Agenda

• How much debt is too much?
• When should a state issue debt and how does it affect credit ratings?
• Explore the proper role of debt as a financing tool, and its affordability in state budgets.
Ratings and Outlook Distribution
U.S. states ratings distribution

CA, CT, KS, MI, PA, WV
KY
NJ
IL

AAA: 26%
AA+: 12%
AA: 26%
AA-: 2%
A+: 2%
A: 2%
BBB+: 2%

General Obligation and ICR ratings as of 6/09/16.
U.S. states outlook distribution

General Obligation and ICR ratings as of 6/09/16.
### 2016 YTD* rating activity

<table>
<thead>
<tr>
<th>State</th>
<th>Action</th>
<th>Rating</th>
<th>Outlook/Watch</th>
<th>Rating</th>
<th>Outlook/Watch</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>On CreditWatch</td>
<td>AA+</td>
<td>Watch Negative</td>
<td>AA+</td>
<td>Negative</td>
<td>6/9/16</td>
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<tr>
<td>Alaska</td>
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<td>AA+</td>
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<td>AAA</td>
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<td>1/5/16</td>
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<tr>
<td>Connecticut</td>
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<td>Stable</td>
<td>AA</td>
<td>Negative</td>
<td>5/19/16</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Outlook change</td>
<td>AA</td>
<td>Positive</td>
<td>AA</td>
<td>Stable</td>
<td>3/1/16</td>
</tr>
<tr>
<td>Illinois</td>
<td>Rating downgrade</td>
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<td>Negative</td>
<td>A-</td>
<td>Negative</td>
<td>6/9/16</td>
</tr>
<tr>
<td>Kansas</td>
<td>Rating downgrade</td>
<td>AA-</td>
<td>Stable</td>
<td>AA</td>
<td>Negative</td>
<td>7/26/16</td>
</tr>
<tr>
<td>Kansas</td>
<td>On CreditWatch</td>
<td>AA</td>
<td>Watch Negative</td>
<td>AA</td>
<td>Negative</td>
<td>7/25/16</td>
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<tr>
<td>Michigan</td>
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<td>Stable</td>
<td>AA-</td>
<td>Positive</td>
<td>3/17/16</td>
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<tr>
<td>New Jersey</td>
<td>Outlook change</td>
<td>A</td>
<td>Negative</td>
<td>A</td>
<td>Stable</td>
<td>3/22/16</td>
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<tr>
<td>North Dakota</td>
<td>Rating downgrade</td>
<td>AA+ (ICR)</td>
<td>Stable</td>
<td>AAA (ICR)</td>
<td>Stable</td>
<td>2/18/16</td>
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<tr>
<td>Pennsylvania</td>
<td>Off CreditWatch</td>
<td>AA-</td>
<td>Negative</td>
<td>AA-</td>
<td>Watch Negative</td>
<td>7/19/16</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>On CreditWatch</td>
<td>AA-</td>
<td>Watch Negative</td>
<td>AA-</td>
<td>Negative</td>
<td>7/11/16</td>
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<td>Pennsylvania</td>
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<td>Negative</td>
<td>AA-</td>
<td>Watch Negative</td>
<td>3/24/16</td>
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<td>Pennsylvania</td>
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<td>Watch Negative</td>
<td>AA-</td>
<td>Stable</td>
<td>3/3/16</td>
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<tr>
<td>Oklahoma</td>
<td>Outlook change</td>
<td>AA+</td>
<td>Negative</td>
<td>AA+</td>
<td>Stable</td>
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<tr>
<td>Tennessee</td>
<td>Rating upgrade</td>
<td>AAA</td>
<td>Stable</td>
<td>AA+</td>
<td>Positive</td>
<td>5/26/16</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Rating downgrade</td>
<td>AA-</td>
<td>Stable</td>
<td>AA</td>
<td>Stable</td>
<td>4/21/16</td>
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<tr>
<td>Wyoming</td>
<td>Outlook change</td>
<td>AAA</td>
<td>Negative</td>
<td>AAA (ICR)</td>
<td>Stable</td>
<td>2/4/16</td>
</tr>
</tbody>
</table>

*As of July 26th, 2016.
State Sector Outlook for 2016
2016 state sector outlook

- Credit quality across the U.S. states sector is somewhat uneven.
- Credit pressures stem from exposure to the energy sector, weakened budgetary performance, and political stalemates.
- We believe it's possible that in 2016, the state sector could experience an uptick in rating volatility, with the balance of risk weighted to the downside.
State fiscal condition leading up start of 2016

Exposure to Key Credit Risks in 2016

- Energy producing states facing fiscal pressure due to fall of oil price
- Current year budget pressure from political gridlock or revenue shortfall
- Future year budget pressure possible or likely due to existing spending baseline, actual or possible legally required spending, or potential for revenue volatility
- Large unfunded liabilities or high debt burden

S&P Global Ratings

See appendix for details.
State fiscal conditions at start of 2016

- **Category One:** Weathered the Great Recession with minimal stress and has good reserves.
- **Category Two:** Narrow fiscal margins with near-term structural budget alignment but typically low-to-adequate reserves.
- **Category Three:** Hit hard by recession but has subsequently achieved considerable fiscal repair.
- **Category Four:** Still experiencing fiscal stress typically stemming from soft revenue trends in general or because of a reliance on oil production-related revenue; some states are undergoing self-imposed fiscal distress as a result of political infighting.
U.S State Budget Outlook and Themes
## Key themes for 2016

<table>
<thead>
<tr>
<th>Slower Revenue Growth</th>
<th>Tax Incentives</th>
<th>Spending Restraint</th>
<th>Aid to Higher Education</th>
<th>Pension Pressure Persists</th>
</tr>
</thead>
</table>
| Findings are consistent with recent Rockefeller Institute of Government report that:  
  • Personal income tax growth will decline to 4.4% in FY 2017 from 7.8% in FY 2015  
  • Sales tax revenue growth will slow to 3.9% in FY 2017 from 4.5% in 2015 | Several state budget proposals include targeted spending initiatives or tax incentives aimed at economic development and job creation. Examples include:  
  • New York  
  • Delaware  
  • Florida  
  • Pennsylvania  
  • Rhode Island | According to a survey by the National Association of State Budget Officers, median general fund spending by states is budgeted to increase by **2.9% in FY 2016** | As of FY 2016, most states have restored aid to higher education to pre-recession levels  
  • In some states, additional state support has been contingent on flat or reduced tuition rates; and  
  • Fund payouts have been delayed by dysfunctional budget politics | Numerous states continue to struggle with fully providing actuarially based contributions to their systems  
  • We anticipate contribution pressures will ratchet upward in the coming one to two years as a result of weaker equity market performance in FY 2015 |

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**S&P Global Ratings**
Economic outlook calls for slow growth to persist

- Most state budget proposals assume economic and revenue growth will slow throughout 2016 and into 2017

  - According to research from the Pew Charitable Trusts, as of mid 2015 there were still 21 states that had yet to see a full inflation adjusted revenue recovery from when revenue associated with the great recession bottomed out in 2009
  - Labor productivity growth is at 1.2%, which is tied with the 1973-1979 period for the slowest growth rate through a business cycle since 1943
  - States burdened by not only slow economic growth, but also complex budget politics (such as Illinois, Louisiana, New Jersey, and Pennsylvania) face a more challenging outlook from a credit perspective
  - Changing demographics and an aging population are economic challenges that states have and will continue to encounter during budget formulation
Most of the states poised for faster economic growth are also those with more rapid population increases. Conversely, many of the states ranked in the bottom 10 in population growth are also expected to have slower economic progress.
Significant changes in state government spending priorities

- States that have been unable or unwilling to make the difficult choices necessary to accommodate funding for significant liabilities, such as retiree benefits, were more likely to see their credit quality erode
- For states that have made these trade offs, the impact on credit quality is favorable in the near term (3-5 years). However, looking ahead, the reduced investment in productivity enhancing areas (infrastructure and higher education), paints a dimmer picture of their long term economic growth prospects
## States to keep an eye on in 2016

<table>
<thead>
<tr>
<th>State</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>Large structural fiscal gap caused by fall in oil prices; major fiscal reform proposed by governor is currently under negotiation.</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Increasing revenue shortfall stemming from outsized financial sector linkages.</td>
</tr>
<tr>
<td>Illinois</td>
<td>Budget compromise has become a casualty in a protracted standoff between the legislature and governor. The state is in an unprecedented tenth month of a fiscal year without an enacted budget.</td>
</tr>
<tr>
<td>Kansas</td>
<td>Revenue declines that exceeded earlier projections following enactment of sweeping tax reduction in 2012-2013 has led state to rely on extensive one-time measures to close the budget gap.</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Existing structural imbalance exacerbated by plummeting oil prices.</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Lack of fiscal capacity both to fund actuarially sound pension contributions and maintain operating balance.</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Contracting energy sector production and employment rippling through economy.</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Negotiation stalemate that led to extreme late-budget enactment due to disagreement rooted in ideological clash between branches of government controlled by opposing political parties over how to close budget gap.</td>
</tr>
</tbody>
</table>
Debt
How S&P calculates debt

- Debt analysis remains a primary area of focus in S&P Global Ratings overall credit evaluation of states.
- Of particular importance is the annual cost of servicing debt compared with current and future tax and revenue streams.
- Our debt ratio calculations for states aggregate all tax-supported obligations, including GO bonds, appropriation obligations, and special-tax bonds, such as sales, personal income, and gas tax bonds.
Aggregate state debt levels

Table 1
Aggregate Debt Levels Of The 50 U.S. States (Medians)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Net tax-supported debt service as a % of governmen</td>
<td>3.9</td>
<td>3.7</td>
<td>4.0</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>tal expenditures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net tax-supported debt per capita ($)</td>
<td>1018</td>
<td>957</td>
<td>999</td>
<td>1036</td>
<td>1010</td>
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<tr>
<td>Net tax-supported debt as a % of personal income</td>
<td>2.5</td>
<td>2.4</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Net tax-supported debt as a % of GSP</td>
<td>2.4</td>
<td>2.0</td>
<td>2.2</td>
<td>2.2</td>
<td>2.1</td>
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</table>
State and local government debt trends are sustainable

- The state and local government sector has long exhibited sustainable debt trends.
- According to the Securities Industry and Financial Markets Assn. (SIFMA), the total amount of new debt (excluding refinancing debt issuance) issued from 1996 through 2015 increased at an annual rate of 1.2%, well below the average annual GDP growth rate of 4.3%.
- In addition, there has been a pronounced pullback since the onset of the Great Recession.
  - From 1996 through 2010, state and local governments issued an average of $234 billion annually in bonds (excluding refinancing issues). Following the end of the recession, however, they have issued a much lower average of $151 billion annually in new capital bonds, according to SIFMA data.
Growth in new money municipal bond issuance relative to GDP

Note: Black line represents trend line for U.S. Municipal Bond New Money Issuance

Source: SIFMA
U.S. municipal bond new money issuance is stable

Source: Bond Buyer
Debt sustainability, not balance outstanding is the key factor

- In our view, assessing whether a state's debt levels or its debt trajectory is sustainable depends largely on its economic -- and relatedly, its revenue -- capacity to repay its debt obligations.
- Consider two hypothetical states:

<table>
<thead>
<tr>
<th>State A</th>
<th>State B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing debt load</td>
<td>Flat debt trends</td>
</tr>
<tr>
<td>Economic and population base that is growing at a faster rate than its debt burden</td>
<td>Economic base is stagnating and suffering below average rates of GDP and population growth</td>
</tr>
</tbody>
</table>

In our view, State A may have a more sustainable debt profile than the latter despite faster growth in the overall amount of debt.
Growth in tax supported debt versus GSP growth
During the recession: states had fiscal crises, not debt crises

- On the fiscal side, it's difficult to argue that aggregate state budget deficits, estimated to have reached $174 billion in fiscal 2010 -- equal to more than 25% of projected general spending -- didn't constitute a crisis.
  - State budget gaps -- projected and after budget adoption -- totaled $518 billion through the five fiscal years through fiscal 2013.

- But as for their debt positions, the situation fell short of the threshold we consider necessary to have considered it a crisis.
States had fiscal crises, not debt crises

• As we see it, at least one of two ingredients is necessary for there to be a debt crisis.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An obligor's ability to fund its principal and interest payments as they come due must be uncertain.</td>
</tr>
<tr>
<td>2</td>
<td>A loss of market access -- the ability to reliably sell debt on the capital markets at a reasonable price.</td>
</tr>
</tbody>
</table>

• To our knowledge, the U.S. states experienced neither of these on any sustained basis throughout or in the aftermath of the Great Recession.

• Overall, we believe U.S. states' current appetite for issuing new debt reflects their fiscal experience in the wake of the Great Recession more than anything to do with their debt levels.
  - States have managed their debt levels prudently, in our view.
State debt levels are only part of the liability picture

• Bonded debt is just one portion of a state's overall debt and liability profile.
  - There are also pension and other postemployment benefits (OPEB) liabilities.

• Funding debt and retiree benefit liabilities consumes a material share of the states' annual budgets, often in the range of 15%.
  - This share would likely be even higher if states funded all the retiree benefits at their actuarially recommended levels.

• Focusing just on bonded debt paints a relatively sustainable picture.
  - As of fiscal 2014, total tax-secured state debt was moderate, in our view, equaling 2.9% of total U.S. economic output as measured by GDP.
Supporting information:

Collapsing Oil Prices Seep Into State Credit Profiles, 1/21/16
History of U.S. State Ratings, 7/28/16
U.S. Public Finance 2016 Credit Conditions Outlook: Expect Growth But Hold The Cheer, 1/11/16
U.S. State Debt Levels May Be More Sustainable Than The Condition Of The Nation's Infrastructure, 10/19/15
U.S. States Have Strong Credit Quality Though Low Oil Prices And Budget Management Will Test Some, 1/11/16
U.S. State And Local Government Credit Conditions Outlook: Economic Growth Outlook Dims Amid Rising Global Uncertainty, 7/27/16
Infrastructure
Infrastructure costs go well beyond the initial investment

• Certain infrastructure projects can result in operating efficiencies and thus, fiscal savings. But, they also implicitly commit to new and ongoing O&M expenditures.
  - Analysis by the Congressional Budget Office (CBO) suggests that more than half (50% to 55% from 2000 through 2007) of total public spending on transportation and water infrastructure has been for O&M. These estimates may even be understated because they exclude spending on public power, equipment, or buildings.

• We believe the pullback of state debt issuance in response to fiscal conditions reflects at least, in part, a rational near-term approach to fiscal policymaking by lawmakers.
States can't solve the infrastructure gap with debt financing alone

- If state policymakers took it upon themselves to fund the ASCE’s estimate of necessary infrastructure at their historic proportionate share, we can approximate the impact it would have on their debt ratios.

85% state and local government share of infrastructure investment → $3.06 billion in needed funding

39% state share of infrastructure investment → $1.9 trillion in debt through 2020

- State debt ratios would increase to 7.6% of GDP from 2.9%.
- Aggregate tax-supported debt burden as ‘high’ versus ‘moderate’ burden today.
The Road Ahead
What will it take to meet infrastructure needs?

- Individually, the states could contribute to reducing the deficiency of infrastructure nationally.
- According to our assessment, however, states won't be able to solve the problem solely through the issuance of traditional tax-supported debt without it having a negative impact on credit quality.
- A mix of traditional debt, public-private partnerships, and additional federal engagement is likely required.
  - We don't currently anticipate a large increase in federal funding support.
States can't solve the infrastructure gap with debt financing alone

*Standard & Poor’s estimate of what would happen if states issued debt to pay their share of total needed infrastructure investment.

© Standard & Poor’s 2015.
We anticipate that states will increasingly consider alternative financing strategies.

Public-private partnerships (P3s) are one such avenue.

- P3 is frequently issued as taxable securities, a disadvantage.
- P3s offer states a way to fold O&M expenses into the overall cost of financing a project, and interest in P3s by states is growing

We expect the number of states with legislation authorizing the use of P3 will increase.

- However, the P3 model can be complex and in certain cases, states attempting P3 projects have encountered political opposition.
U.S. infrastructure ranked 16th in the world

- 60,000 structurally deficient bridges
- $80 billion backlog of repair needs for public transit
- U.S. Corps of Engineers construction backlog totaling $62 billion
- 240,000 water main breaks annually and poor pipe conditions lead to the discharge of 900 million gallons of untreated sewage each year
- Each driver loses $571 and wastes 26 hours sitting in traffic each year
- Each American household pays $232 more for goods due to delays in freight movement caused by poor infrastructure

U.S. multiplier effect

An increase in spending of 1% real GDP (roughly $160B over 4 quarters) would equal:

- $270B over the following 3-year period
- 730,000 new jobs
  - 61,000 new jobs per month

What is a P3? (public-private partnership)

- A risk-sharing partnership—consisting of a government and a private business—that builds, finances, and operates an infrastructure project
  - Availability & Volume Risk
  - Design, Build, Finance, Operate & Maintain
- Roles and responsibilities of both the private-sector and government participants are typically specified in a contract
- S&P treats the U.S state and local governments’ payment obligations as debt, as contingent liability, or neither