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CREDIT OPINION
26 February 2021

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Ohio (State of)

Update to credit analysis

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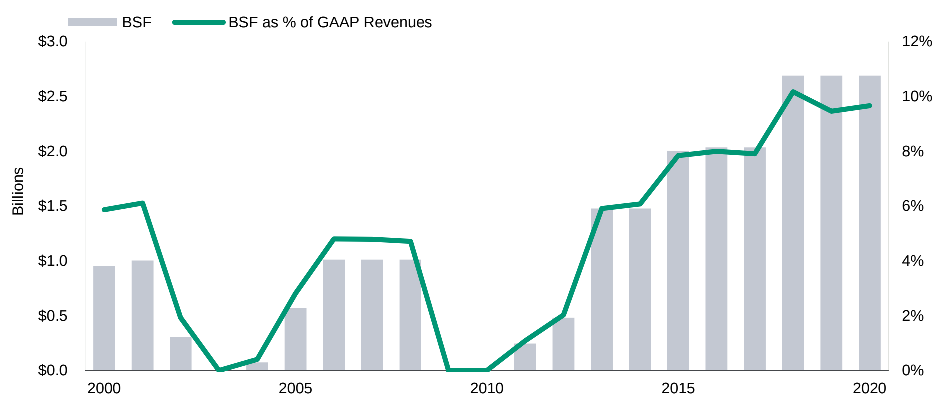
Summary

The State of Ohio's (Aa1 stable) credit profile is supported by the state's strong budgetary and financial management, sound reserve levels, and affordable fixed costs associated with below-average long-term debt, pension and retiree healthcare (OPEB) liabilities. These strengths are offset by below-average economic growth, compounded by weak demographic trends.

We regard the coronavirus outbreak as a social risk under our ESG framework, given the substantial implications for public health and safety. We do not see any material immediate credit risks for the State of Ohio. However, the situation surrounding Coronavirus is rapidly evolving and the longer term impact will depend on both the severity and duration of the crisis. If our view of the credit quality of the State of Ohio changes, we will update the rating and/or outlook at that time.

Exhibit 1
Ohio's accumulation of strong budget stabilization funds provides cushion for impacts of coronavirus



BSF is the Budget Stabilization Fund. Operating Funds Revenue includes state-source revenues recorded in the GAAP-basis general fund and debt service funds.
Source: Ohio Official Statements; Moody's Investors Service

This report was republished on 26 February 2021 with a correction to the contact list on the front page.

Credit strengths

» Conservative fiscal management including sound budgeting, proactive responses to budgetary shortfalls, and commitment to replenishing budget stabilization funds

» High levels of internal liquidity, including available balances outside the general revenue fund

» Moderate long-term liabilities that are affordable compared to the state's budget and revenue trajectory

» Demonstrated history of managing pension and OPEB liabilities by adjusting benefits

Credit challenges

» Below-average economic performance that reflects weak demographic trends and vulnerability to the manufacturing sector

» Fiscal management practices are not institutionalized in statutory or constitutional requirements

Rating outlook

The stable outlook is based on our expectation that the state's proactive financial management, low fixed costs, fully funded rainy day fund and substantial available liquidity will continue to support satisfactory budget flexibility during the significant economic disruption related to the coronavirus outbreak.

Factors that could lead to an upgrade

» Improved demographic trends, particularly in working age population growth, net migration, and age distribution, that contribute to stronger economic growth relative to peers

» Maintenance of a budget in structural surplus, together with an increase in pension contributions sufficient to “tread water”

» Development of governance tools such as consensus revenue forecasting or publicly available long-term forecasts that institutionalize current best practices, increase transparency, and ensure consistency across administrations

Factors that could lead to a downgrade

» Further weakening of employment, personal income or demographic trends

» Financial deterioration, including a return to budgetary structural imbalance and/or materially lower reserve levels

» Unanticipated rise in long-term liabilities and an increase in fixed-costs

Key indicators

Exhibit 2

Ohio (State of)	2016	2017	2018	2019	2020	50-State Median (2019)
Operating Fund Revenues (000s)	$25,428,417	$25,713,795	$26,449,086	$28,435,269	$27,830,271	$12,439,906
Available Balances as % of Operating Fund Revenues	13.8%	12.6%	12.1%	18.8%	22.0%	9.1%
Nominal GDP (billions)	$621.5	$642.4	$675.0	$695.4	NA	$250.6
Nominal GDP Growth	2.0%	3.3%	5.1%	3.0%	NA	3.6%
Total Non-Farm Employment Growth	1.1%	0.8%	0.7%	0.5%	-6.9%	0.9%
Fixed Costs as % of Own-Source Revenue	7.1%	7.4%	6.8%	7.1%	7.1%	7.8%
Adjusted Net Pension Liabilities (000s)	$13,638,720	$15,680,805	$16,365,511	$16,229,714	$18,198,502	$11,258,253
Net Tax-Supported Debt (000s)	$12,621,591	$13,040,038	$13,515,567	$13,541,134	$13,292,000	$3,864,531
(Adjusted Net Pension Liability + Net Tax-Supported Debt) / GDP	4.2%	4.5%	4.4%	4.3%	NA	6.9%

*Operating Funds Revenue and Own-Source Revenue exclude Federal revenues
Source: US Bureau of Economic Analysis; Ohio Comprehensive Annual Financial Reports; Moody's Investors Service

Profile

Ohio has a population of 11.7 million, located in the Midwest region of the US with 312 miles of shoreline along Lake Erie, according to NOAA. The state is the seventh-largest US state by population, and has a large, diverse economy (2019 real GDP of $615 billion) that is the seventh largest among the states.

Detailed credit considerations

Economy

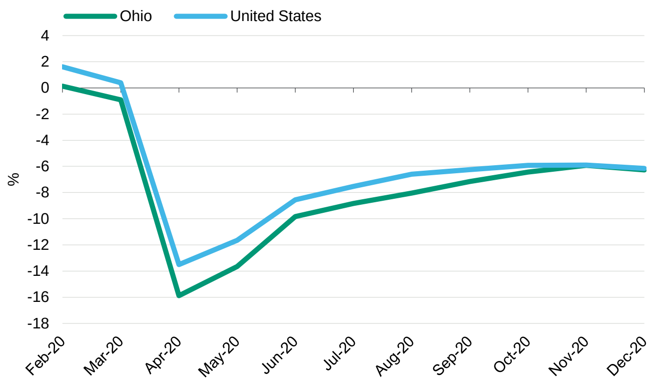
After above-average job losses and GDP contraction in the first two months of the pandemic, Ohio's initial economic recovery has been strong and is on track to match the US going forward. Full recovery will take years however, and in the long-run, growth will likely fall below the national average and continue to be challenged by out-migration, weak population growth and an older, aging population.

From February 2020 through April 2020, Ohio lost 16% of its total non-farm jobs, compared to 14.7% for the US. However, the state's employment recovery has been faster than the US, and through December 2020 Ohio recovered 60% of those jobs, compared to 55% for the US. Ohio's job performance has been suppressed by its relatively hard-hit service sector; Ohio's service jobs remain 7.2% below the prior year in December 2020, compared to 5.9% for the US. Ohio's total non-farm jobs are 6.5% (350,000 jobs) below prior-year levels in December 2020. Ohio's December unemployment rate has declined below the US (see exhibit 4), however some of this reflects the declining labor force participation; the state's December 2020 labor force participation rate dropped to 61.7% from 63% the prior year.

Exhibit 3

Ohio lost more jobs than US in April, but recovery has been quicker to date

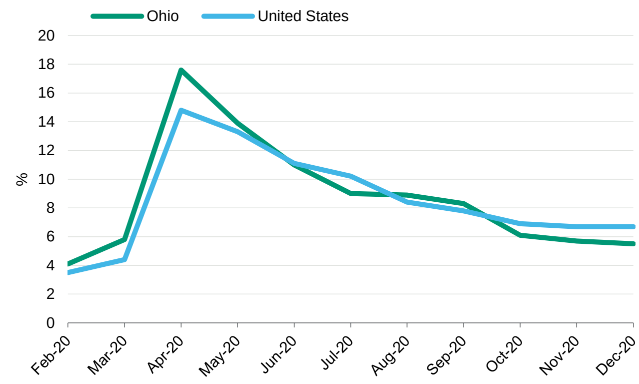
YOY % change in monthly non-farm employment



Source: US Bureau of Labor Statistics

Exhibit 4

After initial spike, OH unemployment rate is below the US



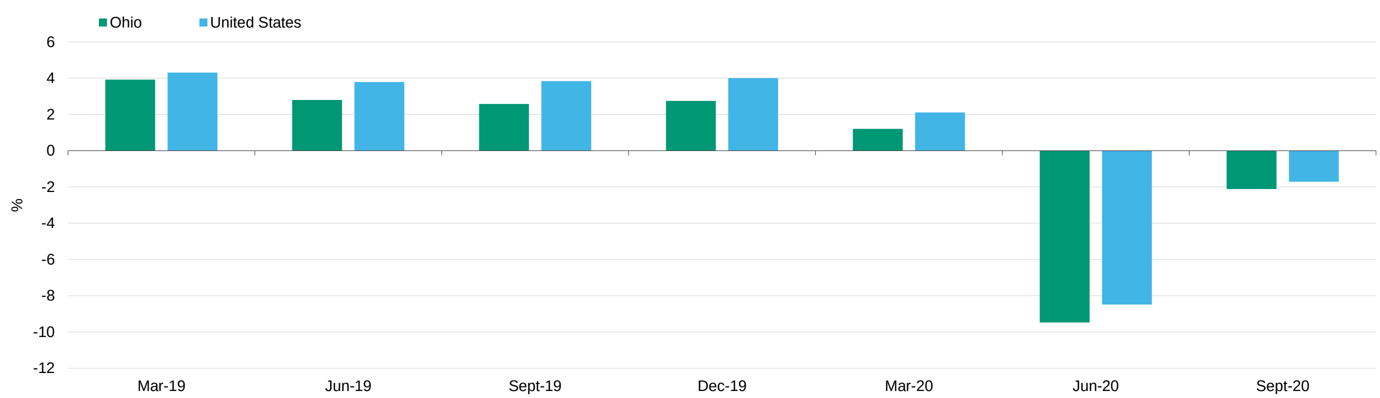
Source: US Bureau of Labor Statistics

In the long run, we forecast that Ohio's economic growth will be below the US average, and challenged by weak demographic trends. Ohio's population has grown a slow 1.3% over the past ten years compared to 6.5% for the US. Growth has been undermined by negative net migration, which will continue over the medium term. Negative net migration has been particularly significant among the working age population (25 to 54), which has declined 4.8% since 2010, while the cohort has grown 1.0% nationally. This contributes to the growth in Ohio's over-65 population which increased to 17.5% in 2019 (compared to 16.5% for the US) from 14% in 2010.

Exhibit 5

Ohio's GDP growth lags the US and was more sensitive to the pandemic

YOY % change in quarterly GDP



Source: US Bureau of Economic Analysis

Finances and liquidity

By the end of fiscal 2021, the pandemic will have cost Ohio's general revenue fund $1.7 billion of tax receipts, however the state's conservative budget management and strong reserves put the state on sound footing to manage coronavirus-related budget pressures.[1] Ohio's budget flexibility will also be supported by below-average fixed costs, the governor's strong powers to reduce spending, and a well-structured budget proposal for the fiscal 2022-23 biennium.

The Governor's proposed biennial budget is structurally balanced, based on conservative revenue assumptions, and prepares for the eventual elimination of federal stimulus aid and enhanced Medicaid reimbursements that have supported finances in fiscal 2020 and fiscal 2021. The proposed budget increases general revenue fund (GRF) appropriations 3.5% ($1.2 billion) in fiscal 2022 primarily due to a return to pre-COVID funding levels for K-12 and higher education. Proposed fiscal 2023 appropriations increase 11% ($3.9 billion) due to the expected loss of enhanced federal Medicaid reimbursement (expiring on December 31, 2021) and continued high caseloads.

The proposed budget is balanced with reasonable tax revenue growth assumptions of 2.0% and 3.4% in fiscal 2022 and fiscal 2023, respectively, and does not use the budget stabilization fund. Fiscal 2021 estimated net tax receipts benefit from the one-time shift of the $719 million April 2020 personal income tax payment to July. If adjusting this payment out of fiscal 2021, the proposed fiscal 2022 revenue growth rate increases to 5.1%, similar to revenue growth experience in fiscal 2019 (see exhibit 6).

The revenue budget is based on conservative economic forecasts that assume slower economic recovery than the US, a relatively slow vaccination rate and no additional federal stimulus aid to individuals and businesses after December 2020. However, risks remain in the revenue forecast due to the uncertain pace of the coronavirus recovery and potential changes in consumer behavior as business and services reopen (more below).

Exhibit 6

Proposed budget includes reasonable GRF revenue forecasts

FYE 6/30

	FY 2019 Actual	FY 2020 Actual	FY 2021 Estimate	FY 2022 Proposed	FY 2023 Proposed
Personal Income Tax	8,910	7,881	9,390	9,176	9,571
Sales and Use Tax	10,573	10,686	11,039	11,604	11,970
Commercial Activity Tax	1,630	1,672	1,535	1,660	1,746
Net Tax Receipts, reported	**23,490**	**22,623**	**24,294**	**24,789**	**25,627**
YOY % growth	4.8%	-3.7%	7.4%	2.0%	3.4%
Personal Income Tax, adjusted for July 2020 timing shift		8,600	8,671		
Net Tax Receipts, adjusted for PIT shift	**23,490**	**23,342**	**23,575**	**24,789**	**25,627**
YOY % growth, adjusted	4.8%	-0.6%	1.0%	5.1%	3.4%

Source: State of Ohio Official Statements; State of Ohio Executive Budget FY2022-23; Moody's Investors Service

Ohio forecasts that its fiscal 2021 financial performance will be strong due to the continuation of budget cuts implemented at the onset of the pandemic, solid year-to-date revenue performance and access to $3.75 billion of CARES Act aid. If the fiscal 2021 surplus meets the forecast, a portion will fund i) a $1.2 billion reserve to smooth Medicaid funding in fiscal 2022 and fiscal 2023 after the enhanced FMAP is eliminated in December 2021 and ii) a $455 million transfer to support economic development and recovery. The latter transfer, combined with $395 million of direct appropriations and $180 million from the Coronavirus Relief Fund, will fund the Governor's proposed $1 billion investment in coronavirus recovery during the fiscal 2022-23 biennium.

Actual fiscal 2021 revenue performance through January has been above the revised forecast; total taxes are $539 million (3.7%) above estimate, mostly due to strong collections in sales taxes (6.0% above estimate) and personal income taxes (2.5%). Sales tax performance in Ohio has been particularly strong as consumers have shifted spending towards goods, which are taxed, from services, which are not taxed. In addition, continued spending holdbacks have kept expenditures $1.2 billion (5.4%) below budget through January. On January 22, the Governor restored $260 million of cuts to education spending, however these were balanced with $390 million of new cuts to other agencies' fiscal 2021 budgets.

LIQUIDITY

Ohio has strong internal liquidity and reserves to manage any unexpected budget gaps. Like many states, Ohio steadily rebuilt its budget stabilization fund (BSF) after the Great Recession, which will be an important balancing tool during this recession. Ohio's BSF will remain stable at $2.7 billion (12% of GRF tax receipts; 8% of total GRF revenue) in fiscal 2020. The state's statutory BSF target is 8.5% of total GRF revenues (including federal revenues).

The state's liquidity was supported through fiscal 2020 and fiscal 2021 by CARES Act aid and other internal liquidity that can be borrowed by the General Revenue Fund within the fiscal year, up to 10% of revenues. As of January 29, 2021, combined daily and weekly liquidity was $6 billion, on a discounted basis.

Debt and pensions

The state leverage position will remain moderate through the next biennium due to below-average pension and OPEB liabilities and modest additional borrowing plans. With 2020 net tax-supported debt of $13.3 billion, Ohio has maintained a moderate debt burden relative to other states. The state's 2019 net tax-supported debt was 2.3% of state personal income, compared to the 50-state median of 2.0% (most recent available). Ohio ranks 24th among states based on net tax-supported debt as a percentage of personal income, down from 20th in 2005. The state currently plans to issue less than $3 billion of new debt through fiscal 2023, which will be partially offset by principal paydowns.

Exhibit 7

OH relies on GO debt for most financing

Security	Outstanding as of 12/31/2019 (millions)	Outstanding as of 12/31/2020 (millions)
General obligation bonds	$ 8,719	$ 8,532
Lease and appropriation bonds	$ 1,988	$ 2,079
GARVEE bonds	$ 908	$ 785
Certificates of participation	$ 251	$ 252
Capital leases	$ 21	$ 24
Portsmouth Bypass P3 project	$ 365	$ 342
JobsOhio liquor enterprise revenue bonds	$ 1,290	$ 1,278
Total net tax supported debt	**$ 13,541**	**$ 13,292**
GO highway bonds included above	$ 1,024	$ 989

Source: OH Official Statement; OH CAFR; JobsOhio CAFR; Moody's Investors Service

The credit profile of the state's lease appropriation bonds (Aa2 stable) reflects the need for biennial legislative appropriation of lease payments backing the bonds, and is notched down from the state's general obligation credit. There are no bondholder remedies in the event of non-appropriation.

Ohio's net tax-supported debt includes $1.3 billion of debt issued by the JobsOhio (Aa3 stable) state liquor enterprise as well as a $342 million long-term liability associated with the state Department of Transportation's public-private partnership (PPP) with the Portsmouth Gateway Group, LLC to construct the Southern Ohio Veterans Memorial Highway (State Route 823), a four-lane limited access highway around the City of Portsmouth, Ohio.

The state has two enhancement programs, the Ohio School District Credit Enhancement Program (Aa2 stable) and the Ohio Board of Regents Community and Technical College Credit Enhancement Program (Aa2 stable). The programs provide credit enhancement to qualified participants by allowing the authorizing state department to intercept state aid revenues to a trustee to ensure timely debt service payments.

DEBT STRUCTURE: VRDO LIQUIDITY SUPPORT PROVIDED BY THE STATE

The state maintains a self-liquidity program to support $390 million of state variable-rate demand debt (or 2.8% of total debt). The short-term ratings on these bonds are VMIG 1, reflecting the state's strong management of available liquid resources. As of January 29, 2021, combined daily and weekly liquidity was $6 billion, on a discounted basis, which provides 7.2x coverage of potential liabilities.

Potential liabilities include liquidity programs that the state treasury offers through its Ohio Market Access Program (OMAP) and its Ohio Liquidity Program (OLP; P-1 issuer rating). Through OMAP, the Ohio treasury provides back-up liquidity to qualified local governments that have issued bond anticipation notes (BANs). The program authorization is capped at $300 million, and as of January 29, 2021, there were $191 million of BANs outstanding.

Through OLP, the treasury also provides liquidity to VRDB of qualified governmental issuers that have entered into standby bond purchase agreements with the state. The program currently covers $75 million of outstanding bonds. The state does detailed credit analysis and monitoring of participants in both programs.

The state has well-organized staff and clearly-articulated policies and procedures for monitoring its own VRDB portfolio and other potential liquidity calls. The state receives notices of tender 7 days prior to the purchase date for bonds in the weekly mode, and at least one day prior to the purchase date for bonds in the Alternative Trading System Mode (the Series 2016 bonds). With this timing, the state is prepared to begin liquidating assets one day before the purchase date, and have sufficient funds available in advance of the deadline on the purchase date. The state has never had a failed remarketing, but has successfully implemented its liquidity support procedures.

DEBT-RELATED DERIVATIVES

The state is a party to five swap agreements with a combined notional principal of $223 million that hedge interest rate risk on its variable-rate obligations. Collateral posting requirements are pegged to rating levels starting at Aa3 and lower, and termination provisions are triggered if the state's rating falls below Baa3 or BBB-. Triggers at these low rating levels introduce minimal risk to the state. As of June 30, 2020, the combined mark-to-market value of the swaps was negative $18.3 million and the mark-to-market with accrued interest was negative $20.0 million.

PENSIONS AND OPEB

Ohio's low pension and OPEB costs have been a relative strength, offsetting challenges posed by its relatively older population and higher out-migration. Importantly, the state has an above-average level of flexibility to manage its liabilities as pension and OPEB benefits are not guaranteed under state law, and contribution requirements and benefit levels can be changed for future and current employees. However, while the state's direct pension and OPEB liabilities are below-average, Ohio's local governments and school districts have large unfunded liabilities that could pressure the state for additional support. Ohio's pension systems overall are considered moderately pressured.

Ohio's fiscal 2020 adjusted net pension liability (ANPL), our measure of the government's pension burden, increased to $18.2 billion from $16.2 billion due to the lower adjusted discount rate in 2020 (3.2% vs. 4.2% the prior year). Compared to our 2019 pension medians (the most recent available), Ohio's ANPL as a % of own-source governmental revenues was 46% vs a 50-state median of 80%. Ohio ranked 38th in this metric and 43rd in ANPL as a percent of GDP (2.3% vs. US median 4.8%).

The state's estimated fixed costs (debt service, pension tread water, and OPEB contributions) are slightly below average, at 7.1% of own-source governmental revenues in fiscal 2020 compared the state sector median of 7.8% (as of FY2019).

The state's fiscal 2020 pension contribution was a very low 1.4% ($474 million) of own-source governmental revenues but was slightly less than the contribution amount that would allow the state's reported net pension liability to "tread water" – or remain stable from one year to the next, assuming investment return and other actuarial assumptions are met for the year.

Unlike most states, which fund other post-employment benefit (OPEB) obligations on a pay-as-you-go basis, Ohio participates in three OPEB programs that have substantial assets ($16.1 billion) pledged to cover aggregate liabilities of $22 billion for state and local government participants. As a result, Ohio's Moody's-adjusted net OPEB liability (ANOL) for the state-only share is a moderate 8.2% of own-source revenues ($2.8 billion), compared to a state median of 16.7%.

ESG Considerations

Environmental Considerations

Environmental risks for the states sector as a whole are low due to states' large and diverse economies, revenue-raising ability, and federal government support for disaster recovery costs via FEMA. Ohio, specifically, has minimal exposure to climate risks, given its inland location and history of very manageable storm damage.

According to data from Moody's affiliate Four Twenty Seven, Ohio counties' average projected rate of change in five climate risk factors, when weighted by county GDP, is higher than average relative to the rest of the nation but lower than the riskiest states. Of the physical climate risks Four Twenty Seven evaluates, Ohio's highest exposures are to rainfall and heat stress.

In addition, Ohio's housing stock is minimally exposed to flood risk, with 4% of the state's dwelling units in 100/500 year floodplains. Rising temperatures could affect agriculture, although the sector—including forestry, fishing and hunting—constitutes just 0.7% of GDP.

Social Considerations

Social issues, such as demographics, labor force, income and education, are key influencers of Ohio's economy, governance stability, and financial and leverage trends. Ohio's key social challenges include an aging population, negative net migration and below-average labor participation. The state benefits from strong housing affordability. For more information on demographics and social factors, please see our Economy section.

Governmental Considerations

Ohio's overall governance and constitutional framework are strong, and the state has a high degree of flexibility to raise revenues and cut expenditures when needed. The state constitution has no revenue raising caps or mandated spending levels, and tax increases require only a simple majority vote. In addition, the governor has the ability to reduce appropriations through executive orders, allowing for quick budget corrections when revenues decline. As discussed above, Ohio also has above-average flexibility to change pension and OPEB benefits to manage long-term liabilities.

Ohio has strengthened its statutory requirements for its budget stabilization fund to reduce the impact of unanticipated budget events, however maintains the flexibility to reduce or defer contributions. The state's statutory targets for the budget stabilization fund and the general revenue fund are 8.5% and 0.5% of the prior year's general revenue fund revenues (state and federal sources), respectively. Statute requires the state to deposit general revenue fund surpluses in excess of 0.5% into the budget stabilization fund, which generally accelerates reserve restoration. However, the legislature retains the flexibility to divert surpluses for other uses, as it has several times since the recession ended.

The state's budget and financial management is strong, as evidenced by its positive financial performance and budget stabilization fund replenishment. However, the state's governance framework does not require consensus revenue forecasting, or publication of long-term forecasts of future debt, financial or economic performance.

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.

Exhibit 8

US state and territories rating methodology

Ohio (State of)

Rating Factors	Measure	Score
Factor 1: Economy (25%)		
a) Per Capita Income Relative to US Average [1]	88.9%	Aa
b) Nominal Gross Domestic Product ($ billions) [1]	$695.4	Aaa
Factor 2: Finances (30%)		
a) Structural Balance	Aa	Aa
b) Fixed Costs / State Own-Source Revenue [2]	7.1%	Aa
c) Liquidity and Fund Balance	Aaa	Aaa
Factor 3: Governance (20%)		
a) Governance / Constitutional Framework	Aa	Aa
Factor 4: Debt and Pensions (25%)		
a) (Moody's ANPL + Net Tax-Supported Debt) / State GDP [2] [3]	4.3%	Aaa
Factors 5 - 10: Notching Factors [4]		
Adjustments Up: None	0	
Adjustments Down: None	0	
Rating:		
a) Scorecard-Indicated Outcome		Aaa
b) Actual Rating Assigned		Aa1

[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 Rating Methodology.
Source: US Bureau of Economic Analysis, State CAFRs, Moody's Investors Service

Endnotes

1 Fiscal 2020 (actual) and fiscal 2021 (forecasted) combined revenues are $1.7 billion (3.5%) below the original adopted budget.

REPORT NUMBER 1261980

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