



# Teachers' Retirement System of Oklahoma

Financial Statements as of and for the  
Year Ended June 30, 2018 (with Comparative Totals  
as of June 30, 2017)

Required Supplementary Information, and  
Related Independent Auditor's Report

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## **Independent Auditor's Report**

To the Board of Trustees  
Teachers' Retirement System of Oklahoma  
Oklahoma City, Oklahoma

### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Teachers' Retirement System of Oklahoma (the System), a component unit of the state of Oklahoma, which comprise the statement of fiduciary net position as of June 30, 2018, and the related statement of changes in fiduciary net position, for the year then ended, and the related notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

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## **Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the statement of fiduciary net position of the Teachers' Retirement System of Oklahoma, as of June 30, 2018, and the respective changes in fiduciary net position thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### *Prior-Year Comparative Information*

We have previously audited the System's June 30, 2017 financial statements, and we expressed an unmodified opinion on the statement of fiduciary net position and the statement of changes in fiduciary net position in our report dated October 20, 2017. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2017, is consistent, in all material respects, with the audited financial statements from which it has been derived.

## **Alternative Investments**

As discussed in Notes 2 and 3 to the financial statements, total system investments include investments valued at \$2,585,808,203 (13.7% of total assets), as of June 30, 2018, whose fair values have been estimated by management in the absence of readily determinable values. Management's estimates are based on information provided by the fund managers or the general partners. Our opinion is not modified with respect to this matter.

## **Other Matters**

### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the required supplementary information on pages 4 to 9 and 32 to 41 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### *Other Information*

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements as a whole. The other supplementary information is presented for purposes of additional analysis and is not a required part of the financial statements.

The additional supplementary information accompanying financial information listed as other supplementary information on pages 42 to 44 are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the accompanying financial information listed as supplemental information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

**Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated October 19, 2018, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

A handwritten signature in black ink that reads "Eide Bailly LLP". The signature is written in a cursive, flowing style.

October 19, 2018  
Oklahoma City, Oklahoma

**Management's Discussion and Analysis  
Teachers' Retirement System of Oklahoma  
June 30, 2018 and 2017**

Management is pleased to present this discussion and analysis of the financial activities of the Teachers' Retirement System of Oklahoma ("TRS" or the "System") for the years ended June 30, 2018 and 2017. The System is responsible for administering retirement benefits for the following plans: an Internal Revenue (IRC) section 401(a) defined benefit plan, (401(a) Plan), a 403(b) defined contribution Plan, and an IRC Section 401(h) medical supplement defined benefit plan, (OPEB Plan), (collectively "the Plans"). The 401(a) Plan is available for all educational employees of the state of Oklahoma. The 401(h) Plan is available for all eligible members. Finally, the 403(b) Plan is a tax-advantaged retirement savings plan also available to all educational employees of the State.

The System was established on July 1, 1943, for the purpose of providing these retirement benefits and other specific benefits for qualified persons employed by public educational institutions. The main purpose of the System is to provide a primary source of lifetime retirement benefits relative to years of service at the time of retirement. It is the objective of the System to provide these benefits in a prudent, responsible, and cost-effective manner. Plan net assets are used to pay current and future benefits to retired clients.

This discussion and analysis is intended to serve as an introduction to the System's basic financial statements. TRS's basic financial statements are comprised of three components: 1) statement of fiduciary net position, 2) statement of changes in fiduciary net position, and 3) notes to the financial statements. This report also contains required supplementary information in addition to the basic financial statements themselves.

The Statement of Fiduciary Net Position presents information on all of the System's assets and liabilities, with the difference between these reported as net position restricted for pensions and OPEB. Over time, increases or decreases in plan net position may serve as a useful indicator of whether the financial position of the System is improving or deteriorating. Information relating to the System's ability to meet the cost of future benefit payments is not shown on the statement of fiduciary net position but is located in both the notes to the financial statements and the required supplementary information.

The Statement of Changes in Fiduciary Net Position presents information showing how the System's net position changed during the most recent fiscal year. Changes in net position are recognized using the accrual basis of accounting, in which expenses are recorded when the liability is incurred and revenues are recorded in the accounting period in which they are earned and become measurable.

The Notes to the Financial Statements are critical to the reader's understanding of the financial status of the System. These notes include a description of the System, details on the cash and investments of the System, as well as contribution and benefit information.

The Required Supplementary Information (RSI) presents various required schedules for pensions and OPEB. Other supplementary information includes the Schedule of Administrative Expenses, the Schedule of Investment Expenses, and the Schedule of Professional/Consultant Fees. These schedules provide additional analysis of the information provided in the financial statements.

**Management's Discussion and Analysis  
Teachers' Retirement System of Oklahoma  
June 30, 2018 and 2017**

The following are condensed schedules of financial information about the Plans in the System for the years ended June 30, 2018, 2017 and 2016 and the results of the years then ended:

**Condensed Financial Information**

Fiduciary net position as of June 30:

	OPEB Plan	401(a) Plan	403(b) Plan	System Total		
				2018	2017	2016 *
<b>Assets</b>						
Cash	\$ -	\$ 14,647,016	\$ -	\$ 14,647,016	\$ 6,982,258	\$ 19,857,301
Receivables	8,010,420	328,630,022	-	336,640,442	234,896,886	389,393,726
Long- and short-term investments, at fair value	477,260,605	16,141,192,525	166,573,895	16,785,027,025	15,623,835,941	14,058,889,353
Capital assets, net	130,994	4,369,129	-	4,500,123	4,293,304	4,072,745
Total investments and other assets	485,402,019	16,488,838,692	166,573,895	17,140,814,606	15,870,008,389	14,472,213,125
Securities lending institutional daily assets fund	50,357,509	1,679,606,034	-	1,729,963,543	1,699,984,799	1,624,015,378
Total assets	535,759,528	18,168,444,726	166,573,895	18,870,778,149	17,569,993,188	16,096,228,503
<b>Liabilities</b>						
Investment settlements and other liabilities	1,345,858	343,765,899	-	345,111,757	232,211,101	478,182,808
Payable under securities lending agreement	50,357,509	1,679,606,034	-	1,729,963,543	1,699,984,799	1,624,015,378
Total liabilities	51,703,367	2,023,371,933	-	2,075,075,300	1,932,195,900	2,102,198,186
<b>Net Position</b>						
Net position restricted for pensions and OPEB	\$ 484,056,161	\$ 16,145,072,793	\$ 166,573,895	\$ 16,795,702,849	\$ 15,637,797,288	\$ 13,994,030,317

\* 2016 column has not been restated for the effect of the adoption of GASB Statement No. 74

**Management's Discussion and Analysis  
Teachers' Retirement System of Oklahoma  
June 30, 2018 and 2017**

**Changes in fiduciary net position for the year ended June 30:**

	OPEB Plan	401(a) Plan	403(b) Plan	System Total		
				2018	2017	2016 *
<b>Additions:</b>						
Member contributions	\$ -	\$ 312,866,576	\$ -	\$ 312,866,576	\$ 292,949,337	\$ 294,459,091
Employer contributions	2,912,563	413,068,467	-	415,981,030	403,256,970	409,753,221
Matching contributions	-	26,437,350	-	26,437,350	23,027,846	25,787,244
Dedicated tax revenue	-	318,172,751	-	318,172,751	278,924,055	289,884,752
Member tax shelter contributions	-	-	1,723,454	1,723,454	2,548,206	2,222,812
Net investment income gain (loss)	44,529,318	1,448,090,255	7,941,562	1,500,561,135	2,011,242,293	(362,477,638)
Security lending net income	231,107	7,515,593	-	7,746,700	8,705,649	7,870,757
Total additions	47,672,988	2,526,150,992	9,665,016	2,583,488,996	3,020,654,356	667,500,239
<b>Deductions:</b>						
Benefit payments	36,963,620	1,323,912,271	-	1,360,875,891	1,312,125,733	1,257,276,705
Refund of member contributions and other payments	-	42,940,983	17,555,113	60,496,096	60,707,115	55,841,270
Administrative expenses	11,427	4,200,021	-	4,211,448	4,054,537	4,458,338
Total deductions	36,975,047	1,371,053,275	17,555,113	1,425,583,435	1,376,887,385	1,317,576,313
Net increase (decrease) in net position	10,697,941	1,155,097,717	(7,890,097)	1,157,905,561	1,643,766,971	(650,076,074)
<b>Net Position Restricted for Pensions and OPEB</b>						
Beginning of year as restated	473,358,220	14,989,975,076	174,463,992	15,637,797,288	13,994,030,317	14,644,106,391
End of year	\$ 484,056,161	\$ 16,145,072,793	\$ 166,573,895	\$ 16,795,702,849	\$ 15,637,797,288	\$ 13,994,030,317

\* 2016 column has not been restated for the effect  
of the adoption of GASB Statement No. 74



**Management's Discussion and Analysis  
Teachers' Retirement System of Oklahoma  
June 30, 2018 and 2017**

**Financial Highlights and Analysis**

The pension system's net position increased 7.7 percent and the OPEB net position increased 2.3 percent. The increases were due to positive investment returns. The domestic equity portfolio earned a net return of 15.49 percent. The international equity portfolio was not as strong due to weaker foreign currency, but still earned a solid return of 10.64 percent. The fixed income portfolio earned a net return of 0.96 percent as it struggled to overcome the headwind of higher interest rates. The System's core and non-core real estate portfolios earned net returns of 6.98 percent and 5.14 percent, respectively. Master Limited Partnerships in the energy sector were the System's weakest performers returning a negative net return of (2.03) percent. The System's private equity and private credit portfolio earned net returns of 15.43 percent and 9.86 percent respectively. In total the portfolio earned a net return of 9.69 percent exceeding both the portfolio's policy benchmark return of 8.13 percent and the Fund's actuarial assumed return of 7.5 percent.

	OPEB Plan 2018	401(a) Plan 2018	403(b) Plan 2018	System Totals		
				2018	2017	2016
Plan net position	\$ 484,056,161	\$ 16,145,072,793	\$ 166,573,895	\$ 16,795,702,849	\$ 15,697,797,288	\$ 13,994,030,317
Yearly % change	2.3%	7.7%	-4.5%	7.4%	11.7%	-4.4%

The total investment return for the five year period of 9.5 percent is above the 7.5 percent actuarial assumed rate of investment returns.

<u>Total Returns</u>	1 Year	3 Year	5 Year	10 Year
2018	10.0%	7.5%	<b>9.5%</b>	8.6%
2017	15.3%	5.4%	<b>11.0%</b>	6.8%
2016	-2.0%	7.5%	<b>8.3%</b>	7.1%

Benefit payments increased 3.7 percent in FY2018 compared to FY2017. The increase is a result of a 2.3 percent increase in the number of 401(a) Plan benefit recipients and a 1.4 percent increase in the average monthly benefit. Benefit payments to retired members in FY2018 exceeded contributions from members and employers by \$346 million, or a ratio of 1.32 to 1. A ratio of more than one signifies that the System is receiving fewer contributions than it pays out in benefits. In a mature pension system like TRS a significant percentage of the benefits is paid out of investment earnings that are not reflected in this ratio. The following table reflects the ongoing employer and member contributions.

	OPEB Plan 2018	401(a) Plan 2018	403(b) Plan 2018	System Totals		
				2018	2017	2016
Member contributions	\$ -	\$ 312,866,576	\$ 1,723,454	\$ 314,590,030	\$ 292,949,337	\$ 294,459,091
Employer contributions	2,912,563	413,068,467	-	415,981,030	403,256,970	409,753,221
State matching funds	-	26,437,350	-	26,437,350	23,027,846	25,787,244
Dedicated tax revenue	-	318,172,751	-	318,172,751	278,924,055	289,884,752
<b>Total contributions</b>	<b>\$ 2,912,563</b>	<b>\$ 1,070,545,144</b>	<b>\$ 1,723,454</b>	<b>\$ 1,075,181,161</b>	<b>\$ 998,158,208</b>	<b>\$ 1,019,884,308</b>
Benefit payments	\$ 36,963,620	\$ 1,323,912,271	\$ -	\$ 1,360,875,891	\$ 1,312,125,733	\$ 1,257,276,705
Refund of contributions	-	42,940,983	17,555,113	60,496,096	60,707,115	55,841,270
<b>Total payments</b>	<b>\$ 36,963,620</b>	<b>\$ 1,366,853,254</b>	<b>\$ 17,555,113</b>	<b>\$ 1,421,371,987</b>	<b>\$ 1,372,832,848</b>	<b>\$ 1,313,117,975</b>
Ratio of benefit payments to contributions	12.69:1	1.28:1	10.19:1	1.32:1	1.38:1	1.29:1

**Management's Discussion and Analysis  
Teachers' Retirement System of Oklahoma  
June 30, 2018 and 2017**

**Financial Highlights and Analysis (Continued)**

The number of pension benefit recipients increased 2.25 percent in FY2018 as compared to 2.8 percent in FY2017 and 3.0 percent in FY2016. This is comparable to fiscal year FY2017 and FY2016. There was a net increase of 1,405 and 1,711 members that retired for FY 2018 and FY2017, respectively. The number of OPEB benefit recipients increased 1.70 percent in FY2018. There was an increase of 965 members that retired and opted to receive the OPEB benefit.

	OPEB Plan 2018	401(a) Plan 2018	OPEB Plan 2017	401(a) Plan 2017	401(a) Plan 2016
Benefit recipients	57,866	63,796	56,901	62,391	60,680
Yearly % change	1.70%	2.25%	N/A	2.80%	3.00%
Net increase	965	1,405	N/A	1,711	1,751

The following table reflects the average monthly benefit for service retirements. While the table above reflects an increase in the number of retirees in the past year of 2.25 percent, the table below reflects the average benefit per retiree has only increased by 1.4 percent in FY2018 as compared to 1.9 percent and 1.4 percent in FY2017 and FY2016 respectively. The increase in benefit recipients was 0.85 percent higher in FY2018 as compared to 0.9 percent in FY2017 and 1.6 percent in FY2016 than the increase in average benefit payment below.

	2018	2017	2016
Average monthly benefit	\$ 1,705	\$ 1,681	\$ 1,650
Yearly % change	1.4%	1.9%	1.4%

The following table shows the ratio of active members to retired members of the System is 1.39 to 1 in FY2018, compared to 1.41 to 1 in FY2017, and 1.49 to 1 in FY2016. This change is caused by the longevity of the Plan's retiree population and an active population that has decreased due to a statewide teacher shortage. Fiscal Year 2018 had a slight increase in active members. Contributing members increased by 739 in FY2018 and decreased by 2,372 in FY2017 while benefit recipients increased by 1,405 in FY2018 and 1,711 in FY2017.

	401(a) Plan 2018	401(a) Plan 2017	2016
Members contributing	88,534	87,795	90,167
Yearly % change	0.8%	-2.6%	-0.2%
Benefit recipients	63,796	62,391	60,680
Yearly % change	2.25%	2.80%	3.00%
Ratio contributing/retired	1.39	1.41	1.49

The following table includes the ratio of the 401(a) plan fiduciary net position to the total 401(a) plan liability increased by 3.42 percent in FY2018. The OPEB plan fiduciary net position to the total OPEB plan liability increased by 5.01 percent in FY2018. The funded ratios of the 401(a) plan and the OPEB plan are 72.74 percent and 115.41 percent respectively for FY2018.

Under GASB Statement 67 the 401(a) plan ratio above represents the Total Pension Liability compared to the Plan's total net position at fair value. Prior to GASB Statement 67 this ratio was calculated using the actuarial value of the Plan's net position.

Under GASB Statement 74 the ratio above represents the Total OPEB Liability compared to the Plan's total net position at fair value.

**Management's Discussion and Analysis  
Teachers' Retirement System of Oklahoma  
June 30, 2018 and 2017**

**Financial Highlights and Analysis (Continued)**

	OPEB Plan 2018	401(a) Plan 2018	OPEB Plan 2017	401(a) Plan 2017	2016
Total pension liability	\$ -	\$ 22,196,455,995	\$ -	\$ 21,625,384,047	\$ 22,193,244,472
Total OPEB liability	419,430,692	-	428,764,003	-	-
Fiduciary net position -Pensions or similar	484,056,162	16,145,072,793	473,358,220	14,989,675,076	13,814,102,655
Employers' net pension liability	-	6,051,388,202	-	6,635,708,971	8,379,141,817
Employers' net OPEB asset	(64,625,470)	-	(44,594,217)	-	-
Ratio of Employers' fiduciary net position to applicable liabilities	115.41%	72.74%	110.40%	69.32%	62.24%

Based on the actuarial value of assets or the market value of assets at the end of FY 2018, and the projected continuation of contribution rates and other revenue, and all assumptions hold constant the Plan's actuary projects a "funding period" of 14 years.

In June of 2018 TRS purchased the Harvey Parkway building located on the northwest corner of NW 63<sup>rd</sup> and N. Harvey Place in Oklahoma City. The six-story office building was purchased as a real estate investment, but TRS also plans to relocate the TRS office to the new building when lease space becomes available.

**System Amendments**

The Legislature authorized a one-time payment for many System retirees in HB 1340. This bill provides a "stipend" to members who were retired as of October 1, 2013. The amount will be 2% of the gross annual benefit up to a maximum of \$1,000 to the System's retirees. It provides a minimum stipend of \$350 for retirees who had at least 20 years of service credit as of their retirement. The law takes effect October 1, 2018.

The System's actuary does not believe any of these amendments will have any significant financial impact to the System.

**Requests for Information**

This financial report is designed to provide a general overview of the System's finances for all those with an interest in the System. Questions concerning any of the information provided in this report or requests for additional information should be addressed to the Executive Director of the Teachers' Retirement System of Oklahoma, P.O. Box 53524, Oklahoma City, Oklahoma 73152 or (405) 521-2387.

# Teachers' Retirement System of Oklahoma

## Statement of Fiduciary Net Position June 30, 2018 (With Comparative Totals as of June 30, 2017)

	OPEB Plan	401(a) Plan	403(b) Plan	Totals June 30,	
				2018	2017
<b>Assets</b>					
Cash	\$ -	\$ 14,647,016	\$ -	\$ 14,647,016	\$ 6,982,258
Short-term investments	12,674,210	422,730,996	-	435,405,206	289,561,114
Accrued interest and dividends receivable	2,140,485	71,392,941	-	73,533,426	56,208,719
Member contributions receivable	-	23,522,906	-	23,522,906	16,406,022
Employer contributions receivable	1,153,770	38,482,441	-	39,636,211	25,896,475
Receivable from the State of Oklahoma	-	37,930,478	-	37,930,478	31,548,869
Due from brokers for securities sold	4,716,165	157,301,256	-	162,017,421	104,836,801
Security lending institutional daily assets fund	50,357,509	1,679,606,034	-	1,729,963,543	1,699,984,799
Long-term investments:					
Mutual funds	-	-	166,573,895	166,573,895	174,463,992
U.S. government securities	40,572,680	1,372,705,095	-	1,413,277,775	1,494,437,729
U.S. corporate bonds	43,627,307	1,476,053,001	-	1,519,680,308	1,473,195,765
International corporate bonds and government securities	13,863,823	469,058,012	-	482,921,835	418,987,601
Equity securities	292,288,650	9,889,071,123	-	10,181,359,773	9,516,827,643
Private equity	38,848,570	1,314,372,875	-	1,353,221,445	1,134,939,460
Real estate	35,385,365	1,197,201,423	-	1,232,586,788	1,121,422,637
<b>Total long-term investments</b>	<b>464,586,395</b>	<b>15,718,461,529</b>	<b>166,573,895</b>	<b>16,349,621,819</b>	<b>15,334,274,827</b>
Capital assets, net	130,994	4,369,129	-	4,500,123	4,293,304
<b>Total assets</b>	<b>\$ 535,759,528</b>	<b>\$ 18,168,444,726</b>	<b>\$ 166,573,895</b>	<b>\$ 18,870,778,149</b>	<b>\$ 17,569,993,188</b>
<b>Liabilities</b>					
Due to brokers for securities purchased	985,679	331,752,620	-	332,738,299	219,401,577
Payable under security lending agreement	50,357,509	1,679,606,034	-	1,729,963,543	1,699,984,799
Other liabilities	360,179	12,013,279	-	12,373,458	12,809,524
<b>Total liabilities</b>	<b>\$ 51,703,367</b>	<b>\$ 2,023,371,933</b>	<b>\$ -</b>	<b>\$ 2,075,075,300</b>	<b>\$ 1,932,195,900</b>
<b>Net Position</b>					
Net position restricted for pensions and OPEB	\$ 484,056,161	\$ 16,145,072,793	\$ 166,573,895	\$ 16,795,702,849	\$ 15,637,797,288

See Notes to Financial Statements.

# Teachers' Retirement System of Oklahoma

## Statement of Changes in Fiduciary Net Position

For the year ended June 30, 2018 (With Comparative Totals for the Year Ended June 30, 2017)

	OPEB Plan	401(a) Plan	403(b) Plan	Totals Year Ended June 30,	
				2018	2017
<b>Additions:</b>					
Members	\$ -	\$ 312,866,576	\$ -	\$ 312,866,576	\$ 292,949,337
Contributions to 403(b) plan	-	-	1,723,454	1,723,454	2,548,206
Employer statutory requirement from local school districts	2,912,563	413,068,467	-	415,981,030	403,256,970
State matching funds	-	26,437,350	-	26,437,350	23,027,846
Dedicated tax	-	318,172,751	-	318,172,751	278,924,055
<b>Total contributions</b>	<b>2,912,563</b>	<b>1,070,545,144</b>	<b>1,723,454</b>	<b>1,075,181,161</b>	<b>1,000,706,414</b>
<b>Investment income:</b>					
Interest and dividends	12,455,331	405,046,501	4,885,789	422,387,621	389,953,141
Net appreciation (depreciation) in fair value of investments	34,141,700	1,110,285,629	3,055,773	1,147,483,102	1,689,160,691
Investment expenses	(2,067,713)	(67,241,875)	-	(69,309,588)	(67,871,539)
<b>Gain from investing activities</b>	<b>44,529,318</b>	<b>1,448,090,255</b>	<b>7,941,562</b>	<b>1,500,561,135</b>	<b>2,011,242,293</b>
<b>Income from securities lending activities:</b>					
Securities lending income	256,785	8,350,660	-	8,607,445	9,672,943
Securities lending expenses:					
Management fees	(25,678)	(835,067)	-	(860,745)	(967,294)
<b>Net income from securities lending activities</b>	<b>231,107</b>	<b>7,515,593</b>	<b>-</b>	<b>7,746,700</b>	<b>8,705,649</b>
<b>Net investment gain</b>	<b>44,760,425</b>	<b>1,455,605,848</b>	<b>7,941,562</b>	<b>1,508,307,835</b>	<b>2,019,947,942</b>
<b>Total additions</b>	<b>47,672,988</b>	<b>2,526,150,992</b>	<b>9,665,016</b>	<b>2,583,488,996</b>	<b>3,020,654,356</b>
<b>Deductions:</b>					
Retirement, death, survivor and health benefits	36,963,620	1,323,912,271	-	1,360,875,891	1,312,125,733
Refund of member contributions and other payments	-	42,940,983	17,555,113	60,496,096	60,707,115
Administrative expenses	11,427	4,200,021	-	4,211,448	4,054,537
<b>Total deductions</b>	<b>36,975,047</b>	<b>1,371,053,275</b>	<b>17,555,113</b>	<b>1,425,583,435</b>	<b>1,376,887,385</b>
<b>Net increase (decrease) in net position</b>	<b>10,697,941</b>	<b>1,155,097,717</b>	<b>(7,890,097)</b>	<b>1,157,905,561</b>	<b>1,643,766,971</b>
<b>Net position restricted for:</b>					
Beginning of year	473,358,220	14,989,975,076	174,463,992	15,637,797,288	13,994,030,317
End of year	\$ 484,056,161	\$ 16,145,072,793	\$ 166,573,895	\$ 16,795,702,849	\$ 15,637,797,288

See Notes to Financial Statements.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 1. Description of the System

The following brief description of the Teachers' Retirement System of Oklahoma (the "System" or "TRS") is provided for general information purposes only. The System's benefits are established and amended by State Statute and participants should refer to Title 70 of the Oklahoma Statutes, 1991, Sections 17-101 through 121, as amended.

The System was established as of July 1, 1943 for the purpose of providing retirement allowances and other specified benefits for qualified persons employed by state-supported educational institutions. The System is a part of the state of Oklahoma financial reporting entity, which is combined with other similar funds to comprise the fiduciary-pension trust funds of the state of Oklahoma (the "State"). The System administers a cost-sharing multiple-employer pension plan which is a defined benefit pension plan ("DB Plan"), a cost-sharing multiple-employer benefit plan other than pensions ("OPEB Plan") as well as a tax-deferred defined contribution plan ("DC Plan").

The supervisory authority for the management and operation of the System is a 14-member Board of Trustees (the Board), which acts as a fiduciary for investment of the funds and the application of plan interpretations. The Board is comprised of six appointees from the Governor's Office, two appointees by the Senate Pro Tempore, two appointees by the House Speaker, three Ex Officio position, and one non-voting member representing Retired Professional Oklahoma Educators. Out of the six appointees from the Governor's Office, one must be a Higher Education representative, one is a non-classified optional personnel, and the remaining four must work in the public or private funds management, banking, law or accounting field. Out of the two Senate Pro Tempore's as well as the House Speaker's appointees, one must be an active classroom teacher while the other be a retired member of Teachers' Retirement System of Oklahoma. The Ex Officio trustees are the State Superintendent, the Office of Management and Enterprise Services Director and the Career-Tech Director or their designee.

**DB Plan:** Oklahoma teachers and other certified employees of common schools, faculty and administrators in public colleges and universities, and administrative personnel of state educational boards and employees of agencies who are employed at least half-time must join the System's DB Plan. Membership is optional for all other regular employees of public educational institutions who work at least 20 hours per week. There are 605 contributing employers in the System. The DB Plan's membership consisted of the following as of June 30, 2018:

#### Pension

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	63,796
Inactive Plan Members Entitled to But Not Yet Receiving Benefits*	12,243
Active Plan Members	88,534
	<u>164,573</u>

\*Does not include 13,315 of non-vested terminated members entitled to a refund of their member contributions.

**OPEB Plan:** TRS will pay a monthly health insurance premium supplement for each retired member who is enrolled in the health insurance plan provided by the State and Education Employees Group Health and Dental Insurance plan or in an insurance program provided by a participating education employer who provides health insurance coverage to former employees, provided the retired member had at least ten (10) years of Oklahoma service prior to retirement. The supplement paid by TRS shall be the premium rate of the Medicare supplement charged to the retired employees not to exceed an amount between \$100 and \$105, depending on length of service and the final average salary of the retired member.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 1. Description of the System (Continued)

**OPEB Plan:** The OPEB Plan's membership consisted of the following as June 30, 2018:

##### OPEB

Inactive Plan Members or Beneficiaries Currently Eligible to Receive Benefits	57,866
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	5,147
Active Plan Members	88,534
Total Plan Members	<u>151,547</u>

**DC Plan:** Members are also offered a tax-deferred defined contribution plan qualified under the Internal Revenue Code ("IRC") Section 403(b). The DC Plan is also referred to by the System as the Tax-Sheltered Annuity Plan or 403(b) Plan. Membership in the DC Plan is voluntary, and investments primarily consist of mutual funds and are participant directed. Voya, a service provider, is responsible for administrative services, including custody and record keeping services.

The DC Plan had approximately 3,069 participants as of June 30, 2018. Contributions are voluntary and require a minimum of \$200 per year. The maximum deferral amount is the lesser of 100 percent of the participant's compensation or the maximum amount allowed by the IRC, currently \$18,500. Participants age 50 and older may contribute an additional \$6,000 if they qualify for the catch up provision.

#### Note 2. Summary of Significant Accounting Policies

**Basis of accounting:** The System has prepared its financial statements in accordance with accounting principles generally accepted in the United States of America and using the economic resources measurement focus. The financial statements are prepared using the accrual basis of accounting, under which expenses are recorded when the liability is incurred, revenues are recorded in the accounting period they are earned and become measurable, and investment purchases and sales are recorded as of their trade dates. Member and employer contributions are established by Oklahoma Statutes as a percentage of salaries and are recognized when due, pursuant to legal requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the Oklahoma Statutes. Administrative expenses are funded through investment earnings.

**Budgetary control:** The System prepares and submits an annual budget of operating expenses on the cash basis for monitoring and reporting to the Office of Management and Enterprise Services. The System's budget process follows the budget cycle for State operations as outlined by the Office of Management and Enterprise Services.

The Executive Director may approve changes within the budget, but a change to the total budget must be handled according to the provision of Title 62 O.S. Sec. 41.12 of the Oklahoma Statutes.

**Investments:** The System is authorized to invest in eligible investments as approved by the Board of Trustees as set forth in the System's investment policy. The Board reviews and updates the plan investment policy at least annually, making changes as deemed necessary to achieve policy goals. An investment policy change can be made at any time during the year at the discretion of the Board.

System investments are reported at fair value within the hierarchy established by generally accepted accounting principles, most recently by Governmental Accounting Standards Board (GASB) Statement No. 72, *Fair Value Measurement and Application*. The short-term investment fund is comprised primarily of investments in a money market fund, which are reported at cost, which approximates fair value. Debt and equity securities are reported at fair value, as determined by the System's custodial agent, using pricing services or prices quoted by independent brokers based on the latest reported sales prices at current exchange rates for securities traded on national or international exchanges.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 2. Summary of Significant Accounting Policies (Continued)

The System also invests as a limited partner in alternative investments. These investments employ specific strategies such as leverage buyouts, venture capital, growth capital, distressed investments, and mezzanine capital. The strategies of all such funds are long term and illiquid in nature. As a result, investors are subject to redemption restrictions which generally limit distributions and restrict the ability of limited partners to exit a partnership investment prior to its dissolution. Alternative investment partnerships are valued using their respective net asset value (NAV) and are audited annually. The most significant input into the NAV of such an entity is the fair value of its investment holdings. These holdings are valued by the general partners on a quarterly or semi-annual basis, in conjunction with management and investment advisors and consultation with valuation specialists. The management assumptions are based upon the nature of the investment and the underlying business. The valuation techniques vary based upon investment type and involve a certain degree of expert judgment.

The System's real estate investments are primarily through limited partnerships. Properties owned by the partnerships are subject to independent third-party appraisals performed in accordance with the Uniform Standards of Professional Appraisal Practice every three years. The System's real estate investments are long term and illiquid in nature. As a result, investors are subject to redemption restrictions which generally limit distributions and restrict the ability of limited partners to exit a partnership investment prior to its dissolution. Limited partner interests are valued by the System using the NAV of the partnerships. The most significant input into the NAV of such an entity is the value of its investment holdings. These holdings are valued by the general partners on a continuous basis, audited annually, and may be periodically appraised by an independent third party. The valuation assumptions are based upon both market and property specific inputs which are not observable and involve a certain degree of expert judgment. The System evaluates investments in conjunction with their custodial bank and investment managers for impairment whenever events or changes in circumstances indicate that the carrying or fair value of the asset may not be recoverable. Should investments be deemed permanently impaired, the carrying or fair value is adjusted to the impaired value with an adjustment to investment income.

Net investment income includes net appreciation (depreciation) in the fair value of investments, interest income, dividend income, investment income from foreign currency translation gains and losses, securities lending income and expenses, and investment expenses, which includes investment management and custodial fees and all other significant investment related costs.

International investment managers use forward foreign exchange contracts to enhance returns or to control volatility. Currency risks arise due to foreign exchange rate fluctuations. Forward foreign exchange contracts are negotiated between two counter-parties. The System could incur a loss if its counter-parties failed to perform pursuant to the terms of their contractual obligations. The gains and losses on these contracts are included in the income in the period in which the exchange rates change. See Note 3 for additional information regarding investment derivatives as of June 30, 2018.

The System's investment policy provides for investment diversification of stocks, bonds, fixed income securities, real estate, alternative investments, and other investment securities along with investment in commingled or mutual funds. Investment securities and investment securities underlying commingled or mutual fund investments are exposed to various risks, such as interest rate, market, and credit risks.



## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 2. Summary of Significant Accounting Policies (Continued)

Due to the risks associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities may occur in the near term, and those changes could materially affect the amounts reported in the statements of fiduciary net position.

At June 30, 2018, the asset allocation guidelines established by the Board's investment policy were:

<u>Category</u>	<u>Allocation</u>
Domestic Equity	38.5%
International Equity	19.0%
Fixed Income	23.5%
Private Equity	9.0%
Real Estate	5.0%
Master Limited Partnerships	5.0%
Total	<u>100.0%</u>

**Capital assets:** Capital assets are stated at cost when acquired, net of accumulated depreciation. Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, which range from five to ten years.

**Risks and uncertainties:** Contributions to the System and the actuarial information included in Note 11 and the required supplementary information are reported based on certain assumptions pertaining to interest rates, inflation rates, employee compensation, and demographics. Due to the changing nature of these assumptions, it is at least reasonably possible that changes in these assumptions may occur in the near term and, due to the uncertainties inherent in setting assumptions, that the effect of such changes could be material to the financial statements.

**Compensated absences:** It is the State's policy to permit employees to accumulate earned but unused vacation and sick leave. Employees earn annual vacation leave based upon their start date and years of service. All accrued vacation leave is payable upon termination, resignation, retirement, or death. Sick leave does not vest to the employee and therefore is not recorded as a liability. Amounts due to the employees for compensated absences were approximately \$219,000 at June 30, 2018.

**Plan termination:** In the event the System terminates, the Board will distribute the net position of the System to provide the following benefits in the order indicated:

Accumulated contributions will be allocated to each respective member, former member, retired member, joint annuitant, or beneficiary then receiving payments.

The balance of such assets, if any, will be allocated to each member then having an interest in the System based upon the excess of their retirement income under the System less the retirement income, which is equal to the actuarial equivalent of the amount allocated to them in accordance with the preceding paragraph in the following order:

- Those retired members, joint annuitants, or beneficiaries receiving payments
- Those members eligible to retire
- Those members eligible for early retirement
- Former members electing to receive a vested benefit
- All other members

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 2. Summary of Significant Accounting Policies (Continued)

**Use of estimates:** The preparation of the System's financial statements in conformity with accounting principles generally accepted in the United States of America requires the System's management to make significant estimates and assumptions. Management of the System has made a number of estimates and assumptions relating to the reporting of assets and liabilities and the disclosure of contingent assets and liabilities to prepare these financial statements in conformity with U.S. generally accepted accounting principles (GAAP), note disclosure and required supplementary information (RSI). Actual results could differ from these estimates.

The System has performed an evaluation of subsequent events through, the date the basic financial statements were available to be issued. No events were identified.

#### Note 3. Cash and Investments

At June 30, 2018, the carrying amount of the System's bank deposits was approximately \$14,647,000. The bank balance of the System's bank deposits at June 30, 2018 was approximately (\$76,094,000). Bank balances were overdrawn due to benefit payments made at the end of June coupled with sales of investments in transit to negate the overdrawn position.

**Custodial credit risk:** Custodial credit risk is the risk that in the event of the failure of a counterparty, the System will not be able to recover the value of its bank deposits or investments. Bank deposits are exposed to custodial credit risk if they are uninsured and uncollateralized. In relation to its bank deposits, the System is not considered to be exposed to custodial credit risk. Although the System does not have a formal bank deposit policy for custodial credit risk, the State Treasurer holds all of the System's bank deposits. As required by Oklahoma Statutes, all bank deposits held by the State Treasurer are insured by Federal Deposit Insurance Corporation, collateralized by securities held by the cognizant Federal Reserve Bank, or invested in U.S. government obligations.

**Fair Value Measurements** – The System categorizes fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements) as follows:

- Level 1 Unadjusted quoted prices for identical instruments in active markets.
- Level 2 Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.
- Level 3 Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured using the net asset value per share (NAV) (or its equivalent) as a practical expedient are not classified in the fair value hierarchy. In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

#### Note 3. Cash and Investments (Continued)

The System's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The following table shows the fair value levels of the investments for the System as of June 30, 2018:

		Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
<b>Investments by fair value level</b>				
Mutual Funds	\$ 166,573,895	\$ 166,573,895	\$ -	\$ -
Total mutual funds	166,573,895	166,573,895	-	-
Fixed Income securities				
Asset Backed Securities	190,315,176	-	190,315,176	-
Bank Loans	29,014,261	-	29,014,261	-
Commercial Mortgage-Backed	50,358,102	-	44,112,628	6,245,474
Corporate Bonds	1,560,454,469	-	1,559,714,949	739,520
Corporate Convertible Bonds	55,731,769	-	54,290,242	1,441,527
Government Agencies	29,741,390	-	26,976,662	2,764,728
Government Bonds	1,022,086,599	201,898,225	820,093,343	95,031
Government Mortgage Backed Securities	352,825,171	-	348,632,569	4,192,602
Gov't-issued Commercial Mortgage-Backed	33,661,184	-	31,871,865	1,789,319
Index Linked Government Bonds	62,132,603	55,649,868	6,482,735	-
Municipal/Provincial Bonds	21,629,710	-	21,629,710	-
Non-Government Backed C.M.O.s	7,929,484	-	7,267,541	661,943
Total fixed income securities	3,415,879,918	257,548,093	3,140,401,681	17,930,144
Equity securities				
Common Stock	9,820,513,446	9,818,804,829	28,475	1,680,142
Convertible Equity	4,466,119	859,104	3,607,015	-
Funds - Common Stock	26,105,235	26,105,235	-	-
Funds - Equities ETF	20,400,890	20,400,890	-	-
Preferred Stock	25,754,739	25,742,314	12,425	-
Rights/Warrants	354,141	352,139	2,002	-
Other Securities	115,775	-	-	115,775
Total equity securities	9,897,710,345	9,892,264,511	3,649,917	1,795,917
Total investments by fair value level	\$ 13,480,164,158	\$ 10,316,386,499	\$ 3,144,051,598	\$ 19,726,061
<b>Investments measured at the net asset value (NAV)</b>				
Alternative investments				
Real Estate Investments	\$ 1,232,586,788			
Private Equity Investments	1,353,221,445			
Total alternative investments	2,585,808,233			
Other Mutual Funds	283,649,428			
Total Investments measured at the NAV	2,869,457,661			
Total Investments measured at fair value and NAV	\$ 16,349,621,819			

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 3. Cash and Investments (Continued)

Equity, derivative securities, and governmental debt securities classified in Level 1 are valued using prices quoted in active markets for those securities. Debt and debt derivative securities classified in Level 2 and Level 3 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. Index linked debt securities are valued by multiplying the external market price feed by the applicable day's Index Ratio.

Level 2 debt securities have non-proprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market. Level 3 debt securities use proprietary information or single source pricing. Equity and equity derivative securities classified in Level 2 are securities whose values are derived daily from associated traded securities.

Equity securities classified in Level 3 are valued with last trade data having limited trading volume.

#### Investments in Entities that Calculate Net Asset Value per Share

The System holds shares or interest in investment companies at where the fair value of the investments are measured on a recurring basis using net asset value per share (or its equivalent) of the investment companies as a practical expedient.

The System's policy is to obtain an external appraisal a minimum of every year for properties or portfolios that the System has some degree of control or discretion. In practice, some investments are appraised annually. Appraisals are performed by an independent appraiser with preference for Member Appraisal Institute (MAI) designated appraisers. The appraisals are performed using generally accepted valuation approaches applicable to the property type.

At year end, the NAV value, unfunded commitments, and redemption rules of those investments is as follows:

	Net Asset Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Real Estate Investments	\$ 1,232,586,788	\$ 100,575,686	N/A	N/A
Private Equity investments	1,353,221,445	846,916,019	N/A	N/A
Other Mutual Funds	283,649,428		Daily	1 Day
Total investments measured at the NAV	<u>\$ 2,869,457,661</u>			

**Real Estate Investments:** This type includes 12 real estate funds that invest primarily in commercial real estate. The values of the investments in this type have been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital. These investments can never be redeemed from the funds. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 20 years. Because it is not probable that any individual investment will be sold, the value of each individual investment has been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 3. Cash and Investments (Continued)

**Private Equity Funds:** This type includes 6 private equity funds that invest primarily in leveraged buyouts. The values of the investments in this type have been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital. These investments can never be redeemed from the funds. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 20 years. Because it is not probable that any individual investment will be sold, the value of each individual investment has been determined using the NAV per share (or its equivalent) of the portfolio's ownership interest in partners' capital.

**Other Mutual Funds:** This type includes investments in an open-end mutual fund that emphasizes broad diversification and consistent exposure to emerging market small company stocks. The value of the investment in this type has been determined using the NAV per share of the investment.

The System does not anticipate restrictions, other than those outlined in the table, on the ability to sell individual investments at the measurement date. Additionally, the System does not anticipate that NAV-driven investments will become redeemable at valuations materially different from the corresponding NAV listed above. The System has no prescribed time frame to liquidate the investments.

**Custodial Credit Risk of Investments:** Investment securities are exposed to custodial credit risk if they are uninsured, are not registered in the name of the System, and are held by a counterparty or the counterparty's trust department but not in the name of the System. While the System's investment policy does not specifically address custodial credit risk, it does limit the amount of cash equivalents and short-term investments to no more than 5 percent of each manager's portfolio. At June 30, 2018, the System had uninsured and uncollateralized deposits translated to approximately \$2,250,000 U.S. Dollars with its custodial agent.

**Credit risk:** Fixed-income securities are subject to credit risk. Credit quality rating is one method of assessing the ability of the issuer to meet its obligation. The System's investment policy places limits on the amount of the fixed income portfolio that may be invested in bonds rated Ba1 or lower by Moody's or BB+ or lower by Standard & Poor's. Short-term investments include United States Treasury bills that mature in less than 90 days.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements (With Comparative Totals as of June 30, 2017)

#### Note 3. Cash and Investments (Continued)

The following table presents the System's fixed income securities subject to credit risk (amounts in thousands).

Investment Type	AAA	AA	A	BBB	BB	B
Asset backed securities	\$ 81,576	\$ 21,204	\$ 9,696	\$ 6,291	\$ -	\$ 692
Bank loans	-	-	-	-	3,752	5,644
Commercial mortgage-backed	10,467	2,160	3,413	1,977	2,022	-
Corporate bonds	1,572	21,504	135,447	455,469	507,719	315,493
Corporate convertible bonds	-	-	615	2,321	5,981	2,310
Government agencies	7,118	3,291	8,990	4,831	-	-
Government bonds	-	8,959	8,670	2,015	5,512	6,947
Government mortgage-backed securities	-	-	-	-	-	-
Gov't-issued commercial mortgage-backed	2,082	-	-	-	-	-
Index linked government bonds	-	-	-	-	-	-
Municipal/Provincial bonds	-	3,718	7,792	-	-	3,911
Non-government backed C.M.O.s	-	378	-	-	-	-
Sukuk	-	-	-	401	-	-
Total fixed income	102,815	61,214	174,623	473,305	524,986	334,997
Short-term investments	-	-	-	-	-	-
	\$ 102,815	\$ 61,214	\$ 174,623	\$ 473,305	\$ 524,986	\$ 334,997

				US Government		Total	Investment Type
CCC	CC	C	D	Not Rated	Securities		
\$ 167	\$ -	\$ -	\$ -	\$ 70,688	\$ -	\$ 190,314	Asset backed securities
7,740	-	369	-	11,509	-	29,014	Bank loans
-	-	-	-	30,127	192	50,358	Commercial mortgage-backed
65,097	998	-	-	57,156	-	1,560,455	Corporate bonds
9,080	-	-	-	35,424	-	55,731	Corporate convertible bonds
-	-	-	-	2,765	2,747	29,742	Government agencies
-	-	-	-	34,275	955,709	1,022,087	Government bonds
-	-	-	-	-	352,825	352,825	Government mortgage-backed securities
-	-	-	-	53	31,526	33,661	Gov't-issued commercial mortgage-backed
-	-	-	-	-	62,133	62,133	Index linked government bonds
-	-	-	-	5,808	-	21,229	Municipal/Provincial bonds
917	-	-	-	6,635	-	7,930	Non-government backed C.M.O.s
-	-	-	-	-	-	401	Sukuk
83,001	998	369	-	254,440	1,405,132	3,415,880	Total fixed income
-	-	-	-	-	80,074	80,074	Short-term investments
\$ 83,001	\$ 998	\$ 369	\$ -	\$ 254,440	\$ 1,485,206	\$ 3,495,954	

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

#### Note 3. Cash and Investments (Continued)

**Interest rate risk:** Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Duration is a measure of a debt investment's exposure to fair value changes arising from changing interest rates based upon the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. Effective duration estimates the sensitivity of a bond's price to interest rate changes and makes assumptions regarding the most likely timing and amounts of variable cash flows arising from investments such as callable bonds, collateralized mortgage obligations, and other mortgage-backed securities. While all investments are subject to market changes, securities invested in index funds are more sensitive to market risk. Although the System's investment policy does not specifically address the duration of fixed-income securities, the System's management does monitor interest rate risk by monitoring the performance of each investment manager. As of June 30, 2018, the System had the following investments with maturities (dollars in thousands):

Investment Type	Fair Value	Effective Duration in Years
Asset-backed securities	\$ 187,365	1.1
Commercial mortgaged-backed	50,358	3.6
Corporate bonds	1,550,275	4.8
Corporate convertible bonds	52,909	4.5
Government agencies	29,742	7.0
Government bonds	1,021,730	14.3
Government mortgage-backed securities	352,825	5.2
Government issued commercial mortgaged-backed	33,661	4.5
Index linked government bonds	62,133	19.1
Municipal/Provincial bonds	20,410	4.7
Non-government backed CMOs	7,352	2.1
Sukuk	401	0.4
Other fixed income securities	46,719	8.5
Total fixed income	<u>\$ 3,415,880</u>	
Portfolio duration		<u>7.8</u>

**Concentration of credit risk:** Investments can be exposed to concentration of credit risk if significant amounts are invested in any one issuer. The System's investment policy places limits on the amount that may be invested in securities of any single issuer. As of June 30, 2018, the System did not hold 5% or more of its total investments in any one issuer.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

#### Note 3. Cash and Investments (Continued)

**Foreign currency risk:** Foreign currency risk is the potential risk for loss due to changes in exchange rates. The System's investment policy provides that international investment managers invest no more than 30 percent of their portfolio's total assets in one or more issuers in a single country, provided that in the U.K. or Japan such limit shall be 35 percent. Investment in cash and cash equivalents, foreign equities, and fixed-income securities as of June 30, 2018 is shown in the following table by monetary unit to indicate possible foreign currency risk (dollars in thousands):

Currency	Equities	Corporate Bonds	Government Bonds	Foreign Exchange Contracts	Cash and Cash Equivalents	Grand Total
Argentine Peso	\$ -	\$ -	\$ 2,934	\$ -	\$ 120	\$ 3,054
Australian Dollar	97,803	-	-	(26)	26	97,803
Brazilian Real	21,537	-	-	-	16	21,553
British Pound Sterling	478,127	1,879	-	(725)	193	479,474
Canadian Dollar	111,300	-	-	(5)	31	111,326
Chilean Peso	971	-	-	-	-	971
Czech Koruna	409	-	-	-	-	409
Danish Krone	20,872	-	-	-	-	20,872
Euro	658,453	8,134	-	517	(485)	666,619
Hong Kong Dollar	214,282	-	-	-	191	214,473
Hungarian Forint	6,299	-	-	-	-	6,299
Indonesian Rupiah	4,464	-	-	-	-	4,464
Israeli Shekel	6,868	-	-	-	-	6,868
Japanese Yen	507,352	-	-	(318)	936	507,970
Malaysian Ringgit	9,565	-	-	-	-	9,565
Mexican Peso	6,249	4,926	24,404	-	-	35,579
New Taiwan Dollar	85,177	-	-	335	431	85,943
New Zealand Dollar	750	-	-	-	-	750
Norwegian Krone	24,917	-	-	-	-	24,917
Philippine Peso	4,821	-	-	(59)	-	4,762
Polish Zloty	4,442	-	-	-	-	4,442
Qatari Rial	356	-	-	-	-	356
Singapore Dollar	26,940	-	-	-	-	26,940
South African Rand	15,306	-	3,259	(3,046)	-	15,519
South Korean Won	96,885	-	-	-	-	96,885
Swedish Krona	47,833	-	-	(132)	316	48,017
Swiss Franc	145,809	-	-	-	474	146,283
Thai Baht	17,260	-	-	-	-	17,260
Turkish Lira	15,543	-	-	-	-	15,543
UAE Dirham	485	-	-	-	-	485
Uruguayan Peso	-	-	697	-	-	697
<b>Total</b>	<b>\$ 2,631,075</b>	<b>\$ 14,939</b>	<b>\$ 31,294</b>	<b>\$ (3,459)</b>	<b>\$ 2,249</b>	<b>\$ 2,676,098</b>



## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

#### Note 3. Cash and Investments (Continued)

**Derivative instruments:** The System's investment derivatives include forward currency and futures contracts. These investments are not speculative in nature and do not increase investment risk beyond allowable limits specified in the System's investment policy. A futures contract is a contract to buy or sell units of an index or financial instrument at a specified future date at a price agreed upon when the contract is originated. The System purchases and sells futures contracts as a means of adjusting the TRS portfolio mix at a lower transaction cost than the transactions, which would otherwise occur in the underlying portfolios. During fiscal year ended June 30, 2018, S&P 500 futures and U.S. Treasury note futures were utilized. Upon entering into such a contract, the TRS pledges to the broker cash or U.S. government securities equal to the minimum initial margin requirement of the futures exchange. Additionally, TRS receives or pays a daily variation margin, which is an amount of cash equal to the daily fluctuation in value of the contract. The change in fair value of the futures contracts is presented in the statement of changes in fiduciary net position as "Net change in fair value of investments." The net change in fair value from futures contracts for fiscal year ended June 30, 2018 was (\$676,678). At June 30, 2018, the foreign currency futures contracts outstanding were as follows:

Description	Expiration Date	Open Position	Number of Contracts	Notional Contract Size	Fair Value	Notional Value
S&P 500 Index	September 2018	Long	2	N/A	\$ 21,092,400	\$ 21,488,493
S&P 400 Midcap Index	September 2018	Long	2	N/A	3,520,980	3,593,201
German Gov't Bond	September 2018	Short	1	Eurx Eur-Bund	(2,846,779)	(2,821,079)
U.S. Treasury note	September 2018	Short	1	10-year U.S. Treasury note	(6,730,500)	(6,695,500)
U.S. Treasury note	September 2019	Short	1	5-year U.S. Treasury note	(19,201,305)	(19,209,227)
U.S. Treasury note	September 2018	Short	2	U.S. Treasury note	(7,540,000)	(7,377,845)
U.S. Treasury note	September 2018	Short	1	U.S. Treasury note	(12,310,500)	(12,321,005)
U.S. Treasury note	September 2018	Long	2	5-year U.S. Treasury note	28,177,063	28,135,267
U.S. Treasury note	September 2018	Long	2	U.S. Treasury note	6,542,063	6,508,475
U.S. Treasury note	September 2018	Long	3	2-year U.S. Treasury note	90,874,266	90,953,585
					<u>\$ 101,577,687</u>	<u>\$ 102,254,365</u>

A foreign currency forward contract is an agreement that obligates the parties to exchange given quantities of currencies at a pre-specified exchange rate on a certain future date. The fair values of the forward contracts are estimated based on the present value of their estimated future cash flows.

The foreign currency forward contracts subject the System to foreign currency risk because the investments are denominated in international currencies. The risks are described in the foreign currency risk schedule where the fair value of the foreign currency contracts in U.S. dollars is presented. The System enters into foreign exchange forward contracts for TRS to manage foreign currency exposure, as permitted by portfolio policies. The fair values of the contracts are presented in the Statement of Fiduciary Net Position as Investments, at fair value – Equities. The change in fair value of the forward contracts is presented in the statement of changes in fiduciary net position as "Net change in fair value of investments." The net change in fair value from foreign currency forward contracts for fiscal year ended June 30, 2018 was \$313,280. At June 30, 2018, the foreign currency forward contracts outstanding were as follows:

Description	Fair Value (U.S. Dollars)	Currency	Value Date	Notional Value
Forward sale	\$ (108,474)	JPY	7/5/2018	\$ (108,338)
Forward sale	(287,084)	USD	7/2/2018	(287,084)
Forward sale	(397,281)	USD	7/3/2018	(397,281)
Forward purchase	65,107	EUR	7/2/2018	64,597
Forward purchase	79,397	GBP	7/2/2018	78,804
Forward purchase	18,778	SEK	7/2/2018	18,624
Forward purchase	160,507	USD	7/2/2018	160,507
Forward purchase	842,201	USD	7/3/2018	842,201
Forward purchase	174,001	USD	7/5/2018	174,001
Forward purchase	3,922,828	USD	8/2/2018	3,922,828

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 3. Cash and Investments (Continued)

**Rate of return - Pension:** For the year ended June 30, 2018, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 9.88 percent. The money-weighted rate of return expresses investment performance, net of investment expense, as adjusted for the changing amounts actually invested.

**Rate of return - OPEB:** For the year ended June 30, 2018, the annual money-weighted rate of return on OPEB plan investments, net of OPEB plan investment expense, was 9.71 percent. The money-weighted rate of return expresses investment performance, net of investment expense, as adjusted for the changing amounts actually invested.

#### Note 4. Commitments

At June 30, 2018, the System has total capital commitments related to alternative and real estate investments of \$3,125,400,000. Of this amount, approximately \$947,492,000 remained unfunded.

#### Securities Lending Activity

The System's investment policy and State statutes provide for its participation in a securities lending program. The program is administered by the System's master custodian, and there are no restrictions on the amount of loans that can be made. Certain securities of the System are loaned to participating brokers, who must provide collateral in the form of cash, U. S. Treasury or government agency securities, or letters of credit issued by approved banks.

Under the terms of the agreement, collateralization of the fair value of the loaned securities must be provided in the amount of 102 percent when the security to be loaned and the collateral are in the same currency and 105 percent when the loan and collateral currencies are dissimilar. The securities on loan as of June 30, 2018 collateralized by cash were approximately \$1,688,123,000 and the cash collateral received for those securities on loan was approximately \$1,729,964,000. Securities on loan as of June 30, 2018 consisted of equity loans, corporate fixed income and US government and agencies securities collateralized by cash and non-cash securities. Because the System cannot pledge or sell collateral securities and letters of credit received unless the borrower defaults, the collateral and related liability is presented in the accompanying statements of fiduciary net position. The following table describes the types of securities lent and collateral as of June 30, 2018 (dollars in thousands):

	Fair Value of Securities on Loan	Collateral Value	Collateral Percentage
Governmental loans compared to collateral	\$ 304,189	\$ 311,133	102%
Equity loans compared to collateral	1,165,659	1,195,218	103%
Corporate loans compared to collateral	218,275	223,613	102%
	<u>\$ 1,688,123</u>	<u>\$ 1,729,964</u>	

At June 30, 2018, the System had no credit risk exposure since the amounts the System owed to borrowers exceeded the amounts borrowers owed the System. The contract with the System's lending agent requires it to indemnify the System if the borrowers fail to return the lent securities. In the event of a collateral shortfall due to a loss in value of investments made with cash collateral, such loss would be the responsibility of the System.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Securities Lending Activity (Continued)

All securities loans can be terminated on demand by either the System or the borrower. Cash collateral is invested in a separate account for the System in accordance with investment guidelines approved by the System. At June 30, 2018, the weighted average maturity of the cash collateral investments was 19 days. The dollar-weighted average maturity of cash collateral investments shall not exceed ninety days. For purposes of this restriction, the average maturity of variable rate instruments will be calculated to the next interest reset date. The Cash Collateral Account's minimum overnight liquidity level shall not be less than twenty percent. The cash collateral investments are structured and maintained by the lending agent's investment desk utilizing an asset and liability methodology designed to manage to an appropriate extent any mismatch between the investment maturities and the System's loans.

#### Note 6. Capital Assets

Capital assets consist of the following at June 30, 2018:

	Balance June 30, 2017	Additions	Deletions	Balance June 30, 2018
Furniture, fixtures and equipment	\$ 4,607,941	\$ 357,367	\$ -	\$ 4,965,308
Accumulated depreciation	(314,637)	(150,548)	-	(465,185)
Capital assets, net	<u>\$ 4,293,304</u>			<u>\$ 4,500,123</u>

The System has commitments to lease building space as well as leases on certain equipment. The future minimum commitment for operating leases as of June 30, 2018 was approximately \$200,000. The System's leases are one-year renewable contracts. Rental expense for all operating leases amounted to approximately \$200,000 for the year ended June 30, 2018.

#### Note 7. Member and Employer Contributions

All contribution rates are defined or amended by the Oklahoma Legislature. All active members contribute to the System; however, the employer may elect to make all or part of the contribution for its employees. There are special provisions for members of higher education who joined the System before July 1, 1995. The annual employer contributions reported for the year ended June 30, 2018 were \$415,981,030. Employers satisfied 100 percent of their contribution requirements for 2018.

All members must contribute 7 percent of regular annual compensation, not to exceed the member's maximum compensation level, which for the year ended June 30, 2018 was the full amount of regular annual compensation.

The employers are required to contribute a fixed percentage of annual compensation on behalf of active members. The employer contribution rate was 9.5 percent beginning on January 1, 2011 for all remitting entities other than comprehensive and four year regional universities. The employer contribution rate was 8.55 percent starting on January 1, 2011 for comprehensive and four year universities. The rates for fiscal year 2018 are applied on the full amount of the member's regular annual compensation up to certain limits prescribed by the IRC.

#### Note 8. Benefits

The System provides defined retirement benefits based on members' final compensation, age, and term of service. In addition, the retirement program provides for benefits upon disability and to survivors upon the death of eligible members. Title 70 O. S. Sec. 17-105 defines all retirement benefits. The authority to establish and amend benefit provisions rests with the State Legislature.

## **Teachers' Retirement System of Oklahoma**

### **Notes to Financial Statements**

**(With Comparative Totals as of June 30, 2017)**

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#### **Note 8. Benefits (Continued)**

Benefit provisions include:

- Members who join TRS after July 1, 1991 become fully vested in retirement benefits earned to date after five years of credited service. Members who join TRS on or after November 1, 2017 become fully vested after seven years of credited service. Any member who has attained age fifty-five (55) or who has completed thirty (30) years of creditable service, or for any person who initially became a member prior to July 1, 1992, whose age and number of years of creditable service total eighty (80) may be retired upon proper application for retirement on forms established by the System and executing a retirement contract. Any person who became a member after June 30, 1992, but prior to November 1, 2011, whose age and number of years of creditable service total ninety (90) may be retired upon proper application for retirement and executing a retirement contract. Any person who becomes a member on or after November 1, 2011, who attains the age of sixty-five (65) years or who reaches a normal retirement date having attained a minimum age of sixty (60) years may be retired upon proper application for retirement and executing a retirement contract.
- Final compensation for members who joined the System prior to July 1, 1992 is defined as the average salary for the three highest years of compensation. Final compensation for members joining the System after June 30, 1992 is defined as the average of the highest five consecutive years of annual compensation in which contributions have been made. The final average compensation is limited for service credit accumulated prior to July 1, 1995 to \$40,000 or \$25,000, depending on the member's election. Monthly benefits are 1/12 of this amount. Service credits accumulated after June 30, 1995 are calculated based on each member's final average compensation, except for certain employees of the two comprehensive universities. Upon the death of a member who has not yet retired, the designated beneficiary shall receive the member's total contributions plus 100 percent of interest earned through the end of the fiscal year, with interest rates varying based on time of service. A surviving spouse of a qualified member may elect to receive, in lieu of the aforementioned benefits, the retirement benefit the member was entitled to at the time of death as provided under the Joint Survivor Benefit Option.
- Upon the death of a retired member, the System will pay \$5,000 to the designated beneficiary, in addition to the benefits provided for the retirement option selected by the member.
- A member is eligible for disability benefits after ten years of credited Oklahoma service. The disability benefit is equal to 2 percent of final average compensation for the applicable years of credited service.
- Upon separation from the System, members' contributions are refundable with interest based on certain restrictions provided in the plan, or by the IRC.
- Members may elect to make additional contributions to a tax-sheltered annuity program up to the exclusion allowance provided under the IRC under Code Section 403(b).

#### **Supplemental Health Insurance Program (OPEB Plan)**

The System makes payments to certain retiree health insurance providers that are subsidies to help pay for certain supplemental health benefits that are available to eligible retired members who elect such coverage. The subsidy payments are made to the Employees Group Insurance Division (EGID) of the Office of Management and Enterprise Services (OMES) for retirees who opt to continue their employer-provided insurance and are also made to employers who provide health insurance options through other insurers as long as the plans provide health insurance options to both the employers' active and retired employees.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 8. Benefits (Continued)

All retirees are eligible except for special retirees (as defined) and spouses and beneficiaries as long as they have at least 10 years of service. Retirees who elect such coverage receive the smaller of (i) a Medicare supplement benefit, if eligible, or (ii) an amount between \$100 and \$105 per month, depending on service and final average compensation. Payments are made on their behalf monthly (i) to EGID as described above, if the member continues health coverage under that Plan, or (ii) to the member's former employer, if the member retains health coverage under a plan maintained by the former employer as described above. The amounts paid to EGID or local employers were approximately \$36,963,000 in 2018 and are included in retirement and other benefits expense.

Employer and employee contributions are made based upon the TRS Plan provisions contained in Title 70, as amended. However, the statutes do not specify or identify any particular contribution source to pay the health insurance subsidy. The cost of the subsidy averages 0.14% of normal cost, as determined by an actuarial valuation.

Each employer in the OPEB Plan will begin disclosing the employer's own apportioned elements of the OPEB plan.

Assumptions: For OPEB, the actuarial valuation date was performed as of June 30, 2018. The measurement date was June 30, 2018. The benefits are only available to those retirees that participate and have at least 10 years of service credit at retirement.

#### Note 9. Dedicated Tax

The plan receives funds provided by the State of Oklahoma, a non-employer contributing entity, through 5.0 percent of the State's sales, use, and corporate and individual income taxes collected as dedicated tax. The System receives 1 percent of the cigarette taxes collected by the State and receives 5 percent of net lottery proceeds collected by the State. The System received approximately \$318,173,000 from the State in 2018. Amounts due from the State were approximately \$37,930,000 at June 30, 2018.

#### Note 10. DB Plans (Pension and OPEB Actuarial Information)

The components of the net pension liability of the employers at June 30, 2018 were as follows:

Total pension liability	\$	22,196,455,995
Plan fiduciary net position		(16,145,072,793)
Employers' net pension liability	\$	<u>6,051,383,202</u>

Plan fiduciary net position as a percentage of the total pension liability 72.74%

The components of the net OPEB asset at June 30, 2018 were as follows:

Total OPEB liability	\$	419,430,692
Plan fiduciary net position		(484,056,162)
Employers' net OPEB asset	\$	<u>(64,625,470)</u>

Plan fiduciary net position as a percentage of the total OPEB asset 115.41%

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### Note 10. DB Plans (Pension and OPEB Actuarial Information) (Continued)

The total pension and OPEB liability and total pension and OPEB asset as of June 30, 2018, were determined based on actuarial valuations prepared as of June 30, 2018 using the following actuarial assumptions:

- Actuarial Cost Method—Entry Age Normal
- Inflation—2.50 percent
- Future Ad Hoc Cost-of-living Increases—None
- Salary Increases—Composed of 3.25 percent wage inflation, including 2.50 percent price inflation, plus a service-related component ranging from 0.00 percent to 8.00 percent based on years of service
- Investment Rate of Return—7.50 percent
- Retirement Age—Experience-based table of rates based on age, service, and gender. Adopted by the Board in May 2015 in conjunction with the five year experience study for the period ending June 30, 2014
- Mortality Rates after Retirement—Males: RP-2000 Combined Healthy mortality table for males with White Collar Adjustments. Generational mortality improvements in accordance with Scale BB from the table's base year of 2000. Females: GRS Southwest Region Teacher Mortality Table, scaled at 105%. Generational mortality improvements in accordance with Scale BB from the table's base year of 2012.
- Mortality Rates for Active Members—RP-2000 Employee Mortality tables, with male rates multiplied by 60% and female rates multiplied by 50%

#### Note 11. DB Plans (Pension and OPEB Actuarial Information)

**Measurement of the net pension liability:** The net pension liability is measured as the total pension liability, less the amount of the plan's fiduciary net position. In actuarial terms, this is analogous to the accrued liability as measured using the individual entry age normal actuarial cost method less the fair value of assets (not the smoothed actuarial value of assets seen in actuarial valuations based on the Board's adopted assumptions and methods).

For the valuation period ending June 30, 2018, a single discount rate of 7.50% was used to measure the total pension liability. Based on the stated assumptions and the projection of cash flows, the pension plan's fiduciary net position and future contributions were projected to be available to finance all projected future benefit payments of current plan members.

Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The projection of cash flows used to determine this single discount rate assumed that plan member and employer contributions will be made at the current statutory levels and remain a level percentage of payroll. The projection of cash flows also assumed that the State's contribution plus the matching contributions will remain a constant percent of projected member payroll based on the past five years of actual contributions.

The long-term expected rate of return on pension plan investments was determined using a building block method in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The target asset allocation and best estimates of arithmetic expected real rates of return for each major asset class as of June 30, 2018 are summarized in the following table:

# Teachers' Retirement System of Oklahoma

## Notes to Financial Statements (With Comparative Totals as of June 30, 2017)

### Note 11. DB Plans (Pension and OPEB Actuarial Information) (Continued)

Asset Class	Target Asset Allocation	Long-Term Expected Real Rate of Return
Domestic Equity	38.5%	7.5%
International Equity	19.0%	8.5%
Fixed Income	23.5%	2.5%
Real Estate	9.0%	4.5%
Alternative Assets	10.0%	6.1%
Total	100.0%	

\*\*The Real Estate total expected return is a combination of US Direct Real Estate (unleveraged) and US Value added Real Estate (unleveraged).

**Sensitivity of the net pension liability and net OPEB asset to the single discount rate assumptions:** The following table provides the sensitivity of the net pension liability and net OPEB asset to changes in the discount rate as of June 30, 2018. In particular, the table presents the plan's net pension liability and net OPEB asset, if they were calculated using a single discount rate that is one-percentage-point lower or one-percentage-point higher than the single discount rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net pension liability	\$ 8,604,702,854	\$ 6,051,383,202	\$ 3,913,823,602
	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net OPEB asset	\$ (22,697,593)	\$ (64,625,470)	\$ (100,451,837)

Due to the structure of the OPEB plan, healthcare cost trend rate sensitivity analysis is not meaningful.

### Note 12. New Accounting Pronouncements Issued, Not Yet Adopted

Fiscal Year Ended June 30, 2018:

GASB Statement No. 81 (GASB 81), *Irrevocable Split-Interest Agreements* provides additional accounting and financial reporting information for circumstances when a government is a beneficiary or and administrator of such agreements. As of the date of the financial statements, the Plan is currently evaluating the effects of this pronouncement.

## Teachers' Retirement System of Oklahoma

### Notes to Financial Statements

(With Comparative Totals as of June 30, 2017)

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#### **Note 12. New Accounting Pronouncements Issues, Not Yet Adopted (Continued)**

GASB Statement No. 85 (GASB 85), *Omnibus 2017* addresses practice issues identified in the implementation and application of existing GASB Statements. The issues involve certain situations involving blending component units, goodwill, fair value measurement and application, pensions and OPEB. As of the date of the financial statements, the Plan is currently evaluating the effects of this pronouncement.

GASB Statement No. 86 (GASB 86), *Certain Debt Extinguishment Issues* improves consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired only with existing resources – resources other than the proceeds of refunding debt – are placed in an irrevocable trust for the sole purpose of extinguishing debt. As of the date of the financial statements, the Plan is currently evaluating the effects of this pronouncement.

#### Fiscal Year Ended June 30, 2019 (and beyond):

GASB Statement No. 83 (GASB 83), *Certain Asset Retirement Obligations* addresses accounting and financial reporting for certain asset retirement obligations (AROs). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset. A government that has legal obligations to perform future asset retirement activities related to its tangible capital assets should recognize a liability based on the guidance.

GASB 83 is effective for reporting periods beginning after June 15, 2018. As of the date of the financial statements, the Plan is currently evaluating the effects of this pronouncement.

GASB Statement No. 84 (GASB 84), *Fiduciary Activities* seeks to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. GASB-84 establishes criteria for identifying fiduciary activities of all state and local governments. The focus of the criteria generally is on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists. Separate criteria are included to identify fiduciary component units and postemployment benefit arrangements that are fiduciary activities. GASB 84 is effective for reporting periods beginning after December 15, 2018. As of the date of the financial statements, the Plan is currently evaluating the effects of this pronouncement.

GASB Statement No. 87 (GASB 87), *Leases* increases the usefulness of governments' financial statements by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this GASB 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources, thereby enhancing the relevance and consistency of information about governments' leasing activities. GASB 87 is effective for reporting periods beginning after December 15, 2019. As of the date of the financial statements, the Plan is currently evaluating the effects of this pronouncement.



# Teachers' Retirement System of Oklahoma

## Required Supplementary Information

### Schedule of Changes in Employers' Net Pension Liability (Unaudited) Fiscal Year Ended June 30,

	Year Ended June 30				
	2018	2017	2016	2015	2014
Total pension liability:					
Service cost	\$ 432,592,587	\$ 446,728,754	\$ 428,904,761	\$ 415,702,261	\$ 409,199,801
Interest	1,586,869,029	1,599,025,933	1,609,511,334	1,538,893,982	1,491,722,137
Benefit changes	18,410,937	-	-	-	-
Difference between actual and expected return	(99,947,351)	(373,928,623)	(36,212,168)	(159,980,414)	(105,344,633)
Assumption changes	-	(482,042,966)	933,294,515	346,488,630	-
Benefit payments	(1,323,912,271)	(1,281,816,606)	(1,257,276,705)	(1,201,350,907)	(1,153,051,607)
Refunds	(42,940,983)	(40,944,298)	(36,109,832)	(35,240,176)	(28,718,256)
<b>Net change in total pension liability</b>	<b>571,071,948</b>	<b>(132,977,806)</b>	<b>1,642,111,905</b>	<b>904,513,376</b>	<b>613,807,442</b>
Total pension liability:					
Beginning	21,625,384,047	21,758,361,853	20,551,132,567	19,646,619,191	19,032,811,749
Ending (a)	22,196,455,995	21,625,384,047	22,193,244,472	20,551,132,567	19,646,619,191
Plan fiduciary net position:					
Contributions-Employer/State	757,678,568	698,695,713	725,425,216	728,442,070	707,052,675
Contributions-Members	312,866,576	292,949,337	294,459,090	303,677,304	301,300,811
Net investment income	1,455,605,848	1,945,898,975	(357,443,247)	428,855,747	2,571,707,952
Benefit payments	(1,323,912,271)	(1,281,816,606)	(1,257,276,705)	(1,201,350,906)	(1,153,051,607)
Refunds	(42,904,983)	(40,944,298)	(36,109,832)	(35,240,176)	(28,718,256)
Administrative expense	(4,200,021)	(4,028,080)	(4,458,336)	(4,358,938)	(4,282,605)
<b>Net change in plan fiduciary net position</b>	<b>1,155,133,717</b>	<b>1,610,755,041</b>	<b>(635,403,814)</b>	<b>220,025,101</b>	<b>2,394,008,970</b>
Plan fiduciary net position:					
Beginning	14,989,975,076	13,379,220,035	14,449,506,469	14,229,481,368	11,835,472,398
Ending (b)	16,145,108,793	14,989,975,076	13,814,102,655	14,449,506,469	14,229,481,368
<b>Plan's net pension liability (a)-(b)</b>	<b>\$ 6,051,347,202</b>	<b>\$ 6,635,408,971</b>	<b>\$ 8,379,141,817</b>	<b>\$ 6,101,626,098</b>	<b>\$ 5,417,137,823</b>

\*\*See notes to required supplementary information\*\*

Information to present a 10 year schedule is not currently available.

# Teachers' Retirement System of Oklahoma

## Required Supplementary Information

### Schedule of Employers' Net Pension Liability (Unaudited)

Fiscal Years Ended June 30,

	2018	2017	Year Ended June 30 2016	2015	2014
Total pension liability	\$ 22,196,455,995	\$ 21,625,384,047	\$ 22,193,244,472	\$ 20,551,132,567	\$ 19,646,619,191
Plan fiduciary net position	16,145,072,793	14,989,675,076	13,814,102,655	14,449,506,469	14,229,481,368
<b>Employers' net Pension liability</b>	<b>\$ 6,051,383,202</b>	<b>\$ 6,635,708,971</b>	<b>\$ 8,379,141,817</b>	<b>\$ 6,101,626,098</b>	<b>\$ 5,417,137,823</b>
Employers' fiduciary net position as a percentage of the total pension liability	72.74%	69.32%	62.24%	70.31%	72.43%
Covered payroll	\$ 4,149,557,077	\$ 4,070,723,673	\$ 4,206,558,429	\$ 4,338,247,200	\$ 4,304,297,300
Employers' net pension liability as a percentage of covered payroll	145.82%	163.00%	199.19%	140.65%	125.85%

\*\*See notes to required supplementary information\*\*

Information to present a 10 year schedule is not currently available.

# Teachers' Retirement System of Oklahoma

## Required Supplementary Information

### Schedule of Contributions From Employers and Other Contributing Entities (Unaudited)

	2018	2017	2016	2015	2014
Actuarially determined contributions	\$ 705,424,703	\$ 689,580,590	\$ 723,528,050	\$ 550,652,420	\$ 602,936,966
Contributions in relation to the actuarially determined contribution:					
Employers (Schools)	413,068,467	396,743,812	409,753,221	392,051,458	386,895,127
State of Oklahoma, a non-employer contributing entity	344,610,101	301,951,901	315,671,995	336,390,612	320,157,548
<b>Contribution deficiency (excess)</b>	<b>\$ (52,253,865)</b>	<b>\$ (9,115,123)</b>	<b>\$ (1,897,166)</b>	<b>\$ (177,789,650)</b>	<b>\$ (104,115,709)</b>
Covered payroll	\$ 4,149,557,077	\$ 4,070,723,673	\$ 4,206,558,429	\$ 4,338,247,200	\$ 4,304,297,300
Contributions as a percentage of covered payroll	18.26%	17.16%	17.25%	16.79%	16.43%
	2013	2012	2011	2010	2009
Actuarially determined contributions	\$ 619,805,640	\$ 588,287,377	\$ 822,419,996	\$ 742,286,289	\$ 714,367,558
Contributions in relation to the actuarially determined contribution:					
Employers (Schools)	373,789,020	376,635,234	364,025,589	366,282,238	338,974,512
State of Oklahoma, a non-employer contributing entity	327,505,309	304,995,663	274,452,205	254,375,139	279,672,051
<b>Contribution deficiency (excess)</b>	<b>\$ (81,488,689)</b>	<b>\$ (93,343,520)</b>	<b>\$ 183,942,202</b>	<b>\$ 121,628,912</b>	<b>\$ 95,720,995</b>
Covered payroll	\$ 3,933,100,000	\$ 3,924,800,000	\$ 3,773,300,000	\$ 3,854,800,000	\$ 3,807,900,000
Contributions as a percentage of covered payroll	17.83%	17.37%	16.92%	16.10%	16.25%

\*\*See notes to required supplementary information\*\*

### Notes to Schedule:

The covered payroll is an estimate of the actual payroll, imputed from individual member contributions.

The assumption change in fiscal year 2015 is attributable to the new assumptions adopted by the Board in May 2015.

The assumption change in fiscal year 2016 is attributable to the new economic assumptions adopted by the Board in September 2016.

The beginning balances for the total pension liability and the plan fiduciary net position were both restated as of June 30, 2016 to remove \$434,882,619 which will be reported as an OPEB going forward.

The assumption change in fiscal year 2017 is attributable to the change in assumed election rate for the Supplemental Medical Insurance benefit adopted by the Board in August 2017.

## Teachers' Retirement System of Oklahoma

### Required Supplementary Information

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#### Schedule of Investment Returns (Unaudited)

Fiscal Year Ended June 30,

	Year Ended June 30				
	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expenses	9.88%	14.72%	-2.50%	3.04%	21.95%

\*\*See notes to required supplementary information\*\*

Information to present a 10 year schedule is not currently available.

## Teachers' Retirement System of Oklahoma

### Required Supplementary Information

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#### NOTES TO REQUIRED SUPPLEMENTARY INFORMATION:

Actuarially determined contribution rates are calculated as of June 30.

Members and employers contribute based on statutorily fixed rates. The State of Oklahoma contributes 5.0% of revenues from sales tax, corporate and individual income taxes and lottery proceeds. An additional contribution is made for members whose salary is paid from grant money.

Beginning with fiscal year ending June 30, 2016, the Actuarially Determined Employer Contribution (ADEC) is determined as the amount necessary to discharge the Unfunded Actuarial Accrued Liability over a period equal to the funding period for the current actuarial valuation purposes (i.e., 17 years as of June 30, 2017). However, in no event shall the amortization period be in excess of a fixed period of twenty years. Rates are calculated as of June 30.

Beginning with the fiscal year ending June 30, 2017, an actuarially determined portion of the employers' contributions (0.07% of pay for the OPEB Plan and reported under GASB 74). As a result, these contributions are not included in either the actual or actuarially determined contribution rates.

The ADEC was previously determined as the total employer contribution necessary to fund the normal cost and to amortize the UAAL over payroll over 30 years.

#### Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Remaining Amortization period	20 years
Asset valuation method	5-year smooth market
Inflation	2.50%
Salary increase	Composed of 2.5% inflation, plus 0.75% productivity increase rate, plus step-rate promotion for members with less than 25 years of service
Investment rate of return	7.50%
Retirement age	Experience-based table of rates based on age, service and gender. Adopted by the Board in conjunction with the five year experience study for the period ending June 30, 2014
Mortality	RP-2000 Combined Mortality Table for males with White Collar Adjustments with fully generational projection by Scale BB from the table's base year of 2000. For females, the GRS Southwest Region scaled at 105%, with fully generational projection by Scale BB from the table's base year of 2000.

# Teachers' Retirement System of Oklahoma

## Required Supplementary Information

### Schedule of Changes in Employers' Net OPEB (Asset)/Liability (Unaudited) Fiscal Years Ended June 30,

	2018	2017
Total OPEB liability:		
Service cost	\$ 6,431,010	\$ 6,647,749
Interest on the total OPEB liability	31,012,327	31,728,895
Benefit changes	-	-
Difference between actual and expected return	(9,813,028)	(14,186,133)
Assumption changes	-	-
Benefit payments	(36,963,620)	(30,309,127)
<b>Net change in total OPEB liability</b>	<b>(9,333,311)</b>	<b>(6,118,616)</b>
Total OPEB liability:		
Beginning	428,764,003	434,882,619
Ending (a)	419,430,692	428,764,003
Plan fiduciary net position:		
Employer contributions	2,912,563	6,513,158
Employee contributions	-	-
OPEB net investment income	44,760,425	62,298,027
Benefit payments	(36,963,620)	(30,309,127)
Administrative expense	(11,427)	(26,457)
<b>Net change in plan fiduciary net position</b>	<b>10,697,941</b>	<b>38,475,601</b>
Plan fiduciary net position:		
Beginning	473,358,220	434,882,619
Ending (b)	484,056,161	473,358,220
<b>Employers' Net OPEB liability (asset) (a)-(b)</b>	<b>\$ (64,625,469)</b>	<b>\$ (44,594,217)</b>

Information to present a 10 year schedule is not currently available.

## Teachers' Retirement System of Oklahoma

### Required Supplementary Information

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#### Schedule of Employers' Net OPEB Liability (asset) (Unaudited) Fiscal Years Ended June 30,

	2018	2017
Total OPEB liability	\$ 419,430,692	\$ 428,764,003
OPEB fiduciary net position	484,056,162	473,358,220
<b>Employers' net OPEB liability (asset)</b>	<b>\$ (64,625,470)</b>	<b>\$ (44,594,217)</b>
Employers' fiduciary net position as a percentage of the total OPEB liability	115.41%	110.40%
Covered payroll	\$4,149,557,077	\$4,070,723,673
Employers' net OPEB liability (asset) as a percentage of covered OPEB payroll	(1.56)%	(1.10)%

\*\*See notes to required supplementary information\*\*

Information to present a 10 year schedule is not currently available.

## Teachers' Retirement System of Oklahoma

### Required Supplementary Information

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#### Schedule of OPEB Contributions From Employers

	2018	2017
Actuarially determined contributions	\$ 2,912,563	\$ 6,513,158
Contributions in relation to the actuarially determined contribution:		
Employers	2,912,563	6,513,158
<b>Contribution deficiency (excess)</b>	<b>\$ -</b>	<b>\$ -</b>
Covered payroll	\$ 4,149,557,077	\$ 4,070,723,673
Contributions as a percentage of covered payroll	0.07%	0.16%

Information to present a 10 year schedule is not currently available.



## Teachers' Retirement System of Oklahoma

### Required Supplementary Information

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#### Schedule of OPEB Investment Returns (Unaudited) Fiscal Year Ended June 30,

OPEB Plan	Year Ended June 30	
	2018	2017
Annual money-weighted rate of return, net of investment expenses	9.71%	14.72%

\*\*See notes to required supplementary information\*\*

Information to present a 10 year schedule is not currently available.

## Teachers' Retirement System of Oklahoma

### Required Supplementary Information

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#### NOTES TO SCHEDULE OF CONTRIBUTIONS

The ADEC is the amount needed to fund the normal cost, the anticipated administrative expenses, and a payment towards eliminating the Unfunded Actuarial Accrued Liability (UAAL). The payment towards eliminating the UAAL is based on an closed period of twenty (20) years calculated as a level percentage of future payroll with the initial period beginning on July 1, 2016.

#### Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Remaining Amortization period	20 years beginning on July 1, 2016
Asset valuation method	Market
Inflation	2.50%
Salary increase	Composed of 2.5% inflation, plus 0.75% productivity increase rate, plus step-rate promotional increases for members with less than 25 years of service
Investment rate of return	7.50%
Retirement age	Experience-based table of rates based on age, service and tier.
Mortality	RP-2000 Combined Mortality Table for males with White Collar Adjustments with fully generational projection by Scale BB from the table's base year of 2000. For females, the GRS Southwest Region Teacher Mortality Table, scaled at 105%, with fully generational projection by Scale BB from the table's base year of 2012.
Health Care Trend Rates	Due to the nature of the benefit, health care trend rates are not applicable to the calculation of contribution rates.
Expenses	Administrative expenses are explicitly included in the ADEC. Investment expenses are paid through investment returns.

**Teachers' Retirement System of Oklahoma**

**Supplementary Information**

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**Schedule of Investment Expenses  
For the Year Ended June 30, 2018**

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Investment managers	\$ 67,917,928
Investment consultants	1,091,205
Investment personnel	<u>300,455</u>
<b>Total investment expenses</b>	<b><u><u>\$ 69,309,588</u></u></b>

## Teachers' Retirement System of Oklahoma

### Supplementary Information

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#### Schedule of Administrative Expenses For the Year Ended June 30, 2018

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Salaries and benefits	\$ 3,084,741
General and miscellaneous	401,520
Professional/consultant fees	539,392
Travel and related expenses	35,247
Depreciation expense	150,548
<b>Total administrative expenses</b>	<b>\$ 4,211,448</b>

## Teachers' Retirement System of Oklahoma

### Supplementary Information

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#### Schedule of Professional/Consultant Fees For the Year Ended June 30, 2018

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Actuarial	\$ 73,038
Medical	9,850
Legal	38,677
Audit	202,469
Data processing	130,651
Miscellaneous	84,707
<b>Total professional/consultant fees</b>	<b>\$ 539,392</b>

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**Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance  
and Other Matters Based on an Audit of Financial Statements Performed in Accordance with  
*Government Auditing Standards***

To the Board of Trustees  
Teachers' Retirement System of Oklahoma  
Oklahoma City, Oklahoma

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the Teachers' Retirement System of Oklahoma (the System), which comprise the statement of fiduciary net position as of June 30, 2018, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated October 19, 2018.

**Internal Control over Financial Reporting**

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

**Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

**Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "Eide Bailly LLP". The signature is written in a cursive, flowing style.

Oklahoma City, Oklahoma  
October 19, 2018