S&P Global
Ratings

RatingsDirect®

Massachusetts; Appropriations; CP; General Obligation; General Obligation Equivalent Security; Joint Criteria

Primary Credit Analyst:
David G Hitchcock, New York (1) 212-438-2022; david.hitchcock@spglobal.com

Secondary Contact:
Eden P Perry, New York (1) 212-438-0613; eden.perry@spglobal.com

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Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed

Rationale

S&P Global Ratings has assigned its 'AA+' rating and negative outlook to the Commonwealth of Massachusetts' $50 million general obligation (GO) bonds consolidated loan of 2016 series D and $450 million GO bonds consolidated loan of 2016 series E. At the same time, S&P Global Ratings affirmed its 'AA+' rating on the commonwealth's approximately $20.9 billion of parity GO bonds outstanding, its 'AA' rating Massachusetts' appropriation secured debt, and its 'A+' rating on the commonwealth's moral obligation debt. The outlook is negative.

Factors supporting the 'AA+' GO rating include what we view as Massachusetts':

- Strong historical budget performance, with timely monitoring of revenues and expenditures and swift action when needed to make adjustments, with a focus on structural solutions to budget balance;
- Strong financial, debt, and budget management policies, including annualized formal debt affordability statements, and multiyear capital investment and financial planning;
- Adequate budget stabilization fund (BSF) balance;
- High wealth and income levels; and
- Deep and diverse economy, which continues its steady recovery.

We understand that the consolidated loan of 2016 series D and E will fund various capital purposes.

S&P Global Ratings believes the commonwealth's high debt burden and high unfunded pension and other postemployment benefit (OPEB) liabilities are offsetting considerations to the current rating. Although we view Massachusetts' total postretirement liabilities as relatively high, we believe the commonwealth has been actively managing these liabilities with a focus on cost control and reform in recent years.

Massachusetts' economy has recovered steadily, outpacing national and regional trends by most measures. Real state GDP rose 2.1% in 2014, compared with 2.2% for the nation. The commonwealth's average annual unemployment rate in 2015 was 5.0% compared with 5.3% for the nation. The state unemployment rate has fallen further to 4.4% as of

March 2016, compared with 5.0% for the nation. Employment growth following the financial crisis was strong relative to that of other states and the commonwealth regained its pre-recession employment peak in 2013, according to the Bureau of Labor Statistics. However, IHS Global Insight Inc. forecasts slightly lower state employment growth in 2016, 2017, and 2018 at 1.6%, 1.2%, and 0.8%, respectively, in those years, compared with its forecast of 1.8%, 1.5%, and 1.0% for the U.S in those years. In our view, Massachusetts' economic fundamentals and key anchors, which center on higher education, technology, and health care, should contribute to continued expansion. Income growth has also been strong relative to that of other states, with 2015 per capita personal income ranked second in the U.S. behind that of Connecticut, at 128% of the U.S. average.

We believe Massachusetts' budget has generally been structurally balanced in recent years with good reserves, although two rounds of midyear budget adjustments were needed in fiscal 2015, primarily prompted by higher-than-budgeted spending and some revenue shortfalls. The state expects another round of mid-year budget adjustments in fiscal 2016 to end the fiscal year in balance. At this point, Massachusetts does not expect to dip into its BSF in fiscal 2016, assuming the mid-year adjustments.

As of April 2016, state general fund revenues were $261 million short of the revised 2016 budget forecast year-to-date, and the state currently projects that by fiscal year-end 2016 (June 30), total fiscal 2016 general fund revenues will end about $311 million short, or 1.2%, short of the state's revised tax revenue forecast. The state expects to make mid-fiscal 2016 adjustments to fully correct for this modest revenue deficiency, although it is near the end of the fiscal year. The commonwealth represents that it can accomplish most of these as executive actions without the need for legislative approval. Previously, Massachusetts calculated one-time budget items in the 2016 budget at $629 million, or only 1.5% of projected expenditures, indicating in our view near structural balance, despite the projected small draw down in overall reserves. Nevertheless, with expected mid-year corrections, we calculate fiscal end 2016 will end with operating funds balances, including the BSF, at $1.3 billion and only 3.2% of budgeted expenditures and other uses, down from 4.0% at fiscal end 2015, based on state projections.

Massachusetts has attributed fiscal 2016 revenue shortfalls to legislative spending overrides of the governor's budget vetoes, a two-day state sales tax holiday, and lower-than-estimated business and individual income tax revenues because of increased tax refunds and lower than expect payments with returns and estimated payments. It has also indicated that fiscal 2016 general fund expenditures are also slightly exceeding budgeted appropriations, both in Medicaid and non-Medicaid areas, although the commonwealth believes that higher federal cost reimbursements will fully offset the increased Medicaid-related expenditures. The governor has proposed a fiscal 2017 budget that further reduces the use of one-time revenues and makes a modest deposit to Massachusetts' rainy-day fund, although overall reserves would still be less than at fiscal year-end 2015 (for more information, see "Massachusetts Governor's Budget Proposal is Mildly Positive," published Feb. 4, 2016, on RatingsDirect).

At this point, both the state senate and house of representatives have passed separate budget bills. We believe these are largely in line with the governor's overall revenue and expenditure growth recommendations, as well as his proposal to add $206 million to the BSF, based on the state's current capital gains tax forecast and the state's formula for depositing excess capital gains tax into the BSF. In our opinion, based on recent April income tax returns, we believe Massachusetts may lower its capital gains tax projection, which could decrease the budgeted BSF build-up in fiscal 2017. The commonwealth is consulting with the department of revenue and independent economists for advice on whether these collections are the result of trends that will continue into fiscal 2017.

In 2015, the state had budgeted originally a drawdown in its BSF, but with the help of two rounds of mid-fiscal 2015 budget adjustments, the commonwealth produced an operating surplus, of which $124 million was deposited into the BSF. This was slightly more than the originally budgeted BSF drawdown, producing what we view as a nominal $4 million increase in the BSF. Combined operating fund balances at fiscal year-end 2015, including the BSF, were $1.57 billion, or 4.0% of expenditures and other uses. State tax revenues have been at or slightly above budgeted levels in recent years; midyear shortfalls have largely been the result of above-budgeted spending or nontax revenues coming in below budget, in our opinion.

The commonwealth drew down its BSF by $308 million in fiscal 2014 to end with a total operating fund balance of 3.9% of expenditures, on a budgetary basis. The most recent peak of the BSF was in 2012, when it reached $1.65 billion, or 4.9% of operating expenditures, and when total operating reserves, including the BSF, reached 5.9%.

On a generally accepted accounting principles (GAAP) basis, Massachusetts ended fiscal 2015 (the most recent audited year) with an available assigned and unassigned general fund balance of $1.49 billion, plus a BSF balance of $1.25 billion. This led to a combined balance that we view as strong at 7.5% of general fund expenditures and transfers out, down somewhat from 8.3% at fiscal year-end 2015 and 10.1% at fiscal year-end 2014.

By most measures, we believe Massachusetts' debt burden remains high compared with that of other states. At fiscal year-end 2015, we calculate GO debt of $20.8 billion and total tax-supported debt of $34.5 billion, producing total tax-backed debt per capita of $5,084, and 8.3% of personal income. The commonwealth reports it had $20.9 billion of GO debt outstanding as of April 30, 2016. Planned debt issuance remains within the parameters of the commonwealth's debt affordability policy and bond cap. A capital and debt affordability committee includes seven voting and eight nonvoting members from the legislature and is charged with formally reviewing the capital investment plan and providing an estimate of debt authorization for each year to stay within certain debt parameters. Massachusetts' current capital plan calls for $2.19 billion of capital debt issuance in fiscal 2017, similar to the amount in last year's capital plan for fiscal 2016. We calculate fiscal 2015 total tax-backed debt service at 7.7% of general governmental spending, a level we view as moderately high.

Other long-term liabilities are also large, in our opinion. We believe state's share of the combined net pension liability for state employees' and teachers' retirement systems of $30.2 billion as of the most recent Jan. 1, 2015 valuation date, or $4,451 per capita, and 7.3% of personal income, is high. Massachusetts continues to fully fund its actuarial annual determined contribution (ADC) based on its own methodology, which is on a lagged statutory basis; on a GAAP basis, it has not fully funded its ADC since fiscal 2011. A decline in the commonwealth's actuarial pension funded ratio as of the Jan. 1, 2015, actuarial valuation date was in part due to lower actuarial return assumptions and new experience data, which we believe shows conservative management of pension liabilities. In our opinion, Massachusetts' unfunded OPEB is also moderately high, at $15.9 billion as of Jan. 1, 2015, net of $610.0 million of actuarial assets in an OPEB trust fund, or $2,339 per capita. Massachusetts intends to make payments to the OPEB trust fund with 5% of excess capital gains tax distributed to the BSF (although this requirement was suspended in fiscal 2015), and a portion of tobacco settlement money that increases in 10% increments each year. In fiscal 2016, the incremental tobacco money increase to the OPEB trust was suspended and we expect the state to contribute 30% of tobacco settlement money, or approximately $73 million, to the OPEB trust fund, contingent on unexpended debt service appropriations.

The commonwealth estimates that its combined budgetary debt service, pension payments, and OPEB payments will be about 12% of budgeted expenditures in fiscal 2016.

Based on the analytic factors we evaluate for states, on a scale of '1.0' (strongest) to '4.0' (weakest), we have assigned a composite score of '1.9' to Massachusetts.

Although a score of '1.9' is indicative under our criteria of a rating of 'AA', we have notched up the rating to reflect the commonwealth's strong financial management practices, such as timely proactive midyear budget adjustments, and a recent move to more conservative pension investment return assumptions, that while temporarily lowering pension funded ratios, in our opinion position them better.

Outlook

The negative outlook reflects a projected decline in financial reserves in fiscal 2016 from what we view was an adequate level at the end of fiscal 2015, despite a period of economic expansion and generally positive revenue trends, and which follows previous drawdowns in 2013 and 2014. The commonwealth also suspended scheduled transfers of excess capital gains tax revenue to the BSF in fiscal years 2015 and 2016, although the governor has proposed partially resuming such transfer in fiscal 2017. We had viewed the policy of setting aside above-trend capital gains tax during good times as a positive budget management tool that could mitigate potential future budget volatility.

Downside scenario

Reduction of reserves could contribute to a downgrade over the two-year outlook horizon if we believe that financial flexibility is impaired--especially in light of relatively high fixed costs related to debt and retirement funding.

Upside scenario

Should the commonwealth reverse the trend of reserve reductions, we could revise the outlook to stable.

Governmental Framework

State finance law requires that the governor submit a balanced budget and the House and Senate each produce a balanced budget. The final general appropriation act must also be balanced. If there is a revenue shortfall, the governor is required by section 9C of Chapter 29 to reduce agency appropriations or recommend a transfer from the BSF.

Massachusetts has autonomy to raise taxes and has adjusted its tax structure. Medicaid accounts for about 35% of total spending while direct local aid accounts for about 13% of originally budgeted 2016 spending. Funding levels for major program areas have been adjusted as needed. Massachusetts voters have approved revenue growth limitations, but these have not negatively affected operations or limited flexibility, in our view. More significant measures to reduce or eliminate major tax sources have been on the ballot but not approved.

An initiative to raise tax rates on those earning more than $1 million by 4% of income has gathered enough signatures for the legislature to consider a referendum. In May 2016, the legislature agreed to the amendment. If at least 25% of the next legislature supports the measure, which we believe is likely, it will appear on the November 2018 statewide ballot.

The commonwealth is authorized to issue GO debt, special obligation debt, and federal grant anticipation notes. There is a statutory limit on debt outstanding and a statutory limitation on debt service appropriations at 10%. These limitations have not impaired flexibility to manage capital and infrastructure requirements. There is no statutory priority for funding debt, but debt service payments are not subject to the warrant requirement applicable to other state spending, and we understand that the comptroller and other state officials have developed procedures to prioritize payments and debt service is given the highest priority among various payment obligations.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '1.5' to the commonwealth's governmental framework.

Financial Management

Financial management assessment: Strong

S&P Global Ratings maintains a strong financial management assessment (FMA) score for Massachusetts. In our framework, an FMA of strong indicates that practices are strong, well embedded, and likely sustainable. Many of the commonwealth's management practices related to debt and financial management are embedded in statute.

Highlights include the following:

- Massachusetts uses internal resources and outside economic forecasting firms to develop a consensus revenue forecast. It has regularly performed monthly revenue estimates and quarterly budget reviews. Legislation approved in 2008 requires that revenue reports be submitted semi-monthly to the legislature.
- It has implemented five-year financial forecasting. We understand that the state will update this annually and integrate it into the budget process.
- A five-year capital improvement plan (CIP; administrative intent, not binding) coordinates every facet of debt issuance. The CIP includes a detailed debt affordability analysis that officials update each year.
- The commonwealth has detailed and frequently reviewed investment policies managed through the office of the treasurer. Quarterly cash flow projections are prepared and submitted to the legislature.
- Massachusetts has a statutorily established BSF that prescribes a mechanism for funding, as well as funding levels, although the process has sometimes changed from year to year.

There are statutory limits on debt issuance. For direct debt, there is a limit allowing the issue of up to 105% of the previous year's limit. There is also a limit on annual debt service of 10% of the then-current year's budget appropriation. In addition to the aforementioned statutory requirement, the governor's office adheres to an administrative bond cap (debt service capped at 8% of budgeted revenues), which sets the annual limit on debt issuance. The treasurer's office maintains debt management and swap policies that we view as comprehensive. Officials also introduced an asset-liability management policy in the most recent fiscal year.

Massachusetts has a statutorily established BSF that prescribes a mechanism for funding, as well as funding levels. Statute requires the deposit of 100% of consolidated net surplus in any given year into BSF. The statute also provides that the BSF's maximum amount cannot exceed 15% of the current year's revenues. The commonwealth must use any excess for tax reduction. A change in 2010 directed capital gains tax revenues of more than $1 billion to the fund, although the state has suspended this in the past two years. Legislation from 2012 indexes the capital gains amount to growth in U.S. gross domestic product. The statute also directs 5% of the excess to the state retiree benefits trust fund and the pension liability fund. We believe this measure has the benefit of enhancing the fund while decreasing budget reliance on this cyclical revenue source. Nevertheless, the commonwealth diverted to the general fund in fiscal years 2015 and 2016 excess capital gains tax that would otherwise have gone to the BSF. Some judgments and settlements must also be deposited to the fund, although this requirement was modified in fiscal 2015 so that only settlements and judgments exceeding the average of the total for the preceding five fiscal years would be transferred to the BSF.

The commonwealth has detailed and frequently reviewed investment policies managed through the office of the treasurer. Quarterly cash flow projections are prepared and submitted to the legislature.

Budget management framework

Once the budget is approved, the Secretary of Administration and Finance (A&F) monitors expenditures, at least quarterly, and receives regular monthly updates on revenue receipts. The administrative and finance secretary is required to formally update revenue projections and submit them to the legislature in October. If officials expect projected revenues to be insufficient to meet appropriations, A&F certifies this and, pursuant to statute (section 9C of Chapter 29), the governor is required to reduce allotments, or submit proposals to raise additional revenues or to make appropriations from the BSF to restore balance. Budget adjustments have historically been implemented regularly and on time, and deficits are not carried forward.

Massachusetts is a voter-initiative state. Although there have been initiatives that limit the overall growth in state tax revenue and a limit on the amount of bonds outstanding and debt service appropriations, these have not substantially altered Massachusetts' ability to manage its budget or fund debt service in our opinion. While more recent ballot initiatives to reduce or eliminate major tax sources of the state were not approved, the legislature can amend an initiative, and a recent initiative rolled back inflation indexing for a gas tax. An initiative to add an extra 4.0% income tax to annual income of more than $1 million a year received enough signatures for the legislature to consider placing it on the November 2018 ballot. This year's legislature gave the initiative its initial approval in May 2016, and it will be placed on the 2018 ballot assuming 25% of the next legislature also approves it, which we believe is likely.

The commonwealth provides a relatively high level of service, in our opinion. Adjustments have been made to programs but reductions to areas such as education have been limited.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '1.0' to Massachusetts' financial management framework.

Economy

Massachusetts' labor market fared relatively well in 2015. According to IHS Global Insight, private-sector payroll gains averaged 1.6%, compared with 1.9% for the U.S. Unemployment rates have declined at a steady pace due to positive employment trends. The average annual unemployment rate for 2015 was 5.0%, which was below the 5.3% rate for the nation, while the state unemployment rate as of March 2016 had fallen to 4.4%, compared with 5.0% for the nation. The U.S. Census Bureau population estimate for the state in 2015 is 6.8 million, a 0.7% increase over 2014, and a 6.1% increase over the past 10 years, compared with 8.8% for the nation. Population growth has outpaced the region since 2007 but continues to lag the nation and we expect this trend to continue. The commonwealth's age dependency ratio of nonworking age population to working age population was better than that of the nation at 55.5% in 2014, compared with 60.2% for the nation.

Massachusetts has always had high income levels. Per capita personal income increased to $61,032 in 2015, or 128% of the national level--a ratio the commonwealth has held consistently for the past seven years. We expect that income will remain well ahead of that of other states based on the nature of the jobs being created and the pace of expansion. IHS Global Insight projects state gross product to rise 1.2 % in 2016, 2.4% in 2017, 2.5% in 2018, and 2.0% in 2019, at rates slightly under, but comparable to, its forecast for the U.S. In 2015, gross state product per capita was 125% of the nation.

The economy has diversified and education and health services now make up the primary employment sectors, accounting for 21.8% of total non-farm employment in 2015 according to the Bureau of Labor Statistics, compared to 15.5% for the nation. This is followed by trade and transport (16.3% vs. 19.0% nationally) and professional business services (15.3% vs. 13.8%). Cyclical sectors, such as manufacturing and construction, represent only 7.2% and 4.0% of employment, respectively. The increasing role of services in the economy reflects growth in research laboratories, computer software, management consulting, other business services, and health care. Higher education anchors, a high level of federal research funding, and venture capital give the commonwealth a leading edge in emerging industries, such as biotechnology, software, communications equipment, and surgical instruments. In addition, its defense-related industries continue to perform well. Massachusetts ranks eighth out of the 50 states by value of federal defense and research contract awards. Any federal fiscal consolidation could affect this part of the economy.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '1.8' to Massachusetts' economy.

Budgetary Performance

The state has established a formal BSF under statutory law that receives excess capital gains taxes over a threshold amount, indexed for inflation. A threshold of $1 billion was in effect for fiscal years 2011, 2012, and 2013. Since then, the threshold is subject to annual adjustment to reflect the average annual rate of growth in U. S. GDP over the preceding five years. Under statutory law, tax revenues collected from capital gains income during a fiscal year that exceed the threshold are required to be transferred to the BSF, with 5% of the amount so deposited then transferred to the State Retiree Benefits Trust Fund (for OPEB) and an additional 5% transferred to the commonwealth's pension liability fund. However, in fiscal years 2015 and 2016, capital gains taxes that would have otherwise flowed to the BSF paid general fund budget expenditures. The governor has proposed partially resuming a $206 million deposit of capital gains in his fiscal 2017 budget proposal, although in our opinion this may be affected to the extent the state downsizes its capital gains forecast based on disappointing 2016 income tax returns. The commonwealth is consulting with the department of revenue and independent economists for advice on whether these collections are the result of trends that will continue into fiscal 2017. The enacted 2016 budget assumes the fiscal 2016 capital gains collections threshold (suspended in fiscal 2016) to be approximately $1.09 billion, with the excess diverted to the general fund instead of the BSF to be approximately $300 million.

The governor's proposed budget for fiscal 2017 forecasts 4.3% revenue growth and a balanced budget, with minimal use of one-time revenues. Although it proposes a $206 million deposit of excess capital gains tax to the BSF, this would be still $150 million short of the original statutory formula for deposit of excess capital gains tax, and as noted could be further downsized based on a potential new capital gains tax forecast. Overall, we believe the proposed budget indicates positive revenue trends, although still budget worries remain in regard to growth in MassHealth spending and the slow build-up of the BSF during a period of positive revenue growth (for more information, see "Massachusetts Governor's Budget Proposal is Mildly Positive," published Feb. 4, 2016).

The BSF reached a peak of $2.335 billion at fiscal year-end 2007, before being drawn down to $670 million at fiscal year-end 2010 during the Great Recession. The commonwealth subsequently began using excess capital gains tax to build up the fund again to $1.65 billion at fiscal year-end 2012. The BSF stood at $1.25 billion at fiscal year-end 2015, or 3.2% of operating expenditures, following a $124 million deposit after the end of the fiscal year from surplus operating revenues into the BSF, offset by budgeted fiscal 2015 BSF draws, for a net increase of $4 million in the BSF. Total operating reserves at fiscal year-end 2015, including the BSF, were $1.57 billion, or 4.0% of expenditures and other uses, which the state is projecting to fall slightly to $1.35 billion at fiscal end 2016, or 3.2%.

Massachusetts earlier made $49 million of mid-fiscal 2016 budget allotment reductions by the governor, $56 million of identified nontax revenue solutions, and identified $48 million of tax revenues exceeding the revised benchmark through January. The state now believes fiscal 2016 revenue will be about $311 million short of its revised revenue forecast, based on its monthly revenue experience through May 2016. It plans to make additional midyear budget adjustments, which the commonwealth believes would put its fiscal 2016 budget near statutory budget balance. The state believes that its budget is near ongoing structural balance, with only about $250 million one-time budget measures in the proposed fiscal 2017 budget. Massachusetts projects the BSF to increase by a slight $6 million in fiscal 2016. However, after a projected decline in other fund balances, overall reserves would decline by $222.9 million under current state projections, to $1.35 billion at fiscal year-end 2016, or 3.2% of budgetary expenditures and other uses. Still, the state typically has been left with unused appropriations of $150 million-$250 million at fiscal year-end that could boost results if the legislature follows its typical pattern of reappropriating unused appropriations to the following fiscal year, which could leave balances flat in fiscal 2016.

We believe the commonwealth is somewhat exposed to cyclical swings in capital gains tax revenue, which Massachusetts projects will constitute about 6% of fiscal 2017 tax revenues. However, we also believe the commonwealth has a good history of making timely midyear budget adjustments when needed. Before the proposed fiscal 2016 budget adjustments of about $311 million, Massachusetts calculated one-time budget items in the budget at $629 million, or only 1.5% of projected expenditures, indicating what we view as near-structural balance, despite the projected small draw down in overall reserves.

We view Massachusetts' liquidity as strong, with the help of annual cash flow note borrowing. The commonwealth does not engage in interfund borrowing. Massachusetts currently projects to end fiscal 2016 with a general fund cash balance of $2.36 billion, and estimates its month-end cash low point in fiscal 2016 will have been August 2015, with a $551.4 million general fund cash balance. In fiscal 2015, the commonwealth issued $1.2 billion in revenue anticipation notes, maturing in April, May, and June 2015. Cash flow notes must be repaid by the end of the fiscal year. Fiscal 2015 ended with a nonsegregated general fund cash position of $2.14 billion.

We view Massachusetts' revenue sources as diverse. Income tax was 58% of operating funds tax revenues in fiscal 2015 on a budgetary basis, and sales tax was 23%.

We believe the commonwealth's revenue forecasting is good. Massachusetts prepares quarterly revenue updates and uses a consensus revenue forecast for budgeting purposes. We believe that state budgeting has historically been done with an eye toward long-term structural balance. However, we believe that Massachusetts is a high service state, with expenditures that may be difficult at times to reduce. In particular, Medicaid plus health and human services spending accounts for 48% of the fiscal 2016 budget expenditures, while operating funds' debt service accounts for about 6%. Pension funding costs from operating funds in fiscal 2016 are estimated at $1.97 billion, or 5%, while OPEB costs for current retirees are about another 1%.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '1.7' to Massachusetts' budgetary performance.

Debt And Liabilities

We calculate total GO bond proceeds outstanding at fiscal year-end 2015, the most recent audited year, at $20.8 billion, and total tax-supported debt at $34.5 billion, including debt issued by state authorities and supported by the statewide sales tax, as well as debt of state agencies supported by annual state contract assistance payments. The commonwealth reports it had $20.9 billion of GO debt outstanding as of April 30, 2016. By most measures, Massachusetts' debt burden remains high compared with that of other states. The variable-rate portfolio is 17% of total GO debt, and the commonwealth actively manages this under formal debt policies. About $1.3 billion, or 6% of state GO debt, consists of unhedged variable-rate bonds, with the remainder of the variable-rate debt's interest rates synthetically fixed through interest rate swaps. The state has a multiyear asset liability management program that could increase its exposure to unhedged variable-rate debt. However, there are no major plans in the near future to significantly expand its unhedged portfolio. In the past several years, the overall portfolio of variable-rate debt has diversified, and put risk has fallen significantly, in our opinion. The commonwealth also has about $960.5 million of direct placement debt, whose structure we do not believe creates an unusual risk to the state. Tax-backed debt per capita is high, in our view, at what we calculate as $5,084 at fiscal year-end 2015 and 8.3% of personal income. We also calculate combined total tax-backed debt service to operating expenditures as high at 7.7% on a GAAP basis.

The current five-year CIP projects debt service to remain below the state's calculation of 8% of budgeted revenues through fiscal 2020. A state debt and capital affordability committee conducts an annual debt affordability study. The committee includes seven voting members and eight nonvoting members from the legislature and is charged with formally reviewing the CIP and providing an estimate of debt authorization for the year. The current CIP for fiscal 2017 calls for $2.19 of bonding, about level compared with that of recent years, as part of a fiscal 2017 total capital budget of

$4.1 billion. Our debt calculation includes special tax bonds supported by statewide tax sources in the ratios we use to assess total tax-supported debt.

The most recent actuarial valuation of the state pension plans indicates a decline in combined pension funded ratios as of Jan. 1, 2015, although in part caused by a lower rate of return assumption and a new experience study, which we consider a positive development. The total actuarial funded ratio declined to 59.0% from 61.2% in 2014, but is now calculated at 61% using new GAAP standards, which uses the market value of assets. The funded ratio remains far below the actuarial 78.6%-funded ratio in 2008. GASB 68's breakout of the state only primary government net pension liability of $30.2 billion for the combined state employees, teachers, and Boston teachers' pension funds, is $30.2 billion, based on a fiscal 2016 valuation as of Jan. 1, 2015. We calculate this is $4,451 per capita, and 7.3% of personal income, which we consider high. Massachusetts attributes the relatively low funded ratio to recognition of previous-year investment losses and certain adjustments to actuarial assumptions, including mortality rates and lowering the investment return assumption to 7.75% in 2015 from 8.00%, which we view as more conservative. The state will use a 7.50% return assumption when preparing its next pension valuation as of Jan. 1, 2016. The actuarial funded ratio in 2015 would have been 61.6% without the change to actuarial assumptions. However, the funded ratio remains below the average funded ratio for other U.S. states.

The state has continued to fully fund its actuarial annual required pension contribution on a lagged budgetary basis, using valuation projections from earlier years, which has resulted in recent years in annual funding less than its actuarial annual required contribution level under GAAP. In fiscal 2015, the state contributed 75% of ADC to its two main employees' retirement system, in part due to the more conservative rate of return assumptions in the most recent valuation. The commonwealth projects that using its actuarial assumptions and statutory funding requirements, it would fully amortize its unfunded pension liability in approximately 20 years. The next actuarial report for determining budgetary pension contributions will be complete this summer, to be used for the next three years of pension contributions starting in fiscal 2018.

Massachusetts had a $15.9 billion unfunded actuarial accrued OPEB liability as of Jan. 1, 2015, which we consider sizable, at $4,451 per capita, but down from $16.3 billion recorded in 2012, as various reform measures were phased in and OPEB trust fund deposits have been made. The commonwealth has dedicated tobacco settlement revenues toward its OPEB trust fund to provide a permanent funding source, which we consider a credit positive, although trust fund deposits were made from other sources recently. The portion of tobacco settlement money dedicated to the OPEB trust fund is scheduled to increase in 10% increments each year, until it reaches 100%, although the incremental increase was suspended in fiscal 2016. In fiscal 2016, we expect the commonwealth to contribute 30% of tobacco settlement money, or approximately $73 million, to the OPEB trust fund. The trust had actuarial assets of $610.0 million as of Jan. 1, 2015. In fiscal 2014, the state funded 49% of its actuarial annually required OPEB contribution.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '3.4' to Massachusetts' debt and liability profile.

Commonwealth of Massachusetts--Financial Summary					
Audited GAAP basis; June 30 fiscal year-end					
(Mil. $)	**2015**	**2014**	**2013**	**2012**	**2011**
General fund (GF)					
Revenues	35,030	32,592	30,694	29,432	29,764
Expenditures	34,084	31,300	29,148	28,025	27,012
Net other financing sources and uses	(1,037)	(1,689)	(1,661)	(1,112)	(1,535)
Net result	(92)	(398)	(114)	295	1,218
Total ending GF balance	2,743	2,835	3,233	3,347	3,053
Available GF balance (assigned and unassigned balances)	1,491	1,587	1,676	1,695	1,673
Budget stabilization fund (BSF) balance	1,253	1,248	1,557	1,652	1,379
Combined available GF and BSF balance as % of expenditures and transfers out	7.5%	8.2%	9.9%	10.7%	10.0%
Debt					
GO debt	20,802	19,597	19,140	19,257	18,820
Total tax-supported debt	34,549	33,993	32,002	32,248	30,177
Tax-supported debt per capita ($)	5,084	5,039	4,770	4,845	4,564
Tax-supported debt (% of total personal income)	8.3	8.6	8.4	8.5	8.4

Related Criteria And Research

Related Criteria

- USPF Criteria: State Ratings Methodology, Jan. 3, 2011
- USPF Criteria: Local Government GO Ratings Methodology And Assumptions, Sept. 12, 2013
- USPF Criteria: Financial Management Assessment, June 27, 2006
- USPF Criteria: Debt Statement Analysis, Aug. 22, 2006
- USPF Criteria: State Credit Enhancement Programs, Nov. 13, 2008
- USPF Criteria: Appropriation-Backed Obligations, June 13, 2007
- USPF Criteria: Rating Government Department Appropriation-Backed Debt In U.S. Public Finance, Nov. 7, 2007
- General Criteria: Rating Government-Related Entities: Methodology And Assumptions, March 25, 2015
- USPF Criteria: Commercial Paper, VRDO, And Self-Liquidity, July 3, 2007
- USPF Criteria: Non-Traditional Not-For-Profits, June 14, 2007
- USPF Criteria: Limited-Tax GO Debt, Jan. 10, 2002
- Criteria: Methodology And Assumptions: Approach To Evaluating Letter Of Credit-Supported Debt, Feb. 20, 2015
- USPF Criteria: Bank Liquidity Facilities, June 22, 2007
- USPF Criteria: Standby Bond Purchase Agreement Automatic Termination Events, April 11, 2008
- Criteria: Toll Road And Bridge Revenue Bonds In The U.S. And Canada, Feb. 25, 2014
- USPF Criteria: Methodology: Definitions And Related Analytic Practices For Covenant And Payment Provisions In U.S. Public Finance Revenue Obligations, Nov. 29, 2011
- USPF Criteria: Methodology: Rating Approach To Obligations With Multiple Revenue Streams, Nov. 29, 2011
- USPF Criteria: Assigning Issue Credit Ratings Of Operating Entities, May 20, 2015
- Criteria: Use of CreditWatch And Outlooks, Sept. 14, 2009

Ratings Detail (As Of June 7, 2016)

Ratings Detail (As Of June 7, 2016) (cont.)		
Massachusetts tax exempt comm pap nts ser L due 01/27/2021		
Short Term Rating	A-1+	Affirmed
Massachusetts CP A		
Short Term Rating	A-1+	Affirmed
Massachusetts CP B		
Short Term Rating	A-1+	Affirmed
Massachusetts GO VRDBs - C		
Long Term Rating	AA+/A-1+/Negative	Affirmed
Massachusetts GO VRDBs 2000A		
Long Term Rating	AA+/A-1/Negative	Affirmed
Massachusetts GO VRDBs 2000B		
Long Term Rating	AA+/A-1/Negative	Affirmed
Massachusetts GO VRDBs 2006A		
Long Term Rating	AA+/A-1+/Negative	Affirmed
Massachusetts GO (wrap of insured) (ASSURED GTY & AMBAC) (SEC MKT)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts GO (wrap of insured) (FGIC & BHAC) (SEC MKT)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts GO (AGM) (SEC MKT)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts GO (FGIC)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts GO (MBIA) (Assured Gty)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts GO		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed

Ratings Detail (As Of June 7, 2016) (cont.)		
Boston Hsg Auth, Massachusetts		
Massachusetts		
Boston Hsg Auth (Massachusetts) APPROP		
Long Term Rating	A+/Negative	Affirmed
Massachusetts Bay Transp Auth, Massachusetts		
Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) var rate gen transp sys bnds 2000A-1 & A-2 ser dtd 03/09/2000 RMKTD dtd 09/30/2011 due 03/01/2030		
Long Term Rating	AA+/A-2/Negative	Affirmed
Massachusetts Bay Transp Auth (Massachusetts) GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV		
Long Term Rating	AA+/A-1/Negative	Affirmed
Massachusetts Bay Transp Auth (Massachusetts) GO (AGM)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts Bay Transp Auth transp sys bnds (Massachusetts)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts Bay Transp Auth (Massachusetts)		
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts Dept of Transp, Massachusetts		
Massachusetts		
Massachusetts Dept of Transp (Massachusetts) GO		
Long Term Rating	AA+/A-1/Negative	Affirmed
Unenhanced Rating	NR(SPUR)	
Massachusetts Dept of Transp (Massachusetts) GO		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts Dept of Transp (Massachusetts) GO VRDO 2010A-1		
Long Term Rating	AA+/A-1+/Negative	Affirmed
Massachusetts Dept of Transp (Massachusetts) GO VRDO 2010A-2 A-7		
Long Term Rating	AA+/A-1	Downgraded
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts Dept of Transp (Massachusetts) GO VRDO 2010B		
Long Term Rating	AA+/Negative	Affirmed
Massachusetts Dept of Transp (Massachusetts) JOINTCRIT		
Long Term Rating	AA+/A-1	Downgraded
Unenhanced Rating	AA+(SPUR)/Negative	Affirmed
Massachusetts Dept of Transp (Massachusetts) VRDBs 2010A-7		
Long Term Rating	AA+/A-1+/Negative	Affirmed
Massachusetts Development Finance Agency, Massachusetts		
Massachusetts		
Massachusetts Dev Fin Agy (Massachusetts) GO		
Long Term Rating	AA+/Negative	Affirmed

Ratings Detail (As Of June 7, 2016) (cont.)		
Univ of Massachusetts Bldg Auth, Massachusetts		
Massachusetts		
University of Massachusetts Bldg Auth (Massachusetts) GO		
Long Term Rating	AA+/A-2/Negative	Affirmed
Univ of Massachusetts Bldg Auth (Massachusetts) GOEQUIV		
Long Term Rating	AA+/A-1+/Negative	Affirmed

Many issues are enhanced by bond insurance.