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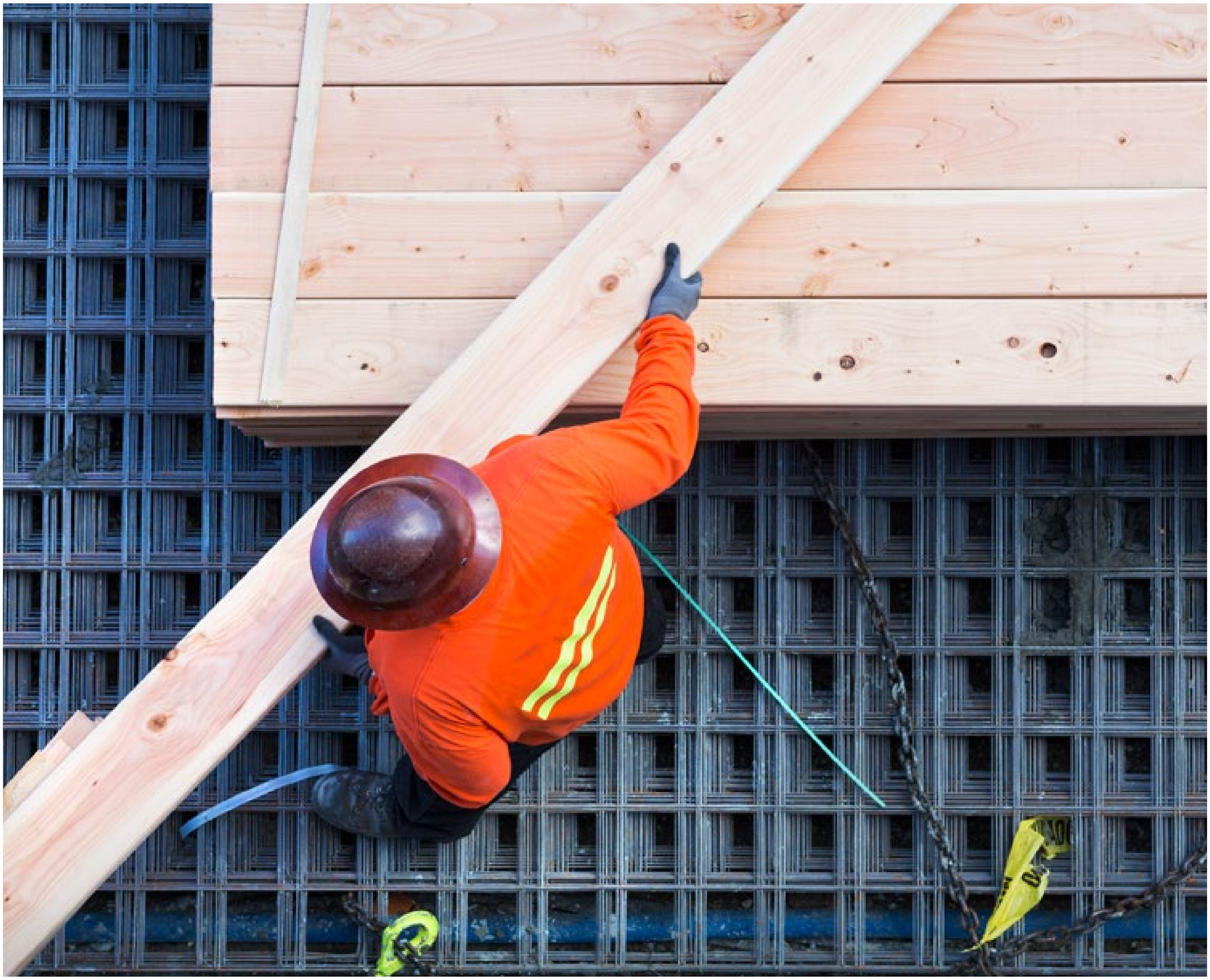

Strategies for Managing State Debt

Affordability studies can help states decide how much to borrow

Contents

Table of figures

Table of tables

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This report was updated in April 2018 to reflect a revised methodology for calculating total state debt. For a more complete explanation of the revised methodology, please see "Calculating state debt" on page 38.

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Overview

When a state government faces a large expense, such as adding lanes to a highway or restoring an aging bridge, officials often borrow the money, allowing these projects to move forward while spreading the costs out over time and to generations of taxpayers.

Gauging whether a state can afford to take on new debt, though—and how much—can be difficult. When lawmakers face decisions over whether to issue bonds or how to manage existing debt, they need the right data to inform their choices. In 27 states, officials produce debt affordability studies that evaluate the impact of potential issuances on the state's self-imposed debt caps. These data-driven analyses give states the power to manage debt in a way that aligns with their resources and spending priorities.

As state budgets recover from the effects of the Great Recession of 2007-09, lawmakers are looking for ways to prepare for the next downturn. At the same time, states are increasingly interested in taking advantage of low interest rates to borrow money for key infrastructure projects that may have been put on hold during the recession.

To help lawmakers and state finance officials better understand and manage their state's debt obligations, The Pew Charitable Trusts conducted a 50-state research study. Pew evaluated state financial documents published from January 2010 to October 2015, reviewed pertinent literature and websites, and interviewed officials, academic experts, and credit rating analysts. The result was the development of a set of criteria to define the characteristics of, and assess the quality of, a debt affordability study.[1]

These key findings emerged from the research:

- Twenty-seven states conduct debt affordability studies.[2] Of these, nine—Florida, Georgia, Maryland, Massachusetts, New Hampshire, North Carolina, Oregon, Texas, and Virginia—lead the way by producing studies that give policymakers a clear understanding of their states' debt levels through, among other things, careful projections, smart benchmarking comparisons, multiple descriptive metrics, and analysis.
- Eighteen other states publish debt affordability studies that could be improved by adding elements such as a legal mandate to produce the study and an expanded scope of analysis. These states are Alaska, California, Connecticut, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Nevada, New Mexico, New York, North Dakota, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, and West Virginia.
- Highly leveraged states are not alone in publishing debt affordability studies. North Carolina, Georgia, Nevada, and New Hampshire are among the states with the 10 lowest measures of debt per capita, according to Pew's analysis of comprehensive annual financial report (CAFR) data, but all produce a study.
- The states that produce debt affordability studies also vary in how they structure their debt. Some have highly centralized debt structures, while others delegate a higher share of total borrowing to independent agencies and authorities. Twenty-three states, including high-debt states such as Illinois, Michigan, and New Jersey, do not produce a debt affordability study. The amount of total debt held by states in this group differs greatly.

The findings show that the quality and depth of debt affordability studies vary. Unlike a CAFR, which documents the financial condition of a state using standardized accounting data, debt affordability studies do not conform to any generally accepted templates and their content varies from one state to another.[3] Indeed, they are meant to have the flexibility necessary to help policymakers understand their state's debt in the context of the state's particular legal structure, fiscal culture, and needs.

Hawaii

In June 2015, Hawaii lawmakers passed legislation directing the Department of Budget and Finance to publish an annual debt affordability study. The department released the first one in December 2016, after the deadline for inclusion in this report's analysis. But an initial review of the study shows that it aligns with many of Pew's recommendations: It has a statutory requirement for publication and uses multiple metrics and extended projections. Like all affordability studies, it also has room for improvement. The benchmarking comparison group, for example, could be more narrowly tailored.

Based on an analysis of the data, Pew developed criteria for a high-quality debt affordability study, which could be used either by officials looking to strengthen an existing study or by officials conducting one for the first time:

- Create a requirement—either by statute or other mechanism—mandating that the state produce a debt affordability study, making clear its purpose and use, who will prepare it, the timetable for ensuring regular publication, and requiring the study to include a statement of how much more the state could afford to borrow. The study's release should coincide with the state capital planning and budgeting process. Doing so helps ensure that it is used in policy analysis, not merely financial analysis.
- Use metrics to put into context what the state has borrowed and its capacity to issue additional debt. These metrics should compare the state's debt load to that of peer states.
- Project the outstanding debt and the cost to service it, and include estimated bond issuances and the state's debt capacity over multiple years. These projections allow debt affordability studies to be forward-looking, something other state financial reports with information on debt are not.
- Include written analysis to explain the data—putting them into context and detailing their implications—and offer clear recommendations for future borrowing and debt management. This analysis equips policymakers with information on the trade-offs between funding infrastructure and capital projects and using the funds on other needs.
- Consider the breadth of publicly supported debt and which obligations to model against state resources. Develop a process for measuring debt issued by component units (entities that are legally separate but perform state functions), independent authorities, state agencies, and local governments. States should consider how much debt these entities issue and how closely the state backs the obligations and distinguish between those modeled in debt capacity calculations and those simply reported.
- Include a discussion of other long-term liabilities, such as public pensions and retiree health care. Although these obligations differ from long-term, bonded debt, they represent competing claims on state funds and should be considered along with debt.
- Ensure that the study originate from an office or body with a commitment to objective analysis and close to the decision-making process to ensure that it is used by policymakers. Among states that produce debt affordability studies, the agency or department that creates them includes state treasurers, executive branch budget staff, comptrollers and controllers, and independent committees and commissions, some of which include elected officials.

Why states borrow

Used carefully and methodically, debt can be a powerful instrument. State and local governments rely on borrowed funds to build or repair vital infrastructure that improves quality of life and drives economic growth. But like individuals buying a home or car, states may not have enough cash on hand to pay for large expenses, so they borrow to spread those costs over time.

Long-term debt—bonds maturing in 10 or more years—is used to fund capital projects such as roads, bridges, ports, housing, sewers, parks, prisons, and other public buildings, including those at colleges and universities.

Borrowing makes it possible for states to finance multiple, pressing infrastructure needs simultaneously instead of one at a time. In June 2016, for instance, Georgia sold $1.4 billion in general obligation bonds to pay for bridge repairs, new university buildings, local school construction, and new school buses and public safety vehicles. The funds also went to several smaller projects, such as building a seawall on an island north of Savannah and upgrading the voting system in the House of Representatives' chambers.[4] Money spent on these infrastructure projects can stimulate the economy, help to create jobs, add to the state's physical assets, and offer investors a dependable, tax-free income.[5] And by using debt to pay for long-lasting capital assets, states can spread the cost of construction to match the useful life of the asset, benefiting taxpayers by distributing costs over multiple years.

States have varying arrangements for sharing the borrowing responsibility for such projects with local governments. For example, while some states issue debt for K-12 school construction and wastewater management, in others, cities and counties take on this debt. In some places, total local government borrowing even exceeds bond issuances by the state.[6]

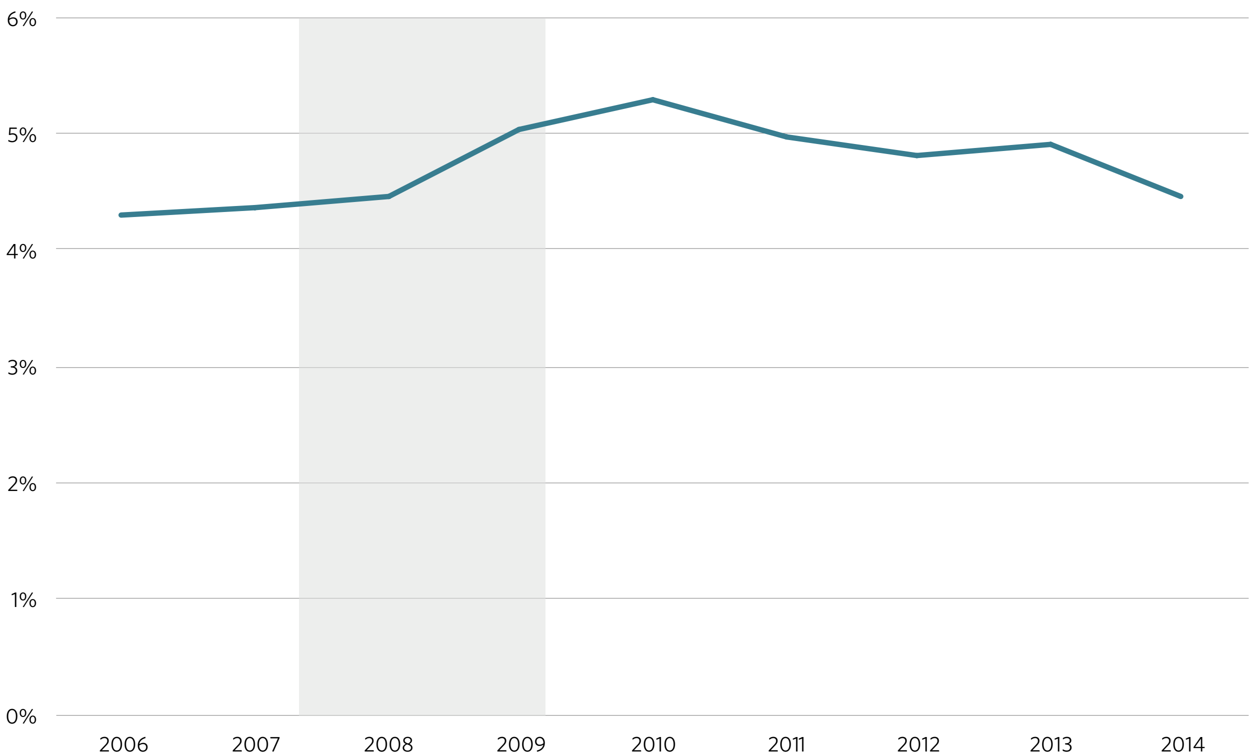
Though government finance experts discourage it, some states borrow to plug operating budget gaps. Some also sell bonds to pay their public sector pension bills, which meets an obligation in the short term but adds to the state's long-term liabilities.[7] The downside to these approaches is that every dollar spent on debt service cannot go to other spending needs, and the use of one-time funds to address ongoing expenditures could lead to structural budget problems.

However, state borrowing—particularly general obligation bonds—is generally constrained by legal limits or requirements. Further, states appear to have grown increasingly cautious about taking on debt. As shown in Figure 1, total state tax-supported debt as a share of state personal income has remained relatively flat over nearly a decade—even through a period of historically low borrowing costs. Although borrowing rose through 2010, bolstered by interest rate subsidies included in the American Recovery and Reinvestment Act of 2009, gross tax-supported debt, which includes obligations repaid with both general funds and dedicated revenue streams, had returned to 2008 levels by 2014.[8] This slowdown in borrowing, as seen in Figure 2, is in spite of continued low interest rates.

Figure 1

Outstanding Debt Represents a Small Portion of State Resources

Gross tax-supported debt outstanding as a share of total state personal income



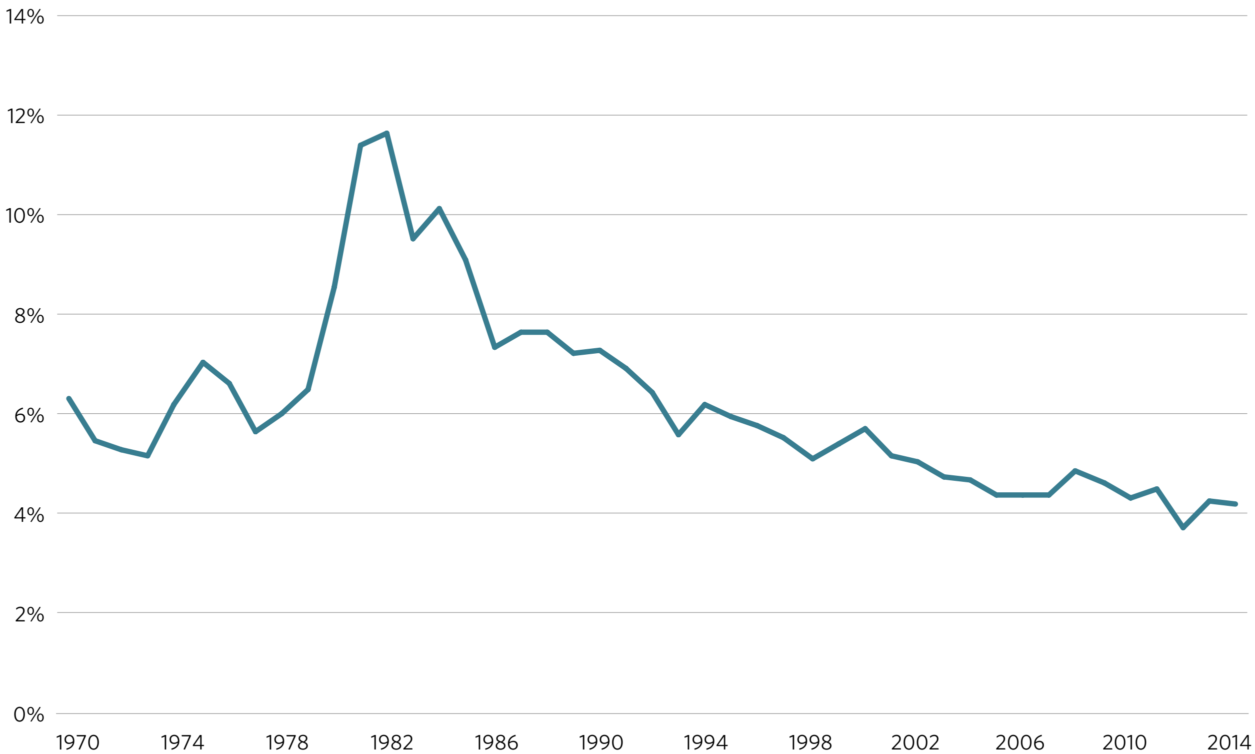
Notes: Gross tax-supported debt includes obligations of the 50 states repaid with both state general funds and dedicated revenue streams.

* Sources: State personal income data are from the U.S. Bureau of Economic Analysis' Regional Economic Accounts, State Personal Income series, accessed Jan. 2, 2017. Gross tax-supported debt data are provided under a license to The Pew Charitable Trusts from Moody's Investor Services.

Figure 2

Borrowing Has Stayed Steady or Declined Despite Historically Low Interest Rates

Bond Buyer 20 Index (a composite of general obligation bonds) interest rates



Note: Thirty-year Treasury bonds were not offered between February 2002 and February 2006.

Source: Bond Buyer, Bond Buyer Indexes, accessed Jan. 11, 2017

Despite constraints on borrowing, many states have trouble tracking all publicly supported debt. Several state officials told Pew that only a handful of policymakers may know the full extent of the state's debt. Challenges collecting and aggregating data, along with multiple layers of government, can pose obstacles. So can the temporary aspect of elected office, especially given the complicated nature of debt financing. This situation creates a need for simple tools, such as debt affordability studies, which can enable policymakers to keep debt at levels that do not constrict funding to other crucial areas.

The Louisiana Bond Commission, made up of 14 members, all but one of whom is elected, illustrates the obstacles inherent in debt policy. "It has got to be tough" for the commission members, said Patrick Goldsmith, director of the Louisiana House Fiscal Division. He noted that debt issuance and management is a highly technical process and that serving on the commission is but one of its members' duties.[9]

This challenge appears across the country. "Debt is just one of the many, many topics that [legislators] need to become familiar with," said Laura Lockwood-McCall, director of the debt management division in the Oregon treasurer's office.[10]

Why debt affordability matters

The American Society of Civil Engineers estimates that roads, bridges, tunnels, and other capital assets in the United States need $4.6 trillion worth of work by 2025, of which just $2.5 trillion is currently funded.[11] Federal agencies agree on the need for large-scale infrastructure spending.[12] But with sluggish revenue growth and pressure to increase pension contributions, states have been reluctant to invest in new projects. As the need to invest in maintaining and improving public infrastructure mounts, the financial burden will likely fall to state and local governments; historically, they contribute about 75 percent of infrastructure-related spending.[13] In addition to the cost of the construction or repair work itself, such projects often require outlays to cover operating costs and debt service payments. While being cautious about borrowing can help states balance their budgets, new infrastructure can also spur economic growth. And, conversely, constrained investment can slow expansion.[14]

With these competing pressures to save or spend, grasping the nuances of debt management is becoming ever more important. Even when states analyze debt affordability as part of the capital planning process, officials sometimes find themselves lacking adequate tools for making decisions on whether to issue debt.

A debt affordability study can provide data-driven insights. Together with policies that guide a state's use of debt, it provides "an essential and forward-looking analysis," as New Hampshire treasurer William Dwyer puts it, "that helps policymakers measure, monitor, and analyze debt."[15] The studies' future projections set them apart from documents such as CAFRs, which look only at a state's current debt levels. Debt affordability studies help states determine, among other things, if there is available capacity for borrowing, understand debt levels relative to peer states, and how much a debt issuance may constrain other spending, and tie debt to capital planning and budgeting processes. The more a state can connect debt projections to capital planning forecasts and needs assessment, the more valuable a debt affordability study becomes.

State officials told Pew that doing a debt affordability study gives them information that is helpful in striking the right balance between issuing bonds and paying for projects with cash, known as pay-go (pay-as-you-go) financing. Affordability analysis also helps states understand the total amount of funding available for capital spending, which aids policymakers in determining which projects to fund first. Myron Frans, commissioner of Minnesota's management and budget agency, said its study "forces policymakers to really examine and gauge how much debt we have relative to our financial situation."[16]

These financial situations, of course, differ from state to state. Affordability is subjective. Each state has its own definition of how much debt it can take on, and its own unique infrastructure needs. While nearly every state has general obligation debt limits in its constitution, many states also have supplementary debt caps that are more nuanced, typically based on a metric such as debt service as a share of revenues, because they may include other debt types. Debt affordability studies can help states navigate these caps, in addition to any statutory debt limits. (See Appendix A for more information on state debt limits.)

These studies are also helping states determine how much they can spend on infrastructure and other needs. They can address funding gaps, and keep states within established guidelines, through analysis of both resources and needs. This approach has worked for states both open to and reserved about debt by giving policymakers evidence that there is or is not available borrowing capacity. By taking into account states' unique definitions of affordability and varying levels of need, debt affordability studies become customized tools that all states can use.

Like other states, Massachusetts has struggled with a decline in federal transportation dollars. This has placed "a tremendous burden" on it, said state Representative Antonio Cabral (D), who heads the House Committee on Bonding, Capital Expenditures, and State Assets. The shrinking federal outlay has increased pressure on the state to borrow money to maintain its bridges and other infrastructure, and to invest in new projects to expand its economy. Massachusetts has one of the nation's highest debt levels, driven by borrowing for schools and other projects. To maintain a balance between its infrastructure needs and responsible bonding, the state created a debt affordability committee in 2012. It conducts an annual study that determines the amount Massachusetts can borrow while staying within a limit of 8 percent of operating budget revenue. The committee's analysis is a key factor in setting the state's borrowing policies. "It keeps people focused," said Rep. Cabral. "Both the administration and the legislature are focused on … the issuance of bonds to stay within the capital plan. The study creates a perimeter that everyone works within. Everyone takes it seriously."[17]

Florida instituted an annual debt affordability study in 1999 as a way to have a comprehensive view of its borrowing. Ben Watkins, the state's bond finance director, recalled then-Governor Jeb Bush (R) pulling him aside after a meeting at which the governor's Cabinet hastily reviewed several debt issuances. "I'm on my way out the door and Governor Bush says, 'Whoa, whoa, whoa, wait a minute. Come back up here. We just took 45 seconds and approved $750 million in debt. Where are we going with all of this?'"[18] Bush's frustration over not knowing the extent of the state's debt helped spur lawmakers to develop the study, which Pew deems a leader in the field.

Debt affordability analysis also shows Wall Street that the state cares about creating financial blueprints. "We do get brownie points with the credit rating agencies," said Lockwood-McCall, the Oregon director of the debt management. "We get high marks from them for just having good planning." (See box below for a more detailed discussion of credit rating agencies and debt affordability.)[19]

How Credit Rating Agencies View Debt Affordability Studies

Preparing a debt affordability study is one of many financial practices that could benefit a state's credit rating if it is part of an overall practice of successfully managing debt, according to credit rating analysts.

In interviews with Pew, top analysts from Moody's, Standard & Poor's, and Fitch said that having a debt affordability study would not by itself result in a credit upgrade or positive outlook. But producing a comprehensive, forward-looking debt study that helps policymakers manage debt over several years could contribute to a boost in the state's rating.

"If a state does a debt affordability analysis that it makes publicly available, we view that as a positive," said Emily Raimes, a Moody's vice president in the public finance group. "Looking out into the future at their ability to issue debt and afford debt is a positive practice."[20]

Debt management policies are one, though not necessarily the most important, of the financial management or governance practices that agencies evaluate before analysts assign credit ratings.

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Other, more significant, practices include revenue and spending assumptions about surpluses and deficits, multiyear operating and capital budget plans, investment policies, and levels of reserves that include policies guiding when to spend rainy day funds and how to replenish them.

When looking at these practices to establish a rating, agency analysts consider a state's ability to repay its debts, among other things. John Sugden, an S&P analyst, told Pew that debt management "plays an important role in our assessment" because it examines debt service as a percentage of the budget, personal income, and GDP, as well as debt per capita. "We're looking to see how the debt is managed," he said. "And, in most cases, if you have a debt affordability model or a debt management policy, those will guide your decisions and help you manage your debt levels and keep them at affordable levels."[21]

Each time a state issues bonds, agency analysts assign a letter grade, ranging from AAA, the highest, to C. Ratings vary at any given time, but about a dozen states hold the coveted AAA mark. Illinois is the lowest, at Baa1.[22] To warn investors of potential upgrades or downgrades, the agencies occasionally release "outlooks" and "watches." Highly rated states historically have been rewarded with lower borrowing costs.

"We can use the savings elsewhere in the budget, so there is a direct benefit" to being a AAA state, said Diana Pope, director of the financing and investment division of the Georgia State Financing and Investment Commission, which prepares a debt affordability study.[23] In June 2016, Georgia earned a triple-A rating from the three agencies for a $1.37 billion bond sale, resulting in relatively low interest rates, between 0.92 and 2.63 percent, for the series. The agencies cited the state's conservative debt management practices among the reasons for the top rating on the bonds, which will finance dozens of capital projects.[24]

A month after Georgia's sale, another triple-A-rated state, North Carolina, sold the first $200 million of a planned $2 billion issue to pay for college buildings, parks, water and sewer improvements, and the National Guard. Fitch singled out the state's "low liabilities and strong debt management practices, including an affordability planning process."[25]

By contrast, Connecticut, whose study is not as comprehensive as Georgia's and North Carolina's, was downgraded by two agencies simultaneously in 2016 because of its indebtedness and declining revenue.[26] As a result, state taxpayers there are penalized due to the correspondingly higher interest rates on borrowing.

Although agency analysts said they do not require a debt affordability study to give a state a high rating, "more is better when it comes to information," said Karen Krop, senior director of public finance at Fitch. "It's great for us as analysts to have a centralized place to find information, a good description of outstanding debt, pledged revenue, alternate funding techniques, projections, and benchmarks."[27]

What goes into a debt affordability study

Pew's examination of state agencies managing debt found that debt affordability studies are the only state publications that consistently analyze whether states will be able to borrow money without difficulty. To determine how many states produce debt studies, Pew reviewed existing research on debt affordability and interviewed officials in every state and other government finance experts. This led Pew to conclude that the studies should include data and analysis that help governors and legislatures evaluate the impact of current and future debt issuance on state finances and inform their decisions about proposed bond sales and in setting capital spending priorities.

Twenty-seven states met the standards: Alaska, California, Connecticut, Florida, Georgia, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Nevada, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Vermont, Virginia, Washington, and West Virginia.[28]

Figure 3

Elements of a Debt Affordability Study

States can evaluate debt levels by routinely analyzing key data

Presents metrics
Uses metrics, such as debt service as a share of revenues, to contextualize debt relative to the state's ability to pay

Projects obligations
Forecasts debt obligations and/or capacity to repay beyond the current fiscal year

Analyzes affordable debt
Includes written analysis to explain the data—putting them into context, and detailing their implications

Produced regularly
Published on a recurring schedule

At a minimum, debt affordability studies include four basic elements: metrics, projections of obligations, analysis, and regular publication (see Figure 3). Metrics discussions typically include tables showing how much the state is paying to service its debt; how its obligations compare against state revenue or expenses; and measures such as debt as a percentage of state personal income or debt per capita. These data help show the debt in relation to the state's ability to repay it. Projections should clearly show how much a state will owe in future years based on its current obligations and the likelihood of future issuances, and whether it will have the capacity to meet long-term obligations.

A debt affordability study should also include analysis of these numbers and projections and give guidance on related policy decisions—for instance, whether it is advisable to take on more debt and, if so, how much it can safely or legally take on. For example, in words and tables, Maryland's debt affordability study lists the state's outstanding tax-supported debt and debt service requirements and advises policymakers on whether they can sell additional general obligation and academic facilities bonds in the coming year without exceeding statutory limits. Such an analysis can also show lawmakers how debt can influence spending on other priorities. It becomes yet more useful if it forecasts how much debt the state can readily take on against how much is necessary to address capital needs.

It is essential that these studies be released on a regular basis because they must contain current data in order to inform the policy process. Updating these studies is also important because they contain projections based on assumptions, such as revenue forecasts, which change from year to year. Updated studies better reflect any changes in a state's fiscal condition. Annual publication is most common, but Nevada, North Dakota, and Kentucky, with biennial budgets, publish every two years. New York and Minnesota's studies come out biannually.

In addition to these elements, the following characteristics strengthen a debt study and add analytical depth:

- A formal requirement to conduct it, either in state law or through agency rules or other means, which includes a list of its contents and a clearly articulated purpose.
- A comparison of debt levels in peer states through a benchmarking analysis.
- A reflection of a state's debt issuance structure and broadening the scope of debt to include all borrowings for which the state may be liable, such as independent authorities, public colleges and universities, and school districts.
- The use of multiple metrics, benchmarks, and projections.

Debt affordability studies may seem similar to CAFRs, the financial reports issued by states or other government entities, or bond disclosure documents, otherwise known as "official statements." The difference lies in both the depth of analysis and the forward-looking nature of debt affordability studies. Whereas the statistical sections of CAFRs report a few metrics, such as debt as a percentage of personal income, debt affordability studies include those metrics with a discussion of the figure's significance. And while CAFRs present current and historical debt levels, a debt affordability study's projections help policymakers understand their state's debt in future years. While disclosure documents may require a debt schedule of a state's outstanding bonds, a debt affordability study calculates how debt service on those bonds affects the state's debt capacity. These studies also help explain debt levels in context so that policymakers can make wise decisions.

How States Borrow

"State debt" can be a difficult concept to define. It includes not only state government bonds, but those issued by agencies, authorities, and special districts. The bonds themselves can vary by type.

Issuers

States, the **primary government**, can retain most of the power to borrow or share this responsibility with other entities. For example, a state may choose to rely heavily on **component unit debt**, or bonds issued by an organization, such as an economic development agency, that may be legally separate from a state's primary government. States may also expect local governments and other substate entities such as school districts to borrow for capital projects within their jurisdictions.

Lenders to such entities sometimes expect the state to step in if the issuer is unable to repay their debt. If the state offers a **guarantee** on this type of borrowing, it is legally required to pay it off if the original issuer cannot pay. Sometimes, however, there is only a **moral obligation**. In such cases, the state is not legally required to pay off the debt but may do so to protect the fiscal health of the issuing entity and its own credit rating. Sometimes this obligation is written into a bond covenant. Often, the support is more tacit. Both legal guarantees and moral obligations help issuers secure lower interest rates than they otherwise might get. In cases where a state intervenes to meet its moral obligations, lawmakers generally approve a special appropriation to repay the liability.

Financial instruments

Once a state has decided to borrow, there are a variety of financial instruments it can use to do so. Many states concentrate on **net tax-supported debt (NTSD)**, or bonds that the state pledges to repay from tax revenue in the general fund. Although NTSD is a widely used term, there is not universal agreement on what liabilities it covers. Pew took a broad view of debt, examining several liabilities not typically included in NTSD.

General obligation bonds are generally the highest-rated and lowest-cost debt because a state pledges its full faith and credit to pay the interest and principal. These bonds are typically used to finance projects such as building or fixing bridges, roads, public buildings, and utility lines. Twenty-eight states require voter approval for general obligation bonds; Arizona, Indiana and West Virginia prohibit their use. **Debt service** is the yearly principal and interest amounts needed to repay debt. Other net tax-supported debt includes **appropriation bonds**, backed by money set aside by the legislature for a specific purpose. Such borrowing technically entails a moral obligation, though payment is made regularly from state funds.

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Revenue bonds differ from general obligation bonds in that the debt service does not come out of general fund tax revenue or require voter approval. They are paid back with funds from a specific revenue stream, often money generated by the project they are financing, such as toll roads or sports stadium ticket sales. Primary governments and certain state agencies and independent authorities may be allowed to sell such bonds, depending on the state. They are not usually included in NTSD, because they are not tax-supported, but do fall under broader categorizations of debt.

Bond anticipation notes allow a government to begin work immediately on a capital project while waiting for the proceeds of a future bond issue. **Revenue and tax anticipation notes** also pay for current projects before revenue is received from a project financed either by the note or from future tax receipts. **Grant Anticipation Revenue Vehicle** (GARVEE) bonds, used to finance highway projects, are another revenue anticipation vehicle. States pledge to repay GARVEE bonds with money they will receive from the federal Highway Trust Fund.

Some state lawmakers favor **certificates of participation** because voters do not have to approve them and they can be issued quickly. Investors who purchase these certificates receive a share of the revenue, usually from lease payments from a specific project.[29]

Some states obtain assets such as buildings or land by paying cash or financing the purchase in installments over time. **Capital lease obligations** reflect the principal and interest paid over the course of the lease.[30]

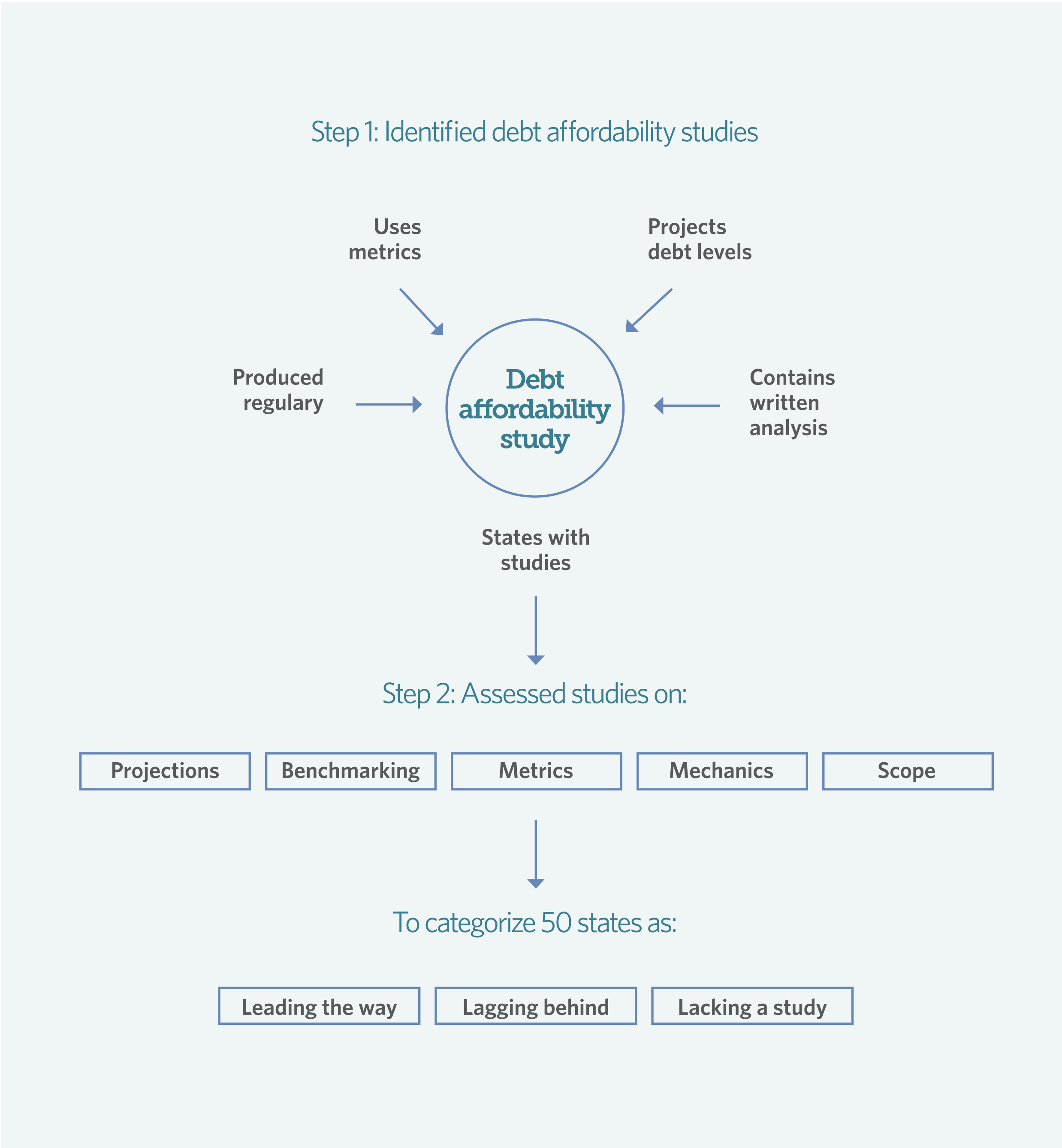
Findings from Pew's 50-state research

All states take some steps to document their debt, even if they do not produce a debt affordability study. State CAFRs, for example, are required to have statistical sections covering state debt. Some states have debt management policies calling for certain state employees or departments to monitor debt or for keeping a benchmark debt ratio below a specified figure. Others issue ad hoc documents containing some combination of debt metrics and projections.

To assess how states report on their debt, Pew first determined which states produce debt affordability studies. (See Appendix B for a listing of state documents considered.) For those that do, it then assessed the studies based on five criteria: projections, benchmarking, metrics, connection to the policymaking process (or mechanics), and scope. (Figure 4 details Pew's evaluation process.)

Figure 4

Assessing States' Use of Debt Affordability Studies



Pew assessed states as leading the way if their debt affordability studies led in four or more of these categories. Table 1 explains these categories and provides examples of stellar state practices for each. (See the methodology section for more detail and Appendix C for state-by-state assessments.)

Table 1

What Goes Into a Strong Debt Affordability Study and Which States Are Leading the Way?

Effective studies	A leading example
Include projections Project debt levels at least three years into the future, considering various issuance and revenue scenarios and looking at multiple measures of future debt levels such as debt to capacity and debt service.	Oregon estimates additional debt capacity under three different interest rates and both a 10 percent increase and decrease in general fund revenue. It also projects nine years into the future levels of debt to capacity, debt issuance, and debt service.[*]
Benchmark against peer states Make comparisons to peer states, considering the appropriateness of the comparison group and using multiple metrics to get a full picture of where their state stands.	New Mexico compares its debt per capita and debt as a percentage of state personal income to similarly ranked states, tracking the latter to the nine years prior to the study's publication. It explains the significance of these comparisons, writing that its ratio of debt to personal income is "toward the higher end of the range among its peers."[†]
Use metrics Use multiple metrics, such as debt service as a share of revenues, to contextualize debt relative to the state's ability to pay. States can also contextualize these metrics with written analysis.	Vermont's study examines debt per capita, debt as a percentage of personal income, debt service as a share of revenues, and debt as a percentage of gross domestic product. It notes that the state's debt capacity has been constrained in recent years by the debt per capita ratio, which has been nearing limitations set by policy.[‡]
Connect to the policymaking process Require the production of a debt affordability study on a regular basis and ensure that the report contains a clear statement of remaining debt capacity.	Alaska's study states that the state can issue up to $1.5 billion in debt over the next decade and still meet its 5 percent debt service ratio. State statute directs the Department of Revenue to prepare an annual report that includes an inventory of state bonded debt, an estimate of how much of this debt will be acquired within the next three years, and an evaluation of debt affordability.[§]
Are broad in scope Consider the majority of debt outstanding from both the primary government and major component units, and discuss the impact of pensions and other long-term obligations on debt affordability.	Kentucky's study captures 68 percent of the primary government and major component unit debt reported in its state CAFR, touching on revenue and authority debt. It also includes a section on unfunded pension and retiree health care liabilities, noting the potential negative impact that funding these liabilities might have on the state's credit rating.[‖]

* Oregon State Debt Policy Advisory Commission, "2015 Commission Report" (January 2015), https://www.oregon.gov/treasury/Divisions/DebtManagement/Documents/SDPAC/2015%20SDPAC%20Report.pdf.

† New Mexico Department of Finance and Administration, Board of Finance, "Debt Affordability Study" (December 2014), http://www.nmdfa.state.nm.us/uploads/FileLinks/3f1739ce82c44d4eaf5d5279513389b3/2014_Debt_Affordability_Study_Final_1.pdf.

‡ Vermont Capital Debt Affordability Advisory Committee, "Recommended Annual Net Tax-Supported Debt Authorization" (December 2014), http://legislature.vermont.gov/assets/Legislative-Reports/2014-Final-CDAAC-Report-with-Transmittal-Memo.pdf.

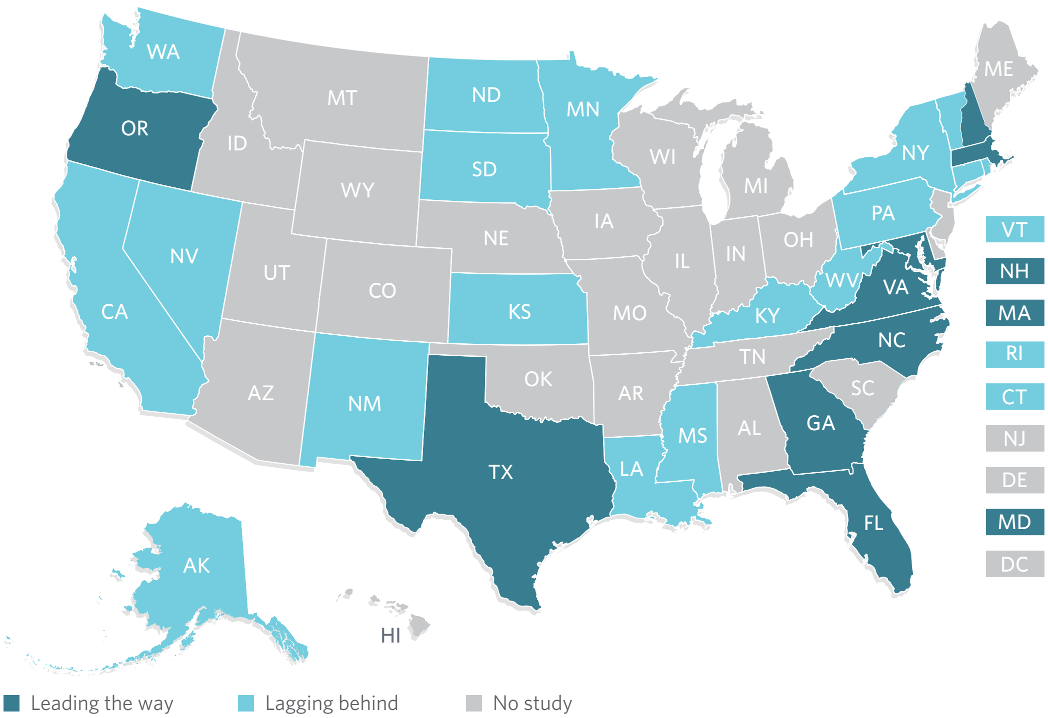
§ Alaska State Bond Committee, "January 2015 State of Alaska State Bond Committee Debt Management Policies and State Debt Capacity" (January 2015), http://treasury.dor.alaska.gov/Portals/0/docs/AK%202015%20Debt%20Management%20Policies%20%20Debt%20Capacity%20January%202015(Final).pdf?ver=2016-01-08-141150-080.

|| Capital Planning Advisory Board, Kentucky General Assembly, "2014-2020 Statewide Capital Improvements Plan" (November 2013), http://www.lrc.ky.gov/Statcomm/CPAB/014-20syp/2014-2020completeplan.pdf.

After applying these criteria, Florida, Georgia, Maryland, Massachusetts, New Hampshire, North Carolina, Oregon, Texas, and Virginia emerged as leaders in producing robust debt affordability studies. Eighteen states fell in the middle and 23 states did not produce one but could benefit from adopting the practice. Figure 5 provides a visual guide to Pew's categorization.

Figure 5

Nearly Half the States Did Not Produce a Debt Affordability Study During Pew's Period of Analysis



Note: Hawaii produced its first state debt affordability study in December 2016, after the data collection for this report had concluded. The state's study is therefore not included in this analysis. For more information, see the text box on Page 2.

Source: Pew analysis of state documents and interviews with state officials

Leading the way

The nine states with the strongest debt affordability studies—**Florida, Georgia, Maryland, Massachusetts, New Hampshire, North Carolina, Oregon, Texas, and Virginia**—are diverse in geography, political leanings, degree of centralization of debt issuance, and amount of debt. Despite these differences, each state has found a debt affordability study to be a valuable financial safeguard.

The leading states differ greatly in how centralized they are in issuing debt. Virginia is the most decentralized, with 71 percent of its debt held by major component units (entities that are legally independent but perform state functions such as building infrastructure), while Oregon and Texas have no debt carried by these entities. The remaining states range from 7 percent of debt held by component units to 35 percent.

Leading states differ not only in where their debt is issued, but also in how much total debt they hold: from $2.1 billion in New Hampshire to $43.4 billion in Texas. There is also a range in debt expressed on a per-person basis: North Carolina's debt per capita is the lowest, $1,333, while Massachusetts' is the highest, $5,981.

The variety among the nine states shows that the desire to comprehensively analyze debt is not limited to states meeting certain conditions. Rather, a debt affordability study is a tool that a group of very different states have deemed worthwhile.

In some areas, the nine states include data and analysis beyond the assessment criteria set by Pew. For example:

- Georgia uses five distinct metrics (debt per capita, debt to personal income, debt service as a share of total revenues, debt as a percentage of the valuation of assessed property, and debt as a percentage of state gross domestic product). This practice provides legislators with a multifaceted picture of claims on state funds.[31]
- North Carolina's report assesses debt based on its purpose. It looks at debt supported by general funds and borrowing backed by transportation revenue separately, and then combines the two. This allows policymakers to both focus in on liabilities of particular interest and take a broader view of the state's long-term obligations.[32]
- Virginia complements its capacity analysis with a discussion of the types of projects its borrowing is funding.[33]

Though they vary in content, reflecting different debt issuance practices, the leading states have one important attribute in common: They look at debt in a variety of ways to give policymakers a more complete picture of the state's borrowing capacity.

However, even among the nine leading states, there is room for improvement. For example, several could broaden the scope of their studies. The studies in New Hampshire, Texas, and Virginia include less than half of their state's long-term debt. Those in New Hampshire and Texas also lack a discussion of other long-term obligations, such as pensions. Taking a broader view of liabilities would give lawmakers a fuller understanding of the impact of borrowing.

Further, while debt affordability studies can be important financial tools for states, the information in them needs to be brought into the policymaking process to have an impact. Several state officials expressed frustration in interviews with Pew, saying policymakers often overlook the studies when they make borrowing decisions. While a robust debt affordability study is a critical first step, the analysis they supply must be translated into effective decision-making, comprehensive debt management policies, and clear reporting and controls on bond sales.

This process has taken hold in Maryland, where the study works its way from the Capital Debt Affordability Committee to the state's General Assembly and governor in a well-established procedure. The committee has garnered a reputation as an effective body and its recommendations are generally adhered to by the legislature and executive branch.

States with studies that are lagging behind

Eighteen states met Pew's criteria for producing a debt affordability study, but fell short of the criteria outlined in the previous section. These states' studies led in up to three categories but could be strengthened by adding a few elements. Table 2 captures some of these missing parts.

The states in this group are: **Alaska, California, Connecticut, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Nevada, New Mexico, New York, North Dakota, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington,** and **West Virginia**.

Table 2

Study Elements Often Missing in Lagging States

Element of study	States missing this element
Project multiple scenarios: Studies should consider multiple scenarios to show how the debt forecast would change if underlying variables did. For example, how much capacity will be available if revenue is above or below forecasts? How much debt will the state have if interest rates experience an unforeseen increase or decrease?	Alaska, California, Connecticut, Kansas, Minnesota, Mississippi, Nevada, New York, North Dakota, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, West Virginia
Discuss appropriate benchmarking peers: Officials should account for state-specific factors when selecting a benchmarking group, and include demographics and capital needs. A stellar debt affordability study discusses which states are most appropriate for comparison.	Alaska, California, Connecticut, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Nevada, New Mexico, New York, North Dakota, Pennsylvania, Rhode Island, Vermont, West Virginia
Be broad in scope: Debt affordability studies should include the majority of primary government and major component unit debt in their analysis.	Alaska, Kansas, Nevada, New Mexico, New York, North Dakota, Pennsylvania, Rhode Island, South Dakota, Vermont, West Virginia
Show a clear statement of remaining capacity: A succinct summary of how much debt a state can afford to issue can draw policymakers' attention and quickly provide them relevant information.	California, Connecticut, Kansas, Kentucky, Louisiana, Mississippi, New York, Pennsylvania, Rhode Island, Washington, West Virginia

Washington's study is missing a few key elements. It makes comparisons to peers based on multiple metrics, comments on its selected benchmarking group, and has some analysis of the benchmarking results. It reports on seven metrics overall, including debt per capita, debt as a percentage of personal income, and debt service to revenues, adding commentary to these analyses as well. It captures over half of CAFR debt and discusses other long-term obligations. Washington could go further by modeling the results of different interest rates or above- or below-expected revenue projections and creating a legal mandate to produce the study.

States lacking a debt affordability study

Although all states employ some measures to track their debt, nearly half do not take the advanced step of producing a debt affordability study. This group is comprised of 23 states: Alabama, Arizona, Arkansas, Colorado, Delaware, Hawaii, Idaho, Illinois, Indiana, Iowa, Maine, Michigan, Missouri, Montana, Nebraska, New Jersey, Ohio, Oklahoma, South Carolina, Tennessee, Utah, Wisconsin, and Wyoming. A number of these states produce documents that include some of the key criteria or analyze debt affordability on an ad hoc basis, but each falls short.[34]

These states vary widely on many characteristics, including economics, demographics, political culture, geography, debt portfolio, and issuance tendencies. Some borrow heavily, while others borrow little.

"States benefit from having a 10-year, forward-looking, rigorous calculation and methodology that provides precise information regarding the estimated debt capacity of the state and measuring the financial impact of issuing additional debt," said Brad Young, press secretary with North Carolina's Office of the State Treasurer.[35] North Carolina is among the states with the 10 lowest measures of debt per capita.

A debt affordability study is not an invitation for expanded borrowing, though it can be used to identify available capacity as states consider their capital investment needs. In 2014, South Dakota had the fifth-lowest amount of state debt in the nation, according to annual financial reports that year. Despite the low debt load, it still produces a debt affordability study. "It's one of the things we do to improve our overall financial practices and how we do things in terms of issuing debt and handling our state budget," said state economist Jim Terwilliger.[36]

Other low-debt states have chosen not to formally analyze their borrowing levels and practices in a debt affordability study but rather to track and analyze debt in other financial documents, which may be sufficient for their immediate needs. However, even these states may benefit from a more robust analysis over the long term. In recent years, traditionally low-debt states such as Utah, Colorado, and Idaho have seen rapid population growth, which has added pressure on infrastructure and sparked debate over the role of debt financing. A debt affordability analysis gives decision-makers critical data to inform these discussions and can serve as the basis for sound policy on state borrowing.

High-debt states, however, would particularly benefit from producing a study, according to officials Pew interviewed. "I think it's even more important when you're one of those higher-debt-ratio states to have a game plan,"[37] said Lockwood-McCall, Oregon's director of debt management.[38]

New Jersey, Illinois, and Michigan are among the highest debt states based on Pew's calculation of primary government and major component unit debt, but they fall short of a complete debt analysis. New Jersey and Illinois produce debt reports with aspects of a debt affordability study. But because those states borrow heavily, policymakers would benefit if they had a fuller accounting and analysis of their states' liabilities. "We're looking at whether states have a debt affordability model, how comprehensive it is, and whether it serves as an effective tool in helping them manage their debt," said John Sugden, senior director of Standard & Poor's U.S. public finance department.

Although they do not produce debt affordability studies, some states take notable steps to catalog their debt. In Tennessee, raising debt service above 6 percent of revenue would automatically trigger the publication of a debt affordability study. (It has not reached that threshold since the rule's implementation.) Wisconsin produces documents in conjunction with new borrowing that would qualify as debt affordability studies if they were regularly produced. They are done, however, only if long-term borrowing has been proposed. New Jersey's debt report is produced regularly and includes metrics, benchmarking, and projections, but it lacks analysis. Other states rely on a history of conservative debt issuance and management.

Recommendations

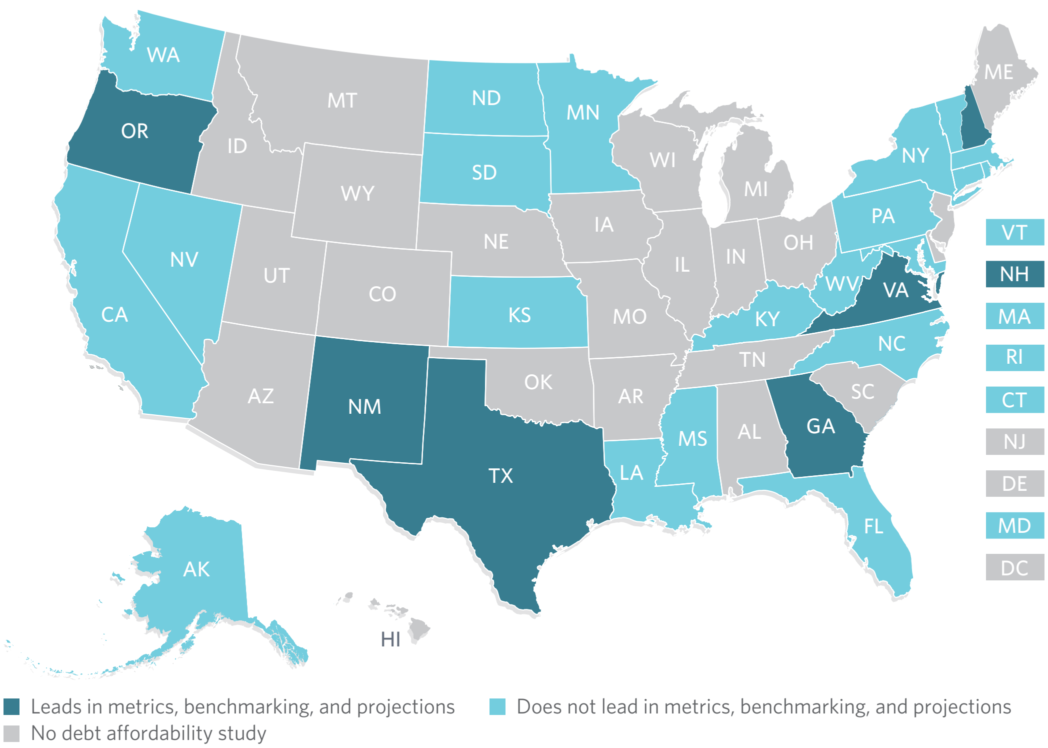
States that conduct debt affordability studies have found them to be useful tools for making budget decisions, particularly on infrastructure and other capital spending. By providing analysis on debt capacity, they can offer policymakers a profile of their state's debt to inform their choices about balancing revenue, spending, and borrowing. They also improve transparency with taxpayers and interest groups that want to see how the state is managing its finances. Given their clear benefits, Pew recommends that state policymakers include the following elements when designing a debt affordability study.

Metrics, benchmarking, and projections

Evaluate a state's debt affordability using metrics, benchmarks, and multiyear projections under several scenarios.

Nearly all of the 27 states with debt affordability studies base their analysis on metrics, benchmarks, and projections, yet only six lead in all three areas, as shown in Figure 6.

Figure 6
Few States Lead in Metrics, Benchmarking, and Projections



Note: Hawaii produced its first state debt affordability study in December 2016, after the data collection for this report had concluded. The state's study is therefore not included in this analysis. For more information, see the text box on Page 2.

Metrics help measure what the state owes and what it has available to pay it back. No single metric offers a complete measure of capacity relative to obligations. Therefore, the more used in a study, the more dynamic the analysis. Studies in 26 of the 27 states contain multiple metrics. Table 3 contains more information on what metrics states use in their studies. Common statistics include:

- **Debt service as a share of revenues.** This ratio refers to the borrowing costs as a percentage of total tax revenue the state collects and is the most commonly used metric. Twenty-two of the 24 states that produce studies include this measure to assess affordability.
- **Total debt per capita.** This statistic presents outstanding debt per resident, allowing for comparisons between states while accounting for population differences.
- **Total debt as a share of state personal income.** This ratio includes a broad measure of a state's economy or capacity to repay debt and can facilitate comparisons across states.

Certain metrics evaluate debt relative to actual capacity while others look at debt relative to potential capacity. Debt service as a share of revenues is an example of the former category as it uses expected revenues. The latter includes metrics such as debt as a share of state personal income, a statistic that quantifies a possible tax revenue base.

Contextualizing these figures with analysis gives a fuller understanding of how the metrics should be interpreted. Looking back at these metrics over previous years can also provide insight, because such trend analysis allows policymakers to understand whether their debt capacity is increasing or shrinking.[39]

One metric is generally used to demarcate an amount above which debt cannot rise; this is a state's affordability metric. States vary in whether these gauges of affordability are legally binding or complement existing debt limits. Debt service as a share of revenue is the most common metric used, with 23 of the 27 states producing debt affordability studies using this measure. Louisiana's constitution caps debt service as a share of revenue at 6 percent.[40] Maryland sets a threshold for outstanding debt at no more than 4 percent of personal income and debt service at 8 percent of revenue.[41]

Policymakers must decide what constitutes affordable debt, as there are no accepted definitions or best practices to serve as guidelines. Affordability is relative to each state's political, economic, and fiscal conditions, and no one-size-fits-all definition applies. Likewise, states should decide which figure to use as their affordability metric. While many states favor debt service as a share of revenue, others choose different measures. Experts assert that no single metric is a panacea for the question of how to define affordability.[42]

Table 3

States Often Use Multiple Metrics to Determine the Affordability of Their Debt

Commonly used debt metrics by state

State	Debt service/ revenue	Total debt/ state personal income	Debt per capita	Debt/state GDP	Other (listed)
Alaska	✔	✔			
California	✔	✔	✔	✔	
Connecticut	✔	✔	✔	✔	Debt service/budget
Florida	✔	✔	✔	✔	
Georgia	✔	✔	✔	✔	Debt/full valuation of all taxable property
Kansas	✔	✔	✔		
Kentucky	✔	✔	✔	✔	
Louisiana	✔		✔		
Maryland	✔	✔	✔	✔	
Massachusetts	✔	✔	✔	✔	
Minnesota		✔			Rate of retirement
Mississippi	✔	✔	✔		Debt/debt limit
Nevada					Debt/assessed valuation
New Hampshire	✔	✔	✔		
New Mexico		✔	✔		Transportation debt service/ pledged revenues
New York	✔	✔	✔		
North Carolina	✔	✔	✔	✔	Transportation fund debt service/total revenue, general fund debt service/ total revenue

Continued on next page

State	Debt service/ revenue	Total debt/ state personal income	Debt per capita	Debt/state GDP	Other (listed)
North Dakota		✔	✔		
Oregon	✔	✔	✔		Debt service/lottery revenue
Pennsylvania	✔	✔	✔		Debt/debt limit
Rhode Island	✔	✔			
South Dakota	✔	✔	✔	✔	
Texas	✔	✔	✔		Rate of retirement; total debt/budgeted general revenue
Vermont	✔	✔	✔	✔	Debt/operating revenue; rate of retirement; debt/ spending
Virginia	✔	✔	✔		
Washington	✔	✔	✔	✔	Debt service/gross fuel tax revenue; debt burden/ general spending; debt/ debt limit
West Virginia	✔	✔	✔		Debt service/assessed valuation

Note: Hawaii produced its first state debt affordability study in December 2016, after the data collection for this report had concluded. The state's study is therefore not included in this analysis. For more information, see the text box on Page 2.

Source: Pew analysis of state debt affordability studies

Benchmarking allows state officials to compare their debt levels to those in other states or to national averages and can help policymakers assess whether existing debt levels are reasonable. Table 4 shows that the most popular benchmarking comparison was to Moody's Medians, with officials also measuring their states against those with similar credit ratings and to top-rated AAA states. Kansas is the only state to compare itself solely to its neighboring states.

Table 4

States Rely on Ratings Agencies When Making Comparisons to Peers

Peer groups used by states to conduct benchmarking analyses

Most populous states	Comparably rated states	Moody's Medians	AAA-rated states	Neighboring states	Undefined peer group	U.S. mean	Census
California	Alaska	Georgia	Georgia	Kansas	Massachusetts	North Dakota	Connecticut
Florida	Georgia	Kansas	North Carolina		New York		
Texas	New Mexico	Kentucky	Oregon				
	North Carolina	Maryland	South Dakota				
	Washington	Mississippi	Vermont				
	West Virginia	New Hampshire	Virginia				
		Oregon					
		Rhode Island					
		Texas					
		Vermont					
		Virginia					
		Washington					
		West Virginia					

Source: Pew analysis of state debt affordability studies

When selecting a group of peer states for comparison, it is important for policymakers to choose those with similar characteristics to sharpen the contrasts. States should select an appropriate group of states for benchmarking comparisons, as there may be important distinctions in a number of areas. These include, but are not limited to:

- Infrastructure needs and priorities.
- Economic and demographic data.
- Historical debt issuance trends.
- Revenue sources available for debt service.
- Governance and debt issuance structures.

Accounting for such state-specific factors can lead to a well-targeted group of states. Washington, for example, includes a mix of 15 peer states with variations in demographics and credit ratings. North Carolina compares itself only to other AAA-rated states, although it takes other Southern states into account only in its transportation-related analysis. Finally, as with metrics, a discussion of why it chose certain benchmarks clarifies why the comparisons are important and identifies potential limitations.

Projections that look at trends beyond one year are a key part of debt affordability studies because they allow states to develop repayment plans and understand trade-offs over time. They also increase transparency by providing clear data on the structure and timing of debt payments. Projections are often for three to five years ahead. Those beyond five years should be viewed with some caution, financial analysts said, because the longer the forecast, the less reliable it is. Pew has identified three projections commonly used in debt affordability studies: debt to capacity, future debt issuance, and future debt service.

- **Debt to capacity.** This type of projection captures the state's ability to repay its debt by comparing its debt liabilities to some measure of repayment, such as by using the debt service to revenues metric. Some states use projections to calculate future debt capacity, while others simply present the metrics themselves. North Carolina does both, projecting how much more it can safely borrow for the next five years, as well as debt ratios over the same time period.[43]
- **Future issuance.** Projecting future debt issuance alongside capital improvement needs can give policymakers a sense of any gaps in financing. Maryland, for example, contrasts current and anticipated capital improvement requests with anticipated bond funding in order to illustrate the amount of capital improvements that must either be financed through other means, such as pay-go, or be delayed.[44]
- **Debt service.** Illustrating both existing debt service on bonds already issued and future debt service can help policymakers determine how much money they will need for debt payment (and thus be unavailable for other purposes). The Texas study includes a chart showing total debt service on various bonding programs through 2053.[45]

Each of these forward-looking analyses help policymakers understand future claims on revenue. All but six of the states producing debt affordability studies (Alaska, Kansas, Kentucky, Minnesota, Mississippi, and North Dakota) examine debt in all three ways.

The strongest projections include multiple scenarios with differing assumptions about debt issuance, borrowing costs, and revenue. This allows states to see how much capacity may be available if these variables differ from forecasts. New Hampshire, for example, considers the effects on debt affordability of flat revenue, increased interest rates, and the state assuming all debt guarantees.[46] In an age where half of the states have revenue below what they had budgeted for, projecting for uncertainty becomes paramount.[47]

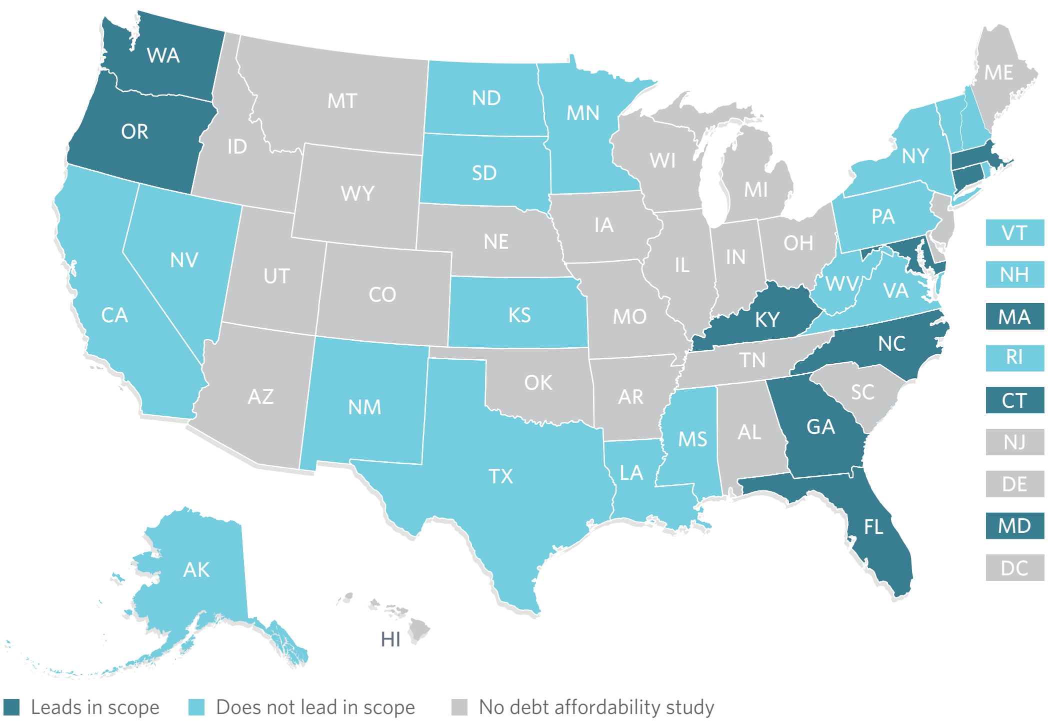
Scope

States must carefully consider the range of liabilities they include in their analysis. Of the states with debt affordability studies, most have room for improvement in this area. As shown in Figure 7, only nine states (Connecticut, Florida, Georgia, Kentucky, Maryland, Massachusetts, North Carolina, Oregon, and Washington) met the criteria to be considered leaders.

Figure 7

Most States Can Improve the Scope of Their Studies

States assessed as leaders in scope



Note: States were designated as leaders if they included more than half of primary and major component unit debt and included a discussion of other long-term obligations such as pensions.[48] Hawaii produced its first state debt affordability study in December 2016, after the data collection for this report had concluded. The state's study is therefore not included in this analysis.

When deciding what debt to include in affordability studies, states should define a purpose for the study and include all debt that is relevant. The purpose should reflect the state's debt issuance structure.

Pew's research found that the goals of debt affordability studies and the scope of debt they consider are tightly linked. This underlines why taking this first step is critical: Establishing a clear purpose for the analysis helps to determine what debt to include. For the most complete picture of a state's liabilities, Pew recommends that officials include a broad range of debt types.

If a state wants to evaluate its capacity to issue debt as a function of certain revenue streams, it is prudent to include all debt types reliant on that revenue. Nevada's study, for example, seeks to determine the state's capacity to issue debt backed by the state's property tax. As a result, it analyzes only general obligation debt, the one type dependent on the tax.

The study's purpose should reflect a state's debt structure. If it issues little general obligation debt but has significant component unit or substate debt, it should consider making those liabilities part of the debt capacity analysis, depending on how closely it backs such debts. In decentralized states where the primary government may issue little debt compared with entities such as independent authorities, including only primary government borrowing in the debt capacity analysis "diminishes the value of the study," said Sugden of S&P.[49]

Policymakers should take into account that the amount, structure, and composition of debt differ among states. Net tax-supported debt per capita ranged from $193 in North Dakota to $5,491 in Connecticut in 2014, for instance.[50] The legal structure differs too. Every state except Maryland and Vermont has laws or constitutional amendments that place limits on the sale of general obligation bonds.[51] These laws, however, have a limited impact on a state's total debt because other entities, such as local governments or independent public authorities, also can issue publicly supported debt.[52] Here, too, states vary widely. Arizona prohibits the sale of general obligation bonds by the state, leading to higher borrowing by other entities. For example, a Phoenix-based electric utility was the state's largest issuer in 2015.[53] In contrast, the Massachusetts state government is permitted to engage in general obligation borrowing, and therefore issues more debt than any other entity in the commonwealth.[54] States should recognize which entities issue debt and tailor their studies accordingly.

General obligation bonds, payable from the tax-supported general fund, are almost always included in a debt capacity analysis in states that sell them. But states vary in whether they believe a debt capacity analysis should include revenue bonds, special assessment bonds, state-backed debt of local governments, and component unit debt such as that of state agencies and authorities. Yet all of these are types of debt for which taxpayers could be responsible.

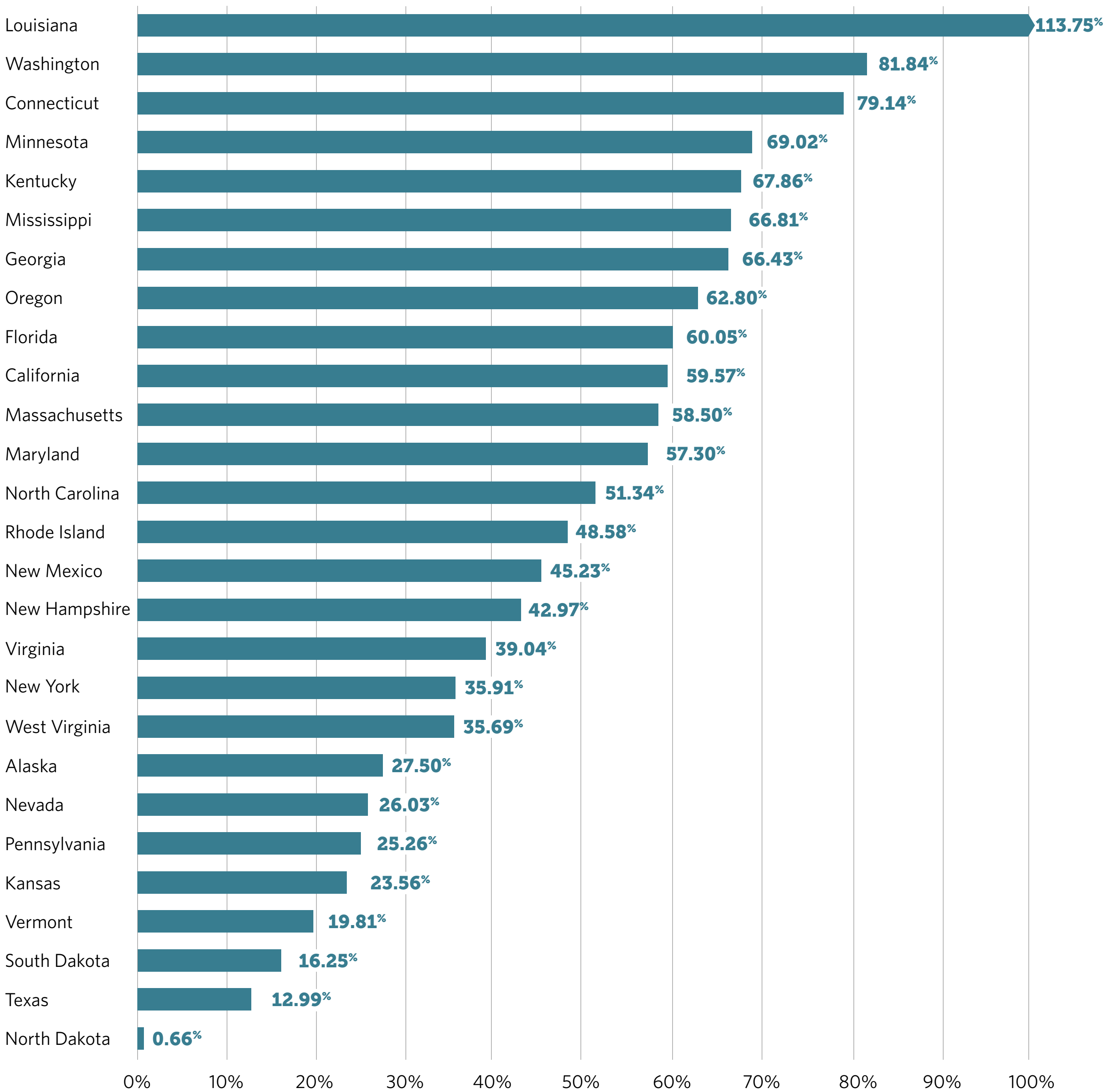
Credit rating agencies do not prescribe which liabilities should be included in debt affordability studies, but they make clear they prefer a broad, comprehensive definition to "capture all the different types of tax-backed debt that you issue," Sugden said.

To assess how much state debt is included in studies, Pew calculated the portion of all state and major component unit debt used to model future debt capacity (see Figure 8). On average, states include 48 percent of their debt. Only three states (Connecticut, Louisiana, and Washington) include 75 percent or more.

Figure 8

Many Studies Fail to Account for a Majority of State Debt

Percentage of total state debt included in analyses of debt capacity



Notes: Total state debt includes the long-term outstanding debt of the primary government and major component units. In states that do not distinguish between major and nonmajor component units, the debt of all such entities is included. Using this figure, Louisiana's study analyzes more than 100 percent of the state's primary government and major component unit debt because it includes debt outstanding from nonmajor component units (see Methodology for more detail).

Source: Pew analysis of state debt affordability studies, CAFRs, and component unit financial statements

Collect data on component unit, agency and authority, and substate debt, even if they are not modeled in the debt affordability study's capacity analysis. Use these data, along with a judgment of the strength of state support, to decide on inclusion in the capacity analysis.

States vary in their treatment of liabilities that do not have an explicit legal claim on general funds. Component unit debt makes up the biggest part of Vermont's liabilities, but state officials do not include it in the debt capacity analysis. Virginia's debt affordability study examines general obligation bonds, agency and authority (component unit) debt, appropriation bonds, moral obligation bonds, capital leases, installment purchases, and revenue bonds.[55] Washington's study has expanded over time to encompass debt for which the state is not legally responsible but which belongs to component units and entities such as schools, colleges, and local governments.[56]

"There is debt issued by state entities that is not state debt," noted Ellen Evans, Washington's deputy treasurer for debt management.[57] This includes bonds issued by universities that are backed by those institutions. "That is not our debt, but it is somewhat related to us since they are state universities."

Local government, or substate, debt is often omitted from debt affordability studies or is discussed in a general way. Only Kentucky and Washington add it to their debt capacity analyses, and even these states include only specific bonding programs, not all local borrowing. (In Kentucky's case, the local debt is appropriation-supported; locals in Washington can borrow through the state's certificates of participation program.) Some states, such as Oregon, discuss local government debt but do not incorporate it into their debt capacity analysis. Including this information, as Oregon does, can help states monitor all debt within their borders.

Because a state government may not be legally responsible for all liabilities within its borders, it may choose not to model these obligations in a debt affordability study. In these cases, the study should still collect data and report on these liabilities, even if they are not included in calculations of borrowing capacity.

The potential consequences of failing to monitor these liabilities were illustrated by events in Rhode Island and California. Rhode Island has made debt service payments since 2014 for bonds issued by Rhode Island Economic Development Corp., even though the state is not required by law to pay bondholders. The agency had sold the bonds in 2010 to benefit a video game company, 38 Studios, which subsequently filed for bankruptcy. Policymakers decided to make the payments anyway because they were worried that the credit rating agencies would lower the state's rating.[58] The bond sale has continued to plague Rhode Island. In March 2016, the Securities and Exchange Commission charged both the issuer and its underwriter, Wells Fargo, with securities fraud, alleging they failed to disclose the fact that 38 Studios was facing a funding shortfall at the time of the sale and needed additional cash.[59] In response to these challenges and other borrowing practices, Treasurer Seth Magaziner has urged that debt management policies take a broader view of the state's liabilities.[60] These policies include a more robust debt affordability study.[61]

In California, an executive at a San Francisco economic development authority embezzled $3.9 million of the agency's bond proceeds.[62] In response to this crime, state lawmakers determined that greater oversight of borrowing was needed. In 2016, Governor Jerry Brown (D) signed a law requiring state and local bond issuers to report to a state agency that they are current with their payments and that proceeds are being used for voter-approved purposes.[63] According to S&P, this oversight could improve the ratings that state issuers receive since it improves financial transparency.[64]

Include a discussion of other long-term liabilities.

Some states include unfunded public pension and retiree health care liabilities in their debt affordability studies. Unlike debt, public pensions and retiree health care are often considered "soft" liabilities. The difference lies in the nature of repayment: While bonded debt carries a promise to pay a specified principal on a set future date at an agreed-upon interest rate, the amounts for the other liabilities fluctuate and do not adhere to a fixed schedule.[65]

Despite these differences, pensions, retiree health care liabilities, and debt all represent a claim on future revenue and considering them can inform decisions on debt capacity. Including a straightforward summary of other long-term liabilities in a separate section of a debt affordability study provides contextual information about the impact these obligations have, or may have, on debt capacity. (Pension obligation bonds, which some states issue to pay the unfunded portion of their pension liability, are considered as state debt and should be included in a debt capacity analysis.)

Pension liabilities in particular have become one of the biggest factors influencing state credit ratings. A state's credit rating affects the cost of its bond issuances and the final amount any bond will cost. When credit rating analysts downgraded Illinois and New Jersey in 2016, they cited, among other things, those states' failure to acknowledge and plan for unfunded public pension liabilities. Analysts told Pew that although pensions probably do not belong in the debt capacity analysis section of a debt affordability study, including them in a separate section is prudent. They noted it helps provide a complete picture by explaining how all of a state's liabilities play into a budget.

Of the 27 states with debt affordability studies, only 14 include a discussion on these other liabilities. One of them, Florida, compares itself against other states with high pension liabilities. Its study compares metrics, including adjusted net pension liabilities as a percentage of revenue and personal income, but does not add pension liabilities to its debt capacity analysis. No states incorporate other long-term liabilities into calculations of debt capacity.

An emerging category of state debt is public-private partnerships, in which the state shares the borrowing cost of projects with the private sector, most commonly for transportation and higher education. Even though these partnerships do not go through the usual approval process for general obligation debt issuances, they do result in short- and long-term liabilities. Due to the similarities to bonded debt, Florida has taken the uncommon step of including these liabilities—$2.2 billion in outstanding debt as of June 2014—in the state's debt affordability analysis.[66] Taking another approach, Maryland does not include these liabilities in its analysis but does discuss them.[67]

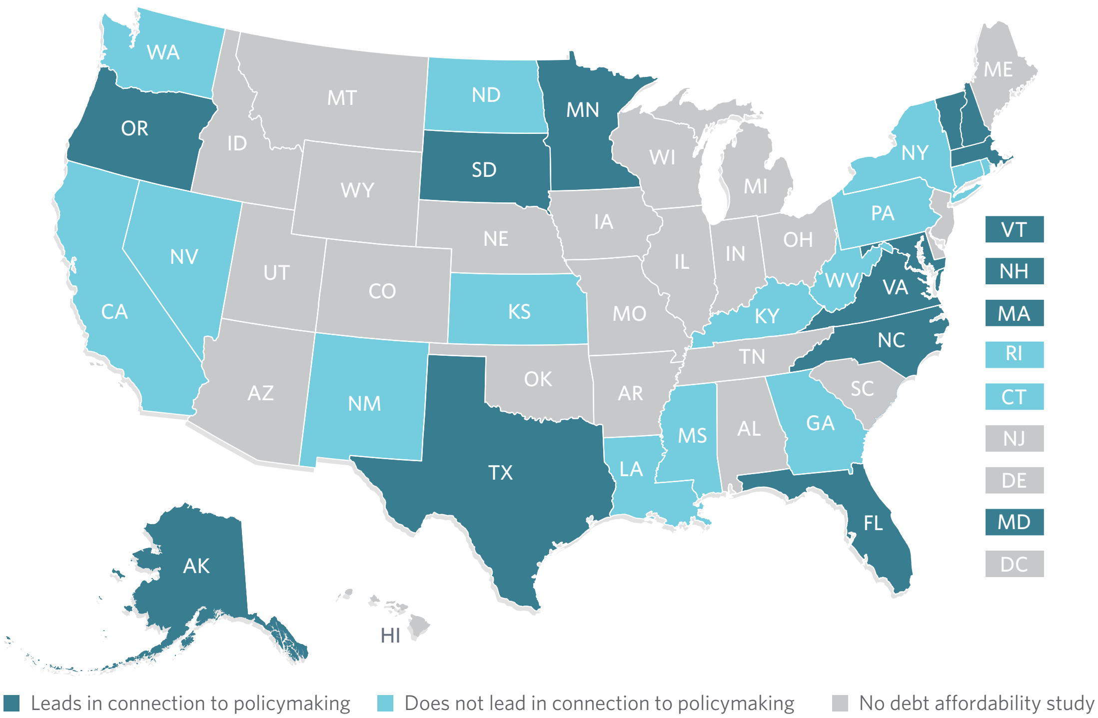
Translating data and analysis into sound policymaking

No matter its quality, a debt affordability study is useful to policymakers only if it is written in a way that connects to the policymaking process. Pew's analysis found that only about half the debt affordability studies are clearly connected to policymaking (see Figure 9).

Figure 9

Many States Could More Tightly Link Their Studies to Policymaking

States leading in connection to policymaking



Note: A state leads in the connection to policy if the study is required by law and contains a clear statement of remaining debt capacity. Hawaii produced its first state debt affordability study in December 2016, after the data collection for this report had concluded. The state's study is therefore not included in this analysis.

Require that debt affordability studies be conducted and make clear their purpose and use, and who will prepare them. Spell out a timetable so the report is released as the governor is putting together capital and operating budget proposals to submit to the legislature.

By mandating an affordability study—by statute or some other formal means—policymakers demonstrate that they take debt management seriously. Sixteen of the 27 states with debt studies have passed laws spelling out the purpose of the debt analysis, who prepares it, what it should include, and how often the study should come out. A legal mandate also signals to credit rating agencies and bond investors the priority state officials give to debt management.

Requiring regular publication of a debt affordability study ensures that it becomes a valuable part of the policymaking toolkit. The study's projections and metrics rely on data such as revenue forecasts, which fluctuate year to year. Publishing regularly, using updated information, gives policymakers a timely and accurate measure of their state's debt capacity. This allows legislators to tie current information from the study to the capital planning and budgeting process, an annual event in most states. Ensuring regular publication—and thereby guaranteeing access to the most current debt statistics—puts policymakers in a position of strength when determining how much debt to budget for. In addition to a regular schedule, tying a debt affordability study to a needs assessment of capital projects allows policymakers to see how much is available relative to how much is required.

Florida's statute requires the Division of Bond Finance to prepare an annual report listing, among other things, a 10-year projection of revenue and debt service and capacity to borrow. The rationale for the analysis is clear in the law: to give the Legislature a framework "to evaluate and establish priorities for bills that propose the authorization of additional state debt during the next budget year."[68]

Maryland's law is specific about the timetable, purpose, and contents of the debt affordability study. It directs the committee that manages state debt to "review on a continuing basis the size and condition of the state tax-supported debt as well as other debt of [universities and colleges]." The law also requires the committee to submit the report to the governor and General Assembly on or before Oct. 1 each year so lawmakers can consider in their budget discussions the committee's estimate of the total amount of new state debt that can be authorized.[69]

By legally mandating a debt affordability study, a state can establish a fixed schedule for the report's release, ideally timing it to coincide with the state budget and capital planning process, as Maryland did. Minnesota publishes its report in February and November, on the same schedule as the state's economic and budget forecasts. New York also updates its debt affordability study twice a year, first with the governor's proposed capital spending plan and again after lawmakers approve the final budget.

In all but three of the 27 states producing a debt affordability study as defined by Pew, the report is published at least once a year. The exceptions are Nevada, North Dakota, and Kentucky, which produce reports every other year to coincide with biennial budget cycles. In Nevada, the state continually updates its model as officials authorize additional debt and when current revenue totals are available, while in Kentucky, the model is updated as the proposed budget changes.

Include a clear statement of remaining debt capacity.

Providing such a statement can help to guide policymakers' decisions. This is usually presented as a dollar figure that the state can afford to issue while keeping its debt levels under any caps.

Each of the nine leading states includes a pronouncement of remaining capacity, while just seven of the 19 other states with debt affordability studies do (see Appendix C). Including such a figure—many states place it near the beginning of the study or in a first-page summary—is a way to communicate a sometimes complex subject to policymakers whose expertise may not include debt or finance.

North Carolina's study deftly includes the statement on one of the first pages. It reads: "The model results show that the State's General Fund has debt capacity of nearly $700 million in each of the next 10 years. The ratio of debt service to revenues peaks at 3.66% in the current fiscal year, notably below the 4.00% target."[70] A few pages later, the study lists the exact amounts available for each of those years. (See Figure 4 for another example of how states implement this technique.)

Pick the right author for the study to ensure the document is actively used.

States should ensure a debt affordability study is published by a trusted body with relevance and familiarity among policymakers. Of states with debt affordability studies, Pew found the two most common entities that produce it are a commission or committee (nine states) and the state treasurer (seven states, in six of which the treasurer is elected). Others are the governor's budget office (six states), the revenue agency (two states), a legislative office (one state), an office of administrative services (one state), and an independent authority (one state). (See Figure 10 for the range of agencies or offices charged with producing a debt affordability study.)

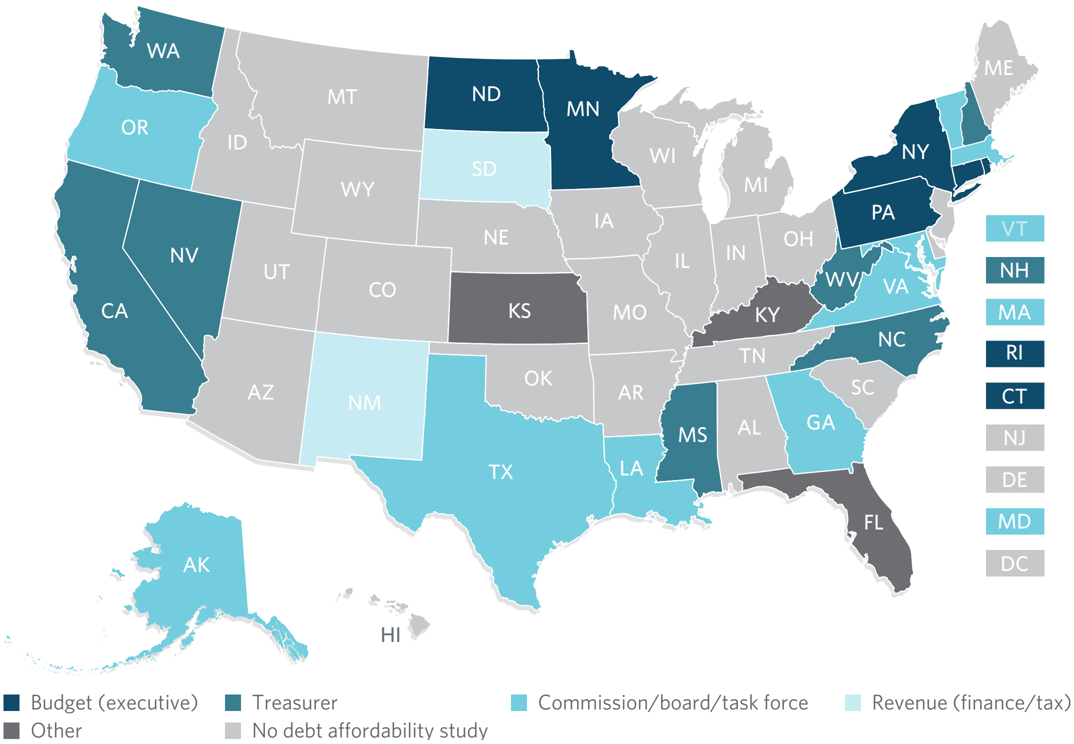
Choosing the right entity to create the study and offer recommendations requires careful deliberation. Decisions to issue debt combine the values of policymakers and their constituents, the need for capital borrowing, the political philosophies of elected officials, and the empirical information available.[71] "Everybody has their own point of view of what's the highest and best use for public dollars," said Lockwood-McCall of Oregon. The debt affordability study is "trying to get the conversation going in the right direction."[72]

States should pay particular attention to where an affordability study is published for two reasons. First, debt can sometimes become a political issue. Giving a respected office the responsibility of publishing the study can alleviate potential obstacles. Second, interviews revealed that in some states, it is not widely read. Indeed, some lawmakers don't know it exists. Debt can be a complex subject, so ensuring that the study does not collect dust on a shelf is especially important.

In considering which office will publish the debt affordability study, states should look for certain qualities. The office should have experience with financial analysis, an understanding of the bond market, and easy access to the state's data on outstanding debt, a respected, nonpartisan reputation, and good standing with elected officials and other policymakers.

Figure 10

Varying Offices Produce Debt Affordability Studies



Notes: In Kansas, the study is authored by an independent authority. In Kentucky, a legislative office serves as the author. The Florida Division of Bond Finance, within the State Board of Administration, conducts that state's study.[73] Hawaii produced its first state debt affordability study in December 2016, after the data collection for this report had concluded. The state's study is therefore not included in this analysis.

In some states, treasurers may be a good choice for study authorship because their office often has debt expertise and is taken seriously by elected officials who make the final decisions about issuing debt. "The debt affordability study, which has been prepared by the Office of the State Treasurer, has been very influential in impacting decisions of debt issuance and communicating with legislators," said Ellen Evans, Washington's deputy treasurer of debt management.[74] However, the duties of the office of the treasurer vary across states. In Wisconsin, for example, the office is not involved in issuing and managing the state's debt, which means it lacks the expertise to conduct an affordability study.[75]

Another model Pew found to be effective in some cases is that of an independent committee or commission whose members include elected officials. This process can work in connecting the findings of a debt affordability study with policymaking. By having lawmakers on the panel, especially those in leadership positions, there is built-in credence for recommendations.

In Georgia, where the Georgia State Financing and Investment Commission produces the state's debt affordability study, the governor, lieutenant governor, and House speaker are on the panel, which recommends how much to borrow up to the maximum 7 percent ratio of debt service to treasury receipts. The governor uses the commission's recommendation when proposing the capital budget, leaving debt capacity for the General Assembly to add projects according to its priorities. According to the Governor's Office of Planning and Budget, this approach helps constrain debt spending because the executive and legislative branches have already agreed to adhere to certain debt levels ahead of the annual appropriations process.[76]

In Maryland, the staff of the seven-member Capital Debt Affordability Committee submits several options for debt issuance to the governor and legislature. Panel members, who include the state treasurer as chair and a mix of lawmakers and state officials, recommend an amount of new debt to be authorized for the coming fiscal year and four years thereafter to aid in capital planning. As in Georgia, the committee's recommendations generally are heeded by the legislature and governor. (See Table 5 for an illustration of two approaches to debt commissions.)

Table 5

Debt Commissions Bring Stakeholders Together to Make Borrowing Decisions

Examples of debt commission/committee members in 2 states

Georgia	Maryland
Governor	Comptroller
Lieutenant governor	Secretary of Department of Budget and Management
House speaker	Secretary of Department of Transportation
State auditor	Member of Senate Budget and Taxation Committee (nonvoting)
Attorney general	Member of House Appropriations Committee (nonvoting)
Commissioner of Department of Agriculture	Governor-appointed public member
State treasurer	State treasurer

Whatever approach is taken, it is important for the author of the debt affordability study to have expertise spanning several years. Governors and legislators are regularly up for re-election and in some states may be bound by limits that cap their terms. The inherent turnover in government can impede elected officials from developing expertise on complicated state debt matters.

Finally, in selecting who produces the study, state officials should emphasize the need for the report language to be written in a way that policymakers and taxpayers alike can understand. Lee McElhannon, Georgia's bond finance director, who produces a 30-page report, advises: "To get somebody to actually read the document, the simpler and more concise you can make it, and the quicker you get to the point, the better. We try to keep it to a reasonable length. We can make as long a document as we want, but I don't know that anybody would read it if it was much longer than we have it now."[77]

Conclusion

In many states, issuing debt is necessary to access the large amount of money needed to build the roads, bridges, ports, schools, and other infrastructure that contribute to a vibrant economy and fiscally healthy state and local governments. Yet many policymakers are unsure how much debt the government can afford to issue, which may hold the state back from realizing its full potential, or lead it to borrow more than it can afford.

Though attitudes toward borrowing vary, states can benefit from approving clear debt policies and practices, especially a debt affordability study. Such an objective analysis assures policymakers and taxpayers that the state has a systematic way to collect, evaluate, and monitor its debt liabilities before lawmakers make decisions about borrowing. The study is for informational purposes, neither encouraging nor discouraging new debt issuances.

Twenty-seven states have debt affordability studies of varying quality. Many of those analyses could be improved, and states that do not have affordability studies may want to consider instituting them to better inform debt policy decisions.

Methodology

Document search

This report identifies which states produce debt affordability studies in an effort to manage their debt portfolio. Pew researchers examined how thorough state studies are and whether they are effective in influencing debt issuance and management policy. Although this report touches briefly on substate debt, it concentrated on evaluating studies' inclusion of primary government and major component unit debt.

Pew began by comprehensively scanning the websites of relevant state agencies, including treasurer, auditor, budget, comptroller or controller, legislative audit, legislative research, bond commission or bond review board, and finance.

In the initial data collection, researchers identified 167 documents published between 2010 and October 2015 that pertain to debt affordability. Pew ultimately decided to use only documents reporting on the fiscal year ending June 30, 2014, the most recent year for which complete data were available from all states.

Next, researchers reviewed the documents to determine which met Pew's definition of a debt affordability study. The documents needed to include a written analysis of the affordability of the state's debt, contain metrics assessing the amount of debt in relation to the state's ability to pay, project future debt outstanding and/or debt service more than one year from the study's publication date, and be produced regularly. This resulted in 27 documents judged as debt affordability studies. It excluded CAFRs and continuing disclosure documents required by security regulations.

The research team was also interested in other documents that included elements of a debt affordability study but did not meet this definition. Pew refers to these documents as debt reports. For the purposes of this analysis, Pew defined a debt report as a document that included at least one of the criteria required to be a debt affordability study. Sixteen states met that standard.

Pew supplemented the internet search by interviewing finance officials in every state. Team members conducted 62 interviews with more than 70 individuals. The officials confirmed the nature of the documents collected and in some cases provided documents not available on state websites. These interviews also provided further information on the role that debt affordability studies play in the policymaking process. For states without debt affordability studies, interviewers asked if there were other documents informing a state's debt policies. Researchers used a snowball sample, beginning by interviewing the office responsible for the relevant documents and then speaking with additional state officials identified through interviewees.

Researchers also reviewed literature on debt affordability. This helped clarify what pieces were essential to a debt affordability study and gave context to how others had previously defined debt affordability and debt affordability studies. The following works were particularly useful:

- A 2013 report by Jennifer Weiner at the New England Public Policy Center helped spur Pew's thinking on debt affordability. The study asked why debt affordability mattered, offered a definition, and surveyed how some states measure debt affordability.[78]
- A 2013 policy brief, also by Weiner, provided a nuts and bolts introduction on what made up a debt affordability study and how those different aspects served it.[79]
- W. Bartley Hildreth and Gerald J. Miller (2007) posited some parameters for what constitutes a debt affordability study. The work contained their own assessment of how many states produced debt affordability studies (they counted 12) and identified some issues states experienced with certain aspects of debt affordability studies.[80]
- Kenneth A. Kriz and Qiushi Wang (2013) also filled in some of what should be included in a debt affordability study, assessing some of the benefits and drawbacks to traditional debt capacity models. Those models espoused three ways debt capacity could be analyzed—by comparing debt levels to an established debt ceiling, by benchmarking to selected ratios, and by using a linear regression statistical technique.[81]
- A survey of state debt management policies in states across the country done by Merl M. Hackbart and James Leigland (1990) posed a series of questions to state officials with debt management duties. These included: What are the principal constraints governing debt policy? What kinds of debt are issued by which state governments? What governmental bodies oversee debt issuances?[82]

Defining debt affordability studies

Pew's evaluation was a two-part system. The first was to identify which documents met the criteria to be considered debt affordability studies. The second was to evaluate those debt affordability studies based on a set of five categories.

In the first part of its assessment, Pew found that 27 states produce a debt affordability study. These studies were defined as documents that:

- Are regularly produced (one-time or ad hoc reports were excluded).
- Use metrics (such as debt per capita) to analyze a state's debt.
- Project debt service outstanding, future debt issuances, or debt relative to capacity beyond the current fiscal year.

- Analyze state debt through at least one of the following:
  - A clear statement of remaining debt capacity.
  - Recommendations regarding debt issuance.
  - A written comment on a metric analysis.
  - A written comment on an analysis comparing, or benchmarking, a state's debt with that of other states.

Assessment

The second part of Pew's evaluation was to assess the 27 states producing debt affordability studies in order to determine which were leading the way. The documents produced by these states meeting Pew's initial criteria were assessed according to their performance in five categories: projections, benchmarking, metrics, mechanics, and scope. Each of these assessment categories consisted of a series of smaller actions. There were four actions within projections, three within benchmarking, and two each within metrics, mechanics, and scope.

States with debt affordability studies were assessed on the following categories:

- **Projections.** States whose studies projected multiple debt scenarios (using either varying debt issuance or revenue possibilities), projected three or more years from the study's publication date, and projected debt capacity, debt outstanding or debt issuance, and debt service outstanding were considered as leading on projections.
- **Benchmarking.** States that benchmarked to multiple metrics and discussed the appropriateness of their benchmarking group or incorporated benchmarking results into a discussion were considered as leading on benchmarking.
- **Metrics.** States that used multiple metrics and incorporated those metrics into a discussion were leading on metrics.
- **Mechanics.** States whose studies had a clear statement of capacity and a legal mandate to produce the study were leading on mechanics.
- **Scope.** States where 50 percent or more of CAFR-reported and major component unit financial statement-reported debt was captured in the study and whose study discussed other long-term obligations were leading on scope. (See "Calculating state debt" for more information on how state debt data was collected.)

States with a study that led in four or five of the assessment criteria were judged to be overall leaders. Table 6 summarizes the assessment criteria and evaluation process.

Table 6

Debt Affordability Study Assessment Criteria

	Projections	Benchmarking	Metrics	Mechanics	Scope
Leading component 1	Includes multiple revenue scenarios	Includes multiple benchmarking metrics	Presents multiple metrics	Contains a clear statement of capacity	Share of debt captured is 50% or higher
Leading component 2	Multiple debt issuance scenarios	Discusses benchmarking appropriateness	Discusses metrics results	Legal mandate to produce the study	Other long-term obligations discussed
Leading component 3	Projects at least 3 years	Has benchmarking results discussion			
Leading component 4	Projects debt capacity, debt outstanding or debt issuance, and debt service				
A state leads if it:	**Includes either component 1 or 2 and both 3 and 4**	**Includes component 1 and either components 2 or 3**	**Includes both components**	**Includes both components**	**Includes both components**

To see how each state producing a study scored on this evaluation, see Appendix C.

Calculating state debt

To calculate total state debt, Pew summed the debt reported in each state's CAFR and the annual financial statements of the state's major component units. In states that do not distinguish between major and nonmajor component units, we included the debt of all the component units. For government entities that follow the GASB's standards—all states and many component units—Pew collected debt data from the table of changes in long-term liabilities included in the notes to the financial statements. For component units that do not follow the GASB's standards, Pew collected comparable data from elsewhere in the financial statements.

Pew collected 50-state data for fiscal 2014. When component units had a different fiscal year end date from the state, Pew collected data for the component unit from the financial statement published before the state CAFR.

To assess the scope of debt affordability studies, Pew compared the amount of debt analyzed in a study with the amount reported in the state's CAFR and major component unit financial statements. In five states (Georgia, Kentucky, Minnesota, Texas, and West Virginia), the study did not report debt as of the end of fiscal 2014 and could not be compared with that year's total debt amount. Instead, CAFR and financial statement data from the fiscal year closest to the study's publication date was used (fiscal 2015 in Georgia, Kentucky, Minnesota, and Texas and fiscal 2013 in West Virginia).

State CAFRs and component unit financial statements report a wide variety of liabilities, not all of which are debt. For this report, Pew defined debt as the following:

- Bonds and notes.
- Certificates of participation.
- Capital leases.
- Accrued interest.
- Issuance discounts and premiums.

We excluded the following liabilities:

- Refundable grants.
- Interest rate swaps and derivative instruments.
- Liabilities related to arbitrage.
- Pension and OPEB liabilities.
- Compensated absences.
- Lottery prizes payable.
- Tuition benefits payable.
- Pollution remediation obligations.
- Liabilities labeled as "other."

After collecting data, Pew researchers adjusted for the inclusion of conduit liabilities in CAFRs and financial statements. Conduit borrowing occurs when an entity, such as an economic development authority, sells a municipal bond on behalf of another entity, such as a hospital. This gives the hospital access to bond issuance expertise and lower interest rates than it would otherwise receive. The authority that sells the bond has no responsibility for it post-sale—the debt belongs entirely to the entity that the bond was sold for, known as the obligor. The obligor in conduit financings can be another government entity or from the private sector (e.g., a hospital).

According to the GASB, government entities may include conduit debts as their own liabilities in their financial statements.[83] This inflates the amount of debt outstanding for these entities by including debt for which they are not ultimately responsible. Written notes to state CAFRs and component unit financial statements are often unclear regarding whether conduit borrowing is included.

To remove these liabilities from our calculations of total state debt, Pew researchers contacted all 50 states and their major component units to ask whether their financial statements included conduit debt, and, if so, the amount that should be removed from their liabilities. Pew contacted 240 government entities, and 216 responded—a 90 percent response rate. Because Pew did not receive responses from all entities, the data on total state debt may still contain some conduit financing.

Appendix A: State debt limits

State	Type of debt limit	Source	Description of general obligation debt limit	Citation
Alabama	Constitutional amendment	Constitution	Voter approval is required for issuance; general obligation debt may not exceed $750 million.	Constitution of Alabama of 1901, amendment 880
Alaska	Referendum and/or supermajority	Constitution	Debt may be issued only for capital improvements or providing housing loans for veterans. Requires voter approval.	Alaska Constitution, Article IX, Section 9, Page 157
Arizona	Prohibition	Constitution	The state may not exceed $350,000 in outstanding general obligation bonds, an amount low enough to effectively constitute a prohibition.	Arizona Constitution, Article 9, Section 5
Arkansas	Referendum and/or supermajority	Constitution	Voter approval is required for issuance.	Constitution of the State of Arkansas of 1874, Amendment 20, Pages 84-85
California	Referendum and/or supermajority	Constitution	General obligation debt exceeding $300,000 outstanding requires voter approval.	California Constitution, Article 16, Section 1
Colorado	Prohibition	Constitution	The state may not exceed $100,000 in outstanding general obligation bonds, an amount low enough to effectively constitute a prohibition.	Colorado Constitution, Article XI, Sections 3 and 5
Connecticut	Metric	Statute	General obligation debt outstanding and authorized is limited to 1.6 times total estimated general fund tax receipts.	Connecticut General Statutes, Chapter 32, Section 3-21
Delaware	Both referendum and/or supermajority and metric	Constitution and statute	Approval of general obligation issuance requires a three-quarters vote of the Legislature. Additionally, new tax-supported debt may not exceed 5% of the estimated net general fund revenue for that year and may not be issued if the aggregate maximum annual payments for outstanding debt exceeds 15% of the estimated general fund revenue plus transportation trust fund revenue for the fiscal year following the fiscal year in which the debt is incurred.	Delaware Constitution, Article VIII, Section 4, and Delaware Code Title 29, Chapter 74, Section 7422
Florida	Both referendum and/or supermajority and metric	Constitution and statute	General obligation (GO) bonds may be sold only through bonding programs authorized by constitutional amendment. Debt service on state tax-supported debt, including GO bonds, may not exceed 6% of revenues available to pay such debt without a legislative determination that such debt is in the best interest of the state. The Legislature may not authorize issuance if doing so would cause the debt service to revenues ratio to exceed 7%, except in the case of a state emergency.	Florida Constitution, Article VII, Section 11, Part A; and Florida Statutes, Title XIV, 215.98, Section 1

Continued on next page

State	Type of debt limit	Source	Description of general obligation debt limit	Citation
Georgia	Metric	Constitution	Fiscal year debt service requirements for total outstanding debt (general obligation and guaranteed revenue) may not exceed 10% of the prior fiscal year's total state treasury receipts.	Georgia Constitution, Article VII, Section IV, Paragraph I (c, d, e) and Paragraph II (b)
Hawaii	Metric	Constitution	General obligation bonds are limited. The total amount of principal and interest payable may not exceed 18.5% of the average of the general fund revenues in the three fiscal years preceding issuance.	Hawaii Constitution, Article VII, Section 13
Idaho	Referendum and/or supermajority	Constitution	Voter approval is required for issuance.	Idaho Constitution, Article VIII, Section 1
Illinois	Both referendum and/or supermajority and metric	Constitution and statute	Approval from three-fifths of the legislature or a majority of voters is required for issuance. Additionally, general obligation debt may not be issued if debt service on all outstanding bonds in the next fiscal year would exceed 7% of the preceding fiscal year's aggregate appropriations from general funds.	Illinois Constitution, Article IX, Section 9 and 30, Illinois Compiled Statutes 330/2.5
Indiana	Prohibition	Constitution	General obligation debt is not permitted.	Indiana Constitution, Article 10, Section 5
Iowa	Referendum and/or supermajority	Constitution	Voter approval is required for issuance.	Iowa Constitution, Article VII, Section 1-5
Kansas	Referendum and/or supermajority	Constitution	General obligation debt is limited to $1 million unless an issuance is approved by voters and the Legislature.	Kansas Constitution, Article XI, Section 6-9
Kentucky	Referendum and/or supermajority	Constitution	General obligation debt is limited to $500,000 unless an issuance is approved by voters.	Kentucky Constitution, Section 49-50, 176
Louisiana	Both referendum and/or supermajority and metric	Constitution and statute	General obligation debt requires approval from two-thirds of the Legislature. Net tax-supported debt is limited to 6% of estimated revenues. Additionally, the annual debt service requirement for general obligation debt may not exceed 10% of the average annual revenues of the Bond Security and Redemption Fund for the last three fiscal years completed prior to the issuance. Total authorized bonds cannot exceed two times the average annual revenues for this fund over the same time period.	Louisiana Constitution, Article VII, Section 6-7, Louisiana Statute 39:1402, and Louisiana Statute 30:1365
Maine	Referendum and/or supermajority	Constitution	Issuance requires approval from both two-thirds of the Legislature and a majority of voters.	Maine Constitution, Article IX, Section 14
Maryland	No limitation		No limitation.	

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State	Type of debt limit	Source	Description of general obligation debt limit	Citation
Massachusetts	Both referendum and/or supermajority and metric	Constitution	General obligation debt is limited to $17 million for fiscal year starting July 1, 2011, and thereafter the general obligation limit is 1.05 times the limit established for the previous fiscal year. General obligation debt requires authorization by law through approval of two-thirds of the Legislature.	Massachusetts General Laws, Part I, Title III, Chapter 29, Section 60A
Michigan	Referendum and/or supermajority	Constitution	Issuance requires approval from both two-thirds of the Legislature and a majority of voters.	Michigan Constitution, Article IX, Sections 14-16
Minnesota	Referendum and/or supermajority	Constitution	Issuance requires approval from three-fifths of the Legislature.	Minnesota Constitution, Article XI, Section 5
Mississippi	Metric	Constitution	Outstanding general obligation may not exceed 1.5 times the sum of all the revenue collected during any one of the preceding four fiscal years, whichever year might be higher.	Mississippi Constitution, Article 4, Section 115
Missouri	Referendum and/or supermajority	Constitution	Voter approval is required for debt in excess of $1 million.	Missouri Constitution, Article III, Section 37
Montana	Referendum and/or supermajority	Constitution	Issuance of GO bonds may be authorized by the Legislature, requiring approval from two-thirds of each house. Alternatively, issuance of GO bonds may be authorized by voter initiative, requiring approval of the majority of voters.	Montana Constitution, Article VIII, Section 8
Nebraska	Prohibition	Constitution	General obligation debt is limited to $100,000, an amount low enough to effectively constitute a prohibition.	Nebraska Constitution, Article XIII, Section 1
Nevada	Metric	Constitution	General obligation debt is limited to 2% of the assessed value of property in the state.	Nevada Constitution, Article IX, Section 3
New Hampshire	Metric	Statute	Debt service is limited to 10% of unrestricted general fund revenues for the previous fiscal year, and exceeding that limit requires approval from three-fifths of the legislature.	New Hampshire Title I, Section 6-C:2
New Jersey	Both referendum and/or supermajority and metric	Constitution	General obligation debt is limited to 1% of the total amount appropriated by the general appropriation law for that fiscal year, and exceeding the limit must be authorized by law for a specific project and receive voter approval for issuance.	New Jersey Constitution, Article VIII, Section II, paragraph 3
New Mexico	Both referendum and/or supermajority and metric	Constitution	General obligation debt is limited to 1% of the assessed valuation of property subject to taxation in the state, and requires voter approval for issuance.	New Mexico Constitution, Article IX, Section 8

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State	Type of debt limit	Source	Description of general obligation debt limit	Citation
New York	Both referendum and/or supermajority and metric	Constitution and statute	Issuance requires approval from three-fifths of the legislature. The total amount is limited to 4% of state personal income, and debt service is limited to 5% of revenues.	New York State Constitution, Article III, Section 23; Article VII, Sections 9-1, 14, 18-19; Article XVIII, Section 3; and New York State Finance Law § 67-b
North Carolina	Metric-based with referendum to exceed	Constitution	Voter approval is required for issuance unless the amount issued is equal to or less than two-thirds of the general obligation debt retired during the previous biennium.	Constitution of North Carolina, Article 5, Section 3
North Dakota	Metric	Constitution	Up to $10 million of general obligation debt may be issued if secured by state property or enterprises, or general obligation debt of no limit may be issued as long as it is secured by a first mortgage upon real estate in amounts not to exceed 65% of its value.	Constitution of North Dakota, Article X, Sections 13-14
Ohio	Constitutional amendment	Constitution	Debt service on direct obligations of the state, which includes general obligation and other bonds backed by the state's general revenue fund (GRF), may not exceed 5% of total GRF revenues and net state lottery proceeds.	Ohio Constitution, Article VIII, Sections 1-17
Oklahoma	Both referendum and/or supermajority and metric	Constitution and statute	Issuance requires authorization by law for a specific project and voter approval. Debt service on outstanding debt, including general obligations, is limited to 5% of the average of the general fund revenue for the preceding five fiscal years. Exceeding that limit requires approval from two-thirds of the Legislature.	Constitution of the State of Oklahoma, Article X, Sections 23-25, and Oklahoma Statutes Section 62-34.200
Oregon	Metric	Constitution	General obligation debt is limited to $50,000 with an exception for debt to build and maintain roads, which may not exceed 1% of the assessed value of property in the state.	Oregon Constitution, Article XI, Section 7
Pennsylvania	Metric-based with referendum to exceed	Constitution	Voter approval is required for issuance except for itemized capital projects. Net debt outstanding is limited to 1.75 times the average annual tax revenues in the previous five fiscal years.	Pennsylvania Constitution, Article VIII, Section 7
Rhode Island	Referendum and/or supermajority	Constitution	General obligation debt is limited to $50,000, but that limit may be exceeded with voter approval.	Constitution of Rhode Island, Article VI, Sections 16-17
South Carolina	Both referendum and/or supermajority and metric	Constitution	Debt service on general obligation bonds is limited to 5% of general revenues for the preceding fiscal year (excluding highway bonds, state institution bonds, and tax and bond anticipation notes) and two-thirds Legislature or voter approval is required for general obligation issuance.	Constitution of South Carolina, Article 10, Section 13

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State	Type of debt limit	Source	Description of general obligation debt limit	Citation
South Dakota	Both referendum and/or supermajority and metric	Constitution	General obligation debt may not exceed $100,000 unless issued for the purpose of economic development. Such debt may not exceed 0.5% of the assessed valuation of the property of the state. Two-thirds approval of the Legislature is required for issuance.	Constitution of South Dakota, Article XIII, Sections 1 and 2
Tennessee	Metric	Constitution and statute	Debt service in the current or any future fiscal year is limited to 10% of total state tax revenue allocated to the general fund, debt service fund, and highway fund for the preceding fiscal year.	Tennessee Code 9-9-105
Texas	Both referendum and/or supermajority and metric	Constitution	Annual debt service in any fiscal year on state debt payable from the general revenue fund is limited to 5% of the average amount of unrestricted general revenue fund revenues from the three preceding fiscal years. General obligation debt must be passed by a two-thirds vote of both houses of the Legislature and a majority of voters.	Texas Constitution, Article III, Sections 49 and 49-j
Utah	Metric	Constitution and statute	General obligation debt is limited to 1.5% of the assessed value of taxable property in the state. The state also sets a limit on appropriations, and outstanding general obligation debt may not exceed 45% of the maximum allowable appropriations amount. This limitation may be exceeded with two-thirds approval by the Legislature.	Utah Constitution, Article XIV, Sections 1-2; Article XIII, Section 5; and Utah Code Title 63J, Chapter 3, Section 204 and 402
Vermont	No limitation		No limitation.	
Virginia	Both referendum and/or supermajority and metric	Constitution	General obligation debt for nonrevenue-producing capital projects is limited to 25% of an amount equal to 1.15 times the average annual taxes on income and retail sales for the three preceding fiscal years. This general obligation debt requires approval of the majority of members of each house of the legislature and the majority of the electorate.	Constitution of Virginia, Article X, Section 9
Washington	Both referendum and/or supermajority and metric	Constitution and statute	Debt service payments are limited to 8.5% (8.25% from July 1, 2016, through June 30, 2034) of the mean of general state revenues for the six preceding fiscal years. General obligation debt requires approval from three-fifths of the Legislature and may also require voter approval.	Washington State Constitution, Article VIII, Section 1
West Virginia	Constitutional amendment	Constitution	General obligation debt, beyond short-term and defensive purposes, is only permitted with a constitutional amendment, which requires two-thirds majority from the Legislature and ratification by a majority of the electorate.	Constitution of West Virginia, Article X, Section 10-4

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State	Type of debt limit	Source	Description of general obligation debt limit	Citation
Wisconsin	Metric	Constitution and statute	Aggregate public debt issued in any calendar year should be less than or equal to 0.75% of the aggregate value of all taxable property in the state, or 5% of the aggregate value of all taxable property in the state should be less than the sum of aggregated public debt outstanding on Jan. 1, after subtracting the amount of sinking funds on hand.	Wisconsin Constitution, Article VIII, Sections 5, 7, and Wisconsin Statute Section 18.05
Wyoming	Metric-based with referendum to exceed	Constitution	General obligation debt is limited to 1% of the assessed value of taxable property in the state. This limit can be exceeded with voter approval for issuance, and debt for "internal improvements" requires approval from two-thirds of the voters for issuance.	Wyoming Constitution, Article 16, Sections 1-2, 6, 9-11

Appendix B: State debt reporting

Although not all states produce debt affordability studies, most produce at least one report on the state's debt annually. Often, these documents contain some, but not all, of the debt affordability study criteria. The table below lists the documents produced by states and whether they meet the criteria. Some states produce multiple documents. For those states, the document meeting the most criteria is shown here. If a state produces multiple documents that meet the same number of study criteria, all are listed below.

State	Document	Debt affordability study	Produced regularly	Includes projections	Contains metrics	Contains analysis
Alabama	No documents found					
Alaska	January 2015 State of Alaska State Bond Committee Debt Management Policies and State Debt Capacity	✔	✔	✔	✔	✔
Arizona	JLBC Staff Report - FY 2013 Debt and Lease-Purchase Financing Report		✔	✔	✔	
	FY 2013/14 Report of Bonded Indebtedness		✔		✔	✔
Arkansas	No documents found					
California	State of California Debt Affordability Report: October 2014	✔	✔	✔	✔	✔
Colorado	State Taxpayer Accountability Report (STAR) Fiscal Year 2011-2012		✔		✔	
Connecticut	Fiscal Accountability Report: FY 2015-2018	✔	✔	✔	✔	✔
Delaware	Delaware Fiscal Notebook: 2014 Edition		✔		✔	
Florida	State of Florida 2014 Debt Affordability Report	✔	✔	✔	✔	✔
Georgia	Debt Management Plan FY 2015 - FY2019	✔	✔	✔	✔	✔
Hawaii	Statement of the Debt Limit of the State of Hawaii as of July 1, 2014		✔	✔		
Idaho	No documents found					
Illinois	Fiscal Year Bonded Indebtedness and Long-Term Obligations Report		✔		✔	✔
Indiana	Indiana: Debt Overview				✔	✔

Continued on next page

State	Document	Debt affordability study	Produced regularly	Includes projections	Contains metrics	Contains analysis
Iowa	Outstanding Obligations Report State of Iowa Selected State Outstanding Obligations		✔			
	Outstanding Obligations Report		✔			
Kansas	State of Kansas 2014 Debt Study	✔	✔	✔	✔	✔
Kentucky	2014–2020 Statewide Capital Improvements Plan	✔	✔	✔	✔	✔
Louisiana	Net Tax Supported Debt: 2012-2013 and 2013-2014 FY Status and 2014-2015 FY Projection	✔	✔	✔	✔	✔
Maine	Summary of Bonded Debt				✔	
Maryland	Report on the Capital Debt Affordability Committee on Recommended Debt Authorizations for Fiscal Year 2016	✔	✔	✔	✔	✔
Massachusetts	Debt Affordability Committee Attachment to Recommendation	✔	✔	✔	✔	✔
Michigan	No documents found					
Minnesota	Minnesota Management and Budget Debt Capacity Forecast	✔	✔	✔	✔	✔
Mississippi	Debt Affordability Study	✔	✔	✔	✔	✔
Missouri	State of Missouri Summary of Indebtedness		✔	✔		
Montana	Legislative Budget Analysis 2015 Biennium		✔	✔		
Nebraska	No documents found					
Nevada	General Obligation Debt Capacity and Affordability Report	✔	✔	✔	✔	✔
New Hampshire	Debt Affordability Study Update	✔	✔	✔	✔	✔
New Jersey	State of New Jersey Debt Report Fiscal Year 2014		✔	✔	✔	

Continued on next page

State	Document	Debt affordability study	Produced regularly	Includes projections	Contains metrics	Contains analysis
New Mexico	Debt Affordability Study	✔	✔	✔	✔	✔
New York	FY 2016 Capital Program and Financing Plan	✔	✔	✔	✔	✔
North Carolina	Debt Affordability Study	✔	✔	✔	✔	✔
North Dakota	Executive Budget 2015-2017 Biennium	✔	✔	✔	✔	✔
Ohio	Constitution Article VIII, Section 17 Determination and Certification by Governor's Designee		✔	✔	✔	
Oklahoma	Oklahoma State Bond Advisor Annual Report 2014		✔		✔	✔
Oregon	Report of the State Debt Policy Advisory Commission 2015 Commission Report	✔	✔	✔	✔	✔
Pennsylvania	2015-2016 Pennsylvania Executive Budget	✔	✔	✔	✔	✔
Rhode Island	Capital Budget, FY 2015	✔	✔	✔	✔	✔
South Carolina	Annual State Debt Report: An Overview and Summary of South Carolina Debt Outstanding, Limitations, Constraints, and Capacity as of December 31, 2013		✔		✔	✔
South Dakota	South Dakota Debt Limitation and Management Policy	✔	✔	✔	✔	✔
Tennessee	State of Tennessee Indebtedness Report		✔	✔		
Texas	Texas Bond Review Board Debt Affordability Study	✔	✔	✔	✔	✔
Utah	State of Utah Constitutional Debt Limit August 31, 2015		✔		✔	✔
Vermont	Capital Debt Affordability Advisory Committee, Recommended Annual Net Tax-Supported Debt Authorization	✔	✔	✔	✔	✔
Virginia	Virginia Debt Capacity Advisory Committee 2014 Report	✔	✔	✔	✔	✔
Washington	2015 Debt Affordability Study	✔	✔	✔	✔	✔

Continued on next page

State	Document	Debt affordability study	Produced regularly	Includes projections	Contains metrics	Contains analysis
West Virginia	2014 Debt Capacity Report	✔	✔	✔	✔	✔
Wisconsin	Wisconsin Debt Management Policy Issue Paper			✔	✔	✔
	GPR Supported Debt and Bonding Overview			✔	✔	✔
Wyoming	No documents found					

Source: Pew analysis of state debt affordability studies and other documents

Appendix C: Assessment of state debt affordability studies

The table below presents the scoring criteria for assessing state debt affordability studies. Only states with studies are included.

		AK	CA	CT	FL	GA	KS	KY	LA	MA	MD	MN	MS	NC	ND	NH	NM	NV	NY	OR	PA	RI	SD	TX	VA	VT	WA	WV
Leading state					✔	✔				✔	✔			✔		✔				✔				✔	✔			
Projections	Multiple scenarios					✔		✔	✔	✔	✔			✔		✔	✔			✔				✔	✔			
	Projects 3 or more years	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Projects all types				✔	✔			✔	✔	✔			✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Projections leader?					✔			✔	✔	✔			✔		✔	✔			✔				✔	✔			
Benchmarking	Multiple metrics	✔	✔	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	✔	✔		✔	✔			✔	✔	✔	✔	✔	✔
	Discusses appropriateness of benchmarking group																						✔	✔	✔		✔	
	Incorporates benchmarking into discussion	✔	✔	✔	✔	✔	✔	✔					✔		✔	✔	✔			✔		✔		✔	✔	✔	✔	✔
	Benchmarking leader?	✔	✔	✔	✔	✔	✔	✔					✔		✔	✔	✔			✔			✔	✔	✔	✔	✔	✔
Metrics	Uses multiple metrics	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Incorporates metrics into discussion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Metrics leader?	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Mechanics	Clear statement of capacity	✔			✔	✔				✔	✔	✔		✔	✔	✔	✔	✔		✔			✔	✔	✔	✔		
	Legal mandate	✔	✔	✔	✔			✔		✔	✔	✔		✔		✔				✔			✔	✔	✔	✔		✔
	Mechanics leader?	✔			✔					✔	✔	✔		✔		✔				✔			✔	✔	✔	✔		
Scope	50% or more debt captured		✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔						✔							✔	
	Discusses other LTOs	✔		✔	✔	✔		✔		✔	✔			✔			✔			✔	✔				✔	✔	✔	
	Scope leader?			✔	✔	✔		✔		✔	✔			✔						✔							✔	

Notes: A state leads in projections if it includes multiple scenarios (such as varying interest rates or different borrowing amounts), looks three or more years into the future, and projects three different types of data: future debt service, future debt capacity, and future issuance or debt outstanding. A state leads in benchmarking if it uses multiple metrics to compare itself to other states and either discusses the appropriateness of making comparisons to the peer group or includes a written analysis explaining the significance of the comparisons. For example, a state may note that its debt per capita is greater than that of its peers, perhaps indicating a heavier burden on that state's taxpayers. A state leads in metrics if multiple metrics are used and they are accompanied by explanatory text. States that lead in mechanics produce a document containing a clear statement of the borrowing capacity remaining and are legally required to produce their studies. Finally, states lead in scope if half or more of their debt was included in the capacity analysis and the study discusses the impact of other long-term obligations, such as pensions and other post-employment benefits, on the state's ability to afford debt.

Source: Pew analysis of states' debt affordability studies, CAFRs, component unit financial statements, and statutes

Endnotes

1 See the methodology section for Pew's definition of a debt affordability study.

2 Hawaii produced its first debt affordability study in December 2016 but was not included in this total, as its study did not meet Pew's October 2015 deadline for evaluation. Please see the Hawaii text box on Page 2 for more information.

3 Requirements for the information that must be contained in a CAFR are set by the seven-member Governmental Accounting Standards Board, an independent organization based in Connecticut that establishes accounting and financial reporting practices for state and local governments. While not a government body, abiding by the board's rules is statutorily required in some states and by auditors who evaluate financial statements. The board's rules are often the standard for what is considered state debt. Certain board interpretations, statements, and pronouncements govern how states deal with various obligations. Interpretation No. 2, for example, delineates disclosure requirements for conduit debt, including certain revenue bonds and certificates of participation (see "Types of debt"). Statement No. 34 establishes reporting requirements for state and local governments, including that officials file financial statements concerning debt service using the modified accrual basis of accounting.

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