CREDIT OPINION
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New Issue

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Contacts

Genevieve Nolan 212-553-3912
VP-Senior Analyst
genevieve.nolan@moodys.com

Nicholas Samuels 212-553-7121
VP-Sr Credit Officer
nicholas.samuels@moodys.com

Commonwealth of Massachusetts

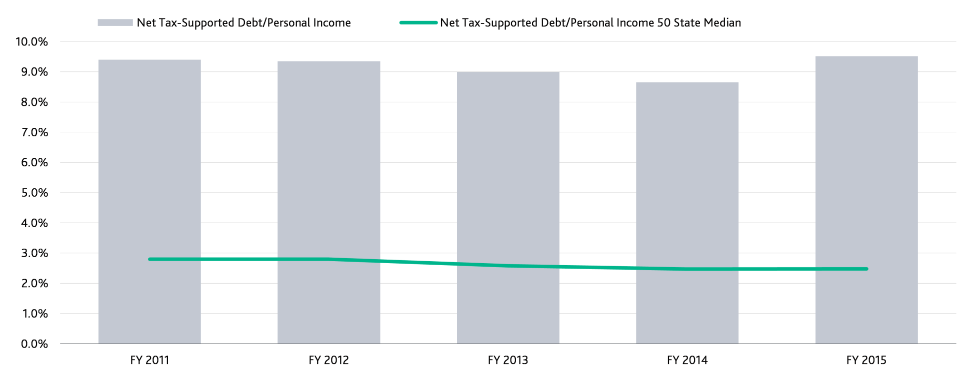
New Issue – Moody's Assigns Aa1 to Massachusetts' $788M GO Bonds 2016 Series H & I and 2017 Series A & B; Outlook stable

Summary Rating Rationale

Moody's Investors Service has assigned Aa1 ratings to the Commonwealth of Massachusetts's $600 million General Obligation (GO) Consolidated Loan of 2016, Series H & I and $188.5 million GO Refunding Bonds (SIFMA Index Bonds), 2017 Series A and B. The 2016 Series H and I bonds are expected to price on November 30, while the GO Refunding Bonds, 2017 Series A and B will price on December.

The ratings are 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 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 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 adjusted net pension liabilities

» Spending pressure stemming from high health care and other social services costs and maintenance of 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

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

Recent Developments

Recent developments are incorporated into the detailed rating considerations below.

Detailed Rating Considerations

Economy: State's economy anchored by healthcare and technology sectors

Massachusetts' economy continues to expand and this trend is expected to continue over the near term given its diverse employment base. Employment growth was 1.96% at the close of fiscal 2016 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 since then Massachusetts has been among the states with the strongest increases. The unemployment rate in the commonwealth fell to 3.6% in September 2016, well below the US rate of 5.0% for the same period.

The commonwealth continues to be aided by its large education and healthcare sectors, which make up more than 20% of employment. Health care is expected to remain a top contributor to the state's economy as research demand remains high at its key institutions. The state also has a large financial activities sector, with a significant mutual fund presence. Its technology sector is surging and will continue to spur growth through the state's economy. 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 2015 was $61,032. The state's population continued to grow by an estimated 3.5% between 2010 and 2015.

Finances and Liquidity: Recent modest budget shortfalls corrected via executive action

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 was 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. Fiscal 2016 total tax revenue was approximately $484 million below revised benchmarks. The Executive Office for Administration and Finance took actions to address tax revenue shortfalls and the commonwealth reported no transfer from reserves.

The fiscal 2017 budget was enacted in July 2016 and increases state spending by 1.3% over estimated fiscal 2016 spending, excluding the Medical Assistance Trust Fund and other certain transfers. The budget assumes tax revenue of $26.2 billion, 3.6% more than the revised fiscal 2016 year-end estimate. Year-to-date collections through September 2016 are 3.9% greater than the same period in fiscal 2016. However, collections are below the budgeted estimate, a modest 0.2% negative variance. The commonwealth suspended the statutorily-required deposit of excess capital gains revenues into the Budget Stabilization Fund in fiscal 2015 and fiscal 2016, though we note some modest deposits were made. Based on market performance, the commonwealth does not project a deposit in fiscal 2017, but it also does not plan a Stabilization Fund draw.

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 figures reflect a similar ending balance, approximately $1.25 billion. 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: Elevated debt burden partly due to borrowing on behalf of other governments

The commonwealth has a high but well-managed debt burden, with $21.9 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 $3.9 billion of floating rate debt outstanding, or 10.3% of its $38 billion Moody's-calculated net tax supported debt, with $1.7 billion of this amount unhedged. Not included is $289 million of variable rate bonds issued by the University of Massachusetts Building Authority and the Massachusetts Bay Transportation Authority (Aa2 stable) 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 -$306.4 million as of September 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 2015 pension data, we have calculated that its adjusted net pension liability (ANPL) was $57.2 billion, or 182.4% of revenues. The 50-state median ANPL to revenues is 84.9%, and Massachusetts ranks eighth highest in this ratio. The commonwealth participates in three pension plans, of which the most significant is the State Teachers Contributory Retirement System. Massachusetts is among the handful of states that take responsibility for directly funding teacher pensions. Moody's ANPL reflects certain adjustments made to improve comparability of reported pension liabilities.

The commonwealth contributes more than the full amount of its actuarially determined contribution, about $1.7 billion in fiscal 2015. The state's contributions were 78.8% of our "tread water" benchmark, which is the payment covering the year's newly accrued service costs and interest on the NPL. 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 ultimately 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 benefits 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 state's combined debt service, pension and OPEB contributions in fiscal 2015 were 19.3% of own-source governmental revenues, among the highest of the states and significantly greater than the 8.5% 50-state median. The high fixed costs are partly attributable to the commonwealth's absorption of certain costs covered by local governments in most other states. High fixed costs reduce the share of discretionary spending and the budgetary flexibility. 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: Strong Financial Best Practices Bolster Credit Profile

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 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 in fiscal 2015 and fiscal 2016, and no deposit of excess capital gains is projected 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. We note, however, that state law limits annual tax revenue growth and does not exempt debt service payments from this limitation. Favorably, actual tax revenue growth is below the limit.

Use of Proceeds

Proceeds of the GO Refunding 2017 Series A and B bonds will be used to currently refund a portion of the commonwealth's 2013 Series A and 2014 Series E SIFMA index bonds for expected net present value savings. The 2016 Series H and I new money bonds will finance capital projects across the Commonwealth.

Obligor Profile

The Commonwealth of Massachusetts has a population of 6.7 million people and a gross state product of approximately $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.moodys.com for a copy of this methodology.

Ratings

Exhibit 3

Massachusetts (Commonwealth of)

Issue	Rating
General Obligation Bonds, Consolidated Loan of 2016, Series I	Aa1
Rating Type	Underlying LT
Sale Amount	$500,000,000
Expected Sale Date	11/30/2016
Rating Description	General Obligation
General Obligation Bonds, Consolidated Loan of 2016, Series H	Aa1
Rating Type	Underlying LT
Sale Amount	$100,000,000
Expected Sale Date	11/30/2016
Rating Description	General Obligation
General Obligation Refunding Bonds (SIFMA Index Bonds), 2017 Series A	Aa1
Rating Type	Underlying LT
Sale Amount	$100,000,000
Expected Sale Date	12/20/2016
Rating Description	General Obligation
General Obligation Refunding Bonds (SIFMA Index Bonds), 2017 Series B	Aa1
Rating Type	Underlying LT
Sale Amount	$88,490,000
Expected Sale Date	12/20/2016
Rating Description	General Obligation

Source: Moody's Investors Service

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Contacts

Nicholas Samuels 212-553-7121
VP-Sr Credit Officer
nicholas.samuels@moodys.com

Genevieve Nolan 212-553-3912
VP-Senior Analyst
genevieve.nolan@moodys.com

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