



Debt Affordability Study 2018

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Executive Summary

This report is prepared in accordance with 62 O.S. Section 34.200-1, requiring the State Bond Advisor in cooperation with the Office of Management and Enterprise Services to produce annual debt affordability studies (Study).

In addition to the State Bond Advisor's annual report and the Comprehensive Annual Financial Report this Study provides the governor and Legislature with an additional tool to contextualize state debt and assess the impact of future debt issuance on the state's fiscal position. The Study assists this endeavor by providing information and analysis that can be utilized by policymakers for the cost-effective management of the state's capital investments.

The state has two structural limits in place to prevent debt from unduly straining the state budget. The first is the constitutional requirement that general obligation bonds must be approved by a vote of the people and must be secured by a specific revenue source. The second is the statutory debt service limit that prohibits the state's net-tax-supported debt service from exceeding 5% of the five-year average of general revenue collections.

Due in part to these limits, Oklahoma's net tax-supported debt and debt service is amongst the lowest in the nation.

The state has primarily used the Oklahoma Capitol Improvement Authority to issue lease-revenue bonds to address the state's capital needs. The state also issues non-tax supported debt through various state

governmental entities with the authority to issue bonds secured through a specific revenue source.

The study projects the state's debt position under various scenarios to provide context and demonstrate how changes in market conditions or the state budget can impact the ability to afford debt and issue additional debt.

Oklahoma is projected to have additional debt capacity over the next five fiscal years even when assuming conservative growth in general revenue and issuance of all authorized debt. For fiscal year 2019 the state has approximately \$510 million in excess debt capacity.

A comparison of a variety of debt metrics relative to peer states illustrates Oklahoma is a low debt state ranking well below the national average and the region in every metric.

Pension liabilities represent perhaps the state's largest outstanding obligation and are included to present a more comprehensive examination of the state's fiscal position. Oklahoma's commitment to funding pension contributions combined with plan reforms have improved the state's systems funded status significantly in recent years.

Oklahoma's general obligation credit rating was downgraded by Fitch Ratings Service and Standard & Poor's in 2017. The ratings agencies cited structural imbalance of the state budget as the leading factor in their decision to lower the state's credit rating. The lower rating will increase borrowing cost to the state



over time making debt issuance a less cost-effective tool for policymakers.

However, fiscal year 2018 ended with the largest deposit ever in the Constitutional Reserve Fund, significantly improving the state's reserve position.

Combined with a structurally balanced fiscal year 2019 budget and enhanced revenue from tax increases the state's fiscal position has stabilized and continued improvement could lead to an upgrade in the state's credit rating in the future.

Oklahoma State Debt Profile

The State of Oklahoma issues two kinds of tax-supported debt. General obligation (GO) bonds and Appropriation-Backed Lease-Revenue bonds.

General Obligation Bonds

The state constitution requires voter approval of all state GO bonds and further requires that they are backed by a specific tax in addition to the pledge of the full faith and credit and taxing power of the State.

As of December 31, 2018, Oklahoma has no remaining governmental purpose GO bonds outstanding.

Lease-Revenue Bonds

The second type of tax-supported debt issued by the state is lease-revenue bonds. These are primarily issued through the Oklahoma Capitol Improvement Authority (OCIA). Lease-revenue bonds are secured by lease contracts between state agencies occupying or utilizing the facilities and OCIA.

Authorizations for OCIA to issue debt are usually accompanied by language indicating the legislature's intent to appropriate sufficient funds to make lease payments.

As an infrequent issuer of GO bonds, the state relies on lease revenue bonds through the OCIA to finance capital projects. Currently there are twenty OCIA series of obligations with an outstanding balance on December 31, 2018 of \$1,184,100,000.

Master Lease Program

A third significant source of secondarily tax-supported debt is issued through the Oklahoma Development

Finance Authority (ODFA) Higher Education Lease Programs. These obligations are primarily secured from revenue sources within higher education institutions but are ultimately backed by appropriations to the State Regents for Higher Education.

The Master Lease Program allows ODFA to issue obligations secured by a master lease with the Oklahoma Regents for Higher Education and sub-leases with participating state institutions of higher education. There are two separate programs: one for financing personal property and one for real property.

The bulk of outstanding debt under the Master Lease Program is through the real property program with a total of \$787,330,000 outstanding as of December 31, 2018.

The state's statutory debt service limit excludes the master lease program because they are generally supported first by non-appropriated revenues and would only impact the general revenue fund in the event that pledged revenue sources were insufficient.

Lease-Purchase Obligations

A smaller component of tax-supported debt is state agency lease-purchase financings. These lease-purchase arrangements are usually for equipment and small office buildings utilized by health and human services related agencies and the state ensures these are conducted in a financially secure manner by limiting the types of transactions that are eligible and requiring several layers of oversight and approval. As of December 31, 2018 the total outstanding balance for lease-purchase obligations is \$9,179,926.



Constitutional Authorization to Issue GO Debt

Oklahoma Industrial Finance Authority

The Oklahoma Industrial Finance Authority (OIFA) is constitutionally authorized to issue GO bonds for the purpose of making industrial development loans. Its authority is limited to \$90 million and its current outstanding GO bond balance is \$30 million as of December 31, 2018.

Security for GO bonds issued under this authorization is initially provided by loan repayments and OIFA reserves. The state provides the ultimate guarantee.

Oklahoma Development Finance Authority

ODFA is constitutionally authorized to issue \$100 million in GO bonds to provide support for the Credit Enhancement Reserve Fund (CERF) program.

The CERF program provides a guarantee of debt service

payments on approved economic development loans. The state guarantee lowers the cost of borrowing for state entities and has been a successful tool to spur economic development. ODFA has never issued GO bonds under its authority.

However, the debt carrying a CERF guarantee backed by its authority and thus CERF issues represent a contingent liability to the state. As of December 31, 2018, the total outstanding CERF commitment was \$31,786,000.

Oklahoma Water Resources Board

The Oklahoma Water Resources Board (OWRB) is constitutionally authorized to issue up to \$300 million in GO bonds to provide credit enhancement for OWRB loan programs. OWRB has never issued bonds pursuant to their authority nor do they anticipate doing so in the future.

Summary of Outstanding Tax-Backed Obligations
As of December 31, 2018

<u>Type of Obligation</u>	<u>Principal Outstanding</u>
General Obligation - OIFA Loan Program	\$ 30,000,000
Oklahoma Capitol Improvement Authority	1,182,573,000
Oklahoma Development Finance Authority	
- Public Sales	112,759,000
- Master Equipment Lease Program	85,504,000
- Master Real Property Lease Program	787,330,000
- Subtotal ODFA	\$ 985,593,000
Direct Agency, Campus and Lease Obligations	10,050,000
Gross Tax-Backed Debt	\$ 2,208,216,000
Less Self-Supporting Bonds	(84,582,000)
Net Tax-Supported Debt	\$ 2,123,634,000



Revenue Bonds

Revenue bonds finance income-producing projects and are secured by a specified revenue source.

These bonds do not represent a debt to the state and are not supported by the full faith, credit or taxing power of the state.

Historically, revenue bond programs have been the largest borrowers in the state and since they derive their funding from fees or other sources of revenue they have a greater capacity to service debt than other state agencies.

The Oklahoma Turnpike Authority (OTA) is the largest revenue bond issuer in the state with \$1.9 billion in bonds outstanding, the majority of which were issued to fund the Driving Forward program. OTA bonds are secured by toll road revenues.

As of December 31, 2018 the principal balance outstanding from the state's largest revenue bond issuers is \$6,321,113,000.

Authorized but Unissued Debt

In addition to its outstanding obligations, Oklahoma has authorized the issuance of obligations that have not been issued. Some authorizations such as the OWRB's constitutional authorization to issue GO bonds are utilized as a credit enhancement for OWRB revenue bonds and are not anticipated to ever be issued.

However, most outstanding authorizations grant OCIA the authority to issue debt for specific state agency projects. These authorizations should be considered when examining that state's overall debt position and debt capacity.

As of January 1, 2019 there are six unissued OCIA authorizations totaling \$204,671,000 that are projected to be issued over the next decade. Issuance of authorized obligations impacts the state's overall bonded indebtedness and reduces capacity to issue new debt under the 5% statutory debt service limit. Therefore these should be included in any examination or projection of state debt.

State of Oklahoma's Largest Revenue Bond Issuers Outstanding Debt
As of December 31, 2018

<u>Issuer</u>	<u>Outstanding Debt</u>
Oklahoma Turnpike Authority	\$1,867,585,000
Grand River Dam Authority	967,570,000
Oklahoma Water Resources Board	915,550,000
University of Oklahoma Revenue Bonds*	937,900,000
Oklahoma Municipal Power Authority	622,345,000
Oklahoma State University Revenue Bonds	399,485,000
Oklahoma Student Loan Authority	210,863,000
Oklahoma Housing Finance Agency	267,185,000
University of Oklahoma HSC	132,630,000
Total:	\$6,321,113,000

*Outstanding as of June 30, 2018

Debt shown in this table is secured solely by the specific pledged revenues of the respective programs. The State of Oklahoma has no legal obligation to pay debt service on these bonds.



Debt Service and Debt Service Projections

Debt Service Capacity Limit

Oklahoma has imposed a statutory limit on total annual debt service payments from the General Revenue Fund. As stipulated in 62 O.S. Section 34.200, total annual debt service subject to the limit may not exceed 5% of the five year average of the of the general revenue fund.

In the event that the 5% calculation is exceeded, the state is prohibited from incurring additional tax-supported debt until additional capacity is available. The calculation excludes debt issued under the master lease program, as these are primarily secured through fees or other non-appropriated revenue sources.

Linking debt service capacity to general revenue growth is intended to ensure debt service payments do not become a strain on the state budget and impact the ability to fund core government services. By averaging the General Revenue Fund over five years, changes to debt capacity are smoothed reducing volatility that might otherwise occur when state revenues deviate from projections.

For fiscal year 2019 the maximum debt service subject to statutory limit is \$274,585,000 and current debt service is \$233,662,000. The statutory excess debt service capacity, \$40,923,000, is well below the limit providing lawmakers with adequate flexibility to utilize debt issuance if needed.

State of Oklahoma Annual Debt Service Limit - FY'19		
<u>Fiscal Year</u>	<u>General Revenue</u>	<u>Five-Year Average</u>
2014	5,628,158,000	
2015	5,726,699,000	
2016	5,204,842,000	
2017	5,044,394,000	
2018	5,854,400,000	5,491,698,600
Annual Debt Service Limit ¹		274,585,000
Current Net Tax-Supported Debt Service ²		233,662,000
Additional Capacity		40,923,000

¹ 62 O.S. Section 34.200 limits Debt Service to 5% of 5-year average of certified general revenue
² Fiscal Year 2019 Debt Service subject to the limitation



Projection Assumptions

The following assumptions were applied to the issuance of authorized but unissued debt and to estimate additional debt capacity for new issues of tax-supported debt over the next five years.

1. All debt will be issued as 20-year obligations
2. Interest rate is assumed to be 5%
3. There will be no refunding of outstanding debt
4. Authorized but unissued debt will be issued from FY-19-FY-23 in equal allotments
5. The General Revenue Fund is assumed to grow at a rate of 2% through FY-23
6. Net tax-supported debt service is debt service subject to the statutory 5% limit calculation

Projection of Available Debt Capacity FY'19-FY'23

Based upon the forgoing assumptions the estimated available par value debt capacity for FY-19 is \$509,993,000 and additional debt service capacity is \$40,923,000.

Debt service is projected to decline significantly after FY-19 with the retirement of the state's only general obligation bonds and multiple OCIA bond issues.

Correspondingly, debt service capacity will dramatically

increase in FY-20 providing the state with significant debt service capacity.

Oklahoma is projected to add significant debt capacity over the next five years with available capacity exceeding \$1.7 billion in FY-23.

While an increase in debt capacity is projected to be available to state lawmakers in the coming years, the issuance of debt should only occur after evaluation of alternatives and comprehensive planning. Projection of the statutory debt service limit is not a recommendation of debt issuance.

Projection of Debt Service Capacity

Debt service capacity projections provide a useful tool to estimate the state's ability to issue debt to meet capital needs in the future. Accounting for authorized but unissued debt illustrates the impact that the issuance of authorized but unissued debt will have on debt capacity and provides policymakers with information to evaluate future debt issuance.

Debt service is projected to remain well below the 5% statutory debt limit through FY-23 providing significant additional debt capacity.

Beginning in FY-20 total net tax-supported debt service is projected to decline significantly and remain near 50% of capacity through FY-23.

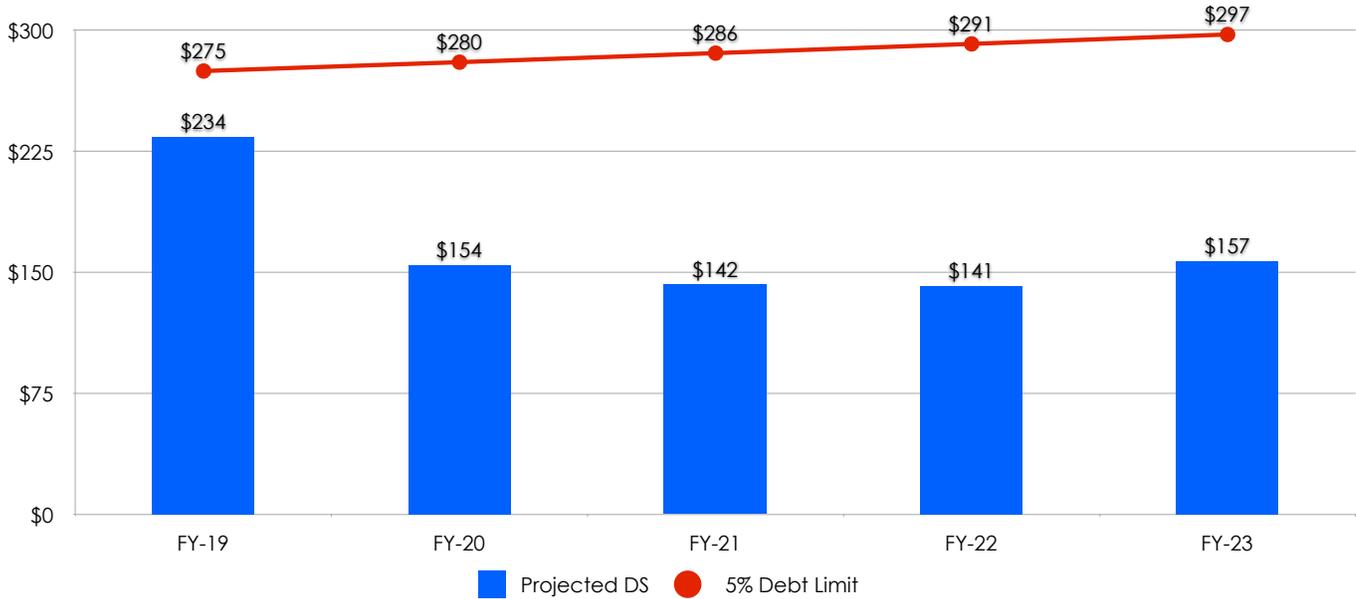
(Projected) Debt Service and Debt Capacity FY'19-FY'23

Fiscal Year	5 Year Average General Revenue	Statutory 5% Debt Limit	Net-Tax Supported Debt Service*	Excess Debt Service Capacity	Excess Debt Capacity
2019	5,491,696,000	274,584,800	233,661,638	40,923,162	509,993,000
2020	5,601,529,920	280,076,496	154,269,582	125,806,914	1,567,832,000
2021	5,713,560,518	285,678,026	142,485,806	143,192,220	1,784,492,000
2022	5,827,831,729	291,391,586	141,393,685	149,997,902	1,869,305,000
2023	5,944,388,363	297,219,418	156,988,900	140,230,518	1,747,582,000

*Assumes additional debt issued for 20 years at 5% interest rate



Net Tax-Supported Debt Service vs. 5% Statutory Debt Limit (Projected)



Projected Net-Tax Supported Outstanding Principal

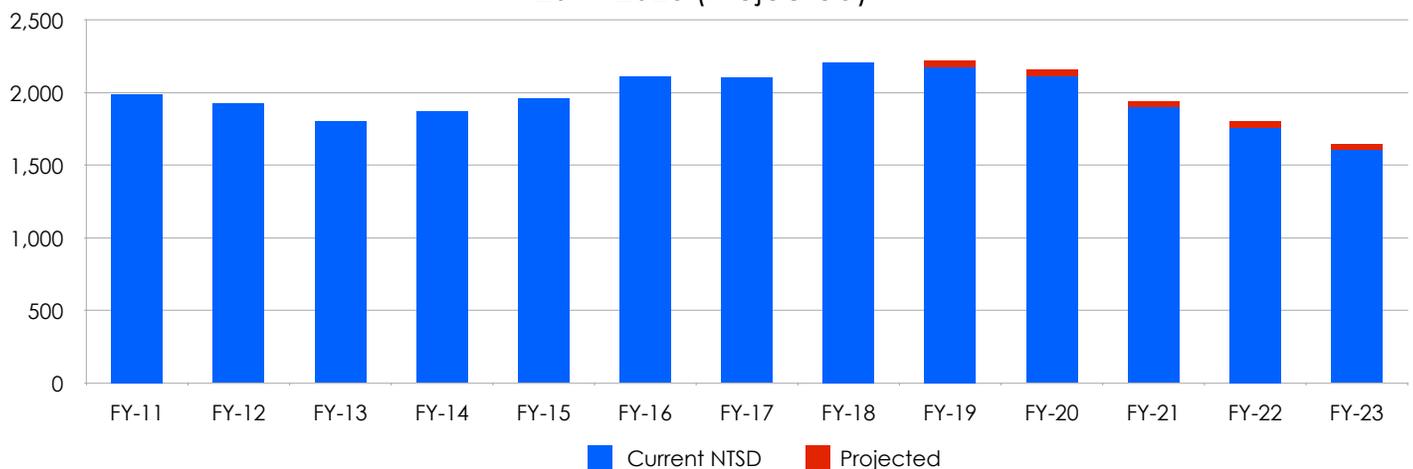
As illustrated in the chart below, outstanding net tax-supported debt is projected to remain level in FY-19 and then steadily decline through FY-23. The state has

historically structured debt to be repaid quickly and based on projections outstanding debt in FY-23 will be at its lowest level in over a decade.

Sensitivity Analysis

Sensitivity analysis measures the degree to which

State of Oklahoma Net Tax-Supported Debt Outstanding 2011-2023 (Projected)





Fiscal Year	GR @ 90% of Projections	GR @ 95% of Projections	GR @ 100% of Projections
2019	-	-	-
2020	\$708,802,000	\$883,321,000	1,057,839,000
2021	209,679,000	213,169,000	216,660,000
2022	77,693,000	81,254,000	84,813,000
2023	-	-	-
Total Additional Debt Capacity	\$996,174,000	\$1,177,744,000	\$1,359,312,000

fluctuations in state revenues and interest rates impact the capacity of the state issue debt for capital needs.

If actual revenue differs from projections the level of additional debt capacity will be directly impacted, assuming all other factors remain constant. The effect on debt capacity based upon different revenue assumptions is summarized in the table above.

If general revenue is 90% of projections over the next five years the state will have \$996,174,000 debt capacity. When compared to an additional \$1,359,312 under 100% general revenue projections the 10%

deviation in general revenue from projections would reduce the state's additional debt capacity by \$363,138,000 or 27% over the next five years.

Statutory debt capacity will increase substantially over the next several years even if general revenue collections are below projections.

Debt capacity analysis assumes a 5% interest rate for the issuance of all authorized and unissued debt. The table below illustrates the effect of interest rates on debt capacity assuming general revenue is at 100% of projections.

Fiscal Year	Interest Rates @ 4%	Interest Rates @ 5%	Interest Rates @ 6%
2019	-	-	-
2020	1,153,598,000	1,057,839,000	973,610,000
2021	236,272,000	216,660,000	199,408,000
2022	92,491,000	84,813,000	78,061,000
2023	-	-	-
Total Additional Debt Capacity	\$1,482,361,000	\$1,359,312,000	\$1,251,079,000



Debt Metric Comparison

A comparison to peer group medians provides context to Oklahoma's debt position. The selected peer group is composed of states contiguous with Oklahoma as well as states that are similar in population.

A few states rated "triple A" by all three major credit rating agencies were included as a benchmark.

Oklahoma's debt burden is very low as illustrated by the comparison.

By any metric, Oklahoma ranks lower than the national median in net-tax supported debt and could modestly increase its debt burden to invest in capital projects without materially impacting its relative debt position to other states.

Oklahoma Net Tax-Supported Debt Comparative Ratios 2018

State	Ratings (S&P/Moody's/ Fitch)	Debt Per Capita	Net Tax- Supported Debt as % of Personal Income	Debt as % of State GDP	Net Tax- Supported Debt (\$ thousands)	Debt Service Ratio (FY'17)
Arkansas	AA/Aa1/NR	\$639	1.6%	1.58%	\$1,920,111	3.5%
Colorado	AA/Aa1/NR	\$353	0.9%	0.84%	\$1,954,579	2.5%
Connecticut	AA-/A1/AA-	\$6,544	9.5%	9.03%	\$23,497,445	13.8%
Georgia	AAA/Aaa/AAA	\$986	2.4%	1.94%	\$10,287,595	6.4%
Indiana	AAA/Aaa/AAA	\$310	0.7%	0.57%	\$1,969,124	1.2%
Kansas	AA-/Aa2/NR	\$1,554	3.3%	3.01%	\$4,526,773	4.4%
Louisiana	AA-/Aa3/NR	\$1,627	3.8%	3.16%	\$7,621,350	4.9%
Missouri	AAA/Aaa/AAA	\$532	1.2%	1.09%	\$3,250,390	3.5%
Mississippi	AA/Aa2/AA	\$1,854	5.2%	5.10%	\$5,532,900	6.9%
New Mexico	AA+/Aa3/NR	\$1,139	3.0%	2.54%	\$2,378,230	5.0%
Oklahoma	AA/Aa2/AA	\$303	0.7%	0.66%	\$1,192,740	1.9%
Oregon	AA+/Aa1/AA+	\$2,017	4.5%	3.65%	\$8,354,427	5.2%
Texas	AAA/Aaa/AAA	\$410	0.9%	0.73%	\$10,681,942	2.7%
Utah	AAA/Aaa/AAA	\$772	1.9%	1.52%	\$2,513,135	5.3%
National Median		\$987	2.3%	2.05%	\$4,450,975	4.2%

*The information contained in the comparison is from Moody's Investors Service 2018 state debt medians report.



Pension Liability Discussion

Pension liabilities represent long-term obligations and the funding required to maintain them competes with other priorities for limited resources. The unfunded liabilities of the pension systems far exceed the bonded indebtedness of the state. As a result, they must be included in any discussion of the state’s debt profile.

For decades, the fiscal soundness of the state’s pension systems deteriorated. By 2010, the aggregate funded status had declined to 56%, which ranked Oklahoma near the bottom nationally in pension financial solvency.

Policymakers responded by enacting meaningful reforms. Since their approval, the funded ratio has improved significantly. The consolidated funded ratio of the systems is currently 81%.

Most of the state’s pension systems now have a funded status exceeding 80%. However, the state’s largest plan, the Teachers Retirement System, as well as the

Firefighters Pension and Retirement System remain below this benchmark at 73% and 68%, respectively.

To compare pension funding across states utilizing the most recent national data available, fiscal year 2016, Pew Charitable Trusts ranked Oklahoma’s funded status at 24th. According to the comparison, Oklahoma’s pension systems had an aggregate funded status well above the national average of 66%.

In spite of recent improvements, it is wise to consider the funded status represents a snapshot in time that can be adversely impacted by market downturns, unfunded mandates, and more stringent actuarial assumptions.

As state policymakers evaluate the debt position of the state and when to utilize debt to finance capital needs, pension obligations and their funding requirement should be part of a comprehensive debt-affordability analysis.

Oklahoma Public Pensions Funded Status by Fiscal Year

	2010	2011	2012	2013	2014	2015	2016	2017	2018
OPERS	66.0%	80.7%	80.2%	81.6%	88.6%	93.6%	93.2%	94.5%	97.7%
Judges	81.3%	96.3%	95.7%	97.3%	105.9%	110.9%	110.8%	112.6%	114.8%
Firefighters	53.4%	63.7%	60.9%	58.8%	62.1%	65.1%	65.9%	65.4%	68.1%
Police	74.9%	93.0%	90.2%	89.3%	94.6%	98.2%	98.7%	101.8%	102.8%
Teachers	47.9%	56.7%	54.8%	57.2%	62.2%	66.6%	65.7%	70.4%	72.9%
Law	73.6%	75.9%	78.4%	81.4%	88.6%	87.8%	87.4%	88.5%	90.0%
All systems	56.0%	66.6%	64.9%	66.5%	72.4%	75.9%	75.3%	78.6%	81.2%



State Credit Review

Credit ratings are the assessments made by ratings agencies of a governmental entity’s ability and likelihood to repay debt in a timely manner.

Credit ratings are an important factor in the public credit markets and can influence the state’s cost of borrowing.

Oklahoma General Obligation debt rating was downgraded from AA+ to AA by Standard and Poor’s and Fitch Ratings in 2017. Credit analysts had long warned that a misalignment between recurring revenues and expenditures creating an ongoing budget gap is a credit risk that could lead to a downgrade. The decreased levels of reserve funds and weakness in the energy sector were also contributors to the rating downgrade.

However, 2018 was a positive year. Recent deposits in the Constitutional Reserve Fund and the adoption of a structurally balanced budget for FY-19 have been received positively by rating agencies.

Further improvements in the state’s reserve position and a sustained practice of adopting structurally balanced budgets could lead to a rating increase in the future.

Important Debt Management Structures and Practices

Oklahoma has several positive debt management practices and structures in place that credit analysts consistently cite as credit strengths, including a low debt burden, below average pension liabilities, and an effective Constitutional Reserve Fund.

Oklahoma Tax-Supported Issuer Bond Ratings As of December 31, 2018

<u>Tax-Supported Bonds</u>	<u>Fitch</u>	<u>Moody's</u>	<u>S&P</u>
General Obligation Bonds	AA	Aa2	AA
OCIA Lease Revenue Bonds	AA-	Aa3	AA-
ODFA Master Lease Program	AA-	Aa3	AA-



All three major credit rating agencies have assigned a stable outlook to the state’s credit rating as of the date of this report.

Debt Retirement

One practice that has allowed Oklahoma to maintain a low debt burden is a rapid amortization rate. As illustrated in the chart, 63% of currently outstanding debt will be repaid within 10 years, and 92% within 20 years.

The rate of principal redemption provides considerable flexibility in debt structuring and marketing and is a credit positive practice.

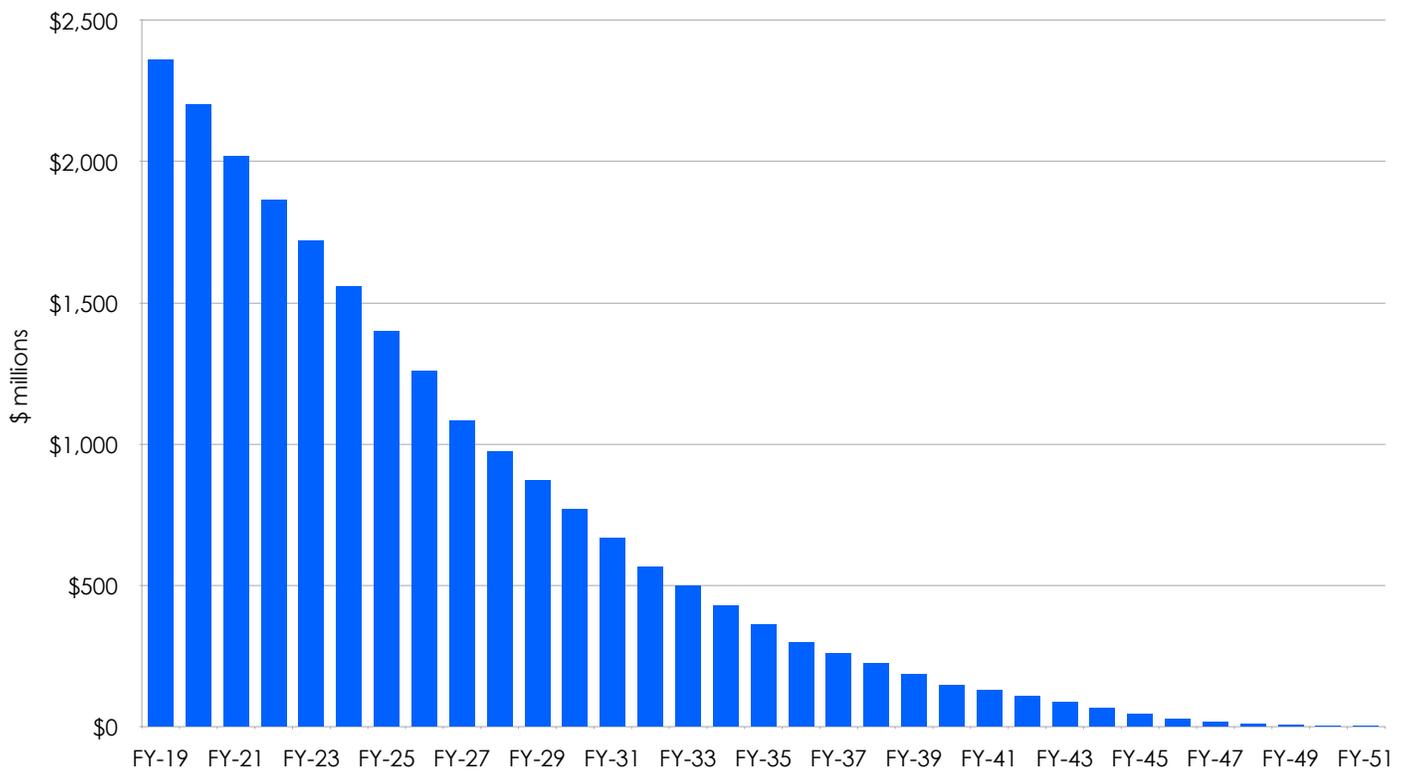
Constitutional Reserve Fund

Oklahoma’s constitutional “rainy day” fund is an important stabilization tool and provides additional support to the state budget during periods of weak financial performance.

The rainy day fund consists of deposits of all general revenue funds collected in excess of the 100% certified estimate and can only be accessed when specific criteria are met.

As illustrated by the chart on the following page, Oklahoma’s rainy day fund has been a positive structural feature allowing the state to build significant reserves in positive economic conditions and use those

State of Oklahoma Tax-Backed Debt Principal Outstanding (as of December 31, 2018)





reserves to manage budgetary shortfalls during periods of weakness.

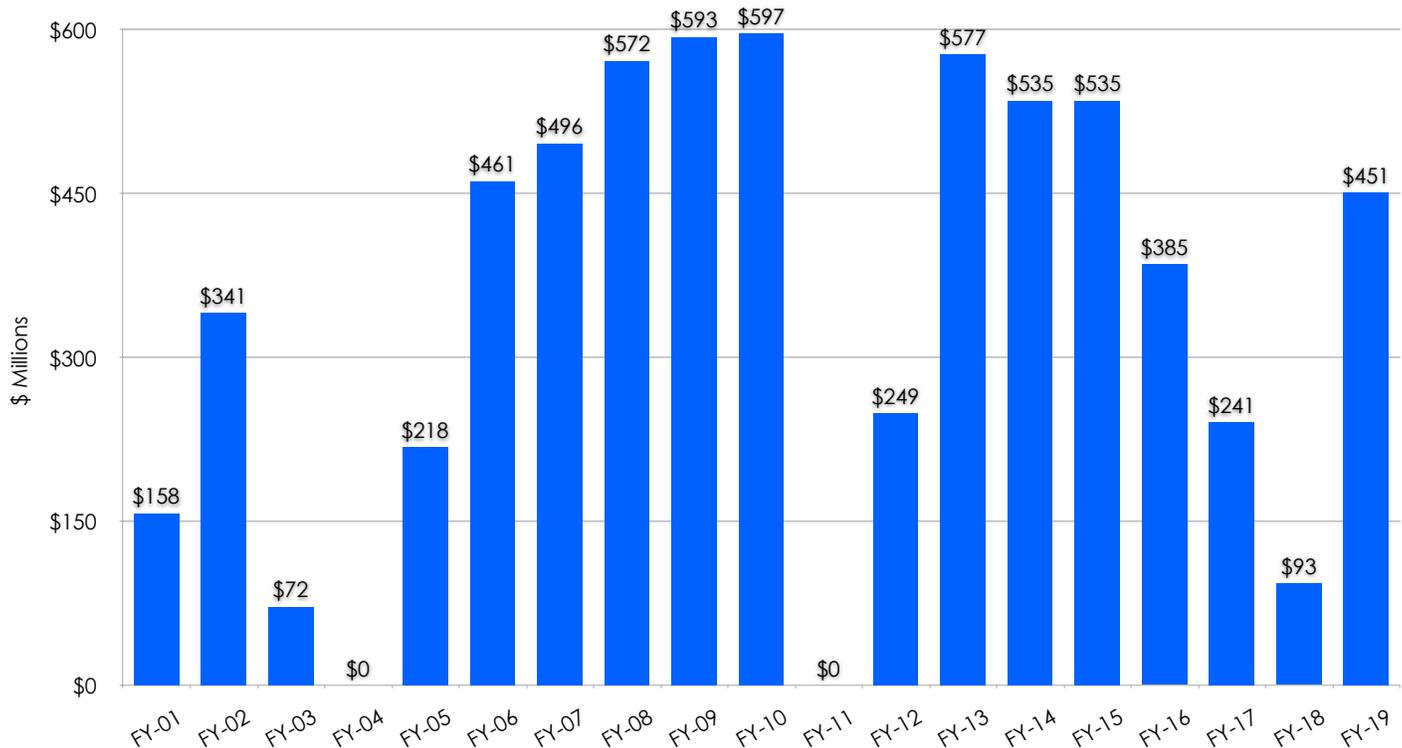
A \$358 million deposit at the conclusion of FY'18 was the largest deposit in the history of the fund and significantly improved the state's reserve position.

Early projections for FY'19 indicate an additional deposit may materialize at the end of FY'19 which would represent the first time consecutive deposits have been made since FY'11-FY'12.

Conclusion

The state's credit has stabilized with improved budget practices and strong economic performance. The state has maintained a low debt burden, made significant improvements to pension systems over the past decade, and when combined with structural features in the budgeting process the state is in a stable credit position. The volatility of the energy industry continues to be a credit risk and while substantial steps to manage cash flows to weather downturns have been taken it remains a challenge for the state.

Available Constitutional Reserve Fund Balance FY-01 – FY-19



(Available balance at beginning of FY.)