligible borrowers can easily obtain a lower interest rate from conventional mortgage lenders away from HFAs.

However, rising fees that accompany conventional mortgages are providing an incentive for low- to moderate-income homebuyers to harness HFA loans instead of conventional mortgages because borrowers can turn to HFAs for down-payment assistance.

Upfront mortgage fees include costs such as lender origination fees for underwriting and processing in addition to settlement fees charged by third parties, including title, appraisal, survey and courier charges. Furthermore, conventional lenders have increased their origination fees to cover costs related to meeting more vigilant federal underwriting regulations implemented since the financial crisis. Other settlement costs also increased because conventional lenders now are required by law to use third-party companies for property valuations, rather than their staff appraisers, to avoid internal pressure on appraisal inflation.

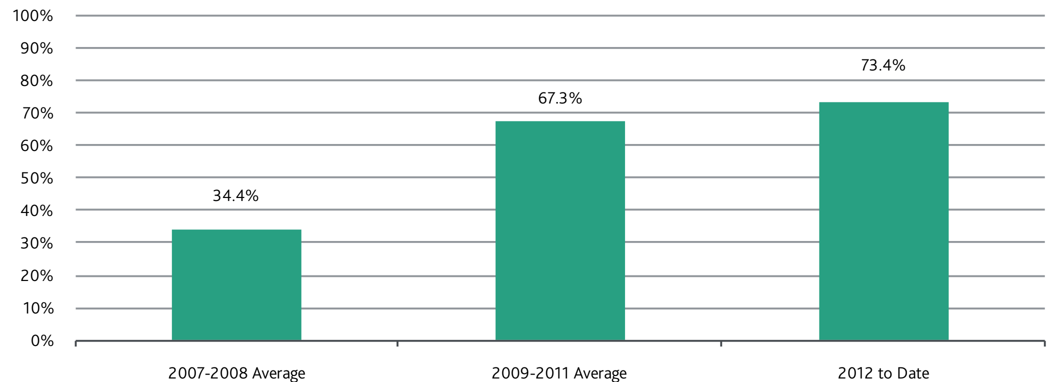
Several HFAs have reported higher demand for down-payment assistance. For example, 75% of Iowa Finance Authority's 2012 origination has been mortgage loans with down-payment assistance, compared with 50% a year ago. Similarly, 73% of Minnesota Housing Finance Agency's (MHFA) 2012 origination has been down-payment assistance loans, which used to average 34% before the financial crisis (see exhibit).

What is Moody's Weekly Credit Outlook?

Moody's Weekly Credit Outlook provides our research clients with timely opinions on breaking credit market developments and trends. Published every Monday morning, the newsletter will help you start your week informed of Moody's latest opinions from across the organization.

[1] Source: Bankrate.com's annual closing survey.

Minnesota Housing Finance Agency Down-Payment Assistance Loans as a Percentage of Total Origination



Source: Minnesota Housing Finance Agency

Increased originations as a result of demand for down-payment assistance will bolster HFAs' revenues because they'll be able to earn more origination fees and ongoing loan revenues on these higher interest rate down-payment assistance loans. HFAs that service their own portfolios will also receive additional ongoing servicing fees. Furthermore, many HFAs currently securitize their mortgages into mortgage-backed securities (MBS). Given the higher interest rates on the down-payment assistance loans, HFAs can securitize them into higher coupon MBS and sell these MBS at a premium to recoup the cost of down-payment assistance at a profit.

Report Number: 142016

Author
Ping Hsieh

Production Specialist
Wing Chan

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

Swaps and Variable Rate Debt

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Bank Liquidity Support and Variable Rate Financings Can Impact Underlying Long-Term Credit Ratings

SBPAs Supporting Insured Variable Rate Bonds May Pose Greater Risks

This special comment was originally published in 2009. It is republished today with minor revisions reflecting our current view on the risks associated with financing agreements relating to puttable variable rate debt.

Table of Contents:

SUMMARY 1
TRANSACTIONS CARRYING "HIDDEN" RISKS 2
Hidden Risk #1: Rating Triggers 2
Hidden Risk #2: Renewal/Rollover Risk 2
Hidden Risk #3: Collateral Pledges or Posting Requirements 3
Hidden Risk #4: Financial Covenants 3
IMPLICATIONS OF RISKS IN CURRENT ENVIRONMENT 3
MOODY'S RELATED RESEARCH 4

Analyst Contacts:

NEW YORK +1.212.553.1653

Timothy Blake +1.212.553.0849
Managing Director - Public Finance
timothy.blake@moodys.com

Robert A. Kurtter +1.212.553.4453
Managing Director - Public Finance
robert.kurtter@moodys.com

Naomi Richman +1.212.553.0014
Managing Director - Public Finance
naomi.richman@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

>>contacts continued on the last page

Summary

Some municipal issuers are exposed to the potential for credit stress stemming from provisions of bank support agreements on their bonds. These agreements, which include letters-of-credit, swaps, standby bond purchase agreements (SBPAs), lines of credit and loan agreements, can contain provisions that weaken the issuer's long-term credit quality. Moody's is primarily focused on provisions of these agreements that could potentially cause unexpected liquidity strains for an issuer due to the ultimate results of tender provisions of bond structures or termination and renewal risks of liquidity agreements. These provisions in variable rate borrowings can potentially lead to short-term demands on liquidity, causing more rapid credit deterioration for holders of fixed-rated bonds than would otherwise be expected.

This report outlines the key types of risks associated with bank support agreements and how these risks are incorporated into Moody's analysis of an issuer's short and long-term credit quality. SBPA's associated with insured variable rate demand obligations (VRDO's) in particular may pose increased near-term risk. Downward revisions of financial guarantor ratings over the last several years have increased the possibility that a bank providing liquidity to an insured VRDO transaction could terminate its agreement based on deterioration in the credit quality of the guarantor.

Key Potential Risks of Bank Support and Other Finance Agreements:

1. Rating Triggers
2. Renewal/Rollover Risk
3. Collateral Pledges or Posting Requirements
4. Financial Covenants

Transactions Carrying "Hidden" Risks

Moody's believes that a diverse debt portfolio, including variable rate debt of different structures, can be a prudent and appropriate choice for many tax-exempt issuers. The widely known and accepted risks of variable rate debt and its associated finance agreements are frequently discussed, including the ability of an issuer to absorb potentially higher or more volatile debt service costs in their budgets, as well as basis risk and counter-party risk of swap agreements. However, detailed provisions in swap agreements and bank support agreements, such as letters of credit (LOC's) and standby bond purchase agreements (SBPA's), can create additional risks for the underlying long-term credit quality of an issuer in ways that are less widely discussed in the market and can often be overlooked by issuers and their financial advisors.

We believe the risks described below are most prevalent for standby bond purchase agreements, letters of credit, lines of credit, swaps and direct bank notes, although they can potentially exist in nearly any financial arrangement.

Hidden Risk #1: Rating Triggers

Some bank documents specify events of default that are triggered by a rating downgrade below a certain threshold. The most typical downgrade trigger provides for immediate and automatic termination of the liquidity provider's obligation to purchase bonds upon downgrade blow Baa3 or its equivalent by all rating agencies rating the bonds. These triggers are based on the underlying long-term rating of the issuer, obligor or, in insured transactions, the financial guarantor. In insured transactions liquidity banks often have the right to terminate their commitment upon downgrade below a significantly higher rating threshold than Baa3, in some cases as high as Aa3. In these cases, however, termination is preceded by notice to investors and mandatory tender of all bonds. Following termination of its commitment, the bank usually has the right to accelerate the issuer's obligation to repay bonds held by the bank. The underlying obligor's credit quality can be severely affected if the obligor depletes its liquid resources to repay the bank. In many cases rated borrowers have mitigated exposure to financial guarantor downgrades by amending rating triggers to reference both the guarantor and the underlying obligor.

Terminations of SBPAs resulting from downgrades of obligors or financial guarantors represent risk to underlying borrower credits. Terms of individual agreements vary widely and should be evaluated on a case by case basis.

Hidden Risk #2: Renewal/Rollover Risk

Many financing agreements expire far earlier than the amortization of the underlying debt, leaving issuers exposed to the risk that the bank will not choose to renew its commitment and that the issuer would not be able to find a replacement within the necessary time horizon. For example, many letters and lines of credit, standby bond purchase agreements and loans extend for three to five years, while principal amortizes over a much longer period. These agreements often do not get renewed until within 60 to 90 days of expiration. Because a bank's decision to not renew its commitment would be most likely to occur if the issuer was under fundamental financial stress, the affected issuers are also likely to have difficulty finding a replacement provider or converting to fixed-rate debt.

This risk is most pronounced for issuers or obligors rated A3 or lower, as higher rated issuers typically have market access even during more challenging periods.

Hidden Risk #3: Collateral Pledges or Posting Requirements

Terms of financing agreements that contain collateral pledges or posting requirements that are not included in bond documents can place parity fixed-rate bondholders in an effectively subordinate position to other lenders. We have seen cases in which institutions have pledged specific assets to counterparties that is not pledged to fixed-rate bondholders. The added risk is greatest when the collateral pledged is liquid financial assets, although for weaker obligors even a pledge of real estate assets to other parties could weaken the credit quality of long term fixed-rate bonds.

Swap agreements that require collateral posting under certain conditions are fairly common, and could lead to liquidity pressures for some weaker organizations or issuers without substantial unrestricted liquidity. Because the availability of liquid assets is an important component of our rating approach, the diminution of bondholder's access to liquidity can have an impact on long term ratings.

Hidden Risk #4: Financial Covenants

Many bank loans, letters of credit and other financing agreements include financial covenants with which the issuer promises to comply. These can be based on a variety of ratios or tests tied to the income statement and balance sheet of the borrower. If the ratio falls below a certain level, the issuer is in violation of the covenant, and the bank can pursue remedies set forth in the agreement. In the case of puttable variable rate debt remedies can include mandatory tender of all bonds supported by LOCs or SBPAs and an immediate acceleration of the issuer's obligation to the bank.

Violations of covenants are commonly waived when the bank is comfortable that they are not driven by long-term financial stress. However, banks can often use these events to negotiate more favorable rates and security provisions, and ultimately will terminate agreements if there is serious concern about the credit position of the obligor.

Implications of Risks in Current Environment

Risks embedded in various types of finance agreements have long been a part of Moody's credit analysis, and we include discussion of terms of these agreements in the underlying credit reports when appropriate and significant to the rating outcome. We will continue to pay close attention to risks to long-term bondholders associated with various kinds of bank agreements, particularly risk that variable rate debt can be accelerated or swap counterparties can demand collateral draining liquidity to the detriment of other investors. Our credit reviews and our commentaries relating to these risks will remain focused on issuers that are least able to withstand short-term disruptions to the marketability of their variable rate bonds and/or to have ready access to alternative sources of financing in the event they are unable to extend bank facilities that expire or are otherwise terminated.

Moody's Related Research

Special Comments:

» Transactions Outside The Fixed-Rate Bond Market Can Weaken The Credit Quality Of Rated Issuers, November 2003 (79885)

» Addendum to Frequently Asked Questions on Rating of Transactions Wrapped by Financial Guarantors: Short-term Rating Transition for Insured Variable Rate Demand Obligations and Tender Option Bonds, January 2008 (107188)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

» contacts continued from page 1

Analyst Contacts:

NEW YORK	+1.212.553.1653
Jack Dorer	+1.212.553.1332

Managing Director - Public Finance
jack.dorer@moodys.com

Thomas Jacobs +1.212.553.0131
Vice President – Senior Credit Officer
thomas.jacobs@moodys.com

Report Number: 148734

Production Specialist
Wendy Kroeker

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S INVESTORS SERVICE

Housing Projects

Special Comment

April 2007

Contact	Phone
New York	
Kurt Krummenacker	212-553-7207
Florence Zeman	212-553-4836
Bill Fitzpatrick	212-553-4104
Ali Sistani	212-553-4356
Rachael McDonald	212-553-4456
Ferdinand Perrault	212-553-4793
Lisa Washburn	212-553-4133
Dallas	
Toby Cook	214-220-4352

Basic Training On Assessing Base Essentiality For Military Housing Privatization

A Subset of Market Risk

Introduction

Privatized military housing bond financings are unique from other real estate transactions as they are subject to a component of market risk that is driven by the changing requirements of the Department of Defense (DoD). This component includes the risks that changes in DoD requirements will result in the closure of a particular base or that DoD requirements will affect the size or propensity of a population to require privatized military housing through:

- Changes in assigned troop strength
- Changes in the primary mission of the base
- Changes in operations and deployment cycles

In order to incorporate this risk into the analysis of the bond financing, Moody's assesses base essentiality as part of the rating process. While it is impossible to precisely quantify the risk of closure or other changes that will be faced by an installation over the life of a long-term bond, analysis of the attributes of each base does allow for some broad categorization of risk. Moody's separates bases into five broad categories ranging from Level 1 which would include bases that provide secondary support to a DoD mission to Level 5 which would include bases viewed as critical to national defense. This categorization allows us to factor in the level of base essentiality risk that should be considered in our analysis of market risk. This article discusses the factors Moody's incorporates in its assessment of the base essentiality.

Moody's Investors Service
Global Credit Research

Background

In the early to mid 1990's the United States Department of Defense recognized that managing fixed infrastructure is not its core mission and saw the value in privatizing several of these functions, particularly the development and management of military family housing. Accordingly, Congress authorized the Military Housing Privatization Initiative in the National Defense Authorization Act for FY 1996 and made it permanent in the National Defense Authorization Act for FY 2005. These authorizations have led to a steady flow of bond financed transactions and over $13 billion of bonds for nearly 80 bases have been issued to date. See Appendix 1 for a list and map of military housing privatization transactions currently rated by Moody's.

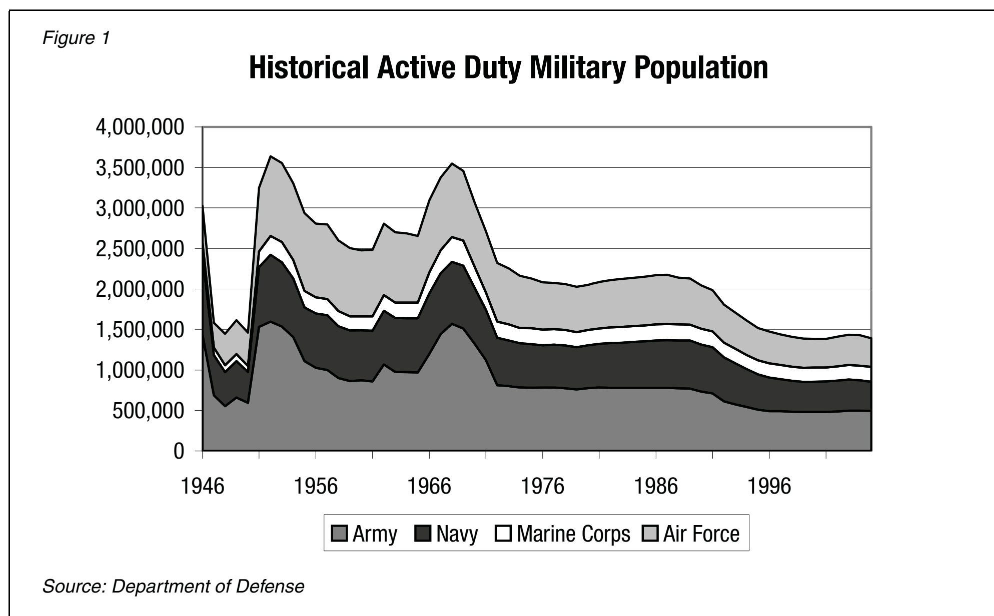
Under the terms of the bond transaction, military housing at a base, or a series of bases in close proximity, are leased to a property management firm for fifty years. In exchange, private property management firms and developers are responsible for the construction of new housing or rehabilitation of the current housing, as well as the management of the housing for the term of the lease. The private sector owner receives the Basic Allowance for Housing (BAH) as rent for each service member living in the privatized housing. These private firms and their military partners work together to manage the housing to meet the standards of both the housing sector and the military.

Privatized military housing projects are subject to many of the same risks associated with multifamily housing projects including competition from other available housing, challenges from the local economy and increasing expenses. Because service members have the option to use their BAH to obtain housing in the conventional market, privatized military housing must provide an attractive product to maintain occupancy. Given their location on DoD land, as well as their target market of military personnel, these projects are also subject to the risks of a dynamic military population as described above. The DoD recognized these risks and the authorization acts incorporated tools to address them including a loan guarantee which would cover a default on a loan in the event there is a dramatic change in the number of eligible military personnel on a base. While this guarantee was incorporated into some transactions, it is rarely used in more recent bond financings, raising the importance of the essentiality analysis.

The Need For Assessing Base Essentiality

Among the many qualitative and quantitative factors considered, the forward-looking nature of a bond rating requires a set of assumptions about the long term viability of the asset. In military privatization, the underlying asset is inextricably linked to the future use of the base. Should a base be designated for closure by a periodic Base Realignment and Closure (BRAC) commission, the need for the privatized asset may end, thus withering the expected revenue stream. This risk may be mitigated, in some cases, by alternative uses for the base or the underlying real estate financed by the bonds; however, even in the event that these are feasible alternatives, there remains a risk that the transition may be too long to be covered by debt service reserve funds or other bond security features. The long term trend for the Department of Defense, as shown in Figure 1, has been a gradual reduction of active duty strength with spikes during periods of major war (Korean War 1951-1954, Vietnam War 1966-1971). In Moody's opinion, this indicates a long-term trend toward slowly decreasing demand for privatized military housing.

Figure 1



Source: Department of Defense

Assessing Base Essentiality

Base essentiality is Moody's estimation of the long-term stability of a base and the likelihood of its closure or downsizing to a point that would materially impact the creditworthiness of the associated bonds. Moody's considers a myriad of factors in determining the rating associated with a debt instrument, and military privatization is no exception. Military base essentiality is one component of market risk, a key driver for housing bond ratings.

The long term stability of a base is difficult to judge because military priorities, strategies, and organization must constantly adapt to new threats. However, many bases have strategic assets, attributes, or locations that provide value to the core missions of the military and cannot be easily replicated elsewhere. The military value of each installation was determined by the three major branches of the Department of Defense (Army, Navy, Air Force) during the 2005 BRAC Commission, as described in the sidebar titled *Overview of the 2005 BRAC Process* on page five.

Similar to the BRAC analysis, military value is the starting point for Moody's assessment of base essentiality. Moody's objective in determining overall base essentiality, forces its qualitative analysis to diverge from the BRAC commission process, which looked to develop an effective infrastructure portfolio across the DoD. Moody's analysis focuses on those attributes that are likely to impact the base's value level over the life of the debt instruments being issued. Similar to the BRAC, Moody's evaluates a base's relationship to other bases, its potential for consolidation, and the fixed infrastructure of the base. Moody's analysis also considers the impact of the political landscape in the fate of military bases.

Moody's analysis must also address the impacts of changes to the base, or tenant military units, on the assets that are providing the financial security of the bonds. When considering the financial implications, it is short sighted to assume that a highly valued base will continue to support the same mission or the same troop levels in the long-term.

Anticipating specifically what these changes will be is challenging, if not impossible, given the fluid nature of our national defense strategy, but an analysis of the potential for infrastructure expansion, the current age of facilities, and the long-term value of the base is certainly reasonable and important to the credit analysis. To this end, Moody's identifies each military installation as falling into one of five broad categories:

Level 5: *Critical National Strategic Assets*- An asset that is of critical importance to national defense due primarily to infrastructure or strategic position.

Level 4: *National Strategic Assets*- An asset that serves an important function in national defense.

Level 3: *Essential Service Branch Assets*- An asset that serves an important function in the mission of one or more branches of the DoD.

Level 2: *Service Branch Assets*- An asset that supports the mission of one or more branches of the DoD.

Level 1: *Secondary Branch Assets*- An asset that provides secondary support to the mission of one or more branches of the DoD.

These categories provide a basic benchmark for the amount of risk that changing Department of Defense requirements may have on market demand and are incorporated in the rating analysis of the bond transactions. This analysis will be used along with many other factors of the transaction, such as financing structure and real estate market conditions, to arrive at a bond rating. For example, bases which fall into the Level 5 category may be eligible for high bond ratings without strong alternative use of the properties, while a Level 3 base may need to demonstrate alternative uses for the properties from a strong real estate market or a low debt per unit to ensure that the transaction will be able to be paid off in the event of a base closure. Alternatively, it is anticipated that bond financings for Level 1 and Level 2 bases may only be eligible for ratings in the low investment grade or below investment grade levels unless significant credit enhancement or other factors that mitigate bondholder risks resulting from greater uncertainty surrounding market demand for the project are incorporated into the transaction.

Once Moody's has reached its broad assessment of the military installation's essentiality, we consider, in that context, the potential for changes in market demand for the privatized military housing due to:

Changes In Assigned Troop Strength

The population of troops assigned to, or in the vicinity of, a military base can be changed at almost any time in order to suit the needs of the Department of Defense. Because privatized military housing is primarily restricted to the local, active duty military population, there is a risk that troop level fluctuations will cause the eligible population to decrease substantially. For example, the 2005 BRAC recommended to re-align Pope Air Force Base in North Carolina, which would include moving the 43d Airlift Wing to Little Rock Air Force Base (AFB) and the 23d Fighter Group to Moody AFB. This action is expected to reduce the number of military personnel at Pope AFB by a net total of 4,821. In order to incorporate this risk in its rating analysis, Moody's looks at the ratio of the number of eligible families to available units. A bond supported by a housing project in a base with a higher ratio will be less vulnerable to changes in troop strength.

Changes in Primary Missions of the Base

The primary mission of a base is an important consideration in understanding the propensity of the population that will require military housing. Bases that focus on training missions tend to have a more transitory population, as military members are stationed there only for the duration of their training and are less likely to have family members accompany them. Operational bases tend to have more permanent populations with military members typically assigned there from two to four years. Should the mission of a base change from one type to the other, the demand for military housing would likely shift dramatically. Moody's incorporates this risk into our analysis by factoring in a certain expected vacancy rate, typically ranging from 5% to 8%. Bases which are more prone to personnel turnover are expected to have a higher vacancy rate and this should be reflected in the financial pro forma.

Fort Bliss, Texas is an example that illustrates the effects that a change in mission can have on demand for military housing. Fort Bliss is undergoing a transition as two major operational units will relocate there from permanent bases in Europe. Currently serving primarily as a training base for the Army's Air Defense Artillery Branch, Fort Bliss will now see its population swell with operational units as its training units are moved to Fort Sill, Oklahoma. The changing needs of the population at Fort Bliss are expected to drive significant infrastructure development.

Changes to Operations and Deployments

Bases may also undergo operational changes that impinge on housing demand. The most dramatic change is the base's expected participation in deployments. Many Army bases saw very stable demand patterns for housing through the 1990's as only limited numbers of troops were deployed in support of global conflicts. Following the events of September 11th, the Global War on Terror has required the active deployment of almost every active duty Army unit on a rotating basis. The deployability of units on a given base will have some bearing on the demand for military housing, as many spouses choose to move near family or other support groups when their spouses are serving long-term military deployments. The analysis of the vulnerability of a specific base to deployment will include an analysis of the amenities of the base or area that the base is located in, as well as strategies the property managers take to entice families to stay on base, as these factors can limit the turnover for families of deployed service members.

Overview of the 2005 BRAC Process

The DoD 2005 BRAC was initiated in November 2002 by the Secretary of Defense's memorandum *Transformation Through Base Realignment and Closure*. The initial concept envisioned elimination of excess physical capacity while aligning infrastructure with defense strategy. The BRAC included separate infrastructure analysis by each major DoD branch, seven joint cross service groups (JCSG), and an overall Infrastructure Executive Council. While each branch analyzed infrastructure within the purview of that particular service, the JCSGs were established to analyze efficiencies in:

- Education and Training
- Headquarters and Support
- Industrial
- Intelligence
- Medical
- Supply and Storage
- Technical

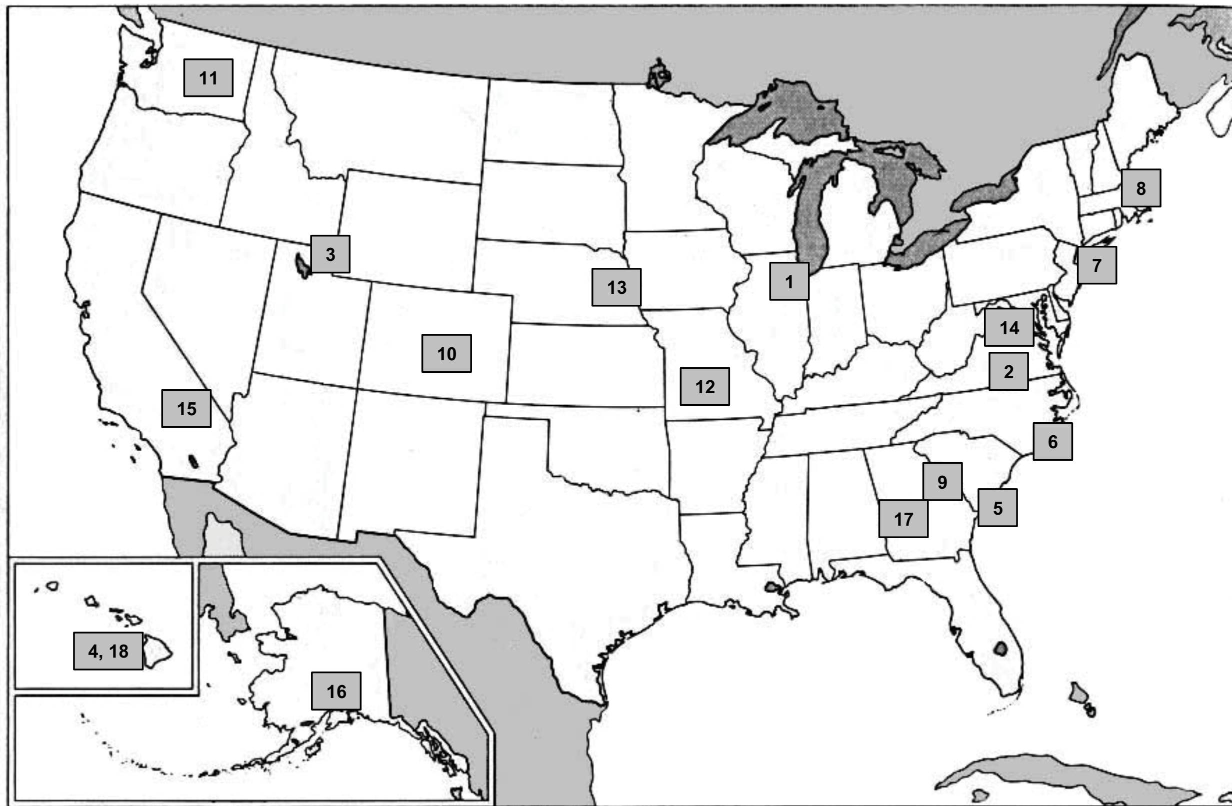
The basis for analysis was the DoD 20-Year Force Structure Plan, which is based on an assessment of probable threats and the resources needed to meet them. Congress approved the BRAC selection criteria as:

1. Military Value
    - Current and future mission capabilities
    - Availability and condition of land, facilities, and associated airspace
    - Ability to accommodate contingency, mobilization, surge and future forces
    - Cost of operations and manpower implications
2. Other Considerations
    - Potential costs and savings
    - Economic impact on existing communities
    - Ability of the infrastructure to support forces, missions and personnel
    - Environmental impact

The military value results were run through scenarios to optimize the portfolio of bases and determine the most productive changes for each service. The JCSG analyzed the recommendations and evaluated them against the other considerations. The JCSG developed a single recommendation that provided the most benefit across DoD. The JCSG recommendation was combined with branch-specific recommendations to form the BRAC Commission recommendations. These recommendations were then taken by the Secretary of Defense, who published a final report of recommendations to Congress and the President. The Comptroller General submitted an analysis of the financial impacts of the recommendations to Congress. Finally, the recommendations were subjected to Presidential and Congressional approval and the approved, legally-binding recommendations were returned to the Secretary of Defense for implementation.

Appendix 1

Privatized Military Housing Transactions Rated by Moody's



	Project / Base Name		Project / Base Name
1	Navy Midwest	10	Fort Carson
2	Navy MidAtlantic	11	Navy Northwest Family Housing Project, WA
3	Boyer Hill Military Housing, LC, UT	12	Fort Leonard Wood
4	Army Hawaii Family Housing	13	Offutt Air Force Base
5	Atlantic Marine Corps Communities	14	Fort Belvoir Family Housing Project, VA
6	Camp Lejeune/ Cherry Point/ Stewart Terrace	15	Fort Irwin / Moffett / Parks Fam Hsg Proj, CA
7	Fort Hamilton	16	Elmendorf Air Force Base Family Housing Project
8	Navy Northeast Family Housing Project	17	Fort Benning
9	Fort Gordon	18	Ohana Military Communities

Related Research

Special Comment:

Impact of 2007 BAH Rate Changes on Moody's-Rated Bond Deals, February 2007 (102001)

Military Housing Fundamentals: The Basic Allowance for Housing, February 2007 (101943)

Housing Update Third Quarter 2006, October 2006 (100351)

Moody's Discusses Privatized Military Housing, July 2004 (87544)

Special Forces: Factors Driving Demand for Military Housing, March 2007 (102554)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 102642

Author	Editors	Senior Production Associate
Kurt Krummenacker	*Florence Zeman* *Bill Fitzpatrick*	*Yelena Ponirovskaya*

© Copyright 2007, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

February 2007

Contact	Phone
New York	
Rachael McDonald	1.212.553.4456
Florence Zeman	1.212.553.4836
Lisa Washburn	1.201.395.6368

Military Housing Fundamentals: The Basic Allowance For Housing (BAH)

The Military Housing Privatization Initiative was established by the U.S. Congress in 1996, sparking the issuance of over $13 billion in bonds to finance the construction and rehabilitation of privatized military housing. The basic allowance for housing (BAH), a housing allowance provided to service members to pay for housing costs, supplies the revenue used to pay debt service on the bonds. Moody's views the BAH as a credit strength when analyzing military housing deals based on Congress' consistent appropriation history and the U.S. government backing of the BAH. However, there are some risks associated with the BAH rate-setting and appropriation process that could result in a change in the BAH from year-to-year, affecting the revenue stream for the project. This article provides an overview of how the BAH rates are computed and discusses the risks inherent in the rate-setting process.

What Is The BAH?

The BAH is a component of the U.S. military's compensation package that provides service members with an allowance to cover the cost of housing if government-owned quarters are not available. The BAH covers the cost of service members' rent, utilities, and renters insurance. Service members assigned to permanent duty within the United States are eligible for the BAH.

Typically, service members who do not live in government-owned quarters can choose to rent housing in either a privatized military housing project or in private sector/market-rate housing. Alternatively, the BAH can be applied to cover mortgage payments should the service member choose to purchase a home. The Military Housing Privatization Initiative (MHPI) has sparked a surge in the construction and rehabilitation of privatized military housing projects available for service members to live in both on- and off-base.

Why Is The BAH Important To Military Housing Privitazation?

In 1996, the U.S. Congress established the Military Housing Privatization Initiative which provided the Department of Defense (DOD) with a number of tools to leverage private sector capital and financing approaches to build and renovate military housing. The purpose of the MHPI was to address the government's concern that 60 percent of the 300,000 units of military-owned housing were in need of rehabilitation. It was estimated that it would cost approximately $20 billion and take up to 30 years to complete the rehabilitation of this housing using the military's traditional Military Construction approach. The MHPI was intended to attract private sector expertise that would help build and renovate necessary housing faster and more efficiently. As a result, many private sector equity and debt investors have

invested in military housing projects which are now owned and operated by a joint venture between the private sector developers and the military via a fifty-year ground lease.

The BAH supplies the revenue to pay back the debt and equity investments made in MHPI projects. However, the government does not provide a revenue stream directly to the housing project - soldiers must choose to live in an MHPI project in order for the BAH to be allocated as rent. The BAH is appropriated each year by the Congress and backed by the strength of the U.S. Government, but the MHPI financings are not U.S. government obligations and the government does not appropriate money to pay debt service on the bonds.

Who Sets The BAH?

The Per Diem, Travel and Transportation Allowance Committee (PDTATAC) of the DOD is in charge of setting BAH rates. The Committee also relies on the aid of the Defense Manpower Data Center, another division of DOD, to help with some of the most complex BAH rates calculations.

What Are The Key Drivers Of The BAH Rate?

DOD has developed a system for calculating the amount of BAH that service members should receive based on their geographic duty location, pay grade and dependent status. These drivers are defined in the chart below.

Table 1: BAH Drivers

Driver	Description
Pay Grade	The military maintains a pay grade scales for Officers (O-1 to O-10), Warrant Officers (W-1 to W-5), and Enlisted personnel (E-1 to E-9) which serve as the basis for their compensation packages.
Dependent Status	Dependents include spouses and children. Service members with dependents have a different BAH scale than service members without dependents. Number of dependents does not effect the size of the BAH received.
Geographic Duty Location	The geographic duty location is defined as the Military Housing Area (MHA) where the soldier is stationed. The military has designated approximately 370 MHAs in the United States, based on groups of zip codes.

Based on these drivers, the military has designed the BAH so that a typical service member of a given geographic duty location, pay grade and dependency status will have zero out-of-pocket costs regardless of the MHA where they reside.

RECENT CHANGE: ZERO OUT-OF-POCKET COSTS

"Zero-out-of-Pocket" costs (ZOOP) is a relatively new DOD policy imperative. In fiscal year 2001, the DOD began a major initiative, also called the Cohen Initiative, to eliminate out-of-pocket rent costs for service members that live in median-rent private-sector housing in the U.S. Prior to this initiative the BAH was equal to the local median monthly housing cost minus a percentage of the nation-wide median monthly cost of housing for that pay grade. Therefore, service members paid some portion of their housing expenses out-of-pocket.

DOD's method for achieving ZOOP was to increase the BAH each year between 2001 and 2005 until the desired BAH levels were achieved. 2005 was the first year that the BAH was large enough to reimburse 100 percent of the service members' housing costs based on the assumption that the service member chooses to live in a "standard housing type" for their pay grade and that the apartment is priced at median rent. (See "What is the Rate Setting Process?" for more discussion of standard housing types).

MHPI developments set their project rents to equal the BAH for that MHA. Therefore, those soldiers who lived in MHPI developments are guaranteed ZOOP for their housing.

However, service members also have the option to live in off-base private sector housing or to purchase a home. In this case, the service member may choose to spend more per month than the median price for rent in that market. Thus, the service member would have to pay out-of-pocket for the rent or mortgage that was not covered by the BAH. Conversely, service members who choose to live in housing with below-market rents can pocket the difference between the BAH and their actual rent cost.

RECENT CHANGE: BAH RATE PROTECTION

Historically, two types of rate protection have been available to ensure that changes in the median rent in an MHA did not negatively affect the BAH offered to service members - individual rate protection and geographic rate protection. These protections are described in the table below.

Table 2: Historical Rate Protections

Rate Protection	Summary	Status
Individual Rate Protection	Prevents a decrease in the BAH that service members receive as long as their status has not changed, even if market rents fall. Status changes include:* • Permanent change in station (PCS)/geographic duty location • Reduction in pay grade • Change in dependent status	On-going
Geographic Rate Protection	Prior to 2005, ensured that the BAH appropriation never decreased for a duty station. Since 2005, BAH rates have been allowed to fluctuate based on the market rental costs.	Eliminated in 2005

**Note: Change in status does not include promotions*

Geographic rate protection was eliminated in 2005, allowing the BAH to fluctuate based on market rental costs. This change impacted the future cash flows of MHPI projects as well as the bond structuring process, as described below.

How Does The BAH Impact Bond Structuring?

Since the BAH provides the revenue stream to pay the bonds, proper bond structuring depends on the ability to project the BAH revenue over the life of the bonds. The elimination of geographic rate protection in 2005 impacted investors' ability to predict the future revenue stream for an MHPI project, as the BAH for that project can now increase or decrease annually based on the fluctuations in market rental costs. The effect of this policy change and the stabilizing influence of individual rate protection are illustrated in the table below.

Table 3: Hypothetical Example -
Impact of BAH Rate Fluctuations on MHPI Rent

Year	2006	2007	2008	2009	2010	2011	Average Rent
Sample BAH for MHA*	$550	$600	$535	$550	$500	$525	
Unit 1							
Service member 1	$550	$600	$600	PCS**	PCS	PCS	
Service member 2				$550	$550	$550	
Unit 1 Rent	$550	$600	$600	$550	$550	$550	$567
Unit 2							
Service member 3	$550	$600	PCS	PCS	PCS	PCS	
Service member 4			$535	$550	PCS	PCS	
Service member 5					$500	$525	
Unit 2 Rent	$550	$600	$535	$550	$500	$525	$543

**This example assumes that service members 1-5 are all the same pay grade and all receive the sample BAH rate for their MHA.*
***Permanent change in station.*

In this example, service members of the same pay grade move in and out of a MHPI project over the course of six years, during which time the BAH rates fluctuate. "Service Member 1" moves into Unit 1 in 2006 when the BAH is $550 and experiences an increase when the BAH rate increases to $600 in 2007. However, when the rates drop to $535 in 2008, Service Member 1's rate remains $600 due to individual rate protection. However, "Service Member 2," who moves into Unit 1 in 2009, receives the new BAH rate of $550, decreasing the unit's rent. Service Members 3, 4 and 5, who alternately occupy Unit 2, experience the same BAH rate changes, but occupy the unit for a shorter time period than Service Member's 1 and 2. As a result, the rent of Units 1 and 2 fluctuate differently during the course of the six years. By the end of 2011, Unit 1 has experienced an average rent of $567 while Unit 2 has experienced an average rent of $543.

This hypothetical example illustrates how the revenues for an MHPI project can vary over time depending on both the BAH rates and the rate of turnover of service members within the MHPI unit. According to the DOD, fluctuations in market rental prices and housing allowances generally change between 2%-5% from year to year, with "hot" markets changing 5%-10%.

The example assumes that all service members occupying the units are of the same pay grade and dependency status. In reality, service members of multiple pay grades and dependency status may occupy an MHPI project. This complicates revenue projections and bond structuring, since the BAH may fluctuate in different directions for different pay grades and dependency status over time (e.g. BAH for E-5 with dependents may increase but BAH for O-5 with dependents may decrease).

To the service member living in an MHPI project, these rate changes are irrelevant, since the MHPI project accepts their BAH payment as the full rent payment regardless of fluctuations in the BAH. Therefore, the MHPI projects take on the full risk of BAH fluctuations.

What Is The Process For Setting BAH Rates?

BAH rates are they key driver of an MHPI project's annual revenues. The BAH rate covers the cost of service members' rent, utilities, and renters insurance. The January 2007 "Primer on Basic Allowance for Housing for the Uniformed Services" published by the DOD provides an overview of the BAH rate setting process. The sections below summarize key concepts from this Primer.

STANDARD HOUSING TYPES

The goal of the rate calculation process is to determine the BAH rates for each combination of pay grade, dependent status and MHA. A key assumption in the rate calculation process is that service members of a particular pay grade/ dependent status will choose to live in only one "standard" housing type. This assumption allows DOD to link median housing costs for a standard housing type to a particular pay grade/dependent status combination.

Each year, DOD works with an outside contractor, Runzheimer International, to identify the median housing costs for each standard housing type. The PDTATAC sets the BAH rates for the associated pay grade/dependent status based on this data. DOD has developed the standard housing types listed in the table below.

Table 4: Standard Housing Types, Pay Grades and Dependent Status

Profile Number	Profile	Abbr.	Grade With Dependents	Grade Without Dependents
1	1 Bedroom Apartment	1br APT		E-4
2	2 Bedroom Apartment	2br APT		O-1
3	2 Bedroom Townhouse	2br TH	E-5	O-1E
4	3 Bedroom Townhouse	3br TH	E-6	O-3E
5	3 Bedroom Single Family Detached House	3br SFD	W-3	O-6
6	4 Bedroom Single Family Detached House	4br SFD	O-5	

Source: "A Primer on Basic Allowance for Housing for the Uniformed Services." Department of Defense. January 2007.

Service members who live in MHPI projects are typically assigned to housing in accordance with their pay grade/ dependent status. However, in some circumstances, service members may be allowed to live in a housing type other than one assigned to their pay grade. For example, an E-5 with six dependents may need more bedrooms than a two bedroom townhouse affords. In this case, DOD would work with the MHPI project to ensure that the family was housed in appropriate quarters. However, the MHPI project must still accept the family's E-5 with dependents BAH rate as rent (the BAH received by the service member remains the same regardless of their housing type). Service members who live off-base in civilian housing are not required to live in their assigned standard housing type.

RENTAL HOUSING RATE CALCULATION

The standard housing types and pay grades listed above are considered "anchor points" from which the rates for all other pay grades are derived. Local median costs for non-anchor pay grades are calculated by taking the difference between the anchors and adding a percentage of that difference to the lower anchor rate. An example taken from the January 2007 "Primer on Basic Allowance for Housing for the Uniformed Services" is included below.

Table 5: BAH Housing Standards and Interpolation Between Anchor Points

With Dependents		Calculate local cost difference between anchors. Add % of difference to anchor
Grade	**Hsg Type**	**BAH Interpolation**
E-1	2br	Midpoint of 2br APT
E-2	2br	and 2br TH
E-3	2br	
E-4	2br	
E-5	2br TH	Anchor
O-1	2br TH	11%
O-2	2br TH	98%
E-6	3br TH	Anchor
W-1	3br TH	1%
E-7	3br TH	36%
O-1E	3br TH	44%
W-2	3br TH	52%
E-8	3br TH	75%
O-2E	3br TH	93%
O-3	3br TH	98%
W-3	3br SFD	Anchor
E-9	3br SFD	16%
W-4	3br SFD	22%
O-3E	3br SFD	26%
W-5	3br SFD	48%
O-4	3br SFD	58%
O-5	4br SFD	Anchor
O-6	4br SFD	Same as O-5
O-7	4br SFD	Same as O-5

Without Dependents		Calculate local cost difference between anchors. Add % of difference to anchor
Grade	**Hsg Type**	**BAH Interpolation**
E-1	1br APT	Same as E-4
E-2	1br APT	Same as E-4
E-3	1br APT	Same as E-4
E-4	1br APT	Anchor
E-5	1br APT	67%
O-1	2br APT	Anchor
E-6	2br APT	7%
W-1	2br APT	31%
E-7	2br APT	53%
O-2	2br APT	83%
O-1E	2br TH	Anchor
W-2	2br TH	19%
E-8	2br TH	20%
O-2E	2br TH	44%
E-9	2br TH	51%
W-3	2br TH	54%
O-3	2br TH	64%
O-3E	3br TH	Anchor
W-4	3br TH	9%
O-4	3br TH	40%
W-5	3br TH	45%
O-5	3br TH	63%
O-6	3br SFD	Anchor
O-7	3br SFD	Same as O-6

Source: "A Primer on Basic Allowance for Housing for the Uniformed Services." Department of Defense. January 2007.

Table 6: Sample BAH Rate Calculation for E-7 with Dependents

Description		Example
E-6 with dependents local housing cost (3 br TH):	A	$1,000
W-3 with dependents local housing cost (3 br SFD):	B	$1,200
Difference:	C: B-A	$1,200 - $1,000 = $200
36% of that difference:	D: C x %	$200 x 0.36 = $72
E-7 with dependents interpolation	A+D	$1,000 + $72 = $1,072

Source: "A Primer on Basic Allowance for Housing for the Uniformed Services." Department of Defense. January 2007.

From the housing standards table, DOD determines that an E-7 with dependents should receive an allowance for a three-bedroom townhouse (TH), plus 36% of the difference between the next lowest profile, a 3 bedroom townhouse, and the next higher, a 3-bedroom single family detached house (SFD). To calculate the BAH for an E-7 with dependents, DOD first identifies the rate for the neighboring anchor points: the E-6 with dependents and the W-3 with dependents. Second, DOD calculates the dollar difference between the two anchor points. Next, DOD applies the specified percentage to the lower anchor point to determine the dollar difference, which is added to the lower anchor point.

Due to the complexity of these calculations, the PDTATAC uses the services of DOD's Defense Manpower Data Center to extrapolate the BAH rates for each pay grade. DMDC personnel create the methodology and programs used for this extrapolation. However, the methodology and any changes must be approved by the PDTATAC.

RENTAL HOUSING DATA COLLECTION

Rental costs are collected on the apartments, townhouses/duplexes, and single-family rental units of varying bedroom sizes which serve as the standard housing types for BAH rate-setting purposes. Since BAH rates become effective on annually on January 1, a large data collection and validation process occurs every Spring and Summer for each of the approximately 370 MHAs. DOD relies on Runzheimer International to collect and analyze this data. Runzheimer and DOD collaborated to develop the data collection methodology.

Runzheimer uses a tiered screening process to select which market units to measure to ensure that the units and neighborhoods selected are appropriate:

Table 7: Screening Criteria for Market-Rate Apartment Selection

Criteria	Description
Commuting criteria	Only housing that is a within 20 miles or a 1-hour commute during rush hour is selected.
Neighborhood	DOD uses the Defense Enrollment Eligibility Reporting System (DEERS) to identify neighborhoods where the top 80% of members live.
Income	Civilian salary equivalents are compared to the military's total compensation package, which includes basic pay, average BAH, Basic Allowance for Subsistence (BAS), and the tax advantages for serving in the military. Then neighborhoods where civilians with comparable incomes live are selected. The income of civilian's spouses is not included.

Once the appropriate neighborhoods are selected, the following sources are contacted to collect data for each standard housing type:

- Fort/post/base housing referral offices and installation leadership for the following:
  - Provide local rental housing referrals, excluding any inadequate units
  - Identify specific geographic areas that contain unacceptable housing
  - Gain insights into the concerns of the service members
- Apartment and real estate management companies and other real estate professionals to determine appropriate units for rental pricing and confirm market prices
- Local newspapers and real estate rental listings

When there are multiple services present in a market, the responsibility for contributing to the screening process can rotate from year to year.

In addition, the following types of units are excluded:

- Mobile homes
- Efficiency apartments
- Furnished units
- Income-subsidized complexes
- Age-restricted facilities
- Seasonal units

Once a list of properties are identified, they are subjected to a screening and validation process by phone to verify the current rental rates, identify the utility inclusions in the rates and determine whether discounts are included in the rates. In addition, on-site reviews are conducted at selected locations. According to DOD, a confidence level of 95% must be attained in order for the data to be statistically valid.

UTILITIES DATA COLLECTION

Runzheimer is also responsible for collecting utilities data and proposing utilities rates for the PDTATAC to include in the BAH. The following steps are taken by Runzheimer to collect utilities data for each MHA:

- Obtain current rates from the major local utility provider for both the current season and the most extreme heating and cooling seasons
- Obtain the scheduled rate increases from the utility provider
- Analyze census data in the American Housing Survey (AHS) to determine consumption of utilities for each dwelling type
- Gather climate data from the National Oceanic and Atmospheric Administration (NOAA)

The data above is then used by Runzheimer to calculate average monthly utility expenses.

RENTER'S INSURANCE DATA COLLECTION

Runzheimer is also responsible for collecting data and proposing renter's insurance rates to the PDTATAC for inclusion in the BAH. The BAH renter's insurance rate covers the value of household contents. Runzheimer uses data from the Bureau of Labor Statistics to correlate selected incomes and dwelling types with a value for household contents. For example, if a family has an income of $75,000 and lives in a two bedroom apartment, this income and dwelling type can be correlated to a specific dollar amount of household goods. Runzheimer determines how much renter's insurance would be required to insure this dollar amount of household goods.

BAH RATE SETTING

After the data collection for median housing costs, utilities and renter's insurance is complete, the PDTATAC sets BAH rates for the pay grades associated with the six standard housing types. These rates are passed along to the Defense Manpower Data Center which calculates a separate BAH rate for each of the 24 pay grades that correspond to military ranks with and without dependents, based on the housing standards table and methodology above. The rates calculated by the Defense Manpower Data Center are then approved by the PDTATAC.

Are The BAH Rate-Setting And Appropriation Processes Related?

According to DOD, the BAH rate-setting process occurs independently from the process used to determine the amount of money that Congress will appropriate for the BAH each year. While the BAH rate-setting process occurs on an annual basis for the calendar year, the DOD budget appropriation process occurs on an annual basis based on the fiscal year. Furthermore, DOD prepares budget proposals for congress one to two years in advance of the appropriation and may not have knowledge of proposed BAH rates during the creation of the proposed budget. Therefore, once BAH rates are set, DOD may determine that not enough funds have been appropriated through the budgeting process. In this case, the DOD requests supplemental funds for the BAH from Congress. All past supplemental requests by DOD have been approved.

What Types of Policy Changes Could Be Made In The Future?

The Defense Advisory Committee on Military Compensation was chartered in March 2005 to review military compensation, including the BAH. The committee has recommended some changes potential changes to the BAH, including:

- Elimination of the distinction between "with" and "without" dependents in the payment of BAH by paying the allowance to all at the "with dependents" rate
- Extension of the BAH to all service members, including those in government housing. As a result, some members, particularly junior enlisted members, could receive a BAH greater than the amount they pay for government housing.

What Are The Risks Associated With The BAH?

Moody's recognizes the financial stability that the BAH backing brings to an MHPI project. However, Moody's has also identified several categories of risk related to the BAH which could potentially put the financial stability of an MHPI project in jeopardy. These risks include:

- Calculation risk (methodology changes, contractor changes)
- Market risk (median rent changes, transportability)
- Political risk (appropriation, policy changes)

These risks are described in the chart below.

Table 8: The BAH - Risks and Issues to Consider

Risk	Description	Moody's Opinion	Mitigation	Relative Level of Risk
Housing Market	Risk that the MHPI's local housing market will experience a downturn, thereby lowering the median rent and the BAH	Moody's believes that market fluctuations are one of the key credit risks to the BAH rate and MHPI projects.	Moody's reviews stress cash flows that demonstrate the financial performance of the project for the life of the bonds. These projections take into account various fluctuations in the BAH and expenses to ensure that project can withstand market risk in different stressful scenarios. Please see Moody's July 2004 Special Comment, entitled "Moody's Discusses Privatized Military Housing" for more details on Moody's requirements.	High
Contractor	Risk that the DOD will change contractors from Runzheimer International to another firm, thereby potentially changing the methodology for collecting and analyzing market data	Moody's believes that a change in contractor is unlikely. However, given DOD's involvement in the development of the data collection and analysis methodology, the impact of a change in contractor on the methodology would be low.	None necessary - this risk is low	Low
Calculation/ Interpolation	Risk that DOD will change the methods used for calculating the BAH including the standard housing types, anchor points, interpolation percentages, etc.	The standard housing types, anchor points and interpolation percentages have remained standard between 2002 and 2006. According to DOD, a change in the calculation/interpolation methodology could be very costly and would be unlikely in the short term.	None necessary - this risk is low	Low
Transportability/Occupancy	Risk that service member will chose use their BAH to rent private/community housing or purchase a home (due to lack of attractiveness of the MHPI price or amenities relative to the market)	Moody's acknowledges the real estate risks associated with MHPI projects, but also believes that they should be considered along with the strengths of military housing, such as the built-in demand from the military, the added advantages to service members of living on-base, and the ability to have BAH revenues deposited directly with the trustee.	Moody's approach to reviewing the transactions includes analysis of the number of eligible families to number of units, occupancy trends on and off base, and on-base amenities.	Medium
Appropriation	Risk that U.S. Congress will not appropriate money for the BAH	Given the Federal Government's appropriation history for military housing allowances, Moody's believes that the risk of failing to appropriate is very low.	None necessary - this risk is low	Low
Budget Change	Risk that the budget for the BAH will decrease, forcing an adjustment in the level of reimbursement that soldiers receive for housing (e.g. reversal of the ZOOP policy)	Moody's believes the risk of a budget decrease in the near term is low. According to DOD, there is not a historical precedent for a budget decrease for BAH.	None necessary - this risk is low	Low
Policy Change	Risk that BAH policies will change, such as the abolishment or reinstatement of rate protections or a decision to eliminate dependent status as a factor in the BAH rate calculation	It is very difficult to predict the likelihood of a policy change that would result in a decline in BAH rates, making this a potential risk.	Moody's will monitor any proposed policy changes to the BAH. If a change in policy were enacted, Moody's would assess the impact on the projected financial performance of the transaction and adjust the rating if warranted.	Medium

Special thanks to Susan Brumbaugh, Director, Basic Allowance for Housing, PDTATAC, Department of Defense, for her review and comments on this article.

The following DOD resources were used for this article:

1. Office of Secretary of Defense websites:
   https://secureapp2.hqda.pentagon.mil/perdiem/
   http://www.dod.mil/militarypay/pay/bah/index.ht
   http://www.acq.osd.mil/housing/mhpi.htm
2. "A Primer on Basic Allowance for Housing for the Uniformed Services." Department of Defense, January 2007.
3. "The Military Compensation System - Completing the Transition to an All Volunteer Force." Department of Defense. April 2006.

Related Research

Special Comment:

Moody's Discusses Privatized Military Housing, July 2004 (87544)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

PAGE INTENTIONALLY LEFT BLANK

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 101943

Author	Production Specialist
Rachael McDonald	*Cassina Brooks*

© Copyright 2007, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Special Comment

March 2007

Contact	Phone
New York	
Maria Ting	212-553-4461
Florence Zeman	212-553-4836
Nicolanne Addalli	212-553-7823
William Fitzpatrick	212-553-4104
Kurt Krummenacker	212-553-7207
Rachael McDonald	212-553-4456
David Parsons	212-553-4537
Ferdinand Perrault	212-553-4793
Ali Sistani	212-553-4356
Lisa Washburn	212-553-4133
Dallas	
Toby Cook	214-220-4352

Special Forces: Factors Driving Demand for Military Housing

The Military Housing Privatization Initiative of 1996 sparked a surge in the construction and rehabilitation of privatized military housing projects, many of which have been financed through the issuance of taxable bonds. To date, over $13 billion in bonds have been issued for these projects. Moody's analysis of privatized military housing transactions focuses on assessing the project's financial feasibility and ability to generate sufficient revenue to support the bonds, while recognizing the distinctive strengths and risks associated with its use for military personnel. A key factor in determining a project's feasibility is an assessment of the demand by the military for the project, particularly in the context of the real estate market in which it is located. Given that military personnel may choose to use their basic allowance for housing (BAH) for either privatized military housing or for other available housing in the area, the demand for the privatized housing directly impacts the occupancy rates for the project. The occupancy rate drives the project revenue and, ultimately, the project's financial feasibility. This article describes the various fundamental real estate characteristics that we consider in order to ascertain the level of demand for a privatized military housing project.[1]

Location, Location, Location

Depending on the particular branch of the military, the location of privatized housing projects varies. Housing for Army and Air Force installations are generally located on the base while Navy housing is primarily off base, on government-owned land, in the neighborhoods near the base. Whether the project is on or off base, its location will play an important factor in the demand for such housing.

A military housing project located in a desirable area increases the likelihood of its marketability to military personnel. Proximity to the conveniences of daily life such as schools and offices, community centers and health clubs, food markets and other shopping centers is advantageous. For installations such as Naval bases that have limited on-base housing, close proximity of the proposed housing to the base may be viewed as positive when evaluating housing options. For the other services, generally it is more appealing if the housing is located within the military base. However, if the housing units are located in remote areas of the military base, or physically are separated from the rest of the installation, the potential could be greater for military service members to live in non-military housing, particularly if comparable housing is available. The desirability of the military housing is evaluated on a neighborhood-by-neigh-

1. *This article will address housing built in the U.S. for military families; not housing for unaccompanied military service members.*

borhood basis because we have seen situations where certain neighborhoods within a specific base perform better than others purely based on their locations.

If the housing in the surrounding real estate markets is limited or non-existent, lesser in quality or over-priced, we would expect the military housing project to be in greater demand regardless of its location on base. This is a likely scenario in areas where the military base is the "only game in town" and the main source for jobs and services in the immediate, local economy.

Since military housing transactions are typically structured with 40-year maturities, the location of the property is also important in considering the possibility of alternative uses for the property, particularly for those bases with more limited essentiality. In those cases, housing located on the coastal areas of the United States or in other competitive local housing markets is considered a credit strength for the transaction. Also in such cases, off-base housing or housing physically segregated from center of the military base operations may be easier to rent or sell in the private market.

Design Features and Amenities Must be Competitive

The design and attractiveness of the military housing project is considered when determining demand. The single family and townhouse units are desirable to prospective tenants, in particular for those with families, and as such, should help make these units marketable. Larger lot-sizes, bigger bedrooms relative to those available in market-rate, off-base rental units, and extra storage space are preferred by the military families. Newly-constructed housing also is preferred over existing housing stock, even if the latter has undergone moderate renovation. Additional amenities unavailable off base such as Department of Defense-run primary and secondary schools, daycare facilities, large and well-equipped community centers or health clubs are attractive features for potential tenants, in particular for those with families. Moody's recognizes that the availability of these amenities, in concert with the strong sense of safety, the close proximity to work and to other conveniences (e.g. the on-base Post Exchange, Commissary, community activities) which are possible, in most cases, only through living on the military installation, will support ongoing demand for these projects. We expect the design features and amenities to be at least competitive if not superior to those available off base in market-rate housing. These features are even more important when considering the marketability of these units to non-military tenants should the need arise.

Experienced Property Manager May Enhance Demand

The selection of a property manager who is experienced in the marketing and managing of military housing properties can be a positive factor as their knowledge of the special needs of military families can greatly impact the families' overall living experience. If the property manager is timely with repairs, current in its maintenance of the units, offers good customer service and also works closely with military command on the base to establish a sense of community, good references from existing or departing tenants can be a powerful driver in generating additional demand, thereby affecting occupancy levels. A property manager with a good working relationship with the military is also desirable given their ready knowledge of existing military protocol, policies and procedures. One example of such policies is the option available to the property manager, with approval from the Department of Defense, to offer rent concessions to service members through the refunding of a portion of their BAH, thereby creating below-market rents for these tenants and potentially impacting occupancy. We view property managers with direct management experience in military housing, specific knowledge of the targeted population as well as the real estate market at-large, and existing good relationship with the military as credit strengths in a military housing project.

Occupancy Experience of Existing Military Housing Provides Insight

Moody's requests and reviews historical vacancy data of existing on-base housing and whether or not waiting lists were maintained for such housing in order to gauge the potential demand for the new or rehabilitated privatized housing. When a military service member lives in privatized military housing, his or her BAH will be used to pay the monthly rent, utility expenses, as well as renters insurance.[2] The BAH is inclusive of all three expenses which are distinct costs to be paid to separate service providers when one lives off base. In most instances, additional services are provided by the property manager of the military housing and included in the BAH, such as landscaping, use of community centers or health clubs, routine maintenance of the units and other services that generally would be additional out-of-pocket expenses paid by military personnel should they live off base. These additional services, at no additional out-of-pocket expense, can increase the attractiveness of the project over market rate, off-base housing.

Since the BAH level for each rank can fluctuate,[3] we also place significance on the distribution of the project's housing units by pay grade for each project. Even though the majority of our present-day military members are enlisted rank (1.2 million versus 216,800 officers; of this group, 42% are E-4s and E-5s and 75% are in the E-3 through E-6 ranks[4]) who receive the lower BAH, we believe there is a healthier demand from these ranks generally, and particularly from those with young families, for well-designed military housing with attractive amenities relative to what the lower BAH can rent off base. If the military housing project has a disproportional number of units designated toward higher enlisted members or ranking officers, we will further analyze the stated demand for the project.

Home ownership is another source of direct competition for any privatized military housing project besides the availability of market-rate rental properties off base, as the BAH received by a military member may be applied toward mortgage payments. Factors we consider to determine the likelihood of home ownership by military personnel and their families include the average length of the tour-of-duty; whether or not military members may return to or retire in the area of the military base; if single-family home prices are affordable and/or targeted to military families on a military income; the level of property tax assessed on homes in the area; and the supply of such single family or townhouses with sizes appropriate for families that are for sale. The distribution of units by pay grade also is significant in this context, particularly for military installations that employ a larger number of ranking officers who receive the higher levels of BAH, as homeownership may be a more attractive option.

Understanding the Tenant Profile Through the Mission

Military housing has an advantage in that the military has built-in demand for the housing with a ready pool of military housing tenants. Although Moody's believes that the number of non-commissioned enlisted personnel and commissioned officers should not fluctuate greatly over the near term, the composition of each base may change over the long term. Moody's reviews the mission of the military installation carefully to assess its essentiality. We strive to understand the duration of the typical service personnel's assignment on base, whether the installation is comprised of mostly deployable units or is primarily a training facility, and if this base is duplicative in its mission compared to other installations serving the same purpose and thus subject to future realignment or even full closure.

If most of the service members on base are deployable, the expectation is that most families of the deployed service personnel will remain in the housing since the BAH continues during deployment. If the base is mostly a training facility with sessions lasting less than one-year in duration, the likelihood of service personnel relocating with their families to such a base for training is smaller. Additionally, should any short-term relocation constitute a "permanent change of station," the BAH currently received by the service personnel may be impacted. In those instances, their families have the choice to move in with extended family members or remain in their previous quarters to avoid any disruption, particularly if the relocation occurs during the school year, thereby impacting occupancy at the base.

---

2. *Given recent change in policy, service members are now responsible for paying their own utilities. They receive a utility allowance that is calculated annually and based on historic information and to the extent that they conserve utilities, the members are able to pocket the difference. If not, then the service member will pay some out-of-pocket costs.*
3. *For more information on how the BAH is set, please read our February 2007 Special Comment titled "Military Housing Fundamentals: The Basic Allowance for Housing (BAH)".*
4. *Department of Defense, Office of the Deputy Under Secretary of Defense (Installations and Environment) (http://www.acq.osd.mil/housing/housing101.htm)*

Overview of Military Personnel

Number of Service Members	Approximately 1.5 million service men (85%) and women (15%) comprised of 1.2 million non-commissioned enlisted personnel (E-1 through E-9). 42% of the 1.2 million are E-4s and E-5s; 75% are in the E-3 through E-6 ranks. Over 216,800 commissioned officers who range in rank from warrant officer to general/admiral. 31% are captains or lieutenants, and 13% are commanders.
Marital and Family Status	58% of service members are married during fiscal year 2002. 93% of career personnel, senior enlisted and senior officers are married. About 66% of military spouses are employed, and 90% of those with preschool children live in homes where both parents work full-time.
Education and Training	93% of all military recruits held a high school diploma during fiscal year 2002.
Housing Status	65% of military families live in civilian housing. As of fiscal year 2005, 24% of families live on-base. Approximately 11% of service members live on privatized military housing and this number is increasing.

Source: Department of Defense, Office of the Deputy Under Secretary of Defense (Installations and Environment) (http://www.acq.osd.mil/housing/housing101.htm)

Market Study Can Provide Useful Data for Demand Analysis

All of the factors discussed in this article are reviewed by Moody's in the context of the real estate market in which the military housing is located. A market study conducted by an independent third party should provide sufficient data to allow us to determine whether or not the military is building to only a portion of the documented demand (which would ensure that the project is well positioned with regard to demand over the short-term and long-term horizon of the project) and whether the project is highly competitive with other housing in the area.

Since the BAH is set based on market conditions and the local real estate market represents direct competition with the proposed military housing, the market study should include an analysis of the overall market condition, incorporating the current supply and demand for comparable housing in the area. It should also include the following:

- percentage of market housing that is renter-occupied; and if available, the percentage of the military's share of the rental market and overall housing market;
- current and forecasted market rent levels, by unit type comparable to the proposed military housing units;
- vacancy rates, also by comparable unit types;
- age of market housing versus proposed military housing;
- absorption experience for comparable unit types (i.e. is it easy for a military family from out of town to rent a home);
- supply forecast (or single family and multifamily permits approved for the area over past years);
- design features and amenities offered at those projects;
- expected population growth in the near term;
- trends in household incomes;
- number of potential residents (such as non-military personnel qualified to rent the military housing units if no military personnel are available) in the proximate area versus the number of military housing units proposed;

If the military housing project is located in an area where home ownership is affordable, the market demand study should address this potential competition by including information about home sale prices of comparable unit configurations, average mortgage loan size and average monthly payment including insurance and taxes. It should also address how responsive the local real estate market is to the military demand and their income levels as home builders may target specific developments to the military market.

Information regarding the local economy and the degree in which the military base impacts the local economy versus other employers in the area is also important. The marketing strategies used by local brokers or property managers are useful in assessing the competition that will be faced by the managers for the project in attracting the military personnel who as tenants. In certain bases, particularly those with low essentiality, an analysis of the alternative use of the property is helpful. Given, however, that a base closure is not on the near-term horizon, the market study should also focus on the demand for the units without the anticipation of a closure. Information regarding the availability of eligible non-military tenants in the area, such as military retirees or civilians affiliated with the military base, is important as well as they represent potential tenants who may occupy the project units, as permitted by the legal documents, in the event active military personnel do not fully occupy the housing units.

It is important that the market study provides a comprehensive overview of the market and not cherry-pick the pool of competitive projects. Additionally, Moody's may independently obtain market data, such as occupancy data and the number of permits issued for new construction in the area, from a third party research firm and may incorporate such information into the assessment of the strength of the project. We also conduct a site visit to gain first-hand knowledge of the proposed project location and the physical condition, layout and sizes of existing units, particularly of those that are to be rehabilitated. The visit is also an opportunity to validate or identify discrepancies with what was presented in the market study.

Related Research

Special Comment:

Military Housing Fundamentals: The Basic Allowance for Housing, February 2007, (101943)
Impact of 2007 BAH Rate Changes on Moody's Rated Bond Deals, February 2007, (102001)
Moody's Discusses Privatized Military Housing, July 2004, (87544)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

PAGE INTENTIONALLY LEFT BLANK

To order reprints of this report (100 copies minimum), please call 1.212.553.1658.
Report Number: 102554

Authors

Maria Ting
Florence Zeman

Production Associate

Petra Daley

© Copyright 2007, Moody's Investors Service, Inc. and/or its licensors and affiliates including Moody's Assurance Company, Inc. (together, "**MOODY'S**"). All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY COPYRIGHT LAW AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT**. All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings and financial reporting analysis observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

MOODY'S hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,400,000. Moody's Corporation (MCO) and its wholly-owned credit rating agency subsidiary, Moody's Investors Service (MIS), also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually on Moody's website at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Privatized Student Housing and Debt Capacity of US Universities:

All Affiliated Projects Affect University Credit—Indirect Debt Classification Discontinued

Table of Contents:

SUMMARY OPINION 1
OVERVIEW OF THE PRIVATIZED STUDENT HOUSING MARKET 2
CATEGORIZATION OF DEBT LIABILITIES 2
DISCONTINUATION OF INDIRECT DEBT CATEGORY FOR PRIVATIZED STUDENT HOUSING 3
UNIVERSITY CREDIT IMPACT VARIES BASED ON SPECIFIC PROJECT CHARACTERISTICS 4
SUMMARY 5
RELATED RESEARCH: 7

Analyst Contacts:

NEW YORK 1.212.553.1653

Karen Kedem 212.553.3614
Assistant Vice President-Analyst
Karen.Kedem@moodys.com

Roger Goodman 212.553.3842
Vice President -Senior Credit Officer
Roger.Goodman@moodys.com

Florence Zeman 212.553.4836
Senior Vice President
Florence.Zeman@moodys.com

John C. Nelson 212.553.4096
Team Managing Director
John.Nelson@moodys.com

Summary Opinion

This special comment updates Moody's treatment of privatized student housing projects as contingent liabilities of affiliated U.S. universities. These types of projects[1] always affect an affiliated university's credit position because student housing is a strategic core business of most U.S. universities—an integral part of a university's student market position, financial management, and capital strategy. The ultimate credit impact of a privatized financing on a university will vary depending on the project specifics, including the project's strategic importance and the university's involvement with the project. It is important to note that the credit impact on a university may not be static, but could vary over the life of the project. Our rating approach applies to all university affiliated privatized projects, including newer structures being used to finance these projects, such as equity-based models, subordinate debt, and pooled trust structures.

Moody's will discontinue the use of the "indirect debt" category for privatized student housing projects due to the lack of transparency implied by this term and the complexity of the contingent aspects of these projects. Projects currently treated as "direct debt" will remain classified as such due to the more explicit strategic and contractual ties of the projects to affiliated universities. The direct debt category includes all direct borrowings by the university and component units of the university, capital leases, and a small number of privatized borrowings that effectively have similar characteristics to other direct obligations (i.e. separately secured debt of a subsidiary of an affiliated fundraising foundation). The discontinuation of the "indirect debt" category for privatized housing projects, affects only our ratio calculations, it does not change our analytical approach. We will continue to assess these projects for their impact on credit quality of the university.

[1] Excludes off-campus, non-affiliated student housing projects which are 100% developer financed, constructed, managed, and owned by a private developer. These projects are not located on land owned by the university or an affiliated foundation and then ground leased to a private developer.

Overview of the Privatized Student Housing Market

Many U.S. public universities, and even some private colleges, continue to expand student housing to meet growing demand despite a weak economy by utilizing privatized student housing transactions with third-party developers. In some cases, universities are motivated to keep financing for student housing "off-credit" in hopes of preserving the institution's core debt capacity. As Moody's has noted in the past, we view all privatized student housing transactions as affecting an affiliated university's credit position, although the impact can vary based on the project's specific characteristics.

Moody's currently maintains 38 public underlying ratings for 31 privatized student housing transactions based on their own credit, which represents $1.57 billion of debt outstanding. The median rating for these transactions is Baa3, with more than half of the underlying ratings in the Baa category. The ratings reflect the typical attributes of these projects: 100% debt financed, single asset collateral, debt service coverage in the 1.20 times range, construction risk at initial issuance, annual lease up risk, targeted tenant base, and affiliation with the university. For more information on Moody's ratings on privatized student housing transactions, please see our special comment from September 2009, "Privatized Student Housing Review: Strong Student Demand Underlies Solid Performance Despite Challenges in the Real Estate and Higher Education Sectors."

The structure of privatized student housing transactions varies, but in nearly all cases the affiliated university has no direct legal obligation to make debt service payments on the bonds issued to finance the project. Moody's does not opine on the efficacy of a particular model or structure, but instead evaluates the credit impact that a project will have on the affiliated rated university. In order to determine the impact, Moody's assesses the same risks that it would for a direct university-financed student housing project, including the university's involvement and strategic interests in the project (please see *Figure 1* below).

Most often, privatized projects are located on land owned by a university or its affiliated foundation and ground leased to a third-party (typically a separate not-for-profit, single purpose limited liability company). Until recently, most projects were 100% debt financed and construction risk was often partially mitigated with capitalized interest and a debt service reserve fund. Bondholders are expected to be repaid from net revenues of the project and, in most cases, excess revenues after payment of operating expenses and debt service flow to the affiliated university. Generally, the affiliated university receives title to the project at the end of the financing term.

More recently, Moody's has seen universities consider privatized student housing transactions that are structured differently from the traditional model. These transactions may be financed by the third-party developer's own equity, corporate level debt, or a combination of the two.

Categorization of Debt Liabilities

Moody's has historically utilized three categories to label the relative credit impact of a student housing financing on a college or university's credit position. In a few cases, we believe there is a very high likelihood the university will treat the project as its own facility and obligation, leading us to include the debt of the project as a "direct debt" similar to other debt obligations issued by the university. However, we have treated the vast majority of privatized housing financings as "indirect debt". This

treatment reflected our conclusion that, despite the lack of legal obligation of the university to make debt service payments, these projects remained highly strategic to the university. Therefore, there remained a meaningful probability that the university would support the project in times of financial stress.

Credit rating reports on affiliated universities have discussed in some detail why these projects would be treated as indirect debt and how the relative importance in an institution's credit profile shifted based on project specific characteristics. For some projects that were either significantly less important to the university (i.e. a commercial development off-campus) or for some projects funded out of a third-party equity structure, we treated the debt as neither direct nor indirect debt, but continued to review the terms of agreements as well as the benefits and risks of the projects to the university as they evolved over time.

The credit impact of these projects varies according to the complex legal arrangements and strategic motivations of the affiliated university. For example, there are cases where a project treated as indirect debt has had little impact on our opinion of debt capacity or credit quality, while others had more significant impact. Because these analytical conclusions rarely lead to a rating change on the university and are not expressed in a quantitative measure, the use of the indirect categorization has not added to transparency around our credit opinions.

The use of these categorizations has encouraged over-simplification by external users of our ratios, leading many to artificially draw distinct conclusions about the relative credit effects of a project that is classified as "direct debt" compared to one that is "indirect debt"; or, the differences in credit impact between "indirect debt" and no-debt treatment. For example, market participants might conclude that projects that are not classified as direct or indirect debt "have no impact" on the university credit position, debt capacity or rating. Or, market participants might conclude that two projects treated as "indirect debt" have exactly the same impact on debt capacity and credit quality. These incorrect conclusions might be reached despite our long standing view that all material projects and financial transactions are included in our rating analysis and affect a university's credit position to varying degrees depending on the project's specific characteristics.

Discontinuation of Indirect Debt Category for Privatized Student Housing

In order to avoid the potential for reduced rating transparency and incorrect conclusions of our analysis of these projects, the use of the "indirect debt" category for privatized housing projects will no longer be used by Moody's. Projects currently treated as "direct debt" will remain classified as such due to the more explicit strategic and contractual ties of the projects to affiliated universities. This change is an adjustment to our ratio calculations and labeling, but not a methodology change.

We will continue to view privatized student housing projects as part of the financial and market position of affiliated universities. We will also continue to monitor the effects of the projects on university behavior—specifically assessing ways in which universities might support them including direct financial support as well as other means of support, such as marketing, shuttle service to campus, etc. As more fully discussed below, the relative credit impacts of these projects will continue to vary based on the details of each organization, project economic, financing terms, and management team capabilities.[2]

[2] We will continue to utilize the indirect debt concept to capture the use of operating leases and unfunded defined benefit pension obligations (see Moody's Views on "Not-For-Profit Healthcare: Capital Access: Moody's View on Operating Leases: Off Balance Sheet But On Credit", August 2004).

FIGURE: 1

Impact on Credit Quality/Analysis

PROJECT CHARACTERISTIC	LIMITED IMPACT	MODERATE IMPACT	STRONG IMPACT
Location	Project located off-campus and not adjacent to campus	Project located on campus or adjacent to campus	Project located in central on-campus location amid university-owned student housing
Ground Lease	Housing not constructed on university or foundation owned land	University or foundation owns underlying land which is ground leased to a third-party	University or foundation owns underlying land which is ground leased to a third-party
Share of Student Residences	Project is minimal amount of student housing (less than 10%)	Project is meaningful amount of student housing (10-30%)	Project is strategic component of student housing (over 30%)
Student Market Segment	Project is not limited to university use	Project is intended to house upperclassmen, graduate, or professional students	Project is intended to house undergraduate students, especially freshmen
Student Services	No university services available at project	Some minor university services available such as shuttle bus	Similar services available as at other university housing
Rental Rates	No university involvement in setting rental rates	University involvement in setting rental rates along with third-party	University substantially controls rental rates
Marketing and Management	No university involvement in management, marketing, or directing students	University involved in management, marketing, or directing students	University markets project as on-campus housing and manages housing
Project Assistance	No direct/indirect assistance	University assists the project to obtain tax-exempt status	University assists the project in obtaining access to same utility rates and other public services as university-owned student housing
Cash Flow	University does not receive residual cash flow or project at end of financing term	University receives residual cash flow or project at end of financing term	University receives previously established cash flow (not dependent on project performance) and/or is required to purchase project at end of financing term
Construction Risk	No interim or other type of financing extended from University or foundation to developer	Implicit university oversight of the project is an important aspect of mitigation of construction risk	Interim loan to construct the facility eliminating construction and lease up risk
Non-Compete Clause	University does not enter into non-compete clause	University agrees to limited lease up or occupancy tests in privatized housing before building additional housing	University agrees to stringent lease up or occupancy tests in privatized housing before building additional housing
Guarantees and Support Agreements	No university guarantee regarding minimum beds or rent levels; no first fill policy or support agreement; if the university markets the privatized student housing project, it is distinguished from other university housing options	Privatized housing is marketed along with university housing with minimal differentiation in the status of the housing; university agrees to recommend housing to students who are on waiting list.	University enters into minimum bed or rent guarantee, first fill policy, or support agreement
Other	No action taken to enforce payment of rental fees on privatized student housing	University offers option to have financial aid applied directly to rental housing payments, but does not take other action if payment is not made	University requires that financial aid be applied to rental payments and withholds transcripts if rental payments are not made on a timely basis

University Credit Impact Varies Based on Specific Project Characteristics

Moody's believes that affiliated privatized student housing projects always impact the credit profile of an affiliated university to some degree. This conclusion holds for the more traditional as well as newer models of privatization that use equity or corporate level debt of a third party to finance the transaction. In Moody's view, the absence of project-level debt alone does not imply that there is no credit impact, particularly if the project can be leveraged in the future.

In assessing the credit impact of a privatized student housing project, Moody's takes into account the project's structure, strategic ties of the affiliated university, the university's role in the project (i.e. setting rent, marketing the project to students, managing the facility), and certain legal considerations. In the table above, Moody's has outlined the most important factors it considers when assessing the credit impact of a privatized student housing project on an affiliated university. The presence of one or more factors that fall into the "strong" category creates greater credit impact on the university.

It is important to note that the credit impact on a university may not be static, but could vary over the life of the project. When a privatized student housing project is meeting its occupancy and performance targets, the credit impact on the affiliated institution is modest and can even be neutral depending on the consistency of operations. However, many privatized projects are vulnerable to volatile performance. When a project is not performing as planned, it will often force the university to consider taking various actions to stabilize what is usually considered a strategic asset with an impact on student market position. These decisions could well result in the university choosing to commit financial, management, or operational resources that would have otherwise been allocated to other programs, even in the absence of any legal requirement to do so.

Summary

We will continue to evaluate privatized student housing projects on a case-by-case basis to determine the credit impact on the affiliated university. The depth of our analysis will depend on the size of the project and the importance relative to the university's overall housing stock and strategic plans, consistent with our existing approach outlined in our special comment from October 2006, "Privatized Student Housing & Debt Capacity: Direct & Indirect Impacts on Affiliated University." We will discontinue use of the "indirect debt" category for privatized housing projects that are not so closely aligned as to warrant treatment equivalent with directly issued debt of the university. As we have in the past, in all cases we will continue to pay particular attention to the specific terms of the agreements between universities and third-party managers, developers, or owners of privatized student housing to evaluate the credit implications.

Key Questions that Form Moody's Approach to Analyzing Credit Risks of These Transactions

When analyzing the credit impact of privatized student housing projects, Moody's applies a standard set of questions to guide our review.

1. Is this a financial transaction entered into purely for potential revenues or is it for the development of a facility that is part of the strategic needs of the organization?

   If the project is entered into with an investment mindset, the university may be more likely to cut losses and allow the project to fail. If it is a necessary part of long-term plans, the university may choose to become more involved, rather than less.

2. How "core" is the project to the mission, market position, and operation of the university?

   If the project is seen as a core part of the development and growth of the organization, it is unlikely that the university would not support a struggling project.

3. What direct benefits does the university gain from the proposed structure of the financing?

   Moody's evaluates the likely benefits from the endeavor, including potential revenue streams, indirect market enhancements, and potential for long-term growth in value of facility.

4. What is the likelihood that the project will run into challenges or not meet expectations?

   The more aggressive the assumptions built into the financing plans, the more likely the university may need to support the project.

5. What would the university likely do if the project were to struggle/fail?

   Often, despite no legal requirement to support a project, universities decide early in the process that they would be willing to take steps to support a project. In these cases, debt capacity impact is likely to be larger.

6. What direct covenants and obligations has the university taken on within the various legal agreements between the university and other parties?

   Often, the university may insert some direct control of aspects of projects, including a role in influencing pricing of rental rates.

   Conversely, has the university agreed to any covenants that are limiting, such as non-compete or first-fill provisions.

Related Research:

» Public-Private Partnerships in U.S. Higher Education, June 2008 (109385)

» Privatized Student Housing and University Support, January 2007 (101436)

» Privatized Student Housing & Debt Capacity, October 2006 (100310)

» Privatized Student Housing Review: Strong Student Demand Underlies Solid Performance Despite Challenges in the Real Estate and Higher Education Sectors, September 2009 (119733)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 123896

Authors
Karen Kedem
Roger Goodman

Editor
John Nelson

Senior Production Associate
Shubhra Bhatnagar

© 2010 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ARE MOODY'S INVESTORS SERVICE, INC.'S ("MIS") CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MIS DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS DO NOT CONSTITUTE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS ARE NOT RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. CREDIT RATINGS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MIS ISSUES ITS CREDIT RATINGS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this Document is by Moody's affiliate Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to wholesale clients (within the meaning of section 761G of the Corporations Act 2001). By continuing to access this Document from within Australia, you represent to Moody's and its affiliates that you are, or are accessing the Document as a representative of, a wholesale client and that neither you nor the entity you represent will directly or indirectly disseminate this Document or its contents to retail clients (within the meaning of section 761G of the Corporations Act 2001).

MOODY'S
INVESTORS SERVICE

Moody's Investors Service
Municipal Credit Research

August 2000 ***Special Comment***

Contact	Phone
New York	
Susanne Forsyth	1.212.553.3825
Jina Yoon	1.212.553.1051
Kelly Wimmer	1.212.553.4456
Florence Zeman	1.212.553.4836

Using Low Income Tax Credits In Affordable Housing Deals: Two Sides Of The Story

Moody's Rating Incorporates An Analysis Of Both Benefits And Potential Risks

Summary Opinion

- The combination of 4% tax credits and tax-exempt bonds is considered by many to be one of the most important tools for providing affordable housing to lower and moderate income households.
- The use of tax credits produces equity, which enables a property to offer lower rents than traditional borrowing. Additionally, the use of the LIHTC may provide substantial oversight strength to the property.
- While Moody's acknowledges the benefits associated with tax credits, Moody's review of a property does not, generally, allow the tax credits to offset a weaker property or financial condition. These benefits need to be weighed against the potential costs such as additional compliance complexity, risks of noncompliance, and the differing interests of equity investors versus bondholders.

continued on page 3

Author

Kelly Wimmer
Jina Yoon
Susanne Forsyth

Editor

Florence Zeman

Production Associate

Phillip Stone

© Copyright 2000 by Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007. All rights reserved. **ALL INFORMATION CONTAINED HEREIN IS COPYRIGHTED IN THE NAME OF MOODY'S INVESTORS SERVICE, INC. ("MOODY'S"), AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.** All information contained herein is obtained by **MOODY'S** from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and **MOODY'S**, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness, completeness, merchantability or fitness for any particular purpose of any such information. Under no circumstances shall **MOODY'S** have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of **MOODY'S** or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if **MOODY'S** is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The credit ratings, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. **NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.** Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling. Pursuant to Section 17(b) of the Securities Act of 1933, **MOODY'S** hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by **MOODY'S** have, prior to assignment of any rating, agreed to pay to **MOODY'S** for appraisal and rating services rendered by it fees ranging from $1,000 to $1,500,000. PRINTED IN U.S.A.

Introduction

Since the inception of the Low Income Housing Tax Credit (LIHTC) Program in 1986, the use of tax credits in conjunction with tax-exempt bonds has become a popular and effective tool for financing low-income multifamily housing. Tax credits provide a number of benefits and incentives to participants, creating equity and greater flexibility within the financing. Despite these benefits, increased compliance complexity, heightened restrictions on rental revenue and the differing interests of equity investors versus bondholders can mitigate the total benefit of the tax credit within the financing from a rating perspective.

This article outlines Moody's view on the impact the presence of tax credits can have on bond-financed transactions by discussing the mechanics of the LIHTC program, the motivations for using tax credits and the various impacts tax credits can have on a bond rating. This article supplements Moody's overall approach to affordable housing transactions which incorporates an analysis of the construction period letter of credit support (if applicable), the property's historical and projected financial performance, physical condition, market demand, and ownership and management. While the emphasis of Moody's analysis continues to be on the property's debt service coverage, the loan to value (LTV) and the use of LIHTC equity is a significant factor in our analysis. (For more information on Moody's approach to rating affordable housing bonds, please refer to *Questions and Answers Regarding Moody's Approach to Reviewing Affordable Housing Transactions*, published in July 1999 and *Moody's Anticipates Increase In Volume of Affordable Housing Bonds: More Credit Risk Than Traditional Housing Bonds*, March 1998).

What Are Low Income Housing Tax Credits?

HISTORY AND LIMITATIONS ON USE

The Low-Income Housing Tax Credit, part of the Tax Reform Act of 1986, is considered by most to be one of the most important tools for providing affordable housing to lower and moderate income households, assisting in the development and availability of more than 850,000 units of affordable housing nationwide. The LIHTC is included in Section 42 of the Internal Revenue Code (IRC) and is administered by the Treasury Department on the Federal level and by the tax credit allocating agencies, often the State Housing Finance Agencies (HFAs), on the state level.

9% VS. 4% CREDITS

The 9% credit is used with non-federally subsidized new construction and substantial rehabilitation expenditures and the 4% credit is used in conjunction with tax-exempt bonds or below-market federal loans for new construction or acquisition and substantial rehabilitation. Developers may apply for an allocation of 9% credits or apply for tax exempt bond allocation to facilitate the receipt of 4% credits. Under the 4% credit program, the developer may be exempted entirely from the volume limitations on LIHTC allocations if they satisfy a number of requirements. These requirements include the 50% test, in which 50% or more of the aggregate basis in land and building must be financed with tax exempt bonds. Given the larger equity amount and the additional restrictions for developers using the tax-exempt bonds, the application process for the 9% credit is highly competitive and generally oversubscribed.

The Participants

Tax credit projects are generally owned by ***operating partnerships*** comprised of a general partner, often the developer or a developer related entity, and an investment partnership, which acts as the ***limited partner***. The general partner typically must guarantee completion, the amount of tax credits and fund operating deficits. Limited partners may own between 99% and 99.99% of the tax credits, losses and profits. The distribution of cash flow and sale residuals are normally negotiated among the partners. Within limited partnerships, all partners are viewed as owners and an investor must be a partner to receive the credits. Although federal tax credits cannot be sold separately, certain state tax credit programs, such as California, do allow for a bifurcation of the tax credits.

In the case of a ***syndicate transaction***, there will generally be two or three separate partnerships. The investment partnerships within these transactions are comprised of one or more investors, often large corporations. The syndicator will generally act as the facilitator for the investment partnership and has reporting responsibilities to the funds it organizes.

Non-profit organizations are often involved in LIHTC transactions. Since the LIHTC has no value for nonprofit or tax-exempt organizations as a credit to their taxes, the nonprofit generally serves as a general partner and the for-profit investors act as limited partners. Utilizing this structure, the for-profit investors are able to take advantage of the tax credit against their regular tax liability during the tax credit period and the nonprofit may negotiate the right to purchase the project after the compliance period expires.

Differences between the LIHTC and the Historic Tax Credit

In addition to the LIHTC, there is another type of tax credit available to developers and investors, the Historic Rehabilitation Tax Credit, or HRTC. The HRTC, established in 1978, was also provided for in the Internal Revenue Code. The HRTC is only available for the rehabilitation of certified historic structure expenditures. The HRTC may be used in conjunction with the LIHTC, most commonly seen in adapting schools or office buildings for residential use, but is generally not available to a property owned by a tax-exempt entity. The following highlights some of the differences between the two programs.

Unlike the LIHTC program administered by the state allocating agencies, in most cases the state housing finance agencies, the HRTC program is administered by the Department of the Interior, mainly the National Park Service. The Historical Rehabilitation Tax Credit is equal to 20% of the amount of qualified rehabilitation expenditures versus the 4% and 9% credits under the LIHTC program. The HRTC is not competitive like the LIHTC program, as HRTC are available without any governmental allocation or approval process except for those approvals required from the Department of the Interior with regard to the historic quality and character of the building.

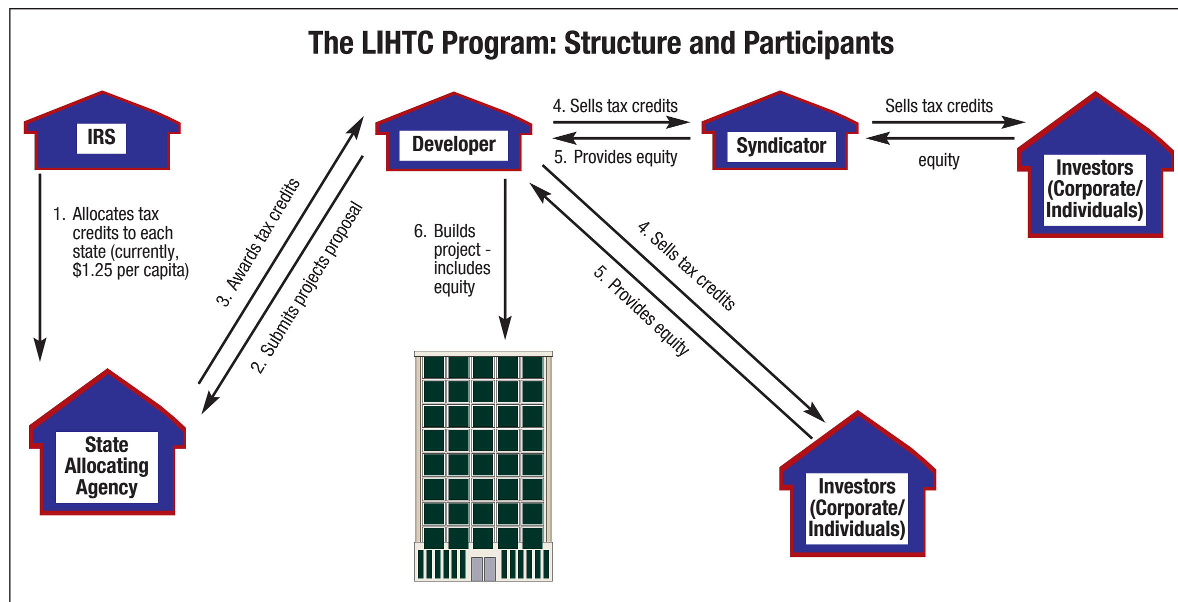
Unlike the LIHTC, which is claimed over a 10-year period commencing with occupancy of the qualified low-income units, the full amount of the HRTC is claimed in the year in which the qualified rehabilitation expenditures are placed in service, usually when a certificate of occupancy is received. The HRTC is subject to the recapture of credits for improper use for the first five years, while the LIHTC is subject to recapture over a 15-year period in the event of non-compliance.

Purchase Of The Tax Credits

Upon the purchase of the tax credits, investors will make equity contributions based on the amount of the 10-year credits available to the investor. The amount the investor will pay for each credit varies with market conditions, type of project location and other structural variables. Investors may purchase the credits directly from the developer or through a syndicator who buys them from the developer. Equity raised from the sale of the tax credits is generally phased in based on an agreed upon pay-in schedule.

The following is an example of a typical equity pay-in schedule:

- 25% upon 50% construction completion
- 25% upon 100% construction completion
- 20% upon closing of permanent financing
- 10% upon receipt of the IRS forms 8609
- 10% upon achievement of break-even operations for a defined period of time plus a determined debt coverage ratio for a defined period of time.



Structuring The Deal With LIHTC — How Tax Credits Impact Your Tax-Exempt Bond Rating

While Moody's recognizes the benefits associated with tax credits, Moody's review of a property does not, generally, allow the tax credits to offset a weaker property or financial condition. The benefits of the tax credit such as equity and additional oversight should be weighed against the potential costs such as additional compliance complexity and risks of noncompliance. The focus of Moody's analysis continues to be the property's debt service coverage, loan to value ratio, historical and projected financial performance, physical condition, market demand, ownership and management. However, due to the additional complexity within the LIHTC program, Moody's places particular emphasis on the owner and management team's demonstrated experience in successfully operating tax credit properties. Thus, in measuring the impact of tax credits on a bond rating, Moody's carefully weighs both the positive and negative factors associated with the use of tax credits, as discussed below.

Short-Term Tax-Exempt Construction Bonds

Section 42(i)(2) of the IRC allows developers to use tax exempt bonds or below market federal loans to finance construction, as long as the bonds are redeemed prior to when the building is placed in service. However, in a private letter ruling (PLR 9853036), the IRS concluded that projects could remain eligible for tax credits even if the bonds are redeemed on or after the placed-in-service date. In so doing, developers would be allowed to use tax exempt bonds to obtain 4% credits and then take out the bonds with a favorable form of permanent financing. In analyzing these types of short-term bond financings, Moody's will look at the security of the source of financing and the strength of the transaction's structure as part of its review process.

CREDIT FACTORS

The Use of Equity Provides Fundamental Strength To Structure

Tax credit equity is commonly used in conjunction with tax-exempt private activity bonds to finance affordable multi-family housing projects. Moody's looks for a property that is not over-leveraged and has owner's equity at closing. Equity may come from a number of sources including HOME funds or the LIHTC. The sponsor may use the proceeds of the sale of the tax credits as equity for their project, reducing the required mortgage amount and providing an opportunity for lower tenant rental levels.

A strong incentive exists for the redemption of bonds after the fifteen-year compliance period, given that the LIHTC is claimed by the taxpayer (LLP) for only a ten-year period, and that at the end of fifteen years the owner is free to sell the property. Although creating concerns for the continuation of low income housing, the structure does provide greater credit strength for the bonds, as the bonds' probability of redemption increases just as the potential for property deterioration increases as the property ages.

New Construction or Rehabilitation — LIHTC Properties Often Strongly Situated Relative To Competition

The combination of LIHTC and tax-exempt bond financing allows for the financing of two types of developments, new construction or the acquisition and rehabilitation of an existing structure. Given the necessary rehabilitation or the modern amenities provided by new construction, the LIHTC property is often very competitive relative to existing properties in its submarket given their generally below-market rents and age relative to the rest of the housing stock. However, these new construction LIHTC properties are often built near the periphery of large metropolitan statistical areas (MSAs), allowing the property to benefit from both a higher median income than many rural areas, and slightly below market land costs as the areas are generally not fully developed. Although this can create a strongly situated LIHTC property if development continues as expected, a considerable downturn in the local market could significantly impact these peripheral properties.

While newly constructed and substantially rehabilitated properties tend to be well situated in the market, risks inherent in these types of projects, such as those associated with construction and lease up, are factored into Moody's analysis of tax credit projects. Moody's looks to some form of liquidity facility, typically a letter of credit (LOC), to be in place during the construction phase and up to stabilization. The LOC or other liquidity facility must be structured properly so that the interest component is sized to cover all debt service payments until the property reaches stabilization. Moreover, the rating of the provider must be sufficient to support the rating on the bonds. (For more information on Moody's approach to rating LOCs, please refer to *A Guideline for Sizing the Interest Component of a Letter of Credit Facility*, published in June 1998)

The stabilization factors generally include a specific debt service coverage ratio for twelve consecutive months, meeting occupancy standards for twelve months and receiving Moody's confirmation of the rating on the bonds. If the LOC release criteria are not met prior to the termination date of the LOC, the LOC must be extended or the trustee is instructed to draw on the LOC and redeem all of the bonds. Moody's views these elements as providing solid credit strength for the bonds during the new construction or substantial rehabilitation phase.

Additional Participant Oversight Provides Strength

The use of the LIHTC may provide additional oversight strength to the property. Often the LIHTC investor, or LLP, has the ability per the loan documents to remove the general partner for non-performance if necessary. This coupled with initial syndicate participation often provides an additional layer of oversight to the LIHTC property. Additionally, although the LIHTC investor is not required to support troubled properties with additional equity, the investor may find a cash infusion in its best interest as weighed against the potential of the recapture of tax credits. These factors, although not foolproof, do provide additional comfort on the maintenance and strength of the underlying asset.

Oversight by the federal and state government agencies may provide another level of credit strength to properties financed with tax credits. Pursuant to Section 42(m)(1)(B)(iii) of the IRC, the credit agency's allocation plan must include procedures for monitoring compliance with provisions of the tax credit program. While the allocating agency is given a certain amount of latitude in developing its oversight plan, it is required to monitor noncompliance with set-aside and rent restrictions and maintaining habitability, among other things. Allocating agencies typically fulfill these requirements by conducting regular site visits to properties in their tax credit portfolio and reviewing annual income certifications and rent records. In the event of any noncompliance, the state is required to notify the IRS of any such instances by filing a form 8823.

LIHTC Regulations Create Additional Compliance Complexity

The presence of tax credits adds complexity to bond-financed transactions through the additional layers of regulations and compliance requirements under the tax credit program, such as rent restrictions, set-aside requirements and federal and state monitoring. Moreover, a tax credit property may have other restrictions due to additional covenants promised during the application process to make the project more competitive and requirements for other financing sources such as tax exempt bond financing, HOME funds and Section 8 subsidies. The compliance period for tax credit projects begins on the date when at least 10% of the units are occupied and ends on the later of 15 years after which 50% of units are occupied, when no tax exempt bonds are outstanding or when any Section 8 assistance terminates.

Under both the tax credit and tax exempt bond financing programs, the owner must satisfy one of two set-aside requirements. The owner may elect to have a minimum of 20% of the units occupied by households whose incomes do not exceed 50% of the area median gross income or 40% of the units to be occupied by households whose incomes do not exceed 60% of median income. Due to the scarcity of tax credits and the increasing competitiveness of the allocation process, however, many owners elect much more stringent income requirements in order to be more competitive. It is, therefore, not uncommon to see tax credit properties in which 100% of the units are very-low to low income. Income tests must be conducted annually, although incomes may increase to 140%, or 170% in some cases, of applicable income limits before another comparable unit must be rented to a qualifying tenant. Given the complexities of complying with the additional layers of restrictions under the LIHTC program, the owner and management team's proven track record in operating tax credit properties will be a critical element of Moody's analysis.

LIHTC Rent Restrictions Can Significantly Reduce Revenue-Raising Flexibility

While tax exempt bond financed properties without tax credits generally have no restrictions on rents as long as set-aside requirements are met, tax credit properties must satisfy the maximum allowable rent guidelines under the LIHTC program, significantly reducing the revenue-raising flexibility of owners of tax credit properties. These maximum allowable rents are based on tenants paying no more than 30% of their income on rent. Income limits are based on an area's median gross income for a four-person household, which are published annually by HUD. The restricted rent levels are calculated by multiplying the area median income by the set aside requirements (i.e. 60% of income) and then multiplying this number by the 30% income limit. Rent levels are also adjusted for unit size. However, because LIHTC rent levels

are calculated on the expected occupancy of the unit, which is one person for a studio and 1.5 persons per bedroom, rather than the actual occupancy of the unit, it is possible for tenants to pay more than 30% of their income on rent.

The stringent rent restrictions under the tax credit program can significantly impair the revenue-raising flexibility of property managers. For example, if rents at a particular tax credit property are currently at the maximum rent levels allowable under the program, any increases will be capped by the annual adjustments in the area median income published by HUD. Therefore, the manager may not have the flexibility to raise rents to improve cash flow and maintain certain debt service coverage levels. As such, the degree of revenue-generating flexibility, as evidenced by the difference between the proposed rents and the maximum allowable rents, will be incorporated into Moody's analysis.

Troubled LIHTC Properties May Result in Conflicting Interests Between Tax Credit Investors and Bondholders

In the case of troubled tax credit properties, the interests of the LIHTC investors may conflict with those of bondholders. While the bondholder is concerned about timely payment of debt service, the LIHTC investor is concerned with whether or not it makes financial sense to maintain the property's cash flow, such as removing the General Partner or injecting additional equity into the property. The timing of when the property runs into trouble may be a critical factor in the investor's decision-making process. For example, in the later years of the 15-year compliance period when the investor has already infused substantial amounts of equity into the property, it may be more prudent for the investor to take remedial steps to avoid a payment default. In the early years of the credit period, however, when the investor has not paid in the total equity contribution, the investor may decide against providing more capital to maintain debt service payments, potentially triggering a draw on the LOC or payment default and an early redemption of bonds. Thus, while the presence of tax credits may increase the likelihood that the LIHTC investor will bail out troubled properties and ensure enough cash flow to meet debt service obligations, Moody's believes that the timing, size and nature of the property's deterioration will greatly impact the investor's decision.

The Future of the Tax Credit Program: The Challenge of Preserving Affordability

A primary challenge for states will be preserving the affordability of projects after the 15-year compliance period when investors may exit their partnership. As the tax credit program matures, many states will be faced with the challenge of how best to spend their allocations, whether on preservation or new housing production. The first crop of tax credit projects, those built in 1987, will reach the end of the affordability period in 2002 and will provide the first indication of how these properties will fare during the transition period. Amendments made to the tax code in 1989 and 1990, however, have increased the probability of preservation through affordability extensions and right-of-first refusal protections, respectively. Moreover, the increasing competitiveness of the tax credit allocation process increases the likelihood that the projects built after 1990 will remain affordable and if not, be better situated to make the transition into market rate properties.

To order reprints of this report (100 copies minimum), please call 800.811.6980 toll free in the USA. Outside the US, please call 1.212.553.1658.

Report Number: 58873

Credit Trends

MOODY'S
INVESTORS SERVICE

INDUSTRY OUTLOOK

Outlook for US State Housing Finance Agencies for 2013 Remains Negative

Sector is Positioned for Future Stabilization, Should Key Credit Drivers Strengthen

Table of Contents:

SUMMARY OPINION 1
CREDIT DRIVER #1: UNEMPLOYMENT REMAINS WELL ABOVE HISTORICAL NORMS 2
CREDIT DRIVER #2: LOW INTEREST RATES ON INVESTMENTS 4
CREDIT DRIVER #3: LOW CONVENTIONAL MORTGAGE RATES 5
CREDIT DRIVER #4: LOW HOME PRICES RELATIVE TO ORIGINATION 8
CREDIT DRIVER #5: WEAKENED COUNTERPARTY CREDIT QUALITY 9
CREDIT DRIVER #6: HIGH LIQUIDITY FEES FOR VARIABLE RATE DEBT 9
CREDIT DRIVER #7: UNCERTAINTY IN GOVERNMENT POLICY 10
HFA SECTOR WELL POSITIONED SHOULD CREDIT DRIVERS STABILIZE 11
MOODY'S RELATED RESEARCH 12

Analyst Contacts:

NEW YORK +1.212.553.1653

Rachael Royal McDonald +1.212.553.4456
Vice President - Senior Analyst
rachael.mcdonald@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

Moody's outlook for the US state housing finance agency sector is negative. The outlook expresses our expectations for the fundamental credit conditions in the sector over the next 12 to 18 months. It does not speak to expectations for individual rating changes and is not a prediction of the expected balance of rating changes during this time frame.

Summary Opinion

The outlook for US state housing finance agency (HFA) sector remains negative. While the U.S. housing market has begun to show signs of improvement, HFA credit drivers are more closely tied to various indicators in the broader US economy and capital markets. We expect that these economic headwinds will continue to drive near-term challenges for HFAs. However, should these factors turn toward a more favorable trend during the next year, we will reassess HFA credit drivers to determine if a change to a stable outlook for the sector is warranted. The key credit pressures determining our current negative outlook are:

1. *Unemployment remains well above historical norms*: Low and moderate income homeowners and renters, the customers of the HFAs, are particularly sensitive to the impacts of joblessness and underemployment. As a result, high unemployment drives elevated rates of loan delinquencies and foreclosures for HFA portfolios. While down from peak levels, unemployment is projected by Moody's Macroeconomic Board central forecast to remain elevated above pre-2009 levels at 6.5% or higher through 2014.[1] Furthermore, we expect there to be a lag between declines in unemployment and improvements in HFA portfolio performance as HFAs work through their backlog of foreclosed loans.

2. *Low interest rates on investments*: Low interest rates depress profitability for both new and existing bond programs and reduce returns for HFA general funds. The US Federal Reserve has indicated that the federal funds rates will remain extremely low until unemployment drops below 6.5%.[2]

[1] Moody's Investors Service. Global Macro Outlook 2013-14: Downside Risks Have Diminished. February 12, 2013.

[2] Federal Open Market Committee. Press Release. January 30, 2013

3. *Low conventional mortgage rates:* Historically low interest rates in the US have greatly lowered conventional mortgage rates, which erodes the inherent interest rate advantage of tax-exempt bonds issued by HFAs. Based on the Federal Reserve's decision to continue purchasing agency mortgage-backed securities in the near term, we anticipate that mortgage rates will also remain low during the outlook period[3] We expect HFAs will continue to struggle to issue bonds at rates low enough to finance competitive mortgage loans.

4. *Low home prices relative to loan origination:* Home prices drive potential losses upon foreclosure sales. While home prices have been trending upwards in some markets, they still remain well below their peak levels for loans originated between 2006 and 2008. Approximately 47% of HFA single family whole loan portfolios were originated during these years.

5. *Weakened counterparty credit quality*: Weakened counterparties can taint HFA credit quality. We anticipate that bank ratings and mortgage insurer ratings will remain under pressure in the near-to-medium term based on our negative outlooks for these sectors.

6. *High liquidity fees for variable rate debt*: Liquidity fees that are higher than when the bonds were originally issued can pressure HFA profitability. We expect that fees will remain at these levels for the medium term, further pressuring the profitability of HFAs with substantial amounts of VRDOs.

7. *Uncertainty in government policy*: Changes to the business model or elimination of Fannie Mae and Freddie Mac, or changes to the role of the Federal Housing Administration (FHA) could impact the ability of many HFAs to originate and package loans. There is also uncertainty around the fate of some federal subsidy programs that are utilized by the HFAs, as well as the municipal bond tax exemption. It is unclear when these policy issues will be clarified.

While these factors place negative pressure on HFAs, HFAs are well-positioned to benefit if the economic recovery solidifies, which would stabilize the sector over the medium-term. Despite negative pressures, HFAs have weathered the recession well, maintaining a stable median asset-to-debt ratio of approximately 1.2 throughout the recession. Furthermore, while median profitability has declined since 2007, it has stabilized between 8% and 9% over the last three years. In addition, many HFAs have taken actions to help bolster their programs during the recession, such as breaking relationships with downgraded counterparties, developing new revenue streams, creating new loan origination strategies, and/or infusing cash into single family programs for added support. If the economic recovery continues along the expected timetable and the economy experiences lower unemployment, higher interest rates and higher conventional mortgage rates in 2014, HFAs will benefit, and the sector will be primed for stabilization thereafter. However, given that the economic recovery remains shaky and may proceed slowly in the near term, we believe that the negative outlook remains appropriate for the next 12 to 18 months.

Credit Driver #1: Unemployment Remains Well Above Historical Norms

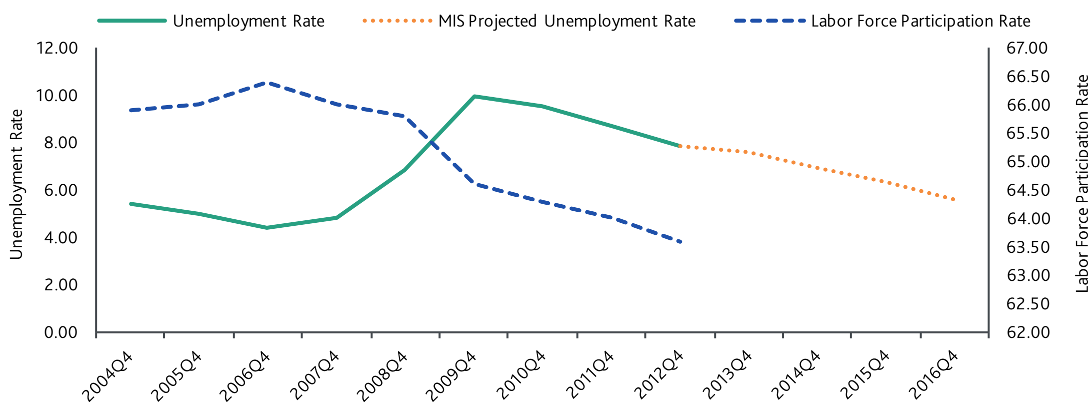
High unemployment in the US, a key driver of delinquency and foreclosure rates for HFAs, is projected to remain comparatively high in the near term, as shown in Exhibit 1. Furthermore, labor participation rates have also been declining since the beginning of the economic crisis. Other general economic indicators, such as increased food stamp usage and Social Security disability claims, also support the notion that low and moderate income home owners may be struggling. Moody's

[3] Ibid.

Macroeconomic Board's central scenario as of February 2013 projects unemployment to remain between 7-8% in 2013 and between 6.5-7.5% in 2014.[4] While this scenario is an improvement over projections made by the Macroeconomic Board at the end of 2012, unemployment is still projected to be high by historical standards in the next 12 to 18 months, resulting in elevated delinquency levels for HFA portfolios.

EXHIBIT 1

Unemployment Rate Will Remain Near 7% Through Outlook Period

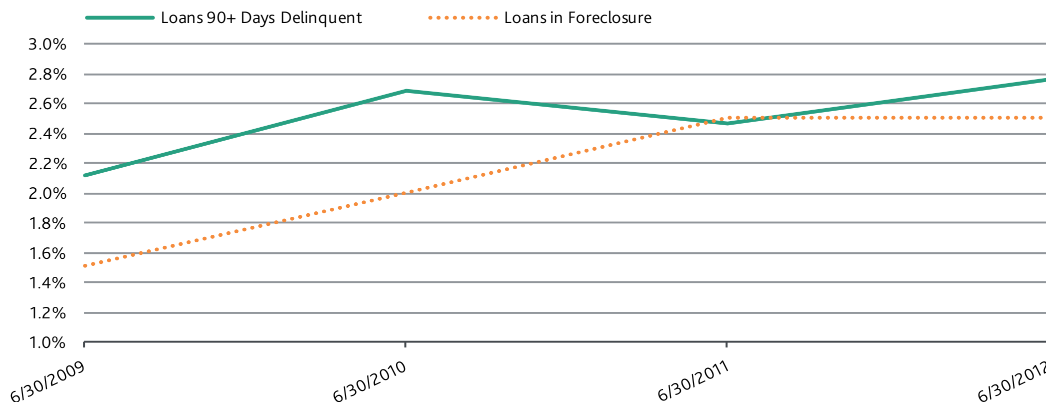


Source: U.S. Bureau of Labor Statistics (BLS); Moody's Analytics (ECCA) Forecast

Furthermore, while there have been some signs of improvement in delinquency rates nationwide, it has not yet translated in the performance of many HFA pools. In addition to unemployment, HFA loan performance has also been weakened by loan modification programs, loss mitigation initiatives, and various state policies – all of which have contributed to lengthened delinquency periods. As shown in Exhibit 2, seriously delinquent rates have continued to climb, reaching an historical high of 5.27% as of June 30, 2012. This marks an increase of 45% from levels reported in June 2009 when seriously delinquent loans were 3.63%. Foreclosure levels, while flat, are also at historically high levels at 2.51%, a 66% increase since 2009.[5]

EXHIBIT 2

Foreclosures Remain Historically High



Source: HFA Surveys

4 Moody's Investors Service. Global Macro Outlook 2013-14: Downside Risks Have Diminished. February 12, 2013.

5 Moody's Investors Service. US State Housing Finance Agency Delinquency Rates Continue to Rise Despite Improvement in National Housing Market. December 2012.

Delinquency and foreclosure rates remain well below the default rates used in our stress case loan loss calculations, but they are still a negative credit factor because they erode HFA profitability and liquidity. As an HFA's seriously delinquent loan rate rises, the agency may experience higher loan losses, reduced cash flow until claim payments are received, and additional administrative costs to address the issues. Furthermore, depending on the severity of the increase in delinquency rates, we may increase the assumed default rates in our stress case loss calculations, which would increase projected losses for the HFAs. A number of HFAs have chosen to transfer funds from the HFA general fund into their single family programs in order to further over collateralize their programs as a result. While these transfers are a positive for the single family program, they reduce the resources for the HFA at large, potentially pressuring HFA issuer ratings.

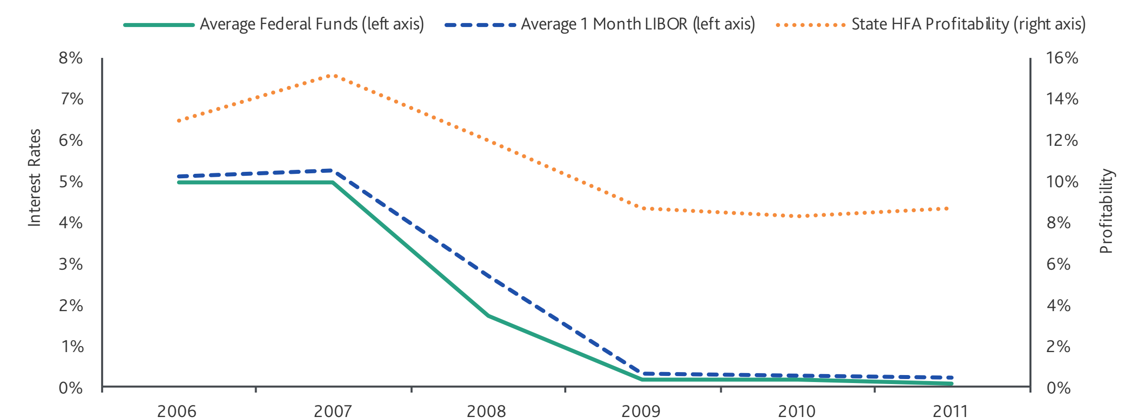
Credit Driver #2: Low Interest Rates On Investments

Low interest rates, which have depressed profitability since fiscal year 2008, are projected to continue in the next 12-18 months. As of January 30, 2013, the Federal Open Market Committee indicated that it would keep the target range for the federal funds rate at 0-0.25% and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6.5% and both near-term and long-term inflation projections remain close to the Committee's 2% percent goal.[6] As a result, it is unlikely that HFAs will experience a boost in investment returns in the near term.

While the low interest rate environment led to a decline in profitability between 2007 and 2009, as shown in Exhibit 3, profitability flattened out at 8-9% beginning in 2009, and we do not expect further declines in the near term due to this factor. While most HFAs remain profitable, the lower level of earnings provides the HFAs with less ability to absorb losses and ongoing operating costs in the future. In addition, a few programs and issuers have experienced very thin levels of profitability and/or losses and will continue to do so until interest rates rise.

EXHIBIT 3

State HFA Profitability, Mirroring Interest Rates, Stabilizes at Lower Levels



Source: Bloomberg, Moody's adjusted audited State HFA financial statements

[6] Federal Open Market Committee. January 2013.

On a positive note, lower rates have led to some positive outcomes for HFAs which have partially mitigated the low investment earnings. For example, HFAs with unhedged variable rate debt have experienced lower bond interest costs since 2007 than were anticipated when the bonds were issued. In addition, lower interest rates have allowed HFAs to reduce interest costs by refunding existing debt into lower-yielding debt.

Credit Driver #3: Low Conventional Mortgage Rates

Conventional mortgage rates are anticipated to remain very low for the outlook period, and will continue to make it difficult for HFAs to finance single family loans with tax exempt mortgage revenue bonds (MRBs). HFAs that struggle to originate single family loans will see their programs go into run-off. While we expect these programs to maintain stable credit quality, certain risks may increase as the bonds and loan portfolios shrink. Challenges may include an increase in the amount of cash and investments earning a low rate of return, a reduced diversification of mortgage loans by vintage, and an increase in the proportion of variable rate debt as high cost fixed rate bonds are redeemed. Furthermore, the operational and financial performance of HFAs could weaken over the long term as fund transfers from the programs to the HFA general fund decline. This decline would decrease the general fund budget and potentially reduce the funding for staff to monitor and manage bond programs.

As of January 30, 2013, the Federal Open Market Committee has indicated that if the outlook for the labor market does not improve substantially, the Committee will continue its purchases of agency mortgage-backed securities.[7] We anticipate that this action will help keep conventional mortgage rates low in the near term, continuing to create significant competition for HFA loans.

Why do conventional mortgages have lower rates than mortgages financed with tax-exempt bonds?

Historically, tax-exempt mortgage revenue bonds have provided HFAs a competitive advantage since they have allowed HFAs to borrow money at lower rates than in the taxable market because of the associated tax benefit for the investor. For instance, the 10yr. US Treasury note, which is used as a benchmark for conventional mortgage rates, yielded between 4.62% and 4.90% in January of 2007, whereas during the same period Aaa-rated 10yr. municipal bonds were yielding between 3.69% and 3.91% (tax-exempt). However, such advantages have evaporated as a result of a compression between taxable and tax-exempt interest rates since the disruption in the US financial markets in 2008. In January 2013, the 10yr. US Treasury note was yielding between 1.76% and 2.00%, and Aaa-rated 10yr. tax-exempt municipal bonds were yielding between 1.67% and 1.85%.

The heightened concerns over the housing market since 2008 have kept municipal housing bond yields high relative to other municipal securities. In contrast, US Treasury yields declined to ultra-low levels on the back of purchases of US Treasury bonds by the US Federal Reserve meant to stimulate the flagging economy, and increased investor demand for lower-risk investments. As US Treasury yields declined to historic lows, so did conventional mortgage rates, making it extremely difficult for HFAs to compete if they continued to finance mortgages with traditional MRBs.

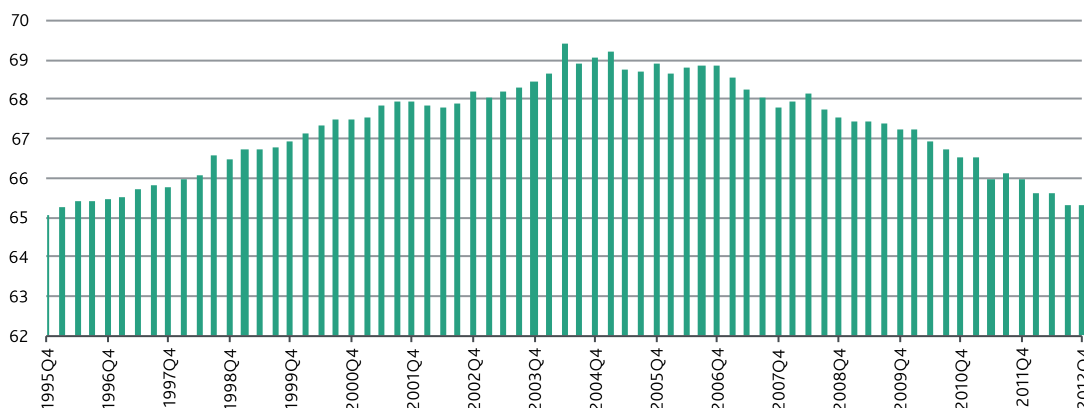
Sources: US Department of Treasury and Moody's Economy.com

[7] Federal Open Market Committee. January 2013.

Several additional factors may have contributed to a reduced demand for HFA mortgage loans specifically from low and moderate income first-time homebuyers. These factors include a slow-down in household formation, shaky consumer confidence in the housing market, growing student loan debt burdens, and high unemployment rates for this demographic group. Furthermore, in line with many mortgage lenders, some HFAs have chosen to increase or implement credit score requirements as part of their loan underwriting process. As a result of all of these factors, some HFAs have seen a decline in demand for their loans during the recession, mirroring the country-wide decline in demand reflected in Exhibit 4.

EXHIBIT 4

Homeownership Rate Has Declined Dramatically Since 2004



Source: U.S. Census Bureau (BOC)

On a positive note, the rate of household formation is projected to improve in the near term, as shown in Exhibit 5 below, and the supply of homes for sale has declined (Exhibit 6) as a result of investors buying properties and renting them out and homeowners beginning to return to the market. These factors, in combination with pent-up demand for housing among renters and signs of increasing consumer confidence that the housing market has turned around, could improve demand in the near-term.[8]

EXHIBIT 5

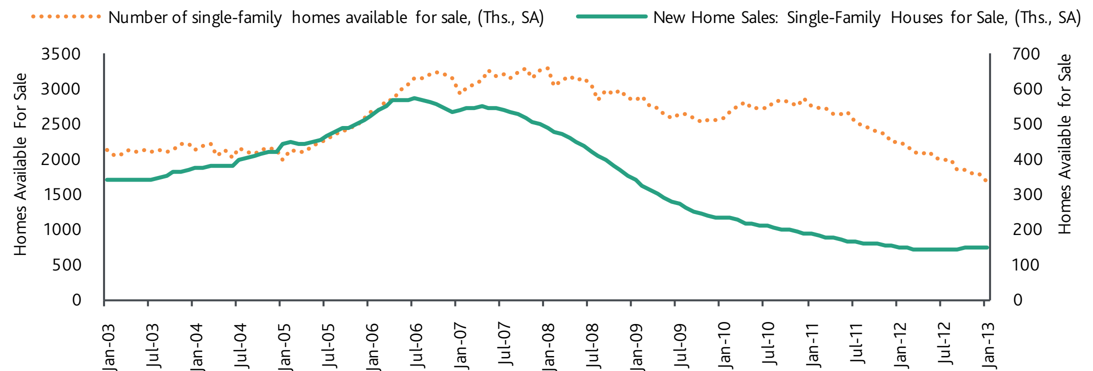
Rate of Household Formation Projected to Improve in Near Term

Source: U.S. Census Bureau (BOC); Moody's Analytics (ECCA) Forecast

[8] Moody's Analytics. Housing Market Monitor Housing Monthly. February 15, 2013.

EXHIBIT 6

Supply of Homes for Sale is Lower Than Pre-Crisis Levels



Source: U.S. Census Bureau (BOC): New Residential Sales (C25) - New Houses Sold, National Association of Realtors (NAR); Moody's Analytics Adjusted

Finding ways to continue loan origination is one of the most fundamental tasks facing HFA managers. In the face of this challenge, many HFAs have begun to use one or more of the strategies below to continue origination:

» *MBS Pass-Through Structure:* HFAs have begun to issue pass-through bonds within their existing parity indentures secured by mortgage backed securities (MBS) guaranteed by Ginnie Mae , Fannie Mae and Freddie Mac. Demand for these deals is currently higher than demand for traditional MRBs, as there is limited supply of agency MBS in the general market due to the Federal Reserve's MBS purchase program. Due to high investor demand, the low bond rate for these deals allows HFAs to finance competitive mortgage loans. These deals differ from traditional MRB parity bond series as mortgage principal payments and prepayments are passed monthly to the owners of these specific bonds rather than being available for any other bond series under the indenture. Furthermore, HFAs are unable to use prepayments or principal repayments for recycling purposes. However, additional revenues, such as those deriving from additional spread in the deal, may be available to the rest of the parity indenture or to the issuer.

» *TBA Market:* HFAs enter into a "To Be Announced" TBA contract to deliver MBSs on a date, generally 60 to 90 days in the future, at agreed-upon terms (such as maturity, coupon, par amount and settlement date), effectively hedging their exposure to rising interest rates from the time a loan reservation is accepted to the time the MBS is delivered. HFAs determine the mortgage rate to be offered based upon the terms of the TBA contract. Since the HFAs are pricing the trade in the same market as conventional lenders, they are able to offer competitive mortgage rates.

» *Cash Window Sale of Whole Loans to Fannie Mae and Freddie Mac (the GSEs):* HFAs originate whole loans that conform to the GSEs' requirements and sell them directly to the GSEs. Funds acquired through the sale of the loans allow for the origination of additional loans by the HFA. Often, HFAs are able to obtain special terms or pricing levels for their loans which enable them to offer a competitive mortgage rate.

» *Cash Sale of Mortgage-Backed Securities:* HFAs securitize their loans into mortgage-backed securities and then sell the MBS directly to the secondary market, which provides immediate liquidity. Depending on the interest rates on the mortgage loans relative to the then current rates, HFAs may be able to sell the MBSs at a premium, providing a funding source for first-time homebuyer initiatives, such as down payment and closing costs assistance.

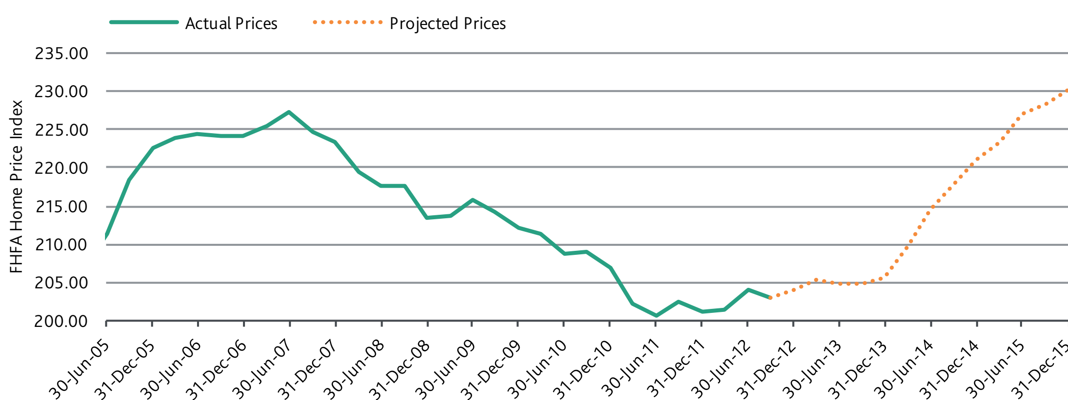
If and when the imbalance between bond rates and mortgage rates reverses, HFAs may resume use of the bond programs that they have allowed to go into run-off. HFAs that have maintained solid working relationships with their local lending partners and that have retained staff with experience in accessing the bond markets are best positioned to resume these programs.

Credit Driver #4: Low Home Prices Relative to Origination

Home prices, while improving, are projected to remain below peak levels in many states in the near term, leading to potential losses on foreclosure sales for homes that are underwater. As shown in Exhibit 7 below, house prices for states that contain Moody's-rated state HFA whole loan programs stabilized in 2011 and began trending upwards in 2012. However, prices still remain well below their peak levels, and they are not projected to return to peak levels until mid-2015. As shown in Exhibit 8 below, 47% of the loans in HFA portfolios were issued between 2006 and 2008. These loans will be particularly vulnerable to experiencing losses upon foreclosure until home prices rise further.

EXHIBIT 7

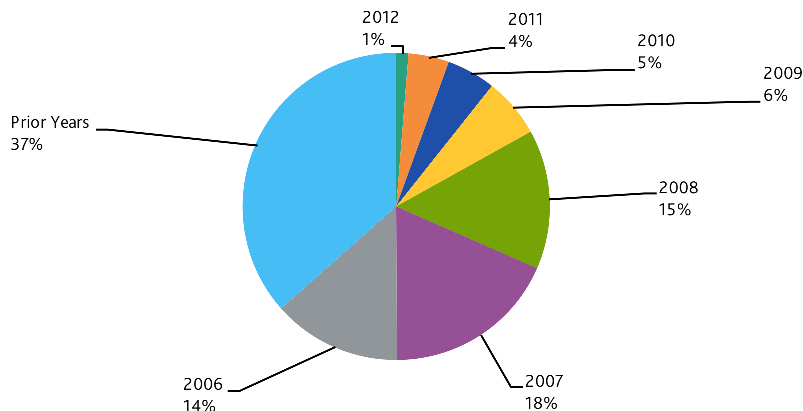
Home Prices Will Remain Below Peak in the Near Term in States with Moody's-Rated HFA Single Family Whole-Loan Programs



Source: Federal Housing Finance Agency, Moody's Analytics Data Buffet

EXHIBIT 8

Significant Proportion of HFA Whole Loans Were Issued At Peak Price Levels



Source: HFA Surveys. Median HFA loan vintage by years for Single Family Whole Loan Programs as of 06/30/12

Most HFA loans are covered by government insurance or private mortgage insurance, which in the past has covered most or all of HFA loan losses. However, some very distressed PMI companies, such as PMI Mortgage Insurance Company, have begun to pay only a portion of their claims. HFAs heavily reliant on these companies, or any other companies that stop paying claims, could experience increased losses in the future. Furthermore, to the extent that the costs associated with foreclosing, maintaining and selling their properties have increased, due to slower foreclosures or other factors, HFAs are seeing losses even if the PMI is paying.

Credit Driver #5: Weakened Counterparty Credit Quality

Over the past five years, there have been substantial downgrades of many of the counterparties involved in HFA programs. Many of these counterparties remain vulnerable to further downgrades. For example, since our September 2012 Outlook publication, Assured Guaranty Municipal Corp's rating was lowered from Aa3 to A2 while Genworth Mortgage Insurance Corporation's rating was lowered from Ba1 to Ba2. While mitigating factors, such as program overcollateralization and strong projected cash flows, have prevented many HFA downgrades as a result of these and other past rating actions, the credit profile of some HFAs has been weakened as a result of their relationships with these counterparties.

Counterparties Are a Significant Factor in HFA Credit Profile

HFAs have exposure to counterparties that support both their balance sheets and income statements, through GICs, PMIs, liquidity contracts, and swap contracts. Credit deterioration of counterparties increases the risk that these counterparties would not perform as expected. Non-performance of a GIC provider could result in a debt service payment shortfall on the bonds due to a loss of timely access to the funds in the GIC or to a loss of interest earnings on the funds. Non-performance of a PMI provider could lead to a loss of insurance claim moneys, resulting in significantly higher loan losses for the program. Credit deterioration of a standby bond purchase agreement (SBPA) provider could lead to bank bonds or higher interest rates on variable rate demand debt, while non-performance of a swap provider could result in unexpected termination payments or collateral posting.

HFAs typically respond to counterparty downgrades by terminating the relationship with the counterparty or by collateralizing their program to offset the increased risk associated with the counterparty. Collateralization has been achieved by using the program's parity assets or by transferring assets into the program from outside sources. If additional counterparty downgrades occur in 2013 and 2014, sources of funds for collateralization may wear thin for some HFAs. HFAs that cannot profitably terminate a relationship with a downgraded counterparty or that cannot afford to collateralize a program could face rating downgrades. Many HFAs have chosen to exit relationships with downgraded GIC providers and to reinvest their cash in short-term Treasuries and money market funds. These fund transfers compound their exposure to low interest rates and have contributed to the profitability declines.

Credit Driver #6: High Liquidity Fees for Variable Rate Debt

Over the past several years, HFAs have seen renewal fees for bank liquidity facilities rise well above levels paid when the bonds were first issued, putting additional pressure on program profitability. We anticipate that fees will continue to remain at these levels in the medium term given that the supply of liquidity providers has declined. Furthermore, those providers still in the market may have increased their prices in reaction to their experience of having to purchase bonds (bank bonds) during the economic crisis, as HFAs experienced levels of bank bonds that were similar to other municipal sectors.

On a positive note, in January 2013 the Basel Committee on Banking Supervision released revisions to the liquidity coverage ratio (LCR) requirement included in Basel III. As a result, banks will be less likely to increase the cost or limit the availability of credit facilities as they would have been under the committee's previous plan.[9]

Credit Driver #7: Uncertainty in Government Policy

Changes in the operating model or the elimination of Fannie Mae and Freddie Mac (the GSEs), or changes to the role of the Federal Housing Administration (FHA), could impact the ability of many HFAs to originate and package loans. HFAs rely on these entities for the following types of support:

» *Mortgage insurance:* HFAs rely on FHA for mortgage insurance for both their single family and multi-family programs. As of June 30, 2012 approximately 36% of singe family whole loans in Moody's HFA portfolio were insured by FHA, and an additional 10% of loans relied on other government insurance such as Rural Development or Veterans Administration. These insurers currently provide very deep coverage on loans, with FHA providing approximately 99% coverage after various fees are paid. Any change to the depth of coverage or availability of coverage could impact the ability of HFAs to originate new loans, particularly since the credit of private mortgage insurers has severely deteriorated since 2009.

» *MBS guarantees:* Many HFAs rely on Fannie Mae and Freddie Mac to guaranty full and timely payment on both their single family and multifamily mortgage loans. Thirty-three HFAs offer MBS products as part of their single-family programs. HFAs that only maintain MBS indentures would be particularly impacted by a change in the enhancement levels of the GSEs, as these HFAs may not have the infrastructure or personnel in place to manage a program where the loans are unenhanced and asset management is required. Even changes well short of eliminating Fannie Mae or Freddie Mac purchases, such as a change in the level of enhancement or the type of loans that could be enhanced, could also have an impact on the HFAs depending on the nature of the change.

» *Secondary market strategies or loan purchases:* As discussed earlier in this report, HFAs are increasingly relying on the GSEs to enhance loans being sold to the TBA or secondary market, and others are requesting that the GSEs purchase their whole loans for cash. These strategies have been effective in helping the HFAs to originate loans during the recession. If these alternatives were no longer available and conventional mortgage rates remained too low to make bond financing a viable option, HFAs would not have an obvious long-term strategy for financing loan origination.

In addition to the GSEs, there are also other potential policy changes on the horizon which have the potential to impact HFAs. For example, sequestration could potentially impact some of the programs run by HUD, the Veteran's Administration (VA), and the US Department of Agriculture (USDA). Changes to the Section 8 and HOME programs could be problematic, as they could affect the HFA's fee-based income and also their ability to offer funds for down payment assistance and second loans. Furthermore, personnel cuts associated with sequestration could slow down claims payments from FHA, the VA or the USDA insurance programs. In addition, changes to the tax law, such as the mortgage interest deduction or the municipal bond tax exemption, could impact demand for the HFAs' products in the housing and bond markets. Any new regulations related to mortgage lending could impact the HFAs' underwriting or servicing operations. It is unclear when these policy issues will be clarified, leading to further uncertainty for the sector in the near term.

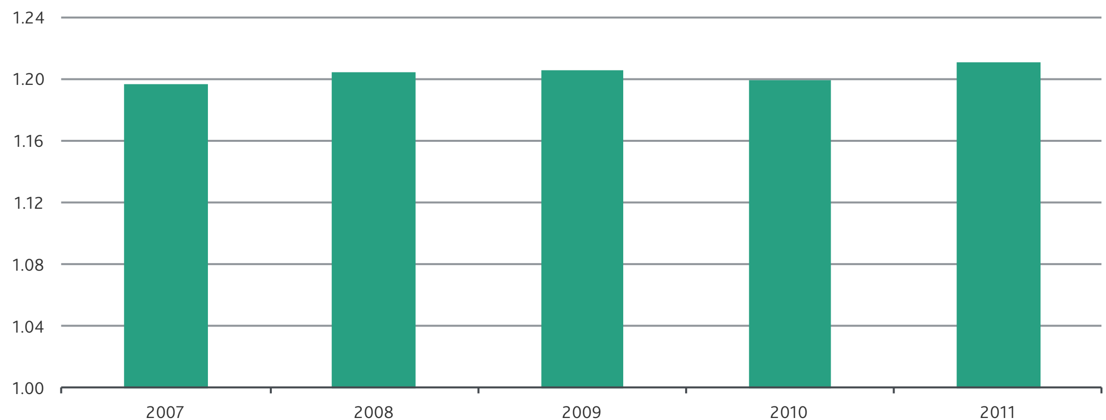
[9] Moody's Investors Service. Easing of Bank Liquidity Requirements Is Credit Positive for Issuers of Municipal Variable Rate Demand Bonds. January 2013.

HFA Sector Well Positioned Should Credit Drivers Stabilize

Despite the economic headwinds facing the sector, most HFAs are well-positioned should a stronger than expected economic recovery develop. HFAs have generally maintained stable financial performance during the post-crisis sluggish economy and made operational changes that will serve them well should a stronger economic growth take a firm hold. Despite historically high levels of delinquency and foreclosure rates, HFAs have maintained stable asset-to-debt ratios during the recession, as shown in Exhibit 9 below.[10]

EXHIBIT 9

HFA Asset-to-Debt Ratios Remain Flat During Recession



Source: Moody's adjusted audited State HFA financial statements

This stability in this key ratio is attributable to several factors:

» Steady, albeit lower, profitability

» Low levels of actual loan losses after mortgage insurance claims have been paid

» Pay-down of bonds outstanding during the run-off of some indentures

In addition, HFA management teams deftly managed their assets, liabilities, and counterparty relationships, created new operational processes, and adopted new business models during the recession which have helped to strengthen the HFAs and their bond portfolios in the face of negative pressure from the economy.

If the economic recovery continues along the expected timetable and the economy experiences lower unemployment, higher interest rates and higher conventional mortgage rates in 2014, we expect that HFAs will see benefits, and the sector will be primed for a stable outlook thereafter. While a rise in interest rates should have a relatively direct and quick impact on investment returns, we expect that a decrease in unemployment and/or an increase in mortgage rates may have a lagged impact on HFA performance. While a decline in unemployment will reduce new delinquencies, it will take HFAs time to work through their backlog of seriously delinquent loans. In addition, HFA lending may not benefit immediately from an increase in mortgage rates as the HFAs may need to rebuild their relationships with mortgage lenders in order to originate loans. For these reasons, as well as the shaky nature of the economic recovery, we believe that the negative outlook remains appropriate for the next 12 to 18 months.

[10] Moody's Investors Service. US State Housing Finance Agency Fiscal Year 2011 Medians Show Resilience Despite Difficulties Posed by Low Interest Rates. November 2012. Report number 147177.

Moody's Related Research

Global Risk Perspectives:

» Moody's Investors Service. Global Macro Outlook 2013-14: Downside Risks Have Diminished, February 2013 (149555)

Sector Comment:

» Easing of Bank Liquidity Requirements Is Credit Positive for Issuers of Municipal Variable Rate Demand Bonds, January 2013 (148980)

Special Comments:

» US State Housing Finance Agency Delinquency Rates Continue to Rise Despite Improvement in National Housing Market, December 2012, (147866)

» State Housing Finance Agency Single Family Programs in Run-off Likely to Maintain Credit Quality, June 2012 (143182)

» Secondary Market Funding Strategies Buoy State HFA's Growth But Add to Their Risks, June 2012 (143141)

Median Report:

» US State Housing Finance Agency Fiscal Year 2011 Medians Show Resilience Despite Difficulties Posed by Low Interest Rates, November 2012 (147177)

Rating Methodology:

» US Housing Finance Agency Single Family Programs, February 2013 (142107).

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 151219

Author
Rachael Royal McDonald

Production Associate
Masaki Shiomi

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

US State Housing Finance Agency Delinquency Rates Continue to Rise Despite Improvement in National Housing Market

HFAs Remain Well Positioned to Weather Prolonged Delinquencies

Table of Contents:

SUMMARY OPINION 1
SERIOUSLY DELINQUENT RATES IN US STATE HOUSING FINANCE AGENCY PROGRAMS REMAIN HIGH 2
UNEMPLOYMENT AND HOUSING PRICES ARE EXPECTED TO KEEP DELINQUENCY AND FORECLOSURE RATES HIGH IN THE NEAR TERM 3
USE OF GOVERNMENT MORTGAGE INSURANCE MITIGATES AGAINST HIGH DELINQUENCIES 5
HFA BOND PROGRAMS ARE NOT EXPECTED TO EXPERIENCE RATING ACTIONS AS A RESULT OF HIGH DELINQUENCIES 6
APPENDIX 8
MOODY'S RELATED RESEARCH 31

Analyst Contacts:

NEW YORK +1.212.553.1653

Ferdinand S. Perrault +1.212.553.4793
Assistant Vice President - Analyst
ferdinand.perrault@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Richard Kubanik +1.212.553.7823
Associate Analyst
richard.kubanik@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

Summary Opinion

Seriously delinquent[1] loan repayment rates in US State Housing Finance Agency (HFA) whole loan programs continue to climb, reaching an historical high of 5.27% as of June 30, 2012. This marks an increase of 45% from levels reported in June 2009 when seriously delinquent loans were 3.63%. Foreclosure levels, while flat, are also at historically high levels at 2.51%, a 66% increase since 2009.

While there have been signs of improvement of the national housing market, such as lower delinquencies and a slight increase in home prices, we have not yet seen these trends reflected in the performance of HFA pools. HFA loan programs continue to experience higher delinquency and foreclosure rates due to stubbornly high unemployment rates in many areas of the country. HFA loan performance has also been impacted by loan modification programs, loss mitigation initiatives, and various state policies – all of which have contributed to lengthened delinquency periods. We expect that delinquencies will remain high as long as these economic conditions and programs are in place.

Despite the weakened performance of HFA single family whole loan portfolios, we do not anticipate many downgrades because the programs continue to maintain strong financial asset to debt ratios, adequate reserves and foreclosure rates still remain well below the default rates that we use for our stress case loan loss calculations.

[1] Loans that are 90 or more days delinquent or in foreclosure

Seriously Delinquent Rates in US State Housing Finance Agency Programs Remain High

HFA delinquencies, as summarized in Exhibit 1, remain at historical highs with seriously delinquent loans experiencing year-over-year increases for three straight years. As of June 30, 2012, seriously delinquent rates reached an average high of 5.27%, compared to 4.98% in 2011, 3.98% in 2010 and 3.63% in 2009.

The increase in seriously delinquent loans was driven primarily by the growth in loans that were 90 days delinquent rather than loans in foreclosure which remained flat. These loans increased over 11% since last year. This can be attributed to a backup of the loans in the 90-day delinquent category as HFAs implemented foreclosure prevention and loss mitigation programs. As long as the HFAs and loan servicers continue to utilize such programs we expect that seriously delinquent loans will remain high.

EXHIBIT 1

Overall High Delinquency Rates Driven by Seriously Delinquent Loans

	6/30/2012	6/30/2011	6/30/2010	6/30/2009
Delinquency Type*				
60+	1.75%	1.74%	1.83%	1.67%
90+	2.76%	2.47%	2.68%	2.12%
Foreclosure	2.51%	2.51%	2.00%	1.51%
Total	7.01%	6.72%	6.52%	5.30%
Year over Year Percent Change in Delinquency Type				
60+	0.29%	-5.02%	9.83%	
90+	11.58%	-7.85%	26.78%	
Foreclosure	0.20%	25.18%	32.39%	
Total	4.41%	3.09%	23.04%	
Year over Year Basis Point Change				
60+	1	-9	16	
90+	29	-21	57	
Foreclosure	1	50	49	
Total	30	20	122	

* To create these averages, weighted average delinquencies and foreclosures were calculated for the following states with more than one single-family program: Idaho, Montana, New York (SONYMA), South Carolina, Tennessee, Utah, Wisconsin and Wyoming.

Source: HFA Surveys

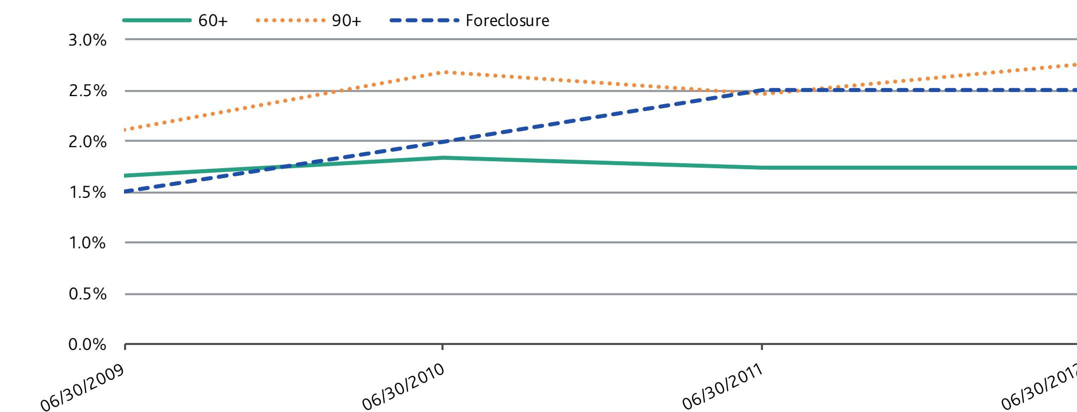
The Housing Recovery is Picking Up Momentum

Moody's Analytics in their November 27 Housing Market Monitor reports that the housing recovery is gaining momentum. Hurricane Sandy will cause some near-term volatility in the housing statistics but will not derail the recovery. Low mortgage interest rates, pent-up demand for housing, and rising confidence that the housing recovery is here to stay will offset weaker job growth. Investor demand will also help drive up home sales for the remainder of this year and in early 2013. House prices will continue to lag, dipping slightly before steadily increasing the remainder of next year. The housing recovery will be in full swing by late next year, adding to overall expansion.[2]

As illustrated in Exhibit 2, for the first time since 2010 foreclosure rates remained flat from the prior year. This may be both an indication of HFA efforts to move as many nonperforming loans through the foreclosure process as possible as well as loans remaining in the 90 day delinquent category due to loan modification or mediation efforts. However, foreclosure rates could rise again if loan modifications fail and the loans in the 90 day category roll into foreclosure.

EXHIBIT 2

Foreclosures Remain Historically High



Source: HFA Surveys

Unemployment and Housing Prices are Expected to Keep Delinquency and Foreclosure Rates High in the Near Term

While recent data indicates that the national housing market is improving, HFA performance is not reflecting this trend. The Mortgage Bankers Association reported that delinquencies as of June 30, 2012 decreased 86 basis points from the prior year and loans in foreclosure dropped 16 points[3] while the Federal Housing Finance Agency (FHFA)[4] reports that the one year median Home Price Index increased 2% with all but 6 Moody's rated states showing improvements However, unemployment continues to be the key contributor to the high HFA delinquency rates and unemployment and delinquency rates often move in tandem as shown in Exhibit 3. Therefore, we expect delinquency rates to remain relatively high and will not reflect the improvement in the national housing market until significant improvements in unemployment rates are achieved and maintained. Despite the drop

[2] Source: Moody's Analytics Housing Market Monitor.

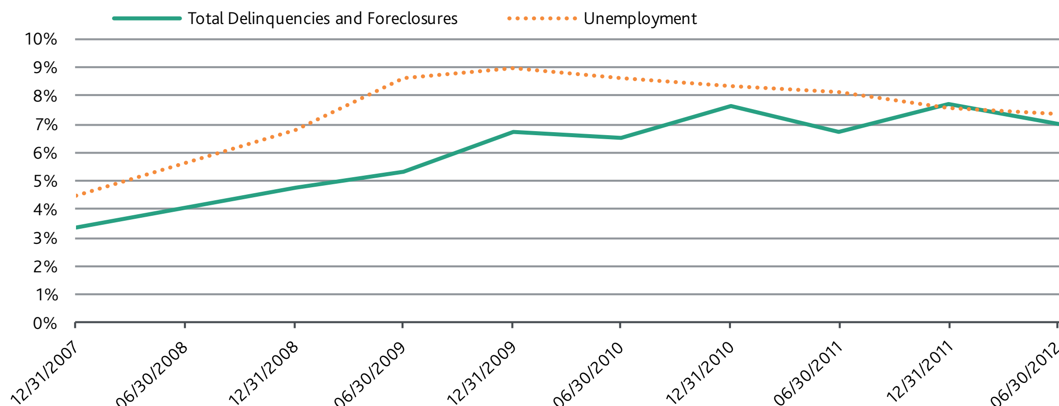
[3] Mortgage Bankers Association National Delinquency Survey Q2 2012. Data as of June 30, 2012.

[4] FHFA's Seasonally Adjusted, Purchase-Only House Price Index for 2012 Q2. The data can be found at www.fhfa.gov.

to 7.8% in September[5], Moody's Investors Service projects that the unemployment rate will stay between 7% and 9% through 2014.[6]

EXHIBIT 3

Unemployment Remains a Key Driver of Moody's-Rated State HFA Total Delinquency and Foreclosure Rates

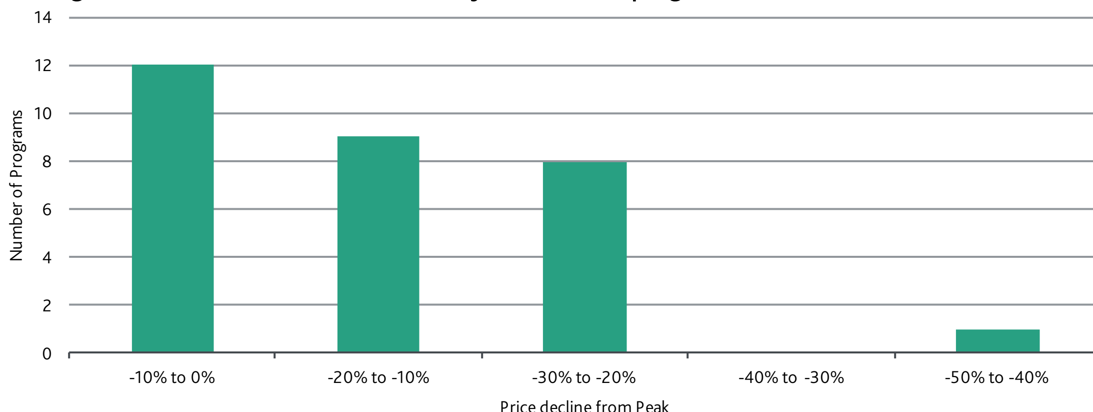


Source: HFA Surveys & Bureau of Labor Statistics

Loan delinquencies can also be attributed to the decline in home prices. When prices are rising, delinquent homeowners had the option of selling homes, thereby avoiding foreclosure – an option that is not available in locations where home values declined. Virtually all of the states with HFA whole loan programs have experienced some level of home price decline from their peak, with the average decline from the peak of 14.7% in the second quarter of 2012.[7] Nearly a third of these states experienced price declines of 20% or more with the state of California leading the way with a decline of 46.4%. While most states are now reporting home price increases from their lowest levels, the prices still remain below levels when the loans were originated. Until prices rebound, this will continue to drive delinquencies.

EHIBIT 4

Housing Price Declines in States with Moody's Rated HFA programs



Source: FHFA's Seasonally Adjusted, Purchase-Only House Price Index for 2012 Q2

[5] Moody's Investors Service. Global Risk Perspectives. Update to the Global Macro-Risk Outlook 2012-14: Slowdown Adjustments to Weigh on Growth. Report Number 146944.

[6] Moody's Investors Service. Global Risk Perspectives. Global Macro-Risk Outlook 2011-2012: Material Slowdown in Growth. Report Number: 137364.

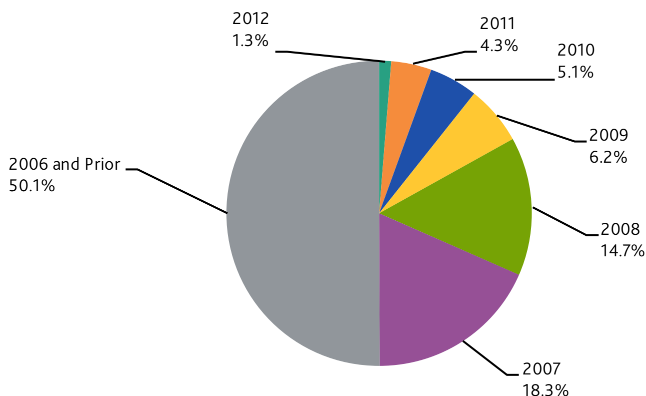
[7] The above data is reproduced from FHFA's Seasonally Adjusted, Purchase-Only House Price Index for 2012 Q2.

The vintage of the loans in an HFA portfolio is also related to delinquency rates. In many states home prices peaked in years 2006 through 2008. HFA programs with high origination levels during this period are more likely to be affected by values below their peak. Overall, HFAs maintain well-seasoned loan portfolios with over 50% of whole loans being originated prior to or during 2006 as indicated in Exhibit 5.

EHIBIT 5

HFA Loan Portfolios are Well Seasoned

Median HFA Loan Vintage by Year as of 06/30/12



Source: HFA Survey

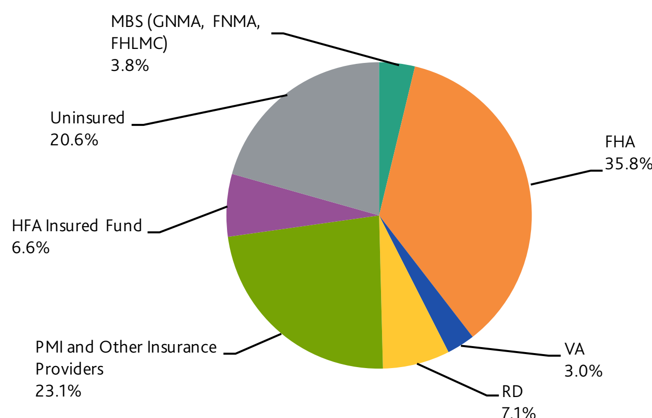
Use of Government Mortgage Insurance Mitigates Against High Delinquencies

A substantial portion of HFA loans continue to be insured by US government insurance. Nearly 46% were insured by either the Federal Housing Administration (FHA), Veterans Administration (VA) or Rural Housing Services (RD) as of June 30, 2012. FHA, which is the largest provider of government mortgage insurance at 35.8%, generally has weaker loan underwriting standards than private mortgage insurers, which leads to higher delinquency rates. However, FHA provides nearly 100% coverage on the outstanding principle balance of the foreclosed loan which reduces losses to the HFA programs despite their higher delinquency rates. Nearly 80% of HFA whole loans carry some form of insurance or have been securitized (see Exhibit 6), which limits foreclosure-related losses.

EXHIBIT 6

HFA Mortgage Insurance Continues to Shift Towards Government Insurance

Median HFA Insurance Provider as of 06/30/12



Source: HFA Survey

More HFAs Using Mortgage Backed Securities

In response to housing market weakness, more HFAs are using Mortgage Backed Securities guaranteed by Government National Association (Ginnie Mae), the Federal National Mortgage Association (Fannie Mae), or the Federal Home Loan Mortgage Association (Freddie Mac) to enhance their loans. This insulates the HFA from the performance of the underlying loans as full and timely monthly payment of principal and interest is guaranteed. The use of MBS is expected to strengthen loan portfolio performance over the long run.

HFA Bond Programs Are Not Expected to Experience Rating Actions as a Result of High Delinquencies

While weak loan performance continues to exert negative pressure on HFA single-family whole loan portfolios, we do not anticipate a substantial number of resulting downgrades, due to the following:

» HFA programs continue to demonstrate strong financial positions that allow them to absorb weaker loan performance. The median asset to debt ratio of HFA whole loan programs was112%, allowing programs to sustain high levels of foreclosures. While delinquencies and foreclosure rates remain elevated, they are well below the default rates that we use for our stress case loan loss calculations.

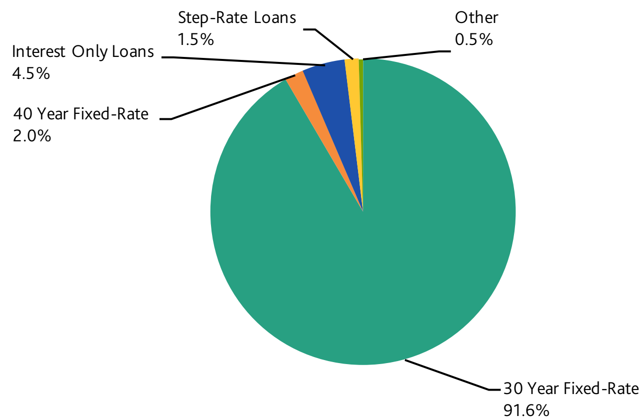
» Most of the loans maintain some form of mortgage insurance that will mitigate losses upon foreclosure. Almost a third are insured by government insurance or securitized, providing the greatest protection against loan loss.

» HFA portfolios are mostly comprised of very seasoned loans. As of June 30, 2012 over 50% of loans were originated prior to 2005. These originations occurred prior to the housing bubble and did not experience the resulting equity losses that were experienced by the 2006 to 2008 vintages.

» The vast majority of HFA loans are fixed rate, fully amortizing, level payment, conforming, fully documented loans, and have historically been the least risky mortgage loans. As of June 30, 2012, around 94% of HFA portfolio stock were fixed rate level payment loans (Exhibit 7), as the use of alternative loan products, such as interest-only loans, has declined sharply in recent years. Many of the interest-only loans originated by HFAs have reached their principal amortization period, lowering the potential for defaults as payments are now level for the remaining life of the mortgage. As a result, we expect loan performance and delinquency rates to trend together across all loan types going forward.

FIGURE 7

94% of HFA Loan Types are Fixed Rate Level Payment HFA Loan Products as of 06/30/12



Source: HFA Survey

Process for Reviewing Performance Data

Moody's rates single family debt of 45 HFAs, of which 30 administer whole loan programs. We surveyed the 30 issuers of the rated open indenture single family whole-loan programs to obtain June 30, 2012 delinquency and foreclosure data for each program. We received data on 40 seasoned programs (detailed data is provided in the appendix) that have been outstanding for at least five years and on another 15 programs that were only opened in 2009. The data on the 40 seasoned programs was compiled and compared on a portfolio basis to the three prior annual periods. The 15 newer programs were not included in this compilation, as the lack of seasoning skews their comparability. However, the delinquency statistics and individual program details are provided in Tables 7-10 of the appendix.

Appendix

» U.S. State Housing Finance Agency Delinquency Rates Continue to Grow Despite Improvement in National Housing Market – Excel Data

» Appendix 1 – Single Family Whole Loan Program Ratings, Outlooks and Bonds Outstanding

» Appendix 2 – Seasoned HFA Delinquencies (Percent of Loans)

» Appendix 3 – Seasoned HFA Delinquencies (Number of Loans)

» Appendix 4 – Seasoned HFA Mortgage Insurance

» Appendix 5 – Seasoned HFA Loan Type

» Appendix 6 – Seasoned HFA Vintages

» Appendix 7 – NIBP Delinquencies (Percent of Loans) and (Number of Loans)

» Appendix 8 – NIBP Mortgage Insurance

» Appendix 9 – NIBP Loan Type

» Appendix 10 – NIBP Vintages

» Appendix 11 – FHFA HPI Q2 2012 Index

» Appendix 12 – PMI Provider Ratings

Appendix 1 – Single Family Whole Loan Program Ratings, Outlooks and Bonds Outstanding

All Moody's-Rated Single Family Whole Loan Program Ratings, Outlooks and Bonds Outstanding

	HFA Single Family Whole Loan Program	Rating	Outlook	Bonds Outstanding in (000s) as of June 30, 2012
1	Alaska Housing Finance Corporation First Time Homebuyer Program	Aa2	Stable	1,164,780
2	Alaska HFC - Mortgage Revenue Bonds [NIBP] (E)	Aa2	Stable	358,979
3	California HFA - Home Mortgage Revenue Bond Program	Baa2	RUR DNG	4,261,315
4	Colorado HFA - Single Family Program	Aaa(sf) / Aa2(sf) / A2(sf)	Stable	1,548,295
5	Connecticut HFA - Housing Mortgage Finance Bonds	Aaa	Stable	3,282,305
6	Idaho H&FA - Single Family Mortgage Bonds (2000 Indenture)	Aaa(sf) / Aa2(sf) / A1	Multiple	119,735
7	Idaho H&FA - Single Family Mortgage Bonds (2003 Indenture)	Aaa(sf) / Aa2(sf) / A1	Multiple	255,830
8	Idaho H&FA - Single Family Mortgage Bonds (2006 Indenture)	Aa2(sf) / Aa3(sf) / A1	Multiple	666,745
9	Idaho H&FA - Single Family Mortgage Bonds (2009 Indenture) [NIBP]	Aaa(sf) / Aa2(sf) / A1	Multiple	64,210
10	Illinois HDA - Homeowner Mortgage Revenue Bonds	Aa3	Stable	794,440
11	Kentucky HC - Housing Revenue Bonds	Aaa	Negative	1,872,370
12	Maine State HA - Mortgage Purchase Program	Aa1	Stable	1,011,938
13	Maryland CDA - Residential Revenue Bonds	Aa2	Negative	2,015,205
14	MassHousing - Single Family Housing Revenue	Aa2	Stable	1,215,821
15	Michigan State HDA- Single Family Mortgage Revenue Bonds	Aa2	Stable	1,179,735
16	Minnesota HFA - Residential Housing Finance Bonds	Aa1	Stable	1,500,095
17	Montana BoH - Single Family Mortgage (1977 Indenture)	Aa1	Stable	282,265
18	Montana BoH - Single Family Program Bonds (1979 Indenture)	Aa1	Stable	192,105
19	Montana BoH - Single Family Homeownership Bonds [NIBP]	Aa3	Stable	146,695
20	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	Aa3	Stable	774,015
21	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds [NIBP]	Aa3	Stable	267,940
22	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	Aa2	Negative	1,014,640
23	New Jersey Housing & Mortgage FA - Single Family Home Mortgage Bonds [NIBP]	Aa1	Stable	508,640
24	North Carolina HFA - Home Ownership Revenue Bonds	Aa2	Stable	1,021,420
25	North Carolina HFA - Home Ownership Revenue Bonds [NIBP]	Aa2	Stable	184,270
26	North Dakota HFA - Home Mortgage Finance Program	Aa1	Stable	533,570
27	North Dakota HFA - Homeownership Revenue Bonds [NIBP]	Aa3	Stable	300,555
28	Oregon HCSD - Single Family Mortgage Revenue Bonds	Aa2	Stable	873,330
29	Oregon HCSD- Housing Revenue (Single Family Mortgage Program) [NIBP]	Aa3	Stable	182,330
30	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	Aa2	Stable	3,968,120
31	Rhode Island HMFC - Homeownership Opportunity Bonds	Aa2	Negative	920,261
32	Rhode Island HMFC- Home Funding Bonds [NIBP]	Aa2	Stable	182,876
33	SONYMA - Homeowner Mortgage Revenue Bonds	Aa1	Stable	2,282,940
34	SONYMA - Mortgage Revenue Bonds	Aaa	Stable	817,110
35	South Carolina State HFDA - Mortgage Revenue Bonds (1994)	Aa1	Stable	443,475
36	South Carolina State HFDA - Single Family Mortgage Purchase Bonds (1979)	Aaa	Stable	88,015
37	South Dakota HDA - Homeownership Mortgage Bonds	Aa1	Stable	1,195,205

All Moody's-Rated Single Family Whole Loan Program Ratings, Outlooks and Bonds Outstanding

	HFA Single Family Whole Loan Program	Rating	Outlook	Bonds Outstanding in (000s) as of June 30, 2012
38	South Dakota HDA - Single Family Mortgage Bonds - First Time Home Buyer [NIBP]	Aa3	Stable	338,340
39	Tennessee HDA - Homeownership Program Bonds (1985)	Aa1	Stable	1,312,985
40	Tennessee HDA- Housing Finance Program Bonds [NIBP]	Aa2	Stable	631,910
41	Tennessee HDA - Mortgage Finance Program Bonds (1974)	Aa2	Stable	61,400
42	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	Aaa(sf) / Aa2(sf) / Aa3(sf)	Stable	576,740
43	Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	Aaa(sf) / Aaa(sf) / Aa3(sf)	Stable	46,625
44	Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	Aaa(sf) / Aa2(sf) / Aa3(sf)	Stable	261,245
45	Utah HC - Single Family Mortgage Bonds [NIBP]	Aaa(sf) / Aa2(sf) / Aa3(sf)	Negative	306,985
46	Vermont HFA - Single Family Housing Bonds	Aa3	Stable	373,837
47	Virginia HDA - Commonwealth Mortgage Bonds	Aaa	Stable	2,680,726
48	Virginia HDA - Homeownership Mortgage Bonds [NIBP]	Aa1	Stable	781,656
49	West Virginia HDF - Housing Finance Bonds	Aaa	Stable	460,905
50	West Virginia HDF - New Issue Program Bonds	Aaa	Stable	118,170
51	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	Aa2	Stable	771,500
52	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	Aa2	Stable	618,935
53	Wyoming CDA - Single Family Mortgage (1994 Indenture)	Aa1	Stable	823,721
54	Wyoming CDA - Homeownership Mortgage Revenue Bonds [NIBP]	Aa2	Stable	279,359
55	Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	Aa2	Stable	104,386
	Total			**48,041,000**

Appendix 2 – Seasoned HFA Delinquencies (Percent of Loans)

Delinquencies and Foreclosures for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs (Percent by Total Number of Loans)

		As of 06/30/2012				As of 6/30/2011				As of 06/30/2010				As of 6/30/2009			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
1	Alaska HFC - First Time Homebuyer Program	1.41%	1.17%	0.85%	3.43%	1.46%	0.91%	0.88%	3.25%	1.70%	0.90%	0.76%	3.36%	1.27%	0.69%	0.71%	2.67%
2	California HFA - Home Mortgage Revenue Bond Program	1.64%	1.03%	6.52%	9.20%	1.91%	1.23%	7.31%	10.46%	1.88%	1.43%	10.07%	13.38%	2.05%	1.56%	6.63%	10.24%
3	Colorado HFA - Single Family Program	1.54%	2.13%	1.12%	4.79%	1.48%	2.81%	1.62%	5.92%	1.43%	3.31%	1.48%	6.22%	1.65%	3.31%	1.61%	6.57%
4	Connecticut HFA - Housing Mortgage Finance Bonds	2.19%	3.64%	3.16%	8.99%	1.93%	3.31%	3.30%	8.54%	1.84%	3.09%	3.07%	8.00%	1.93%	2.93%	2.52%	7.38%
5	Idaho H&FA - Single Family Mortgage Bonds (2000 Indenture)	1.28%	2.64%	1.46%	5.38%	2.27%	3.81%	1.22%	7.29%	1.91%	2.75%	1.41%	6.07%	1.75%	2.31%	1.06%	5.12%
6	Idaho H&FA - Single Family Mortgage Bonds (2003 Indenture)	1.77%	4.00%	1.50%	7.27%	2.23%	4.11%	1.84%	8.17%	1.87%	4.15%	1.97%	7.99%	1.17%	1.78%	1.00%	3.95%
7	Idaho H&FA - Single Family Mortgage Bonds (2006 Indenture)	1.80%	4.91%	2.40%	9.11%	2.37%	6.42%	2.72%	11.51%	2.57%	5.71%	2.34%	10.63%	1.89%	3.49%	1.76%	7.14%
8	Illinois HDA - Homeowner Mortgage Revenue Bonds	1.01%	2.85%	7.47%	11.32%	1.70%	4.22%	4.01%	9.93%	1.80%	2.83%	2.25%	6.89%	1.42%	2.14%	1.40%	4.95%
9	Kentucky HC - Housing Revenue Bonds	1.58%	5.24%	4.99%	11.82%	3.21%	5.81%	7.07%	16.09%	3.59%	6.57%	4.15%	14.31%	2.47%	5.22%	2.06%	9.75%
10	Maine State HA - Mortgage Purchase Program	1.49%	4.48%	2.91%	8.88%	1.07%	3.15%	2.81%	7.04%	1.87%	2.65%	2.35%	6.87%	1.85%	2.73%	1.59%	6.18%
11	Maryland CDA - Residential Revenue Bonds	2.82%	5.81%	2.92%	11.55%	2.95%	4.31%	1.91%	9.18%	2.82%	5.37%	1.36%	9.55%	2.23%	4.71%	1.15%	8.09%
12	MassHousing - Single Family Housing Revenue	0.81%	0.87%	1.49%	3.17%	0.80%	1.19%	1.36%	3.35%	0.99%	1.33%	0.95%	3.26%	0.95%	0.82%	1.04%	2.81%
13	Michigan State HDA- Single Family Mortgage Revenue Bonds	2.60%	3.66%	1.41%	7.67%	2.75%	3.81%	2.62%	9.19%	2.78%	7.92%	2.35%	13.05%	3.33%	7.04%	1.75%	12.12%
14	Minnesota HFA - Residential Housing Finance Bonds	1.93%	4.32%	0.66%	6.92%	1.87%	3.51%	1.32%	6.70%	2.24%	4.78%	1.36%	8.39%	2.02%	3.90%	1.11%	7.03%
15	Montana BoH - Single Family Mortgage (1977 Indenture)	1.16%	1.32%	1.39%	3.87%	0.92%	0.92%	1.22%	3.06%	0.76%	1.16%	0.76%	2.69%	0.86%	0.71%	1.04%	2.61%
16	Montana BoH - Single Family Program Bonds (1979 Indenture)	0.68%	0.84%	1.23%	2.75%	0.81%	1.27%	0.84%	2.92%	0.69%	0.75%	0.86%	2.30%	0.63%	0.74%	0.76%	2.13%

Delinquencies and Foreclosures for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs (Percent by Total Number of Loans)

		As of 06/30/2012				As of 6/30/2011				As of 06/30/2010				As of 6/30/2009			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
17	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	1.69%	3.07%	2.07%	6.83%	1.69%	2.67%	1.88%	6.23%	2.04%	4.36%	1.49%	7.89%	1.34%	2.60%	1.55%	5.49%
18	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	2.43%	2.30%	9.95%	14.68%	1.94%	1.80%	8.88%	12.62%	1.98%	2.09%	4.63%	8.70%	1.79%	0.94%	2.93%	5.67%
19	North Carolina HFA - Home Ownership Revenue Bonds	1.94%	2.59%	1.55%	6.08%	1.92%	2.11%	1.50%	5.53%	1.92%	2.93%	1.13%	5.99%	1.75%	1.97%	0.78%	4.51%
20	North Dakota HFA - Home Mortgage Finance Program	1.67%	0.33%	0.64%	2.64%	1.52%	0.25%	0.74%	2.51%	1.17%	0.22%	0.70%	2.09%	1.16%	0.28%	0.54%	1.99%
21	Oregon HCSD - Single Family Mortgage Revenue Bonds	1.03%	0.37%	3.88%	5.28%	1.07%	0.41%	3.46%	4.94%	0.88%	0.76%	2.44%	4.08%	0.90%	0.52%	1.75%	3.17%
22	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	2.47%	2.99%	1.35%	6.81%	1.75%	2.07%	1.05%	4.86%	1.53%	1.85%	0.96%	4.34%	1.56%	1.71%	0.91%	4.18%
23	Rhode Island HMFC - Homeownership Opportunity Bonds	1.65%	4.20%	1.33%	7.17%	1.49%	4.55%	0.84%	6.88%	1.56%	3.44%	0.61%	5.62%	1.13%	1.59%	0.27%	2.99%
24	SONYMA - Homeowner Mortgage Revenue Bonds	0.80%	0.78%	1.88%	3.45%	0.80%	0.57%	1.38%	2.75%	0.55%	0.54%	1.01%	2.10%	0.57%	0.25%	0.74%	1.56%
25	SONYMA - Mortgage Revenue Bonds	0.65%	0.59%	1.08%	2.32%	0.63%	0.38%	0.85%	1.86%	0.48%	0.33%	0.86%	1.67%	0.77%	0.45%	1.04%	2.27%
26	South Carolina State HFDA - Mortgage Revenue Bonds (1994)	3.45%	1.32%	4.17%	8.94%	3.67%	1.12%	3.65%	8.44%	3.59%	1.51%	2.90%	8.00%	3.34%	1.25%	2.02%	6.61%
27	South Carolina State HFDA - Single Family Mortgage Purchase Bonds (1979)	4.17%	1.22%	3.41%	8.80%	3.57%	1.10%	3.52%	8.19%	3.90%	1.09%	2.39%	7.39%	4.30%	0.99%	2.47%	7.75%
28	South Dakota HDA - Homeownership Mortgage Bonds	0.85%	0.81%	2.88%	4.54%	0.69%	0.89%	2.83%	4.41%	0.67%	0.93%	1.86%	3.47%	0.73%	0.87%	1.51%	3.10%
29	Tennessee HDA - Homeownership Program Bonds (1985)	1.96%	5.24%	0.72%	7.91%	2.08%	4.52%	1.24%	7.85%	2.61%	5.03%	0.52%	8.17%	2.97%	5.47%	0.58%	9.02%
30	Tennessee HDA - Mortgage Finance Program Bonds (1974)	3.67%	5.15%	0.46%	9.28%	0.92%	4.58%	1.09%	6.60%	2.51%	6.16%	0.68%	9.35%	3.25%	6.54%	0.68%	10.47%
31	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	1.69%	5.79%	0.93%	8.41%	1.31%	3.56%	3.19%	8.06%	1.76%	4.89%	2.02%	8.68%	1.30%	2.86%	0.31%	4.46%
32	Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	1.36%	2.27%	0.91%	4.55%	1.47%	4.04%	3.68%	9.19%	2.42%	3.94%	0.61%	6.97%	0.52%	2.06%	0.52%	3.09%

Delinquencies and Foreclosures for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs (Percent by Total Number of Loans)

		As of 06/30/2012				As of 6/30/2011				As of 06/30/2010				As of 6/30/2009			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
33	Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	1.94%	6.95%	2.02%	10.91%	1.32%	5.46%	3.54%	10.32%	1.38%	5.82%	1.59%	8.79%	1.18%	2.81%	0.36%	4.35%
34	Vermont HFA - Single Family Housing Bonds	1.56%	1.96%	1.79%	5.31%	1.42%	2.07%	1.39%	4.88%	1.81%	0.89%	1.29%	3.99%	1.29%	0.93%	0.88%	3.11%
35	Virginia HDA - Commonwealth Mortgage Bonds	3.08%	4.87%	1.19%	9.14%	2.52%	2.50%	1.38%	6.40%	2.32%	3.20%	1.15%	6.67%	1.85%	2.43%	0.77%	5.05%
36	West Virginia HDF - Housing Finance Bonds	1.52%	2.36%	0.48%	4.36%	1.51%	0.60%	0.43%	2.54%	1.53%	0.70%	1.44%	3.66%	1.45%	0.58%	1.34%	3.38%
37	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	0.80%	0.71%	1.93%	3.44%	0.81%	0.51%	1.83%	3.15%	0.74%	0.50%	1.19%	2.43%	0.53%	0.47%	0.89%	1.89%
38	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	0.86%	0.85%	1.74%	3.45%	0.96%	0.47%	1.69%	3.11%	0.79%	0.57%	1.26%	2.62%	0.70%	0.40%	0.77%	1.87%
39	Wyoming CDA - Single Family Mortgage (1994 Indenture)	1.67%	2.38%	1.98%	6.04%	1.71%	2.91%	2.16%	6.79%	2.31%	2.88%	1.86%	7.05%	2.18%	0.95%	2.43%	5.56%
40	Wyoming CDA - Single Family Mortgage Revenue Bonds (1978)	1.76%	1.76%	1.14%	4.66%	2.57%	1.65%	1.10%	5.32%	1.43%	2.10%	0.92%	4.45%	1.92%	1.01%	2.11%	5.04%

NA** = Not Available

Appendix 3 – Seasoned HFA Delinquencies (Number of Loans)

Delinquencies and Foreclosures for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs (Number of Loans)

		As of 06/30/2012				As of 6/30/2011				As of 06/30/2010				As of 6/30/2009			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
1	Alaska HFC - First Time Homebuyer Program	164	136	98	11,595	177	111	107	12,154	235	124	105	13,812	179	98	101	14,136
2	California HFA - Home Mortgage Revenue Bond Program	342	216	1,363	20,891	446	288	1,709	23,363	499	380	2,671	26,523	662	503	2,139	32,278
3	Colorado HFA - Single Family Program	323	447	234	20,949	321	611	352	21,707	365	844	377	25,507	425	850	415	25,712
4	Connecticut HFA - Housing Mortgage Finance Bonds	449	747	650	20,543	401	686	685	20,743	374	626	623	20,291	378	576	494	19,632
5	Idaho H&FA - Single Family Mortgage Bonds (2000 Indenture)	14	29	16	1,097	28	47	15	1,234	27	39	20	1,416	28	37	17	1,602
6	Idaho H&FA - Single Family Mortgage Bonds (2003 Indenture)	39	88	33	2,200	57	105	47	2,557	54	120	57	2,890	60	91	51	5,119
7	Idaho H&FA - Single Family Mortgage Bonds (2006 Indenture)	74	202	99	4,118	115	312	132	4,857	145	322	132	5,636	122	226	114	6,471
8	Illinois HDA - Homeowner Mortgage Revenue Bonds	66	187	490	6,561	127	316	300	7,486	154	242	192	8,538	136	205	134	9,594
9	Kentucky HC - Housing Revenue Bonds	215	713	679	13,594	485	876	1,067	15,090	640	1,170	739	17,814	641	1,352	534	25,925
10	Maine State HA - Mortgage Purchase Program	175	528	343	11,775	131	384	343	12,193	227	322	286	12,146	196	290	169	10,604
11	Maryland CDA - Residential Revenue Bonds	423	870	437	14,984	470	686	304	15,908	364	693	175	12,894	291	615	150	13,049
12	MassHousing - Single Family Housing Revenue	51	55	94	6,309	58	86	99	7,255	81	109	78	8,216	83	72	91	8,748
13	Michigan State HDA- Single Family Mortgage Revenue Bonds*	332	468	180	12,781	360	500	344	13,108	369	1,051	311	13,262	454	960	238	13,632
14	Minnesota HFA - Residential Housing Finance Bonds	274	612	94	14,165	262	490	184	13,980	347	740	211	15,476	298	576	164	14,756
15	Montana BoH - Single Family Mortgage (1977 Indenture)	35	40	42	3,021	39	39	52	4,251	38	58	38	4,988	49	40	59	5,670
16	Montana BoH - Single Family Program Bonds (1979 Indenture)	17	21	31	2,511	25	39	26	3,080	24	26	30	3,485	24	28	29	3,806

Delinquencies and Foreclosures for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs (Number of Loans)

		As of 06/30/2012				As of 6/30/2011				As of 06/30/2010				As of 6/30/2009			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
17	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	96	175	118	5,695	107	169	119	6,339	141	301	103	6,911	99	192	114	7,373
18	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	192	182	787	7,907	173	161	793	8,931	186	197	436	9,411	129	68	211	7,198
19	North Carolina HFA - Home Ownership Revenue Bonds	263	350	210	13,536	245	269	192	12,759	257	392	151	13,365	246	277	110	14,029
20	North Dakota HFA - Home Mortgage Finance Program	127	25	49	7,622	141	23	69	9,272	123	23	73	10,493	131	32	61	11,271
21	Oregon HCSD - Single Family Mortgage Revenue Bonds	77	28	291	7,507	84	32	272	7,851	72	62	199	8,168	78	45	152	8,675
22	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	1,197	1,452	656	48,534	896	1,059	536	51,269	741	892	465	48,314	711	779	416	45,609
23	Rhode Island HMFC - Homeownership Opportunity Bonds	142	362	115	8,629	133	406	75	8,922	149	328	58	9,523	110	155	26	9,724
24	SONYMA - Homeowner Mortgage Revenue Bonds	220	215	517	27,555	237	168	407	29,485	176	171	322	31,914	194	86	251	34,011
25	SONYMA - Mortgage Revenue Bonds	52	47	86	7,958	53	32	72	8,453	32	22	58	6,720	46	27	62	5,946
26	South Carolina State HFDA - Mortgage Revenue Bonds (1994)	238	91	287	6,890	275	84	273	7,487	290	122	234	8,078	284	106	172	8,496
27	South Carolina State HFDA - Single Family Mortgage Purchase Bonds (1979)	72	21	59	1,728	65	20	64	1,819	75	21	46	1,922	87	20	50	2,025
28	South Dakota HDA - Homeownership Mortgage Bonds	104	100	354	12,304	101	131	415	14,668	117	163	325	17,434	124	147	255	16,941
29	Tennessee HDA - Homeownership Program Bonds (1985)	342	915	125	17,476	402	873	240	19,311	553	1,067	111	21,198	672	1,239	132	22,656
30	Tennessee HDA - Mortgage Finance Program Bonds (1974)	104	146	13	2,835	27	134	32	2,926	77	189	21	3,069	106	213	22	3,258
31	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	49	168	27	2,903	46	125	112	3,512	73	203	84	4,149	59	130	14	4,551
32	Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	3	5	2	220	4	11	10	272	8	13	2	330	2	8	2	388

Delinquencies and Foreclosures for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs (Number of Loans)

		As of 06/30/2012				As of 6/30/2011				As of 06/30/2010				As of 6/30/2009			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
33	Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	26	93	27	1,338	22	91	59	1,666	34	143	39	2,456	26	62	8	2,207
34	Vermont HFA - Single Family Housing Bonds	54	68	62	3,467	55	80	54	3,871	83	41	59	4,589	72	52	49	5,568
35	Virginia HDA - Commonwealth Mortgage Bonds	928	1,468	360	30,161	817	809	446	32,367	822	1,135	406	35,440	714	940	299	38,652
36	West Virginia HDF - Housing Finance Bonds	145	225	46	9,535	167	66	48	11,077	176	80	165	11,498	177	71	164	12,201
37	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	74	65	178	9,209	89	56	201	10,967	97	66	157	13,187	79	70	132	14,857
38	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	64	63	129	7,416	84	41	148	8,765	80	58	128	10,156	81	46	89	11,541
39	Wyoming CDA - Single Family Mortgage (1994 Indenture)	108	154	128	6,461	130	221	164	7,590	201	251	162	8,704	198	86	221	9,090
40	Wyoming CDA - Single Family Mortgage Revenue Bonds (1978)	17	17	11	965	28	18	12	1,090	17	25	11	1,191	21	11	23	1,091

* Includes the NIBP Indenture

NA** = Not Available

Appendix 4 – Seasoned HFA Mortgage Insurance

Mortgage Insurance Data for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	GNMA	FNMA	FHLMC	Total MBS	FHA	VA	RD	Total Federal	MGIC	Genworth	UGRIC	Radian	RMIC	Triad	PMI Co.	Other Insurance	Total PMI	HFA Insured Fund	Uninsured with LTV below 80%	Uninsured with LTV above 80%
1	Alaska HFC - First Time Homebuyer Program	0.00%	0.00%	0.00%	0.00%	31.59%	10.89%	10.62%	53.10%	1.63%	1.18%	0.01%	2.25%	0.02%	0.00%	1.19%	2.06%	8.34%	6.10%	25.89%	6.57%
2	California HFA - Home Mortgage Revenue Bond Program	0.74%	2.93%	0.00%	3.67%	28.06%	0.81%	0.00%	28.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.48%	0.48%	38.20%	24.33%	4.45%
3	Colorado HFA - Single Family Program	0.00%	0.00%	0.00%	0.00%	63.51%	5.66%	2.86%	72.03%	6.92%	5.27%	1.94%	0.40%	2.13%	0.51%	1.02%	0.01%	18.19%	0.09%	7.29%	2.40%
4	Connecticut HFA - Housing Mortgage Finance Bonds	20.09%	0.00%	0.00%	20.09%	57.65%	1.76%	1.42%	60.83%	0.97%	3.09%	0.97%	0.11%	0.38%	0.00%	0.87%	0.04%	6.43%	0.69%	11.86%	0.10%
5	Idaho H&FA - Single Family Mortgage Bonds (2000 Indenture)	0.00%	0.00%	0.00%	0.00%	71.78%	7.73%	10.61%	90.12%	0.90%	0.16%	0.39%	0.00%	0.10%	0.00%	0.00%	0.00%	1.55%	0.00%	1.70%	6.63%
6	Idaho H&FA - Single Family Mortgage Bonds (2003 Indenture)	0.00%	0.00%	0.00%	0.00%	59.40%	4.86%	11.11%	75.37%	9.36%	7.72%	2.23%	2.22%	0.19%	0.00%	0.40%	0.00%	22.12%	0.00%	0.63%	1.88%
7	Idaho H&FA - Single Family Mortgage Bonds (2006 Indenture)	0.00%	0.00%	0.00%	0.00%	27.72%	2.35%	8.46%	38.53%	14.67%	37.92%	1.69%	6.10%	0.21%	0.00%	0.26%	0.02%	60.87%	0.23%	0.05%	0.32%
8	Illinois HDA - Homeowner Mortgage Revenue Bonds	5.45%	0.00%	0.00%	5.45%	0.11%	0.00%	5.67%	5.78%	31.86%	2.47%	17.14%	8.28%	3.46%	0.00%	1.38%	0.00%	64.58%	0.00%	24.15%	0.04%
9	Kentucky HC - Housing Revenue Bonds	25.90%	16.40%	0.00%	42.30%	38.60%	2.60%	14.20%	55.40%	0.20%	0.40%	0.20%	0.00%	0.00%	0.10%	0.10%	0.00%	1.00%	0.00%	0.65%	0.65%
10	Maine State HA - Mortgage Purchase Program	0.00%	0.00%	0.00%	0.00%	26.91%	5.69%	39.44%	72.04%	7.48%	0.35%	1.51%	1.31%	0.56%	0.02%	1.54%	0.48%	13.25%	0.00%	12.61%	2.10%
11	Maryland CDA - Residential Revenue Bonds	0.00%	0.00%	0.00%	0.00%	38.39%	2.17%	1.94%	42.50%	23.83%	1.82%	10.54%	1.12%	7.94%	0.57%	2.26%	0.00%	48.08%	7.38%	1.93%	0.11%
12	MassHousing - Single Family Housing Revenue	0.00%	25.70%	0.00%	25.70%	0.97%	0.00%	0.04%	1.01%	1.34%	0.12%	0.00%	0.45%	0.38%	0.00%	0.42%	0.00%	2.71%	50.30%	20.28%	0.00%
13	Michigan State HDA- Single Family Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	50.59%	1.13%	14.43%	66.15%	18.61%	3.41%	0.72%	0.34%	0.00%	0.02%	1.72%	0.31%	25.13%	0.27%	8.45%	0.00%
14	Minnesota HFA - Residential Housing Finance Bonds	1.95%	0.09%	0.00%	2.04%	26.82%	1.19%	18.13%	46.14%	19.44%	7.97%	2.61%	0.59%	5.17%	0.16%	1.80%	0.61%	38.35%	0.00%	13.47%	0.00%
15	Montana BoH - Single Family Mortgage (1977 Indenture)	0.00%	0.00%	0.00%	0.00%	49.35%	9.86%	21.13%	80.34%	3.45%	12.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.47%	0.00%	3.74%	0.45%
16	Montana BoH - Single Family Program Bonds (1979 Indenture)	0.00%	0.00%	0.00%	0.00%	64.51%	8.71%	26.78%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
17	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	0.00%	0.00%	0.00%	0.00%	13.23%	3.94%	7.19%	24.36%	1.28%	1.68%	61.07%	0.41%	0.01%	0.00%	0.02%	0.00%	64.47%	0.00%	8.90%	2.27%

Mortgage Insurance Data for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	GNMA	FNMA	FHLMC	Total MBS	FHA	VA	RD	Total Federal	MGIC	Genworth	UGRIC	Radian	RMIC	Triad	PMI Co.	Other Insurance	Total PMI	HFA Insured Fund	Uninsured with LTV below 80%	Uninsured with LTV above 80%
18	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	0.00%	0.00%	0.00%	0.00%	55.63%	3.71%	1.89%	61.23%	10.85%	0.73%	5.41%	0.05%	0.24%	0.07%	0.54%	0.31%	18.20%	0.00%	11.77%	8.80%
19	North Carolina HFA - Home Ownership Revenue Bonds	0.00%	0.00%	0.00%	0.00%	41.15%	3.69%	9.60%	54.44%	7.86%	19.43%	3.69%	0.77%	3.58%	0.27%	1.74%	0.12%	37.46%	0.00%	8.10%	0.00%
20	North Dakota HFA - Home Mortgage Finance Program	0.00%	0.00%	0.00%	0.00%	57.02%	6.11%	13.90%	77.03%	5.35%	6.73%	0.00%	0.15%	0.00%	0.00%	0.18%	0.82%	13.23%	0.00%	9.34%	0.40%
21	Oregon HCSD - Single Family Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	39.24%	0.00%	10.63%	49.87%	19.61%	0.13%	2.87%	0.04%	1.02%	0.05%	0.37%	0.02%	24.11%	0.00%	25.89%	0.13%
22	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	53.00%	3.00%	7.00%	63.00%	4.00%	2.00%	1.00%	1.00%	1.00%	0.00%	1.00%	0.00%	10.00%	9.00%	18.00%	0.00%
23	Rhode Island HMFC - Homeownership Opportunity Bonds	1.44%	0.00%	0.00%	1.44%	11.72%	1.68%	1.12%	14.52%	27.41%	11.08%	4.66%	5.27%	0.43%	0.00%	8.91%	1.49%	59.25%	0.00%	24.79%	0.00%
24	SONYMA - Homeowner Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.07%	28.07%	0.00%	6.05%	0.00%	0.00%	0.01%	0.00%	34.20%	4.79%	61.01%	0.00%
25	SONYMA - Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.02%	0.02%	34.60%	0.00%	1.06%	0.00%	0.00%	0.01%	0.00%	35.69%	11.01%	53.29%	0.00%
26	South Carolina State HFDA - Mortgage Revenue Bonds (1994)	0.00%	0.00%	0.00%	0.00%	39.16%	0.23%	0.31%	39.70%	14.26%	4.96%	17.25%	0.28%	5.72%	4.04%	4.80%	0.00%	51.31%	0.00%	8.99%	0.00%
27	South Carolina State HFDA - Single Family Mortgage Purchase Bonds (1979)	0.00%	0.00%	0.00%	0.00%	56.77%	0.27%	1.09%	58.13%	10.01%	2.94%	10.65%	0.17%	4.36%	3.01%	4.76%	0.00%	35.90%	0.00%	5.97%	0.00%
28	South Dakota HDA - Homeownership Mortgage Bonds	0.00%	0.00%	0.00%	0.00%	33.05%	5.67%	34.12%	72.84%	12.38%	3.30%	1.68%	0.00%	0.00%	0.00%	0.27%	0.37%	18.00%	0.00%	9.16%	0.00%
29	Tennessee HDA - Homeownership Program Bonds (1985)	0.00%	0.00%	0.00%	0.00%	63.93%	2.90%	10.61%	77.44%	3.76%	5.07%	1.58%	0.05%	0.83%	0.09%	0.03%	5.71%	17.12%	0.00%	5.44%	0.00%
30	Tennessee HDA - Mortgage Finance Program Bonds (1974)	0.00%	0.00%	0.00%	0.00%	44.86%	3.93%	6.28%	55.07%	3.09%	2.99%	0.85%	0.03%	1.95%	0.00%	0.02%	1.93%	10.86%	0.00%	34.07%	0.00%
31	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	0.00%	0.00%	0.00%	0.00%	98.14%	1.79%	0.07%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
32	Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	0.00%	0.00%	0.00%	0.00%	99.16%	0.84%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
33	Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	0.00%	0.00%	0.00%	0.00%	97.63%	2.37%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
34	Vermont HFA - Single Family Housing Bonds	2.83%	2.51%	6.05%	11.39%	0.03%	0.00%	11.09%	11.12%	46.47%	0.22%	0.05%	0.00%	0.00%	0.00%	0.31%	0.56%	47.61%	0.00%	28.53%	1.35%

Mortgage Insurance Data for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	GNMA	FNMA	FHLMC	Total MBS	FHA	VA	RD	Total Federal	MGIC	Genworth	UGRIC	Radian	RMIC	Triad	PMI Co.	Other Insurance	Total PMI	HFA Insured Fund	Uninsured with LTV below 80%	Uninsured with LTV above 80%
35	Virginia HDA - Commonwealth Mortgage Bonds	2.80%	0.00%	0.00%	2.80%	37.80%	6.10%	3.60%	47.50%	3.70%	1.90%	0.70%	0.60%	2.10%	0.40%	1.40%	0.00%	10.80%	0.00%	10.30%	28.60%
36	West Virginia HDF - Housing Finance Bonds	0.00%	0.00%	0.00%	0.00%	25.59%	5.34%	18.15%	49.08%	9.43%	11.39%	1.69%	0.49%	1.13%	0.23%	4.57%	0.50%	29.43%	0.00%	21.42%	0.07%
37	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	39.45%	33.03%	1.98%	0.07%	3.07%	0.00%	3.47%	4.55%	85.61%	0.00%	12.41%	1.97%
38	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%	42.32%	30.06%	1.40%	0.02%	3.62%	0.00%	3.31%	4.70%	85.43%	0.00%	12.81%	1.73%
39	Wyoming CDA - Single Family Mortgage (1994 Indenture)	0.00%	0.00%	0.00%	0.00%	40.67%	4.85%	12.35%	57.87%	0.00%	22.02%	0.00%	17.00%	0.00%	0.00%	0.00%	0.05%	39.07%	0.33%	2.73%	0.00%
40	Wyoming CDA - Single Family Mortgage Revenue Bonds (1978)	0.00%	0.00%	0.00%	0.00%	39.88%	11.78%	27.10%	78.76%	0.00%	2.49%	0.00%	12.01%	0.00%	0.00%	0.00%	0.10%	14.60%	5.14%	1.50%	0.00%
	Weighted Average	**2.47%**	**1.23%**	**0.05%**	**3.75%**	**35.83%**	**2.97%**	**7.05%**	**45.85%**	**8.28%**	**7.01%**	**3.12%**	**1.40%**	**1.39%**	**0.17%**	**1.19%**	**0.58%**	**23.14%**	**6.65%**	**16.75%**	**3.86%**

Appendix 5 – Seasoned HFA Loan Type

Loan Type Data for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	% Interest only for an Initial Period	% Step Rate	% 30 Year Level Amortization	% 40 Year Level Amortization	Other
1	Alaska HFC - First Time Homebuyer Program	0.00%	0.00%	97.55%	0.00%	2.45%
2	California HFA - Home Mortgage Revenue Bond Program	20.50%	0.00%	75.10%	4.40%	0.00%
3	Colorado HFA - Single Family Program	0.00%	0.00%	97.34%	2.66%	0.00%
4	Connecticut HFA - Housing Mortgage Finance Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
5	Idaho H&FA - Single Family Mortgage Bonds (2000 Indenture)	0.00%	14.66%	85.34%	0.00%	0.00%
6	Idaho H&FA - Single Family Mortgage Bonds (2003 Indenture)	0.00%	19.80%	80.20%	0.00%	0.00%
7	Idaho H&FA - Single Family Mortgage Bonds (2006 Indenture)	0.00%	14.15%	85.85%	0.00%	0.00%
8	Illinois HDA - Homeowner Mortgage Revenue Bonds	0.00%	0.00%	99.65%	0.06%	0.29%
9	Kentucky HC - Housing Revenue Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
10	Maine State HA - Mortgage Purchase Program	0.00%	0.00%	96.68%	0.41%	2.91%
11	Maryland CDA - Residential Revenue Bonds	11.26%	0.00%	82.85%	5.89%	0.00%
12	MassHousing - Single Family Housing Revenue	0.74%	0.00%	96.89%	2.37%	0.00%
13	Michigan State HDA- Single Family Mortgage Revenue Bonds	0.00%	1.73%	98.27%	0.00%	0.00%
14	Minnesota HFA - Residential Housing Finance Bonds	0.00%	0.00%	90.38%	9.62%	0.00%
15	Montana BoH - Single Family Mortgage (1977 Indenture)	0.00%	0.00%	100.00%	0.00%	0.00%
16	Montana BoH - Single Family Program Bonds (1979 Indenture)	0.00%	0.00%	100.00%	0.00%	0.00%
17	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	0.00%	0.00%	94.10%	5.90%	0.00%
18	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	0.00%	0.00%	99.75%	0.25%	0.00%
19	North Carolina HFA - Home Ownership Revenue Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
20	North Dakota HFA - Home Mortgage Finance Program	0.00%	0.33%	98.59%	1.07%	0.01%
21	Oregon HCSD - Single Family Mortgage Revenue Bonds	0.00%	0.01%	99.88%	0.00%	0.11%
22	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
23	Rhode Island HMFC - Homeownership Opportunity Bonds	30.20%	14.55%	42.28%	10.67%	2.30%
24	SONYMA - Homeowner Mortgage Revenue Bonds	0.00%	0.30%	94.11%	5.10%	0.49%
25	SONYMA - Mortgage Revenue Bonds	0.00%	0.00%	91.24%	8.36%	0.40%
26	South Carolina State HFDA - Mortgage Revenue Bonds (1994)	0.00%	0.00%	100.00%	0.00%	0.00%

Loan Type Data for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	% Interest only for an Initial Period	% Step Rate	% 30 Year Level Amortization	% 40 Year Level Amortization	Other
27	South Carolina State HFDA - Single Family Mortgage Purchase Bonds (1979)	0.00%	0.00%	100.00%	0.00%	0.00%
28	South Dakota HDA - Homeownership Mortgage Bonds	0.00%	8.10%	91.90%	0.00%	0.00%
29	Tennessee HDA - Homeownership Program Bonds (1985)	0.00%	0.00%	99.50%	0.00%	0.50%
30	Tennessee HDA - Mortgage Finance Program Bonds (1974)	0.00%	0.00%	95.08%	0.00%	4.92%
31	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	0.00%	0.00%	100.00%	0.00%	0.00%
32	Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	0.00%	0.00%	100.00%	0.00%	0.00%
33	Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	0.00%	0.00%	100.00%	0.00%	0.00%
34	Vermont HFA - Single Family Housing Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
35	Virginia HDA - Commonwealth Mortgage Bonds	13.30%	0.00%	86.66%	0.00%	0.04%
36	West Virginia HDF - Housing Finance Bonds	0.00%	0.00%	89.59%	0.00%	10.41%
37	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	0.41%	0.00%	99.35%	0.00%	0.24%
38	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	0.44%	0.00%	99.25%	0.00%	0.31%
39	Wyoming CDA - Single Family Mortgage (1994 Indenture)	0.00%	26.07%	73.93%	0.00%	0.00%
40	Wyoming CDA - Single Family Mortgage Revenue Bonds (1978)	0.00%	61.05%	38.95%	0.00%	0.00%

*NA = Not available.

Appendix 6 – Seasoned HFA Vintages

Loan Vintage for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	2012	2011	2010	2009	2008	2007	2006	Prior years
1	Alaska HFC - First Time Homebuyer Program	4.82%	19.60%	18.62%	3.98%	11.11%	8.84%	8.54%	24.49%
2	California HFA - Home Mortgage Revenue Bond Program	0.00%	0.00%	0.00%	1.20%	17.61%	19.33%	18.56%	43.30%
3	Colorado HFA - Single Family Program	0.24%	0.52%	0.27%	0.70%	17.52%	20.13%	14.61%	46.01%
4	Connecticut HFA - Housing Mortgage Finance Bonds	3.21%	8.17%	11.39%	10.73%	10.13%	13.12%	11.85%	31.40%
5	Idaho H&FA - Single Family Mortgage Bonds (2000 Indenture)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
6	Idaho H&FA - Single Family Mortgage Bonds (2003 Indenture)	0.00%	0.00%	0.00%	0.00%	0.00%	0.09%	32.32%	67.59%
7	Idaho H&FA - Single Family Mortgage Bonds (2006 Indenture)	0.00%	0.00%	1.56%	4.23%	33.36%	53.62%	6.95%	0.28%
8	Illinois HDA - Homeowner Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.10%	10.14%	19.96%	16.34%	53.46%
9	Kentucky HC - Housing Revenue Bonds	5.40%	2.00%	2.10%	8.90%	10.70%	10.20%	9.10%	51.60%
10	Maine State HA - Mortgage Purchase Program	1.16%	9.96%	10.65%	9.91%	12.00%	9.69%	9.59%	37.04%
11	Maryland CDA - Residential Revenue Bonds	0.13%	2.51%	4.90%	4.91%	18.65%	32.00%	17.42%	19.48%
12	MassHousing - Single Family Housing Revenue	0.06%	1.12%	1.27%	11.19%	13.43%	15.41%	15.99%	41.53%
13	Michigan State HDA- Single Family Mortgage Revenue Bonds	2.83%	8.41%	5.28%	3.09%	30.15%	16.11%	10.12%	24.01%
14	Minnesota HFA - Residential Housing Finance Bonds	0.00%	0.00%	0.00%	5.29%	15.47%	23.57%	14.03%	41.64%
15	Montana BoH - Single Family Mortgage (1977 Indenture)	0.08%	0.57%	2.32%	0.22%	8.72%	34.83%	28.80%	24.46%
16	Montana BoH - Single Family Program Bonds (1979 Indenture)	0.00%	0.00%	0.58%	10.96%	15.38%	2.04%	0.94%	70.10%
17	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	0.00%	0.87%	0.32%	2.50%	13.23%	22.93%	16.98%	43.17%
18	New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	0.00%	0.00%	3.93%	10.12%	23.41%	30.55%	10.66%	21.34%
19	North Carolina HFA - Home Ownership Revenue Bonds	0.00%	0.07%	1.49%	2.42%	10.38%	25.68%	13.12%	46.84%
20	North Dakota HFA - Home Mortgage Finance Program	6.69%	1.43%	4.53%	15.81%	16.44%	14.36%	8.39%	32.35%
21	Oregon HCSD - Single Family Mortgage Revenue Bonds	0.67%	1.03%	0.59%	6.57%	24.68%	17.70%	12.64%	36.12%
22	Pennsylvania HFA - Single Family Mortgage Revenue Bonds	0.00%	13.00%	17.00%	7.00%	9.00%	13.00%	10.00%	31.00%
23	Rhode Island HMFC - Homeownership Opportunity Bonds	1.39%	1.35%	1.01%	2.52%	12.24%	24.53%	18.70%	38.26%
24	SONYMA - Homeowner Mortgage Revenue Bonds	2.67%	4.10%	0.00%	4.85%	16.66%	10.50%	11.55%	49.67%
25	SONYMA - Mortgage Revenue Bonds	0.00%	23.66%	39.25%	5.35%	4.70%	0.00%	0.00%	27.04%
26	South Carolina State HFDA - Mortgage Revenue Bonds (1994)	0.00%	0.00%	0.00%	5.50%	16.62%	19.87%	18.52%	39.49%

Loan Vintage for Seasoned Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	2012	2011	2010	2009	2008	2007	2006	Prior years
27	South Carolina State HFDA - Single Family Mortgage Purchase Bonds (1979)	0.00%	0.32%	2.35%	10.81%	12.82%	7.62%	11.73%	54.35%
28	South Dakota HDA - Homeownership Mortgage Bonds	0.73%	0.06%	2.91%	15.10%	16.11%	15.39%	11.89%	37.81%
29	Tennessee HDA - Homeownership Program Bonds (1985)	1.41%	0.46%	0.03%	10.52%	13.88%	22.75%	12.72%	38.22%
30	Tennessee HDA - Mortgage Finance Program Bonds (1974)	4.26%	5.80%	5.86%	8.29%	7.18%	14.86%	0.02%	53.73%
31	Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	0.00%	0.08%	0.59%	11.46%	9.91%	14.55%	18.68%	44.73%
32	Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	0.00%	0.00%	0.00%	6.42%	45.57%	7.25%	10.70%	30.06%
33	Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	0.00%	0.00%	0.00%	2.82%	45.96%	51.22%	NA*	NA*
34	Vermont HFA - Single Family Housing Bonds	0.00%	0.06%	0.12%	1.33%	8.85%	18.32%	14.77%	56.55%
35	Virginia HDA - Commonwealth Mortgage Bonds	2.69%	3.04%	1.06%	8.75%	14.70%	20.51%	18.51%	30.74%
36	West Virginia HDF - Housing Finance Bonds	0.13%	5.17%	6.74%	3.01%	10.52%	16.14%	11.46%	46.83%
37	Wisconsin HEDA Homeownership Revenue Bonds (1988 Resolution)	0.00%	0.00%	0.00%	0.00%	14.72%	18.18%	17.42%	49.68%
38	Wisconsin HEDA Homeownership Revenue Bonds (1987 Resolution)	0.00%	0.00%	0.03%	0.00%	10.19%	23.23%	12.44%	54.11%
39	Wyoming CDA - Single Family Mortgage (1994 Indenture)	2.83%	0.29%	3.15%	13.60%	19.24%	23.87%	13.40%	23.62%
40	Wyoming CDA - Single Family Mortgage Revenue Bonds (1978)	1.00%	6.06%	10.68%	39.26%	3.51%	4.03%	6.16%	29.30%

NA* = Not available. The Utah indenture was opened in 2007.

Appendix 7 – NIBP Delinquencies (Percent of Loans) and (Number of Loans)

Delinquencies and Foreclosures for Moody's-Rated State HFA Single Family Whole Loan New Issue Bond Programs (Percent and Number of Loans)

		As of 06/30/2012								As of 12/31/2011							
		Percent by Total Number of Loans				Number of Loans				Percent by Total Number of Loans				Number of Loans			
#	HFA Single Family Whole Loan Program	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total	60+	90+	Fore-closure	Total
1	Alaska HFC - Mortgage Revenue Bonds (E)	0.93%	0.85%	0.59%	2.37%	22	20	14	2,365	1.08%	0.75%	0.61%	2.45%	23	16	13	2,126
2	Idaho H&FA - Single Family Mortgage Bonds (2009 Indenture)	2.54%	2.54%	0.98%	6.07%	13	13	5	511	NA*	NA*	NA*	NA*	NA*	NA*	NA*	NA*
3	Montana BoH - Single Family Homeownership Bonds	0.66%	0.83%	0.75%	2.24%	8	10	9	1,204	0.35%	0.88%	0.00%	1.23%	4	10	0	1,137
4	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	0.96%	1.48%	0.19%	2.64%	15	23	3	1,555	1.05%	1.12%	0.52%	2.69%	14	15	7	1,337
5	New Jersey Housing & Mortgage FA - Single Family Home Mortgage Bonds	1.90%	1.64%	6.10%	9.65%	52	45	167	2,737	2.02%	1.63%	6.82%	10.46%	51	41	172	2,523
6	North Carolina HFA - Home Ownership Revenue Bonds	0.99%	0.66%	0.11%	1.76%	9	6	1	910	0.90%	0.54%	0.00%	1.45%	5	3	0	553
7	North Dakota HFA - Homeownership Revenue Bonds	0.69%	0.22%	0.33%	1.24%	19	6	9	2,742	1.30%	0.11%	0.42%	1.84%	34	3	11	2,612
8	Oregon HCSD- Housing Revenue (Single Family Mortgage Program)	0.23%	0.23%	0.00%	0.46%	2	2	0	879	0.17%	0.00%	0.33%	0.50%	1	0	2	606
9	Rhode Island HMFC- Home Funding Bonds	0.19%	1.33%	0.00%	1.52%	1	7	0	528	0.94%	1.13%	0.00%	2.06%	5	6	0	533
10	South Dakota HDA - Single Family Mortgage Bonds - First Time Home Buyer	0.63%	0.40%	0.70%	1.72%	19	12	21	3,017	0.28%	0.28%	0.35%	0.90%	8	8	10	2,897
11	Tennessee HDA- Housing Finance Program Bonds	1.88%	3.04%	0.46%	5.38%	115	186	28	6,119	1.93%	2.86%	0.78%	5.57%	104	154	42	5,389
12	Utah HC - Single Family Mortgage Bonds	0.79%	3.16%	0.58%	4.53%	15	60	11	1,897	0.92%	2.70%	0.97%	4.58%	18	53	19	1,966
13	Virginia HDA - Homeownership Mortgage Bonds	2.31%	2.73%	0.44%	5.48%	121	143	23	5,242	2.51%	2.48%	0.45%	5.44%	111	110	20	4,430
14	West Virginia Housing Development Fund - New Issue Program Bonds	0.42%	1.59%	0.11%	2.11%	4	15	1	946	0.36%	0.00%	0.00%	0.36%	1	0	0	279
15	Wyoming CDA - Homeownership Mortgage Revenue Bonds	0.98%	0.98%	0.90%	2.85%	12	12	11	1,226	0.49%	0.99%	0.59%	2.08%	5	10	6	1,011

(E) indicates an existing inactive Indenture was used for the New Issue Bond Program

NA* = Not available.

Appendix 8 – NIBP Mortgage Insurance

Mortgage Insurance Data for Moody's-Rated State HFA Single Family Whole Loan NIBP Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	GNMA	FNMA	FHLMC	Total MBS	FHA	VA	RD	Total Federal	MGIC	Genworth	UGRIC	Radian	RMIC	Triad	PMI Co.	Other Insurance	Total PMI	HFA Insured Fund	Uninsured with LTV below 80%	Uninsured with LTV above 80%
1	Alaska HFC - Mortgage Revenue Bonds (E)	0.00%	0.00%	0.00%	0.00%	28.32%	7.45%	14.47%	50.24%	1.55%	0.67%	0.00%	2.69%	0.00%	0.00%	1.45%	2.57%	8.93%	9.12%	24.66%	7.05%
2	Idaho H&FA - Single Family Mortgage Bonds (2009 Indenture)	0.00%	0.00%	0.00%	0.00%	75.02%	4.49%	19.37%	98.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.61%	0.00%	0.51%
3	Montana BoH - Single Family Homeownership Bonds	0.00%	0.00%	0.00%	0.00%	59.99%	12.61%	27.40%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	0.00%	0.00%	0.00%	0.00%	73.13%	2.50%	23.24%	98.87%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.13%	0.00%
5	New Jersey Housing & Mortgage FA - Single Family Home Mortgage Bonds	0.00%	0.00%	0.00%	0.00%	51.82%	2.19%	1.59%	55.61%	7.26%	0.70%	0.45%	1.19%	0.79%	0.10%	0.19%	0.20%	10.88%	0.00%	16.28%	17.23%
6	North Carolina HFA - Home Ownership Revenue Bonds	0.00%	0.00%	0.00%	0.00%	66.75%	5.30%	20.59%	92.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.36%	0.00%
7	North Dakota HFA - Homeownership Revenue Bonds	0.00%	0.00%	0.00%	0.00%	57.93%	4.14%	14.43%	76.50%	4.28%	5.75%	0.00%	0.50%	0.00%	0.00%	0.00%	2.09%	12.62%	0.00%	10.68%	0.20%
8	Oregon HCSD- Housing Revenue (Single Family Mortgage Program)	0.00%	0.00%	0.00%	0.00%	66.40%	0.00%	12.96%	79.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.64%	0.00%
9	Rhode Island HMFC- Home Funding Bonds	52.38%	0.00%	0.00%	52.38%	46.07%	0.08%	1.47%	47.62%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10	South Dakota HDA - Single Family Mortgage Bonds - First Time Home Buyer	0.00%	0.00%	0.00%	0.00%	51.04%	5.24%	34.75%	91.03%	0.59%	0.16%	0.10%	0.00%	0.00%	0.00%	0.04%	0.02%	0.91%	0.00%	8.06%	0.00%
11	Tennessee HDA- Housing Finance Program Bonds	0.00%	0.00%	0.00%	0.00%	95.34%	0.77%	2.71%	98.82%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.05%	0.09%	0.00%	1.09%	0.00%
12	Utah HC - Single Family Mortgage Bonds	0.00%	0.00%	0.00%	0.00%	99.49%	0.51%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
13	Virginia HDA - Homeownership Mortgage Bonds	0.00%	0.00%	0.00%	0.00%	84.96%	2.22%	3.81%	90.98%	0.69%	0.10%	0.42%	0.32%	0.02%	0.00%	0.02%	0.00%	1.56%	0.00%	7.18%	0.27%
14	West Virginia Housing Development Fund - New Issue Program Bonds	0.00%	0.00%	0.00%	0.00%	31.09%	3.32%	10.61%	45.02%	7.02%	17.72%	0.29%	0.43%	0.89%	0.29%	1.72%	0.90%	29.26%	0.00%	24.99%	0.73%
15	Wyoming CDA - Homeownership Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	56.25%	6.61%	35.58%	98.44%	0.00%	0.00%	0.00%	1.25%	0.00%	0.00%	0.00%	0.03%	1.28%	0.00%	0.28%	0.00%

(E) indicates an existing inactive Indenture was used for the New Issue Bond Program

Appendix 9 – NIBP Loan Type

Loan Type Data for Moody's-Rated State HFA Single Family Whole Loan NIBP Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	% Interest Only For an Initial Period	% Step Rate	% 30 Year Level Amortization	% 40 Year Level Amortization	Other
1	Alaska HFC - Mortgage Revenue Bonds (E)	0.00%	0.00%	97.44%	0.00%	2.56%
2	Idaho H&FA - Single Family Mortgage Bonds (2009 Indenture)	0.00%	5.81%	94.19%	0.00%	0.00%
3	Montana BoH - Single Family Homeownership Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
4	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
5	New Jersey Housing & Mortgage FA - Single Family Home Mortgage Bonds	0.00%	0.00%	99.58%	0.42%	0.00%
6	North Carolina HFA - Home Ownership Revenue Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
7	North Dakota HFA - Homeownership Revenue Bonds	0.00%	1.33%	97.06%	1.61%	0.00%
8	Oregon HCSD- Housing Revenue (Single Family Mortgage Program)	0.00%	0.00%	100.00%	0.00%	0.00%
9	Rhode Island HMFC- Home Funding Bonds	0.00%	33.63%	66.37%	0.00%	0.00%
10	South Dakota HDA - Single Family Mortgage Bonds - First Time Home Buyer	0.00%	0.43%	99.57%	0.00%	0.00%
11	Tennessee HDA- Housing Finance Program Bonds	0.00%	0.00%	99.98%	0.00%	0.02%
12	Utah HC - Single Family Mortgage Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
13	Virginia HDA - Homeownership Mortgage Bonds	0.00%	0.00%	100.00%	0.00%	0.00%
14	West Virginia Housing Development Fund - New Issue Program Bonds	0.00%	0.00%	98.84%	0.00%	1.16%
15	Wyoming CDA - Homeownership Mortgage Revenue Bonds	0.00%	2.08%	97.92%	0.00%	0.00%

(E) indicates an existing inactive Indenture was used for the New Issue Bond Program

Appendix 10 – NIBP Vintages

Loan Vintage for Moody's-Rated State HFA Single Family Whole Loan Programs as of June 30, 2012

#	HFA Single Family Whole Loan Program	2012	2011	2010	2009	2008	2007	2006	Prior years
1	Alaska HFC - Mortgage Revenue Bonds (E)	16.72%	33.44%	27.84%	0.00%	0.88%	2.99%	5.02%	13.11%
2	Idaho H&FA - Single Family Mortgage Bonds (2009 Indenture)	0.90%	84.25%	14.85%	0.00%	0.00%	0.00%	0.00%	0.00%
3	Montana BoH - Single Family Homeownership Bonds	15.01%	32.05%	22.84%	0.00%	0.57%	0.00%	0.00%	29.53%
4	New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	12.99%	36.71%	33.25%	17.05%	0.00%	0.00%	0.00%	0.00%
5	New Jersey Housing & Mortgage FA - Single Family Home Mortgage Bonds	12.77%	37.09%	13.46%	0.00%	0.00%	0.00%	11.08%	25.60%
6	North Carolina HFA - Home Ownership Revenue Bonds	24.60%	63.65%	11.41%	0.34%	0.00%	0.00%	0.00%	0.00%
7	North Dakota HFA - Homeownership Revenue Bonds	6.92%	32.14%	39.07%	19.27%	0.00%	0.00%	0.00%	2.60%
8	Oregon HCSD- Housing Revenue (Single Family Mortgage Program)	30.26%	69.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
9	Rhode Island HMFC- Home Funding Bonds	8.29%	47.59%	21.59%	22.10%	0.43%	0.00%	0.00%	0.00%
10	South Dakota HDA - Single Family Mortgage Bonds - First Time Home Buyer	6.03%	47.97%	43.55%	2.45%	0.00%	0.00%	0.00%	0.00%
11	Tennessee HDA- Housing Finance Program Bonds	15.67%	33.22%	39.71%	8.26%	0.00%	0.00%	0.00%	3.14%
12	Utah HC - Single Family Mortgage Bonds	0.00%	13.73%	77.10%	9.17%	0.00%	0.00%	0.00%	0.00%
13	Virginia HDA - Homeownership Mortgage Bonds	12.68%	32.79%	53.88%	0.65%	0.00%	0.00%	0.00%	0.00%
14	West Virginia Housing Development Fund - New Issue Program Bonds	33.71%	15.70%	3.08%	1.73%	4.37%	8.69%	8.50%	24.22%
15	Wyoming CDA - Homeownership Mortgage Revenue Bonds	10.89%	49.04%	36.42%	0.00%	0.00%	0.28%	0.21%	3.16%

(E) indicates an existing inactive Indenture was used for the New Issue Bond Program

NIBP Indentures may have older vintage loans as a result of transfers from existing seasoned Indentures

Appendix 11 – FHFA HPI Q2 2012 Index

Housing Price Appreciation Since 1991, Reported by the FHFA*

State	1-Yr. Rank	1-Yr.	Qtr.	5-Yr.	Since 1991Q1
Arizona	1	12.93	5.95	-41.89	81.93
Idaho	2	8.67	3.89	-25.51	95.79
Florida	3	7.44	3.25	-40.29	80.37
Michigan	4	7.25	3.50	-20.47	49.24
Arkansas	5	7.18	1.87	-5.00	85.93
Utah	6	7.13	2.52	-20.58	154.24
North Dakota	7	6.27	1.81	17.68	142.71
Hawaii	8	6.16	2.89	-14.48	83.07
Colorado	9	4.83	4.04	-3.24	170.44
California	10	4.13	3.54	-40.09	58.92
Texas	11	4.09	1.29	3.83	95.69
Alabama	12	4.03	1.16	-10.75	79.18
South Dakota	13	3.99	2.64	4.98	129.85
Georgia	14	3.98	2.62	-24.41	52.41
West Virginia	15	3.89	-3.66	-0.57	89.28
Missouri	16	3.74	0.79	-10.84	82.69
Tennessee	17	3.55	1.79	-8.83	85.36
Oregon	18	3.51	1.98	-25.63	153.38
South Carolina	19	3.44	1.92	-10.90	78.89
Maryland	20	3.42	4.69	-21.72	110.85
Minnesota	21	3.26	1.80	-18.98	104.84
District of Columbia	22	3.24	-0.10	1.07	258.00
Kentucky	23	3.24	1.80	-1.19	90.71
Nebraska	24	3.21	0.75	-2.57	96.16
USA		3.03	1.80	-17.43	85.48
New Mexico	25	2.91	3.16	-13.78	110.86
Iowa	26	2.68	-1.08	-0.72	97.60
Nevada	27	2.48	4.80	-55.15	16.85
Ohio	28	2.26	0.95	-11.61	53.65
Vermont	29	2.09	-0.90	-4.23	109.02
Virginia	30	2.03	0.81	-15.04	111.50
Kansas	31	1.97	0.31	-4.16	90.61
Wyoming	32	1.95	1.66	-4.61	189.66
New Hampshire	33	1.66	1.38	-16.77	94.29
Indiana	34	1.32	0.65	-5.76	59.59
Louisiana	35	1.09	1.69	-2.51	128.65
Washington	36	1.07	3.57	-23.68	113.20
Montana	37	1.06	0.55	-7.23	192.61

Housing Price Appreciation Since 1991, Reported by the FHFA*

State	1-Yr. Rank	1-Yr.	Qtr.	5-Yr.	Since 1991Q1
Wisconsin	38	1.04	0.78	-11.43	103.08
Alaska	39	1.00	4.55	0.85	127.32
Mississippi	40	0.87	-1.60	-9.90	74.57
North Carolina	41	0.62	0.23	-10.91	78.38
Maine	42	0.47	0.39	-9.07	103.21
Illinois	43	0.27	1.65	-19.25	71.76
Pennsylvania	44	-0.34	0.60	-8.00	86.71
Oklahoma	45	-0.35	0.25	2.56	94.18
New Jersey	46	-0.76	1.63	-18.20	111.63
New York	47	-0.80	0.06	-7.74	104.50
Rhode Island	48	-1.03	-0.68	-21.70	79.21
Massachusetts	49	-1.14	0.48	-11.49	114.40
Delaware	50	-3.40	-0.60	-22.68	69.43
Connecticut	51	-4.69	-1.36	-18.04	61.93

* The above data is reproduced from FHFA's Seasonally Adjusted, Purchase-Only House Price Index for 2012 Q2. The ranking is based on one-year appreciation. The data can be found at www.fhfa.gov.

Appendix 12 – PMI Provider Ratings

	30-Nov-12		30-Mar-12		30-Nov-11		30-Mar-11		30-Sep-10		30-Apr-10		31-Dec-09		30-Jun-09	
Rated Private Mortgage Insurance Companies	**Rating**	**Outlook**	**Rating**	**Outlook**	**Rating**	**Outlook**	**Rating**	**Outlook**	**Rating**	**Outlook**	**Rating**	**Outlook**	**Rating**	**Outlook**	**Rating**	**Outlook**
Genworth Mortgage Insurance Corporation	Ba1	RUR DNG	Ba1	NEG	Ba1	NEG	Baa2	RUR DNG	Baa2	NEG	Baa2	NEG	Baa2	NEG	Baa2	DEV
Genworth Residential Mtg. Ins. Corp. of NC	Ba1	RUR DNG	Ba1	NEG	Ba1	NEG	Baa2	RUR DNG	Baa2	NEG	Baa2	NEG	Baa2	NEG	Baa2	DEV
Mortgage Guaranty Insurance Corp.	B2	RUR DNG	B1	NEG	B1	RUR DNG	Ba3	POS	Ba3	POS	Ba3	POS	Ba3	NEG	Ba2	RUR
PMI Mortgage Insurance Co.	Caa3	NEG	Caa3	NEG	Caa3	NEG	B2	POS	B2	POS	B2	POS	B2	NEG	Ba3	DEV
Radian Guaranty Inc.	Ba3	NEG	Ba3	RUR DNG	Ba3	RUR DNG	Ba3	POS	Ba3	POS	Ba3	NEG	Ba3	NEG	Ba3	DEV
Republic Mortgage Insurance Company	WR	RWR	WR	RWR	Caa2	NEG	Ba1	NEG	Ba1	NEG	Ba1	NEG	Ba1	NEG	Baa2	DEV
United Guaranty Mortgage Indemnity Company	Baa1	STA	Baa1	STA	Baa1	STA	Baa1	STA	A3	NEG	A3	NEG	A3	NEG	A3	NEG
United Guaranty Residential Insurance Co.	Baa1	STA	Baa1	STA	Baa1	STA	Baa1	STA	A3	NEG	A3	NEG	A3	NEG	A3	NEG

Moody's Related Research

Outlook:

» Sector Outlook for US State Housing Finance Agencies Remains Negative, September 2012 (145130)

Median Report:

» US State Housing Finance Agency Fiscal Year 2011 Medians Show Resilience Despite Difficulties Posed by Low Interest Rates, November 2012 (147177)

Rating Methodology:

» Moody's Rating Approach For Single Family, Whole-Loan Housing Programs, May 1999 (45064)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 147866

Author
Ferdinand S. Perrault

Editor
Florence Zeman

Production Associates
David Dombrovskis
Steven Prudames

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

MEDIAN REPORT

US State Housing Finance Agency Fiscal Year 2011 Medians Show Resilience Despite Difficulties Posed by Low Interest Rates

Challenging Credit Conditions Expected to Continue in 2012 and 2013

Table of Contents:

SUMMARY OPINION 1
STABLE PROFITABILITY AIDED BY FEDERAL INITIATIVES; ENDING OF PROGRAM PRESENTS FURTHER CHALLENGES FOR 2013 2
VARIABLE RATE PROGRAMS OUTPERFORM FIXED RATE PROGRAMS WITH HELP FROM TCLP, MANAGEMENT OVERSIGHT IN REVIEWING COUNTERPARTY EXPOSURE, AND LOW INTEREST RATE ENVIRONMENT 3
MEDIAN HFA ASSET-TO-DEBT RATIO DEMONSTRATES STABILITY AS UNDERLYING ASSETS CONTINUE TO PERFORM 5
APPENDIX 7
APPENDIX 1: MOODY'S ISSUER RATINGS AND ACTIVE SINGLE FAMILY PROGRAM RATINGS 8
APPENDIX 2: HFA-WIDE FINANCIAL DATA 11
APPENDIX 3: SINGLE FAMILY PROGRAM FINANCIAL DATA 25
APPENDIX 4: NEW ISSUE BOND PROGRAM FINANCIAL DATA 35
APPENDIX 5: HFA-WIDE VARIABLE RATE AND SWAP DATA 36
MOODY'S RELATED RESEARCH 38

Analyst Contacts:

NEW YORK +1.212.553.1653

Richard Kubanik +1.212.553.7823
Associate Analyst
richard.kubanik@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

>>contacts continued on the last page

Summary Opinion

The financial position of US state housing finance agencies ("HFAs") remained resilient through fiscal year 2011 despite the continued low interest rate environment which reduced opportunities for HFAs to earn investment income and to offer mortgage loans which are both competitive with the conventional market and profitable for the HFA. HFA profitability[1] was bolstered in 2011 by the US Treasury's New Issue Bond Program ("NIBP") which offered the HFAs low cost bond financing so that they could originate competitive mortgages. Furthermore, issuers with variable rate debt benefitted as low interest rates reduced debt service costs on unhedged variable rate bonds although for issuers that need to post collateral, lower rates may result in higher required posting levels. The continued profitability, albeit at lower than historical levels, supported HFA balance sheets as asset-to-debt ratios remained stable.

While HFA profitability has remained resilient over the last three years, we expect that the low interest rates will remain a financial challenge for HFAs for the remainder of 2012 and 2013 and is one of the factors in our negative outlook[2] on the HFA sector. The ending of Treasury's NIBP compels HFAs to seek new methods of accessing low cost capital in order to remain competitive in the core mortgage lending market segment.

Highlights of the Fiscal 2011 state HFA medians include the following three themes

» Median HFA profitability stabilized at 8.7% as historically low investment rates were mitigated by federal initiatives and management actions.

» Programs with variable rate debt above 25% of bonds outstanding reversed a two-year trend and were more profitable than fixed rate programs at 10.3% vs. 8.2% respectively due to the low interest rate environment, successful remarketings and avoidance of bank bonds.

» Median asset-to-debt ratios continued to demonstrate stability at 1.21x as a result of continued profitability, limited loan losses, and declining bond liabilities.

[1] Moody's definition of profitability is net revenue or surplus divided by total revenue. Net revenue is calculated as the difference between operating revenues (mortgage loan interest, investment interest and loan and program fees) and operating expenses (bond interest expenses, administrative expenses, and any pool policy fees).

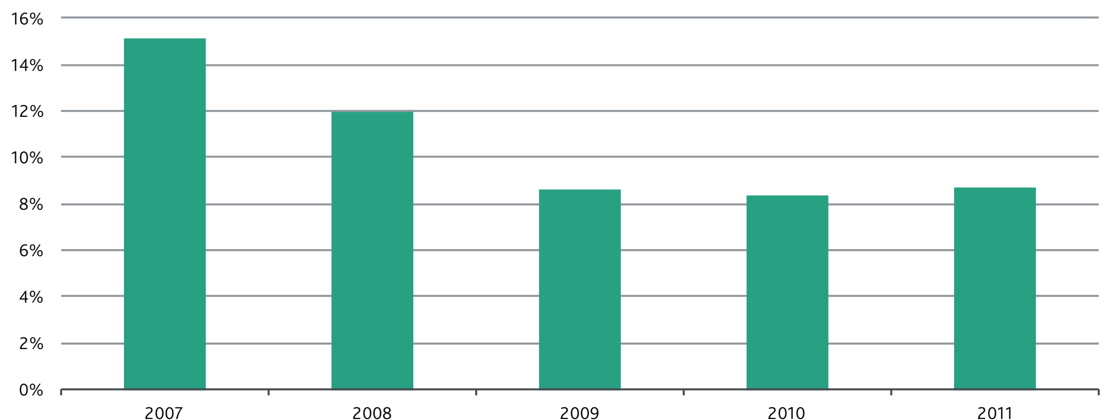
[2] For more information about Moody's Mid-Year 2012 HFA outlook please refer to http://www.moodys.com/research/Moodys-Sector-outlook-for-US-state-HFAs-stays-negative-improvements--PR_255025 dated September 11, 2012.

Stable profitability aided by federal initiatives; Ending of program presents further challenges for 2013

Median HFA-wide profitability remained stable at 8.7%, only a slight improvement from 8.3% in 2010 (see Figure 1)[3]. Of the 36 Moody's rated state HFAs, 33 had positive net revenue while only 3 were unprofitable (Alaska, California and New York) although these losses were offset by healthy fund balances. While profitability has been sustained, it remains at historically low levels, well down from 14.7% in 2007. These low levels reflect the low interest rate environment (see Figure 2) which limited HFA investment earnings and reduced their opportunity to issue mortgage loans which are both profitable and competitive with conventional mortgages.

FIGURE 1

HFA-wide Profitability Stabilizes at Lower Levels



Source: Moody's adjusted audited State HFA financial statements

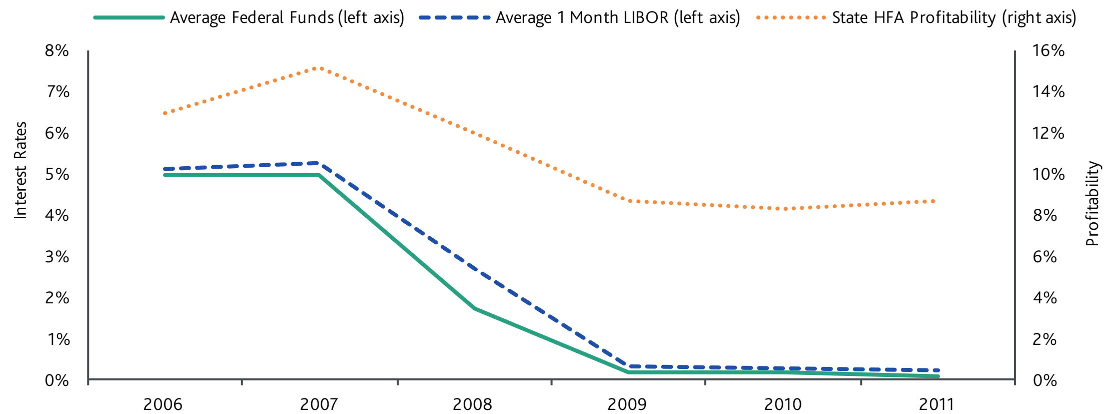
The federal NIBP program mitigated some of the challenges of mortgage originations by offering the HFAs low cost funding through much of fiscal 2011. As the NIBP program ends in 2012, we expect that profitability will remain low and become more of a challenge for the HFAs to maintain. To address this, we have seen HFA management utilizing new financing techniques in addition to taking other actions that will help sustain profitability.

HFA management is an important factor in maintaining future HFA profitability, and finding ways to continue loan origination is one of the most fundamental tasks facing HFA managers in the persistent low interest rate environment because traditional tax-exempt mortgage revenue bonds are not an effective financing tool for HFAs. In the face of this challenge, HFAs are using the secondary mortgage market, such as the To Be Announced ("TBA") market or direct sales to Fannie Mae and Freddie Mac to finance their loan originations[4]. This bolsters HFA revenue, through origination fees and premiums upon sale of the loans, while continuing their single family loan originations. Several HFAs have found this strategy to be effective and intend to maintain it as an ongoing program and many other HFAs are planning to use these tools going forward.

[3] The median profitability for active (non NIBP) single family programs declined 9.1% to 8.2% from 9.0% over the same period of 2010 - 2011. For data on single family programs please refer to the appendix.

[4] For more information please refer to Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks (143141) published June 2012.

FIGURE 2
State HFA Profitability Follows Investment Rates



Source: Bloomberg, Moody's adjusted audited State HFA financial statements

We have also observed HFAs taking other actions to sustain profitability including cross calling (using prepayments from various bond series to target the highest paying coupon bonds first), conducting economic refundings and increasing the frequency of redemptions to limit the low interest rates that loan prepayments earn prior to the redemption of the bonds.

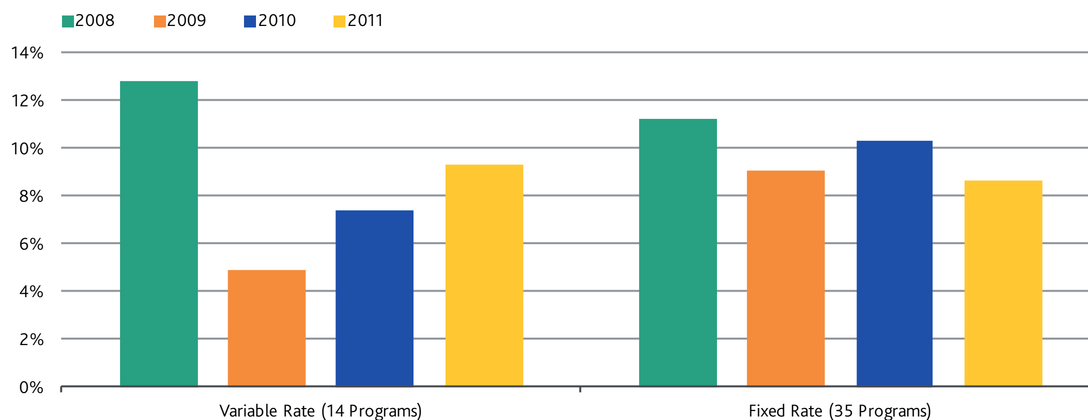
Variable rate programs outperform fixed rate programs with help from TCLP, management oversight in reviewing counterparty exposure, and low interest rate environment

Low interest rates do provide some benefit to those HFAs that have used variable rate demand bonds (VRDBs) to finance their loan originations. For HFAs with unhedged variable rate debt, the lower interest rates translated into lower debt service which contributed to higher profitability. Moody's-rated variable rate programs reversed a two-year trend and outperformed fixed rate programs with profitability of 9.3% compared to 8.7% for the latter as seen in the Figure 3. The HFAs also benefited from more favorable remarketings as fewer bonds became bank bonds and bonds were remarketed at rates closer to the benchmark SIFMA rates. While many HFAs do not have to post collateral, low interest rates results in a mark-to-market which would require more funds to be restricted for collateral posting instead of loan origination.

Some of the remarketing success may be attributed to the US Treasury's Temporary Credit and Liquidity Program ("TCLP"), which provides credit and liquidity support for variable rate demand obligations (VRDO) issued by HFAs. The program was utilized by 1/3 of variable rate issuers and fiscal 2011, the first full year of TCLP, reflected the success of the program. In the near term, while variable rate debt is still subject to risks such as high interest rates and increased liquidity fees, we expect this trend of variable rate programs outperforming fixed-rate programs to continue as rates stay low.

FIGURE 3

Profitability of Variable Rate Programs Outperforms Fixed Rate Programs for First Time Since 2008



Source: Moody's adjusted audited State HFA financial statements

Thirty-two HFAs issue variable rate debt, but the vast majority of debt issuance is concentrated among only 14 HFAs which comprise 83% of the sector's variable rate debt. Most of this debt is hedged with interest rate swaps. As of June 30, 2011, 81% of variable rate debt is hedged compared to 82% on June 30, 2010. The small reduction demonstrated the ability of HFA management to focus on weaker counterparties and terminate contracts with those having the most credit risk.

FIGURE 4

2011 Variable Rate Debt Concentrated Amongst 14 HFAs

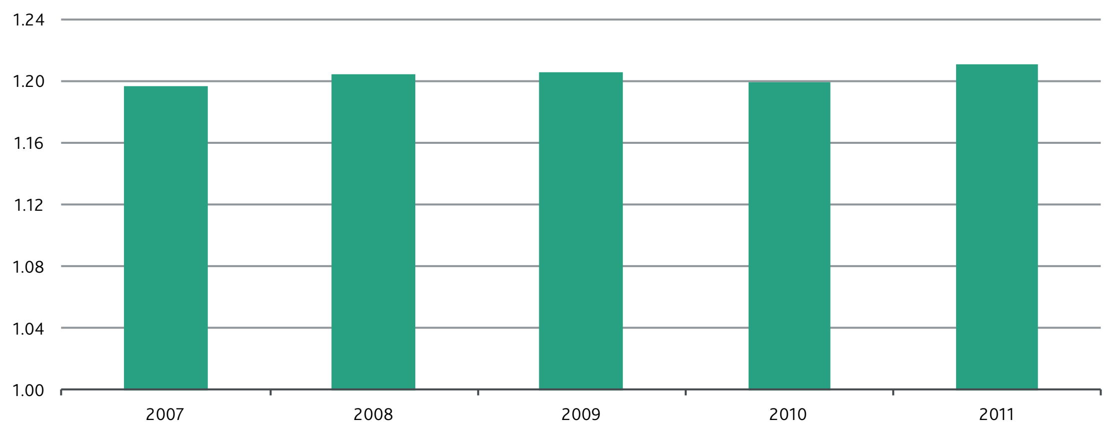
#	Issuer Name	Variable Rate Bonds Outstanding ($000s)	Variable Rate Debt as % of Agency Bonds Outstanding	Swaps Outstanding ($000s)	Swaps as % of Variable Rate Bonds Outstanding
1	California Housing Finance Agency	4,141,250	52%	2,806,555	68%
2	Colorado Housing and Finance Authority	2,364,005	74%	2,034,790	86%
3	Michigan State Housing Development Authority	1,662,130	67%	1,205,345	73%
4	Pennsylvania Housing Finance Agency	1,611,510	35%	1,403,785	87%
5	Wisconsin Housing and Economic Development Authority	1,388,005	54%	1,265,330	91%
6	Connecticut Housing and Finance Authority	1,275,590	35%	979,830	77%
7	Ohio Housing Finance Agency	1,174,382	35%	1,055,670	90%
8	New Jersey Housing and Mortgage Finance Agency	1,041,180	42%	967,750	93%
9	Alaska Housing Finance Corporation	855,850	31%	855,805	100%
10	Idaho Housing and Finance Association	716,190	52%	664,890	93%
11	Utah Housing Corporation	708,335	42%	720,282	102%
12	Texas Department of Housing and Community Affairs	632,260	26%	299,110	47%
13	South Dakota Housing Development Authority	523,750	30%	395,835	76%
14	Iowa Finance Authority	338,675	41%	311,630	92%
	Total for 14 Issuers above 25%:	**18,433,112**		**14,966,607**	
	Total for all Issuers:	**22,133,279**		**17,863,186**	

Source: Moody's State HFA Q2 2011 survey

Median HFA asset-to-debt ratio demonstrates stability as underlying assets continue to perform

HFA balance sheets continued to show resiliency with the median asset-to-debt ratio at 1.21x which has been relatively stable at 1.20x levels since 2007. This stability can be attributed to steady profitability as well as continued favorable performance of the underlying assets. Despite credit pressure from high unemployment levels and increasing delinquencies, losses on single family mortgage loans continue to be low supporting the financial position of the bonds. Delinquencies, while higher than normal, are still below Moody's stress case loan loss calculations and the majority of loans are well seasoned. Furthermore, despite private mortgage insurance ("PMI") downgrades, HFAs, in general, are reporting that claim payments are being received with minimal denials or losses. HFA balance sheets, as discussed below, also benefit from the pay down of bonds outstanding. We expect that these factors will continue to support asset-to-debt ratios over the near term.

FIGURE 5
Asset-to-Debt Ratios HFA-wide Remain Flat

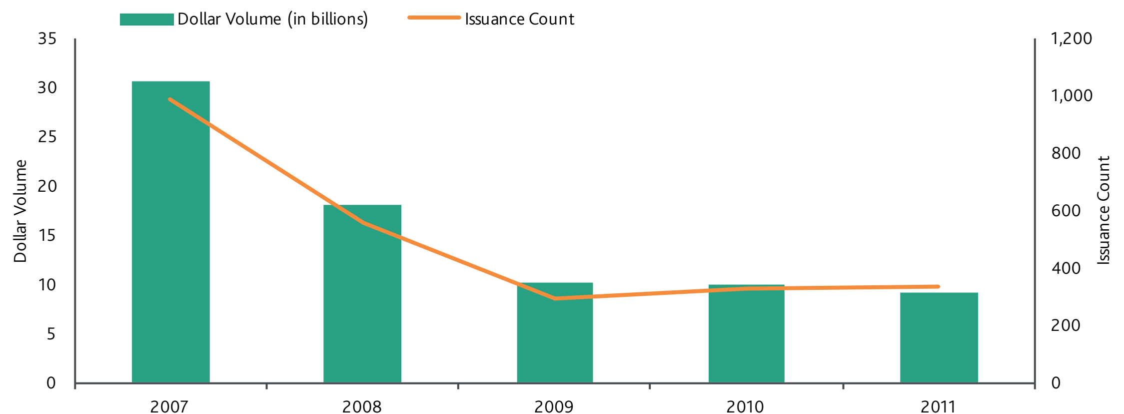


Source: Moody's adjusted audited State HFA financial statements

A key driver of stable asset-to-debt ratios is declining outstanding debt. As mortgage loans are paid and prepaid, HFAs use the funds to redeem bonds thereby decreasing bonds outstanding. Typically net assets remains steady which results in stronger balance sheets as net assets now support a lower liability balance. Prior to 2008, loan prepayments were offset by new bond issuance, but new issuance is now quite low due to low interest rates. The median HFA issuer has $1.56 billion in outstanding debt, down 7.8% from 2010 and the lowest level in 5 years. Overall, outstanding HFA debt is down 5.5% to $109.8 billion from an all time high of $116.2 billion in 2010. As long as rates remain so low, we expect lower issuance[5] and continuing stability in asset-to-debt ratios.

[5] As seen in Figure 6, municipal bonds used for housing purposes hit a new low in volume as 335 issuers recorded dollar volume of $9.1 billion in 2011 compared to 330 issuers recording $9.9 billion of dollar volume in 2010.

FIGURE 6
2011 Housing Deals Dollar Volume Hits New Low



Source: The Bond Buyer

A Note on Methodology and Data Presented

This report discusses the median results from the fiscal year end 2011 audits of 49 state HFAs, 36 of which Moody's maintains an Issuer rating on. In the appendix we present both the entity-wide results of the HFAs (referred to as HFA-wide) as well as 36 single family whole loan programs, and 12 single family mortgage backed securities (MBS) programs (collectively referred to as the single family programs) issued by these HFAs. All financial data is sourced from audited fiscal year end statements and adjusted as per Moody's Financial Statement Analysis Methodology For State Housing Finance Agencies, dated March 2004. HFA-wide information, the main focus of this report, references combined financial statements which incorporate single family, multi-family and other housing programs administered by the HFA, and includes a variety of income sources, loan types, and federal housing programs. In Appendix 3, Moody's rated single family programs, whether whole-loan or MBS, are presented together and the financial statements pertain to the assets and liabilities pledged under the specific single family bond indenture. A new addition to the 2011 medians report is Appendix 4 which contains the ratings and key financial information of 29 New Issue Bond Programs "NIBP" that were established in 2009.

Appendix

- US State Housing Finance Agency Fiscal Year 2011 Medians Show Resilience Despite Difficulties Posed by Low Interest Rates - Excel data
- Appendix 1: Moody's Issuer Ratings and Active Single Family Program Ratings
- Appendix 2: HFA-wide Financial Data
- Appendix 3: Single Family Program Financial Data
- Appendix 4: New Issue Bond Program Financial Data
- Appendix 5: HFA-wide Variable Rate and Swap Data

Appendix 1: Moody's Issuer Ratings and Active Single Family Program Ratings

Issuer Name	Current Rating	Current Outlook
Alabama Housing Finance Authority	Aa2	Stable
Alaska Housing Finance Corporation	Aa2	Stable
Arkansas Development Finance Authority	Not Rated	Not Rated
California Housing Finance Agency	A3	RUR DNG
Colorado Housing and Finance Authority	A2	Stable
Connecticut Housing and Finance Authority	Not Rated	Not Rated
Delaware State Housing Authority	A2	Stable
Florida Housing Finance Corporation	A2	Stable
Georgia Housing and Finance Authority	Not Rated	Not Rated
Hawaii Housing and Community Development Corporation	A2	Negative
Idaho Housing and Finance Association	A1	Negative
Illinois Housing Development Authority	A1	Stable
Indiana Housing Finance Authority	Aa3	Stable
Iowa Finance Authority	Aa3	Stable
Kentucky Housing Corporation	Aa3	Stable
Louisiana Housing Finance Agency	A1	Stable
Maine State Housing Authority	A2	Stable
Maryland Community Development Administration	A1	Stable
Massachusetts Housing Finance Agency	A2	Positive
Michigan State Housing Development Authority	Not Rated	Not Rated
Mississippi Home Corporation	A2	Stable
Missouri Housing Development Commission	Not Rated	Not Rated
Minnesota Housing Finance Agency	Aa1	Stable
Montana Board of Housing	A2	Stable
Nebraska Investment Finance Authority	Not Rated	Not Rated
Nevada Housing Division	Aa3	Stable
New Hampshire Housing Finance Agency	A2	Stable
New Mexico Mortgage Finance Authority	A2	Stable
New Jersey Housing and Mortgage Finance Agency	Aa1	Stable
North Carolina Housing Finance Agency	Not Rated	Not Rated
North Dakota Housing Finance Agency	A2	Stable
New York State Housing Finance Agency	Not Rated	Not Rated
Ohio Housing Finance Agency	A1	Stable
Oklahoma Housing Finance Agency	A1	Stable
Oregon Housing and Community Services Department	A2	Stable
Pennsylvania Housing Finance Agency	Aa2	Stable
Rhode Island Housing and Mortgage Finance Corporation	Not Rated	Not Rated

Issuer Name	Current Rating	Current Outlook
South Carolina State Housing & Finance Development Authority	A1	Stable
State of New York Mortgage Agency	Not Rated	Not Rated
South Dakota Housing Development Authority	Aa3	Stable
Tennessee Housing Development Agency	Not Rated	Not Rated
Texas Department of Housing and Community Affairs	Not Rated	Not Rated
Utah Housing Corporation	Aa3	Stable
Vermont Housing Finance Agency	A2	Stable
Virginia Housing Development Authority	Aa1	Stable
Washington State Housing Finance Commission	Not Rated	Not Rated
Wisconsin Housing & Economic Development Authority	Aa3	Stable
West Virginia Housing Development Fund	Aaa	Stable
Wyoming Community Development Authority	Aa1	Stable

Single Family Whole Loan Program Name	Current Rating	Current Outlook
Alaska HFC - Home Mortgage Revenue Bonds	Aa2	Stable
California HFA - Home Mortgage Revenue Bond Program	Baa2	RUR DNG
Colorado HFA - Single Family Program	Aaa(sf) / Aa2(sf) / A2(sf)	Stable
Connecticut HFA - Housing Mortgage Finance Bonds	Aaa	Stable
Delaware State HA - Senior Single Family Mortgage Revenue Bonds	Aa1	Stable
Idaho H&FA - Single Family Mortgage Bond (2000 Indenture)	Aaa(sf) / Aa2(sf) / A1	Multiple
Idaho H&FA - Single Family Mortgage Bond (2003 Indenture)	Aaa(sf) / Aa2(sf) / A1	Multiple
Idaho H&FA - Single Family Mortgage Bond (2006 Indenture)	Aa2(sf) / Aa3(sf) / A1	Multiple
Illinois HDA - Homeowner Mortgage Revenue Bonds	Aa3	Stable
Kentucky HC - Housing Revenue Bonds	Aaa	Negative
Maine State HA - Mortgage Purchase Program	Aa1	Stable
Maryland CDA - Residential Revenue Bonds	Aa2	Negative
MassHousing - Single Family Housing Revenue	Aa2	Stable
Michigan State HDA - Single Family Mortgage Revenue Bonds	Aa2	Stable
Minnesota HFA - Residential Housing Finance Bonds	Aa1	Stable
Montana BoH - Single Family Mortgage (1977 Indenture)	Aa1	Stable
Montana BoH - Single Family Program Bonds	Aa1	Stable
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	Aa3	Stable
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	Aa2	Negative
North Carolina HFA - Home Ownership Revenue Bonds (1988 Indenture)	Aa2	Stable
North Dakota HFA - Home Mortgage Finance Program	Aa1	Stable
Oregon HCSD - Single Family Mortgage Revenue Bonds	Aa2	Stable
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	Aa2	Stable
Rhode Island HMFC - Homeownership Opportunity Bonds	Aa2	Negative
SONYMA - Homeowner Mortgage Revenue Bonds	Aa1	Stable
SONYMA - Mortgage Revenue Bonds	Aaa	Stable

Single Family Whole Loan Program Name	Current Rating	Current Outlook
South Carolina State HFDA - Mortgage Purchase Bonds (1979 Indenture)	Aaa	Stable
South Carolina State HFDA - Mortgage Revenue Bonds (1994 Indenture)	Aa1	Stable
South Dakota HDA - Homeownership Mortgage Bonds	Aa1	Stable
Tennessee HDA - Mortgage Finance Program (1974 Indenture)	Aa2	Stable
Tennessee HDA - Homeownership Program Bonds (1985 Indenture)	Aa1	Stable
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	Aaa(sf) / Aa2(sf) / Aa3(sf)	Stable
Utah HC - Single Family Mortgage Rev Bonds (2001 Indenture)	Aaa(sf) / Aaa(sf) / Aa3(sf)	Stable
Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	Aaa(sf) / Aa2(sf) / Aa3(sf)	Stable
Vermont HFA - Single Family Housing Bonds	Aa3	Stable
Virginia HDA - Commonwealth Mortgage Bonds	Aaa	Stable
West Virginia HDF - Housing Finance Bonds	Aaa	Stable
WHEDA Homeownership Revenue Bonds (1988 Resolution)	Aa2	Stable
WHEDA Homeownership Revenue Bonds (1987 Resolution)	Aa2	Stable
Wyoming CDA - Housing Revenue Bonds (1994 Indenture)	Aa1	Stable
Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	Aa2	Stable

Single Family MBS Program Name	Current Rating	Current Outlook
AL HFA - Collateralized Single Family Mortgage Revenue Bonds	Aaa	Negative
AL HFA - Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program)	Aaa	Negative
Delaware State HA - Senior Single Family Mortgage Revenue Bonds	Aa1	Stable
Florida HFC - Homeowner Mortgage Revenue Bonds	Aa1	Stable
Indiana HFA - Single Family Mortgage Revenue Bonds	Aaa	Negative
Iowa FA - Single Family Mortgage Bond Resolution	Aaa	Negative
Louisiana HFA - Homeownership Program	Aaa	Negative
Ohio HFA - Single Family Mortgage Revenue Bond Program	Aaa	Negative
Oklahoma HFA - Homeownership Loan Program	Aaa	Negative
Texas DHCA - Single Family Mortgage Revenue	Aa1 / Aa2	Stable
Texas DHCA - Residential Mortgage Revenue Bond Program	Aaa	Negative
Washington State HFC - Single Family Program Bonds	Aaa	Negative

Appendix 2: HFA-wide Financial Data

Profitability[1]

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	18.5%	14.3%	12.0%	18.8%	24.9%
Alaska Housing Finance Corporation	25.6%	26.8%	11.6%	-12.6%	-9.2%
Arkansas Development Finance Authority	15.6%	16.0%	13.4%	6.2%	14.9%
California Housing Finance Agency	12.2%	5.5%	-2.0%	-12.4%	-2.1%
Colorado Housing and Finance Authority	7.7%	3.5%	3.8%	10.5%	6.2%
Connecticut Housing and Finance Authority	20.7%	12.0%	4.8%	7.7%	18.0%
Delaware State Housing Authority	17.9%	10.4%	29.2%	18.8%	19.8%
Florida Housing Finance Corporation	47.2%	28.5%	19.1%	6.7%	4.9%
Georgia Housing and Finance Authority	9.2%	6.2%	7.8%	2.1%	1.3%
Hawaii Housing and Community Development Corporation	44.1%	37.9%	26.8%	27.6%	35.5%
Idaho Housing and Finance Association	14.0%	14.9%	5.6%	6.2%	4.2%
Illinois Housing Development Authority	6.8%	7.1%	5.1%	4.6%	5.5%
Indiana Housing Finance Authority	16.2%	17.1%	11.0%	15.8%	15.5%
Iowa Finance Authority	13.5%	11.0%	7.1%	6.9%	10.3%
Kentucky Housing Corporation	8.5%	9.9%	1.8%	5.6%	2.6%
Louisiana Housing Finance Agency	17.8%	16.1%	10.5%	29.3%	34.1%
Maine State Housing Authority	19.3%	9.3%	0.4%	2.9%	3.1%
Maryland Community Development Administration	15.1%	15.1%	12.3%	12.3%	7.7%
Massachusetts Housing Finance Agency	22.5%	20.0%	9.0%	10.3%	11.9%
Michigan State Housing Development Authority	21.9%	14.1%	4.0%	8.4%	15.7%
Mississippi Home Corporation	11.2%	13.9%	9.0%	2.6%	3.3%
Missouri Housing Development Commission	7.2%	10.6%	8.9%	13.1%	10.6%
Minnesota Housing Finance Agency	18.4%	20.4%	17.9%	17.4%	20.2%
Montana Board of Housing	15.8%	11.0%	2.8%	0.5%	0.2%
Nebraska Investment Finance Authority	18.4%	19.2%	18.6%	22.3%	21.5%
Nevada Housing Division	17.0%	16.4%	11.2%	4.8%	5.9%
New Hampshire Housing Finance Agency	9.2%	9.0%	9.0%	10.9%	4.9%
New Mexico Mortgage Finance Authority	7.8%	7.1%	2.2%	5.0%	2.1%
New Jersey Housing and Mortgage Finance Agency	49.1%	16.6%	11.6%	6.7%	1.6%
North Carolina Housing Finance Agency	9.5%	11.2%	14.9%	14.8%	9.6%
North Dakota Housing Finance Agency	15.4%	14.6%	13.1%	20.6%	18.9%
New York State Housing Finance Agency	7.1%	2.3%	8.7%	4.4%	-6.4%
Ohio Housing Finance Agency	15.1%	13.7%	5.0%	9.1%	14.0%
Oklahoma Housing Finance Agency	12.3%	11.3%	6.0%	3.8%	10.7%
Oregon Housing and Community Services Department	1.4%	9.8%	5.1%	9.3%	11.4%
Pennsylvania Housing Finance Agency	8.3%	6.7%	3.8%	8.3%	18.2%
Rhode Island Housing and Mortgage Finance Corporation	14.0%	10.9%	7.3%	10.8%	8.7%

Profitability[1]

Name of HFA	2007	2008	2009	2010	2011
South Carolina State Housing & Finance Development Authority	9.3%	8.3%	4.4%	3.3%	4.5%
State of New York Mortgage Agency	14.4%	12.4%	8.7%	3.4%	5.1%
South Dakota Housing Development Authority	17.3%	18.9%	8.5%	18.4%	15.6%
Tennessee Housing Development Agency	4.4%	6.1%	3.9%	1.8%	1.2%
Texas Department of Housing and Community Affairs	3.5%	5.7%	0.4%	9.8%	13.6%
Utah Housing Corporation	16.7%	15.3%	2.7%	3.0%	8.3%
Vermont Housing Finance Agency	8.4%	4.9%	-5.5%	2.8%	4.7%
Virginia Housing Development Authority	26.2%	21.9%	17.0%	15.2%	15.4%
Washington State Housing Finance Commission	8.6%	5.2%	9.8%	16.4%	16.9%
Wisconsin Housing and Economic Development Authority	11.1%	10.4%	6.2%	7.1%	6.2%
West Virginia Housing Development Fund	15.3%	16.1%	14.3%	15.5%	7.2%
Wyoming Community Development Authority	32.4%	25.2%	16.8%	11.6%	16.2%
Average	15.9%	13.3%	8.9%	9.2%	10.1%
% Change		-16.5%	-33.1%	3.0%	10.4%
Median	15.1%	12.0%	8.7%	8.3%	8.7%
% Change		-20.9%	-27.6%	-3.7%	4.0%

Profitability is defined as Net Revenue/ Total Revenue

Combined Fund Balance as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	24.1%	22.4%	29.3%	52.1%	64.7%
Alaska Housing Finance Corporation	50.1%	49.3%	52.3%	48.9%	58.1%
Arkansas Development Finance Authority	11.4%	19.9%	36.1%	28.3%	31.7%
California Housing Finance Agency	16.9%	15.1%	15.8%	13.5%	14.5%
Colorado Housing and Finance Authority	9.3%	9.9%	10.6%	9.1%	11.3%
Connecticut Housing and Finance Authority	22.3%	22.2%	20.2%	21.1%	22.3%
Delaware State Housing Authority	29.7%	23.7%	24.5%	30.4%	26.7%
Florida Housing Finance Corporation	49.4%	44.9%	8.1%	8.2%	9.3%
Georgia Housing and Finance Authority	20.2%	19.6%	22.6%	20.1%	21.3%
Hawaii Housing and Community Development Corporation	85.6%	94.8%	88.4%	91.1%	101.8%
Idaho Housing and Finance Association	10.8%	12.0%	10.2%	9.5%	9.8%
Illinois Housing Development Authority	21.6%	22.7%	26.1%	16.0%	17.7%
Indiana Housing Finance Authority	11.3%	13.7%	15.4%	21.4%	22.7%
Iowa Finance Authority	18.3%	13.5%	13.2%	12.8%	18.2%
Kentucky Housing Corporation	13.1%	13.1%	13.9%	14.9%	15.9%
Louisiana Housing Finance Agency	30.2%	32.5%	35.9%	33.7%	44.0%
Maine State Housing Authority	18.6%	20.4%	18.9%	20.2%	20.5%
Maryland Community Development Administration	12.2%	14.6%	15.1%	16.0%	15.5%
Massachusetts Housing Finance Agency	39.2%	44.6%	22.5%	22.1%	24.2%
Michigan State Housing Development Authority	38.8%	29.5%	29.8%	26.2%	27.7%
Mississippi Home Corporation	5.2%	5.9%	7.9%	8.3%	10.1%
Missouri Housing Development Commission	20.2%	31.0%	38.9%	39.5%	49.2%
Minnesota Housing Finance Agency	24.2%	27.9%	28.2%	26.1%	25.6%
Montana Board of Housing	14.7%	15.2%	17.5%	15.4%	19.6%
Nebraska Investment Finance Authority	20.1%	17.5%	25.5%	22.5%	22.6%
Nevada Housing Division	21.2%	19.6%	19.5%	18.1%	20.0%
New Hampshire Housing Finance Agency	8.7%	7.5%	7.3%	7.7%	8.6%
New Mexico Mortgage Finance Authority	11.4%	12.4%	11.9%	14.0%	15.1%
New Jersey Housing and Mortgage Finance Agency	51.3%	43.1%	44.0%	46.3%	42.9%
North Carolina Housing Finance Agency	19.5%	21.9%	24.2%	25.8%	28.7%
North Dakota Housing Finance Agency	9.8%	9.5%	10.8%	9.1%	11.0%
New York State Housing Finance Agency	7.9%	8.0%	7.7%	8.8%	5.3%
Ohio Housing Finance Agency	8.2%	7.4%	8.1%	8.3%	9.0%
Oklahoma Housing Finance Agency	12.2%	13.3%	14.0%	14.7%	18.6%
Oregon Housing and Community Services Department	8.1%	8.4%	9.3%	8.7%	9.7%
Pennsylvania Housing Finance Agency	16.0%	16.0%	17.0%	14.6%	15.6%
Rhode Island Housing and Mortgage Finance Corporation	20.9%	18.8%	19.5%	18.8%	19.7%
South Carolina State Housing & Finance Development Authority	40.5%	37.4%	39.7%	36.2%	40.1%
State of New York Mortgage Agency	15.6%	15.8%	16.0%	15.3%	16.8%

Combined Fund Balance as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
South Dakota Housing Development Authority	18.7%	19.7%	19.4%	20.7%	24.9%
Tennessee Housing Development Agency	21.1%	23.5%	25.7%	22.0%	23.8%
Texas Department of Housing and Community Affairs	2.7%	2.5%	4.3%	4.2%	6.8%
Utah Housing Corporation	12.9%	12.4%	13.6%	13.2%	13.6%
Vermont Housing Finance Agency	10.5%	9.8%	10.6%	12.2%	18.7%
Virginia Housing Development Authority	35.0%	32.3%	34.0%	34.8%	36.4%
Washington State Housing Finance Commission	0.7%	1.6%	1.2%	1.8%	3.1%
Wisconsin Housing and Economic Development Authority	15.1%	15.1%	17.8%	18.4%	18.4%
West Virginia Housing Development Fund	60.7%	47.9%	51.8%	52.7%	56.2%
Wyoming Community Development Authority	21.9%	21.0%	21.7%	19.3%	16.0%
Average	21.8%	21.6%	22.0%	21.9%	24.2%
% Change		-0.7%	1.5%	-0.3%	10.3%
Median	18.6%	18.8%	18.9%	18.4%	19.6%
% Change		1.1%	0.6%	-2.4%	6.3%

General Fund Balance as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	2.3%	1.8%	5.2%	6.3%	7.8%
Alaska Housing Finance Corporation	25.5%	23.7%	27.3%	27.6%	31.4%
Arkansas Development Finance Authority	8.5%	10.3%	16.1%	13.9%	22.3%
California Housing Finance Agency	6.9%	9.0%	8.7%	7.5%	7.8%
Colorado Housing and Finance Authority	6.5%	5.5%	5.9%	4.2%	4.6%
Connecticut Housing and Finance Authority	0.2%	0.1%	0.1%	0.1%	0.1%
Delaware State Housing Authority	4.1%	3.0%	3.1%	3.8%	3.3%
Florida Housing Finance Corporation	3.7%	3.9%	5.6%	4.5%	4.7%
Georgia Housing and Finance Authority	13.8%	13.2%	14.7%	13.1%	15.2%
Hawaii Housing and Community Development Corporation	72.0%	79.6%	77.9%	83.0%	94.0%
Idaho Housing and Finance Association	7.5%	6.3%	6.4%	6.1%	6.0%
Illinois Housing Development Authority	7.7%	7.3%	7.9%	7.4%	8.4%
Indiana Housing Finance Authority	4.3%	5.5%	5.7%	6.2%	6.2%
Iowa Finance Authority	2.4%	1.7%	1.3%	0.7%	1.3%
Kentucky Housing Corporation	2.3%	2.0%	2.0%	2.0%	2.1%
Louisiana Housing Finance Agency	24.2%	26.9%	30.3%	32.3%	55.2%
Maine State Housing Authority	1.0%	1.0%	1.0%	1.1%	1.2%
Maryland Community Development Administration	1.5%	1.4%	1.3%	1.2%	1.2%
Massachusetts Housing Finance Agency	11.1%	10.9%	10.8%	9.7%	10.8%
Michigan State Housing Development Authority	7.4%	6.5%	6.5%	5.1%	2.6%
Mississippi Home Corporation	2.9%	3.2%	4.3%	4.4%	5.6%
Missouri Housing Development Commission	16.6%	27.2%	29.6%	31.5%	35.2%
Minnesota Housing Finance Agency	1.8%	1.0%	0.9%	0.8%	0.8%
Montana Board of Housing	0.5%	0.6%	0.6%	0.3%	0.3%
Nebraska Investment Finance Authority	8.3%	7.0%	7.2%	7.8%	7.8%
Nevada Housing Division	19.1%	18.1%	18.2%	16.7%	18.5%
New Hampshire Housing Finance Agency	5.1%	3.3%	4.3%	3.9%	4.5%
New Mexico Mortgage Finance Authority	7.0%	7.4%	7.1%	8.1%	9.0%
New Jersey Housing and Mortgage Finance Agency	29.0%	25.0%	27.4%	28.4%	23.7%
North Carolina Housing Finance Agency	5.4%	6.1%	7.0%	7.8%	8.3%
North Dakota Housing Finance Agency	1.1%	1.1%	1.4%	0.9%	0.3%
New York State Housing Finance Agency	1.5%	1.6%	1.0%	1.0%	1.0%
Ohio Housing Finance Agency	4.4%	4.1%	4.8%	4.3%	4.9%
Oklahoma Housing Finance Agency	5.9%	6.5%	7.2%	7.5%	8.0%
Oregon Housing and Community Services Department	1.7%	0.7%	0.6%	0.6%	0.7%
Pennsylvania Housing Finance Agency	3.0%	2.4%	2.8%	2.8%	2.8%
Rhode Island Housing and Mortgage Finance Corporation	10.2%	7.5%	7.0%	6.0%	7.5%
South Carolina State Housing & Finance Development Authority	11.5%	10.6%	11.2%	10.8%	12.2%
State of New York Mortgage Agency	-0.3%	0.9%	-0.1%	-0.1%	-0.5%

General Fund Balance as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
South Dakota Housing Development Authority	3.0%	3.1%	3.1%	3.4%	5.1%
Tennessee Housing Development Agency	0.3%	0.2%	0.3%	0.3%	0.1%
Texas Department of Housing and Community Affairs	0.7%	0.7%	0.5%	0.5%	0.6%
Utah Housing Corporation	2.2%	3.4%	3.9%	3.4%	3.8%
Vermont Housing Finance Agency	1.7%	1.6%	1.8%	2.8%	4.0%
Virginia Housing Development Authority	4.3%	3.2%	2.9%	5.4%	2.2%
Washington State Housing Finance Commission	1.7%	1.8%	2.0%	2.2%	2.5%
Wisconsin Housing and Economic Development Authority	5.5%	5.3%	6.0%	5.6%	7.1%
West Virginia Housing Development Fund	1.5%	1.7%	1.6%	1.8%	2.6%
Wyoming Community Development Authority	1.1%	0.9%	0.9%	0.7%	0.7%
Average	7.5%	7.7%	8.2%	8.3%	9.5%
% Change		1.7%	7.4%	0.5%	14.9%
Median	4.3%	3.4%	4.8%	4.4%	4.7%
% Change		-19.3%	38.9%	-8.6%	8.0%

Asset-to-Debt Ratio

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	1.43	1.41	1.57	1.94	1.64
Alaska Housing Finance Corporation	1.50	1.49	1.51	1.49	1.57
Arkansas Development Finance Authority	1.12	1.20	1.36	1.28	1.31
California Housing Finance Agency	1.24	1.22	1.21	1.18	1.18
Colorado Housing and Finance Authority	1.10	1.11	1.12	1.12	1.15
Connecticut Housing and Finance Authority	1.23	1.22	1.21	1.22	1.23
Delaware State Housing Authority	1.30	1.30	1.28	1.34	1.29
Florida Housing Finance Corporation	1.54	1.50	1.13	1.12	1.13
Georgia Housing and Finance Authority	1.35	1.29	1.31	1.28	1.30
Hawaii Housing and Community Development Corporation	1.99	2.13	2.07	2.08	2.19
Idaho Housing and Finance Association	1.13	1.12	1.11	1.10	1.10
Illinois Housing Development Authority	1.24	1.26	1.27	1.18	1.20
Indiana Housing Finance Authority	1.12	1.14	1.16	1.21	1.23
Iowa Finance Authority	1.20	1.14	1.14	1.16	1.21
Kentucky Housing Corporation	1.13	1.14	1.15	1.17	1.16
Louisiana Housing Finance Agency	1.30	1.33	1.38	1.36	1.46
Maine State Housing Authority	1.19	1.20	1.19	1.20	1.21
Maryland Community Development Administration	1.12	1.15	1.15	1.16	1.16
Massachusetts Housing Finance Agency	1.40	1.46	1.24	1.22	1.24
Michigan State Housing Development Authority	1.39	1.31	1.31	1.27	1.28
Mississippi Home Corporation	1.07	1.08	1.10	1.13	1.16
Missouri Housing Development Commission	1.20	1.31	1.38	1.39	1.49
Minnesota Housing Finance Agency	1.24	1.28	1.28	1.26	1.26
Montana Board of Housing	1.15	1.16	1.18	1.16	1.20
Nebraska Investment Finance Authority	1.23	1.20	1.28	1.26	1.29
Nevada Housing Division	1.23	1.21	1.21	1.20	1.22
New Hampshire Housing Finance Agency	1.09	1.07	1.08	1.08	1.09
New Mexico Mortgage Finance Authority	1.10	1.11	1.12	1.15	1.15
New Jersey Housing and Mortgage Finance Agency	1.54	1.46	1.48	1.49	1.45
North Carolina Housing Finance Agency	1.20	1.22	1.24	1.25	1.29
North Dakota Housing Finance Agency	1.10	1.10	1.11	1.09	1.11
New York State Housing Finance Agency	1.09	1.09	1.08	1.10	1.06
Ohio Housing Finance Agency	1.16	1.14	1.14	1.14	1.15
Oklahoma Housing Finance Agency	1.13	1.14	1.15	1.15	1.19
Oregon Housing and Community Services Department	1.08	1.09	1.09	1.09	1.10
Pennsylvania Housing Finance Agency	1.16	1.22	1.25	1.24	1.24
Rhode Island Housing and Mortgage Finance Corporation	1.21	1.20	1.20	1.19	1.20
South Carolina State Housing & Finance Development Authority	1.40	1.38	1.40	1.36	1.40
State of New York Mortgage Agency	1.16	1.16	1.17	1.16	1.18

Asset-to-Debt Ratio

Name of HFA	2007	2008	2009	2010	2011
South Dakota Housing Development Authority	1.20	1.21	1.21	1.22	1.25
Tennessee Housing Development Agency	1.23	1.24	1.27	1.23	1.25
Texas Department of Housing and Community Affairs	1.10	1.08	1.09	1.08	1.10
Utah Housing Corporation	1.14	1.13	1.14	1.14	1.14
Vermont Housing Finance Agency	1.14	1.13	1.14	1.16	1.22
Virginia Housing Development Authority	1.35	1.32	1.34	1.35	1.36
Washington State Housing Finance Commission	1.04	1.05	1.04	1.04	1.06
Wisconsin Housing and Economic Development Authority	1.16	1.16	1.18	1.19	1.19
West Virginia Housing Development Fund	1.63	1.58	1.62	1.55	1.58
Wyoming Community Development Authority	1.22	1.21	1.23	1.20	1.21
Average	1.24	1.24	1.25	1.25	1.26
% Change		0.12%	0.34%	0.12%	1.13%
Median	1.20	1.20	1.21	1.20	1.21
% Change		0.63%	0.08%	-0.49%	0.95%

Bonds Outstanding ($000)

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	958,552	1,067,843	805,604	511,372	434,669
Alaska Housing Finance Corporation	3,188,876	3,257,427	3,051,043	3,014,825	2,749,275
Arkansas Development Finance Authority	969,025	876,175	657,091	736,746	560,350
California Housing Finance Agency	7,572,151	8,605,384	8,221,148	8,976,396	7,906,400
Colorado Housing and Finance Authority	3,248,076	3,634,645	3,279,854	3,303,668	2,889,407
Connecticut Housing and Finance Authority	3,526,926	3,870,056	4,189,023	4,134,969	4,160,630
Delaware State Housing Authority	712,679	850,864	962,416	786,214	899,812
Florida Housing Finance Corporation	4,076,065	4,328,076	3,876,634	4,332,274	4,047,486
Georgia Housing and Finance Authority	712,097	791,110	770,620	937,915	943,205
Hawaii Housing and Community Development Corporation	364,642	400,110	411,965	469,521	463,221
Idaho Housing and Finance Association	1,543,519	2,107,183	2,275,511	2,413,051	2,222,565
Illinois Housing Development Authority	1,585,609	1,643,380	1,545,149	1,700,589	1,567,406
Indiana Housing Finance Authority	1,815,999	1,643,764	1,427,533	1,151,160	1,063,715
Iowa Finance Authority	953,813	1,159,267	1,224,975	1,323,770	1,022,542
Kentucky Housing Corporation	2,085,415	2,182,960	2,178,711	2,244,219	2,104,427
Louisiana Housing Finance Agency	875,438	973,916	918,175	990,089	910,965
Maine State Housing Authority	1,565,732	1,460,770	1,524,370	1,437,355	1,417,790
Maryland Community Development Administration	2,866,995	2,809,190	2,837,650	2,759,705	2,900,230
Massachusetts Housing Finance Agency	4,060,704	4,103,990	4,062,914	4,208,179	4,081,131
Michigan State Housing Development Authority	1,849,908	2,476,924	2,440,081	2,676,403	2,599,541
Mississippi Home Corporation	966,048	1,037,538	844,431	815,982	714,423
Missouri Housing Development Commission	1,638,025	1,686,655	1,611,690	1,640,628	1,527,850
Minnesota Housing Finance Agency	2,393,190	2,405,705	2,470,010	2,702,855	2,552,980
Montana Board of Housing	917,329	936,186	862,836	876,313	776,928
Nebraska Investment Finance Authority	1,326,601	1,635,405	1,504,304	1,398,638	1,318,468
Nevada Housing Division	782,307	886,195	911,783	994,193	920,635
New Hampshire Housing Finance Agency	1,102,386	1,225,859	1,215,716	1,363,116	1,254,231
New Mexico Mortgage Finance Authority	1,495,269	1,445,650	1,490,357	1,400,359	1,260,357
New Jersey Housing and Mortgage Finance Agency	2,270,141	2,642,761	2,617,929	2,502,834	2,703,831
North Carolina Housing Finance Agency	1,636,479	1,549,998	1,499,775	1,455,150	1,339,633
North Dakota Housing Finance Agency	793,240	920,270	843,345	1,060,940	994,990
New York State Housing Finance Agency	8,016,966	9,113,855	9,686,110	9,722,370	10,136,391
Ohio Housing Finance Agency	2,985,330	3,640,852	3,575,552	3,812,540	3,359,292
Oklahoma Housing Finance Agency	685,737	734,322	638,348	673,518	618,990
Oregon Housing and Community Services Department	1,418,318	1,485,191	1,391,095	1,379,395	1,303,345
Pennsylvania Housing Finance Agency	4,010,675	4,270,702	4,253,381	4,832,576	4,602,909
Rhode Island Housing and Mortgage Finance Corporation	1,530,852	1,614,654	1,582,343	1,733,646	1,672,716
South Carolina State Housing & Finance Development Authority	699,023	804,035	778,915	811,840	781,750
State of New York Mortgage Agency	2,948,044	3,237,625	3,140,520	3,415,584	3,189,811

Bonds Outstanding ($000)

Name of HFA	2007	2008	2009	2010	2011
South Dakota Housing Development Authority	1,806,005	1,892,758	1,979,997	2,026,692	1,789,669
Tennessee Housing Development Agency	2,059,915	2,041,014	1,975,811	2,303,932	2,132,690
Texas Department of Housing and Community Affairs	2,615,243	2,731,648	2,658,347	2,671,049	2,397,035
Utah Housing Corporation	1,599,545	1,750,563	1,685,845	1,747,173	1,688,797
Vermont Housing Finance Agency	719,800	805,377	718,158	758,215	680,245
Virginia Housing Development Authority	5,988,065	6,918,996	6,855,012	7,043,609	6,942,782
Washington State Housing Finance Commission	3,688,582	3,961,472	3,937,208	3,910,818	3,716,484
Wisconsin Housing and Economic Development Authority	3,045,901	3,278,507	2,922,119	2,917,954	2,573,539
West Virginia Housing Development Fund	750,839	760,177	722,845	751,882	701,668
Wyoming Community Development Authority	1,111,590	1,255,302	1,239,473	1,399,847	1,255,661
Average	2,153,748	2,345,149	2,291,300	2,372,083	2,241,895
% Change		8.9%	-2.3%	3.5%	-5.5%
Median	1,599,545	1,643,764	1,582,343	1,700,589	1,567,406
% Change		2.8%	-3.7%	7.5%	-7.8%
Total	105,533,665	114,912,305	112,273,722	116,232,067	109,852,866
% Change		8.9%	-2.3%	3.5%	-5.5%

Cash and Investments as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	33.6%	37.2%	20.9%	35.8%	35.9%
Alaska Housing Finance Corporation	40.6%	38.2%	41.1%	47.3%	50.6%
Arkansas Development Finance Authority	96.4%	101.5%	116.3%	121.4%	122.7%
California Housing Finance Agency	26.2%	25.8%	21.5%	37.4%	37.5%
Colorado Housing and Finance Authority	18.9%	20.7%	18.5%	29.6%	33.7%
Connecticut Housing and Finance Authority	34.7%	37.8%	39.4%	35.3%	35.7%
Delaware State Housing Authority	34.9%	16.4%	16.9%	17.9%	31.2%
Florida Housing Finance Corporation	82.0%	81.8%	59.0%	66.1%	66.8%
Georgia Housing and Finance Authority	43.7%	48.2%	46.4%	56.8%	48.3%
Hawaii Housing and Community Development Corporation	138.5%	129.8%	117.1%	111.5%	105.9%
Idaho Housing and Finance Association	38.2%	35.2%	31.3%	32.9%	31.2%
Illinois Housing Development Authority	36.0%	33.6%	30.8%	37.2%	39.6%
Indiana Housing Finance Authority	61.3%	45.7%	47.5%	43.5%	43.3%
Iowa Finance Authority	23.1%	20.8%	27.4%	41.7%	36.3%
Kentucky Housing Corporation	16.5%	16.3%	15.7%	18.5%	16.4%
Louisiana Housing Finance Agency	45.4%	28.5%	18.1%	27.3%	25.6%
Maine State Housing Authority	43.8%	34.6%	34.0%	27.6%	25.1%
Maryland Community Development Administration	37.8%	22.5%	16.8%	16.9%	21.0%
Massachusetts Housing Finance Agency	45.8%	52.7%	25.4%	33.1%	31.4%
Michigan State Housing Development Authority	18.8%	30.2%	19.6%	26.8%	26.9%
Mississippi Home Corporation	71.8%	88.6%	102.6%	109.9%	110.5%
Missouri Housing Development Commission	26.4%	23.1%	30.2%	36.7%	34.2%
Minnesota Housing Finance Agency	43.7%	31.6%	31.6%	43.1%	46.3%
Montana Board of Housing	25.9%	18.6%	22.9%	32.8%	35.4%
Nebraska Investment Finance Authority	28.1%	21.8%	18.1%	23.3%	26.5%
Nevada Housing Division	47.6%	55.8%	56.6%	60.2%	58.6%
New Hampshire Housing Finance Agency	16.4%	13.9%	14.9%	22.9%	18.4%
New Mexico Mortgage Finance Authority	38.0%	21.5%	23.9%	22.5%	17.2%
New Jersey Housing and Mortgage Finance Agency	31.3%	29.5%	27.3%	25.5%	30.4%
North Carolina Housing Finance Agency	36.7%	22.4%	25.8%	30.5%	30.3%
North Dakota Housing Finance Agency	30.8%	28.7%	16.3%	24.7%	21.2%
New York State Housing Finance Agency	17.6%	17.7%	14.5%	14.9%	14.8%
Ohio Housing Finance Agency	20.4%	19.9%	13.3%	27.3%	20.0%
Oklahoma Housing Finance Agency	14.8%	8.3%	9.6%	29.8%	27.6%
Oregon Housing and Community Services Department	39.7%	28.1%	20.3%	24.1%	23.6%
Pennsylvania Housing Finance Agency	28.4%	24.5%	28.1%	30.3%	21.0%
Rhode Island Housing and Mortgage Finance Corporation	27.6%	17.0%	12.0%	16.9%	12.9%
South Carolina State Housing & Finance Development Authority	33.2%	31.9%	28.6%	31.1%	41.5%
State of New York Mortgage Agency	17.3%	17.7%	16.3%	21.8%	16.9%

Cash and Investments as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
South Dakota Housing Development Authority	44.5%	40.4%	42.4%	40.7%	36.4%
Tennessee Housing Development Agency	40.7%	27.9%	26.1%	32.3%	26.7%
Texas Department of Housing and Community Affairs	62.5%	62.8%	62.5%	62.3%	62.7%
Utah Housing Corporation	45.5%	41.1%	41.7%	39.1%	36.7%
Vermont Housing Finance Agency	26.3%	24.2%	17.6%	29.9%	29.7%
Virginia Housing Development Authority	20.1%	20.3%	16.5%	20.4%	22.5%
Washington State Housing Finance Commission	23.9%	14.4%	8.4%	10.6%	8.2%
Wisconsin Housing and Economic Development Authority	26.3%	25.4%	25.1%	34.8%	37.4%
West Virginia Housing Development Fund	29.6%	26.2%	27.7%	42.6%	42.2%
Wyoming Community Development Authority	40.8%	35.2%	34.4%	39.8%	37.3%
Average	38.2%	34.6%	32.2%	37.7%	37.0%
% Change		-9.4%	-6.9%	16.9%	-1.8%
Median	34.7%	28.1%	25.8%	32.3%	31.4%
% Change		-19.1%	-8.2%	25.4%	-2.9%

Investment Income as a Percent of Revenue

Name of HFA	2007	2008	2009	2010	2011
Alabama Housing Finance Authority	25.9%	18.7%	6.5%	5.4%	6.9%
Alaska Housing Finance Corporation	27.8%	21.8%	10.8%	6.1%	4.8%
Arkansas Development Finance Authority	66.9%	65.9%	67.3%	79.6%	79.5%
California Housing Finance Agency	20.1%	15.0%	9.2%	7.2%	5.9%
Colorado Housing and Finance Authority	13.6%	7.9%	4.5%	5.2%	6.4%
Connecticut Housing and Finance Authority	26.5%	23.5%	22.8%	18.6%	15.4%
Delaware State Housing Authority	21.6%	14.4%	6.1%	6.7%	7.9%
Florida Housing Finance Corporation	23.9%	32.9%	56.9%	49.6%	48.4%
Georgia Housing and Finance Authority	13.5%	11.2%	11.6%	7.3%	4.8%
Hawaii Housing and Community Development Corporation	22.7%	18.5%	25.0%	14.6%	8.8%
Idaho Housing and Finance Association	28.4%	21.7%	16.0%	13.9%	9.3%
Illinois Housing Development Authority	9.8%	8.3%	3.7%	2.7%	1.9%
Indiana Housing Finance Authority	38.2%	34.3%	18.6%	15.9%	10.9%
Iowa Finance Authority	NA	NA	NA	NA	NA
Kentucky Housing Corporation	NA	NA	NA	NA	NA
Louisiana Housing Finance Agency	13.0%	8.7%	9.8%	5.7%	4.9%
Maine State Housing Authority	37.1%	27.2%	13.3%	7.4%	7.0%
Maryland Community Development Administration	25.2%	17.9%	6.5%	4.4%	2.1%
Massachusetts Housing Finance Agency	21.1%	17.0%	9.2%	3.8%	5.8%
Michigan State Housing Development Authority	10.9%	13.4%	9.7%	9.2%	10.1%
Mississippi Home Corporation	29.1%	19.9%	7.9%	5.2%	2.5%
Missouri Housing Development Commission	7.5%	7.5%	5.4%	3.3%	2.3%
Minnesota Housing Finance Agency	26.4%	18.6%	11.6%	8.0%	9.4%
Montana Board of Housing	20.5%	15.7%	8.7%	7.5%	7.3%
Nebraska Investment Finance Authority	22.2%	18.0%	11.0%	8.1%	6.1%
Nevada Housing Division	32.4%	38.1%	40.7%	32.3%	19.6%
New Hampshire Housing Finance Agency	13.4%	10.7%	9.4%	8.6%	7.1%
New Mexico Mortgage Finance Authority	20.0%	12.7%	5.6%	3.4%	3.3%
New Jersey Housing and Mortgage Finance Agency	11.4%	15.4%	11.0%	5.4%	6.6%
North Carolina Housing Finance Agency	18.5%	17.0%	9.9%	7.7%	5.0%
North Dakota Housing Finance Agency	18.5%	19.8%	12.3%	8.7%	8.5%
New York State Housing Finance Agency	12.9%	12.8%	5.9%	4.7%	4.1%
Ohio Housing Finance Agency	17.5%	14.3%	6.0%	5.8%	4.0%
Oklahoma Housing Finance Agency	1.0%	1.1%	0.9%	1.3%	0.4%
Oregon Housing and Community Services Department	30.9%	20.9%	9.4%	5.2%	4.5%
Pennsylvania Housing Finance Agency	6.7%	5.5%	6.8%	3.6%	6.0%
Rhode Island Housing and Mortgage Finance Corporation	23.6%	16.7%	9.0%	7.1%	8.6%
South Carolina State Housing & Finance Development Authority	6.9%	5.8%	3.0%	1.2%	2.5%
State of New York Mortgage Agency	15.4%	10.4%	5.1%	4.3%	4.2%

Investment Income as a Percent of Revenue

Name of HFA	2007	2008	2009	2010	2011
South Dakota Housing Development Authority	31.7%	32.5%	23.1%	20.0%	18.2%
Tennessee Housing Development Agency	9.3%	7.2%	4.6%	3.2%	2.2%
Texas Department of Housing and Community Affairs	NA	NA	NA	NA	NA
Utah Housing Corporation	33.5%	28.5%	19.7%	14.6%	14.4%
Vermont Housing Finance Agency	22.0%	18.6%	10.7%	9.8%	10.2%
Virginia Housing Development Authority	8.1%	6.2%	2.3%	0.4%	2.3%
Washington State Housing Finance Commission	8.2%	5.8%	2.1%	3.4%	2.5%
Wisconsin Housing and Economic Development Authority	8.8%	8.7%	4.4%	2.1%	1.9%
West Virginia Housing Development Fund	9.8%	9.8%	6.5%	8.4%	2.6%
Wyoming Community Development Authority	31.5%	26.4%	17.5%	13.0%	10.5%
Average	20.5%	17.5%	12.6%	10.2%	9.1%
% Change		-14.9%	-28.0%	-18.8%	-11.1%
Median	20.3%	16.2%	9.3%	6.9%	6.0%
% Change		-20.1%	-42.6%	-25.8%	-12.8%

Appendix 3: Single Family Program Financial Data

Profitability[1]

Name of HFA	2007	2008	2009	2010	2011
Alabama HFA - Collateralized Single Family Mortgage Revenue Bonds [MBS]	8.3%	8.0%	7.6%	12.3%	28.6%
Alabama HFA - Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program) [MBS]	75.3%	70.9%	67.7%	68.8%	82.3%
Alaska HFC - Home Mortgage Revenue Bonds	3.2%	6.1%	-12.2%	-5.8%	-6.1%
CalHFA - Home Mortgage Revenue Bond Program	10.8%	5.8%	27.0%	31.9%	42.7%
Colorado HFA - Single Family Program	10.8%	8.4%	-8.0%	8.4%	1.9%
Connecticut HFA - Housing Mortgage Finance Bonds	21.7%	12.7%	6.2%	8.9%	19.2%
Delaware State HA - Senior Single Family Mortgage Revenue Bonds [MBS]	5.0%	5.7%	3.8%	2.8%	1.6%
Florida HFC - Homeowner Mortgage Revenue Bonds [MBS]	2.1%	0.9%	5.3%	9.5%	11.7%
Idaho H&FA - Single Family Mortgage Bond - 2000 Indenture	8.3%	8.3%	-9.0%	13.2%	-4.6%
Idaho H&FA - Single Family Mortgage Bond - 2003 Indenture	9.2%	9.2%	2.0%	3.0%	-2.3%
Idaho H&FA - Single Family Mortgage Bond - 2006 Indenture	14.2%	1.9%	-0.7%	2.0%	-6.5%
Illinois HDA - Homeowner Mortgage Revenue Bonds	7.4%	9.2%	-1.8%	-5.2%	-0.9%
Indiana Housing Finance Authority - Single Family Mortgage Revenue Bonds [MBS]	13.5%	16.4%	10.1%	13.0%	11.0%
Iowa Finance Authority - Single Family Mtge Bond Resolution [MBS]	6.2%	5.0%	4.0%	3.0%	4.0%
Kentucky HC - Housing Revenue Bonds	18.6%	6.3%	4.3%	11.5%	8.8%
Louisiana Housing Finance Agency - Homeownership Program [MBS]	17.8%	7.7%	8.7%	12.6%	14.8%
Maine State HA - Mortgage Purchase Program	19.6%	9.5%	2.2%	4.3%	2.4%
Maryland CDA - Residential Revenue Bonds	8.2%	10.8%	12.0%	16.9%	13.9%
MassHousing - Single Family Housing Revenue	13.0%	16.7%	7.6%	2.6%	5.5%
Michigan State Housing Development Authority	29.1%	21.7%	11.3%	18.9%	25.9%
Minnesota HFA - Residential Housing Finance Bonds	14.2%	2.3%	1.5%	0.5%	-0.5%
Montana BoH - Single Family Mortgage Bonds - 1977 Indenture	14.2%	14.6%	5.7%	1.7%	0.3%
Montana BoH - Single Family Program Bonds - 1979 Indenture	16.2%	13.4%	7.0%	4.1%	-7.2%
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	8.6%	8.3%	6.5%	7.8%	3.5%
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	9.4%	4.2%	-1.9%	1.3%	0.2%
North Carolina HFA - Home Ownership Revenue Bonds (1998)	11.4%	13.0%	10.8%	8.9%	5.9%
North Dakota HFA - Home Mortgage Finance Program	21.3%	21.5%	19.5%	24.5%	23.7%
Ohio HFA Single Family Mortgage Revenue Bond Program [MBS]	9.1%	7.0%	2.2%	11.0%	21.4%
Oklahoma Housing Finance Agency - Homeownership Loan Program [MBS]	7.1%	6.8%	3.6%	9.0%	8.2%
Oregon HCSD - Single Family Mortgage Revenue Bonds	5.4%	9.2%	7.3%	7.8%	6.2%
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	6.6%	5.1%	-6.2%	-4.1%	6.3%
Rhode Island HMFC - Homeownership Opportunity Bonds	22.2%	19.5%	17.0%	15.3%	14.8%
SONYMA - Homeowner Mortgage Revenue Bonds	18.6%	16.2%	16.0%	20.1%	15.3%
SONYMA - Mortgage Revenue Bonds	34.4%	34.2%	28.8%	26.2%	26.6%
South Carolina State SHFDA - Mortgage Revenue Bonds	19.1%	13.8%	4.4%	14.8%	15.3%
South Dakota HDA - Homeownership Mortgage Bonds	19.8%	19.5%	8.1%	21.2%	20.5%
Tennessee HDA - Homeownership Program Bonds	21.2%	18.9%	20.2%	18.5%	17.8%

Profitability[1]

Name of HFA	2007	2008	2009	2010	2011
Texas DHCA-Single Family Mortgage Revenue [MBS]	10.8%	8.1%	-3.8%	13.5%	14.5%
Texas DHCA - Residential Mortgage Revenue Bond Program [MBS]	8.1%	8.0%	5.2%	11.7%	31.0%
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	10.3%	9.8%	-5.2%	-9.0%	-7.3%
Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	64.9%	2.5%	-3.0%	-3.8%	-1.1%
Vermont HFA - Single Family Housing Bonds	10.3%	9.6%	0.2%	5.9%	6.1%
Virginia HDA - Commonwealth Mortgage Bonds	43.6%	37.1%	32.2%	30.0%	27.3%
Washington State Housing Finance Commission Single Family Program Bonds [MBS]	3.9%	4.3%	1.2%	5.9%	7.2%
West Virginia HDF - Housing Finance Bonds	24.5%	27.1%	24.6%	29.7%	17.6%
WHEDA Homeownership Revenue Bonds (1988 Resolution)	15.8%	13.6%	1.3%	10.5%	11.1%
WHEDA Homeownership Revenue Bonds (1987 Resolution)	11.8%	12.3%	6.2%	5.0%	4.7%
Wyoming CDA - Housing Revenue Bonds (1994 Indenture)	16.3%	18.2%	11.5%	5.0%	6.6%
Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	49.2%	46.7%	23.0%	11.8%	52.7%
Average	16.9%	13.6%	8.0%	11.0%	12.3%
% Change		-19.9%	-41.1%	37.0%	12.2%
Median	13.0%	9.5%	5.7%	9.0%	8.2%
% Change		-27.1%	-39.4%	56.3%	-9.1%

1 Profitability is defined as Net Revenue/ Total Revenue

Adjusted Program Fund Balance as Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Alabama HFA - Collateralized Single Family Mortgage Revenue Bonds [MBS]	0.5%	1.9%	0.1%	3.8%	12.4%
Alabama HFA - Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program) [MBS]	197.1%	190.2%	126.6%	157.4%	150.9%
Alaska HFC - Home Mortgage Revenue Bonds	10.9%	9.8%	16.1%	18.5%	21.4%
CalHFA - Home Mortgage Revenue Bond Program	7.2%	5.7%	6.7%	6.8%	8.2%
Colorado HFA - Single Family Program	1.9%	0.6%	2.5%	3.4%	3.0%
Connecticut HFA - Housing Mortgage Finance Bonds	20.8%	20.9%	21.7%	22.0%	25.2%
Delaware State HA - Senior Single Family Mortgage Revenue Bonds [MBS]	3.3%	2.8%	2.3%	2.7%	1.6%
Florida HFC - Homeowner Mortgage Revenue Bonds [MBS]	2.9%	2.3%	2.3%	3.0%	4.2%
Idaho H&FA - Single Family Mortgage Bond - 2000 Indenture	2.0%	2.9%	4.4%	9.4%	2.0%
Idaho H&FA - Single Family Mortgage Bond - 2003 Indenture	2.7%	1.2%	2.6%	5.0%	0.2%
Idaho H&FA - Single Family Mortgage Bond - 2006 Indenture	-0.1%	-1.7%	-0.3%	3.3%	-1.4%
Illinois HDA - Homeowner Mortgage Revenue Bonds	4.0%	4.0%	8.7%	8.8%	10.1%
Indiana Housing Finance Authority - Single Family Mortgage Revenue Bonds [MBS]	9.3%	10.3%	12.4%	16.1%	20.5%
Iowa Finance Authority - Single Family Mtge Bond Resolution [MBS]	6.9%	5.3%	7.5%	9.2%	12.6%
Kentucky HC - Housing Revenue Bonds	10.0%	10.4%	10.1%	8.6%	9.0%
Louisiana Housing Finance Agency - Homeownership Program [MBS]	5.3%	4.3%	5.0%	7.2%	10.3%
Maine State HA - Mortgage Purchase Program	18.4%	18.4%	16.2%	17.2%	17.5%
Maryland CDA - Residential Revenue Bonds	4.1%	4.3%	8.7%	13.2%	17.1%
MassHousing - Single Family Housing Revenue	13.0%	9.6%	10.4%	7.9%	7.9%
Michigan State Housing Development Authority	19.1%	9.8%	13.6%	16.9%	19.8%
Minnesota HFA - Residential Housing Finance Bonds	13.7%	6.3%	6.5%	6.9%	6.4%
Montana BoH - Single Family Mortgage Bonds - 1977 Indenture	9.3%	8.6%	10.8%	9.8%	16.6%
Montana BoH - Single Family Program Bonds - 1979 Indenture	20.9%	22.8%	27.6%	26.0%	33.5%
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	1.7%	0.3%	1.4%	3.4%	4.1%
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	7.9%	7.8%	7.5%	7.6%	15.4%
North Carolina HFA - Home Ownership Revenue Bonds (1998)	6.8%	7.6%	9.1%	11.1%	11.5%
North Dakota HFA - Home Mortgage Finance Program	8.7%	8.2%	9.4%	10.4%	13.9%
Ohio HFA Single Family Mortgage Revenue Bond Program [MBS]	4.0%	3.5%	3.5%	4.5%	7.0%
Oklahoma Housing Finance Agency - Homeownership Loan Program [MBS]	5.4%	6.6%	7.1%	9.3%	11.9%
Oregon HCSD - Single Family Mortgage Revenue Bonds	7.1%	5.7%	6.6%	7.8%	9.0%
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	6.3%	7.5%	6.9%	6.7%	7.4%
Rhode Island HMFC - Homeownership Opportunity Bonds	10.3%	10.7%	11.5%	12.8%	13.7%
SONYMA - Homeowner Mortgage Revenue Bonds	12.0%	11.4%	12.0%	13.6%	16.2%
SONYMA - Mortgage Revenue Bonds	41.1%	43.0%	41.3%	17.1%	16.8%
South Carolina State SHFDA - Mortgage Revenue Bonds	11.7%	12.0%	13.4%	18.3%	21.9%
South Dakota HDA - Homeownership Mortgage Bonds	14.0%	14.9%	15.1%	17.8%	19.7%
Tennessee HDA - Homeownership Program Bonds	17.3%	17.5%	18.6%	20.0%	22.6%
Texas DHCA-Single Family Mortgage Revenue [MBS]	3.9%	3.5%	2.4%	8.1%	13.8%
Texas DHCA - Residential Mortgage Revenue Bond Program [MBS]	2.9%	3.4%	3.0%	4.4%	7.6%

Adjusted Program Fund Balance as Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	-0.2%	0.5%	1.2%	0.9%	0.6%
Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	-0.7%	-1.1%	0.9%	1.1%	1.2%
Vermont HFA - Single Family Housing Bonds	3.6%	5.0%	5.6%	7.8%	10.6%
Virginia HDA - Commonwealth Mortgage Bonds	40.3%	35.0%	38.1%	44.7%	46.6%
Washington State Housing Finance Commission Single Family Program Bonds [MBS]	2.6%	2.8%	2.8%	3.4%	4.2%
West Virginia HDF - Housing Finance Bonds	28.3%	29.2%	34.0%	40.2%	45.5%
WHEDA Homeownership Revenue Bonds (1988 Resolution)	4.5%	4.9%	5.7%	7.8%	11.0%
WHEDA Homeownership Revenue Bonds (1987 Resolution)	3.9%	4.5%	5.2%	7.4%	9.1%
Wyoming CDA - Housing Revenue Bonds (1994 Indenture)	10.9%	10.2%	11.8%	12.2%	13.8%
Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	66.0%	65.7%	60.9%	40.4%	45.2%
Average	14.4%	13.7%	13.4%	14.7%	16.5%
% Change		-4.6%	-1.9%	9.8%	12.1%
Median	7.1%	6.6%	7.5%	8.8%	11.9%
% Change		-7.1%	13.8%	17.2%	34.3%

Asset-to-Debt Ratio

Name of HFA	2007	2008	2009	2010	2011
Alabama HFA - Collateralized Single Family Mortgage Revenue Bonds [MBS]	1.02	1.02	1.04	1.05	1.12
Alabama HFA - Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program) [MBS]	2.55	2.90	2.26	2.57	2.51
Alaska HFC - Home Mortgage Revenue Bonds	1.11	1.10	1.14	1.16	1.20
CalHFA - Home Mortgage Revenue Bond Program	1.07	1.06	1.07	1.07	1.08
Colorado HFA - Single Family Program	1.02	1.02	1.01	1.03	1.03
Connecticut HFA - Housing Mortgage Finance Bonds	1.21	1.21	1.22	1.22	1.25
Delaware State HA - Senior Single Family Mortgage Revenue Bonds [MBS]	1.04	1.03	1.03	1.03	1.02
Florida HFC - Homeowner Mortgage Revenue Bonds [MBS]	1.05	1.04	1.04	1.07	1.07
Idaho H&FA - Single Family Mortgage Bond - 2000 Indenture*	1.04	1.05	1.05	1.11	1.03
Idaho H&FA - Single Family Mortgage Bond - 2003 Indenture*	1.04	1.01	1.03	1.05	1.00
Idaho H&FA - Single Family Mortgage Bond - 2006 Indenture*	1.01	0.99	1.00	1.03	0.99
Illinois HDA - Homeowner Mortgage Revenue Bonds	1.04	1.04	1.09	1.09	1.10
Indiana Housing Finance Authority - Single Family Mortgage Revenue Bonds [MBS]	1.09	1.10	1.12	1.16	1.20
Iowa Finance Authority - Single Family Mtge Bond Resolution [MBS]	1.07	1.05	1.07	1.09	1.12
Kentucky HC - Housing Revenue Bonds	1.10	1.10	1.10	1.08	1.09
Louisiana Housing Finance Agency - Homeownership Program [MBS]	1.05	1.05	1.05	1.07	1.11
Maine State HA - Mortgage Purchase Program	1.19	1.19	1.17	1.18	1.18
Maryland CDA - Residential Revenue Bonds	1.04	1.04	1.09	1.13	1.17
MassHousing - Single Family Housing Revenue	1.14	1.11	1.09	1.09	1.09
Michigan State Housing Development Authority	1.19	1.10	1.13	1.17	1.19
Minnesota HFA - Residential Housing Finance Bonds	1.14	1.06	1.06	1.06	1.06
Montana BoH - Single Family Mortgage Bonds - 1977 Indenture	1.09	1.09	1.11	1.10	1.17
Montana BoH - Single Family Program Bonds - 1979 Indenture	1.21	1.23	1.28	1.26	1.34
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	1.02	1.03	1.03	1.04	1.05
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	1.08	1.08	1.08	1.08	1.16
North Carolina HFA - Home Ownership Revenue Bonds (1998)	1.07	1.08	1.09	1.11	1.11
North Dakota HFA - Home Mortgage Finance Program	1.09	1.08	1.09	1.10	1.14
Ohio HFA Single Family Mortgage Revenue Bond Program [MBS]	1.04	1.04	1.04	1.05	1.07
Oklahoma Housing Finance Agency - Homeownership Loan Program [MBS]	1.06	1.07	1.07	1.10	1.12
Oregon HCSD - Single Family Mortgage Revenue Bonds	1.07	1.06	1.07	1.08	1.09
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	1.06	1.08	1.07	1.09	1.09
Rhode Island HMFC - Homeownership Opportunity Bonds	1.10	1.11	1.11	1.13	1.14
SONYMA - Homeowner Mortgage Revenue Bonds	1.12	1.12	1.12	1.14	1.17
SONYMA - Mortgage Revenue Bonds	1.41	1.43	1.42	1.17	1.17
South Carolina State SHFDA - Mortgage Revenue Bonds	1.11	1.12	1.13	1.18	1.21
South Dakota HDA - Homeownership Mortgage Bonds	1.15	1.16	1.16	1.18	1.21
Tennessee HDA - Homeownership Program Bonds	1.18	1.19	1.19	1.21	1.23
Texas DHCA-Single Family Mortgage Revenue [MBS]	1.05	1.05	1.03	1.08	1.14
Texas DHCA - Residential Mortgage Revenue Bond Program [MBS]	1.04	1.05	1.04	1.05	1.08

Asset-to-Debt Ratio

Name of HFA	2007	2008	2009	2010	2011
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)*	1.01	1.01	1.01	1.00	1.00
Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)*	0.99	0.99	1.01	1.01	1.01
Vermont HFA - Single Family Housing Bonds	1.04	1.05	1.06	1.08	1.11
Virginia HDA - Commonwealth Mortgage Bonds	1.40	1.35	1.38	1.44	1.46
Washington State Housing Finance Commission Single Family Program Bonds [MBS]	1.03	1.03	1.03	1.03	1.04
West Virginia HDF - Housing Finance Bonds	1.27	1.28	1.32	1.39	1.44
WHEDA Homeownership Revenue Bonds (1988 Resolution)	1.05	1.05	1.06	1.08	1.11
WHEDA Homeownership Revenue Bonds (1987 Resolution)	1.04	1.04	1.05	1.07	1.09
Wyoming CDA - Housing Revenue Bonds (1994 Indenture)	1.11	1.10	1.13	1.13	1.14
Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	1.67	1.66	1.63	1.41	1.46
Average	1.14	1.14	1.14	1.15	1.17
% Change		0.16%	-0.38%	1.18%	1.46%
Median	1.07	1.07	1.08	1.09	1.12
% Change		-0.16%	0.57%	1.40%	2.74%

* The asset to debt ratio of the subordinate class is presented

Bonds Outstanding ($000)

Name of HFA	2007	2008	2009	2010	2011
Alabama HFA - Collateralized Single Family Mortgage Revenue Bonds [MBS]	328,990	388,025	364,374	331,410	288,755
Alabama HFA - Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program) [MBS]	70,720	79,675	104,185	105,300	106,330
Alaska HFC - Home Mortgage Revenue Bonds	741,970	810,010	1,033,475	1,117,755	1,029,735
CalHFA - Home Mortgage Revenue Bond Program	5,800,563	6,874,683	6,698,770	6,209,250	5,117,045
Colorado HFA - Single Family Program	1,993,011	2,277,295	2,073,750	2,200,719	1,611,323
Connecticut HFA - Housing Mortgage Finance Bonds	3,464,026	3,813,436	3,914,223	3,775,808	3,686,091
Delaware State HA - Senior Single Family Mortgage Revenue Bonds [MBS]	675,473	845,320	944,765	777,372	635,339
Florida HFC - Homeowner Mortgage Revenue Bonds [MBS]	1,490,950	1,765,857	1,739,293	1,364,143	1,141,625
Idaho H&FA - Single Family Mortgage Bond - 2000 Indenture	200,924	177,809	161,002	150,407	139,404
Idaho H&FA - Single Family Mortgage Bond - 2003 Indenture	499,087	448,933	385,143	450,046	396,837
Idaho H&FA - Single Family Mortgage Bond - 2006 Indenture	762,639	878,413	1,000,641	913,400	809,018
Illinois HDA - Homeowner Mortgage Revenue Bonds	966,910	1,040,940	998,835	993,170	891,200
Indiana Housing Finance Authority - Single Family Mortgage Revenue Bonds [MBS]	1,336,780	1,293,030	1,119,335	902,160	716,675
Iowa Finance Authority - Single Family Mtge Bond Resolution [MBS]	905,002	1,093,075	1,080,135	931,712	687,695
Kentucky HC - Housing Revenue Bonds	2,076,963	2,141,295	2,175,418	2,240,477	2,100,685
Louisiana Housing Finance Agency - Homeownership Program [MBS]	528,940	686,589	702,586	610,162	503,938
Maine State HA - Mortgage Purchase Program	1,385,785	1,442,935	1,507,870	1,429,555	1,416,260
Maryland CDA - Residential Revenue Bonds	2,156,380	2,159,800	2,211,730	2,197,825	2,186,285
MassHousing - Single Family Housing Revenue	1,164,360	1,157,265	1,384,040	1,462,156	1,350,861
Michigan State Housing Development Authority	474,095	1,057,506	978,703	920,306	869,284
Minnesota HFA - Residential Housing Finance Bonds	1,895,500	1,816,020	1,735,690	1,770,650	1,614,017
Montana BoH - Single Family Mortgage Bonds - 1977 Indenture	568,870	631,675	560,635	459,630	376,865
Montana BoH - Single Family Program Bonds - 1979 Indenture	324,599	293,456	291,451	256,465	224,605
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	926,070	1,024,778	1,037,710	955,400	855,305
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	834,542	1,201,870	1,332,680	1,255,690	1,061,015
North Carolina HFA - Home Ownership Revenue Bonds (1998)	1,410,893	1,409,960	1,368,361	1,228,916	1,121,488
North Dakota HFA - Home Mortgage Finance Program	793,240	920,270	843,345	803,840	688,240
Ohio HFA Single Family Mortgage Revenue Bond Program [MBS]	2,701,285	3,257,480	3,290,450	3,001,685	2,384,865
Oklahoma Housing Finance Agency - Homeownership Loan Program [MBS]	657,274	728,325	632,956	503,221	416,531
Oregon HCSD - Single Family Mortgage Revenue Bonds	911,596	1,209,961	1,211,940	1,087,605	973,045
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	3,634,474	3,927,037	3,946,155	4,560,384	4,404,546
Rhode Island HMFC - Homeownership Opportunity Bonds	1,102,560	1,169,410	1,158,645	1,077,865	998,475
SONYMA - Homeowner Mortgage Revenue Bonds	2,572,455	2,884,815	2,804,425	2,582,415	2,320,137
SONYMA - Mortgage Revenue Bonds	366,980	345,330	329,745	832,475	866,840
South Carolina State SHFDA - Mortgage Revenue Bonds	596,320	702,410	677,290	590,215	518,115
South Dakota HDA - Homeownership Mortgage Bonds	1,715,207	1,804,860	1,877,473	1,695,951	1,378,282
Tennessee HDA - Homeownership Program Bonds	1,638,982	1,803,214	1,867,578	1,732,490	1,506,849
Texas DHCA-Single Family Mortgage Revenue [MBS]	1,037,085	1,143,425	1,097,500	902,588	792,371
Texas DHCA - Residential Mortgage Revenue Bond Program [MBS]	310,742	285,430	337,570	560,172	497,436

Bonds Outstanding ($000)

Name of HFA	2007	2008	2009	2010	2011
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	1,040,640	903,695	788,555	698,855	627,760
Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	65,263	387,105	413,090	375,789	320,392
Vermont HFA - Single Family Housing Bonds	585,790	487,235	446,640	386,765	321,620
Virginia HDA - Commonwealth Mortgage Bonds	3,163,489	3,925,755	3,803,007	3,306,748	3,056,345
Washington State Housing Finance Commission Single Family Program Bonds [MBS]	952,167	991,694	1,036,520	912,151	787,952
West Virginia HDF - Housing Finance Bonds	735,839	759,928	722,259	651,035	598,300
WHEDA Homeownership Revenue Bonds (1988 Resolution)	1,388,960	1,498,675	1,377,065	1,191,795	973,295
WHEDA Homeownership Revenue Bonds (1987 Resolution)	1,071,835	1,132,135	1,033,085	886,610	726,655
Wyoming CDA - Housing Revenue Bonds (1994 Indenture)	962,605	1,101,610	1,125,980	1,071,425	929,630
Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	113,290	112,446	113,290	113,290	105,000
Average	1,246,982	1,393,712	1,384,477	1,317,046	1,165,926
% Change		11.8%	-0.7%	-4.9%	-11.5%
Median	952,167	1,093,075	1,037,710	931,712	866,840
% Change		14.8%	-5.1%	-10.2%	-7.0%
Total	61,102,121	68,291,894	67,839,362	64,535,254	57,130,362
% Change		11.8%	-0.7%	-4.9%	-11.5%

Cash and Investments as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Alabama HFA - Collateralized Single Family Mortgage Revenue Bonds [MBS]	27.8%	13.9%	8.3%	10.0%	9.3%
Alabama HFA - Taxable Mortgage Revenue Bond (Collateralized Revenue Bond Program) [MBS]	68.1%	105.4%	110.7%	129.3%	101.2%
Alaska HFC - Home Mortgage Revenue Bonds	8.6%	8.8%	8.6%	12.8%	17.1%
CalHFA - Home Mortgage Revenue Bond Program	17.4%	18.4%	12.8%	20.3%	19.3%
Colorado HFA - Single Family Program	15.0%	18.0%	15.0%	27.9%	22.1%
Connecticut HFA - Housing Mortgage Finance Bonds	34.8%	38.0%	36.3%	33.4%	35.0%
Delaware State HA - Senior Single Family Mortgage Revenue Bonds [MBS]	28.2%	5.6%	7.2%	6.6%	1.8%
Florida HFC - Homeowner Mortgage Revenue Bonds [MBS]	96.4%	98.2%	98.8%	100.4%	99.9%
Idaho H&FA - Single Family Mortgage Bond - 2000 Indenture	25.4%	31.2%	34.3%	39.0%	43.6%
Idaho H&FA - Single Family Mortgage Bond - 2003 Indenture	19.9%	17.9%	16.8%	15.0%	15.4%
Idaho H&FA - Single Family Mortgage Bond - 2006 Indenture	21.6%	14.1%	14.0%	16.7%	18.6%
Illinois HDA - Homeowner Mortgage Revenue Bonds	26.3%	23.4%	31.5%	39.9%	43.7%
Indiana Housing Finance Authority - Single Family Mortgage Revenue Bonds [MBS]	40.7%	25.2%	26.1%	23.5%	31.0%
Iowa Finance Authority - Single Family Mtge Bond Resolution [MBS]	11.1%	12.4%	15.2%	16.9%	14.6%
Kentucky HC - Housing Revenue Bonds	15.7%	14.3%	15.9%	18.0%	16.1%
Louisiana Housing Finance Agency - Homeownership Program [MBS]	25.7%	11.0%	7.4%	5.8%	7.1%
Maine State HA - Mortgage Purchase Program	35.3%	33.4%	32.1%	25.9%	23.2%
Maryland CDA - Residential Revenue Bonds	40.8%	18.6%	14.8%	15.7%	14.7%
MassHousing - Single Family Housing Revenue	29.6%	18.1%	19.3%	29.2%	35.7%
Michigan State Housing Development Authority	6.6%	31.1%	7.5%	7.5%	8.7%
Minnesota HFA - Residential Housing Finance Bonds	41.3%	21.7%	12.7%	15.6%	17.7%
Montana BoH - Single Family Mortgage Bonds - 1977 Indenture	25.2%	12.2%	18.3%	13.5%	18.5%
Montana BoH - Single Family Program Bonds - 1979 Indenture	25.7%	28.6%	29.3%	26.3%	30.5%
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds	12.1%	10.2%	11.4%	9.8%	9.5%
New Jersey Housing & Mortgage FA Housing Revenue Bond Resolution	7.9%	14.8%	13.2%	9.3%	14.8%
North Carolina HFA - Home Ownership Revenue Bonds (1998)	30.2%	13.9%	16.6%	14.4%	13.5%
North Dakota HFA - Home Mortgage Finance Program	30.1%	28.0%	16.0%	16.2%	16.9%
Ohio HFA Single Family Mortgage Revenue Bond Program [MBS]	15.6%	14.4%	9.2%	11.7%	12.6%
Oklahoma Housing Finance Agency - Homeownership Loan Program [MBS]	3.7%	2.5%	3.1%	3.2%	5.4%
Oregon HCSD - Single Family Mortgage Revenue Bonds	21.1%	21.2%	18.1%	15.2%	15.9%
Pennsylvania HFA - Single Family Mortgage Revenue Bonds	18.9%	16.4%	20.2%	25.4%	14.9%
Rhode Island HMFC - Homeownership Opportunity Bonds	26.5%	15.2%	10.5%	9.9%	11.3%
SONYMA - Homeowner Mortgage Revenue Bonds	15.0%	14.0%	13.8%	10.6%	15.7%
SONYMA - Mortgage Revenue Bonds	27.7%	33.5%	23.2%	51.2%	15.1%
South Carolina State SHFDA - Mortgage Revenue Bonds	25.3%	25.2%	21.9%	14.6%	18.8%
South Dakota HDA - Homeownership Mortgage Bonds	43.6%	39.1%	41.1%	35.8%	33.5%
Tennessee HDA - Homeownership Program Bonds	25.6%	20.3%	22.6%	23.5%	23.8%
Texas DHCA-Single Family Mortgage Revenue [MBS]	102.4%	103.2%	102.2%	106.9%	112.2%
Texas DHCA - Residential Mortgage Revenue Bond Program [MBS]	2.4%	104.5%	104.1%	104.3%	105.4%

Cash and Investments as a Percent of Bonds Outstanding

Name of HFA	2007	2008	2009	2010	2011
Utah HC - Single Family Mortgage Rev Bonds (2000 Indenture)	32.3%	33.4%	34.2%	31.2%	36.7%
Utah HC - Single Family Mortgage Rev Bonds (2007 Indenture)	63.7%	23.7%	20.7%	22.5%	26.1%
Vermont HFA - Single Family Housing Bonds	22.6%	11.8%	14.1%	13.9%	16.0%
Virginia HDA - Commonwealth Mortgage Bonds	14.3%	15.5%	11.3%	8.2%	13.6%
Washington State Housing Finance Commission Single Family Program Bonds [MBS]	20.5%	7.4%	9.4%	7.3%	4.6%
West Virginia HDF - Housing Finance Bonds	15.0%	13.2%	15.5%	16.5%	16.0%
WHEDA Homeownership Revenue Bonds (1988 Resolution)	22.9%	16.9%	17.9%	18.4%	21.4%
WHEDA Homeownership Revenue Bonds (1987 Resolution)	10.0%	12.2%	15.0%	17.2%	15.5%
Wyoming CDA - Housing Revenue Bonds (1994 Indenture)	28.3%	21.2%	23.5%	22.4%	25.7%
Wyoming CDA - Single Family Mortgage Revenue Bonds (1978 Indenture)	82.0%	93.6%	97.1%	44.5%	47.9%
Average	28.7%	27.4%	26.5%	26.8%	26.7%
% Change		-4.4%	-3.4%	1.1%	-0.4%
Median	25.4%	18.1%	16.6%	16.9%	17.1%
% Change		-29.0%	-8.3%	2.1%	1.2%

Appendix 4: New Issue Bond Program Financial Data

New Issue Bond Program Financial Data for Fiscal Year End 2011

Name of HFA	Rating	Outlook	Profit-ability	Adjusted Program Fund Balance as Percent of Bonds Outstanding	Asset to Debt Ratio	Bonds Outstanding ($000)	Cash and Investments as a Percent of Bonds Outstanding
Alaska HFC - Mortgage Revenue Bonds	Aaa	Stable	-28.3%	9.8%	1.09	309,575	53.0%
Arkansas DFA - Home Ownership Revenue Bonds (2009) [MBS]	Aaa	Negative	16.8%	0.4%	1.00	116,000	100.4%
Cal HFA - Residential Mortgage Revenue Bonds [MBS]	Aaa	Negative	-19.1%	0.3%	1.00	1,112,410	84.2%
Colorado HFA - Single Family Program Bonds (NIBP) [MBS]	Aaa	Negative	7.9%	2.7%	1.03	313,694	102.9%
Delaware State Housing Authority - NIBP Indenture [MBS]	Aaa	Negative	-12.3%	-0.7%	0.99	187,596	57.2%
Florida HFC - Homeowner Mortgage Revenue Bonds, Special Program [MBS]	Aaa	Negative	4.7%	0.8%	1.02	894,775	102.9%
Idaho H&FA - Single Family Mortgage Bond - 2009 Indenture	Aaa(sf) / Aa2(sf) / A1	Multiple	7.6%	0.0%	1.00	219,035	72.7%
Indiana H&CDA - Home First Mortgage Revenue Bonds [MBS]	Aaa	Negative	32.8%	7.9%	1.08	347,040	51.9%
Iowa FA - Single Family Mtge Rev Bond Resolution (2009) [MBS]	Aaa	Negative	23.1%	1.9%	1.02	227,700	63.1%
Louisiana HFA - Single Family Mortgage Revenue Bonds (Mortgage Backed Security Program) [MBS]	Aaa	Negative	9.0%	0.5%	1.00	141,000	64.3%
Maryland CDA - Single Family Housing Revenue Bonds [MBS]	Aaa	Negative	0.0%	0.0%	1.00	154,290	100.2%
Minnesota HFA - Homeownership Finance Bonds [MBS]	Aaa	Negative	27.2%	1.8%	1.02	399,990	23.6%
Mississippi Home Corp. - NIBP Indenture 2009 [MBS]	Aaa	RUR	-4.6%	2.0%	1.02	169,550	44.3%
Montana BoH - Single Family Homeownership Bonds	Aa3	Stable	79.9%	0.7%	1.01	166,400	76.7%
New Hampshire HFA - Single Family Mortgage Acquisition Revenue Bonds -2009 Indenture (NIBP)	Aa3	Stable	0.0%	0.0%	1.01	239,306	0.0%
New Jersey H&MFA- Single Family Home Mortgage Bonds	Aa1	Stable	45.6%	2.1%	1.02	514,285	42.1%
North Dakota HFA - Homeownership Revenue Bonds	Aa3	Stable	23.8%	2.7%	1.03	270,585	33.1%
Ohio HFA - Single Family NIBP Indenture 2009 [MBS]	Aaa	Negative	18.4%	0.6%	1.01	672,125	36.8%
Oklahoma Housing Finance Agency - Homeownership Loan Program (2009 Indenture) [MBS]	Aaa	Negative	24.1%	0.5%	1.01	191,500	46.6%
Oregon HCSD - Housing Revenue Bonds (Single Family Mortgage Program)	Aa3	Stable	-87.3%	1.0%	1.01	157,161	68.4%
Rhode Island HMFC - Home Funding Bond Program	Aa2	Stable	20.7%	2.4%	1.02	175,190	73.0%
SC SHFDA - Homeownership Bonds [MBS]	Aaa	Negative	11.4%	0.4%	1.02	175,620	30.1%
South Dakota HAD - Single Family Mortgage Bonds	Aa3	Stable	28.0%	19.2%	1.10	307,525	34.1%
Tennessee HDA - Housing Finance Program Bonds	Aa2	Stable	29.4%	5.8%	1.06	549,008	25.9%
Utah HC - Single Family Mortgage Bonds (2009 General Indenture)	Aaa(sf) / Aa2(sf) / Aa3(sf)	Negative	17.7%	-4.6%	0.95	324,000	8.4%
Virginia HDA - Homeownership Mortgage Bonds	Aa1	Stable	10.2%	1.2%	1.01	723,915	29.8%
Washington State Housing Finance Commission-Homeownership Program Bonds [MBS]	Aaa	Negative	20.8%	2.4%	1.02	291,500	20.2%
West Virginia HDF - New Issue Bond Program [MBS]	Aaa	Stable	-12.3%	-0.7%	0.99	187,596	57.2%
Wyoming CDA - Homeownership Mortgage Revenue - 2009 Indenture	Aa2	Stable	29.4%	2.3%	1.02	220,605	74.4%
Average			11.2%	2.2%	1.02	336,516	54.4%
Median			16.8%	1.0%	1.02	239,306	53.0%

Profitability is defined as Net Revenue/ Total Revenue.

While 6 NIBP programs report losses, this may be attributed to a timing issue of payment from investments as a result of the escrow structure.

Many of the programs receive support such as the general obligation pledge of the Issuer.

Appendix 5: HFA-wide Variable Rate and Swap Data

HFA-wide Variable Rate and Swap Data as of 06/30/2011

Issuer Name	Variable Rate Bonds Outstanding ($000s)	Variable Rate Debt as % of Agency Bonds Outstanding ($000s)	Swaps Outstanding	Total Amount of Bonds Outstanding ($000s)	Swaps as % of Variable Rate Bonds Outstanding
Alabama Housing Finance Authority	96,873	15%	-	641,529	-
Alaska Housing Finance Corporation	855,850	31%	855,805	2,749,275	100%
Arkansas Development Finance Authority	-	-	-	560,350	-
California Housing Finance Agency	4,141,250	52%	2,806,555	7,934,331	68%
Colorado Housing and Finance Authority	2,364,005	74%	2,034,790	3,193,997	86%
Connecticut Housing and Finance Authority	1,275,590	35%	979,830	3,681,869	77%
Delaware State Housing Authority	-	-	-	830,092	-
Florida Housing Finance Corporation	-	-	-	4,287,592	-
Georgia Housing and Finance Authority	-	-	-	943,205	-
Hawaii Housing and Community Development Corporation	-	-	-	463,221	-
Idaho Housing and Finance Association	716,190	52%	664,890	1,379,045	93%
Illinois Housing Development Authority	120,165	6%	10,000	1,958,089	8%
Indiana Housing Finance Authority	181,960	21%	158,575	870,080	87%
Iowa Finance Authority	338,675	41%	311,630	822,934	92%
Kentucky Housing Corporation	214,995	10%	171,585	2,096,570	80%
Louisiana Housing Finance Agency	-	-	-	914,524	-
Maine State Housing Authority	289,530	20%	235,980	1,460,280	82%
Maryland Community Development Administration	358,950	12%	280,485	2,909,745	78%
Massachusetts Housing Finance Agency	316,799	8%	229,424	4,084,804	72%
Michigan State Housing Development Authority	1,662,130	67%	1,205,345	2,487,340	73%
Minnesota Housing Finance Agency	415,875	19%	410,515	2,202,120	99%
Mississippi Home Corporation	-	-	-	709,382	-
Missouri Housing Development Commission	-	-	-	1,527,850	-
Montana Board of Housing	-	-	-	776,928	-
Nebraska Investment Finance Authority*	-	-	-	1,318,468	-
Nevada Housing Division	43,700	5%	43,700	920,635	100%
New Hampshire Housing Finance Agency	-	-	-	1,240,786	-
New Jersey Housing and Mortgage Finance Agency	1,041,180	42%	967,750	2,496,460	93%
New Mexico Mortgage Finance Authority	-	-	-	1,239,551	-
North Carolina Housing Finance Agency	67,480	5%	67,480	1,333,130	100%
North Dakota Housing Finance Agency	226,870	24%	198,365	958,825	87%
Ohio Housing Finance Agency	1,174,382	35%	1,055,670	3,359,292	90%
Oklahoma Housing Finance Agency	-	-	-	568,818	-
Oregon Housing and Community Services Department	323,700	22%	305,550	1,450,290	94%
Pennsylvania Housing Finance Agency	1,611,510	35%	1,403,785	4,599,339	87%

HFA-wide Variable Rate and Swap Data as of 06/30/2011

Issuer Name	Variable Rate Bonds Outstanding ($000s)	Variable Rate Debt as % of Agency Bonds Outstanding ($000s)	Swaps Outstanding	Total Amount of Bonds Outstanding ($000s)	Swaps as % of Variable Rate Bonds Outstanding
Rhode Island Housing & Mortgage Finance Corporation	89,160	6%	-	1,577,072	-
South Carolina State Housing & Finance Development Authority	-	-	-	781,750	-
South Dakota Housing Development Authority	523,750	30%	395,835	1,744,040	76%
State of New York Mortgage Agency	545,000	17%	493,695	3,189,811	91%
Tennessee Housing Development Agency	-	-	-	2,129,440	-
Texas Department of Housing and Community Affairs	632,260	26%	299,110	2,450,669	47%
Utah Housing Corporation	708,335	42%	720,282	1,688,796	102%
Vermont Housing Finance Agency	136,080	20%	136,080	672,425	100%
Virginia Housing Development Authority	-	-	-	6,438,200	-
Washington State Housing Finance Commission	39,885	1%	33,885	3,717,880	85%
West Virginia Housing Development Fund	10,000	1%	-	698,300	-
Wisconsin Housing and Economic Development Authority	1,388,005	54%	1,265,330	2,573,539	91%
Wyoming Community Development Authority	223,145	18%	121,260	1,255,179	54%
	22,133,279		17,863,186	97,887,847	

* Nebraska IFA has 36% of outstanding agency bond debt as variable rate but does not participate in Moody's HFA surveys since they no longer have any Moody's-rated debt.

The data is sourced as reported by the state HFAs from the Q2 2011 survey and may include other types of variable rate debt found HFA-wide.

Moody's Related Research

Outlook:

» Sector Outlook for US State Housing Finance Agencies Remains Negative, September 2012 (145130)

Sector Comment:

» Extension of Federal Credit and Liquidity Support Is Credit Positive for HFA Participants, October 2012 (145965)

Special Comments:

» Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks, June 2012 (143141)

» Issuance Under The New Issue Bond Program Expected To Mitigate Some Pressures Facing Housing Finance Agencies, October 2010 (128355)

» Moody's Financial Statement Analysis Methodology For State Housing Finance Agencies, March 2004 (81685)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

» contacts continued from page 1

Analyst Contacts:

NEW YORK +1.212.553.1653

John C. Nelson +1.212.553.4096
Managing Director -Public Finance
john.nelson@moodys.com

Rishi R. Singh +1.212.553.4883
Associate Analyst
rishi.singh@moodys.com

Report Number: 147177

Author
Richard Kubanik

Editor
Florence Zeman

Production Associate
Sarah Warburton

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Survey Highlights Credit Strength of State HFA Multifamily Mortgage Loans

Table of Contents:

SUMMARY OPINION 1
HOUSING FINANCE AGENCY MULTIFAMILY PROGRAMS CONTRIBUTE TO CREDIT STRENGTH FOR THE SPONSORING AGENCIES 2
HFAS REPORT VERY LOW LEVELS OF MULTIFAMILY LOAN DELINQUENCIES AND FORECLOSURES 3
LOANS HAVE FAVORABLE STRUCTURAL CHARACTERISTICS 4
PROJECT RENTAL SUBSIDIES ADD STRENGTH, BUT SUPPORT LIKELY TO DECLINE 6
LOW INCOME HOUSING TAX CREDITS PROVIDE SIGNIFICANT EQUITY 7
APPENDIX A 8

Analyst Contacts:

NEW YORK 1.212.553.1653

William Fitzpatrick 1.212.553.4104
Vice President-Senior Credit Officer
william.fitzpatrick@moodys.com

Kyle Kane 1.212.553.1686
Associate Analyst
kyle.kane@moodys.com

Naomi Richman 1.212.553.0014
Managing Director-Public Finance
naomi.richman@moodys.com

Florence Zeman 1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Summary Opinion

Multifamily mortgage loans financed by housing finance agencies (HFAs) demonstrated strong credit characteristics, according to our survey completed in the fall of 2011. Mortgage loans had low levels of delinquencies and foreclosures, which was attributed to factors including effective loan structures, credit enhancement, and high levels of underlying equity investment. For HFAs with both multifamily and single family programs, the relative strength of the multifamily side may provide a valuable offset to declining performance of single family programs.

Key findings from our survey of multifamily portfolios include the following:

» Mortgage loans have very low delinquency rates and losses. 1.47% of loan principal balance is 90+ days delinquent, in workout or in REO combined, and loans have experienced minimal losses. We do not foresee any significant increases in delinquencies, given the credit characteristics of the loans and the strong oversight provided by the HFAs.

» The structure and credit enhancement of the mortgage loans are key sources of credit strength. Over 79%[1] of underlying loans are fixed-rate, fully amortizing first lien mortgage loans which are the least volatile type of mortgage financing. In addition, 39% of the mortgage loans benefit from credit enhancement that substantially mitigates any risk of mortgage delinquency or default. We expect HFAs will increasingly finance loans with credit enhancement.

» Many of the projects financed by these loans have high levels of equity or rental subsidies that contribute to strong performance. Over 49% of the mortgage loans finance projects with federal Low Income Housing Tax Credit equity, which results in significantly lower loan-to-value ratios and provides an additional source of project oversight. Approximately 19% of the mortgage loans finance projects with rental subsidies from HUD, USDA or other federal programs, which provide an additional source of revenues to the projects.

[1] Percentages are by principal balance outstanding of the total loans reported.

Moody's Survey of HFA Multifamily Bond Programs

In the fall of 2011, we conducted a survey of Moody's rated multifamily bond programs. The survey focused on characteristics of the mortgage loans and underlying rental projects financed by bonds, including loan type (lien position and amortization), project status (stabilized, in lease-up or in construction), credit enhancement, rental subsidies (including Section 8 and Section 236 contracts), low income housing tax credit equity and levels of loan delinquency and loss. We limited the survey to parity multifamily indentures sponsored by state and local HFAs; we did not include pure pass-through financings where the HFA issued bonds on behalf of a developer on a limited obligation basis, retains no further obligation and does not retain a material share of program profitability or residual value. This survey includes 22 agencies that sponsor such programs. Data was provided for fiscal year 2011.

Information about the individual bond programs included in the survey is provided in Appendix A.

The programs are sponsored by the following 22 agencies:

Alaska Housing Finance Corporation	Montana Board of Housing
California Housing Finance Agency	New Hampshire Housing Finance Authority
Colorado Housing & Finance Authority	New York City Housing Development Corporation
Connecticut Housing Finance Agency	New York State Housing Finance Agency
Housing Opportunities Commission of Montgomery County, Maryland	Oregon State Housing & Community Services Department
Illinois Housing Development Authority	Pennsylvania Housing Finance Agency
Iowa Finance Authority	Rhode Island Housing & Mortgage Finance Corporation
Maine State Housing Corporation	South Dakota Housing Development Authority
Maryland Community Development Administration	Vermont Housing Finance Agency
Massachusetts Housing Finance Agency	Virginia Housing Development Authority
Minnesota Housing Finance Agency	Wisconsin Housing & Economic Development Authority

Housing Finance Agency Multifamily Programs Contribute to Credit Strength for the Sponsoring Agencies

The surveyed loans are financed under 40 multifamily bond programs sponsored by 20 State HFAs and two local HFAs, with $15.02 billion aggregate debt outstanding. Under these programs the HFAs issue bonds (primarily tax-exempt) and use the proceeds to finance mortgage loans for development of affordable multifamily rental properties. The bonds for each program are issued under a trust indenture that is secured by a pledge of the underlying mortgage loans, including revenues from scheduled mortgage payments, as well as reserves and other assets pledged to secure the indenture. The credit strength and performance of the underlying loans is therefore a key factor in the security of the bond programs. The bonds are issued under parity indentures, so that all of the bonds outstanding are secured equally and ratably by all of the mortgage loans. In some cases, the bond indenture is also secured by a general obligation pledge of the sponsoring housing finance agency.

These programs contribute to HFA profitability and balance sheet growth because the HFA retains the right to the spread between earnings from mortgage loan payments and the cost of bond debt service. As these earnings are retained and the bonds are paid down, the asset- to- debt position of the program grows. The residual value of the bond indenture assets after bonds are repaid is retained by the HFA.

Multifamily programs are often more profitable than single family programs because tax law allows HFAs to retain a greater spread on multifamily loans than on single family mortgage loans (1.5% as opposed to 1.125% as calculated in the tax regulations). Moreover, multifamily programs do not experience regular mortgage prepayments like those expected in single family programs, so that profitability and growth of program equity may be sustained over time. The rights of the sponsor of the underlying project to prepay the mortgage loan are generally limited under the bond indenture. If prepayments are permitted they generally must be sufficient to redeem the outstanding bonds related to the project plus accrued interest to the date of redemption. In addition, as is detailed below, the multifamily programs exhibit very low mortgage loan delinquencies, further strengthening the programs. Given these characteristics, multifamily programs may provide a positive offset to single family programs, which over the past few years have experienced stresses from rising delinquencies, falling house prices and adverse single family market conditions.

HFAs Report Very Low Levels of Multifamily Loan Delinquencies and Foreclosures

HFAs report very low delinquency levels as of the survey reporting date. Of the $14.8 billion loans outstanding as of June 30, 2011, only 0.25% (on an aggregate basis) of the loans were 90 days or more delinquent, 0.58% real estate owned (REO) and 0.64% in workout. Total reported losses over the past five years constitute only 0.10% of current principal.

The low level of mortgage delinquencies, foreclosures and losses (Figure 1) reflects the strong credit characteristics of the loans and active asset management by the HFAs. In general, the HFAs either service the mortgage loans in-house or monitor the outside servicers, in keeping with their mission to preserve the affordable housing units provided through the projects. They tend to be proactive in addressing potentially troubled loans, thereby lowering levels of delinquency or default. For troubled projects, we often see HFAs working to obtain additional sources of support, such as soft loans or grants, to address capital needs or relieve financial stress.

FIGURE 1

Credit Strength is Demonstrated by Strong Loan Performance

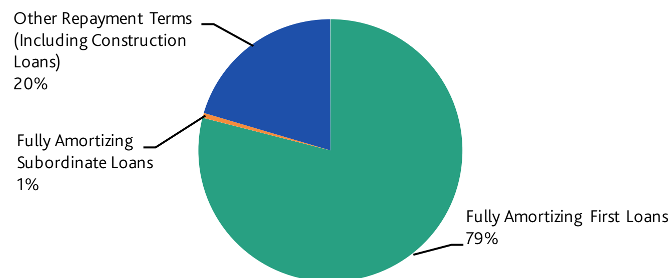
	WA % of Loan Principal Outstanding	Amount in Thousands
Loans 90+ Days Delinquent	0.25%	-
Projects in REO	0.58%	-
Projects in Workout	0.64%	-
Program Losses (Total to Date)	0.095%	14,034.74

Loans Have Favorable Structural Characteristics

Scheduled payments on the underlying mortgage loans are the primary source for repayment of the bonds. The mortgage loans exhibit credit characteristics that contribute to the performance of the bond programs. The majority of these underlying assets are long-term, fixed rate mortgage loans being repaid by multifamily developments that have achieved stable operations. This allows bond cash flows to be structured so that regular mortgage prepayments are sufficient to meet bond debt service through maturity. In addition, 39% of the mortgage loans benefit from credit enhancement that substantially mitigates any risk of mortgage delinquency or default. We expect HFAs will increasingly finance loans with credit enhancement.

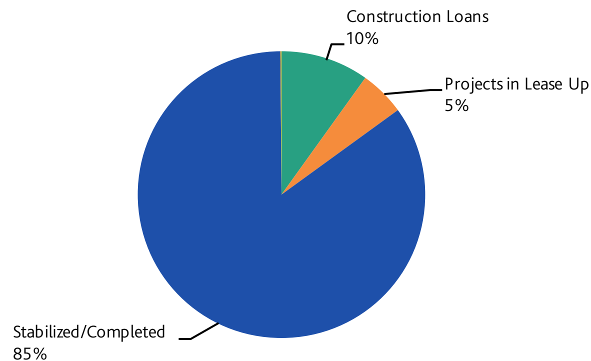
» **Loan Amortization:** About 79% of mortgage loans are senior lien with level amortization over the loan term (Figure 2). Level amortization eliminates the risk of an unexpected change in the mortgage payment due to changing interest rates or refinancing risk. Less than 1% of the mortgage loans are subordinate or payable only from project cash flow. The remaining 20% consists of short-term construction loans and loans with special amortization features. The risks associated with these types of loans are often covered by enhancements such as construction loan letters of credit or issuer support.

FIGURE 2
Most Projects are First Lien Loans



» **Project Status:** As shown in Figure 3, 85% of the projects financed by these mortgage loans are past their construction phase and have achieved stabilized operations. Ten percent are in construction and 5% are completed but in lease-up. Although the construction loans introduce additional construction risk, HFAs use a variety of tools to mitigate these risks, including letters of credit, Agency GO pledges and management oversight. These mitigants are incorporated in our ratings of individual programs. Although the number of agencies that offer construction financing is limited, those that are continue to offer active construction loan programs, and overall we expect the levels of construction lending to remain steady or increase.

FIGURE 3
Mortgage Loans Finance Primarily Stabilized Rental Projects



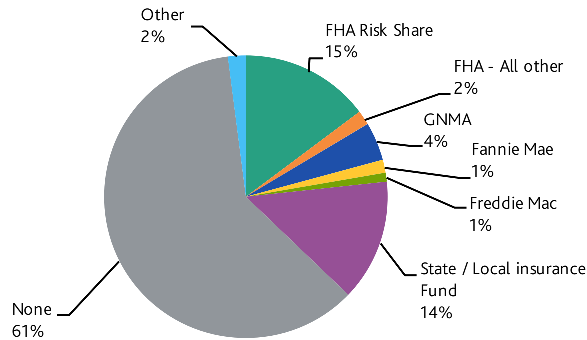
» **Credit Enhancement:** Credit enhancement is a significant mitigant to the risk of mortgage delinquency and default. Over 39% of the mortgage loans benefit from credit enhancement, including FHA Risk Sharing which covers 15% of the loans, and insurance under other FHA programs covers an additional 2%. In combination with debt service reserves structured into the bond programs, FHA insurance provides coverage for repayment of 100% of outstanding principal upon a mortgage default, together with accrued interest.

Nearly 14% of the mortgage loans are insured under programs of state or local government insurance funds (Figure 4). This consists primarily of mortgage insurance issued by the SONYMA Mortgage Insurance Fund and covering mortgage loans financed by the New York State Housing Finance Agency and the New York City Housing Development Corporation (NYHDC). NYHDC also provides enhancement for some mortgage loans through REMIC, a separate insurance fund affiliated with NYHDC.

An additional 7% of the mortgage loans are securitized with mortgage-backed securities issued by Ginnie Mae, Fannie Mae or Freddie Mac. The MBSs provide for timely payment of principal and interest due on each mortgage loan.

FIGURE 4

Credit Enhancement Reduces Exposure to Mortgage Default



We expect the percentage of mortgage loans with credit enhancement to remain steady or increase going forward. HFAs are increasingly using credit enhancement, such as through Risk Sharing or Ginnie Mae, Fannie Mae or Freddie Mac securitization.

Project Rental Subsidies Add Strength, but Support Likely to Decline

Housing projects representing 19% of the mortgage loans outstanding benefit from rental subsidies under federal and state affordable housing programs (Figure 5). These include Section 8 (15.83%) and Section 236 (3.51%) subsidy contracts from the US Department of Housing and Urban Development (HUD). By providing contractually determined amounts to subsidize rents for lower-income residents, these programs provide additional support to multifamily projects. A portion of the monthly rental payments is shifted from individual tenants to the government. However, we expect the level of federal subsidy contracts in these programs to decrease over time, as the federal government has cut back new project-based rental support. For those projects that have Section 8 contracts in place, federal budget constraints may lead to delays in payments or potential reductions in support levels, diminishing the value of this subsidy as a credit feature.

FIGURE 5

Federal Subsidy Contracts Provide Additional Support

Rental Subsidy Program	%	Project Loan Balance
Section 8 - Co-Terminous with Loan	4.69%	697,200.56
Section 8 - Non-Coterminous with Loan	11.14%	1,655,850.79
Section 236	3.51%	521,763.53
Total	19.34%	2,874,814.88

Low Income Housing Tax Credits Provide Significant Equity

Nearly half of the loans finance projects that also benefit from equity investments under the federal Low Income Housing Tax Credit program (LIHTC). Under LIHTC, investors purchase equity interests in the project's ownership entity in exchange for tax credits against federal income tax. LIHTC strengthens project credit by significantly lowering the loan-to-value ratio, as well as by providing an additional level of project oversight and potential support by the sponsors of the LIHTC programs.

Appendix A

Multi Family Program Overview

		Bonds [1]							Loan Summary		Loan Type [2]		
Issuer	Program	Principal Outstanding ($000s)	Rating	Key Rating Factors	Variable Rate: % of Principal Outstanding	VRDB: % of Principal Outstanding	Swapped: % of Principal Outstanding	Other Variable: % of Principal Outstanding	Principal Outstanding ($000s)	Number of Loans	Fully Amortizing - Senior	Fully Amortizing - Subordinate	Other
Alaska Housing Finance Corporation	Housing Development Bonds	238,125	Aa2 / Stable	Issuer Rating	0%	0%	0%	0%	76,218	96	100.00%	0.00%	0.00%
California Housing Finance Agency	Multifamily Housing Revenue Bonds II	36,095	Aa3 / Negative	Issuer Rating / Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	32,995	10	100.00%	0.00%	0.00%
	Multi-Family Housing Revenue III	971,730	A3 / Negative	Issuer Rating	77%	61%	61%	16%	1,020,329	324	94.16%	5.81%	0.03%
	Housing Program Bonds	51,105	A3 / Negative	Issuer Rating	100%	100%	0%	0%	37,609	55	63.61%	8.60%	27.79%
	California HFA Total	1,058,930							1,090,933	389			
Colorado Housing & Finance Authority	Multi-Family Project Bonds	813,205	Aaa / Aa2 / A2 Stable	Issuer Rating / Portfolio Characteristics / Indenture Financial Performance / Loan Performance	78%	78%	78%	0%	715,982	483	100.00%	0.00%	0.00%
	Multi-Family Hsg. Insured Mtge. Rev. Bds.	95,535	Aa2 (sf) / Stable	Portfolio Characteristics / Indenture Financial Performance	27%	27%	27%	0%	67,062	26	100.00%	0.00%	0.00%
	Colorado HFA Total	908,740							783,044	509			

1. Bonds include amounts issued under the NIBP program and not yet converted to finance loans
2. Loan Type "Other" includes construction loans and loans with less conventional repayment terms

Multi Family Program Overview

		Bonds [1]							Loan Summary		Loan Type [2]		
Issuer	Program	Principal Outstanding ($000s)	Rating	Key Rating Factors	Variable Rate: % of Principal Outstanding	VRDB: % of Principal Outstanding	Swapped: % of Principal Outstanding	Other Variable: % of Principal Outstanding	Principal Outstanding ($000s)	Number of Loans	Fully Amortizing - Senior	Fully Amortizing - Subordinate	Other
Connecticut Housing Finance Authority	Connecticut Housing Mortgage Finance Program	551,687	Aaa / Stable	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	31%	31%	24%	0%	576,903	187	100.00%	0.00%	0.00%
Housing Opportunities Commission of Montgomery County, Maryland	Multifamily Housing Development Bonds	285,640	Aaa / Negative	Portfolio Characteristics / Indenture Financial Performance	13%	0%	11%	0%	275,171	31	100.00%	0.00%	0.00%
	Multifamily NIBP Indenture	51,350	Aaa / Negative	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	51,340	2	0.00%	0.00%	100.00%
	Montgomery County HOC Total	336,990							326,511	33			
Illinois Housing Development Authority	Illinois HDA - Multi-Family Initiative Bonds	184,080[1]	Aaa / Negative	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	0%	0%	0%	0%	61,081	11	0.00%	0.00%	100.00%
	Illinois HDA - Housing Bond Program	409,625	Aa3 / Stable	Indenture Financial Performance	14%	14%	0%	0%	444,176	127	98.15%	1.85%	0.00%
	Illinois HDA - Affordable Hsg. Prog. Trust Fund Bonds	65,055	A2 / Stable	Limited Issuer Pledge / State Contributions / Portfolio Characteristics / Loan Performance	0%	0%	0%	0%	38,497	13	100.00%	0.00%	0.00%
	Illinois HDA Total	658,760							543,754	151			

1. Bonds include amounts issued under the NIBP program and not yet converted to finance loans
2. Loan Type "Other" includes construction loans and loans with less conventional repayment terms

Multi Family Program Overview

		Bonds [1]							Loan Summary		Loan Type [2]		
Issuer	Program	Principal Outstanding ($000s)	Rating	Key Rating Factors	Variable Rate: % of Principal Outstanding	VRDB: % of Principal Outstanding	Swapped: % of Principal Outstanding	Other Variable: % of Principal Outstanding	Principal Outstanding ($000s)	Number of Loans	Fully Amortizing - Senior	Fully Amortizing - Subordinate	Other
Iowa Finance Authority	Iowa Finance Authority - Multifamily Housing Bonds	43,295	Aa3 / Stable	Issuer Rating	59%	59%	9%	0%	31,130	5	100.00%	0.00%	0.00%
Maine State Housing Corporation	Maine Mortgage Purchase Program Bond Resolution	373,393	Aa1 / Stable	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	37%	33%	30%	4%	354,804	635	100.00%	0.00%	0.00%
Maryland Community Development Administration-CDA	Housing Revenue Bonds	424,075	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	426,846	63	100.00%	0.00%	0.00%
	Multi-Family Mortgage Revenue Bonds	139,035[1]	Aaa / Negative	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	70,965	20	75.00%	0.00%	25.00%
	Maryland DHCD Totals	563,110							497,811	83			
Massachusetts Housing Finance Agency	Multi-Family Housing Bonds, 2009 NIBP	287,455	Aaa/ Negative	Portfolio Characteristics / Indenture Financial Performance	22%	0%	0%	22%	166,267	14	66.66%	0.00%	33.34%
	Housing Finance Agency Construction Loan Notes	174,535	A2 / Positive	Issuer Rating	16%	0%	0%	16%	147,051	27	0.00%	0.00%	100.00%
	Massachusetts - Housing Bond Resolution	1,559,093	Aa3 / Stable	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	8%	2%	7%	6%	1,669,364	596	97.14%	0.00%	2.86%
	Massachusetts HFA Totals	2,021,083							1,982,682	637			
Minnesota Housing Finance Agency	Rental Housing Bonds	159,200	Aa1 / Stable	Issuer Rating	0%	0%	0%	0%	184,272	180	86.89%	4.23%	8.88%
Montana Board Of Housing	Montana Board Of Housing - Multifamily Mortgage Bonds	8,560	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	9,476	13	95.58%	3.78%	0.64%

1. Bonds include amounts issued under the NIBP program and not yet converted to finance loans
2. Loan Type "Other" includes construction loans and loans with less conventional repayment terms

Multi Family Program Overview

		Bonds [1]							Loan Summary		Loan Type [2]		
Issuer	Program	Principal Outstanding ($000s)	Rating	Key Rating Factors	Variable Rate: % of Principal Outstanding	VRDB: % of Principal Outstanding	Swapped: % of Principal Outstanding	Other Variable: % of Principal Outstanding	Principal Outstanding ($000s)	Number of Loans	Fully Amortizing - Senior	Fully Amortizing - Subordinate	Other
New Hampshire Housing Finance Authority	Multi-Family Housing Bonds (2000-2008 Indenture)	61,965	Aa2 / Negative	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	60,077	18	100.00%	0.00%	0.00%
New York City Housing Development Corporation	Multifamily Secured Mortgage Revenue Bonds	13,635	Aa1 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	30,023	4	43.73%	0.00%	56.27%
	Multifamily Housing Revenue Bonds	3,818,400	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	15%	1%	0%	14%	3,489,723	963	44.76%	0.00%	55.24%
	NYCHDC Total	3,832,035							3,519,746	967			
New York State Housing Finance Agency	Affordable Housing Revenue Bonds (NIBP)	208,320	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	207,215	13	0.00%	0.00%	100.00%
	Affordable Housing Revenue Bonds	371,075	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	371,075	45	100.00%	0.00%	0.00%
	New York HFA Totals	579,395							578,290	58			
Oregon State Housing & Community Services Department	Multiple Purpose Bonds Series 2005A	4,805	A1 / Stable	Issuer Rating	0%	0%	0%	0%	5,221	35	100.00%	0.00%	0.00%
	Multifamily Housing Rev. Bd. Prog	169,495	Aaa / Negative	Portfolio Characteristics / Indenture Financial Performance	8%	8%	8%	0%	161,120	38	100.00%	0.00%	0.00%
	Oregon State HCSD Total	174,300							166,341	73			

1. Bonds include amounts issued under the NIBP program and not yet converted to finance loans
2. Loan Type "Other" includes construction loans and loans with less conventional repayment terms

Multi Family Program Overview

		Bonds [1]							Loan Summary		Loan Type [2]		
Issuer	Program	Principal Outstanding ($000s)	Rating	Key Rating Factors	Variable Rate: % of Principal Outstanding	VRDB: % of Principal Outstanding	Swapped: % of Principal Outstanding	Other Variable: % of Principal Outstanding	Principal Outstanding ($000s)	Number of Loans	Fully Amortizing - Senior	Fully Amortizing - Subordinate	Other
Pennsylvania Housing Finance Agency	Multi-Family Development Bonds	35,735	Aa2 / Stable	Issuer Rating	69%	0%	69%	69%	44,240	62	100.00%	0.00%	0.00%
	Residential Development Bonds	18,420	Aa2 / Stable	Issuer Rating	0%	0%	0%	0%	19,145	21	100.00%	0.00%	0.00%
	Rental Housing Bonds	99,625	Aa2 / Stable	Issuer Rating	100%	100%	110%	0%	119,273	91	100.00%	0.00%	0.00%
	Pennsylvania HFA Total	153,780							182,658	174			
Rhode Island Housing & Mortgage Finance Corporation	Multi-Family Housing Bonds	4,565	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	5,670	4	0.00%	100.00%	0.00%
	Multi-Family Funding Program	72,310	Aa2 / Negative	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	72,217	9	100.00%	0.00%	0.00%
	Multi-Family Development Bonds	8,935	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance	0%	0%	0%	0%	8,935	5	89.74%	10.26%	0.00%
	Rhode Island HMFC Total	85,810							86,822	18			

1. Bonds include amounts issued under the NIBP program and not yet converted to finance loans
2. Loan Type "Other" includes construction loans and loans with less conventional repayment terms

Multi Family Program Overview

		Bonds[1]							Loan Summary		Loan Type[2]		
Issuer	Program	Principal Outstanding ($000s)	Rating	Key Rating Factors	Variable Rate: % of Principal Outstanding	VRDB: % of Principal Outstanding	Swapped: % of Principal Outstanding	Other Variable: % of Principal Outstanding	Principal Outstanding ($000s)	Number of Loans	Fully Amortizing - Senior	Fully Amortizing - Subordinate	Other
South Dakota Housing Development Authority	South Dakota Multi Family Bond Program	78,927	Aa2 / Stable	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	40%	40%	9%	0%	69,804	81	100.00%	0.00%	0.00%
Vermont Housing Finance Agency	Multi Purpose - Program 15 & Multifamily Mortgage - Program 21	90,957	Aa3 / Stable	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	5%	5%	5%	0%	78,034	153	88.40%	0.00%	11.60%
	Vermont HFA Initiative Multifamily Bonds Series 2009 B	6,700[1]	Aaa / Negative	Portfolio Characteristics / Indenture Financial Performance / Loan Performance	0%	0%	0%	0%	6,487	2	100.00%	0.00%	0.00%
	Vermont HFA Total	97,657							84,521	155			
Virginia Housing Development Authority	Rental Housing Bonds	2,273,990	Aa1 / Stable	Issuer Rating	0%	0%	0%	0%	2,879,765	877	87.61%	0.01%	12.38%
	General Purpose Bonds	353,685	Aa1 / Stable	Issuer Rating	0%	0%	0%	0%	350,028	377	84.53%	2.36%	13.10%
	Virginia H DA Total	2,627,675							3,229,793	1,254			
Wisconsin Housing & Economic Development Authority	Wisconsin Housing Revenue Bonds	405,945	Aa3 / Stable	Issuer Rating	48%	0%	39%	0%	430,849	306	100.00%	0.00%	0.00%
Combined Total		15,019,362							14,866,438	6,022			

1. Bonds include amounts issued under the NIBP program and not yet converted to finance loans
2. Loan Type "Other" includes construction loans and loans with less conventional repayment terms

Multi Family Program Overview

Issuer	Program	Projects: Number of Projects	Projects: Number of Units	Projects: In Construction	Projects: Lease Up	Projects: Stabilized	Projects: Other	Insurance or Guaranty: FHA Risk Share	Insurance or Guaranty: Other FHA	Insurance or Guaranty: Ginnie Mae	Insurance or Guaranty: Fannie Mae	Insurance or Guaranty: Freddie Mac	Insurance or Guaranty: State/Local Insurance Fund	Insurance or Guaranty: Other Guaranty	Insurance or Guaranty: None
Alaska Housing Finance Corporation	Multi-Family Housing Development Bonds	96	1,289	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
California Housing Finance Agency	Multifamily Housing Revenue Bonds II	10	1,572	0%	0%	100%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Multi-Family Housing Revenue III	249	22,531	0%	2%	98%	0%	25.68%	0.49%	0.00%	1.04%	0.00%	0.00%	0.00%	72.79%
	Housing Program Bonds	52	2,573	0%	0%	100%	0%	2.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	97.15%
	California HFA Total	311	26,676												
Colorado Housing & Finance Authority	Multi-Family Project Bonds	444	12,041	0%	0%	100%	0%	27.07%	3.45%	0.00%	0.00%	0.00%	0.00%	24.34%	45.14%
	Multi-Family Hsg. Insured Mtge. Rev. Bds.	20	1,395	0%	0%	100%	0%	49.32%	47.97%	0.00%	0.00%	0.00%	0.00%	0.00%	2.71%
	Colorado HFA Total	464	13,436												
Connecticut Housing Finance Authority	Connecticut Housing Mortgage Finance Program	153	15,271	13%	9%	78%	0%	1.84%	3.98%	0.00%	0.00%	0.00%	0.00%	7.39%	86.79%
Housing Opportunities Commission of Montgomery County, Maryland	Multifamily Housing Development Bonds	28	3,933	4%	0%	96%	0%	72.09%	0.00%	23.19%	4.71%	0.00%	0.00%	0.00%	0.00%
	Multifamily NIBP Indenture	2	291	100%	0%	0%	0%	0.00%	0.00%	74.87%	0.00%	25.13%	0.00%	0.00%	0.00%
	Montgomery County HOC Total	30	4,224												
Illinois Housing Development Authority	Illinois HDA - Multi-Family Initiative Bonds	11	907	100%	0%	0%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Illinois HDA - Housing Bond Program	94	14,427	0%	0%	100%	0%	13.50%	1.33%	0.00%	0.00%	0.00%	0.00%	0.00%	85.17%
	Illinois HDA - Affordable Hsg. Prog. Trust Fund Bonds	13	1,599	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Illinois HDA Total	118	16,933												
Iowa Finance Authority	Iowa Finance Authority - Multifamily Housing Bonds	5	625	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Maine State Housing Corporation	Maine Mortgage Purchase Program Bond Resolution	434	9,390	1%	0%	99%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Maryland Community Development Administration- CDA	Housing Revenue Bonds	59	8,637	0%	0%	100%	0%	6.85%	0.00%	84.18%	5.66%	1.25%	0.00%	1.67%	0.38%
	Multi-Family Mortgage Revenue Bonds	15	1,744	100%	0%	0%	0%	92.72%	0.00%	0.00%	0.00%	3.43%	0.00%	3.85%	0.00%
	Maryland DHCD Totals	74	10,381												

Multi Family Program Overview

		Projects						Insurance or Guaranty							
Issuer	Program	Number of Projects	Number of Units	In Construction	Lease Up	Stabilized	Other	FHA Risk Share	Other FHA	Ginnie Mae	Fannie Mae	Freddie Mac	State/Local Insurance Fund	Other Guaranty	None
Massachusetts Housing Finance Agency	Multi-Family Housing Bonds, 2009 NIBP	14	1,829	33%	0%	67%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Housing Finance Agency Construction Loan Notes	27	-	100%	0%	0%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Massachusetts - Housing Bond Resolution	377	47,264	1%	0%	99%	0%	42.68%	1.76%	0.00%	0.00%	0.00%	0.00%	0.00%	55.57%
	Massachusetts HFA Totals	418	49,093												
Minnesota Housing Finance Agency	Rental Housing Bonds	160	9,806	7%	0%	93%	0%	24.22%	3.94%	0.00%	0.00%	0.00%	0.00%	0.00%	71.85%
Montana Board Of Housing	Montana Board Of Housing - Multifamily Mortgage Bonds	12	480	0%	0%	100%	0%	89.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.99%
New Hampshire Housing Finance Authority	Multi-Family Housing Bonds (2000-2008 Indenture)	18	1,121	0%	0%	100%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
New York City Housing Development Corporation	Multifamily Secured Mortgage Revenue Bonds	4	402	0%	0%	44%	56%	0.00%	0.00%	0.00%	0.00%	0.00%	99.29%	0.00%	0.71%
	Multifamily Housing Revenue Bonds	731	105,005	13%	15%	71%	0%	0.00%	2.00%	5.38%	4.28%	3.09%	42.39%	1.83%	41.03%
	NYCHDC Total	735	105,407												
New York State Housing Finance Agency	Affordable Housing Revenue Bonds (NIBP)	13	1,752	100%	0%	0%	0%	0.00%	0.00%	0.00%	2.37%	9.48%	88.14%	0.00%	0.00%
	Affordable Housing Revenue Bonds	45	3,996	4%	36%	60%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
	New York HFA Totals	58	5,748												
Oregon State Housing & Community Services Department	Multiple Purpose Bonds Series 2005A	31	900	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Multifamily Housing Rev. Bd. Prog	42	3,861	8%	0%	92%	0%	92.23%	0.00%	0.00%	0.00%	0.00%	0.00%	7.77%	0.00%
	Oregon State HCSD Total	73	4,761												
Pennsylvania Housing Finance Agency	Multi-Family Development Bonds	62	4,108	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Residential Development Bonds	21	1,494	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Rental Housing Bonds	91	9,044	0%	0%	100%	0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Pennsylvania HFA Total	174	14,646												
Rhode Island Housing & Mortgage Finance Corporation	Multi-Family Housing Bonds	4	387	0%	0%	100%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Multi-Family Funding Program	9	973	0%	16%	84%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Multi-Family Development Bonds	4	247	0%	0%	100%	0%	86.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.62%
	Rhode Island HMFC Total	17	1,607												

Multi Family Program Overview

Issuer	Program	Projects: Number of Projects	Projects: Number of Units	Projects: In Construction	Projects: Lease Up	Projects: Stabilized	Projects: Other	Insurance or Guaranty: FHA Risk Share	Insurance or Guaranty: Other FHA	Insurance or Guaranty: Ginnie Mae	Insurance or Guaranty: Fannie Mae	Insurance or Guaranty: Freddie Mac	Insurance or Guaranty: State/Local Insurance Fund	Insurance or Guaranty: Other Guaranty	Insurance or Guaranty: None
South Dakota Housing Development Authority	South Dakota Multi Family Bond Program	79	3,200	0%	0%	100%	0%	18.15%	41.38%	0.00%	26.35%	7.05%	0.00%	0.00%	7.08%
Vermont Housing Finance Agency	Multi Purpose - Program 15 & Multifamily Mortgage - Program 21	93	3,334	0%	0%	99%	1%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Vermont HFA Initiative Multifamily Bonds Series 2009 B	2	156	51%	0%	49%	0%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Vermont HFA Total	95	3,490												
Virginia Housing Development Authority	Rental Housing Bonds	760	72,672	7%	0%	93%	0%	0.00%	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%	99.94%
	General Purpose Bonds	350	22,660	2%	0%	98%	0%	0.00%	3.87%	0.00%	0.00%	0.00%	0.00%	0.00%	96.13%
	Virginia H DA Total	1,110	95,332												
Wisconsin Housing & Economic Development Authority	Wisconsin Housing Revenue Bonds	241	14,810	12%	0%	88%	0%	1.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	98.62%
Combined Total		**4,875**	**407,726**												

Multi Family Program Overview

		Subsidy Contracts			Equity	Loan Delinquency			
Issuer	Program	Section 8 Coterminous	Section 8 Non-Coterminous	Section 236	Low Income Housing Tax Credit	90+ Days Delinquent	REO	In Workout	Loss (000's)
Alaska Housing Finance Corporation	Multi-Family Housing Development Bonds	0.00%	0.00%	0.00%	17.45%	0.00%	0.00%	0.00%	-
California Housing Finance Agency	Multifamily Housing Revenue Bonds II	0.00%	0.00%	0.00%	63.32%	0.00%	0.00%	0.00%	N/A
	Multi-Family Housing Revenue III	1.93%	5.08%	0.29%	80.30%	0.00%	0.00%	0.46%	1,014
	Housing Program Bonds	0.00%	1.20%	0.00%	54.38%	0.00%	0.00%	0.00%	N/A
	California HFA Total								1,014
Colorado Housing & Finance Authority	Multi-Family Project Bonds	0.00%	18.54%	0.00%	0.00%	0.02%	1.79%	0.00%	764
	Multi-Family Hsg. Insured Mtge. Rev. Bds.	0.00%	12.74%	0.00%	0.00%	0.00%	1.76%	0.00%	-
	Colorado HFA Total								764
Connecticut Housing Finance Authority	Connecticut Housing Mortgage Finance Program	18.06%	0.00%	0.91%	51.00%	0.43%	0.40%	0.00%	-
Housing Opportunities Commission of Montgomery County, Maryland	Multifamily Housing Development Bonds	0.00%	44.20%	4.80%	50.91%	0.00%	0.00%	0.00%	-
	Multifamily NIBP Indenture	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	-
	Montgomery County HOC Total								-
Illinois Housing Development Authority	Illinois HDA - Multi-Family Initiative Bonds	0.00%	26.59%	0.00%	100.00%	0.00%	0.00%	0.00%	-
	Illinois HDA - Housing Bond Program	15.96%	57.60%	5.57%	43.85%	0.67%	0.00%	0.00%	-
	Illinois HDA - Affordable Hsg. Prog. Trust Fund Bonds	0.00%	6.45%	0.00%	0.00%	6.45%	0.00%	0.00%	-
	Illinois HDA Total								-
Iowa Finance Authority	Iowa Finance Authority - Multifamily Housing Bonds	0.00%	21.40%	0.00%	78.60%	0.00%	0.00%	0.00%	-
Maine State Housing Corporation	Maine Mortgage Purchase Program Bond Resolution	3.01%	28.39%	0.01%	57.03%	1.20%	0.00%	0.00%	320
Maryland Community Development Administration- CDA	Housing Revenue Bonds	12.14%	11.38%	2.52%	100.00%	0.00%	0.00%	0.00%	-
	Multi-Family Mortgage Revenue Bonds	26.91%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	-
	Maryland DHCD Totals								-
Massachusetts Housing Finance Agency	Multi-Family Housing Bonds, 2009 NIBP	0.00%	92.10%	7.90%	100.00%	0.00%	0.00%	0.00%	-
	Housing Finance Agency Construction Loan Notes	0.00%	0.00%	0.00%	93.98%	0.00%	0.00%	0.00%	-
	Massachusetts - Housing Bond Resolution	0.00%	0.00%	0.00%	0.00%	0.07%	0.00%	0.00%	N/A
	Massachusetts HFA Totals								-
Minnesota Housing Finance Agency	Rental Housing Bonds	7.44%	59.87%	12.81%	40.53%	0.00%	0.00%	0.00%	-
Montana Board Of Housing	Montana Board Of Housing - Multifamily Mortgage Bonds	0.00%	45.74%	0.00%	91.06%	0.00%	0.00%	0.00%	-
New Hampshire Housing Finance Authority	Multi-Family Housing Bonds (2000-2008 Indenture)	16.01%	0.00%	0.00%	54.06%	0.00%	0.00%	0.00%	-

Multi Family Program Overview

		Subsidy Contracts			Equity	Loan Delinquency			
Issuer	Program	Section 8 Coterminous	Section 8 Non-Coterminous	Section 236	Low Income Housing Tax Credit	90+ Days Delinquent	REO	In Workout	Loss (000's)
New York City Housing Development Corporation	Multifamily Secured Mortgage Revenue Bonds	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-
	Multifamily Housing Revenue Bonds	0.00%	6.23%	7.40%	41.46%	0.59%	0.00%	0.59%	-
	NYCHDC Total								-
New York State Housing Finance Agency	Affordable Housing Revenue Bonds (NIBP)	0.00%	28.29%	27.92%	100.00%	0.00%	0.00%	0.00%	N/A
	Affordable Housing Revenue Bonds	0.00%	43.67%	13.75%	96.39%	0.00%	0.00%	0.00%	N/A
	New York HFA Totals								-
Oregon State Housing & Community Services Department	Multiple Purpose Bonds Series 2005A	0.00%	82.25%	0.00%	7.72%	0.00%	0.00%	0.00%	-
	Multifamily Housing Rev. Bd. Prog	0.00%	0.00%	0.00%	87.67%	0.00%	0.00%	0.00%	-
	Oregon State HCSD Total								-
Pennsylvania Housing Finance Agency	Multi-Family Development Bonds	0.00%	0.00%	12.30%	0.00%	0.00%	0.00%	0.00%	-
	Residential Development Bonds	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-
	Rental Housing Bonds	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-
	Pennsylvania HFA Total								-
Rhode Island Housing & Mortgage Finance Corporation	Multi-Family Housing Bonds	0.00%	69.49%	30.51%	69.49%	0.00%	0.00%	0.00%	-
	Multi-Family Funding Program	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	-
	Multi-Family Development Bonds	0.00%	35.03%	0.00%	100.00%	0.00%	0.00%	0.00%	-
	Rhode Island HMFC Total								-
South Dakota Housing Development Authority	South Dakota Multi Family Bond Program	31.62%	0.00%	0.00%	0.00%	4.00%	3.00%	1.00%	144
Vermont Housing Finance Agency	Multi Purpose - Program 15 & Multifamily Mortgage - Program 21	5.81%	19.37%	1.68%	52.04%	0.00%	0.00%	0.00%	-
	Vermont HFA Initiative Multifamily Bonds Series 2009 B	0.00%	50.78%	0.00%	100.00%	0.00%	0.00%	0.00%	-
	Vermont HFA Total								-
Virginia Housing Development Authority	Rental Housing Bonds	2.76%	0.00%	1.22%	60.50%	0.00%	2.00%	2.17%	6,928
	General Purpose Bonds	34.84%	0.00%	4.54%	50.73%	0.00%	2.90%	2.00%	3,201
	Virginia H DA Total								10,129
Wisconsin Housing & Economic Development Authority	Wisconsin Housing Revenue Bonds	7.21%	25.48%	0.39%	56.73%	0.00%	0.00%	0.00%	1,663

Report Number: 140527

Author
William Fitzpatrick

Production Associates
Judy Torre
Amanda Ealla

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SECTOR COMMENT

Easing of Bank Liquidity Requirements Is Credit Positive for Issuers of Municipal Variable Rate Demand Bonds

From Credit Outlook

Analyst Contacts:

NEW YORK +1.212.553.1653

Michael Loughlin +1.212.553.4066
Vice President – Senior Analyst
michael.loughlin@moodys.com

Thomas Jacobs +1.212.553.0131
Vice President – Senior Credit Officer
thomas.jacobs@moodys.com

Last Sunday, the Basel Committee on Banking Supervision released revisions to the liquidity coverage ratio (LCR) requirement included in Basel III. These revisions are credit positive for municipal issuers of variable rate demand bonds (VRDBs) and similar securities because they will not likely result in banks increasing the cost or limiting the availability of credit facilities as much as what would have likely occurred under the committee's previous plan.

The key changes to the LCR include the following:

» A significant reduction in the percentage of liquidity facilities and lines of credit that banks must assume will be drawn down for purposes of the LCR

» An expansion of the definition of high quality liquid assets (HQLAs) used for the LCR

» An extension of the schedule for implementation of the LCR requirement

VRDBs are long-term obligations that may be tendered at par at pre-determined intervals, including daily, weekly and monthly. On the tender dates, a remarketing agent sets an interest rate for the VRDB at a level it expects will allow for a sale at par value. Investors, mainly money market funds, purchase VRDBs based largely on a liquidity provider's commitment to purchase VRDBs on a timely basis if the remarketing effort fails. The municipal VRDB market currently totals approximately $265 billion.

The LCR requires banks to have enough high quality liquid assets that can be converted to cash in order to meet a percentage of the liquidity commitments that could be drawn within 30 days. Originally, the committee required banks assume 100% draws on liquidity facilities and lines of credit. The new requirement assumes 30% of all facilities extended to non-financial corporations, sovereigns and other public sector enterprises will be drawn. That is a significant reduction in the amount of HQLAs that banks will have to hold relative to liquidity commitments to municipal issuers.

Further easing the effect on banks, the LCR will be phased in starting at 60% of the full amount on 1 January 2015 and increase in 10-percentage-point increments until it is fully implemented by 1 January 2019. Under the original requirement the LCR was to be fully implemented on 1 January 2015.

What is Moody's Credit Outlook?

Published every Monday and Thursday morning, Moody's Credit Outlook informs our research clients of the credit implications of current events.

The committee also expanded the definition of HQLAs to include investment-grade corporate bonds subject to a 50% haircut, unencumbered equities subject to a 50% haircut and certain residential mortgage-backed securities rated Aa2 or higher subject to a 25% haircut. The aggregate amount of assets in these categories, after haircuts, however, is limited to 15% of the total LCR requirement.

Some banks have been reluctant to provide support facilities for municipal VRDBs in anticipation of the LCR requirement. Others have made new commitments that include cost recovery provisions that would allow them to pass on the cost of complying with the requirement to the municipal issuers.

These changes to the LCR requirement will significantly lower the cost of compliance. As of 1 January 2015, banks will be required to hold HQLAs equal to 18% (equaling the 60% phase in of the 30% requirement) of their 30-day liquidity commitments, an amount that will ratchet up to 30% by 1 January 2019. Thus, the cost associated with compliance will be phased in and reduced to 30% of what it would have been as of 1 January 2019. Using higher yielding assets or bank assets for up to 15% of the LCR would reduce the cost even further. At these lower LCR requirements, some banks are likely to resume providing support facilities for municipal VRDBs, which would help lower the related costs to municipal issuers.

Report Number: 148980

Authors
Michael Loughlin
Thomas Jacobs

Production Specialist
Wing Chan

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Credit Trends: Privatized Military Housing Sector Shows Stability

Federal budget cuts could weaken revenue

Table of Contents:

SUMMARY OPINION 1
OVERVIEW OF PRIVATIZED MILITARY HOUSING SECTOR 2
FINANCIAL PERFORMANCE REMAINS STABLE 4
AVERAGE GROWTH IN BAH MEETS PRO-FORMA EXPECTATIONS FOR MOST PROJECTS 6
COMPETITIVE ADVANTAGE DRIVES INCREASED OCCUPANCY RATES 7
COMPLETION OF IDP ELIMINATES CONSTRUCTION RISK 8
COMMENCEMENT OF BOND PRINCIPAL AMORTIZATION COULD CAUSE FINANCIAL STRAIN 9
SUPPORT FROM THE MILITARY ADDS STRENGTH TO SOME DEALS 9
FEDERAL BUDGET CONCERNS REMAIN 10
APPENDIX 1: PRIVATIZED MILITARY HOUSING BOND RATINGS AS OF SPRING 2012 11
SOURCES REFERENCED IN THIS REPORT 14
MOODY'S RELATED RESEARCH 14

Analyst Contacts:

NEW YORK +1.212.553.1653

Carlos A. Calderon +1.212.553.2737
Analyst
carlos.calderon@moodys.com

Brendan Weber +1.212.553.4688
Associate Analyst
brendan.weber@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Naomi Richman +1.212.553.0014
Managing Director – Public Finance
naomi.richman@moodys.com

Summary Opinion

Privatized military housing credits continue to demonstrate stable credit quality and solid financial performance. The overall credit quality of our rated portfolio has remained resilient during the course of the economic downturn due to the strong market position of the projects, the reliability of the basic allowance for housing (BAH) as the primary revenue stream, and management's ability to control operating expense growth. The following credit factors continue to be core strengths for most of the financings:

- **Robust financial performance** of most projects due to solid occupancy and controlled expense growth
- **Consistent lifetime growth in BAH rates,** which meet or exceed pro-forma expectations for most projects
- **Competitive advantage** of the on-base, newly constructed or renovated housing
- **Completion of the initial development phase (IDP)** eliminating construction risk for about half of the portfolio
- **Support from the military** including additional equity, units, or land, adds strength to the projects

While we expect these trends to continue, the projects may face the following challenges in the near-to-medium term:

- **Commencement of bond principal amortization post-IDP** may cause financial strain
- **Expected military budget cuts and proposed Base Realignment and Closure (BRAC)** by the US Department of Defense (DoD) could impact projects' future occupancy levels, reduce revenue streams through cuts in BAH stipends, and limit the DoD's level of flexibility for providing additional forms of discretionary financial support to projects

Overview of Privatized Military Housing Sector

Privatized military housing revenue bonds finance the construction and renovation of on-base housing for military personnel and their families. We maintain 54 ratings for 24 privatized military housing projects with approximately 87,000 housing units under management. The related transactions carry approximately $9.56 billion in outstanding debt and a have a median rating of Baa1 by number of ratings and A2 by dollar volume (Figure 1). The bonds are secured primarily by project rental revenues, which consist of Basic Allowance for Housing (BAH) stipends paid by the US military to service members.

FIGURE 1

Ratings Distribution

Rating Category	Debt Outstanding ($ in thousands)	%	All Tranches	%
Aaa	-	0%	0	0%
Aa	1,206,130	13%	4	7%
A	4,749,382	50%	21	39%
Baa	2,205,849	23%	17	31%
Ba	1,193,000	12%	6	11%
B	202,945	2%	6	11%
Ca	-	0%	0	0%
C	-	0%	0	0%
Total	**9,557,306**	**100%**	**54**	**100%**

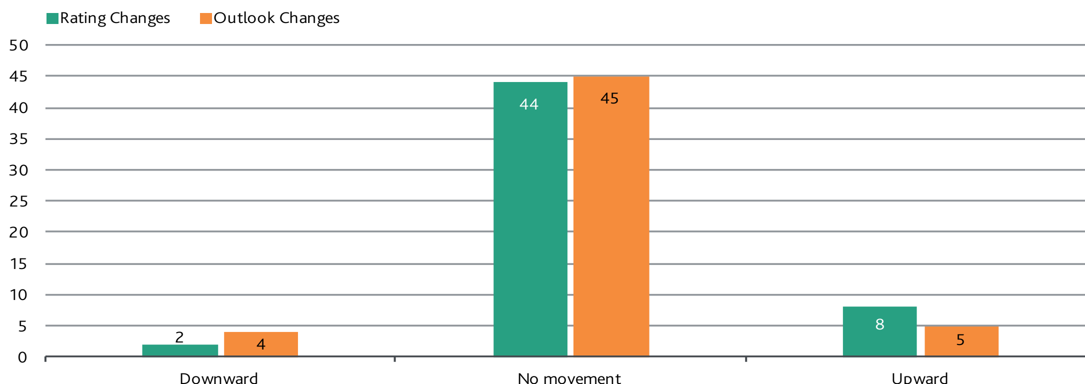
Source: Moody's

Our recent review of privatized military housing ratings resulted in affirmation of approximately 81% of the ratings, with upward changes—either rating upgrades and/or upward changes in outlook—exceeding downward rating/outlook changes (Figure 2). Positive changes included eight rating upgrades and five upward changes in outlook. Downward changes included two rating downgrades and four downward changes in rating outlook.[1]

[1] The number of outlook changes do not include those associated with rating changes.

FIGURE 2

Ratings/Outlook Stability Prevailed During Our 2012 Review



Source: Moody's

Profile of an Upgrade:

Project: Midwest Family Housing LLC, located in various states including IL, IN, TN

Number of Units: 1,719 (Targeted end-state)

Bonds: Series 2006 Class I, II, III and IV

Debt Outstanding: $140.6 million

Rating Action(s): Class I: upgraded to Baa2 from Baa3 on June 8, 2012
Class II: upgraded to Ba2 form Ba3 on June 8, 2012
Class III: upgraded to B2 from B3 on June 8, 2012
Class IV: upgraded to B2 from B3 on June 8, 2012

Summary: The upgrade reflected improved financial performance and market position as measured by a debt service coverage of 3.17x in 2011 and an average occupancy level of 93%, respectively. This represents a major improvement from the prior year. Additionally, construction risk is minimal with scope of work approximately 98% complete.

Profile of a Downgrade:

Project: Southeast Housing LLC, located in various states including FL, MS, TX, GA, SC

Number of Units: 4,673 (Targeted end-state)

Bonds: Series 2007 Class I

Debt Outstanding: $451.7 million

Rating Action(s): Downgraded to Ba1 from Baa3 on June 25, 21012

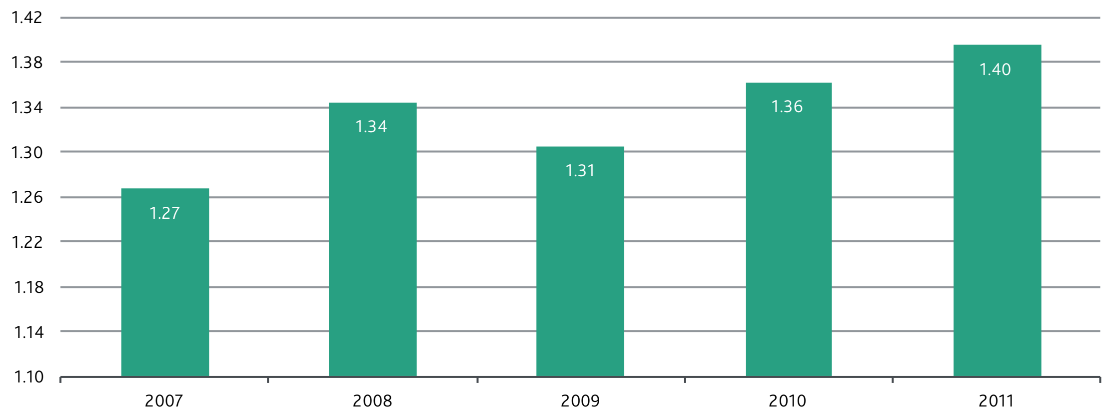
Summary: The downgrade reflected weak project financial performance as measured by a thin debt service coverage level of 1.03x in 2011. Despite the re-scoping and financial restructuring currently underway, which involves reduction in targeted end-state units, sale of additional excess land and partial redemption of existing bonds, the project is expected to continue performing in line with the revised rating. Additional challenge includes BAH decline of 3.67% in 2011 and lackluster increase of 0.92% in 2012.

Financial Performance Remains Stable

Debt service coverage levels remained solid at about 1.40x in 2011, an increase over 1.36x in 2010 (Figure 3). The increase in coverage in 2011 can be attributed to the overall decline in expenses observed at the projects. In 2011, revenue per unit declined, as rent levels have fallen in line with BAH rates for new incoming tenants throughout the turnover cycle. However, the decline in revenues is mitigated by the cumulative BAH increases that many of the projects have experienced since their inception.

FIGURE 3

Debt Service Coverage Levels Continue to be Solid



Source: Moody's, Projects' Audited Financial Data

Revenue per unit declined in 2011

Project rental revenues per unit declined in 2011, breaking the previous pattern of steady growth.[2] This trend reflects the recent trajectory of the BAH, which has had decelerating increases, leading to tapering revenue levels across the projects (Figure 4). In addition, prior to 2011 average monthly rental revenue had exceeded weighted average BAH levels, perhaps due to a higher ranking tenant mix compared to the originally planned tenant composition, since BAH varies by rank. However, revenue levels have recently begun to fall in line with weighted average BAH rates, indicating that as units have turned over, the incoming tenant mix is increasingly resembling the original plans.

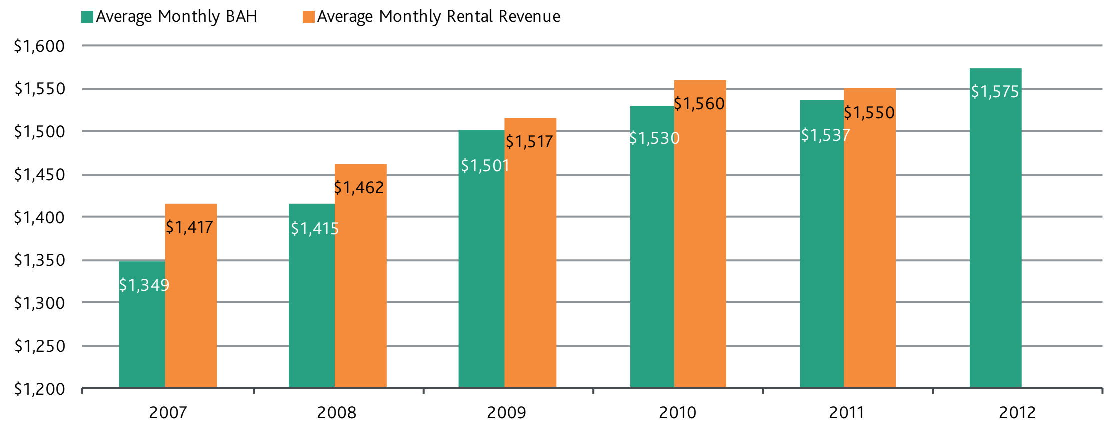
The Basic Allowance for Housing

Rental income, which is the primary source of debt repayment in privatized military housing projects, is established by the DoD by way of the Basic Allowance for Housing (BAH), which are housing stipends provided to military service member households living in non-government-owned quarters. The BAH levels are driven by pay grade, household size, and geographic duty location of the tenant military personnel. DoD adjusts BAH levels to reflect local rental prices, which means that BAH levels may be subject to decreases in weakening housing markets. The impact of decreases in BAH rates on project revenues is partially mitigated by DoD's Individual Rate Protection policy for service members, which ensures existing BAH rates for existing project tenants.

See Special Comment: "Military Housing Fundamentals: The Basic Allowance For Housing (BAH)", published in February 2007.

[2] Project revenues were measured on a per-online-unit basis.

FIGURE 4
Rental Revenues Declined in 2011



Source: Moody's, Projects' Audited Financial Data

Expenses were controlled in 2011

In 2011, project managers achieved a substantial decline in overall operating expense levels from the prior four years (Figure 5). The expense savings were sufficient to outweigh the decline in rental revenues, leading to an increase in net operating income across the portfolio.

FIGURE 5
Operating expenses declined in 2011

Source: Moody's, Projects' Audited Financial Data

Major drivers of the savings were utility and maintenance expenses, which together make up about 60% of overall operating expenses at any given project. Following a dramatic spike in utility expenses in 2008, and maintenance expenses in 2008 and 2009, projects have seen significant cumulative savings of 15.2% for utilities and 8.2% for maintenance through 2011 (Figure 6).

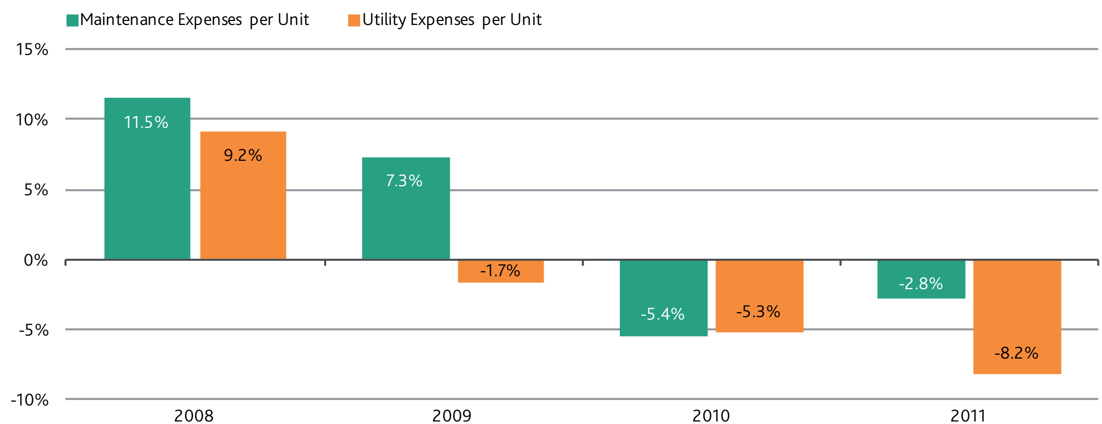
The trend in declining utility expenses stemmed from non-controllable factors such as such recent declines in energy prices and heating/cooling degree-days, but also management initiatives to control costs through energy efficiency capital upgrades, implementation of utility metering and maximum

household consumption allowances, and other changes in energy procurement methods.[3] Although managers continue taking steps to control utility expenses, current budgets forecast costs to increase significantly in 2012 primarily due to expected increases in residential heating fuel oil and natural gas prices, signaling that utility expense levels will likely return to a pattern of growth.[4]

Maintenance and repair expense pressures also eased, as the number of new and/or renovated occupied units has increased, leading to less intense upkeep, as well as spreading of fixed costs over a greater number of revenue-producing units.

FIGURE 6

Utility and Maintenance Expenses have Declined Significantly



Source: Moody's, Projects' Audited Financial Data

Average Growth In BAH Meets Pro-Forma Expectations For Most Projects

Historical weighted average BAH growth rates for all but four projects meet or exceed original pro forma assumptions of 2%-3% for the first five years and 0% thereafter, which has helped maintain their financial stability over time, despite any cyclical and operational challenges.

Following a lackluster BAH increase of approximately 0.5% in 2011, BAH numbers for 2012 indicate a reversal of the trend with an average increase of 1.6%, a relatively positive development for the portfolio (Figure 7).[5] We expect the turnaround in the BAH growth rate to help to further stabilize project revenues in 2012.

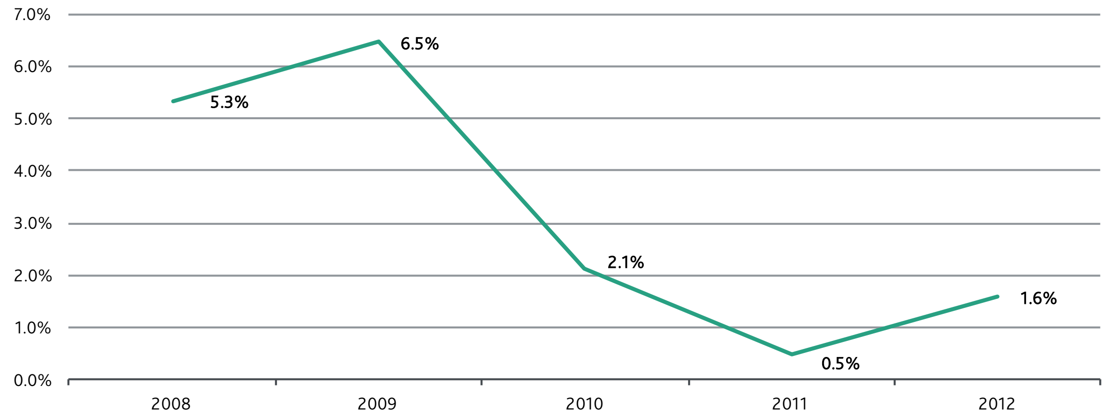
[3] See Sector Comment: *"Lend Lease Implements Energy Upgrades in Military Housing, a Credit Positive"*, published on October 24, 2011.

[4] U.S. Energy Information Administration, Annual Energy Outlook 2012: http://www.eia.gov/forecasts/aeo/pdf/0383(2012).pdf

[5] See Special Comment: *"Increase In 2012 Basic Allowance For Housing Is Positive For Most Military Housing Financings"*, published on February 13, 2012.

FIGURE 7

Growth in the BAH has Slowed



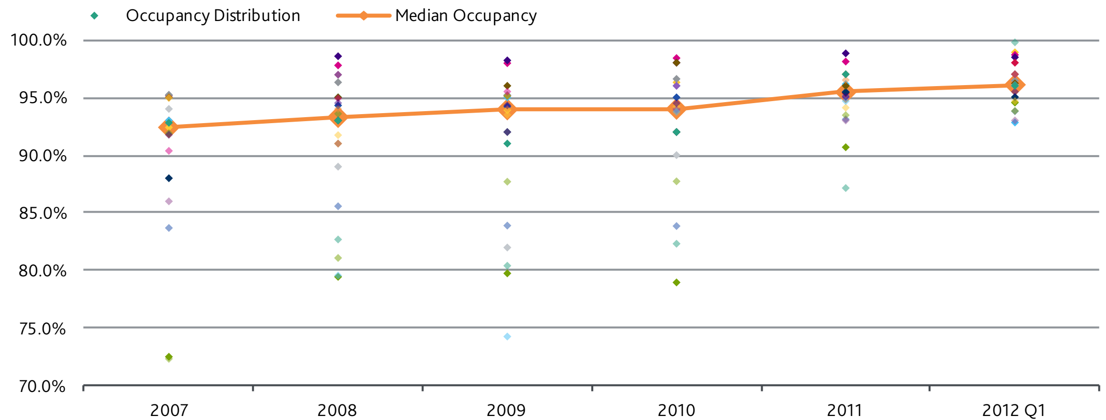
Source: Moody's, U.S. Department of Defense

Despite the overall positive trend, four financings have not sustained 2% average BAH increases since issuance, which could place pressure on project revenues in the future. Two projects with low average BAH growth, Fort Irwin Land, LLC (A1 / A3 / Ba1 negative) and Southeast Housing, LLC (Ba1 negative) were downgraded, in part due to average annual BAH growth levels below expectation at 0.3% and 1.7%, respectively. A third project, Ohana Military Communities, LLC (A2 / Baa3 / Baa3 negative) maintained its negative outlook partially due to a low average historical BAH increase of 0.8% since 2007. The last project, GMH Military Housing - Navy Northeast LLC (Ba1 / B1 stable (m)) had its rating affirmed and outlook changed to stable from negative, despite a moderately low historical average BAH level of 1.8%; this was due to mitigating factors including improved occupancy, financial performance in line with the assigned rating, and a strong BAH increase of 2.34% in 2012.

Competitive Advantage Drives Increased Occupancy Rates

In 2011, projects' occupancy levels strengthened, as demonstrated by a median occupancy of 96.1%. The current distribution of occupancy levels across the portfolio between 93% and 100% (Figure 8) has narrowed significantly from median occupancy rates between 79% and 98% as recent as 2010. Many projects enjoy a strong market position relative to their competition as they benefit from their location on base or proximity to military bases and their ability to offer amenities and services not available to tenants in the surrounding area housing.

FIGURE 8
Occupancy Levels have Steadily Improved



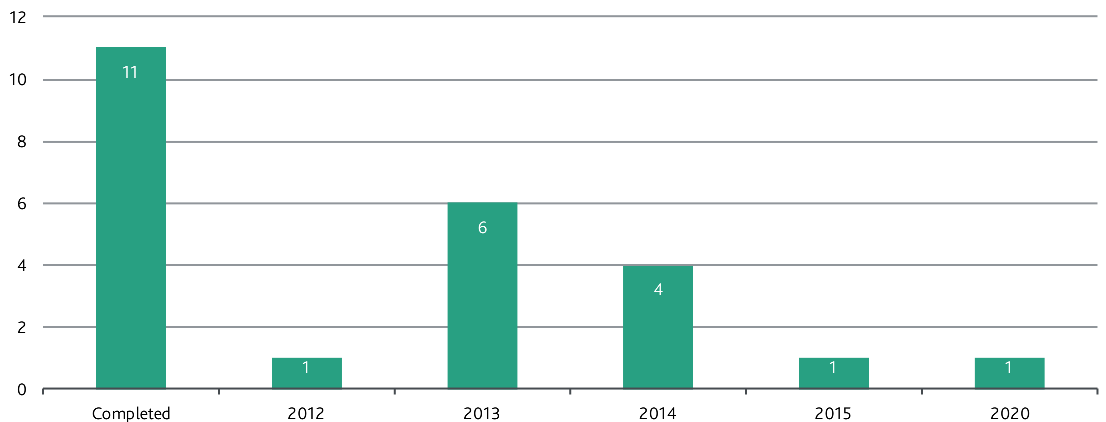
Source: Moody's

Occupancy also benefited from the improving quality of the on-line units, as the number of newly constructed or renovated existing units compared to overall online units has increased. Furthermore, many owners have demolished or otherwise disposed of excess units that were available temporarily during the initial development phase, therefore condensing the universe of units down to a more attractive and marketable portfolio. However, the increase in occupancy rates may come at a cost, to the extent that the projects lose revenue-producing units overall.

Completion of IDP Eliminates Construction Risk

To date, 11, or approximately 46% of all projects, have completed the Initial Development Phase (IDP). This includes completion of any new construction and/or rehabilitation under the scopes of work, and therefore, eliminates the risk of construction delays and cost overruns that could negatively impact financial performance. The remaining 13 projects in the IDP are due to be completed by 2020, with the majority scheduled for completion by 2014 (Figure 9). This does not include planned expansions of projects that may be in the pipeline for future financing.

FIGURE 9
Most Projects are Expected to Complete IDP within the Next Three Years



Source: Moody's

Commencement of Bond Principal Amortization Could Cause Financial Strain

While transition out of the of the IDP eliminates project construction risk, as discussed above, it is also typically associated with commencement of bond principal amortization, meaning that debt service payments are likely to increase significantly in one year or phased-in over several years. This is also the time when projects may no longer have access to capitalized interest funds to supplement debt service payments. Additionally, loss of supplemental income from excess units scheduled to be returned to the military or slated for demolition may further erode projects' revenue base, which in some cases may be mitigated by the military's allowance to extend their use in favor of financial stability.

The transition out of the scheduled IDP may also pose financial challenges for projects which have experienced construction delays, a history of low BAH increases and/or higher than projected operating costs. The result may be a decline in debt service coverage ratios below underwritten levels.

Support from the Military Adds Strength to Some Deals

Approximately one-third of the projects financed by rated debt have received discretionary support from the military in since 2009 (Figure 10). This includes additional cash equity to construct or renovate additional units, conveyance of additional existing revenue-generating housing units, and conveyance of land to be developed or sold, with the sales proceeds expected to be used to construct additional units.

FIGURE 10

Projects recently receiving additional support from the military

Project	Year(s)	Contribution
Fort Bragg	2011	$49.8 million in equity
Fort Carson	2010	$98.3 million in equity
Fort Irwin	2009 & 2010	$61 million in equity
Fort Leonard Wood	2011	$15.75 million in equity
Navy Mid-Atlantic	2010	$88 million in equity as well as additional land
Navy Southeast	2011	$8.4 million in equity
Ohana	2010	$60 million in equity

Source: Moody's

In general, any additional support from the military is positive for the receiving projects, as it will bolster their revenue-generating assets and long-term financial performance. Depending on the timing, this may also present an opportunity to increase revenues in time for transition out of the IDP and commencement of bond principal amortization. However, with the new assets come new expenses such as increased operating costs or additional construction costs, which may place some marginal strain on existing operating and construction budgets. In addition, for projects relying on proceeds from a sale of land to fund construction of a certain number of housing units, failure to obtain the market price for the land may hinder plans for additional development. It is also important to note that these forms of support are intended to help project managers preserve and/or build new housing for military families, and that the cash equity or land sale proceeds are not available to cover debt service.

Federal Budget Concerns Remain

Current imperatives for federal budget reductions resulting from the Budget Control Act of 2011 place significant burden on the DoD to cut spending by upwards of $600 billion, or about 8% of its current budget over 10 years, if Congress fails to identify alternative savings initiatives.[6] In addition, the President's budget request for federal fiscal year 2013 includes targeted reductions of $257 billion in the military's budget over the next five years.[7] The budget savings are expected to be met in part by reducing the size of the Army and Marine Corps by approximately 92,000 active service members, or approximately 12% by 2017, as well as demolishing approximately 10% of base structures by 2016.[8] In order to implement much of these changes, the President's budget requests two additional rounds of Base Realignment and Closure (BRAC) processes, which could be implemented as early as 2014.[9]

The proposed changes, if implemented, can have implications for privatized military housing:

» A reduction in personnel and/or downsizing of local military installations by way of a BRAC process could negatively affect the demand for the installation's units. This situation may be especially challenging for projects serving military bases with smaller potential tenant pools relative to project size, areas where the military is the primary employer, or in generally soft housing markets.[10] Projects rely on a heavy presence of military personnel in excess of the project units in order to maintain strong market position.

» Although the President's budget does not explicitly identify savings targets for BAH spending, budget cuts may be partially met by curbing growth in stipend levels, which could cause deterioration in financial performance of project financings. BAH stipends are the main form of revenue available to cover project operating costs and bond debt service.

» Cuts in procurement of new weapons systems, or of other capital expenditures, could have more indirect effects on project financings, by reducing the amount of troops or DoD personnel, and thereby the tenant supply associated with a particular base. For example, the level of personnel at a naval base would be affected by reductions or a moratorium on shipbuilding. In addition, these cuts could also lessen activities in related industries thereby adversely impacting the local economy surrounding the affected bases and potentially lowering real estate values. As real estate values are an important factor for setting annual BAH levels this could result in declines in the BAH and reduced revenue for the project financings.

» With the advent of federal budget cuts, DoD may have less flexibility to provide new additional support, and in all cases reserves the right to rescind pending allocations of equity or other forms of support. As discussed before, several projects have benefited from discretionary equity contributions and other forms of support from the military above and beyond any contributions made in the original financings. At least one project is currently awaiting final approval of additional equity recently allocated to it.

---

6 See article: "Some Lawmakers Look for Way Out as Defense Cuts Near", published in the New York Times on June 3, 2012; http://www.nytimes.com/2012/06/04/us/politics/budget-control-act-military-cuts-raise-concerns.html?pagewanted=all

7 Office of the Under Secretary of Defense, National Defense Budget Estimates for FY2013: http://comptroller.defense.gov/defbudget/fy2013/FY13_Green_Book.pdf

8 See Sector Comment: *"Proposed Military Base Cuts are Credit Negative for Privatized Military Housing"*, published February 20, 2012.

9 U.S. Office of Management and Budget, The President's Budget for the Department of Defense for Fiscal Year 2013: http://www.whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/defense.pdf

10 See Special Comment: *"Department of Defense Budgetary Cuts could have a Negative Effect on Military Housing Bonds"*, published August 25, 2011

Appendix 1: Privatized Military Housing Bond Ratings as of Spring 2012

Project Base/Site	Location State(s)	Issuer	Bonds	End-state Units	Debt Outstanding (in thousands)	Underlying Ratings & Outlook	2010 Debt Service Coverage Ratio(s)	2011 Debt Service Coverage Ratio(s)	2010 Average Occupancy Rate	2011 Average Occupancy Rate	Bond Insurer	Surety Bond Provider	Developer / Manager
Army Hawaii	HI	Army Hawaii Family Housing, LLC	Military Housing Revenue Obligations, Class I, Class II, Class III (2005)	7,756	$1,597,500	A1 / Baa1 / Baa3 negative (m)	2.01 / 1.95 / 1.88	1.83 / 1.78 / 1.66	92.0%	95.4%	National	Surety from National	Actus Lend Lease
Atlantic Marine Corps	NC, SC, NY, MA	Atlantic Marine Corps Communities, LLC	Military Housing Revenue Bonds, Class I, Class II, Class III, Class IV(Series 2005, 2006, 2007)	8,059	$ 687,930	A1 / A2 / A2 / Baa2 stable	2.13 / 1.79 / 1.75 / 1.32	2.10 / 1.80 / 1.76 / 1.35	95.0%	95.5%	National	Surety from National	Actus Lend Lease
Boyer Hill	UT	Utah Housing Corporation	Military Housing Taxable Revenue Bonds, 2005 Series A Class I, Class II	1,018	$41,000	A2 / A3 stable	2.72 / 2.45	2.71 / 2.44	94.0%	95.0%	CIFG	Surety from CIFG	Boyer
Elmendorf AFB Phase I	AK	Aurora Military Housing, LLC	Taxable Military Housing Revenue Bonds, Series 2005A	828	$56,370	Aa3 stable	2.54	2.54	98.4%	98.1%	Assured	Surety novated to Assured from CIFG	Hunt, JL Properties
Elmendorf AFB Phase II	AK	Aurora Military Housing II, LLC	Taxable Military Housing Revenue Bonds Series 2005A Class I, Class II	1,194	$ 115,925	A1 / A2 stable	2.45 / 2.04	2.62 / 2.18	98.0%	98.8%	Assured	Surety novated to Assured from CIFG	Hunt, JL Properties
Elmendorf AFB Phase III	AK	Aurora Military Housing III, LLC	Military Housing Revenue Bonds, Series 2011A	1,240	$ 155,000	A1 stable	n/a	1.47	n/a	95.4%	(None)	Cash	Hunt, JL Properties
Fort Belvoir	VA	Belvoir Land, LLC	Military Housing Revenue Bonds, Series 2005 A Class I,Class II, Class III	2,156	$ 502,460	A1 / A3 / Baa3 Stable	1.86 / 1.43 / 1.10	2.25 / 1.73 / 1.33	96.3%	97.0%	(None)	Surety from AIG	Clark
Fort Benning	GA	Fort Benning Family Communities, LLC	Military Housing Taxable Revenue Bonds, 2006 Series A Class I, Class II, Class III	4,000	$ 371,000	A2 / Baa2 / Baa3 stable (m)	3.03 / 1.80 / 1.22	4.29 / 2.54 / 1.73	79.0%	90.7%	(None)	Surety from AIG / Cash	Clark
Fort Bragg	NC	Fort Bragg Housing, LLC	Fort Bragg Project Certificates, Series 2003 and 2007A	6,238	$ 450,394	Baa3 stable	1.36	1.37	96.6%	95.2%	AMBAC	Surety from AMBAC	Picerne
Fort Carson	CO	Fort Carson Family Housing, LLC	Fort Carson Family Housing Housing Revenue Bonds, Series 1999	3,368	$ 124,725	A1 stable	2.22	2.26	96.0%	96.1%	National	Surety from National	Balfour Beatty
Fort Gordon	GA	Fort Gordon Housing, LLC	Fort Gordon Housing LLC Taxable Military Revenue Bonds, Series 2006 Class I, Class II	1,080	$79,435	Baa1 / Baa2 negative	1.68 / 1.60	1.72 / 1.64	92.0%	96.0%	AMBAC	Surety from AMBAC	Balfour Beatty

Project Base/Site	Location State(s)	Issuer	Bonds	End-state Units	Debt Outstanding (in thousands)	Underlying Ratings & Outlook	2010 Debt Service Coverage Ratio(s)	2011 Debt Service Coverage Ratio(s)	2010 Average Occupancy Rate	2011 Average Occupancy Rate	Bond Insurer	Surety Bond Provider	Developer / Manager
Fort Hamilton	NY	New York City Housing Development Corporation	Military Housing Revenue Class I Notes, 2004 Series A and Class II Notes, 2004 Series A	228	$47,165	A3 / Baa3 stable	1.48 / 1.19	1.63 / 1.31	90.0%	96.0%	(None)	LOC provided by ANZ Bank	Balfour Beatty
Fort Irwin	CA	Fort Irwin Land, LLC	Military Housing Revenue Bonds, Series 2005 A Class I, Class II, Class III	3,182	$ 348,263	A1 / A3 / Ba1 negative	2.03 / 1.57 / 1.18	1.95 / 1.52 / 1.14	98.0%	96.0%	(None)	Surety from AIG	Clark
Fort Leonard Wood	MO	Leonard Wood Family Communities, LLC	Military Housing Revenue Bonds, Series 2005, Class I, Class II, Class III	1,806	$ 131,240	Baa1 / Baa3 / Baa3 stable	1.49 / 1.20 / 1.15	1.55 / 1.24 / 1.19	82.3%	87.1%	National	Cash invested in GIC with MBIA	Balfour Beatty
Fort Stewart	GA	Stewart Hunter Housing, LLC	Military Housing Privatization Project Housing Revenue Bonds, Series 2003 and Series 2008 A	3,999	$ 279,870	Baa3 stable	1.43	1.28	92.0%	97.0%	AMBAC	Surety from AMBAC	Balfour Beatty
Hampton Roads	VA	Hampton Roads PPV, LLC	Military Housing Taxable Revenue Bonds, 2007 Series A Class I, Class II, Class III	1,913	$ 276,070	Ba1 / B1 / B1 stable	1.43 / 1.10 / 1.05	1.55 / 1.19 / 1.14	n/a	n/a	AMBAC	Surety from AMBAC	Hunt, American Campus Communities
Mid-Atlantic Military	VA, MD	MidAtlantic Military Family Communities	Military Housing Revenue Bonds, Series 2005 Class I, Class III	6,448	$ 583,795	Aa3 / A3 stable	2.25 / 1.35	2.12 / 1.30	94.0%	96.5%	National	Surety from National	Lincoln
Navy Midwest	IL, IN, TN	Midwest Family Housing	Military Taxable Revenue Bonds 2006 Series A Class I,Class II, Class III, Class IV	1,719	$ 140,615	Baa2 / Ba2 / B2 / B2 stable	2.49 / 1.59 / 1.20 / 1.15	3.17 / 2.03 / 1.53 / 1.47	93.9%	93.0%	CIFG	Surety from CIFG	Forest City
Navy Northeast	ME, RI, CT, NY, NJ	GMH Military Housing - Navy Northeast LLC	Taxable Military Housing Revenue Refunding Bonds, Series 2007 A-1,Series 2007 A-2, Series 2007 B	2,921	$ 352,660	Ba1 / B1 stable (m)	1.28 / 1.02	1.32 / 1.06	83.9%	93.1%	AMBAC	Surety from AMBAC	Balfour Beatty
Navy Northwest	WA	Pacific Northwest Communities, LLC	Taxable Military Housing Revenue Bonds, Series 2005A and 2005B	2,985	$ 222,130	Aa3 / A3 stable	1.73 / 1.38	1.73 / 1.38	94.2%	94.1%	National	Cash	Forest City
Navy Southeast	FL, MS, TX, GA	Southest Housing, LLC	Taxable Military Housing Revenue Bonds, Series 2007 Class I	4,673	$ 451,700	Ba1 negative	1.14	1.03	87.7%	93.5%	National	Surety from National	Balfour Beatty
Offutt Air Force Base	NE	Offutt AFB America First Communities, LLC	Taxable Housing Revenue Bonds - First Mortgage Lien Bonds, Series 2005A and Series 2005B	1,640	$ 138,350	Ba3 / B1 stable	1.56 / 1.25	1.78 / 1.43	93.8%	94.7%	Syncora	Surety from Syncora	Forest City

Project Base/Site	Location State(s)	Issuer	Bonds	End-state Units	Debt Outstanding (in thousands)	Underlying Ratings & Outlook	2010 Debt Service Coverage Ratio(s)	2011 Debt Service Coverage Ratio(s)	2010 Average Occupancy Rate	2011 Average Occupancy Rate	Bond Insurer	Surety Bond Provider	Developer / Manager
Ohana	HI	Ohana Military Communities, LLC	Military Housing Revenue Bonds, Class I, Class II, Class III (Series 2004, 2006, 2007)	6,788	$1,381,264	A2 / Baa3 / Baa3 negative	1.70 / 1.35 / 1.34	1.70 / 1.36 / 1.35	96.0%	97.0%	National, CIFG	Surety from National & CIFG	Forest City
San Diego	CA	San Diego Family Housing, LLC	Military Housing Revenue Bonds, Series 2007 Class I, Class II, Class III	12,555	$1,022,445	Aa2 / A1 / A3 stable	3.00 / 2.25 / 1.79	3.05 / 2.29 / 1.82	94.5%	95.1%	National	Surety from National	Lincoln

Sources Referenced in this Report

- Moody's Investors Service Databases
- Projects' Audited Financial Statements
- The New York Times
- U.S. Energy Information Administration
- U.S. Department of Defense, Office of the Under Secretary of Defense
- U.S. Office of Management and Budget

Moody's Related Research

Special Comments:

- Increase in 2012 Basic Allowance for Housing Is Positive For Most Military Housing Financings, February 2012 (139702)
- Department of Defense Budgetary Cuts Could have a Negative effect on Military Housing Bonds, August 2011 (135322)
- Moody's Responds to Frequently Asked Questions on Privatized Military Housing, November 2010 (128857)
- Military Housing Fundamentals: The Basic Allowance for Housing (BAH), February 2007 (101943)

Sector Comments:

- Navy's San Diego Fleet Expansion Is Credit Positive for San Diego Family Housing, April 2012 (141514)
- Proposed Military Base Cuts Are Credit Negative for Privatized Military Housing, February 2012 (139957)
- Lend Lease Implements Energy Upgrades in Military Housing, a Credit Positive, October 2011 (136865)

Rating Methodology:

- Global Housing Projects, July 2010 (125767)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 144441

Author
Carlos A. Calderon

Associate Analyst
Brendan Weber

Senior Production Associate
Diana Brimson

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S INVESTORS SERVICE

SPECIAL COMMENT

3.8% Increase in Basic Allowance for Housing Highlights Positive Trend for Military Housing Bonds

Impact is Positive for Most Moody's-Rated Financings

Table of Contents:

SUMMARY OPINION 1
BAH OVERVIEW 2
BAH Rates Fluctuate Based on Market Rents, Although Individual Rate Protection Policy May Limit Revenue Decreases 2
Weighted Average Increase in BAH Funding For Rated Projects Highest Since 2009 2
Impact of the 2013 BAH is Positive For All But One Moody's Rated Financings 3
Despite Overall Increase in BAH Rates, Three Financing Have Not Sustained an Average 2% BAH Increase Since Issuance 4
APPENDIX 5

Analyst Contacts:

NEW YORK +1.212.553.1653

Dmitriy Plit +1.212.553.7463
Analyst
dmitriy.plit@moodys.com

Rishi R. Singh +1.212.553.4883
Associate Analyst
rishi.singh@moodys.com

Florence Zeman +1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

John C. Nelson +1.212.553.4096
Managing Director - Public Finance
john.nelson@moodys.com

Summary Opinion

In December 2012, the Department of Defense (DoD) increased the average national Basic Allowance for Housing (BAH) rates by 3.8%, effective January 1, 2013. This increase, which is the highest national increase since 2009, is credit positive for the sector.[1] This report focuses on the credit implications of the 2013 BAH rates for the 24 Moody's-rated military housing financings ($9.6 billion outstanding). Its key findings are:

» Bases with Moody's rated military housing debt outperformed the national trend and was above our expectations with an average rate increase of 4.9%, which should boost project revenue and debt service coverage.

» In 2013, 23 of 24 bases received increases. Only one transaction, Navy Northeast Family Housing Privatization Project (Class I, Ba1 stable; Class II, B1 negative) did not receive an increase, as their 2013 BAH rate is down 0.1% from 2012.

» As a result of the steady BAH increases, 21 bases are meeting or exceeding our initial expectations. As reflected in their ratings, only three Moody's rated financings have not sustained the projected average BAH increases since the bonds were issued, primarily due to low increases or declines. These include Fort Irwin (Class I - A1, NEG / Class II - A3, STA / Class III – Ba1, STA), Navy Northeast (Class I - Ba1, STA / Class II - B1, NEG) and Navy Southeast (Ba1, NEG).

[1] For additional information on the impact of the 2013 BAH rates on the Military Housing Finances, please see Moody's 2012 Sector Comment, entitled "Housing Allowance Increases Is Credit Positive for Military Housing Financings"

BAH Overview

The BAH is a component of the US military's compensation package that provides service members with an allowance to cover the cost of housing if government-owned quarters are not available. The allowance pays for rent, utilities, and insurance, and could be used for dwellings on or off the primary military base. If a service member elects to live in a privatized military housing project, their BAH payments are pledged directly to the project in lieu of monthly rent, making it a critical revenue stream that impacts the ability of privatized military housing financings to pay debt service.

BAH Rates Fluctuate Based on Market Rents, Although Individual Rate Protection Policy May Limit Revenue Decreases

The BAH rate received by an individual service member depends on the service member's geographic duty location, pay grade and if they have dependents. The geographic duty location is defined as the Military Housing Area where the soldier is stationed. The Per Diem, Travel and Transportation Allowance Committee of the Department of Defense is in charge of setting BAH rates. The goal of the Department of Defense is to provide service members with enough BAH to pay for median-priced private-sector rental housing in the locality that they are stationed. As such, the Department of Defense sets BAH rates based on the median cost of rental housing in each of the 370 civilian markets where service members reside. [2] Prior to 2005, a policy called "Geographic Rate Protection" ensured that the BAH rates never decreased for a military duty station even if the prices in the civilian market dropped. However, Geographic Rate Protection was eliminated in 2005, allowing the BAH to fluctuate up and down based on local rent costs.

A DoD policy called Individual Rate Protection prevents service members from experiencing a decrease in the BAH that they receive as long as their permanent duty station, pay grade or dependent status has not changed. This is an important credit consideration, as project revenues are not expected to decrease with an overall BAH decrease as long as the impacted service members continue to live in the project. Given that service members are typically assigned to a base for three years, we would expect that a BAH decrease would only affect approximately 1/3 of the residents in the first year on average.

Weighted Average Increase in BAH Funding For Rated Projects Highest Since 2009

According to the DoD, service members received an average BAH increase of 3.8% in 2013 across all bases in the U.S. [3] The average 2013 BAH rate increase for projects that were financed by Moody's rated bonds was 4.9%, significantly higher than the national average. In fact, Moody's rated projects received the largest single year increase in BAH rates since 2009. Historical nationwide rental data shows a steep decrease in rental rates in 2009 and 2010, followed by a recovery the next two years. Since BAH rates often lag rental housing trends, given the process used to gather rental information data and incorporate it into BAH rates, we attribute the stronger average BAH increase in 2013 to improving rental rates in major markets nationwide. Rent inflation is expected to rise moderately from

[2] For additional information on the BAH rates and how they are calculated, please see Moody's February 2007 Special Comment, entitled "Military Housing Fundamentals: The Basic Allowance for Housing (BAH)."

[3] U.S. Department of Defense Website http://www.defense.gov/releases/release.aspx?releaseid=15747

the projected 2.7% in 2013 to 3.2% in 2014.[4] Since the cost of rental housing is the primary driver of the BAH, we expect positive BAH increases in the near term.

EXHIBIT 1

Significant Improvement in Average 2013 BAH Rate Change for Moody's Rated Projects

Year	Average Change (National)	Average Change (Moody's-rated)	Minimum Change	Maximum Change
2007	3.5%	2.7%	-5.8%	17.0%
2008	7.3%	5.3%	-4.4%	24.1%
2009	6.9%	6.5%	-3.6%	14.2%
2010	2.5%	2.1%	-4.1%	9.3%
2011	-0.6%	0.6%	-7.7%	6.4%
2012	2.0%	1.6%	-5.2%	10.7%
2013	3.8%	4.9%	-0.1%	14.8%

Represents weighted-average increases for each project

Source: U.S. Department of Defense, Moody's calculations

As shown in Exhibit 1, for 2013 there has been significant improvement in the average BAH rate increase for Moody's rated projects. However, there is still substantial deviation in rate increases for individual bases from the national average and from the average rate increase for all Moody's-rated projects. Such variability in project BAH rates is based on various project-specific factors, such as the geographic location of the base and pay grades of the service members.[5]

Impact of the 2013 BAH is Positive For All But One Moody's Rated Financings

An increase in the annual BAH rates is generally a positive credit factor in our analysis, since the project will experience improvement in income levels from occupied units. The majority of projects secured by Moody's-rated bonds continue to meet our original BAH rate expectations. In fact, Moody's rated financings show improvement in 2013 BAH rate changes for 23 out of 24 bases. In 2013, 18 of the 24 projects received BAH increases of over 2%, five projects received increases between 0% and 2%, and one project experienced a decline in its weighted average BAH rate. We believe these BAH rate increases are sufficient to maintain existing credit ratings for most financings.

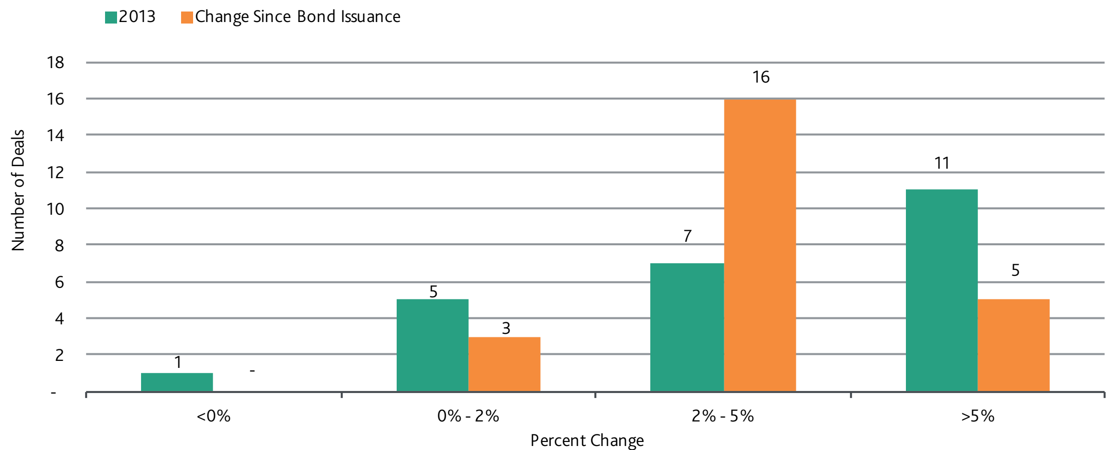
We also review historic rate changes and the weighted average change since bond inception for each program to assess how the project is performing compared to initial assumptions incorporated when the bond was issued. The financial projections of Moody's rated bond financings generally assume steady 2% BAH increases for the first five years after issuance and then flat revenue until maturity. If the actual BAH increases fall short of these initial assumptions then, barring other mitigating factors, the transaction's financial performance may be adversely impacted. Exhibit 2 shows that 21 of 24 Moody's rated projects received weighted average annual BAH increases in excess of 2% since bond issuance. Given the strong 2013 BAH rate increases, our initial revenue projections materialized for most projects.

[4] Source: CBRE Econometric Advisors ($ per Unit Rent Inflation (%) Baseline Outlook as of Q3 2012)

[5] Moody's considers the expected number of service members at each pay grade following the completion of the construction period to calculating the weighted average BAH rate for each transaction.

EXHIBIT 2

Majority of Moody's Rated Financings Met or Exceeded Our BAH Rate Projections in 2012, and for the Life of the Deal*



*"Change Since Bond Issuance" refers to the average annual BAH rate change that has occurred in the years following the most recent bond issuance
Source: Moody's Calculations

Despite Overall Increase in BAH Rates, Three Financing Have Not Sustained an Average 2% BAH Increase Since Issuance

Despite the highest increase in the national BAH funding level since 2009, three Moody's rated financings have not sustained an average annual 2% BAH increase since the issuance of the bonds:

» Fort Irwin (Class I - A1 / Class II - A3 / Class III – Ba1, NEG)

» Navy Northeast (Class I - Ba1, STA / Class II - B1, NEG),

» Navy Southeast (Ba1, NEG)

The lower than projected growth in BAH rates is a credit weakness for these military housing financings as it results in a much tighter project financial position. The tighter financial position makes the project more vulnerable to future credits pressures such as further decreases in BAH rates, lower occupancy levels and rises in expenses than credits which have had steady levels of rent growth. This is one of the factors in the current ratings of the programs.

Appendix

TABLE 1

Weighted average BAH changes between 2004 (or bond issuance date if later than 2004) and 2013 for bases with housing projects financed by Moody's-rated bonds.

Base	2004 Increase	2005 Increase	2006 Increase	2007 Increase	2008 Increase	2009 Increase	2010 Increase	2011 Increase	2012 Increase	2013 Increase	Average Since 2004 (or bond issuance date if later)
Multi-Site Projects											
Army Hawaii Family Housing	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	5.61%
Aliamanu Military Reservation	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	
Schofield Barracks	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	
Wheeler Army Airfield	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	
Helemano Military Reservation	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	
Fort Shafter	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	
Tripler Medical Center	*	22.04%	11.21%	5.23%	-0.01%	-2.39%	3.27%	1.24%	-2.62%	12.55%	
Atlantic Marine Corps**	*	*	4.32%	3.83%	6.55%	8.74%	7.45%	0.11%	1.18%	1.21%	4.17%
Camp Lejeune	*	*	5.14%	4.99%	4.03%	11.21%	9.53%	1.99%	1.34%	-0.79%	
Cherry Point	*	*	3.66%	5.25%	13.00%	0.98%	6.73%	-5.60%	5.32%	3.22%	
New River	*	*	5.14%	4.99%	4.03%	11.21%	9.53%	1.99%	1.34%	-0.79%	
Stewart Terrace	*	*	-3.33%	2.58%	-1.46%	13.04%	13.14%	3.99%	-2.72%	6.93%	
Beaufort / Parris Island Marine Corps (Tri-Command)	2.94%	7.55%	3.37%	0.01%	12.31%	4.59%	0.74%	-3.85%	-1.00%	5.74%	
Westover	*	*	*	*	8.58%	13.83%	4.61%	-0.42%	2.84%	10.19%	
Fort Irwin	*	*	2.42%	3.54%	-1.01%	0.44%	0.92%	1.06%	-5.19%	4.16%	0.79%
Fort Irwin	*	*	10.40%	3.01%	-4.08%	-0.48%	0.39%	0.75%	-9.11%	0.77%	
Fort Irwin Senior Unaccompanied Housing	*	*	11.38%	1.69%	-4.23%	-0.29%	0.77%	0.39%	-9.44%	0.48%	
Moffett Westcoat - Berry	*	*	-22.75%	7.24%	8.50%	5.47%	1.44%	-0.09%	6.35%	13.39%	
Parks Family Housing Project	*	*	-10.31%	2.40%	15.50%	-2.35%	5.49%	8.10%	7.15%	11.39%	
Navy MidAtlantic	*	13.68%	9.53%	3.84%	7.20%	6.95%	3.87%	-1.28%	-0.97%	6.41%	5.47%

TABLE 1

Weighted average BAH changes between 2004 (or bond issuance date if later than 2004) and 2013 for bases with housing projects financed by Moody's-rated bonds.

Base	2004 Increase	2005 Increase	2006 Increase	2007 Increase	2008 Increase	2009 Increase	2010 Increase	2011 Increase	2012 Increase	2013 Increase	Average Since 2004 (or bond issuance date if later)
Hampton / Newport News	*	16.25%	16.67%	2.97%	9.85%	9.26%	0.64%	0.01%	-6.58%	12.45%	
Norfolk / Portsmouth	*	18.48%	9.34%	2.73%	7.27%	7.87%	5.38%	-1.72%	-0.88%	4.96%	
Pax River	*	3.30%	9.31%	7.21%	5.67%	1.55%	1.67%	-2.14%	2.83%	8.04%	
Annapolis	*	5.56%	3.63%	5.41%	6.33%	5.72%	4.20%	2.38%	-4.54%	8.56%	
Dahlgren (Camp AP Hill)	*	2.41%	6.04%	5.24%	12.59%	4.92%	1.92%	-1.58%	1.43%	3.04%	
Indian Head	*	10.11%	12.70%	7.90%	3.14%	10.83%	-3.75%	-1.16%	4.85%	9.04%	
Sugar Grove	*	2.53%	3.14%	1.35%	-8.69%	23.24%	6.51%	-1.86%	7.55%	-4.06%	
Navy Midwest	*	*	2.75%	-0.29%	-0.02%	7.34%	1.07%	6.36%	0.13%	2.06%	2.42%
Naval Station Great Lakes	*	*	2.89%	-0.54%	-1.77%	3.81%	1.52%	5.56%	1.24%	2.44%	
Naval Support Activity Crane Division	*	*	2.55%	0.08%	2.47%	12.16%	0.48%	7.39%	-1.26%	1.57%	
Naval Support Activity Mid-South	*	*	*	*	8.72%	6.92%	7.83%	-2.33%	-4.70%	6.34%	
Navy Northeast	*	*	*	4.98%	0.56%	5.03%	0.20%	-3.11%	2.34%	-0.11%	1.41%
NAS Brunswick	*	*	*	5.31%	4.17%	12.60%	-6.47%	-7.25%	-2.45%	2.81%	
NWS Earle	*	*	*	-0.42%	3.49%	3.90%	1.60%	-0.78%	2.84%	4.39%	
NAES Lakehurst	*	*	*	6.94%	11.71%	-2.67%	7.41%	-2.28%	-4.77%	-1.91%	
Mitchel	*	*	*	-3.29%	8.26%	3.58%	-0.80%	-1.23%	-5.82%	0.41%	
NSB New London	*	*	*	10.27%	-4.87%	3.24%	2.66%	-1.46%	5.06%	-3.33%	
NAVSTA Newport	*	*	*	6.42%	1.59%	4.20%	-0.82%	-4.86%	4.89%	1.66%	
NSY Portsmouth	*	*	*	4.54%	1.19%	4.46%	-2.00%	-1.18%	-2.58%	-0.33%	
NSU Saratoga Springs	*	*	*	2.06%	11.63%	17.12%	3.94%	-2.92%	0.87%	7.63%	
Navy Northwest	*	8.54%	7.76%	-2.61%	8.36%	8.70%	0.74%	-1.99%	3.27%	1.82%	3.84%
Everett	*	3.06%	5.64%	-3.04%	13.59%	8.94%	-2.02%	-4.28%	4.24%	7.07%	
Bangor	*	5.46%	15.59%	-2.17%	12.58%	4.76%	-2.69%	0.94%	1.95%	4.25%	

TABLE 1

Weighted average BAH changes between 2004 (or bond issuance date if later than 2004) and 2013 for bases with housing projects financed by Moody's-rated bonds.

Base	2004 Increase	2005 Increase	2006 Increase	2007 Increase	2008 Increase	2009 Increase	2010 Increase	2011 Increase	2012 Increase	2013 Increase	Average Since 2004 (or bond issuance date if later)
Bremerton	*	5.46%	15.59%	-2.17%	12.58%	4.76%	-2.69%	0.94%	1.95%	4.25%	
Keyport	*	5.46%	15.59%	-2.17%	12.58%	4.76%	-2.69%	0.94%	1.95%	4.25%	
Indian Island	*	5.46%	15.59%	-2.17%	12.58%	4.76%	-2.69%	0.94%	1.95%	4.25%	
Whidbey Island	*	11.93%	1.40%	-3.00%	3.69%	12.82%	4.42%	-4.40%	4.44%	-1.04%	
Navy Ohana	*	*	*	4.96%	-0.24%	-2.29%	3.36%	1.10%	-2.30%	12.34%	2.42%
Navy Hawaii Housing Privatization Project	*	*	*	4.59%	-0.56%	-2.22%	3.45%	1.03%	-1.84%	12.01%	
Marine Corps Hawaii Housing Privatization Project	*	*	*	5.69%	0.38%	-2.43%	3.19%	1.23%	-3.21%	13.02%	
Navy San Diego	*	*	*	*	9.31%	5.42%	0.35%	2.01%	0.27%	2.19%	3.26%
San Diego	*	*	*	*	10.79%	6.16%	0.12%	2.56%	1.27%	1.33%	
Lemoore	*	*	*	*	4.82%	3.10%	6.68%	-4.26%	2.16%	11.32%	
Fallon	*	*	*	*	0.00%	-4.12%	-7.89%	-3.85%	4.87%	-3.30%	
El Centro	*	*	*	*	0.00%	2.91%	-2.47%	2.93%	-3.12%	-1.87%	
China Lake	*	*	*	*	0.00%	-2.01%	0.64%	12.16%	-8.09%	-3.93%	
Seal Beach / Fallbrook	*	*	*	*	8.66%	5.63%	-6.69%	-0.08%	-6.50%	11.00%	
Ventura	*	*	*	*	3.88%	2.84%	0.03%	2.26%	-7.36%	2.36%	
Navy Southeast	*	*	*	*	3.34%	5.31%	3.47%	-3.67%	0.00%	3.29%	1.96%
Key West	*	*	*	*	-5.35%	6.32%	6.08%	-5.78%	-2.58%	1.88%	
Mayport	*	*	*	*	5.90%	3.08%	3.43%	-0.50%	0.49%	5.26%	
King's Bay	*	*	*	*	7.70%	7.69%	0.17%	-4.05%	-3.96%	0.79%	
Jacksonville	*	*	*	*	5.66%	3.40%	3.44%	-0.29%	0.37%	5.38%	
Charleston	*	*	*	*	9.66%	5.77%	8.93%	-2.85%	5.85%	-0.24%	
Pensacola	*	*	*	*	6.96%	1.98%	-0.98%	-4.27%	-0.41%	6.11%	
Whiting Field	*	*	*	*	7.25%	3.69%	-0.81%	-4.15%	-0.13%	7.05%	

TABLE 1

Weighted average BAH changes between 2004 (or bond issuance date if later than 2004) and 2013 for bases with housing projects financed by Moody's-rated bonds.

Base	2004 Increase	2005 Increase	2006 Increase	2007 Increase	2008 Increase	2009 Increase	2010 Increase	2011 Increase	2012 Increase	2013 Increase	Average Since 2004 (or bond issuance date if later)
Gulfport	*	*	*	*	0.93%	9.40%	1.40%	-6.88%	-2.16%	2.40%	
Meridian	*	*	*	*	4.33%	5.85%	6.96%	-3.09%	7.46%	4.15%	
Panama City	*	*	*	*	9.74%	6.07%	-4.59%	-4.85%	4.24%	2.42%	
Fort Worth	*	*	*	*	1.47%	4.54%	2.77%	-2.34%	3.18%	8.85%	
Single-Site Projects											
Elmendorf Air Force Base I	*	*	10.67%	9.41%	-1.33%	11.04%	-4.11%	3.13%	4.68%	5.97%	4.93%
Elmendorf Air Force Base II	*	*	9.78%	16.98%	-4.44%	9.69%	-3.31%	1.59%	4.41%	7.01%	5.21%
Elmendorf Air Force Base III	*	*	*	*	*	*	*	2.70%	3.95%	5.45%	4.04%
Fort Belvoir	*	*	14.62%	2.18%	2.67%	5.15%	0.81%	-0.85%	10.72%	4.24%	4.94%
Fort Benning	*	*	1.49%	-3.12%	9.74%	2.45%	5.00%	6.23%	-1.51%	6.81%	3.39%
Fort Bragg	*	*	*	*	6.92%	12.41%	4.05%	-7.67%	5.34%	0.17%	3.54%
Fort Carson	0.44%	9.82%	7.50%	-0.78%	-0.42%	9.29%	3.55%	3.56%	5.95%	5.84%	4.48%
Fort Gordon	*	*	3.81%	-5.75%	9.64%	12.09%	4.76%	3.51%	-1.75%	1.44%	3.47%
Fort Hamilton	0.00%	2.13%	-0.57%	-1.70%	24.09%	14.23%	2.53%	0.63%	-1.56%	14.84%	5.46%
Fort Leonard Wood	*	11.76%	5.81%	5.81%	0.67%	3.29%	0.08%	3.87%	5.95%	1.45%	4.30%
Fort Stewart and Hunter Army Airfield	*	*	*	*	15.49%	10.51%	4.81%	-6.17%	6.33%	2.21%	5.53%
Hampton Roads (unaccompanied)	*	*	*	*	7.11%	-3.61%	9.25%	-0.81%	-1.36%	5.25%	2.64%
Hill Air Force Base (Boyer Hill)	*	7.69%	4.27%	0.14%	15.13%	11.85%	-3.44%	2.15%	1.92%	4.71%	4.94%
Offutt Air Force Base	*	11.12%	3.32%	2.09%	3.47%	6.91%	0.08%	0.23%	-1.16%	6.79%	3.65%

* Weighted Average BAH calculated using projected end-state unit count and BAH data provided by the Department of Defense (http://perdiem.hqda.pentagon.mil/). Some projects have adjusted their end state scope since this data was last published by Moody's. As a result, the weighted average BAH data in this chart may differ slightly from previously reported data.

**Results for Atlantic Marine Corps restated to reflect the merger of Tri-Command Military Housing with Atlantic Marine Corps Communities, LLC

TABLE 2

Bond Ratings on Moody's Rated Military Housing Deals as of January 31, 2013

Military Base	Issuer	Bond	Underlying Rating Rating & Outlook	Bond Insurer	Surety Bond Provider	Developer
Multi-Site Projects						
Army Hawaii	Army Hawaii Family Housing, LLC	Military Housing Revenue Obligations, Class I, Class II, Class III (2005)	A1 NEG / Baa1 STA / Baa3 STA	National	Surety from National	Actus Lend Lease
Atlantic Marine Corps *	Atlantic Marine Corps Communities, LLC	Military Housing Revenue Bonds, Class I, Class II, Class III, Class IV (Series 2005, 2006, 2007)	A1 / A2 / A2 / Baa1 Stable	National	Surety from National	Actus Lend Lease
Fort Irwin	Fort Irwin Land, LLC	Military Housing Revenue Bonds, Series 2005 A Class I, Class II, Class III	A1 NEG / Baa1 STA / Baa3 STA	(None)	Surety from AIG	Clark
Navy MidAtlantic	MidAtlantic Military Family Communities	Military Housing Revenue Bonds, Series 2005 Class I, Class III	Aa3 / A3 Stable	National	Surety from National	Lincoln
Navy Midwest	Midwest Family Housing	Military Taxable Revenue Bonds 2006 Series A Class I, Class II, Class III, Class IV	Baa2 / Ba2 / B2 / B2 Stable	CIFG	Surety from CIFG	Forest City
Navy Northeast	GMH Military Housing - Navy Northeast LLC	Taxable Military Housing Revenue Refunding Bonds, Series 2007 A-1,Series 2007 A-2, Series 2007 B	Ba1 STA / B1 NEG	AMBAC	Surety from AMBAC	Balfour Beatty
Navy Northwest	Pacific Northwest Communities, LLC	Taxable Military Housing Revenue Bonds, Series 2005A and 2005B	Aa3 / A3 Stable	National	Cash	Forest City
Navy Ohana	Ohana Military Communities, LLC	Military Housing Revenue Bonds, Class I, Class II, Class III (Series 2004, 2006, 2007)	A2 / Baa3 / Baa3 Negative	National, CIFG	Surety from National & CIFG	Forest City
Navy San Diego	San Diego Family Housing, LLC	Military Housing Revenue Bonds, Series 2007 Class I, Class II, Class III	Aa2 / A1 / A3 Stable	National	Surety from National	Lincoln
Navy Southeast	Southest Housing, LLC	Taxable Military Housing Revenue Bonds, Series 2007 Class I	Ba1 / NEG	National	Surety from National	Balfour Beatty

TABLE 2

Bond Ratings on Moody's Rated Military Housing Deals as of January 31, 2013

Military Base	Issuer	Bond	Underlying Rating Rating & Outlook	Bond Insurer	Surety Bond Provider	Developer
Single Site Projects						
Elmendorf Air Force Base / JBER	Aurora Military Housing, LLC	Taxable Military Housing Revenue Bonds, Series 2005A	Aa3 Stable	Assured	Surety novated to Assured from CIFG	Hunt, JL Properties
	Aurora Military Housing II, LLC	Taxable Military Housing Revenue Bonds Series 2005A Class I, Class II	A1 / A2 Stable	Assured	Surety novated to Assured from CIFG	Hunt, JL Properties
	Aurora Military Housing III, LLC	Military Housing Revenue Bonds, Series 2011A	A2 / Stable	(None)	Cash	Hunt, JL Properties
Fort Belvoir	Belvoir Land, LLC	Military Housing Revenue Bonds, Series 2005 A Class I, Class II, Class III	A1 / A3 / Baa3 Stable	(None)	Surety from AIG	Clark
Fort Benning	Fort Benning Family Communities, LLC	Military Housing Taxable Revenue Bonds, 2006 Series A Class I, Class II, Class III	A2 / Baa2 / Baa3 Stable	(None)	Surety from AIG / Cash	Clark
Fort Bragg	Fort Bragg Housing, LLC	Fort Bragg Project Certificates, Series 2003 and 2007A	Baa3 Stable	AMBAC	Surety from AMBAC	Picerne
Fort Carson	Fort Carson Family Housing, LLC	Fort Carson Family Housing Housing Revenue Bonds, Series 1999	A1 Stable	National	Surety from National	Balfour Beatty
Fort Gordon	Fort Gordon Housing, LLC	Fort Gordon Housing LLC Taxable Military Revenue Bonds, Series 2006 Class I, Class II	Baa1 / Baa2 Stable	AMBAC	Surety from AMBAC	Balfour Beatty
Fort Hamilton	New York City Housing Development Corporation	Military Housing Revenue Class I Notes, 2004 Series A and Class II Notes, 2004 Series A	A3 / Baa3 Stable	(None)	LOC provided by ANZ Bank	Balfour Beatty
Fort Leonard Wood	Leonard Wood Family Communities, LLC	Military Housing Revenue Bonds, Series 2005, Class I, Class II, Class III	Baa1 / Baa3 / Baa3 Stable	National	Cash invested in GIC with MBIA	Balfour Beatty

TABLE 2

Bond Ratings on Moody's Rated Military Housing Deals as of January 31, 2013

Military Base	Issuer	Bond	Underlying Rating Rating & Outlook	Bond Insurer	Surety Bond Provider	Developer
Fort Stewart and Hunter Army Airfield	Stewart Hunter Housing, LLC	Military Housing Privatization Project Housing Revenue Bonds, Series 2003 and Series 2008 A	Baa3 Stable	AMBAC	Surety from AMBAC	Balfour Beatty
Hampton Roads	Hampton Roads PPV, LLC	Military Housing Taxable Revenue Bonds, 2007 Series A Class I, Class II, Class III	Ba1 / B1/ B1 Stable	AMBAC	Surety from AMBAC	Hunt, American Campus Communities
Hill Air Force Base (Boyer Hill)	Utah Housing Corporation	Military Housing Taxable Revenue Bonds, 2005 Series A Class I, Class II	A2 / A3 Stable	CIFG	Surety from CIFG	Boyer
Offutt Air Force Base	Offutt AFB America First Communities, LLC	Taxable Housing Revenue Bonds - First Mortgage Lien Bonds, Series 2005A and Series 2005B	Ba3 / B1 Stable	Syncora	Surety from Syncora	Forest City

* Atlantic Marine Corps Communities, LLC merged with Tri-Command Military Housing in 2007. As a result of the merger, Atlantic Marine Corps Communities assumed the obligations of Tri-Command Military Housing Taxable Military Housing Revenue Bonds

TABLE 3

Bond Ratings on Bond Insurers and Surety Providers for Moody's Rated Military Housing Deals as of January 31, 2013

Insurer	Rating	Outlook	As of Date
American International Group, Inc.	Baa1	Stable	1/12/2011
AMBAC Assurance Corporation		Withdrawn	4/7/2011
Assured Guarantee Municipal Corp.	A2	Stable	1/17/2013
CIFG Assurance North America, Inc.		Withdrawn	11/12/2009
MBIA Insurance Corporation	Caa2	Developing	11/19/2012
National Public Finance Guarantee Corp (formerly MBIA Insurance Corporation)	Baa2	Negative	12/19/2011
XL Capital Assurance Inc.		Withdrawn	11/8/2012

Please see the accompanying Excel Data Supplement on moodys.com.

Report Number: 149685

Author
Dmitriy Plit

Associate Analyst
Rishi R. Singh

Senior Production Associate
Judy Torre

© 2013 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

For Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail clients. It would be dangerous for retail clients to make any investment decision based on MOODY'S credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT

Credit Trends: Privatized Student Housing Financings Demonstrate Credit Stability

Table of Contents:

SUMMARY	1
OVERVIEW OF PRIVATIZED STUDENT HOUSING PROJECT RATINGS	2
STRONG MARKET POSITION BECAUSE OF COMPETITIVE ADVANTAGES	4
RENTAL RATE GROWTH CONTINUES TO BE POSITIVE	5
FINANCIAL PERFORMANCE IS RESILIENT	6
STRONG MANAGEMENT CONTRIBUTES TO SUCCESS	8
APPENDIX A	9
APPENDIX B	11
MOODY'S RELATED RESEARCH	19

Analyst Contacts:

NEW YORK 1.212.553.1653

Thomas Song 1.212.553.7159
Analyst
thomas.song@moodys.com

Kyle Kane 1.212.553.1686
Associate Analyst
kyle.kane@moodys.com

Florence Zeman 1.212.553.4836
Associate Managing Director
florence.zeman@moodys.com

Naomi Richman 1.212.553.0014
Managing Director - Public Finance
naomi.richman@moodys.com

Summary

Privatized student housing project bonds demonstrate stable performance as debt service and occupancy rates remain solid for most Moody's-rated financings. The overall credit quality of the portfolio has been resilient to the downturn in the real estate market and the mixed credit trends in the higher education sector[1], with the majority of projects reporting healthy financial performance. New bond issuance has also seen a resurgence years, with ten new ratings assigned in 2010 and 2011, and we expect continued interest in the bond-financed student housing model in 2012.

The following credit factors continue to be the core strengths for most financings:

» **Strong market position** because of competitive advantages such as location, floor plan, amenities, and integration with the university's existing housing stock.

» **Rental rate growth**, although at a slower rate than in prior years. Debt service coverage has returned to 2008 levels bolstered by rental rate growth.

» **Resilient financial performance** due to high student demand for housing units.

» **Strong management** that guided projects through the economic downturn.

[1] Please see U.S. Higher Education Outlook Mixed in 2012, January 2012 (139177)

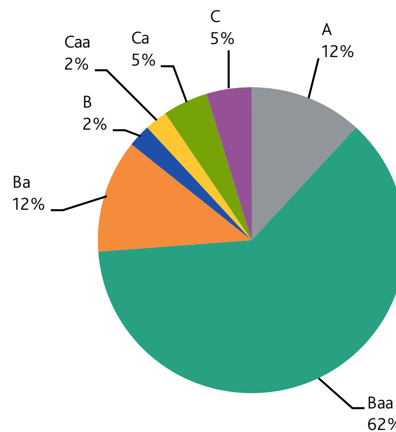
Overview of Privatized Student Housing Project Ratings

We maintain 43 public ratings for 37 privatized student housing financings with $2.3 billion in bonds outstanding. More than 85% of the debt was issued for projects affiliated with public universities, which seek to benefit from quicker execution of project construction under the privatized financing model. Having a project available sooner could be important in maintaining and strengthening the university's overall competitive position, especially as public universities seek more out-of-state student revenue to replace lost state funding. This approach could allow the university to avoid investing its own funds in housing management and maintenance. Over the long term, however, the interests of the private company and the university may diverge, if they do not agree on pricing strategy or the level of capital investment in the project.

The ratings reflect the typical attributes of these projects: 100% debt financing, single asset collateral, projected debt service coverage of 1.20x, construction risk, annual lease-up risk, and competition from other student housing projects. The strong affiliation buoys the credit quality to the investment grade category. As Figure 1 illustrates, more than half of the underlying ratings are in the Baa category with a median rating of Baa3.

FIGURE 1

Ratings Distribution Concentrated in Baa Category



Volume of new privatized housing project financings was strong in 2010 and 2011. After virtually no new bond issuance in the 2009 year, there was a lot of pent up demand for these projects. The bond-financed model saw a resurgence, with 5 new bond ratings assigned in 2010 and 5 new ratings assigned in 2011. Privatized student housing was also financed under the equity-based model where developers use their own equity and/or corporate debt to finance projects. We expect this trend to continue given the interest in updating student housing.

FIGURE 2

New Bond Issuance is Back

2011 Rating Action	Count
Downgrades	2
Upgrades	5
New	5
Affirmations	31
Outlook Changes	13
Positive	7
Negative	6
Withdrawals	2

Over the past five years, there have been three debt service defaults in this sector. These were due to unique situations of these financings and do not reflect weaknesses in the privatized student housing sector as a whole.[2] In each case the recovery to bondholders is not known at this time as the projects securing the bonds have not yet been foreclosed or sold.

Privatized Student Housing and Debt Capacity[3]

Privatized student housing projects always affect an affiliated university's credit position because student housing is a strategic core business of most U.S. universities—an integral part of a university's student market position, financial management, and capital strategy. The ultimate credit impact of a privatized financing on a university will vary depending on the project specifics, including the project's strategic importance and the university's involvement with the project. It is important to note that the credit impact on a university may not be static, but could vary over the life of the project. Our rating approach applies to all university affiliated privatized projects, including newer structures being used to finance these projects, such as equity-based models, subordinate debt, and pooled trust structures.

In assessing the credit impact of a privatized student housing project, Moody's takes into account the project's structure, strategic ties of the affiliated university, the university's role in the project (i.e. setting rent, marketing the project to students, managing the facility), and certain legal considerations. In the Special Comment, "Privatized Student Housing and Debt Capacity in US Universities," Moody's has outlined the most important factors it considers when assessing the credit impact of a privatized student housing project on an affiliated university. The presence of one or more factors that fall into the "strong" category creates greater credit impact on the university.

It is important to note that the credit impact on a university may not be static, but could vary over the life of the project. When a privatized student housing project is meeting its occupancy and performance targets, the credit impact on the affiliated institution is modest and can even be neutral depending on the consistency of operations. However, many privatized projects are vulnerable to volatile performance. When a project is not performing as planned, it will often force the university to consider taking various actions to stabilize what is usually considered a strategic asset with an impact on student market position. These decisions could well result in the university choosing to commit financial, management, or operational resources that would have otherwise been allocated to other programs, even in the absence of any legal requirement to do so.

2 Please see Appendix A for more information.

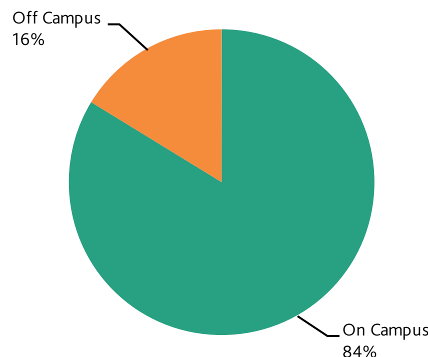
3 Please see the Special Comment, Privatized Student Housing and Debt Capacity of US Universities

Strong Market Position Because of Competitive Advantages

Privatized housing projects have a competitive advantage over non-affiliated student housing projects, off-campus housing, and some of the universities' own housing stock. Typically, the projects are on-campus and close enough to the academic core of a university that shuttle transportation is not needed. Their on-campus status is achieved because the university ground leases its land to the developer. As Figure 3 below shows a large majority of rated bonds are on campus.

FIGURE 3

Majority of Portfolio is On Campus



The projects are built to the tastes of the students with suites, or semi-suite floor plans where one or two students share one bathroom. This has a major advantage over the traditional dorm-style housing with gang bathrooms and one room floor plans that are used for doubles and triples. These properties are the newest, and often come with high end amenities. Even projects that have aged are popular among students because of such features.

The success of these projects are typically important to the sponsoring university, who sometimes manages the project, subordinates expenses, and/or markets the project as their own. The legal documents might also have provisions for non-compete clauses and additional bonds tests. The universities may be willing to withhold transcripts if students do not pay their rent, and often have a seamless integration with the universities' existing housing stock.

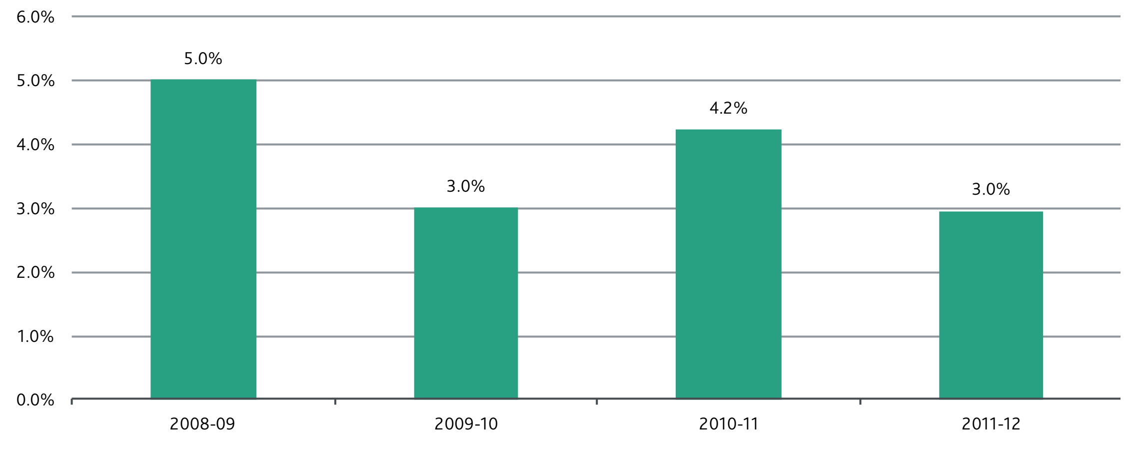
Projects that were replacement housing where there was already demonstrated demand by use of triples and outside space to accommodate their students was one of the trends for new issuance in 2010 and 2011. As the university's housing stock continues to age and become outdated, we expect to see more of these financings. Another trend for new projects has been to see the university leasing space in the property. Whether it be a dining hall or new live-and-learn space, the university as a tenant to the project only tightens the affiliation with the university.

Rental Rate Growth Continues to be Positive

Despite the weak real estate market and challenges in the higher education sector, rental rate growth continued to be robust for privatized student housing bonds. Rental rate growth from 2011-2012 was lower than in prior years, but in line with overall university increases.[4] Figure 4 demonstrates steady increases in rental rates even throughout the weak economy.

FIGURE 4

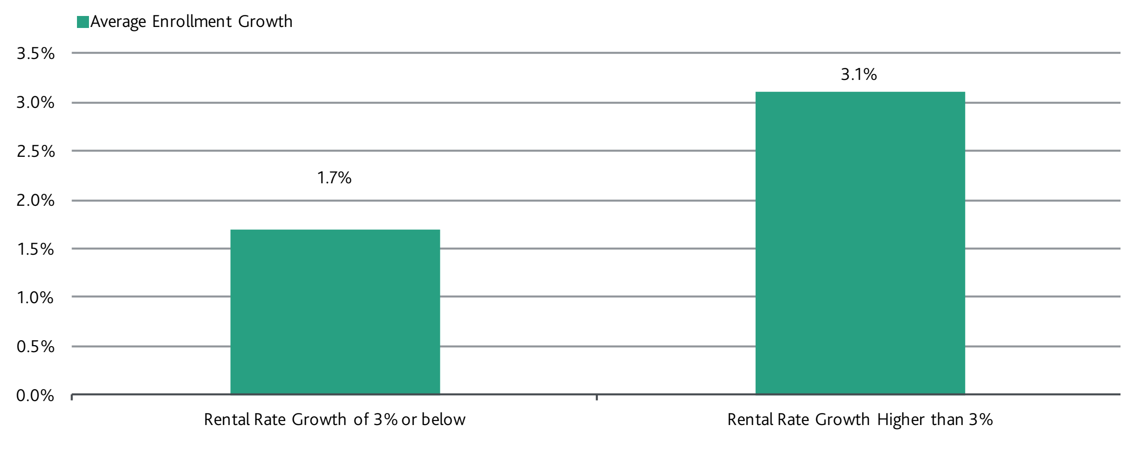
Steady Rental Rate Growth 2011 - 2012



For this sector, rental rate trends are closely tied with the enrollment trends of the sponsoring university. As Figure 5 illustrates, projects with a 3% or lower rental rate growth for the 2011-2012 school year were affiliated with universities that had on average enrollment growth of 1.7%, while projects with rental rate growth above 3% were affiliated with university with average enrollment growth of 3.1%. We expect rental rates to remain steady in the near term reflecting the stable demand for higher education that is illustrated by level first time freshman enrollment .[5]

FIGURE 5

Rental Rate Growth Tied to Enrollment Growth at University



[4] See, "More U.S. Universities Expect Tuition Revenue Declines; Larger, Diversified Universities Favored in Tough Higher Education Market "

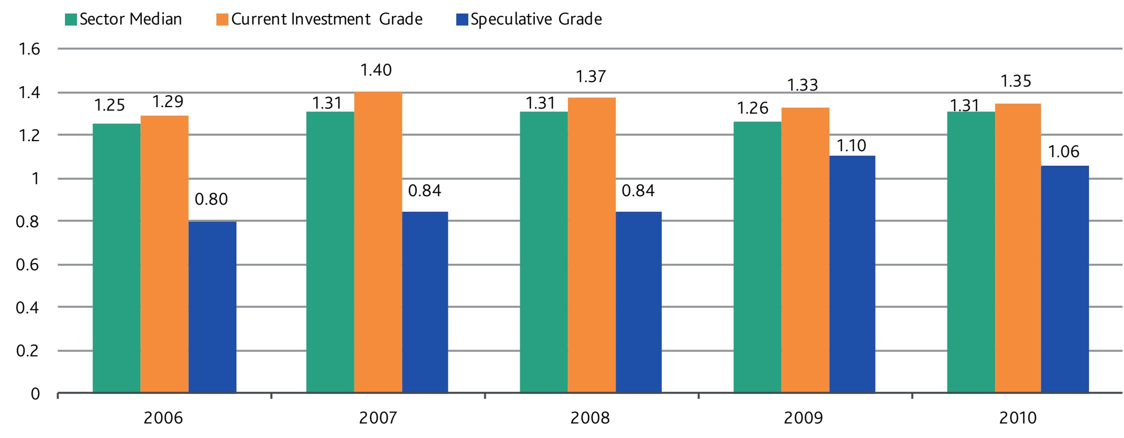
[5] See, "More U.S. Universities Expect Tuition Revenue Declines; Larger, Diversified Universities Favored in Tough Higher Education Market "

Financial Performance Is Resilient

For the majority of projects, financial performance improved during the fiscal year ending in 2010. A key measure of financial performance is debt service coverage; the median debt service coverage for this sector returned to 2008 levels at 1.31x. Median debt service coverage increased for speculative grade credits as some projects recovered from difficult times. In the past, some projects experienced a dip in financial performance when enrollment trends changed, typically due to a higher admissions standards. This diminished the incoming class and resulted in lower occupancy rates. To improve occupancy, the projects had to offer concessions and in effect lower rental rates. Enrollment trends at the sponsoring university have now returned to a level before the admissions standards were changed, and has resulted in higher student demand for the projects, steady increases in rental rates, and increases in debt service coverage.

FIGURE 6

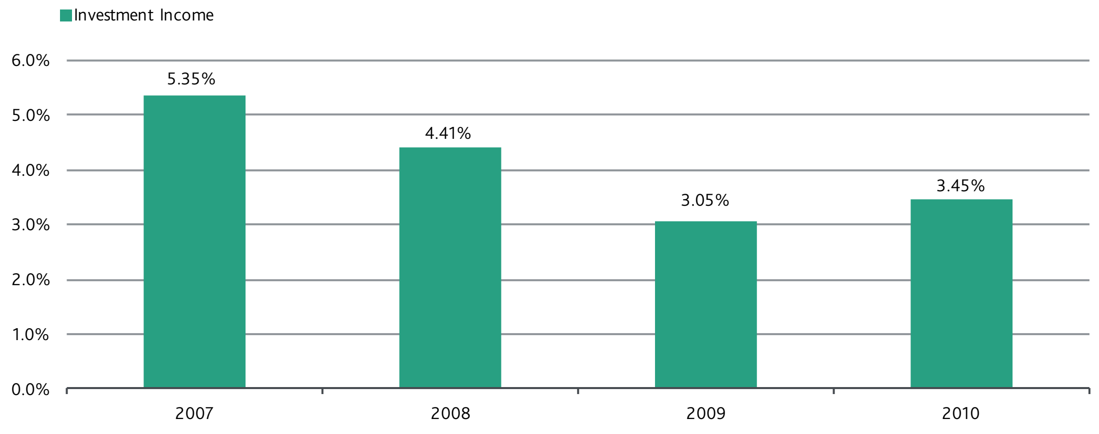
Median Debt Service Coverage Back at 2008 Levels



The dip in 2009 can be attributed partly to lower investment income and partly to expense growth outpacing revenue growth for that period. See Figure 7 to see how investment income dropped off considerably as interest rates fell during the financial crisis. Investment income is important because these projects hold debt service reserve funds at maximum annual debt service. In addition, earnings from the repair and replacement fund and the bond fund dropped off considerably for FY 2009.

FIGURE 7

Declines in Investment Earnings as Interest Rates Drop

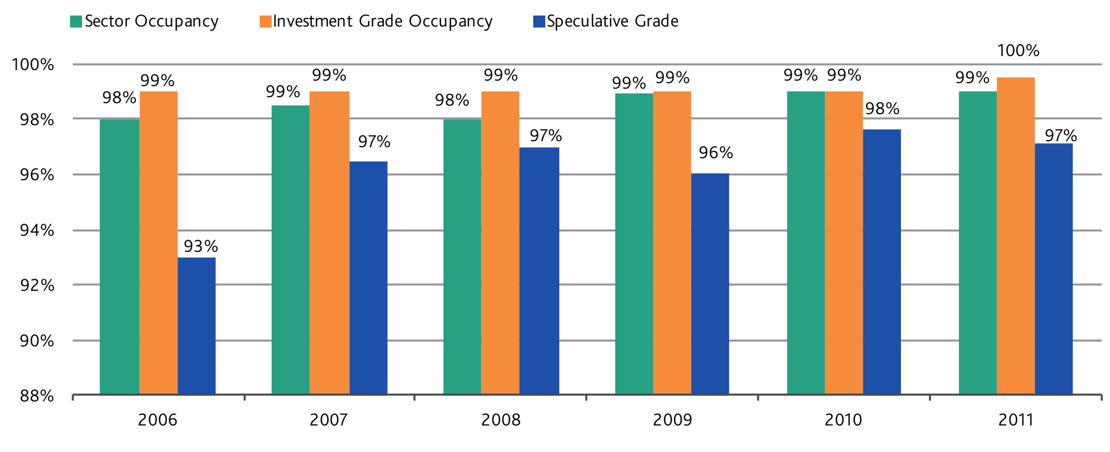


Strong financial performance is also demonstrated through high occupancy rate throughout the portfolio, a sign of strong student demand. It is not uncommon to see physical occupancy rates[6] of 99% or 100%. Enrollment growth has been a key driver in student demand, and the projects are expected to be at full capacity in future years.

One caveat is that some speculative grade bonds have occupancies that are at 100%, but are not performing well because they have offered concessions and lowered their rents to attract tenants. The low rents limit the revenue and the financial position of the financing.

FIGURE 8

High Occupancy Rates For Most of the Portfolio



[6] Physical occupancy does not account for the number of non-revenue producing beds set aside for residential life staff.

Strong Management Contributes to Success

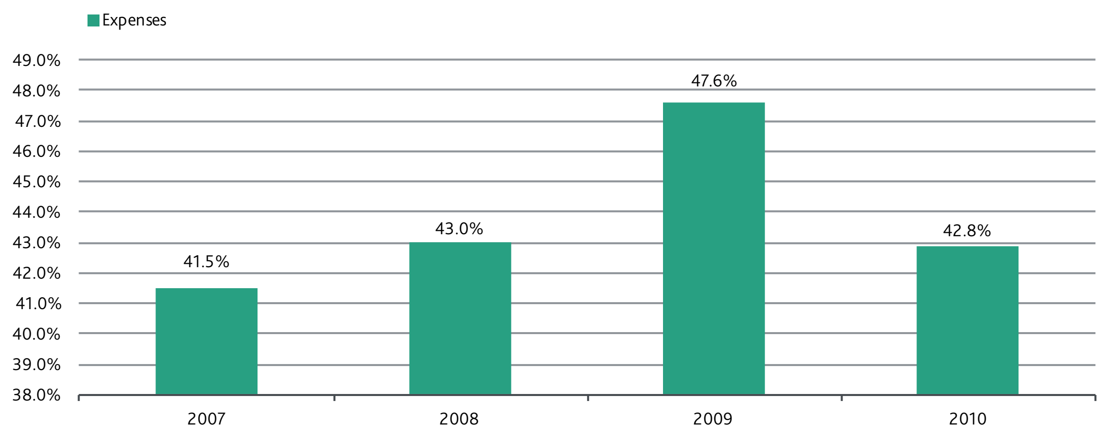
Property management is an important driver of a project's financial performance and occupancy rates. This is because a distinct feature of student housing projects is annual lease up risk, due to a 100% tenant turnover rate every year when the academic year of the university ends. Projects that are unable to achieve high occupancy rates at the beginning of the academic year are unlikely to substantially increase occupancy until the following year. Experienced property managers have been effective in marketing their units successfully despite the short lease-up period, by coordinating with the university in marketing and early leasing efforts.

Historically, universities have been high-performing property managers. Sixteen of the projects in our portfolio, or 43%, are managed by the affiliated university or university system. These projects have median debt service coverage of 1.36x for fiscal year ending in 2010 and median occupancy rate off 99% for Fall 2011. However, it is not necessary for the projects to be managed by the affiliated university to achieve strong performance. For privately managed projects, the 2010 median debt service coverage was 1.32x. Median Fall 2011 occupancy was 99%.

Strong management has contributed to the success of student housing by keeping expenses under control. As Figure 9 illustrates, average expenses has remained stable with a spike in 2009 due to an increase in utility and insurance costs.

FIGURE 9

Expenses Over Total Revenue Well Controlled



New bond issuances this year have had structures where the university is the manager or shares management responsibilities with the private developer. It is expected that similar structures will continue to arise where university involvement for tax-exempt bond financings, the university will have the lead role in managing the property, especially in areas where there is existing university management for the university's housing stock.

Appendix A

Defaults in Privatized Student Housing Sector

1. Jefferson Commons at the Ballpark, TX

Senior Series 2001A rated Ca, Junior Series 2001B rated C (Senior Series also insured by MBIA Corporation and reinsured by National Public Finance Guarantee Corporation rated Baa2).

The Series 2001 bonds are secured by and were issued to purchase a newly built 282 unit/768 bed student housing rental property located in Austin, Texas. The senior bonds were insured through a policy provided by National Public Finance Guaranty (formerly MBIA Corp.). The property houses mostly freshman and sophomore students who attend the University of Texas at Austin, but is otherwise legally and financially unaffiliated with the University. The project's occupancy rate was 97% at the time of purchase, but this fell to 79% in 2003 as a result of a softening of the submarket in Austin. This softening led to rent decreases and concessions in order to stay competitive with new student housing offerings and conventional rental properties in the submarket. With revenues and cash levels now substantially lower than at the time of underwriting, the junior debt service reserve fund was tapped on July 1, 2005 to make payments for the Junior Series. The project continued to utilize reserve funds to pay Junior Series debt service until the junior reserves were depleted, and on January 1, 2007, the project defaulted on the interest payment due. The project began tapping reserves to pay for the Senior Series debt service on January 1, 2007; the senior reserve was depleted by the time of the January 1, 2009 debt payment, and at this point deficiencies in Senior Series debt service began to be covered by the bond insurance policy. As of September 2011, payments to senior bondholders continue to be made from a combination of project revenues and claims on the senior bonds insurance policy.

Since the initial default on the uninsured Junior Series in 2007, no further Junior debt service payments have been made and the trustee has set an expectation that bondholders will not receive payments for the foreseeable future. While the bond insurance provider continues to make advances for enable full payment of principal and interest on the Senior Series, it is unclear whether the property will file for bankruptcy or taken over by the insurance company in the near future.

2. Fullerton Village at DePaul University, IL

Senior Series 2004A rated Ca, Subordinate Series 2004B rated C

Fullerton Village at DePaul University defaulted on their 2004 A and B bonds when the project failed to make interest payments on December 1, 2008.

This student housing development suffered low occupancy levels attributable at least in part to the project architecture. The design--loft-style apartments with concrete floors and high ceilings--was unconventional for student housing, and apparently created very noisy living quarters. The senior property manager was replaced with an affiliate of the project developer (who is the sole bondholder of the unrated Series 2004 C debt) but low occupancy levels persisted. As a result of the drop in occupancy from 87% in Spring 2007 to 52% in Fall 2007, the project tapped debt service reserve funds on both the Senior and Subordinate bonds to make debt service payments on June 1, 2008. On October 24, 2008, the trustee issued a notice to bondholders stating that debt service reserve funds would not be used to make debt service until such time as revenues would be adequate to replenish any draws. This decision was overturned by the majority of bondholders, who were subsequently paid out of the debt service reserve fund, drawing it down to below required levels. The debt service reserve

funds were subsequently fully depleted such that the project defaulted on December 1, 2008 on both the A and B Series. At current occupancy levels, the project is able to cover operating costs but is not able to make full debt service payments or replenish the debt service fund.

As of June 1, 2011, the Senior Series 2004A and the Subordinate Series 2004B Bonds remain in default. Project revenues, which include rental income from student residents as well as the retail spaces, have not been sufficient to meet debt service payments. Pro forma budget projects that debt service coverage will be 0.76 times for the Senior Bonds and 0.61 times for the Subordinate Bonds for the fiscal year ending in 2010.

3. Pegasus Landing & Pegasus Pointe at University of Central Florida (now Knight's Circle and The Pointe at Central, respectively), FL

Senior Series 2000F-1 rated Caa3 (also insured by MBIA Corporation and reinsured by National Public Finance Guarantee Corporation.

The bonds are limited obligations of Capital Projects Finance Authority, secured solely by rental revenue from two privatized student housing projects--Pegasus Landing and Pegasus Pointe --and various funds pledged under the indenture. The Subordinate Series 2000G were not rated or insured, while the senior bonds are insured by MBIA Corporation and reinsured by National Public Finance Guarantee Corporation.

The occupancy rate for Pegasus dropped to 66% in 2010 when the University of Central Florida began diverting students away from the projects because of water damage and mold discovered in the buildings. Given reduced rental revenue with tenant relocation, the project began tapping the debt service reserves to help pay debt service for both series beginning in October 2010. Reserves were depleted by October 2011, and a monetary default occurred on the Senior bonds though bond insurance covered the debt service payments.

However, unlike other distressed housing projects with weak submarkets, these projects still have a potentially strong occupancy potential with the proximity of the University. Accordingly, MBIA in the spring of 2011 committed to lend the projects approximately $21 mm to cure the mold and water damage problem and restore the buildings to student tenancy. The projects have also undergone a name change to Knight's Crossing and The Pointe at Pegasus, as noted above. MBIA continues to cover the debt service on the Senior bond while the remediation effort is completed.

Appendix B

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Arizona															
1	Arizona Capital Facilities Financing Corporation Student Housing Revenue Bonds Series 2000	Arizona Capital Facilities Financing Corporation	$11,010,000	No	Baa3 / Stable	Baa3 / Stable	Adelphi Commons	332	University	1.03	94%	$9,675,000	Arizona State University - Tempe	Aa3 / Stable	50,397	3.6%
	California															
2	California Statewide Community Development Authority Student Housing Revenue Bonds Series 2002 A[7]	East Campus Apartments, LLC	$102,300,000	No	Baa1 / Stable	Baa1 / Stable	East Campus Apts. at UC Irvine	1,488	American Campus Communities	1.34	98%	$99,245,000	University of California - Irvine	Aa1 / Stable	26,994	-1.0%
3	California Statewide Community Development Authority Student Housing Revenue Bonds Series 2004A Student Housing Revenue Bonds Series 2006 Student Housing Revenue Bonds Series 2008 Student Housing Revenue Refunding Bonds Series 2011	CHF - Irvine, L.L.C.	$220,915,000	No	Baa3 / Positive	Baa2 / Stable	East Campus Apts. at UC Irvine	3,322	American Campus Communities	1.56	97%	$332,070,000	University of California - Irvine	Aa1 / Stable	26,994	-1.0%
	Florida															
4	Capital Projects Finance Authority Student Housing Revenue Bonds, Senior Series 2000F-1	CAPFA Capital Corp. 2000F	$150,740,000	National (MBIA)	Baa2 / Stable	Caa3 / Stable	Knight's Circle (Pegasus Landing) and the Pointe at Central (Pegasus Pointe)	3,756	Asset Campus Housing, Inc.	0.00	87%	$134,185,000	University of Central Florida	A1 / Stable	56,337	5.2%

[7] As of January 2012, these bonds were refunded and defeased pursuant to the California Statewide Community Development Authority, Student Housing Revenue Refunding Bonds, Series 2011

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Georgia															
5	Georgia Private Colleges and Universities Authority Student Housing Revenue Bonds, Series 1999A	Mercer Housing Corporation	$17,815,000	No	Baa3 / Stable	Baa3 / Stable	Various Projects on Macon & Atlanta Campuses	479	University	1.89	94%	$14,555,000	Mercer University	Baa2 / Stable	7,492	2.1%
6	Georgia Private Colleges and Universities Authority Student Housing Revenue Bonds, Series 2001A	Mercer Housing Corporation	$18,500,000	No	Baa3 / Stable	Baa3 / Stable	Various Projects on Macon & Atlanta Campuses	385	University	1.31	97%	$15,915,000	Mercer University	Baa2 / Stable	7,492	2.1%
7	Development Authority of Cobb County University Facilities Revenue Bonds Student Housing Senior Series 2004 A&B	Kennesaw State University Foundation, Inc. and Kennesaw State University Foundation LLC	$57,765,000	National (MBIA)	Aa3 / Stable	A1 / Stable	University Place, KSU Place, University Village, University Manor, and Village Centre at Kennesaw State University	2,131	University	2.47	100%	$52,060,000	Kennesaw State University	A1 / Stable	23,452	5.6%
	Subordinate Series 2004 C		$18,240,000		A3 / Stable	A1 / Stable				1.74	100%	$16,375,000				
	Junior Subordinate Series 2004 D		$34,275,000		Baa2 / Stable	A1 / Stable				1.20	100%	$30,665,000				
8	Development Authority of Cobb County Student Housing Revenue Bonds (KSU Village II Real Estate Foundation, LLC Project) Senior Series 2007A	KSU Village II Real Foundation, LLC	$28,225,000	AMBAC	Baa3 / Stable	Baa2 / Stable	KSU Village II	915	University	2.06	100%	$26,825,000	Kennesaw State University	A1 / Stable	23,452	5.6%
	Subordinate Series 2007B		$8,465,000		Baa3 / Stable	Baa3 / Stable				1.61	100%	$8,015,000				
	Junior Subordinate Series 2007C		$16,630,000		Baa3 / Stable	Baa3 / Stable				1.06	100%	$15,795,000				

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Illinois															
9	Illinois Finance Authority Student Housing Revenue Bonds Student Housing Revenue Bonds Series 2004 A (Senior)	MJH Education Assistance Illinois IV LLC	$58,340,000	No	Baa2 / Stable	Ca / Negative	1237 West (formerly known as Fullerton Village)	580	ICL Management, Inc.	0.76	91%	$57,400,000	DePaul University	A3 / Positive	20,164	4.4%
	Student Housing Revenue Bonds Series 2004 B (Subordinate)		$15,050,000		Baa3 / Stable	C / Negative				0.61	91%	$14,800,000				
10	Illinois Finance Authority Student Housing Revenue Bonds Series 2006 A&B	Education Advancement Fund, Inc.	$162,875,000	No	Baa3 / Stable	Baa3 / Stable	University Center	1,700	U.S. Equities Student Housing	1.41	100%	$150,935,000	DePaul University, Columbia College and Roosevelt University	A3 / Positive	N/A	N/A
11	Illinois Finance Authority Student Housing Revenue Bonds (CHF-Dekalb II L.L.C. Northern Illinois University Project) Series 2011	CHF-DeKalb II, L.L.C.	$132,225,000	No	Baa3 / Stable	Baa3 / Stable	To Be Determined	1,248	University	Construction	Construction	$132,225,000	Northern Illinois University	A2 / RUR	24,850	1.7%
12	Illinois Finance Authority Student Housing Revenue Bonds (CHF-Normal LLC - Illinois State University Project) Series 2011	CHF-Normal, L.L.C.	$59,610,000	No	Baa3 / Stable	Baa3 / Stable	To Be Determined	896	University	Construction	Construction	$59,610,000	Illinois State University	A2 / RUR	20,762	-0.5%
	Louisiana															
13	Louisiana Public Facilities Authority Tax-exempt Revenue Bonds 2007 Series A & B	Black & Gold Facilities, Inc.	$40,500,000	No	Baa3 / Stable	Baa3 / Negative	Black and Gold Facilities Project	796	Ambling Management Company	1.11	~95%	$41,295,000	Grambling State University	NR	5,207	4.3%

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Maryland															
14	Maryland Economic Development Corporation Student Housing Revenue Bonds, Series 1999A	Collegiate Housing Foundation	$18,295,000	No	Baa3 / Stable	Baa3 / Stable	University Park Apartments I	576	Allen & O'Hara	1.81	100%	$15,200,000	Salisbury State University	Aa1 / Stable	8,397	2.4%
15	Maryland Economic Development Corporation Student Housing Revenue Bonds, Series 2003	MEDCO	$16,500,000	No	Baa3 / Stable	Baa3 / Stable	University Park Apartments II	312	Allen & O'Hara	1.36	100%	$14,400,000	Salisbury State University	Aa1 / Stable	8,397	2.4%
16	Maryland Economic Development Corporation Student Housing Revenue Bonds, Series 1999A	Collegiate Housing Foundation	$19,450,000	No	Baa3 / Stable	Baa3 / Stable	Millennium Hall	420	Capstone	1.46	100%	$15,970,000	Towson State University	Aa1 / Stable	21,840	3.1%
17	Maryland Economic Development Corporation Senior Student Housing Revenue Bonds, Series 2002 A	MEDCO	$17,220,000	No	Baa3 / Stable	Ba3 / Positive	Edgewood Commons	406	Capstone	1.22	98%	$15,030,000	Frostburg State University	Aa1 / Stable	4,876	1.8%
18	Maryland Economic Development Corporation Senior Student Housing Revenue Bonds, Series 2002 A	MEDCO	$38,025,000	No	Baa3 / Stable	Baa2 / Stable	Morgan View Apartments	794	American Campus Communities	1.25	99%	$34,400,000	Morgan State University	Aa3 / Negative	7,955	1.9%
19	Maryland Economic Development Corporation Senior Student Housing Revenue Bonds, Series 2003	MEDCO	$21,470,000	No	Baa3 / Stable	Baa2 / Stable	Christa McAuliffe	460	Capstone	1.32	97%	$19,600,000	Bowie State University	Aa1 / Stable	3,712	0.1%
20	Maryland Economic Development Corporation Senior Student Housing Revenue Bonds, Series 2003 A	MEDCO	$34,210,000	No	Baa3 / Positive	B3 / Negative	Fayette Square	337	Capstone	0.9	99%	$31,800,000	University of Maryland - Baltimore	Aa1 / Stable	6,107	0.5%

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
21	Maryland Economic Development Corporation Student Housing Refunding Revenue Bonds, Series 2006 Student Housing Revenue Bonds, Series 2008	MEDCO	$169,145,000	CIFG	Baa2 / Stable	Baa2 / Stable	The Courtyard & South Campus Commons I & II, South Campus Commons III Building 7	2,897	Capstone	1.4	100%	$162,600,000	University of Maryland - College Park	Aa1 / Stable	26,922	3.3%
	New Jersey															
22	Middlesex County Improvement Authority, NJ Revenue Bonds, 2004 Series A (Senior Bonds)	Student Housing Urban Renewal, LLC	$49,915,000	No	Baa1 / Stable	Baa1 / Stable	George Street Student Housing Project (Rockoff Hall)	671	New Brunswick Development Corporation	1.25	98%	$44,935,000	Rutgers University	Aa2 / Stable	28,904	4.7%
23	New Jersey Economic Development Authority Revenue Bonds (Provident Group-Montclair Properties LLC - Montclair University State University) Series 2010A	Provident Group - Montclair Properties LLC	$211,390,000	No	Baa3 / Stable	Baa3 / Stable	The Heights	1978	Capstone	Construction	100%	$211,390,000	Montclair State University	A1 / Stable	18,402	1.3%
	New York															
24	Monroe County Industrial Development Agency Student Housing Revenue Bonds, Series 1999A	Collegiate Housing Foundation	$14,290,000	No	Baa3 / Stable	Baa3 / Stable	University Commons II at R.I.T.	416	University	1.33	96%	$11,415,000	Rochester Institute of Technology	A1 /Stable	14,224	3.1%
25	Town of Amherst Development Corporation Tax-Exempt Student Housing Facility Revenue Bonds (UBF Faculty Student Housing Corp.) Series 2010A	UBF Faculty Student Housing Corp.	$82,865,000	Assured Guaranty	A3 / Stable	A3 / Stable	Greiner Hall and Hadley Hall	1,220	University	1.52	99%	$82,865,000	University at Buffalo	Aa2 / Stable	28,881	2.4%
26	Canton Capital Resource Corporation Tax Exempt Student Housing Facility Revenue Bonds (Grasse River LLC at SUNY Canton Project), Series 2010A	Grasse River LLC	$26,935,000	Assured Guaranty	Baa3 / Stable	A2 / Stable	Grasse River LLC at SUNY Canton	305	University	Construction	100%	$26,935,000	SUNY Canton	Aa2 / Stable	3,661*	10.3%*

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Pennsylvania															
27	Pennsylvania Higher Educational Facilities Authority Student Housing Revenue Bonds, Series 2000A	Student Association, Inc.	$15,970,000	No	Baa3 / Stable	Baa3 / Stable	Vulcan Village at CalPenn (formerly known as Jefferson)	432	Allen & O'Hara	1.32	100%	$14,670,000	California University of Pennsylvania	Aa2 / Negative	8,242	0.2%
28	Pennsylvania Higher Educational Facilities Authority Student Housing Revenue Bonds, Series 2008 Student Housing Revenue Bonds, Series 2010	Edinboro University Foundation	$116,945,000	No	Baa3 / Stable	Baa3 / Stable	The Highlands at Edinboro University	1652	University	1.66	97%	$116,945,000	Edinboro University of Pennsylvania	Aa2 / Negative	8,283	-4.5%
29	Pennsylvania Higher Educational Facilities Authority Student Housing Revenue Bonds Series of 2010 (University Properties, Inc. Student Housing Project)	University Properties, Inc.	$73,695,000	No	Baa3 / Stable	Baa3 / Stable	Hemlock Suites and Hawthorn Suites	968	University	Construction	Construction	$73,695,000	East Stroudsburg University of Pennsylvania	Aa2 / Negative	6,719	0.0%
30	Pennsylvania Higher Educational Facilities Authority Refunding Revenue Bonds Series A of 2006 (University Properties, Inc. Student Housing Project)	University Properties, Inc.	$28,200,000	No	Baa3 / Stable	Baa3 / Stable	University Ridge	541	Capstone	1.41	100%	$28,200,000	East Stroudsburg University of Pennsylvania	Aa2 / Negative	6,719	0.0%
31	Pennsylvania Higher Educational Facilities Authority Revenue Bonds (Shippensburg University Student Services, Inc), Series 2011	Shippensburg University Student Services, Inc.	$69,760,000	No	Baa3 / Stable	Baa3 / Stable	To Be Determined	924	University	Construction	Construction	$69,760,000	Shippensburg at University of Pennsylvania	Aa2 / Negative	8,326	0.9%

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Texas															
32	American Campus Properties Student Housing Financing LTD Taxable Insured Bonds Series 1999 (Phase I-III)	American Campus Properties Student Housing Financing LTD	$34,000,000	National (MBIA)	Baa3 / Stable	Ba1 / Positive	University Village Apartments, Phases I-III	1,920	American Campus Communities	1.28	97%	$29,059,000	Texas A&M University System - Prairie View	Not Rated	8,781	2.0%
33	American Campus Properties Student Housing Financing LTD Taxable Insured Bonds Series 2001 & 2003 (Phase IV and V)	American Campus Properties Student Housing Financing LTD	$25,290,000	National (MBIA)	Baa2 / Stable	Ba1 / Positive	University College Apartments, Phases IV-V	1,470	American Campus Communities	1.55	100%	$20,320,000	Texas A&M University System - Prairie View	Not Rated	8,781	2.0%
34	Texas Student Housing Authority Student Housing Revenue Bonds, Senior Series 2001A	Texas Student Housing Authority	$35,000,000	National (MBIA)	Baa3 / Stable	Ca / Stable	Jefferson Commons at the Ballpark	768	JPI Partners	0.73	n/a	$29,510,000	Unaffiliated	N/A	N/A	N/A
	Student Housing Revenue Bonds, Junior Series 2001 B			No	Baa3 / Stable	C / Stable				0.68	n/a	$2,365,000				
	Virginia															
35	Richmond Industrial Development Authority Student Housing Revenue Bonds Series 2000	Virginia Commonwealth University Real Estate Foundation	$16,065,000	No	A3 / Stable	A3 / Stable	Edmund F. Ackell Residence Center	396	University	1.61	99%	$13,600,000	Virginia Commonwealth University	Aa2 / Stable	28,650	0.2%
	Wisconsin															
36	Brown County Housing Authority Green Bay Housing Authority Housing Revenue Bonds Series 2001A&B Student Housing Refunding Revenue Bonds, Series 2005A Student Housing Revenue Bonds, Series 2009	University Village Housing, Inc.	$32,640,000	No	A3 / Stable	A3 / Stable	Ed Thompson Hall	366	University	2.05	99%	$21,850,000	University of Wisconsin - Green Bay	Not Rated	4,751	1.4%

Privatized Student Housing Ratings at a Glance

	Bond Information						Property Information						University Information			
	Bond Issue	Obligor	Bond Amount Issued	Bond Insured	Initial Rating / Outlook	Current Rating / Outlook	Project Name	Number of Beds	Property Manager	Debt Service Coverage (FY2010)	Physical Occupancy (Fall 2011)	Bonds Outstanding (FY2010)	University	University Rating / Outlook	FTE Enrollment (Fall 2010)	Enrollment Growth (2009 - 2010)
	Wyoming															
37	Wyoming Community Development Authority Student Housing Revenue Bonds (CHF-Wyoming, L.L.C. - University of Wyoming Project) Series 2011	CHF-Wyoming, L.L.C.	$15,300,000	No	Baa3 / Stable	Baa3 / Stable	Bison Run Village	332	University	Construction	Construction	$15,300,000	University of Wyoming	Aa2 / Stable	10,662	3.1%

*Unduplicated headcount

Moody's Related Research

Special Comments:

» More U.S. Universities Expect Tuition Revenue Declines; Larger, Diversified Universities Favored in Tough Higher Education Market, January 2012 (138401)

» Privatized Student Housing and Debt Capacity of US Universities, March 2010 (123896)

Industry Outlook:

» U.S. Higher Education Outlook Mixed in 2012, January 2012 (139177)

Rating Methodology:

» Global Housing Projects, July 2010 (125767)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Report Number: 139170

Author
Thomas Song

Production Specialist
Wendy Kroeker

© 2012 Moody's Investors Service, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. ("MIS") AND ITS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND CREDIT RATINGS AND RESEARCH PUBLICATIONS PUBLISHED BY MOODY'S ("MOODY'S PUBLICATIONS") MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL, FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. Each user of the information contained herein must make its own study and evaluation of each security it may consider purchasing, holding or selling.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

MIS, a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MIS have, prior to assignment of any rating, agreed to pay to MIS for appraisal and rating services rendered by it fees ranging from $1,500 to approximately $2,500,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Shareholder Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Any publication into Australia of this document is by MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657, which holds Australian Financial Services License no. 336969. This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001.

Notwithstanding the foregoing, credit ratings assigned on and after October 1, 2010 by Moody's Japan K.K. ("MJKK") are MJKK's current opinions of the relative future credit risk of entities, credit commitments, or debt or debt-like securities. In such a case, "MIS" in the foregoing statements shall be deemed to be replaced with "MJKK". MJKK is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO.

This credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors. It would be dangerous for retail investors to make any investment decision based on this credit rating. If in doubt you should contact your financial or other professional adviser.

MOODY'S
INVESTORS SERVICE

Glossary & Index

Glossary of Housing Terms

- **501(c)(3):** A non-profit and tax exempt organization organized under Section 501(c)(3) of the Federal Tax Code.
- **Absorption Rate:** The rate that rental units are leased up and occupied.
- **Accrued Interest:** Interest that has been earned or owed but not yet paid.
- **Acquisition Fund:** The fund created by a bond program into which bond proceeds are deposited until the funds are used to purchase or fund single family or multifamily mortgage loans.
- **Adjustable Rate Mortgage (ARM):** Mortgage loan with an adjustable interest rate. Frequency of adjustment as well as maximum periodic and overall increases in rate vary.
- **Affordable Housing:** Housing that is typically affordable to low and/or moderate income households. While different programs use various definitions of what is affordable, rent levels typically must be affordable to households with income ranging from 50% to 80% of area median income.
- **Amortization:** The process of paying off debt or loan with scheduled periodic payments of principal.
- **Amortization Schedule:** Any form of debt in which the principal balance is repaid gradually over the term of the loan. In the case of an amortizing swap, interest exchanges are made on a progressively smaller notional principal amount.
- **Appraisal Report:** A third party independent report determining a property's value. This report should include the information, such as economic and real estate market characteristics, and rationale for the establishment of the property's value.
- **Arbitrage:** The difference between interest paid on the bonds issued and the interest earned by investing the proceeds in other securities such as investments or mortgages.
- **Arbitrage Rebate:** Excess investment earnings which must be rebated to the U.S. Treasury Department.
- **Arrears:** Payments which are due at the end of an accrual period. (For example, a mortgage payment that is paid in arrears is paid at the end of the month or the first day of the following month.) Arrears can also be used to define a payment that is late or overdue.
- **Assisted Living:** A residential setting for seniors which include some level of service delivery, e.g. meal preparation, transportation, and personal care.
- **Assignment:** The transfer of rights from one party to the other.
- **Balance Sheet:** The financial statement of a business or institution that lists the assets, liabilities, and net assets as of a specific date.
- **Balloon Payment:** The final payment of a loan which is disproportionately larger than the previous payment and will pay off the loan in full.
- **Bank Bonds:** Unremarketed bonds that have been purchased and held by the liquidity provider. Bank bonds typically bear higher interest rates and must be repaid over a short period of time

» **Bankruptcy:** The inability to fully repay one's debts. The debtor or creditor files a petition with a court to work out, reduce, or erase the debts.

» **Basic Allowance for Housing (BAH):** Housing stipends provided to military service member households living in non-government-owned quarters

» **Bond Cap:** Tax-exempt bond issuance is federally limited by a private activity bond cap in issuance for housing, industrial development projects and student loans.

» **Capitalization Rate (Cap Rate):** The rate used to derive the value of an income stream from an investment property.

» **Cash Flow Analysis:** An analysis to determine whether the assets consisting of pledged funds and mortgage loans or MBSs will generate sufficient income to pay all of the principal and interest on the bonds and all expenses on a timely basis.

» **Closed Loop Flow of Funds:** A legal prohibition on an issuer to withdraw trustee-held excess moneys from the lien of an indenture. Any excess funds must be used to redeem bonds or, in some cases, purchase new loans.

» **Comparables:** Properties, particularly as cited in an appraisal report, which are deemed to be significantly similar to the subject property.

» **Condominium:** Form of joint ownership, typically in the form of a deed to an individual unit as well as joint ownership of common areas of a multifamily property .

» **Conforming Loan:** Conforming mortgages that meet the specifications regarding maximum loan size, loan to value ratios, and borrower credit profiles set by the Government-Sponsored Enterprises (GSEs) of Fannie Mae and Freddie Mac.

» **Continuing Care Retirement Community (CCRC):** A residential setting for seniors which offers a continuum of distinct housing options including independent living, assisted living, and skilled nursing care.

» **Conventional Loan:** A single family mortgage loan not insured by any government program, such as FHA, VA, or RHS.

» **Convertible Option Bonds:** Debt that is typically subject to mandatory tender by the issuer on specific dates. The bonds are usually priced with short-term (12 to 18 months) investment horizons. The short-term rating on the bonds reflects the ability of the issuer to be repaid principal and interest from the investment provider in order to pay bond debt service and the tender price of the bonds.

» **Cooperative (Coop):** Form of ownership where the cooperative/corporation owns the entire property and the stockholder/tenants are entitled to the use of certain units.

» **Counterparty:** The principal to a swap or other derivative product, contractually responsible for swap provisions.

» **Credit Enhancement:** Additional security to a mortgage or bond transaction. The presence of credit enhancement reduces the risk and the interest rate to the bondholder. The provider of credit enhancement can be a bond insurer insuring payment upon default; a commercial bank offering a letter of credit; or an agency like GNMA, Fannie Mae, or Freddie MAC which guarantee the timely payment of principal and interest on the mortgage loans.

» **Debt Service Coverage:** The ratio of the net operating income divided by the annual debt service.

» **Delinquency Rate:** The number or dollar volume of loans with delinquent payments divided by the number or dollar amount of loans in a portfolio.

» **Depreciation:** The period cost assigned for the reduction in usefulness and value of a long-term tangible asset.

» **Developer:** A person or entity who turns land into improved property or property developed for use.

» **Down Payment Assistance:** Funds provided to the mortgagor by the issuer or a third party which can be used to pay for a portion of the borrower's down payment and/or closing costs on the home.

» **Economic Life:** The remaining period in which a property is expected to generate more revenue than expenses.

» **Engineer's Report:** A report for a multifamily property that identifies normal expenditure projections for typical maintenance issues and also includes a capital expenditures projection budget indicating items that will need replacement over the course of the bond financing estimating the time frame when the work will be needed.

» **Environmental Report:** Phase I assessment of a multifamily project site to determine whether a site may have been contaminated by hazardous waste.

» **Failed Remarketing:** An event in which the bondholder exercises its tender option and the Remarketing Agent or Tender Agent is unable to remarket the variable rate bonds to new investors on the tender date.

» **Fannie Mae:** The Federal National Mortgage Association (FNMA). Fannie Mae is a private company and government-sponsored entity which purchases, sells and otherwise deals in mortgages in the secondary market.

» **Fair Market Rent (FMR):** The rent level for a specific area determined by the Department of Housing and Urban Development (HUD) to be a fair and adequate amount. This rent level is used as a basis for various programs, particularly Section 8.

» **Federal Housing Administration (FHA):** Federal insurance entity administered through the U.S. Department of Housing and Urban Development to insure mortgage loans secured by single family properties, multi-family properties, and healthcare facilities.

» **Foreclosure:** Legal procedure for the sale and disposition of real estate in order to pay off the debt associated with a mortgage loan default.

- **Freddie Mac:** The Federal Home Loan Mortgage Corporation (FHLMC). Freddie Mac is a Government Sponsored Enterprise (GSE) that purchases mortgages from originators such as thrifts, commercial banks and mortgage banks.
- **General Obligation (GO) Pledge:** A full faith and credit pledge of an issuing entity.
- **Ginnie Mae:** The Government National Mortgage Association (GNMA). Ginnie Mae, a part of HUD, assists in housing finance by guaranteeing payments to investors.
- **Graduated Equity Mortgage (GEM):** Type of alternative mortgage with scheduled payment changes. Amount and timing of increases determined at onset. Increased payments are allocated to principal amortization.
- **Graduated Payment Mortgage (GPM):** A type of mortgage where the payments increase for a specified period of time.
- **Guaranteed Investment Contract (GIC):** An investment product sold by financial institutions that guarantees a fixed rate of return for a specific length of time. A GIC Provider is the financial institution that sells the investment.
- **Hazard Insurance:** A form of insurance that protects against financial loss from risks such as fires and storms.
- **Hedge:** A position taken to offset risk associated with another position. Hedge positions often involve a risk management instrument such as a swap or futures contract.
- **Housing Assistance Payment (HAP) Contract:** The contract between the Department of Housing and Urban Development and the owner of a Section 8 subsidized property which provides for monthly subsidy payments.
- **Housing Finance Agency (HFA):** A public entity established by state and local governments to finance affordable housing. Their primary activity has traditionally been the financing of single family mortgages for first-time homebuyers through the issuance of tax-exempt bonds, but also offer a wide range of affordable housing programs to families of low or moderate incomes, including both single family and multifamily products. They are generally self supporting, primarily paying bond debt service and expenses from revenue generated by the loans they finance.
- **HUD:** The United States Department of Housing and Urban Development. A United States government agency which implements federal housing and community development programs.
- **Income Approach:** A method of appraising real estate which is calculated based on the future income of the property.
- **Income Statement:** A business financial statement that lists revenues, expenses, and net income through a given period.
- **Indenture:** A legal agreement between the bond trustee and the issuer which specifies how the bond proceeds will be used and how revenue will be used to repay the bonds (also Trust Indenture).

- **Independent Senior Living:** Adult communities with generally healthy senior residents who are not in need of medical assistance or help with activities of daily living.
- **Instrumental Activities of Daily Living (IADLs):** Activities that measure one's capacity to perform home management chores. These include meal preparation, shopping, money management, housework, and using the telephone.
- **Interest Rate Swap:** An agreement between two parties to engage in a series of interest payments on specified notional principal amounts, such as fixed-for-floating payments.
- **IREM:** The Institute of Real Estate Management.
- **Jumbo Mortgage:** A mortgage larger than the Fannie Mae and Freddie Mac purchase limits.
- **Letter of Credit (LOC):** A form of credit enhancement whereby a bank agrees to make payments on behalf of a borrower.
- **Liquidity Facility:** Provides a source of funds for meeting purchase price payments upon an optional or mandatory tender in the case of a failed remarketing, generally provided by a standby bond purchase agreement (SBPA) or line of credit.
- **Loan Portfolio:** Loans that have been made or bought and are being held for repayment. Loan portfolios are the major asset of banks, Housing Finance Agencies, and other lending institutions.
- **Loan to Value Ratio (LTV):** The ratio of the amount of the loan to the sale price of the real estate.
- **Low Income Housing Tax Credits (LIHTC):** A federal tax credit provided to investors in order to raise equity to invest in newly constructed or substantially rehabilitated affordable multi-family housing.
- **Marginal Tax Rate:** The legislated tax rate applied to the taxpayer's last dollar of adjusted earnings.
- **Mark-to-Market:** To record a change in the value of an asset or fund to reflect its current fair market value. Marking to market occurs on a daily basis and is used for a number of purposes. Notably, investors mark to market portfolios, securities and derivatives such as a swap agreements to ensure that a margin account is meeting its minimum maintenance.
- **Market Area:** The geographic and economic region in which the property is located.
- **Market Demand Study:** Report generated by an independent third party which provides general information about the supply and demand in the market as well as rents for specific comparable properties.
- **Medicaid:** A state and federally funded program that covers medical care for the indigent.
- **Medicaid Waiver:** An exception to general Medicaid rules that allows for certain services, not otherwise eligible, to be reimbursed under Medicaid, e.g. personal services in assisted living facilities.
- **Mortgage Backed Securities (MBS):** Securities backed by mortgages. A third party may guarantee the revenue stream from the principal and interest payments on the underlying mortgages.

- **Mortgagee:** The lender in a mortgage loan transaction.
- **Mortgagor:** The borrower in a mortgage loan transaction.
- **Negative Arbitrage:** The negative cashflow created from an earnings discrepancy between an asset and a liability. This includes the negative cashflow which may occur prior to loan origination, as bond proceeds temporarily invested in an asset, such as an investment agreement or Treasury, may earn at a lower rate than the liability, such as the issued bonds.
- **Net Assets:** Difference between assets and liabilities for all funds and programs of an HFA.
- **Net Operating Income (NOI):** Income available to pay mortgage debt service. This is calculated as revenue less operating expenses and replacement reserves and generally applies to housing project financings.
- **New Issue Bond Program (NIBP):** Part of a 2009 US Department of Treasury initiative to help low and moderate income persons to purchase or rent homes at affordable prices. The program allows state and local housing finance agencies (HFAs) to issue bonds at below market rates in order to increase their origination of single family and multifamily loans.
- **Non-Asset Bonds:** The portion of the bond issue which is equal to the difference between the amount of assets pledged to the indenture and the principal amount of bonds outstanding.
- **Notional Principal Amount:** The amount of principal on which the interest is calculated on a swap or other instrument. In the case of interest rate swaps, the principal is purely notional in that no exchange of principal occurs.
- **Open Loop Flow of Funds:** The legal ability of an issuer to withdraw excess funds from a bond program free and clear of the lien of the indenture. An asset test or cash flow test is usually required for a withdrawal to occur.
- **Operating and Maintenance Expenses:** The ordinary expenses of operating and maintaining a multifamily property including taxes, insurance, repairs, and utilities.
- **Operating Profitability Ratio:** Net operating revenues relative to total operating revenues.
- **Overcollateralization:** Assets in excess of a program's liabilities.
- **PADR:** Program Asset/Debt Ratio measures the relationship between assets and liabilities. It is calculated by adding net mortgage loans receivable, cash, investments and mortgage and investment interest receivables divided by bond outstanding plus accrued interest.
- **Point:** An amount equal to one percent of the principal amount of a mortgage. Generally, points are charged at the closing of a mortgage loan.
- **Pool Insurance:** A policy which covers losses in a mortgage loan portfolio upon loan default which are not covered by the resale of the property and private mortgage insurance.
- **Premium:** The amount by which the price paid for a security exceeds the principal value.

- **Prepayment:** Any payment or recovery of principal on a mortgage loan other than a scheduled payment of principal.
- **Private Mortgage Insurance (PMI):** Insurance written by a private company which protects against financial loss upon a borrower default on a mortgage.
- **Public Housing Capital Grants:** US Government appropriations given to public housing authorities (PHAs) to provide financial support for capital upkeep and modernization of the PHAs housing stock.
- **Pro forma financial statement:** A financial statement which uses estimates to project a property's income and expenses over a period of time.
- **Put:** An option that grants its holder the right to sell the underlying asset at a specified price, in the case of variable rate bonds, the option of the bondholder to tender their bonds at par.
- **Recycling:** Purchasing of additional loans from proceeds received from mortgage loan prepayments, repayments and excess funds.
- **Real Estate Investment Trust (REIT):** An investment vehicle, much like a mutual fund, whose shareholders invest in commercial real estate, including apartment properties.
- **Real Estate Owned (REO):** Property that has been foreclosed upon but not yet resold by the mortgagee.
- **Replacement Reserve Funds:** Funds set aside on a monthly basis to pay for the anticipated replacement of systems and appliances.
- **Return on Equity:** Total net income at the end of the fiscal year divided by total fund balance at the beginning of fiscal year.
- **Rural Housing Services (RHS):** Formerly Farmer's Home Administration. Provides loan guarantees to properties in certain rural areas.
- **Section 8:** The Section 8 program, named for that portion of the U.S. Housing Act, authorizes the Department of Housing and Urban Development (HUD) to pay rental subsidies to owners of qualified housing on behalf of eligible tenants.
- **Skilled Nursing Care:** A high level of medical and personal care typically found in nursing homes.
- **Special Purpose Vehicle (SPV):** Independent, bankruptcy-remote entities often utilized for various transactions including off-balance sheet borrowing.
- **Spread:** Multiple definitions including- the number of basis points added to the designated Treasury yield curve to determine the absolute yield on a LIBOR swap, differential between various indices and the difference between the rate that money is borrowed and the rate that it is either loaned out at or invested at.
- **Surety Bond:** Serves as a substitute for cash funded debt service reserve fund or a mortgage reserve fund or it can be used to cover non-asset bonds. Insurance companies often provide these.

- **Temporary Credit and Liquidity Program (TCLP):** Part of a 2009 US Department of Treasury to assist HFAs by enhancing their ability to continue providing affordable mortgage financing. Under TCLP, Fannie Mae and Freddie Mac (the GSEs) issued liquidity facilities, in the form of Standby Irrevocable Temporary Credit and Liquidity Facilities, for each bond indenture that the HFAs elected to include in the program. The TCLP Facility provides liquidity support for bondholder tenders, and thereby replaces the private sector SBPA for the bonds

- **Tender Option:** The option of the security holder to tender the security for purchase to the Remarketing Agent or Tender Agent in accordance with defined provisions.

- **Termination Clause:** Provisions in a swap agreement that provide for assessment of costs in the event of early swap termination.

- **Vacancy Allowance:** The estimated income that will be lost from rental property units remaining empty for a period of time or from nonpayment of rent.

- **Veteran Administration (VA):** Provides federal loan insurance for U.S. veterans. Guaranty varies by the original principal amount of the loan.

- **Whole Loan Program:** A single family bond program secured by the principal and interest payments generated from a pool of mortgage loans. The loan type is in contrast to those programs secured by one or more types of Mortgage Backed Securities (MBS) guaranteed by Ginnie Mae, Fannie Mae or Freddie Mac.

INDEX (Hyperlinks to Moodys.com)

- Moody's Rating Definitions

Methodologies

- U.S. Housing Finance Agency Single Family Programs
- US Stand-Alone Housing Bond Programs Secured by Credit Enhanced Mortgages
- Global Housing Projects
- Moody's Approach to Analyzing Pools of Multifamily Properties
- Moody's Approach for Assigning Issuer Ratings to Housing Finance Agencies
- Moody's Approach to Evaluating State-Sponsored Mortgage Insurers
- US Public Housing Authority Capital Fund Bonds
- Variable Rate Instruments Supported by Third-Party Liquidity Providers
- Variable Rate Instruments Supported by Third-Party Liquidity Providers Immediate Termination or Suspension Events Section
- Rating Transactions Based on the Credit Substitution Approach: Letter of Credit-backed, Insured and Guaranteed Debts
- Moody's Approach to the Moral Obligation Pledge

Research articles

- Housing 101: US Public Finance Housing Key Credit Features

Single Family

- Housing 101: Single Family Loan Prepayments
- Housing 101: Single Family Program Open Indentures
- Housing 101: PAC Bonds
- Housing 101: HFA Single Family Bonds versus RMBS – Differences Lead to Variation in Performance
- Management and Governance of US State Housing Finance Agencies' Single Family Programs: A Key Driver of Ratings
- State Housing Finance Agency Single Family Programs in Run-off Likely to Maintain Credit Quality
- Secondary Market Funding Strategies Buoy State HFAs' Growth But Add to Their Risks

Housing Bond Programs Secured by Credit Enhanced Mortgages

» Key Downgrade Drivers of Stand-Alone Housing Bonds with Mortgage Enhancements

» Failure to Adhere to Legal Documents May Result in Rating Downgrades for Local Housing Transactions

Housing Finance Agencies

» Housing 101: State Housing Agencies

» State Housing Finance Agency Financial Strength and Management Actions Mitigate Impact of Weaker Counterparties

» Availability of Floating-Rate Debt Structures a Benefit for State Housing Finance Agencies

» Rising Mortgage Fees Are Credit Positive for Housing Finance Agencies

Swaps and Variable Rate Debt

» Bank Liquidity Support and Variable Rate Financings Can Impact Underlying Long-Term Credit Ratings

Housing Projects

» Basic Training on Assessing Base Essentiality for Military Housing Privatization

» Military Housing Fundamentals: The Basic Allowance for Housing (BAH)

» Special Forces: Factors Driving Demand for Military Housing

» Privatized Student Housing and Debt Capacity of US Universities

» Using Low Income Tax Credits In Affordable Housing Deals: Two Sides Of The Story

Moody's
INVESTORS SERVICE

152833

Moody's
INVESTORS SERVICE