Municipal Bond Credit Perspectives

State of the States

May 2018

ASSET MANAGEMENT | WHITE PAPER

Conning's State of the States report is our proprietary, ongoing ranking of the U.S. states by credit outlook. In this issue, we also offer insight on the recent tax-law changes along with our overall assessment of municipal bond credit quality. States are the largest issuers of municipal bonds and we believe that a sound understanding of their credit quality is a prerequisite to effective municipal bond investing. This report forms the basis for our internal ratings, which also consider security features and fiscal management, yielding a comprehensive assessment of both credit quality and direction. This analysis centers our disciplined approach to constructing and managing municipal bond portfolios.

Key Findings

» Conning maintains its declining outlook on state credit quality.
» Slow state tax-revenue growth is making for tough fiscal choices.
» Economic growth is concentrated in Western and Southeastern states.
» The Tax Cuts and Jobs Act has altered the municipal bond buyer base.
» Elimination of state and local tax deduction is adding challenges for high-tax states.
» Overall municipal credit quality is benefiting from U.S. economic growth.
» Revenue bond sectors have positive outlooks.

Executive Summary

Conning has a declining outlook on state credit quality. State revenue growth is trending below the growth in state expenditures (as well as the growth of U.S. GDP), and this mismatch has led to state reserves edging lower since our last report in October 2017.

The ongoing economic expansion continues to be uneven. Several states concentrated in the Northeast are lagging, while many Western and Southeastern states are experiencing strong economic growth. We believe that above-average economic activity foreshadows credit upgrades and better relative bond performance.

A handful of states are now in perpetual budget mode, making mid-cycle adjustments, watching revenues come up short and experiencing enactment delays. We expect this pattern to continue with FY 2019 budgets starting July 1. Increases in retirement costs and Medicaid continue to crowd out spending on other essential purposes for many states, making for tough political decisions.

The Tax Cuts and Jobs Act (TCJA) has added a new challenge for states with high income and property taxes, in the form of a new $10,000 per-family cap in state and local deductions (SALT). Curtailing the SALT deductions is especially challenging for middle- to high-income taxpayers in states with higher tax rates, who in turn are pressuring political leaders to cut state and local taxes. For these taxpayers, the benefits of the TCJA may be negated – and their taxes may even go up. Taxpayers in low-tax states are much more likely to see greater tax-relief benefits created by TCJA.

The TCJA also affects the municipal bond buyer base. The lower corporate tax rate makes municipal bond investments less attractive for P&C insurers and banks, which account for about 25% of all municipal bonds outstanding. In 2017, P&C insurers and banks increased their holdings by $33 billion, but this demand is unlikely to be maintained in 2018. [1]

However, life insurers may find tax-advantaged securities more attractive under the TCJA. Demand from individuals has also been

1. The Board of Governors of the Federal Reserve System, Financial Accounts of the United States – Z.1, L.212 Municipal Securities, https://www.federalreserve.gov/releases/z1/20180308/html/l212.htm, March 8, 2018

strong, especially in states with high state-income tax rates. While the municipal bond buyer base is changing, we estimate new-issue municipal supply will be lower by 25% in 2018, as the TCJA has eliminated tax-exempt advance refundings of municipal bonds.

States continue to be very cautious in issuing new debt; debt service remains less than 5% of General Fund expenditures for most states. Growing costs for Medicaid, pensions and other retirement benefits (OPEB) are crowding out room for new capital projects. The proposed infrastructure plan by the Trump administration will not likely lead to a meaningful increase in state debt issuance, as it calls for more than seven dollars of state funds for each dollar of federal grant money on a project-by-project basis. States and their political subdivisions have political and economic limits in their ability to raise revenue, and the Trump infrastructure proposal does not alter this reality.

Although we have a declining outlook on the state credit sector, Conning has improving or stable outlooks on all the municipal market's other major risk sectors. Steady home price appreciation, growing consumer confidence plus higher wages and wealth levels are leading to more driving, flying and purchases - all of which increase municipal revenues.

State Revenues: Slow Growth Continues in 2017

As Exhibit 1 illustrates, state tax revenues increased 3.8% in 2017, which is an improvement from 2016 but still below the growth in GDP and state General Fund expenditures. Some of the 2017 state revenue growth is due to individuals and corporations prepaying their income taxes as a result of the passage of the TCJA, which are one-time prepayments that will not lead to long-term growth. Furthermore, 25% of the states' revenue growth came not from economic growth but from newly enacted revenue measures, according to the State Expenditure Report, Fall 2017, from the National Association of State Budget Officers (NASBO).

Exhibit 1: State Revenues, State Expenditure and GDP Growth

Year	State General Fund Revenue ($ in Billions)[1]	Growth in State Revenues (%)	Growth in State Expenditures (%)	Change in National GDP in Current Dollars (%)
2017	969.4	3.8	4.0	4.1
2016	934.6	0.4	3.2	3.4
2015	930.7	5.0	4.2	3.1
2014	884.3	2.0	4.8	4.3
2013	866.7	8.0	4.1	4.3
2012	802.7	4.0	3.4	3.2

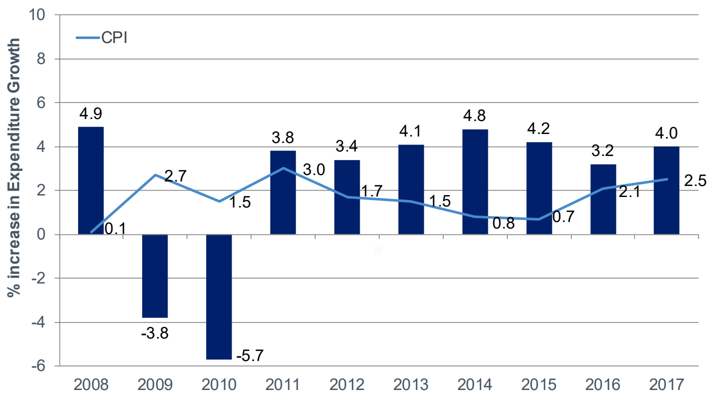
Prepared by Conning, Inc. Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2009-2018), Census Bureau, U.S. Department of Commerce (2009-2018) and ©2017 The National Association of State Budget Officers, "Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

[1] State General Fund revenues include individual and corporate income taxes, sales, property taxes, licenses and fees plus other revenue.

State Expenditures: Outpacing Inflation

Lackluster revenue growth from state taxes has been accompanied by state General Fund expenditures being up 4.0% in 2017.[2] As Exhibit 2 illustrates, state expenditures continue to outpace the CPI inflation measure, implying that states face difficult choices between higher taxes, spending cuts or reserve drawdowns. Combined with the state election cycle, which includes many gubernatorial races in large states, we expect a contentious state budget enactment process this spring and summer, which is a credit concern.

Exhibit 2: State General Fund Expenditure Growth % Compared to Annual CPI



Prepared by Conning, Inc. Source: Census Bureau U.S. Department of Commerce (2009-2017)

State Spending Trends: Medicaid Crowding Out Other Needs

In the past two decades, Medicaid spending has risen to 29% of total state spending (FY2016) from 20% (FY1996), per NASBO's latest State Expenditure Report. During the same period, elementary and secondary education fell to 19.6% of total state

[2] ©2017 The National Association of State Budget Officers, "Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

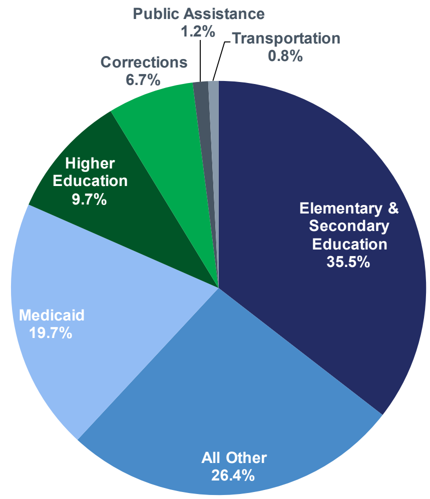
spending from 22%. Medicaid is currently the largest state-spending component and was the fastest-growing component (6.1%) in FY2016.

Another major expenditure driver are legacy costs. These are not shown as a specific expenditure in Exhibit 3, but are embedded in all the categories. Many states, most notably California, have lowered their assumed rates of return on pension investments. While this may be good governance, it also increases required state pension plan contributions.

General Fund Reserve Balances: Declining Trend

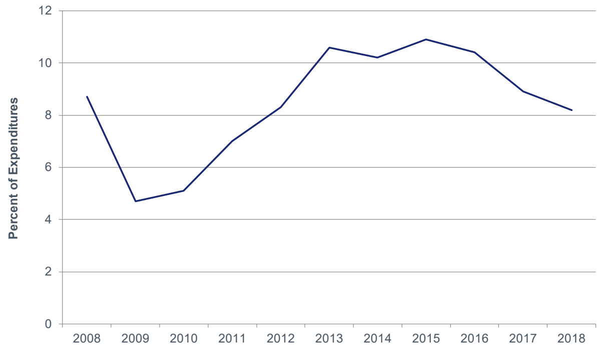
General Fund reserve balances (defined as General Fund balances + "rainy day" fund balances) as a percentage of General Fund expenditures are a key measure of a state's fiscal health. States rely on reserves to protect against revenue volatility caused by recessions. Conning views a healthy state reserve balance to be equal to 10% of its annual General Fund expenditures. The average aggregate state General Fund reserve for 2018 is 8.2%, as estimated by NASBO.

Exhibit 3: State Expenditures by Function FY2016



Prepared by Conning, Inc. Source: © 2000-2018 The National Association of State Budget Officers, Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

Exhibit 4: Year-End Balance as a Percent of Expenditures[1]



Prepared by Conning, Inc. Source: © 2000-2017 The National Association of State Budget Officers, Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

[1] Includes the ending GF balance plus Rainy Day Fund Balance

Exhibit 5: Total Fund Balances as Percentage of GF Expenditures by State

GF Balance Percentage of GFE	Number of States: FY 2016 Actual	FY 2017 Preliminary	FY 2018 (Enacted)
Less than 1%	3	1	2
>1% and <5%	9	13	14
>5%	38	36	34

Prepared by Conning, Inc. Source: © 2000-2018 The National Association of State Budget Officers, Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

As shown in Exhibit 4, fund-reserve balances continue to fall. Reserve balances vary dramatically: 13 states have less than 5%, as shown in Exhibit 5, including Illinois, New Jersey and Pennsylvania. Among the states with large reserve balances, Texas and Alaska have more than 15%.

State Pensions: No Improvement

For state pension plans, net unfunded liabilities edged higher in 2016. The Funded Ratio declined to 71.1% in FY2016 from 74.5% in FY2015, per state financial reports. Conning expects some improvement in funding ratios for FY2017 once higher FY2017 investment returns are factored in. Exhibit 6 lists the states with the lowest funded ratios.

States report a wide dispersion in funded ratios: some have fully funded plans while others have huge unfunded obligations created by years of underfunding, plan changes and poor investment performance. Many states now required to make higher pension contributions are choosing to not fund 100% of their annual required contribution, most notably New Jersey. Other states are extending the time to reach fully funded status, most notably Illinois. These actions make the pension liabilities even greater.

Economic Debt: Fixed Costs Vary by State

Economic debt measures each state's total fixed-cost obligations, not just direct or stated debt issued. It tallies stated debt plus a state's net pension liability (NPL) and its unfunded other post-retirement benefits (OPEB) liabilities. Conning believes economic debt is a more comprehensive measure of fixed costs and an important credit factor.

While aggregate FY2016 stated debt was $517 billion, Conning calculates that economic debt (including stated debt) for the same period was $1.6 trillion. The difference is NPL plus unfunded OPEB. Although the failure to make annual required contributions in full to these accounts does not constitute an event of default, these are long-term obligations and for many states it is all but impossible to reduce vested benefits. While states generally have more control over setting OPEB benefits, these are often subject to collective bargaining agreements.

Several states have high economic debt levels with the annual expense to service their fixed-cost obligations accounting for 20% or more of their General Fund expenditures. States with little economic debt do not have this burden, giving them a material credit and competitive advantage. Illinois, New Jersey, Connecticut and Pennsylvania have fixed costs exceeding 20% of their expenditures. Median state economic debt as a percentage of personal income is 5.4% as calculated by Conning, but as Exhibits 7 and 8 illustrate, the dispersion by state is quite wide.

Exhibit 6:
States with Lowest Pension Plan Funded Ratios

State	2016 Funded Ratio
New Jersey	30.9%
Kentucky	31.4%
Illinois	35.6%
Connecticut	44.1%
Colorado	46.0%

Prepared by Conning, Inc. Source: State Comprehensive Annual Financial Reports (CAFRs 2016)

Exhibit 7:
States with Low Economic Debt

State	Economic Debt per Personal Income	Rank
Nebraska	0.48%	1
South Dakota	1.50%	2
Iowa	1.55%	3
North Dakota	1.76%	4
Tennessee	1.80%	5

Prepared by Conning, Inc. Source: State Comprehensive Annual Financial Reports (CAFRs 2016)

Exhibit 8:
States with High Economic Debt

States	Economic Debt per Personal Income	Rank
Illinois	30.11%	46
Hawaii	30.55%	47
Alaska	32.71%	48
Connecticut	32.71%	49
New Jersey	41.26%	50

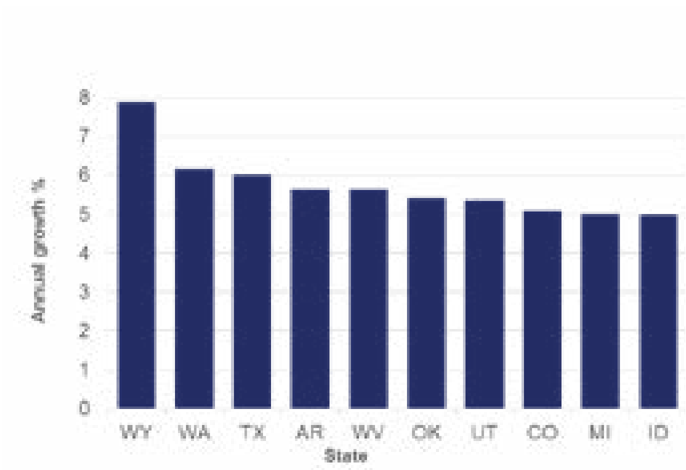
Prepared by Conning, Inc. Source: State Comprehensive Annual Financial Reports (CAFRs 2016)

Exhibit 9:
State Revenues: Leaders v. Laggards

Highest Reserves	Lowest Reserves
Alaska	Pennsylvania
Wyoming	Connecticut
West Virginia	New Jersey
Nebraska	Kansas
Texas	Montana
Oregon	Kentucky
Hawaii	Arkansas

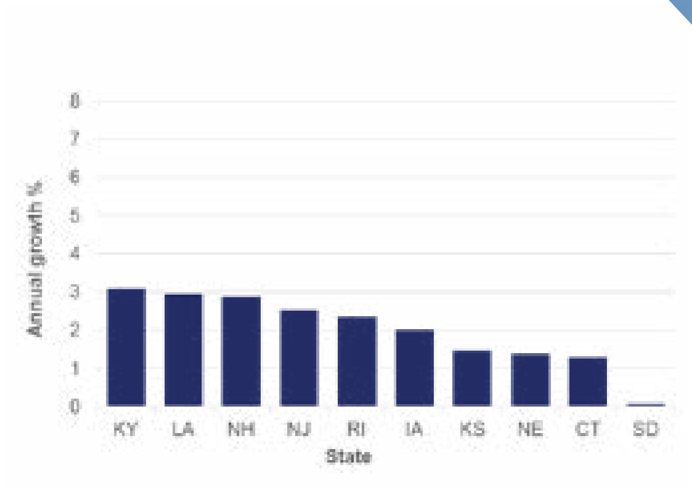
Prepared by Conning, Inc. Source: ©2000-2018 The National Association of State Budget Officers, Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

Exhibit 10:
GDP Growth Leaders by State, 3Q17 vs 3Q16



Prepared by Conning, Inc. Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2009-2018), Census Bureau, U.S. Department of Commerce (2009-2018)

Exhibit 11:
GDP Growth Laggards by State, 3Q17 vs 3Q16



Prepared by Conning, Inc. Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2009-2018), Census Bureau, U.S. Department of Commerce (2009-2018)

General Fund Reserves: Major Differences by State

General Fund reserves provide an important cushion in the event revenues and expenditures fall out of balance. The median state General Fund reserve balance as estimated by NASBO in its Fall 2017 report is 7.7%. The state leaders and laggards are set forth in Exhibit 9.

GDP Growth: All States Up

Real GDP increased in every state in the third quarter of 2017 versus the third quarter in 2016 at seasonally adjusted annual rates; year over year, GDP grew 4.1% on average. States that have the strongest GDP growth during the period are listed in Exhibit 10, while the laggards are shown in Exhibit 11.

Exhibit 12:
State Employment Growth Leaders

State	Percent Employment Growth Feb 2017 to Feb 2018	State Rank
Idaho	3.39%	1
Nevada	3.24%	2
Utah	3.18%	3
Washington	2.94%	4
Colorado	2.40%	5

Prepared by Conning, Inc. Source: Bureau of Labor Statistics, U.S. Department of Labor (2018)

Exhibit 13:
State Employment Growth Laggards

State	Percent Employment Growth Feb 2017 to Feb 2018	State Rank
Vermont	-0.10%	46
Louisiana	-0.01%	47
Delaware	-0.07%	48
Alaska	-0.42%	49
North Dakota	-1.57%	50

Prepared by Conning, Inc. Source: Bureau of Labor Statistics, U.S. Department of Labor (2018)

State Employment: Impressive Growth

During the past 12 months (February 2017-February 2018), the U.S. economy added just over two million jobs. All states gained employment except Alaska, Delaware, Louisiana and North Dakota. Employment growth is an insightful economic indicator as it drives state tax revenue, housing prices and personal income.

Unemployment rates have come down since our October 2017 report. Colorado, Hawaii, Idaho, Iowa, Maine, Nebraska, New Hampshire, North Dakota, Vermont and Wisconsin all reported unemployment rates at or below 3%, while only Alaska reported an unemployment rate above 6% (7.3%). Employment growth by state is listed in Exhibits 12 and 13.

Exhibit 14:
2017 State Personal Income Leaders, Growth 4% or More

State	Personal Income Growth
Washington	4.79%
Idaho	4.69%
Nevada	4.45%
Utah	4.44%
Arizona	4.28%
Colorado	4.13%
California	4.12%

Prepared by Conning, Inc. Source: Census Bureau, U.S. Department of Commerce (2018)

Exhibit 15:
2017 State Personal Income Laggards, Growth 1.5% or Less

State	Personal Income Growth
Connecticut	1.50%
South Dakota	1.43%
Nebraska	1.42%
Kansas	1.00%
Alaska	0.43%
Iowa	0.34%
North Dakota	-0.31%

Prepared by Conning, Inc. Source: Census Bureau, U.S. Department of Commerce (2018)

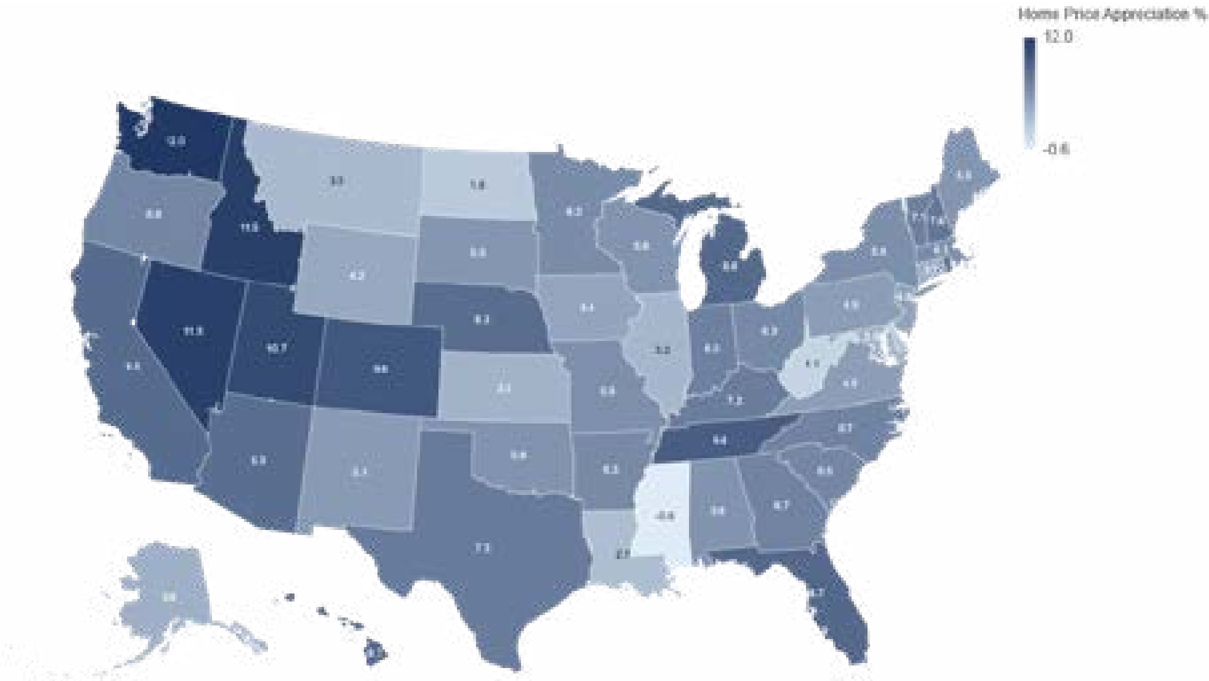
Personal Income: Growth Led by Mountain, Pacific and Southeastern Regions

State personal income is defined as the sum of net earnings by place of residence, property income, and personal current-transfer receipts. State personal income grew by 3.1% on average in 2017, up from 2.3% growth in 2016 per the Bureau of Economic Analysis. North Dakota was the lone state to experience a decline in personal income. Meanwhile, personal income increased 1.1% quarter over quarter in 4Q2017, led by Nevada's 1.5% growth.

Home Price Appreciation: Another Year of 6%+ Growth

The Home Price Index (HPI) is calculated by the Federal Housing Finance Agency (FHFA) using conventional, conforming mortgages that are backed by either Fannie Mae or Freddie Mac. House prices rose 6.7% between the fourth quarters of 2016 and 2017. All states except Mississippi experienced home price increases. In 2016, home prices also rose more than 6%. The Mountain, Western and Southeastern regions led the way higher as illustrated by Exhibit 16.

Exhibit 16: Fourth-Quarter Price Change by State, Purchase-Only Index (Seasonally Adjusted)



Prepared by Conning, Inc. Source: Federal Housing Finance Agency (FHFA) (2018), "U.S. House Prices Rise 1.6 Percent in Fourth Quarter," February 27, 2018

Exhibit 17:
Home Price Leaders

State	Year-over-Year Price Increase 2016-2017	State Rank
Washington	12.04%	1
Idaho	11.49%	2
Nevada	11.45%	3
Utah	10.74%	4
Colorado	9.76%	5

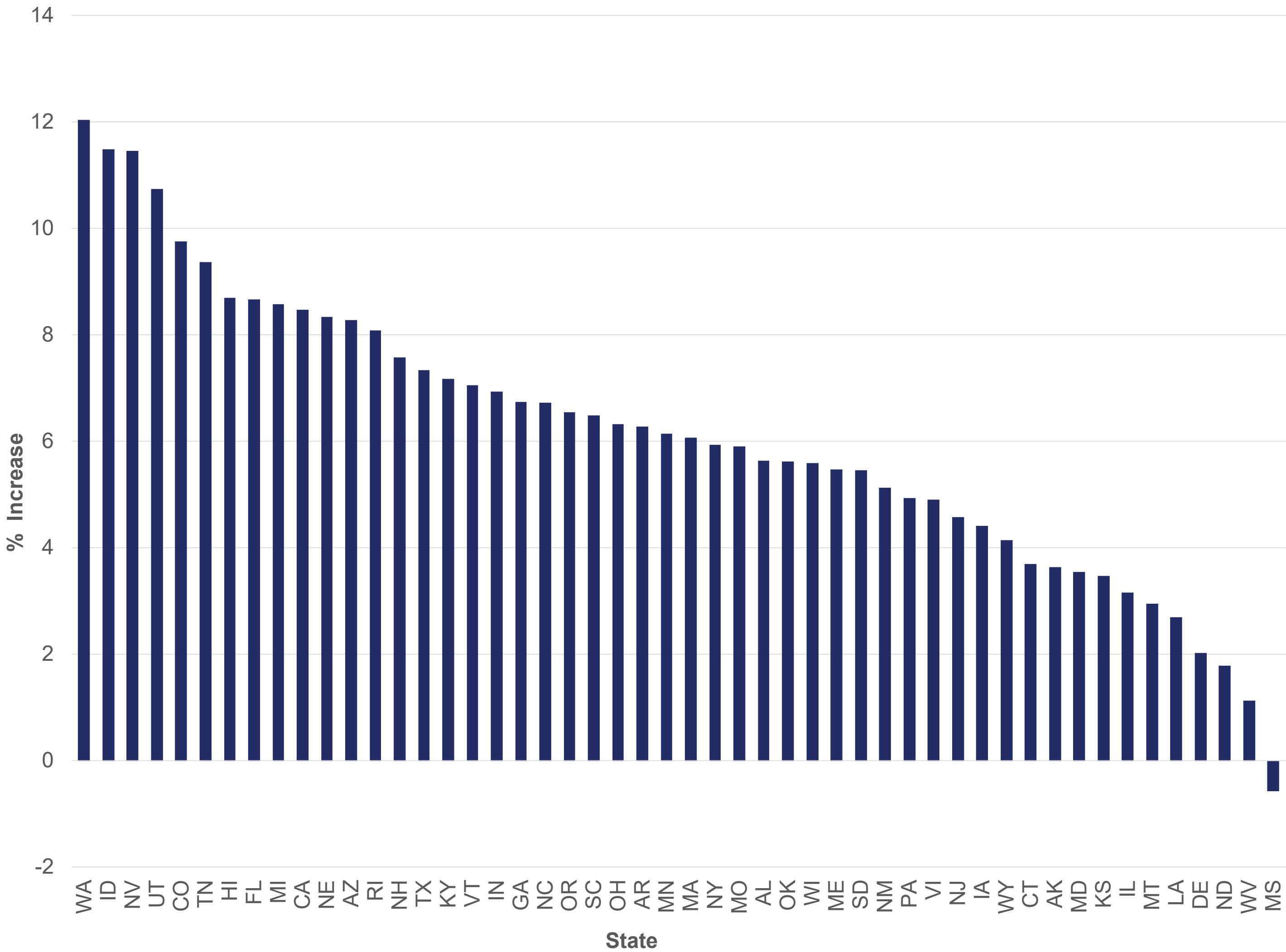
Prepared by Conning, Inc. Source: Federal Housing Finance Agency (FHFA) (2018) press release dated February 23, 2018

Exhibit 18:
Home Price Laggards

State	Year-over-Year Price Increase 2016-2017	State Rank
Louisiana	2.69%	46
Delaware	2.03%	47
North Dakota	1.79%	48
West Virginia	1.13%	49
Mississippi	-0.57%	50

Prepared by Conning, Inc. Source: Federal Housing Finance Agency (FHFA) (2018) press release dated February 23, 2018

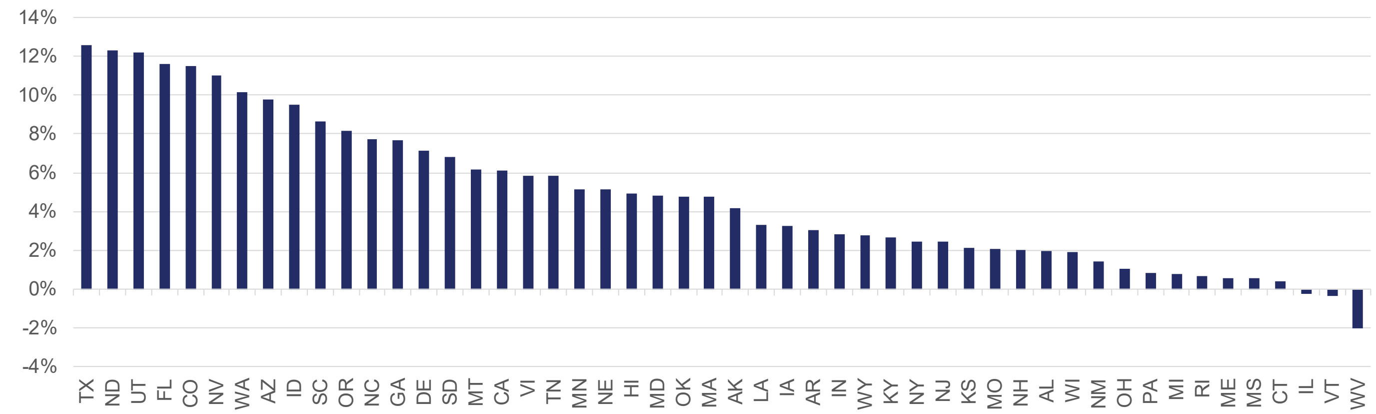
Exhibit 19:
One-Year Home Price Appreciation, by State



Prepared by Conning, Inc. Source: Federal Housing Finance Agency (FHFA) (2018) press release dated February 23, 2018

Home price appreciation is largely driven by local economic conditions and, as such, is an important indicator of state credit quality. Home price appreciation is an even more important credit factor for local governments, which derive 75% of their revenues from local property taxes.

Exhibit 20:
Population Percentage Growth by State Since 2010



Prepared by Conning, Inc. Source: Census Bureau, U.S. Department of Commerce (2018).

Population Growth: Western and Southern States Lead

Population growth since the last census in 2010 has been led by a handful of states. Over the past seven years, 45% of the nation's population growth of almost 17 million has come from three states: Texas, California and Florida. Over this same period, three states have lost population: Illinois, Vermont and West Virginia. Exhibit 20 illustrates population growth since 2010 by state.

State of the States Methodology

Conning analyzes 13 economic and government-obligation credit ratios to calculate our state rankings, measuring business climate, credit-specific metrics, economic and income levels, and housing activity. Exhibit 21 sets forth the indicators and their respective weightings. We emphasize the indicators that we think are forward-looking and correlate to future financial results.

The definitions and sources of each of the indicators can be found in Appendix A.

Exhibit 21:
Quantitative Measures of State Performance

	Weighting
Credit Metrics	**40%**
ALEC-Laffer Economic Outlook Ranking 2018	8%
Economic Debt per Personal Income	8%
FY 2017 General Fund Balance as % of General Fund Expenditures	8%
Debt per Capita	8%
Tax Revenue Growth	8%
Economic and Income Measures	**60%**
GDP per Capita	8%
Real State GDP Growth	8%
Employment Growth	8%
Personal Income Growth	8%
Unemployment Rate	8%
Median Household Income	8%
Home Price Growth	8%
Population Growth	4%
Total	**100%**

Prepared by Conning, Inc. Source: see Appendix A.

CONNING®

The Results: Utah to Kentucky

Conning's five top-ranked states are Utah, Colorado, Idaho, Texas and Washington. Their common threads include strong economic growth, favorable business conditions and low fixed costs.

Our five lowest-ranked states are Connecticut, New Mexico, Illinois, Mississippi and Kentucky. These states share some combination of high commodity-revenue reliance, high legacy costs, slow economic growth and a less favorable business climate. The state rankings by each indicator can be found in Appendix B.

Of note among the large states is the continued credit improvement for California, rising to 14th from 23rd in our October 2017 report. California is in its best fiscal situation in over 15 years. State tax revenues were up over 7% during 2017 without any new revenue actions. Reserves are also at record levels and growing. State debt levels have been stable. Concerns remain due to the state's high unfunded pension levels and OPEB and the fear of what a recession would do to tax revenues. An impediment to a higher ranking is California's high state income and sales tax rates, which hinder its competitiveness.

Exhibit 22: Conning's State Rankings

State	Rank	Raw Score
Utah	1	10.28
Colorado	2	10.88
Idaho	3	12.12
Texas	4	15.24
Washington	5	16.32
Florida	6	17.96
Tennessee	7	18.24
Indiana	8	19.52
Arizona	9	19.68
Wyoming	10	19.68
Nebraska	11	20.28
Georgia	12	20.44
New Hampshire	13	20.76
California	14	21.28
North Dakota	15	21.40
Nevada	16	21.44
North Carolina	17	22.76
Oregon	18	22.84
Hawaii	19	23.04
Michigan	20	23.04
South Dakota	21	23.12
Minnesota	22	23.56
Virginia	23	23.68
Oklahoma	24	24.20
Ohio	25	25.56

State	Rank	Raw Score
South Carolina	26	25.60
Massachusetts	27	25.80
Iowa	28	26.44
Wisconsin	29	27.24
Missouri	30	27.44
Alabama	31	27.88
New York	32	27.92
Delaware	33	28.04
Montana	34	28.24
Arkansas	35	28.80
Alaska	36	29.88
Maine	37	30.44
Maryland	38	30.48
Rhode Island	39	31.28
West Virginia	40	31.72
Vermont	41	32.04
Pennsylvania	42	32.40
New Jersey	43	32.96
Kansas	44	33.64
Louisiana	45	34.80
Connecticut	46	35.36
New Mexico	47	36.04
Illinois	48	36.24
Mississippi	49	36.76
Kentucky	50	36.96

Prepared by Conning, Inc.

Exhibit 23 provides our current rankings alphabetically by state and whether the rank has materially improved, declined or remained stable from our October 2017 report. Since our last report, many of the oil patch states, including Texas, Oklahoma, North Dakota and Wyoming, have seen their relative state rankings improve as a result of the recovery of oil prices.

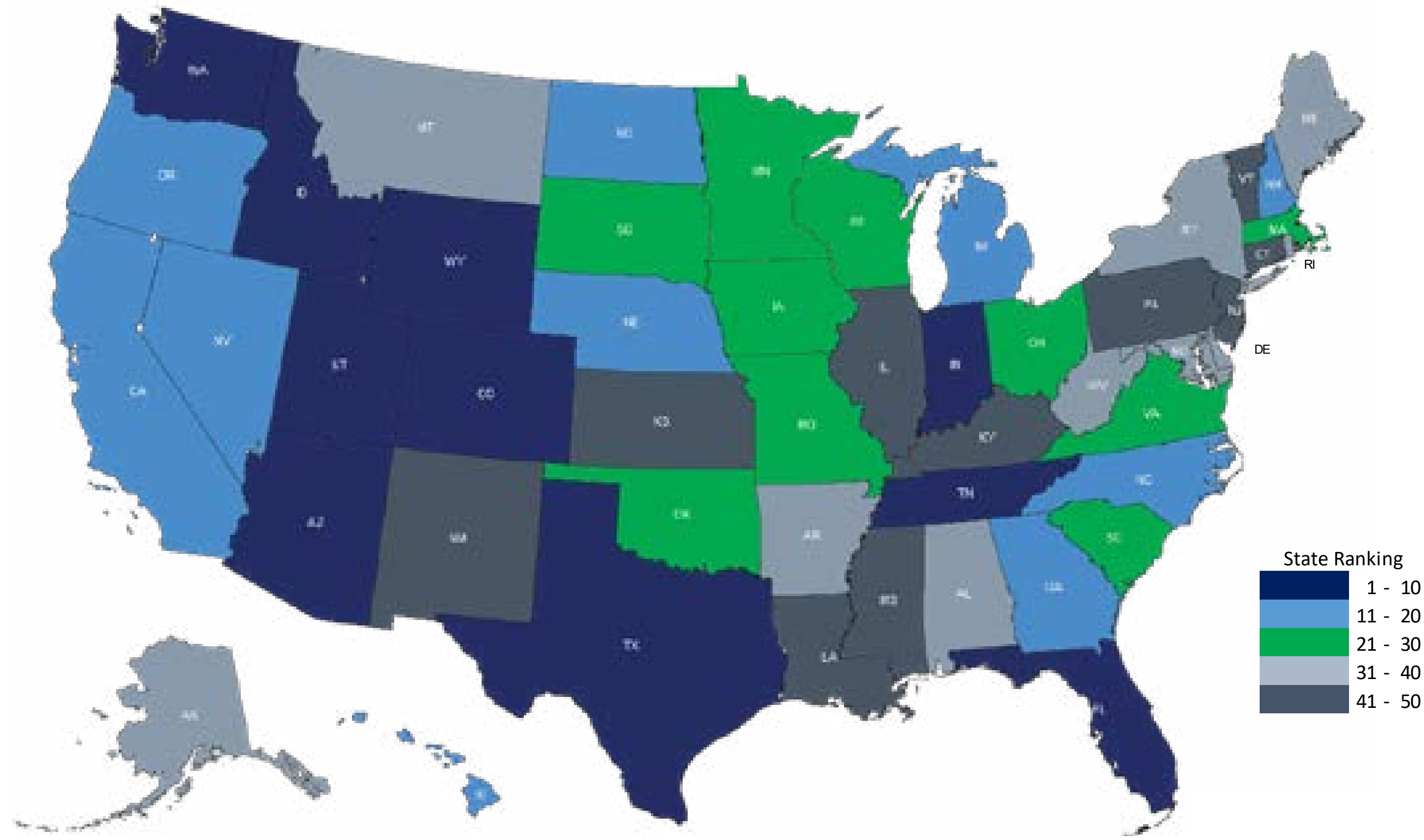
Exhibit 23: State Rankings Alphabetically with Credit Trend

State	Rank	Relative State Credit Trend	State	Rank	Relative State Credit Trend
Alabama	31	Stable	Montana	34	Stable
Alaska	36	Stable	Nebraska	11	Stable
Arizona	9	Improved	Nevada	16	Declined
Arkansas	35	Stable	New Hampshire	13	Stable
California	14	Improved	New Jersey	43	Stable
Colorado	2	Stable	New Mexico	47	Stable
Connecticut	46	Stable	New York	32	Stable
Delaware	33	Stable	North Carolina	17	Declined
Florida	6	Stable	North Dakota	15	Improved
Georgia	12	Stable	Ohio	25	Stable
Hawaii	19	Improved	Oklahoma	24	Improved
Idaho	3	Stable	Oregon	18	Improved
Illinois	48	Stable	Pennsylvania	42	Stable
Indiana	8	Improved	Rhode Island	39	Stable
Iowa	28	Stable	South Carolina	26	Stable
Kansas	44	Stable	South Dakota	21	Declined
Kentucky	50	Stable	Tennessee	7	Stable
Louisiana	45	Stable	Texas	4	Improved
Maine	37	Stable	Utah	1	Stable
Maryland	38	Declined	Vermont	41	Stable
Massachusetts	27	Stable	Virginia	23	Stable
Michigan	20	Stable	Washington	5	Stable
Minnesota	22	Declined	West Virginia	40	Improved
Mississippi	49	Stable	Wisconsin	29	Declined
Missouri	30	Stable	Wyoming	10	Improved

Prepared by Conning, Inc.

CONNING®

Exhibit 24: State Ranking Map



Preprared by Conning, Inc.

Credit highlights for the best and worst states are displayed in Exhibits 25 and 26.

Exhibit 25: Top-Ranked States

State	Rank	Key credit factors
Utah	1	Best state competitive index with very strong employment, personal income, GDP and population growth.
Colorado	2	Strong employment, personal income, GDP growth with low economic debt and a favorable business climate.
Idaho	3	Top state in terms of employment growth and population growth with rapidly increasing home prices.
Texas	4	A top state for employment, population and GDP with significant GF reserves.
Washington	5	Top state for home price growth with very strong growth in personal income, population and employment.

Prepared by Conning, Inc. GF = General Fund.

Exhibit 26: Lowest-Ranked States

State	Rank	Key credit factors
Connecticut	46	High economic debt levels with low GF reserve balances; slow personal income and employment growth offset by high income levels.
New Mexico	47	Very high unemployment rate, high economic debt levels and very low median household income.
Illinois	48	High economic debt levels with low GF reserves and a slow-growing economy. Recent tax increases have stabilized GF operations.
Mississippi	49	Lowest median family income among all states, poor growth in employment and income.
Kentucky	50	Very high unfunded pension levels with low median family household income. Employment, GDP and home price have been sluggish.

Prepared by Conning, Inc. GF = General Fund.

Special Section: TCJA, Infrastructure and the Municipal Bond Market

State and Local Taxes (SALT) Cap: New Worry for High-Tax States

Under the TCJA, state and local tax deductions are limited to $10,000 per return ($5,000 for married couples filing separately). States where SALT deductions are highest as a percentage of personal income include New York, New Jersey, Connecticut, California, Maryland and Oregon. Lawmakers in these states are considering ways to preserve this deduction, but the likelihood of the IRS approving measures to evade the $10,000 cap is uncertain.

The SALT deduction cap will erode and possibly eliminate all the benefits of the personal income tax cuts for many upper-middle-class earners in states with high tax rates. Higher-income residents of states with lower tax rates will receive a greater share of benefits from the TCJA tax cuts. This could accelerate the migration away from states with higher tax rates to those with lower rates, creating a new credit concern for the former.

On balance, the TCJA has made the states with higher tax rates less competitive.

Federal Changes: TCJA Has Altered the Municipal Bond Buyer Base

The lower corporate tax rate of 21% has made municipal bond investments less attractive for P&C insurers and banks, which account for 24% of total municipal bond holdings.[3] We expect P&C companies to be less active buyers of tax-exempt municipal bonds, especially at the short end of the curve.

Proposed Congressional legislation classifies municipals as level 2B high-quality liquid assets (HQLA), the same as for mortgage-backed securities but below sovereign debt. This new potential demand may offset some loss of demand created by the lower corporate tax rate. Furthermore, municipal bonds continue to offer diversification for portfolios with significant corporate bond exposure, and a universe of average higher quality than today's corporate bond market.

While P&C insurers may have less interest, life insurers may have more interest in municipal bonds. While life companies hold just 5% of all municipal securities (tax-exempt and taxable), the TCJA has increased the value of holding tax-exempt securities for life insurers by lowering their effective tax rate to 6.3%. (Previously the effective tax rate on tax-exempt municipals was higher and complicated for life insurers to determine.) Under the TCJA, tax-exempt income for life insurers is now taxed just above the 5.25% rate for P&C companies.

However, the traditional ability for issuers to call bonds after 10 years is a concern for life insurance accounts, which are long-duration buyers. New structures, including replacing call features with make-whole calls, may be needed to attract these buyers.

While the TCJA has slightly lowered personal tax rates, we expect individual demand for tax-exempt municipal bonds to remain strong especially in states with high income-tax rates. With state and local deductions capped, tax-exempt municipal bond interest is one of the few tax deductions remaining.

The TCJA eliminated the ability of municipal issuers to advance refund outstanding bonds. Advance refundings of existing bonds, which result in two sets of bonds outstanding for the same project, have accounted for as much as 40% of total annual issuance. This prohibition may lower municipal issuance as much as 25% in 2018 compared to 2017. Thus, any reduction in demand will be offset by lower supply.

Overall, there is a great deal of information for market participants to digest. There are crossover buyers, ETFs and mutual funds willing to step in if municipal yields become attractive. On balance, we expect demand for municipal securities to hold steady.

Trump Infrastructure Plan: No Surge of Issuance

The White House has proposed a $1.5 trillion, 10-year infrastructure plan, entitled "Legislative Outline for Rebuilding Infrastructure in America." The proposal calls for $200 billion in federal funding with the remainder coming from state, local and private sources, with a heavy reliance on public-private partnerships.

The plan relies heavily on states to finance the bulk of new infrastructure improvements, similar to today. A key question:

3. The Board of Governors of the Federal Reserve System, Financial Accounts of the United States – Z.1, L.212 Municipal Securities, https://www.federalreserve.gov/releases/z1/20180308/html/l212.htm,

can the federal government commit $200 billion in additional spending given its own budget deficit? Raising the federal gas tax is one way for the federal government to pay for new transportation infrastructure, but historically Congressional support for this has been difficult to obtain. The existing tax rate of 18.4 cents per gallon has not been adjusted since 1993.

In the White House proposal, state governments and their political subdivisions would apply for federal grants to one of three agencies, based on the project. Applicants would have to identify how they would fund their share of the projects, which would be an important selection criterion for receiving grant money. This would mean spelling out meaningfully high state fee and tax increases in the applications, which has been politically difficult for both state and local governments facing their own fiscal challenges, let alone adding new projects. Nothing in this plan changes that reality.

The plan also includes permitting reform, which may be difficult for Congress to approve. Even if approved in some fashion, money could be slow in forthcoming due to the grant approval process. Thus, we feel there is no immediate concern over any surge in new municipal issuance related to the proposed federal infrastructure plan.

Municipal Credit Quality Show Overall Improving Trend

Municipal credit has been on an improving trend, benefiting from the ongoing national economic recovery. Severe credit problems, where they exist, are concentrated in a few large issuers, namely Puerto Rico, Illinois and New Jersey. The recovery is lifting home prices and economic activity and both are either taxed or subject to user fees by state and local governments. Credit upgrades exceeded downgrades for the third consecutive year in 2017, per Moody's.[4] Conning sees improving to stable outlooks for all major risk sectors composing the municipal universe, other than for state-backed obligations, as summarized by Exhibit 27. Two sectors where we see value are airport and health care credits.

[4] Rating revisions: Upgrades top downgrades in 2017, though downgraded is higher", ©2018 Moody's Investor Service,Inc., and/or their licensors and affiliates - used with permission.

Exhibit 27:
Conning's Municipal Sector Outlook

Issuers	Outlook	Comment
Airports	Improving	Enplanement and other revenue growth have led to improved debt-service coverage.
Transportation	Improving	Improving ecomony and low fuel prices driving increased revenues.
Higher Ed-Public	Improving	Strong demand for a limited number of spaces at a reasonable price point.
Sales Taxes	Improving	Higher consumer spending leading to higher tax revenues and debt-service coverage.
Health Care	Stable	Low financial leverage with stable margins but with unrelenting cost pressures.
Public Power	Stable	Economic growth and debt refundings resulting in solid credit metrics.
Water & Sewer	Stable	Usage growth, essential service yielding stable operating performance.
Local GOs	Stable	Steady home price appreciation leading to property tax revenue growth.
School Districts	Stable	Property tax revenue growth offset by pension costs and lower state aid.
Higher Ed-Private	Stable	High demand for top-tier schools continues; affordability issues for lower-tier schools.
State Housing Agencies	Stable	Low mortgage loan losses and limited new issuance merit stable outlook.
State GOs	Declining	Tax revenue growth has been slow with growing legacy costs for many states.

Airports – During the past two years, domestic aviation traffic has increased 9.2% among large-hub airports and 14.2% among mid-hub airports, and the rate of growth in enplanements is exceeding national GDP growth.[5] Demand is primarily a function of economic and population growth, especially for airports that principally serve origin and destination passengers,

[5] Calculated by Conning. Calendar Year (CY) Passenger Boardings at Commercial Service Airports, CY 2016 vs 2014, Hubs L, M; https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/media/cy16-commercial-service-enplanements.pdf; https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/media/cy14-commercial-service-enplanements.pdf

where airline traffic is most responsive to local economic conditions and population growth. Other developments affecting airports and airlines have generally been positive as well, with capacity apparently growing responsibly.

This airport sector has proven resilient to both natural and man-made disasters. The fall 2017 hurricanes striking Texas and Florida closed several airports for several days but didn't cause material damage or long-term financial strain. The 2016 Florida zika outbreak didn't materially affect airport credits like the Miami International Airport, the Orlando International Airport, the Fort Lauderdale-Hollywood International Airport or the Tampa International Airport. Even looking back at 9/11, after which civilian air traffic was grounded for a week, airport traffic recovered with no permanent impairment in airport credit quality.

Another positive trend for airports is growth in international traffic. International travellers tend to spend more at airports, generate higher landing fees and use other airport services such as parking. Millennial behavior is also a tailwind for the sector: younger people prefer living in cities without owning cars and using air travel more frequently. We have an improving outlook on the airport sector.

Health Care - We believe that the healthcare sector merits a stable outlook and is an appropriate asset class for insurance companies. Healthcare providers, which we define as those operating acute-care facilities, have improved their financial profiles in recent years with adoption of the Affordable Care Act (ACA). Medicaid expansion has increased the number of patients covered by insurance while reducing bad debt expense. Investment-grade hospitals provide essential services and generally have strong financial profiles with a growing need for their services as the population ages. Most healthcare providers have been successfully adjusting their business models for the ACA, an aging population, lower reimbursement levels and value-based reimbursement models. Merger and acquisition activity is also strengthening credit profiles.

Conning's Municipal Credit Research Team

Conning manages more than $9 billion of municipal bonds held in client portfolios. Its dedicated municipal research team follows the firm's existing holdings and makes recommendations for new purchases.

Paul Mansour, a Managing Director and Head of Municipal Credit Research, joined Conning in 2006. Previously, Mr. Mansour was employed by MBIA Corporation as a Managing Director and business leader for revenue producing units where he prepared and approved municipal credit reports while also supervising credit analysts for 23 years. Paul started his career at the New York State Power Authority serving four years as a revenue and power forecasting analyst. Mr. Mansour is a graduate of Colgate University with a degree in Economics and earned an MBA from Pace University. He is a member of MAGNY and the Municipal Bond Club of New York.

Karel Citroen, a Director Municipal Credit Research, joined Conning in 2015. Previously, Mr. Citroen was employed by MBIA Corporation as a Vice President of municipal portfolio surveillance. Prior to obtaining an MBA from the Yale School of Management, he worked in the Netherlands as a banking and securities law lawyer for different financial institutions. Mr. Citroen earned an LL.M from the University of Amsterdam in 2000. He is a member of MAGNY and has 10 years of industry experience.

Diane Diaz, a Vice President, joined Conning in 2014. Previously, Ms. Diaz held positions in the public and non-profit sectors. Ms. Diaz earned a BA from the University of Pittsburgh and a Master of Public Administration from the University of Connecticut. She is a member of the National Federation of Municipal Analysts and the Municipal Analyst Group of New York.

Nolan Cicerrella, an Assistant Vice President, joined Conning in 2015. Previously, Mr. Cicerrella was employed by Bank of America as a Residential Credit Analyst. Mr. Cicerrella is a graduate of the University of Connecticut with a degree in Economics and is currently pursuing an MBA from the University of Connecticut School of Business. He is a member of the Municipal Analyst Group of New York.

About Conning®

Conning (www.conning.com) is a leading global investment management firm with a long history of serving the insurance industry. Conning supports institutional investors, including pension plans, with investment solutions and asset management offerings, award-winning risk modeling software, and industry research. Founded in 1912, Conning has investment centers in Asia, Europe and North America.

Appendix A — Description of Indicators

Laffer State Competitive Environment (8% weight)

Arthur Laffer, a supply-side economist, developed the Laffer State Economic Competitive Index. The report assigns an Economic Outlook Rank based on a state's current standing in 16 state policy variables including top marginal personal and corporate income tax rates, property and sales tax burdens, and state minimum wage. Rankings are from his 11th edition 2018 report.

Source: ©2018 American Legislative Exchange Council (ALEC), Rich States Poor States, Authors: Dr. Arthur B. Laffer, Jonathan Williams, and Stephen Moore, 11th Edition, published April 16, 2018 – used with permission, http://www.alec.org/publications/rich-states-poor-states/

Economic Debt Per Personal Income (8% weight)

This indicator ranks each state according to its economic debt as a percentage of each state's first quarter personal income. Conning defines "Economic Debt" for each state as its Net Tax-Supported Debt + State Unemployment Trust Fund Loan Balance (if any) + Unfunded Pension Liabilities + Unfunded OPEB Liabilities. Each state's Economic Debt is then divided by its personal income.

Economic Debt = Net Tax-Supported Debt + State Trust Fund Loans + Unfunded Pensions + OPEB Liabilities/ personal income

Sources: ©2017 Moody's Investors Services, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates – used with limited permission; Office of Unemployment Insurance, Division of Fiscal and Actuarial Services, U.S. Department of Labor "State Unemployment Insurance Trust Fund Solvency Report 2018," https://oui.doleta.gov/unemploy/docs/trustFundSolvReport2018.pdf; and Bureau of Economic Analysis, U.S. Department of Commerce (2017), "State Personal Income: 2017" (March 22, 2018), https://bea.gov/newsreleases/regional/spi/2018/pdf/spi0318.pdf

FY17 General Fund Balance as a percentage of GF Expenditures (8% weight)

This indicator ranks the states according to their General Fund balance as a percentage of expenditures for FY17. Each state's ending balance and budget stabilization fund are added together to equal their total funds. Each state's total fund is then divided by that state's expenditures. This data was taken from The Fall Fiscal Survey of States (December 2017), published by the National Association of State Budget Officers.

Sources: ©2017 The National Association of State Budget Officers, "Fiscal Survey of the States (Fall 2017)," https://www.nasbo.org/reports-data/fiscal-survey-of-states

Debt per Capita (8%)

Dividing total state debt by population provides a measures a state's debt burden.

Sources: "©2018 Moody's Investors Services, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates – used with limited permission, "Medians – Total State Debt Remains Flat in 2017" (May 3, 2017) and Census Bureau, U.S. Department of Commerce (2017), https://census.gov/data/tables/2017/demo/popest/state-total.html

Tax Revenue Growth (8% weight)

This indicator ranks the states according to their tax revenue growth for the 12 months ended December 31, 2017 as compared same period a year earlier. The data was obtained from the U.S. Census Bureau.

Source: Census Bureau, U.S. Department of Commerce (2018), https://www.census.gov/data/tables/2017/econ/qtax/historical/q4.html

Gross Domestic Product (GDP) Growth by State (8% weight)

This indicator ranks each state's annual growth in GDP. This information comes from the U.S. Bureau of Economic Analysis.

Source: Bureau of Economic Analysis, U.S. Department of Commerce (2015-2018), https://bea.gov/newsreleases/regional/gdp_state/qgsp_newsrelease.htm

Gross Domestic Product per capita (8% weight)

This indicator equals GDP divided by the population of each state, per statistics from the U.S. census bureau.

Source: Bureau of Economic Analysis, U.S. Department of Commerce (2018), https://bea.gov/newsreleases/regional/gdp_state/qgsp_newsrelease.htm

Year-over-Year Employment Growth (8% weight)

This indicator ranks the states based on their year-over-year total employment growth from February 2017 to February 2018. The data was obtained through the Bureau of Labor Statistics using seasonally adjusted figures.

Source: Bureau of Labor Statistics, U.S. Department of Labor (2018), https://www.bls.gov/news.release/laus.t01.htm

Median Family Income (8% weight)

This indicator ranks states by their median household income. Information is from the census survey dated September 14, 2017.

Source: Census Bureau, U.S. Department of Commerce (2018). https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html

Unemployment Rate (8% weight)

This indicator ranks the states by their February 2018 unemployment rate. The unemployment rate is the percentage of the labor force that is unemployed but is actively seeking employment and is willing and able to work. The data were obtained from the Bureau of Labor Statistics.

Source: Bureau of Labor Statistics, U.S. Department of Labor (2018), https://www.bls.gov/news.release/laus.t01.htm

Year-over-Year Personal Income Growth (8% weight)

This indicator ranks the states according to their personal income growth over the most recent 12 months ending December 31, 2017.

Source: Bureau of Economic Analysis, Department of Commerce (2016) https://bea.gov/newsreleases/regional/spi/2018/pdf/spi0318.pdf

One-Year change in Home Prices (8% weight)

This indicator ranks the states based on their one-year change in home prices. The data were obtained through the Federal Housing Finance Agency (FHFA) and covers the quarter ended December 2017.

Source: Federal Housing Finance Agency (FHFA) (2018), https://www.fhfa.gov/AboutUs/Reports/Pages/US-House-Price-Index-Report-4Q2017-December.aspx

Population Change (4% weight)

Annual change in population by state from July 2016 to July 2017

Source: Census Bureau, U.S. Department of Commerce (2017) https://www.census.gov/data/tables/2017/demo/popest/state-total.html

Appendix B—State Rankings by Credit Indicator

State	Raw	May 2018 Rank	Laffer 8%	Economic Debt/PI 8%	GF Balance/GF Expenditures 8%	NPL/capita 8%	Tax Revenue Growth 8%	State GDP/capita 8%	Employment Growth 8%	GDP Growth 8%	Unemployment Rate 8%	Personal Income Growth 8%	One Year Home Price Change 8%	Personal Income per capita 8%	Population Growth 4%
Utah	10.28	1	1	9	22	20	7	28	3	7	11	4	4	11	3
Colorado	10.88	2	15	14	34	7	6	16	5	8	9	6	5	7	8
Idaho	12.12	3	2	6	9	10	19	49	1	10	9	2	2	32	1
Texas	15.24	4	14	35	5	11	11	19	6	3	23	21	15	24	7
Washington	16.32	5	37	26	11	45	16	9	4	2	42	1	1	8	4
Florida	17.96	6	6	7	21	23	17	40	11	17	22	9	8	41	5
Tennessee	18.24	7	12	5	8	6	34	35	17	27	14	17	6	40	14
Indiana	19.52	8	3	19	13	8	14	27	29	32	12	24	18	33	24
Arizona	19.68	9	5	11	29	19	10	43	9	26	46	5	12	28	6
Wyoming	19.68	10	8	10	2	2	50	6	13	1	23	41	39	26	50
Nebraska	20.28	11	28	1	4	1	22	14	44	48	4	46	11	21	19
Georgia	20.44	12	11	17	20	24	24	29	10	15	33	8	19	39	13
New Hampshire	20.76	13	17	23	27	22	48	20	19	43	2	13	14	1	21
California	21.28	14	47	34	32	42	4	8	8	22	30	7	10	12	20
North Dakota	21.40	15	4	4	39	3	3	4	50	20	2	50	48	19	43
Nevada	21.44	16	13	12	26	14	44	36	2	34	46	3	3	34	2
North Carolina	22.76	17	7	30	18	17	43	30	14	19	33	10	20	38	11
Oregon	22.84	18	41	22	6	38	49	22	7	14	25	14	21	22	9
Hawaii	23.04	19	45	47	7	48	20	15	21	28	1	20	7	6	46
Michigan	23.04	20	18	16	19	18	18	33	25	9	44	33	9	29	34
South Dakota	23.12	21	9	2	14	16	27	26	18	50	14	45	33	27	16
Minnesota	23.56	22	44	28	12	31	28	13	36	23	12	25	25	9	17
Virginia	23.68	23	10	18	41	32	23	17	32	29	17	19	36	13	18
Oklahoma	24.20	24	16	20	43	9	5	38	12	6	25	39	30	42	35
Ohio	25.56	25	21	8	28	28	9	24	33	30	33	30	23	37	31
South Carolina	25.60	26	33	39	10	12	47	46	15	12	31	12	22	36	10
Massachusetts	25.80	27	25	43	40	49	36	3	28	24	17	15	26	5	23
Iowa	26.44	28	29	3	23	5	40	18	38	46	6	49	38	23	25
Wisconsin	27.24	29	19	13	35	36	33	25	37	39	6	32	31	20	29
Missouri	27.44	30	23	15	24	13	29	37	31	36	19	38	28	35	30
Alabama	27.88	31	20	25	17	27	38	45	34	11	19	22	29	45	33
New York	27.92	32	50	33	16	46	31	2	26	18	39	26	27	15	40
Delaware	28.04	33	36	44	15	44	25	1	48	16	31	11	47	25	15
Montana	28.24	34	43	21	46	4	8	44	27	31	25	23	45	30	12

Appendix B—State Rankings by Credit Indicator (continued)

State	Raw	May 2018 Rank	Laffer 8%	Economic Debt/PI 8%	GF Balance/GF Expenditures 8%	NPL/capita 8%	Tax Revenue Growth 8%	State GDP/capita 8%	Employment Growth 8%	GDP Growth 8%	Unemployment Rate 8%	Personal Income Growth 8%	One Year Home Price Change 8%	Personal Income per capita 8%	Population Growth 4%
Arkansas	28.80	35	22	24	44	15	42	48	43	4	21	16	24	46	22
Alaska	29.88	36	34	48	1	35	1	7	49	33	50	48	41	3	47
Maine	30.44	37	42	27	25	21	35	41	39	25	6	31	32	43	27
Maryland	30.48	38	32	40	33	40	37	11	45	37	29	18	42	4	26
Rhode Island	31.28	39	39	36	30	41	41	23	23	45	33	35	13	14	36
West Virginia	31.72	40	30	37	3	25	21	47	30	5	48	29	49	48	49
Vermont	32.04	41	49	41	31	26	39	34	46	38	4	37	17	18	41
Pennsylvania	32.40	42	38	38	50	29	26	21	20	40	44	28	35	17	38
New Jersey	32.96	43	46	50	48	47	15	10	16	44	39	34	37	10	32
Kansas	33.64	44	26	31	47	33	12	31	40	47	14	47	43	31	37
Louisiana	34.80	45	27	32	42	34	2	32	47	42	33	27	46	49	44
Connecticut	35.36	46	40	49	49	50	13	5	41	49	39	44	40	2	42
New Mexico	36.04	47	35	42	36	30	45	39	22	13	49	42	34	44	39
Illinois	36.24	48	48	46	38	43	30	12	35	35	42	40	44	16	48
Mississippi	36.76	49	24	29	37	37	46	50	24	21	33	36	50	50	45
Kentucky	36.96	50	31	45	45	39	32	42	42	41	25	43	16	47	28

Prepared by Conning, Inc. Sources: ©2018 Conning, Inc. and publicly available information.