S&P Global
Ratings

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# Massachusetts; Appropriations; CP; General Obligation; General Obligation Equivalent Security

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

**Secondary Contact:**
Jillian Legnos, Hartford (1) 617-530-8243; jillian.legnos@spglobal.com

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| Credit Profile | | |
|---|---|---|
| US$350.0 mil GO bnds consolidated loan of 2020 ser C due 03/01/2050 | | |
| *Long Term Rating* | AA/Stable | New |
| US$200.0 mil GO bnds consolidated loan of 2020 ser B due 03/01/2043 | | |
| *Long Term Rating* | AA/Stable | New |
| US$100.0 mil GO bnds consolidated loan of 2020 ser A due 03/01/2029 | | |
| *Long Term Rating* | AA/Stable | New |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |

## Rationale

S&P Global Ratings assigned its 'AA' long-term rating to the Commonwealth of Massachusetts' $650 million general obligation (GO) bonds, consolidated loan of 2020, series A, B, and C.

At the same time, S&P Global Ratings affirmed its 'AA' long-term rating on approximately $23.7 billion of parity GO bonds outstanding, and its 'A' long-term rating 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. In addition, S&P Global Ratings affirmed its 'A-1+' short-term rating on Massachusetts' GO-secured commercial paper.

The outlook on all long-term ratings is stable.

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

- Deep and diverse economy, which continues to outperform the nation on several economic indicators;
- High income levels, with per capita income at 132% of the nation in 2018, the second-highest among the states;
- 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; and
- Good budget stabilization fund (BSF) balance, equal to an estimated 7.3% of expenditures and other uses at fiscal year-end 2019, and projected at 8.3% at fiscal year-end 2020.

Offsetting factors include high debt, pension, and other postemployment benefits (OPEB) liabilities. Combined debt, unfunded pension, and OPEBs per capita ranked fifth highest among all the states in fiscal 2018, according to our pension commentary "U.S. State Pension Reforms Partly Mitigate The Effects Of The Next Recession," (published Sept. 26, 2019, on RatingsDirect).

In particular, the commonwealth has a low 59.3% combined pension funded ratio on a Governmental Accounting Standards Board (GASB) basis and has contributed less to its pension funds than the actuarial annual required contribution (ARC) in every fiscal year since 2011. However, Massachusetts has put in place a plan to increase annual pension contributions 9.63% per year to fully amortize unfunded pension liabilities by 2036. Furthermore, the $958 million shortfall against the ARC in fiscal 2020, which we view as a structural deficit, is only about 2% of estimated budgetary operating expenditures. The commonwealth is paying 75% of the ARC in fiscal 2020, the same level as the year before. The state projects state pension contributions will grow by $2.1 billion above the fiscal 2020 level by 2026, the year when the commonwealth projects annual payments will equal the ARC, assuming the commonwealth continues to increase payments 9.63% per year.

Massachusetts' economy remains strong, in our view, although low unemployment is constraining employment growth. The commonwealth's average annual unemployment rate in 2018 was low at 3.3%, compared with 3.9% for the nation. Overall, IHS Markit forecasts 1.0% employment growth in calendar 2020 and 0.4% in calendar 2021, compared to 1.2% and 0.7%, respectively, for the nation. Much of the recent growth has been in the professional, scientific, and technical services sector, which consists of higher-paying jobs, although is perhaps contributing to rising home prices. Massachusetts has an above-average high-technology employment sector, which IHS Markit estimates at about 10% of state employment, compared with 6.5% for the country as a whole. Total state personal income rose a strong 5.7% in 2018 according to the federal Bureau of Economic Analysis, and state per capita income was 132% (second only to Connecticut), the same as the year before. In our view, Massachusetts' economic fundamentals and key anchors, which center on higher education, technology, finance, and health care, should contribute to continued expansion.

The commonwealth's operating revenues have come in better than budgeted over the past three years. Estimated fiscal 2019 tax revenue grew faster than budgeted, in part due to strong growth in volatile corporate tax revenues, similar to what some other states experienced in the wake of federal tax reform. As a result, the commonwealth has budgeted for a corporate tax decline in fiscal 2020, contributing to an originally budgeted projection of only 1.4% overall tax collection growth in fiscal 2020. Massachusetts' enacted its fiscal 2020 budget about a month into the new fiscal year, using an interim budget in the meantime. The enacted fiscal 2020 budget currently projects a small 0.1% operating surplus in fiscal 2020 based on 2.0% growth in total tax revenues, including settlements and judgments. However, through January 2020, cumulative fiscal 2020 tax receipts were up 4.9% over the prior-year period.

The result of recent above-budgeted tax growth has been a buildup of budget stabilization fund (BSF) balances since 2017, after a period of drawdowns beginning in fiscal 2013. The BSF fell to 3.1% of budgetary expenditures and other uses by fiscal 2017, before rising again. The BSF totaled $3.4 billion at fiscal year-end 2019, or a good 7.3% of expenditures and other uses, and is budgeted to increase to $4.0 billion, or what we view as a strong 8.3%, as the BSF receives a portion of surplus revenue and excess capital gains tax. Combined BSF and other operating funds balances are estimated at $4.0 billion, or 8.5% at fiscal year-end 2019, and budgeted to increase to $4.1 billion, also 8.5%, at fiscal year-end 2020.

The governor has proposed a fiscal 2021 budget with a consensus revenue forecast of 2.80% tax revenue growth, including an already enacted statutory reduction in the individual income tax rate to 5.00% from 5.05% and reinstitution of a charitable deduction. The governor's proposed budget projects spending growth of 2.3% and a $310 million increase in the BSF, including interest earnings. If the commonwealth follows recent trends, the final 2021 budget is likely to be adopted in the summer.

We view the accumulation of budget reserves during good economic times as especially important from a credit perspective in that the state has historically shown some cyclicality in its finances and we view its fixed costs as moderately high. Massachusetts drew down its BSF in fiscal years 2013 and 2014, even while revenues were increasing, and then essentially level-funded the BSF with small deposits until fiscal 2018, when revenues began to come in substantially above budget. We view the retention of BSF reserves, despite projected slow revenue growth in fiscal 2020 as a credit strength, but note that the commonwealth was able to budget the fiscal 2020 BSF increase, while simultaneously increasing spending at a faster pace than budgeted revenue growth, by using the unexpected excess surplus the occurred in fiscal 2019. Of interest is whether Massachusetts retains reserves in the year following closer to a breakeven yearly operating result, or if it reduces the BSF even while revenues are still growing strongly, as it did in fiscal years 2013 and 2014.

Although revenue growth has been strong in recent years, earlier the commonwealth had to make midyear budget adjustments in each fiscal year from 2015-2017, particularly because of Medicaid spending pressures. Health care spending has since been mitigated, in part, by greater scrutiny of Medicaid eligibility, which caused Medicaid enrollment member months to decline 1.9% in fiscal 2018 and 2.8% in 2019 as adults moved to the commonwealth's Health Insurance Connector Authority. Massachusetts projects 0.7% growth in enrollment in fiscal 2020, and only 0.9% growth in Medicaid total expenditures due in part to pharmacy reforms. We believe that the commonwealth's Medicaid costs are a significant entitlement expenditure, at about 34% of fiscal 2020 budgeted expenditures and other uses.

Other potential long-term challenges include growth in scheduled annual state pension payments of 9.63% per year through 2036--a pace we believe will likely exceed revenue growth. Although we recognize that Massachusetts has made budgeting its fixed costs a priority, we also view the growth in these areas as placing increased stress on its ability to maintain structural balance because each year funding less than the ARC will raise future years' ARC levels. The state currently projects that it won't reach ARC under its funding schedule until fiscal 2026.

On a generally accepted accounting principles (GAAP) basis, Massachusetts ended fiscal 2019 (the most recent audited year) with an available assigned and unassigned general fund balance of $2.44 billion, plus a BSF balance of $3.42 billion. This led to a combined available balance plus BSF of $5.87 billion, which we view as strong at 14.1% of general fund expenditures and transfers out, up from 8.7% at fiscal year-end 2018.

By most measures, we believe Massachusetts' debt burden remains high compared with that of other states, in part due to the commonwealth's support for local infrastructure. At audited fiscal year-end 2019, we calculate GO debt of $23.7 billion and total tax-supported debt of $39.0 billion, producing total tax-backed debt per capita of $5,644, and 7.9% of 2018 personal income. Tax-backed debt includes GO debt, sales and gas tax supported debt, including Massachusetts Bay Transportation Authority and Massachusetts School Building Authority debt supported from state resources, capital leases, and general fund contract assistance supported debt that supports Massachusetts Department of Transportation. We calculate fiscal 2019 total tax-backed debt service at 6.9% of general governmental spending on a GAAP audited basis, a level we view as moderately high. Planned debt issuance remains within the parameters of Massachusetts' debt affordability policy and bond cap, and we don't anticipate significant change in its debt ratios. As of Nov. 30, 2019, the commonwealth had $23.7 billion of GO debt outstanding.

Other long-term liabilities are also large, in our opinion. We believe Massachusetts' share of the net pension liability for combined state pensions systems is high at $37.7 billion as of the Jan. 1, 2019, valuation date on a GASB Statement Nos. 67 and 68 basis, or $6,028 per capita, and 8.4% of 2018 personal income. The aggregate funded ratio fell slightly to 59.3% in 2019 from 60.7% in 2018, with a 60% three-year average. Some of the reason net pension liabilities have not shown much improvement is that Massachusetts decided to lower its assumed actuarial return to a less aggressive 7.25% as of Jan. 1, 2019, from 7.35% in 2018, 7.50% in 2016, and 7.75% in 2015, which increased the actuarial liabilities. Massachusetts sets its annual pension contribution based on its own methodology under state statute; it has not fully funded its ARC since fiscal 2011, but expects to reach full ARC funding by 2026 under its plan to increase annual pension contributions 9.63% per year to fully amortize the unfunded liability by 2036. It only re-evaluates its annual pension funding schedule every three years, and recently raised the scheduled rate of annual increase from 8.9%, as well as pushed back the year of full ARC funding by two years.

In our opinion, Massachusetts' unfunded OPEB is also moderately high, although it has decreased significantly following recent deposits into an OPEB trust fund. The state's net OPEB liability on a GASB No. 74 basis has decreased to $12.2 billion as of a June 30, 2019, valuation date, or $1,771 per capita (using 2018 population), from $17.5 billion as recently as fiscal 2017, as offsetting OPEB trust fund assets rose to $1.4 billion. In 2018 and 2019, the commonwealth originally budgeted to transfer 10% of tobacco settlement revenue into its OPEB trust fund, but subsequent legislation after the close of each fiscal year increased the percentage to 30%. In fiscal 2019, $42.4 million of excess capital gains tax was also transferred into the OPEB trust fund. As of fiscal 2019, the OPEB trust fund was 10.1% funded on a GASB basis, with assets of $1.4 billion.

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, which is consistent with a 'AA' indicative rating.

## Outlook

The stable outlook reflects our view that Massachusetts' steady economic growth and proactive management will allow the commonwealth to continue to manage potential budgetary challenges, even if midyear budget shortfalls develop in future fiscal years. We believe the current increase in fiscal year-end 2019 reserves and that projected in fiscal 2020 are the result of small budgeted additions to reserves and extra funds from stronger-than-budgeted revenues. Our stable outlook also anticipates that the commonwealth will budget for close-to-breakeven operations during our two-year outlook horizon, and make midyear budget corrections should revenues weaken, as well as bank a portion of unexpected revenue windfalls in its BSF. At this point in the economic cycle and at the current rating level, we expect Massachusetts to modestly improve its BSF and maintain good balances to prepare for a potential recession.

### Upside scenario

Improvement in the rating or outlook could occur if the commonwealth strengthened its pension funding discipline based on a prudent actuarial footing, while retaining material budget reserves during periods of economic growth as a matter of budgetary policy.

### Downside scenario

We could lower the rating if Massachusetts fails to maintain near-structural balance during periods of economic expansion. Such factors that could further pressure the rating include

Medicaid costs outpacing revenue growth, reduced revenues in recessions due to income tax cyclicality from above-average high technology sector employment, the effect of federal tax reform on state and local tax deduction caps in high-tax states, and increasing state fixed costs in excess of revenue growth that might lead to significant structural imbalance and rapidly diminishing reserves.

More specifically, these factors could stress the state's structural balance to the extent that Massachusetts fails to adhere to its plan to increase annual pension contributions by 9.63% per year to amortize unfunded pension liabilities or, if this proves insufficient, to keep GASB pension funded ratios from materially declining.

## 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 accounted for about 36% of total fiscal 2018 spending (35% budgeted in 2019) while direct local aid accounted for about 13% in 2018 (13% budgeted in 2019). 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 citizens' initiative to place a 4% income tax surcharge on incomes of more than $1 million gathered enough signatures to be on the November 2018 ballot, but the Massachusetts Supreme Court did not allow it to go to a vote as it impermissibly tied increased tax revenue to specific spending categories.

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 capital improvement plan (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. 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; however, the mechanism has been weakened in some previous years by the legislature's decision to adjust deposit thresholds and suspend required transfers into the fund.

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. However, in fiscal years 2015 and 2016, the commonwealth diverted to the general fund excess capital gains tax that would otherwise have gone to the BSF. An indexed threshold and lower collections in fiscal 2017 eliminated the potential for a transfer in that fiscal year, although high capital gains tax has resulted in higher BSF deposits than originally budgeted in fiscal years 2018 and 2019, and projected for 2020. Some judgments and settlements must also be deposited in 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.

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 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 fiscal 2014.

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. A voter initiative to add an extra 4% income tax to annual income of more than $1 million a year, that would have been dedicated to education, gathered enough signatures to be on the November 2018 ballot, but did not survive a court challenge. As a result, it was stripped off the ballot, due to its provisions that would restrict use of revenue proceeds, which is impermissible for voter initiatives under the commonwealth's constitution. However, the legislature subsequently approved a similarly worded constitutional amendment in 2019, which if approved by the legislature again in 2021 could go on the November 2022 ballot. As a referendum authorized by the legislature, instead of voter petition, it is considered to have a better chance of withstanding a court challenge.

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 a Boston metropolitan area that includes many higher education institutions and associated technology companies, represents an important credit strength.

Massachusetts' labor market fared well in 2018, spurred by above-average growth in the high-paying professional, scientific, and technical services sector. The average annual unemployment rate declined to a very low 3.3% in 2018, following an already low 3.7% in 2017, and compared to a 2018 federal unemployment rate of 3.9%. The U.S. Census

Bureau population estimate for Massachusetts in 2018 is 6.9 million, a 0.57% increase over 2017, following a 0.50% increase in 2016. Over the past 10 years, state population increased 6.7%, compared to 7.6% for the nation. Although below that of the nation, state population growth has outpaced the region since 2007 and we expect this trend to continue. The commonwealth's age dependency ratio of nonworking age population to working age population, at 56.6% in 2017, was better than that of the nation (61.8%).

The commonwealth has always had high income levels. Per capita personal income increased to $71,693 in 2018, or 132% of the national level, level with the year before and up from 127% in 2014. State per capita income ranks second highest among all the states. 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 Markit forecasts real gross state product (GSP) to rise 2.2% in 2020, 1.9% in 2021, and 1.7% in 2022, slightly under its respective U.S. forecast of 2.0%, 2.0%, and 1.7%, respectively, for the same years. In 2018, GSP per capita was strong at 131% of the nation.

We view the economy as slightly more concentrated in education and health services than the nation as a whole. Education and health services accounted for 21.9% of total state nonfarm employment in 2018 according to the Bureau of Labor Statistics, compared with 15.9% for the nation. This is followed by professional business services (16.0% versus 14.0%), and trade and transport (15.9% versus 18.6% nationally). The manufacturing and construction sectors, known for their cyclicality, represented only 6.7% and 4.3% 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. IHS Markit estimates about 10% of state employment is in high-technology-related industries. In addition, Massachusetts' defense-related industries continue to perform well, and the commonwealth ranks high in the value of federal defense and research contract awards. However, it is unclear how recent federal tax reform, with its limitation on state and local tax deductions, might affect high-tax states such as Massachusetts.

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, indexed for inflation. However, state budgets in fiscal years 2013 and 2014 drew down the BSF, and the commonwealth overrode the BSF formula during fiscal years 2015-2019 by either retaining all excess capital gains tax or by resetting the hurdle for excess capital gains at a higher level than in statute. As a result, we viewed the BSF as essentially level funded during fiscal years 2014-2017, while the build-up in the BSF in fiscal years 2018 and 2019 was slower than what would have occurred if the statute had not been overridden.

The threshold for excess capital gains tax to be diverted to the BSF was set at $1 billion for fiscal years 2011, 2012, and 2013. The statute was subsequently revised to include an annual adjustment factor 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, state budgets diverted capital gains taxes that would have otherwise flowed to the BSF to instead pay for general fund budget expenditures. In 2017, capital gains taxes came in below the level that would have triggered a transfer of excess capital gains to the BSF.

The adopted fiscal 2018 budget would have added only $66 million to the BSF if revenues had come in at levels forecast in the budget; however, strong capital gains tax came in above the reset higher trigger, producing a $463 million transfer to the BSF that, along with a small $13 million deposit required to be transferred from unclaimed property tax net revenue, brought the BSF up to 4.5% of expenditures and other uses. The fiscal 2019 adopted budget projected a $368 million transfer to the BSF. Due to stronger-than-budgeted revenue, the BSF actually increased by $1.4 billion in fiscal 2019, bringing it up to $3.4 billion, or what we view as a good 7.3% of budgetary expenditures and other uses.

Massachusetts' adopted fiscal 2020 budget projects 2.0% growth in operating funds tax revenue (including settlements and judgments, and reflecting a small cut in income taxes). Including federal reimbursements, other revenue and sources, and transfers in, the state budget projects 0.05% overall growth in total budgeted operating funds revenue and other sources, against 3.3% growth in total budgeted operating expenditures and other uses, including transfers out. The net result is that Massachusetts is projecting a small fiscal 2020 operating surplus of $53.1 million, or 0.1% of expenditures and other uses. However, this does not include an additional $476 million budgeted to be deposited into the BSF from excess capital gains tax and the previous year's consolidated operating surplus carried over from fiscal 2019. Actual year-to-date state tax collections for the first seven months of fiscal 2020 through January 2020 have come in 4.9% higher than the previous year, or very slightly above the state's budget benchmark for the period. The $476 million budgeted deposit to the BSF in 2020 is somewhat above the original tax revenue forecast due to unexpectedly high capital gains tax and net operating surplus carried over from fiscal 2019.

The commonwealth is now projecting that with investment income and other revenues its BSF should grow in total by $566 million to reach $4.0 billion at fiscal year-end 2020, or a strong 8.3% of budgeted operating expenditures and other uses.

The BSF reached a previous 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 judgments and settlement and other surpluses to build up the fund again to $1.65 billion at fiscal year-end 2012, before drawing it down to $1.25 billion in 2014. The budgeted increase in fiscal 2020 to $4.0 billion would represent the highest size of the BSF in dollar terms that it has yet reached.

The state has released a fiscal 2021 consensus tax revenue forecast for use in preparing the 2021 budget, forecasting 2.8% tax revenue growth from a revised fiscal 2020 tax estimate, which includes another final statutory income tax cut that went into effect Jan. 1, 2020. Fiscal 2020 forecast revenues were revised slightly upward by $190 million above the original 2020 budget projection in the January 2020 forecast update, but are still within 1% of the original budget projection. The governor has released an executive budget proposal for fiscal 2021 that basically proposes a breakeven budget with a $310 million deposit to the BSF.

We view Massachusetts' liquidity as strong, with the help of annual cash-flow note borrowing. The commonwealth does not engage in interfund borrowing. It currently projects to end fiscal 2020 with a non-segregated cash balance of $3.4 billion, or 7.1% of projected expenditures and other uses, and estimates its month-end cash low point in fiscal 2020 is projected to be March 2020, with a $2.2 billion nonsegregated operating funds cash balance at month end. In fiscal 2020, the commonwealth issued $1.4 billion in revenue anticipation notes, maturing in April, May, and June 2020. Cash flow notes must be repaid by the end of the fiscal year. Fiscal 2019 ended with a nonsegregated operating funds cash position of $4.5 billion.

We view Massachusetts' revenue sources as diverse. Income tax was 58% of operating funds tax revenue in fiscal 2019 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. 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-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 accounts for 34.4% of budgeted fiscal 2020 total operating expenditures and other uses, while health and human services accounted for 13.0%. Operating funds' debt service accounted for 5.2%, OPEB costs were budgeted at 1.0% of expenditures, and pension transfers 5.9%.

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

## Debt And Liabilities

### Debt

We calculate total GO bonds outstanding at fiscal year-end 2019, the most recent audited year, at $23.7 billion, and total tax-supported debt at $39.0 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. The commonwealth reports it had $23.7 billion of GO debt outstanding as of Nov. 30, 2019. By most measures, Massachusetts' debt burden remains high compared with that of other states. The variable-rate portfolio is 9% of total GO debt, and the commonwealth actively manages this under formal debt policies. About $1.1 billion, or 5% 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. There are no major plans to significantly expand its unhedged portfolio in the near term. The commonwealth also has about $518 million of direct-placement debt outstanding in five bond issues, whose structure we do not believe creates an unusual risk to Massachusetts. Tax-backed debt per capita is high, in our view, at what we calculate as $5,644 at fiscal year-end 2019 and 7.9% of 2018 personal income. We also calculate combined total tax-backed debt service to operating expenditures as high at 6.9% on a GAAP basis.

The current five-year CIP projects debt service remaining below the commonwealth's calculation of 8% of budgeted revenues through fiscal 2023. 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 2019 through 2023 calls for new bonding of $2.3 billion, about level with that of recent years, as part of a total five-year capital budget of $4.4 billion. Our debt calculation includes special tax bonds supported by statewide tax sources in the ratios we use to assess total tax-supported debt. In December 2019, a capital debt affordability committee submitted to the governor and legislature a plan that estimated $2.53 billion of GO debt could be prudently issued by the commonwealth in fiscal 2020. 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 as poor, with Massachusetts funding substantially underfunding the ARC since 2011. ARC is calculated using previous Governmental Accounting Standards Board (GASB) statement 27 methodology because the more recent GASB statements 67/68's annually determined contribution (ADC) is arrived at using commonwealth statutory law that is not based on the current year's full actuarial requirement. In fiscal years 2019 and 2020, Massachusetts is budgeted to pay 75% of ARC. Every year the ARC is not funded, it will increase in future years until full ARC funding is reached. Currently, the commonwealth projects it will reach full ARC funding in fiscal 2026, based on increasing ARC contributions 9.63% per year, which will increase annual state contributions from $2.8 billion in fiscal 2020 to $4.9 billion in 2026, a substantial increase. We also calculate Massachusetts' pension contribution for state employees at 86% of the level needed to maintain static funding, and 69% of the level to meet minimum funding progress, which we view as weak (see "Assessing U.S. Public Finance Pension And Other Postemployment Obligations For GO Debt, Local Government GO Ratings, And State Ratings," published Oct. 7, 2019).

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 to 8.00% from 8.25% in 2013, to 7.75% in 2015, to 7.50% in 2016, to 7.35% in 2018, and to 7.25% in 2019. This is above our pension criteria guidance guideline of 6.50%. The commonwealth reported a five-year pension fund rate of return of 7.01% as of fiscal 2019.

The combined pension-funded ratio of the various state retirement systems' net pension liability fell slightly to 59.3% as of Jan. 1, 2019, on a GASB basis, from 60.7% the year before in part because of the more conservative rate of return assumptions. The three-year average was 60%.

The net pension liability was $41.6 billion in fiscal 2019, or a high $6,028 per capita and 8.4% of 2018 state personal income. We will believe pension ratios will remain weak until the commonwealth reaches annual ARC funding, which would be in 2026 under their current funding schedule.

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 fell very slightly to 56.3% as of Jan. 1, 2019, but down from its most recent high point of 71.1% in 2011. If Massachusetts continues to increase pension contributions by 9.63% per year (a change from its 8.94% per year projection last year), the commonwealth calculates under its actuarial assumptions that it would have a combined funded ratio of 55.1% in 2023. Based on Massachusetts' actuarial methodology, the commonwealth's primary government combined unfunded pension liability was $44.0 billion, as of Jan. 1, 2019.

Massachusetts' current plan assumes 9.63% per year growth in commonwealth annual pension contributions to reach full amortization of the commonwealth's unfunded liability by fiscal 2036, four years ahead of Massachusetts' statutory requirement. However, from a funding standpoint, Massachusetts 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 slightly more 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 actuarially determined contribution (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. The commonwealth has not contributed its full annual ADC since 2011, and we do not expect that it will do so in 2021.

In its most recent three-year funding schedule reset, Massachusetts updated its planned pension contributions to the aforementioned 9.63% per year, up from previously scheduled 8.9% annual increases, and 7.0% annual increases in the three-year plan before that. Despite these increased contributions, the funded ratio on an actuarial basis is projected to decline through 2023, although Massachusetts currently projects it will reach full ADC funding by 2026 (and increase from 2024 in the previous plan) and start to improve thereafter. In fiscal 2020, the commonwealth projects it will contribute $2.8 billion, or 75% of the $3.8 billion ARC, to its two main employees' retirement system, the same percentage as was contribution in 2019. 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 ratio of active-to-retirees is 1.41 and 1.39, 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.

### Other postemployment benefits

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

As of June 30, 2019, Massachusetts had a $12.2 billion net unfunded OPEB liability, which we consider sizable, at $1,771 per capita, but down significantly from $17.4 billion as of June 30, 2017, due to various reform measures that have been phased in and deposits to an OPEB trust fund. Deposits to the trust fund also enable a 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 2016, 2017, 2018, and 2019 was 30%, 10%, 30%, and 30%, respectively. In fiscal years 2018 and 2019, $26.0 million and $42.4 million, respectively, of excess capital gains tax was also transferred into the OPEB trust fund. As of fiscal 2019, the OPEB trust fund was 10.1% funded on a GASB basis, with assets of $1.4 billion.

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.

| Ratings Detail (As Of February 14, 2020) | | |
|---|---|---|
| Massachusetts go bnds cons loan ser 2019F due 05/01/2029 | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts CP | | |
| *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 | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/A-1/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO bnds, consolidated loan of 2019 (Federally Taxable) ser 2019H due 09/01/2049 | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO rfdg bnds ser 2019 C due 05/01/2031 | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO VRDB | | |
| *Long Term Rating* | AA/A-1/Stable | Affirmed |
| Massachusetts GO VRDB | | |
| *Long Term Rating* | AA/A-1+/Stable | Affirmed |
| Massachusetts GO VRDB | | |
| *Long Term Rating* | AA/A-1/Stable | Affirmed |
| Massachusetts GO (wrap of insured) (FGIC & BHAC) (SEC MKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (AGM) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |

| Ratings Detail (As Of February 14, 2020) (cont.) | | |
|---|---|---|
| Massachusetts GO (AGM) (SEC MKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (AMBAC) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (BAM) (SECMKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (BAM) (SECMKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (BAM) (SECMKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (BAM) (SECMKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (BAM) (SEC MKT) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (CIFG) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (FGIC) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (FGIC) (National) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (MBIA) (National) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO (SYNCORA GTY) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| **Boston Hsg Auth, Massachusetts** | | |
| Massachusetts | | |

| Ratings Detail (As Of February 14, 2020) (cont.) | | |
|---|---|---|
| Boston Hsg Auth (Massachusetts) APPROP | | |
| *Long Term Rating* | A/Stable | Affirmed |
| **Massachusetts Bay Transp Auth, Massachusetts** | | |
| Massachusetts | | |
| Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV (MBIA) (National) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV RMKTD | | |
| *Long Term Rating* | AA/A-1/Stable | Affirmed |
| Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV (FGIC) (National) | | |
| *Unenhanced Rating* | AA(SPUR)/Stable | Affirmed |
| **Massachusetts Development Finance Agency, Massachusetts** | | |
| Massachusetts | | |
| Massachusetts Dev Fin Agy (Massachusetts) GO | | |
| *Long Term Rating* | AA/Stable | Affirmed |
| **Univ of Massachusetts Bldg Auth, Massachusetts** | | |
| Massachusetts | | |
| University of Massachusetts Bldg Auth (Massachusetts) GOEQUIV | | |
| *Long Term Rating* | AA/A-1/Stable | Affirmed |
| Univ of Massachusetts Bldg Auth (Massachusetts) GOEQUIV | | |
| *Long Term Rating* | AA/A-1+/Stable | Affirmed |

Many issues are enhanced by bond insurance.