State Debt, Bond Ratings & Trends

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States/Transport, U.S. Public Finance

April 5, 2019
Overview

• State Ratings and Trends
• Sector Outlook and Credit Conditions
• Demographics and Long-term Liabilities
• State Debt Trends
State Ratings and Trends
U.S. States Ratings Distribution

Source: S&P Global Ratings U.S. State Ratings And Outlooks: Current List 03/19/19
U.S. States Outlook Distribution

- 96% Positive
- 4% Stable
- None Negative

Source: S&P Global Ratings U.S. State Ratings And Outlooks: Current List 03/19/19
Ratings Movements For U.S. States

Source: S&P Global Ratings History of U.S. State Ratings 03/19/19. Includes multiple rating changes for same state within a year
S&P Approach: U.S. States Overall Analytical Framework

Government Framework
- Fiscal policy framework
- System support
- Intergovernmental funding

Financial Management
- FMA
- Budget management

Economy
- Demographic profile
- Economic structure
- Wealth and income indicators
- Economic development

Budgetary Performance
- Budget reserves
- Liquidity
- Tax/revenue structure
- Revenue forecasting
- Service levels
- Structural performance

Debt and Liability Profile
- Debt burden
- Pension liabilities
- OPEB risk assessment

Indicative Credit Level

Overriding Factors
- System support
- Willingness to support debt
- Liquidity and capital market access
- High level of expected future debt/liabilities
- Weak structural budget performance
- High level of contingent liquidity risk

Holistic Analysis

State Rating

Source: S&P Global Ratings  U.S. States Ratings Methodology, October 17, 2016
ESG Rating Factors

Rating factors:

<table>
<thead>
<tr>
<th>Environmental</th>
<th>Social</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Sea level rise; extreme weather events, inland flooding;</td>
<td>- Demographics changes and population trends affecting need or demand for government services, not-for-profit enterprise’s product or infrastructure</td>
<td>- Federal/State framework</td>
</tr>
<tr>
<td>- Longer-term changes in climate affecting resiliency, water supply, agricultural production</td>
<td>- Income levels, income inequality, population trends</td>
<td>- Management &amp; policy framework</td>
</tr>
<tr>
<td>- Swings (positive or negative) to demand for a not-for-profit enterprise’s product, supply chain disruption, of necessary inputs to production or services</td>
<td>- Dependent populations</td>
<td>- Political discord/harmony</td>
</tr>
<tr>
<td>- Costs or benefits from a transition to newer, more environmentally-beneficial production or user base; environmental regulation</td>
<td>- Affordability of service provided by enterprises</td>
<td>- Transparency of policies, information, decision-making, and disclosures</td>
</tr>
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<td>- Impact of regulations including managing carbon emissions</td>
<td>- Tax structure, taxing ability</td>
<td>- Headline risk: impacts of self-inflicted controversies, corruption &amp; misleading, such as adverse publicity</td>
</tr>
<tr>
<td>- Environmental violations, consent decrees</td>
<td>- Exposure to labor unrest</td>
<td>- Organizational structure</td>
</tr>
<tr>
<td></td>
<td>- Exposure to political unrest/terrorism</td>
<td>- Risk culture and risk mitigation including cyber security</td>
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<td></td>
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<td>- Deferred maintenance requirements</td>
</tr>
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<td></td>
<td></td>
<td>- Pension and OPEB exposure</td>
</tr>
</tbody>
</table>

Source: S&P Global Ratings When U.S. Public Finance Ratings Change, ESG Factors Are Often The Reason, March 28, 2019
ESG Rating Factors

ESG In USPF - Connecting The Dots

Environmental, Social or Government related factors contributed to 34% of rating actions in 2017 and 2018.

Source: S&P Global Ratings When U.S. Public Finance Ratings Change, ESG Factors Are Often The Reason, March 28, 2019
Sector Outlook and Credit Conditions
<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Greater federal funding certainty for Medicaid following 2018 midterm elections, likely ensuring through the near-term, program status as an open-ended federal entitlement;</td>
<td>• Challenging politics of simultaneously addressing pent-up demand for increased spending while preparing for an economic slowdown;</td>
</tr>
<tr>
<td>• Potential for broadened sales tax bases in the wake of the U.S. Supreme Court’s Wayfair ruling allowing states to levy sales tax on most online retailers;</td>
<td>• Growing propensity to experience fiscal volatility tied to the risk of a slowdown triggered by unpredictable trade policy or a sustained selloff in equity markets, which could undermine revenues and pension funding ratios;</td>
</tr>
<tr>
<td>• Uptick in revenue growth during 2018 provided states with an opportunity to build upon budget reserves for the next downturn</td>
<td>• Continued Medicaid cost growth in excess of revenue, inflation, and GDP growth;</td>
</tr>
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<td>• Emerging use of bond covenants and recent voter-approved tax caps that constrain future fiscal policy options;</td>
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<td>• Natural disaster event risk, requiring higher liquidity reserves than usual</td>
</tr>
</tbody>
</table>

Nominal State Tax Revenue Growth and Recession

Source: When The Credit Cycle Turns, U.S. States May Be Tested In Unprecedented Ways, September 17, 2018

Source: U.S. Census Bureau; U.S. Bureau of Economic Analysis
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Real Tax Revenue Growth Rates

Source: U.S. Census Bureau; Federal Reserve Bank of St. Louis; U.S. Bureau of Economic Analysis
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Source: When The Credit Cycle Turns, U.S. States May Be Tested In Unprecedented Ways, September 17, 2018
State Medicaid Expenditures

Source: Office of the Actuary, Centers for Medicare and Medicaid Services
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Combined Medicaid, Debt Service, And Pension And OPEB Contributions Share Of General Fund Expenditures

Source: When The Credit Cycle Turns, U.S. States May Be Tested In Unprecedented Ways, September 17, 2018
State Susceptibility To Fiscal Distress In Recession

Source: When The Credit Cycle Turns, U.S. States May Be Tested In Unprecedented Ways, September 17, 2018
Credit Conditions: U.S. Economic Forecast

– S&P Global Ratings' increased our risk of recession estimate over the next 12 months to 20%-25% from 15%-20%.

– GDP growth forecasted to slow to 1.8% by Q4 2019 from 3.5% in Q4 2018.

– Assume no fed rate hike in 2019 and 0.25 bp increase in first half of 2020.

– Risks to states include a prolonged, significant equity market correction, especially for states that are heavily reliant on capital gains taxes. Federal or state policy moves such as additional tariff escalations that could being to wear down some heavily trade-dependent regions.

## S&P Global Ratings' Economic Outlook

<table>
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<tbody>
<tr>
<td>Real GDP</td>
<td>1.8</td>
<td>2.5</td>
<td>2.9</td>
<td>1.6</td>
<td>2.2</td>
<td>2.9</td>
<td>2.3</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>CPI</td>
<td>1.5</td>
<td>1.6</td>
<td>0.1</td>
<td>1.3</td>
<td>2.1</td>
<td>2.5</td>
<td>2.2</td>
<td>2.3</td>
<td>2.2</td>
</tr>
<tr>
<td>CPI (EOP)</td>
<td>1.2</td>
<td>1.2</td>
<td>0.4</td>
<td>1.8</td>
<td>2.1</td>
<td>2.3</td>
<td>2.2</td>
<td>2.4</td>
<td>2.1</td>
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<tr>
<td>Unemployment rate</td>
<td>7.4</td>
<td>6.2</td>
<td>5.3</td>
<td>4.9</td>
<td>4.4</td>
<td>3.9</td>
<td>3.6</td>
<td>3.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Balance trade and services GDP</td>
<td>(2.9)</td>
<td>(2.9)</td>
<td>(2.9)</td>
<td>(2.8)</td>
<td>(3.0)</td>
<td>(3.0)</td>
<td>(2.9)</td>
<td>(3.0)</td>
<td>(2.9)</td>
</tr>
<tr>
<td>Short-term interest rate</td>
<td>0.27</td>
<td>0.23</td>
<td>0.32</td>
<td>0.74</td>
<td>1.26</td>
<td>2.33</td>
<td>3.04</td>
<td>3.31</td>
<td>3.35</td>
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<tr>
<td>Short-term interest rate (EOP)</td>
<td>0.24</td>
<td>0.24</td>
<td>0.41</td>
<td>0.92</td>
<td>1.47</td>
<td>2.72</td>
<td>3.16</td>
<td>3.35</td>
<td>3.35</td>
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<tr>
<td>Long-term interest rate</td>
<td>2.35</td>
<td>2.54</td>
<td>2.14</td>
<td>1.84</td>
<td>2.33</td>
<td>2.94</td>
<td>3.41</td>
<td>3.61</td>
<td>3.66</td>
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<tr>
<td>Long-term interest rate (EOP)</td>
<td>2.75</td>
<td>2.28</td>
<td>2.19</td>
<td>2.13</td>
<td>2.37</td>
<td>3.14</td>
<td>3.54</td>
<td>3.85</td>
<td>3.65</td>
</tr>
<tr>
<td>Nominal GDP (bil. US$)</td>
<td>16,785</td>
<td>17,522</td>
<td>18,219</td>
<td>18,707</td>
<td>19,485</td>
<td>20,503</td>
<td>21,398</td>
<td>22,261</td>
<td>23,221</td>
</tr>
<tr>
<td>Population (mil.)</td>
<td>316.2</td>
<td>318.6</td>
<td>320.9</td>
<td>323.1</td>
<td>325.5</td>
<td>327.9</td>
<td>330.3</td>
<td>332.6</td>
<td>335.0</td>
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<tr>
<td>Real exports</td>
<td>3.6</td>
<td>4.3</td>
<td>0.6</td>
<td>(0.1)</td>
<td>3.0</td>
<td>4.4</td>
<td>2.5</td>
<td>2.3</td>
<td>2.7</td>
</tr>
<tr>
<td>Real imports</td>
<td>1.5</td>
<td>5.1</td>
<td>5.5</td>
<td>1.9</td>
<td>4.6</td>
<td>4.8</td>
<td>4.6</td>
<td>3.3</td>
<td>2.8</td>
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<tr>
<td>Real fixed investment</td>
<td>3.8</td>
<td>4.9</td>
<td>3.3</td>
<td>1.7</td>
<td>4.0</td>
<td>4.9</td>
<td>2.9</td>
<td>2.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Real private consumption</td>
<td>1.5</td>
<td>2.9</td>
<td>3.7</td>
<td>2.7</td>
<td>2.5</td>
<td>2.7</td>
<td>2.6</td>
<td>1.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Real government consumption</td>
<td>(2.4)</td>
<td>(0.9)</td>
<td>1.9</td>
<td>1.4</td>
<td>(0.1)</td>
<td>1.7</td>
<td>2.0</td>
<td>1.3</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Source: Oxford Economics. 1–S&P Global Ratings' forecast. EOP—end of period (fourth-quarter values).
States With Graduated Income Tax

State Pension Plans: Cash Flows and Market Volatility

Source: S&P Global Ratings: Five U.S. State And Local Government Pension And OPEB Trends To Watch For In 2019 And Beyond, January 16, 2019
Demographics and Long-term Liabilities
State Pension Survey Funded Ratios

Source: S&P Global Ratings  U.S. State Pensions Struggle For Gains Amid Market Shifts And Demographic Headwinds, October 30, 2018
S&P State Pension Approach

- Assumed rate of return vs. actual performance
- Amortization method
- Ratio of actives to beneficiaries
- Frequency of updates to experience studies
- Cash flow assumptions underlying GASB plan asset depletion projections

Source: S&P Global Ratings U.S. States Ratings Methodology, October 17, 2016
In our view, states that consistently fund full required contributions on an actuarial basis and use conservative assumptions and methods are more likely to effectively manage their pension liabilities and the associated long-term budgetary costs than states that do not.

Blue: Pension contributions are actuarially based and usually meet or exceed required levels

Red: Pension contributions do not have an actuarial basis or are not usually fully funded

Source: S&P Global Ratings  U.S. State Pensions Struggle For Gains Amid Market Shifts And Demographic Headwinds, October 30, 2018
Mature plans with riskier target asset allocations could expose participating governments to higher costs in the event of a market downturn.

Demographic effects of aging populations are expected to amplify in the next ten years due to continued retirement of baby boomers.

Source: S&P Global Ratings  U.S. State Pensions Struggle For Gains Amid Market Shifts And Demographic Headwinds, Oct 30, 2018
Upward Trajectory of OPEB Costs

State OPEB Survey: Funded Ratios and Future Costs

OPEB liabilities are likely to continue to escalate without meaningful funding progress or benefit reductions.

Source: Rising U.S. States' OPEB Liabilities Signal Higher Costs Ahead, November 28, 2018
Risk of Exposure to Aging Demographic Changes

Source: S&P Global Ratings  U.S. States May See Negative Revenue Effects From Aging Demographic Trends
State Debt Trends
Growth in Municipal Bond New Money Issuance (YoY)

Source: Bureau of Economic Analysis and the Bond Buyer
Municipal Debt Outstanding

Total State Tax-Supported Debt

Source: S&P Global Ratings  Level U.S. State Debt Reflects Long-Term Management Strategies And Affordability Concerns, May 14, 2018

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</thead>
<tbody>
<tr>
<td>Net tax-supported debt service as a % of governmental expenditures</td>
<td>3.8</td>
<td>3.8</td>
<td>3.9</td>
<td>3.7</td>
<td>4.0</td>
<td>3.5</td>
<td>3.6</td>
<td>3.6</td>
<td>3.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Net tax-supported debt per capita ($)</td>
<td>945</td>
<td>955</td>
<td>1018</td>
<td>957</td>
<td>999</td>
<td>1036</td>
<td>1010</td>
<td>932</td>
<td>870</td>
<td>739</td>
</tr>
<tr>
<td>Net tax-supported debt as a % of personal income</td>
<td>2.1</td>
<td>2.2</td>
<td>2.5</td>
<td>2.4</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Net tax-supported debt as a % of GSP</td>
<td>1.7</td>
<td>2.3</td>
<td>2.4</td>
<td>2.0</td>
<td>2.2</td>
<td>2.2</td>
<td>2.1</td>
<td>2.2</td>
<td>2.0</td>
<td>1.8</td>
</tr>
</tbody>
</table>
State Tax-Supported Debt Service: % of Spending

Source: S&P Global Ratings, Pew Charitable Trusts. © 2018 Standard & Poor’s Financial Services LLC. All rights reserved.
Total Net Supported Debt

Source: S&P Global

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Source: S&P Global Ratings  Level U.S. State Debt Reflects Long-Term Management Strategies And Affordability Concerns, May 14, 2018
Estimated Annual Interstate Highway Needs, 2019-2039

Values are in 2016 dollars. Source: National Academies of Sciences, Engineering, and Medicine, "Renewing the National Commitment to the Interstate Highway System," 2018. VMT=Vehicle miles traveled. Copyright © 2019 by Standard & Poor's Financial Services LLC.

Source: U.S. Transportation Infrastructure 2019 Sector Outlook: Mostly Stable, Despite Expected Slower Growth And Unlikely Investment Package
S&P Global Select State-Transport Sector Sector Publications

- When U.S. Public Finance Ratings Change, ESG Factors Are Often The Reason

- Pension Brief: Are Asset Transfers A Gimmick Or A Sound Fiscal Strategy?

- With Oil Price Volatility, Recent Economic Gains In U.S. Oil-Producing States Are At Risk

- U.S. State Sector 2019 Outlook: Caution – Slower Speeds Ahead

- U.S. Transportation Infrastructure 2019 Sector Outlook: Mostly Stable, Despite Expected Slower Growth And Unlikely Investment Package

- When The Credit Cycle Turns U.S. States May Be Tested In Unprecedented Ways

- Five U.S. State And Local Government Pension And OPEB Trends To Watch For In 2019 And Beyond

- Rising U.S. States’ OPEB Liabilities Signal Higher Costs Ahead

- U.S. State Pensions Struggle for Gains Amid Market Shifts and Demographic Headwinds

- U.S. States May See Negative Revenue Effects From Aging Demographic Trends

- New GASB Statements 74 And 75 Provide Transparency For Assessing Budgetary Stress on U.S. State & Local Government OPEBs

- Recent U.S. State Pension Reform: Balancing Long-Term Strategy and Budget Reality

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As of March 2019
Thank you

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