S&P Global
Ratings

RatingsDirect®

Massachusetts; Appropriations; CP; Gas Tax; General Obligation; General Obligation Equivalent Security; Miscellaneous Tax; Sales Tax

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Credit Profile		
US$970.0 mil GO bnds consolidated loan of 2023 ser A due 05/01/2043		
Long Term Rating	AA+/Stable	Affirmed
US$270.955 mil GO rfdg bnds 2023 ser B due 05/01/2044		
Long Term Rating	AA+/Stable	Affirmed
Massachusetts GASTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO (AMBAC)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded

Credit Highlights

- S&P Global Ratings raised its long-term rating to 'AA+' from 'AA' on the Commonwealth of Massachusetts' general obligation (GO) bonds as well as on various other bonds secured by annual appropriations from the commonwealth.
- S&P Global Ratings also affirmed its 'AA+' long-term rating on Massachusetts' $970.0 million GO bonds, consolidated loan of 2023, series A; and $270.955 million GO refunding bonds, 2023 series B.
- We also raised our long-term ratings to 'AA+' from 'AA' on the Massachusetts Bay Transportation Authority's senior sales tax bonds outstanding, on its subordinated sales tax bonds outstanding (including raising our dual rating on MBTA's variable-rate demand purchase debt to 'AA+/A-1+' from 'AA/A-1+'), and on a U.S. Department of Transportation third-lien Railroad Rehabilitation & Improvement Financing (RRIF) loan agreement for the authority's commuter rail safety and resiliency program.
- In addition, we raised our long-term rating to 'A+' from 'A' on the Boston Housing Authority's series 2003 housing project bonds (West Broadway Homes IV project), supported by a commonwealth annually appropriated state-operating subsidy, subject to the terms of a trust agreement.
- Finally, we raised our long-term ratings to 'AAA' from 'AA+' on the commonwealth transportation fund (CTF) revenue bonds outstanding rated based on our priority-lien criteria.
- The upgrade reflects our view that the commonwealth's commitment to strengthen its budget management practices supported by the state's improved reserves and strong economy will be sustained through near-term recessionary pressures.
- The outlook on all ratings is stable.

Security

Massachusetts' full faith and credit are pledged to the GO bonds. Proceeds from the 2023 series A consolidated bonds will fund various capital expenditures authorized in the capital investment plan (CIP). The 2023 series A refunding bonds will refund certain outstanding GO bonds of the commonwealth.

S&P Global Ratings' "Priority-Lien Tax Revenue Debt" criteria, published Oct. 22, 2018, on RatingsDirect, are used to rate the CTF bonds, and take into account both the strength and stability of the pledged revenues, as well as the general credit quality of the obligor where taxes are distributed and/or collected, in this case, the commonwealth. We consider the linkage between the priority-lien pledge and the Commonwealth of Massachusetts to be close; therefore, the rating on the CTF bonds is constrained by the GO rating. The CTF bonds are eligible to be rated above the sovereign because we believe pledged revenues can maintain better credit characteristics than the U.S. in a stress scenario. Under our criteria "Ratings Above The Sovereign: Corporate And Government Ratings--Methodology And Assumptions" (published Nov. 19, 2013), U.S. states are considered to have moderate sensitivity to country risk. State-derived revenues are the sole source of security on the bonds, and the institutional framework in the U.S. is predictable with significant state autonomy and flexibility.

Credit overview

Massachusetts' rating reflects strong economic metrics, with the second-highest per capita income level in the nation, partly due to an above-average presence of high-technology companies in the Boston metropolitan statistical area (MSA). The rating further reflects some historical cyclicality in financial results due to volatile revenue sources, although recent strong growth in tax collections and federal aid have led to large operating surpluses and reserves, as well as high debt, pension, and other postemployment benefit (OPEB) liabilities, with a history of funding less than full annual actuarial recommendations to its pension and OPEB funds. The upgrade reflects our expectation that the recent trend of the commonwealth's commitment to strong budget practices will continue in the fiscal 2024 budget and beyond.

Strong revenue growth, combined with extra federal aid and strong budgetary management practices, helped the commonwealth rebound strongly from the 2020 pandemic and end its last two fiscal years in an extremely strong financial position with highest level of reserves in its history. At fiscal year-end June 30, 2021, the budget stabilization fund (BSF) stood at $4.6 billion, or a strong 9.4% of operating expenditures and other uses on a budgetary basis of accounting (excluding interfund transfers), higher than the 5.3% originally budgeted. The trend of adding to its reserves continued in fiscal 2022 with the year ending with an estimated BSF balance of $6.9 billion, or a strong 12.4% of budgeted operating expenditures and other uses. The commonwealth's most recent consensus revenue estimate shows the state revenue meeting benchmarked expectation and on track for a BSF balance of $8.5 billion, or a strong 14% of budgeted operating expenditures at the end of fiscal 2023.

Nevertheless, the commonwealth still faces headwinds as national recessionary pressures persist, with long-term liabilities remaining among the highest in the nation and persistent underfunding of its pensions, which could lead to budgetary pressures as revenue growth softens and tests the commonwealth's commitment to strong BSF levels in the next two years. S&P Global Economics believes that the U.S economy will fall into a shallow recession in 2023, although increased credit tightening stemming from recent events in the banking sector elevated the likelihood of a hard landing. While inflation likely peaked in third-quarter 2022 as prices for goods moderated, while prices for services (excluding housing) remain elevated. Our U.S. GDP growth forecast is 0.7% for 2023 and a 1.2% for 2024. We also expect U.S. GDP will decline by 0.3% from its peak in first-quarter 2023 to its third-quarter trough. Our lower GDP and inflation forecasts for 2023 and 2024 relate to the Federal Reserve's continued aggressive policy stance to keep interest rates higher until inflation exhibits declines toward its 2% target. See "Economic Outlook U.S. Q2 2023: Still Resilient, Downside Risks Rise," published March 27, 2023, on RatingsDirect.

The governor's budget proposal reflects a 1.6% increase in tax revenue (excluding new surtax revenue) based on the consensus revenue estimate of $40 billion. The proposed budget also includes about $1 billion surtax revenue, which is proposed to be segregated for education and transportation programs outside of the general funds. The budget also proposes various tax relief initiatives, including new family and child tax credits, real estate tax relief, and reduction of the tax rate for short-term capital gains from 12% to 5%. All proposed tax measures are expected to reduce the commonwealth's tax revenues by $859 million in fiscal 2024. The proposed budget also projects another deposit into the BSF to end fiscal 2024 at about $9 billion. The state enacted its 2023 budget in July, after its June 30 fiscal year-end (using an interim budget in the meanwhile). Total operating expenditure and uses is expected to increase by 8%, but the budget is structurally balanced after adjusting for nonrecurring appropriations. State tax revenue exceeded revenue limits pursuant to Chapter 62 of the commonwealth's general laws in fiscal 2022, leading to about $2.9 billion in tax rebates to be distributed as refunds to taxpayers by the Department of Revenue in fiscal 2023. The 2023 budget outlines that $2.9 billion is expected to be paid with excess revenues set aside from 2022. The 2024 proposed budget does not anticipate any tax rebates paid for fiscal 2023.

We believe that Massachusetts' economy, with a substantial high-technology sector presence in the Boston MSA, has been a bright spot, with a substantial proportion of highly skilled workers with strong income levels supports the commonwealth's revenue growth. Although lower than the prior year, state tax revenue continues to exceed the revised forecast used in the fiscal 2023 budget. Through March 2023, fiscal 2023 tax collections for the year to date were 0.2% below the same period the prior year but 0.8% above estimates. Strong recent tax growth has swelled the commonwealth's BSF balance, which receives both excess general fund revenue, as well as capital gains tax above an annual benchmark, and certain other lesser revenue sources. S&P Market Intelligence, however, forecasts that real gross state product (GSP) will experience slightly slower growth than the nation through 2026, at 5.4% compared with the nation's real GDP growth of 5.7%.

Despite the commonwealth's strong finances and economy, financial risks remain. We believe Massachusetts has an above-average dependence on cyclical capital gains tax revenue, which has benefited from the high stock market, but could recede in future years with national economic contraction and pressure the state's commitment to its financial goals. The state has also had large recent increases in Medicaid enrollment, a potential budgetary concern if the federal government no longer pays the higher Medicaid reimbursement rate it implemented during the pandemic. Other long-term pressures for the commonwealth include its high debt levels and moderately high OPEBs, exacerbated by persistent underfunding of its annual actuarial pension contribution, which we believe could significantly increase liabilities. At fiscal year-end 2021, the last audited fiscal year, we calculate the commonwealth had net total tax-backed debt per capita of $5,825 and 7% of personal income, including tax-supported revenue debt. Massachusetts has chronically underfunded its actuarially required annual pension contribution over the years. Pension contributions are statutorily determined based on a funding schedule set every three years, and the state has made contributions in accordance with its schedule set in 2020. The latest schedule targets a fully funded retirement system by 2036 by increasing annual contributions by 9.63% per year through 2028, a steep increase that we believe defers current pension pressure to future years. Contribution increases are scheduled at slower rate of 4% by 2030. We calculate the pension underfunding amounts equivalent to about 1% of operating expenditures or higher for the past five years, if excluding restricted federal revenue from the budget denominator. The commonwealth has contributed less than its actuarial annually recommended contribution since 2011, funding only an estimated 86% (including supplemental contributions) of its annual actuarial recommendation in fiscal 2022, which has contributed to what we consider a relatively low combined three-year average pension-funded ratio on a Governmental Accounting Standards Board (GASB) basis of 61%. A strong investment return of 29.9% in fiscal 2021 temporarily improved combined funded levels to 68.7%, but preliminary estimates show that fiscal 2022 returns were extremely weak at negative 2.8% and could lead to lower funded levels for 2022. At fiscal year-end 2021, the commonwealth's net pension liability (NPL) on a GASB basis was a high $5,006 per capita, or 6.1% of state personal income. Net OPEB liability on a GASB basis at fiscal year-end 2021 was also high, at $2,639 per capita, although the state has made efforts in recent years to prefund a portion of OPEBs through a trust fund.

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

- Deep and diverse economy;
- High income levels, with per capita income at 130% of the nation in 2021, the second-highest among the states;
- History of timely monitoring of revenues and expenditures and swift action when needed to make adjustments;
- Strong financial, debt, and budget management policies, including annualized formal debt affordability statements and multiyear capital investment planning;
- Strong BSF balance, equal to about 14% of expenditures and other uses on a budgetary basis at fiscal year-end 2022, and an estimated increase in 2023, in part due to currently strong capital gains tax; and
- High debt, pension, and OPEB liabilities.

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. 8' to Massachusetts, which is consistent with an 'AA+' indicative rating.

Environmental, social, and governance

ESG Credit Indicators: E-3, S-2, G-2

We consider Massachusetts' chronic physical risks moderately negative in our credit rating analysis because of the commonwealth's coastal exposure to rising sea levels, with about two-thirds of its population in the Boston MSA and substantial property value in the combined Boston and Cape Cod area exposing the state to significant economic disruption following a high-impact event. However, we also note that the commonwealth has been addressing environmental risks since 2004 through its Climate Protection Plan and has historically maintained a stable management and policy framework to respond to developing risks. We view social and governance as neutral to the credit rating analysis.

Outlook

The stable outlook reflects our view that Massachusetts' underlying economy and currently very strong reserves could support its rating despite its economically sensitive revenues and potential nationwide contraction.

Downside scenario

We could downgrade the state if we believe Massachusetts will fail to make budget adjustments to maintain structural balance or maintain strong reserves if its revenue weakens. Other factors that could lead to a downgrade include significant increases in debt or other fixed costs, or a significant decline in pension-funded levels due to the commonwealth falling significantly behind required pension funding contribution levels.

Upside scenario

If Massachusetts significantly shrinks it pension and debt obligation while demonstrating continued commitment to strong budgetary policies and pension funding discipline, especially during periods of economic contraction, we could raise the rating.

Credit Opinion

Governmental Framework

State finance law requires that the governor submit a balanced budget and the House and Senate each produce one as well. 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 was budgeted for about 35% of total fiscal 2022 spending, while direct local aid accounted for about 12%. Funding levels for major program areas have been adjusted as needed. Massachusetts voters have approved revenue growth limitations, but these have not weakened 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. A 4% income tax surcharge on incomes of more than $1 million (surtax revenues) was approved through a ballot initiative in November 2022, raising the top income tax rate for those making more than $1 million per year effective tax year 2023.

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 limitation as stipulated by Massachusetts' debt affordability policy published annually with the commonwealth's CIP, which is designed to limit debt service on Massachusetts' direct debt to no more than 8% of budgeted revenues. 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 that 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 its 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 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.
- A five-year CIP (administrative intent, not binding) coordinates all types of debt issuance, informed by 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 mechanism has been weakened periodically by the legislature's decision to adjust deposit thresholds and suspend required transfers into the fund in certain years.

Statute requires the deposit of 100% of consolidated net surplus in any given year into the 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. In 2010, the state passed a statutory law that directed excess capital gains tax revenues of more than $1 billion to the BSF, although Massachusetts subsequently suspended or lowered this threshold in fiscal years 2015 and 2016. Legislation in 2012 indexed the $1 billion capital gains excess threshold to the growth in U.S. GDP for each fiscal year beginning with fiscal 2014. The statute also directs 5% of the excess capital gains tax to the state retiree benefits trust fund and another 5% to pension liabilities. We believe the capture of above-trend capital gains tax enhances the BSF, while decreasing some of the cyclicality of state revenue. An indexed threshold and lower collections in fiscal 2017 eliminated the potential for a transfer in that fiscal year. In 2020, the governor filed a supplemental budget request to retain excess capital gains tax above the threshold in the general fund. Some judgments and settlements must also be deposited into 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.

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. In addition to the above-mentioned 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.

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 A&F 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 the commonwealth's major tax sources that made the ballot were not approved, the legislature can amend an initiative.

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

We believe the Massachusetts economy, anchored by the Boston MSA that includes many higher education institutions and associated technology companies, represents an important credit strength.

Massachusetts' recent economic experience has mirrored national trends, although per capita income has grown slightly faster than that of the nation, spurred by growth in the high-paying professional, scientific, and technical services sector that suffered less in the recent recession than lower-paying service sector jobs. The average annual unemployment at 3.8 % in 2022 is slightly higher than the U.S, at 3.6%. While we view the economy as slightly more concentrated in education and health services than the nation as a whole, these sectors have contributed to relatively high wages compared to the nation. Education and health services accounted for 22% of total state nonfarm employment in 2022, according to the Bureau of Labor Statistics, compared with 16% for the nation. Professional and business services accounted for 17% compared to 15% nationally.

The U.S. Census Bureau population estimate for Massachusetts in 2021 is about 7 million, a 0.5% decline over 2020, and the five- and 10-year compound growth rate of 0.2% and 0.5%, respectively, trailed the nation's 0.5% and 0.6%, respectively. S&P Market intelligence projects continued population loss through 2023 at an average annual rate of 0.12%. The commonwealth's age dependency ratio of nonworking-age population to working-age population, at 58.5%

in 2021, was better than that of the nation (63.9%).

The commonwealth has always had high income levels with per capita income ranking among the highest across all states. Per capita personal income of $83,653 was 130% of the U.S. in 2021, consistent with prior years. We expect that income will remain well ahead of that of other states based on the highly educated workforce that have jobs more conducive to telecommuting. S&P Market Intelligence forecasts real GSP to rise 0.86% in 2023 and grow 5.4% over the next four years, slightly lower than the U.S. forecast of 5.7%. In 2021, GSP per capita of $91,819 was strong at 131% of that of the nation's GDP.

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. S&P Market Intelligence has estimated about 10% of state employment is in high-technology-related industries. In addition, Massachusetts has defense-related industries that have ranked high in the value of federal defense and research contract awards.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '1.4' to Massachusetts' economy.

Budgetary Performance

Massachusetts has established a formal BSF under statutory law that receives excess capital gains taxes over a threshold amount, adjusted annually to reflect the average 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 OPEBs) and an additional 5% transferred to the commonwealth's pension liability fund. However, in fiscal years 2015 and 2016, state budgets diverted capital gains taxes that would have otherwise flowed to the BSF to instead pay for general fund budget expenditures.

Strong revenue growth in fiscal 2022 supported structural balance at the end of the fiscal year after accounting for nonrecurring appropriations and contributed to an additional deposit to the BSF, leading to a balance of $6.9 billion, or 12.4% of budgeted expenditures and other uses. The BSF balance in fiscal 2022 is very strong, in our view, and represents the largest amount in dollar terms that the fund has ever reached. State tax revenue exceeded revenue limits pursuant to Chapter 62F of the commonwealth's general laws in fiscal 2022, leading to about $2.9 billion in tax rebates to be refunded to taxpayers by the Department of Revenue in fiscal 2023. We view Massachusetts' revenue sources as diverse. Income tax was59% of budgeted operating funds tax revenue in fiscal 2022, and sales tax was 21%.

The 2023 enacted budget forecast currently anticipates that Massachusetts' adopted budget will have a decline of 1.5% in operating funds tax revenue (using actual budgetary results in 2022, not adopted 2022 budget numbers) but will be structurally balanced and deposit an additional $1.5 billion to the BSF, resulting in a total of $8.5 billion, or 14% of operating finds expenditure. The budget is based on a 3.9% decline in tax revenue, reflecting conservative projections of historically more volatile tax revenue as well as the moderating effects of the pass-through entity provisions (which boosted 2022 tax revenue). Total operating expenditure and uses is expected to increase by 8%, but the budget is structurally balanced after adjusting for nonrecurring appropriations.

We view Massachusetts' liquidity as strong, with the help of annual cash-flow note borrowing. The commonwealth does not engage in interfund borrowing, so the general fund cannot borrow from the BSF without an act of the legislature. In fiscal 2020, the commonwealth issued $1.4 billion in revenue anticipation notes, maturing in April, May, and June 2020 and has not required short-term financing since. In addition, it obtained a line of credit for $1.75 billion from a syndicate of banks to ensure adequate liquidity due to a pandemic-related extension of the time for taxpayers to file their income tax in fiscal 2020. As of February 2021, the line of credit was reduced to $500 million, and no amount was outstanding under the line, which is scheduled to expire March 30, 2024, although the commonwealth anticipates extending the expiration through 2026.

Fiscal 2022 ended with a nonsegregated general fund cash position of $16.9 billion, and according to the March 2023 cash-flow statement, the state projects it will end with a general fund cash position of $10.6 billion at fiscal year-end 2023.

We believe the commonwealth's revenue forecasting is good. Massachusetts prepares quarterly revenue updates and uses a consensus revenue forecast for budgeting purposes. The governor is required to recommend midyear budget adjustments if necessary. We believe that state budgeting has historically been done with an eye toward long-term structural balance, apart from the below-actuarially required contribution (ARC) pension contributions. However, we believe that Massachusetts is a high service state, with expenditures that could be difficult to reduce at times. In particular, Medicaid accounted for 29.8% of budgeted fiscal 2023 total operating expenditures and other uses, while health and human services accounted for 13.1%. Operating funds' debt service accounted for 3.5%, and OPEB costs were budgeted at 6.8% of expenditures.

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

Debt

We calculate total GO bonds outstanding at fiscal year-end 2021, the most recent audited year, at $24.8 billion, and total tax-supported debt at $40.6 billion, including debt issued by Massachusetts' authorities and supported by the statewide sales tax, gas taxes, and debt of state agencies supported by annual state contract assistance payments. As of Aug. 31, 2022, the commonwealth reported it had $24.5 billion of GO debt outstanding.

By most measures, Massachusetts' debt burden remains high compared with that of other states. The variable-rate portfolio is about 4% of total GO debt, and the commonwealth actively manages this under formal debt policies. Within its variable-rate portfolio, it has $500 million of direct-placement debt outstanding, in structures we do not believe create an unusual risk to Massachusetts. Tax-backed debt per capita is high, in our view, although stable, at what we calculate as $5,825 at fiscal year-end 2021 and 7% of personal income. We also calculate combined total tax-backed debt service to operating expenditures as high at 7.6% on a generally accepted accounting principles basis.

The current five-year CIP projects debt service remaining below the commonwealth's calculation of 8% of budgeted revenues. 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 five-year CIP for fiscal years 2023 through 2027 calls for new bonding of $2.8 billion in 2023, slightly higher than previous years, as part of a total five-year capital budget of $4.9 billion. Our debt calculation includes special tax bonds supported by statewide tax sources in the ratios we use to assess total tax-supported debt. We view amortization of tax-backed debt as average at 42% over 10 years.

Pensions

We consider the commonwealth's pension funding discipline in recent years poor, with Massachusetts funding substantially underfunding the ARC since 2011. ARC is calculated using previous GASB Statement 27 methodology because the more recent GASB Statements 67/68's actuarially determined contribution (ADC) is arrived at using commonwealth statutory law that is not based on the current year's full actuarial requirement. In fiscal year 2022, Massachusetts paid an estimated 81% of ARC. However, the state also contributed an additional $250 million from excess capital gains tax revenues, which increased total contributions to about 86% of ARC. Every year the ARC is not funded, it will increase in future years until full ARC funding is reached. The commonwealth has not contributed its full annual ARC since 2011 and projects it will reach full ARC funding in fiscal 2036, based on increasing ARC contributions 9.63% per year through 2028 and then declining to 4% through 2036, which will increase annual state contributions substantially from $2.8 billion in fiscal 2020 to $5.9 billion in 2028. We currently calculate Massachusetts' pension contribution for state employees at 81% of the level to meet minimum funding progress, which we view as weak.

Massachusetts has gradually lowered its retirement funds' investment return assumption in recent years, which we view as positive, but which has restrained improvement in its combined pension funded ratio and increased funding needs. The commonwealth lowered its assumed actuarial rate of return from 8.25% prior to 2013 to 7.0% in 2021. However, the currently assumed return level is still above our pension criteria guidance guideline of 6.50%. The commonwealth reported a five-year pension fund rate of return of 12.3% as of fiscal 2021, and a one-year return in 2021 of 29.9%. The combined pension funded ratio of the various state retirement systems' NPL improved to 68.7% in 2021 (from 56.2%) as a result of strong market returns. We expect that the growth in funded ratios will be moderated in the next year as expected returns for 2022 contracts to negative 2.95%. The three-year average was 61%.

The NPL was $34.9 billion as of a June 30, 2020, measurement date rolled forward by one year to June 30, 2021, or a high $5,006 per capita and 6.1% of state personal income. We believe pension ratios will remain weak until the commonwealth reaches annual ARC funding, which would be in 2026 under its current funding schedule, assuming Massachusetts meets its actuarial return and other assumptions.

Using the commonwealth's actuarial methodology and actuarial asset smoothing methods (not GASB), the funded ratio for the combined state employees', teachers', and Boston teachers' pension funds improved to 62% from 51% in fiscal 2020. If Massachusetts continues to increase pension contributions by 9.63% per year, the commonwealth calculates under its actuarial assumptions that it would have a combined funded ratio of 66% in 2025.

Massachusetts' current plan assumes it will reach full amortization of the commonwealth's unfunded liability by fiscal 2036, four years ahead of Massachusetts' statutory requirement, assuming actuarial assumptions are met. However, from a funding standpoint, the commonwealth has continued to calculate its contribution by setting funding targets based on percentage increases to contributions rather than adjusting for increases necessary to keep level amortization of the liability. This translates into a back-loaded amortization of the liability.

Furthermore, the commonwealth continues to establish its contribution levels on a three-year lagged budgetary basis, although actuarial valuations are conducted each year. This policy of only adjusting the pension contribution schedule every three years can cause Massachusetts to fall below full ADC funding when actuarial assumptions miss actual experience, such as missed investment returns, or actuarial assumptions themselves have been changed, such as the recent lowering of assumed rates of return. While a three-year lag in resetting pension contributions could provide Massachusetts with a more predictable funding schedule, we believe it also exposes the commonwealth to the risk of never catching up to full ADC funding if its actuarial assumptions prove too aggressive.

In its most recent three-year funding schedule reset, Massachusetts updated its planned pension contributions to the above-mentioned 9.63% per year through 2028 and then declining to 4% through 2036, compared to the previously scheduled 8.9% annual increases, and 7.0% annual increases in the three-year plan before that. In fiscal 2023, the commonwealth projects it will contribute $3.7 billion, or 88% of the $4.2 billion ARC, to its two main employees' retirement systems. This does not include an additional $100 million deposit toward pensions as part of the fiscal 2023 budget. As part of our criteria, we look to the ratio of active-to-inactive members to determine how mature the system is and how it compares with the national average. For Massachusetts State Retirement Board and Massachusetts Teachers' Retirement System, the ratios of active-to-retirees are 1.40 and 1.36, respectively, and nearly in line with the national average. Experience studies are only conducted every six years as per statute, which we view as a weakness. Although the commonwealth updates portions of the studies more frequently, it has done this as needed rather than on a set schedule.

OPEBs

The state has sizable OPEBs but has made good funding progress in reducing its OPEB liabilities by putting money aside in an OPEB trust fund.

As of June 30, 2021, Massachusetts' retirement trust had a $18.4 billion net unfunded OPEB liability, which we consider sizable, at $2,639 per capita, although OPEBs were cut significantly a few years ago due to various reform measures that were been phased in and to deposits to an OPEB trust fund. The OPEB trust funded ratio is relatively low at 10.7% of OPEB liabilities.

Deposits to the trust fund enable a somewhat higher assumed actuarial discount rate under a blended interest rate assumption that assumes lower rates after trust fund assets are depleted, and which lowers actuarial unfunded liabilities. Massachusetts has dedicated a portion of tobacco settlement revenues toward its OPEB trust fund to provide a permanent funding source, which we consider a credit positive, although exact deposits have deviated from formula depending on the year of the enacted budget. The portion of tobacco settlement money dedicated to the OPEB trust fund was scheduled to increase in 10% increments each year, until it reaches 100%, although the incremental increase in contributions has been revised since 2016. The actual percentage of tobacco settlement revenue deposited in the OPEB trust fund in each year from 2018 to 2022 was 10%, 30%, 10%, 10%, and 10%, respectively, and it is budgeted for 10% in 2023. In fiscal 2020, legislation suspended the transfer of capital gains tax into the OPEB trust.

On a scale from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings assigned a score of '3.5' to Massachusetts' debt and liability profile.

Related Research

- Through The ESG Lens 3.0: The Intersection Of ESG Credit Factors And U.S. Public Finance Credit Factors, March 2, 2022

Ratings Detail (As Of April 14, 2023)		
Massachusetts Bay Transp Auth sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transp Auth sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transp Auth CP		
Short Term Rating	A-1+	Affirmed
Massachusetts Bay Transp Auth CP		
Short Term Rating	A-1+	Affirmed
Massachusetts Bay Transp Auth CP		
Short Term Rating	A-1+	Affirmed
Massachusetts Bay Transp Auth CP		
Short Term Rating	A-1+	Affirmed
Massachusetts Bay Transp Auth CP		
Short Term Rating	A-1+	Affirmed
Massachusetts Bay Transp Auth CP		
Short Term Rating	A-1+	Affirmed
Massachusetts GASTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts GASTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts GASTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts GASTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts GASTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded

Ratings Detail (As Of April 14, 2023) (cont.)		
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts GO (wrap of insured) (FGIC & BHAC) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (AGM)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (AGM) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (BAM)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded

Ratings Detail (As Of April 14, 2023) (cont.)		
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (BAM) (SECMKT)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (CIFG)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (FGIC)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (FGIC) (National)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (MBIA) (National)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts GO (SYNCORA GTY)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts MISCTAX		
Long Term Rating	AAA/Stable	Upgraded
Massachusetts MISCTAX		
Long Term Rating	AAA/Stable	Upgraded
Boston Housing Authority, Massachusetts		
Massachusetts		
Boston Hsg Auth (Massachusetts) APPROP		
Long Term Rating	A+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transp Auth sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/A-1+/Stable	Upgraded
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV		
Long Term Rating	AA+/A-1+/Stable	Upgraded
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV		

Ratings Detail (As Of April 14, 2023) (cont.)		
Long Term Rating	AA+/A-1+/Stable	Upgraded
Massachusetts Department of Transportation, Massachusetts		
Massachusetts		
Massachusetts Dept of Transp (Massachusetts) GO		
Long Term Rating	AA+/A-1+/Stable	Upgraded
Massachusetts Dept of Transp (Massachusetts) GO		
Long Term Rating	AA+/A-1/Stable	Upgraded
Massachusetts Dept of Transp (Massachusetts) GO		
Long Term Rating	AA+/A-1/Stable	Upgraded
Massachusetts Development Finance Agency, Massachusetts		
Massachusetts		
Massachusetts Dev Fin Agy (Massachusetts) GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		

Ratings Detail (As Of April 14, 2023) (cont.)		
Massachusetts Bay Transp Auth (Massachusetts) sales tax		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax (AGM) (MBIA)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts		
Massachusetts Bay Transportation Authority, Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) sales tax (MBIA) (National)		
Unenhanced Rating	AA+(SPUR)/Stable	Upgraded
Massachusetts Department of Transportation, Massachusetts		
Massachusetts		
Metropolitan Highway System, Massachusetts		
Massachusetts Dept of Transp (Massachusetts) GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Department of Transportation, Massachusetts		
Massachusetts		
Metropolitan Highway System, Massachusetts		
Massachusetts Dept of Transp (Metropolitan Hwy Sys) GO		
Long Term Rating	AA+/Stable	Downgraded
Massachusetts Department of Transportation, Massachusetts		
Massachusetts		
Metropolitan Highway System, Massachusetts		
Massachusetts Dept of Transp (Metropolitan Hwy Sys) GO		
Long Term Rating	AA+/Stable	Upgraded
Massachusetts Department of Transportation, Massachusetts		
Massachusetts		
Metropolitan Highway System, Massachusetts		
Massachusetts Dept of Transp (Metropolitan Hwy Sys) GO		
Long Term Rating	AA+/Stable	Upgraded

Many issues are enhanced by bond insurance.