CREDIT OPINION
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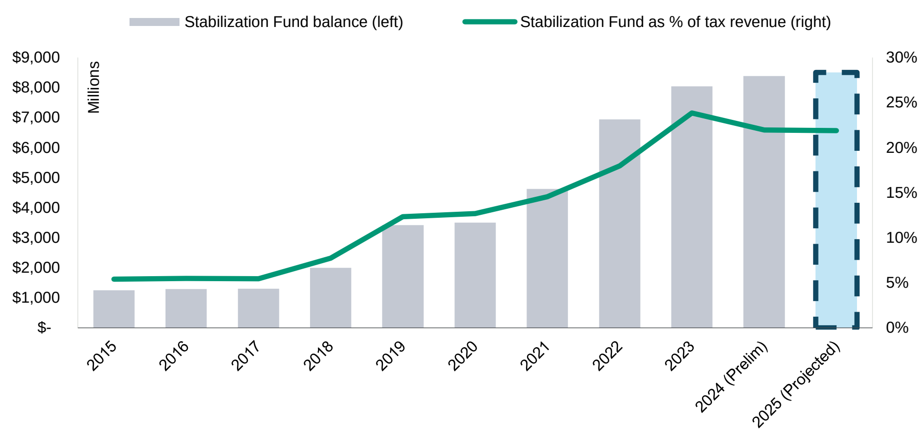
Massachusetts (Commonwealth of)

Update to credit analysis

Summary

The Aa1 issuer rating assigned to the Commonwealth of Massachusetts is supported by a robust economic base, with a highly educated workforce and above-average personal income levels that help meet the demands of comparatively heavy long-term liabilities. The commonwealth also faces increased spending pressures in the coming years, particularly for pension contributions and to support the Massachusetts Bay Transportation Authority. The balance in the Commonwealth Stabilization Fund has reached a record level and will help offset revenue volatility from the state's economically sensitive tax system. Massachusetts' governance framework is strong, including sound financial and budgetary management practices that serve it well during economic downturns. General obligation bonds issued by Massachusetts are rated the same as the issuer rating, based on a full faith and credit pledge.

Exhibit 1
Stabilization Fund will remain near record level this fiscal year



Source: Commonwealth of Massachusetts

Credit strengths

» Large economy focused on technology, healthcare, education and related sectors that pay above-average wages

» Reserve fund balance at or near record levels that provides a substantial buffer against economic downturns

» Strong financial management and a practice of quickly closing budget gaps through spending cuts, revenue increases and use of reserves if necessary

Credit challenges

- » Combined debt and pension liabilities that are among the highest in the state sector relative to revenue, resulting in elevated fixed costs that limit fiscal flexibility
- » Demographic profile weakened by negative domestic migration and aging population, offset by strong immigration trends
- » Exposure to rising costs for government programs such as Medicaid and to needs of related entities such as the Massachusetts Bay Transportation Authority

Rating outlook

Massachusetts' stable outlook is supported by strong financial management and the state's record reserve levels, which will accommodate moderating revenue growth even if spending pressures intensify and will help fill budget gaps that could emerge in an unexpected economic downturn.

Factors that could lead to an upgrade

- » Leverage that moderates in relation to the sector median, reducing the gap by approximately one-third
- » Fiscal sustainability measures that signal long-term capacity to maintain a Stabilization Fund balance equal to at least 15% of revenue

Factors that could lead to a downgrade

- » Protracted structural budget imbalance leading to repeated draws on financial reserves or other nonrecurring measures
- » Leverage that grows to more than 300% of revenue, combined with underperforming revenue and economic growth trends

Key indicators

Exhibit 2

	2021	2022	2023	State Medians (2023)
Economy				
Nominal GDP ($billions)	645.4	691.5	733.9	313.0
Real GDP, annual growth	6.4%	2.1%	1.8%	2.2%
RPP-adjusted per capita income as % of US	121%	118.1%		97.7%
Nonfarm employment, annual growth	4%	4.0%	1.1%	2.1%
Financial performance				
Available balance as % of own-source revenue	24.2%	30.1%	31.4%	44.4%
Net unrestricted cash as % of own-source revenue	34.7%	40.4%	34.0%	72.4%
Leverage				
Total long-term liabilities as % of own-source revenue	378%	303.7%	247.4%	99.4%
Adjusted fixed costs as % of own-source revenue	16.5%	13.1%	13.6%	5.2%

Sources: US Bureau of Economic Analysis, US Bureau of Labor Statistics, audited financial statements, Moody's Ratings adjustments.

Profile

The Commonwealth of Massachusetts is the 16th-largest state by population, with an estimated seven million residents as of 2023, according to the US Census Bureau. Its gross domestic product, at $733.9 billion in 2023, ranks 12th among the states, according to the US Bureau of Economic Analysis. The state's per-capita income in 2023 was about 130% of the nation's, the highest of any state.

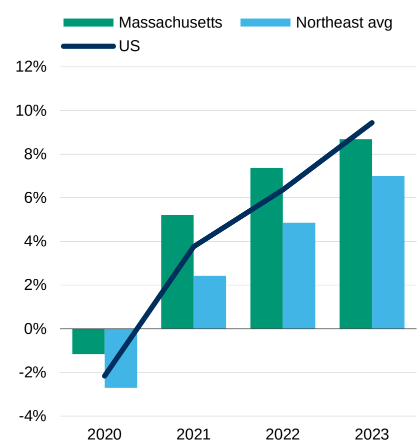
Detailed credit considerations

Economy

The Massachusetts economy will remain a key credit strength. Real GDP growth has outpaced the Northeast including New England and several other states.[1] Until 2023, the state's GDP recovery was stronger than the nation's (Exhibit 3). Above-average labor force participation constitutes a positive social factor, and unemployment in the state has remained low, ranging between 2% and 4% for most of the past three years. High per capita income is yet another positive economic feature (Exhibit 4).

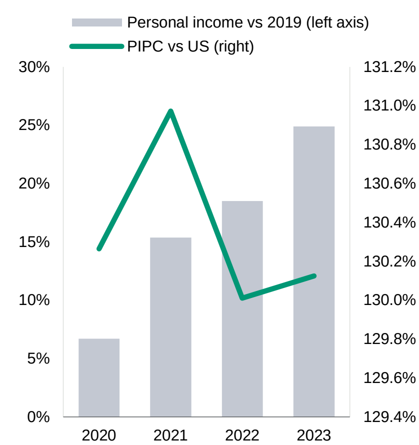
Supporting the state's income and wealth are high-paying economic sectors – including scientific research and development and computer systems design – that benefit from evolving technologies developed in connection with Harvard University (Aaa, stable) and the Massachusetts Institute of Technology (Aaa, stable) and other public and private institutions. The prominence of computer technology, biotechnology, robotics and other research and development oriented fields attracts a highly educated workforce. As of 2022, the share of residents 25 and over with a bachelor's degree was 47%, higher than any other state.

Exhibit 3
Real GDP in Massachusetts steadily outpaced the Northeast region
Gross domestic product versus 2019 base



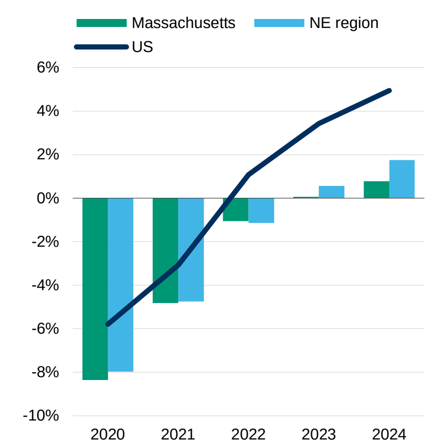
Change in GDP (chained 2017 dollars) by calendar year, compared with 2019 base
Source: US Bureau of Economic Analysis

Exhibit 4
Massachusetts has long benefited from very high personal income per capita



Unadjusted personal income per capita by calendar year
Source: US Bureau of Economic Analysis

Exhibit 5
The state's labor market recovery has significantly trailed the nation's
Nonfarm payroll employment compared with 2019



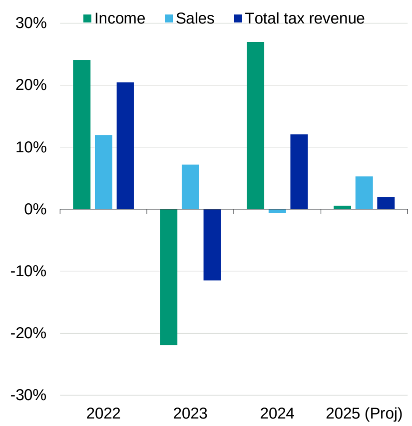
Reflects average of monthly nonfarm employment figures
Source: US Bureau of Labor Statistics

These strong economic indicators are balanced against weaker employment and population trends. In 2024 through September, the state's nonfarm employment increased 0.7% compared with 2019, trailing the nation's 1.5% growth in the same period. Looking at employment compared with 2019 levels, Massachusetts' employment has lagged the Northeast US average (Exhibit 5) and, to a more pronounced degree, the nation. Negative domestic migration trends, although offset by international immigration, have caused sluggish population growth in recent years.

Financial performance

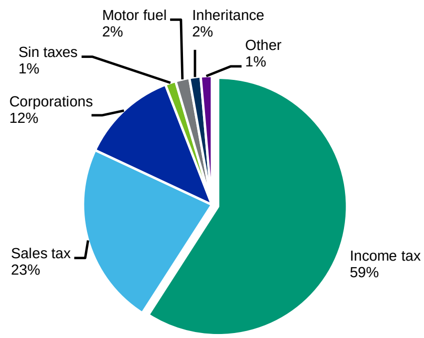
The state's budget for fiscal 2025 (which began July 1) aligns with moderating trends in other states. Tax revenue is budgeted to rise 2%, compared with fiscal 2024's 12% (Exhibit 6). The enacted budget's approximately $41.66 billion of projected tax revenue includes base revenue of about $40.2 billion and $1.3 billion from a 4% surtax on personal income exceeding $1 million.[2] Budgeted revenues also reflect other tax policy measures including tax amnesty, tax enforcement and the recently enacted Affordable Homes Act. Stock market downturns or other conditions weighing on investment income and capital gains pose a bigger threat to states like Massachusetts that have high wealth levels and above-average reliance on taxes paid by high income residents. Very strong stock market performance in the year ending December 31 (with the S&P 500's gain approaching 30%) signals continued income tax revenue strength that could drive total tax revenue above what is currently budgeted.

Exhibit 6
Revenue trends are moderating
Tax revenue growth by fiscal year



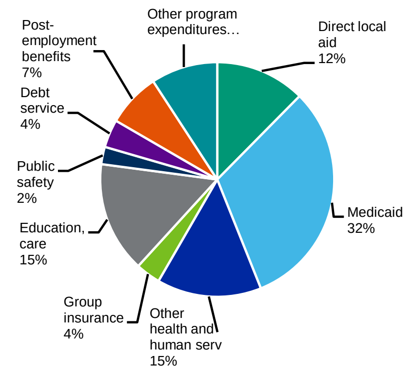
Fiscal 2024 is preliminary and 2025 is projected; budgeted operating funds, statutory basis.
Source: Commonwealth of Massachusetts Information Statement

Exhibit 7
Income and sales tax account for more than four-fifths of tax revenue



Budgeted operating funds, statutory basis
Source: Commonwealth of Massachusetts Information Statement

Exhibit 8
Expenditures of budgeted operating funds
Fiscal 2024 (preliminary)



Source: Commonwealth of Massachusetts Information Statement

Liquidity

As in other states, strengthening liquidity in recent years resulted from better-than-expected tax revenue after the pandemic-driven downturn. The state has built up its Stabilization Fund (or rainy day fund), as shown in Exhibit 1. In fiscal 2024, Massachusetts increased the fund's fiscal year-end allowable balance to 25.5% from 15% of total budgeted revenue for the year, with extra amounts allocated to a tax reduction fund. The fund also receives 90% of the state's capital gains tax revenue above a certain level ($1 billion, subject to annual inflation adjustment). At the end of fiscal 2024, the fund's balance was about $8.4 billion – 4.5 times the average balance from 2011 through 2020 and the highest year-end balance on record.

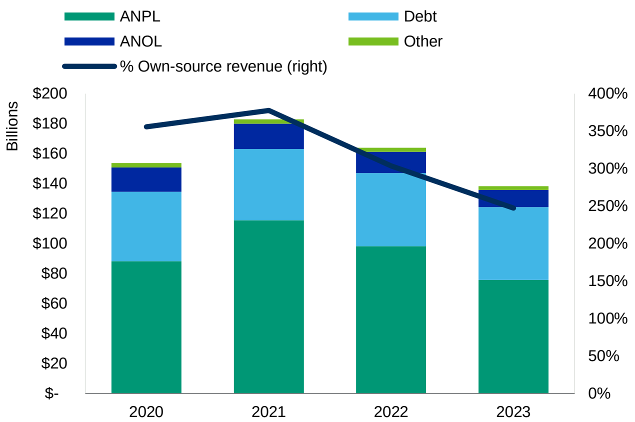
Massachusetts' available fund balance relative to revenue falls just short of the median for all Aa1-rated states, at 31.4% compared to 35.3%. Notably, current reserve levels are far larger than the state historically has maintained and are sufficient to absorb a substantial economic downturn or revenue loss caused by federal policy changes. The Stabilization Fund's growth has precluded the need external cash-flow borrowing since fiscal 2021. Additional liquidity sources include a $500 million line of credit, which has no outstanding balance and expires in March 2026.

Leverage

Massachusetts' leverage incorporates unfunded retirement benefits and bonded debt that both are high as a share of revenue compared with other states. In this year's ranking,[3] the state's leverage ratio (long-term liabilities including debt, ANPLs, OPEB and other liabilities divided by own-source revenue) was 247%, the sixth highest among states and more than double the sector median (101%).

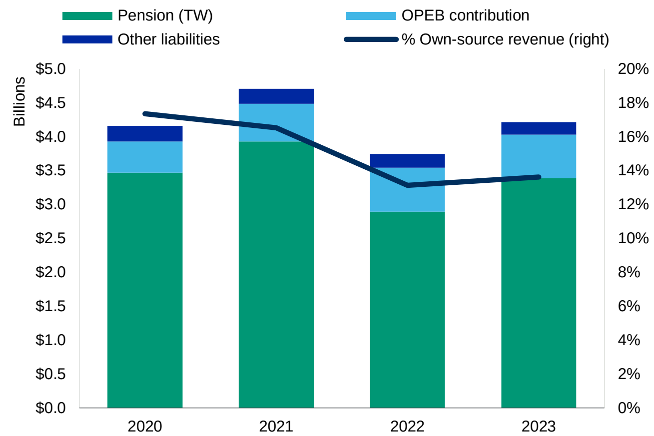
While the total liability burden remains elevated, the state has taken steps to moderate the leverage ratio by increasing annual pension contributions. Increased contributions, along with strong investment performance and market conditions driving up pension discount rates, led to a 23% decline during the fiscal 2023 reporting cycle. Still, the state's adjusted net pension liability (ANPL) accounted for 55% of total leverage. Across all states, ANPLs have similarly declined because of general market conditions, leading to stronger investment returns and higher discount rates used in determining present value of plan liabilities.

Exhibit 9
Despite recent declines, leverage remains high in relation to revenue



Source: Audited financial report data with Moody's Ratings adjustments

Exhibit 10
Fixed costs including pension tread water payments are elevated



Source: Audited financial report data with Moody's Ratings adjustments

Legal security
General obligation bonds carry the full faith and credit support of the Commonwealth of Massachusetts. However, state law limits annual tax revenue growth and does not exempt debt service payments from this limitation. Massachusetts also has several special tax bond programs that are limited obligations secured by specific revenue streams (Exhibit 11).

Debt structure
The state's net tax-supported debt is likely to remain elevated, as the commonwealth keeps pace with planned capital investments. General obligation bonds account for about two-thirds of outstanding debt. The remainder includes revenue bonds issued for transportation and convention centers and sales tax debt for other underlying entities, the Massachusetts Bay Transportation Authority and the Massachusetts School Building Authority.

Exhibit 11

Net tax-supported debt as of fiscal 2023

Security	Fiscal 2023 outstanding (000s)	Pledge	Rating
GO and GO related			
GO	$28,144,509	Commonwealth full faith and credit	Aa1/STA
Contract Assistance	$3,230,422	Commonwealth full faith and credit	Aa1/STA
MBTA Prior Obligations	$99,470	Commonwealth full faith and credit	Aa1/STA
Capital Leases	$871,539		N/A
Revenue			
MSBA sales tax (senior and subordinate)	$5,915,372	Dedicated statewide sales tax	Aa2 RUR/Aa3 RUR/RUR (Possible upgrade)
Commonwealth Transportation Fund	$3,917,772	Gas taxes and registry fees	Aa1/STA
GANs	$499,170	Federal highway funds and sub- lien on gas taxes and registry fees	Aa2/STA
Convention Center	$426,235	Hotel occupancy tax; rental car surcharge; sales tax and sightseeing surcharge	A1 RUR/RUR (Possible upgrade)
MBTA sales tax and assessment (senior and sub)	$5,415,370	Dedicated statewide sales tax and/or dedicated statewide assessments	Aa2 RUR/Aa3RUR/RUR (Possible upgrade)
Total net tax-supported debt	$48,519,859		

Source: Massachusetts ACFR, MSBA and MBTA ACFRs, Moody's Ratings.

Debt-related derivatives

The Massachusetts Department of Transportation, a component unit of the commonwealth, is engaged in several interest rate swaps. Under these agreements, the DOT pays a fixed rate and receives a variable rate. As of June 30, 2023, the agreements had an aggregate fair value of negative $18.65 million.

Pensions and OPEB

Elevated leverage is consistent with a practice of borrowing on behalf of several governmental entities, including transit and education and fully covering teacher pension liabilities. Massachusetts is responsible for K-12 teacher pensions in addition to state employees. If a similar practice of shouldering teacher plan contribution burdens is assumed for all states, then the Massachusetts ANPL-to-revenue statistic moves somewhat closer to the sector median, although it is still elevated.

The state's pension contributions in fiscal 2022 and 2023 exceeded the “tread water” amounts,[4] ending a period in which pension contributions fell below the tread water amounts. In 2022, the contribution exceeded the tread water level because of a $250 million supplemental deposit from general revenue and $126 million from capital gains taxes as required by statute.

ESG considerations

Massachusetts (Commonwealth of)'s ESG credit impact score is CIS-2

Exhibit 12
ESG credit impact score

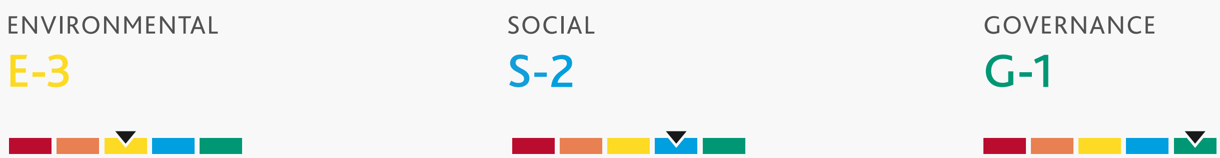
CIS-2

ESG considerations do not have a material impact on the current rating.

Source: Moody's Ratings

Massachusetts' ESG Credit Impact Score (**CIS-2**) reflects moderately negative exposure to climate risks, neutral-to-low exposure to social risks and a positive governance profile.

Exhibit 13
ESG issuer profile scores



Source: Moody's Ratings

Environmental

Massachusetts' environmental issuer profile score (**E-3**) factors in exposure to physical climate risks, particularly hurricanes and resulting flooding. Other environmental risks have a neutral to low impact on Massachusetts' credit profile. The commonwealth is far along in transitioning its energy generation to renewable sources, and its economy relies largely on industries that are neither carbon-intensive nor dependent on the commonwealth's natural capital. Hurricane risk affects 95% of state GDP, and about half of state GDP is vulnerable to flooding. The vast majority of the commonwealth's economic activity is concentrated along its coastline, particularly in the city of Boston (Aaa stable), which drives up vulnerability to physical climate risks.

Social

Massachusetts' issuer profile score (**S-2**) incorporates a highly educated workforce, high income levels, and labor force participation significantly higher than the nation, offset by weak demographic metrics that include lagging population growth. The state's population is somewhat older (median age is 40.3 years, compared with the US median of 39.2 years). The state's prime working-age population, defined as people 25 to 54 years old, peaked in 2001, although the percentage of residents in this age range is slightly better than the nation's (39% compared with 38%).

Governance

Massachusetts' governance practices are generally very strong, reflected in a **G-1** issuer profile score. These practices include consensus revenue estimating and publishing multiyear debt affordability plans. Delayed budget adoption is common in Massachusetts. Budget delays typically result from a multilayered approval process that requires three separate budgets to be combined into one final document. Interim budgets are put in place to ensure continuing operations and payment of debt service.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Rating methodology and scorecard factors

The US States and Territories methodology includes a scorecard, which summarizes the rating factors generally most important to state and territory credit profiles. Because the scorecard is a summary and may not include every consideration in the credit analysis for a specific issuer, a scorecard-indicated outcome may or may not map closely to the actual rating assigned. The Aa1 rating assigned differs from the Aaa scorecard-indicated rating because of long-term retirement liabilities that will remain comparatively large, despite beneficial factors in the last few years (primarily higher interest rates) that likely will prove temporary.

Exhibit 14

US States and Territories scorecard

Commonwealth of Massachusetts

	Measure	Weight	Score
Economy			
Resident Income (PCI Adjusted for RPP / US PCI)	118.1%	15%	Aaa
Economic Growth (5-year CAGR real GDP - 5-year CAGR US real GDP)	0.2%	15%	Aaa
Financial performance			
Financial performance	Aaa	20%	Aaa
Governance/Institutional Framework			
Governance/Institutional Framework	Aaa	20%	Aaa
Leverage			
Long-term liabilities ratio (adjusted long-term liabilities / own-source revenue)	247.4%	20%	A
Fixed-costs ratio (adjusted fixed costs / own-source revenue)	13.6%	10%	Aa
Notching factors			
Very limited and concentrated economy			
Scorecard-Indicated Outcome			Aaa
Assigned rating			Aa1

Sources: Massachusetts ACFR, MSBA and MBTA ACFRs, Moody's Ratings.

Endnotes

1 The Northeastern composite is a simple average of nine states' nonfarm employment growth since 2019. The states consist of New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) plus New Jersey, New York and Pennsylvania. The change cited is derived from annual averages of monthly figures.

2 Starting in January 2023, the state levied a 4% surtax on net income exceeding $1 million, after voters approved the tax in a ballot measure. The $1 million threshold is annually adjusted for inflation. For tax year 2025, the threshold is $1.083 million.

3 "Revenue growth and lower ANPLs boost capacity to manage long-term debt"; 7 October 2024.

4 The tread water indicator is the cost for a government to prevent its reported unfunded liabilities from growing, under its actuarial assumptions.

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