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Fiscal Resilience Among U.S. States Varies As Economic Expansion Surpasses Seven-Year Mark

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A majority of the 10 U.S. states with the most tax-supported debt outstanding have only a limited capacity to withstand the effects of a moderate recession, S&P Global Ratings found when it assessed their 2016-2017 budgets. The results of our scenario analysis underscore that fiscal health across the U.S. state sector is subject to the powerful countervailing effects of pro-cyclical revenue trends and countercyclical expenditure pressures. We have previously asserted that from a credit perspective states fare better when they leverage periods of economic growth to restore fiscal alignment and build budgetary reserves. This simulation affirmed our view.

Throughout 2016, we have described state fiscal health as uneven. Several states have yet to fully recover from the recession that ended in 2009 and some remain ill-equipped to withstand unanticipated fiscal stress. Others—because their economic and revenue bases depend on oil extraction—are mired in more acute fiscal stress brought about by the dramatic fall in oil prices. Complicating matters is that since 2000, state tax revenues have, to varying degrees, grown increasingly responsive to changes in economic performance.

Overview

- Fiscal imbalance in the latter stage of economic expansion indicates heightened vulnerability to a recession scenario;
- States with more volatile revenue bases necessitate relatively larger budget reserves to achieve the same budgetary protection from recessionary conditions as states with more stable revenues;
- Countercyclical Medicaid enrollment patterns exacerbate the fiscal pressure on states during economic downturns;
- The magnitude of revenue shortfalls in a recession is a function of baseline forecast assumptions and the sensitivity of the tax base to economic conditions;
- Stress scenario analysis illustrates that aggregate potential revenue shortfall of $27 billion among the 10 states in our study could exceed these states' $21 billion in budget reserves

Contemplating A Recession Scenario In 2016

The big picture: Slow economic growth amid rising uncertainty

Most recent economic indicators support our base-case projection calling for gradual economic growth to persist through the end of 2016 and into 2017. But in June, the recovery that began in 2009 reached its seventh anniversary, longer than all but three expansions since the end of World War II. Assuming our forecast holds through 2017, the current expansion will be one of the longest on record. The duration of an economic expansion isn't reason enough on its own to predict its demise, but with each passing day the next recession—whenever it will strike—draws nearer. It was somewhat ominous then that in late June, the United Kingdom decided via a national referendum to leave the European Union, setting off a torrent of financial market volatility. Furthermore, business investment and average monthly job growth in the U.S. have slowed. Whereas the U.S. economy created 229,000 jobs per month in 2015, the

number is lower at 186,000 through the first seven months of 2016. We still place the odds of recession occurring within the next 12 months at a less than likely 20%-to-25%, though our estimated probability of a contraction has increased relative our earlier viewpoint.

Potential channels of economic stress

While traditional indicators of a business cycle peak, such as rapid wage growth and accelerating inflation are lacking, there is greater uncertainty about global economic conditions. Recent events, such as the U.K.'s Brexit vote, illustrate how geopolitical developments can serve as tripwires to financial market volatility. Global equity markets have largely reversed the losses that came in the immediate aftermath of the Brexit vote, though the initial selloff rivaled the market declines that followed Lehman Brothers' bankruptcy filing in 2008. Therefore, while neither our baseline forecast nor the alternative downside scenario currently anticipates that the U.S. economy will revert into recession within the next 12 months, we cannot rule it out entirely.

Formulating a hypothetical recession scenario

In the current setting, we believe the most plausible recession scenario involves a sharper-than-anticipated slowdown among various global economies, such as the U.K., China or the eurozone economies. If it were pronounced enough, the larger-than-expected pullback in demand from China or the U.K. could, for example, unleash a deflationary wave that would cascade around the world. And with interest rates at or near the zero lower bound, central banks have little room to maneuver, rendering global economies brittle to unanticipated stress. As a consequence, falling commodity prices would damage the economic prospects of numerous emerging market economies, facilitating relatively sudden current account outflows and currency depreciation. Whereas we expect the yuan and other emerging market currencies could depreciate in this scenario, possibly by as much as 20%, the U.S. dollar and, to a lesser extent, other safe haven currencies of developed economies would appreciate. This would undercut demand for U.S. exports. Given that exports leave a relatively minor footprint on the domestic economy, we believe it's likely that the U.S. could avoid a recession in this case. However, the response to these events on the financial markets is unpredictable and provides a channel through which they could affect U.S. economic performance.

Therefore, as with the two most recent recessions, our hypothetical recession in the U.S. begins with a sharp selloff in global equity markets. In our recession scenario, the S&P 500 common stock index falls by 25%, causing consumer confidence to fall. Businesses respond to weakening private sector demand by pulling back on hiring. Job creation slows and unemployment begins to tick upward leading the banks and financial institutions to tighten mortgage lending standards. Household formation rates revert to slower growth as access to credit narrows. Sensing that demand has begun to soften, home builders retrench and sharply reduce their applications for housing permits, causing housing starts to fall and unemployment in the construction sector to more rapidly escalate. Weakening conditions lead to an overall downturn in the labor markets, reflected in a rising jobless rate with unemployment increasing by 2% and real GDP declining by 2%.

Predicting Fiscal Outcomes Under A Hypothetical Recession Scenario

Recessionary conditions

For each state in our study, we calculated the elasticity of its key economic indicators to changes in U.S.

macroeconomic performance. In all cases, the moderate U.S. recession scenario corresponded to declines in state-level personal income, personal consumption expenditures, and an increase in the state unemployment rate. Taking into consideration the state specific relationships observed in the past 15 years between tax revenue and aforementioned macro variables, we estimated each state's primary general fund tax revenues (personal income, sales, and corporate, where applicable) in fiscal 2017 under a scenario of broad based economic slowdown, defined by a 2% decline in real U.S. GDP and a 25% downside correction to the S&P 500 stock index.

We then compared the general fund tax revenues predicted by the output from our regression analyses with each state's budget or its most recent revenue projection for fiscal 2017. Our regressions predicted that tax revenues for all the states would be lower than what their budget and baseline projections anticipate. The magnitude of each state's predicted revenue shortfall relative to its budget differs as a function of its forecast assumptions and the sensitivity of its revenue base to changes in economic performance.

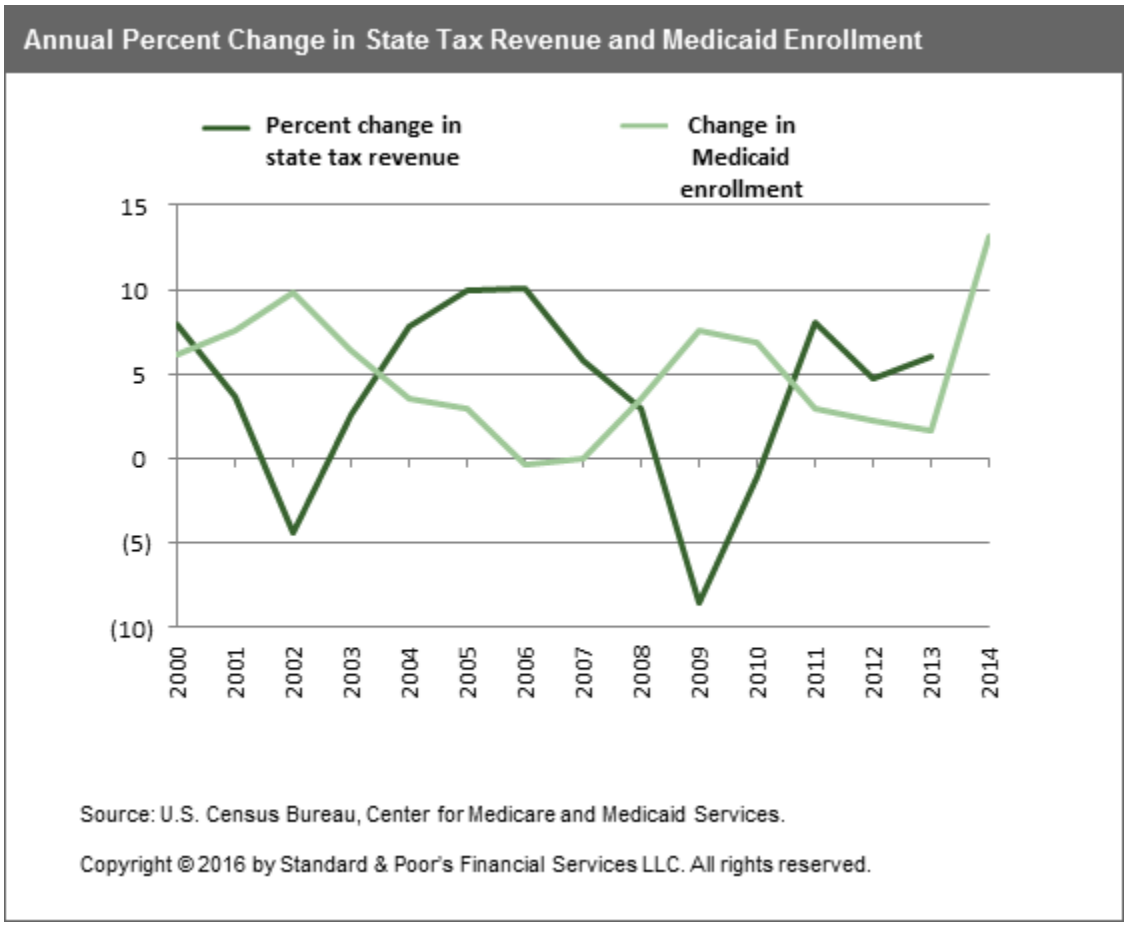
Our simulation evaluated the states' fiscal capacity to withstand the first-year stress associated with a recession, which we believe is particularly important. Balanced budget requirements encourage lawmakers to adopt corrective measures upon the emergence of a fiscal gap. But until the revised policies take effect—yielding either expenditure savings or additional revenue—budget reserves can provide a crucial source of interim funding. From a policy perspective, reserves can also facilitate a smoother transition to a changed fiscal setting.

Countercyclical demand for Medicaid adds to state fiscal pressure in a recession

As providers of various safety net programs, states also face increased demand for social services such as unemployment insurance, food stamps, Medicaid, and temporary assistance when economic conditions soften. From a fiscal standpoint, Medicaid stands out because for most states it's the second largest general fund expenditure behind K-12 education.

As the Great Recession unfolded, total Medicaid enrollments increased 3.5% in 2008 and 7.6% in 2009 after having declined slightly in 2005 and 2006. There was a similar pattern early in the decade in response to the 2001 recession. In both instances, Congress stepped in with extraordinary fiscal aid to the states. Consequently, while Medicaid spending increased 15% between 2007 and 2009, the portion from state sources actually declined by almost 9%. But in our view, it's doubtful that in 2016 or 2017, given its current composition, Congress would be forthcoming with similar aid to the states for their Medicaid budgets in a recession.

Chart 1



In 2014, there was a large--13%--increase in Medicaid enrollments related to implementation of the federal Patient Protection and Affordable Care Act (ACA). This policy-based disruption in the traditional enrollment patterns has complicated efforts to model the potential recessionary increases in Medicaid. Nevertheless, for each state in our sample, we calculated the elasticity of total spending in response to changes in the same economic variables used for our revenue estimates. Using these elasticity measures, we estimated the potential increase in general fund spending on Medicaid for each state in the hypothetical recession scenario.

Table 1

2017 General Fund Medicaid Expenditures

	State projected Medicaid spending ($ mils.)	S&PGR estimated Medicaid cost assuming recession ($ mils.)	Percent increase in Medicaid cost assuming recession
California	17,800	18,285	2.7
Connecticut	2,447	2,582	5.5
Florida	6,500	6,788	4.4
Illinois	7,800	7,954	2.0
Massachusetts	7,018	7,386	5.2
New Jersey	3,967	4,010	1.1
New York	18,184	19,284	6.1

Table 1

2017 General Fund Medicaid Expenditures (cont.)

	State projected Medicaid spending ($ mils.)	S&PGR estimated Medicaid cost assuming recession ($ mils.)	Percent increase in Medicaid cost assuming recession
Pennsylvania	9,571	9,788	2.3
Washington	1,995	2,015	1.0
Wisconsin	2,911	2,972	2.1
Total	78,193	81,065	3.2

Summary Of Stress Analysis Results

Revenue shortfalls

The 10 states in our assessment currently project primary general fund tax revenues of $351.4 billion. We estimate that in a recession scenario of moderate severity, these states could experience a collective revenue shortfall of $27.1 billion, or 7.7%. A shortfall of this magnitude would exceed these states' combined budget reserves of $21.7 billion. State budget gaps may be smaller than this, however, to the extent that states began implementing offsetting spending reductions as revenue collections fell short of their forecasts. Of course, budget gaps could also be larger if the economy were to weaken more than our hypothetical recession scenario contemplates.

The duration of a recession is also an important variable, with more extended downturns putting greater stress on state finances. But even a short-lived contraction will cast a shadow that extends over state finances for three to four years. Following the immediate fiscal shock of a recession, less quantifiable elements of a state's credit profile including its financial management, will rise in importance. Enactment of structurally-oriented fiscal reforms that restore alignment between recurring revenues and expenditures, for example, fare better under our criteria scoring than those involving one-time budgetary adjustment or accounting maneuvers.

Our assessment focused on the first-year effects of a recession for two reasons. First, predicting when recessions will strike has proven elusive to economists and state budget officials alike. Therefore, a state's capacity to withstand the first-year effects a recession has on its budgetary condition—until its policy responses take effect—is indicative of its fiscal resilience. Second, it's not practical or politically feasible for most states to accumulate and maintain reserves large enough to counteract entirely the effects of a recession. Because of this reality, our criteria include an assessment of a state's political and institutional capacity to enact structural fiscal reforms in the wake of a recession.

Table 2

Tax Revenue Shortfalls vs. States' Reserves

	Revenue shortfall ($ mils.)	Sum of rainy day fund and ending balances ($ mils.)	Reserves as share of shortfall (%)
California	14,744	8,464	57.4
Connecticut	1,156	127	11.0
Florida	1,938	3,000	154.8
Illinois	1,286	0	0.0
Massachusetts	1,409	1,291	92.0
New Jersey	2,414	613	25.4

Table 2

Tax Revenue Shortfalls vs. States' Reserves (cont.)

	Revenue shortfall ($ mils.)	Sum of rainy day fund and ending balances ($ mils.)	Reserves as share of shortfall (%)
New York	2,112	6,069	287.3
Pennsylvania	1,078	0	0.0
Washington	356	1,210	340.3
Wisconsin	510	350	68.7

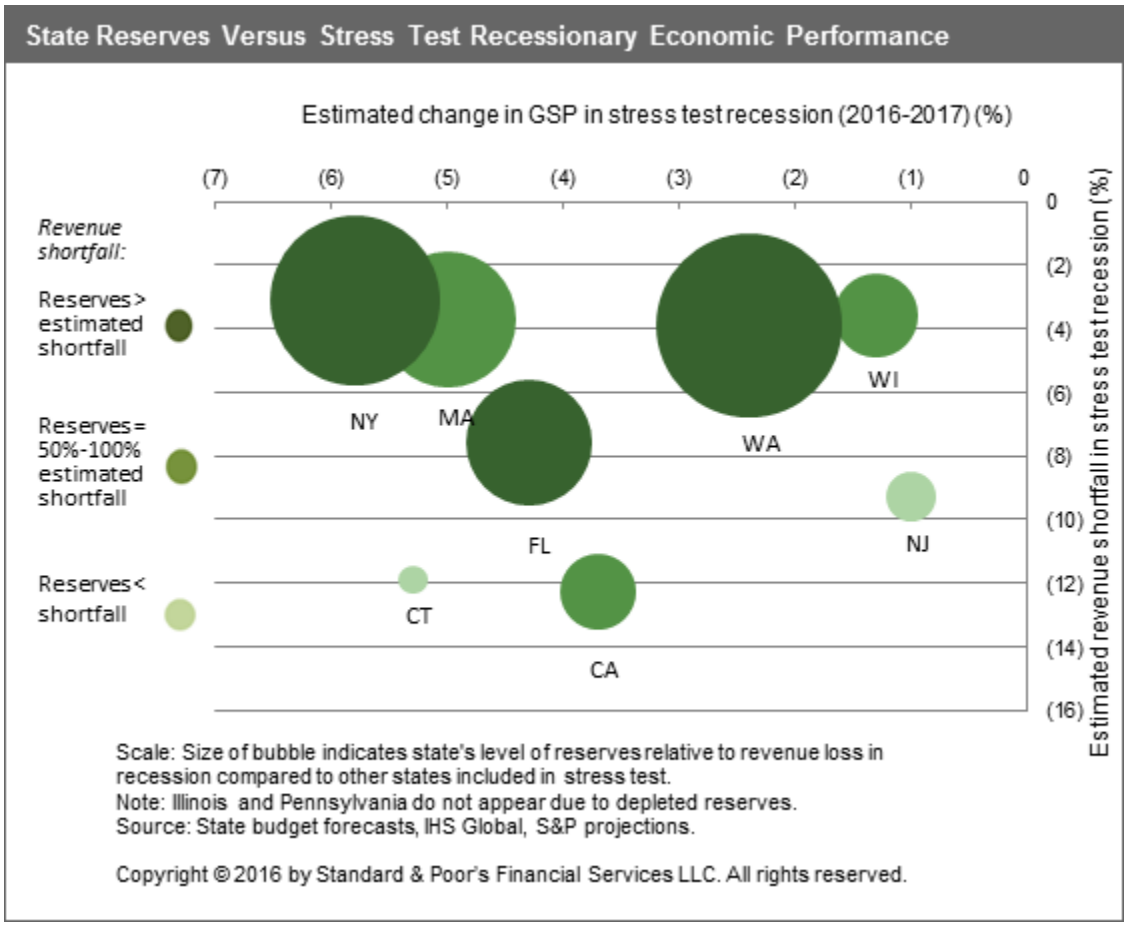
Source: State projections are from state budget documents and revenue forecasts, recession scenario values are estimates by S&P Global Ratings.

Reserve adequacy varies widely across states

Of the 10 we sampled, Illinois, Pennsylvania, New Jersey, and Connecticut are the four states most susceptible to significant fiscal stress. Budget reserves in these states equal less than half of the potential revenue underperformance that we estimate is possible in the first year of a recession of moderate intensity. Conversely, the reserve balances in the best positioned states—Washington, Florida, and New York—exceed the revenue shortfalls that we predict could occur in a recession scenario.

Three states—California, Massachusetts, and Wisconsin--fall in-between. Budget reserves in these states are insufficient to fully cover the revenue shortfall in our stress scenario, but equal at least 50% of the potential gap. As with the better prepared states, we view California and Wisconsin as having structurally aligned finances, at least on a budgetary basis of accounting. Of these three, budget reserves in Massachusetts are closest to being sufficient to cover the predicted revenue shortfall, though this partly reflects that throughout the latter part of fiscal 2016, Massachusetts repeatedly lowered its revenue forecast for fiscal 2017. As a consequence of a lowered revenue trajectory, the Commonwealth's most recent revenue forecast is closer to what we predict in a recession scenario. By budgeting to this lower level of fiscal 2017 revenue than was previously anticipated, the potential fiscal gap in a recession scenario is reduced. According to our simulation, Massachusetts' reserves could cover 92% of the potential gap, though the softening revenue outlook reflects that the Commonwealth's fiscal condition remains somewhat out of step with the broader economic expansion.

Chart 2



Fixed costs consume a larger share of general fund revenue in a recession scenario

The fiscal positions of Illinois and Connecticut are also vulnerable to a recession because of high fixed costs, which consume an especially large portion of tax revenue in a downturn. Table 4 presents the states' fixed costs—including tax-supported debt service, pension contributions, and other post-employment benefits outlays—as a share of baseline general fund revenue and predicted revenues in our recession scenario.

In addition to budget reserves, states with balanced fiscal structures typically have deeper reservoirs of unconventional budget flexibility at their disposal. Examples include the ability of states to make inter-fund transfers or even defer certain payments. Whereas California has leveraged the economic expansion to retire its backlog of budgetary debts, stalemated budget negotiations in Illinois have it with a large balance of unpaid bills. In Illinois, New Jersey, and Pennsylvania, a failure to restore fiscal alignment has impeded progress in addressing the growth of long-term pension liabilities.

Table 3

States' Primary General Fund Revenue Projections vs. Recession Scenario

	State projected primary general fund tax revenues ($ mils.)	Recession scenario revenues ($ mils.)	Revenue shortfall (%)
California	120,113	105,369	(12.3)

Table 3

States' Primary General Fund Revenue Projections vs. Recession Scenario (cont.)

	State projected primary general fund tax revenues ($ mils.)	Recession scenario revenues ($ mils.)	Revenue shortfall (%)
Connecticut	14,687	13,531	(7.9)
Florida	25,407	23,469	(7.6)
Illinois	23,271	21,985	(5.5)
Massachusetts	23,443	22,034	(6.0)
New Jersey	26,072	23,658	(9.3)
New York	68,702	66,590	(3.1)
Pennsylvania	26,123	25,045	(4.1)
Washington	9,121	8,765	(3.9)
Wisconsin	14,313	13,803	(3.6)

Primary general fund tax revenues include in the states where they are collected, personal income, corporate income, and sales taxes. Source: State projections are from state budget documents and revenue forecasts, recession scenario values are estimates by S&P Global Ratings. Primary general fund revenues: personal income tax, corporate income tax, sales tax.

Table 4

Debt Service, Pension, And OPEB Contribution As Shares Of Revenue

	Sum of debt service, pension, OPEB contribution ($ mils.)	Share of state's general fund revenue projection (%)	Share of recession scenario revenues (%)
California	15,066	12.5	14.3
Connecticut	4,977	27.8	31.0
Florida	2,715	9.2	9.8
Illinois	9,302	28.8	30.0
Massachusetts	4,601	17.9	19.0
New Jersey	5,643	16.3	17.5
New York	8,931	9.4	9.7
Pennsylvania	5,052	16.0	16.5
Washington	2,622	14.0	14.3
Wisconsin	733	4.5	4.7

Source: State projections are from state budget documents and revenue forecasts, recession scenario values are estimates by S&P Global Ratings.

Fiscal Sustainability Emerges As An Intangible Credit Factor

Macroeconomic performance in recent years presents challenging landscape for states

It's well-documented that economic growth throughout the current expansion has been subpar, with real GDP increasing at just 2.1% per year since 2009. But in our view, it's useful to recall that although growth during the prior 2002-2007 expansion was stronger—averaging 2.7% per year—it nevertheless lagged most post-World War II era recoveries. And that was in the context of a dramatic increase in household leverage, accommodative monetary policy, and expansionary fiscal policy (the Bush tax cuts). Before that, a burgeoning information technology sector throughout the mid-to-late 1990s that culminated in a stock market bubble related to internet startup companies propelled economic growth rates that proved unsustainable. Since the late 1990s, therefore, periods of faster economic have been associated with asset price bubbles—fueled in large part by low interest rates—rendering them inherently

unstable.

Mirroring the macro economy itself, state tax revenue growth since around 2000 has also been slower and punctuated by episodes of volatility. In retrospect, the slower growth trend was noticeable in the manner in which the economy -- and the states, from a fiscal standpoint -- recovered only gradually from the 2001 recession. By the time the Great Recession struck in late 2007, many states had either only just achieved fiscal repair, or their recovery remained a work-in-progress. The story since then has been more of the same. States have, therefore, now spent more than 15 years responding to or recovering from adverse fiscal pressures stemming from economic contraction triggered by financial market shocks.

Low interest rates and financial market volatility also complicate states' efforts to manage their large and inflexible long-term liabilities related to employee pension benefits. Insofar as pension systems respond to the low-interest-rate environment by shifting to a riskier asset allocation, they exacerbate the potential for investment losses. And when investment results underperform actuarial assumptions, the subsequent result is upward pressure on state pension contributions. States that maintain funding discipline by adhering to contribution schedules tied to an actuarial basis tend to have healthier pension funded ratios over time. Spending on entitlements including for public welfare (such as Medicaid) and pension benefits has increased as a share of total state spending to 40% in 2013 from 34% in 1995. Faster growth among these spending commitments has attenuated the states' budget capacity to fund other more discretionary and pro-growth oriented investments in infrastructure and higher education, for example.

Assessing state fiscal sustainability through the business cycle

To evaluate whether a state's fiscal structure is sustainable requires an assessment that spans the business cycle. A sustainable through-the-cycle fiscal model is one in which the state accumulates budget reserves in the boom and then draws upon them during the bust. This implies, therefore, that even the states we view as having sustainable fiscal structures will periodically experience operating deficits, most commonly during economic downturns (we define operating deficits as situations in which revenues are less than expenditures). But if the state's fiscal structure is sustainable, it will have also previously operated in a surplus sufficient to build reserves that can mitigate the revenue loss associated with an economic slowdown. States that still have minimal reserves—or are even drawing upon reserves—in the latter phases of an economic expansion, on the other hand, are especially vulnerable to unanticipated fiscal strain.

A state's budget reserves relative to its potential revenue shortfall in a recession offers a snapshot of its capacity to accommodate the fiscal effects of economic stress. More subtly, a state's level of reserves to its predicted shortfall in a recession also provides a window into a state's financial management practices and policy priorities. Among the most important of these from a credit standpoint is a state's fiscal operations, and specifically whether there is structural alignment between recurring revenues and ongoing expenditures. Structural fiscal alignment typically is a necessary prerequisite for a state to have the budgetary capacity to recapitalize its budget reserves after a downturn. Therefore, it's no coincidence, in our view, that the four states in our evaluation we found to be most fiscally vulnerable to a recession have also struggled with chronic structural budget imbalance.

Relatively larger budget reserves tend to be more necessary for states with volatile revenue bases or where the executive has limited discretion to unilaterally impose intra-year spending cuts. For states with less economically

sensitive revenue bases or those that have strong mid-year corrective capacity, a relatively smaller reserve may suffice. Either way, there are difficult policy-tradeoffs involved in depositing funds in a budget reserve. A dollar set aside in reserve becomes unavailable to be spent on programs or returned to the taxpayers in the form of a tax rate reduction.

Fiscal alignment—and whether a state has achieved it at this point in the cycle—emerged as an important indicator of a state's vulnerability to stress in our scenario analysis. The credit profiles of the states still grappling with budgetary imbalance also suffer from minimal budget reserves. As the following case studies illustrate, the details of each state's credit story may differ, but the combination of these characteristics can put states at-risk of experiencing credit deterioration in a downturn.

State Recession Scenarios

California (AA-/Stable)

California is susceptible to boom-and-bust budgetary cycles, a byproduct, in our view, of its simultaneously high incomes, progressive income tax regime, and above-average poverty rate. During stock and technology sector booms, soaring capital gains incomes and bonuses accrue disproportionately to those at the top of California's income spectrum. In tax year 2014, for instance, the adjusted gross income of the top percentile—which took home 23.9% of the total—increased 14.9%, much more than other segments of the income distributions. Being subject to the state's progressive personal income tax schedule, however, the top one percent of income earners also paid an outsized 48% of total personal income taxes that year. But while the heavy reliance on high income taxpayers can turbocharge tax receipts in goods years, there is a downside corollary to linking revenue performance to financial markets. After surging by 28% in fiscal 2000 at the height of the dot-com boom, California's personal income tax receipts plummeted 26% just two years later when technology industry valuations faltered. These swings mirrored trends in capital gains income itself, which nearly doubled between 1998 and 2000 before falling by a precipitous 72% over the subsequent two years.

In a slowdown, the repercussions of declining stock prices and smaller bonuses among California's upper income strata ripple throughout its real estate market and broader economy. Reduced demand for construction and service sector workers causes unemployment among these lower wage sectors to rise. As job and income losses mount, the state's Medi-Cal (California's Medicaid program) caseloads swell along with demand for other social services. California's high per capita personal income translates to a fiscal disadvantage under the federal funding formula that determines the state's eligibility for Medicaid matching funds. In fact, California's 50% Medicaid matching rate is the federal minimum. Countercyclical demand for social services is not unique to California, though its low federal match rate and revenue volatility conspire to virulent fiscal effect in times of economic stress.

In addition, when California's tax revenues begin falling short of the budget forecast, its institutional capacity to make a midyear fiscal course correction is limited. There is minimal executive authority for the governor to unilaterally restrict spending or impose allotment reductions after the budget takes effect. The main line of defense is the state's special fund for economic uncertainty and—if the governor declared a financial emergency—the ability to draw down upon up to half the balance in the budget stabilization account. Unless the governor invoked his authority to call a special session focused on addressing the fiscal emergency pursuant to Proposition 58, however, the budget gap would roll

into the proposed budget for fiscal 2018. If the revenue falloff were severe enough to precipitate intra-year liquidity pressure, we expect the governor would call a special session to address the fiscal emergency.

In our simulation, general fund tax revenue would fall short of what the enacted budget assumes by $14.7 billion during the first year of a recession. Reflecting its propensity for revenue volatility, California's 12.3% revenue miss in our recession scenario would exceed the shortfalls of the other states in our sample. On the spending side, falling incomes and rising unemployment would correspond with rising Medi-Cal caseloads, exerting upward pressure on state expenditures. We estimate that in the first year of a recession, state Medi-Cal related expenditures would increase by 2.7%, or $485 million. California's constitution offers some offsetting relief, however, because under the Proposition 98 education funding formula, the state's minimum guarantee is a product of personal income and tax revenue growth. The Legislative Analyst's Office has characterized the dynamism of the Proposition 98 funding requirement as an "automatic stabilizer". We estimate that if general fund revenues went into a decline similar to our stress scenario, the state's general fund portion of the minimum guarantee would also fall by $6.3 billion to $44.8 billion from $51.1 billion.

Absent other budgetary adjustments, the net effect of these assumptions is an operating shortfall of $11.1 billion. After accounting for the state's $4.8 billion beginning balance, there is a $6.3 billion deficit, which equals approximately 93% of its budget stabilization account—BSA—balance. Proposition 2, which established the BSA provisions, allows that only up to half the balance held in the BSA may be spent in the first year of a recession. Therefore, lawmakers would likely address the residual fiscal gap as part of the fiscal 2018 budget, unless the governor convened a special session. In a recessionary setting, the governor would also have the authority to pause the phased implementation of recent legislation to raise the state's minimum wage. At a cost $133 million in fiscal 2017, the potential savings from delaying the wage increase would be relatively minor against the $122.5 billion general fund budget, however.

According to our analysis, a moderate recession would strain the state's finances, but its efforts in recent years at shoring up its finances have paid off. In our view, the $2 billion supplemental contribution to its budget stabilization account in the fiscal 2017 budget provides California with a crucial fiscal backstop against a potential downturn. The state is in a better position to weather the first-year effects of a recession than it has been in recent memory.

Looking beyond the first year effects of a recession, falling stock prices would also portend increased contributions to the California Public Employee (CalPERS) and State Teachers' Retirement Systems (CalSTRS) from the state general fund. In recent years, funding policies set by the CalPERS board and via statute by the legislature for CalSTRS, have tied state pension contributions to the market value of system assets. Already, California's fiscal position is subject to above-average sensitivity to financial markets through their effect on capital gains income and personal income tax revenue. State pension funding arrangements that produce higher contribution requirements following underperforming investment returns and—relatedly, general fund tax revenues—accentuates the relationship. Reflecting the conundrum faced by all states, any budgetary relief achieved by relaxing the contribution requirements would be met by an increase in the state's long-term liabilities.

Connecticut (AA-/Stable)

Our recession scenario assumes a revenue downturn is led by a sharp drop in capital gains tax, likely caused by a downturn in the capital markets. In our view, Connecticut has above-average dependence on its top taxpayers, who

contribute a greater share of its cyclical capital gains tax revenue. The state estimates that millionaires contributed 31.8% of total state income tax collections in 2014, while comprising only 0.7% of income tax filers.

Our fiscal stress projection for Connecticut projects a steep 7.9% drop in general fund revenue as the result of recession, equivalent to a $1.2 billion revenue shortfall, based on historical revenue variation. To meet this shortfall, the state would have a $127 million budget stabilization fund, or just 0.7% of fiscal 2016 appropriations, based on the most recent state comptroller's estimate. The state's revised fiscal 2016-2017 biennium budget projects the stabilization fund will remain near its current size through June 30, 2017. As a result, we believe Connecticut may be poorly poised if a recession occurred in fiscal 2017. Out-year financial results could also be under pressure. The legislative Office of Fiscal Analysis projects a large $1.3 billion current services financial gap (6.6% of projected 2018 appropriations) that will need to be closed in fiscal 2018 as part of next year's biennium budget. As a result, we expect state reserves will remain low for the foreseeable future.

Our stress test estimate of revenue shortfalls is based on historical revenue performance, which included years when the state had tax increases. However, we believe after two large tax increases in the last two biennium budgets, and a well-publicized move of General Electric's headquarters to Massachusetts, it may be politically difficult to raise taxes in the next recession.

We believe the state has a good history of mid-year budget monitoring and in recent years has made mid-year budget cuts to restore structural balance. However, structural balance may become more difficult to maintain in a recession scenario due to the state's rising fixed costs. Connecticut estimates that combined debt service, pension, and OPEB costs equal 28% of its enacted fiscal 2017 general fund budget. In addition, state OPEB matching payments are scheduled to increase in fiscal 2018 under current law. Pension costs could also escalate due to possible investment underperformance against its actuarially assumed 8.0% rate of return and the pension system's relatively short 19 year remaining fixed pension amortization period on a blended basis, although the amortization period could theoretically be stretched out and reduce pension costs. A potentially mitigating factor is what we consider the state's rapid debt amortization schedule, with 66% of tax-backed debt principal due to be retired in 10 years.

The state has also overestimated personal income tax revenue in recent years, and as a result has had budget shortfalls even while revenues were growing. A continued revenue overestimate, combined with recessionary economic conditions, could potentially leave the state doubly vulnerable, despite the near structural balance of the current biennium budget under current economic conditions.

Florida (AAA/Stable)

A recession would pressure Florida's heavily sales tax dependent general fund revenue, which is particularly exposed to large drops in personal income and personal consumption. However, although economic indicators in Florida would drop by relatively wide margins under our recession simulation, the state's accumulation of strong budgetary reserves bolsters its position in the event of a downturn.

As of the second quarter of 2016, State Policy Reports finds that Florida ranks fourth in economic momentum, as measured by personal income growth, employment growth and population growth. Florida's employment recovery is broad, in our view, with most major sectors continuing to experience positive growth year over year. We also believe housing market conditions are more sustainable than prior to the last recession and unlikely to be the main catalyst for

a future economic downturn. Overall housing starts continue to grow although existing home sales in the first four months of 2016 have been sluggish compared with the same period in 2015. Home prices in the state's major cities are above the troughs of 2011 but they are still well below the peaks experienced before the last recession. Miami's home prices, for example, are 53.25% above their low in November, 2011, but still 25% below their peak as of February, 2007. However, based on historical trends between 2000 and 2014, we estimate the state remains particularly susceptible to economic volatility. In the event of a recession, we predict that personal income and personal consumption in the state would fall by 4.04% and 3.96%, respectively, both the largest simulated declines of all the states put through our simulation. In such a scenario, general fund tax revenue would fall short of what the enacted budget assumes by $1.9 billion, or about 6.4% of budget, during the first year of a recession. Additionally, we estimate that a flagging economy would pressure Medicaid caseloads to inflate Medicaid spending to 4.44% higher than the $6.5 billion currently budgeted for fiscal 2017. The net effect of the lower revenue and higher Medicaid costs, assuming no other adjustments, is a simulated operating shortfall of about $2.2 billion, or 7.5% of budget.

Despite the aforementioned economic contractions, we estimate that a one-year 7.6% drop in state revenue is smaller than that experienced during the previous recession (11%) and we calculate that Florida's strong reserve position could more than cover the shortfall. Florida has built up its general fund reserves since the recession to a strong combined general fund and budget stabilization fund balance of $3 billion, or 10% of budget. The total available reserves are even higher, at about 19% of budget, when including trust fund balances. Although we expect the state would use a combination of budgetary adjustments, in addition to use of reserves, to solve any future budget gaps, we estimate that general fund and budget stabilization fund reserves alone would be sufficient to cover the simulated revenue shortfall by 1.55x.

Illinois (BBB+/Negative)

Already the lowest rated of the 50 states, Illinois' revenue and expenditure volatility is moderate relative to other states in our sample; however, the state's weakened fiscal position, limited financial flexibility, and political gridlock leave it susceptible to the most severe fiscal stress in the event of a recession. Despite seven years of a national economic expansion, Illinois is still operating at a significant structural imbalance and continues to contend with a large and growing backlog of payables. Decision making has been severely hampered by top leadership's political intransigence and deeply polarized views on how to address the state's current structural imbalance. It nonetheless adds to existing fiscal pressures at a time when the state is at risk of approaching service level insolvency, which could more fundamentally jeopardize its creditworthiness.

For fiscal 2016, we estimate the state's structural imbalance was over $4 billion. In the absence of a fully enacted budget the state operated under a de-facto budget that led to unchecked spending based on continuing appropriations, consent decrees, judicial ruling, and appropriations enacted. In addition to its lingering structural budget gap, which opened up following the expiration of the temporary tax increases on Dec. 31, 2014, the state has a large and growing backlog of unpaid bills. We expect the bill backlog to range between $9 billion and $10 billion, close to one-third of the expenditures at 2016 fiscal year-end. The recently agreed upon stopgap budget depletes the remaining $275 million left in its reserves.

In our simulation, the state's three largest sources of revenue--income, corporate and sales taxes--would experience

moderate declines in the first year of a recession. We estimate that these general tax revenues would decline 3.4% from the prior fiscal year. Based on the governor's fiscal 2017 estimated revenues, and assuming no changes to the tax structure, these revenues would decline by $1.29 billion, or 5.5% from the estimate, adding to the state's already sizeable structural misalignment. On the expenditure side, a recession would place additional pressure on an already Illinois overstrained social support network. Unemployment, already well above the national average, would increase further, especially if issues such as Brexit negatively affects large employers in the state, such as Caterpillar, which has significant operations in the United Kingdom. Falling incomes and rising unemployment would correspond with rising Medicaid caseloads and translate into a $282 million, or 2%, increase on the state's projected Medicaid spending.

Faced with falling revenues and rising expenditures, the state would be left with very few options. Typically, states would rely on at least some portion of their reserves to either delay or mitigate the blow of necessary revenue raising and austerity measures. In the absence of reserves, Illinois would have to either raise revenues or reduce expenditures, or both. Given the current structural imbalance, tax increases or spending reductions would have to be more draconian to cover the current budget gap plus the newly opened recessionary one. The tax rate decline in 2015 suggests there is some capacity to increase revenues, although taxpayer tolerance for increases might be less when including increases imposed at the local level; say, Chicago, for example. Reducing expenditures would also prove challenging given its high and rising level of fixed costs, including debt and pension expenses, especially in absence of a budget. Reductions to education, in addition to likely facing political resistance, would place increased pressure on entities that are already struggling, such as Chicago public schools and the state's community colleges. As fiscal 2016 demonstrated, in the absence of a budget, most of the state's spending will likely continue unchecked based on continuing appropriations, consent decrees, and court-ordered spending.

Even with some room to make adjustments, it is unlikely that Illinois would react to a recession in a timely manner. The state has historically been unable to make difficult and politically unpopular revenue and expenditure decisions necessary to restore balance to its operations and has allowed deficits and payables to accumulate. Illinois is required to adopt a balanced budget, but is not required to maintain balance throughout the year. In our view, this ability to end the year out of balance and carry forward deficits is likely one of the most significant weaknesses in the state's government framework. Decision making is further complicated by a high level of consensus required to adopt legislation that become effective immediately and political gridlock. The state requires a simple majority to enact immediately effective laws from January 1 through May 31, but a three-fifths majority during the remainder of the year. Despite operating for a full year without a comprehensive budget, growing payables, increased social pressure, and 2016 being an election year, the state was only able to adopt a stopgap measure that funds six months of continued spending deferring action on its structural budget gap until next year.

In our view, the state's remaining options add uncertainty, are likely to come with an increased cost, and would further weaken the state's creditworthiness. The state would likely manage its liquidity by continuing to accumulate either short-term or long-term payables, both of which are temporary measures that would further weaken the state's fiscal position. Arguably, many of the state's service providers are operating with weakened balance sheets after having to endure a full year with no or reduced payments. The ability, if not the willingness, to continue to provide services in exchange for deferred payment, albeit at a premium, could come into question during a recession, especially if payables continue to rise. As an alternative, the state could access the capital markets to issue deficit bonds. GO must

be authorized by at least 60% of the General Assembly and there is a well-established priority for payment of debt. We would expect that if deficit bond financing were to be approved, it would come at a premium.

Massachusetts (AA+/Negative)

Massachusetts had the fifth-highest estimated revenue shortfall as a percent of total operating revenue in our stress test scenario, suggesting the state is prone to revenue volatility as the result of the volatility of the financial markets. We believe this is in large measure the result of the state's exposure to the cyclical capital gains tax.

Massachusetts projects capital gains tax will constitute about 5% of fiscal 2017 total tax revenues, a level that we see as high. However, we also believe the commonwealth has a good history of making timely midyear budget adjustments when needed.

Our stress test also shows a relatively large drop in state GDP in a recession, based on historical economic performance. This may be attributable in part to the relatively large proportion of high-technology in the state economy, a sector which has shown good growth, but also retains a cyclical element.

In our stress test, the Commonwealth would experience a 6.0% revenue shortfall in its three primary tax revenue sources in a recession, or $1.4 billion, against which it would have a $1.3 billion budget stabilization fund. Massachusetts estimates it will end fiscal 2016 with a budget stabilization fund (BSF) of about $1.3 billion, after a very small increase in fiscal 2015 and a modest draw down in fiscal 2014. The state has not budgeted for an increase in its budget stabilization fund in fiscal 2017.

Under the state's formula for building up its BSF, excess capital gains receipts above an inflation-adjusted target flow to the BSF. However, even though capital gains tax has come in above target, the state has suspended its transfer to the BSF in recent years. Total combined general fund and BSF reserves at fiscal end 2016 are projected by the state at only about 3% of operating appropriations.

The state has a good history of monitoring budget trends during the fiscal year, and it made several rounds of mid-year budget adjustments in fiscal 2016. Massachusetts has had strong revenue growth since the recession, and while its revenues have been short of projections over the last several months, its main variation against budgets in the last two years has been due to unexpected growth in expenditures, in our view. The state has in particular pointed to unexpected Medicaid cost growth in recent budget shortfalls. Given the volatility in the state's revenue, any greater-than-average cyclicality in its social service costs could prove troublesome in a stress situation.

New Jersey (A/Negative)

New Jersey's structural budget imbalance at a mature stage of economic expansion suggests the state is not well positioned for a recession. Although economic conditions are improving on some fronts, growth continues to lag the nation. In line with slow economic growth, growth in revenues has not been sufficient to match expenditure growth, which is somewhat masked by substantially reduced pension funding. For fiscal 2016, New Jersey contributed $1.3 billion, or just 30% of its actuarial recommended contribution (ARC), leaving $3.05 billion unfunded. Furthermore, the state continues to struggle to adequately fund education and infrastructure and still relies on one-time revenues, including its reserves to close budgetary gaps. As of the May update, the state had a $600 million revenue shortfall relative to the revised budget, of which $350 million was attributable to gross income tax. Although the state improved

its budgetary reserve to $824 million at the end of fiscal 2015, it is expected to draw down reserves to $551 million, or 1.6% of expenses at fiscal year-end 2016, providing limited cushion against revenue shortfalls. The current administration has relied primarily on expenditure reductions, deferrals, and one-time measures as a way to close midyear budgetary gaps. Although it has the ability to raise taxes and other revenues, it has not relied on this as a significant gap-closing tool, opting instead to maintain or lower taxes, despite sizable budgetary deficits and deferred expenditures. While our outlook on the national economy remains positive, we recognize that the current expansion has reached its seventh year and any weakness in the economy or financial markets could have a significant impact on the state's fiscal condition.

Among the states in our sample, New Jersey was among those exhibiting the highest volatility. In our simulation, the state's three largest sources of revenue--income, corporate and sales taxes--would experience significant declines in the first year of a recession. We estimate that the three largest revenue streams would decline 8.2% from fiscal year 2016 levels and $2.4 billion, or 9.3%, from the state's estimates for fiscal 2017. On the expenditure side, we would expect falling incomes and rising unemployment would correspond with rising Medicaid caseloads. However, given the state's generally high wealth and income levels, we estimate that this would translate into a very slight $43 million, or 1.1%, increase on the state's projected Medicaid spending. Faced with what we have estimated at over $2.4 billion shortfall, the governor has the authority to make necessary adjustments to make sure the state budget remains in balance at the end of the year, which may include the use of available reserves and the deferral of payments

Absent significant budgetary flexibility, the state would be likely have to take a multi-prong approach to closing its budgetary gap--one which could further weaken credit quality. Reserves, limited as they are, would only serve to address a portion of the shortfall. Depletion of its reserves would leave the state in an even weaker liquidity position in future years. Although the state has some ability to reduce or defer spending, it already relies on one-time measures to close budgetary gaps, suggesting limited room and political willingness for significant additional reductions. Despite a period of economic expansion, New Jersey has already been operating with a structural imbalance and has had to limit programmatic spending to make way for growing fixed costs, such as for pensions and debt service. The state could reduce or eliminate its pension payment, as it did in fiscal years 2014 and 2015, budgeted at $1.9 billion in fiscal 2017. However, with a system that is only 37.5% funded and payments that only represent 40% of the ARC, this option could have longer lasting effects on the state's credit quality. A potential constitutional amendment being considered by the legislature, if approved by voters, would require the state to fully fund its pension obligations each year, thereby limiting the state's flexibility to reduce pension payments to manage expenditures.

The state does not have formal limitations in that it can set and modify tax rates, deductions, exemptions, and collection dates. In the past, it has used such flexibility to increase revenues and levy additional taxes. For example, in fiscal 2007, New Jersey raised its sales tax to 7% from 6% and expanded the base, and in fiscal 2010 it levied a millionaires' tax effective for calendar 2009. However, the political appetite and taxpayer tolerance for tax increases, especially during a recession, might be limited given the state's tax structure, especially when considering underlying government taxes. Allocation of these revenues to address recessionary pressures would limit or at least delay the state's response to its long-term pressures.

New York (AA+/Stable)

New York State's adherence to conservative budgeting and improving its reserves has positioned it well in the event of an economic slowdown. Given the state's recent progress in shoring up its reserve position since the last recession, it performed well under our stress test given that it projects out for just one fiscal year. However, New York is the home of the financial heart of the U.S. financial markets and even though the state would likely manage through what we are projecting under our recession simulation; it would still be affected due to its unavoidable economic and financial exposure to bear market conditions and management will be integral to managing through the impact of a longer recession scenario.

Under our recession simulation scenario the state's 2017 revenues would fall by $2.1 billion (a 3.1% decline from budget) to $66.59 billion during the first year of a recession. The state's current reserves of $6.069 billion provide a strong 2.87x cushion over the projected revenue shortfall. From a credit perspective this is important as the reserve position would allow the state time to react and manage the decline in revenues. The state has periodically made midyear budget adjustments in previous cyclical revenue downturns but, in our opinion, in recent downturns these were not always sufficient to close midyear gaps or gaps within the fiscal year. However, we believe that since 2012 the state has made progress in restraining service costs, even while the economy has improved.

Interestingly, New York is the only state among the 10 in the evaluation that still saw some revenue growth (1.3%) from 2016 to the recession scenario in 2017 (albeit still lower growth--3.1% less than what is currently budgeted for fiscal 2017). This is important to note as during the last recession the state's revenues declined by 14.21%--the second largest decline for the states in our study. New York's pre-recession revenue volatility was the highest among the 10 states; however, post-recession it is now the least volatile in the study. Looking at the historical data, tax revenues have grown at smaller rates than they did pre-recession. Before the recession, the state experienced very large revenue increases year-to-year followed by significant drops during economic contractions. Post-recession, the state's revenue growth has had steady, but significantly smaller increases. As a result, growth is muted but less volatile, which combined with the state's practice of conservative budgeting, insulates it to some degree to the inherent revenue volatility and improves the state's ability to react during an economic downturn.

On the expenditure side of the equation, our simulation shows the state's Medicaid expenses would climb by 6%, which is the largest growth rate among the 10 states. Although statutory law requires certain formula increases in school aid and Medicaid appropriations, the state can appropriate them in the current year at a lesser amount if it so chooses as part of the annual budget process. Although the state has legal flexibility to cut costs, we believe that political difficulty could arise, resulting in delays in budget enactment or midyear gap-closing when cuts in politically favored programs are proposed. As a result, under our simulation the pressure point for New York would be more on managing its expenditures than on its revenues.

Pennsylvania (AA-/Negative)

In our view, Pennsylvania is not well-positioned for a recession given the depletion of budget reserves and elevated fixed costs. While several years have passed since the official end of the last recession, slow economic growth has not kept pace with growing expenditures, and the commonwealth has continuously enacted structurally imbalanced budgets. Even without a recession scenario, Pennsylvania has struggled to balance its budget, as evidenced by the nine-month budget impasse in fiscal 2016 and delayed revenue package adoption for fiscal 2017. Given that the

commonwealth has depleted reserves, its remaining options to mitigate a potential revenue shortfall include revenue or expenditure adjustments. Elevated fixed costs, including rising pension and Medicaid expenses, challenge the commonwealth's flexibility to cut back on expenditures, although we understand it still has capacity to reduce appropriations. Pennsylvania benefits from executive authority to reduce the budget without legislative approval, and it retains the ability to raise new revenues without voter approval or supermajority votes in legislature. We anticipate that in our stress scenario, the commonwealth's liquidity position would weaken, but it has demonstrated access to external liquidity through issuance of TANs and internal borrowing from the state treasury.

Since the previous recession, Pennsylvania has not recovered its fiscal condition in preparation for a future downturn. During fiscal 2002 and fiscal 2003 revenue shortfalls, the commonwealth relied significantly on tax stabilization reserves, but it recovered building its budget stabilization fund up to $755 million prior to the subsequent recession. In fiscal 2010, the commonwealth again depleted reserves, and it has suspended any transfers to rebuild the budget stabilization fund since, leaving projected available reserve balances to end fiscal 2016 at a mere $232,000. As of 2007 actuarial studies, the funded levels for the State Employee Retirement System (SERS) and the Public School Employees' Retirement System (PSERS) were at 97.1% and 85.8%, respectively. The introduction of rate collars in 2010 reduced significantly rising pension contributions, providing short-term budget relief, but underfunding of ARC has contributed to overall lower funded levels and rising pension costs for fiscal 2017. While many other states' pension funded levels have significantly recovered since the last recession, as of 2015, SERS and PSERS funded levels were at 82.9% and 54.4%, respectively, contributing to a combined funded ratio of 58%. Due to expected declines in the equity markets during a recession, we would expect increased pressures on the state's pension contributions, especially during a prolonged recession.

We estimate that Pennsylvania would have a below-average shortfall in a recession, somewhat mitigating its lack of reserves. Pennsylvania benefits from a diverse revenue stream with personal income and sales taxes, each accounting for 41% and 32.9% of total revenues, respectively. Despite below average economic growth, Pennsylvania's diverse employment base has supported unemployment rates below national average over the last decade, including during the last recession.

Washington (AA+/Stable)

Washington fares relatively well in our recession simulation given its revenue diversity and strong reserve levels. Although the large role of exports in Washington (about 21% of the state's GDP) weakens the state's economy in our scenario due to its susceptibly to flagging global demand and a strong dollar, we estimate Washington's sales tax revenue collections ($9.1 billion) would decline by 3.9% to create a relatively minimal $356 million shortfall, or about 2% of budget. This simulated decline reflects a less pronounced drop in revenue within one year compared to the state's actual one-year 10.8% revenue shortfall in the previous recession. We predict that budget reserves relative to estimated revenue losses would still rank at the top among the states in our survey and are significantly strong to cover more than 3x the simulated revenue loss. We predict that budget reserves totaling $1.2 billion, or 4% of budgeted expenditures, are strong enough to cover more than 3x the simulated loss in revenue.

Previously strong economic growth, characterized by personal income gains fueled by the information technology sector, has helped Washington stave off fiscal pressures in our recession scenario. The state's economy has sustained above-average rates of growth with real GDP and employment expanding at a strong 2.9%, respectively, in 2015,

outpacing the nation's 2.4% and 2.0%, respectively. Currently as of the second quarter of 2016, State Policy Reports finds that Washington ranks third in economic momentum, as measured by personal income growth, employment growth and population growth. Housing starts have grown steadily along with home prices contributing to strong growth in construction employment, along with large public works projects. The state's fiscal position is further bolstered by lower revenue volatility due to the absence of a personal income tax (although there is still reliance on sales tax revenue). In the event of a recession, we predict that GDP growth in the state would fall by 2.35% and personal income and personal consumption would fall by 2.22% and 2.61%, respectively. Although the state's revenue gap would not be as pronounced as the last recession, it could still experience fiscal pressure due to high fixed costs and material upward pressure on state spending for K-12 education due to the McCleary State Supreme Court ruling. Furthermore, Medicaid spending would increase by a relatively small rate of 1.01% under our model.

Wisconsin (AA/Stable)

Despite a less volatile revenue stream than other states, Wisconsin's reserves are thin, and the estimated revenue shortfall in our stress scenario exceeds available reserves. Our simulation does show that Wisconsin's revenue shortfall compared to the budget is smaller than other state cases. However, we do see Wisconsin's outsized manufacturing sector as leaving the state more vulnerable to broader macroeconomic trends in the U.S. These include cyclical factors affecting international trade, such as the recent trend toward a stronger U.S. dollar, which by raising the price of U.S. exports, could undercut demand for products manufactured in the state. Brexit only increases the risk of a stronger U.S. dollar.

Due to relatively stable revenue performance and expenditure reductions, the state has managed its financial condition despite low reserves. Despite several years of positive economic growth, Wisconsin has not consistently added to reserves. In recent years, revenues have fallen short of estimates, and the state has a track record of making cuts in favor of fiscal alignment. In the case that the state determines that budgeted expenditures will exceed revenue by more than 0.5% of general purpose revenues, then it cannot approve additional expenditure estimates and the governor is required to submit a budget correction bill to the legislature to address the imbalance. Furthermore, the Secretary of Administration has power to prioritize payments if vouchers are in excess of available revenue and has statutory power to reduce appropriations to state agencies, to temporarily reallocate certain balances, and prorate or defer certain payments. In our view, these administrative powers to make cuts help mitigate the potential depletion of reserves in a recession scenario. Wisconsin does retain flexibility to raise revenues with the need for voter approval or a supermajority of votes in the legislature, but there has been deep political resistance in recent years to do so. The state has reduced income tax rates in recent years, which we view as leaving the its finances more vulnerable to economic or revenue underperformance in a future stress scenario than in recent downturns.

Wisconsin benefits from a dynamic pension liability, whereby in instances of declining pension asset values, benefits are also subject to reduction. In a stress scenario, this system design may not provide immediate flexibility to reduce pension payments, but it limits future spikes in costs. The Wisconsin Retirement System is also fully funded, which reduces fixed costs tied to fully funding actuarially determined pension contributions relative to a weaker funded system.

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