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Rainy Day Funds and State Credit Ratings

How well-designed policies and timely use can protect against downgrades

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The Pew Charitable Trusts is driven by the power of knowledge to solve today's most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life.

Overview

After Massachusetts lawmakers drew down the state's budget stabilization fund in fiscal years 2013 through 2015 to cover higher spending, Standard & Poor's (S&P) took action. The nation's oldest credit rating agency announced in November 2015 that it had revised its outlook on the state's finances from stable to negative and warned that it might also lower the state's debt rating unless lawmakers replenished Massachusetts' rainy day fund.

Governor Charlie Baker responded by asking lawmakers to approve a deposit of more than \$200 million into the budget stabilization fund in the fiscal year that began July 1, 2016. In a statement, he said this action would "ensure we are saving money in good economic times to protect us from future economic downturns." In a subsequent interview with The Pew Charitable Trusts, the governor said he thought the payment would alleviate S&P's worry. "Their concern was that we weren't going to make a deposit," he said.

The step Gov. Baker took to placate Wall Street was not unique. States generally react to the warnings of S&P and similar agencies in order to protect or enhance their ratings. The higher a state's credit rating, the lower the cost to repay bonds the state sells to investors to finance construction and renovation of roads, schools, airports, prisons, parks, water projects, and other infrastructure.

Yet research by Pew has found that even in states with the agencies' highest rating (triple-A), policymakers often are unsure about how best to manage their rainy day funds to earn or keep high credit ratings. As a result, some state officials are reluctant to tap reserves even during recessions for fear of a ratings downgrade.

To offer policymakers advice and insight into the relationship between budget reserves and credit ratings decisions, Pew studied documents and data on state ratings from the three major rating agencies—S&P Global Ratings, Moody's Investors Service, and Fitch Ratings—and interviewed policymakers, rating agency analysts, and others. The study is part of Pew's ongoing look at how states are managing their finances since the Great Recession of 2007-09. In previous reports, beginning with *Managing Uncertainty: How State Budgeting Can Smooth Revenue Volatility*, Pew has offered recommendations on how policymakers can strengthen their state's financial stability, including prudent design of rainy day funds.

While rainy day funds are one of several factors that inform ratings decisions, they are especially important because of the increasing volatility in state revenue. "Everyone has seen the same trend: Tax revenues have become increasingly volatile in the last one to two decades, and the cushion provided by rainy day funds helps offset that budget position," said Gabriel Petek, a managing director in S&P's public finance division, in an April 2016 interview with Pew.

Pew examined changes in credit ratings and the use of reserves in the 47 states that Pew classified as having a rainy day fund (all but Colorado, Illinois, and Montana). The research found that:

- Credit rating agency analysts pay attention to how states structure their reserves, whether policymakers are disciplined about controlling deposits and withdrawals, and how officials integrate rainy day fund policy with spending and revenue decisions. In an April 2016 interview with Pew, Laura Porter, who heads Fitch's state and local ratings group, said, "Reserves are a starting place to think about overall financial management."
- The rating agencies typically favor states that design their rainy day funds to align with the turns in the economic cycle, by depositing revenue into the fund during upturns and spending those reserves during downturns as one way to help cover budget shortfalls. Further, they tend to prefer states that consistently follow their own established rainy day fund policies.

- States that make withdrawals from reserves during recessions, or when an event such as a natural disaster lowers revenue, will not necessarily jeopardize their credit ratings as long as other budgetary actions meant to address the decline in revenue are also taken, according to Pew's analysis of rainy day fund use and state general obligation bond ratings.

With that in mind, Pew recommends that state policymakers:

1. Design rainy day funds with clear, objective goals that policymakers can refer to regardless of changes in governors, legislatures, and business cycles.
2. Structure rainy day funds to be in line with the economy, so that deposits, withdrawals, and savings targets are informed by the state's revenue volatility and the business cycle.
3. Base the decision to tap rainy day funds on the state's fiscal situation, withdrawing money as appropriate during budget crises but resuming deposits when economic and fiscal conditions improve.

Why ratings matter

At any one time, only 10 or so states have carried a triple-A rating, indicative of a high level of confidence that these states will honor their debts.

"AAA is the best you can get, and here in Utah we won't settle for anything less," Governor Gary Herbert said in his January 2016 State of the State address. He later added in an interview with Pew, "It may not mean much to the average citizen, but it does have an impact on their wallet." The higher a state's credit rating, the lower the cost to repay its bonds. For investors, meanwhile, high ratings signal that the state can and will meet its financial obligations to pay both interest and principal.

California provides an excellent example of how higher ratings can benefit a state. On Feb. 25, 2015, Fitch Ratings upgraded the state's credit rating from A to A+, explaining the upgrade as a result of "the institutional improvements made by the state in recent years, its disciplined approach to achieving and maintaining structural balance in recent budgets, and the consequent fiscal progress made to date by the state as it recovers from the severe budgetary and cash flow crisis of 2008-2009."¹ Two days later, California State Treasurer John Chiang announced the sale of \$1.9 billion in general obligation bonds.² As part of the issuance, the state refinanced \$1 billion in previously issued bonds at a lower interest rate to take advantage of the upgraded rating, which was expected to save taxpayers almost \$200 million in debt service costs over the life of the bonds.³

Comparing similar bond issuances before and after California's ratings upgrade, Pew's analysis found reductions in the initial offering yields, or the estimated cost for the state to borrow.⁴ For a 10-year bond, borrowing costs were reduced by 4 percent. Similarly, for a 15-year bond, the costs were reduced by 2 percent.⁵ While these reduced borrowing costs are the result of many factors, California's improved credit rating is a major contributor to the state's savings.

How Agencies Assign Ratings

The rating system's origins date back to the 1860s, when the U.S. railroad system was rapidly developing. Henry Varnum Poor, a financial analyst and railroad enthusiast from Maine, compiled and released two publications describing the history, operations, and finances of the railroad system. Investors and business managers came to rely on "Poor's Manual" to help decide where to put their money. Out of this grew the firm Standard & Poor's, which issued its first ratings on corporate bonds and sovereign debt in 1916.⁶

In a manner similar to how Poor evaluated railroads, today's public finance specialists at S&P, Moody's, Fitch Ratings, and other ratings agencies provide an independent analysis of the credit risk of state and local government. In this way, the agencies tell investors the chances of a default on government-issued debt. Although each agency assigns ratings a little differently, all have lettered categories with notches or degrees.⁷ Moody's highest rating is Aaa, while S&P's and Fitch's is AAA. Moody's modifies its letters with the numbers 1, 2, and 3, while S&P and Fitch use plus and minus signs. The S&P and Fitch ratings for states drop as low as a BBB-, equivalent to Baa3 in Moody's case. As of January 2017, Illinois was the lowest-rated state, holding a Baa2 rating from Moody's, BBB from S&P, and BBB+ from Fitch. See Table 1 for more information on how the different ratings scales compare.

The ratings are based on both quantitative and qualitative factors. To evaluate a state's credit, the agencies assess its performance using a variety of core criteria, such as its ability to operate across the business cycle, trends in the state's economy, and its government's financial performance, management, debt load, long-term costs, and political structure. States deemed able to meet their debt obligations during periods of recession or fiscal stress, or able to adapt quickly to such conditions, are typically granted the highest ratings. Conversely, states that receive lower ratings usually operate with less structurally sound budgets, exhibit less diversified economies that rely on volatile revenue, and/or experience periods of political delay or gridlock.

State-issued bonds are generally rated higher than other market segments, such as corporations and financial institutions, which do not have the flexibility to stabilize their finances during recessions and, unlike states, are at a much higher risk of defaulting on debt.

Rainy day funds and states' broader reserves play a prominent role in the credit agencies' evaluations. Pew researchers examined 149 credit rating action reports between 1992 and 2015 in which Moody's changed a state's rating up or down. Eighty-one percent mentioned reserves generally, and 42 percent specifically noted the condition of the state's rainy day fund and cited it by name.

Continued on next page

Table 1

The 'Big 3' Rating Agencies Use Similar Scales to Assess Creditworthiness

States are considered investment grade by default with a minimum Baa or BBB rating

Class	Moody's	S&P Global	Fitch
Prime	Aaa	AAA	AAA
High investment grade	Aa1	AA+	AA+
	Aa2	AA	AA
	Aa3	AA-	AA-
Upper medium grade	A1	A+	A+
	A2	A	A
	A3	A-	A-
Lower medium grade	Baa1	BBB+	BBB+
	Baa2	BBB	BBB
	Baa3	BBB-	BBB-

Note: The rating agencies have noted that they typically will not rate states below Baa or BBB due to their legal ability to raise revenue in response to added fiscal pressures or an increased need to meet obligations. Lower ratings are designated as speculative and are indicative of higher levels of risk for investors.

Source: Moody's Investors Service, S&P Global, and Fitch Ratings.

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Maryland guards its triple-A rating so fervently that state leaders rarely pull money out of budget reserves even when such withdrawals make sense to plug temporary budget gaps. The purpose of the state's rainy day fund, the Revenue Stabilization Account, is "to retain state revenues for future needs and reduce the need for future tax increases by moderating revenue growth."⁸ Confronted with multimillion dollar budget deficits during the 2007-09 recession and afterward, then-Governor Martin O'Malley raised a series of income and gasoline taxes and fees, and cut \$9.1 billion in spending, the most in the state's history. Yet at the same time, Maryland only withdrew a net \$840 million from its rainy day fund, leaving a balance of almost \$700 million still in savings by the end of fiscal 2009.⁹

"We never use ours, and that's one of the reasons we have a triple-A rating in good economic times and bad," said Barbara Hoffman, a former state senator from Baltimore. William Ratchford, former director of the Maryland General Assembly's fiscal services department, said that to most legislators, the purpose of the rainy day fund is to maintain the triple-A rating. "If we have future needs, we'll deal with that. But it's never been, 'Well we can always use the rainy day fund.' It just isn't how they approach it," he said.

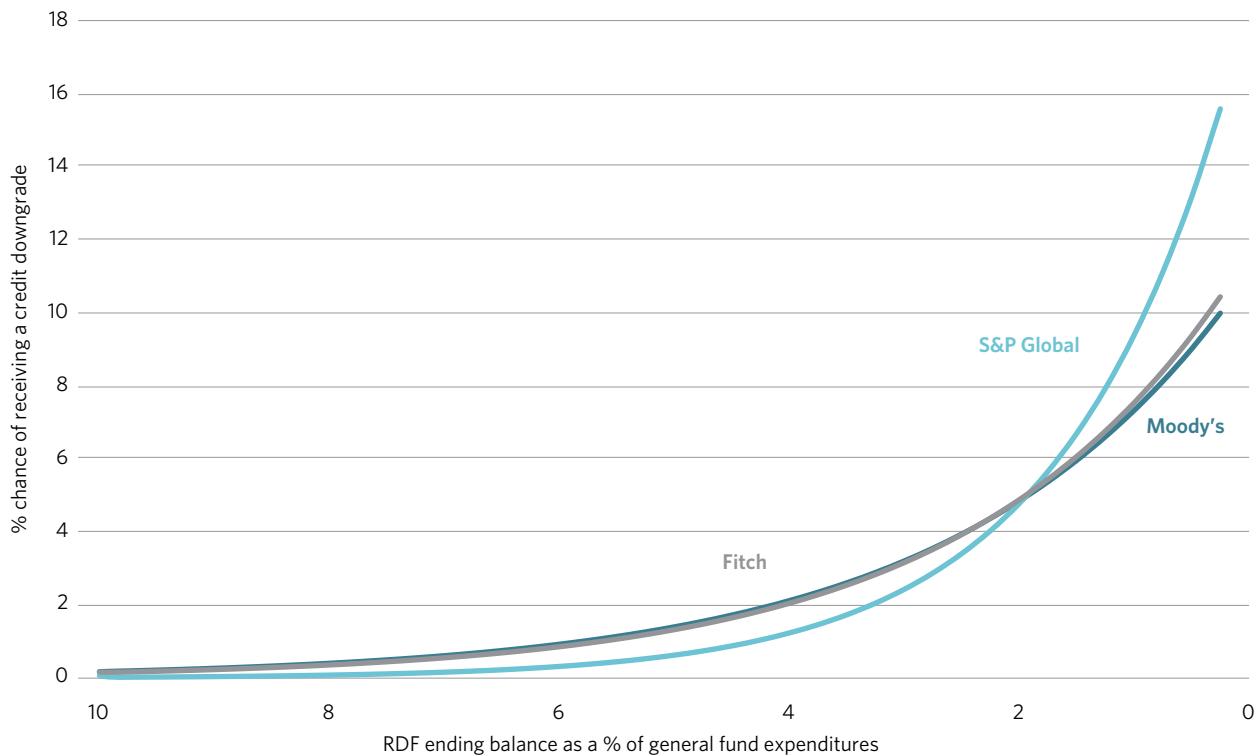
Maryland's conservative attitude, which is similar to the philosophy of other top-rated triple-A states, suggests that many state officials do not have a clear understanding of when and how they can spend their reserves. According to the credit rating agency specialists that Pew interviewed, withdrawals from reserves are unlikely to result in a downgrade as long as they are made in response to broader economic and fiscal conditions, such as an economic downturn that shrinks revenue. In those circumstances, rainy day fund withdrawals can be part of a suite of approaches to cover budget gaps that also include spending cuts, tax increases, or both. In fact, the specialists said, relying only on spending cuts and tax increases to balance budgets, without some contribution from rainy day funds, can impede a state's growth.

On the other hand, the rating agencies advise policymakers against making arbitrary withdrawals from rainy day funds or using reserves to address a longstanding structural budget gap—the difference between the revenue collected and what is available to cover increasing costs. "Rainy day funds are there to provide a cushion or a partial solution to a downturn," S&P's Petek said. "Our focus is more on the consistency of states during the expansionary periods to replenish reserves. So we evaluate rainy day fund usage in a broader context, not in a vacuum, aware of where a state is in the economic cycle."¹⁰ Further, Pew researchers found that making withdrawals from reserves during periods of growth may be viewed as a credit negative by the rating agencies, as displayed in Figure 1.

Figure 1

Drawing on Rainy Day Funds During Periods of Growth Can Increase the Chance That a State Will Be Downgraded

Pew researchers used statistical models to estimate the likelihood that a state's credit would be downgraded in response to various factors. While the probability of a state being downgraded is low, if the state's rainy day fund is drawn down when revenue is above its long-term trend, the chances of a downgrade increase—especially as those reserves approach zero.



Source: Pew analysis of state rainy day fund use and general obligation credit ratings.

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Clearly designate goals and objectives for rainy day funds

Rainy day funds should be designed with distinct, objective goals that policymakers can adhere to regardless of changes in governors, legislatures, and business cycles.

As highlighted in two previous reports, *Why States Save: Using Evidence to Inform How Large Rainy Day Funds Should Grow* and *Building State Rainy Day Funds: Policies to Harness Revenue Volatility, Stabilize Budgets, and Strengthen Reserves*, Pew research found that all but three states have rainy day funds but that the funds differ in their purpose, rules, and structure.¹¹ The rating agencies look for states with reliable rainy day fund deposit rules that are legal requirements, not merely informal policies.

S&P and Fitch analysts emphasize that they generally view rule-based deposits—automatic mechanisms that trigger payments into the fund—positively when assessing state issuances of debt.¹² Tying rule-based deposits to historical fluctuations in revenue is essential to good reserve policy, according to rating analysts.

Only 15 states have such deposit rules linked to volatility, although there is a growing awareness of their value. Notably, California and Connecticut were two of the latest states to reinforce their rainy day fund policies to include rules for depositing and withdrawing money. Both enacted deposit rules that reduce their reliance on volatile personal income tax revenue, which can vary widely depending on the strength or weakness of the economy. California now requires deposits of 1.5 percent of annual general fund revenue and of capital gains revenue when the amount exceeds 8 percent of general fund revenue.¹³ Starting in 2019, Connecticut will feature an automatic funding mechanism that is activated when certain revenue sources exceed an average historical growth rate.¹⁴ The rating agencies praised both states for their disciplined approach to building reserves that will better insulate them from uncontrollable swings in revenue.

The remaining 13 states tie deposits to overall revenue volatility, a single unpredictable revenue source, or the state's general economic condition. In 1992, triple-A-rated Virginia adopted a constitutional rule linking rainy day fund deposits to growth in all major taxes, which Moody's said is "a strong feature of its Aaa rating and will help to prepare it for future downturns."

While deposit rules ensure that states have set aside reserve funds needed for a downturn, withdrawal rules establish the conditions under which the money can be taken out. California's precise rules were approved by voters in 2014. To manage budget gaps, California officials may make withdrawals or forego deposits into the fund if spending is at or below the highest level of spending for the past three years, adjusted for population and inflation. To respond to emergencies, officials also can take out money or waive deposits for a natural disaster. These withdrawals are limited to half of the amount in the rainy day fund in the first year of withdrawal.¹⁵

Porter, of Fitch, noted that there is no direct correlation between a state's credit rating and whether policymakers approve deposit and withdrawal rules, except in the broader context of a state convincing the rating agencies that it has ample reserves. According to Fitch's rating criteria, "Established reserves that benefit from automatic funding mechanisms and clear restrictions on use are the strongest credit features, but fund balances that have been maintained consistently over time also are beneficial."¹⁶

Understanding the Cost of State Debt

A number of factors drive the cost of issuing debt for a state. Typically, when a state issues bonds, it offers them at various interest rates and maturities. The interest rates are fixed and determine how much the state will pay out annually to the bondholder. This annual payment is referred to as a coupon. The maturities determine how long the state has to repay the debt, with some bonds repaid in as little as a few months and others ranging from two to 10, 20, or even 30 years in the future. Most importantly, the state will repay the bond's face value on the date the bond matures.

A state's credit rating influences not only the interest rate at which states can offer bonds to investors, but other factors as well. Credit ratings give investors an informed opinion about the quality of the state's debt and how likely the state is to make bond payments in a timely manner. As such, the rating can influence the price of the bond. For instance, if a state has a low credit rating, a \$1,000 bond with a 5 percent coupon (the annual payment to the bondholder) might cost an investor only \$900 because the poor rating requires the state to discount the price of the bond in order to attract investors. Conversely, if the state's rating is high, the same bond with a face value of \$1,000 might sell for \$1,100.¹⁷

Bring the rainy day fund in line with the economy

Rating agencies say that rainy day funds need to be in line with the economy, so that deposits, withdrawals, and savings targets are informed by the state's revenue volatility and the business cycle. Policymakers should recognize that a strong, growing state economy can be critical to a high credit rating because of the impact on revenue, spending, debt, and overall fiscal health. But a robust job-producing economy does not guarantee a lofty bond rating if state policymakers do not manage their finances well, according to the rating agencies.

Topping S&P's list of 10 management characteristics of highly rated credits in U.S. public finance is a rainy day fund that is sensitive to how the economic cycle affects revenue.¹⁸ Moody's says triple-A states are distinguished by well-institutionalized fiscal management and governance practices. When recessions, natural disasters, and other shocks threaten these states' ability to balance budgets, their "superior management" quickly acts to restore financial strength, a response that includes tapping reserves.¹⁹ See Table 2 for ratings for all 50 states.

Credit rating analysts from all three agencies agree that well-managed states administer rainy day funds in a way that reinforces structural balance, or a budget that is financially sustainable over several years. This means that policymakers make deposits into reserves during times of economic expansion and revenue growth, while they make withdrawals during times of distress when revenue falls. "We talk about structural balance a lot," Emily Raimes, vice president and senior credit officer at Moody's, told Pew.²⁰ "Increasing a structural imbalance can be a reason for a downgrade." For example, she said, a state would attract negative attention if it was withdrawing money from its rainy day fund during an economic recovery. In its revised rating criteria released in 2016, Fitch emphasized that rating upgrades "would likely result from the more focused consideration of the economy, while downgrades would center around the more integrated consideration of the adequacy of reserve funding."²¹

In S&P's annual preview of state budget conditions for the fiscal year beginning July 1, 2016, Petek stressed the link between the economic cycle and reserve funding. "States that have taken advantage of an expanding economy to shore up their budget reserves are more likely to approach the coming fiscal year [2017] on stronger footing," he said.²²

Nevada and Virginia offer lessons for policymakers on the importance of aligning budget reserves with the economic cycle. Nevada policymakers, assuming that the gaming and tourism industry was less vulnerable to swings in the business cycle, did not build up reserves during the early 2000s when revenue was soaring. When the recession hit and many Americans curtailed travel spending, Nevada's revenue plummeted. So did its rainy day fund balance, which did not offset the deep spending cuts, tax increases, borrowing, and one-time federal stimulus money that the state needed to balance its budget. Moody's downgraded Nevada's credit as a result, citing the state's reduced reserves, declining revenue, and overall weakened finances.

Virginia, on the other hand, faced some of the same economic forces as Nevada but managed to maintain its triple-A rating during the recession. The state's revenue stabilization fund takes advantage of the turns in the economy by using a deposit formula that incorporates current and historical revenue growth and volatility during the prior six budget years in sales, and individual and corporate income taxes. The state constitution imposes further discipline by limiting withdrawals to cover only half of a budget shortfall in a fiscal year, forcing policymakers to cut spending or consider tax increases.

Energy states dependent on commodity prices experience notoriously fluctuating revenue, which challenges their policymakers to save more cash for economic downturns than states with steadier revenue. At the start of fiscal 2015, Alaska, North Dakota, and Wyoming each held reserve balances equivalent to over 25 percent of general fund revenue, compared with the national average of about 5 percent. In February 2016, S&P revised Wyoming's credit outlook from stable to negative. This reflects the agency's expectation that the state's rating—assuming economic or fiscal conditions and policies remain unchanged—might need to be downgraded because low energy prices will force the state to deplete its reserves. Specifically, S&P warned that current economic conditions could widen Wyoming's structural budget deficit. "In such an event, we believe the state could, over time, choose to draw down reserves significantly rather than make structural adjustments," and in doing so, threaten the state's triple-A rating.²³

Table 2

Only 12 States Hold the Highest Rating Across All 3 Rating Agencies

Illinois and New Jersey are the lowest rated states

State	Moody's	S&P Global	Fitch
Alabama	Aa1	AA	AA+
Alaska	Aa2	AA+	AA+
Arizona	Aa2	AA*	Not Rated
Arkansas	Aa1	AA	Not Rated
California	Aa3	AA-	AA-
Colorado	Aa1	AA*	Not Rated
Connecticut	Aa3	AA-	AA-
Delaware	Aaa	AAA	AAA
Florida	Aa1	AAA	AAA
Georgia	Aaa	AAA	AAA
Hawaii	Aa1	AA+	AA
Idaho	Aa1	AA+*	AA+
Illinois	Baa2	BBB	BBB+
Indiana	Aaa	AAA*	AAA
Iowa	Aaa	AAA*	AAA
Kansas	Aa2	AA-*	Not Rated
Kentucky	Aa2	A+*	AA-
Louisiana	Aa3	AA	AA-

Continued on next page

State	Moody's	S&P Global	Fitch
Maine	Aa2	AA	AA
Maryland	Aaa	AAA	AAA
Massachusetts	Aa1	AA+	AA+
Michigan	Aa1	AA-	AA
Minnesota	Aa1	AA+	AAA
Mississippi	Aa2	AA	AA
Missouri	Aaa	AAA	AAA
Montana	Aa1	AA	AA+
Nebraska	Aa2	AAA*	Not Rated
Nevada	Aa2	AA	AA+
New Hampshire	Aa1	AA	AA+
New Jersey	A2	A-	A
New Mexico	Aa1	AA+	Not Rated
New York	Aa1	AA+	AA+
North Carolina	Aaa	AAA	AAA
North Dakota	Aa1	AA+*	Not Rated
Ohio	Aa1	AA+	AA+
Oklahoma	Aa2	AA+	AA+
Oregon	Aa1	AA+	AA+
Pennsylvania	Aa3	AA-	AA-
Rhode Island	Aa2	AA	AA

Continued on next page

State	Moody's	S&P Global	Fitch
South Carolina	Aaa	AA+	AAA
South Dakota	Aaa	AAA*	AAA
Tennessee	Aaa	AAA	AAA
Texas	Aaa	AAA*	AAA
Utah	Aaa	AAA	AAA
Vermont	Aaa	AA+	AAA
Virginia	Aaa	AAA	AAA
Washington	Aa1	AA+	AA+
West Virginia	Aa1	AA-	AA
Wisconsin	Aa2	AA	AA
Wyoming	Not Rated	AAA*	Not Rated

Note: All ratings are current as of January 9, 2017 and reflect either their general obligation rating or senior-most tax-backed rating. Blue text reflects the highest rating.

* Indicates the use of an Issuer Credit Rating in place of an evaluation of general obligation debt.

Source: Moody's, S&P Global, Fitch ratings

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Analysts express less worry about Texas' rainy day funds because state policymakers have more experience with factoring in how the ups and downs of oil prices will affect the state's revenue. In a recent assessment of how the four most populous states could weather the next recession, Moody's found Texas better prepared than California, Florida, and New York, in part because Texas' rainy day fund "provides substantially higher" coverage of a budget shortfall than the other three states—three times' coverage of a first-year deficit.²⁴ "One thing we're seeing now is that states that rely on oil revenues, which have a lot of volatility, may want to build up more of a cushion against that volatility," Raimes, of Moody's, said.

Few state policymakers reflect on revenue volatility when deciding how much to save in reserves, according to Pew's research, which also showed that few states mandate a process under which officials analyze revenue and economic performance data to aid in setting funding levels. A more focused emphasis on the state's economy would include regular study of the fluctuations in tax collections to align with the use of rainy day fund deposits and withdrawals in fat and lean times. Yet only Connecticut, Minnesota, Nebraska, Oregon, and Utah require periodic studies of revenue volatility so that lawmakers can adjust the amount needed in reserves to react to fluctuations in the economy.

Comply with rainy day fund policies

State leaders can write sensible laws for managing a rainy day fund through the boom and bust cycles of the economy, but they need to consistently follow these laws to avoid negative considerations from the rating agencies. As in the example of Massachusetts, skipping or suspending deposits in lieu of spending on other programs can be viewed as a negative signal about the state's financial management. California had policies in place for many years that would have allowed it to build up its rainy day fund from general fund revenue, but those policies were frequently suspended. However, in 2014, state policymakers adopted policies to strengthen the fund, which officials have pledged to follow. Petek said S&P generally views states with rainy day fund rules as having more potential for a rating upgrade than states without such policies. But it is crucial, he said, that state legislators "have a demonstrated track record of adhering to their own rules."²⁵

Annual budget surpluses are not a substitute for rainy day fund deposits, Fitch says, because those extra dollars often are spent on operations or special purposes instead of stashed away into reserves. Moody's, meanwhile, will rate a state below double-A if officials address revenue volatility by borrowing long-term funds for operations instead of spending down rainy day funds.

Determine how much to save

The rules controlling the rainy day fund must ensure that it is large enough. "More volatile financial profiles dictate larger financial cushions that will give the state time to react in a downturn," according to Fitch.²⁶ Moody's noted that while most states have some type of rainy day fund on the books, some "keep it at such low funding levels that it is of little use to the state should the budget tighten."²⁷

How the rating agencies view the ideal size of the reserve fund has evolved in recent years, with Fitch and Moody's allowing policymakers more latitude in determining the right level for their state.²⁸ After revenue volatility developed into a long-term feature of many state tax systems, the credit rating analysts reconsidered their previous guidance about how much states should set aside in reserves. The analysts now advise policymakers to set a level for the rainy day fund tailored to their state's economy, tax structure, degree of revenue volatility, and financial flexibility. "We think it is a state-by-state decision and situation," Raimes said. "States that traditionally are more stable and don't need to draw heavily from reserves probably don't need a large rainy day fund compared to states with more revenue volatility."²⁹

While S&P notes that no one level or type of reserve is optimal,³⁰ it and the other agencies do include rainy day fund levels among several factors that go into their rating analysis.³¹ Petek said S&P combines ending budget balances with rainy day fund levels in determining a state's flexibility to manage its finances.³² Ending balances—money left in the general fund at the end of the fiscal year—speak to how well a state estimates and manages its revenue and spending assumptions at the beginning of the budget year.

Among the 47 states with rainy day funds, six—Alaska, California, New Mexico, New York, South Carolina, and Vermont—have two funds. This adds to the difficulty of recommending a minimum percentage size for all states. South Carolina, for instance, requires 5 percent of general fund revenue to be set aside in a general reserve fund, and another 2 percent allocated to a capital reserve fund.³³ Vermont has two rainy day funds, which by statute have to be maintained at a maximum of 5 percent of the previous year's appropriations.³⁴

California, with its reliance on capital gains tax revenue, and North Dakota, whose budget growth has been fueled by proceeds from severance taxes, further demonstrate why the inherent revenue differences between states

argue against setting a static, 50-state size for a budget reserve. “The level of reserves is related to policy choices and revenue volatility in each state,” said Fitch’s Porter. “It’s not meaningful to come up with a percentage [target] in a vacuum.”³⁵ In contrast to states, where there is no one-size-fits-all recommendation, Fitch does expect local governments to keep a minimum reserve level of 2 percent, reflecting the fact that states have more control—and higher ratings—than cities in managing the ups and downs of their budgets through spending cuts and tax increases.

An example is Louisiana. In 2016, two rating agencies noted that Louisiana’s finances weakened in part because officials cap the rainy day fund at 4 percent of the state’s total revenue from the previous year and limit withdrawals to one-third of the balance over two years.³⁶ Such a low cap and burdensome rules may discourage lawmakers from tapping the fund. Louisiana covered a \$940 million budget deficit in fiscal 2016 mostly with spending cuts and one-time remedies, and faced a \$750 million gap in fiscal 2017.³⁷ “This level of reserves is substantially less as a percent of budget than most other states dependent on oil and mineral extraction for economic activity and operating revenues,” Moody’s said in February 2016, explaining why it downgraded Louisiana’s debt a notch.

How Minnesota Sets Reserve Size

Policymakers should examine Minnesota’s approach when weighing the savings target for the rainy day fund. Rating agency analysts praise state economists with Minnesota Management and Budget for designing a data-driven method that takes volatility into account in setting the size of its reserve fund. Until the system went into effect in 2014, Minnesota arbitrarily capped its reserve at \$653 million. But now, the state’s rainy day fund target is set as a percentage of each two-year budget’s revenue projections and can be adjusted depending on changes in tax collections. To finance the fund, lawmakers built in an automatic funding mechanism and an adjustable target. The target for the 2016-17 budget years is 4.8 percent of biennial general fund revenue, which is an increase from the 2.4 percent that economists believed was needed in the current two-year budget.³⁸ “We draw on the motivation that state rainy day funds are not a one-size-fits-all solution,” said Matt Schoeppner, a Minnesota state economist. “Changing economic conditions and tax policy choices are unique among states.”³⁹

Withdraw reserves, when necessary, during downturns

Policymakers should base the decision to tap rainy day funds on their state’s financial and economic situation. The rating agencies stress that states can withdraw money as appropriate during economically driven budget crises without receiving a credit negative so long as the withdrawals are among a suite of budgetary actions taken to address the revenue shortfall and the state resumes deposits when economic and fiscal conditions improve.

Historically, analysts say, many states’ ratings and outlooks are lowered during economic downturns, which may discourage some policymakers from using rainy day funds at the very time they need the money the most. Pew’s research found that between 1994 and 2014, during which there were two recessions, the three agencies downgraded 32 states at least one time. Eight states with chronic budget volatility were rated up or down more

than four times during the 20-year period: California, Connecticut, Hawaii, Illinois, Louisiana, Maine, Michigan, and New Jersey.

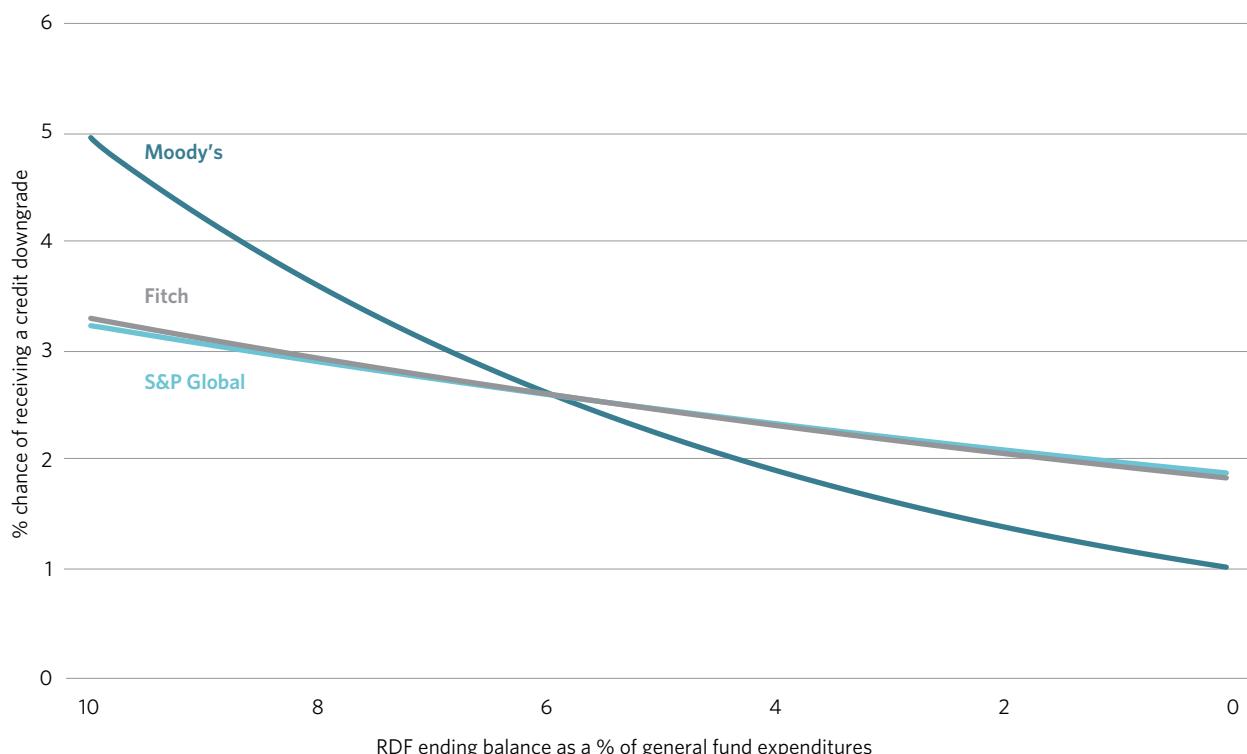
To help clarify the relationship between withdrawals and credit downgrades, Pew researchers examined the deposit and withdrawal activities of 46 states and state general obligation bond ratings from the major credit rating agencies for 1994 through 2014.⁴⁰ This analysis found a significant relationship between reserve size and whether a state's credit is downgraded, with higher reserve balances serving as a credit positive.⁴¹

Pew research also found that countercyclical usage of rainy day funds—deposits during growth periods and withdrawals during revenue downturns—is a significant credit positive. More importantly, there does not appear to be any net credit impact when reserves are tapped during revenue downturns, because the positive effect of a “properly timed” transfer offsets the credit negative associated with a shrinking reserve balance, as displayed in Figure 2.

Figure 2

Withdrawals From Rainy Day Funds During Revenue Downturns Can Actually Reduce the Probability of a Credit Downgrade

According to Pew’s models, the odds that a state would receive a credit downgrade are much higher when revenue is below its long-term trends. However, drawing on reserves during these times appears to reduce the chance of a downgrade, as the rainy day fund offsets some of the drop in revenue.



Source: Pew analysis of state rainy day fund use and general obligation credit ratings.

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Georgia provides a good example of a state that has used its reserves countercyclically to maintain a high rating. The state has kept its triple-A rating since 1998 while withdrawing from reserves, slashing spending, and, as a last resort, raising taxes to manage budget shortfalls during downturns. Pew's research showed that Georgia's rainy day fund had swelled to \$1.7 billion in fiscal 2007, before the Great Recession began taking its toll on state revenue. Officials withdrew almost all of the reserve in fiscal 2008 and 2009, ending fiscal 2010 with \$268 million in the fund. Since then, Georgia gradually rebuilt its reserves to \$1.6 billion by the end of fiscal 2015, which was the sixth straight year the state added to its rainy day fund.⁴² While Georgia has proved that a state can achieve or maintain high credit ratings while taking out reserve funds during a downturn, the state could strengthen its rainy day fund further by setting a savings target and making deposits linked to fluctuations in its main tax collections instead of building the fund solely through budget surpluses and general fund appropriations.

Contrast Georgia with triple-A-rated Delaware, one of 11 states that Pew found did not make significant withdrawals from its rainy day fund during the 2007-09 recession.⁴³ In fact, Delaware has never withdrawn money from reserves and has no plans to do so.⁴⁴ Yet the state was not immune to the revenue crunch of the past two recessions. By fiscal 2010, Delaware's budget gap had widened to \$800 million. Lawmakers closed it with a combination of spending cuts, federal economic stimulus funds, and nearly \$200 million in tax hikes—but no money drawn from reserves. Tapping the rainy day fund could have mitigated the depth of the cuts and tax hikes.

Hawaii offers policymakers a dual lesson in how the credit rating agencies reward and rebuke some states for how they manage their rainy day funds. Even though the state built up its reserves before the 2007-09 recession, officials could not count on the rainy day fund alone to balance the state's tourism-reliant budget. Moody's downgraded Hawaii's general obligation debt from Aa1 to Aa2 in 2011, citing in part the state's drawdown in reserves and one-time deficit-closing solutions such as delaying tax refunds, restructuring debt, and spending its share of nonrecurring federal economic stimulus funds. By the end of fiscal 2011, lawmakers had drained the emergency budget reserve and a second, hurricane relief fund to the point where officials would have been forced to borrow money if there was a sudden need for cash. "Strong reserve levels are important for Hawaii given the state's heightened vulnerability to national and international shifts in its essential tourism-based economy," Moody's analyst Nicole Johnson said in announcing the downgrade. "The currently low reserve levels leave Hawaii with reduced flexibility to address additional shortfalls that may emerge."⁴⁵ As tourism—and revenue—improved after the recession, state officials channeled increased amounts of dollars to the reserve funds. As of 2017, Moody's has upgraded the state's rating to Aa1 with a stable credit outlook, largely because of the state's increased reserves. S&P was more effusive in affirming its AA rating on Hawaii general obligation bonds in 2015. "Central to our outlook regarding the state's very strong credit quality is its financial management and demonstrated commitment to building and maintaining strong reserve levels," Petek wrote in 2015.⁴⁶

Prioritize building reserves during economic expansion

The rating agencies recommend that state lawmakers outline the circumstances under which reserves can be drawn down in law. Just as important, as S&P said, are policies and practices that "create a mechanism to rebuild reserves once they are spent."⁴⁷ Petek of S&P told Pew: "We look for it to be a fiscal priority to replenish reserves. However that is defined may vary, but you know it when you see it."

Rating agency specialists told Pew they prefer that policymakers create well-defined deposit rules instead of a mechanism that requires the state to replenish the rainy day fund over a stipulated period of time after

withdrawals, because deposit rules are more sensitive to the ups and downs of the economic cycle than are static rainy day fund replenishment provisions. Fixed, unchangeable rules can hamstring states when the economic cycle changes, as Alabama and Michigan show.

In 2016, Alabama lawmakers approved a timetable calling for the state to pay back by 2026 the money it borrowed from its rainy day fund and education trust fund during the 2007-09 recession. While officials have made deposits into the funds in the past few years, such replenishment deadlines do not allow the state the flexibility to adapt to changing economic conditions, such as a downturn that would cause another drop in revenue. In fact, state lawmakers raised taxes and cut spending to plug a budget gap for fiscal 2016 stemming in part from a lingering imbalance between revenue and expenditures.⁴⁸

Michigan also shows how new circumstances can complicate pledges to rebuild reserves in a specified time period. As its contribution to the so-called grand bargain allowing Detroit to escape bankruptcy, in 2014 the state withdrew \$195 million from a reserve fund that officials had been slowly rebuilding after it was depleted during the state's long economic decline of the 2000s. At the time, Governor Rick Snyder said the state would repay the money it borrowed for Detroit from tobacco settlement revenue over 20 years.⁴⁹ But then came the Flint water crisis and the near-insolvency of the Detroit school system, which also required drawdowns from the rainy day fund that Gov. Snyder had proposed to repay over 10 years. S&P reacted swiftly, revising its outlook on Michigan debt from positive to stable and charging that state officials had reversed their commitment to significantly accumulate reserves. "Rising costs tied to the Flint water crisis and Detroit Public Schools' (DPS) distressed financial position will limit the state's ability to build reserves over the next two fiscal years," S&P analyst Carol Spain said in March 2016, adding that the state would face uncertain legal costs from Flint-related lawsuits.⁵⁰ The problem with the 10- and 20-year timetables, analysts said, is that costs from Flint and Detroit—or some other sudden crisis—might rise or another recession in the manufacturing-dependent state could put pressure on revenue and spending. Moreover, a future governor or legislature could change Gov. Snyder's policy choices and decide to build and spend reserves in a different way during downturns and upcycles.

Conclusion

Smart design and management of rainy day funds are central to how the nation's credit rating agencies view state government fiscal health. To earn and maintain strong ratings, states should establish reserve policies that harness the revenue volatility prevalent in recent years. In times of economic expansion, the agencies will reward states that deposit growing revenue as a cushion against future budget gaps when the economic cycle declines. During downturns, rating agency analysts expect states to tap their rainy day funds in conjunction with spending cuts and tax increases, if necessary, to balance budgets. States that make withdrawals from reserves during recessions, or when an event such as a natural disaster lowers revenue, are unlikely to see their creditworthiness decline as a result.

Appendix: Methodology

As part of this report, Pew conducted several analyses, each aimed at assessing the relationship among states' rainy day funds, use of those funds, and credit ratings.

Rainy day fund identification

In an earlier report, *Building State Rainy Day Funds*, Pew researchers identified and examined the statutory and constitutional guidelines in all 50 states pertaining to the mechanisms for depositing money into budget stabilization funds. States use a number of funds to set aside money for various purposes. To focus on the challenge of managing volatility, Pew narrowed the scope of this report to include only budget stabilization funds, using the definition set forth by Yilin Hou in *State Budget Stabilization Funds*.⁵¹ Hou's definition identifies three key characteristics of these funds. First, there must be enabling legislation that establishes them. Second, they must operate across fiscal years and over the whole economic cycle (i.e., rather than cash flow funds for use during the fiscal year or legacy funds such as North Dakota's). Third, they must serve as government-wide reserves for general purposes (i.e., not for Medicaid or education specifically).

To assemble the list of qualifying funds, Pew built upon previous research examining these types of reserves, collecting data from three peer-reviewed academic sources as well as the National Conference of State Legislatures and the Center on Budget and Policy Priorities.⁵² The researchers cross-referenced these five sources to develop a list of 52 budget stabilization funds across 46 states, then further verified them by identifying their enabling legislation.⁵³ For all valid funds, Pew examined the enabling statute, designated purpose, and scope of the fund.

During the 2016 legislative session, Kansas lawmakers created the Budget Stabilization Fund, making the state the 47th to establish a legally defined rainy day fund. However, Kansas did not have a fund when the research supporting this report was conducted. As such, the state was excluded from these analyses.

Examining Moody's credit action reports

To determine how frequently rainy day funds and reserves were cited by one of the major rating agencies as a factor justifying a change in a state's rating, Pew researchers surveyed Moody's rating actions and identified every instance in which a state's general obligation debt rating was upgraded or downgraded from 1994 through 2014. These changes were then traced to the corresponding rating action reports released by Moody's. The text from these reports was then examined by Pew to locate mentions of "reserves" to indicate the consideration of a state's broader reserves. The text was subsequently surveyed for references to states' specific funds using each state's respective fund name.

This approach yielded a total of 149 credit action reports across the 46 states examined—noting that at the time of this research Colorado, Illinois, Kansas, and Montana did not have a rainy day fund, according to Pew's criteria.⁵⁴ Among the 149 reports, 121 (81 percent) refer to states' reserves or broader savings, while 62 (42 percent) mention states' rainy day funds by name.

Assessing fund use's effect on ratings

In order to characterize the relationship between rainy day funds and credit ratings, Pew researchers conducted an econometric analysis of state general obligation bond ratings, rainy day fund balances and fund use, and other economic factors from 1994 through 2014. A more detailed account of the methodology and findings is available in the technical appendix.

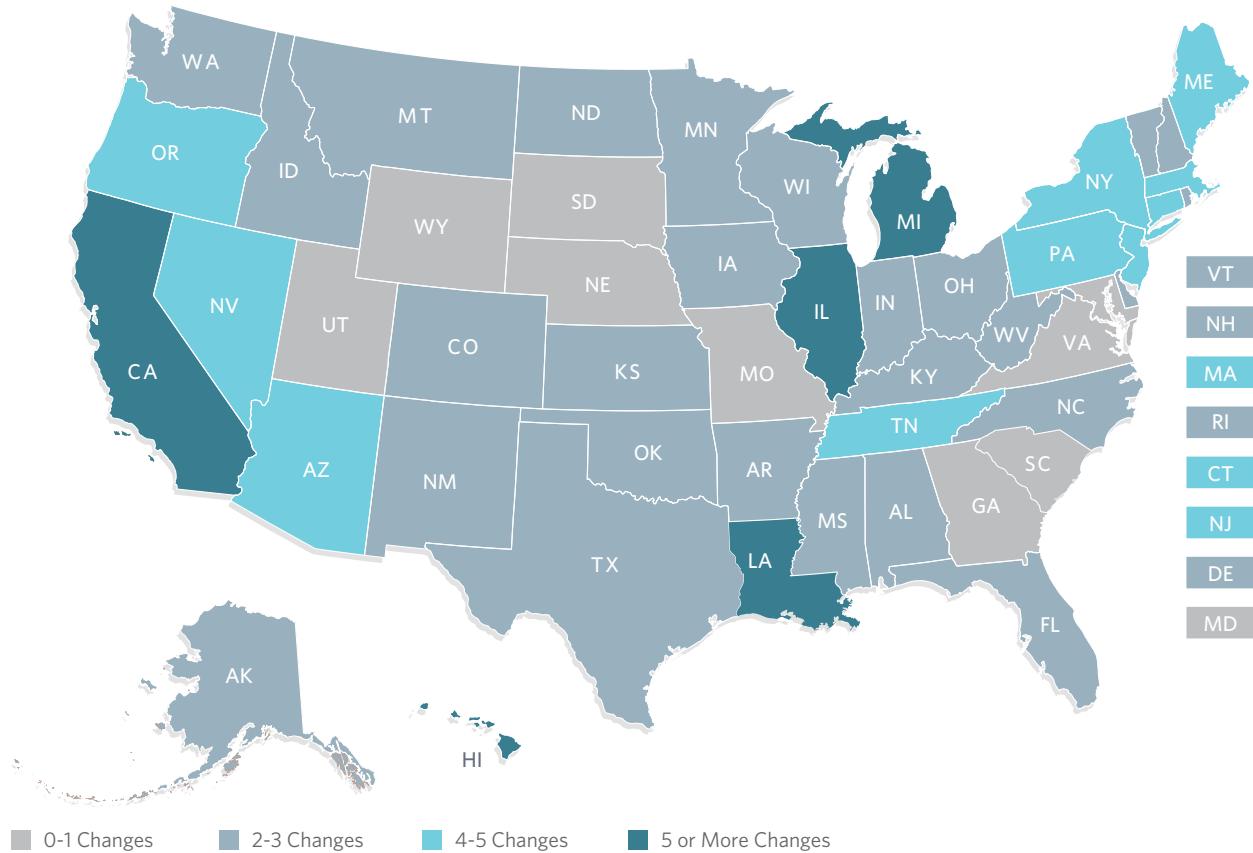
Data recording credit ratings were pulled directly from Moody's, S&P, and Fitch. Figures A.1 through A.6 offer additional detail regarding the frequency of credit rating shifts among the 50 states across each of the three major credit rating agencies.

Rainy day fund balances and use were obtained from each state's respective treasurer, comptroller, department of revenue, or other appropriate agency charged with monitoring or managing the fund. These data were supplemented with a number of other variables designed to capture some of the economic, demographic, and other additional factors that are incorporated into the credit ratings methodologies. The data capture the credit rating across each of the three major rating agencies, the balance in the rainy day fund, net use for the state rainy day fund, the amount of any general fund ending balances, state outstanding long- and short-term debt obligations, and state population.

Pew used statistical models to estimate the likelihood a state would experience a change in its credit rating, with separate models estimated to assess both upgrades and downgrades for each of the respective credit rating agencies. The results of the models offer strong empirical evidence indicating that 1) higher reserve balances serve as a credit positive, reducing the likelihood of a credit downgrade; and, 2) there is no net credit impact when reserves are tapped during revenue downturns, because the positive effect of a "properly timed" transfer offsets the credit negative associated with a shrinking reserve balance.

Figure A.1

Only California, Hawaii, Illinois, Louisiana, and Michigan Saw More Than 5 Credit Rating Actions From Moody's Between 1994 and 2014 On average, states experienced 3 rating actions



Note: Values reflect the cumulative count of both upgrades and downgrades observed in annually aggregated data from 1994 through 2014.

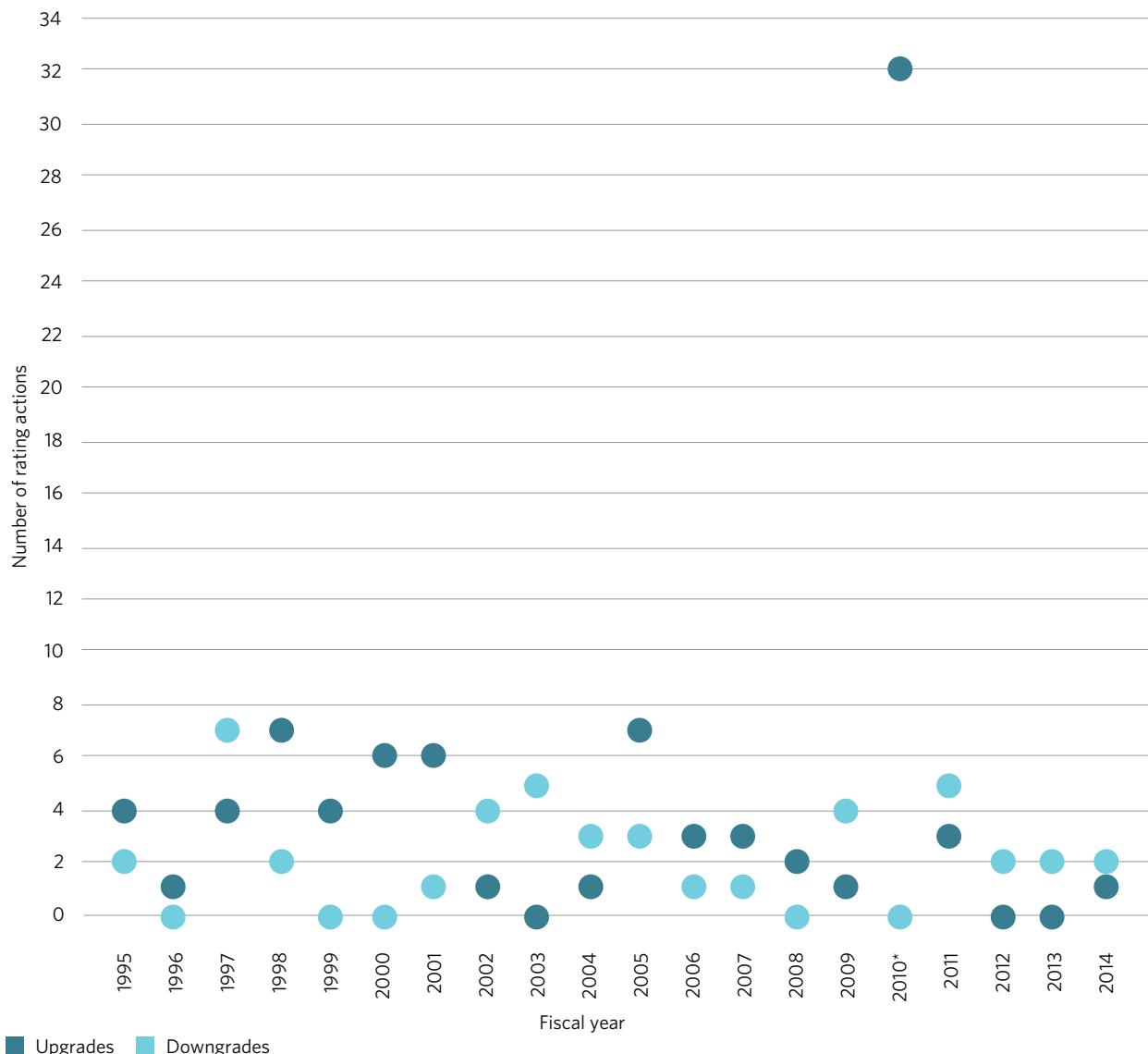
Source: Pew analysis of Moody's ratings

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Figure A.2

Moody's Ratings Upgraded States More Frequently Than the Other Rating Agencies From 1994 Through 2014

Downgrades were more common following the 2001-02 recession but were not more likely after the Great Recession



Note: Rating actions were aggregated at the annual level. States were measured by examining the latest rating in a given fiscal year against the prior year to identify whether the state's rating had been upgraded, downgraded, or remained stable. This approach obscures multiple rating actions that take place within a single fiscal year, however, it provides a clear view of whether states' ratings were improving or worsening over time.

* Moody's recalibrated their public finance ratings in 2010, resulting in a higher number of upgrades than in any other year.

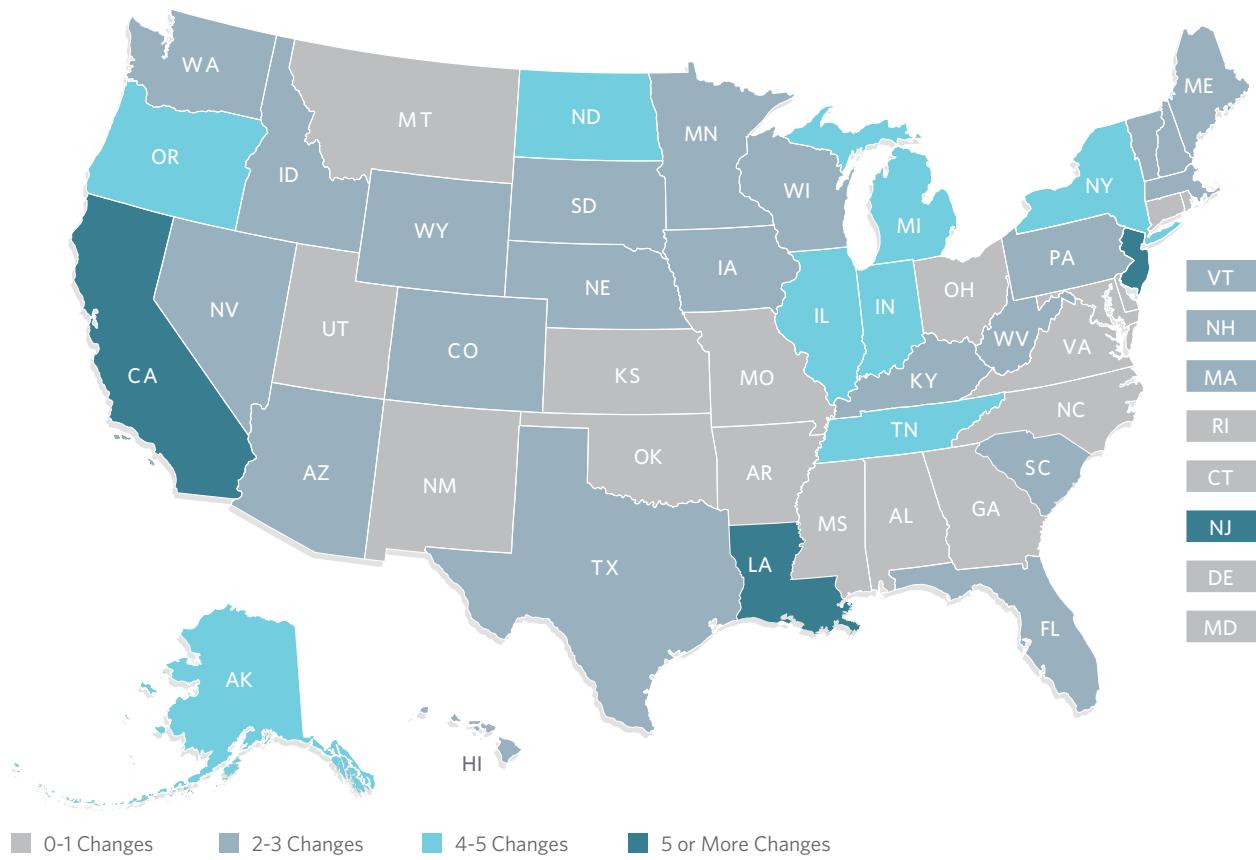
Source: Pew analysis of Moody's ratings

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Figure A.3

Only California, Louisiana, and New Jersey Experienced More Than 5 Rating Actions by S&P Global From 1994 Through 2014

S&P changes states' credit outlooks far more frequently than credit ratings



Note: Values reflect the cumulative count of both upgrades and downgrades observed in annually aggregated data from 1994 through 2014.

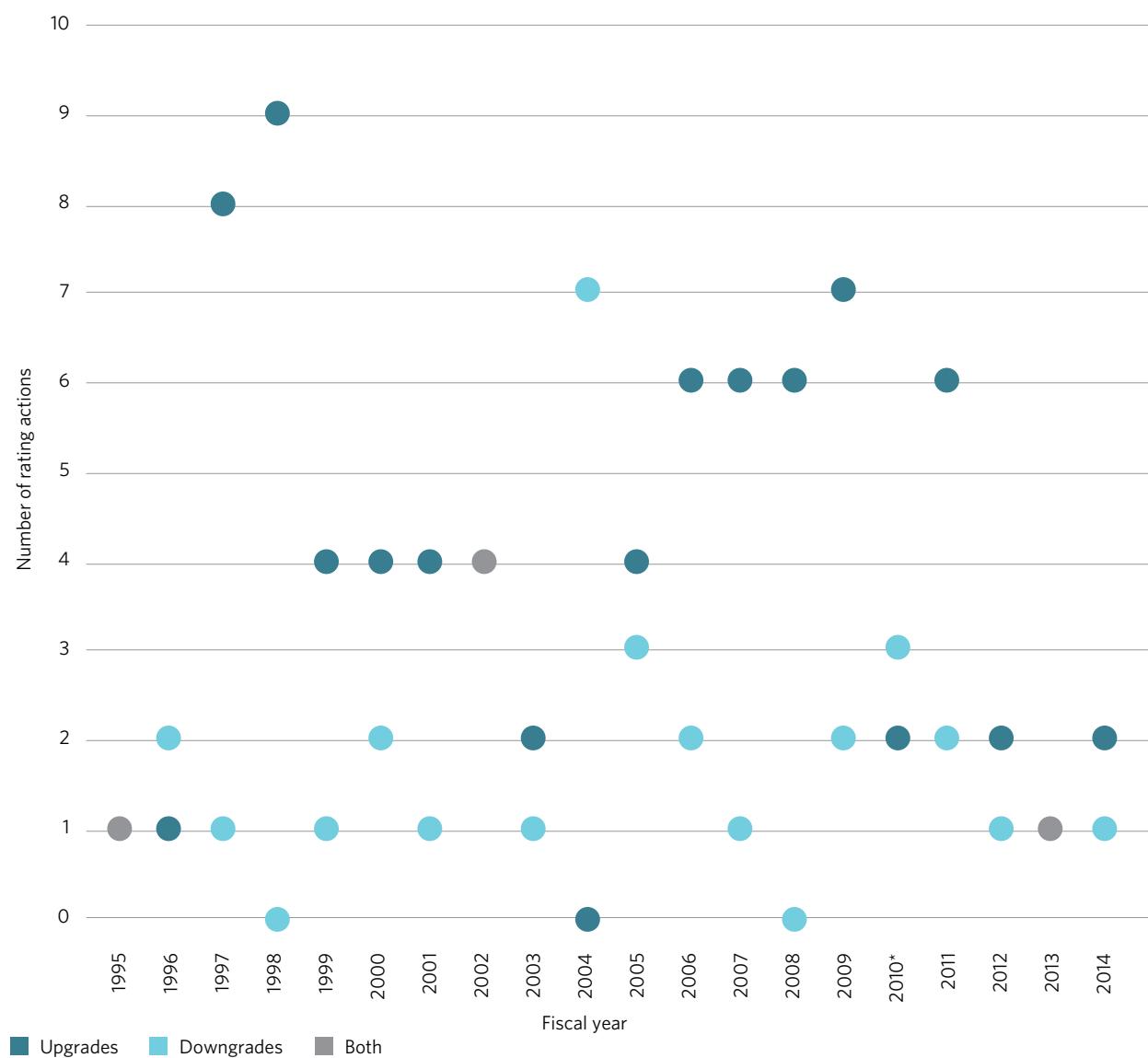
Source: Pew analysis of S&P Global's ratings

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Figure A.4

S&P Global Issued More Rating Upgrades in All but 3 Years From 1994 Through 2014

Downgrades were more common in 1996, 2004, and 2010



Note: Rating actions were aggregated at the annual level. States were measured by examining the latest rating in a given fiscal year against the prior year to identify whether the state's rating had been upgraded, downgraded, or remained stable. This approach obscures multiple rating actions that take place within a single fiscal year, however, it provides a clear view of whether states' ratings were improving or worsening over time.

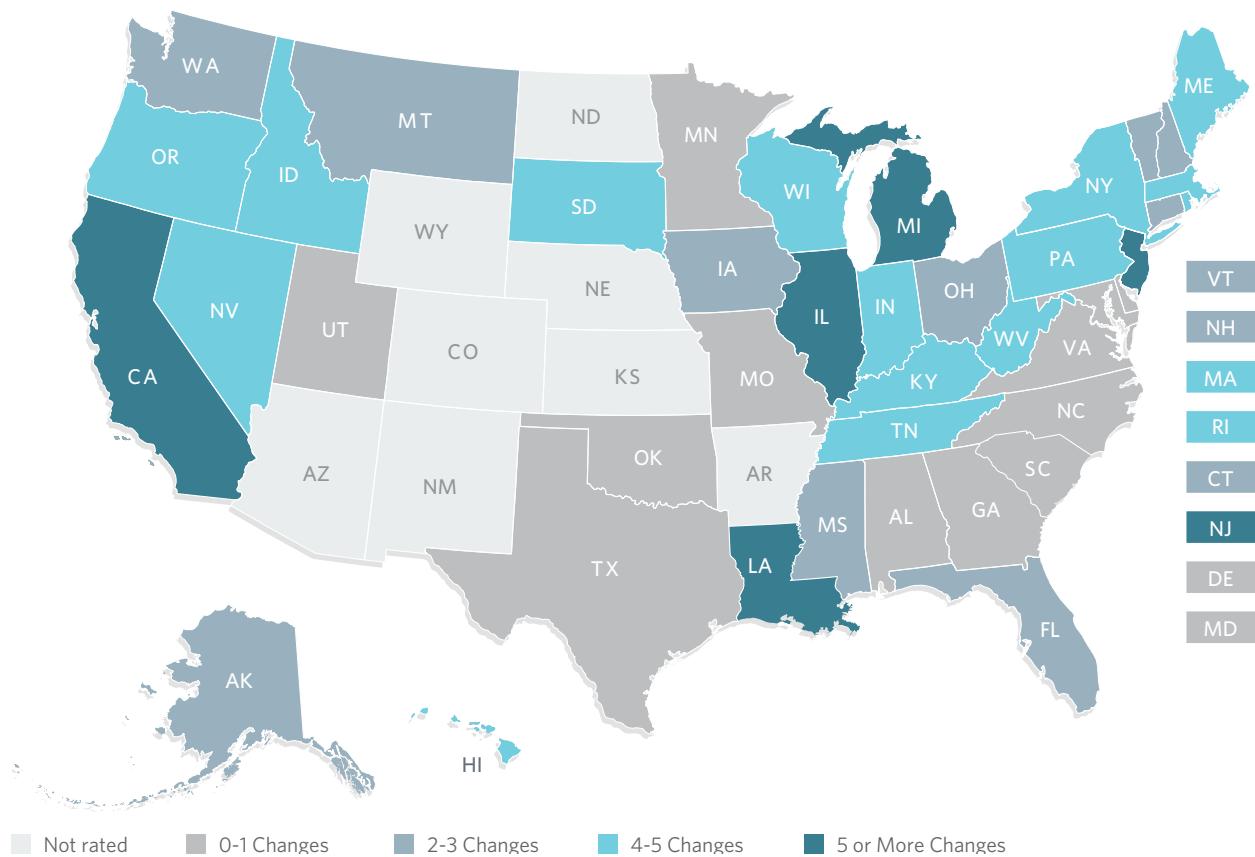
Source: Pew analysis of S&P Global's ratings

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Figure A.5

California, Illinois, Louisiana, Michigan, and New Jersey Experienced More Than 5 Rating Actions From Fitch Ratings Between 1994 and 2014

Fitch chooses not to rate numerous states that do not issue very much general obligation debt



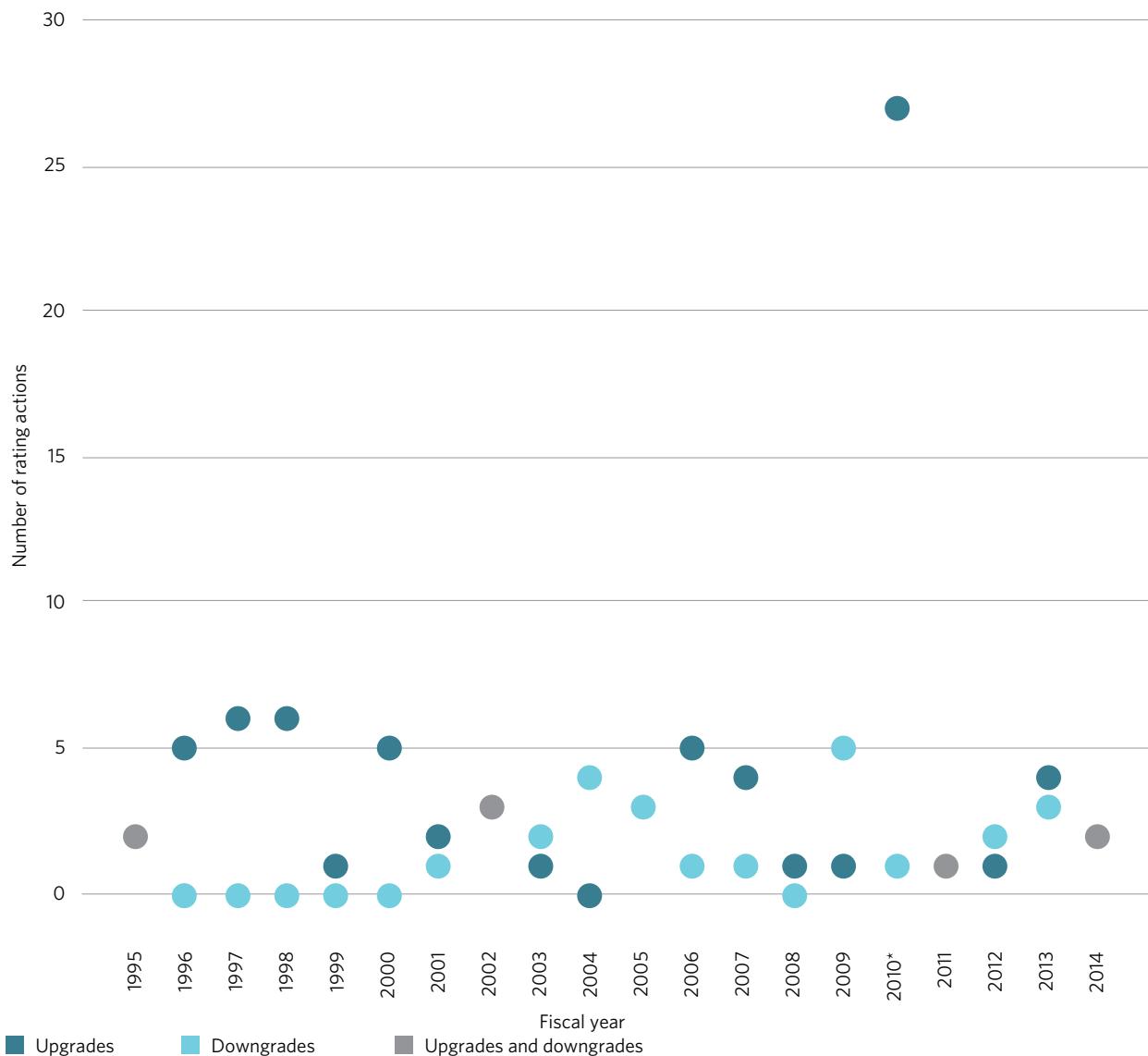
Note: Values reflect the cumulative count of both upgrades and downgrades observed in annually aggregated data from 1994 through 2014.

Source: Pew analysis of Fitch's ratings

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Figure A.6

Similar to Moody's and S&P Global, Fitch Upgraded States More Frequently Than It Downgraded Them From 1994 Through 2014 Downgrades outpaced upgrades following the 2001-02 recession and at the end of the Great Recession



Note: Rating actions were aggregated at the annual level. States were measured by examining the latest rating in a given fiscal year against the prior year to identify whether the state's rating had been upgraded, downgraded, or remained stable. This approach obscures multiple rating actions that take place within a single fiscal year, however, it provides a clear view of whether states' ratings were improving or worsening over time.

* Fitch recalibrated its public finance ratings in 2010, resulting in a higher number of upgrades than in any other year.

Source: Pew analysis of Fitch's ratings

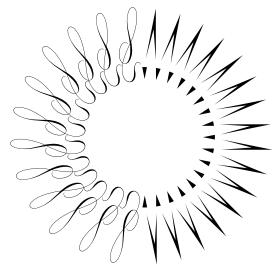
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