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A Guide to State Debt Affordability Studies: Common Elements and Best Practices

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State governments commonly issue debt to finance the construction of roads, schools, and other investments in infrastructure that are important for economic growth and competitiveness. While borrowing funds can facilitate these investments, there is also a danger in allowing debt to grow unchecked. If debt service is too high, it can crowd out other public spending or else necessitate burdensome taxes or fees. Policymakers thus must carefully balance a state's capital needs with efforts to keep debt levels affordable.

To help policymakers weigh these competing concerns, at least 21 states, including Massachusetts, Rhode Island, and Vermont, routinely prepare formal debt affordability studies or similar analyses (see Table 1).[1] By exploring the purpose of such studies, their common elements, and best practices, this policy brief aims to provide guidance to states that are developing or re-examining their own debt affordability analyses.

Why Do States Conduct Debt Affordability Studies?

Debt affordability studies aim to inform and guide the policymakers making decisions about state borrowing. Some affordability studies are largely informative in nature, providing a context for decisionmaking. Others focus on providing a specific recommendation for the amount of new debt a state can prudently issue. The most comprehensive reports serve both purposes.

States also perform debt affordability studies with the goal of protecting or enhancing their credit ratings. The three major credit rating agencies consider a state's debt burden (meaning its debt level relative to the resources available for its repayment) and debt management policies among various other factors when assigning ratings. A recurring formal affordability analysis may positively impact a state's rating not only by influencing debt levels, but also by signaling prudent debt management.[2] A debt affordability study may also serve as a platform for dialogue between the state and the agencies

Finally, while not commonly stated as a goal, debt affordability analyses can also provide the interested public with a transparent view of a state's debt burden. This information may be especially important in states where voters must approve the issuance of new debt.

Common Elements of Debt Affordability Studies

While state debt affordability studies vary in scope, the following elements are found in many reports and may serve as a checklist for states preparing a study:

State Debt Profile

Most debt affordability studies include a section reviewing the state's various types of debt. Obligations are often classified by the

1 To identify state debt affordability studies we visited the websites of the state treasurers or other state agencies responsible for the debt function for all 50 states. We considered reports posted on these websites that had the terms "debt affordability" or "debt capacity" in the title or that (a) included some calculation of debt capacity and/or (b) included a profile of the state's indebtedness beyond a simple table or chart. Table 1 does not include states such as Kansas and New York that have conducted one or more studies in the past but do not on a regular basis.

2 Richard K. Ellis and Jenny Poree, "Debt Affordability Studies: Impact on Debt Management and Credit Ratings." Presentation on August 13, 2012 at the 2012 Annual Conference of the National Association of State Auditors, Comptrollers, and Treasurers," held in Seattle, WA. The session handouts and power point slide presentation are available at http://www.nasact.org/conferences_training/nasact/conferences/AnnualConferences/2012AnnualConference/materials.cfm.

Table 1. States Preparing Formal Debt Affordability Studies or Similar Analyses

State	Statutory Requirement	Responsible Entity	Includes Capacity Calculation	Includes Benchmark Comparisons
Alaska	Yes	Treasury Division of the Department of Revenue	Yes	No
California	Yes	State Treasurer's Office	No	Yes
Florida	Yes	Division of Bond Finance	Yes	Yes
Georgia	No	Georgia State Financing and Investment Commission	Yes	Yes
Louisiana	Unclear	State Bond Commission	Yes	No
Maryland	Yes	Capital Debt Affordability Committee	Yes	No
Massachusetts	See note	Executive Office for Administration and Finance	Yes	No
Minnesota	Yes	Minnesota Management and Budget	Yes	No
Nevada	No	State Treasurer's Office	Yes	No
New Jersey	Yes	Office of Public Finance	No	Yes
New Mexico	No	Department of Finance and Administration	Yes	Yes
North Carolina	Yes	Debt Affordability Advisory Committee	Yes	Yes
Oregon	Yes	Debt Policy Advisory Commission	Yes	Yes
Rhode Island	See note	State Treasurer's Office	Yes	Yes
South Carolina	No	State Treasurer's Office	Yes	No
Tennessee	No	Comptroller of the Treasury	No	No
Texas	Yes	Texas Bond Review Board	Yes	Yes
Vermont	Yes	Capital Debt Affordability Advisory Committee	Yes	Yes
Virginia	Yes	Debt Capacity Advisory Committee	Yes	Yes
Washington	No	State Treasurer's Office	Yes	Yes
West Virginia	Yes	State Treasurer's Office	Yes	Yes

Sources: Individual state documents.
Note: The table reflects studies available as of October 3, 2013. Massachusetts legislation passed in 2012 codified the requirement for an annual debt affordability analysis and created the Massachusetts Debt Affordability Committee to estimate the total amount of new Commonwealth debt that may be prudently authorized each year. Rhode Island's debt affordability study is an annual report to the state's Public Finance Management Board (PFMB) prepared by the Treasurer's Office. The statute creating the PFMB does not specifically call for the preparation of an annual report. See online appendix for additional detail and links to state studies, available at http://www.bostonfed.org/neppc.

type of pledge backing the debt (e.g. general obligation versus revenue), the issuer, or the program area the debt supports. This section of a study typically highlights current levels of outstanding debt for the chosen categories, and may also present historical trends and future projections of both debt outstanding and debt service requirements. Other relevant factors such as the average speed of amortization, the exposure to variable rate debt, and the use refunding bonds may also be addressed.

Description of State Debt Policies

State debt affordability studies often describe any existing formal or informal debt limits as well as other factors restricting the issuance or characteristics of new debt, such as voter or legislative supermajority requirements, bond term limits, or restrictions on the use of debt. Reports may also outline the steps and parties responsible for different elements of the bonding process including authorization, issuance, and the allocation of bond proceeds.

Review of State Credit Ratings

Many affordability studies talk about any recent changes in the state's credit rating or the outlook assigned by the three major ratings agencies. This section may also highlight strengths and weaknesses noted by the agencies and may include excerpts from agency reports.

Debt Capacity Calculation

The centerpiece of many debt affordability studies is a calculation of debt capacity. Such an analysis is used to determine the maximum amount of new debt a state can issue while remaining within any prescribed debt limits, or simply to demonstrate that a desired amount of new debt issuance (such as the amount required for planned capital projects) falls within those bounds.

The details of a capacity calculation will necessarily depend on the nature of the debt limit (or limits) in question. Many states aim to restrict annual debt service payments to a certain percentage of state revenues, and some are legally required to do so. While the ratio of debt service-to-revenues governs debt capacity calculations for many states, there is still considerable variation in what debts are included, what types of revenues are included and how these are measured (e.g. forecasts versus averages of past years), the time horizon captured, and various necessary assumptions about interest rates and repayment schedules.

Table 2 illustrates a hypothetical debt capacity calculation for a state aiming to limit its combined debt service on new and existing debt to 5 percent of annual revenues. The first step calculates available debt service capacity based on existing debt and forecasted revenues. It first estimates maximum debt service allowed under the 5 percent limit and then compares this value to forecasted debt service on existing debt. Inherent in this calculation are various assumptions about revenue growth and interest rates on existing debt.

The second step of the calculation takes this available capacity—which represents the maximum amount of debt service on new debt—and "backs out" the maximum amount of new debt that may be issued for the year. This step requires assumptions about the interest rate, term, and payment structure of the new bonds. In practice, most state debt affordability studies include calculations that are more complex (e.g. examining capacity over multiple years) and are presented with varying degrees of transparency.

Table 2. Simple Hypothetical Debt Capacity Calculation

Step 1: Determine the Available Debt Service Capacity:

Forecasted Revenues	Debt Limit (as % of Revenues)	Maximum Debt Service Under Limit	Forecasted Debt Service on Existing Debt	Available Debt Service Capacity Based on Existing Debt
[1]	[2]	[3] = [1] x [2]	[4]	[5] = [3] - [4]
$10,000,000	5.0	$500,000	$460,000	$40,000

Step 2: Solve for the Maximum New Debt Issuance:

Maximum Debt Service on New Debt	Assumed Interest Rate (%)	Assumed Term (Years)	Maximum New Debt Issuance
[6] = [5]	[7]	[8]	[9] = See note
$40,000	4.5	20	$520,317

Note: The maximum new debt issuance is calculated with the following formula:
[9] = [6]/[7] x (1 – 1/(1 + [7])^[8]).
The calculation assumes level debt service payments over the 20 year term of the bonds.

Benchmark Comparisons

Many affordability studies also include some form of benchmarking analysis that compares selected debt burden ratios for the state with those from a peer group of states or with national averages. Common criteria for selecting peers include geographic proximity, population size, the general age of infrastructure, or credit rating.

Most benchmark comparisons rely on ratios of state net tax-supported debt reported by Moody's Investors Service. This measure of debt includes obligations that are repaid with taxes and other general-purpose revenues and thus is highly relevant for state budget discussions.

States may also compare Census Bureau statistics which reflect a broader characterization of state debt (including debt issued by public authorities and debt supported by user fees) and thus may better capture the overall burdens borne by residents and businesses in different states. Census data also allow for the comparison of combined state and local debt. Table 3 shows the ratios of debt-to-personal income for the six New England states relative to the national average using Moody's and Census Bureau data, illustrating how alternative definitions of state debt provide different perspectives on relative burdens.

Other Issues Relevant to Debt Affordability

Debt affordability studies also frequently highlight other policy issues that have impacted the affordability of the state's obligations in the past, or could do so in the future. Issues discussed in recent state debt affordability studies include: the downgrade of the U.S. credit rating, the potential implications of federal actions such as sequestration or a repeal or revision of the tax exemption for municipal bond interest, unfunded pension and other post-employment benefit (OPEB) obligations, and other state-specific factors, such as the damage caused by Tropical Storm Irene in Vermont.

Best Practices in Debt Affordability Studies

A review of existing reports suggests the following practices can enhance the usefulness of debt affordability studies:

Time Reports to Inform the Capital Planning Process

Studies should be performed on a regular basis, and ideally timed to inform the setting of capital budgets—this will reinforce the important link between debt and infrastructure investment. Reports in states such as Massachusetts and New Jersey have been prepared in direct conjunction with state capital plans.

Be Comprehensive When Profiling State Debt

Some reports only focus on certain types of debt, such bonds supported by general state taxes. Limiting the analysis might paint a misleading picture of a state's overall debt burden, particularly if states have turned to alternative types of financing to avoid restrictions on tax-supported debt. Ideally, a state's debt profile will paint a fuller picture of state debt and explain how various types of obligations differ from one another. Rhode Island, for example, reports four categories of state debt obligations and describes their relevance to the state's general credit rating. This approach provides a more comprehensive and transparent

Table 3. New England Benchmark Comparisons

	Debt-to-Personal Income					
	Net Tax-Supported State Debt		Total Long-Term State Debt		Total Long-Term State and Local Debt	
	Percent	Rank	Percent	Rank	Percent	Rank
Connecticut	9.1	3	15.0	5	20.0	27
Maine	2.1	33	11.9	13	18.0	32
Massachusetts	9.3	2	21.5	1	26.3	6
New Hampshire	1.9	36	14.1	7	18.8	30
Rhode Island	4.7	13	20.1	2	26.1	8
Vermont	1.9	35	13.3	10	17.9	33
U.S. Mean	3.4		9.4		20.6	
U.S. Median	2.8		9.0		20.5	

Source: Moody's Investors Service, U.S. Census Bureau, and U.S. Bureau of Economic Analysis data, with calculations by author.

Note: The net tax-supported debt figures represent outstanding debt at the end of the 2012 calendar year; the total long-term debt figures represent outstanding debt at the end of the 2011 fiscal year. Rank represents the state's rank among the 50 states.

view of a state's debt burden than focusing solely on tax-supported debt, while acknowledging that the nature of the obligations vary.

Calculate Capacity Under Alternative Scenarios

Some states, including Louisiana, Texas, and Virginia, perform capacity calculations under alternate sets of assumptions. Sensitivity analyses allow policymakers to see how estimates of capacity change under alternative assumptions about debt issuance or interest rates. Additionally, calculating available capacity under different debt issuance scenarios can help policymakers to more easily weigh concerns about the debt burden with capital needs. Calculations should be transparent and any assumptions clearly stated, allowing the reader to judge their plausibility.

Provide Context for Cross-State Comparisons

A benchmarking analysis can show how a state's debt load compares to other states, and can also help policymakers judge whether existing debt limits are reasonable. However, even with a carefully selected peer group there may be important differences across states with respect to the division of responsibility between state and local government, infrastructure needs and preferences, economic or demographic trends, or other factors that may reasonably contribute to valid differences in debt ratios. A discussion of such state-specific factors can provide greater context to benchmarking analyses. Washington State's inaugural debt affordability study in 2011 included such a discussion, highlighting the state's high income levels, strong population growth, diverse economy, and centralized funding structure. Presenting multiple comparisons that employ alternative definitions of state debt and alternative debt burden ratios can also provide a more complete picture.

Reexamine Existing Limits and Other Debt Practices

Annual debt affordability studies provide periodic opportunities not only to estimate the amount of new debt that may be issued within a particular limit, but to reconsider the appropriateness of the limit itself. Benchmark comparisons and a review of state-specific circumstances can inform such an assessment. Affordability studies can also highlight the use of worrisome debt practices and provide recommendations for the future. For example, in its most recent report, North Carolina's debt affordability committee noted the state's growing use of debt that does not require voter in place of general obligation bonds that are subject to referendum. The committee recommended greater use general obligation debt, which tends to have lower borrowing costs, in the future.

Promote Readability

One tradeoff associated with a comprehensive examination of affordability can be a report that is too lengthy or dense. Some states like Florida and Maryland address this concern by including an executive summary or, like California and Virginia, use appendices to display supporting information or detailed data. Graphical representations, such as those found in Oregon's debt affordability report, can be highly useful in showing the different components of a state's debt burden and their changing nature over time. Finally, the most useful debt affordability studies are written in language that is accessible readers with varying degrees of familiarity with state finance issues. Glossaries of relevant debt terms, offered by states such as New Jersey and Texas, can help to promote accessibility, especially for the general reader.

Summary

Regular debt affordability studies are conducted by a number of states and vary in scope and quality. At their best, such analyses can be a useful resource for promoting transparency and providing context to policymakers who must weigh decisions about state debt and capital planning with other governmental priorities.

This policy brief builds upon the New England Public Policy Center Research Report, "Assessing the Affordability of State Debt" by Jennifer Weiner. This report is available at http://www.bostonfed.org/neppc.