

CREDIT OPINION

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Vermont (State of)

Update to credit analysis following downgrade

Summary

The [State of Vermont](#) (Aa1 stable) carries a healthy economic profile, stable finances and strong fiscal management. It is the smallest US state economy and has the second smallest population, but unemployment is low, resident income is above average and educational attainment is high. At the same time, Vermont's performance on multiple economic measures lags that of the US and many peers, and an aging population may remain a modest drag on future growth. Further, the state's leverage, measured by combined debt and unfunded post-employment obligations relative to GDP, is high among US states. With slower than average growth, Vermont's long-term liabilities will weigh more heavily on its economic base. We expect the state's ample liquidity and consistently prudent management of operations will remain a credit factor that balances economic and leverage challenges relative to highly rated peers.

On October 23, we downgraded the state's general obligation rating to Aa1 from Aaa. We also downgraded ratings notched off of the state's general obligation rating. We downgraded to Aa3 from Aa2 the rating on education loan revenue bonds issued by the Vermont Student Assistance Corporation that are supported by the state's moral obligation pledge. We downgraded to A1 from Aa3 the rating on mental health services bonds issued by the Vermont Economic Development Authority and Vermont Educational and Health Buildings Financing Agency that are supported by state appropriations. We also downgraded to Aa2 from Aa1 the programmatic rating on the Vermont State Aid Intercept Program.

Exhibit 1

Vermont's debt burden is low, but its pension burden is much higher than state medians

Net tax supported debt (NTSD) and adjusted net pension liability (ANPL)

NTSD...	as % of personal income	as % of GDP	per capita	as % of own-source revenue
Vermont	2.0%	2.0%	\$987	17%
State median	2.3%	2.1%	\$987	29%
ANPL...	as % of personal income	as % of GDP	per capita	as % of own-source revenue
Vermont	16.1%	15.9%	\$8,215	141%
State median	6.9%	6.1%	\$3,207	107%

Based on fiscal 2017 data.

Source: Moody's Investors Service

Credit strengths

- » Although Vermont's economy is the smallest of all US states, resident income is above average, educational attainment is high, and unemployment is low
- » Liquidity is healthy and stable

Credit challenges

- » The state's economic performance lags that of the US and many peers, and an aging population may be a drag on future growth
- » Relative to state GDP, Vermont's leverage (combined debt and unfunded pensions) is higher than most states

Rating outlook

The stable outlook reflects the expectation that Vermont's economic fundamentals, financial position and fiscal management will remain strong and support the current rating.

Factors that could lead to an upgrade

- » Improved demographic and economic trends that more closely track those of the nation and other highly rated states
- » Moderated leverage, especially unfunded pensions and retiree health care liabilities, relative to state GDP

Factors that could lead to a downgrade

- » Substantial growth in debt or unfunded post-employment liabilities
- » A slowdown in economic expansion or revenue growth
- » A departure from strong fiscal management practices

Key indicators

Exhibit 2

Vermont (State of)	2013	2014	2015	2016	2017	50-State Median (2017)
Operating Fund Revenues (000s)	2,636,432	2,748,223	2,858,148	2,927,613	2,963,227	
Available Balances as % of Operating Fund Revenues	9.1%	4.3%	4.3%	4.3%	2.9%	4.4%
Nominal GDP (billions)	28.7	29.4	30.3	31.3	32.2	
Nominal GDP Growth	1.8%	2.5%	3.0%	3.3%	2.9%	3.8%
Total Non-Farm Employment Growth	0.7%	1.0%	0.8%	0.3%	0.3%	1.1%
Fixed Costs as % of Own-Source Revenue	NA	6.8%	6.6%	7.6%	8.1%	9.2%
Adjusted Net Pension Liabilities (000s)	3,500,771	3,715,067	3,677,705	4,020,919	5,123,076	
Net Tax-Supported Debt (000s)	549,995	597,520	627,192	666,935	615,759	
(Adjusted Net Pension Liability + Net Tax-Supported Debt) / GDP	14.1%	14.7%	14.2%	15.0%	17.8%	8.3%

Operating fund revenues consists of non-federal revenues of the state's general, education and transportation funds. Available balance is the unassigned, committed and assigned balances of the same funds as reported in the state's comprehensive annual financial report. We discuss in more detail below fund balances available outside these funds.

Source: Moody's Investors Service

Profile

The State of Vermont is located in the northeast United States. Its estimated 2017 population of just under 624,000 makes it the second smallest state in the country. Its 2017 nominal GDP of \$32.2 billion is the smallest of the 50 states.

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Detailed credit considerations

Economy

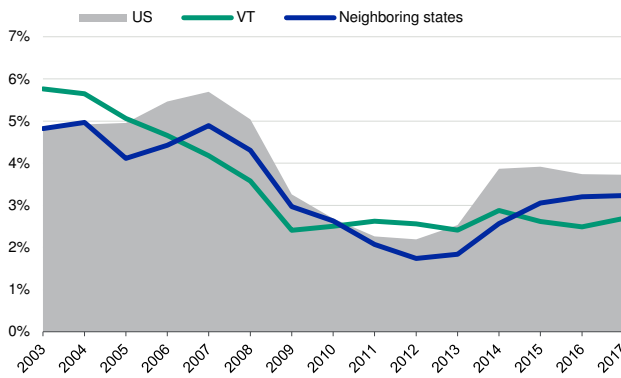
Vermont's economic standing is good and, like just about every other state in the US, it is growing amid the current expansion. But, Vermont's performance along multiple metrics lags the US at large, the state's regional peers and its highly rated peers.

In the five years through 2017, Vermont's nominal GDP and nonfarm employment grew at compound annual growth rates of 2.7% and 0.6%, respectively. Both rates trail those of the US and Vermont's northeast neighbors, all of whom are rated Aa1 or lower (see Exhibits 3 & 4).

Vermont's aging population may remain an obstacle to attaining growth on par with other states. Vermont is currently second only to [Maine](#) (Aa2 stable) in the share of residents aged 55 or older. Vermont had one of the lowest rates of growth in total population over the last decade. Between 2000 and 2017, the state's prime working age population (those between 25 and 54 years) fell just over 16%. Over the same period, the prime working age population in the US grew over 4% (see Exhibit 5).

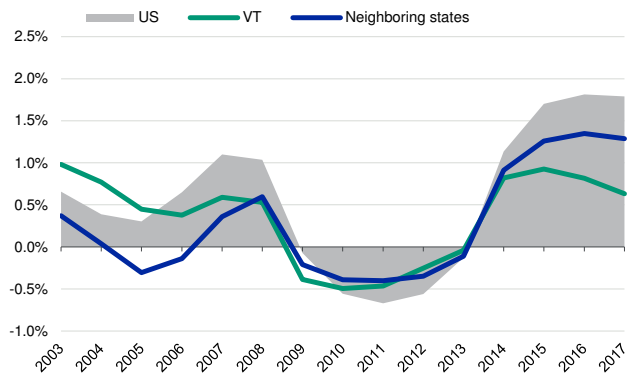
With one of the nation's lowest birthrates and a modestly net negative migration trend, we expect population growth to remain very low. Moody's Analytics projects subpar demographics will keep Vermont a below-average economic performer over the long term.

Exhibit 3
Vermont's economic growth has lagged that of the US and regional neighbors for several years
 Rolling 5-year CAGR in nominal GDP



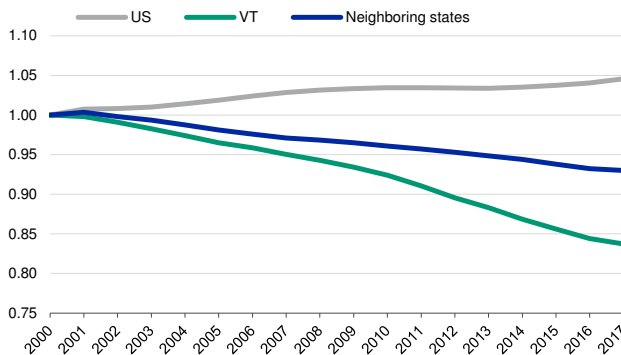
'Neighboring states' combines Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island.
 Source: US Bureau of Economic Analysis

Exhibit 4
Employment growth has also been slower in Vermont
 Rolling 5-year CAGR in nonfarm employment



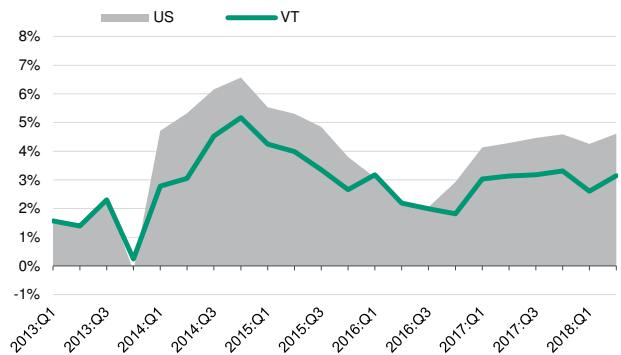
'Neighboring states' combines Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island.
 Source: US Bureau of Labor Statistics

Exhibit 5
Vermont's prime working age population declining faster than in the nation and region
 Annual prime working age population relative to base year 2000



Source: Moody's Analytics

Exhibit 6
Though healthy, Vermont's growth in personal income lags that of the US
 Year-over-year growth in quarterly personal income



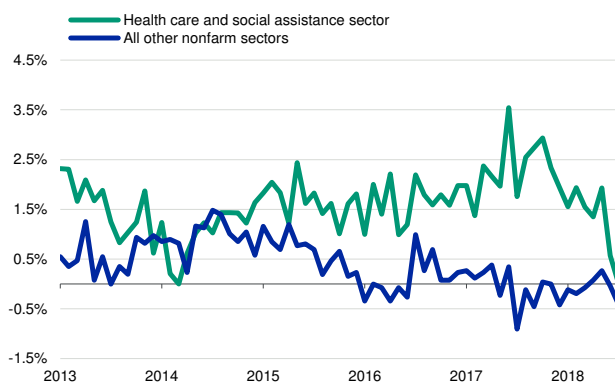
Source: US Bureau of Economic Analysis

Vermont's aging population is causing the state to lean on the health care sector to drive employment gains (see Exhibits 7 & 8). According to the US Bureau of Labor Statistics, employment in health care and social assistance now accounts for nearly 17% of jobs in Vermont compared to just over 13% nationwide. The health care sector will likely remain a source of well-paying jobs in the state. However, though personal income growth in Vermont has been sound, it also trails growth across the US (see Exhibit 6 above).

Exhibit 7

Growth in the health care sector is a driver of Vermont's employment gains

Year-over-year change in Vermont's monthly nonfarm employment

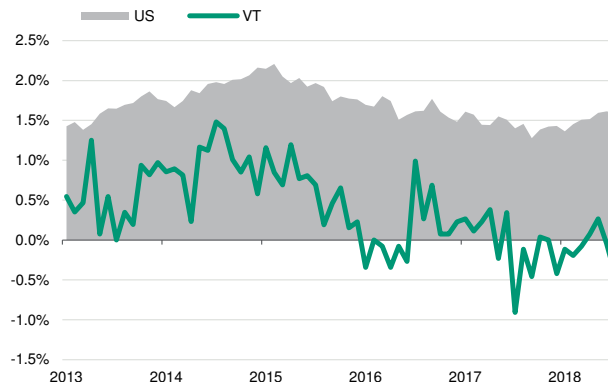


Source: US Bureau of Labor Statistics

Exhibit 8

Vermont's growth in non-health care employment significantly lags that of the US

Year-over-year change in monthly nonfarm employment excluding the health care and social assistance sector



Source: US Bureau of Labor Statistics

Notwithstanding the above discussion, Vermont has several economic bright spots that support its credit profile. It has a relatively high income base. Per capita and median household income in Vermont are slightly higher than those of the entire US, and rank 19th and 20th, respectively, among the 50 US states. The state's poverty rate, averaged over the three years through 2016 by the US Census Bureau, is the sixth lowest in the US. Vermont's unemployment rate consistently falls below that of the US while its labor force participation rate consistently exceeds that of the US.

Much of this is supported by the state's highly educated populace. According to the US Census Bureau, Vermont ranks 8th among the states in share of residents having earned a bachelor's degree or higher. The state also has a robust and growing tourism sector, which has benefited from rising personal income throughout the wider region.

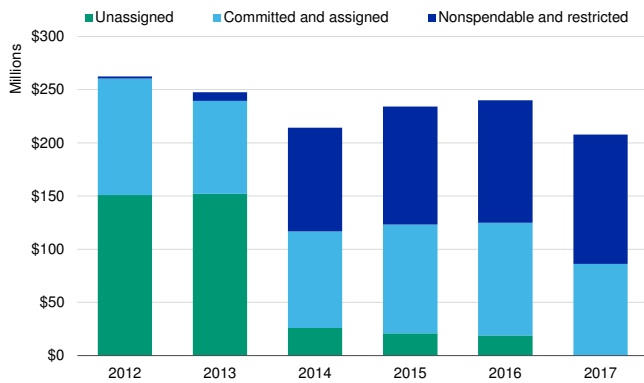
Finances

The state's GAAP-basis available fund balance (unassigned, committed and assigned balances) across its general, education and transportation funds fell in recent years (see Exhibit 9). Accounting for fund balance classified as restricted but composed of funds receivable from the state's internal service fund, the available balance stood at 5% of those funds' combined revenue in fiscal 2017 (see Exhibit 10). This partially reflects loans made by the general fund to the state's OPEB trust that had grown to \$29 million in fiscal 2017. The state anticipates returning up to \$4 million of this loan to the general fund in fiscal 2019 and completely retiring the interfund loan by 2022.

At 5% of revenue, Vermont's available fund balance is in line with the state's statutory commitment to maintain a budget reserve equal to no less than that share of prior year spending. On a budget basis, the state's fiscal 2017 budget reserves in its general, education and transportation funds were \$74.1 million, \$33.5 million and \$13.3 million, respectively, and, in total, equal to 5% of those funds' combined revenue. The state anticipates the aggregate budget reserve will rise to \$126.3 million in the current fiscal 2019.

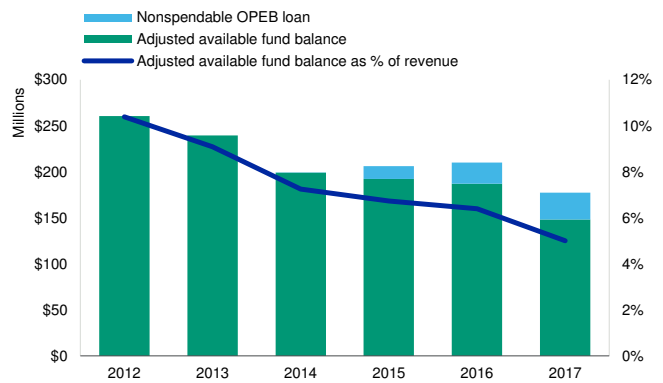
Vermont also holds balances outside its three core operating funds, the largest of which is its human services caseload reserve. The fiscal 2019 budget moves this entire reserve to the general fund, though the state's global commitment fund will continue to account for human services activities. The state anticipates the fiscal 2019 caseload reserve will be around \$100 million. Adding this to the state's fiscal 2017 available fund balance puts that balance close to 8.5% of revenue, which is closely aligned with average monthly cash classified as unrestricted by the state treasurer.

Exhibit 9
Vermont's total fund balance has been stable, but reporting changes brought available fund balance down



We define available fund balance as the sum of unassigned, committed and assigned fund balance
 Source: Vermont's comprehensive annual financial reports

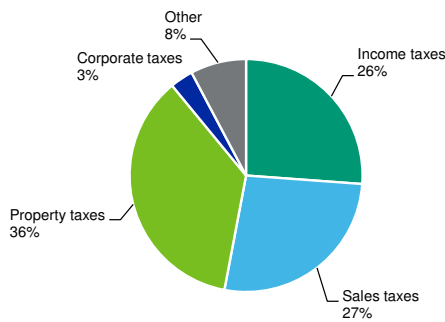
Exhibit 10
Adjustments to available fund balance show a moderate decline as well



"Adjusted available fund balance" consists of reported available fund balance plus the general fund's annual receivable from the state's internal service fund.
 Source: Vermont's comprehensive annual financial reports

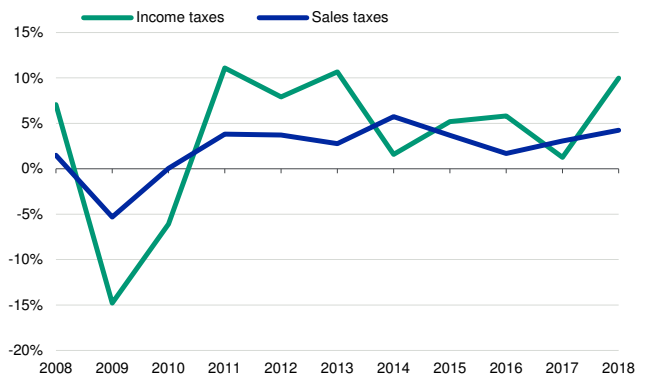
On a budget basis, the state reports closing fiscal 2018 on June 30 with an operating surplus of \$11 million in the general fund, which it transferred to the teachers pension plan. Personal income taxes were up 10% year-over-year, part of which the state attributes to growth in capital gains (see Exhibit 12). The fiscal 2019 budget assumes only moderate growth in revenue over fiscal 2018 and is balanced without the use of reserves.

Exhibit 11
Vermont's revenue base is diverse
 Composition of revenue across Vermont's general, education and transportation funds



Sales tax includes gas and vehicle taxes, and meals and room taxes.
 Source: State of Vermont

Exhibit 12
Revenue growth in Vermont has been solid
 Annual growth in select taxes

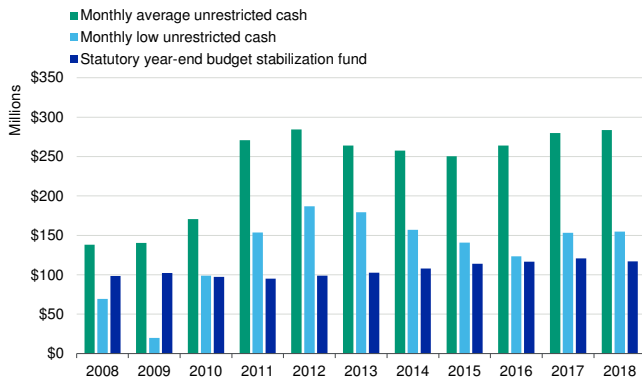


Sales tax includes gas and vehicle taxes, and meals and room taxes.
 Source: State of Vermont

LIQUIDITY

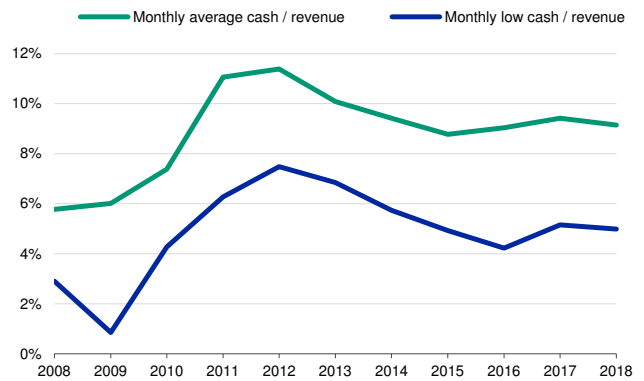
Vermont rapidly rebuilt its cash reserves after the 2007-09 recession and has kept liquidity at a strong level (see Exhibit 13). Monthly average unrestricted cash held by the state treasurer hovered around 9% of combined general, education and transportation fund revenue over the past several years (see Exhibit 14). We do not anticipate a material change in liquidity in the coming years.

Exhibit 13
Available liquidity and statutory budget stabilization reserves remain healthy, both nominally...



Source: State of Vermont

Exhibit 14
...and as a share of key operating revenues



Revenue is the sum of Vermont's general, education and transportation funds, less federal grant receipts
Source: State of Vermont

Debt and pensions

Vermont's net tax supported debt (NTSD) ratios are very close to or below state medians (see Exhibit 1 above). But, the state carries a heavy unfunded pension burden. As a share of state nominal GDP, Vermont's fiscal 2017 adjusted net pension liability (ANPL) is the 8th highest of the 50 states. It ranks 10th in combined ANPL and NTSD as a percentage of GDP.

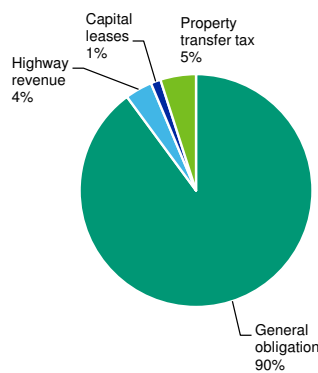
Vermont's debt and pension burden is still much lower than those of the most highly leveraged states. Importantly, Vermont's pension burden incorporates all liabilities associated with statewide school districts because the state accounts for all primary and secondary education financial activities. This is a big driver of Vermont's high pension burden relative to other states.

Exhibit 15
Vermont's debt statement (\$million)
As of June 30, 2018

General obligation bonds	\$636
Transportation infrastructure bonds	\$27
Capital leases	\$10
Property transfer tax bonds	\$35
Total net tax-supported debt	\$707
Moral obligations	
Vermont Municipal Bond Bank	\$585
Vermont Econ. Dev. Auth.	\$173
Vermont Housing Finance Auth.	\$38
Vermont Student Assistance Corp.	\$7
Total moral obligations	\$802
Gross tax-supported debt	\$1,509

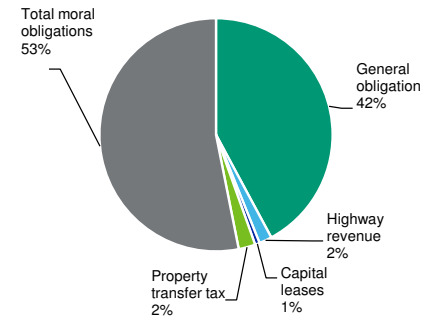
Source: State of Vermont

Exhibit 16
General obligation bonds make up the vast majority of net tax-supported debt



Source: State of Vermont

Exhibit 17
Moral obligations are a big component of Vermont's gross tax-supported debt



Source: State of Vermont

DEBT STRUCTURE

All of Vermont's debt is fixed rate.

DEBT-RELATED DERIVATIVES

Vermont is not party to any debt-related derivatives.

PENSIONS AND OPEB

Across both of its retirement plans (the Vermont State Retirement System and State Teachers' Retirement System), Vermont's pension contribution of \$142 million in fiscal 2017 consumed just under 4% of own-source revenue. The actual contribution was short of the \$162 million we estimate as the state's aggregate pension "tread water" indicator. The "tread water" indicator, which we calculate based on pension plan disclosures, measures the annual employer contribution necessary to forestall growth in plan reported net pension liabilities, assuming other plan actuarial assumptions hold, after accounting for employee contributions. The difference between the state's actual contribution and the "tread water" indicator was less than 1% of own-source revenue.

The state's current funding policy, established in statute, is to fully amortize the unfunded liabilities of VSERS and VSTRS by 2038. In the past year, the state lowered the discount rate of both plans to 7.5% from 7.95%. To accommodate the lower investment return assumption and stay within the statutory funding target, the state plans to increase its contributions to VSTRS in fiscal 2020 to 19% of payroll from 16% of payroll. In the same year, the state plans to increase its VSERS contributions to 13.3% of payroll from 11.6% of payroll.

As of fiscal 2017, Vermont reported a net OPEB liability of \$2.4 billion under newly adopted GASB statement 74. The net OPEB liability is another 7.4% of 2017 GDP and, like the state's pension burden, includes 100% of state teacher retiree health care liabilities. The state made \$57 million in OPEB payments in fiscal 2017, which is incorporated in our calculation of the state's fixed cost burden.

Governance

Vermont's governance is strong. The state updates its consensus revenue forecast twice per year, in January and July. The January update covers the remainder of the current fiscal year as well as the two upcoming fiscal years. The July update then revises the forecast for the newly begun fiscal year and the immediately following fiscal year. The two forecast updates are required by statute. During economic downturns, such as the 2007-09 recession, the state has updated its revenue forecast more frequently to aid responses to weakened revenue 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 18

US states and territories rating methodology scorecard Vermont (State of)

Rating Factors	Measure	Score
Factor 1: Economy (25%)		
a) Per Capita Income Relative to US Average [1]	101.4%	Aaa
b) Nominal Gross Domestic Product (\$ billions) [1]	\$32.2	A
Factor 2: Finances (30%)		
a) Structural Balance	Aa	Aa
b) Fixed Costs / State Own-Source Revenue [2]	8.1%	Aa
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]	17.8%	Aa
Factors 5 - 10: Notching Factors [4]		
Adjustments Up: Financial Stability	0.5	
Adjustments Down: None	0	
Rating:		
a) Scorecard-Indicated Outcome		Aa1
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, Vermont's comprehensive annual financial reports, Moody's Investors Service

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