

CREDIT OPINION

31 March 2021



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Connecticut (State of)

Update to credit analysis following upgrade to Aa3

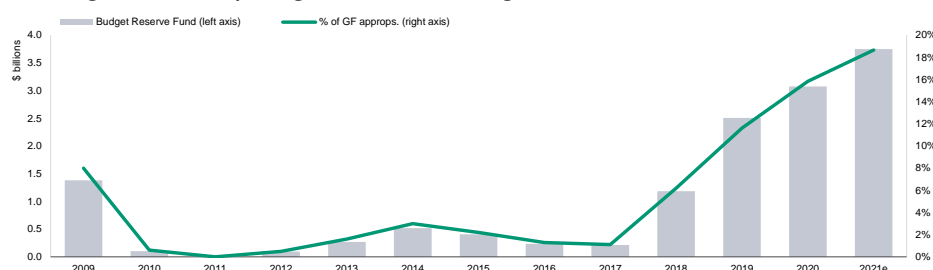
Summary

Connecticut (Aa3 stable) has high income levels, strong governance, and strong liquidity, offset by high fixed costs for debt service, pension, and post-employment benefits relative to the state's budget. Unfunded pension liabilities combined with debt outstanding are among the highest, relative to revenues, of any state in the country. The state's economic growth performance has been below average in recent years and has generally continued to trail the nation's rate of recovery through the pandemic. However, a recent trend of population loss may be ending as suburban living gains favor. Federal stimulus support and better than expected revenue performance to date are enabling the state to navigate the impacts of the coronavirus while maintaining healthy liquidity. Our view incorporates the impact of COVID-19 to date, but the pandemic and its long-term credit implications remain fluid. If our view of the credit quality of rated debt changes, we will update the rating or outlook at that time.

The state has made governance improvements in recent years resulting in substantial reserves and laying the groundwork for a more effective approach to funding its pension liabilities. On March 31, Moody's upgraded the state's rating to Aa3 stable from A1 stable, in recognition of the positive impact of state governance and financial management policies on Connecticut's current and future financial position.

Exhibit 1

Record-high reserves help mitigate Connecticut's high fixed costs



Fiscal 2021 value is the state's projection

Source: Connecticut Office of Policy and Management

Credit strengths

- » Wealthiest state in the nation with per capita personal income levels well above national levels
- » Demonstrated willingness to make mid-year budget adjustments
- » Recently-enacted pro-active initiatives to mitigate impacts of revenue volatility and build rainy day fund

Credit challenges

- » Fixed costs for debt, pension and other post-employment benefits (OPEB) relative to budget are among the highest in the nation and restrict budgetary flexibility
- » Vulnerability to financial market fluctuations due to effect on capital gains for very high-wealth residents and employment in the financial services sector
- » Unfavorable demographic trends resulting in population loss and an aging population

Rating outlook

Connecticut's outlook is stable, reflecting high level of budgetary reserves and the state's strong provisions to promote fiscal discipline, which pair redressing elements of its high leverage position and requiring GAAP-based budgeting.

Factors that could lead to an upgrade

- » Reduced pension and debt leverage relative to the state's economic base, resulting in lower annual fixed costs
- » Evidence of sustained stronger economic performance

Factors that could lead to a downgrade

- » Significant additional leverage, encompassing bonded debt, pension and OPEB obligations and negative unassigned GAAP balances
- » Rapid acceleration of revenue/economic/demographic weakness
- » Significant decline in liquidity position

Key indicators

Exhibit 2

Connecticut (State of)	2016	2017	2018	2019	2020	50-State Median (2019)
Operating Fund Revenues (000s)	\$17,750,816	\$17,940,062	\$20,026,439	\$20,243,307	\$19,135,507	\$12,439,906
Available Balances as % of Operating Fund Revenues	-4.3%	-3.4%	4.8%	8.6%	10.1%	9.1%
Nominal GDP (billions)	\$266.7	\$272.6	\$279.8	\$287.8	#N/A	\$250.6
Nominal GDP Growth	1.7%	2.2%	2.6%	2.9%	NA	3.6%
Total Non-Farm Employment Growth	0.3%	0.2%	0.2%	-0.2%	-7.7%	0.9%
Fixed Costs as % of Own-Source Revenue	30.0%	33.6%	30.7%	29.8%	#N/A	7.8%
Adjusted Net Pension Liabilities (000s)	\$53,742,607	\$71,223,221	\$62,059,644	\$63,348,693	#N/A	\$11,258,253
Net Tax-Supported Debt (000s)	\$23,265,534	\$23,479,445	\$24,299,690	\$23,664,466	\$24,795,559	\$3,864,531
(Adjusted Net Pension Liability + Net Tax-Supported Debt) / GDP	28.9%	34.7%	30.9%	30.2%	NA	6.9%

Source: Moody's Investors Service; Connecticut financial statements

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Profile

The State of Connecticut has a population of 3.57 million people located in the coastal northeastern US, bordered by [Rhode Island](#) (Aa2 stable), [Massachusetts](#) (Aa1 stable) and [New York](#) (Aa2 stable) with 618 miles of shoreline, according to the National Oceanic and Atmospheric Administration (NOAA). The state has a large and diverse economy with a gross state product of \$286 billion in 2019. It is the wealthiest state in the country with per capita income of nearly 140% of the US average.

Detailed credit considerations

Economy: Connecticut recovery lags the nation's

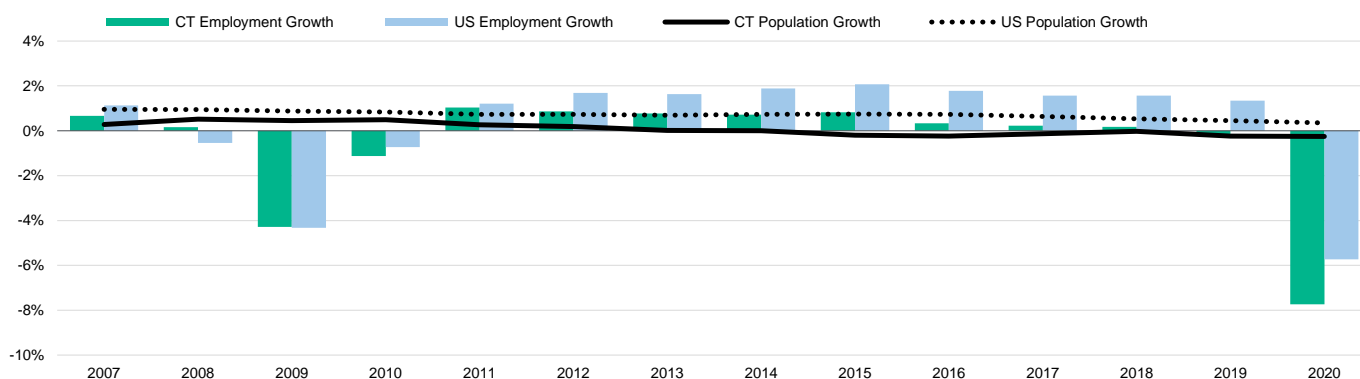
Economic activity in Connecticut has been significantly curtailed because of efforts to contain the coronavirus outbreak. From February to the trough in April, the state lost about 290,000 jobs, a decline of more than 17%. Losses were concentrated in leisure and hospitality, education and health and retail. As in the rest of the country, a partial recovery occurred through the summer and autumn months and the state regained 167,000 jobs by January 2021, recovering to about 93% of pre-pandemic job levels. This recovery is slightly weaker than in the nation as a whole. Moody's Analytics Back-to-Normal index, which measures various aspects of economic activity compared to February 2020, ranks Connecticut 37th among the states as of mid-March in its path to resuming pre-pandemic levels. With pre-pandemic activity set equal to 100, Connecticut experienced an index low of about 53 and has recovered to an index of about 82.

The state's budget office currently projects an economic recovery in which real GSP does not return to the pre-pandemic peak until the end of calendar year 2021, with employment recovering more slowly and not regaining its pre-pandemic peak by 2024.

The impact of the pandemic has occurred against the backdrop of lagging economic trends in the state. Connecticut's economy has lagged the nation's since the last recession in 2008 and we expect that trend to continue. Connecticut is a wealthy state, with per capita personal income at 137% of the US. However, during the nation's long economic expansion the state's population has declined 1% from its peak in 2013. The population trends align with an underperforming housing market and lagging labor force growth. Accompanying slow population growth, the state's labor force has been relatively flat over the past decade, compared to nationwide growth of 6.2%. Employment and GDP growth have similarly lagged the nation (see Exhibit 3).

Exhibit 3

Employment and population growth have lagged the US % change from previous year



Source: US Bureau of Labor Statistics; US Census Bureau; Moody's Investors Service

The coronavirus pandemic may have shifted the state's shorter term population trajectory somewhat, as the virus appears to have accelerated a shift to the suburbs of millennial families. Real estate conveyance taxes have grown more than 80% through the first six months of fiscal 2021 from the same period in fiscal 2020. By contrast, full year 2019 conveyance tax collections grew 2.8%. Single family home prices have also taken off after years of lackluster growth. If remote work persists at higher levels post-pandemic, Connecticut could benefit from sustained interest in suburban living, which would help lift its real estate market and stem declining

population trends. However, the state is unlikely to buck the longer term relatively slow population growth trend of the entire northeastern region for a sustained period.

Economic headwinds have included lackluster performance in the state's high-paid financial activities sector. While financial activities jobs nationwide exceed pre-financial crisis levels, Connecticut's finance sector has alternately declined and stalled. The failure of the sector to recover contributes to the state's slow wage growth: growth in total wages in the post-Great recession period has grown at roughly half the rate as in the expansion leading up to that recession.

The state benefits from defense contracts for aerospace and submarine programs, which are subject to federal defense policy shifts and could provide either upside or down drag to the state's economy independent of overall economic trends. The recently-enacted National Defense Authorization Act includes significant contracts that will benefit Connecticut-based employers such as General Dynamics Electric Boat and Pratt and Whitney.

Finances and Liquidity: multi-year recovery cushioned by reserves

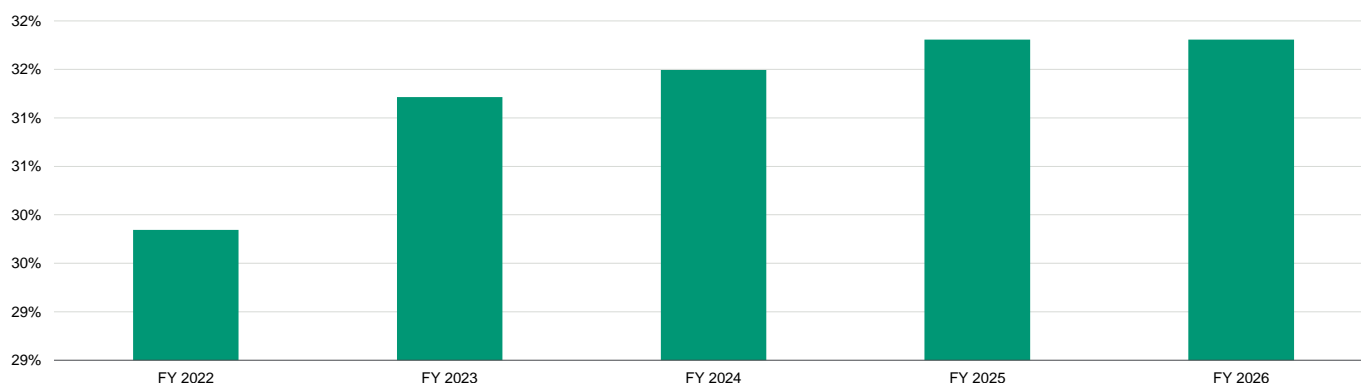
The impacts of the coronavirus pandemic on Connecticut's finances have been mitigated by significant federal aid that has provided fiscal relief and supported income and sales tax revenue. In fiscal 2020, the state ended with a small surplus and additional deposits to its reserves instead of facing a budget gap that at one point was projected at \$900 million, compared to the state's roughly \$20 billion budget. Furthermore, the state has maintained strong liquidity that would have been ample even without federal aid because of large reserve balances that stem from improvements in the state's financial management.

Fiscal 2021 appears similarly headed toward an operating surplus, recently pegged by the state budget office at about \$180 million, and additional significant deposits to the state's budget reserve fund (BRF). By contrast, earlier in the fiscal year the state anticipated closing the current year budget gap with a withdrawal from the BRF. The state's projection for the fiscal 2021 year-end BRF balance is currently \$3.75 billion, compared to the previous projections of \$2.1 billion. The state will exceed its statutory cap of 15% of appropriations for the second consecutive year. Deposits are determined by a statutory formula established in recent years that funnels revenue in excess of the BRF cap to fund the state's pension systems or reduce outstanding debt.

The BRF is critical to the state's finances because a store of reserves helps mitigate the inflexibility created by the state's high fixed costs, which create a significant drag on the its credit profile. The state's high costs are partly attributable to the state's absorption of certain costs such as teacher pension contributions covered by local governments in most other states. By consuming roughly 30% of the state's general fund budget, these costs, which consist of pension contributions, retiree health benefits and debt service, force budget balancing measures to be focused on the remaining two-thirds of the budget. This narrowing of balancing options makes expenditure adjustments more operationally and politically difficult because they need to be proportionally larger than would be the case with lower fixed costs. In Governor Lamont's proposed biennial 2022-2023 budget, fixed costs grow from 29.8% of general fund appropriations in fiscal 2022 to nearly 32% in fiscal 2026.

Exhibit 4

Projected spending on retiree pension contributions, debt service and retiree health insurance consume growing share of state budget
Fixed costs as % of proposed general fund appropriations



Source: Governor's recommended biennial budget for fiscal 2022-2023

The proposed biennial budget would balance projected gaps of \$1.75 billion in fiscal 2022 and \$2.127 billion in fiscal 2023 through a mix of expenditure savings and revenue actions, combined with a significant infusion of federal funds. Some actions are recurring, but reliance on federal aid and temporary extension of actions taken to balance the biennium's budgets leaves projected gaps of about \$1.8 billion in subsequent years. While there is time to craft initiatives to address the imbalance, these gaps represent a large portion of a budget exceeding \$20 billion.

On the spending side, the proposal banks the benefits of efficiencies implemented as a surge of retirements leads to reduced state headcount, in addition to such measures as eliminating scheduled state employee wage increases and recognizing the extension of emergency federal Medicaid reimbursements through calendar 2021. Savings would also derive from extending a scheduled ramp-up period for the state to shift to a level-percent-of-pay pension funding approach for the state employees retirement system (SERS).

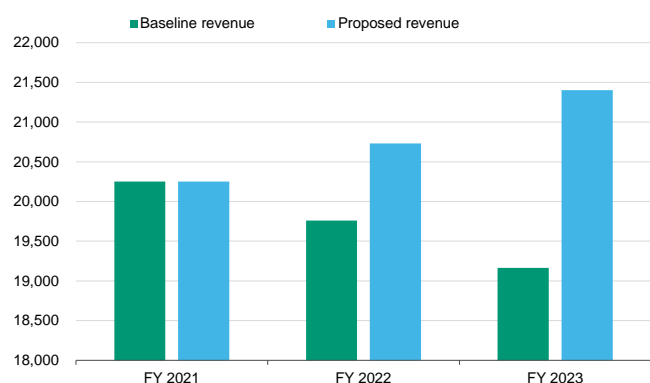
On the revenue side, the most significant item is the expectation of about \$1.75 billion in additional federal stimulus aid over two years. The recently-enacted federal American Rescue Plan Act includes more than \$2.6 billion for the state of Connecticut. The funds are more than sufficient to cover the state's needs depending on how much flexibility is provided to states. Because the proposal budget would have made up any shortfall in its federal aid projection with withdrawal from the BRF, the federal funds should allow the state to preserve its strong balances for several years, absent significant new negative developments.

Additional resources in the proposed budget include extended emergency federal Medicaid reimbursements help balance fiscal 2022, the extension of certain revenue measures that were implemented to help manage the current year, such as suspension of revenue diversions to assist municipalities, and revenue-expanding initiatives such as sports betting and cannabis legalization.

Exhibit 5

Governor's recommended budget reflects expectation of significant federal aid to achieve balance...

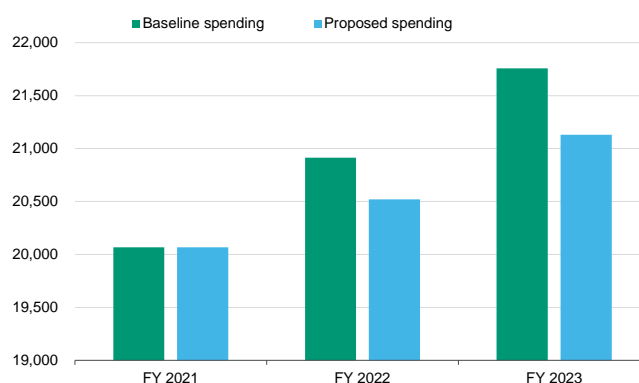
Annual general fund revenue in millions



Source: Governor's recommended biennial budget for fiscal 2022-2023

Exhibit 6

...while trimming spending from baseline current services trend



Source: Governor's recommended biennial budget for fiscal 2022-2023

LIQUIDITY

With the rapid growth of the state's budget reserve since 2017, Connecticut's liquidity has strengthened dramatically. The state has not needed to borrow for cash purposes in recent years and has no plans to borrow in the current fiscal year. The state's available cash balance as of the end of February was \$6.4 billion, about 30% of projected fiscal 2021 general fund revenue.

Debt and Pensions: large liabilities underlie high fixed costs

Connecticut is a frequent borrower and the state's debt per capita and debt-to-personal income ranked first and second, respectively, among the 50 states in Moody's 2020 [debt medians](#) report. Net tax-supported debt equaled \$6,637 per capita and 8.4% of total state personal income, well above the 50-state median of \$1,071 in debt per capita and 2% for debt-to-personal income. These high debt ratios are partly due to substantial capital financing for K-12 school building construction that is carried out at the local level in many other states; combined state and local debt metrics place Connecticut closer to the middle of the pack. However, pension obligation bonds and GAAP conversion bonds to address a portion of the state's sizeable cumulative GAAP deficit add considerably to the state's

normal sizeable annual debt issuances and ensure that Connecticut's debt ratios will remain among the highest in the country for the foreseeable future.

Governor Lamont has advocated a "debt diet" for the state to reduce its bonded liabilities. In calendar year 2020, the approved bond allocation was \$1.382 billion. This is modestly higher than allocations approved in fiscal 2019 but considerably less than the \$2.68 billion approved at the peak in fiscal 2016. The governor's proposed budget calls for \$1.4 billion in authorizations for each year of the biennium. Bond issuance has fallen accordingly, to \$1.6 billion in fiscal 2020 from \$2.46 billion in peak year fiscal 2015. Continued discipline in borrowing will result in positive improvements in the state's liability profile.

DEBT STRUCTURE

Connecticut's \$24.8 billion in net tax-supported debt outstanding (as of calendar year 2020) consists primarily of general obligation bonds, which account for 66% of NTSD (see Exhibit 5). Bonds backed by special taxes for highway construction account for another 25% of state debt. Most GO debt is structured with 20-year principal amortization and a declining debt service schedule, resulting in a pay-out rate of 70% within 10 years. Other debt consists primarily of bonds issued by the University of Connecticut through a debt service commitment and by related organizations for which the state guarantees payment from special capital reserve funds. In 2018, the state also absorbed about \$487 million in general obligation debt outstanding issued by the city of [Hartford](#) (Ba3 stable issuer rating) as a form of municipal assistance.

Exhibit 7

Connecticut's net tax-supported debt consists primarily of GO and highway bonds

Net tax-supported debt outstanding as of December 31, 2020

Total NTSD	24,795,559
GO bonds	16,311,617
Lease/appropriation/state guarantee	2,318,535
Highway revenue	6,160,665
Capital lease	4,742

Source: Connecticut Office of the Treasurer; Connecticut financial statements; Moody's Investors Service

The state has \$893 million in variable rate debt as of March 1, 2021, most of which is indexed to SIFMA. Its variable rate debt accounts for about 5% of the state's total GO debt. One variable rate series (2016 Series C) is has an SBPA provided by [Bank of America, N.A.](#) (Aa2(cr)/ P-1(cr)). Two series are direct placements, 2017 Series C and 2017 Series D.

DEBT-RELATED DERIVATIVES

The state's remaining swap on \$20 million of the state's variable rate debt expired on June 1, 2020 when the underlying debt matured. The state has no plan to incorporate swaps into future GO bonds.

PENSIONS AND OPEB

Connecticut's adjusted net pension liability (ANPL), our measure of the government's pension burden, is significantly above the 50-state median. As of the state's 2018 financial statements, ANPL was \$62 billion, or 22.6% of state GDP, the third highest of the states. Since then, ANPL has risen to about \$74 billion in 2020 and will rise further, driven by falling interest rates. Moody's ANPL reflects certain adjustments made to improve comparability of reported pension liabilities.

The state participates in several pension systems, of which the most significant are the State Employees Retirement System (SERS) and the Teachers Retirement System (TRS). Connecticut is among the handful of states that take responsibility for directly funding teacher pensions.

Pension contributions remain a very significant and growing part of the state's budget. The state contributed the full amount of its actuarially determined contributions, about \$3 billion in fiscal 2020. It is required via bond indenture to pay the full required contribution to the TRS plan and by collective bargaining to do the same for SERS. With its contributions stepped up in recent years, its payments to the system in 2019 were more than enough to "tread water," or cover current year benefit accruals and interest costs, but fell a little short in fiscal 2020 (see Exhibit).

Exhibit 8

High liabilities drive high fixed costs

(% own-source revenue)	2018	2019	2020	50-state median (2018)	New England median (2018)
Debt service	13.5%	14.7%	14.1%	4.2%	10.8%
OPEB contribution	3.7%	3.5%	4.2%	0.6%	1.6%
Pension contribution	12.5%	12.9%	13.2%	2.7%	6.6%
Pension tread water	13.5%	11.7%	15.2%	3.0%	NA
Fixed costs (tread water)	30.7%	29.8%	33.6%	8.7%	NA
Pension tread water shortfall (surplus)	0.9%	-1.2%	2.0%	0.2%	0.1%
Pension contributions (as % of tread water)	93.0%	110.1%	86.7%	81.4%	NA

Source: State and pension system annual financial statements; Moody's Investors Service

The state has made substantial changes to its pension funding approach. It has stretched amortization periods for both SERS (in 2016) and TRS (in 2019), combined with lowering the discount rate for both systems to 6.9% and phasing in a level dollar amortization approach. In previous years the state maintained an unrealistically high investment rate of return (discount rate) assumption and followed a less conservative funding approach linked to assumed wage growth, resulting in back-loaded pension contributions and rapidly escalating contributions in coming years. Nonetheless, to achieve the actuarially-determined level dollar payment requires several years of escalating contributions, contributing to fixed cost growth and placing pressure on other areas of the state budget. As part of the governor's recommended balancing plan, the phase-in period to achieve level dollar funding for SERS would be extended by three years.

Connecticut also has a very high OPEB liability. As reported under GASB 75 reporting standards in the fiscal 2020 financial statements, the net OPEB liability is \$23 billion. Adjusted for a common discount rate, we calculate the liability as a marginally higher \$23.2 billion. Employees have been required to make contributions to prefund OPEB benefits since 2011, and the state is now making matching contributions, which totaled nearly \$127 million in fiscal 2020.

ESG considerations

Environmental Considerations

The US states sector overall has [low credit exposure](#) to environmental risks because of states' large and diverse economies, revenue raising ability and federal government support for disaster recovery costs. However, due to its coastline along the Long Island Sound, Connecticut is more exposed than most states to climate risks.

According to data from Moody's affiliate Four Twenty Seven, Connecticut counties' average projected rate of change in five climate risk factors, when weighted by county GDP, is among the highest in the nation. Hartford and Fairfield counties, which combined account for over 60% of the state's GDP, project to have high water stress and cyclone risk according to Four Twenty Seven's assessment scale. Fairfield county also has high sea level rise risk, due to its large border on the coastline.

With its southern counties situated along the shore of the Long Island Sound, the state is vulnerable to sea level rise and coastal storms, although the storm risk is mitigated by the protective barrier formed by Long Island to the south. The state is working to develop a systematic climate resiliency plan. The state's utilities regulatory authority has authorized funding for substation mitigation and other storm-hardening initiatives and the state is developing plans to reduce statewide greenhouse gas emissions.

Social considerations

Social issues, such as demographics, labor force, income and education, are [key influencers](#) of Connecticut's economy, governance stability and financial and leverage trends. The coronavirus crisis will intensify social challenges, such as access to health care and demands on the social safety net.

The current coronavirus epidemic constitutes a social risk under our ESG framework, given the substantial implications for public health and safety. The longer term impact will depend on both the severity and duration of the crisis. We do not see any material immediate credit risks for Connecticut at this time, but the situation is evolving.

As noted in the Economy section above, Connecticut is wealthy but losing population and lagging the nation in most demographic indicators. The workforce is highly educated, with almost 40% of the population aged 25 or more possessing a bachelor's degree or higher compared to the nationwide rate of just less than 33%.

Governance: state profile features strong practices

Governance is a [material consideration](#) for the entire state sector. Connecticut's financial management is characterized by strong practices that include timely budget adoption and binding consensus revenue forecasting conducted at least three times a year. Annual multi-year Fiscal Accountability reports are produced by both the governor's budget office and the legislative office of fiscal analysis, and the state releases monthly budgetary updates. The state constitution requires a balanced budget, given greater force by the state's adoption of GAAP-basis budgeting. In addition, the state is not constrained by supermajority requirements to enact tax increases, mandated initiatives or voter referenda.

The governor's executive authority to cut expenses mid-year without legislative approval is limited to 5% of an individual appropriation not to exceed 3% of any fund providing only moderate flexibility. We consider strong executive flexibility to make mid-year spending adjustments a plus. If a deficit exceeding 1% of the general fund is projected by the comptroller in that office's monthly financial statement, the governor is required to submit and implement a deficit mitigation plan. Historically, some of the state's financial provisions were not highly effective, as the state has accumulated high debt levels and did not make a constitutional spending cap operative until 2018. See the Summary section for further details on the state's governance improvements.

The state has taken action to address some of its most pressing long-run financial challenges in recent years by implementing pension and OPEB reforms and committing to moving pension contributions to a more adequate level, although the state's long-term obligations remain formidable. In addition, in recent years the state legislature enacted a number of measures designed to contain spending and debt growth, rebuild the state's rainy day fund, and more frequently assess the condition of its pension funds. Following some of these provisions will now be required by bond covenants and constitutional amendments. While the required practices strengthens the state's long term credit profile, covenanting to follow them reduces budgetary flexibility.

Rating methodology and scorecard factors

The [US States and Territories Rating Methodology](#) includes a scorecard, which summarizes the 10 rating factors generally most important to state and territory credit profiles. Because the scorecard is a summary, and may not include every consideration in the credit analysis for a specific issuer, a scorecard-indicated outcome may or may not map closely to the actual rating assigned.

States rating methodology scorecard

Connecticut (State of)

Rating Factors	Measure	Score
Factor 1: Economy (25%)		
a) Per Capita Income Relative to US Average [1]	136.8%	Aaa
b) Nominal Gross Domestic Product (\$ billions) [1]	\$280.9	Aaa
Factor 2: Finances (30%)		
a) Structural Balance	Aa	Aa
b) Fixed Costs / State Own-Source Revenue [2]	33.6%	Ba
c) Liquidity and Fund Balance	Aa	Aa
Factor 3: Governance (20%)		
a) Governance / Constitutional Framework	Aaa	Aaa
Factor 4: Debt and Pensions (25%)		
a) (Moody's ANPL + Net Tax-Supported Debt) / State GDP [2] [3]	35.0%	Baa
Factors 5 - 10: Notching Factors [4]		
Adjustments Up: None	0	
Adjustments Down: Growth Trend	-0.5	
Rating:		
a) Scorecard-Indicated Outcome		Aa3
b) Actual Rating Assigned		Aa3

[1] Economy measures are based on data from the most recent year available.

[2] Fixed costs and debt and pensions measures are based on data from the most recent debt and pensions medians report published by Moody's.

[3] ANPL stands for adjusted net pension liability.

[4] Notching factors 5-10 are specifically defined in the US States and Territories Methodology.

Source: US Bureau of Economic Analysis; Connecticut audited financial statements; Moody's Investors Service

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