

SECTOR IN-DEPTH

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States - US

Medians - State debt continues slow growth trend

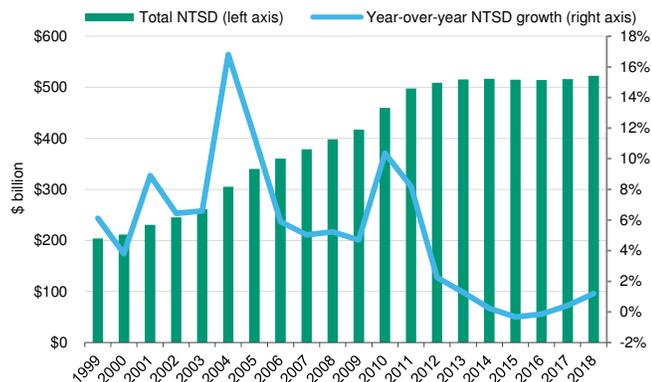
Total net tax-supported debt (NTSD) for the 50 states continued its slow growth pace, marking the fifth consecutive year of growth below 2%, according to our 2018 medians data. Slow growth in state revenues dampened appetites for new borrowing. Similarly, growth in state infrastructure spending has also slowed and projects remain heavily financed by current spending. As the economy continues to expand, debt ratios will continue to fall, reducing the debt burden for many states.

- » **Total NTSD grew by 1.2%, continuing a half decade of slow growth.** NTSD increased in half of the states, with [Illinois](#) (Baa3 negative) accounting for most of the net national increase.
- » **Debt ratios improved, continuing their multiyear improvements in many states.** Median NTSD relative to GDP, per capita and as a percentage of personal income declined by 5.7%, 4.3% and 2.1%, respectively.
- » **General obligation (GO) debt remains the most common type of debt outstanding.** The shares of debt by type remained stable, with GO debt constituting 52% of NTSD, followed by appropriation and lease debt at 20%. Eleven states do not issue any GO debt, while the state median was \$1.4 billion in GO debt outstanding.
- » **Debt service costs inched up to 4.2% of own-source governmental revenues.** Debt service may decline as a result of a spike in advanced refunding transactions at the end of 2017.

Our 2018 state debt medians are based on an analysis of calendar year 2017 debt issuance and fiscal year 2017 debt service. As in prior reports, trend data incorporate a one-year lag (i.e., data labeled 2018 reflect debt as of calendar year-end 2017).

Exhibit 1

Growth in state net tax-supported debt remains low



Some historical debt figures have been updated and may not match prior published reports

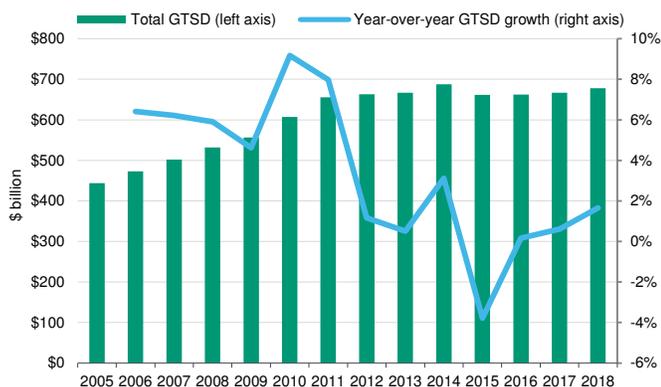
Source: Moody's Investors Service

Total net tax-supported debt (NTSD) continued its slow expansion, the fifth consecutive year of low or negative growth

- » Total NTSD grew by 1.2% to \$522 billion from \$516 billion last year.
- » NTSD increased in 24 of the states. Illinois had the largest increase in debt in dollar terms at \$5.2 billion (up 16.3% year-on-year), which was largely due to issuing long-term debt to finance payment of its bill backlog.
- » Debt is likely to maintain slow growth in the next 12 to 24 months, as infrastructure spending will remain subdued. The [federal infrastructure plan](#) is unlikely to generate significant new expenditures.

Exhibit 2

Growth in gross tax-supported debt has accelerated



Source: Moody's Investors Service

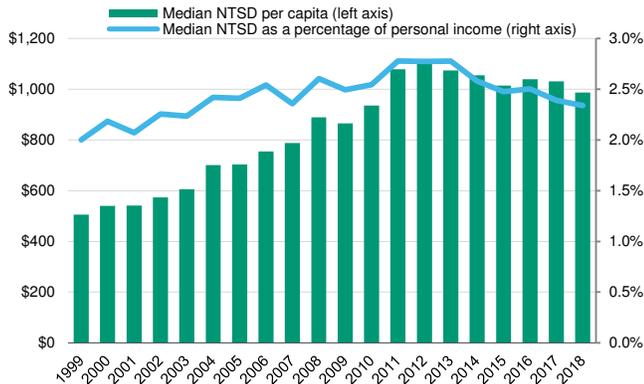
Gross debt expanded slightly faster than NTSD, although overall growth in debt is likely to remain subdued

- » Growth in gross tax-supported debt increased to 1.7% from 0.6% last year. [Colorado](#) (Aa1 stable) and [Oregon](#) (Aa1 stable) each had the largest increases in gross debt at more than \$2.5 billion, up 20% year-on-year, due to expanded issuance under school bond guarantee programs.
- » States continue to finance capital expenditures largely on a pay-go basis, with only 30% of capital expenditures financed by debt. Although debt remained flat, capital expenditures grew by an estimated 5.9% according to the [National Association for State Budget Officers \(NASBO\)](#).

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Exhibit 3

Median debt burden continues to decline



Some historical debt figures have been updated and may not match prior published reports.

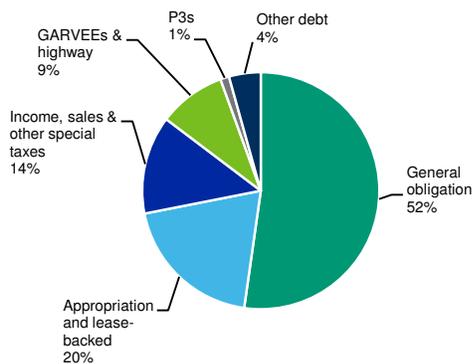
Sources: Moody's Investors Service

Debt ratios declined, continuing their multiyear improvements

- » Despite slower national population growth (0.7%) than growth in total NTSD, median NTSD per capita fell by 4.3% to \$987, as many states with moderate debt levels saw their NTSD contract alongside growing populations.
- » Median NTSD to personal income (PI) continued a nearly decade-long decline, falling to 2.3%. NTSD to PI declined in 34 states. [Hawaii](#) (Aa1 stable) remains the only state with a double-digit figure (10.4%).
- » Median NTSD as a percentage of GDP fell to its lowest level (2.1%) since 2006, as economic growth remained solid.

Exhibit 4

GO debt constitutes more than half of outstanding NTSD



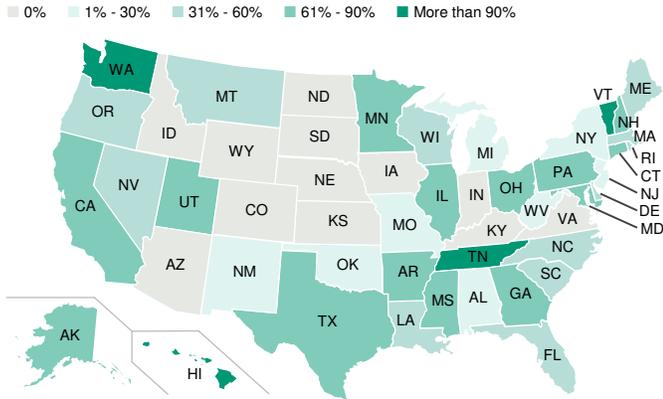
Some historical debt figures have been updated and may not match prior published reports. GARVEE stands for grant anticipation revenue vehicle. P3s stands for public private partnerships.

Source: Moody's Investors Service

GO debt continues to comprise the largest share of state debt outstanding at 52.2%

- » Appropriation and lease debt remains the second largest share of state debt outstanding at 19.7%.
- » Special tax debt accounts for 13.4% of NTSD, but is largely due to two states: [Massachusetts](#) (Aa1 stable) and [New York](#) (Aa1 stable). New York's special tax debt includes dedicated-tax bonds that are subject to appropriation.
- » Highway revenue and GARVEE¹ bonds at 9.2% of NTSD are issued by all but 15 states.
- » Variable rate debt totaled \$18.3 billion or 3.5% of NTSD. Half of the states have variable rate debt exposure ranging from 0.3% of NTSD in [Florida](#) (Aa1 stable) to 23.8% in [Indiana](#) (Aaa stable).
- » The distribution of debt by security type tends to remain stable. Lease and appropriation debt's share has eroded, while special tax — particularly income tax-backed debt — has expanded. These trends are likely to continue.

Exhibit 5
Use of general obligation (GO) debt varies widely by state
 GO debt as % of NTSD

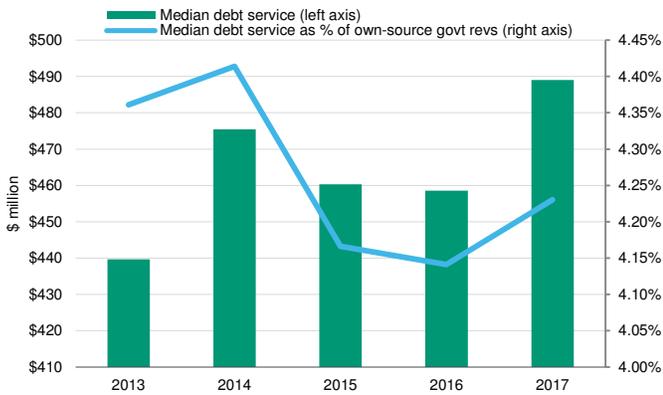


Source: Moody's Investors Service

Reliance on GO debt continues to vary

- » The use of GO debt varies considerably by state, depending on constitutional restrictions and political considerations.
- » Eleven states do not issue any GO debt, while in five states — [Georgia](#) (Aaa stable), [Tennessee](#) (Aaa stable), [Vermont](#) (Aaa stable), [Hawaii](#) and [Washington](#) (Aa1 stable) — more than 90% of outstanding NTSD is GO debt. States without GO debt tend to rely on lease and appropriation debt.

Exhibit 6
Median debt service costs increase slightly



Own-source revenues are reported as total governmental revenues less funds received from federal sources. Additional adjustments have been made to own-source revenues for Delaware, Massachusetts and Washington to reflect inclusion or exclusion of certain funds. Some historical debt figures have been updated and may not match prior published reports.

Source: Moody's Investors Service

Median debt service costs increased slightly to 4.2% of own-source governmental revenues in 2017

- » While 18 states experienced a decline in debt service, 24 states had a decline in debt service as a percentage of own-source revenues, as revenue grew at a faster rate.
- » Debt service expanded by more than \$200 million in [Louisiana](#) (49.0% year-on-year, Aa3 negative), [Florida](#) (17.2%), [New York](#) (8.8%) and [Connecticut](#) (8.7%).
- » [California](#) (\$8.0 billion) and [Connecticut](#) (13.8% of own-source revenues) had the highest debt service and debt service ratio, respectively.
- » The surge in advanced refunding at the end of 2017 may lead to a decline in debt service in 2018 and level off thereafter.

Appendix: Key metrics for US state debt medians

Exhibit 7

Net tax-supported debt - per capita and percentage of personal income

Net Tax-Supported Debt Per Capita			Rating	Net Tax-Supported Debt as a % of 2016 Personal Income		
1	Connecticut	\$6,544	A1	1	Hawaii	10.4%
2	Massachusetts	\$6,085	Aa1	2	Massachusetts	9.5%
3	Hawaii	\$5,257	Aa1	3	Connecticut	9.5%
4	New Jersey	\$4,281	A3	4	New Jersey	7.0%
5	New York	\$3,082	Aa1	5	Illinois	5.6%
6	Illinois	\$2,919	Baa3	6	Delaware	5.5%
7	Washington	\$2,662	Aa1	7	Mississippi	5.2%
8	Delaware	\$2,587	Aaa	8	New York	5.2%
9	California	\$2,188	Aa3	9	Kentucky	5.1%
10	Rhode Island	\$2,188	Aa2	10	Washington	5.0%
11	Maryland	\$2,164	Aaa	11	Oregon	4.5%
12	Oregon	\$2,017	Aa1	12	Rhode Island	4.4%
13	Kentucky	\$1,995	Aa3*	13	California	3.9%
14	Mississippi	\$1,854	Aa2	14	Louisiana	3.8%
15	Wisconsin	\$1,660	Aa1	15	Maryland	3.7%
16	Louisiana	\$1,627	Aa3	16	Wisconsin	3.6%
17	Alaska	\$1,574	Aa3	17	Kansas	3.3%
18	Kansas	\$1,554	Aa2*	18	New Mexico	3.0%
19	Virginia	\$1,515	Aaa	19	Virginia	2.9%
20	Minnesota	\$1,430	Aa1	20	West Virginia	2.9%
21	Pennsylvania	\$1,311	Aa3	21	Alaska	2.8%
22	New Mexico	\$1,139	Aa1	22	Minnesota	2.8%
23	Ohio	\$1,118	Aa1	23	Pennsylvania	2.6%
24	West Virginia	\$1,056	Aa2	24	Ohio	2.5%
25	Vermont	\$987	Aaa	25	Georgia	2.4%
26	Georgia	\$986	Aaa	26	Alabama	2.3%
27	Maine	\$900	Aa2	27	Maine	2.1%
28	Alabama	\$898	Aa1	28	Vermont	2.0%
29	Florida	\$889	Aa1	29	Florida	2.0%
30	New Hampshire	\$773	Aa1	30	Utah	1.9%
31	Utah	\$772	Aaa	31	Arizona	1.6%
32	South Dakota	\$694	Aaa*	32	Arkansas	1.6%
33	Michigan	\$673	Aa1	33	Michigan	1.5%
34	Arizona	\$651	Aa2*	34	Nevada	1.5%
35	Arkansas	\$639	Aa1	35	North Carolina	1.5%
36	Nevada	\$637	Aa2	36	South Dakota	1.5%
37	North Carolina	\$611	Aaa	37	New Hampshire	1.4%
38	Missouri	\$532	Aaa	38	South Carolina	1.3%
39	South Carolina	\$517	Aaa	39	Idaho	1.2%
40	Colorado	\$484	Aa1*	40	Missouri	1.2%
41	Idaho	\$482	Aa1*	41	Colorado	0.9%
42	Texas	\$410	Aaa	42	Texas	0.9%
43	Tennessee	\$312	Aaa	43	Tennessee	0.7%
44	Oklahoma	\$303	Aa2	44	Oklahoma	0.7%
45	Indiana	\$295	Aaa*	45	Indiana	0.7%
46	Iowa	\$219	Aaa*	46	Iowa	0.5%
47	Montana	\$177	Aa1	47	Montana	0.4%
48	North Dakota	\$133	Aa1*	48	North Dakota	0.2%
49	Wyoming	\$38	NGO**	49	Wyoming	0.1%
50	Nebraska	\$20	Aa1*	50	Nebraska	0.0%
	Mean	\$1,477		Mean	2.9%	
	Median	\$987		Median	2.3%	

*Issuer rating (No GO debt outstanding)

**No general obligation debt

Sources: Moody's Investors Service, US Census Bureau, US Bureau of Economic Analysis

Exhibit 8

State net tax-supported debt and gross tax-supported debt

Net Tax-Supported Debt (\$ Thousands)			Rating	Gross Tax-Supported Debt (\$ Thousands)			Ratio
1	California	\$86,507,000	Aa3	1	California	\$92,675,000	1.07
2	New York	\$61,173,092	Aa1	2	New York	\$61,529,982	1.01
3	Massachusetts	\$41,744,847	Aa1	3	New Jersey	\$43,916,002	1.14
4	New Jersey	\$38,557,606	A3	4	Massachusetts	\$42,857,944	1.03
5	Illinois	\$37,374,448	Baa3	5	Illinois	\$38,461,848	1.03
6	Connecticut	\$23,479,445	A1	6	Washington	\$32,457,502	1.65
7	Washington	\$19,711,256	Aa1	7	Texas	\$28,182,738	2.43
8	Florida	\$18,664,395	Aa1	8	Connecticut	\$28,112,910	1.20
9	Pennsylvania	\$16,788,401	Aa3	9	Minnesota	\$23,360,535	2.93
10	Maryland	\$13,095,582	Aaa	10	Pennsylvania	\$22,548,094	1.34
11	Ohio	\$13,040,038	Aa1	11	Michigan	\$22,497,968	3.36
12	Virginia	\$12,834,076	Aaa	12	Florida	\$21,242,795	1.14
13	Texas	\$11,603,694	Aaa	13	Ohio	\$18,571,633	1.42
14	Georgia	\$10,287,595	Aaa	14	Virginia	\$17,214,114	1.34
15	Wisconsin	\$9,621,950	Aa1	15	Oregon	\$16,953,645	2.03
16	Kentucky	\$8,884,897	Aa3*	16	Wisconsin	\$13,535,009	1.41
17	Oregon	\$8,354,427	Aa1	17	Maryland	\$13,095,582	1.00
18	Minnesota	\$7,973,810	Aa1	18	Kentucky	\$12,718,513	1.43
19	Louisiana	\$7,621,350	Aa3	19	Colorado	\$11,815,533	4.35
20	Hawaii	\$7,504,305	Aa1	20	Georgia	\$10,287,595	1.00
21	Michigan	\$6,703,628	Aa1	21	Alabama	\$9,609,219	2.20
22	North Carolina	\$6,281,556	Aaa	22	Louisiana	\$8,923,480	1.17
23	Mississippi	\$5,532,900	Aa2	23	Utah	\$7,806,840	3.26
24	Arizona	\$4,569,056	Aa2*	24	Hawaii	\$7,529,682	1.00
25	Kansas	\$4,526,773	Aa2*	25	North Carolina	\$6,281,556	1.00
26	Alabama	\$4,375,177	Aa1	26	Mississippi	\$5,977,735	1.08
27	Missouri	\$3,250,390	Aaa	27	Arizona	\$4,569,056	1.00
28	Colorado	\$2,715,533	Aa1*	28	Kansas	\$4,526,773	1.00
29	South Carolina	\$2,595,211	Aaa	29	Maine	\$4,444,222	3.70
30	Delaware	\$2,488,993	Aaa	30	Tennessee	\$4,266,401	2.03
31	Utah	\$2,393,846	Aaa	31	Indiana	\$4,248,693	2.16
32	New Mexico	\$2,378,230	Aa1	32	West Virginia	\$3,365,469	1.76
33	Rhode Island	\$2,318,173	Aa2	33	Missouri	\$3,250,390	1.00
34	Tennessee	\$2,098,486	Aaa	34	Rhode Island	\$3,031,425	1.31
35	Indiana	\$1,969,124	Aaa*	35	Delaware	\$2,985,593	1.20
36	Arkansas	\$1,920,111	Aa1	36	Alaska	\$2,887,900	2.48
37	West Virginia	\$1,916,830	Aa2	37	South Carolina	\$2,828,196	1.09
38	Nevada	\$1,910,259	Aa2	38	New Mexico	\$2,378,230	1.00
39	Maine	\$1,202,673	Aa2	39	Idaho	\$2,375,038	2.87
40	Oklahoma	\$1,192,740	Aa2	40	Oklahoma	\$2,216,756	1.86
41	Alaska	\$1,164,500	Aa3	41	Nevada	\$2,211,357	1.16
42	New Hampshire	\$1,038,040	Aa1	42	Iowa	\$2,037,626	2.95
43	Idaho	\$827,014	Aa1*	43	New Hampshire	\$1,959,661	1.89
44	Iowa	\$690,076	Aaa*	44	Arkansas	\$1,920,111	1.00
45	Vermont	\$615,759	Aaa	45	Vermont	\$1,411,919	2.29
46	South Dakota	\$603,126	Aaa*	46	North Dakota	\$1,390,163	13.80
47	Montana	\$186,305	Aa1	47	South Dakota	\$702,281	1.16
48	North Dakota	\$100,763	Aa1*	48	Montana	\$357,827	1.92
49	Nebraska	\$38,545	Aa1*	49	Nebraska	\$38,545	1.00
50	Wyoming	\$21,840	NGO**	50	Wyoming	\$21,840	1.00
	Total	\$ 522,447,871		Total	\$ 677,588,927		
	Mean	\$10,448,957		Mean	13,551,779	1.91	
	Median	\$4,450,975		Median	6,129,646	1.32	

*Issuer rating (No GO debt outstanding)

**No general obligation debt

Source: Moody's Investors Service

Exhibit 9

Net tax-supported debt as percentage of gross state domestic product

2016 NTSD as % of 2014 State GDP		2017 NTSD as % of 2015 State GDP		2018 NTSD as % of 2016 State GDP				
1	Connecticut	9.04%	1	Connecticut	9.11%	1	Connecticut	9.03%
2	Massachusetts	8.49%	2	Hawaii	8.77%	2	Hawaii	8.86%
3	Hawaii	8.46%	3	Massachusetts	8.33%	3	Massachusetts	8.25%
4	New Jersey	6.83%	4	New Jersey	6.98%	4	New Jersey	6.70%
5	Mississippi	5.12%	5	Mississippi	5.19%	5	Mississippi	5.10%
6	Kentucky	4.65%	6	Kentucky	4.76%	6	Illinois	4.70%
7	Washington	4.64%	7	Washington	4.38%	7	Kentucky	4.52%
8	New York	4.37%	8	New York	4.15%	8	Washington	4.13%
9	Illinois	4.32%	9	Illinois	4.14%	9	New York	4.08%
10	California	3.85%	10	Rhode Island	4.03%	10	Rhode Island	4.03%
11	Oregon	3.77%	11	Delaware	3.48%	11	Oregon	3.65%
12	Rhode Island	3.65%	12	California	3.47%	12	Delaware	3.48%
13	Wisconsin	3.53%	13	Oregon	3.46%	13	Maryland	3.42%
14	Delaware	3.41%	14	Maryland	3.43%	14	California	3.30%
15	Maryland	3.30%	15	Wisconsin	3.30%	15	Louisiana	3.22%
16	Louisiana	3.09%	16	Louisiana	3.14%	16	Wisconsin	3.07%
17	Kansas	3.01%	17	Kansas	3.03%	17	Kansas	3.01%
18	West Virginia	2.92%	18	West Virginia	2.83%	18	West Virginia	2.63%
19	New Mexico	2.71%	19	New Mexico	2.82%	19	Virginia	2.60%
20	Minnesota	2.64%	20	Virginia	2.60%	20	New Mexico	2.54%
21	Florida	2.55%	21	Minnesota	2.49%	21	Minnesota	2.35%
22	Virginia	2.50%	22	Pennsylvania	2.41%	22	Pennsylvania	2.33%
23	Pennsylvania	2.25%	23	Alaska	2.35%	23	Alaska	2.31%
24	Maine	2.23%	24	Florida	2.23%	24	Alabama	2.13%
25	Georgia	2.19%	25	Vermont	2.20%	25	Ohio	2.08%
26	Vermont	2.13%	26	Alabama	2.16%	26	Maine	2.03%
27	Ohio	2.13%	27	Maine	2.06%	27	Florida	2.02%
28	Alabama	2.11%	28	Ohio	2.06%	28	Vermont	1.98%
29	Utah	1.96%	29	Georgia	2.02%	29	Georgia	1.94%
30	Arizona	1.88%	30	Utah	1.69%	30	Arkansas	1.58%
31	Alaska	1.80%	31	Arizona	1.65%	31	Utah	1.52%
32	Michigan	1.60%	32	Arkansas	1.47%	32	Arizona	1.49%
33	Arkansas	1.58%	33	Michigan	1.45%	33	Michigan	1.37%
34	South Carolina	1.54%	34	South Carolina	1.38%	34	New Hampshire	1.34%
35	North Carolina	1.53%	35	New Hampshire	1.36%	35	Nevada	1.31%
36	New Hampshire	1.51%	36	North Carolina	1.33%	36	South Dakota	1.25%
37	Nevada	1.28%	37	Nevada	1.22%	37	South Carolina	1.24%
38	Missouri	1.27%	38	Missouri	1.20%	38	Idaho	1.21%
39	Idaho	1.19%	39	South Dakota	1.13%	39	North Carolina	1.20%
40	South Dakota	1.18%	40	Idaho	1.08%	40	Missouri	1.09%
41	Colorado	0.76%	41	Tennessee	0.68%	41	Colorado	0.84%
42	Tennessee	0.66%	42	Texas	0.66%	42	Texas	0.73%
43	Texas	0.65%	43	Oklahoma	0.65%	43	Oklahoma	0.66%
44	Indiana	0.63%	44	Colorado	0.62%	44	Tennessee	0.63%
45	Oklahoma	0.61%	45	Indiana	0.61%	45	Indiana	0.57%
46	Montana	0.57%	46	Montana	0.47%	46	Montana	0.40%
47	Iowa	0.44%	47	Iowa	0.40%	47	Iowa	0.37%
48	North Dakota	0.21%	48	North Dakota	0.20%	48	North Dakota	0.19%
49	Wyoming	0.06%	49	Wyoming	0.06%	49	Wyoming	0.06%
50	Nebraska	0.01%	50	Nebraska	0.03%	50	Nebraska	0.03%
	Mean	2.66%		Mean	2.61%		Mean	2.57%
	Median	2.16%		Median	2.18%		Median	2.05%

State GDP numbers have a one-year lag.

Some historical debt figures have been updated and may not match prior published reports.

Sources: Moody's Investors Service, US Bureau of Economic Analysis

Exhibit 10

Net tax-supported debt as a percentage of personal income

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Alabama	2.0%	2.8%	2.5%	2.4%	2.6%	2.5%	2.5%	2.4%	2.3%	2.3%	2.3%	2.3%
Alaska	2.7%	2.4%	2.2%	3.2%	3.0%	3.3%	2.8%	3.2%	2.9%	2.6%	3.0%	2.8%
Arizona	2.0%	2.0%	2.5%	2.3%	2.8%	2.8%	2.5%	2.5%	2.4%	2.1%	1.8%	1.6%
Arkansas	1.4%	1.7%	1.3%	1.0%	1.1%	1.0%	1.2%	1.7%	1.9%	1.7%	1.5%	1.6%
California	4.4%	4.3%	4.4%	5.6%	6.0%	6.0%	5.8%	5.3%	5.0%	4.6%	4.1%	3.9%
Colorado	0.9%	0.8%	0.8%	1.0%	1.3%	1.3%	1.2%	1.1%	1.0%	0.9%	0.7%	0.9%
Connecticut	7.8%	7.3%	8.2%	8.7%	9.5%	9.1%	9.1%	9.2%	8.8%	9.2%	9.5%	9.5%
Delaware	5.5%	5.2%	5.4%	6.2%	6.8%	6.8%	6.2%	5.7%	5.6%	5.3%	5.4%	5.5%
Florida	3.1%	2.8%	2.9%	2.9%	3.0%	3.0%	2.8%	2.5%	2.5%	2.5%	2.2%	2.0%
Georgia	3.0%	3.0%	3.0%	3.3%	3.3%	3.1%	3.0%	2.9%	2.8%	2.7%	2.4%	2.4%
Hawaii	10.6%	9.9%	9.4%	9.9%	10.1%	9.6%	10.0%	10.6%	11.0%	9.9%	10.3%	10.4%
Idaho	0.6%	1.2%	1.6%	1.7%	1.6%	1.7%	1.6%	1.5%	1.4%	1.2%	1.1%	1.2%
Illinois	5.5%	5.2%	4.6%	4.4%	5.7%	6.0%	5.7%	5.6%	5.7%	5.2%	4.9%	5.6%
Indiana	2.1%	1.5%	1.5%	1.5%	1.4%	1.3%	1.2%	1.4%	0.8%	0.8%	0.7%	0.7%
Iowa	0.3%	0.3%	0.2%	0.2%	0.7%	0.8%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%
Kansas	3.7%	3.5%	3.2%	3.0%	3.2%	3.1%	2.8%	2.6%	2.4%	3.3%	3.4%	3.3%
Kentucky	4.3%	4.7%	4.8%	5.4%	6.1%	6.1%	5.9%	5.7%	5.4%	5.3%	5.4%	5.1%
Louisiana	4.9%	4.3%	3.3%	3.6%	3.5%	3.7%	3.7%	3.7%	3.9%	3.8%	3.8%	3.8%
Maine	1.9%	1.9%	2.2%	2.2%	2.4%	2.3%	2.1%	2.4%	2.4%	2.3%	2.1%	2.1%
Maryland	2.8%	3.0%	3.3%	3.4%	3.3%	3.6%	3.6%	3.4%	3.6%	3.6%	3.7%	3.7%
Massachusetts	9.4%	9.8%	8.9%	9.2%	9.2%	9.4%	9.3%	9.0%	9.8%	9.7%	9.6%	9.5%
Michigan	2.2%	2.2%	2.2%	2.1%	2.2%	2.2%	2.2%	2.1%	1.9%	1.8%	1.6%	1.5%
Minnesota	2.2%	2.3%	2.1%	2.4%	2.8%	2.7%	3.0%	3.0%	3.3%	3.1%	2.9%	2.8%
Mississippi	4.9%	4.8%	5.2%	5.0%	5.1%	5.6%	5.4%	5.2%	5.3%	5.2%	5.3%	5.2%
Missouri	1.9%	2.1%	2.0%	2.2%	2.2%	2.0%	1.8%	1.7%	1.6%	1.4%	1.4%	1.2%
Montana	1.5%	1.2%	1.2%	1.1%	1.1%	1.0%	0.9%	0.7%	0.6%	0.6%	0.5%	0.4%
Nebraska	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nevada	1.7%	2.0%	2.2%	2.3%	2.4%	2.2%	1.9%	1.7%	1.7%	1.5%	1.4%	1.5%
New Hampshire	1.3%	1.3%	1.3%	1.6%	1.9%	1.8%	1.9%	1.8%	1.6%	1.5%	1.4%	1.4%
New Jersey	7.6%	7.5%	7.3%	7.2%	7.8%	7.8%	7.6%	7.3%	7.5%	7.2%	7.3%	7.0%
New Mexico	5.3%	4.8%	4.6%	4.4%	5.6%	4.2%	3.8%	3.4%	3.6%	3.3%	3.3%	3.0%
New York	6.7%	6.3%	6.3%	6.5%	6.7%	6.6%	6.3%	6.0%	5.7%	5.5%	5.2%	5.2%
North Carolina	2.4%	2.8%	2.5%	2.3%	2.3%	2.3%	2.4%	2.1%	2.0%	1.9%	1.6%	1.5%
North Dakota	1.0%	1.1%	1.0%	0.8%	0.8%	0.6%	0.7%	0.5%	0.4%	0.3%	0.3%	0.2%
Ohio	3.0%	2.9%	2.8%	2.6%	2.8%	2.8%	2.8%	2.7%	2.7%	2.6%	2.5%	2.5%
Oklahoma	1.5%	1.5%	1.5%	1.6%	1.8%	1.3%	1.2%	1.0%	0.9%	0.7%	0.7%	0.7%
Oregon	4.6%	5.0%	4.6%	5.2%	5.6%	5.5%	5.2%	4.9%	4.9%	4.6%	4.2%	4.5%
Pennsylvania	2.4%	2.4%	2.5%	2.4%	2.7%	2.8%	2.8%	2.6%	2.5%	2.5%	2.7%	2.6%
Rhode Island	4.6%	4.7%	4.5%	5.2%	5.3%	4.7%	4.7%	4.5%	4.3%	3.9%	4.3%	4.4%
South Carolina	2.3%	3.3%	2.9%	2.9%	2.7%	2.5%	2.3%	2.2%	1.9%	1.7%	1.5%	1.3%
South Dakota	0.8%	0.9%	0.8%	0.4%	0.9%	0.9%	0.9%	0.9%	1.2%	1.4%	1.3%	1.5%
Tennessee	0.7%	0.7%	0.7%	0.9%	1.0%	1.0%	0.9%	0.8%	0.8%	0.8%	0.8%	0.7%
Texas	1.3%	1.4%	1.4%	1.4%	1.6%	1.5%	1.5%	1.5%	1.0%	0.9%	0.8%	0.9%
Utah	2.3%	1.9%	1.5%	3.2%	4.1%	4.4%	3.8%	3.4%	3.0%	2.5%	2.1%	1.9%
Vermont	2.1%	2.0%	1.8%	1.8%	1.9%	2.0%	1.9%	2.0%	2.1%	2.1%	2.2%	2.0%
Virginia	1.8%	1.9%	1.9%	2.1%	2.4%	2.6%	2.9%	2.7%	2.8%	2.8%	2.9%	2.9%
Washington	5.1%	5.1%	5.1%	5.3%	6.2%	6.0%	6.4%	6.4%	6.1%	5.5%	5.2%	5.0%
West Virginia	3.9%	3.9%	3.6%	3.5%	3.8%	3.6%	3.3%	3.0%	2.7%	3.3%	3.1%	2.9%
Wisconsin	4.2%	4.1%	4.0%	4.6%	4.8%	4.8%	4.7%	4.4%	4.2%	4.0%	3.8%	3.6%
Wyoming	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mean	3.2%	3.2%	3.1%	3.2%	3.5%	3.4%	3.3%	3.2%	3.2%	3.0%	3.0%	2.9%
Median	2.4%	2.6%	2.5%	2.5%	2.8%	2.8%	2.8%	2.6%	2.5%	2.5%	2.4%	2.3%

Some historical debt figures have been updated and may not match prior published reports.

Sources: Moody's Investors Service, US Bureau of Economic Analysis

Exhibit 11

Debt service ratio

	FY 2015		FY 2016		FY 2017
1 Connecticut	14.3%	1 Connecticut	13.3%	1 Connecticut	13.8%
2 Massachusetts	11.7%	2 Massachusetts	12.1%	2 Massachusetts	11.7%
3 Hawaii	10.9%	3 Hawaii	10.4%	3 Hawaii	10.5%
4 Illinois	9.2%	4 New Jersey	10.1%	4 New Jersey	9.4%
5 New Jersey	8.5%	5 Illinois	8.8%	5 Illinois	9.2%
6 Washington	8.3%	6 Washington	8.1%	6 New York	8.1%
7 New York	7.6%	7 New York	7.4%	7 Washington	7.7%
8 Kentucky	7.6%	8 Kentucky	7.4%	8 Kentucky	7.3%
9 Delaware	6.6%	9 Maryland	6.6%	9 Maryland	7.0%
10 Georgia	6.5%	10 Mississippi	6.3%	10 Mississippi	6.9%
11 Rhode Island	6.4%	11 Georgia	6.2%	11 Georgia	6.4%
12 Maryland	6.2%	12 Utah	5.9%	12 Wisconsin	5.9%
13 Mississippi	6.0%	13 West Virginia	5.8%	13 Ohio	5.6%
14 Wisconsin	6.0%	14 Wisconsin	5.7%	14 West Virginia	5.4%
15 Utah	5.9%	15 Ohio	5.6%	15 Utah	5.3%
16 West Virginia	5.8%	16 Delaware	5.5%	16 Oregon	5.2%
17 Oregon	5.7%	17 Oregon	4.9%	17 Delaware	5.1%
18 Nevada	5.6%	18 California	4.9%	18 Rhode Island	5.1%
19 Ohio	5.5%	19 Maine	4.8%	19 New Mexico*	5.0%
20 California	5.3%	20 Virginia	4.8%	20 Louisiana	4.9%
21 Maine	5.1%	21 Nevada	4.7%	21 Virginia	4.8%
22 Virginia	4.9%	22 New Mexico	4.4%	22 Maine	4.8%
23 New Hampshire	4.7%	23 Rhode Island	4.4%	23 California	4.6%
24 Arizona	4.4%	24 Arizona	4.3%	24 Florida	4.4%
25 New Mexico	4.3%	25 New Hampshire	4.3%	25 Kansas	4.4%
26 Arkansas	4.1%	26 Kansas	4.0%	26 Alabama*	4.0%
27 Florida	4.0%	27 Pennsylvania	4.0%	27 New Hampshire	4.0%
28 Alabama	3.8%	28 Florida	3.9%	28 Nevada	3.9%
29 Pennsylvania	3.7%	29 Alaska	3.8%	29 Arizona	3.9%
30 Minnesota	3.7%	30 Minnesota	3.7%	30 Pennsylvania	3.6%
31 South Carolina	3.7%	31 Alabama	3.7%	31 Missouri	3.5%
32 Missouri	3.5%	32 Louisiana	3.6%	32 Arkansas	3.5%
33 North Carolina	3.4%	33 Missouri	3.4%	33 Minnesota	3.4%
34 Kansas	3.4%	34 North Carolina	3.3%	34 North Carolina	3.1%
35 Louisiana	3.1%	35 South Carolina	3.2%	35 South Carolina	2.7%
36 Michigan	2.7%	36 Texas	2.7%	36 Texas	2.7%
37 Colorado	2.5%	37 Michigan	2.5%	37 Michigan	2.5%
38 Alaska	2.4%	38 Colorado	2.5%	38 Colorado	2.2%
39 Texas	2.4%	39 Arkansas	2.3%	39 South Dakota	2.1%
40 South Dakota	2.1%	40 South Dakota	2.2%	40 Vermont	2.1%
41 Vermont	2.1%	41 Vermont	2.0%	41 Oklahoma	1.9%
42 Oklahoma	1.8%	42 Oklahoma	1.9%	42 Idaho	1.5%
43 Idaho	1.6%	43 Idaho	1.6%	43 Alaska	1.4%
44 Tennessee	1.3%	44 Montana	1.4%	44 Montana	1.3%
45 Montana	1.3%	45 Tennessee	1.3%	45 Tennessee	1.3%
46 Indiana	1.2%	46 Indiana	1.2%	46 Indiana	1.2%
47 Iowa	0.7%	47 Iowa	0.7%	47 Iowa	0.6%
48 North Dakota	0.5%	48 North Dakota	0.5%	48 North Dakota	0.3%
49 Wyoming	0.1%	49 Wyoming	0.1%	49 Nebraska	0.2%
50 Nebraska	0.1%	50 Nebraska	0.1%	50 Wyoming	0.1%
Mean	4.6%	Mean	4.5%	Mean	4.5%
Median	4.2%	Median	4.1%	Median	4.2%

*Figures use fiscal 2016 own-source revenues; fiscal 2017 audited financial statements not available at time of publication. Own-source revenues are reported total governmental revenues less funds received from federal sources. Additional adjustments have been made to own-source revenues for Delaware, Massachusetts and Washington to reflect inclusion or exclusion of certain funds.

Some historical debt figures have been updated and may not match prior published reports.

Source: Moody's Investors Service

Exhibit 12

Demand debt and direct loans/private placements

State	NTSD (\$ Thousands)	Demand Debt (\$ Thousands)	Direct Loans/ Private Placements (\$ Thousands)	# Direct Loans/ Private Placements
Alabama	\$4,375,177	\$0	\$263,512	6
Alaska	\$1,164,500	\$0	\$0	0
Arizona	\$4,569,056	\$0	\$0	0
Arkansas	\$1,920,111	\$0	\$27,704	2
California	\$86,507,000	\$3,421,420	\$13,745	1
Colorado	\$2,715,533	\$0	\$0	0
Connecticut	\$23,479,445	\$1,657,315	\$434,865	2
Delaware	\$2,488,993	\$0	\$1,657	2
Florida	\$18,664,395	\$60,400	\$0	0
Georgia	\$10,287,595	\$0	\$0	0
Hawaii	\$7,504,305	\$0	\$0	0
Idaho	\$827,014	\$33,500	\$0	0
Illinois	\$37,374,448	\$600,000	\$0	0
Indiana	\$1,969,124	\$468,165	\$289,075	4
Iowa	\$690,076	\$0	\$49,854	2
Kansas	\$4,526,773	\$510,490	\$0	0
Kentucky	\$8,884,897	\$185,000	\$0	0
Louisiana	\$7,621,350	\$424,375	\$405,800	5
Maine	\$1,202,673	\$0	\$0	0
Maryland	\$13,095,582	\$59,450	\$70,438	12
Massachusetts	\$41,744,847	\$3,469,990	\$866,535	7
Michigan	\$6,703,628	\$123,275	\$0	0
Minnesota	\$7,973,810	\$0	\$0	0
Mississippi	\$5,532,900	\$0	\$0	0
Missouri	\$3,250,390	\$0	\$0	0
Montana	\$186,305	\$0	\$0	0
Nebraska	\$38,545	\$0	\$0	0
Nevada	\$1,910,259	\$0	\$3,400	1
New Hampshire	\$1,038,040	\$0	\$0	0
New Jersey	\$38,557,606	\$1,020,875	\$1,744,380	8
New Mexico	\$2,378,230	\$420,000	\$284,800	3
New York	\$61,173,092	\$1,799,470	\$50,000	1
North Carolina	\$6,281,556	\$0	\$0	0
North Dakota	\$100,763	\$0	\$0	0
Ohio	\$13,040,038	\$430,635	\$0	0
Oklahoma	\$1,192,740	\$0	\$0	0
Oregon	\$8,354,427	\$495,055	\$369,549	4
Pennsylvania	\$16,788,401	\$594,615	\$81,800	1
Rhode Island	\$2,318,173	\$38,400	\$38,400	2
South Carolina	\$2,595,211	\$0	\$0	0
South Dakota	\$603,126	\$0	\$0	0
Tennessee	\$2,098,486	\$245,536	\$0	0
Texas	\$11,603,694	\$1,670,781	\$1,726,620	25
Utah	\$2,393,846	\$0	\$118,700	1
Vermont	\$615,759	\$0	\$0	0
Virginia	\$12,834,076	\$50,000	\$1,670	1
Washington	\$19,711,256	\$0	\$0	0
West Virginia	\$1,916,830	\$0	\$0	0
Wisconsin	\$9,621,950	\$486,170	\$203,905	1
Wyoming	\$21,840	\$0	\$0	0
TOTAL	\$522,447,871	\$18,264,917	\$7,046,409	91

Source: Moody's Investors Service

Exhibit 13

Key metrics for US territories

	American Samoa	Northern Mariana Islands	Guam	U.S. Virgin Islands	Puerto Rico
Rating	Ba3	No Rating	Ba1	Caa3	Ca
2018 Debt Outstanding					
Net Tax-Supported Debt (\$ Thousands)	\$86,370	\$75,935	\$1,268,978	\$1,853,270	
Gross Tax-Supported Debt (\$ Thousands)	\$86,370	\$75,935	\$1,268,978	\$1,868,405	
NTSD Key Metrics					
NTSD as % of GDP	13.1%	6.1%	21.9%	47.9%	
NTSD per Capita (\$)	\$1,474	\$1,501	\$7,799	\$17,701	
Debt Service Key Metrics					
Debt Service (\$ Thousands)	\$6,433	\$9,122	\$88,876	\$179,982	
Debt Service as % of Own-Source Governmental Revenues	7.0%	3.2%	10.2%	12.0%	
Debt Service as % of Total Governmental Revenues	2.6%	2.3%	7.2%	14.7%	

Data for Puerto Rico is unavailable.

Source: Moody's Investors Service

Basis for state debt medians

Our 2018 state debt medians are based on our analysis of calendar year 2017 debt issuance and fiscal year 2017 debt service. As in prior year reports, the presentation of debt trend data incorporates a one-year lag (i.e., the data labeled 2018 reflect debt as of calendar year-end 2017).

In considering debt burden, our focus is largely on net tax-supported debt (NTSD), which we characterize as debt secured by statewide taxes and other general resources, net of obligations that are self-supporting from pledged sources other than state taxes or operating resources — such as utility or local government revenues. We also examine gross debt, which captures debt supported by revenues other than state taxes and general resources. This includes self-supporting general obligation (GO) debt, special assessment bonds and contingent debt liabilities that may not have direct tax support but represent commitments to make debt service payments under certain conditions (e.g., state guarantees and bonds backed by state moral obligation pledges that have never been tapped).

The debt and debt service ratios of some states are relatively high because they issue debt for purposes that in other states would be financed at the local level, such as for schools or mass transit. Some states' debt service ratios rank higher than their NTSD ratios owing to conservative debt management practices, such as rapid debt amortization. Conversely, some states' debt service ratios rank relatively lower due to the use of capital appreciation bonds or long maturity schedules.

Exhibit 14

Comparison of NTSD and gross tax-supported debt (GTSD)

Generally included in NTSD	Generally Excluded from NTSD/ Included in GTSD
General obligation debt paid from statewide taxes and fees	Self-supporting general obligation debt with an established history of being paid from sources other than taxes or general revenues
Appropriation backed bonds	Moral obligation debt with an established history of being paid from sources other than taxes or general revenues
Lease revenue bonds	Tobacco securitization bonds, with no state backup
Special tax bonds secured by statewide taxes and fees	Unemployment insurance obligation bonds
Highway bonds, secured by gas taxes and DMV fees	Debt guaranteed, but not paid, by the state
GARVEE bonds	Special assessment bonds
Lottery bonds	
Moral obligation debt paid from statewide taxes and fees	
Capital leases	
P3s with state concession obligation	
Pension obligation bonds	

Source: Moody's Investors Service

These ratios have been calculated based on our definition of net tax-supported debt, debt service and own-source governmental revenues, and in most cases will differ from a state's own published calculations of debt limits or debt affordability. There is no correlation between our ratios and a state's compliance with its internal policies.

Moody's Related Research

Methodology

» [US States and Territories](#), April 12, 2018

Outlook

» [2018 Outlook - 2018 Outlook stable as modest revenue growth continues](#), December 7, 2017

Endnotes

- 1 GARVEE stands for grant anticipation revenue vehicle.

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