The Connecticut & Massachusetts Municipal Borrowers Guide

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Fidelity INVESTMENTS

Overview

This overview provides information about the major municipal borrowers in the State of Connecticut and the Commonwealth of Massachusetts and their bond programs. The borrowers described in this guide include some of the most established and recognized issuers in the municipal market, as well as issuers of bonds under programs that have been established more recently. They reflect the largest and most active issuers in the two states, and encompass various types of debt. In many cases, a single borrower may issue debt under multiple programs that are each repaid with a different revenue source; most of the significant active bond programs are covered for these borrowers. While underlying ratings are shown, individual series or maturities within each of the bond programs may be insured and may not have underlying ratings.

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Introduction

This introduction is intended to provide an overview of the long-term economic and fiscal developments taking place in the State of Connecticut and in the Commonwealth Massachusetts. Several factors are weighed and counterbalanced when determining these long-term trends. In terms of the economy, unemployment, job creation, and industry diversity are considered. Trends in the tax base are examined by looking at per capita income, tax burden, and shifts in adjusted gross income into and out of the two states. Finally, trends in the states' fiscal positions are presented in terms of liabilities and reserves.

Of the 50 state economies, Connecticut and Massachusetts rank 2nd and 1st largest, respectively, as measured by per capita personal income from all industries. While both state economies have seen earnings from the finance and insurance industry contribute to a larger than average share of the total, Massachusetts has been more successful at diversifying its economy away from this historically more volatile sector. The last year in which the two states had the same contribution from finance and insurance was 1969. In recent years, Connecticut's peaked in 2010 at 19% and declined to 14% in 2021, while Massachusetts' peaked the same year at 13% and was 9% in 2021, compared to 7% nationally. The measure of the states' overall economic diversity may be derived using the Hachman Index. This is an index of similarity that measures how closely industry earnings of the subject region (Connecticut or Massachusetts) resembles that of the reference region (United States). The value of the index is between zero and one. As the value of the index approaches one, this means that the subject region's employment distribution among industries is more similar to that of the reference region. If the reference region is the nation, and, given the assumption that the nation's economy is diversified, a larger Hachman Index value means that a subject region is more diversified (and therefore less specialized). In 2021, Connecticut and Massachusetts had a Hachman Index value of 0.89 and 0.88, respectively, indicating that both states were near the middle of the distribution, which is described by a median of 0.88 for all states. Both states have experienced a decline in the share of income earned from the manufacturing sector since the 1950s, when that was the largest sector for the two states and significantly above the nation as a whole. In 2021, Connecticut's retained manufacturing industry at 10% was still above the national average of 9%, while in Massachusetts that sector represented less than the average at 7%. Service industries have displaced manufacturing as drivers of personal income growth, although more so in Massachusetts than in Connecticut. The finance and insurance and the healthcare sectors were the largest in terms of personal income from non-government sectors in Connecticut, with healthcare becoming larger than manufacturing only in the last three years. In fact, this change helped contribute to Connecticut's higher Hachman Index over the past two years, while Massachusetts' index value notched lower on account of increasing concentration in professional services, by far the state's largest sector at 19%, followed by healthcare. Professional services represented the greatest share of personal income in Massachusetts than in any other state.

The charts on the following page illustrate the trends in the states' economic diversity (Hachman Index), and in the four largest non-government sector industries in terms of personal income in 2021.

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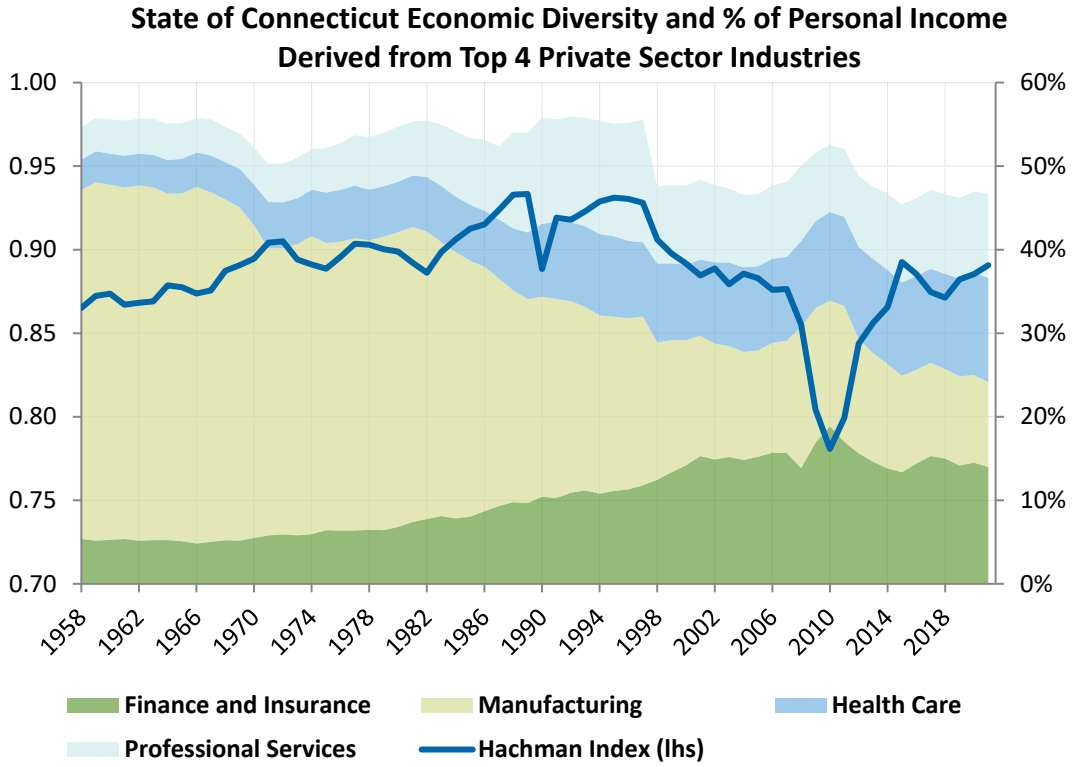
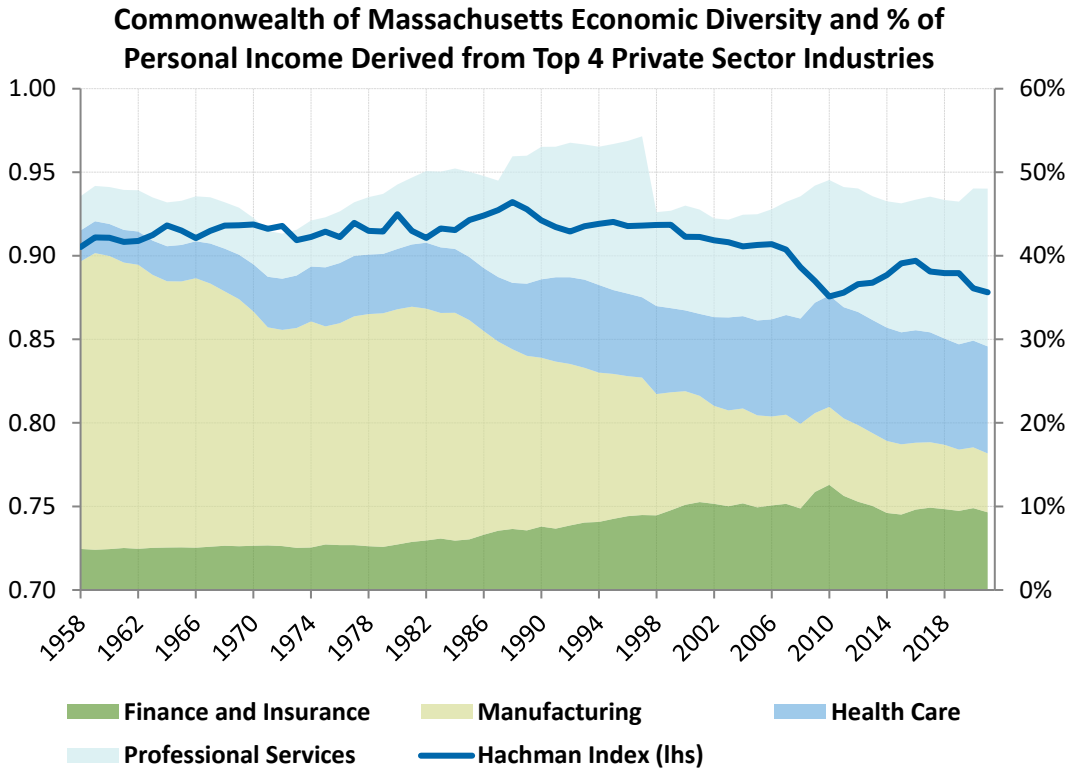


Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Fidelity Capital Markets; June 22, 2022



Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Fidelity Capital Markets; June 22, 2022

Introduction

Connecticut had a lower unemployment rate than Massachusetts in nearly 90% of all years from 1976 to 2007, before the onset of the financial crisis in 2008. In the subsequent 14 years Connecticut's unemployment rate has been higher in all but the recession year 2020 – underscoring the lackluster recovery from the financial crisis that hit the finance and insurance sector hardest. However, as 2020 most recently showed, in years around national economic recessions Massachusetts' unemployment rate increased at a faster pace than Connecticut's, 2008 being the exception, only to recover faster afterward. Whether Connecticut's labor market is more flexible or more sclerotic is perhaps open to debate, though the next paragraph on job creation and destruction may shed some light on this subject. Connecticut's average unemployment rate in 2021 was 6.3% compared to 5.8% for Massachusetts.

Another measure of employment health comes from the Census Bureau's Business Dynamics Statistics, which contains the results of a census of business establishments and firms in the U.S. The census includes measures of establishment openings and closings, firm startups, job creation and destruction by firm size, age, and industrial sector, and several other statistics on business dynamics. One such measure is the net job creation rate, which considers gross job creation and gross job destruction figures within a year's period, in order to find net job creation rates (NJCR) among businesses of all sizes within each state. Like all aggregate economic statistics, the NJCR is not without its flaws, as it fails to capture the quality of jobs being destroyed and created. However, it may be useful in assessing the general trend of business dynamism within a state. The NJCR for Connecticut and Massachusetts averaged 0.89% and 1.45%, respectively, in the 31-year period ending in 2007. However, from 2008 through the most current year of the survey (2019), Connecticut's annual average NJCR dropped to 0.05%, while the annual average rate for Massachusetts was 0.90%. In 2019, the last full year of the post-2008 economic recovery, the NJCR for Connecticut was 0.67%, compared to the cycle peak of 2.66% reached in 2016 – apparently, the federally enacted Tax Cuts and Jobs Act of 2017 did not live up to its name in the Nutmeg State. In 2019, the NJCR for Massachusetts was 2.16%, the second highest net job creation rate since 2008 compared to the cycle peak of 2.68% reached in 2015.

The unemployment rate and net job creation statistics may indicate that Massachusetts has maintained a more dynamic business climate, one that has enabled the state to better adjust to changes taking place in the broader economy and better suited to take advantage of any structural labor market changes that have taken place since 2008.

The charts on the following page illustrate the trend in the states' unemployment and net job creation rates.

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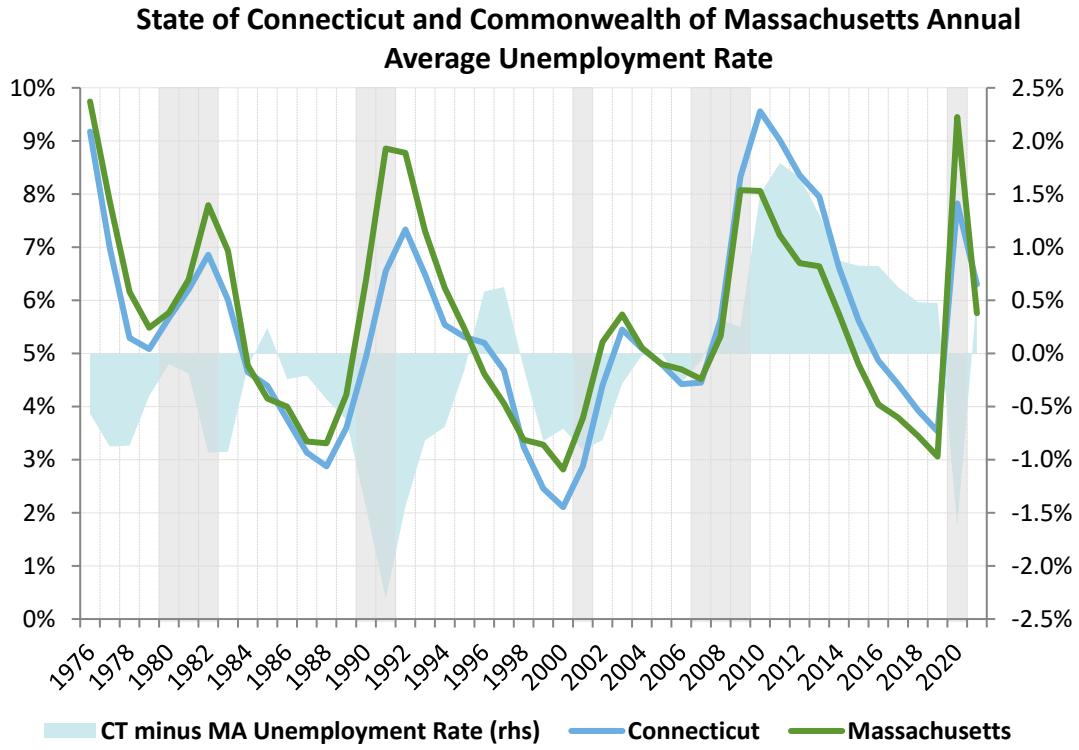
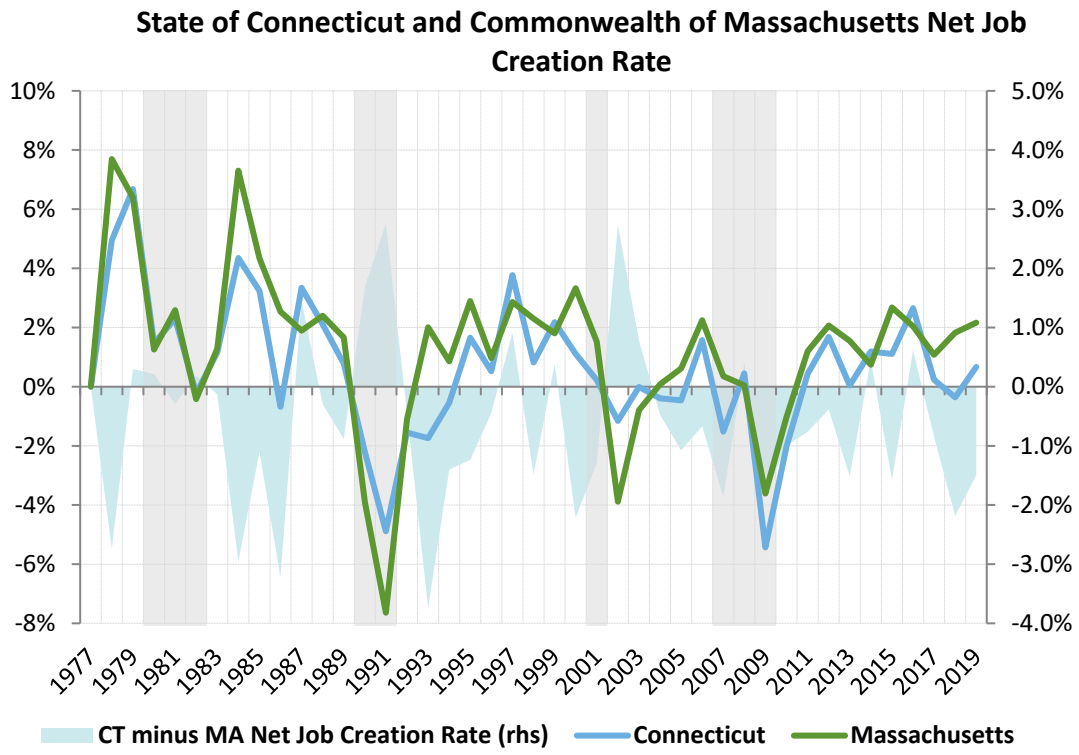


Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Fidelity Capital Markets; June 22, 2022



Source: Census Bureau, Fidelity Capital Markets; June 22, 2022

Introduction

Connecticut and Massachusetts are wealthy states, having ranked second and first highest in per capita personal income (PCPI) in 2021, respectively. Connecticut had experienced an upward sloping trend in PCPI when compared to the nation until it peaked at 152% in 2010. Since then, it has steadily declined to 129% in 2021, the lowest level since 1986, and the first year below Massachusetts since at least 1977. The diversification away from the high-paying jobs in the finance and insurance sector in the years since 2008 has had certain drawbacks. The upward trend in Massachusetts' PCPI has been more consistent, having risen to 130% relative to the nation in 2021, or near its highest level since at least 1977.

Connecticut's state personal tax burden was notably above the national median in 2021 and has been higher than the median over the past decade. Massachusetts' state personal tax burden was close to the median and has been much closer to the median than Connecticut over the past 10 years. The state personal tax burden is calculated by taking total state tax revenue excluding corporate income and severance taxes divided by total state personal income excluding federal transfer receipts. Importantly, the state personal tax burden does not include local taxes such as property taxes. Connecticut residents were subject to a 7.8% state personal tax burden and Massachusetts residents to a 6.9% rate; the 2021 median for U.S. states was 7.1%. Connecticut's state personal tax burden increased substantially from the late 1970s through the mid 1990s and has generally been more volatile than Massachusetts' over time, which has generally been in line with the national median since the late 1970s.

Higher living costs and changing demographics in the two states may be pressuring their tax bases, which have exhibited outmigration in terms of shifts in adjusted gross income (AGI). Looking solely at changes in a state's population may provide limited value in this regard because it does not directly measure changes in the tax base. Rather, the migration of AGI between and among the states provides a more accurate measure of the trend in a state's tax base. The Statistics of Income Division of the IRS maintains records of all individual income tax forms filed in each year, including the state of residence of the filers. The data used to produce the migration statistics come from individual income tax returns and represent between 95% and 98% of total annual filings. One gauge of the degree of movement in a state's tax base is the extent to which it is on the sending or receiving end of AGI migration. The net dollar flow of AGI between Connecticut and Massachusetts and other states, as well as the number of inflows received from and outflows sent to every other state, provide a good indication of how the two states' tax bases are changing. Since the 1992-1993 period, growth in the two states' tax bases has kept the net dollar flow of AGI within a range of -1.7% and 0.0% of the tax base for Connecticut and within a range of -1.0% and -0.2% for Massachusetts. For the most recent 2019-2020 period the net dollar flow of AGI as a percent of the tax base for Massachusetts was -0.8%, or the largest outflow on a percentage basis since 2006, and for Connecticut it was -0.2%, the smallest outflow on a percentage basis since 2011. In terms of breadth, the states lost part of their tax bases to 44 and 32 other states, respectively – meaning that Connecticut had a net inflow from 6 states and Massachusetts from 18. The pandemic affected the two states differently. Although breadth was little-changed, high-income earners relocating out of the Bay State (primarily to Maine) and into the Nutmeg State (primarily from New York) significantly affected the dollar flow of AGI in 2020. The charts on the following pages illustrate the trend in the states' per capita personal income, state personal tax burden, and tax base.

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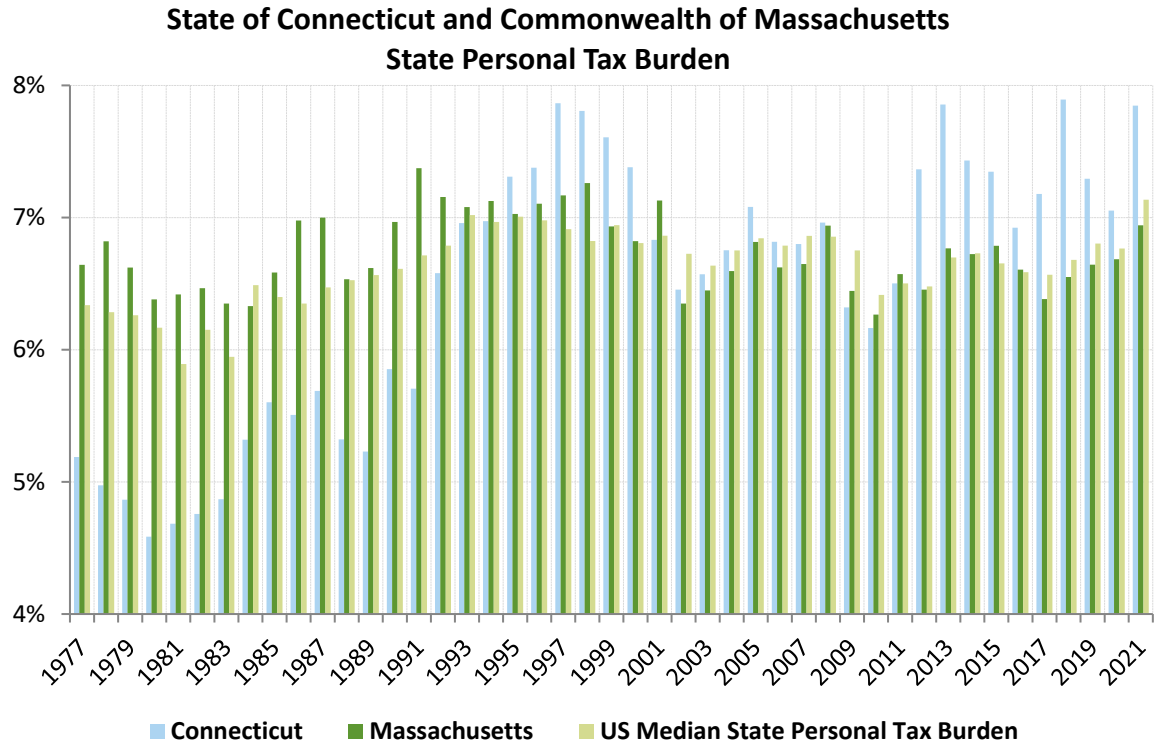
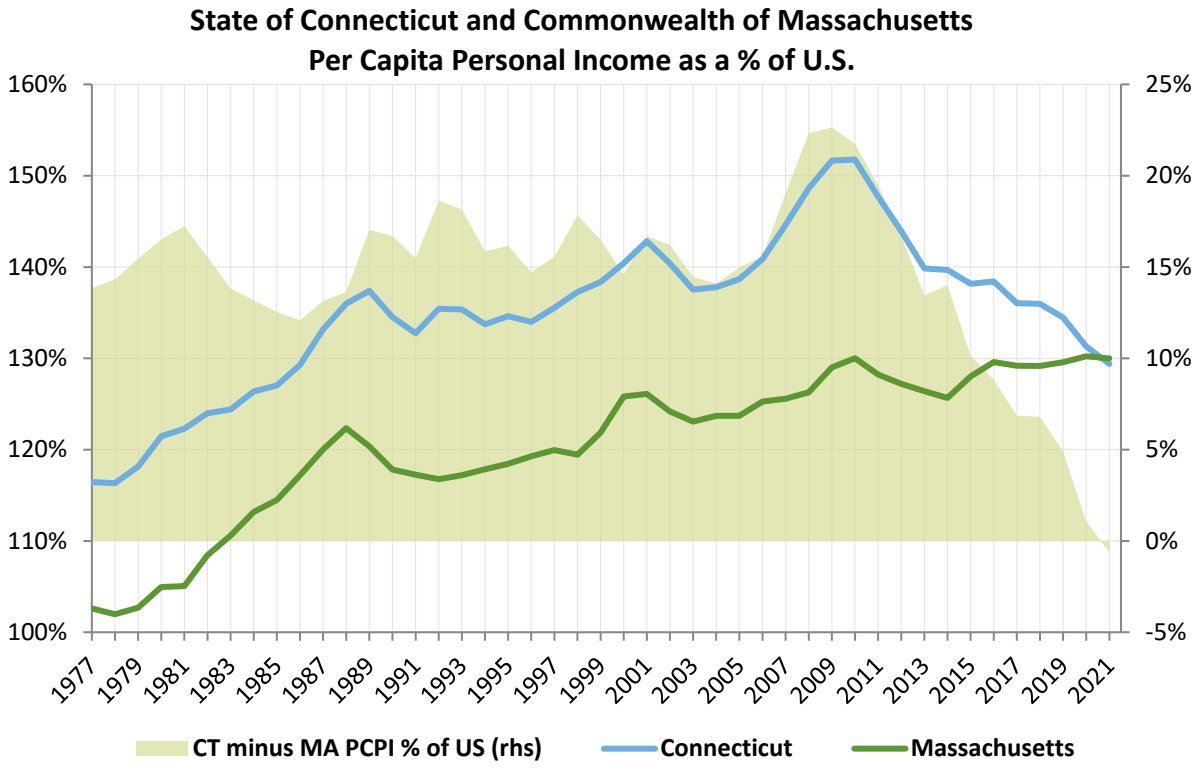


Source: Bureau of Economic Analysis, US Census Bureau, Fidelity Capital Markets; June 22, 2022



Source: Bureau of Economic Analysis, Fidelity Capital Markets; June 22, 2022

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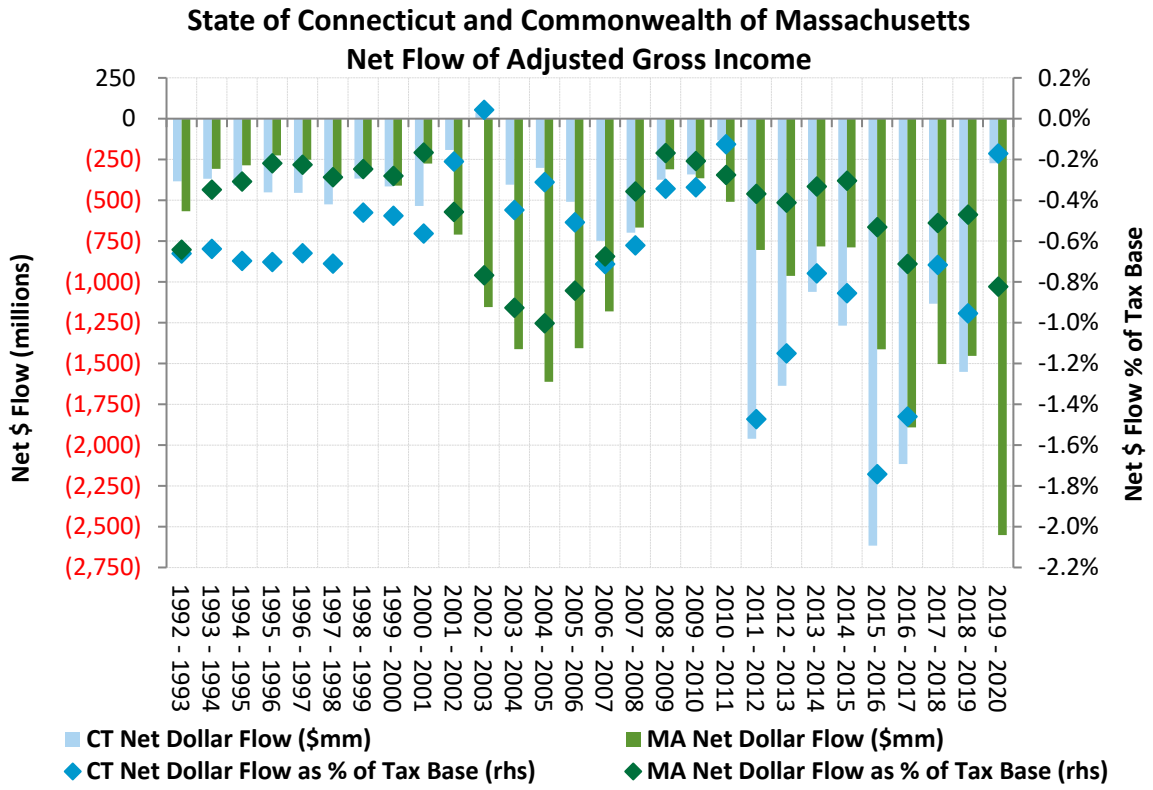
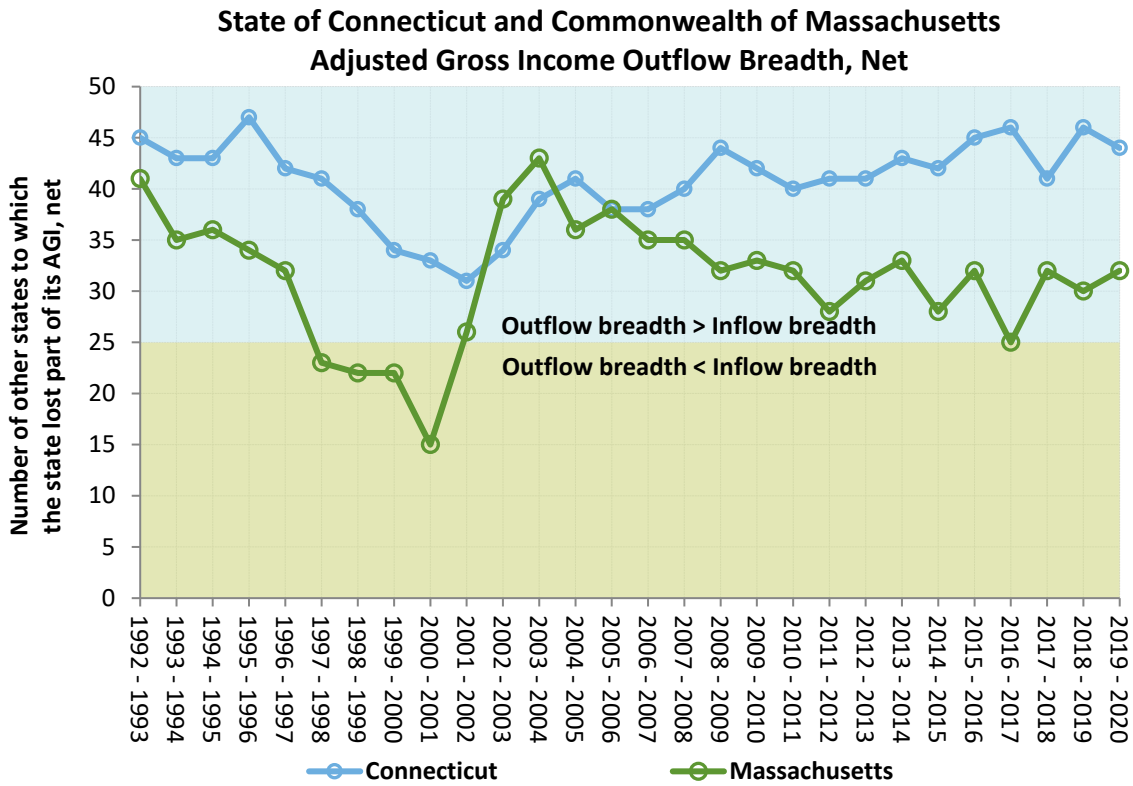


Source: IRS, Fidelity Capital Markets; June 22, 2022



Source: IRS, Fidelity Capital Markets; June 22, 2022

Introduction

Connecticut's and Massachusetts' wealthy tax bases have enabled the states to support large debt burdens. Total net tax supported debt (NTSD) of $24.8 billion in Connecticut and $43.7 billion in Massachusetts rank them 6th and 3rd highest among states, respectively. At 8.7% and 7.8% of personal income their NTSDs rank 2nd and 3rd, respectively, and significantly above the 1.9% U.S. state median. Part of the explanation for their high debt levels may be attributed to the financing of projects that in other states are financed at the local level. Nevertheless, their debt burdens are high in addition to having large unfunded pension system liabilities. Connecticut's Moody's adjusted net pension liability (ANPL) was $90 billion in 2021. Massachusetts' ANPL was $110 billion. Neither state has a history of maintaining strong pension funding levels, although both have enacted reforms even though material near-term progress is not expected. Going forward, both states have committed to fully funding their actuarially required contribution (ARC) amounts. Most states do not annually set aside 100% of their other post employment benefits (OPEB) ARC, and Connecticut and Massachusetts are not different in this respect. Both states have incurred substantial OPEB commitments, with Connecticut's Moody's adjusted net OPEB liability (ANOL) at $23 billion and Massachusetts' at $16 billion. Taken together with NTSD and ANPL, total liabilities represented 43% of Connecticut's state GDP and 25% of Massachusetts' state GDP.

One measure of a state's financial flexibility is its unrestricted reserves and rainy-day fund balances. At fiscal year end 2021, Connecticut had unrestricted reserves in its general fund of negative $661 million, and a committed rainy-day fund balance of $3.1 billion; the combined balance equated to 11.8% of general fund expenditures, the highest level since at least 1995. Massachusetts had unrestricted reserves in its general fund of $4.0 billion, and a committed rainy-day fund balance of $4.6 billion, resulting in a combined balance of 19.7% of general fund expenditures, the highest since 2001.

The charts on the following page illustrate the trend in the states' NTSD and reserve levels.

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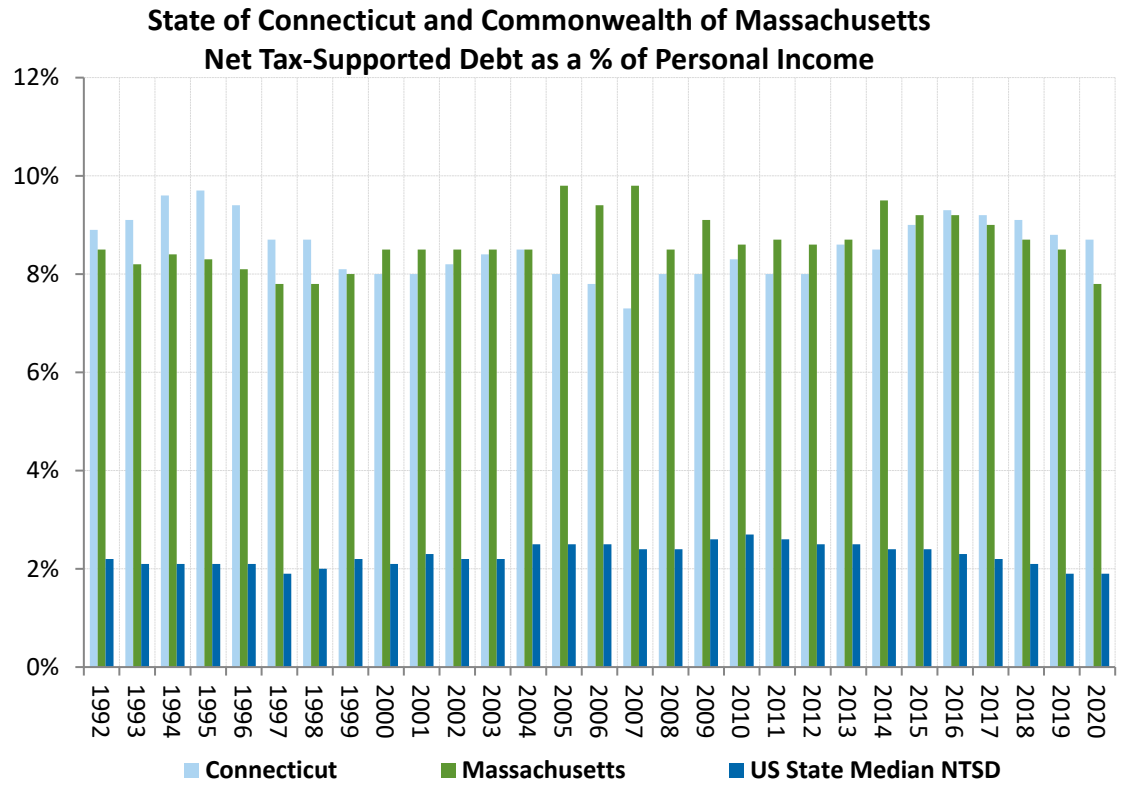
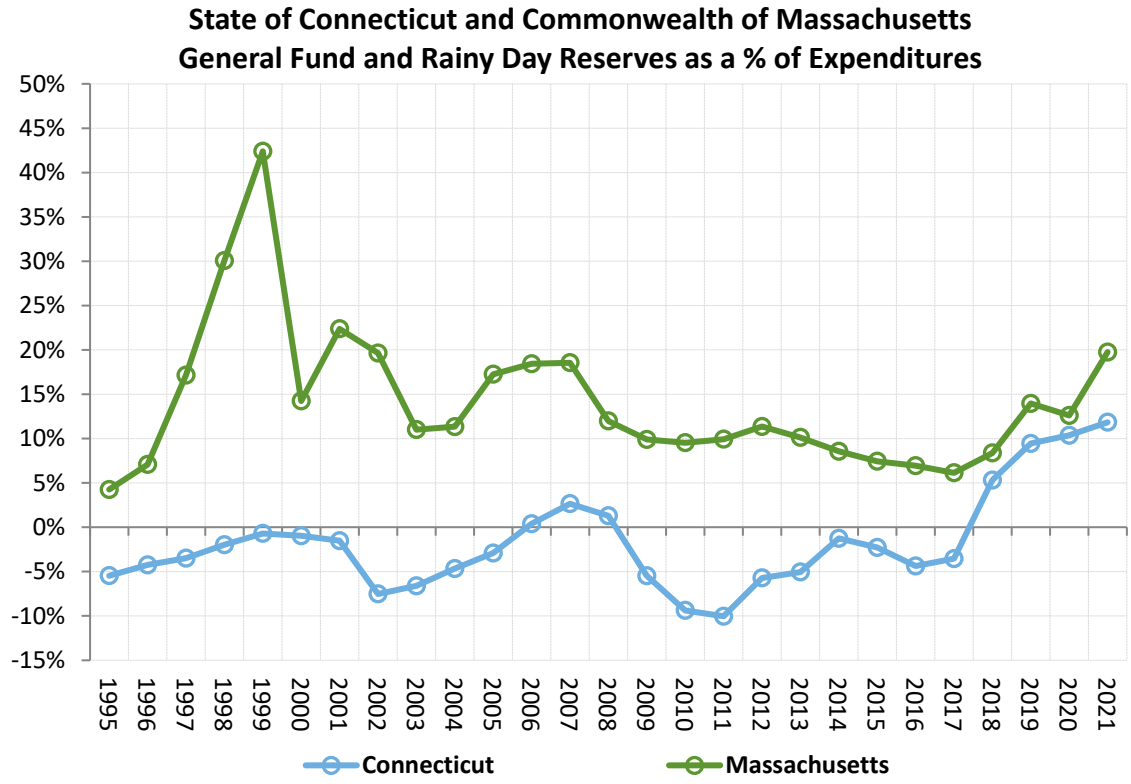


Source: Moody's, Fidelity Capital Markets; June 22, 2022



Source: State comprehensive annual financial reports, Fidelity Capital Markets; June 22, 2022

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State of Connecticut

General Obligation Bonds

Moody's Aa3 S&P A+ Fitch AA-

Purpose

- Bond proceeds were used for various capital improvement projects.

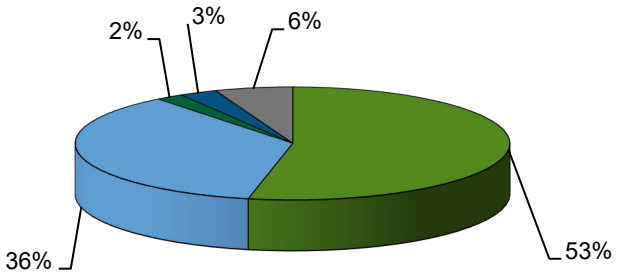
Security

- The bonds are secured by the full faith and credit of the State of Connecticut.
- The State general obligation bond procedure act pursuant to which the bonds are issued further provides the appropriation of all necessary amounts for the punctual payment of principal and interest.

Bonds Outstanding

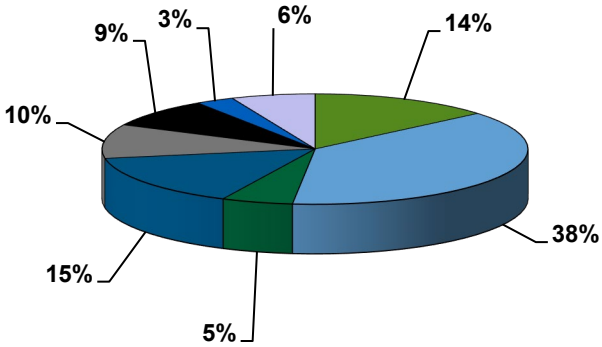
- $18.3 billion as of June 30, 2021

All Governmental Funds Revenues for the FY Ending June 30, 2021 (In Millions) $37,808.43



- Taxes
- Federal Grants
- Lottery, Casino Gaming & Tobacco Settlement
- Charges for Services, Licenses, Permits, Fees & Fines
- Other

All Governmental Funds Expenditures for the FY Ending June 30, 2021 (In Millions) $35,833.68



- General Government
- Health & Human Services
- Transportation
- Education
- Legislative, Judicial & Corrections
- Debt Service
- Public Safety
- Capital Outlay, Development & Conservation

Source: State of Connecticut Annual Comprehensive Financial Report June 30, 2021

State Revolving Fund (Clean Water Fund) General Revenue Bonds

Moody's Aaa S&P AAA Fitch AAA

Purpose

- Bond proceeds were used to provide a source of low interest loans and other types of financial assistance to local entities for the construction, rehabilitation, expansion or improvement of wastewater treatment or drinking water facilities.
- The loans provided were either at heavily discounted interest rates or the State paid for a portion of the project and the remaining loan was at a low interest rate.

Security

- The bonds are secured by all available funds of the program, which are derived from borrower loan repayments and program equity, as well as interest earnings and support funds.
- Each borrower must deliver a Borrower Obligation which provides for the repayment of the principal and interest on the loan. The Borrower Obligation is either a general obligation or a revenue obligation of each participant.

Bonds Outstanding

- $793 million as of June 30, 2021

Anticipated Borrowings

- None

Special Tax Obligation Bonds

Moody's Aa3 S&P AA- Fitch AA-

Purpose

- Bond proceeds were used to fund the Infrastructure Program, which was established in 1984. The program finances the ongoing requirements of all aspects of the State highways and bridges, interstate highway system projects, waterway facilities, mass transportation and transit facilities, aeronautic facilities, maintenance garages, and highway safety programs.

Bonds Outstanding

- $7.0 billion as of June 30, 2021

Debt Service Reserve Fund

- The Debt Service Reserve Fund Requirement for the senior bonds is equal to MADS.
- The Debt Service Reserve Fund Requirement for the second lien Bonds is equal to MADS on the senior and second lien Bonds less the amount on deposit in the Senior Debt Service Reserve Fund.

Security

- The Bonds are special obligations of the State payable solely from Pledged Revenues and other moneys pledged including investment earnings. Pledged Revenues consist of general sales taxes, motor fuels taxes; motor vehicle receipts; motor vehicle related licenses; permits and fees; oil companies tax payments; sales tax related to DMV payments; motor vehicle fines and other items. The Pledged Revenues are credited to the Special Transportation Fund.

- The obligation of the State to pay the Debt Service Requirement of the senior Bonds will be further secured by a Gross Pledge and a lien upon certain amounts held in the Special Transportation Fund.

- The second lien Bonds are secured by a second lien on Pledged Revenues and amounts held in the Special Transportation Fund. Remaining Fund resources, subject to appropriation, may be applied to debt service on the State's GO bonds issued for transportation purposes and to the payment of State budget appropriations for the Department, the DMV and the Department of Public Safety.

Special Tax Obligation Bonds (cont.)

Moody's Aa3 S&P AA- Fitch AA-

Rate Covenant

- The State covenants to provide Pledged Revenues in each fiscal year, after deducting payments for required reserves under the Senior Indenture, in an amount equal to at least 2x the aggregate principal and interest requirements on all senior Bonds outstanding and interest on senior notes. As long as second lien Bonds are outstanding, the Pledged Revenue Coverage Requirement must include coverage for all bonds outstanding.

- The State is obligated pursuant to the Second Lien Indenture to provide Pledged Revenues, in each fiscal year, after deducting payments for required reserves, in an amount equal to at least 2x the aggregate principal and interest requirements on all bonds outstanding.

Anticipated Borrowings

- $3.6 billion authorized but unissued as of June 30, 2021.

Additional Bonds Test

- Additional senior Bonds may be issued if certain conditions are met including that Pledged Revenues for any 12-month period in the preceding 18 months must equal at least 2x the aggregate principal and interest requirements on senior Bonds and interest requirements on senior notes.

- Additional second lien Bonds may be issued if certain conditions are met including that Pledged Revenues for any 12-month period in the preceding 18 months must equal at least 2x the aggregate principal and interest requirements on all Bonds outstanding and additional Bonds.

- The Second Lien Indenture provides that the State may not issue senior Bonds unless the coverage test described above is met for all outstanding Bonds and notes.

- As long as the second lien Bonds are outstanding, the State has covenanted not to issue senior short-term notes

City of Hartford, CT

General Obligation Bonds

Moody's Aa3 S&P A+ Fitch NR

Purpose

- Bond proceeds were used to finance construction at magnet and public-school facilities and police and fire complexes, as well as for various infrastructure improvements.

Bonds Outstanding

- $461 million as of June 30, 2021

Additional Bonds Test

- Under Connecticut law, municipalities can not incur indebtedness through the issuance of general obligation bonds that will cause aggregate indebtedness by class to exceed the following:
  General Purpose: 2.25x annual receipts from taxation.
  School Purpose: 4.50x annual receipts from taxation.
  Sewer Purpose: 3.75x annual receipts from taxation.
  Urban Renewal Purpose: 3.25x annual receipts from taxation.
  Pension Deficit Funding: 3.00x annual receipts from taxation.
  In no case shall total indebtedness exceed seven times annual receipts from taxation.

Security

- The bonds are general obligations and are secured by the full faith and credit of the City of Hartford.
- Public Act 17-2, authorizes the OPM Secretary and state treasurer to enter into contract with Tier III and Tier IV municipalities to provide them with financial assistance. A contract between the state and Hartford pursuant to this authorization was effectuated March 29, 2018. Contract assistance is limited to annual debt service on bonds outstanding as of the contract date or refunding bonds. The contract provides for the state to make direct payments to the city, trustee, paying agent or bondholder. The contract constitutes a full faith and credit obligation of the state.

Anticipated Borrowings

- None specified

Yale University Revenue Bonds

Moody's Aaa S&P AAA Fitch NR

Purpose

- Proceeds were used for general University purposes, providing flexible cash resources to the University. Proceeds were also used for financing a variety of capital projects and refunding outstanding bonds.

Security

- The bonds are an unsecured general obligation of the University.

Bonds Outstanding

- $4.6 billion as of June 30, 2021

Anticipated Borrowings

- None anticipated.

Yale New Haven Health Revenue Bonds

Moody's Aa3 S&P AA- Fitch AA-

Purpose

- Yale New Haven Health (YNHH or the Obligated Group) operates four hospitals in Connecticut and one in Rhode Island. The system's flagship academic medical center is Yale New Haven Hospital, which is primary teaching hospital for the Yale School of Medicine.
- Bond proceeds were used to fund capital improvement projects.

Security

- YNHH pledges Gross Revenues of the Obligated Group, as well as all moneys and securities held under the Indenture to secure the Bonds.
- The Obligated Group includes Yale New Haven Hospital (which includes Yale New Haven Children's Hospital, the Yale New Haven Psychiatric Hospital, and the Smilow Cancer Hospital), Bridgeport Hospital, Greenwich Hospital, Lawrence + Memorial Hospital, Westerly Hospital, Northeast Medical Group.

Bonds Outstanding

- $1.6 billion as of March 31, 2022

Debt Service Reserve Fund

- None

Anticipated Borrowings

- None specified

Yale New Haven Health Revenue Bonds (cont.)

Moody's Aa3 S&P AA- Fitch AA-

Rate Covenant

- The Obligated Group agrees that if it does not maintain for each Fiscal Year the Long-Term Debt Service Coverage Ratio of at least 1.25x, that it will retain a Consultant. If, as of the end of any Fiscal Year, the Long-Term Debt Service Coverage Ratio is less than 1.00x, then an Event of Default shall be deemed to have occurred under the Loan Agreement.

- The Obligated Group covenants to set tuition and other fees so that together with its general funds will provide revenue sufficient to cover all obligations of the Obligated Group including operating expenses and debt service.

Additional Bonds Test (cont.)

- With the prior written consent of the Authority, which consent shall not be unreasonably withheld, at least one of the following shall have been satisfied.
- (i) The total principal amount of Long-Term Indebtedness to be incurred plus all other outstanding Long-Term Indebtedness will not exceed 15% of Operating Revenues on a historical basis, and the Long-Term Debt Service Coverage Ratio shall have been met, taking into consideration projected revenues and the proposed Indebtedness; or (ii) the Long-Term Debt Service Coverage Ratio is not less than 1.35x on an historical basis, including the proposed indebtedness; or (iii) the Long-Term Debt Service Coverage Ratio is not less than 1.25x on a prospective basis, including the proposed indebtedness.

Fairfield University Bonds

Moody's A2 S&P A- Fitch NR

Purpose

- Fairfield University is an independent, co-educational institution of higher education. Bond proceeds were used to fund various capital improvement projects at University campuses.

Security

- The obligation to repay the loan is an unsecured general obligation of the University.
- While the bonds are not secured by a mortgage, the University covenants not to create any mortgage, lien, or security interest on its property, without the prior written consent of the Authority.

Bonds Outstanding

- $276 million as of June 30, 2021

Debt Service Reserve Fund

- No DSRF is required on outstanding Bonds. May be required on future series.

Anticipated Borrowing

- None specified

Fairfield University Bonds (cont.)

Moody's A2 S&P A- Fitch NR

Rate Covenant

- The University agrees to maintain a Long-Term Debt Service Coverage Ratio whereby Income Available for Debt Service to MADS is at least 1.50x.
- The University covenants to maintain its tuition and other charges to provide Operating Revenues sufficient to cover all operating expenses, debt service on the bonds, and all other obligations of the University.

Additional Bonds Test

- The University, with the consent and approval of the Authority, which consent shall not be unreasonably withheld, and subject to certain provisions of the Loan Agreement, reserves the right to issue additional Indebtedness as Parity Debt or otherwise.

Quinnipiac University Bonds

Moody's A3 S&P A- Fitch NR

Purpose

- Quinnipiac University (the "Institution") is a private, coeducational institution of higher education with its main campus located in Hamden, CT. Bond proceeds were used for various capital improvement projects on the University's three campuses.

Security

- The bonds are secured by a mortgage granted to the Authority on the Institution's main campus. The mortgage is an absolute, unconditional, and general obligation of the Institution. In addition, there are restrictions on the creation or imposition of liens.

Bonds Outstanding

- $382 million as of June 30, 2021

Debt Service Reserve Fund

- No DSRF is required on outstanding Bonds. May be required on future series.

Anticipated Borrowing

- None specified

Quinnipiac University Bonds (cont.)

Moody's A3 S&P A- Fitch NR

Rate Covenant

- The Institution agrees that if it does not maintain for each Fiscal Year the Long-Term Debt Service Coverage Ratio of at least 1.25x, that it will retain a Consultant. If, as of the end of any Fiscal Year, the Long-Term Debt Service Coverage Ratio is less than 1.00x, then an Event of Default shall be deemed to have occurred under the Loan Agreement.

- The Institution covenants to set tuition and other fees so that together with its general funds will provide revenue sufficient to cover all obligations of the Institution including operating expenses and debt service.

Additional Bonds Test

- The Institution, with the consent and approval of the Authority, which consent shall not be unreasonably withheld, and subject to certain provisions of the Loan Agreement, as described below, reserves the right to issue additional Indebtedness as Parity Debt or otherwise.
- (i) The total principal amount of Long-Term Indebtedness to be incurred plus all other outstanding Long-Term Indebtedness will not exceed 15% of Operating Revenues on a historical basis, and the Long-Term Debt Service Coverage Ratio shall have been met, taking into consideration projected revenues and the proposed Indebtedness; or (ii) the Long-Term Debt Service Coverage Ratio is not less than 1.35x on an historical basis, including the proposed indebtedness; or (iii) the Long-Term Debt Service Coverage Ratio is not less than 1.25x on a prospective basis, including the proposed indebtedness.

Connecticut Housing Finance Authority

Housing Mortgage Finance Program Bonds

Moody's Aaa S&P AAA Fitch NR

Purpose

- The Authority was created for the purpose of increasing the supply of and assisting in the purchase, development, and construction of housing for low and moderate income families and persons throughout the state.
- Bond proceeds were used to finance single family mortgage loans throughout the state, to refund outstanding bonds, and to fund the Housing Mortgage Capital Reserve Fund.

Debt Service Reserve Fund

- The Housing Mortgage Capital Reserve Fund must be maintained in an amount equal to MADS.
- In the event the Reserve Fund falls below the minimum requirement, on or before December 1st of each year, the shortfall will be appropriated from the State's General Fund to restore the Reserve Fund.

Security

- The bonds are general obligations of the Authority.
- The bonds are secured by the revenues and assets which consist primarily of interest in first lien mortgages, investments and reserves held with the Trustee, and all funds available to the Authority on behalf of the Housing Mortgage Finance Program.

Bonds Outstanding

- $4.4 billion as of December 31, 2021

Anticipated Borrowings

- On average, the Authority issues $125 million in bonds approximately 4 times a year to finance single family mortgage loans. However, none specified.

South Central CT Regional Water Authority

Water System Revenue Bonds

Moody's Aa3 S&P AA- Fitch NR

Purpose

- The Authority owns and operates an extensive water supply and distribution system which serves customers in fifteen municipalities and owns land in five additional municipalities within the District. Bond proceeds were used to acquire utilities, fund a variety of system improvements and to finance necessary deposits into certain other funds.

Bonds Outstanding

- $516 million as of May 31, 2021

Security

- The bonds are secured by a pledge of net revenues as well as all moneys and securities in all the funds established by the bond resolution. Revenues include income derived from the payment of rates and charges for water service and investments in the funds other than the Construction Fund. Revenues do not include, however, government grants and contributions for capital improvements. The payment of debt service has priority over any claim from Payments-in-lieu-of-Taxes (PILOT). PILOTs are required to be paid to municipalities in which the Authority owns property.

Debt Service Reserve Fund

- The Debt Service Reserve Fund must equal the lesser of (i) MADS (ii) 10% of the stated principal amount, or (iii) 125% of the Average Annual Principal and Interest Requirements.

Anticipated Borrowing

- None specified.

Water System Revenue Bonds (cont.)

Moody's Aa3 S&P AA- Fitch NR

Rate Covenant

- The Authority has covenanted to set rates for the Water System at levels sufficient to produce the greater of: (i) revenues that will equal at least all expenses, PILOTS, debt service requirements, and any other obligation of the Water System, (2) Net Revenues that will equal at least 114% of debt service, or (3) Net Revenues plus PILOT payments that will equal at least 125% of debt service.

Additional Bonds Test

- Additional bonds are permitted to be issued on parity with the existing outstanding bonds as long as such bonds do not exceed $10 million or 10% of the aggregate amount of bonds outstanding unless they are being issued for refunding or completion purposes. In addition, (i) Revenues during any twelve consecutive month period out of the preceding 18 months can not be less than 100% of all expenses and obligations (ii) Net Revenues can not be less than 114% of MADS and (iii) Net Revenues plus PILOT payments must equal at least 125% of MADS.

Hartford County Metropolitan District

General Obligation Bonds

Moody's Aa3 S&P AA Fitch NR

Purpose

- This District provides water supply, sewer collection, treatment and disposal services to its eight member communities including Bloomfield, East Hartford, Hartford, Newington, Rocky Hill, West Hartford, Wethersfield, and Windsor. The District also has special agreements for water supply and sewage disposal facilities with 10 non-member towns and various state facilities. Bond proceeds provide funding for various public improvement projects.

Security

- The bonds are general obligations of the District and secured by the District's authority to levy unlimited taxes on the eight member municipalities.

Bonds Outstanding

- $547 million as of December 31, 2020

Anticipated Borrowing

- Total of authorized but unissued bonds as of December 31, 2020, is $762 million.

Debt Service Reserve Fund

- None.

Hartford County Metropolitan District

Clean Water Project Revenue Bonds

Moody's Aa2 S&P AA- Fitch NR

Purpose

- The District developed the Clean Water Project (CWP) in order to address a consent decree with the State Department of Environmental Protection, Department of Justice and US Environmental Protection Agency by 2029. The District implemented the Clean Water Project Charge (formerly Special Sewer Service Surcharge) in fiscal 2008 in anticipation of issuing debt specifically for the CWP.

Security

- The bonds are secured by a gross revenue pledge of the District's dedicated Clean Water Project Charge revenues, including transfers from the Rate Stabilization Fund. The charge is applied to the water bill of property owners that utilize any of the District's services for sewage collection, treatment, and disposal. The District has the legal authority to raise the charge without limitation.

Bonds Outstanding

- $252 million as of December 31, 2020

Anticipated Borrowing

- None specified.

Debt Service Reserve Fund

- None.

Clean Water Project Revenue Bonds (cont.)

Moody's Aa2 S&P AA- Fitch NR

Rate Covenant

- The District has covenanted to set the Clean Water Project Charge sufficient to produce gross revenues equal to at least 120% of debt service. After debt service on the bonds is paid, residual revenues are deposited in the Rate Stabilization Fund where they are legally available to pay debt service on any debt issued to fund the CWP as well as capital expenses for the CWP. The District can make transfers from the Rate Stabilization Fund to pay debt service in any period of up to 35% of debt service on the bonds; these transfers can be included as revenue to meet the rate covenant. Clean Water Project Charge revenues and transfers from the Rate Stabilization Fund to pay debt service are together referred to as Pledged Revenues.

Additional Bonds Test

- Additional bonds are permitted to be issued on parity with the existing outstanding bonds as long as Pledged Revenues during either of the two prior fiscal years are equal to at least 120% of aggregate annual debt service on all outstanding bonds for such fiscal year. Pledged Revenues may be adjusted to reflect any subsequently adopted increases in the Clean Water Project Charge as if such charges had been in effect from the beginning of such fiscal year.

General Obligation Bonds

Moody's Aa3 S&P A+ Fitch A+

Purpose

- Bond proceeds were used to fund the UCONN 2000 program which is an infrastructure improvement program for the University. The program's purpose is to modernize, rehabilitate and expand the physical plant of the University.

Security

- The bonds are general obligations of the University of which the University's full faith and credit are pledged.
- To date, all of the general obligation bonds are additionally secured by the pledge of and a lien upon the State Debt Service Commitment, which is a commitment by the State to appropriate an annual amount for the punctual payment of Special Debt Service Requirements on securities issued as general obligations of the University.

Bonds Outstanding

- $1.6 billion as of June 30, 2021

Anticipated Borrowing

- None specified.

General Obligation Bonds (cont.)

Moody's Aa3 S&P A+ Fitch A+

Security, cont.

- Bonds are payable from all Assured Revenues which include fees, tuition, grants and gifts, annual State appropriations for operating expenses and the annual amounts of the State Debt Service Commitment. Currently the bonds with such security are limited to $2.2 billion exclusive of any amounts for refunding purposes.
- The State commits to appropriate annually an amount for operations of the University, after consideration of other amounts available for operations, which will allow the University to continue to operate pursuant to the provisions of the Constitution of the State.

Rate Covenant

- The University covenants to set tuition and other charges, such that revenues, when added to other Assured Revenues, shall be sufficient to permit the University to operate and maintain itself and to cover the Special Debt Service Requirements on outstanding bonds.

General Obligation Bonds

Moody's Aa1 S&P AA Fitch AA+

Purpose

- Bond proceeds were used to finance capital projects of the Commonwealth and to refund certain bonds.

Bonds Outstanding

- $27.3 billion as of June 30, 2021

Anticipated Borrowings

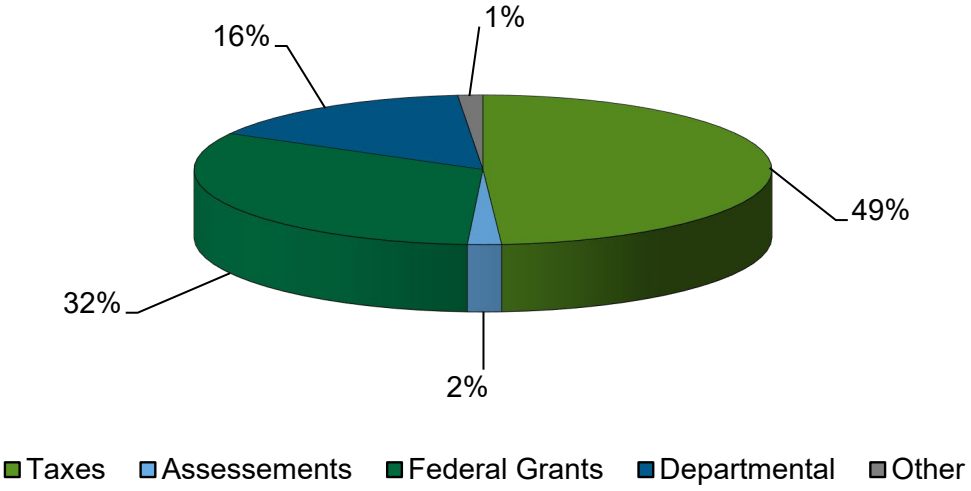
- $2.8 billion in fiscal year 2023.

Security

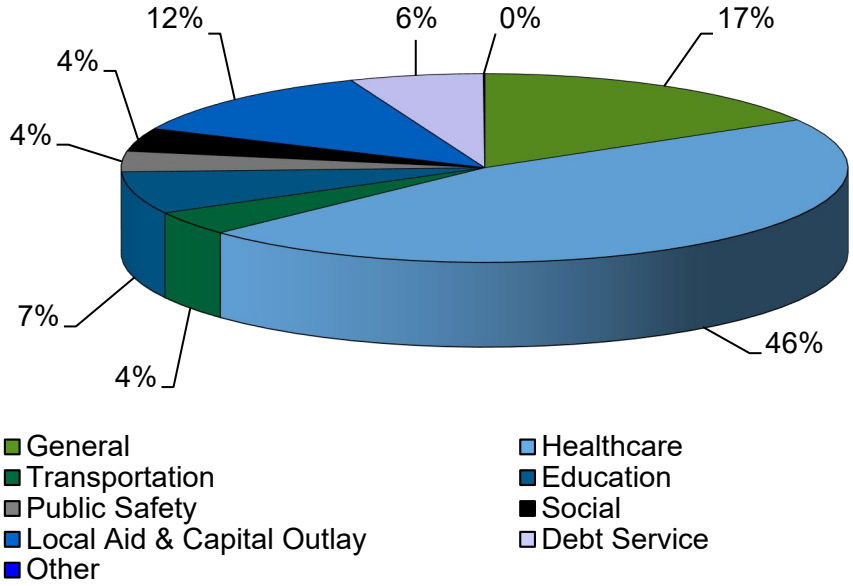
- The bonds are secured by the full faith and credit of the Commonwealth of Massachusetts. However, Massachusetts' General Laws impose a limit on state tax revenue growth. The limitation for each fiscal year is equal to the average positive rate of growth in total wages and salaries during the three preceding calendar years. In addition, the law provides that no more than 10% of the total appropriations in any fiscal year may be expended for payment of principal and interest on general obligation debt.

General Obligation Bonds (cont.)

All Governmental Funds Revenues
for FY Ending June 30, 2021 (In Millions)
$71,381.17



All Governmental Funds Expenditures
for FY Ending June 30, 2021 (In Millions)
$70,260.44



Source: Commonwealth of Massachusetts Annual Comprehensive Financial Report
June 30, 2021

Commonwealth Transportation Fund Bonds

Moody's Aa1 S&P AA+ Fitch NR

Purpose

- Bond proceeds are used to finance the accelerated capital improvement of bridges and rails and related infrastructure pursuant to the Accelerated Bridge Program and Rail Enhancement Program.

Bonds Outstanding

- $3.7 billion as of June 30, 2021

Debt Service Reserve Fund

- None

Security

- The Bonds are special obligations of the Commonwealth payable solely from certain Pledged Revenues which are deposited into the Commonwealth Transportation Fund including revenues generated by the excise tax imposed on fuel, excluding aviation fuel, by the provisions of Chapter 64A, 64E and 64F of the Massachusetts General Laws and all the Registry Fess received by the Registrar of the Motor Vehicles pursuant to Section 33 of Chapter 90 of the General Laws.
- The 6.86 cents of the 24-cent gas tax that is levied on each gallon of gasoline sold in the Commonwealth is pledged on a subordinate basis to the Commonwealth's Federal Highway Grant Anticipation Notes.

Commonwealth Transportation Fund Bonds (cont.)

Moody's Aa1 S&P AA+ Fitch NR

Rate Covenant

- The Commonwealth shall not impair the rights and remedies of the Trustee and the owners of the Bonds under the Trust Agreement with respect to the CTF Pledge Funds. In order to change the rate of the Registry Fees or the Gas Tax credited to the CTF, the Commonwealth must certify that CTF Pledged Funds received in any 12 consecutive months of the last 18 months, as adjusted for the proposed change, shall be at least equal to 4.0x MADS.

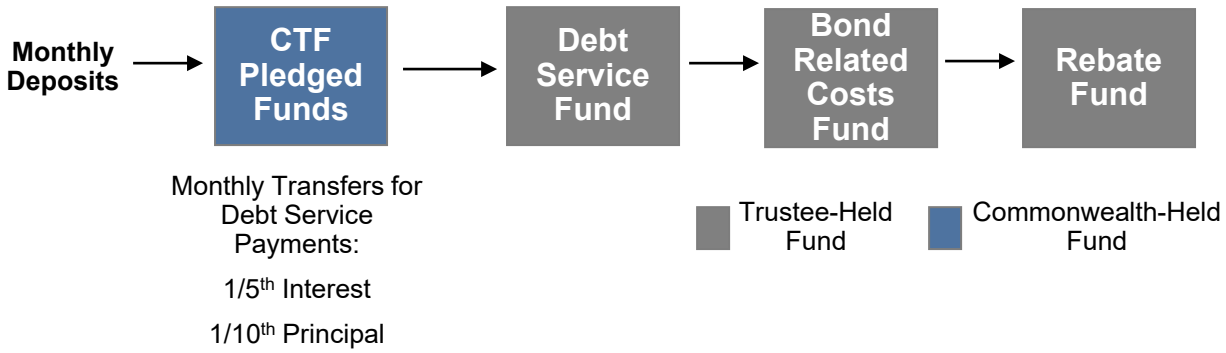
Additional Bonds Test

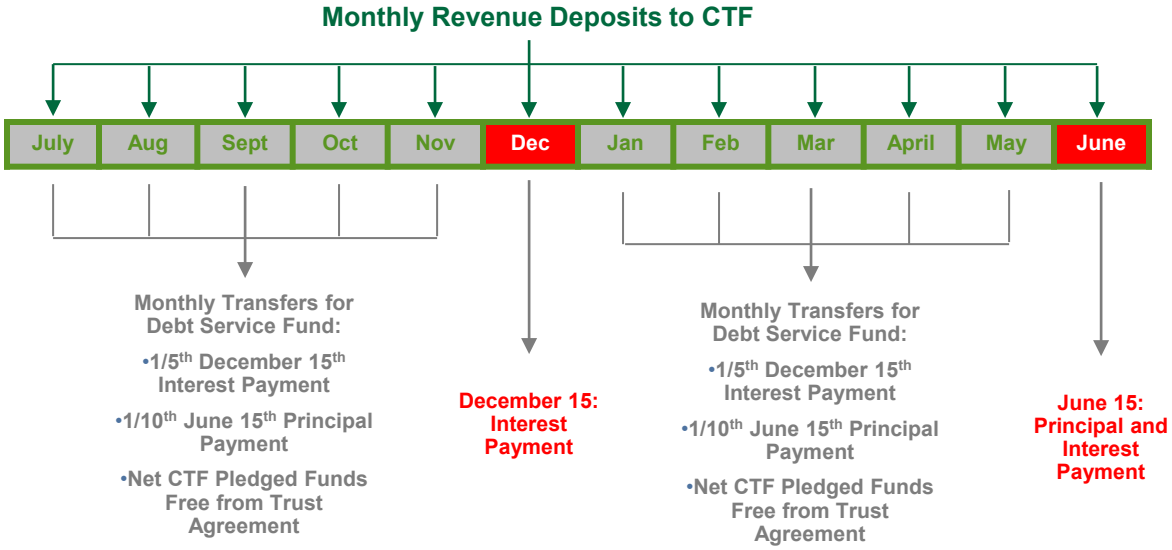
- CTF Pledged Funds for any 12 consecutive months of the last 18 months must be at least 4.0x MADS, including the Additional Bonds to be issued.

Anticipated Borrowings

- $465 million in fiscal year 2023.

Commonwealth Transportation Fund Bonds - Flow of Funds





Source: Official Statement

Special Obligation Bonds – Convention Center

Moody's A1 S&P A- Fitch NR

Purpose

- Bond proceeds were used to finance the costs incurred by the Commonwealth for constructing or renovating three convention and exhibition centers located in the cities of Boston, Springfield and Worcester.

Bonds Outstanding

- $480 million as of June 30, 2021

Debt Service Reserve Fund

- The Trust Agreement requires a Capital Reserve Fund to be established and provides for its funding and maintenance in an amount at least equal to the lesser of (i) 10% of the original principal amount of all Bonds outstanding, (ii) 125% of the average aggregate amount of principal and interest becoming due in any fiscal year on all Bonds outstanding, or (iii) the Maximum Adjusted Bond Debt Service Requirement in any fiscal year on all Bonds Outstanding.

Security

- The Bonds are secured by a pledge of and lien on Pledged Receipts collected by the Commonwealth within the Boston/Cambridge Area and the Greater Springfield Area and the City of Worcester, including the Room Occupancy Taxes, Vehicular Rental Surcharge and other Revenues.
- Pledged Receipts include: (1) 2.75% room occupancy excise tax on lodging establishments within the Tax Base, (2) 5.7% room occupancy excise tax on lodging establishments within the cities of Boston, Cambridge, and Springfield, (3) an additional 4% room occupancy excise tax on certain hotel rooms in Springfield, (4) a surcharge on all vehicular rental transaction contracts in Boston, (5) 5% sales tax on meals, beverages, and tangible personal property sold in certain establishments in Boston, Cambridge, and Springfield, (6) 5% surcharge on the water and land-based sightseeing tours and cruises in Boston, and (7) $2 per day parking surcharge in parking facilities in conjunction with the Projects.

Special Obligation Bonds – Convention Center (cont.)

Moody's A1 S&P A- Fitch NR

Rate Covenant

- The Commonwealth has covenanted in the Convention Center Act and in the Trust Agreement that so long as any Bonds are outstanding the rates of the respective room occupancy taxes, the vehicular rental surcharge, the sightseeing surcharge, the sales taxes, and the parking surcharge pledged to the payment of the Bonds will not be reduced below the rates in effect at the dates of the original issue of such Bonds.

Additional Bonds Test

- The Commonwealth must demonstrate that the amount of Pledged Receipts collected during any 12 consecutive months out of the preceding 18 months was at least equal to 150% of the Maximum Adjusted Bond Debt Service Requirement due in the current or any future fiscal year for all Bonds outstanding including the proposed additional Bonds.

Anticipated Borrowings

- None anticipated.

Massachusetts Department of Transportation

Metropolitan Highway System Senior Revenue Bonds

Moody's A2 S&P A+ Fitch A+

Purpose

- Bond proceeds were used to pay certain costs relating to the Central Artery/Tunnel Project in Boston, to refund certain outstanding indebtedness of the Massachusetts Turnpike Authority, to fund the Senior and second lien Debt Service Reserve Funds, and to pay portions of interest due.

Debt Service Reserve Fund

- The Debt Service Reserve Fund must equal the lesser of (i) 10% of the original net proceeds from the sale of such series, (ii) 125% of Average Annual Debt Service, or (iii) MADS.

Bonds Outstanding

- $722 million as of June 30, 2021

Rate Covenant

- The Department is required to set tolls, rentals, and other charges such that Net Revenues for such fiscal year must equal the greater of (i) 1.20x the Senior Net Debt Service, (ii) 1.15x the Combined Net Debt Service, or (iii)1.00x the Combined Net Debt Service plus the Capital Reinvestment Requirement for that fiscal year which is established by the Department in its annual budget.

Security

- The Bonds are secured by a senior lien pledge of the System's Net Revenues derived from the Accepted Metropolitan Highway System that includes tolls, rates, fees, rentals, and other charges/revenues and certain investment income. The senior Bonds are further secured by a first claim on $25 million in annual Contract Assistance by the Commonwealth of Massachusetts and by a second lien claim on an additional $100 million in annual Contract Assistance payable first to the second lien Bonds. Contract Assistance payments are full faith and credit general obligations of the Commonwealth. The senior lien is closed to new issuance except for refunding bonds.

Additional Bonds Test

- Additional Bonds may be issued only for refunding purposes.

Metropolitan Highway System Second Lien Revenue Bonds

Moody's Aa2 S&P AA Fitch AA+

Purpose

- Bond proceeds were used to pay certain costs relating to the Central Artery/Tunnel Project in Boston, to refund certain outstanding indebtedness of the Massachusetts Turnpike Authority, to fund the Senior and second liend Debt Service Reserve Funds, and to pay portions of interest due.

Debt Service Reserve Fund

- The Debt Service Reserve Fund must equal the lesser of (i) 10% of the original net proceeds from the sale of such series, (ii) 125% of Average Annual Debt Service, or (iii) MADS.

Bonds Outstanding

- $866 million as of June 30, 2021

Rate Covenant

- The Department is required to set tolls, rentals, and other charges such that Net Revenues for such fiscal year must equal the greater of (i) 1.20x the Senior Net Debt Service, (ii) 1.15x the Combined Net Debt Service, or (iii)1.00x the Combined Net Debt Service plus the Capital Reinvestment Requirement for that fiscal year which is established by the Department in its annual budget.

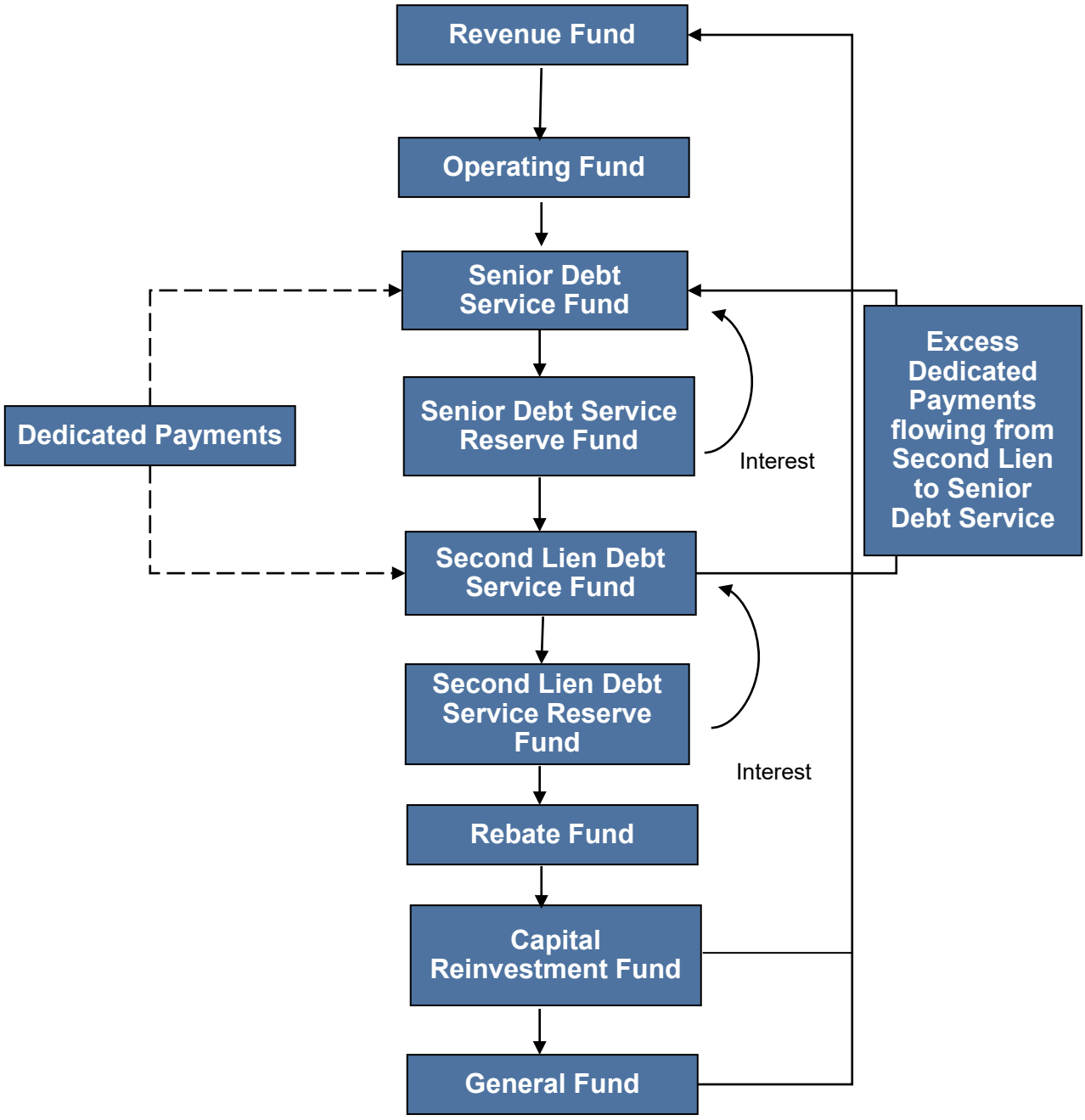
Security

- The Bonds are secured by a second lien pledge of the System's Net Revenues derived from the Accepted Metropolitan Highway System that includes tolls, rates, fees, rentals, and other charges/revenues and certain investment income. The second lien Bonds are further secured by a first claim on $100 million in annual Contract Assistance by the Commonwealth of Massachusetts and by a second lien claim on an additional $25 million in annual Contract Assistance payable first to the senior lien Bonds. Contract Assistance payments are full faith and credit general obligations of the Commonwealth.

Additional Bonds Test

- Additional second lien Bonds may be issued if (i) prospective Net Revenues will be at least equal to 1.15x Combined Net Debt Service, including on the proposed Bonds, or (ii) historical Net Revenues would have been at least equal to 1.15x Combined Net Debt Service, assuming the proposed Bonds were outstanding.

Metropolitan Highway System Revenue Bonds - Flow of Funds



Source: Official Statement

Massachusetts Bay Transportation Authority

Sales Tax Bonds

Moody's Aa2 S&P AA Fitch NR

Purpose

- The Massachusetts Bay Transportation Authority ("MBTA") finances and operates mass transportation facilities within 175 cities and towns.
- Bond proceeds are used to fund the MBTA's capital improvement program.

Bonds Outstanding

- $4.2 billion as of June 30, 2021

Debt Service Reserve Fund

- The minimum Senior/second lien Debt Service Reserve Requirement for any series of Senior/second lien Sales Tax Bonds respectively is an amount equal to one-half the lesser of (i) 10% of the original net proceeds from the sale of such series, (ii) 125% of Average Annual Debt Service, or (iii) MADS.

Security

- The bonds are special obligations of the MBTA payable solely from Pledged Revenues which consists of the Dedicated Sales Tax. This revenue source is calculated as the greater of Base Revenue or Dedicated Sales Tax Revenue. Base Revenue amount increases by the percentage change in inflation, as measured by the Boston Consumer Price Index for the prior year except under certain conditions. The Dedicated Sales Tax Revenue amount is equal to the amount raised by a 1% statewide sales tax, allocated from the State's existing 6.5%.
- In addition, the Bonds are secured by (i) amounts received from the Trustee under the Assessment Bond Trust Agreement, and (ii) the Deficiency Fund and the Capital Maintenance Fund including the investments.

Sales Tax Bonds (cont.)

Moody's Aa2 S&P AA Fitch NR

Rate Covenant

- The Commonwealth covenants that as long as Bonds secured by Dedicated Revenues, defined as Assessments (revenue source discussed in the MBTA Assessment Bonds section) and Dedicated Sales Tax, are outstanding the rate of the sales tax will not be set below the Dedicated Sales Tax amount. In addition, the Annual Aggregate Assessments shall not be reduced below approximately $136 million.

Anticipated Borrowings

- None specified.

Additional Bonds Test

- Additional bonds may be issued as long as the following conditions are met:

  (i) The amount on deposit in the senior and second lien Debt Service Reserve Funds, after the issuance of additional Bonds, will at least equal the respective reserve requirements;

Additional Bonds Test, cont.

(ii) For the current and future fiscal years, the sum of the Assessment Floor amount (pursuant to Section 35T of Chapter 10 Mass. General Laws) plus the Residual Sales Tax divided by Net Debt Service on outstanding assessment bonds will be equal to or greater than 1.5x; and (iii) Must demonstrate (A) the Base Revenue Floor amount for each fiscal year during which the new series will be outstanding will be equal to or greater than the sum of (i) the Combined Net Debt Service for all series of Sales Tax Bonds outstanding after issuance and (ii) the aggregate estimated payments due and payable on prior obligations for the current and future fiscal years or (B) the Historic Dedicated Sales Tax Revenue amount less the aggregate estimated payments due and payable on prior obligations for the current and future fiscal years, divided by, for each fiscal year, (a) the Senior Net Debt Service for all series of bonds and (b) the Combined Net Debt Service for all series of bonds, will be equal to or greater than 2.0x and 1.5x, respectively.

Massachusetts Bay Transportation Authority

Assessment Bonds

Moody's Aa1 S&P AAA Fitch NR

Purpose

- Bond proceeds are used to fund the MBTA's capital improvement program..

Bonds Outstanding

- $574 million as of June 30, 2021

Debt Service Reserve Fund

- The Debt Service Reserve Fund must equal the lesser of: (i)10% of the original net proceeds from the sale of such series, (ii) MADS, or (iii) 125% of Average Annual Debt Service.

Security

- The bonds are secured by all Pledged Revenues defined as Assessments on 175 cities and towns located in the Authority's service area. The Assessments constitute unconditional general obligations of each community and are paid on a quarterly basis via automatic deductions by the Commonwealth of a portion of each community's local aid payments.
- In addition, the Bonds are secured by (i) amounts received from the Trustee under the Sales Tax Bond Trust Agreement, and (ii) the Deficiency Fund and the Capital Maintenance Fund including the investments.

Assessment Bonds (cont.)

Moody's Aa1 S&P AAA Fitch NR

Rate Covenant

- The Commonwealth covenants that as long as Bonds secured by Dedicated Revenues, defined as Assessments and Dedicated Sales Tax, are outstanding the rate of the sales tax will not be set below the Dedicated Sales Tax amount. In addition, the Annual Aggregate Assessments shall not be reduced below approximately $136 million.

Anticipated Borrowings

- None specified.

Additional Bonds Test

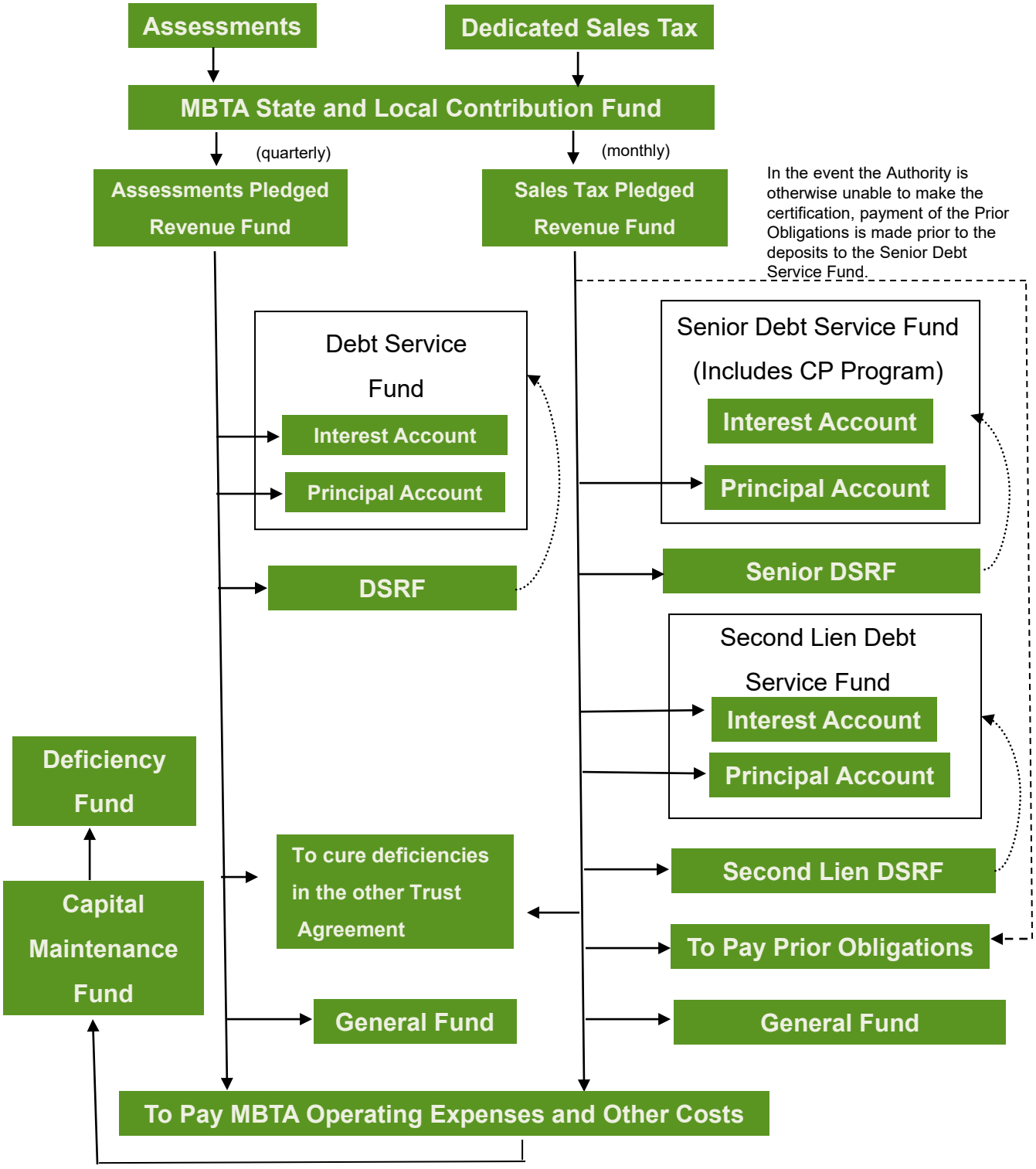
- The Authority may issue additional debt in the event the following tests are met (and some others):

  (i) The amount on deposit in the Debt Service Reserve Fund after the issuance of additional bonds will be at least equal to the Reserve Requirements,

  (ii) For each year, the Assessment Floor amount divided by Net Debt Service on outstanding Assessment Bonds will equal at least 1.00 and if those outstanding Assessment Bonds are rated by Moody's then it must equal at least 1.2x or such lesser amount acceptable by Moody's, and

  (iii) For each year, the sum of the Assessment Floor amount plus the Residual Sales Tax, divided by the Net Debt Service will equal at least 1.5x or the aggregate of the amounts on deposit in each Qualified Reserve Fund will equal the Qualified Reserve Fund Requirement.

Flow of Funds



Source: Official Statement

Massachusetts Port Authority

Revenue Bonds

Moody's Aa2 S&P AA- Fitch AA

Purpose

- The Authority controls, operates and manages Logan International Airport, Hanscom Field, the Worcester Regional Airport and various seaport properties. Bond proceeds were used to finance the construction and renovation of the above-mentioned properties.

Debt Service Reserve Fund

- The balance of the Reserve account will not exceed MADS. The 1978 Trust agreement requires upon issuance of any additional Bonds, there must be a deposit to the Reserve account in an amount equal to at least one-half of the difference between (a) the amount of the increase in the MADS requirement and (b) the amount in the Reserve account in excess of the MADS requirement on all then-outstanding bonds.

Additional Bond Test

- Bonds may be issued if Net Revenues during any 12 consecutive months out of the most recent 18-month period are at least 125% of MADS on all outstanding debt and additional debt.

Bonds Outstanding

- Senior Lien - $2.2 billion as of June 30, 2021

Security

- The Bonds are payable from the Authority's Net Revenues which includes all tolls, rates, fees, rentals, and other charges from its Projects (subject to limited exclusions) and certain investment income along with other revenues.
- In addition, all of the Bonds are secured by a lien and charge on all funds and accounts created under the 1978 Trust Agreement.

Rate Covenant

- The Authority covenants to charge tolls, rates, fees, rentals and other charges as may be necessary so that the Revenues, in each fiscal year, will equal the greater of (a) an amount sufficient to cover operating expenses plus 125% of Debt Service Requirements on all outstanding bonds or (b) an amount sufficient to cover operating expenses, to make required deposits into various funds, and to make any required payments to the Commonwealth.

Anticipated Borrowings

- None specified.

Massachusetts Water Resources Authority

Senior General Revenue Bonds

Moody's Aa1 S&P AA+ Fitch AA+

Purpose

- The Authority controls a water distribution system and a sewer system serving 62 communities. The Bond proceeds were used for capital improvements in rehabilitating, repairing, and maintaining the systems and ensuring they are compliant with the various environmental laws.

Debt Service Reserve Fund

- The Debt Service Reserve Fund Requirement is equal to the lesser of (i) 50% of the maximum amount of Adjusted Debt Service on all Bonds, (ii) 10% of the original net proceeds of the Bond series, (iii) 125% of the average annual Debt Service of the Bond series, or (iv) MADS of the Bond series.

Security

- The Authority pledges its net revenues and all funds established under the General Resolution except the Operating Fund, the Note Payment Fund, the Rebate Fund and subordinate lien Debt Service Reserve Funds. Revenues are defined as all income, revenue, receipts and other moneys derived by the Authority from its operation of the systems.
- The Authority provides services to Local Bodies on a wholesale basis. The obligation of the Local Bodies to pay for these services is a general obligation payable from any and all sources of revenue available to the Local Bodies.

Bonds Outstanding

- $3.0 billion as of November 30, 2021

Anticipated Borrowings

- None specified.

Senior General Revenue Bonds (cont.)

Moody's Aa1 S&P AA+ Fitch AA+

Rate Covenant

- The Authority covenants that for each Fiscal Year it will maintain Revenues sufficient to pay Current Expenses, debt service on Indebtedness, required deposits to reserves, costs of maintenance, replacement or improvement of the Systems to be funded as Current Expenses, and all amounts which the Authority may be obligated to pay by any law or contract.
- The Authority is also required set Rates and Charges sufficient to cover Bond Debt Service in each Fiscal Year by 1.2x (excluding Subordinated Bonds), and (ii) so long as any Subordinated Bonds are Outstanding, set Rates and Charges sufficient to cover total Bond Debt Service in any 12-month period by 1.1x.
- The coverage ratio may be adjusted by the Authority provided that such adjustment will not adversely affect the then current ratings, if any, assigned to any series of outstanding Bonds.

Additional Bonds Test

- The Authority may issue new Bonds if it has met the Rate Covenant for the most recent period of 12 consecutive months, and for the Fiscal Year of issuance and the Fiscal Year thereafter projected revenues, and expenses and required reserve deposits if applicable, must satisfy the Rate Covenant (taking into account the proposed Bonds).
- Upon the issuance of Bonds, for refunding purposes or otherwise, the Debt Service Reserve Fund shall be fully funded to its applicable requirement.

Massachusetts Water Resources Authority

Subordinate Lien General Revenue Bonds

Moody's Aa2 S&P AA Fitch AA

Purpose

- The Authority controls a water distribution system and a sewer system servicing 61 communities. The Bonds proceeds were used for capital improvements in rehabilitating, repairing, and maintaining the systems and ensuring they are in compliance with the various environmental laws.

Security

- The Authority pledges its Net Revenues and any funds established under the General Resolution except the Operating Fund, the Debt Service Fund, the Debt Service Reserve Fund, the Note Payment Fund, and the Rebate Fund. Revenues are defined as all income, revenue, receipts and other moneys derived by the Authority from its operation of the systems. The claim is subordinate to the senior Bonds.
- The Authority provides services to Local Bodies on a wholesale basis. The obligation of the Local Bodies to pay for these services is a general obligation payable from any and all sources of revenue available to the Local Bodies.

Bonds Outstanding

- $533 million as of November 30, 2021

Debt Service Reserve Fund

- While the resolution allows for a subordinate lien Debt Service Reserve Fund, there is none presently.

Anticipated Borrowings

- None anticipated.

Subordinate Lien General Revenue Bonds (cont.)

Moody's Aa2 S&P AA Fitch AA

Rate Covenant

- The Authority covenants that for each Fiscal Year it will maintain Revenues sufficient to pay Current Expenses, debt service on Indebtedness, required deposits to reserves, costs of maintenance, replacement or improvement of the Systems to be funded as Current Expenses, and all amounts which the Authority may be obligated to pay by any law or contract.
- The Authority is also required set Rates and Charges sufficient to cover Bond Debt Service in each Fiscal Year by 1.2x (excluding Subordinated Bonds), and (ii) so long as any Subordinated Bonds are Outstanding, set Rates and Charges sufficient to cover total Bond Debt Service in any 12-month period by 1.1x.
- The coverage ratio may be adjusted by the Authority provided that such adjustment will not adversely affect the then current ratings, if any, assigned to any series of outstanding Bonds.

Additional Bonds Test

- The Authority may issue new Bonds if it has met the Rate Covenant for the most recent period of 12 consecutive months, and for the Fiscal Year of issuance and the Fiscal Year thereafter projected revenues, and expenses and required reserve deposits if applicable, must satisfy the Rate Covenant (taking into account the proposed Bonds).
- Upon the issuance of Bonds, for refunding purposes or otherwise, the Debt Service Reserve Fund shall be fully funded to its applicable requirement.

Massachusetts Clean Water Trust

State Revolving Fund Bonds

Moody's Aaa S&P AAA Fitch AAA

Purpose

- The Trust was established to provide financial assistance to borrowers for water pollution abatement projects and drinking water projects.
- There are three programs under which borrowers have received loans: Master Trust Agreement (the MTA, or the active program), Pool SRF Program (the prior program), and the MWRA Program.

Bonds Outstanding

- $2.5 billion as of June 30, 2021

Security

- The majority of loans funded by the SRF Bonds are general obligations of the related borrowers. The remaining are revenue obligations payable solely from water and wastewater revenues of the related borrowers.
- Reserve funds are established to reduce financing costs for the Trust's borrowers by applying investment earnings on such reserve funds to pay a portion of the debt service on the related Bonds.

Security, cont.

- The SRF programs were established to accept federal grants and required the Commonwealth to match 20% of the grants. The matching payment is a general obligation of the Commonwealth.
- Each borrower is obligated to repay the principal amount of its loan at a subsidized interest rate of 2% or less if the maturity is no longer than 20 years. Certain loans with terms longer than 20 years may bear an interest rate in excess of 2%. The Trust has the right to intercept local aid payments made by the Commonwealth to a city or town in the event the specific municipality fails to make payments.
- In addition to matching funds, the Commonwealth provides assistance payments to the Trust on behalf of each borrower. The obligation is a general obligation of the Commonwealth in which the State's full faith and credit is pledged.

State Revolving Fund Bonds (cont.)

Moody's Aaa S&P AAA Fitch AAA

Additional Bonds Test

- In order for Additional Bonds to be issued the Trust must certify that (i) Borrower Payments, (ii) investment earnings, (iii) Commonwealth assistance payments, and (iv) to the extent not already included revenues from the prior programs (collectively, "Program Revenues") for the current and each subsequent fiscal year are not projected to be less than 105% of the Aggregate Debt Service on all Bonds, including the proposed Bonds, for the then-current and each subsequent fiscal year.

- Prior to the issuance of any Subordinate Bonds, the Trust must certify that the Program Revenues for the current and each subsequent fiscal year are not projected to be less than 100% of the Aggregate Debt Service on all Bonds outstanding, including the proposed additional Subordinate Bonds, for the then-current and each subsequent fiscal year.

Debt Service Reserve Fund

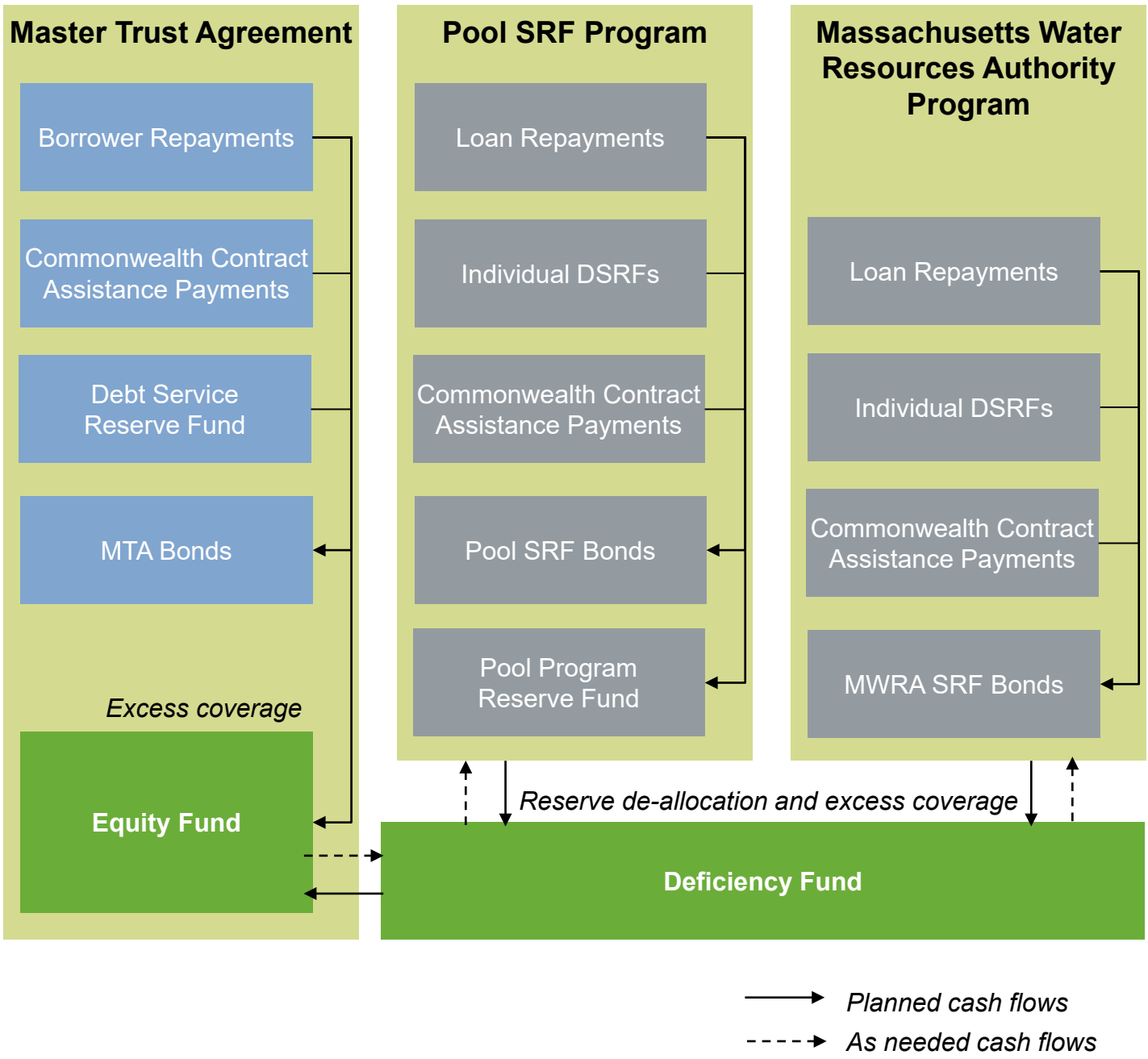
- The Trust has not funded the Senior DSRF in connection with any issuance of MTA Bonds and does not intend to fund the Senior DSRF in connection with the issuance of the Bonds.
- The Trust may fund the Subordinate DSRF in connection with the issuance of Subordinate MTA Bonds, to the extent such bonds are issued.
- To the extent there are amounts in the Project Fund allocable to a particular Borrower, those amounts are available to cure Payment Defaults by such Borrower.
- The Equity Fund under the MTA and the Deficiency Fund under the other two programs are available to cure Payment Defaults on a cross-collateral basis to the extent such funds hold sufficient reserves.

Anticipated Borrowings

- None specified.

Massachusetts Clean Water Trust

Flow of Funds



Source: Official Statement

Massachusetts State College Building Authority

Project Revenue Bonds

Moody's Aa2 S&P AA- Fitch NR

Purpose

- The Authority was created in 1963 to finance the construction of residential, dining, parking, and various projects at the Mass State Colleges, which includes Bridgewater, Fitchburg, Framingham, Salem, Westfield, and Worcester State Colleges as well as MA College of Art and Design, MA College of Liberal Arts and MA Maritime Academy.

- Bond proceeds were used to finance the cost of renovations and expansions of the facilities at the various State Colleges.

Debt Service Reserve Fund

- None

Security

- The Bonds are secured by fees, rents, rates, and other charges imposed by the Authority on the State Colleges for the projects.

- The Board of Higher Education (BHE) pledges a portion of each State College's gifts, grants and trust funds in an amount equal to 25% of the Average Annual Aggregate Debt Service costs. The BHE also pledges the annual appropriations made by the Legislature on behalf of each State College to secure only that specific State College's allocable share of debt service on the Bonds.

- Continued next page

Project Revenue Bonds (cont.)

Moody's Aa2 S&P AA- Fitch NR

Security, cont.

- The BHE or any State College is permitted to grant a lien on Pledged Funds on parity with the pledge made to the holders of the Bonds if they certify in writing that the total revenues available for expenditure by the applicable State College during each of the three most recently completed fiscal years (including the Pledged Funds but excluding any revenues in respect of such State College) were not less than 200% of MADS on all outstanding debt obligations allocable to such State College.
- Each State College must hold all Revenues derived from System Projects and Campus Projects separate and apart from all other moneys and deposit them in a respective trust.
- Other Reserves include a Capital Improvement Reserve Fund and a Multipurpose Reserve Fund, both are available to pay debt service on Bonds.

Bonds Outstanding

- $1.2 billion as of June 30, 2021

Rate Covenant

- The Authority is required to set charges such that revenues are sufficient to cover at least 1.00x debt service, operating expenses, Debt Service Reserve Fund requirements, and other costs associated with the System Projects.

Dedicated Sales Tax Bonds

Senior:	Moody's Aa2	S&P AA+	Fitch AAA
Subordinate:	Moody's Aa3	S&P AA	Fitch AA+

Purpose

- Bond proceeds were used to fund grants to cities, towns and regional school districts for school construction and renovation projects. In addition, Bond proceeds were used to satisfy the Reserve Fund requirements.

Debt Service Reserve Fund

- The Debt Service Reserve Fund requirement will be set on a series-by-series basis.

Additional Bonds Test

- Additional Bonds may be issued if either: (i) the Dedicated Sales Tax Revenue amount during any 12 consecutive months within the prior 24 months provides at least 1.4x MADS on the Senior Bonds and any additional Senior Bonds or 1.3x MADS on all Bonds and any additional Subordinate Bonds; or (ii) pledged revenues in each fiscal year following the issuance of any additional Bonds are projected to provide at least 1.4x annual debt service on Senior Bonds, including the new Senior Bonds, or 1.3x annual debt service on all Bonds, including the new Subordinate Bonds, and the Authority must deliver a rating confirmation from each rating agency on the outstanding Bonds.

Security

- The Bonds are secured by a Dedicated Sales Tax Revenue Amount equal to 1% of the 6.25% sales tax imposed by the Commonwealth on retail sales transactions, with certain revenues excluded from the DSTRA (i.e., taxes on meals).
- The DSTRA will be credited, without appropriation, to the SMART Fund and pledged to the benefit of the owners of the Bonds.
- Certain moneys that are not derived from the DSTRA may from time to time be credited to the SMART Fund on a non-recurring basis and disbursed to the Authority. Such moneys are to be used for the purposes of the Authority and are not held for the benefit of the owners of the Bonds.

Bonds Outstanding

- Senior: $4.2 billion as of June 30, 2021
- Subordinate: $1.9 billion as of June 30, 2021

Anticipated Borrowings

- The aggregate principal amount of all Bonds issued by the Authority can not exceed $10 billion outstanding at any time.

University of Massachusetts Building Authority

Project Revenue Bonds

Moody's Aa2 S&P AA- Fitch AA

Purpose

- UMBA was created in 1960 to provide dormitories, dining commons and other buildings and structures for use by the University of Massachusetts, its students, staff and their dependents and other entities associated with the University.

Bonds Outstanding

- $3.0 billion as of June 30, 2021

Debt Service Reserve Fund

- The Debt Service Reserve Fund is established as security for all Bonds that have the Commonwealth Guarantee. Each bond year 1/12th of the highest future annual debt service amount is deposited into the reserve until funded.

Rate Covenant

- The Authority covenants that it will fix, revise, adjust and collect charges for use of the Projects and any other projects or property revenues pledged sufficient to pay all expenses of the Authority allocable to projects financed.

Anticipated Borrowings

- None specified.

Security

- The Bonds are secured primarily by payments made to the Authority under its contracts with the University of Massachusetts, with such payments pledged to the Bond trustee.
- Certain Bonds are secured with a pledge of revenues derived from the operation of the facilities financed by the Bonds

Additional Bonds Test

- The Authority may issue additional Bonds on parity with or subordinate to the Bonds issued under its Trust Agreements.
- The University of Massachusetts has agreed under separate indentures (not with UMBA) not to request or permit the Authority to issue additional indebtedness if MADS exceeds 10% of total available revenues.

Massachusetts Housing Finance Agency

Single Family Housing Revenue Bonds

Moody's Aa1 S&P AA+ Fitch NR

Purpose

- Bond proceeds were used to finance single family loans in targeted areas at competitive lending rates, and to encourage new construction and rehabilitation.

Bonds Outstanding

- $1.1 billion as of June 30, 2021

Debt Service Reserve Fund

- The Debt Service Reserve Fund must be maintained at an amount at least equal to 2% of the sum of (i) the outstanding principal balance of all loans then held under the General Resolution plus (ii) the aggregate amount, if any, then held in all purchase accounts which may be applied to the purchase of loans.

Security

- The Bonds are special obligations of MassHousing and secured solely by a pledge of all loans, revenues including the payments of principal and interest on the loans, all insurance proceeds and other recovery payments, all moneys in the funds and accounts created by the Bond Resolution (other than the Rebate Fund).

- Each loan purchased under the resolution that has a principal amount in excess of 80% of the Value of the Property must be (i) insured by the Federal Housing Administration ("FHA"); (ii) guaranteed by the United States Veterans Administration ("VA") or by the Rural Housing and Community Development Service ("RHCDS") , (iii) insured by a qualified private mortgage insurance company, (iv) insured by MassHousing's Mortgage Insurance Fund or (v) insured, guaranteed or otherwise secured by another program of self-insurance established by or on behalf of MassHousing.

Single Family Housing Revenue Bonds (cont.)

Moody's Aa1 S&P AA+ Fitch NR

Additional Bonds Test

- MassHousing is prohibited from issuing Bonds at any time unless the amount on deposit in the Debt Service Reserve Fund, including any deposit to be made from the proceeds of the Bonds to be issued, is equal to the Debt Service Reserve Fund Requirement calculated at such date of issuance.
- Prior to the delivery of any series of Bonds and prior to the transfer to MassHousing of moneys pledged under the Bond Resolution, MassHousing is required to file a Projection of Revenues demonstrating that following such delivery or transfer, expected Revenues will be sufficient to cover MADS and all expenses.
- In addition, the issuance of additional Bonds can not adversely affect ratings.

Anticipated Borrowings

- None specified.

Housing Bonds

Moody's Aa2 S&P AA Fitch AA-

Purpose

- Bond proceeds were used to finance multifamily housing projects.

Bonds Outstanding

- $2.1 billion as of June 30, 2021

Debt Service Reserve Fund

- The Series Resolution for New Series Bonds requires a deposit to the Debt Service Reserve Fund in the amount equal to 50% of MADS for the New Series Bonds.

Additional Bonds Test

- Additional Bonds may be issued under the Resolution only upon confirmation of the ratings of the Bonds outstanding prior to such issuance.
- In addition to parity Bonds issued under the Resolution, MassHousing may issue bonds that are subordinate to the Parity Bonds.

Security

- The Bonds are special revenue obligations of MassHousing and secured solely by a pledge of all loans, revenues including the payments of principal and interest on the loans, all insurance proceeds and other recovery payments, all moneys in the funds and accounts created by the Bond Resolution (other than the Rebate Fund).

Anticipated Borrowings

- None specified.

Mass General Brigham, Inc. Revenue Bonds

Moody's Aa3 S&P AA- Fitch NR

Purpose

- Mass General Brigham Inc, (the Obligated Group or MGB fka Partners Health System) operates hospitals in eastern Massachusetts and New England. It has two academic medical centers, Brigham and Women's Hospital and Massachusetts General Hospital, and is a principal teaching affiliate of Harvard Medical School. MGB also operates AllWays Health Partners an insurance company with Medicaid managed care and commercial plans.
- Bond proceeds were used for capital improvement projects.

Bonds Outstanding

- $5.9 billion as of September 30, 2021

Rate Covenant

- MGB agrees to maintain a Debt Service Coverage Ratio equal to net revenues plus depreciation, amortization, and interest expense divided by Debt Service Payments on outstanding debt, at least equal to 1.0 in each fiscal year.

Security

- MGB pledges all Revenues of the Obligated Group, as well as all funds and investments established under the Agreement to secure the Bonds.
- The Obligated Group consists of the following entities: Massachusetts General Hospital (MGH), Brigham Health (parent of Brigham and Women's Hospital and Brigham and Women's Faulkner Hospital), NSMC HealthCare, Inc. (parent of North Shore Medical Center), Newton-Wellesley Health Care System, Inc. (parent of Newton- Wellesley Hospital), Foundation of the Massachusetts Eye and Ear Infirmary, Inc. (MEEI), Spaulding Rehabilitation (parent of several non-acute service providers), and AllWays Health Partners. MGB also controls Mass General Brigham Community Physicians Organization. MGH includes Cooley Dickinson Health Care Corp., McLean HealthCare, Martha's Vineyard Hospital, Nantucket Cottage Hospital, and Wentworth-Douglass Health System.

Mass General Brigham, Inc. Revenue Bonds (cont.)

Moody's Aa3 S&P AA- Fitch NR

Security (cont.)

- The Bonds issued by MGB are additionally secured by unconditional guarantees of Brigham Health and MGH. These guarantees may be suspended (Guarantee Suspension) if certain covenanted financial tests are met, but are automatically reinstated, without board approval, if the covenant tests are not maintained.

Anticipated Borrowings

- None specified.
- Other issuers of MGB bonds include the Massachusetts Health & Educational Facilities Authority, New Hampshire Health and Education Facilities Authority, as well as MGB itself.

Debt Service Reserve Fund

- None

Additional Bonds Test

- During the period that there is no Guarantee Suspension, there are no limitations relating to the incurrence of additional Indebtedness.
- During any period in which a Guaranty Suspension is in effect an Affiliate may not incur Indebtedness unless (i) such Affiliate deliver a guarantee, substantially similar to the Guarantees securing the Bonds on an equal and ratable basis with such Indebtedness, or (ii) such Indebtedness does not exceed certain applicable limitations set forth in the Agreement.
- In addition, during any such suspension, Partners shall not incur any Indebtedness secured by a non-parity lien on any Property of the Institution unless such Indebtedness does not exceed certain limitations set forth in the Agreement.
- The Agreement also provides that if any of the Guarantors shall incur Indebtedness secured by their tangible or intangible property Partners shall cause such Affiliate to extend such encumbrance also to secure such Affiliate's obligations under its respective Guarantee.

Beth Israel Lahey Health Revenue Bonds

Moody's A3 S&P A Fitch NR

Purpose

- Beth Israel Lahey Health (BILH or the Obligated Group) was formed by the merger of CareGroup, Lahey Health, and Seacoast Health, and includes 13 hospitals in total. The system includes three academic medical centers, an orthopedic hospital, several community hospitals, and numerous employed or affiliated physician practices and ambulatory locations. The system's primary academic medical center, Beth Israel Deaconess Medical Center, is a Harvard affiliated teaching hospital. Lahey Clinic has a teaching affiliation with Tufts University School of Medicine.

- Bond proceeds were used for capital improvement projects and merger-related costs.

Bonds Outstanding

- $1.2 billion as of September 30, 2021

Debt Service Reserve Fund

- None

Security

- The Obligated Group, consisting of all the major components of BILH, including all hospitals, secure the Bonds with a pledge Gross Receipts. The legacy Lahey and Seacoast obligated groups joined the legacy CareGroup obligated group. The bonds are secured under the legacy CareGroup master trust indenture.

- All prior bonds of the legacy obligated groups are equally and ratably secured with the Bonds as to the lien on Gross Receipts of the Obligated Group

- Obligated Group members include Beth Israel Deaconess Medical Center, Inc., Lahey Clinic Foundation, Inc., Lahey Clinic, Inc., Lahey Clinic Hospital, Inc., Mount Auburn Hospital, Northeast Hospital Corporation, Winchester Hospital, Beth Israel Deaconess Hospital - Plymouth, Inc., New England Baptist Hospital, Anna Jaques Hospital, Beth Israel Deaconess Hospital - Milton, Inc., Beth Israel Deaconess Hospital - Needham, Inc., Medical Care of Boston Management Corporation d/b/a Affiliated Physicians Group, and Mount Auburn Professional Services, Inc.. The academic faculty practice group, associated with BIDMC, Harvard Medical Faculty Physicians, is not a member of the obligated group.

Beth Israel Lahey Health Revenue Bonds (cont.)

Moody's A3 S&P A Fitch NR

Additional Bonds Test

- Each member of the Obligated Group agrees certain conditions must be met before issuing new Bonds. Such conditions include:

  (i) the principal amount outstanding must not exceed15% of Adjusted Annual Operating Revenues for the most recent Fiscal Year;

Rate Covenant

- The Obligated Group has made certain covenants with respect to the maintenance of the Maximum Annual Debt Service (MADS) Coverage Ratio. If, as of the end of any Fiscal Year, the MADS Coverage Ratio is less than 1.00, then an Event of Default shall be deemed to have occurred under the Master Trust Indenture. If the MADS Coverage Ratio is not at least equal to 1.10 as of the end of any two consecutive Fiscal Years, the Obligated Group has covenanted to retain a Consultant.

Anticipated Borrowings

- None specified.

Additional Bonds Test (cont.)

(ii) (A) the ratio determined by dividing Aggregate Income Available for Debt Service by MADS, not including the proposed Additional Indebtedness, is not less than 1.20 and (B) the Projected Debt Service Coverage Ratio, taking the proposed Additional Indebtedness into account, for (1) in the case of Additional Indebtedness to finance capital improvements, each of the two consecutive Fiscal Years succeeding the date on which such capital improvements are expected to be placed in operation, or (2) in the case of refinancing or not financing capital improvements, each of the two consecutive Fiscal Years succeeding the date on which the Indebtedness is incurred, is not less than 1.20 (or an Officer's Certificate forecasting coverage of not less than 1.35 for the same period);

(iii) immediately after the issuance all outstanding Indebtedness will not exceed 67% of aggregate Capitalization of the Obligated Group

(iii) for purposes of refunding, an Officer's Certificate must state that MADS will not be increased by more than 15%.

(The test applies only to Long-Term Indebtedness. Other tests to incur Short-Term Indebtedness apply).

Boston Medical Center Revenue Bonds

Moody's Baa2 S&P BBB Fitch NR

Purpose

- Boston Medical Center (BMC or the Obligated Group) is parent to Boston Medical Center and Boston Medical Center Health Plan. BMC is an academic medical center affiliated with Boston University and is also a safety net provider for Boston. The Health Plan operates primarily Medicaid managed care plans.
- Bond proceeds were used to fund capital improvements.

Security

- BMC pledges Gross Receipts of the Obligated Group, as well as all funds established under the Agreement to secure the Bonds.
- BMC has also granted a leasehold mortgage on certain facilities.
- BMC (the hospital corporation) is the only Affiliate obligated on the Bonds. BMC Affiliates included in the system but excluded from the Obligated Group are Boston Medical Center Health Plan, the Faculty Practice Foundation, Boston Medical Center Insurance Company, East Concord Medical Foundation, BMC Integrated Care Services, Inc., the real estate corporations and other smaller Affiliates.

Debt Service Reserve Fund

- None.

Bonds Outstanding

- $583 million as of September 30, 2021

Boston Medical Center Revenue Bonds (cont.)

Moody's Baa2 S&P BBB Fitch NR

Additional Bonds Test

- Each member of the Obligated Group agrees certain conditions must be met before issuing new Bonds. Such conditions include:

  (i) The ratio determined by dividing Aggregate Income Available for Debt Service by MADS including the additional debt issuance, is greater than 1.20;

Rate Covenant

- The Obligated Group agrees to use its best efforts to maintain the ratio of Aggregate Income Available for Debt Service to Maximum Annual Debt Service (MADS) at least equal to 1.10 in each Fiscal Year. If, as of the end of any Fiscal Year, the MADS Coverage Ratio is less than 1.00, then an Event of Default shall be deemed to have occurred under the Master Trust Indenture. If the MADS Coverage Ratio is not at least equal to 1.10 as of the end of any Fiscal Year, the Obligated Group has covenanted to retain a Consultant.

Anticipated Borrowings

- None specified.

Additional Bonds Test (cont.)

(ii) (A) the ratio determined by dividing Aggregate Income Available for Debt Service by MADS, not including the proposed Additional Indebtedness, is not less than 1.10 and (B) the Projected Debt Service Coverage Ratio, taking the proposed Additional Indebtedness into account, for (1) in the case of Additional Indebtedness to finance capital improvements, the first full Fiscal Year succeeding the date on which such capital improvements are expected to be placed in operation, or (2) in the case of refinancing or not financing capital improvements, the first full Fiscal Year succeeding the date on which the Indebtedness is incurred, is not less than 1.10;

(iii) the aggregate principal amount of Indebtedness, including the proposed Additional Indebtedness, does not exceed 10% of Adjusted Annual Operating Revenues;

(iii) for purposes of refunding, an Officer's Certificate must state that MADS will not be increased by more than 15%.

(The test applies only to Long-Term Indebtedness. Other tests to incur Short-Term Indebtedness apply).

Dana-Farber Cancer Institute Revenue Bonds

Moody's A1 S&P A Fitch NR

Purpose

- Dana-Farber Cancer Institute (DFCI or the Obligated Group) is a National Cancer Institute-designated comprehensive cancer center. DFCI maintains working relationships with Mass General Brigham, Inc. and Boston Children's Hospital, and serves as a teaching affiliate of Harvard University; most DFCI physicians hold faculty appointments at Harvard. DFCI operates a hospital located at Brigham and Women's Hospital and its inpatient pediatric cancer care is provided by Children's Hospital.
- Bond proceeds were used to fund capital improvement projects.

Security

- DFCI pledges Gross Receipts of the Obligated Group, as well as all funds and investments established under the Agreement to secure the Bonds.
- Obligated Group members include DFCI and Dana-Farber Inc. (responsible for investment management). Nonobligated entities include the Dana-Farber Trust, which manages the company's real estate transactions, and Dana-Farber Cancer Care Network physician practices.

Bonds Outstanding

- $511 million as of September 30, 2021

Debt Service Reserve Fund

- None

Dana-Farber Cancer Institute Revenue Bonds (cont.)

Moody's A1 S&P A Fitch NR

Rate Covenant

- The Obligated Group agrees to use its best efforts to maintain an Annual Debt Service Ratio at least equal to 1.10 in each Fiscal Year. If, as of the end of any Fiscal Year, the Annual Debt Service Ratio is less than 1.00, then an Event of Default shall be deemed to have occurred under the Master Trust Indenture. If the Annual Debt Service Ratio is not at least equal to 1.10 as of the end of any Fiscal Year, the Obligated Group has covenanted to retain a Consultant.

Anticipated Borrowings

- None specified.

Additional Bonds Test

- Each member of the Obligated Group agrees certain conditions must be met before issuing new Bonds. Such conditions include:

  (i) the aggregate principal amount of all outstanding Indebtedness after issuance will not exceed 65% of the aggregate capitalization of the Obligated Group for the most recent Fiscal Year;

  (ii) Completion Indebtedness, in an amount not greater than 15% of the Indebtedness originally incurred for a project, must be certified that it will be sufficient to complete the project

  (iii) for purposes of refunding, an Officer's Certificate must state that MADS will not be increased by more than 15%.

  (The test applies only to Long-Term Indebtedness. Other tests to incur Short-Term Indebtedness apply).

Harvard University Revenue Bonds

Moody's Aaa S&P AAA Fitch NR

Purpose

- Proceeds were used for general University purposes, providing flexible cash resources to the University. Proceeds were also used for financing a variety of capital projects, refunding outstanding bonds, and to pay costs associated with terminating swaps.

Security

- The bonds are an unsecured general obligation of the University pledged by the full faith and credit of the President and Fellows of Harvard College.

Bonds Outstanding

- $5.1 billion as of June 30, 2021

Anticipated Borrowings

- None anticipated.

Important information about this report:

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In general the bond market is volatile, and fixed income securities carry interest rate risk. As interest rates rise, bond prices usually fall, and vice versa. This effect is usually more pronounced for longer-term securities. Fixed income securities also carry inflation, credit, and default risks for both issuers and counterparties. Lower-quality fixed income securities involve greater risk of default or price changes due to potential changes in the credit quality of the issuer. Any fixed-income security sold or redeemed prior to maturity may be subject to loss.

Diversification does not ensure a profit or guarantee against a loss. Interest income earned from tax-exempt municipal securities generally is exempt from federal income tax, and may also be exempt from state and local income taxes if you are a resident in the state of issuance. A portion of the income you receive may be subject to federal and state income taxes, including the federal alternative minimum tax. In addition, you may be subject to tax on amounts recognized in connection with the sale of municipal bonds, including capital gains and "market discount" taxed at ordinary income rates. "Market discount" arises when a bond is purchased on the secondary market for a price that is less than its stated redemption price by more than a statutory amount. Before making any investment, you should review the official statement for the relevant offering for additional tax and other considerations.

The municipal market can be adversely affected by tax, legislative, or political changes and the financial condition of the issuers of municipal securities. Investing in municipal bonds for the purpose of generating tax-exempt income may not be appropriate for investors in all tax brackets or for all account types. Tax laws are subject to change and the preferential tax treatment of municipal bond interest income may be revoked or phased out for investors at certain income levels. You should consult your tax adviser regarding your specific situation.

Investing in municipal bonds for the purpose of generating tax-exempt income is generally more beneficial the higher an investor's tax bracket. Tax-advantaged accounts such as IRAs and 401(k)s are generally not appropriate for holding tax-exempt municipal securities.

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