

State and Local Governments Reshape Their Finances

By Don Boyd and Lucy Dadayan

State and local governments have been reshaping their finances since the Great Recession. They have been struggling with three major sources of fiscal stress: slow tax revenue growth, growth in pension contributions that has been heavily concentrated in a few states, and Medicaid spending growth driven by recession-related enrollment. In 37 states, pension contributions plus state-funded Medicaid grew by more than state and local government tax revenue between 2007 and 2014, in real per-capita terms. In response to these strains, state and local governments have cut infrastructure investment, slashed support for higher education, cut spending on K–12 education, cut spending on social benefits other than Medicaid, reduced administrative staff and reduced most other areas of the budget.

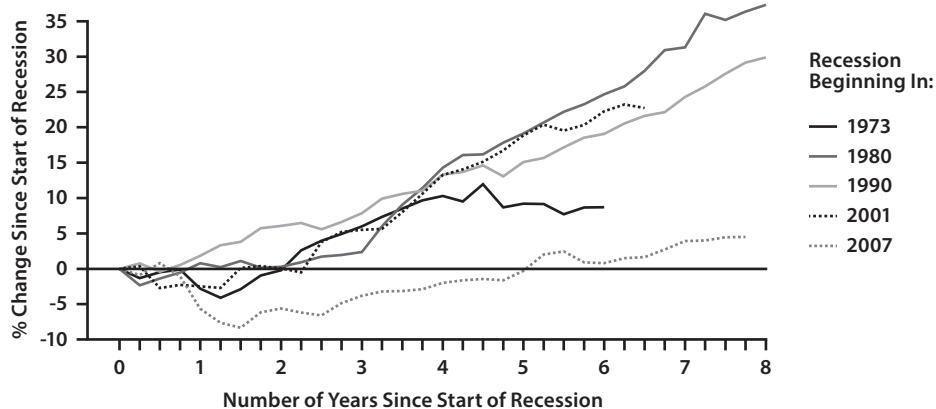
Introduction

State and local governments have been remaking their finances since the Great Recession, doing less of many traditional activities so that they can do more of what they must do. They have been struggling with three major sources of fiscal stress: slow tax revenue growth, growth in pension contributions that has been heavily concentrated in a few states, and Medicaid spending growth driven by recession-related enrollment. Some states have been unscathed by one or more of these forces, but in combination their effect has been substantial for most. In 37 states, pension contributions plus state-funded Medicaid

grew by more than state and local government tax revenue between 2007 and 2014, in real per-capita terms. In response to these strains, state and local governments have cut infrastructure investment, slashed support for higher education, cut social benefits other than Medicaid, cut spending on K–12 education, reduced administrative staff and reduced most other areas of the budget.

The near-term outlook is dour. Tax revenue is likely to grow slowly, pension contributions almost certainly will increase substantially and forecasters anticipate that the state share of Medicaid will

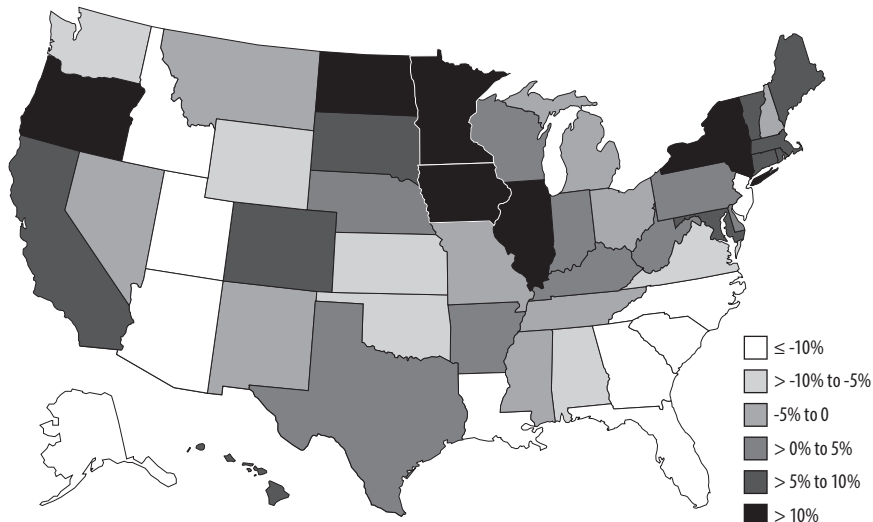
Figure A: Percent Change in Inflation-adjusted State and Local Government Tax Revenue Since Start of Recession



Source: Rockefeller Institute analysis of data from Bureau of Economic Analysis.

Note: Data are shown only until the start of the next recession; 1980 and 1981 recessions are treated as single recession.

Figure B: Percent Change in 4-quarter Sum of State Tax Revenue, 2007q4 to 2015q3, Adjusted for Inflation and Population Change



Source: Rockefeller Institute analysis of tax revenue and population from U.S. Bureau of the Census, GDP price index from BEA.

continue to grow faster than the economy. This suggests that many states will struggle to fund desired programs. As always, conditions vary greatly across states. Oil-patch states are suffering devastating revenue declines and several states face extreme pension problems, but some states are relatively unstressed.

Three Major Sources of Stress: Taxes, Pensions and Medicaid

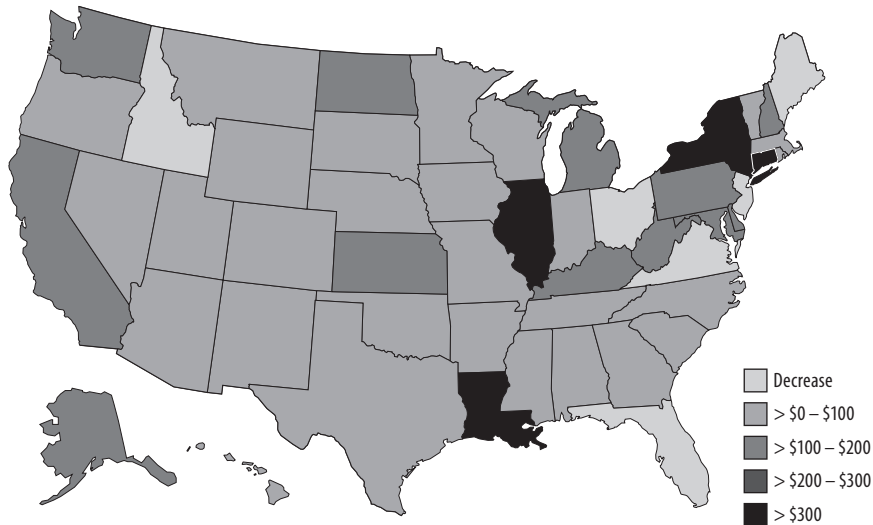
State and local government tax revenue has grown far more slowly than it has following prior recessions. Nearly eight years after the start of the recession, inflation-adjusted tax revenue is only 4.5 percent above the pre-recession level, compared to about 37 percent after the 1980 recession, 30 percent after the 1990 recession and 23 percent after the 2001 recession.¹ (See Figure A.)

The main reasons for weak tax revenue relative to past recessions are (1) the drop in revenue at the start of this recession was much larger than

previous declines, (2) the economic recovery has been slow and (3) states have had little appetite for tax increases. We have discussed these issues in depth elsewhere.²

State government tax revenue has been hit harder than local government revenue because many states rely especially heavily on economically sensitive personal income and sales taxes. The extent of weakness varies greatly. In 25 states, inflation-adjusted per capita state government tax revenue remains below its level at the start of the recession, particularly in the Southeast and the Southwest—many of these states suffered greatly from the real estate bust and also have been reluctant to raise taxes. Revenue is up more than 10 percent in six states, and more than 5 percent in 15 states; revenue growth has been strongest among states where the economic recovery has been strong and among states willing to increase taxes (Figure B). Real per capita state tax revenue rose by more than \$100 in only 16 states.

Figure C: Change in State and Local Government Pension Contributions, Inflation-adjusted Dollars per Capita, 2007 to 2014



Source: Rockefeller Institute analysis of Annual Survey of Public Pensions, U.S. Bureau of the Census.
 Note: 2008 data used for West Virginia due to extraordinary contribution in 2007 funded from bond proceeds.

Extraordinary Growth in Pension Contributions in Some States

Pension contributions historically have been a relatively small share of state budgets and until recently had not been a major source of fiscal stress. In 2007, contributions were 5.8 percent of state and local government tax revenue and were only 3.3 percent of total general expenditures. Pension contributions are essentially “must do” expenditures: Most public pensions have strong legal protections and if pension funds become underfunded, state and local governments must eventually make up the shortfalls. These catch-up contributions are particularly painful because they purchase no new services—they are needed to pay for services delivered years in the past.

Pension contributions for the United States as a whole have been driven up dramatically since the recession, primarily because of pension fund investment shortfalls. Between fiscal years 2007 and 2014, inflation-adjusted state and local government annual

pension contributions increased by \$39 billion, or 46.9 percent. This amounted to 92 percent of the growth in state and local government inflation-adjusted tax revenue over this period.

Pension contribution increases have been very uneven. Real per capita expenditures rose by more than \$300 in four states (Connecticut, Illinois, Louisiana and New York), accounting for nearly half of the national contribution increase. Contributions rose by \$100 to \$200 in 12 states (no states were between \$200 and \$300), and increased by less than \$100 in 35 states (including declines in six states) (Figure C). Thus, the extent to which pension contributions have caused fiscal stress varies greatly.

Higher Medicaid Spending Driven by Recession-related Enrollment Growth

State-financed Medicaid expenditures have risen by \$37 billion, or 23 percent, since 2008 after adjusting for inflation. Most of this increase was driven by recession-related rises in enrollment that

have not been reversed. Between 2008 and 2011 enrollment rose by 18.5 percent, compared to an increase of only 2.9 percent over the prior three-year period. While states can choose how generous their Medicaid programs will be, both in terms of populations and services covered, within those parameters Medicaid is essentially an entitlement, and the costs of enrollment increases must be funded unless policies are changed.

Table A: Medicaid Expenditures and Enrollment Before, During and After the Great Recession

Federal fiscal years	Enrollment (millions)	Expenditures: billions of 2015\$		
		Total	Federal	State
2005	46.3	\$357.6	\$204.7	\$152.9
2008	47.7	368.5	210.3	158.3
2011	56.5	431.8	275.2	156.6
2013	58.9	442.6	254.3	188.3
2015	70.1	524.5	329.3	195.2
<i>% change</i>				
2005 to 2008	2.9%	3.1%	2.7%	3.5%
2008 to 2011	18.5	17.2	30.9	-1.1
2011 to 2013	4.3	2.5	-7.6	20.3
2013 to 2015	19.0	18.5	29.5	3.7
Post recession: 2008 to 2015	47.1	42.3	56.6	23.4
<i>% change</i>				
2005 to 2008	1.3	\$10.9	\$5.6	\$5.4
2008 to 2011	8.8	63.2	64.9	(1.7)
2011 to 2013	2.4	10.8	(20.9)	31.7
2013 to 2015	11.2	81.9	75.0	6.9
Post recession: 2008 to 2015	22.4	156.0	119.0	37.0

Sources: Centers for Medicare and Medicaid Services (expenditures), MACPAC (enrollment), Bureau of Economic Analysis (GDP price index).

Note: Enrollment is average monthly enrollment for the federal fiscal year. Enrollment for 2015 estimated by authors.

States were protected initially from the costs of recession-related enrollment increases by the federal stimulus program, the American Recovery and Reinvestment Act, or ARRA. However, ARRA provided only temporary support to states, and as that support was removed, states had to replace lost federal funds. Although enrollment rose by only 4.3 percent between 2011 and 2013, state

inflation-adjusted expenditures rose by 20.3 percent while federal expenditures declined by 7.6 percent. (See Table A.)

After 2013, enrollment began to rise in large part because of newly eligible enrollees in states opting into Medicaid expansion under the Affordable Care Act, or ACA. Enrollment rose by an estimated 19 percent between 2013 and 2015.³ These enrollment increases had little impact on state finances because the federal government picked up new costs in expansion states. Thus, between 2013 and 2015, state-financed Medicaid spending increased by only 3.7 percent even though federal spending increased by 29.5 percent (adjusted for inflation). In fact, inflation-adjusted state-financed Medicaid spending was up only 1.3 percent in expansion states, and was up 10.3 percent in non-expansion states.

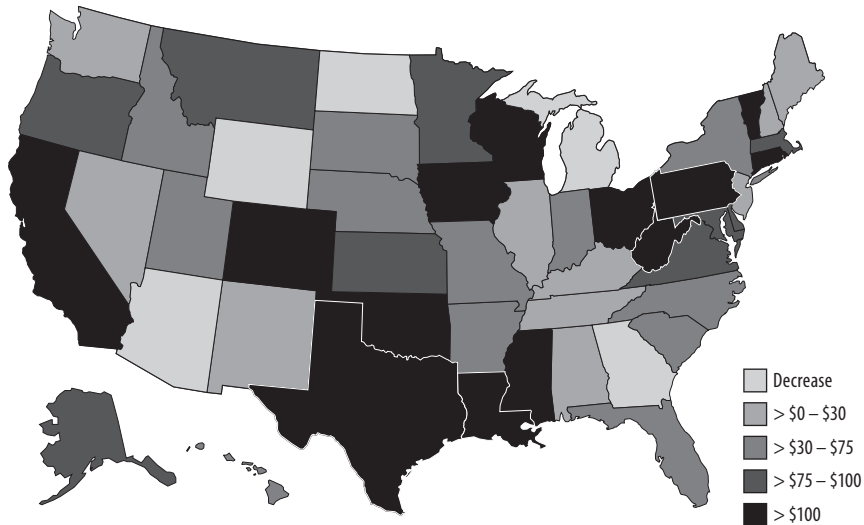
Figure D maps the change in Medicaid spending per capita, adjusted for inflation, between 2008, before recession-related enrollment increases were substantial, and 2015.⁴ Spending increased in 45 states and was up by \$73 per capita in the median state, but the range was great. Two of the nation's most populous states had large increases. California's increase in Medicaid spending of \$234 per capita requires taxpayers to pay \$9 billion more than in 2008, given the state's population of approximately 39 million.⁵ Texas' increase of \$142 per capita amounts to almost \$3.9 billion more annually given the state's population of 27.5 million. By contrast, Medicaid spending increased by less than \$50 per capita in 21 states, presumably causing relatively little fiscal stress in those states.

Net effect: Tax Revenue Growth has not Kept up with Pension Contribution and Medicaid Increases

These three sources of stress have cramped the ability of state and local governments to finance other services. State and local governments' inflation-adjusted spending on pension contributions and state-funded Medicaid increased by a combined \$73 billion between 2007 and 2014, while state and local government tax revenue increased by only \$42 billion⁶ (Table B). These difficult-to-avoid spending increases were nearly twice as great as tax revenue increases, leading state and local governments to cut elsewhere in their budgets.

Figure E shows the net impact by state. Because state tax revenue data were available for 2014 but local revenue data were not, we estimated local government tax revenue to obtain state and local tax revenue for each state.^{7,8} Different states have

Figure D: Change in Per-capita State-funded Medicaid Expenditures, 2008 to 2015, Adjusted for Inflation, in 2015 Dollars



Source: Rockefeller Institute analysis of data from CMS (Medicaid), Census (population), and BEA (GDP price index).

been affected in different ways. For example, 15 states had inflation-adjusted per capita pension contribution increases of more than \$100, 20 states had state-funded Medicaid increases of more than \$100, and 24 states had declines in state and local

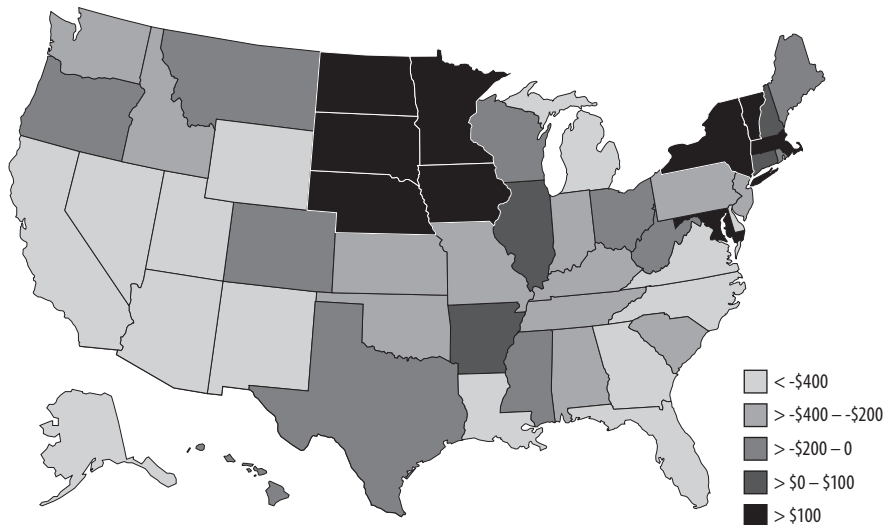
tax revenue of \$100 or more. In combination, the effect has been widespread and substantial. In 37 states pension contributions plus state-funded Medicaid have grown by more than state and local government tax revenue (Figure E).

Table B: Pension Contributions, Medicaid and Taxes: Before and After the Recession (Billions of 2014\$)

	2007	2014	\$ change	% change	\$ change as % of change in taxes
Pension contributions—state and local	\$82.4	\$121.1	\$36.6	46.9%	91.8%
Medicaid state share (mostly paid by states)	151.2	185.4	34.2	22.6%	81.3%
Pensions plus Medicaid	233.6	306.4	72.9	31.2%	173.1%
Taxes—state and local	\$1,475.4	\$1,517.5	\$42.1	2.9%	

Notes and Sources: Pension contributions: data are for pension fund fiscal year; source is Census Bureau Annual Survey of Public Pensions. Medicaid state-share: data are for federal fiscal year; source is Centers for Medicare and Medicaid Services. Taxes state and local: data are for calendar year; source is Bureau of Economic Analysis, NIPA Table 3.3. All values are adjusted to 2014 dollars using the gross domestic price index from BEA.

Figure E: Change in Real Per-capita State-local Taxes from 2007 to 2014 Minus Change in Pension Contributions Plus State-financed Medicaid, in 2014 Dollars



Source: Rockefeller Institute analysis of data from CMS., Census and BEA. See text for details.

States Face Different Stresses

Louisiana faced difficulty in all three areas; pension contributions and state-funded Medicaid both increased by more than twice the United States average, while tax revenue declined by more than \$500 per capita. Alaska, too, faced difficulty in all three areas.

By contrast, in Florida pension contributions did not increase and Medicaid spending increases were far below the U.S. average; however, tax revenue is below pre-recession levels (as Figure B showed for state government taxes). As a result, pension contributions plus Medicaid spending increased by more than taxes in that state. Although Florida governments in aggregate have less inflation-adjusted revenue per capita than before the recession, this may be exactly what political leaders want. It does not necessarily mean that the state is stressed, but it does mean that cuts in spending have been needed to keep spending within available resources.

In Illinois, tax revenue growth outstripped growth in pension contributions plus Medicaid because the state enacted very large tax increases. Tax revenue grew by more than pensions plus Medicaid in New York even though New York had the second-highest pension contribution increase in the nation (after Illinois), because Medicaid growth was slow and tax revenue was strong.

Some states have not experienced stress by these measures, particularly the oil patch states, because the tax data do not reflect their tax revenue declines. Unfortunately, their situation is worsening.

How Governments have Responded— The Reshaping of State and Local Government Finance

State and local governments have responded to sharply constrained resources not by raising taxes (with some exceptions), but by slashing capital spending and cutting many other areas sharply. The

STATE FINANCE

Bureau of Economic Analysis develops estimates of annual state and local government expenditures. These expenditures include amounts spent from state and local governments' own funds as well as amounts spent from federal funds or financed by bonds. We have arranged these expenditures into four broad categories:

- Consumption expenditures, which include spending on critical current activities such as education, public safety, public health, income security, and parks and recreation.⁹
- Social benefit spending, which includes Medicaid spending (including spending from federal funds) and other social program spending.
- Net investment spending, which includes gross investment (actual outlays) on capital projects such as highway and water infrastructure, school buildings and power projects, reduced by an estimate of the amount of capital that was consumed or used up by wear and tear, economic obsolescence, and other factors. (Consumption of capital is a non-cash expenditure.) In concept, net investment spending is the amount actually added to state and local government capital stock above and beyond what is needed to make up for wear and tear and obsolescence.
- All other expenditures, amounting to less than 10 percent of the total. This includes interest payments among other things.

In the tables that follow, we examine how inflation-adjusted state and local government spending changed between 2009 and 2014. We begin with 2009 because that was the peak recession-related year—it takes time for elected officials to change policies in response to a shock such as the Great Recession, and policy responses play out over sev-

eral years. We end with 2014 because that is the latest year available. We convert all numbers to 2014 dollars using the gross domestic product price index so that they are on the same basis as most other data in this chapter.¹⁰

Table C shows that total state and local government expenditures, as measured by the Bureau of Economic Analysis, were down by 2.9 percent between 2009 and 2014. Medicaid expenditures were up 21.5 percent, and capital used up or “consumed” (a non-cash expenditure) also increased, but all other major categories decreased. Gross investment—that is, the amount actually spent on capital—was down 16 percent. And because gross investment in 2014 was only slightly more than the capital that was used up, state and local governments added 49 percent less to their capital stock in 2014 than they did in 2009.

We examine several of these areas in more detail below.

Cuts in Infrastructure Spending

State and local government net investment fell as a share of the gross domestic product from the late 1960s through the early 1980s after the buildout of the national highway system, then was relatively stable for about 20 years before falling after the 2001 recession and plunging after the Great Recession. It is now at its lowest point in more than 50 years (Figure F).

The available data do not allow us to examine changes in *net* investment by category, but they do allow us to examine *gross* investment. Table D shows that every major category of investment was down between 2009 and 2014. The largest dollar decline was in education, reflecting reductions in construction of education buildings. Spending

Table C: State and Local Government Inflation-adjusted Total Expenditures (Billions of 2014\$)

	2009	2014	Change	% change
Total expenditures	\$2,563.3	\$2,487.8	(\$75.5)	-2.9%
Consumption expenditures	1,639.5	1,601.0	(38.5)	-2.4
Medicaid (including federal share)	401.3	487.4	86.1	21.5
Other social benefit spending	134.1	122.5	(11.6)	-8.7
Net investment	168.3	85.2	(83.1)	-49.4
Gross investment in infrastructure, buildings, other capital	394.6	331.3	(63.3)	-16.0
Less: Consumption of fixed capital	226.3	246.1	19.8	8.7
All other expenditures	220.1	191.7	(28.4)	-12.9

Source: U.S. Bureau of Economic Analysis.

Note: All items adjusted by gross domestic product price index, not expenditure-specific indexes.

Figure F: State and Local Government Net Investment as Percent of Gross Domestic Product



Source: U.S. Bureau of Economic Analysis.

on water and sewer systems, public safety, and most other categories was down by double-digit percentages. The most notable exception was transportation investment spending, which was down by 4.1 percent, much less than most categories.

The U.S. Census Bureau collects capital expenditure data for each state; the most recent year for these data is 2013, making it possible to determine which states have cut total capital expenditures the most. As Figure G shows, capital expenditure cuts have been widespread and real per capita spending is down in 43 states. Spending was down by more than \$100 per capita in 33 states. It is not possible to know from these data the extent to which individual states have cut spending on traditional infrastructure, such as highways, transit, and water and sewer systems, versus spending on school buildings, office buildings and other purposes that are not traditional inventory assets.

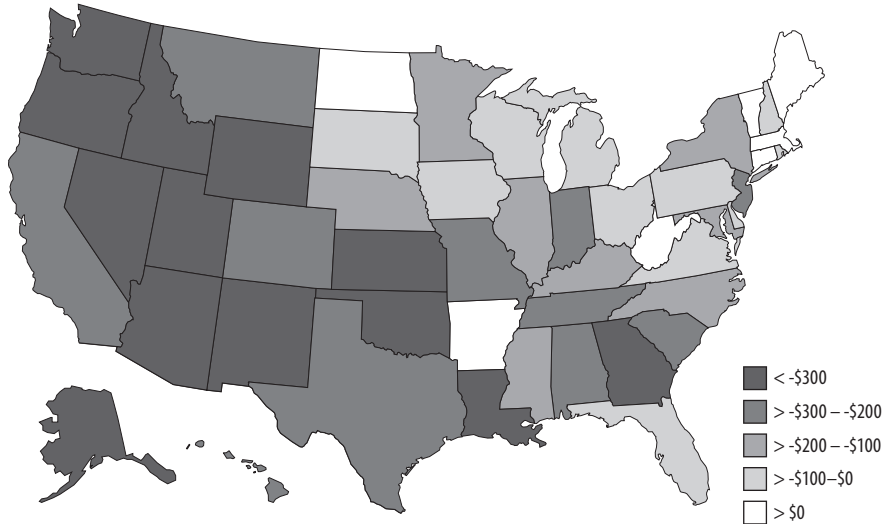
Table D: State and Local Government Inflation-adjusted Gross Investment (Billions of 2014\$)

	2009	2014	Change	% change
Gross investment	\$394.6	\$331.3	(\$63.3)	-16.0%
Education	90.0	61.0	(29.0)	-32.2
Water & sewer systems	41.2	33.6	(7.6)	-18.4
Office	23.2	17.7	(5.5)	-23.5
Transportation total	110.7	106.1	(4.6)	-4.1
Highways and streets	87.4	83.5	(3.9)	-4.5
Other transportation	23.3	22.6	(0.7)	-2.8
Public safety	5.1	3.3	(1.8)	-35.4
Health care	6.6	5.6	(1.0)	-15.5
Amusement and recreation	8.4	5.3	(3.1)	-36.7
Power	12.2	9.7	(2.5)	-20.3
Equipment, intellectual property	87.1	80.3	(6.8)	-7.8
All other	10.2	8.7	(1.5)	-14.8

Source: U.S. Bureau of Economic Analysis.

Note: All items adjusted by gross domestic product price index, not expenditure-specific indexes.

Figure G: Change in Inflation-adjusted State and Local Government Capital Expenditures Per Capita 2009 to 2013, in 2014 Dollars



Source: Rockefeller Institute analysis of data from Census Bureau (expenditures) and Bureau of Economic Analysis (GDP price index).

Cuts in Consumption and Social Benefit Spending

States have cut consumption spending, although not by as much as capital spending. Table E shows that the largest cuts in dollar terms have been in education. However, several of the largest cuts in percentage terms have been in categories that tend

to include assistance for the needy, such as income security and housing and community service.

Cuts in Higher Education Support

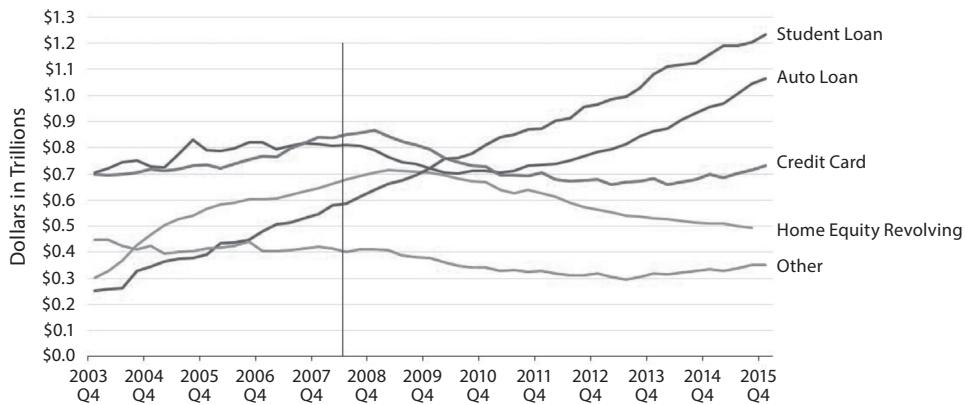
Higher education is often called the “balance wheel” of state budgets—when times are bad, states cut support substantially and when times are good,

Table E: State and Local Government Inflation-adjusted Consumption Expenditures (Billions of 2014\$)

	2009	2014	Change	% change
State & local government consumption expenditures, total	\$1,639.5	\$1,601.0	(\$38.5)	-2.4%
Education	768.8	754.9	(13.9)	-1.8
Public safety	306.1	301.9	(4.2)	-1.4
Economic affairs	183.3	182.9	(0.4)	-0.2
General public service	189.8	181.9	(7.9)	-4.2
Income security	81.7	76.8	(4.9)	-6.0
Net health expenditures; excludes Medicaid	67.9	63.6	(4.3)	-6.4
Recreation & culture	32.0	29.7	(2.3)	-7.1
Housing and community service	10.0	9.3	(0.7)	-7.0

Source: U.S. Bureau of Economic Analysis.

Note: All items adjusted by gross domestic product price index, not expenditure-specific indexes.

Figure H: Trends in Non-mortgage Balances, Debt Balance Composition

Source: Federal Reserve Bank of New York Consumer Credit Panel/Equifax.

they increase support. States do this in part because there is another major source of revenue—tuition—that institutions or states can raise in response.¹¹ Because enrollment has been rising over most of the last two decades, cuts per full-time enrolled student, or FTE, have been large, while restorations per FTE have been muted.

In response to the Great Recession, almost every state substantially cut funding for higher education.

For the United States as a whole, inflation-adjusted state appropriations per FTE declined by 17.6 percent between the peak year of 2008 and 2014 (see Table F, which also provides data for periods before the recession). These cuts were widespread and deep. Of the 47 states that cut inflation-adjusted appropriations per FTE, 40 cut funding by more than 10 percent, 32 cut by more than 20 percent, and eight states cut by more than 30 percent¹² (Table G).

Table F: Higher Education Enrollment and Inflation-adjusted Per-FTE Revenues Before, During and After the Great Recession

State FY	FTE enrollment (millions)	2014\$ per FTE			Net tuition as % of total education revenues
		Educational appropriations	Net tuition	Total educational revenues	
2000	8.605	\$8,000	\$3,309	\$11,308	29.3%
2005	9.896	7,145	4,047	11,154	36.3
2008	10.254	7,956	4,413	12,328	35.8
2011	11.644	6,708	4,941	11,597	42.6
2014	11.138	6,552	5,777	12,266	47.1
		% change			Change in %
2000 to 2005	15.0	(10.7)	22.3	(1.4)	7.0
2005 to 2008	3.6	11.4	9.0	10.5	(0.5)
2008 to 2011	13.6	(15.7)	12.0	(5.9)	6.8
2011 to 2014	(4.4)	(2.3)	16.9	5.8	4.5
Post-recession: 2008 to 2014	8.6	(17.6)	30.9	(0.5)	11.3

Source: State Higher Education Executive Officers.

Note: Adjusted for inflation using gross domestic product price index.

Higher education institutions and states responded by raising tuition. For the United States as a whole, inflation adjusted net tuition per student increased from \$4,413 in 2008 to \$5,777 in 2014, or 30.9 percent. Of the 47 states that increased inflation-adjusted tuition per FTE, 44 increased tuition by more than 10 percent, 37 increased it by more than 20 percent and 25 states increased tuition by more than 30 percent.

Appropriation cuts and tuition increases have shifted costs from states to students; between 2008 and 2014, the tuition share of education revenue increased from 35.8 percent to 47.1 percent (Table F). This was part of a longer term trend—back in 2000, the tuition share of education revenue was only 29.3 percent. Tuition increases have made higher education more difficult to afford and potentially have reduced access. In addition, tuition increases have not kept up fully with appropriation cuts. Total education revenue is down slightly since 2008, potentially jeopardizing education quality. In fact, costs of higher education have been increasing more rapidly than overall prices in the economy, so institutions are able to buy less with a dollar now than they could previously.¹³ Public higher education institutions in many states cut full-time faculty positions, eliminated course offerings, and reduced library and computer lab services, among other service reductions. These cuts diminish the quality of education and the potential quality of the workforce, which in return can have a negative impact on longer-term economic growth.

Tuition increases also have contributed to increases in student loans, which nearly doubled between 2008 and 2014, from about \$600 billion to nearly \$1.2 trillion, and student loans outstanding now surpass all other types of non-mortgage debt (See Figure H).

Cuts in K–12 Education Spending

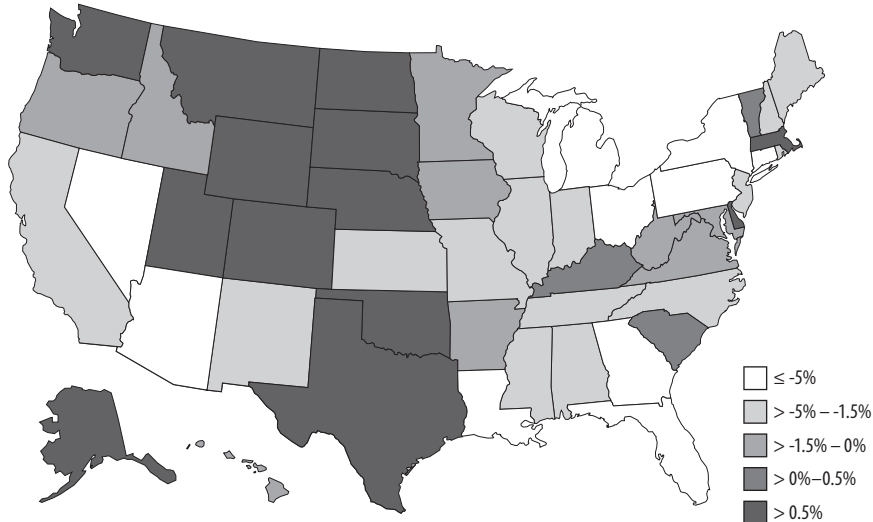
A majority of states have cut K–12 spending in response to the Great Recession. For the United States as a whole, inflation-adjusted per pupil K–12 spending from state, local and federal sources combined declined by 6.2 percent between 2008 and 2013, in contrast to more than 20 percent growth between 2000 and 2008 before the Great Recession (Table H). Overall, 33 states cut inflation-adjusted per pupil spending between 2008 and 2013, 10 of which cut funding by more than 10 percent (Table I). Most of the states that cut per pupil K–12 spending are in the South or the West.

Table G: Percent Change in Enrollment and Inflation-adjusted Per-FTE Revenue Sources, 2008 to 2014

State	FTE enrllmt.	Educ. approps.	Net tuition	Total education revenues
United States	8.6	(17.6)	30.9	(0.5)
Florida	12.5	(30.7)	29.8	(17.2)
Louisiana	1.3	(39.6)	53.9	(16.9)
Mississippi	11.5	(22.5)	(3.2)	(15.7)
Massachusetts	16.4	(21.9)	(6.1)	(15.6)
Nevada	1.9	(29.7)	37.4	(14.6)
Idaho	27.8	(32.4)	71.0	(12.3)
Missouri	19.9	(26.7)	11.6	(11.1)
Hawaii	14.0	(23.6)	42.0	(9.4)
North Carolina	12.5	(20.5)	33.8	(8.0)
South Carolina	14.4	(35.5)	29.2	(6.8)
Texas	23.6	(13.4)	6.1	(6.7)
Kentucky	8.7	(23.3)	22.0	(6.6)
Connecticut	15.0	(25.2)	24.0	(5.8)
Utah	15.8	(24.5)	32.7	(5.4)
Arizona	15.7	(34.7)	50.1	(4.9)
California	0.3	(13.6)	49.0	(4.9)
Oklahoma	10.8	(20.1)	31.2	(3.9)
Wyoming	8.4	(3.8)	(2.7)	(3.8)
Pennsylvania	4.6	(36.4)	20.9	(3.7)
New Jersey	15.2	(27.2)	25.7	(3.0)
Ohio	6.9	(22.3)	14.1	(2.7)
Oregon	27.7	(28.3)	26.4	(2.6)
Tennessee	9.7	(21.7)	40.2	(1.5)
Maryland	12.3	(11.1)	10.7	(1.3)
West Virginia	3.6	(24.7)	31.6	(1.1)
Kansas	8.8	(17.2)	22.2	(0.9)
Alabama	4.6	(37.9)	59.4	0.5
Georgia	11.9	(21.9)	92.4	0.9
Wisconsin	2.2	(16.9)	31.7	1.2
Minnesota	4.1	(22.8)	32.2	1.3
Virginia	12.8	(25.0)	33.2	2.2
New Mexico	15.8	(22.6)	223.0	2.2
Arkansas	11.3	(4.3)	21.0	2.4
Washington	10.7	(24.0)	64.5	2.4
Montana	11.0	(3.6)	9.3	2.8
Vermont	5.8	(9.6)	7.6	3.2
New Hampshire	12.1	(32.2)	18.2	3.3
Maine	2.9	(11.4)	19.4	4.0
Iowa	10.8	(19.6)	31.2	4.9
New York	7.5	(3.2)	27.3	6.0
Rhode Island	3.9	(22.8)	27.0	6.4
Nebraska	5.6	(4.1)	34.4	8.6
Alaska	9.4	7.4	13.4	8.9
Indiana	8.1	(2.9)	20.8	9.6
Michigan	1.2	(21.7)	35.5	11.0
South Dakota	13.8	(17.9)	45.5	11.2
Delaware	12.8	(23.2)	37.3	13.5
Colorado	12.3	(26.4)	49.1	16.6
North Dakota	5.6	39.7	12.2	25.5
Illinois	(16.6)	52.5	92.3	60.7

Source: State Higher Education Executive Officers (SHEEO).

Figure I: Percent Change in State and Local Government Employment, Fiscal Years 2009 to 2015



Source: Rockefeller Institute analysis of Quarterly Census of Employment and Wages from BLS.

Despite post-recession economic growth, many states have continued to cut funding for K–12 education.¹⁴ States' cuts in K–12 funding have been driven by factors including state efforts to close budget shortfalls, rising costs, reduction in federal education aid and other state policy choices.¹⁵ The cuts in K–12 education spending have resulted in layoffs of more recently hired teachers, larger class sizes, cuts in instructional and non-instructional services, cuts in professional development for teachers and staff, among other service reductions. While the cuts may help states to close the budget shortfalls, they could result in diminished educational outcomes and a less qualified workforce for the future.

Workforce Changes

As we have discussed elsewhere, state and local governments cut employment considerably in response to the Great Recession, unlike most prior recessions when employ-

Table H: K–12 Enrollment and Inflation-adjusted Expenditures Before, During and After the Great Recession

School year	2013\$		
	Fall enrollment (millions)	K–12 expenditures (\$ billions)	K–12 per pupil expenditures
2000	46.857	\$498.60	\$10,714
2005	48.795	580.8	11,965
2008	49.291	643.8	13,054
2011	49.484	625.4	12,670
2013	49.77	606.5	12,247
	% change		
2000 to 2005	4.1	16.5	11.7
2005 to 2008	1	10.8	9.1
2008 to 2011	0.4	-2.9	-2.9
2011 to 2013	0.6	-3	-3.3
Post-recession: 2008 to 2013	1	-5.8	-6.2

Source: National Center for Education Statistics.

Table I: Percent Change in Enrollment and Inflation-adjusted Per-pupil K–12 Spending, 2008 to 2013

State	K–12 enrollment			K–12 per-pupil real spending		
	Fall 2008	Fall 2013	% change, 2008–13	2008	2013	% change, 2008–13
United States	49,290,559	49,769,818	1.0%	\$13,054	\$12,247	-6.2%
Florida	2,666,811	2,692,162	1.0	12,716	9,692	(23.8)
Nevada	429,362	445,707	3.8	11,362	9,170	(19.3)
Idaho	272,119	284,834	4.7	9,369	7,605	(18.8)
Arizona	1,087,447	1,089,384	0.2	10,633	8,663	(18.5)
Georgia	1,649,589	1,703,332	3.3	12,575	10,346	(17.7)
Colorado	801,867	863,561	7.7	12,118	10,281	(15.2)
California	6,343,471	6,299,451	(0.7)	12,427	10,755	(13.4)
Texas	4,674,832	5,077,659	8.6	11,679	10,142	(13.2)
Alabama	742,919	744,637	0.2	11,462	9,990	(12.8)
Utah	576,244	613,279	6.4	9,413	8,239	(12.5)
North Carolina	1,489,492	1,518,465	1.9	9,985	8,848	(11.4)
Oregon	565,586	587,564	3.9	12,129	10,772	(11.2)
New Mexico	329,040	338,220	2.8	11,678	10,449	(10.5)
Wisconsin	874,633	872,436	(0.3)	13,489	12,309	(8.7)
Hawaii	179,897	184,760	2.7	13,970	12,759	(8.7)
Virginia	1,230,857	1,265,419	2.8	13,146	12,093	(8.0)
South Carolina	712,317	735,998	3.3	12,183	11,320	(7.1)
Mississippi	494,122	493,650	(0.1)	9,304	8,745	(6.0)
Missouri	917,188	917,900	0.1	11,820	11,224	(5.0)
Washington	1,030,247	1,051,694	2.1	12,173	11,561	(5.0)
Louisiana	681,038	710,903	4.4	12,393	11,838	(4.5)
Maine	196,245	185,739	(5.4)	13,982	13,385	(4.3)
Michigan	1,692,739	1,555,370	(8.1)	12,344	11,862	(3.9)
Maryland	845,700	859,638	1.6	16,147	15,554	(3.7)
Wyoming	86,422	90,993	5.3	19,120	18,461	(3.4)
New Jersey	1,382,348	1,372,203	(0.7)	20,548	19,976	(2.8)
Delaware	122,574	129,026	5.3	15,830	15,458	(2.3)
Indiana	1,046,764	1,041,369	(0.5)	10,963	10,752	(1.9)
Oklahoma	642,065	673,483	4.9	9,103	8,948	(1.7)
Ohio	1,827,184	1,729,916	(5.3)	13,122	13,029	(0.7)
Kansas	468,295	489,043	4.4	11,864	11,782	(0.7)
South Dakota	121,606	130,471	7.3	10,504	10,469	(0.3)
Tennessee	964,259	993,496	3.0	9,358	9,355	0.0
Minnesota	837,578	845,404	0.9	13,351	13,355	0.0
Montana	142,823	142,908	0.1	11,676	11,700	0.2
Kentucky	666,225	685,167	2.8	10,733	10,778	0.4
Arkansas	479,016	486,157	1.5	10,860	11,037	1.6
Nebraska	291,244	303,505	4.2	12,957	13,170	1.6
Rhode Island	147,629	142,481	(3.5)	16,011	16,416	2.5
Massachusetts	962,958	954,773	(0.8)	16,071	16,572	3.1
West Virginia	282,535	283,044	0.2	11,323	11,705	3.4
Pennsylvania	1,801,971	1,763,677	(2.1)	14,600	15,188	4.0
Iowa	485,115	499,825	3.0	11,794	12,272	4.0
New Hampshire	200,772	188,974	(5.9)	13,862	14,474	4.4
Connecticut	570,626	550,954	(3.4)	17,948	18,941	5.5
New York	2,765,435	2,710,703	(2.0)	19,944	21,537	8.0
Illinois	2,112,805	2,072,120	(1.9)	12,846	13,884	8.1
Vermont	94,038	89,624	(4.7)	16,527	18,122	9.6
Alaska	131,029	131,489	0.4	18,488	20,536	11.1
Dist. of Columbia	78,422	76,140	(2.9)	23,517	27,855	18.4
North Dakota	95,059	101,111	6.4	11,078	14,564	31.5

Source: National Center for Education Statistics (NCES).

Table J: State and Local Government Employment Most Recent Year Compared to Peak Following Start of Great Recession

	Year ending June:		Change	% change
	2009 emplmt. in thousands	2015 emplmt. in thousands		
Total state and local government employment	18,888	18,372	(516)	-2.7%
Education	9,752	9,556	(197)	-2.0
Elementary and secondary education	7,400	7,123	(277)	-3.7
Colleges, universities and junior colleges	2,290	2,371	81	3.5
Business, trade and other instructional schools	46	37	(9)	-20.5
Education consultants, guidance counselors, testing and other support	17	25	9	52.9
Justice, public order and safety activities	1,674	1,618	(56)	-3.4
Fire protection	188	198	10	5.4
Police protection	512	509	(3)	-0.5
Correctional institutions, parole and probation	548	505	(43)	-7.9
Courts, legal counsel and prosecution	269	261	(8)	-3.0
Other justice and safety activities	157	144	(13)	-8.0
Health care	1,323	1,284	(39)	-3.0
Hospitals other than psychiatric and substance abuse	867	863	(5)	-0.5
Physicians, medical & diagnostic laboratories & other ambulatory health care	91	100	9	10.0
Nursing, community care and other residential facilities	99	97	(3)	-2.9
Psychiatric and substance abuse hospitals and residential mental health facilities	263	223	(40)	-15.3
Social assistance services for children, youth, elderly, disabled	235	237	2	0.9
General administration	4,312	4,117	(195)	-4.5
Executive and legislative offices, legislative bodies, commissions	2,982	2,843	(139)	-4.7
Administration of programs	1,330	1,274	(56)	-4.2
All other	1,591	1,560	(31)	-2.0

Source: Quarterly Census of Employment and Wages, U.S. Bureau of Labor Statistics.

ment growth generally slowed but did not decline.¹⁶ State and local governments cut employment repeatedly between the peak in state fiscal year 2009 and state fiscal year 2013, before employment stabilized and began to rise slightly. As of state fiscal year 2015, state and local government employment was down by over half a million jobs.

Table J shows the change in employment by major activity of government, based on the Quarterly Census of Employment and Wages from the Bureau of Labor Statistics. K-12 education accounts for more

than half of the decline in employment, followed by general administration, including cuts to executive and legislative bodies and boards and commissions, as well as administrators of major governmental programs.

States and localities in 35 states cut government employment between 2009 and 2015, as Figure I shows, with the deepest cuts in the eastern and southwestern states. Employment generally grew in oil-dependent states, which boomed during much of this period, but that may change given the plunge in oil prices and cuts in oil production.

Table K: Most Recent Revenue Forecasts from States

	FY 2015	FY 2016	FY 2017	Change from 2015 to 2016	Change from 2016 to 2017
Personal income tax					
Median forecast	7.80%	4.60%	4.40%	-3.20%	-0.20%
Number of states expecting >5% growth	29	12	12	-17	0
Sales tax					
Median forecast	4.70%	3.80%	3.90%	-0.90%	0.10%
Number of states expecting >5% growth	17	9	10	-8	1

*Reflects 36 states with income tax forecasts and 38 states with sales tax forecasts.

Figure J: State and Local Government Defined Benefit Pension Plans in the United States, Unfunded Liabilities as Percentage of Gross Domestic Product



Source: Federal Reserve Board, Financial Accounts of the United States.

The Outlook

Tax revenue growth is likely to continue to be slow

The current economic environment is not likely to support strong tax revenue growth for state and local governments. Economic growth has accelerated slightly, as has inflation, but both remain low by historical standards. In its latest economic forecast, the Congressional Budget Office anticipated real gross domestic product growth of 2.5 percent in 2016, consumer price inflation of 1.3 percent and growth in nominal GDP of 4.1 percent.¹⁷ This is broadly consistent with the consensus of private forecasters.¹⁸ Moderate economic growth and low inflation is likely to lead to relatively slow tax revenue growth. All else equal, sales taxes tend to be higher when prices are higher, and higher prices often work their way into wages and other forms of income, boosting income taxes. Lower inflation tends to restrain state and local tax revenue growth.

One factor that can make income tax revenue grow faster or slower than the economy is the stock market. A strong stock market often leads to significantly higher capital gains income, and a declining stock market can lead to sharp decreases. The 2015 stock market will affect tax returns filed in April 2016, shortly after this writing. The stock market declined by about 0.7 percent in 2015, so states seem unlikely to get a boost from this source, and might even get an unpleasant surprise. And as of this writing, the stock market is down about 8 percent thus far in 2016.¹⁹ Based on other work of the Rockefeller Institute, the states that have the most to gain or lose from large shifts in capital gains, in order, are New York, California, Oregon, Connecticut and Massachusetts, followed by Minnesota, Montana and New Jersey. Most other states are much less affected by swings in capital gains.

State revenue forecasters are aware of these trends and risks, and generally are forecasting slower

tax revenue growth in the 2017 fiscal year than in 2016.²⁰ In the next section we examine current state forecasts and in the following section we summarize the troubles of oil and coal states, discussed more fully in a recent Rockefeller Institute brief.²¹

States forecast slow tax revenue growth in fiscal years 2016 and 2017

States expect tax revenue growth to be slower in fiscal years 2016 and 2017. Table K summarizes states' most recent forecasts for income and sales taxes—the two largest taxes—for 41 states for which we were able to collect forecast data for fiscal years 2016 and 2017. (See Table L for individual states' forecasts.) The median state forecast for personal income tax growth is 4.6 percent in 2016 and 4.4 percent in 2017, both of which are down from state-estimated growth of 7.8 percent in 2015. Similarly, the median sales tax forecast slows from 4.7 percent in 2015 to 3.8 percent in 2016 and 3.9 percent in 2017. Fewer states are forecasting growth of more than 5 percent in both 2016 and 2017 than in 2015, for both the income tax and the sales tax. Overall, 19 of 36 states with income tax forecasts are forecasting slower income tax growth in 2017 than in 2016, and 18 of 38 states are forecasting slower sales tax growth.

States benefited from the strong stock market in 2014, which led to strong income tax collections in fiscal 2015. The subsequent weakening of the stock market likely is contributing to states' forecasts of slower income tax growth in 2016 and 2017.

Table L shows the forecasts for the individual states. It also shows the forecast month and year. Forecasts vary significantly from state to state, reflecting many factors including reliance on capital gains, state overall economic conditions, oil supplies and oil prices, financial and real estate market developments, state specific policy changes, and others. Most states anticipate considerable downward pressure over the long-term revenue forecast horizon. The overall picture is of continued but sluggish growth in fiscal years 2016 and 2017 and continued fiscal challenges and uncertainties for the states.

Oil and coal states face special difficulties

Oil prices dropped from an average of \$99 per barrel in 2014 to \$52 in 2015, and fell below \$30 in January 2016, the lowest level in the last 12 years. The steep declines in oil prices throughout 2015 and early 2016 had a negative economic and fiscal impact on oil- and mineral-dependent states. Oil, natural gas and mining account for about 10 percent

or more of gross domestic product in eight states: Alaska, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, West Virginia and Wyoming. As a group, these states rely on severance taxes for 16 percent of their tax revenue, far more than the 0.2 percent for the rest of the country. They accounted for nearly 90 percent of the \$18 billion in severance tax revenue raised nationally in 2014. This revenue fell by 35.5 percent in the 12 months ending in September 2015, with declines that ranged from 15.8 percent in West Virginia to 87.9 percent in Alaska. (See Table M).

The steep price declines are leading to cuts in production and employment, weakening mineral-state economies and likely leading to slower growth in revenue from other tax sources. At the end of 2015, total employment was lower in six of the eight states than it was in January 2015. Revenue from non-severance taxes, such as income and sales taxes, grew nearly 2 percentage points more slowly in these eight states than in the other 42 states, primarily reflecting a decline in Alaska. Total tax revenues in the eight states declined by 3.2 percent. The remaining 42 states reported 6.5 percent growth in total tax revenues.

As a result, the oil- and mineral-dependent states are all facing fiscal challenges and budget shortfalls, particularly Alaska, North Dakota and Wyoming, where severance taxes are a significant share of total taxes.²²

Pension contributions are poised to rise further

Despite large contribution increases discussed earlier and widespread benefit cuts, public pensions in aggregate remain woefully underfunded. At the end of September 2015, unfunded liability as measured by the Bureau of Economic Analysis and the Federal Reserve Board was \$1.7 trillion, or 9.5 percent of gross domestic product. This was little better than the situation shortly after the worst of the recession-related stock market declines, even though we are seven years past the declines of 2008 (Figure J). (Note that the Federal Reserve Board estimates of unfunded liabilities are greater than those of actuaries.²³)

Pension contributions now are generally being made on the basis of actuarial valuations developed in 2014 and 2015, and recognize very little if any of the investment shortfalls that have occurred since then. In fiscal year 2015, the median public pension fund earned about 3.4 percent despite assuming that it would earn approximately 7.5 percent.²⁴ Fiscal year 2016, so far, is off to a bad

Table L: State Personal Income and Sales Tax Revenue Forecasts for FY 2016 and FY 2017

State	Forecast month	Personal Income Tax (\$ in Millions)					Sales Tax (\$ in Millions)				
		FY 2015 actual	FY 2016 forecast	FY 2017 forecast	% change 2015–2016	% change 2016–2017	FY 2015 actual	FY 2016 forecast	FY 2017 forecast	% change 2015–2016	% change 2016–2017
Arizona	Jan. 16	3,761.30	3,940.60	4,147.10	4.8	5.2	4,190.50	4,330.60	4,502.50	3.3	4.0
Arkansas	Feb. 16	2,664.20	2,699.40	2,741.10	1.3	1.5	2,197.80	2,305.40	2,396.00	4.9	3.9
California	Jan. 16	75,384.00	77,700.00	81,652.00	3.1	5.1	23,684.00	25,240.00	25,761.00	6.6	2.1
Colorado	Dec. 15	6,350.10	6,477.50	6,973.90	2.0	7.7	2,879.40	2,966.50	3,139.50	3.0	5.8
Connecticut	Jan. 16	9,151.00	9,570.00	9,829.10	4.6	2.7	4,205.10	4,230.30	4,092.20	0.6	(3.3)
Delaware	Dec. 15	1,251.90	1,306.80	1,360.80	4.4	4.1	N/A	N/A	N/A	N/A	N/A
Florida	Jan. 16	N/A	N/A	N/A	N/A	N/A	21,062.70	22,086.10	23,242.90	4.9	5.2
Georgia	Jan. 16	9,678.50	10,084.30	10,715.60	4.2	6.3	5,390.40	5,432.90	5,658.90	0.8	4.2
Hawaii	Jan. 16	1,987.80	2,085.50	2,190.10	4.9	5.0	2,992.70	3,197.60	3,373.70	6.8	5.5
Idaho	Jan. 16	1,470.80	1,523.90	1,606.20	3.6	5.4	1,218.80	1,279.00	1,345.10	4.9	5.2
Indiana	Dec. 15	5,233.00	5,250.10	5,372.10	0.3	2.3	7,194.80	7,345.60	7,665.30	2.1	4.4
Iowa	Dec. 15	4,207.30	4,502.10	4,707.70	7.0	4.6	2,753.00	2,838.80	2,914.50	3.1	2.7
Kansas	Nov. 15	2,277.50	2,450.00	2,485.00	7.6	1.4	2,485.00	2,675.00	2,775.00	7.6	3.7
Kentucky	Feb. 16	4,069.50	4,233.50	4,411.10	4.0	4.2	3,267.30	3,420.50	3,539.80	4.7	3.5
Louisiana	Nov. 15	2,886.10	3,054.80	3,221.50	5.8	5.5	2,700.80	2,872.20	2,840.60	6.3	(1.1)
Maine	May 15	1,521.80	1,548.80	1,640.40	1.8	5.9	1,195.00	1,127.50	1,180.60	(5.7)	4.7
Maryland	Dec. 15	8,346.10	8,779.10	9,273.20	5.2	5.6	4,350.70	4,515.70	4,662.30	3.8	3.2
Massachusetts	Jan. 16	14,449.00	14,940.00	15,543.00	3.4	4.0	5,774.00	6,090.00	6,436.00	5.5	5.7
Michigan	Jan. 16	8,979.50	9,031.90	9,345.80	0.6	3.5	7,819.00	8,045.80	8,059.20	2.9	0.2
Minnesota	Nov. 15	10,403.00	10,678.00	11,278.00	2.6	5.6	5,131.00	5,368.00	5,663.00	4.6	5.5
Mississippi	Oct. 15	1,743.40	1,830.00	1,903.20	5.0	4.0	2,260.80	2,326.70	2,415.10	2.9	3.8
Missouri	Jan. 16	6,890.80	7,221.10	7,566.10	4.8	4.8	2,014.40	2,073.30	2,137.10	2.9	3.1
Montana	Nov. 15	1,175.70	1,243.00	1,313.00	5.7	5.6	N/A	N/A	N/A	N/A	N/A
Nebraska	Oct. 15	2,205.50	2,300.00	2,415.00	4.3	5.0	1,535.40	1,565.00	1,620.00	1.9	3.5
New Mexico	Jan. 16	1,339.70	1,401.00	1,455.00	4.6	3.9	2,167.00	2,144.40	2,280.10		6.3
New York	Aug. 15	43,709.00	47,075.00	49,701.00	7.7	5.6	12,991.00	13,532.00	14,067.00	4.2	4.0
Oklahoma	Feb. 16	2,160.80	1,970.80	1,751.90	(8.8)	(11.1)	2,224.00	2,037.60	2,069.50	(8.4)	1.6
Oregon	Feb. 16	7,330.30	7,716.00	7,976.10	5.3	3.4	N/A	N/A	N/A	N/A	N/A
Pennsylvania	Dec. 15	12,107.00	12,687.00	13,180.00	4.8	3.9	9,493.00	9,840.00	10,188.00	3.7	3.5
Rhode Island	Nov. 15	1,227.60	1,214.90	1,265.40		4.2	963.4	981	1,015.00	1.8	3.5
South Carolina	Nov. 15	3,661.20	3,888.10	4,066.70	6.2	4.6	2,643.70	2,785.50	2,925.80	5.4	5.0
South Dakota	Dec. 15	N/A	N/A	N/A	N/A	N/A	836.6	872.6	904.9	4.3	3.7
Tennessee	Nov. 15	303.4	325.6	341	7.3	4.7	7,706.10	8,140.90	8,575.70	5.6	5.3
Texas	Oct. 15	N/A	N/A	N/A	N/A	N/A	28,787.40	29,143.70	30,546.20	1.2	4.8
Utah	Nov. 15	3,157.70	3,320.90	3,466.60	5.2	4.4	1,715.00	1,780.30	1,852.40	3.8	4.0
Vermont	Jul. 15	705.9	763.8	797.8	8.2	4.5	364.6	382.2	394.3	4.8	3.2
Virginia	Dec. 15	12,328.70	12,778.00	13,162.40	3.6	3.0	3,235.40	3,397.70	3,528.90	5.0	3.9
Washington	Nov. 15	N/A	N/A	N/A	N/A	N/A	8,793.20	9,427.90	9,811.60	7.2	4.1
West Virginia	Jan. 16	1,840.10	1,861.00	1,935.00	1.1	4.0	1,228.20	1,270.00	1,379.00	3.4	8.6
Wisconsin	Jan. 16	7,325.80	7,810.00	8,050.00	6.6	3.1	4,892.10	5,050.90	5,217.50	3.2	3.3
Wyoming	Jan. 16	N/A	N/A	N/A	N/A	N/A	544	466.8	470.5	(14.2)	0.8
US Median		\$276,859	\$288,622	\$301,951	4.6	4.4	\$198,499	\$205,950	\$213,748	3.7	3.8

Source: Individual state data, analysis by the Rockefeller Institute.

Notes: Data are missing for seven states: AL, IL, NC, ND, NJ, NV and OH. In addition, no data is reported for AK and NH as both states don't have either personal income or sales tax.

start; The typical pension fund still assumes it will earn about 7.5 percent on its portfolio, generally suggesting that it needs to earn considerably more on the equities portion of its portfolio (and less on the fixed income portion). But between the July 1, 2015, start of the typical pension fund year and mid-February 2016, the stock market is down more

than 8 percent. With more than \$3.5 trillion of assets under investment, the shortfalls for the 2015 and 2016 fiscal years are likely to be substantial.

Although pension funds are slow to reflect these shortfalls in actuarially determined contributions, over the next several years requested contributions are likely to rise substantially. In what may

Table M: Economy, Employment and Taxes in Oil- and Mineral-dependent States

State	Mining industries as share of state GDP, 2013			Emplmt. change Dec. 2015 vs. Jan. 2015	Percent change, 4 quarters ending September 2015 vs. year earlier			
	Oil & gas extraction	All other mining activities	Total mining		Severance taxes as % of total taxes (FY 2014)	Severance taxes	Other taxes	Total taxes
Alaska.....	22.1%	6.4%	28.4%	-0.3%	72.4%	-87.9%	-17.6%	-67.2%
Louisiana.....	7.5	2.6	10.1	-0.5	8.9	-22.9	2.5	-3.2
New Mexico.....	6.1	3.5	9.6	0.2	18.5	-25.4	6.8	-0.3
North Dakota.....	6.4	8.3	14.6	-4.3	53.8	-31.9	6.8	-15.8
Oklahoma.....	11.4	2.9	14.3	-0.7	7.5	-33.7	5.4	-0.3
Texas.....	11.6	2.1	13.8	1.3	10.9	-33.4	4.9	-0.1
West Virginia.....	2.0	11.4	13.4	-1.8	12.7	-15.8	3.5	1.4
Wyoming.....	14.9	18.2	33.1	-2.4	39.0	0.1	6.7	3.9
Oil & coal states ...	10.9	3.1	14.0	0.5	16.4	-35.5	4.6	-3.2
Other states.....	0.4	0.5	0.9	1.7	0.2	-19.8	6.4	6.5
United States.....	1.8	0.9	2.7	1.6	2.1	-33.7	6.2	5.4

Source: Rockefeller Institute analysis of data from BEA (GDP, BLS (employment)) and Census Bureau (taxes).

seem like an unfair twist, these increases often will be largest for governments with the best funded plans, because those are the plans with the most assets and therefore the most to lose.

Over the longer term, public pensions will be a major risk for state and local governments. Public pension funds keep contributions low by assuming that they will earn about 7.5 percent annually through investments in diversified portfolios of stocks, bonds, real estate, hedge funds and many other assets. This may or may not be attainable, but the risk is sizeable. For example, annual contributions would have to be \$130 billion to \$200 billion higher than they are now to fund public pensions without taking investment risk, based on our analysis of estimates by the Bureau of Economic Analysis.²⁵ Governments certainly don't want to pay the higher contributions that would be needed to avoid this risk; instead, they (and their taxpayers) will be exposed to the risk of loss.

In some states pensions are not just a longer term risk—they are a near and present danger. In particular, Connecticut, Illinois, Kentucky, New Jersey and Pennsylvania all face pension crises that will play out over the next several years. In California, contributions were slated to rise substantially even before the latest stock market declines; legislation finally requires governments to contribute actuarially-based payments to CalSTRS, and so contributions will rise. In addition, CalPERS has announced that it intends to mitigate risk by slowly lowering its earnings assumption, which in turn will raise contributions for the state

and local governments. These actions will help make these funds and their beneficiaries more secure than they otherwise would be—and they may not even go far enough—but they will squeeze their governments and taxpayers.

Pension fund stress is going to be a continuing issue for state and local governments for many years.

Medicaid still expected to grow faster than the economy

Medicaid has been a long-term source of fiscal pressure for state and local governments, although not as much as in past years and decades. According to the Centers for Medicare and Medicaid Services, between 1990 and 2007 total Medicaid expenditures grew at an average annual rate of 9.7 percent, while the economy (gross domestic product) grew at an annual rate of 5.4 percent—a difference of 4.3 percentage points, far outstripping growth in tax bases.²⁶ As discussed earlier, after the Great Recession federal spending on Medicaid grew rapidly as a result of recession-related enrollment increases, and states absorbed some of those costs after the federal stimulus program waned.

Looking forward, CMS researchers expect that state-funded Medicaid will grow at an average annual rate of 6.1 percent between 2015 and 2018 while the economy grows at a 5.1 percent rate—a gap of 1 percentage point. Between 2018 and 2024, CMS forecasts state-funded Medicaid will grow at a 6.7 percent rate, 1.9 percentage points faster than anticipated GDP growth.²⁷ CMS forecasts that

growth in spending per enrollee will accelerate as dually eligible beneficiaries (eligible for both Medicare and Medicaid) age into the program and as the aging of the population leads to higher costs, particularly for nursing home care. Thus, Medicaid is likely to be a continuing source of pressure on state budgets, albeit not as great as in the 1990s and early 2000s.

Conclusion

State and local governments play a crucial role in the nation's economy. They are responsible for three-quarters of the nation's transportation and water infrastructure, they finance 90 percent of the nation's public elementary and secondary schools, they provide a majority of the nation's higher education in degree-granting institutions, and they implement much of the nation's social safety net. They have scaled many of these activities back in response to slow growth in taxes, rapid growth in pension contributions and enrollment-driven Medicaid growth. The outlook is for more of the same over the next several years, suggesting that states will continue to struggle to provide these crucial services.

Notes

¹Percentage change in taxes after the start of a recession are calculated only until the start of the next recession, consistent with Figure A.

²Donald J. Boyd and Lucy Dadayan, "The Economy Recovers While State Finances Lag," The Blinken Report, Nelson A. Rockefeller Institute of Government, June 2015. http://www.rockinst.org/pdf/government_finance/2015-06-23-Blinken_Report_Two.pdf. Also see the Institute's quarterly *State Revenue Reports*.

³We estimated federal fiscal year 2015 average monthly enrollment assuming growth of 8.2 percent, which is the growth rate for average monthly enrollment reported in the December 2015 "CMS Fast Facts," Centers for Medicare & Medicaid Services, December 2015. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Fast-Facts/index.html>. It is faster than the 6.3 percent growth rate implied in an earlier CMS publication, "2015 CMS Statistics," Centers for Medicare & Medicaid Services, n.d. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Statistics-Reference-Booklet/Downloads/2015CMS_Statistics.pdf. Table I.16, was based on the president's budget from early 2015. It appears to be broadly consistent with the 13.8 percent June-to-June growth estimated in Robin Rudowitz, Laura Snyder, and Vernon K. Smith, "Medicaid Enrollment & Spending Growth: FY 2015 & 2016," Issue Brief, Kaiser Commission on Medicaid and the Uninsured, October 2015, based on our examination

of the past relationship between fiscal year growth and June-to-June growth.

⁴Per capita spending means spending per person in the state, not per Medicaid enrollee.

⁵States do have other resources besides taxes with which to pay pensions and other expenditures—fees, for example—but as a practical matter, higher pension contributions generally will require higher taxes or cuts in other spending.

⁶We use 2007 through 2014 to have a consistent set of years for all three sources of stress, even though our earlier Medicaid analysis began with 2008 terminated in 2015. State-financed Medicaid trends between 2007 and 2014 were very similar to those between 2008 and 2015, so this choice has very little impact on the results. It is not possible to make perfect comparisons because available measures for these sources of stress come from different data sources and are for slightly different annual periods.

⁷For each state, we estimated 2014 local government taxes by adding the average annual growth rate in local government taxes from 2010 to 2013 to 2013 local tax revenue. We then added this estimate of 2014 local government taxes to reported 2014 state government taxes. All tax data were from U.S. Census Bureau surveys.

⁸As in the earlier pension contributions analysis, we used 2008 pension contributions for West Virginia.

⁹Consumption expenditures include, within each category, what the Bureau of Economic Analysis calls "consumption of fixed capital"—the estimated amount of state and local government capital stock, such as roads and bridges, that is used up by wear and tear, economic obsolescence, and other causes. It is similar in concept to depreciation. It is not a cash expenditure.

¹⁰Explain why we use GDPPI for everything.

¹¹For research and pragmatic underpinnings, see Donald Boyd, "Public Research Universities: Changes in State Funding," The Lincoln Project, October 2015.

¹²Forty-eight states cut funding for educational services when we include Illinois, where the reported funding increase supported underfunded university pensions rather than current students. *Ibid*.

¹³In this analysis, we adjust education revenue using the GDP price index, so that they are comparable to other inflation-adjusted numbers in this report. In essence, the result is a measure of effort by governments rather than a measure of how much may be bought of each governmental good or service. However, according to estimates by the State Higher Education Executive Officers, or SHEEO, the cost of "producing" education has risen more rapidly than prices in the overall economy. Between 2008 and 2014, SHEEO's higher education cost index rose by 11.3 percent, compared to 9.6 percent for the GDP price index; between 2000 and 2014, the higher education cost index increased by 44.6 percent compared to 32.7 percent for the GDP price index.

¹⁴Michael Leachman et. al, "Most States Have Cut School Funding, and Some Continue Cutting," Center on Budget and Policy Priorities, Jan. 25, 2016. <http://www.cbpp.org/research/state-budget-and-tax/most-states-have-cut-school-funding-and-some-continue-cutting>.

¹⁵ Ibid.

¹⁶ Lucy Dadayan and Robert B. Ward, “Data Alert: State and Local Government Employment Shows Broad, Continuing Declines,” July 22, 2011. <http://archive.constantcontact.com/fs091/1104610489644/archive/1106689721430.html>; Donald J. Boyd and Lucy Dadayan, “The Economy Recovers While State Finances Lag.”

¹⁷ “The Budget and Economic Outlook: 2016 to 2026,” Congressional Budget Office, January 2016. <https://www.cbo.gov/publication/51129>.

¹⁸ “Economic Forecasting Survey,” accessed Feb. 15, 2016. <http://projects.wsj.com/econforecast/#ind=gdp&r=20>.

¹⁹ Based on S&P 500 adjusted close at end of 2014, 2015 and Feb. 12, 2016, as obtained from the Yahoo API using the R package `quantmod`.

²⁰ Lucy Dadayan and Donald J. Boyd, “By The Numbers: States Forecast Slower Tax Growth Through 2017 and Beyond,” Rockefeller Institute of Government, Dec. 23, 2015. http://www.rockinst.org/pdf/government_finance/2015-12-By_Numbers_Brief_2_Page.pdf.

²¹ Lucy Dadayan and Donald J. Boyd, “By The Numbers: Double, Double, Oil and Trouble,” Rockefeller Institute of Government, Feb. 1, 2016. http://www.rockinst.org/pdf/government_finance/2016-02-By_Numbers_Brief_No5.pdf.

²² Ibid.

²³ Discussed in Donald J. Boyd and Yimeng Yin, “By The Numbers: State and Local Government Unfunded Pension Liabilities Rise by \$268 Billion in the Third Quarter of 2015,” Rockefeller Institute of Government, Jan. 30, 2016. http://www.rockinst.org/pdf/government_finance/2016-01-20_By_the_Numbers_Brief_No4.pdf.

²⁴ Wilshire Trust Universe Comparison Service calculated the median return of public plans with more than \$5 billion in assets at 3.4%, and Callan Associates Inc. calculated an average investment return of 3.2% for 265 public plans with assets of more than \$1 billion. <http://www.pionline.com/article/20150810/PRINT/308109985/high-return-era-ends-for-many-big-public-pension-funds>.

²⁵ According to NIPA table 7.24 published on Aug. 26, 2015, employer contributions in 2014 were \$71 billion below what was needed to fund annual benefits earned without taking investment risk (Imputed employer contributions, Line 6). In addition, unfunded liabilities were accruing interest of \$63 billion (Line 13). Thus, to avoid taking investment risk, governments would have needed to pay an additional \$134 billion (\$71 billion + \$63 billion) just to keep unfunded liabilities from rising. Amortizing the existing unfunded liabilities would take another \$70 billion or more in annual contributions, depending on the amortization method chosen.

²⁶ Exhibit 3, S.P. Keehan et al., “National Health Expenditure Projections, 2014-24: Spending Growth Faster Than Recent Trends,” *Health Affairs* 34, no. 8 (Aug. 1, 2015): 1407–17, doi:10.1377/hlthaff.2015.0600.

²⁷ Ibid.

About the Authors

Donald J. Boyd is director of fiscal studies at the Rockefeller Institute of Government. Boyd has over three decades of experience analyzing state and local government fiscal issues, and has written or co-authored many of the Rockefeller Institute’s reports on the fiscal climate in the 50 states. Boyd currently is principal investigator for the Institute’s Pension Simulation Project, which is examining risks associated with public pension plans. His previous positions include executive director of the State Budget Crisis Task Force created by former Federal Reserve Board Chairman Paul Volcker and former New York Lieutenant Governor Richard Ravitch; director of the economic and revenue staff for the New York State Division of the Budget; and director of the tax staff for the New York State Assembly Ways and Means Committee. Boyd holds a Ph.D. in managerial economics from Rensselaer Polytechnic Institute.

Lucy Dadayan is a senior policy analyst at the Rockefeller Institute of Government. She has conducted research and coauthored reports on state and local government fiscal policy issues; state spending on public policy programs and the effects of state fiscal capacity and economic changes; among other topics. Dadayan holds a Ph.D. in Informatics from the State University of New York.