

CREDIT OPINION

1 June 2016

New Issue

Rate this Research >>

Contacts

Genevieve Nolan 212-553-3912
 VP-Senior Analyst
 genevieve.nolan@moody's.com

Nicholas Samuels 212-553-7121
 VP-Sr Credit Officer
 nicholas.samuels@moody's.com

Commonwealth of Massachusetts

New Issue – Moody's assigns Aa1 to Massachusetts' \$500M GO Consolidated Loan Bonds, Ser. 2016D&E; outlook stable

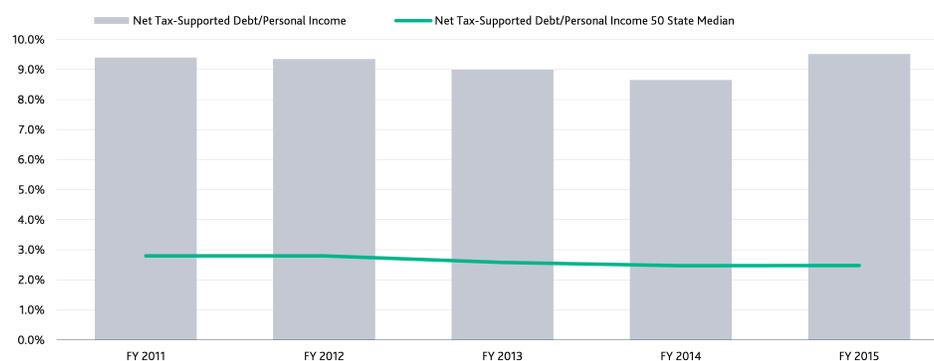
Summary Rating Rationale

Moody's Investors Service has assigned a Aa1 rating to the Commonwealth of Massachusetts's \$50.0 million General Obligation (GO) Bonds, Consolidated Loan Series 2016D and \$450 million GO Bonds, Consolidated Loan Series 2016E. The bonds are expected to price on June 9.

The Aa1 general obligation rating is based on the commonwealth's full faith and credit pledge, reflecting its strong financial management practices and demonstrated willingness to balance its budget through spending cuts, revenue increases and use of reserves. The rating also reflects large education and health care sectors that generate high wages and helps to bolster employment, as well as state debt and pension liabilities that are among the highest in the nation.

Exhibit 1

Massachusetts Debt Burden Continues to Exceed National Median



Source: Moody's Investors Service

Credit Strengths

- » Strong financial management practices, particularly a willingness to promptly identify and close budget gaps through expenditure reductions, revenue increases and overall prudent use of reserves
- » Budget reserves that provide an adequate cushion to another downturn and the commonwealth's commitment to maintain them at healthy levels

- » An economic base characterized by high wealth and high levels of educational attainment that has provided a degree of stability to the commonwealth's employment situation

Credit Challenges

- » State debt ratios that are among the nation's highest and large unfunded pension liabilities based on Moody's adjusted figures
- » Large health care and other social services costs that drive the budget and ongoing spending pressure related to the statewide transportation system
- » Budgetary burden of growing pension contributions as the commonwealth seeks to address its large unfunded pension liabilities

Rating Outlook

The outlook for Massachusetts is stable, reflecting its satisfactory reserve levels and efforts to regain structural budget balance. The outlook also reflects our expectation that the commonwealth will continue to take proactive measures to close budget gaps if they emerge and continue its trend of strong financial management. Going forward, reliance on one-time budget solutions, tighter cash margins, unexpectedly severe economic deterioration, or a large increase in tax-supported debt could pressure the rating at its current level.

Factors that Could Lead to an Upgrade

- » Continued rebuilding of reserves and establishment of stronger constraints on their use
- » Established trend of structural budget balance
- » Reduced debt ratios relative to Moody's 50-state median

Factors that Could Lead to a Downgrade

- » Protracted structural budget imbalance driven by deeper and/or prolonged economic downturn
- » Depletion of Budget Stabilization Fund to inadequate levels
- » Increased leveraging of the commonwealth's resources to pay debt service or further erosion in pension funding ratios
- » Narrowed cash flow that strains the commonwealth's liquidity

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody.com for the most updated credit rating action information and rating history.

Key Indicators

Exhibit 2

Commonwealth of Massachusetts

Massachusetts	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Operating Fund Revenues (000s)	26,665,993	27,886,200	29,133,206	30,863,081	32,603,621
Balances as % of Operating Fund Revenues	10.1%	11.4%	10.1%	8.7%	7.8%
Net Tax-Supported Debt (000s)	31,714,847	33,019,222	33,455,411	36,328,772	37,997,157
Net Tax-Supported Debt/Personal Income	9.4%	9.3%	9.0%	8.7%	9.5%
Net Tax-Supported Debt/Personal Income 50 State Median	2.8%	2.8%	2.6%	2.5%	2.5%
Debt/All Governmental Funds Revenue	71.2%	73.7%	73.3%	76.0%	79.5%
Debt/All Governmental Funds Revenue 50 State Median*	22.7%	24.3%	23.8%	23.0%	20.4%
Adjusted Net Pension Liability/All Govt Funds Revenue	100.4%	139.8%	155.5%	127.7%	N/A
Adjusted Net Pension Liability/All Govt Funds Revenue 50 State Median	48.7%	63.9%	60.3%	59.2%	N/A
Total Non-Farm Employment Change (CY)	1.2%	1.5%	2.6%	1.6%	2.1%
Per Capita Income as a % of US (CY)	128.0%	128.2%	127.3%	127.6%	128.0%

*The 2015 governmental fund median number uses 2014 numbers for states that have not yet released their FY2015 audit

Source: Massachusetts CAFRs FY11-FY15; Moody's Investors Service

Recent Developments

Recent developments are incorporated into the detailed rating considerations below.

Detailed Rating Considerations

Economy

Massachusetts' economy continues to expand and this trend is expected to continue over the near term given continued job growth and its diverse employment base. Employment growth moderated slightly at the close of calendar year 2015, though year-over-year employment growth was still 2.2% in December and in line with the US level for the same period. Labor force participation in the state decreased less than most other states during the recession (except for energy-producing states), and during the current recovery Massachusetts has been among the states with the strongest increases. The unemployment rate in the commonwealth fell to 4.2% in April 2016, below the US average of 5.0% for the same time period.

The commonwealth continues to be aided by its large education and healthcare sectors, which make up more than 20% of employment. The state also has a large financial activities sector, with a significant mutual fund presence. While the important healthcare sector is partly behind Massachusetts's above-average employment and income performance, federal downsizing could impact healthcare as well as government research and have a significant impact in Massachusetts. The state is characterized by high wealth and education levels but with slow population and job growth over the longer run. Per capita personal income as of 2014 was \$58,737. Massachusetts' year-over-year third quarter income growth ranks fourth in the nation, the highest in the northeast region, net of non-wage income such as dividends and interest. The state's population continued to grow by an estimated 3.4% between 2010 and 2014.

Finances and Liquidity

The state's fiscal 2015 audit was released in May following a delay due to allegations of misstatements in the Massachusetts Bay Transit Authority's (MBTA) Retirement Fund financial reports that were later cleared. Audited results reflect a year-end Stabilization Fund balance of \$1.25 billion, equivalent to the year-end balance in fiscal 2014. The GAAP fund balance as a percent of operating revenues is 7.8%.

The fiscal 2016 enacted budget was based on a consensus tax revenue forecast of \$25.6 billion, representing 3.2% growth over fiscal 2015. The budget increased spending by 3% over fiscal 2015 and includes one-time resources of approximately \$600 million, or 1.6% of proposed spending of \$38.1 billion. Spending increases are mainly attributed to Medicaid, K-12 school aid, other local aid and transportation. In January 2016 the state announced a budget shortfall of \$320 million or a modest 0.01% of total budgeted expenditures and other uses. The state revised its tax revenue estimate to \$25.8 billion while the Governor reduced expenditures by

\$49 million and implemented non-tax revenue solutions of \$56 million. After a \$48 million positive variance in January tax revenues, the state estimates the fiscal 2016 budget is in substantial balance.

The fiscal 2017 budget recommendation, which was also filed in January, proposes to increase state spending by 3.5% over the fiscal 2016 budgeted amount. The consensus tax revenue estimate is \$26.9 billion, growing 4.3% over the revised fiscal 2016 estimate, with no proposed draws on the stabilization fund. Instead, the state is proposing to deposit \$200 million to the stabilization fund, with additional deposits possible depending on possible operating surpluses throughout the year. The legislative consensus process is expected to begin shortly, following the Senate's recent approval of its fiscal 2017 budget. Should the reconciliation process continue into the new fiscal year, the state expects to approve an interim budget.

LIQUIDITY

The commonwealth had a healthy Stabilization Fund balance of \$2.1 billion prior to fiscal 2009 that it was able to rely on during the fiscal downturn. The commonwealth was able to partially rebuild the Stabilization Fund in fiscals 2011 and 2012 to \$1.65 billion, but made several withdrawals in the fiscal years since then. In fiscal 2015, the legislature also voted to keep statutory excess capital gains totaling \$331 million in the general fund rather than depositing them into the Stabilization Fund, which ended the year with a balance of \$1.25 billion; fiscal 2016 budgeted figures reflect a similar ending balance, with no planned draw. That amount is still adequate to deal with unforeseen circumstances, but future Stabilization Fund draws would reflect the commonwealth's challenges in getting to structural balance and eliminating the use of one-time resources in the budget.

Debt and Pensions

The commonwealth has a high but well-managed debt burden, with \$21 billion in outstanding general obligation bonds and \$38.0 billion in total net tax-supported debt. Debt levels have been driven upwards in part by the commonwealth's issuance of bonds to finance projects that in other states would be paid for at the local level as Massachusetts does not issue debt at the county level. Based on Moody's 2016 state debt medians report, the state's debt levels ranked second-highest among the 50 states on a per-capita basis and remains the third-highest as a percentage of personal income and as a percentage of state gross domestic product after Hawaii and Connecticut. As of fiscal 2015, the commonwealth's debt per capita was \$5,592, 9.5% of its personal income, and 8.3% of its gross domestic product.

DEBT STRUCTURE

Massachusetts has a total of \$3.8 billion of floating rate debt outstanding, or 11% of its Moody's-calculated net tax supported debt, with \$1.5 billion of this amount unhedged. As of May 24, 2016 this includes: \$636 million of variable rate demand bonds with unremarketed tenders supported by bank liquidity facilities; \$846 billion of SIFMA index bonds (\$388 million of which mature within the next year and require take out or refinancing); \$961 million of floating rate direct loans; \$402 million of auction rate bonds; \$100 million of CPI index bonds; and \$846 million of LIBOR index bonds. Not included is \$289 million of variable rate bonds issued by the [University of Massachusetts Building Authority](#) and the [Massachusetts Bay Transportation Authority](#) that the commonwealth pledges its full faith and credit to pay if necessary.

DEBT-RELATED DERIVATIVES

The commonwealth's variable rate and derivatives portfolio is closely managed, and its liquidity facilities and swap agreements contain provisions favorable to the commonwealth and offset its relatively low available cash balances. Liquidity facilities contain a mix of three- and five-year term-out provisions that, considering the strength of Massachusetts' market access, should provide ample time to refinance if necessary. Swap counterparties are well-diversified and do not reflect collateral posting requirements on the part of the commonwealth, although the mark-to-market value was a sizeable -\$338.1 million as of April 30, 2016, which limits the commonwealth's ability to refinance the transactions those swaps are associated with. In our analysis, the commonwealth's liquidity (reflecting current cash as well as amounts in the stabilization fund) is sufficient to handle unforeseen circumstances related to its variable rate debt and swaps. The commonwealth plans to increase the amount of its unhedged floating rate debt portfolio over the next several years in an effort to better align asset and liability interest rate risks. The commonwealth also plans to implement additional risk management controls and oversight to manage the program as it ramps up.

PENSIONS AND OPEB

Based on the commonwealth's fiscal 2014 pension data, we have calculated that its adjusted net pension liability (ANPL) was \$61.1 billion, or 128% of revenues. The 50-state median ANPL to revenues is 59%, and Massachusetts ranks eight highest in this ratio. Our

adjustments to reported state pension data include the common 20-year amortization period, as well as an assumed 13-year duration of plan liabilities and a market-based discount rate to value the liabilities, rather than the long-term investment return used in reported figures.

Based on the fiscal 2014 actuarial valuation, Massachusetts' unfunded pension liability fell slightly to \$26 billion. Massachusetts law requires that the schedule of pension contributions be updated every three years. With the fiscal 2015 budget, the governor and legislature agreed to shorten the state's pension amortization schedule and increase its pension contributions by 10% annually through fiscal 2017 and by 7% thereafter until the final amortization payment in fiscal 2036. While pension contributions rose to 4.7% of the state's budget in fiscal 2015, the agreement means that by fiscal 2018 Massachusetts will make its full actuarial required pension contribution and will reduce its ANPL. The new plan reverses a negative aspect of a pension reform enacted in 2012 that pushed the pension funding horizon to 2040. That reform also increased the retirement age for most state employees; eliminated early retirement subsidies; increased the period for calculating retirement from an average of three years to five years; and eliminated double-dipping. It also prohibits the commonwealth from making less than the annual payment required by the new schedule if investment returns exceed expectations.

The commonwealth's other post-employment benefits (OPEB) accrued liability, assuming no pre-funding and a discount rate of 4.5%, was approximately \$15.9 billion as of January 1, 2016. The liability falls to \$9.5 billion assuming pre-funding and a discount rate of 7.75%. Massachusetts dedicates future tobacco settlement monies to its OPEB trust fund, phased-in starting in fiscal 2013. The combined ratio of Massachusetts' pension and OPEB actuarially required contributions to revenue is 16%, slightly higher than average for states. Those costs, combined with the state's high bonded debt costs, could limit the commonwealth's fiscal flexibility going forward. The prior pension reform and the increased contributions recently agreed to still result in high fixed costs but will help to reduce Massachusetts' long-term liabilities in the long run.

Governance

The commonwealth's financial best practices are generally very strong. Per statute, the Secretary of Administration and Finance is required to develop a consensus tax revenue forecast for the ensuing fiscal year with the house and senate committees of ways and means by January 15 of each year, before budget recommendations are developed. Subsequently, the secretary certifies the accuracy of the consensus revenue forecast two times per year and prepares new estimates if the estimate starts to diverge materially from actual collections.

The state devises multi-year financial plans. The governor has executive authority to cut expenses without legislative approval resulting from a revenue shortfall. The commonwealth also conducts a debt affordability analysis and reports its audited financial results on a timely basis. Budget enactments have also been timely, and the commonwealth's financial flexibility is strong. There are no constitutional caps on revenue raising or spending increases. The commonwealth is subject to ballot initiatives, though per the state constitution, initiative petitions are subject to repeal or amendment by the legislature and initiative petitions that become statute can be amended like any other state law.

The commonwealth is required to deposit the entire year-end surplus and any tax revenue from excess capital gains into the Stabilization Fund, with 5% of the amount deposited then transferred to the State Retiree Benefits Trust Fund and 5% transferred to the commonwealth's Pension Liability Fund. The deposit of excess capital gains revenues into the Stabilization Fund was suspended for fiscal 2015 and fiscal 2016, but is expected to resume in fiscal 2017. The commonwealth is also required to deposit certain one-time settlements and judgments into the Stabilization Fund.

Legal Security

The bonds are general obligations of the commonwealth, which has pledged its full faith and credit for the payment of principal and interest when due.

Use of Proceeds

Proceeds of the bonds will be used to finance capital expenditures in the commonwealth's fiscal 2017 capital investment plan.

Obligor Profile

The Commonwealth of Massachusetts has a population of 6.7 million people and a gross state product of approximately of more than \$420 billion. The state is economically well diversified and has very high wealth levels.

Methodology

The principal methodology used in this rating was US States Rating Methodology published in April 2013. Please see the Rating Methodologies page on www.moody.com for a copy of this methodology.

Ratings

Exhibit 3

Massachusetts (Commonwealth of)

Issue	Rating
General Obligation Bonds Consolidated Loan of 2016 Series D	Aa1
Rating Type	Underlying LT
Sale Amount	\$50,000,000
Expected Sale Date	06/06/2016
Rating Description	General Obligation
General Obligation Bonds Consolidated Loan of 2016 Series E	Aa1
Rating Type	Underlying LT
Sale Amount	\$450,000,000
Expected Sale Date	06/06/2016
Rating Description	General Obligation

Source: Moody's Investors Service

© 2016 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") 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. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. 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, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. 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 or in preparing the Moody's Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

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.

Moody's Investors Service, Inc., 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 Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. 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.moody's.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms 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 61 003 399 657 AFSL 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 investors. It would be reckless and inappropriate for retail investors to use MOODY'S credit ratings or publications when making an investment decision. If in doubt you should contact your financial or other professional adviser.

Additional terms for Japan only: Moody's Japan K.K. ("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. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for appraisal and rating services rendered by it fees ranging from JPY200,000 to approximately JPY350,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER 1029271

Contacts

Genevieve Nolan
VP-Senior Analyst
genevieve.nolan@moody's.com

212-553-3912

Nicholas Samuels
VP-Sr Credit Officer
nicholas.samuels@moody's.com

212-553-7121

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454