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Summary:

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

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Credit Profile		
US\$650.0 mil GO rfdg bnds ser 2020B due 08/01/2030		
<i>Long Term Rating</i>	AA/Stable	New
US\$500.0 mil GO bnds consolidated loan of 2020 ser D due 03/01/2050		
<i>Long Term Rating</i>	AA/Stable	New
US\$456.575 mil GO rfdg bnds (Federally Taxable) ser 2020C due 07/01/2041		
<i>Long Term Rating</i>	AA/Stable	New
US\$175.0 mil GO rfdg bnds (Multi-Model Bnds) ser 2020A due 08/01/2043		
<i>Long Term Rating</i>	AA/Stable	New
Massachusetts GO		
<i>Long Term Rating</i>	AA/Stable	Affirmed

Rating Action

S&P Global Ratings assigned its 'AA' long-term rating to the Commonwealth of Massachusetts' \$500 million general obligation (GO) bonds consolidated loan of 2020, series D; \$650 million GO refunding bonds 2020 series B; and \$175 million GO refunding bonds 2020 series A (multi-modal bonds). The 2020A multi-modal bonds will have a final maturity of Aug. 1, 2043, and a mandatory put date of June 1, 2023 in their initial fixed-rate term rate mode, at which point they are expected to be remarketed either as new term bonds, or converted to another interest rate mode.

At the same time, S&P Global Ratings affirmed its 'AA' rating on outstanding commonwealth GO debt; 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.

Massachusetts' full faith and credit are pledged to the GO bonds and commercial paper.

The series 2020D bonds will fund various capital projects as part of the commonwealth's ongoing long-term capital plan. The 2020A multi-modal bonds will refund series 2014D-1 GO bonds and the series 2020B bonds will refund various bond series outstanding.

Credit overview

Massachusetts experienced a large one-month decrease in April 2020 tax revenues, which fell 52.2% below their benchmark January forecast, while cumulative year-to-date fiscal 2020 tax revenues were 7.7% below forecast.

Although these represent very large declines, most of the decline reflects a temporary deferral of April income tax because of the extension of the state income tax filing deadline to July. In our view, Massachusetts retains the ability to access adequate external liquidity for tax revenue shortfalls that could occur this fiscal year and next using either its own liquidity or a \$1.75 billion line of credit agreement recently entered into with a syndicate of commercial banks (expiring May 10, 2021), or potentially drawing up to \$7.859 billion under a federal reserve municipal liquidity facility (MLF) available under the Coronavirus Aid Relief and Economic Security (CARES) Act. Currently, the commonwealth does not have set plans to draw on either the commercial line of credit or the federal MLF, but wants to retain these potential sources of liquidity for back-up purposes, if necessary. In addition, the commonwealth has received \$2.46 billion of federal funds under the CARES Act, which has been deposited into the commonwealth's general fund and is available as a resource for cash purposes, although CARES Act money is required to be fully spent by the end of December for coronavirus-related expenditures. Even if Massachusetts does not borrow externally, we believe the commonwealth would still have more than adequate liquidity if the legislature authorized the use of its substantial budget stabilization fund (BSF) for liquidity needs, and would also have adequate liquidity with the use of the BSF next fiscal year, if the commonwealth makes budget adjustments, as expected, when it adopts its fiscal 2021 budget this summer.

The state has not yet released updated revenue projections as a result of lost economic activity due to the COVID-19 pandemic. However, key state legislative leaders have said publicly that tax revenue losses in fiscal 2021 could be \$2 billion-\$8 billion below the \$31.2 billion January tax revenue forecast normally used for budgeting purposes, which we would consider a substantial decline in forecast revenue. The governor also has asked for a supplemental appropriations bill requesting an additional \$1 billion of such appropriations in fiscal 2020 for COVID-19-related expenditures, which would largely be paid for from additional federal funds. The state house of representatives has amended its rules to release a fiscal 2021 budget from its Ways and Means Committee as late as July 1, 2020, when a revised forecast might become available. The state fiscal year begins July 1, but Massachusetts has typically enacted a budget in July or August, passing a temporary interim budget in the meanwhile.

The commonwealth's April 7, quarterly cash flow forecast, made before the pandemic and based on the January forecast, projected state unrestricted cash of \$4.0 billion at fiscal year-end June 30, 2020. However, this did not include the commonwealth's BSF, equal to \$3.4 billion at fiscal year-end 2019, or 7.3% of 2019 budgetary expenditures and other uses. Under the January forecast, the BSF was budgeted to rise to \$4.0 billion at fiscal end 2020. (The BSF requires legislative authorization for use.) At the end of March, monthly state tax collections were running slightly ahead of budget; at the end of April, cumulative year-to-date tax revenues were \$1.9 billion below the forecast benchmark, and one-month April revenue was \$2.2 billion below the one-month April tax benchmark. While these are large shortfalls, we believe that with the ability to borrow for cash flow purposes, the expected receipt in July of deferred April income tax payments, and the potential availability of the BSF with legislative authorization, should provide the commonwealth with adequate time and resources until enactment of its fiscal 2021 budget.

An adjustment to the January consensus revenue forecast is expected as part of the fiscal 2021 budget process this summer. Our rating assumes that Massachusetts will take actions necessary to substantially close its structural budget gap in its adopted fiscal 2021 budget using updated forecasts. Although fiscal 2021 gap-closing actions might include drawdowns of its BSF, our rating assumes that the commonwealth will not resort to actions creating material structural

deficits that will have to be solved in subsequent years. To the extent additional COVID-19-related costs occur, we expect such expenses to be largely covered by federal CARES Act reimbursement, although the act does not, at present, reimburse for tax revenue lost due to economic conditions.

We believe that Massachusetts' economy, with a substantial tech sector presence in the Boston area, might be well-positioned to come out of the current recession when pandemic restrictions are fully lifted, although capital gains tax could be a weakness over the coming year in this income tax-dependent state, which we view as a restraining factor in the growth of tax revenues coming out of the recession.

While Massachusetts has high income levels and a good rainy-day fund, this is partially offset by high debt and persistent underfunding of its annual actuarial pension contribution. The commonwealth has contributed less than its actuarial annual required contribution (ARC) since 2011 and is not expected to catch up to static funding levels any time soon.

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

- Deep and diverse economy, which has outperformed the nation on several economic indicators in recent years;
- High income levels, with per capita income at 132% of the nation in 2019, the second-highest among the states;
- A 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; and
- Good budget stabilization fund (BSF) balance, equal to an estimated 7.3% of expenditures and other uses at fiscal year-end 2019, and budgeted at 8.3% at fiscal year-end 2020, before the effect of recent pandemic-related revenue losses.

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 to the ARC in every fiscal year since 2011. However, Massachusetts has put in place a plan to increase annual pension contributions a steep 9.63% per year to fully amortize unfunded pension liabilities by 2036, although with recent stock market declines, achievement of full funding could be pushed back, or the state might need to increase pension contributions even more steeply. However, the \$958 million shortfall against the ARC budgeted in fiscal 2020, which we view as a structural deficit, is only about 2% of estimated fiscal 2020 budgeted operating expenditures. The commonwealth is paying 75% of the ARC in fiscal 2020, the same level as the year before, and we calculate that pension contributions in fiscal 2019 to Massachusetts' employee retirement system were only 86% of static funding requirements, and 83% of static funding for the teachers' pension system. Massachusetts projects state pension contributions will increase by \$2.1 billion above the fiscal 2020 level by 2026, the year when the commonwealth projects annual payments will equal the ARC, assuming it continues to increase payments 9.63% per year and pension returns this year meet existing actuarial assumptions.

Environmental, social, and governance factors

We consider Massachusetts' environmental, social, and governance risks as being generally in line with the state sector, and the commonwealth has historically maintained a stable management and policy framework to respond to developing risks.

Stable Outlook

The stable outlook reflects our view that Massachusetts will be able to arrange sufficient external cash flow borrowing to provide adequate liquidity through fiscal year-end 2021, and this, in conjunction with its currently sizable BSF, will provide time to make fiscal 2021 budget adjustments that will avoid significant structural deficits, beyond use of its BSF. This supposes that the commonwealth's economy can recover most of its pandemic-related economic losses over the coming year once restrictions are lifted.

Upside scenario

We do not foresee a positive development in the near term due to the severe impact of the current recession on state tax revenue. In the longer term, an upgrade would require a strong rebound in Massachusetts' economy, the commonwealth instituting measures to strengthen its pension funding discipline based on a prudent actuarial footing, and the resumption of a BSF build-up as a matter of budgetary policy.

Downside scenario

We could lower the rating if we believe Massachusetts will fail to make budget adjustments to maintain near-structural balance even after drawing down its BSF. Factors that could pressure the rating include a slow rebound in tax revenue next year or overly optimistic revenue projections, significant unexpected growth in Medicaid costs, even with increased federal reimbursement under the CARES Act, or significant increases in debt or other fixed costs. In particular, weak liquidity, significant deficit borrowing, or a significant fall in pension funded levels due to the commonwealth falling significantly behind static pension funding contribution levels, could trigger a negative outlook or downgrade.

Credit Opinion

Massachusetts economy

Massachusetts' economy was strong going into the current recession, with a low 2.9% average unemployment rate in 2019, compared with 3.7% for the nation. Nevertheless, the commonwealth's economy has been affected by pandemic restrictions. According to the Bureau of Labor Statistics, preliminary state unemployment in April was 15.1%, compared with 14.7% nationally. IHS Markit forecasts a steep 8.7% drop in real gross state product (GSP) in calendar 2020, compared with a 7.6% drop for the U.S., followed by 5.0% growth in 2021, slightly below the 5.1% growth IHS Markit forecasts for the nation. Much of the commonwealth's recent growth has been in the professional, scientific, and technical services sector, which consists of higher-paying jobs, and Massachusetts has an above-average high-technology employment sector, which IHS Markit estimated at about 10% of state employment, compared with 6.5% for the U.S. as a whole. The GSP rose a strong 2.5% in 2019 according to the federal Bureau of Economic Analysis, compared with 2.3% for the U.S., and state per capita income was 132% (second only to Connecticut). In our

view, Massachusetts' economic fundamentals and key anchors, which center on higher education, technology, finance, and health care, should position the commonwealth for an economic rebound once pandemic restrictions are lifted.

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 \$5,652, and 7.5% of personal income. Tax-backed debt includes GO debt, and 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. As of March 31, 2020, the commonwealth had \$24.1 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 \$6,037 per capita, and 8.1% of 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 commonwealth'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 \$1,774 per capita, from \$17.5 billion as recently as fiscal 2017, as offsetting OPEB trust fund assets rose to \$1.4 billion. In 2018 and 2019, Massachusetts 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 this 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.

For more information, please refer to our most recent Massachusetts full analysis published Feb. 14, 2020.

Related Research

Through The ESG Lens 2.0: A Deeper Dive Into U.S. Public Finance Credit Factors, April 28, 2020

Ratings Detail (As Of June 4, 2020)		
Massachusetts go bnds cons loan ser 2019F due 05/01/2029		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts CP		
<i>Short Term Rating</i>	A-1+	Affirmed
Massachusetts CP A		
<i>Short Term Rating</i>	A-1+	Affirmed
Massachusetts CP B		
<i>Short Term Rating</i>	A-1+	Affirmed
Massachusetts GO		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO		
<i>Long Term Rating</i>	AA/A-1/Stable	Affirmed
Massachusetts GO		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO bnds, consolidated loan of 2019 (Federally Taxable) ser 2019H due 09/01/2049		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO cons loan of 2020 ser D due 03/01/2050		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO rfdg bnds ser 2019 C due 05/01/2031		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO rfdg bnds ser 2020A due 03/01/2042		
<i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO VRDB		
<i>Long Term Rating</i>	AA/A-1/Stable	Affirmed
Massachusetts GO VRDB		
<i>Long Term Rating</i>	AA/A-1+/Stable	Affirmed
Massachusetts GO VRDB		
<i>Long Term Rating</i>	AA/A-1/Stable	Affirmed
Massachusetts GO (wrap of insured) (FGIC & BHAC) (SEC MKT)		
<i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (AGM)		
<i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed

Ratings Detail (As Of June 4, 2020) (cont.)

Massachusetts GO (AGM) (SEC MKT) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (AMBAC) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SECMKT) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (BAM) (SEC MKT) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (CIFG) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (FGIC) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (FGIC) (National) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (MBIA) (National) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO (SYNCORA GTY) <i>Unenhanced Rating</i>	AA(SPUR)/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed
Massachusetts GO <i>Long Term Rating</i>	AA/Stable	Affirmed

Boston Hsg Auth, Massachusetts

Massachusetts

Ratings Detail (As Of June 4, 2020) (cont.)

Boston Hsg Auth (Massachusetts) APPROP		
<i>Long Term Rating</i>	A/Stable	Affirmed
Massachusetts Bay Transp Auth, Massachusetts		
Massachusetts		
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV (MBIA) (National)		
<i>Unenhanced Rating</i>	AA(SPUR)/Stable	Current
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV		
<i>Long Term Rating</i>	AA/Stable	Current
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV RMKTD		
<i>Long Term Rating</i>	AA/A-1/Stable	Current
Massachusetts Bay Transp Auth (Massachusetts) GOEQUIV (FGIC) (National)		
<i>Unenhanced Rating</i>	AA(SPUR)/Stable	Current
Massachusetts Development Finance Agency, Massachusetts		
Massachusetts		
Massachusetts Dev Fin Agy (Massachusetts) GO		
<i>Long Term Rating</i>	AA/Stable	Current
Univ of Massachusetts Bldg Auth, Massachusetts		
Massachusetts		
University of Massachusetts Bldg Auth (Massachusetts) GOEQUIV		
<i>Long Term Rating</i>	AA/A-1/Stable	Current
Univ of Massachusetts Bldg Auth (Massachusetts) GOEQUIV		
<i>Long Term Rating</i>	AA/A-1+/Stable	Current

Many issues are enhanced by bond insurance.

Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

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