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THE FISCAL HEALTH OF U.S. STATES

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Abstract

This paper examines the fiscal health of the 50 U.S. states and reaches five conclusions. First, state government finances are not on a stable path; if spending patterns continue to follow those of recent decades, the ratio of state debt to output will increase without bound. Second, the key driver of increasing state and local expenditures is health-care costs, especially Medicaid and subsidies for health-insurance exchanges under the Patient Protection and Affordable Care Act of 2009. Third, states have large implicit debts for unfunded pension liabilities, making their net debt positions substantially worse than official debt statistics indicate. Fourth, if spending trends continue and tax revenues remain near their historical levels relative to output, most states will reach dangerous ratios of debt to GDP within 20 to 30 years. Fifth, states differ in their degrees of fiscal imbalance, but the overriding fact is that all states face fiscal meltdown in the foreseeable future.

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I. Introduction

As the worldwide financial crisis has eased, economic policy debates have shifted from the short-term issue of stabilization to the long-term issue of fiscal imbalance. Current projections suggest that the U.S. federal government faces an exploding ratio of debt to GDP, driven in large part by spending on health insurance.¹ If this trend continues, the United States will soon find itself unable to roll over its debt and be forced to default, generating a fiscal crisis.

Although the federal situation is serious, it is not the only area of concern. State and local governments experienced large budget shortfalls during the recent recession, and states share the burden of rising Medicaid expenditures. One major component of federal spending, moreover, is transfers to state governments, which would face larger shortfalls without the revenue they receive from the federal government. During the recession, federal stimulus funds provided a temporary reprieve for states, but this source of funds cannot continue indefinitely. A full assessment of U.S. fiscal health, therefore, should consider the state fiscal landscape, not just the federal picture.

This paper examines the fiscal health of the 50 U.S. states. Existing work considers important aspects of this issue, but it does not provide a complete picture of current and future state fiscal outlooks. Earlier work has not integrated the assessment of explicit state debts with the assessment of implicit state liabilities for employee pensions. In addition, earlier work has not sufficiently evaluated whether states face widely varying or substantially similar fiscal outlooks. As this paper shows, accounting for implicit pension liabilities provides a significantly more negative picture than does explicit debt information on its own. And the popular perception that some states are fiscal basket cases while others are models of fiscal rectitude is accurate only in the short term; over a longer horizon, all states are in danger of fiscal meltdown.

This paper offers five conclusions. First, state government finances are not on a stable path; if spending patterns continue to follow those of recent decades, the ratio of state debt to output will increase

¹ U.S. Congressional Budget Office, “CBO’s 2011 Long-Term Budget Outlook” (Washington, DC: CBO, June 2011).

without bound. Second, the key driver of increasing state and local expenditures is health-care costs, especially Medicaid and subsidies for health-insurance exchanges under the Patient Protection and Affordable Care Act of 2009. Third, states have large implicit debts for unfunded pension liabilities, making their net debt positions substantially worse than official debt statistics indicate. Fourth, if spending trends continue and tax revenues remain near their historical levels relative to output, most states will reach dangerous ratios of debt to GDP within 20 to 30 years. Fifth, states differ in their degrees of fiscal imbalance, but the overriding fact is that all states face fiscal meltdown in the foreseeable future.

The analysis presented here sheds light on both recent media attention to state and local finances and on recent budget battles at the state and local levels. Media attention has rightly generated concern that state and local finances are not on a stable path and has raised fears of a future crash in the municipal bond market.² The recent budget battles have focused on reigning in state and local employee compensation, especially the pension component, and on restricting the union bargaining rights of public-sector employees.³ The analysis here confirms that concerns about state and local debts are well-placed, and that pension liabilities constitute a significant component of existing state and local debt (explicit plus implicit). The analysis paints a different picture from much of this commentary and activity, however, by emphasizing that existing debts are a relatively modest part of the problem; it is the path of state government health-care expenditures that will drive states to fiscal imbalance. Other policy changes, such as less generous pensions, can delay default by only a few years.

The paper is organized as follows. Section II summarizes earlier literature. Section III examines the recent history of state and local expenditures, revenues, and deficits. Section IV assesses the states'

² See, for example, Michael Cooper and Mary Williams Walsh, "Mounting Debts by States Stoke Fears of Crisis," *New York Times*, December 4, 2010; Veronique De Rugy, "The Municipal Debt Bubble," *Reason*, June 15, 2011; or Shawn Tully, "Meredith Whitney: State Finances are Worse than Estimate," *Fortune.CNN.com*, June 6, 2011, <http://finance.fortune.cnn.com/2011/06/06/meredith-whitney-state-finances-are-worse-than-estimated/>. Elizabeth McNichol, Phil Oliff, and Nicholas Johnson document the ongoing fiscal woes of state governments in *States Continue to Feel Recession's Impact* (Washington, DC: Center on Budget and Policy Priorities, 2011).

³ See, for example, David Crane, "California's \$500 Billion Pension Time Bomb," *Los Angeles Times*, April 6, 2010; Lisa Lambert, "U.S. Enters Next Round of Public Pensions Fight," *Reuters.com*, June 29, 2011, <http://www.reuters.com/article/2011/06/29/us-usa-states-pensions-idUSTRE75S71920110629>; or Scott Bauer and Todd Richmond, "Thousands Protest Wisconsin Anti-Union Bill," *MSNBC.com*, February 17, 2011, http://www.msnbc.msn.com/id/41624142/ns/politics-more_politics/t/thousands-protest-wisconsin-anti-union-bill/.

current fiscal situations, as measured by their non-pension and pension net debt ratios. Section V considers projections of the debt ratios under a set of plausible assumptions about output, expenditures, revenues, and interest rates. Section VI concludes by discussing implications of the results and speculating about the policies that state governments might pursue to avoid fiscal disaster.

II. Review of Existing Literature

Earlier work on state and local fiscal outlooks forms a useful background to the analysis presented here. This paper summarizes the key points.

Mercatus Center Research Fellow Matthew Mitchell documents that aggregate state and local spending has grown over the past three decades, and he calculates what path these expenditures would have taken under counterfactual assumptions about expenditure growth.⁴ The main result is that most current budget gaps would have been avoided if spending had grown merely at the rate of inflation plus population growth. This analysis makes an important point: spending has grown faster than inflation plus population growth, so real, per capita expenditures have increased over time. This information does not, however, indicate what to expect in the future, whether in the aggregate or for individual states.

The U.S. Government Accountability Office projects aggregate state and local expenditures, revenues, and deficits.⁵ It uses a methodology similar to that used in the Congressional Budget Office's analyses of the federal, long-term budget outlook.⁶ The main result is that under CBO-like assumptions, state spending and deficits will increase without bound relative to GDP. The key driver of this increase is health-care costs, of which the largest fraction is Medicaid.

⁴ Matthew Mitchell, "State Spending Restraint: An Analysis of the Path Not Taken" (working paper no. 10-48, Mercatus Center at George Mason University, Arlington, VA, 2010).

⁵ U.S. Government Accountability Office, *State and Local Governments: Fiscal Pressures Could Have Implications for Future Delivery of Intergovernmental Programs*, GAO Report 10-899 (Washington, DC: GAO, 2010).

⁶ See, for example, CBO, "CBO's 2011 Long-Term Budget Outlook." The CBO considers two sets of assumptions. Under its extended-baseline scenario, it assumes that existing laws continue, so that expenditures and revenues increase in ways consistent with these laws. Under its alternative fiscal scenario, it assumes that policy adjustments that have typically occurred in the past (e.g., de facto indexation of the alternative minimum tax, or regular suspension of the sustainable growth rate formula for Medicare reimbursements) continue to occur going forward. The alternative scenario implies more rapidly rising expenditures and less rapidly increasing tax revenues, implying larger deficits and a faster-growing debt.

Assistant Professor of Finance Robert Novy-Marx and Associate Professor of Finance Joshua Rauh show that the unfunded pension liabilities of state and local governments are substantially higher than official reports indicate.⁷ Their key point is that official calculations assume a risky (large) discount rate in computing the present value of future pension payouts, and these payouts are virtually certain to occur given most states' statutory and constitutional requirements.⁸ Thus, the present value of future payouts should utilize a riskless discount factor, and this lower rate implies that liabilities are much higher than reported.⁹ In their base case, correctly measured liabilities exceed stated liabilities by roughly \$1.3 trillion.¹⁰

The existing literature on state fiscal outlooks thus provides important information. A full assessment, however, should discuss the differences across states and integrate the pension and non-pension aspects of these fiscal outlooks.

III. Where Have the States Been?

As a first step in assessing the fiscal future of the 50 states, this paper examines the history of state and local fiscal expenditures. History provides a sense of how state and local governments have gotten to their current positions, and it provides a benchmark for projecting what might occur in future.

Figure 1 shows state and local expenditures, state and local revenues, and state and local deficits, in all cases divided by GDP, for the period 1962–2008.¹¹ This paper focuses on the period up to the recent

⁷ Robert Novy-Marx and Joshua Rauh, "Public Pension Promises: How Big Are They and What Are They Worth?" *Journal of Finance*, forthcoming.

⁸ Jeffrey Brown and David Wilcox, "Discounting State and Local Pension Liabilities," *American Economic Review* 99, no. 2 (2009): 538–542.

⁹ Consider, for example, a benefit payment of \$1,000 that a state owes in 20 years. At a risky interest rate of 8%, the state's current liability for that payment is only \$215. At a risk-free interest rate of 2%, the liability is \$673.

¹⁰ The Pew Center on the States documents a roughly \$1 trillion underfunding of state and local pension and health-care plans in *The Trillion Dollar Gap: Underfunded State Retirement Systems and the Roads to Reform* (Washington, DC: Pew Center on the States, 2010). The Center provides an updated figure of \$1.26 trillion in "The Widening Gap: The Great Recession's Impact on State Pension and Retiree Health Care Costs" (Washington, DC: Pew Center on the States, 2011). The CBO discusses the different approaches to measuring the underfunding of state and local pension plans in "The Underfunding of State and Local Pensions Plans," Economic and Budget Issue Brief (Washington, DC: CBO, May 2011).

¹¹ These data are from the Economic Report of the President (Washington, DC: Government Printing Office, February 2011). The sample starts in 1962 because that is the first year of consistently reported data.

financial crisis and recession in part to reduce the effects of this unusual event and in part because this paper consistently makes assumptions that “bias” the results toward an optimistic scenario. The paper then analyzes how alternative samples and assumptions might impact key conclusions.

The data show, first, that state and local expenditures (the solid line) have trended upward relative to overall economic output, rising from roughly 8 percent of GDP in 1962 to more than 14 percent in 2008.¹² The data also show, however, that revenues have kept pace and indeed have often exceeded expenditures (the dashed line), yielding net surpluses in many years (the dotted line). Thus, while state and local government activity has risen substantially as a share of the economy, this growth did not yield major deficits and even appears to have left states with net (explicit) assets (see section IV).

Figure 2 illustrates that most of the increase in expenditures over recent decades has been due to health care, including Medicaid.¹³ The graph shows the share of state and local expenditures accounted for by all categories of health-care spending; this share has trended upward over time, from roughly 16 percent of expenditures in 1992 to roughly 18 percent in 2008.¹⁴ Since health-care expenditures have increased relative to total expenditures, and total expenditures have increased relative to GDP, health-care expenditures have also increased relative to GDP. This pattern mirrors the federal budget, where expenditures on Medicaid and Medicare have increased steadily both relative to GDP and as a fraction of federal expenditures.¹⁵

In recent decades, therefore, state and local expenditures have grown faster than GDP, and this growth in large part reflects increased health-care expenditures. Both trends are problematic; the question is, when will they become a severe problem? The next two sections attempt to address that question.

¹² Similarly, Mitchell shows that real, state, and local consumption expenditure plus gross investment grew 1.0% faster per year over the 1950–2009 period than real GDP. Mitchell, “State Spending Restraint.”

¹³ The data on health-care expenditures are from the U.S. Census Bureau, <http://www.census.gov/govs/estimate/>. Clicking on the link for particular state provides excel files with the necessary tables. The data on state GDP are from the Bureau of Economic Analysis, “GDP by State,” news release, June 7, 2011, http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm.

¹⁴ The health category is the sum of several components included under social services and income maintenance in the Census Bureau data set: vendor payments (mainly Medicaid), hospitals, and health. Of these, vendor payments and hospitals are the largest. Mitchell and the GAO make a similar point for somewhat different samples and definitions of health-care expenditures. See Mitchell, “State Spending Restraint.” and GAO, “State and Local Governments.”

¹⁵ CBO, “CBO’s 2011 Long-Term Budget Outlook.”

IV. Where Are the States Now?

The next step in analyzing the fiscal position of U.S. states is to determine where they stand now, given past spending and tax policies. To do this, this paper examines various measures of state solvency. None of the measures are perfect, due to data limitations, but together they paint a clear picture of the challenges that state governments face. As above, this paper considers assumptions that err on the optimistic side to make clear that the conclusions below are, if anything, too rosy.

Table 1 displays several measures of state and local fiscal health for all 50 states and for the United States overall. The data are for the end of 2008 and are displayed relative to state or aggregate GDP. The paper begins with the simplest possible measure and works up to more comprehensive measures.¹⁶

Column 1 presents data on the gross, explicit debt ratios of state and local governments, with no adjustment for assets held or for implicit liabilities due to state and local employee pensions. This measure is the one most readily compared to the frequently cited level of federal debt held by the public, which will be roughly 70 percent by the end of the 2011 fiscal year.¹⁷ That debt ratio also ignores implicit liabilities for retirement and health-care programs (i.e., Social Security and Medicare).

The debt to GDP ratios range from 6.0 percent to 25.4 percent, and most fall below 20 percent. The states with the highest debt burdens, according to this measure, are Massachusetts, Kentucky, and New York; the states with the lowest debt burdens are Wyoming, Idaho, and Oklahoma.

These debt ratios, by themselves, are not nearly as alarming as the federal ratio. For the entire country, the ratio of state and local debt to GDP is 17.9 percent, and no state has a ratio as high as 26 percent. Few economists would worry about state solvency based simply on these debt levels. If expenditures were growing relative to GDP, that would still imply eventual insolvency, but so long as this excess growth is not too large, the day of reckoning will be far in the future, leaving ample time for adjustment.

¹⁶ The data on state and local debt and assets are again from the U.S. Census, <http://www.census.gov/govs/estimate/>. The data on state GDP are from the Bureau of Economic Analysis, "GDP by State."

¹⁷ CBO, "CBO's 2011 Long-Term Budget Outlook."

The ratios in column 1 are based on 2008 data and thus do not include the full effects of the recent recession and financial crisis. Taking 2009-10 into account would have generated only a modest net increase in the debt ratios, however. State and local governments experienced much of their budgetary shortfalls in 2008 (\$47.4 billion), and these gaps are already included. In 2009, state and local governments had a net deficit of \$20.1 billion, while in the first three quarters of 2010 they experienced a surplus of \$23.0 billion.¹⁸ The reason for the modest budgetary gaps in 2009 and 2010, despite the recession, is that transfers from the federal government replaced much of the lost tax revenue.

Column 2 adjusts the data in column 1 by subtracting the financial assets of state and local governments, excluding those assets held in government pension funds. This measure thus continues to ignore pension liabilities, but it provides a more accurate picture of state fiscal health by giving a net rather than gross position.¹⁹

The states' net debt positions are even less concerning than the gross debt positions; most states own sufficient financial assets to make their net debts almost irrelevant. The worst net debt ratio, by this measure, is only 9.6 percent (New York), and the ratios are negative for 18 states.²⁰ Overall, the net explicit debt of state and local governments is only 1.9 percent of GDP. This percentage is consistent with the information in Figure 1, which shows that state and local governments have generally run surpluses over much of the post-World War II period.

That state and local governments, by the measure in column 2, are not far from being debt-free is also consistent with the statutory or constitutional balanced-budget requirements that exist in all states except Vermont.²¹ The apparent success of such rules is perhaps surprising, since politicians can evade

¹⁸ These data are from the Economic Report of the President, Table B85.

¹⁹ This measure does not account for the value of nonfinancial assets such as land, buildings, or businesses owned by state and local governments. Including the value of such assets would tend to improve solvency if these assets are not currently being devoted to their most profitable uses (e.g., land is being used for state parks when it would generate higher profits if used for housing developments) or if they are being run inefficiently (e.g., a golf course is being badly managed by government employees but might earn a higher profit if privatized).

²⁰ The net asset ratios for several states, especially Alaska, are sufficiently negative to raise concerns about the underlying data. The states with the most extreme numbers are small, however, so their data have minimal impact on the overall assessments.

²¹ National Conference of State Legislatures, *NCSL Fiscal Brief: State Balanced Budget Provisions* (Washington, DC: NCSL, October 2010), <http://www.ncsl.org/documents/fiscal/StateBalancedBudgetProvisions2010.pdf>.

these restrictions in numerous ways. Plus, the rules themselves are often weak; for example, some require the governor to submit a balanced budget, or the legislature to pass a balanced budget but do not prevent the carryover of a deficit. Existing work on state-level balanced-budget rules suggests that they constrain deficits under some but not all conditions.²²

If the debt ratios in column 2 were the whole story, then concerns about state fiscal outlooks would appear minor. For two reasons, however, these measures of fiscal health are incomplete. On the one hand, officially recorded debts and assets are not the whole story; state and local governments have significant “off-balance-sheet” liabilities in the form of pension liabilities for state and local employees, and these exceed existing asset balances in the relevant pension funds. On the other hand, future expenditures are on a path that will worsen state government fiscal health over time. The remainder of Table 1 addresses the first of these issues. Section V addresses the second.

Column 3 adjusts the data in column 2 by adding officially reported state and local pension liabilities, minus officially reported state and local pension assets, to the net indebtedness measures.²³ Reported liabilities exceed reported assets, so solvency worsens for most states. The ratio of explicit plus implicit debt to GDP, however, is still moderate rather than extreme. For state and local governments overall, the ratio is only 2.2 percent. The highest ratio (New Jersey) is only 17.9 percent, and more than 40 states have ratios below 10 percent. Twelve states continue to show net assets by this measure.

The actual degree of state solvency, however, is almost certainly worse than column 3 suggests, for the reasons discussed by Novy-Marx and Rauh and by Finance Professor Jeffrey Brown, Economics Professor Robert Clark, and Rauh.²⁴ The crucial issue is that officially reported pension liabilities assume a risky interest rate when discounting future payouts (typically, about 8 percent, the historical return on

²² See, for example, James M. Poterba, “States’ Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics,” *Journal of Political Economy* 102, no. 4 (1994): 799–821 and Henning Bohn and Robert Inman, “Balanced Budget Rules and Public Deficits: Evidence from the U.S. States,” *Carnegie-Rochester Conferences Series on Public Policy* 45 (1996): 13–76.

²³ The data are again from the U.S. Census Bureau. This definition is equivalent to assuming that state and local governments undertake explicit borrowing equal to the difference between their pension liabilities and their pension assets, thus making their pensions fully funded.

²⁴ Novy-Marx and Rauh, “Public Pension Promises;” Jeffrey R. Brown, Robert Clark, and Joshua Rauh, “The Economics of State and Local Pensions” (working paper no. 16792, National Bureau of Economic Research, Cambridge, MA, 2011).

stocks), but this approach is problematic. The pension obligations of state and local governments, the future payouts owed to those already collecting pensions, and the future payouts to those not yet retired but contributing are “certain” in the sense that state and local governments have legal obligations to make these payments. Standard financial economics holds that non-risky future payments should be discounted at a non-risky interest rate, which is much lower than 8 percent. A lower interest rate makes the appropriate present values larger.

Novy-Marx and Rauh provide detailed calculations of the appropriate adjustments to state pension liabilities.²⁵ They consider a range of assumptions about the appropriate liability concept; the key issue is whether to include only those liabilities that have already been incurred (to retirees, separated but not retired employees, and current employees with vested benefits) or to also include benefits that would accrue in the future as existing employees earn higher benefits over time and future employees earn benefits. This paper employs their most conservative measure of liabilities, which they refer to as the accumulated benefit obligation (ABO). The ABO is the amount state and local pension plans would owe if their plans were terminated.

Column 4, therefore, adjusts the numbers in column 3 by using the Novy-Marx data on the estimated pension liabilities of state and local governments, rather than officially stated pension liabilities; the former exceed the latter by about \$1.3 trillion in aggregate as of June 2009.²⁶ The differential between the adjusted numbers and the official numbers is of the same magnitude as officially reported non-pension debt.²⁷

The status of state fiscal health implied by column 4 is noticeably worse than that implied by column 3. The net, explicit-plus-implicit indebtedness ratio aggregated over all states is now 11.2 percent, and ten states have ratios exceeding 20 percent. The most heavily indebted states are Rhode Island,

²⁵ Novy-Marx and Rauh focus on large government pension plans, so the ones they consider are state rather than local.

²⁶ These are the data in the column labeled “ABO Liabilities, Treasury Rate” in Table 4.

²⁷ The calculations in Table 1 do not include unfunded liabilities for the health-care benefits of retired state and local government employees. The Pew Center on the States estimates these to be \$587 billion in present value as of 2008 in “The Trillion Dollar Gap.” Inclusion of this liability would make the net indebtedness picture worse. It is not included here because information is not readily available by state.

Kentucky, South Carolina, and New Jersey, all with ratios above 25 percent. Interestingly, New Jersey has recently been at the forefront of battles to reign in state spending, but the other heavily indebted states have not. California, another state whose budget battles have made headlines, has a ratio of only 7.7 percent, making it far from being the worst offender.

The results in Table 1 suggest a somewhat mixed message. On the one hand, even before the recent recession, state and local governments were not in fiscal balance once one accounts explicitly for pension liabilities. On the other hand, the degree of indebtedness for most states was not extreme. A few states were already overly leveraged at the end of 2008, but the number of such states was not sufficient to suggest an overall crisis in state and local finances.

The data are also interesting relative to the earlier discussion about state-level balanced-budget requirements. While the official, widely reported and visible debt numbers (column 2) are broadly consistent with the spirit of budget balance, the truer assessment of state fiscal positions is not. The data thus suggest that state and local governments do find ways around balanced budget rules. The existence of large, implicit liabilities is also consistent with the view that when policy targets a particular concept, that concept tends to obey the official target.²⁸ But this attention does not guarantee that the adoption of a balanced budget rule has addressed the more fundamental issue—true state and local fiscal balance.²⁹

V. Where Are the States Headed?

The information above suggests that state and local governments are not in ideal fiscal shape; most states have substantial net debt once one accounts appropriately for pension liabilities. But this information does not provide a complete picture of whether the fiscal future is rosy or bleak; to address that question, it is necessary to combine information about where states are now with plausible assumptions about how their output, spending, and interest costs will evolve.

²⁸ A similar example is that when education policy targets student test scores, these scores indeed rise. But test-score increases do not guarantee that true learning has increased.

²⁹ Mitchell finds that tax and expenditure limits play a relatively modest role in actually limiting spending. Matthew Mitchell, “TEL It Like It Is: Do State Tax and Expenditure Limits Actually Limit Spending?” (working paper no. 10-71, Mercatus Center at George Mason University, Arlington, VA, 2010).

This section projects states' net indebtedness ratios under a range of assumptions. It is important to emphasize that all projections are, to a large degree, just a product of the assumptions. By varying the assumptions, one can obtain rosy or pessimistic results. So, a better way to think about projections is not as forecasts of what will happen, but as a way of portraying the different options available to states.

The assumptions adopted in the following analysis are meant to provide a sense of the best-case scenario. For example, this paper assumes that GDP will grow in the future at its average rate over the pre-2009, post-World War II period. This assumption is probably optimistic for two reasons. First, GDP has grown more slowly than the historical average over the past three years. Second, the federal debt burden will plausibly impede growth going forward. Similarly, this paper assumes an interest rate on state and local government borrowing equal to that observed in recent years. But rates have been substantially higher during parts of the post-World War II period, and as debt ratios increase, investors may demand a higher interest rate to compensate for the increased risk of lending to highly indebted governments.

Methodology

The main projections reported here take a particular approach that has a significant benefit and a potential limitation. The key aspect of the approach is that it assumes away any differences across states—other than their initial net indebtedness positions—instead assuming that the interest rate on borrowing and the growth rate of expenditures, revenues, and GDP are all identical across states.

This approach makes sense because each state can, in principle, adjust its spending and taxation policies. Likewise, it makes sense because each state can, in principle, achieve a growth rate for GDP similar to rates experienced in other states. The only fact that each state must take as given is its initial debt (assuming states do not default on this debt).

One benefit of this approach is simplicity. Using common interest rates and growth rates makes calculations for all 50 states more manageable than utilizing state-by-state information, which is often noisy and might introduce spurious heterogeneity into state-by-state projections. This approach also facilitates interpretation of the results. Because the assumptions about interest rates and growth rates are

common across states, it is obvious that any differences in the projections result from differences in initial conditions.

The limitation of using common assumptions across states is that any differences that might occur in the growth of GDP, expenditures, or revenues will not be reflected in the projections. But since that information is highly uncertain, this loss is not substantial.

The last reason to rely on the approach advocated here is that, given the conclusions presented in this paper, it is hard to see why the additional detail and complication that would result from state-by-state assumptions would modify the results in a useful way. The crucial conclusions have little to do with differences across states and mainly reflect factors that are common across states. Thus, it makes sense to set aside most of the state-by-state detail. This paper nevertheless also considers alternative specifications that address the issue of differences across states.

The procedure for calculating projections is as follows. It begins with the formula

$$\text{Debt}_{t+1} = \text{Debt}_t * (1 + i_t) + \text{Expenditures}_{t+1} - \text{Revenues}_{t+1}$$

where

Debt_{t+1} is the debt at the end of period $t + 1$;

Debt_t is the debt at the end of period t ;

i_t is the interest rate on period debt between t and $t + 1$;

$\text{Expenditures}_{t+1}$ is expenditures during period $t + 1$; and

Revenues_{t+1} is revenues during period $t + 1$.

This formula provides a value for the nominal debt of a state in each period of the projection, given the initial debt and given paths for the nominal interest rate, nominal expenditures, and nominal revenues.³⁰

One feature of the projections is that they combine data that cover both state and local governments with data that cover only state governments. Specifically, the estimated growth rate of

³⁰ The initial debt level used is a value that combines information from the end of 2008 and the middle of 2009. 2008 is the last year for which consistent, state-by-state data on debt, assets, and official pension liabilities are available. Also, the Novy-Marx and Rauh, "Public Pension Promises" data on pension liabilities are available only for June 2009.

government expenditures, the values for gross explicit debt, the values for explicit, non-pension assets, and the values for official pension assets all correspond to the sum of state and local governments. The estimated values from Novy-Marx and Rauh for pension liabilities based on appropriate discount factors, however, correspond only to state pension programs.³¹ This means the initial explicit-plus-implicit debt ratios employed in the projections are too low, so the future debt scenarios are actually worse than shown.

The projections assume that the nominal interest rate that state and local governments pay on their debts remains constant at 5 percent per year. This rate is the observed average over the 1992–2011 period, based on the Bond-Buyer Go 20-Bond Municipal Bond Index.³² This assumption biases the projected debt levels downward given that the debt is projected to increase over time, since increasing indebtedness is likely to raise the interest rates that state and local governments face.

The projections assume that nominal, state GDP grows at 7.2 percent per year, which is the average growth rate over the period 1962–2008.³³ The projections assume that tax revenues increase at this same rate, so the ratio of tax revenues to GDP remains constant over time. These two assumptions plausibly bias the projected debt levels downward, since higher debt levels are likely an impediment to growth.

The assumption that tax revenues remain constant as a percentage of GDP is reasonable for three reasons. First, political opposition to tax increases is likely to continue. Second, raising taxes to reduce debt levels would reduce GDP growth rates, both complicating the calculations and reducing the revenue gains from higher rates. Third, state governments in particular face significant impediments to higher tax rates because many individuals and businesses can avoid them by relocating to other states. State and local governments do have some ability to raise tax revenues, of course, and some may respond to their

³¹ Novy-Marx and Rauh, “Public Pension Promises.”

³² These data are reported in Federal Reserve Board Release H.15 and available at <http://www.research.stlouisfed.org/fred2/>. The specific series is <http://research.stlouisfed.org/fred2/series/MSLB20?cid=113>.

³³ This paper starts the sample in 1962 because that is when consistent data on state and local expenditures become readily available. The sample ends in 2008 so that the growth rates are not overly influenced by the recent recession.

fiscal difficulties in this way. The calculations below imply, however, that large increases in tax rates will be necessary to close existing and future fiscal gaps.

The projections in this paper also assume that nominal state and local expenditures will grow at 8.5 percent per year, which is the average growth rate of these expenditures over the 1962–2008 period. The key fact about expenditure growth is that it has consistently exceeded GDP growth; this growth drives the projection results. The excess of state and local expenditure growth over output growth cannot continue indefinitely, however, so projections based on this assumption cannot be thought of as what “will” happen. Instead, the projections show that past behavior cannot continue, and they give a sense of how soon pressure for change is likely to become severe.

This paper calculates projections of debt relative to GDP, for all 50 states and the aggregate across states, for the period 2009–2084.³⁴ Because the projected ratios grow smoothly over time, and because the full set of projections is an unwieldy amount of information, this paper summarizes the projections by just reporting for each state and for the aggregate across states the year in which the debt ratio first exceeds 90 percent—the “tipping point” described by economics professors Carmen Reinhart and Kenneth Rogoff.³⁵

Rogoff and Reinhart have concluded that sovereign nations have a strong tendency to experience growth slowdowns and fiscal crises when their debt-to-GDP ratios reach 90 percent.³⁶ It is not obvious that this same rule of thumb should apply to states. On the one hand, states have one possible escape from excessive debt—a transfer from the federal government—that is not available to a country as a whole (situations like that of Greece, which is in a monetary union, are plausibly in between). On the other hand, states do not have the option to reduce their debts via inflation, which may make them more vulnerable than countries. These caveats aside, the 90-percent ratio is at least a cautionary landmark for states.

³⁴ This paper calculates projections for 75 years to be consistent with analyses like CBO, “CBO’s 2011 Long-Term Budget Outlook.” Since almost all states hit the 90-percent debt to GDP ratio well before 75 years, the exact length of the projections is mainly irrelevant. The one exception is Alaska, which has unusually large asset values. This paper extends the projections for Alaska but takes those results with a grain of salt.

³⁵ Carmen M. Reinhart and Kenneth S. Rogoff, “Growth in a Time of Debt,” *American Economic Review* 100, no. 2 (May 2010): 573–578.

³⁶ *Ibid.*

Projections

Table 2 summarizes projections of the net indebtedness of state and local governments under the assumptions described previously. Column 1 shows for each state the first year in which debt relative to GDP is 90 percent or greater.

The first-order fact about these projections is that most states will hit a ratio of explicit-plus-implicit debt-to-GDP of 90 percent within two to three decades. That day is far enough away that a fiscal crisis within the next few years does not seem likely. But it is close enough that taking action now is sensible.

The case for taking these debt projections to heart is even stronger because they are almost certainly too optimistic. First, the projections ignore the fact that GDP, and therefore state and local revenue, has grown more slowly during 2009, 2010, and likely 2011 than assumed in the projections (which used the average growth rate of GDP for 1962–2008). Second, even setting aside the recent recession and the current slow growth period, we cannot predict whether the U.S. economy will grow as fast in the future as it has in the past. Various structural impediments, such as mounting federal debt, may slow growth. Third, the assumptions about expenditure growth rates are possibly too conservative; past projections of government health-care costs have often erred on the low side. Fourth, if growing expenditures and rising debt levels are not addressed soon, interest rates will likely rise beyond the level assumed above.

The second column of Table 2 shows the “tipping point dates” for projections that make alternative assumptions about the growth rates of expenditures or GDP. Column 2 assumes an expenditure growth rate that is 0.5 percent slower than the historical average; column 3 assumes an output growth rate that is 0.5 percent higher than the historical average. This column also adjusts the growth rate of tax expenditures so that the ratio of revenues to output stays constant over time.

The results show that neither alternative assumption makes a dramatic difference in the results. The year in which states reach the 90- percent tipping point is naturally later in all cases, but for the most part by only a few years. For the aggregate of all states, for example, lower expenditure growth delays

reaching the 90 percent ratio of debt to GDP by only six years; higher output growth delays it by only seven.

The results of these alternative assumptions make clear that state heterogeneity is a minor aspect of state fiscal outlooks. Reducing expenditure growth by 0.5 percent per year is likely to prove difficult because the high overall rate of expenditure growth mainly reflects health-care expenditures, which are driven primarily by national policies. Increasing output growth by 0.5 percent per year is also a huge task. Thus, few states can realistically hope to achieve either or both of these outcomes; they are far more likely to end up nearer the historical averages (which may be too optimistic). State-by-state differences may well determine which states hit fiscal crisis first; but once that happens, the problem is likely to spread rapidly.

VI. Summary

The calculations presented in this paper paint an interesting picture of state government finances, with five main conclusions. First, state government finances are not on a stable path; if spending patterns continue to follow those of recent decades, the ratio of state debt to output will increase without bound. Second, the key driver of increasing state and local expenditures is health-care costs, which means especially Medicaid and subsidies for health-insurance exchanges under the Patient Protection and Affordable Care Act of 2009. Third, states have large implicit debts for unfunded pension liabilities, making their net debt positions substantially worse than official debt statistics indicate. Fourth, if spending trends continue and tax revenues remain near their historical levels relative to output, most states will reach dangerous ratios of debt to GDP within 20 to 30 years. Fifth, states differ in their degrees of fiscal imbalance, but the overriding fact is that all states face fiscal meltdown in the foreseeable future.

A few additional observations are in order.

The outlook for state debt is perhaps less bleak than it is for federal debt, but that assessment may change if pressure to reduce federal expenditures results in a shift of these expenditures to states.³⁷ The Patient Protection and Affordable Care Act, for example, includes provisions that expand Medicaid and require states to provide much of the funding.

The analysis here suggests that some of the recent debate about state fiscal situations has been misfocused. Attempts to reduce the power of government employee unions, or to reduce the generosity of pensions for state and local employees, may well be sensible policy changes, and they have the potential to reduce state and local expenditures. These changes can do little to avoid the looming fiscal crisis, however, because that outcome is driven far more by rising health-care costs. In particular, changes in union or pension policy can reduce the existing stock of net debt, but they do little to slow expenditure growth rates.

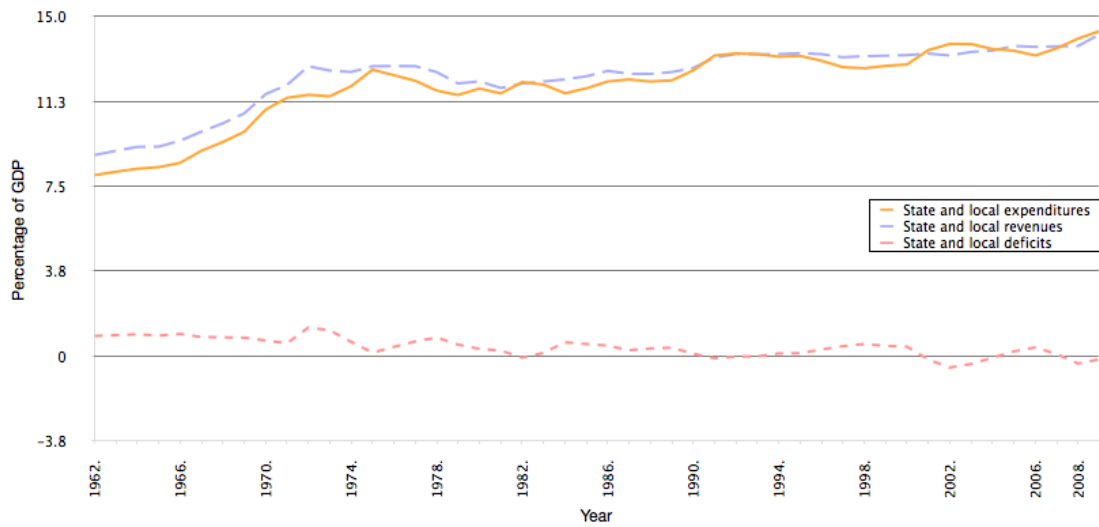
The crucial question is what states can do to avoid fiscal meltdown. Unfortunately, all the options involve substantial political pain, which may cause the necessary actions to be delayed until a crisis occurs. Setting political constraints aside, the way for states to avoid fiscal crisis is to slow the growth of health-care expenditures. This task is difficult, however, since the federal government gives states relatively little freedom to limit Medicaid expenditures, unless a state opts out of the program entirely.

The policy changes that can help states avoid fiscal meltdown, therefore, must come from the federal government. One possibility is converting Medicaid into block grants to states, with each state having substantial leeway to determine exactly who and what is covered under the state plan. For the block grant approach to make a difference, of course, the formula for adjusting it over time must limit the rate of increase relative to the past several decades; in the short term, this may mean that less care is available for state Medicaid beneficiaries. The block grant approach can plausibly generate a lower rate of health-care cost increases. However, because states will be free to adjust their programs in ways that reduce costs without major reductions in health care. Over time, therefore, the block grant approach is

³⁷ See, for example, Michael Cooper, “No Matter How Debt Debate Ends, Governors See More Cuts for States,” *New York Times*, July 15, 2011.

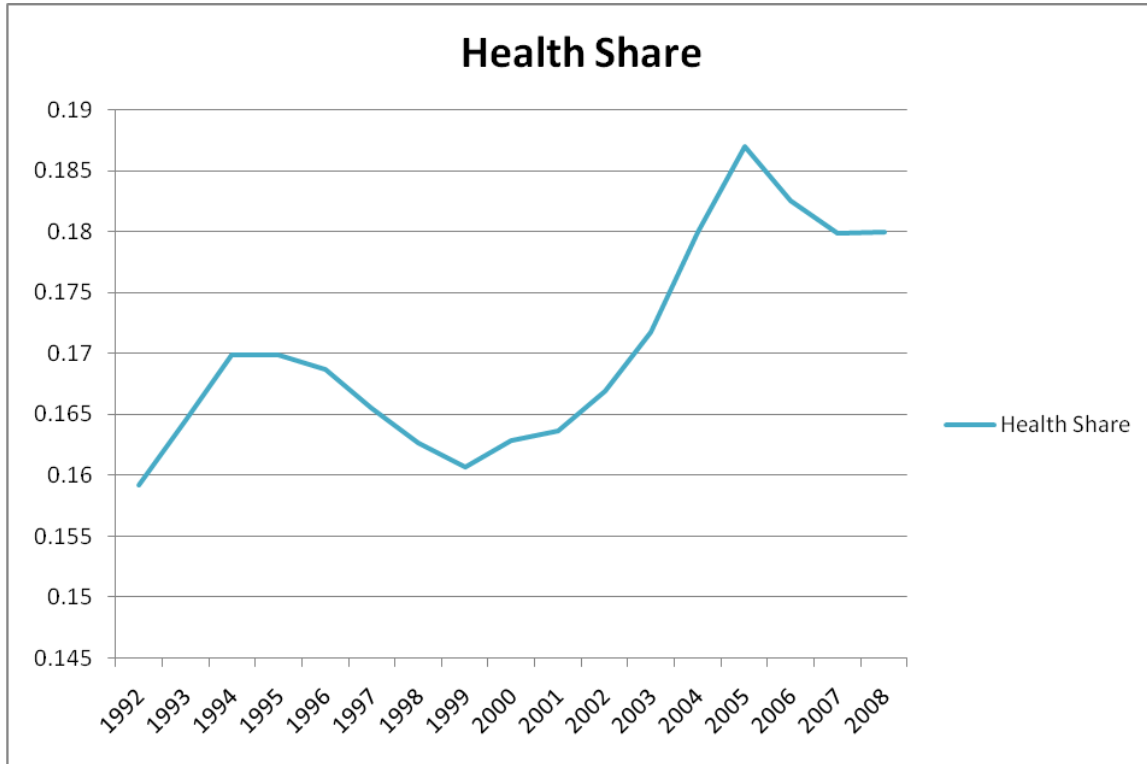
plausibly consistent with both a lower growth rate for Medicaid expenditures and the effective provision of health care to beneficiaries because of increased efficiency generated under state-level control.

Figure 1: Aggregate State and Local Expenditures Relative to GDP,
1962–2008



Source: *Economic Report of the President* (Washington, DC: Government Printing Office, February 2011)
Produced by: Jeffrey Miron

Figure 2: State and Local Government Health-Care Expenditures as a Fraction of Total Expenditures, 1992–2008



Source: The data on health-care expenditures are from the U.S. Census Bureau, <http://www.census.gov/govs/estimate/>. The data on state GDP are from the Bureau of Economic Analysis, "GDP by State," news release, June 7, 2011, http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm.
Produced by: Jeffrey Miron

Table 1: Debt Ratios for States

States	Gross, Explicit, Non- Pension Debt	Net, Explicit, Non- Pension Debt	Official, Net, Pension Plus Non- Pension Debt	Novy-Marx and Rauh Adjusted, Net, Pension Plus Non- Pension Debt
Alabama	16.5	1.4	9.1	20.7
Alaska	20.3	-93.7	-95.3	-82.3
Arizona	16.7	0.7	2.7	14.2
Arkansas	13.0	-1.0	3.2	12.2
California	17.8	1.3	-1.8	7.7
Colorado	19.7	2.5	4.9	16.3
Connecticut	16.3	6.9	12.6	23.1
Delaware	13.5	-0.9	0.3	6.0
Florida	19.0	-0.1	-0.5	6.2
Georgia	12.5	1.9	2.8	11.3
Hawaii	15.8	3.3	12.6	22.7
Idaho	10.4	-6.9	-4.5	4.3
Illinois	19.5	5.9	9.2	22.1
Indiana	17.7	0.8	5.8	10.6
Iowa	11.5	-1.4	0.2	6.9
Kansas	16.7	3.6	9.6	16.8
Kentucky	24.7	7.8	17.0	28.7
Louisiana	14.9	-4.3	-4.5	3.9
Maine	15.6	-1.2	6.4	17.8
Maryland	13.5	2.2	3.3	10.2
Massachusetts	25.4	8.3	6.5	13.9
Michigan	20.0	4.3	1.1	9.0
Minnesota	15.9	2.1	5.6	17.2
Mississippi	13.8	0.5	6.9	20.2
Missouri	17.0	0.2	0.4	9.4
Montana	18.1	-13.1	-9.2	0.0
Nebraska	16.5	1.9	-0.5	3.3
Nevada	18.8	4.6	7.8	16.0
New Hampshire	17.9	2.2	7.0	13.8
New Jersey	18.2	6.2	17.9	30.0
New Mexico	17.2	-21.5	-15.0	-0.8
New York	24.3	9.6	-3.8	4.0
North Carolina	12.7	1.8	1.1	7.8
North Dakota	11.5	-19.9	-18.0	-12.0
Ohio	14.6	-4.8	4.4	22.2
Oklahoma	11.2	-3.7	3.3	11.4
Oregon	16.9	0.9	2.5	15.8
Pennsylvania	21.8	3.1	2.3	12.2
Rhode Island	24.1	4.9	14.1	28.1
South Carolina	22.9	8.3	15.9	29.1
South Dakota	13.7	-4.7	-5.7	1.8
Tennessee	14.4	5.7	5.0	10.2
Texas	18.0	0.1	0.3	6.7
United States	17.9	1.9	2.2	11.2

Utah	14.9	-1.2	1.8	9.4
Vermont	17.6	-0.8	2.4	9.3
Virginia	13.6	1.3	2.5	7.5
Washington	19.3	2.6	1.6	8.8
West Virginia	16.7	-2.5	6.8	14.6
Wisconsin	17.6	5.2	3.0	17.6
Wyoming	6.0	-36.2	-35.0	-27.8

*Source: The data on state and local debt and assets are from the U.S. Census, <http://www.census.gov/govs/estimate/>. The data on state GDP are from the Bureau of Economic Analysis, "GDP by State." The data in the fourth column is adjusted using Novy-Marx and Rauh, "Public Pension Promises;" Jeffrey R. Brown, Robert Clark, and Joshua Rauh, "The Economics of State and Local Pensions" (working paper no. 16792, National Bureau of Economic Research, Cambridge, MA, 2011).
Produced by: Jeffrey Miron*

Table 2: Summary of Debt Ratio Projections: First Year in Which Projected Debt Ratio Exceeds 90 Percent

	Baseline	Slower Expenditure Growth	Faster Output Growth
United States	2031	2037	2038
Alabama	2023	2025	2026
Alaska	2068	2095	2094
Arizona	2028	2033	2034
Arkansas	2033	2040	2041
California	2025	2028	2029
Colorado	2045	2059	2061
Connecticut	2034	2042	2043
Delaware	2035	2042	2043
Florida	2030	2036	2037
Georgia	2031	2038	2039
Hawaii	2027	2032	2033
Idaho	2034	2042	2043
Illinois	2029	2034	2035
Indiana	2032	2039	2040
Iowa	2034	2041	2043
Kansas	2034	2040	2042
Kentucky	2023	2026	2026
Louisiana	2032	2039	2040
Maine	2030	2036	2038
Maryland	2029	2034	2035
Massachusetts	2041	2054	2056
Michigan	2023	2025	2026
Minnesota	2028	2033	2034
Mississippi	2026	2031	2032
Missouri	2032	2038	2039
Montana	2038	2048	2049
Nebraska	2032	2039	2040
Nevada	2034	2040	2041
New Hampshire	2035	2043	2044
New Jersey	2029	2035	2037
New Mexico	2026	2029	2030
New York	2029	2033	2034
North Carolina	2041	2053	2054
North Dakota	2052	2070	2070
Ohio	2031	2038	2040
Oklahoma	2035	2043	2044
Oregon	2025	2028	2029
Pennsylvania	2033	2041	2042
Rhode Island	2025	2028	2029
South Carolina	2023	2026	2027
South Dakota	2033	2029	2040
Tennessee	2034	2041	2042
Texas	2042	2054	2055

Utah	2038	2048	2049
Vermont	2033	2041	2042
Virginia	2034	2041	2042
Washington	2032	2038	2039
West Virginia	2033	2041	2042
Wisconsin	2025	2028	2028
Wyoming	2055	2076	2075

Produced by: Jeffrey Miron