

**TEACHERS' RETIREMENT
SYSTEM OF THE
STATE OF KENTUCKY**

Financial Statements

June 30, 2017 and 2016

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Board of Trustees
Teachers' Retirement System of the State of Kentucky
Frankfort, Kentucky

Report on the Financial Statements

We have audited the accompanying statements of fiduciary net position of the Teachers' Retirement System of the State of Kentucky as of June 30, 2017 and 2016, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements which collectively comprise the component unit financial statements of the Teachers' Retirement System of the State of Kentucky as listed in the table of contents.

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 the 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 audits. We conducted our audits 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 audits 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 of the effectiveness of the entity's internal control. Accordingly we do not express such an 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 financial statement presentation.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Teachers' Retirement System of the State of Kentucky, a component unit of the Commonwealth of Kentucky, at June 30, 2017 and 2016 and the respective changes in its fiduciary net position for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Kentucky
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Ohio

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Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 4 through 8 and the Schedule of Changes in Net Pension Liability (page 56), Schedule of Net Pension Liability (page 57), Schedule of Employer Contributions (page 58) Schedule of Investment Returns (page 59), Medical Insurance Plan Schedule of Changes in Net OPEB Liability (page 60), Medical Insurance Plan Schedule of Net OPEB Liability (page 61), Medical Insurance Plan Schedule of Employer Contributions (page 61), Schedule of Investment Returns (page 62), Life Insurance Plan Schedule of Changes in Net OPEB Liability (page 63), Life Insurance Plan Schedule of Net OPEB Liability (page 64), Life Insurance Plan Schedule of Employer Contributions (page 64), and Schedule of Investment Returns (page 65) 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 audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Kentucky Teachers' Retirement System's basic financial statements. The additional supporting schedules (pages 66 through 68) are presented for purposes of additional analysis and are not a required part of the basic financial statements. The Schedule of Administrative Expenses, Schedule of Professional Services and Contracts, and Schedule of Contracted Investment Management Expenses 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 audits 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 Schedule of Administrative Expenses, Schedule of Professional Services and Contracts, and Schedule of Contracted Investment Management Expenses are 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 November 14, 2017, on our consideration of the Teachers' Retirement System of the State of Kentucky's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is 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 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 Teachers' Retirement System of the State of Kentucky's internal control over financial reporting and compliance.



Louisville, Kentucky
November 14, 2017

**TEACHERS' RETIREMENT SYSTEM OF THE STATE OF KENTUCKY
MANAGEMENT'S DISCUSSION AND ANALYSIS**

This discussion and analysis of the Teachers' Retirement System of the State of Kentucky (TRS, System, or Plan) financial performance provides an overview of the defined benefit and medical insurance plans' financial year ended June 30, 2017. Please read it in conjunction with the respective financial statements, which begin on page 10.

USING THIS FINANCIAL REPORT

Because of the long-term nature of the defined benefit retirement annuity plan, and the medical and life insurance plans, financial statements alone cannot provide sufficient information to properly reflect the ongoing perspective of the System. The Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position (on pages 10-13) provide information about the activities of the defined benefit retirement annuity plan, medical insurance plan, life insurance plan and the tax-sheltered annuity plan as a whole. The Teachers' Retirement System of the State of Kentucky is the fiduciary of funds held in trust for its members.

The Required Supplementary Information includes historical trend information about the funded status of the defined benefit retirement annuity plan, the medical insurance plan and life insurance plan presented as required by accounting standards. The Schedules of Employer Contributions present historical trend information about the required contributions of employers and the contributions made by employers in relation to the requirement. These schedules provide information that contributes to understanding the changes over time in the funded status of the plans. Separate reports prepared by the actuary using board adopted funding methodology provide a long-term, ongoing plan perspective and the progress made in accumulating sufficient assets to pay benefits and insurance premiums when due.

**KENTUCKY TEACHERS' RETIREMENT
SYSTEM AS A WHOLE**

In the fiscal year ended June 30, 2017, the System's combined fiduciary net position increased by \$2,116.3 million – from \$17,638.5 million in 2016 to \$19,754.8 million in 2017. In 2015, the combined net position totaled \$18,766.8 million. The following summaries focus on the fiduciary net position and changes in fiduciary net position of the System's defined benefit retirement annuity plan, medical insurance plan, and life insurance plan.

TEACHERS' RETIREMENT SYSTEM OF THE STATE OF KENTUCKY
MANAGEMENT'S DISCUSSION AND ANALYSIS (Continued)

Summary of Fiduciary Net Position
(In Millions)

Categories	Defined Benefit Plan			Medical Insurance Plan			Life Insurance Plan		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Cash & Investments	\$ 18,649.0	\$ 16,707.7	\$ 17,930.0	\$ 922.6	\$ 681.4	\$ 609.7	\$ 86.6	\$ 90.1	\$ 88.6
Receivables	135.0	119.5	295.5	44.6	58.3	29.1	1.2	1.2	1.1
Capital Assets	18.1	17.0	14.9	-	-	-	-	-	-
Total Assets	18,802.1	16,844.2	18,240.4	967.2	739.7	638.8	87.8	91.3	89.7
Total Liabilities	(94.4)	(31.4)	(191.3)	(8.8)	(5.9)	(11.8)	-	(0.4)	-
Net Position	<u>\$ 18,707.7</u>	<u>\$ 16,812.8</u>	<u>\$ 18,049.1</u>	<u>\$ 958.4</u>	<u>\$ 733.8</u>	<u>\$ 627.0</u>	<u>\$ 87.8</u>	<u>\$ 90.9</u>	<u>\$ 89.7</u>
	*Totals	2017	2016**	2015**					
Cash & Investments	\$	19,658.2	\$ 17,479.2	\$ 18,628.3					
Receivables		180.8	179.0	325.7					
Capital Assets		18.1	17.0	14.9					
Total Assets		19,857.1	17,675.2	18,968.9					
Total Liabilities		(103.2)	(37.7)	(203.1)					
Net Position	\$	19,753.9	\$ 17,637.5	\$ 18,765.8					

*Other Funds consisting of the 403(b) Tax Shelter Plan, the Excess Benefit Fund and the Losey Scholarship fund had a combined fiduciary net position of \$1.0 million for years ended 2017, 2016 and 2015.

**Reflects revised amounts reported for both 2016 and 2015 as described in Note 2

The fiduciary net position of the defined benefit retirement annuity plan increased by 11.3 percent (\$18,707.7 million compared to \$16,812.8 million) and in 2015, the fiduciary net position of the defined benefit plan totaled \$18,049.1 million. The increase is primarily due to additional employer contributions from the state and improvements in market conditions which resulted in a net investment income increase of \$2.7 billion more than 2016. The 2016 amount was \$1.1 billion less than 2015. The defined benefit retirement annuity plan assets are restricted to providing monthly retirement allowances to members and their beneficiaries.

The fiduciary net position of the medical insurance plan increased by 30.6 percent (\$958.4 million compared to \$733.8 million) primarily due to contributions from members and employers exceeding insurance expenses due to legislation passed in 2010. This compares to 2015 where fiduciary net position of the medical insurance fund totaled \$627 million. Plan assets are restricted to providing hospital and medical insurance benefits to members and their spouses.

**TEACHERS' RETIREMENT SYSTEM OF THE STATE OF KENTUCKY
MANAGEMENT'S DISCUSSION AND ANALYSIS (Continued)**

**Summary of Changes in Fiduciary Net Position
(In Millions)**

Categories	Defined Benefit Plan			Medical Insurance Plan			Life Insurance Plan		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Additions									
Member Contributions	\$ 313.6	\$ 313.0	\$ 308.2	\$ 128.8	\$ 128.1	\$ 100.6	\$ -	\$ -	\$ -
Employer Contributions	1,060.7	565.5	559.6	180.3	178.6	145.3	1.0	1.0	1.0
Net Investment Income/(Loss)	2,475.8	(245.2)	862.2	95.5	(9.3)	7.4	1.0	4.8	2.0
Total Additions	3,850.1	633.3	1,730.0	404.6	297.4	253.3	2.0	5.8	3.0
Deductions									
Benefit Payments	1,918.6	1,833.2	1,741.5	-	-	-	5.2	4.6	4.1
Refunds	26.3	27.8	23.1	-	-	-	-	-	-
Administrative Expense	10.3	8.6	8.9	1.5	1.7	1.6	-	-	-
Insurance Expenses	-	-	-	178.5	188.9	160.7	-	-	-
Total Deductions	1,955.2	1,869.6	1,773.5	180.0	190.6	162.3	5.2	4.6	4.1
Increase/(Decrease) in Net Position	\$ 1,894.9	\$ (1,236.3)	\$ (43.5)	\$ 224.6	\$ 106.8	\$ 91.0	\$ (3.2)	\$ 1.2	\$ (1.1)

*Totals	2017	2016**	2015**
Additions			
Member Contributions	\$ 442.4	\$ 441.1	\$ 408.8
Employer Contributions	1,242.0	745.1	705.9
Net Investment Income/(Loss)	2,572.3	(249.7)	871.6
Other Income	-	-	-
Total Additions	4,256.7	936.5	1,986.3
Deductions			
Benefit Payments	1,923.8	1,837.8	1,745.6
Refunds	26.3	27.8	23.1
Administrative Expense	11.8	10.3	10.5
Insurance Expenses	178.5	188.9	160.7
Total Deductions	2,140.4	2,064.8	1,939.9
Increase/(Decrease) in Net Position	\$ 2,116.3	\$ (1,128.3)	\$ 46.4

*Other Funds consisting of the 403(b) Tax Shelter Plan, the Excess Benefit Fund and the Losey Scholarship fund had a combined change in fiduciary net position of \$1.0 million for years ended 2017, 2016 and 2015.

**Reflects revised amounts reported for both 2016 and 2015 as described in Note 2.

DEFINED BENEFIT RETIREMENT ANNUITY PLAN ACTIVITIES

Retirement contributions are calculated by applying a percentage factor to salary and are paid monthly by each member. Members may also pay contributions to repurchase previously refunded service credit or to purchase various types of elective service credit.

**TEACHERS' RETIREMENT SYSTEM OF THE STATE OF KENTUCKY
MANAGEMENT'S DISCUSSION AND ANALYSIS (Continued)**

In 2017, Employer contributions totaled \$1,060.7 million, a net increase of \$495.2 million from the prior fiscal year. The increase was due to additional employer contributions paid by the state. In 2016, Employer contributions increased \$5.9 million compared to the prior fiscal year.

In 2017, the defined benefit plan experienced an increase in net investment income compared to the previous year (\$2,475.8 million compared to negative \$245.2 million). For 2015, net investment income totaled \$862.2 million. The increase in net investment income is mainly due to favorable market conditions for the year ended June 30, 2017 compared to 2016. Total deductions in 2017 increased \$85.6 million. The increase was caused principally by an increase of \$86.0 million in defined benefit payments. Members who were drawing benefits as of June 2016 received an increase of one and one-half percent to their retirement allowances in July 2016. Also, there was an increase of 1,403 members and beneficiaries on the retired payroll as of June 30, 2017.

OTHER POST EMPLOYMENT BENEFIT ACTIVITIES

During the 2017 fiscal year, the medical insurance plan member contributions increased \$0.7 million and employer contributions increased \$1.7 million from fiscal year 2016. The member, employer and state contributions increased primarily due to the implementation of the Shared Responsibility Plan beginning July 1, 2010 which includes increased contributions from active and retired members, employers and the state.

Net investment income for the medical insurance plan increased \$104.8 million from negative \$9.3 million in 2016 to \$95.5 million in 2017. In 2015, net investment income totaled \$7.4 million.

The life insurance plan has an actuarial valuation conducted independently from the defined benefit plan. Total life insurance benefits paid for 2017, 2016 and 2015 were \$5.2, \$4.6 and \$4.1 million respectively.

FUNDING

For the 2016-2018 biennium, the State budgeted \$973 million of additional employer contributions for the unfunded liability of the System. The latest actuarial valuation was for the period ending June 30, 2017. This report reflects the System's actuarial value of assets totaling \$18.5 billion and actuarial determined liabilities totaling \$32.8 billion. The funded ratio of actuarial assets to liabilities is 56.4%. The additional funding provided in the budget resulted in 99% of the Actuarially Determined Employer Contribution being made for fiscal year 2017. Assuming that contributions to the System are made by the State from year to year in the future as recommended by the actuary, the System should have sufficient assets to provide the benefits defined by law.

The actuarial funding of the medical insurance and life insurance plans is provided in the Schedule of Funding Progress presented in the Required Supplementary Information. The asset value, stated in the Schedule of Funding Progress, is determined by the System's independent actuary. The actuarial accrued liability is calculated using the entry age cost method. Although the medical insurance plan continues to have a large unfunded actuarial liability, the current obligations are being met by current funding. Effective July 1, 2010 the Shared Responsibility Plan for funding retiree health benefits requires members, retirees, participating employers and the state to make contributions for pre-funding retiree medical benefits. Annual required contributions of the medical insurance plan are provided in the Schedule of Employer Contributions presented in the Required Supplementary Information.

**TEACHERS' RETIREMENT SYSTEM OF THE STATE OF KENTUCKY
MANAGEMENT'S DISCUSSION AND ANALYSIS (Continued)**

HISTORICAL TRENDS

Accounting standards require that the Statement of Fiduciary Net Position present asset values at fair value and include only benefits and refunds due to plan members and beneficiaries and accrued investment and administrative expenses as of the reporting date. Detailed information regarding the funded status, including the key actuarial assumptions, target allocations and the sensitivity of the discount rate can be found in Note 4 of the financial statements for the defined benefit plan, Note 8 for the medical health plan, and Note 9 for the life insurance plan. The blended discount rate mandated by accounting standards result in a lower funding level when compared to the actuarially determined funded levels reported in past years. The Schedule of Employer Contributions is provided in the Required Supplementary Information.

The System's independent consulting actuaries are members of the American Academy of Actuaries and experienced in performing valuations for public retirement systems. As mandated by state law, the valuations of the retirement annuity and health care plans are prepared in accordance with principles of practice prescribed by the Actuarial Standards Board consistent with accepted actuarial procedures. Actuarial assumptions used in the valuations are internally consistent and reasonable based on the actual experience of the plans. An actuarial audit was completed in 2015, which confirmed the accuracy of actuarial procedures and the reasonableness of assumptions. A five-year experience study was completed in 2016, which also confirmed the reasonableness of assumptions based upon the actual experience of the plans. The actuarial assumptions reflected in the results may be reasonably relied upon. However, projections using other assumptions may produce significantly different results.

The Finance and Administration Cabinet commissioned a study of the state's retirement systems, including the Teachers' Retirement System. The resulting report from this study was issued in August 2017 and is the basis for ongoing discussions that may lead to legislative change to the System.

This financial report is designed to provide citizens, participating employers, plan members, and other users with an overview of the Kentucky Teachers' Retirement System's fiscal practices and responsibility. If you have questions or need additional information, please contact Mark Whelan, Chief Financial Officer, Teachers' Retirement System at 479 Versailles Road, Frankfort, Kentucky 40601.

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Teachers' Retirement System of the State of Kentucky
Statement of Fiduciary Net Position
As of June 30, 2017

	Defined Benefit Plan	Medical Insurance Plan	Life Insurance Plan	Other Funds	Total
Assets					
Cash	\$ 137,274,752	\$ 87,841,753	\$ 187,657	\$ 23,852	\$ 225,328,014
Prepaid Expenses	100,838	-	-	-	100,838
Receivables					
Contributions	28,779,827	18,456,779	105,264	-	47,341,870
Due from Other Trust Funds	1,567,472	-	-	-	1,567,472
State of Kentucky	13,640,427	5,580,025	32,617	-	19,253,069
Investment Income	40,623,372	1,685,597	1,036,228	2,693	43,347,890
Investment Sales Receivable	49,973,750	915,100	-	-	50,888,850
Other Receivables	438,303	17,958,624	-	-	18,396,927
Total Receivables	135,023,151	44,596,125	1,174,109	2,693	180,796,078
Investments at Fair Value (See Note 5)					
Short Term Investments	521,348,977	46,008,715	4,150,029	398,093	571,905,814
Bonds and Mortgages	2,871,403,201	70,283,077	82,293,300	258,962	3,024,238,540
Equities	11,589,656,638	473,274,401	-	280,104	12,063,211,143
Alternative Investments	1,062,855,562	42,340,364	-	-	1,105,195,926
Real Estate	1,046,760,134	42,701,494	-	-	1,089,461,628
Additional Categories	1,419,607,158	160,170,175	-	-	1,579,777,333
Total Investments	18,511,631,670	834,778,226	86,443,329	937,159	19,433,790,384
Capital Assets, at Cost net of Accumulated Depreciation of \$8,019,203 (See Note 2)					
	18,046,639	-	-	-	18,046,639
Total Assets	18,802,077,050	967,216,104	87,805,095	963,704	19,858,061,953
Liabilities					
Accounts Payable	2,201,644	10,300	-	-	2,211,944
Due To Other Trust Funds	-	1,538,574	27,690	1,208	1,567,472
Revenues Collected in Advance	-	3,437,483	-	-	3,437,483
Investment Purchases Payable	92,176,381	3,840,074	-	-	96,016,455
Total Liabilities	94,378,025	8,826,431	27,690	1,208	103,233,354
Net Position - Restricted for Pension and Other Post-Employment Benefits					
	\$ 18,707,699,025	\$ 958,389,673	\$ 87,777,405	\$ 962,496	\$ 19,754,828,599

*The "Combining Statement of Fiduciary Net Position – Other Funds" is presented on page 14.
The accompanying notes are an integral part of these financial statements.*

Teachers' Retirement System of the State of Kentucky
Statement of Fiduciary Net Position
As of June 30, 2016

	Defined Benefit Plan	Medical Insurance Plan	Life Insurance Plan	Other Funds	Total
Assets					
Cash	\$ 15,156,496	\$ 59,843,503	\$ -	\$ 481	\$ 75,000,480
Prepaid Expenses	89,235	-	-	-	89,235
Receivables					
Contributions	34,664,070	21,525,458	95,285	-	56,284,813
Due from Other Trust Funds	3,719,997	-	-	-	3,719,997
State of Kentucky	22,766,523	1,359,808	54,392	-	24,180,723
Investment Income	39,619,872	1,333,953	1,090,402	2,417	42,046,644
Investment Sales Receivable	18,182,733	633,642	-	-	18,816,375
Other Receivables	559,913	33,481,047	-	-	34,040,960
Total Receivables	<u>119,513,108</u>	<u>58,333,908</u>	<u>1,240,079</u>	<u>2,417</u>	<u>179,089,512</u>
Investments at Fair Value (See Note 5)					
Short Term Investments	507,724,996	18,186,502	913,077	410,590	527,235,165
Bonds and Mortgages	2,734,474,510	62,555,400	89,200,103	290,132	2,886,520,145
Equities	10,267,066,002	354,369,798	-	242,351	10,621,678,151
Alternative Investments	932,813,350	23,931,317	-	-	956,744,667
Real Estate	940,860,202	25,433,241	-	-	966,293,443
Additional Categories	1,309,513,418	137,075,842	-	-	1,446,589,260
Total Investments	<u>16,692,452,478</u>	<u>621,552,100</u>	<u>90,113,180</u>	<u>943,073</u>	<u>17,405,060,831</u>
Capital Assets, at Cost net of Accumulated Depreciation of \$6,022,382 (See Note 2)					
	16,973,670	-	-	-	16,973,670
Total Assets	<u>16,844,184,987</u>	<u>739,729,511</u>	<u>91,353,259</u>	<u>945,971</u>	<u>17,676,213,728</u>
Liabilities					
Accounts Payable	1,917,838	19,811	325,494	-	2,263,143
Due To Other Trust Funds	1,935,385	1,747,115	36,837	660	3,719,997
Revenues Collected in Advance	-	2,047,051	-	-	2,047,051
Investment Purchases Payable	27,499,881	2,134,567	-	-	29,634,448
Total Liabilities	<u>31,353,104</u>	<u>5,948,544</u>	<u>362,331</u>	<u>660</u>	<u>37,664,639</u>
Net Position - Restricted for Pension and Other Post-Employment Benefits					
	<u>\$ 16,812,831,883</u>	<u>\$ 733,780,967</u>	<u>\$ 90,990,928</u>	<u>\$ 945,311</u>	<u>\$ 17,638,549,089</u>

*The "Combining Statement of Fiduciary Net Position – Other Funds" is presented on page 15.
The accompanying notes are an integral part of these financial statements.*

Teachers' Retirement System of the State of Kentucky
Statement of Changes in Fiduciary Net Position
For the Year Ended June 30, 2017

	Defined Benefit Plan	Medical Insurance Plan	Life Insurance Plan	Other Funds	Total
Additions					
Contributions					
State of Kentucky	\$ 981,417,089	\$ 75,496,731	\$ 881,703	\$ -	\$ 1,057,795,523
Other Employers	79,302,904	104,879,255	167,980	220,001	184,570,140
Members	313,625,434	128,819,243	-	-	442,444,677
Total Contributions	<u>1,374,345,427</u>	<u>309,195,229</u>	<u>1,049,683</u>	<u>220,001</u>	<u>1,684,810,340</u>
Investment Income/(Loss)					
Net Appreciation/(Depreciation) in					
Fair Value of Investments	2,167,046,581	89,058,380	(2,087,797)	6,584	2,254,023,748
Interest	153,207,310	5,777,776	3,011,187	10,920	162,007,193
Dividends	180,297,227	3,787,309	-	5,468	184,090,004
Rental Income, Net	30,477,797	-	-	-	30,477,797
Securities Lending, Gross Earnings	3,656,565	-	3,692	231	3,660,488
Gross Investment Income/(Loss)	<u>2,534,685,480</u>	<u>98,623,465</u>	<u>927,082</u>	<u>23,203</u>	<u>2,634,259,230</u>
Less: Investment Expense	(57,836,050)	(3,170,868)	(10,478)	(114)	(61,017,510)
Less: Securities Lending Expense	(1,096,632)	-	(1,107)	(69)	(1,097,808)
Net Investment Income/(Loss)	<u>2,475,752,798</u>	<u>95,452,597</u>	<u>915,497</u>	<u>23,020</u>	<u>2,572,143,912</u>
Total Additions	<u>3,850,098,225</u>	<u>404,647,826</u>	<u>1,965,180</u>	<u>243,021</u>	<u>4,256,954,252</u>
Deductions					
Benefits	1,918,612,128	-	5,151,013	224,628	1,923,987,769
Refunds of Contributions	26,305,240	-	-	-	26,305,240
Insurance Expenses	-	178,500,546	-	-	178,500,546
Administrative Expense	10,313,715	1,538,574	27,690	1,208	11,881,187
Total Deductions	<u>1,955,231,083</u>	<u>180,039,120</u>	<u>5,178,703</u>	<u>225,836</u>	<u>2,140,674,742</u>
Net Increase/(Decrease)	1,894,867,142	224,608,706	(3,213,523)	17,185	2,116,279,510
Net Position - Restricted for Pension and Other Postemployment Benefits					
Beginning of Year	<u>16,812,831,883</u>	<u>733,780,967</u>	<u>90,990,928</u>	<u>945,311</u>	<u>17,638,549,089</u>
End of Year	<u>\$ 18,707,699,025</u>	<u>\$ 958,389,673</u>	<u>\$ 87,777,405</u>	<u>\$ 962,496</u>	<u>\$ 19,754,828,599</u>

*The "Combining Statement of Changes in Fiduciary Net Position – Other Funds" is presented on page 16.
The accompanying notes are an integral part of these financial statements.*

Teachers' Retirement System of the State of Kentucky
Statement of Changes in Fiduciary Net Position
For the Year Ended June 30, 2016

	Defined Benefit Plan	Medical Insurance Plan	Life Insurance Plan	Other Funds	Total
Additions					
Contributions					
State of Kentucky	\$ 484,986,954	\$ 74,367,250	\$ 872,990	\$ -	\$ 560,227,194
Other Employers	80,467,636	104,271,120	164,779	-	184,903,535
Members	<u>313,044,226</u>	<u>128,068,781</u>	-	-	<u>441,113,007</u>
Total Contributions	<u>878,498,816</u>	<u>306,707,151</u>	<u>1,037,769</u>	-	<u>1,186,243,736</u>
Investment Income					
Net Appreciation/(Depreciation) in					
Fair Value of Investments	(584,310,367)	(16,291,780)	1,742,044	41,543	(598,818,560)
Interest	162,339,804	8,029,465	3,095,887	10,013	173,475,169
Dividends	194,570,308	1,207,958	-	5,187	195,783,453
Rental Income, Net	28,039,967	-	-	-	28,039,967
Securities Lending, Gross Earnings	<u>2,767,119</u>	-	<u>3,550</u>	<u>404</u>	<u>2,771,073</u>
Gross Investment Income	(196,593,169)	(7,054,357)	4,841,481	57,147	(198,748,898)
Less: Investment Expense	(47,791,624)	(2,278,133)	(11,080)	(116)	(50,080,953)
Less: Securities Lending Expense	<u>(830,067)</u>	-	<u>(1,065)</u>	<u>(121)</u>	<u>(831,253)</u>
Net Investment Income	<u>(245,214,860)</u>	<u>(9,332,490)</u>	<u>4,829,336</u>	<u>56,910</u>	<u>(249,661,104)</u>
Total Additions	<u>633,283,956</u>	<u>297,374,661</u>	<u>5,867,105</u>	<u>56,910</u>	<u>936,582,632</u>
Deductions					
Benefits	1,833,198,630	-	4,595,489	94,665	1,837,888,784
Refunds of Contributions	27,747,742	-	-	-	27,747,742
Insurance Expenses	-	188,869,994	-	-	188,869,994
Administrative Expense	<u>8,636,438</u>	<u>1,686,070</u>	<u>27,195</u>	<u>560</u>	<u>10,350,263</u>
Total Deductions	<u>1,869,582,810</u>	<u>190,556,064</u>	<u>4,622,684</u>	<u>95,225</u>	<u>2,064,856,783</u>
Net Increase/(Decrease)	(1,236,298,854)	106,818,597	1,244,421	(38,315)	(1,128,274,151)
Net Position - Restricted for Pension and Other Postemployment Benefits					
Beginning of Year	<u>18,049,130,737</u>	<u>626,962,370</u>	<u>89,746,507</u>	<u>983,626</u>	<u>18,766,823,240</u>
End of Year	<u>\$ 16,812,831,883</u>	<u>\$ 733,780,967</u>	<u>\$ 90,990,928</u>	<u>\$ 945,311</u>	<u>\$ 17,638,549,089</u>

*The "Combining Statement of Changes in Fiduciary Net Position – Other Funds" is presented on page 17.
The accompanying notes are an integral part of these financial statements.*

Teachers' Retirement System of the State of Kentucky
Combining Statement of Fiduciary Net Position - Other Funds
As of June 30, 2017

	403(b) Tax Shelter	Supplemental Benefit Fund	Losey Scholarship	Total
Assets				
Cash	\$ -	\$ 23,852	\$ -	\$ 23,852
Receivables				
Investment Income	233	-	2,460	2,693
Investments at Fair Value				
Short Term Investments	343,750	-	54,343	398,093
Bonds and Mortgages	-	-	258,962	258,962
Equities	-	-	280,104	280,104
Total Investments	<u>343,750</u>	<u>-</u>	<u>593,409</u>	<u>937,159</u>
Total Assets	343,983	23,852	595,869	963,704
Liabilities				
Due to Other Trust Funds	<u>56</u>	<u>1,055</u>	<u>97</u>	<u>1,208</u>
Total Liabilities	<u>56</u>	<u>1,055</u>	<u>97</u>	<u>1,208</u>
Net Position - Restricted for Pension and Other Post-Employment Benefits	<u>\$ 343,927</u>	<u>\$ 22,797</u>	<u>\$ 595,772</u>	<u>\$ 962,496</u>

The accompanying notes are an integral part of these financial statements.

Teachers' Retirement System of the State of Kentucky
Combining Statement of Fiduciary Net Position - Other Funds
As of June 30, 2016

	403(b) Tax Shelter	Supplemental Benefit Fund	Losey Scholarship	Total
Assets				
Cash	\$ -	\$ 481	\$ -	\$ 481
Receivables				
Investment Income	111	-	2,306	2,417
Investments at Fair Value				
Short Term Investments	352,773	-	57,817	410,590
Bonds and Mortgages	-	-	290,132	290,132
Equities	-	-	242,351	242,351
Total Investments	<u>352,773</u>	<u>-</u>	<u>590,300</u>	<u>943,073</u>
Total Assets	352,884	481	592,606	945,971
Liabilities				
Due to Other Trust Funds	<u>110</u>	<u>389</u>	<u>161</u>	<u>660</u>
Total Liabilities	<u>110</u>	<u>389</u>	<u>161</u>	<u>660</u>
Net Position - Restricted for Pension and Other Post-Employment Benefits	<u>\$ 352,774</u>	<u>\$ 92</u>	<u>\$ 592,445</u>	<u>\$ 945,311</u>

The accompanying notes are an integral part of these financial statements.

Teachers' Retirement System of the State of Kentucky
Combining Statement of Changes in Fiduciary Net Position - Other Funds
For the Year Ended June 30, 2017

	<u>403(b)</u> <u>Tax Shelter</u>	<u>Supplemental</u> <u>Benefit Fund</u>	<u>Losey</u> <u>Scholarship</u>	<u>Total</u>
Additions				
Other Employers	\$ -	\$ 220,001	\$ -	\$ 220,001
Investment Income				
Net Appreciation in				
Fair Value of Investments	-	-	6,584	6,584
Interest	1,638	-	9,282	10,920
Dividends	-	-	5,468	5,468
Securities Lending, Gross	-	-	231	231
Gross Investment Income	<u>1,638</u>	<u>-</u>	<u>21,565</u>	<u>23,203</u>
Less: Investment Expense	(42)	-	(72)	(114)
Less: Securities Lending Expense	-	-	(69)	(69)
Net Investment Income	<u>1,596</u>	<u>-</u>	<u>21,424</u>	<u>23,020</u>
Total Additions	1,596	220,001	21,424	243,021
Deductions				
Benefits	10,387	196,241	18,000	224,628
Administrative Expense	<u>56</u>	<u>1,055</u>	<u>97</u>	<u>1,208</u>
Total Deductions	<u>10,443</u>	<u>197,296</u>	<u>18,097</u>	<u>225,836</u>
Net Increase/(Decrease)	(8,847)	22,705	3,327	17,185
Net Position - Restricted for Pension and Other Post-Employment Benefits				
Beginning of Year	<u>352,774</u>	<u>92</u>	<u>592,445</u>	<u>945,311</u>
End of Year	<u>\$ 343,927</u>	<u>\$ 22,797</u>	<u>\$ 595,772</u>	<u>\$ 962,496</u>

The accompanying notes are an integral part of these financial statements.

Teachers' Retirement System of the State of Kentucky
Combining Statement of Changes in Fiduciary Net Position - Other Funds
For the Year Ended June 30, 2016

	<u>403(b)</u> <u>Tax Shelter</u>	<u>Supplemental</u> <u>Benefit Fund</u>	<u>Losey</u> <u>Scholarship</u>	<u>Total</u>
Additions				
Investment Income				
Net Appreciation in				
Fair Value of Investments	\$ -	\$ -	\$ 41,543	\$ 41,543
Interest	863	-	9,150	10,013
Dividends	-	-	5,187	5,187
Securities Lending, Gross	-	-	404	404
Gross Investment Income	<u>863</u>	<u>-</u>	<u>56,284</u>	<u>57,147</u>
Less: Investment Expense	(43)	-	(73)	(116)
Less: Securities Lending Expense	-	-	(121)	(121)
Net Investment Income	<u>820</u>	<u>-</u>	<u>56,090</u>	<u>56,910</u>
Total Additions	820	-	56,090	56,910
Deductions				
Benefits	11,858	65,807	17,000	94,665
Administrative Expense	<u>71</u>	<u>389</u>	<u>100</u>	<u>560</u>
Total Deductions	<u>11,929</u>	<u>66,196</u>	<u>17,100</u>	<u>95,225</u>
Net Increase/(Decrease)	(11,109)	(66,196)	38,990	(38,315)
Net Position - Restricted for Pension and Other Post-Employment Benefits				
Beginning of Year	<u>363,883</u>	<u>66,288</u>	<u>553,455</u>	<u>983,626</u>
End of Year	<u>\$ 352,774</u>	<u>\$ 92</u>	<u>\$ 592,445</u>	<u>\$ 945,311</u>

The accompanying notes are an integral part of these financial statements.

NOTE 1: DESCRIPTION OF RETIREMENT ANNUITY PLAN

A. REPORTING ENTITY

The Teachers' Retirement System of the State of Kentucky (TRS) was created by the 1938 General Assembly and is governed by Chapter 161 Section 220 through Chapter 161 Section 990 of the Kentucky Revised Statutes (KRS). TRS is a blended component unit of the Commonwealth of Kentucky and therefore is included in the Commonwealth's financial statements. TRS is a cost-sharing multiple-employer defined benefit plan with a special funding situation established to provide retirement annuity plan coverage for local school districts and other public educational agencies in the Commonwealth.

KRS 161.250 provides that the general administration and management of TRS, and the responsibility for its proper operation, is vested in a board of trustees. The board of trustees consists of the chief state school officer, the State Treasurer, two trustees appointed by the Governor and seven elected trustees. Four of the elected trustees are active teachers, two are not members of the teaching profession, and one is an annuitant of the System.

B. PARTICIPANTS

As of June 30, 2017 a total of 207 employers participated in the plan. Employers are comprised of local school districts, Department of Education Agencies, universities, the Kentucky Community and Technical College System, and other educational organizations. The State under the Governmental Accounting Standards Board (GASB) No. 67 is recognized as a non-employer contributing entity providing the employer matching contributions for members employed by the local school districts and regional educational cooperatives.

According to KRS 161.220 " . . . any regular or special teacher, or professional occupying a position requiring certification or graduation from a four (4) year college or university . . . " is eligible to participate in the System. The following illustrates the classifications of members:

	2017	2016
Active contributing members:		
Vested	48,211	48,292
Non-vested	23,919	23,556
Inactive members, vested	8,624	9,240
Retirees and beneficiaries currently receiving benefits	52,966	51,563
Total members, retirees, and beneficiaries	133,720	132,651

C. BENEFIT PROVISIONS

For Members Before July 1, 2008:

Members become vested when they complete five (5) years of credited service. To qualify for monthly retirement benefits, payable for life, members must either:

- 1.) Attain age fifty-five (55) and complete five (5) years of Kentucky service, or
- 2.) Complete twenty-seven (27) years of Kentucky service.

Non-university members receive monthly payments equal to two percent (2%) (service prior to July 1, 1983) and two and one-half percent (2.5%) (service after July 1, 1983) of their final average salaries for each year of credited service. Non-university members who became members on or after July 1, 2002 will receive monthly benefits equal to two percent (2%) of their final average salary for each year of service if, upon retirement, their total service is less than ten (10) years. New members after July 1, 2002 who retire with ten (10) or more years of total service will receive monthly benefits equal to two and one-half percent (2.5%) of their final average salary for each year of service, including the first ten (10) years. In addition, non-university members who retire July 1, 2004 and later with more than thirty (30) years of service will have their multiplier increased for all years over thirty (30) from two and one-half percent (2.5%) to three percent (3%) to be used in their benefit calculation.

University employees receive monthly benefits equal to two percent (2%) of their final average salary for each year of credited service.

The final average salary is the member's five (5) highest annual salaries except members at least age fifty-five (55) with twenty-seven (27) or more years of service may use their three (3) highest annual salaries. For all members, the annual allowance is reduced by 5% per year from the earlier of age 60 or the date the member would have completed 27 years of service. The minimum annual service allowance for all members is \$440 multiplied by credited service.

For Members On or After July 1, 2008:

Members become vested when they complete five (5) years of credited service. To qualify for monthly retirement benefits, payable for life, members must either:

- 1.) Attain age sixty (60) and complete five (5) years of Kentucky service, or
- 2.) Complete twenty-seven (27) years of Kentucky service, or
- 3.) Attain age fifty-five (55) and complete ten (10) years of Kentucky service.

The annual retirement allowance for non-university members is equal to: (a) one and seven tenths percent (1.7%) of final average salary for each year of credited service if their service is 10 years or less; (b) two percent (2.0%) of final average salary for each year of credited service if their service is greater than 10 years but no more than 20 years; (c) two and three tenths percent (2.3%) of final average salary for each year of credited service if their service is greater than 20 years but no more than 26 years; (d) two and one half percent (2.5%) of final average salary for each year of credited service if their service is greater than 26 years but no more than 30 years; (e) three percent (3.0%) of final average salary for years of credited service greater than 30 years.

The annual retirement allowance for university members is equal to: (a) one and one-half percent (1.5%) of final average salary for each year of credited service if their service is 10 years or less; (b) one and seven tenths percent (1.7%) of final average salary for each year of credited service if their service is greater than 10 years but no more than 20 years; (c) one and eighty five hundredths percent (1.85%) of final average salary for each year of credited service if their service is greater than 20 years but less than 27 years; (d) two percent (2.0%) of final average salary for each year of credited service if their service is greater than or equal to 27 years.

The final average salary is the member's five (5) highest annual salaries except members at least age fifty-five (55) with twenty-seven (27) or more years of service may use their three (3) highest annual salaries. For all members, the annual allowance is reduced by 6% per year from the earlier of age 60 or the date the member would have completed 27 years of service.

Other Benefits:

TRS provides post-employment medical benefits to retirees as fully described in Note 8. The System also provides disability benefits for vested members at the rate of sixty percent (60%) of the final average salary. A life insurance benefit, payable upon the death of a member, is \$2,000 for active contributing members and \$5,000 for retired or disabled members.

Cost of living increases are one and one-half percent (1.5%) annually. Additional ad hoc increases and any other benefit amendments must be authorized by the General Assembly.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. BASIS OF ACCOUNTING

The financial statements are prepared on the accrual basis of accounting. Member contributions and employer matching contributions are recognized in the fiscal year due. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

B. CASH

TRS has seven cash accounts. At June 30, 2017, the retirement annuity cash account totaled \$105,013,741, the control cash account totaled \$32,163,714 and the administrative expense fund cash account was \$97,297 for a total of \$137,274,752 as carrying value of cash in the defined benefit plan. The medical insurance trust cash account totaled \$80,806,325, the medical insurance 401(h) cash account totaled \$6,921,861 and the medical insurance claims cash account totaled \$113,567 for a total of \$87,841,753 as carrying value of cash in the medical insurance plan. The life insurance plan cash account totaled \$187,657. The excess benefit fund cash account contained \$23,852. Therefore, the carrying value of cash was \$225,328,014 and the bank balance was \$222,173,747 and funds controlled by the Commonwealth of Kentucky of \$5,245,371. The variance is primarily due to outstanding checks and items not processed by the bank as of June 30, 2017.

C. CAPITAL ASSETS

Property and equipment are carried at cost, less accumulated depreciation. All costs of property and equipment \$5,000 (actual dollars) or greater are capitalized. Expenditures for maintenance and repairs are charged to operations as incurred. Depreciation is calculated using the straight-line method, with estimated lives ranging from five to forty years in the following major classes: office furniture and equipment, five years; other equipment, five years; computer software, ten years; TRS office buildings, forty years. The Pathway System replaced TRS's legacy computer system and is TRS's primary line of business information technology system. The Pathway System was capitalized and is being amortized or depreciated over ten years. As of June 30, 2016, the project to build and implement the Pathway System was substantially complete.

D. INVESTMENTS

Plan investments are reported at fair value. Fair value is the amount that a plan can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller. Short-term securities are carried at cost, which approximates fair value. Fixed income and common and preferred stocks are generally valued based on published market prices and quotations from national security exchanges and securities pricing services. Real estate is primarily valued based on appraisals performed by independent appraisers. Alternative investments such as private equity, timberland, and other additional categories, such as opportunistic credit, high yield bonds, and direct lending are valued using the most

recent general partner statement of fair value based on independent appraisals, updated for any subsequent partnership interests' cash flows.

Purchase and sales of debt securities, equity securities, and short-term investments are recorded on the trade date. Real estate equity transactions are recorded on the settlement date. Upon sale of investments, the difference between sales proceeds and cost is reflected in the statement of changes in fiduciary net position. Investment expenses consist of investment manager and consultant fees along with fees for custodial services.

E. COMPENSATED ABSENCES

Expenses for accumulated vacation days and compensatory time earned by TRS's employees are recorded when earned. Upon termination or retirement, employees of TRS are paid for accumulated vacation time limited to sixty (60) days and accumulated compensatory time limited to two hundred-forty (240) hours. As of June 30, 2017 and 2016 accrued compensated absences were included in the accounts payable on the balance sheet amounting to \$1,272,405 and \$1,166,764, respectively.

F. RISK MANAGEMENT

Destruction of assets, theft, employee injuries and court challenges to administrative policy are among the various risks to which TRS is exposed. In order to cover such risks TRS carries appropriate insurance policies such as fire and tornado, employee bonds, fiduciary liability, worker's compensation and equipment insurance.

G. OTHER RECEIVABLES

TRS allows qualified purchases of service credit to be made by installment payments not to exceed a five (5) year period. Revenue is recognized in the initial year of the installment contract agreement. The June 30, 2017 and 2016 installment contract receivables were \$438,303 and \$559,913, respectively.

H. USE OF ESTIMATES

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates. The most significant estimates impacting the financial statements relate to the actuarial assumptions.

I. INCOME TAXES

The defined benefit plan is organized as a tax-exempt retirement plan under the Internal Revenue Code. The tax sheltered annuity plan is no longer continued and will be fully terminated when all lifetime annuities have expired. The System's management believes that it has operated the plans within the constraints imposed by federal tax law.

J. RECENT PRONOUNCEMENTS

GASB Statement No. 74 which was adopted during the year ended June 30, 2017, addresses accounting and financial reporting requirements for postemployment benefits other than pensions (OPEB). The requirements for GASB No. 74 requires changes in presentation of the financial statements, notes to the financial statements, and required supplementary information. Significant changes include an actuarial calculation of total and net OPEB liability. It also includes comprehensive footnote disclosures regarding the OPEB liability, the sensitivity of the OPEB liability to the discount rate, and increased investment activity disclosures. The implementation of GASB No. 74 did not significantly impact the accounting for accounts receivable and investment balances. The total OPEB liability, determined in accordance with GASB No. 74 is presented in Note 8 for the Medical Insurance Plan, Note 9 for the Life Insurance Plan and in the Required Supplementary Information.

GASB Statement No. 75 replaces GASB Statement No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefit Plans Other Than Pensions and is effective for fiscal years beginning after June 15, 2017. TRS will issue a report in the Summer of 2018 that will help employers implement GASB No. 75 for their June 30, 2018 financial statements.

K. RECLASSIFICATIONS

Due to the implementation of GASB Statement No. 74, certain 2016 amounts have been reclassified in conformity with the 2017 presentation regarding amounts paid by retirees for medical insurance premiums and amounts received from Medicare and formulary rebates on the Statement of Changes in Fiduciary Net Position. Previously these payments were reported as additions to net assets and have been reclassified to be reported as a reduction to insurance expenses on the Statement of Changes in Fiduciary Net Position. The reclassification had no effect on total net position.

In order to comply with GASB Statement No. 28, amounts TRS has received as collateral from securities lending transactions have been removed from the balance sheet because the System does not have the ability to pledge or sell the securities unless the borrower defaults. Previously these amounts were recorded as an asset and a corresponding liability. The reclassification had no effect on total net position.

NOTE 3: CONTRIBUTIONS AND FUNDS OF THE PLAN

A. CONTRIBUTIONS

Contribution rates are established by Kentucky Revised Statutes. Non-university members are required to contribute 12.855 percent of their salaries to the System effective July 1, 2015; university members are required to contribute 10.40 percent of their salaries effective July 1, 2015. KRS 161.565 allows each university to reduce the contribution of its members by 2.215 percent; therefore, university members contribute 8.185 percent of their salary to TRS. For members employed by local school districts, the State, as a non-employer contributing entity, contributes 13.105 percent of salary for those who joined before July 1, 2008 and 14.105 percent for those who joined thereafter.

Other participating employers are required to contribute the percentage contributed by members plus an additional 3.25 percent of members' gross salaries.

The member and employer contributions consist of retirement annuity contributions and other post-employment benefit contributions to the medical and life insurance plans. The member post-employment medical contribution is 3.75 percent of salary. The employer post-employment medical contribution is .75 percent of member salaries. Also, employers (other than the state) contribute 3.0 percent of members' salaries and the state contributes the net cost of health insurance premiums for new retirees after June 30, 2010 in the non-Medicare eligible group. If a member leaves covered employment before accumulating five (5) years of credited service, accumulated member contributions to the retirement annuity plan plus interest are refunded upon the member's request.

B. FUNDS OF THE PLAN

Teacher Savings Fund

This fund was established by KRS 161.420(2) as the Teacher Savings Fund and consists of contributions paid by university and non-university members. The fund also includes interest authorized by the Board of Trustees from the Guarantee Fund. The accumulated contributions of members that are returned upon withdrawal or paid to the estate or designated beneficiary in the event of death are paid from this fund. Upon retirement, the member's contributions and the matching state contributions are transferred from this fund to Allowance Reserve Fund, the fund from which retirement benefits are paid.

State Accumulation Fund

This fund was established by KRS 161.420(3) as the State Accumulation Fund and receives state appropriations to the System. The state matches an amount equal to members' contributions. State appropriations during the year are based on estimates of members' salaries. At year-end when actual salaries are known, the required state matching is also realized by producing either a receivable from or a payable to the State of Kentucky.

Allowance Reserve Fund

This fund was established by KRS 161.420(4) as the Allowance Reserve Fund, the source for retirement, disability, and survivor benefits paid to members of TRS. These benefits are paid from the retired members' contributions until they are exhausted, at which time state matching contributions are used to pay the benefits. After an individual member's contributions and the state matching contributions have been exhausted, retirement benefits are paid from monies transferred from the Guarantee Fund.

Guarantee Fund

This fund was established by KRS 161.420(6) as the Guarantee Fund, to collect income from investments, state matching contributions of members withdrawn from the System, and state matching contributions for cost of living adjustments (COLAs). In addition, it receives money for which disposition is not otherwise provided. This fund provides interest to the other funds, benefits in excess of both members' and state matching contributions, monies for administrative expenses of TRS, and deficiencies not covered by the other funds.

Administrative Expense

This fund was established by KRS 161.420(1) as the Expense Fund. Investment income transferred to this fund from the Guarantee Fund is used to pay the administrative expenses of TRS. Administrative expenses are allocated among the funds based on benefits paid.

NOTE 4: NET PENSION LIABILITY OF EMPLOYERS

A. NET PENSION LIABILITY OF EMPLOYERS

The net pension liability (i.e., the System's liability determined in accordance with GASB No. 67 less the fiduciary net position) as of June 30, 2017 and June 30, 2016 is shown below.

Net Pension Liability of Employers						
(In Thousands)						
Fiscal Year Ending June 30	Total Pension Liability A	Plan Fiduciary Net Position B	Employers Net Pension Liability (A-B)	Plan Fiduciary Net Position As a % of Total Pension Liability (B/A)	Covered Payroll C	Net Pension Liability As a % of Covered Payroll [A-B/C]
2017	\$ 46,966,822	\$ 18,707,699	\$ 28,259,123	39.8%	\$ 3,415,432	827.40%
2016	\$ 47,736,901	\$ 16,812,832	\$ 30,924,069	35.2%	\$ 3,390,539	912.07%

B. SUMMARY OF ACTUARIAL ASSUMPTIONS

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below.

Valuation Date	6/30/2016
Actuarial cost method	Entry Age
Actuarial Assumptions:	
Investment rate of return	7.50%, net of pension plan investment expense, including inflation.
Projected salary increases	3.50 – 7.30%, including inflation
Inflation rate	3.00%
Municipal Bond Index Rate	3.56%
Single Equivalent Interest Rate	4.49%

Mortality rates were based on the RP-2000 Combined Mortality Table for Males or Females, as appropriate, with adjustments for mortality improvements based on a projection of Scale BB to 2025, set forward two years for males and one year for females. The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an actuarial experience study for the period July 1, 2010 – June 30, 2015 adopted by the Board on September 19, 2016.

C. TARGET ALLOCATIONS

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis 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 allocation and best estimates of arithmetic real rates of return for each major asset class, as provided by TRS's investment consultant, are summarized in the following table:

Asset Class	Allocation	Real Rate of Return
U.S. Equity	42.0%	4.4%
International Equity	20.0%	5.3%
Fixed Income	16.0%	1.5%
Additional Categories*	9.0%	3.6%
Real Estate	5.0%	4.4%
Private Equity	6.0%	6.7%
Cash	2.0%	0.8%
Total	100.0%	

**Includes Hedge Funds, High Yield and Non-US Developed Bonds*

D. DISCOUNT RATE

The discount rate used to measure the total pension liability was 4.49%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rates and the Employer contributions will be made at statutorily required rates, and the additional amount appropriated for fiscal year 2018. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members until the 2038 plan year. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments through 2037 and a municipal bond index rate of 3.56% was applied to all periods of projected benefit payments after 2037. The Single Equivalent Interest Rate (SEIR) that discounts the entire projected benefit stream to the same amount as the sum of the present values of the two separate benefit payments streams was used to determine the total pension liability.

The following tables present the net pension liability of the System for 2017 and 2016. The 2017 net pension liability of the System is calculated using the discount rate of 4.49%, as well as what the System's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (3.49%) or 1-percentage-point higher (5.49%) than the current rate:

2017			
<i>(in thousands)</i>	1% Decrease (3.49%)	Current Discount Rate (4.49%)	1% Increase (5.49%)
Systems' net pension liability	\$ 35,029,551	\$ 28,259,123	\$ 22,702,413

2016			
<i>(in thousands)</i>	1% Decrease (3.20%)	Current Discount Rate (4.20%)	1% Increase (5.20%)
Systems' net pension liability	\$ 37,937,230	\$ 30,924,069	\$ 25,168,197

June 30, 2016 is the actuarial valuation date upon which the TPL is based. An expected TPL is determined as of June 30, 2017 using standard roll forward techniques for the TPL based on the assumptions from the June 30, 2015 experience study using a discount rate of 4.49%, which was based on a municipal bond index rate as of that date equal to 3.56%. An expected TPL was also determined based on the assumptions prior to the June 30, 2015 experience study using the prior year discount rate of 4.20%, which was based on a municipal bond index rate of 3.01%. The roll forward calculation adds the annual normal cost (also called the service cost), subtracts the actual benefit payments and refunds for the plan year and then applies the assumed interest rate (SEIR) for the year. The difference between the two roll-forward amounts as of June 30, 2017 is the gain or loss due to changes in assumptions and other inputs.

In addition, we have determined an expected TPL as of June 30, 2017 based on the TPL roll-forward in the June 30, 2016 GASB 67 report. The difference between this amount and the roll-forward of the actual TPL using last year's assumptions is reflected as an experience gain or loss for the year. These procedures are shown in the following table:

TPL Roll-Forward			
(In Thousands)			
	Expected	Actual Before Assumption Change	Actual After Assumption Change
(a) Interest Rate	4.20%	4.20%	4.49%
(b) TPL as of June 30, 2016	\$ 47,736,901	\$ 47,928,332	\$ 45,781,405
(c) Entry Age Normal Cost for the Year July 1, 2016 - June 30, 2017	1,332,587	1,332,587	1,118,412
(d) Actual Benefit Payments (including refunds) For the year July 1, 2016 - June 30, 2017	1,944,917	1,944,917	1,944,917
(e) TPL as of June 30, 2017 (b) x (1 + (a)) + (c) - (d) x (1 + 0.5 x (a))	49,088,678	49,288,149	46,966,822
(f) Difference between Expected and Actual Experience (Gain)/Loss		199,471	
(g) Difference due to change in Assumptions and Other Inputs (Gain)/Loss			(2,321,327)

NOTE 5: DEPOSITS WITH FINANCIAL INSTITUTIONS AND INVESTMENTS
(Including Repurchase Agreements)

A. LEGAL PROVISIONS FOR INVESTMENTS

The following disclosures are meant to help the users of TRS' financial statements assess the risks TRS takes in investing member funds. The Board of Trustees and the Investment Committee are guided by asset allocation parameters that the Board approves through its powers as defined in KRS 161.430.

TRS administers a retirement annuity trust fund and a health insurance trust fund in accordance with state and federal law. TRS provides service and disability retirement benefits, death and survivor benefits, health insurance benefits, and life insurance benefits for Kentucky public education employees and their beneficiaries. The trust funds managed by TRS shall be referred to collectively as the "System" unless the context requires a specific reference to a particular fund.

The asset allocation parameters for the retirement annuity trust fund are set forth in Title 102, Chapter 1:175, Section 2 and Section 3 of the Kentucky Administrative Regulations as follows:

- There shall be no limit on the amount of investments owned by the retirement annuity trust fund if the investments are guaranteed by the United States government.
- Not more than thirty-five percent (35%) of the assets of the retirement annuity trust fund at fair value shall be invested in corporate debt obligations.
- Not more than ten percent (10%) of the assets of the retirement annuity trust fund at fair value shall be invested in foreign debt.
- Not more than sixty-five percent (65%) of the assets of the retirement annuity trust fund at fair value shall be invested in common stocks or preferred stocks.
- Not more than twenty-five percent (25%) of the assets of the retirement annuity trust fund at fair value shall be invested in a stock portfolio designed to replicate a general stock index.
- Not more than thirty percent (30%) of the assets of the retirement annuity trust fund at fair value shall be invested in the stocks of companies domiciled outside of the United States; any amounts so invested shall be included in the sixty-five percent (65%) limitation for total stocks.
- Not more than ten percent (10%) of the assets of the retirement annuity trust fund at fair value shall be invested in real estate. This would include real estate equity, real estate lease agreements, and shares in real estate investment trusts.
- Not more than ten percent (10%) of the assets of the retirement annuity trust fund at fair value shall be invested in alternative investments. This category may include private equity, venture capital, timberland, and infrastructure investments.
- Not more than fifteen percent (15%) of the assets of the retirement annuity trust fund at fair value shall be invested in any additional category or categories of investments. The Board of Trustees shall approve by resolution such additional category or categories of investments.

The asset allocation parameters for the health insurance trust fund are set forth in Title 102, Chapter 1:178, Section 2 of the Kentucky Administrative Regulations as follows:

- In order to preserve the assets of the health insurance trust fund and produce the required rate of return while minimizing risk, assets shall be prudently diversified among various classes of investments.
- In determining asset allocation policy, the investment committee and the board shall be mindful of the health insurance trust fund's liquidity and its capability of meeting both short and long-term obligations.

B. CASH AND CASH EQUIVALENTS

For cash deposits and cash equivalents, custodial credit risk is the risk that, in the event of a bank failure, the System's deposits may not be returned to the System. The System's total cash balance held at J.P. Morgan Chase Bank in noninterest-bearing accounts on June 30, 2017 was \$222,173,747. In addition to these funds, an amount of \$5,245,371 represents funds transferred to and controlled by the Commonwealth of Kentucky.

On November 9, 2010, the FDIC issued a Final Rule implementing Section 343 of the Dodd-Frank Wall Street Reform and Consumer Protection Act that provides for unlimited insurance coverage of noninterest-bearing transaction accounts. Beginning January 1, 2013, all cash balances at J.P. Morgan Chase Bank were insured up to \$250,000 and the remaining balances fully collateralized with securities held by the Federal Reserve Bank of New York in the name of the Commonwealth of Kentucky-Teachers' Retirement.

Deposits are exposed to custodial credit risk if they are not covered by depository insurance and the deposits are:

- a. uncollateralized,
- b. collateralized with securities held by the pledging financial institution, or
- c. collateralized with securities held by the pledging financial institution's trust department or agent but not in the depositor-government's name.

As of June 30, 2017, the System's cash balance in the amount of \$222,173,747 was not exposed to custodial credit risk since this amount was fully insured by the FDIC limit of \$250,000 and the remaining balances collateralized with securities valued at \$221,955,776.

C. INVESTMENTS

All of the System's assets are invested in short-term and long-term debt (bonds and mortgages) securities, equity (stock) securities, real estate, alternative investments, and additional categories as permitted by regulation. These assets are reported at fair value.

Investments are governed by the Board of Trustees' policies while the Board of Trustees and the Investment Committee shall execute their fiduciary responsibilities in accordance with the "prudent person rule", as identified in KRS 161.430 (2)(b). The prudent person rule establishes a standard for all fiduciaries, to act as a prudent person would be expected to act, with the "care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims".

The following chart represents the fair values of the investments of the Teachers' Retirement System of the State of Kentucky for June 30, 2017 and 2016.

**Schedule of Investments
Retirement Annuity Trust**

	Fair Value June 30, 2017	Fair Value June 30, 2016
Money Market Fund	\$ 525,897,099	\$ 508,661,966
STIFF (BNYM)	-	386,697
Total Cash Equivalents	525,897,099	509,048,663
U. S. Government	1,001,683,231	797,819,019
Agency Bonds	48,416,092	55,607,806
Mortgage Backed Securities	78,747,979	90,812,117
Asset Backed Securities	52,576,134	62,625,012
Commercial Mtg Backed Securities	40,167,581	61,720,221
Collateralized Mtg Obligations	27,820,939	27,572,453
Municipal Bonds	384,589,168	405,755,392
Corporate Bonds	1,319,954,339	1,322,052,725
Total Fixed Income	2,953,955,463	2,823,964,745
International Equity	4,460,064,917	3,681,811,400
U. S. Equity	7,129,871,825	6,585,496,953
Total Equities	11,589,936,742	10,267,308,353
Real Estate Equity	1,046,760,134	940,860,202
Total Real Estate Equity	1,046,760,134	940,860,202
Private Equity	854,635,619	731,560,317
Timberland	208,219,943	201,253,033
Total Alternative Investments	1,062,855,562	932,813,350
Opportunistic Credit	539,082,990	512,173,863
Corporate Bonds	491,088,604	411,948,487
Corporate Loans	389,435,564	385,391,068
Total Additional Categories	1,419,607,158	1,309,513,418
TOTAL INVESTMENTS*	\$ 18,599,012,158	\$ 16,783,508,731

**This schedule includes the Life Insurance Plan, 403(b) Tax Shelter Plan, and Losey Scholarship fund.*

**Schedule of Investments
Health Insurance Trust**

	Fair Value June 30, 2017	Fair Value June 30, 2016
Money Market Fund	\$ 46,008,715	\$ 18,186,502
Total Cash Equivalents	46,008,715	18,186,502
Agency Bonds	-	6,380,550
U.S. Government	20,457,755	-
Corporate Bonds	49,825,322	56,174,850
Total Fixed Income	70,283,077	62,555,400
Global Equities	442,726,237	354,369,798
U.S. Equity	30,548,164	-
Total Equities	473,274,401	354,369,798
Real Estate Equity	42,701,494	25,433,241
Total Real Estate Equity	42,701,494	25,433,241
Private Equity	42,340,364	23,931,317
Total Alternative Investments	42,340,364	23,931,317
Opportunistic Credit	49,620,098	45,955,526
Corporate Bonds	81,742,713	64,192,800
Corporate Loans	28,807,364	26,927,516
Total Additional Categories	160,170,175	137,075,842
TOTAL INVESTMENTS	\$ 834,778,226	\$ 621,552,100

Custodial Credit Risk

Custodial Credit Risk for an investment is the risk that, in the event of the failure of counterparty, the System will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System, and are held by either:

- a. the counterparty or
- b. the counterparty's trust department or agent, but not in the System's name.

The cash reserve of the System is primarily maintained in high quality short term investments through the Dreyfus Institutional Cash Advantage Fund. This fund invests in a diversified portfolio of high quality, short-term debt securities and the Fund is rated AAA by S&P, Moody's, and Fitch, Inc. The Fund's portfolio is structured within the confines of Rule 2a-7 under the Investment Company Act of 1940, as amended. Commercial paper, U.S. Treasury and agency obligations, certificates of deposit, bankers' acceptances, repurchase agreements, time deposits, etc. are all permissible investments within this Fund.

Whenever repurchase agreements are ordered by TRS under the terms of Master Repurchase Agreements with various brokers, the terms are dictated by TRS. The repurchase agreements and their supporting collateral are held by the custodial agent's correspondent bank in an account identified by the custodian's name and TRS' nominee name. This account is unique to TRS. The Master Repurchase Agreements require that the supporting collateral have a fair value of at least 102 percent of the value of the repurchase agreements.

As of June 30, 2017, cash collateral reinvestment securities acquired through securities lending for the retirement annuity trust fund by TRS's custodian, who is also the lending agent/counterparty, amounted to \$1,404,968,291 related to \$1,371,172,509 securities lent consistent with the lending agreement with the custodian. (Please refer to a following section entitled Securities Lending.)

Interest Rate Risk

Interest rate risk on investments is the possibility that changes in interest rates will reduce the fair value of the System's investments. In general, the longer the period until an investment matures, the greater the risk of a negative impact on fair value resulting from changes in interest rates.

As of June 30, 2017 and 2016, the retirement annuity trust and health insurance trusts had the following investment fair values and weighted average maturities:

2017 Retirement Annuity Trust

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
U.S. Government	\$ 1,001,683,231	\$ -	8.69
Agency	48,416,092	-	7.42
MBS	78,747,979	-	14.63
CMO	27,820,939	-	13.00
ABS	52,576,134	-	13.46
CMBS	40,167,581	-	20.58
Muni	384,589,168	-	11.92
Corporate Bonds	1,319,954,339	491,088,604	8.14
Corporate Loans*	-	381,101,026	4.53
Total	<u>\$ 2,953,955,463</u>	<u>\$ 872,189,630</u>	<u>8.67</u>

**Does not include \$8,335,538 in cash held directly at Barings European Loan Fd.*

2016 Retirement Annuity Trust

<u>Investment Type</u>	<u>Fixed Income</u>	<u>Additional Categories</u>	<u>Average Maturity (Yrs)</u>
U.S. Government	\$ 797,819,019	\$ -	8.34
Agency	55,607,806	-	8.61
MBS	90,812,117	-	12.24
CMO	27,572,453	-	12.67
ABS	62,625,012	-	14.31
CMBS	61,720,221	-	20.55
Muni	405,755,392	-	12.47
Corporate Bonds	1,322,052,725	411,948,488	7.83
Corporate Loans*	-	380,989,944	4.56
Total	<u>\$ 2,823,964,745</u>	<u>\$ 792,938,432</u>	<u>8.61</u>

*Does not include \$4,401,123 in cash held directly at Babson Capital Management.

2017 Health Insurance Trust

<u>Investment Type</u>	<u>Fixed Income</u>	<u>Additional Categories</u>	<u>Average Maturity (Yrs)</u>
U.S. Government	\$ 20,457,755	\$ -	8.44
Corporate Bonds	49,825,322	81,742,713	5.99
Corporate Loans	-	28,807,364	5.37
Total	<u>\$ 70,283,077</u>	<u>\$ 110,550,077</u>	<u>6.17</u>

2016 Health Insurance Trust

<u>Investment Type</u>	<u>Fixed Income</u>	<u>Additional Categories</u>	<u>Average Maturity (Yrs)</u>
U.S. Government	\$ 6,380,550	\$ -	11.53
Corporate Bonds	56,174,849	64,192,800	4.49
Corporate Loans	-	26,927,516	5.04
Total	<u>\$ 62,555,399</u>	<u>\$ 91,120,316</u>	<u>4.88</u>

In addition to the above securities, the System held short-term cash investments in the Dreyfus Institutional Cash Advantage Fund and STIF, held at the Bank of New York Mellon, with a total fair value of \$571,905,814 and had a weighted average maturity of twenty-two (22) days. Average maturity is used as a measure of a security's exposure to interest rate risk due to fluctuations in market interest rates. Mortgage-backed securities and collateralized mortgage obligations are typically amortizing investments with an average life and interest rate risk significantly less than suggested by the legal maturity. Mortgage-backed securities, which are generally pre-payable, and other callable bonds are subject to adverse changes in average life in response to market interest rate changes. The schedule above reflects only the legal maturity of all such bonds.

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. This risk is managed by using the effective duration or option adjusted methodology to quantify the risk of interest rate changes. This methodology takes into account optionality on bonds and scales the risk of price changes on bonds depending upon the degree of changes in rates and the slope of the yield curve. The control of interest rate risk is not set forth in a particular policy; however, the System manages interest rate risk in practice by establishing appropriate benchmarks for its various portfolios.

Mortgage-backed securities are securities representing pass-through interests in the cash flows from pools of mortgage loans on single-family or multi-family residential properties. All of the mortgage-backed securities owned by the System were securitized and are guaranteed by Fannie Mae, Freddie Mac, or GNMA. The average life of a mortgage-backed security depends upon the level of prepayments experienced in the underlying pool of loans. Market interest rates are a primary determinant of prepayment levels. Lower than anticipated market rates generally lead to higher than anticipated prepayments and a shorter average life; higher than anticipated market rates generally lead to lower than anticipated prepayments and a longer average life. The retirement annuity trust held \$78.7 million in mortgage-backed securities as of June 30, 2017, compared to \$90.8 million as of June 30, 2016.

Collateralized mortgage obligations are bonds that are collateralized by whole loan mortgages, mortgage pass-through securities or stripped mortgage-backed securities. Income is derived from payments and prepayments of principal and interest generated from collateral mortgages. Cash flows are distributed to different investment classes in accordance with a collateralized mortgage obligations established payment order. The retirement annuity trust held \$27.8 million in collateralized mortgage obligations as of June 30, 2017, compared to \$27.6 million as of June 30, 2016.

Asset-backed securities are bonds or notes backed by loan paper or accounts receivables originated by banks, credit card companies, or other credit providers, and are considered to be moderately sensitive to changes in interest rates. The originator of the loan or accounts receivable paper sells it to a specially created trust, which repackages it as securities. Asset-backed securities have been structured as pass-throughs and as structures with multiple bond classes. The retirement annuity trust held \$52.6 million as of June 30, 2017, compared to \$62.6 million as of June 30, 2016.

Commercial mortgage-backed securities are securities representing interests in the cash flows from pools of mortgage loans on commercial properties. The interests in a securitized pool of loans are generally divided into various tranches based upon planned payment order and level of seniority. The System's commercial mortgage-backed securities investments consist of highly rated relatively senior tranches. The average maturity of the System's commercial mortgage-backed securities holdings in the schedule above reflects the legal maturity of those holdings. Most of the tranches held are earlier in the planned payment order than the legal maturity suggests. The retirement annuity trust held \$40.2 million in commercial mortgage-backed securities investments as of June 30, 2017, compared to \$61.7 million as of June 30, 2016.

Credit Risk

Credit risk is the risk that an issuer or counterparty to an investment will not fulfill its obligations. The following schedules list the System's fixed income investment fair values (net of cash equivalents) according to credit ratings as of June 30, 2017 and 2016:

2017 Retirement Annuity Trust

Rating	Bonds & Mortgages	Additional Categories	Total	%
U.S. Government	\$ 1,001,683,231	\$ -	\$ 1,001,683,231	26.18%
AAA	219,844,883	-	219,844,883	5.74%
AA	603,818,809	-	603,818,809	15.78%
A	539,635,824	1,131,449	540,767,273	14.13%
BBB	545,712,370	37,033,244	582,745,614	15.23%
BB	24,210,493	329,217,429	353,427,922	9.24%
B	4,048,200	329,149,508	333,197,708	8.71%
CCC	-	22,858,417	22,858,417	0.60%
CC	-	-	-	0.00%
D	1,045,762	46,000	1,091,762	0.03%
Not Rated	13,955,891	152,753,583	166,709,474	4.36%
Total	\$ 2,953,955,463	\$ 872,189,630	\$ 3,826,145,093	100.00%

2016 Retirement Annuity Trust

Rating	Bonds & Mortgages	Additional Categories	Total	%
U.S. Government	\$ 797,819,019	\$ -	\$ 797,819,019	22.06%
AAA	246,954,820	-	246,954,820	6.83%
AA	640,674,139	-	640,674,139	17.71%
A	517,571,569	-	517,571,569	14.31%
BBB	574,578,935	47,754,834	622,333,769	17.21%
BB	21,968,709	287,254,645	309,223,354	8.55%
B	13,654,700	267,438,487	281,093,187	7.77%
CCC	3,151,610	17,517,637	20,669,247	0.57%
CC	-	1,271,750	1,271,750	0.04%
D	-	836,481	836,481	0.02%
Not Rated	7,591,244	170,864,598	178,455,842	4.93%
Total	\$ 2,823,964,745	\$ 792,938,432	\$ 3,616,903,177	100.00%

2017 Health Insurance Trust

Rating	Bonds & Mortgages	Additional Categories	Total	%
U.S. Government	\$ 20,457,755	\$ -	\$ 20,457,755	11.31%
AAA	6,427,010	-	6,427,010	3.55%
AA	11,828,664	-	11,828,664	6.55%
A	21,162,730	-	21,162,730	11.70%
BBB	9,938,418	5,546,635	15,485,053	8.56%
BB	468,500	52,006,671	52,475,171	29.02%
B	-	47,612,272	47,612,272	26.33%
CCC	-	3,693,471	3,693,471	2.04%
D	-	-	-	0.00%
Not Rated	-	1,691,028	1,691,028	0.94%
Total	<u>\$ 70,283,077</u>	<u>\$ 110,550,077</u>	<u>\$ 180,833,154</u>	<u>100.00%</u>

2016 Health Insurance Trust

Rating	Bonds & Mortgages	Additional Categories	Total	%
U.S. Government	\$ 6,380,550	\$ -	\$ 6,380,550	4.15%
AAA	5,042,219	-	5,042,219	3.28%
AA	11,085,052	-	11,085,052	7.21%
A	26,633,606	-	26,633,606	17.33%
BBB	13,413,972	7,489,048	20,903,020	13.60%
BB	-	42,642,309	42,642,309	27.75%
B	-	34,663,206	34,663,206	22.56%
CCC	-	2,537,454	2,537,454	1.65%
D	-	194,842	194,842	0.13%
Not Rated	-	3,593,457	3,593,457	2.34%
Total	<u>\$ 62,555,399</u>	<u>\$ 91,120,316</u>	<u>\$ 153,675,715</u>	<u>100.00%</u>

Total fair value of the retirement annuity trust's fixed income portfolio was \$3,826,145,093 on June 30, 2017. The health insurance trust's fixed income portfolio was valued at \$180,833,154 on June 30, 2017. The rating system used in the above charts is the Standard and Poor's rating system. For securities where a Standard and Poor's rating is not provided, another nationally recognized system is used and translated to the Standard and Poor's rating system.

In addition to the above categories, the retirement annuity trust held \$545,368,716 in short term investments through the Dreyfus Institutional Cash Advantage Fund. The health insurance trust held \$26,537,097 in the Dreyfus Institutional Cash Advantage Fund. The credit risk associated with this Fund is minimal as the securities held are required to maintain the highest possible short-term credit ratings by Moody's and Standard & Poor's. In addition, investments in US Government and Agency securities are also highly rated securities since they are backed by the US Government. Notation is made that the ratings of securities is subject to change due to circumstances and thereby may have a lower rating than when first purchased.

The retirement annuity trust fund's policy on credit rating is set forth in 102 KAR 1:175 and reads as follows:

"A fixed income investment shall be rated at the time of purchase as investment grade by at least one (1) of the major rating services. A private placement debt investment shall be subject to the same credit qualifications as each fixed income investment. The fixed income investment portfolio as a whole shall maintain an average rating of investment grade by at least one (1) of the major rating services."

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. Losses from credit risk are heightened if a significant portion of resources are invested with a single issuer. Per Administrative Regulation 102 KAR 1:175, the retirement annuity trust fund is subject to the following policies regarding single issuers of fixed income and equity securities:

"Unless the issuer is the United States Government or a government sponsored enterprise (GSE), the amount invested in the securities of a single issuer shall not equal more than five (5) percent of the assets of the System."

"The System's position in a single stock shall not exceed two and one-half (2.5) percent of the System's assets. The System's position in a single stock shall not exceed five (5) percent of the outstanding stock for that company unless the investment is part of a venture capital program."

TRS has not invested greater than five percent (5%) of the retirement annuity trust fund's assets at fair value in any single issuer and is in compliance with investment policy.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. As of June 30, 2017, the System's exposure to foreign currency risk consisted of \$4,752,209,518 and \$248,950,831 in the retirement annuity trust and health insurance trust funds respectively.

The following tables represent the fair values of investments that are subject to foreign currency as a result of cash contributions to each portfolio manager as of June 30, 2017 and 2016:

2017 Retirement Annuity Trust

Commingled Funds	
Babson Capital European Loan Fd	\$ 83,529,164
Baillie Gifford Intrntl EAFE	826,304,923
Baring All Country World ex US	576,106,295
Black Rock ACWI EX-US IMI	712,902,870
UBS All Country World ex US	704,979,730
Alternative Funds	
Carlyle Europe Partners IV, L.P.	19,731,527
KKR & Co European Fund III	33,809,458
KKR & Co European Fund IV	26,265,452
Oaktree European Principal III	22,839,529
ADRs (Equities)	658,341,208
Cross-Listed Equities	688,122,140
Bonds (Fixed Income)	206,555,302
Additional Categories (Fixed Income)	83,459,203
Additional Categories (Opportunistic)	109,262,717
Total	\$ 4,752,209,518

2016 Retirement Annuity Trust

Commingled Funds	
Babson Capital European Loan Fd	\$ 83,723,731
Baillie Gifford Intrntl EAFE	734,894,403
Baring All Country World ex US	496,968,194
Black Rock ACWI EX-US IMI	600,737,023
UBS All Country World ex US	576,221,719
Alternative Funds	
Carlyle Europe Partners IV, L.P.	17,509,391
KKR & Co European Fund III	49,515,576
KKR & European Fund IV	16,088,979
Oaktree European Principal III	24,409,242
ADRs (Equities)	458,137,096
Cross-Listed Equities	718,502,718
Bonds (Fixed Income)	247,293,462
Additional Categories (Fixed Income)	83,423,983
Additional Categories (Opportunistic)	119,390,254
Total	\$ 4,226,815,771

2017 Health Insurance Trust

Commingled Funds	
Medical Ins. Black Rock Fund B	\$ 206,320,676
Alternative Funds	
Medical Ins. Carlyle Europe IV	3,946,307
Medical Ins. KKR European IV	5,253,090
Bonds (Fixed Income)	4,503,370
ADRs (Equities)	3,658,163
Additional Categories (Fixed Income)	15,306,108
Additional Categories (Opportunistic)	9,963,117
Total	\$ 248,950,831

2016 Health Insurance Trust

Commingled Funds	
Medical Ins. Black Rock Fund B	\$ 173,166,422
Alternative Funds	
Medical Ins. Carlyle Europe IV	3,501,879
Medical Ins. KKR European IV	3,217,797
Bonds (Fixed Income)	7,090,460
Additional Categories (Fixed Income)	12,602,739
Additional Categories (Opportunistic)	11,305,351
Total	\$ 210,884,648

The following tables reflect the fair values of the various foreign currencies associated with the System's investments in the categories outlined above:

2017 Retirement Annuity Trust

Currency	<u>Fair Value</u>	Currency	<u>Fair Value</u>
Australian Dollar	\$ 116,620,840	Mexican Peso	\$ 70,822,257
Bermudian Dollar	66,974,641	Netherlands Antillean Guilder	24,156,367
Brazilian Real	36,631,654	New Zealand Dollar	1,600,934
British Pound Sterling	651,726,435	Norwegian Krone	26,977,335
Canadian Dollar	297,523,837	Omani Rial	1,045,762
Cayman Islands Dollar	54,684,123	Pakastani Rupee	426,623
Chilean Peso	14,187,093	Panamanian Balboa	35,045,435
Chinese Yuan	72,872,379	Peruvian Nuevo Sol	19,274
Colombian Peso	6,717,571	Philippine Peso	3,568,672
Czech Koruna	266,000	Polish Zloty	3,811,229
Danish Krone	77,878,375	Qatari Rial	1,127,736
Egyptian Pound	320,624	Russian Ruble	4,174,638
Euro	1,665,892,188	Singapore Dollar	29,311,066
Hong Kong Dollar	231,547,001	South African Rand	33,764,272
Hungarian Forint	483,670	Swedish Krona	147,404,707
Indian Rupee	71,413,664	Swiss Franc	165,092,155
Indonesian Rupiah	8,323,019	Taiwan Dollar	62,467,815
Israeli New Shekel	18,361,613	Thai Baht	4,953,021
Japanese Yen	627,530,830	Turkish Lira	4,346,512
Korean Won	77,277,317	UAE Dirham	10,010,413
Liberian Dollar	2,086,293	Various	8,114,544
Malaysian Ringgit	14,649,584	Total	<u>\$ 4,752,209,518</u>

2016 Retirement Annuity Trust

Currency	Fair Value	Currency	Fair Value
Argentine Peso	\$ 7,929,600	Malaysian Ringgit	\$ 8,375,874
Australian Dollar	117,642,969	Mexican Peso	60,042,605
Bermudian Dollar	51,636,166	Netherlands Antillean Guilder	31,869,794
Brazilian Real	29,642,858	New Zealand Dollar	1,468,579
British Pound Sterling	542,857,180	Norwegian Krone	19,279,653
Bulgarian Lev	325,816	Panamanian Balboa	29,110,068
Canadian Dollar	305,265,009	Peruvian Nuevo Sol	71,390
Cayman Islands Dollar	82,711,544	Philippine Peso	3,795,486
Chilean Peso	5,099,683	Polish Złoty	5,239,446
Chinese Yuan	149,888,039	Qatari Rial	1,148,933
Colombian Peso	6,919,734	Russian Ruble	43,832,381
Czech Crown	275,888	Singapore Dollar	14,630,090
Danish Krone	69,964,944	South African Rand	35,391,881
Egyptian Pound	340,728	Swedish Krona	109,926,460
Euro	1,431,414,303	Swiss Franc	143,631,290
Hong Kong Dollar	148,792,516	Taiwan Dollar	73,906,720
Hungarian Forint	349,215	Thai Baht	6,106,618
Indian Rupee	53,386,927	Turkish Lira	7,940,689
Indonesian Rupiah	7,086,814	UAE Dirham	17,657,398
Israeli New Shekel	50,530,727	Various	4,318,599
Japanese Yen	504,456,061	Total	\$ 4,226,815,771
Korean Won	39,837,403		
Liberian Dollar	2,717,693		

2017 Health Insurance Trust

Currency	<u>Fair Value</u>	Currency	<u>Fair Value</u>
Australian Dollar	\$ 12,204,361	Mexican Peso	\$ 1,800,372
Bermudian Dollar	1,006,412	New Zealand Dollar	486,228
Brazilian Real	3,139,989	Norwegian Krone	453,325
British Pound Sterling	28,771,704	Pakastani Rupee	1,168,560
Canadian Dollar	20,587,815	Panamanian Balboa	121,971
Cayman Islands Dollar	117,062	Peruvian Nuevo Sol	592,818
Chilean Peso	526,286	Philippine Peso	5,171
Chinese Yuan	497,440	Polish Złoty	584,439
Colombian Peso	209,996	Qatari Rial	647,019
Czech Koruna	82,136	Russian Ruble	331,098
Danish Krone	2,465,213	Singapore Dollar	885,415
Egyptian Pound	107,526	South African Rand	2,024,219
Euro	74,200,106	Swedish Krona	3,339,571
Hong Kong Dollar	14,669,785	Swiss Franc	4,739,818
Hungarian Forint	149,091	Taiwan Dollar	12,797,324
Indian Rupee	4,713,176	Thai Baht	6,542,493
Indonesian Rupiah	1,222,441	Turkish Lira	1,173,463
Israeli New Shekel	564,024	UAE Dirham	517,208
Japanese Yen	36,155,429	Various	320,571
Korean Won	7,793,916	Total	<u>\$ 248,950,831</u>
Malaysian Ringgit	1,235,840		

2016 Health Insurance Trust

Currency	<u>Fair Value</u>	Currency	<u>Fair Value</u>
Australian Dollar	\$ 10,520,315	Malaysian Ringgit	\$ 1,121,622
Bermudian Dollar	1,766,016	Mexican Peso	1,486,499
Brazilian Real	2,477,384	New Zealand Dollar	397,301
British Pound Sterling	25,478,499	Norwegian Krone	866,284
Canadian Dollar	18,803,103	Panamanian Balboa	168,383
Cayman Islands Dollar	2,812,299	Peruvian Nuevo Sol	19,342
Chilean Peso	447,558	Philippine Peso	564,995
Chinese Yuan	141,703	Polish Złoty	401,767
Colombian Peso	168,485	Qatari Rial	309,925
Czech Crown	59,152	Russian Ruble	826,876
Danish Krone	2,228,544	Singapore Dollar	2,447,734
Egyptian Pound	85,907	South African Rand	2,596,781
Euro	62,852,767	Swedish Krona	3,650,524
Hong Kong Dollar	10,982,771	Swiss Franc	10,815,063
Hungarian Forint	92,975	Taiwan Dollar	4,749,926
Indian Rupee	3,416,016	Thai Baht	921,116
Indonesian Rupiah	995,857	Turkish Lira	498,876
Israeli New Shekel	925,797	UAE Dirham	326,765
Japanese Yen	28,521,314	Various	2,918
Korean Won	5,712,246	Total	<u>\$ 210,884,648</u>
Liberian Dollar	223,243		

The majority of foreign investments are held in commingled funds managed by Babson Capital Management, UBS Global Asset Management, Baillie Gifford, Baring Asset Management, and Black Rock. In addition to the commingled funds investing in foreign securities, the retirement annuity trust fund held \$658,341,208 associated with foreign interests in American Depositary Receipt investments. These American Depositary Receipts are securities that are issued by a U.S. bank in place of the foreign stock shares held in trust by that bank, thereby facilitating the trading of foreign shares in U.S. markets. American Depositary Receipts are denominated in U.S. currency. Also, the cross listed equities, in the amount of \$688,122,140, represent securities domiciled in foreign countries, but are listed and traded on U.S. exchanges. Other foreign securities and investments consisted of debt securities and alternative investment opportunities. Foreign holdings, including investment receivables/payables, that were not readily identifiable to a specific country were listed in the “various” category pertaining to currency type.

The retirement annuity trust fund’s policy regarding foreign equities is that not more than thirty percent (30%) of the assets of the retirement annuity trust fund at fair value shall be invested in the stocks of companies domiciled outside of the United States. Any amounts so invested shall be included in the sixty-five percent (65%) limitation for total stocks per 102 KAR 1:175 Section 2(e).

Fair Value Measurement

A retiree pension defined benefit plan holds significant amounts of investments that are measured at fair value on a recurring basis. In Fiscal Year 2016, TRS adopted GASB Statement No. 72 (“GASB 72”), *Fair Value Measurement and Application*. The Governmental Accounting Standards Board issued GASB 72 to address accounting and financial reporting issues related to fair value measurements.

TRS categorizes its fair value measurements within the fair value hierarchy established by GAAP. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date. Level 2 inputs are inputs – other than quoted prices included within Level 1 – that are observable for an asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for an asset or liability. The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3 inputs. The following tables depict the following recurring fair value measurements as of June 30, 2017.

Retirement Annuity Trust

Investments	<u>Level 1 Inputs</u>	<u>Level 2 Inputs</u>	<u>Level 3 Inputs</u>	<u>Fair Value</u>
Cash Equivalents	\$ 525,897,099	\$ -	\$ -	\$ 525,897,099
Fixed Income:				
ABS	-	47,346,318	5,229,816	52,576,134
Agency	-	48,416,092	-	48,416,092
CMBS	-	40,167,581	-	40,167,581
CMO	-	27,820,939	-	27,820,939
Corporate Bonds	4,109,212	1,314,766,807	1,078,320	1,319,954,339
MBS	-	76,896,293	1,851,686	78,747,979
Muni	-	379,365,052	5,224,116	384,589,168
US Government	992,472,191	9,211,040	-	1,001,683,231
Total Fixed Income	<u>996,581,403</u>	<u>1,943,990,122</u>	<u>13,383,938</u>	<u>2,953,955,463</u>
Equities:				
International Equity	1,326,738,184	3,133,326,733	-	4,460,064,917
US Equity	6,888,437,450	241,434,211	164	7,129,871,825
Total Equity	<u>8,215,175,634</u>	<u>3,374,760,944</u>	<u>164</u>	<u>11,589,936,742</u>
Real Estate Equity	-	-	1,046,760,134	1,046,760,134
Alternative Investments:				
Private Equity	-	-	854,635,619	854,635,619
Timberland	-	-	208,219,943	208,219,943
Total Alternative Investments	<u>-</u>	<u>-</u>	<u>1,062,855,562</u>	<u>1,062,855,562</u>
Additional Categories:				
Corporate Bonds	19,262	491,069,342	-	491,088,604
Corporate Loans	-	388,091	389,047,473	389,435,564
Opportunistic Credit	-	-	539,082,990	539,082,990
Total Additional Categories	<u>19,262</u>	<u>491,457,433</u>	<u>928,130,463</u>	<u>1,419,607,158</u>
Total Investments	<u>\$ 9,737,673,398</u>	<u>\$ 5,810,208,499</u>	<u>\$ 3,051,130,261</u>	<u>\$ 18,599,012,158</u>

Health Insurance Trust

Investments	<u>Level 1 Inputs</u>	<u>Level 2 Inputs</u>	<u>Level 3 Inputs</u>	<u>Fair Value</u>
Cash Equivalents	\$ 46,008,715	\$ -	\$ -	\$ 46,008,715
Fixed Income:				
Corporate Bonds	-	49,825,322	-	49,825,322
US Government	19,464,425	993,330	-	20,457,755
Total Fixed Income	19,464,425	50,818,652	-	70,283,077
Equities:				
Global Equity	-	442,726,237	-	442,726,237
US Equity	30,548,164	-	-	30,548,164
Total Equity	30,548,164	442,726,237	-	473,274,401
Real Estate Equity	-	-	42,701,494	42,701,494
Alternative Investments:				
Private Equity	-	-	42,340,364	42,340,364
Total Alternative Investments	-	-	42,340,364	42,340,364
Additional Categories:				
Corporate Bonds	5,253	81,586,060	151,400	81,742,713
Corporate Loans	-	182,662	28,624,702	28,807,364
Opportunistic Credit	-	-	49,620,098	49,620,098
Total Additional Categories	5,253	81,768,722	78,396,200	160,170,175
Total Investments	<u>\$ 96,026,557</u>	<u>\$ 575,313,611</u>	<u>\$ 163,438,058</u>	<u>\$ 834,778,226</u>

Cash Equivalents - Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and so near their maturity that they present insignificant risk of changes in value because of changes in interest rates. Cash equivalents can be valued with inputs from quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date and therefore are classified as Level 1 assets.

Equity and Fixed Income Securities – Equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets issued by pricing vendors for these securities. Debt and equity securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Debt and equity securities classified in Level 3 are securities whose stated market price is unobservable by the market place and are instead priced by the issuers or industry groups for these securities.

Real Estate - Real Estate falls into the level 3 classification of the fair value hierarchy. Much of our real estate is comprised of owned properties leased to various commercial enterprises. The fair value measurement for real estate is determined by professional appraisals recurring every five years. Real Estate also includes some Limited Partnerships that are valued the same as Alternative Investments.

Alternative Investments – Alternative Investments are comprised of Private Equity and Timberland investments classified as Level 3 assets. Private equity funds invest in equity and debt securities issued by private and publicly-held companies in connection with leveraged buyouts, recapitalizations and expansion opportunities. These investments do not allow redemptions. Alternatively, we receive distributions as the underlying assets of the fund liquidate. These are investments for which exchange quotations are not readily available. Therefore, private equity investments are valued at an estimated fair value determined in good faith by the General Partner (“GP”). A GP is an owner of a partnership that has unlimited liability and is a managing partner that is active in the day to day business of a Limited Partnership. These investments are initially valued at cost with subsequent adjustments that reflect third party transactions, financial operating results and other factors deemed relevant by the GP.

The GP values each investment by applying generally accepted valuations methods including the market approach and the income approach. The determination of fair value using these methodologies takes into consideration a range of factors, including but not limited to, the price at which the investment was acquired, the nature of the investment, local market conditions, trading values on public exchanges for comparable securities, current and projected operating performance and financing transactions subsequent to the acquisition of the investment. Because of the subjective nature of estimated fair value of the private investments, such values may differ significantly from the values that would have been used had a ready market existed for these investments.

Timberland investments are managed investments regarding the acquiring, growing and disposing of timber on timberlands owned by the System. Fair value determinations for Level 3 measurements of investments are the responsibility of the Advisor, The Molpus Woodlands Group, LLC. The Advisor contracts with outside appraisers to generate fair value estimates on an annual basis. The outside appraisers utilized the cost, sales comparison and income capitalization approaches to estimate the fair value of the timber and timberlands. The Advisor challenges the reasonableness of the assumptions used and reviews the methodology to ensure the estimated fair value complies with accounting standards generally accepted in the United States of America.

Additional Categories – Investments in this category do not fit the regular parameters for the retirement annuity trust fund set forth in Title 102, Chapter 1:175 of the Kentucky Administrative Regulations. Rather, they fall into the allowable 15% of assets of the retirement annuity trust fund invested in any additional category or categories of investments approved by the Board of Trustees. Debt securities in this category classified as Level 1 are valued using prices quoted in active markets for those securities. Debt securities in the Additional Categories classified as Level 2 are valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Opportunistic credits classified as Level 3 in the fair value hierarchy are valued using consensus pricing.

D. SECURITIES LENDING

Section 161.430 of the Kentucky Revised Statutes empowers the Board of Trustees with complete fiduciary responsibility for the funds of the System. The System operates a securities lending program in which it temporarily lends securities to qualified agents in exchange for a net fee and high quality collateral. U.S. Government and agency securities, selected domestic bonds, and domestic and international stocks are the types of securities that are lent. The System’s custodian, The Bank of New York Mellon, acts as lending agent in exchanging securities for collateral. The collateral has a value of not less than 102% of the fair value of the lent securities plus any accrued, unpaid distributions. The collateral may consist of cash, marketable U.S. Government securities, and select marketable U.S. Government agency securities approved by the System.

Securities lending transactions are accounted for in accordance with GASB Statement No. 28 Accounting and Financial Reporting for Securities Lending Transactions, which established standards of accounting and financial reporting for securities lending transactions. During the fiscal year ended June 30, 2017, only the retirement annuity trust fund had securities lending transactions. The following section details the net income earned in the retirement annuity trust fund from securities lending for the fiscal year ended June 30, 2017 and 2016:

Item	2017 Earnings	2016 Earnings
Gross Earnings (Interest and Fees)	\$ 5,799,152	\$ 687,380
Gross Borrower Rebates	(2,138,664)	2,083,694
Bank Fees	(1,097,808)	(831,253)
Net Earnings	<u>\$ 2,562,680</u>	<u>\$ 1,939,821</u>

Cash collateral is invested in short-term obligations fully guaranteed by the United States Government or select Government agencies and Government Repurchase Agreements with qualified agents. The System cannot pledge or sell collateral securities received unless the borrower defaults. The lending agent (Bank of New York Mellon) also indemnifies the System from any financial loss associated with a borrower's default and collateral inadequacy. As per GASB 28, securities lending transaction collateralized by letters of credit or by securities that the governmental entity does not have the ability to pledge or sell unless the borrower defaults are not reported as assets and liabilities on the Statement of Fiduciary Net Position.

As of June 30, 2017, the loan average days to maturity in the retirement annuity trust fund was one (1) day and the weighted average investment maturity of cash collateral investments was one (1) day. At fiscal year end, the retirement annuity trust fund had no credit risk exposure to borrowers, since the amounts the retirement annuity trust fund owes the borrowers exceeds the amounts the borrowers owe the retirement annuity trust fund and there were no losses resulting during the period.

Security lending programs can entail interest rate risk and credit risk. The System minimizes interest rate risk by limiting the term of cash collateral investments to several days.

The credit risk is controlled by investing cash collateral in securities with qualities similar to the credit worthiness of lent securities.

The following table presents the fair values of the underlying securities, and the value of the collateral pledged at June 30, 2017 and 2016:

Type of Security Lent	Fair Value	Cash Collateral Received	Non-cash Collateral Value Received	Total Collateral Received 2017	Total Collateral Received 2016
Fixed Income	\$ 309,194,938	\$ 37,740,812	\$ 282,265,094	\$ 320,005,906	\$ 135,742,272
Equities	1,061,977,571	926,925,925	158,036,460	1,084,962,385	305,638,558
Total	<u>\$ 1,371,172,509</u>	<u>\$ 964,666,737</u>	<u>\$ 440,301,554</u>	<u>\$ 1,404,968,291</u>	<u>\$ 441,380,830</u>

E. ANNUAL MONEY-WEIGHTED RATE OF RETURN

A money-weighted rate of return is an expression of investment performance that is net of the plan's investment expenses (net the plan's administrative expenses). The following tables reflect the money-weighted rate of return for both the retirement annuity trust fund and the health insurance trust fund:

Annual Rate of Return Net of Investment Expense

	2017	2016
Retirement Annuity Trust	15.00%	-1.32%
Health Insurance Trust	14.37%	-2.20%

NOTE 6: RETIREMENT PLAN FOR EMPLOYEES OF THE RETIREMENT SYSTEM

Full-time employees of TRS participate in either TRS or Kentucky Employees Retirement System (KERS). Both plans are multiple-employer cost sharing defined benefit retirement annuity plans. All TRS employees in positions requiring a four-year degree are covered under TRS. The contribution rates and required employer matching are the same as state agency employers in the System. These rates, the plan description and funding policy are fully disclosed in the notes to the financial statements.

The System's annual required contributions for TRS employee members for the fiscal years 2017, 2016 and 2015 were \$893,635, \$820,077 and \$767,958, respectively. TRS contributed one hundred percent of the required contribution each year.

All other TRS employees are covered under KERS in the Non-Hazardous Employees' Pension Plan. The plan provides for retirement, disability, and death benefits to plan members. Retirement benefits may be extended to beneficiaries of plan members under certain circumstances. Per KRS 61.565(3), contribution rates shall be determined by the Board on the basis of an annual actuarial valuation. Rates may be amended by the Board as needed. TRS's administrative budget and employer contribution rates are subject to the approval of the Kentucky General Assembly. Employee contribution rates are set by the statute and may be changed only by the Kentucky General Assembly.

Members of KERS who joined prior to July 1, 2008, are required to contribute five percent of their annual creditable compensation and members who joined on or after July 1, 2008 contribute an additional one percent. As the employer, TRS is required to contribute the annual actuarially determined rate of the creditable compensation (or the rate approved by legislators). The approved rate for the fiscal years 2017, 2016 and 2015 were 48.59 percent, 38.77 percent and 38.77 percent and TRS's annual required contributions to KERS were \$675,300, \$547,105 and \$552,133, respectively. TRS contributed one hundred percent of the required contributions for each year.

KERS issues a publicly available financial report that may be obtained by writing Kentucky Retirement System, 1260 Louisville Road, Frankfort, Kentucky 40601-6124.

NOTE 7: OTHER FUNDS

A. 403(B) TAX-SHELTERED ANNUITY PLAN

Plan Description

TRS has, in prior years, administered a salary deferral program as permitted by section 403(b) of the Internal Revenue Code. Under this program members were able to voluntarily defer a portion of their compensation within the limits established by the applicable laws and regulations. However, the System's Board of Trustees determined that the cost of providing the necessary services to assure the System of continuing compliance with these laws and regulations was not economically feasible due to the limited participation in the program by TRS's members. The Board decided, therefore, to discontinue offering the program as of April 30, 1997. Members who were not receiving annuities from their account as of April 30, 1997, were able to transfer their respective accounts directly into other tax-sheltered plans on a tax-free basis. As of June 30, 2017, the eight members who are receiving annuities will continue to receive distributions according to the terms of their respective elections.

B. SUMMARY OF SIGNIFICANT POLICIES

Basis of Accounting

The Tax-sheltered Annuity Plan financial statements are prepared using an accrual basis of accounting. Contributions are no longer being accepted into the plan; therefore, there are no receivables to be recognized.

Method Used to Value Investments

The short-term investments are reported at cost, which approximates fair value.

C. SUPPLEMENTAL BENEFIT FUND

The Supplemental Retirement Benefit Fund is a qualified governmental excess benefit arrangement as described in Section 415 of the Internal Revenue Code. In accordance with KRS 161.611 and KRS 161.420(8), TRS is authorized to provide a supplemental retirement benefit fund for the sole purpose of enabling the employer to apply the same formula for determining benefits payable to all members of the System employed by the employer, whose benefits under the System are limited by Section 415 of the Internal Revenue Code of 1986, as amended from time to time. Funding of benefits payable under this fund are provided by the state, as employer, and are segregated from funds that are maintained by TRS for payment of the regular benefits provided by the System.

D. JUNITA LOSEY SCHOLARSHIP BEQUEST

Junita Losey, a retired teacher, designated TRS as a residuary beneficiary of her estate and expressed a desire that TRS establish a scholarship program for Kentucky students studying to be teachers. Ms. Losey died in 1997 and thereafter her estate provided a scholarship bequest to TRS. The scholarship bequest has at all times been segregated from funds that are maintained by TRS for payment of the regular benefits provided by the System. The Scholarship Committee of the System's Board of Trustees meets each December to consider scholarship standards and administration of the scholarship bequest.

NOTE 8: OTHER POSTEMPLOYMENT BENEFITS - MEDICAL INSURANCE PLAN

A. PLAN DESCRIPTION

In addition to the retirement annuity plan described in Note 1, Kentucky Revised Statute 161.675 requires TRS to provide access to postemployment healthcare benefits for eligible members and dependents. The TRS medical plan (MIF) is funded by employer and member contributions. Changes made to the medical plan may be made by the TRS Board of Trustees, the Kentucky Department of Employee Insurance and the General Assembly.

The TRS medical plan is funded by employee contributions to an account established pursuant to 26 U.S.C. sec. 401(h). Additional funding is derived from the Kentucky Teachers' Retirement System insurance trust fund that went into effect on July 1, 2010. The insurance trust fund provides a trust separate from the account established pursuant to 26 U.S.C. sec. 401(h). The insurance trust fund includes employer and retired member contributions required under KRS 161.550 and KRS 161.675(4)(b).

To be eligible for medical benefits, the member must have retired either for service or disability. The TRS medical plan offers coverage to members under the age of 65 through the Kentucky Employees Health Plan (KEHP) administered by the Kentucky Department of Employee Insurance. TRS retired members are given a supplement to be used for payment of their health insurance premium. The amount of the member's supplement is based on a contribution supplement table approved by the TRS Board of Trustees. The retired member pays premiums in excess of the monthly supplement. The amount of insurance premiums paid by retirees for fiscal years 2017 and 2016 were \$57,941,968 and \$56,296,433, respectively. The Commonwealth of Kentucky bears risk for excess claims expenses that exceed the premium equivalents charged for the Kentucky Employees Health Plan. Once retired members and eligible spouses attain age 65 and are Medicare eligible, coverage is obtained through the TRS Medicare Eligible Health Plan.

At June 30, 2017, TRS insurance covered 39,497 retirees and 7,189 dependents. There are 207 participating employers and 72,130 active members contributing to the medical plan.

B. NET OPEB LIABILITY OF EMPLOYERS

The net OPEB liability (i.e., the System's liability determined in accordance with GASB No. 74 less the fiduciary net position) for the medical insurance plan as of June 30, 2017 is shown below.

Net OPEB Liability of Employers
(In Thousands)

Fiscal Year Ending June 30	Total OPEB Liability (TOL) A	Plan Fiduciary Net Position B	Employers Net OPEB Liability (NOL) (A-B)	Plan Fiduciary Net Position (FNP) As a % of Total OPEB Liability (B/A)	Covered Payroll C	Net OPEB Liability As a % of Covered Payroll [A-B/C]
2017	\$ 4,524,172	\$ 958,390	\$ 3,565,782	21.2%	\$ 3,415,432	104.40%

C. SUMMARY OF ACTUARIAL ASSUMPTIONS

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below.

Valuation Date	6/30/2016
Actuarial Assumptions:	
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent of Payroll
Amortization Period	30 years, open
Asset Valuation Method	Five-year smoothed value
Investment Rate of Return	8.00%, net of OPEB plan investment expense, including inflation.
Projected Salary Increases	3.50 – 7.20%, including wage inflation
Inflation Rate	3.00%
Real Wage Growth	0.50%
Wage Inflation	3.50%
Municipal Bond Index Rate	3.56%
Discount Rate	8.00%
Single Equivalent Interest Rate	8.00%, net of OPEB plan investment expense, including price inflation

Mortality rates were based on the RP-2000 Combined Mortality Table projected to 2025 with projection scale BB, and set forward two years for males and one year for females is used for the period after service retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table set forward two years for males and seven years for females is used for the period after disability retirement. The demographic actuarial assumptions for retirement, disability incidence, withdrawal, rates of plan participation, and rates of plan election used in the June 30, 2016 valuation were based on the results of the most recent actuarial experience studies for the System, which covered the five-year period ending June 30, 2015. The remaining actuarial assumptions used in the June 30, 2017 valuation of the MIF were based on a review of recent plan experience done concurrently with the June 30, 2016 valuation.

D. TARGET ALLOCATIONS

The long-term expected rate of return on OPEB investments was determined using a log-normal distribution analysis 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 allocation and best estimates of arithmetic real rates of return for each major asset class, as provided by TRS's investment consultant, are summarized in the following table:

Asset Class	Target Allocation	30 Year Expected Geometric Real Rate of Return
Global Equity	60.0%	5.1%
Fixed Income	9.0%	1.2%
Real Estate	4.5%	4.0%
Private Equity	5.5%	6.6%
High Yield	10.0%	4.3%
Other Additional Categories*	10.0%	3.3%
Cash	1.0%	0.5%
Total	<u>100.0%</u>	

**Modeled as 50% High Yield and 50% Bank Loans*

E. DISCOUNT RATE

The discount rate used to measure the TOL as of the Measurement Date was 8.00%. The projection of cash flows used to determine the discount rate was performed in accordance with GASB 74. The projection's basis was an actuarial valuation performed as of June 30, 2016. In addition to the actuarial methods and assumptions of the June 30, 2016 actuarial valuation, the following actuarial methods and assumptions were used in the projection of cash flows:

- Total payroll for the initial projection year consists of the payroll of the active membership present on the Valuation Date. In subsequent projection years, total payroll was assumed to increase annually at a rate of 3.50%.
- For the retiree health care costs of those beneficiaries under age 65, the KEHP implicit rate subsidies were assumed to be paid in all years by the employer directly to plan members as the benefits come due.
- As administrative expenses were assumed to be paid in all years by the employer as they come due, they were not considered.
- Cash flows occur mid-year.
- Future contributions to the MIF were based upon the contribution rates defined in statute and the projected payroll of active employees. Per KRS 161.540(1)(c).3 and 161.550(5), when the MIF achieves a sufficient prefunded status, as determined by the retirement system's actuary, the following MIF statutory contributions are to be decreased, suspended, or eliminated:

- Employee contributions
- School District/University Contributions
- State Contributions for KEHP premium subsidies payable to retirees who retire after June 30, 2010

To reflect these adjustments, open group projections were used and assumed an equal, pro rata reduction to the current statutory amounts in the years if/when the MIF is projected to achieve a Funded Ratio of 100% or more. Here, the current statutory amounts are adjusted to achieve total contributions equal to the Actuarially Determined Contribution (ADC), as determined by the prior year's valuation and in accordance with the MIF's funding policy (Schedule E). As the specific methodology to be used for the adjustments has yet to be determined, there may be differences between the projected results and future experience. This may also include any changes to retiree contributions for KEHP coverage pursuant to KRS 161.675(4)(b).

- In developing the adjustments to the statutory contributions in future years, the following was assumed:
 - Liabilities and cash flows are net of expected retiree contributions and any implicit subsidies attributable to coverage while participating in KEHP.
 - A 0% active member growth rate was assumed for the purposes of developing estimates for new entrants (membership dates beyond June 30, 2016).

Based on these assumptions, the MIF's FNP was not projected to be depleted.

The FNP projections are based upon the MIF's financial status on the Valuation Date, the indicated set of methods and assumptions, and the requirements of GASB 74. As such, the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing basis, reflecting the impact of future members. Therefore, the results of these tests do not necessarily indicate whether or not the MIF will actually run out of money, the financial condition of the MIF, or the MIF's ability to make benefit payments in future years.

These paragraphs require disclosure of the sensitivity of the NOL to changes in the health care cost trend rates for the MIF and the discount rate for the MIF. The following exhibit presents the NOL of the MIF, calculated using the health care cost trend rates, as well as what the MIF's NOL would be if it were calculated using a health care cost trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate. Similarly, the exhibit presents the NOL of the MIF, calculated using the Single Equivalent Interest Rate, as well as what the MIF's NOL would be if it were calculated using a Discount Rate that is 1-percentage-point lower or 1-percentage-point higher than the current Single Equivalent Interest Rate:

Systems' Net OPEB Liability (in thousands)			
<u>Discount Rate</u>	<u>Health Care Cost Trend Rates</u>		
	<u>1% Decrease</u>	<u>Current</u>	<u>1% Increase</u>
1% Increase (8.50%)		\$ 3,077,710	
Current (7.50%)	\$ 2,986,442	3,565,977	\$ 4,281,487
1% Decrease (6.50%)		4,152,539	

The TOL of the MIF is based upon an actuarial valuation performed as of the Valuation Date, June 30, 2016. An expected TOL is determined as of June 30, 2017 using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2016, subtracts the actual benefit payments (net of retiree contributions, if applicable) for the year, applies interest at the discount rate for the year, and then adds the annual normal cost (also called the Service Cost). If applicable, actuarial gains and losses arising from the difference between estimates and actual experience (excluding amounts related to benefit changes and changes in assumptions or other inputs) are reconciled to the TOL as of the Measurement Date. Last, any changes of assumptions or other inputs are reflected. The procedure used to determine the TOL of the MIF, as of June 30, 2017, is shown in the following table:

TOL Roll-Forward
(In Thousands)

(a) TOL as of June 30, 2016*	\$	4,264,131
(b) Actual Benefit Payments and Refunds for the Year July 1, 2016 - June 30, 2017		(178,500)
(c) Interest on TOL = [(a) x (0.080)] + [(b) x (0.0400)]		333,990
(d) Service Cost for the Year July 1, 2016 - June 30, 2017 at the End of the Year		95,625
(e) Changes of Benefit Terms		8,926
(f) Difference between Expected and Actual Experience at the End of the Year		-
(g) Changes of Assumptions or Other Inputs		-
(h) TOL Rolled Forward to June 30, 2017 = (a) + (b) + (c) + (d) + (e) + (f) + (g)	\$	4,524,172

* The TOL used in the roll-forward as of June 30, 2016 is calculated using the discount rate as of the Prior Measurement Date

NOTE 9: OTHER POSTEMPLOYMENT BENEFITS - LIFE INSURANCE PLAN

A. PLAN DESCRIPTION

TRS administers the Life Insurance Plan (LIF) as provided by KRS 161.655 to provide life insurance benefits to retired and active members. This benefit is financed by actuarially determined contributions from the 207 participating employers. The benefit is \$5,000 for members who are retired for service or disability, and \$2,000 for active contributing members.

B. NET OPEB LIABILITY OF EMPLOYERS

The net OPEB liability (i.e., the System's liability determined in accordance with GASB No. 74 less the fiduciary net position) for the life insurance fund as of June 30, 2017 is shown below.

Net OPEB Liability of Employers
(In Thousands)

Fiscal Year Ending June 30	Total OPEB Liability (TOL) A	Plan Fiduciary Net Position B	Employers Net OPEB Liability (NOL) (A-B)	Plan Fiduciary Net Position (FNP) As a % of Total OPEB Liability (B/A)	Covered Payroll C	Net OPEB Liability As a % of Covered Payroll [A-B/C]
2017	\$ 109,736	\$ 87,777	\$ 21,959	80.0%	\$ 3,415,432	0.64%

C. SUMMARY OF ACTUARIAL ASSUMPTIONS

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below.

Valuation Date	6/30/2016
Actuarial Assumptions:	
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent of Payroll
Amortization Period	30 years, open
Asset Valuation Method	Market Value
Investment Rate of Return	7.50%, net of OPEB plan investment expense, including inflation.
Projected Salary Increases	4.00 – 8.10%, including wage inflation
Inflation Rate	3.50%
Real Wage Growth	0.50%
Wage Inflation	4.00%
Municipal Bond Index Rate	3.56%
Discount Rate	7.50%
Single Equivalent Interest Rate	7.50%, net of OPEB plan investment expense, including price inflation

Mortality rates were based on the RP-2000 Combined Mortality Table projected to 2025 with projection scale BB, and set forward two years for males and one year for females is used for the period after service retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table set forward two years for males and seven years for females is used for the period after disability retirement. The demographic actuarial assumptions for retirement, disability incidence, withdrawal, rates of plan participation, and rates of plan election used in the June 30, 2016 valuation were based on the results of the most recent actuarial experience studies for the System, which covered the five-year period ending June 30, 2015.

D. TARGET ALLOCATIONS

The long-term expected rate of return on OPEB investments was determined using a log-normal distribution analysis 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 allocation and best estimates of arithmetic real rates of return for each major asset class, as provided by TRS's investment consultant, are summarized in the following table:

Asset Class	Target Allocation	30 Year Expected Geometric Real Rate of Return
U.S. Large Cap Equity	38.4%	4.3%
U.S. Small Cap Equity	2.6%	4.8%
Developed Int'l Equity	15.8%	5.2%
Emerging Markets Equity	4.2%	5.4%
Fixed Income - Inv. Grade	16.0%	1.2%
Real Estate	6.0%	4.0%
Private Equity	7.0%	6.6%
High Yield	2.0%	4.3%
Other Additional Categories**	7.0%	3.3%
Cash	2.0%	0.5%
Total	100.0%	

**As the LIF investment policy is to change, the above table reflects the pension allocation and returns that achieve the targeted 7.50% long-term rate of return.*

***Modeled as 50% High Yield and 50% Bank Loans*

E. DISCOUNT RATE

The discount rate used to measure the TOL as of the Measurement Date was 7.50%. The projection of cash flows used to determine the discount rate was performed in accordance with GASB 74. The projection's basis was an actuarial valuation performed as of June 30, 2016. In addition to the actuarial methods and assumptions of the June 30, 2016 actuarial valuation, the following actuarial methods and assumptions were used in the projection of the LIF's cash flows:

- Total payroll for the initial projection year consists of the payroll of the active membership present on the Valuation Date. In subsequent projection years, total payroll was assumed to increase annually at a rate of 3.50%.
- The employer will contribute the Actuarially Determined Contribution (ADC) in accordance with the LIF's funding policy (Schedule E) determined by a valuation performed on a date two years prior to the beginning of the fiscal year in which the ADC applies.
- As administrative expenses were assumed to be paid in all years by the employer as they come due, they were not considered.
- Active employees do not explicitly contribute to the plan.
- Cash flows occur mid-year.

Based on these assumptions, the LIF's FNP was not projected to be depleted.

The FNP projections are based upon the LIF's financial status on the Valuation Date, the indicated set of methods and assumptions, and the requirements of GASB 74. As such, the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing basis, reflecting the impact of future members. Therefore, the results of these tests do not necessarily indicate whether or not the LIF will actually run out of money, the financial condition of the LIF, or the LIF's ability to make benefit payments in future years.

These paragraphs require disclosure of the sensitivity of the NOL to changes the discount rate for the LIF. The schedule below presents the NOL of the LIF, calculated using the Single Equivalent Interest Rate, as well as what the LIF's NOL would be if it were calculated using a Discount Rate that is 1-percentage-point lower or 1-percentage-point higher than the current Single Equivalent Interest Rate:

Systems' Net OPEB Liability (in thousands)		
1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
\$ 36,497	\$ 21,959	\$ 10,055

The TOL of the LIF is based upon an actuarial valuation performed as of the Valuation Date, June 30, 2016. An expected TOL is determined as of June 30, 2017 using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2016, subtracts the actual benefit payments (net of retiree contributions, if applicable) for the year, applies interest at the discount rate for the year, and then adds the annual normal cost (also called the Service Cost). If applicable, actuarial gains and losses arising from the difference between estimates and actual experience (excluding amounts related to benefit changes and changes in assumptions or other inputs) are reconciled to the TOL as of the Measurement Date. Last, any changes of assumptions or other inputs are reflected. The procedure used to determine the TOL of the LIF, as of June 30, 2017, is shown in the following table:

TOL Roll-Forward (In Thousands)	
(a) TOL as of June 30, 2016*	\$ 106,059
(b) Actual Benefit Payments and Refunds for the Year July 1, 2016 - June 30, 2017	(5,151)
(c) Interest on TOL = [(a) x (0.075)] + [(b) x (0.0375)]	7,761
(d) Service Cost for the Year July 1, 2016 - June 30, 2017 at the End of the Year	1,067
(e) Changes of Benefit Terms	-
(f) Difference between Expected and Actual Experience at the End of the Year	-
(g) Changes of Assumptions or Other Inputs	-
(h) TOL Rolled Forward to June 30, 2017 = (a) + (b) + (c) + (d) + (e) + (f) + (g)	\$ 109,736

* The TOL used in the roll-forward as of June 30, 2016 is calculated using the discount rate as of the Prior Measurement Date

Schedule of Changes in the Net Pension Liability
(In Thousands)

Change in the total pension liability	2017	2016	2015	2014
Total pension liability				
Service Cost	\$ 1,332,587	\$ 1,120,893	\$ 1,015,080	\$ 1,002,338
Interest	1,964,107	2,027,457	2,029,372	1,956,610
Difference between expected and actual experience	199,471	(58,035)	-	-
Changes of assumptions	(2,321,327)	4,030,834	1,511,960	(353,043)
Benefit payments	(1,918,612)	(1,833,199)	(1,741,456)	(1,654,376)
Refunds of contributions	(26,305)	(27,748)	(23,033)	(25,462)
Net change in total pension liability	(770,079)	5,260,202	2,791,923	926,067
Total pension liability - beginning	47,736,901	42,476,699	39,684,776	38,758,709
Total pension liability - ending (a)	\$ 46,966,822	\$ 47,736,901	\$ 42,476,699	\$ 39,684,776
Plan Net Position				
Contributions - State of Kentucky	\$ 981,417	\$ 484,987	\$ 480,073	\$ 483,330
Contributions - Other Employers	79,303	80,468	79,506	79,996
Contributions - Members	313,625	313,044	308,160	304,982
Net investment income	2,475,753	(245,215)	862,179	2,803,249
Benefit payments	(1,918,612)	(1,833,199)	(1,741,456)	(1,654,376)
Administrative expense	(10,314)	(8,636)	(8,869)	(7,956)
Refunds of contributions	(26,305)	(27,748)	(23,033)	(25,462)
Net change in plan net position	1,894,867	(1,236,299)	(43,440)	1,983,763
Plan net position - beginning	16,812,832	18,049,131	18,092,571	16,108,808
Plan net position - ending (b)	18,707,699	16,812,832	18,049,131	18,092,571
Net pension liability - ending (a) - (b)	\$ 28,259,123	\$ 30,924,069	\$ 24,427,568	\$ 21,592,205

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

NOTE 1 SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

The total pension liability contained in this schedule was provided by TRS's actuary, Cavanaugh Macdonald Consulting, LLC. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the System.

Changes of Benefit Terms. None

See accompanying independent auditor's report.

Changes of assumptions. In the 2016 valuation, rates of withdrawal, retirement, disability, mortality and rates of salary increase were adjusted to more closely reflect actual experience. In the 2016 valuation and later, the expectation of retired life mortality was changed to the RP-2000 Mortality Tables projected to 2025 with projection scale BB, set forward two year for males and one year for females rather than the RP-2000 Mortality Tables projected to 2020 with projection scale AA, which was used prior to 2016.

In the 2011 valuation, rates of withdrawal, retirement, disability and mortality were adjusted to more closely reflect actual experience. In the 2011 valuation and later, the expectation of retired life mortality was changed to the RP-2000 Mortality Tables projected to 2020 with projection scale AA, set back one year for females rather than the 1994 Group Annuity Mortality Tables which was used prior to 2016. For the 2011 valuation through the 2013 valuation, an interest smoothing methodology was used to calculate liabilities for purposes of determining the actuarially determined contributions.

Schedule of the Net Pension Liability

(In Thousands)

	2017	2016	2015	2014
Total pension liability	\$ 46,966,822	\$ 47,736,901	\$ 42,476,699	\$ 39,684,776
Plan net position	<u>18,707,699</u>	<u>16,812,832</u>	<u>18,049,131</u>	<u>18,092,571</u>
Net pension liability	<u>\$ 28,259,123</u>	<u>\$ 30,924,069</u>	<u>\$ 24,427,568</u>	<u>\$ 21,592,205</u>
Ratio of plan net position to total pension liability	39.83%	35.22%	42.49%	45.59%
Covered-employee payroll	\$ 3,415,432	\$ 3,390,539	\$ 3,455,008	\$ 3,317,422
Net pension liability as a percentage of covered-employee payroll	827.40%	912.07%	707.02%	650.87%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report.

Schedule of Employer Contributions
 (In Thousands)

Year Ended June 30	Covered Payroll	Actual Employer Contributions	Actuarially Determined Employer Contributions	Annual Contribution Excess (Deficiency)	Actual Contributions as a Percentage of Covered Payroll
2017	\$ 3,415,432	\$ 1,060,720	\$ 1,076,617	\$ (15,897)	31.06%
2016	3,390,539	565,455	999,270	(433,815)	16.68%
2015	3,455,008	559,579	913,654	(354,075)	16.20%
2014 *	3,317,422	563,326	823,446	(260,120)	16.98%
2013	3,310,710	568,233	802,985	(234,752)	17.16%
2012	3,310,176	557,340	757,822	(200,482)	16.84%
2011	3,283,749	1,037,936	678,741	359,195	31.61%
2010	3,321,614	479,805	633,938	(154,133)	14.44%
2009	3,253,077	442,550	600,283	(157,733)	13.60%
2008	3,190,332	466,248	563,789	(97,541)	14.61%

* Revised from previous year to reflect actual covered-employee payroll.

NOTE 2 SCHEDULE OF EMPLOYER CONTRIBUTIONS

The required employer contributions and percent of those contributions actually made are presented in the schedule.

NOTE 3 ACTUARIAL METHODS AND ASSUMPTIONS

The actuarially determined contribution rates in the schedule of employer contributions are calculated as of June 30, three years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the most recent year of the schedule:

Actuarial cost method	Entry age
Amortization period	Level percentage of payroll, open
Remaining amortization period	30 years
Asset valuation method	5-year smoothed market
Inflation	3.50 percent
Salary increase	4.00 to 8.20 percent, including inflation
Ultimate Investment rate of return	7.50 percent, net of pension plan investment expense, including inflation

See accompanying independent auditor's report.

Schedule of Investment Returns
Retirement Annuity Trust

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual money weighted rate of return, net of investment expense	15.00%	-1.32%	4.96%	17.95%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report.

Medical Insurance Plan
Schedule of Changes in the Net OPEB Liability
 (In Thousands)

<u>Change in the net OPEB liability</u>	<u>2017</u>
Total OPEB liability	
Service Cost	\$ 95,625
Interest	333,990
Changes of benefit terms	8,926
Difference between expected and actual experience	-
Changes of assumptions	-
Benefit payments	<u>(178,500)</u>
Net change in total OPEB liability	260,041
Total OPEB liability - beginning	<u>4,264,131</u>
Total OPEB liability - ending (a)	<u>\$ 4,524,172</u>
 Plan Net Position	
Contributions - State of Kentucky	\$ 75,497
Contributions - Other Employers	104,879
Contributions - Active Members	128,819
Net investment income	95,453
Benefit payments	(178,500)
Administrative expense	(1,539)
Other	<u>-</u>
Net change in plan net position	224,609
Plan net position - beginning	<u>733,781</u>
Plan net position - ending (b)	<u>958,390</u>
 Net OPEB liability - ending (a) - (b)	<u>\$ 3,565,782</u>

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

NOTE 1 SCHEDULE OF CHANGES IN THE NET OPEB LIABILITY

The net OPEB liability contained in this schedule was provided by TRS's actuary, Cavanaugh Macdonald Consulting, LLC. The net OPEB liability is measured as the total OPEB liability less the amount of the fiduciary net position of the System.

Changes of Benefit Terms. With the passage of House Bill 471, the eligibility for non-single subsidies (NSS) for the KEHP-participating members who retired prior to July 1, 2010 is restored, but the State will only finance, via its KEHP "shared responsibility" contributions, the costs of the NSS related to those KEHP-participating members who retired on or after July 1, 2010.

Changes of assumptions. None

See accompanying independent auditor's report.

Medical Insurance Plan
Schedule of the Net OPEB Liability
 (In Thousands)

Valuation Year June 30	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Payroll	Net OPEB Liability as a Percentage of Covered Payroll
2017	\$ 4,524,172	\$ 958,390	\$ 3,565,782	21.18%	\$ 3,415,432	104.40%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Medical Insurance Plan
Schedule of Employer Contributions

Valuation Year June 30	Actuarially Determined Employer Contribution	Contributions in Relation to the Actuarially Determined Contribution	Annual Contribution Deficiency/(Excess)	Covered Payroll	Actual Contributions as a Percentage of Covered Payroll
2017	\$ 102,854	\$ 180,376	\$ (77,522)	\$ 3,415,432	5.28%
2016	97,983	221,967	(123,984)	3,390,539	6.55
2015	106,606	168,084	(61,478)	3,455,008	4.86
2014	159,583	162,568	(2,985)	3,317,422	4.90
2013	186,726	166,611	20,115	3,310,710	5.03
2012	470,217	177,748	292,469	3,310,176	5.37
2011	477,723	188,735	288,988	3,283,749	5.75
2010	457,054	173,380	283,674	3,321,614	5.22
2009	467,313	178,092	289,221	3,253,077	5.47
2008	395,282	160,866	234,416	3,190,322	5.04

NOTE 2 SCHEDULE OF EMPLOYER CONTRIBUTIONS

The required employer contributions and percent of those contributions actually made are presented in the schedule.

See accompanying independent auditor's report.

NOTE 3 ACTUARIAL METHODS AND ASSUMPTIONS

The actuarially determined contribution rates in the schedule of employer contributions are calculated as of June 30, three years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the most recent year of the schedule:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Amortization period	30 years, open
Asset valuation method	5-year smoothed value
Inflation	3.00 percent
Real wage growth	0.50 percent
Wage inflation	3.50 percent
Salary increase	3.50 to 7.20 percent, including wage inflation
Discount rate	8.00 percent
MIF health care cost trends	
Under age 65	7.75 percent FYE 2017, decreasing to an ultimate rate of 5.00 percent by FYE 2023
Ages 65 and older	5.75 percent FYE 2017, decreasing to an ultimate rate of 5.00 percent by FYE 2020
Medicare part B premiums	1.02 percent FYE 2017 with an ultimate rate of 5.00 percent by FYE 2029
MIF under age 65 claims	The current premium charged by KEHP is used as the base cost and is projected forward using only the health care trend assumption (no implicit rate subsidy is recognized).

Schedule of Investment Returns

Health Insurance Trust

	2017	2016	2015	2014
Annual money weighted rate of return, net of investment expense	14.37%	-2.20%	1.38%	15.38%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report.

Life Insurance Plan
Schedule of Changes in the Net OPEB Liability
 (In Thousands)

Change in the net OPEB liability	2017
Total OPEB liability	
Service Cost	\$ 1,067
Interest	7,761
Changes of benefit terms	-
Difference between expected and actual experience	-
Changes of assumptions	-
Benefit payments	(5,151)
Net change in total OPEB liability	3,677
Total OPEB liability - beginning	106,059
Total OPEB liability - ending (a)	\$ 109,736
 Plan Net Position	
Contributions - State of Kentucky	\$ 882
Contributions - Other Employers	168
Contributions - Active Members	-
Net investment income	915
Benefit payments	(5,151)
Administrative expense	(28)
Other	-
Net change in plan net position	(3,214)
Plan net position - beginning	90,991
Plan net position - ending (b)	87,777
 Net OPEB liability - ending (a) - (b)	 \$ 21,959

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

NOTE 1 SCHEDULE OF CHANGES IN THE NET OPEB LIABILITY

The net OPEB liability contained in this schedule was provided by TRS's actuary, Cavanaugh Macdonald Consulting, LLC. The net OPEB liability is measured as the total OPEB liability less the amount of the fiduciary net position of the System.

Changes of Benefit Terms. None

Changes of assumptions. None

See accompanying independent auditor's report.

Life Insurance Plan
Schedule of the Net OPEB Liability
 (In Thousands)

Valuation Year June 30	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Payroll	Net OPEB Liability as a Percentage of Covered Payroll
2017	\$ 109,736	\$ 87,777	\$ 21,959	79.99%	\$ 3,415,432	0.64%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Life Insurance Plan
Schedule of Employer Contributions

Valuation Year June 30	Actuarially Determined Employer Contribution	Contributions in Relation to the Actuarially Determined Contribution	Annual Contribution Deficiency/(Excess)	Covered Payroll	Actual Contributions as a Percentage of Covered Payroll
2017	\$ 1,065	\$ 1,050	\$ 15	\$ 3,415,432	0.03%
2016	1,058	1,038	20	3,390,539	0.03
2015	1,050	1,020	30	3,455,008	0.03
2014	1,045	1,006	39	3,317,422	0.03
2013	1,740	1,680	60	3,310,710	0.05
2012	1,733	1,685	48	3,310,176	0.05
2011	1,726	1,669	57	3,283,749	0.05
2010	1,993	1,967	26	3,321,614	0.06
2009	1,498	5,455	(3,957)	3,253,077	0.17
2008	1,914	5,411	(3,497)	3,190,322	0.17

NOTE 2 SCHEDULE OF EMPLOYER CONTRIBUTIONS

The required employer contributions and percent of those contributions actually made are presented in the schedule.

See accompanying independent auditor's report.

NOTE 3 ACTUARIAL METHODS AND ASSUMPTIONS

The actuarially determined contribution rates in the schedule of employer contributions are calculated as of June 30, three years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the most recent year of the schedule:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Amortization period	30 years, open
Asset valuation method	Market value
Inflation	3.50 percent
Real wage growth	0.50 percent
Wage inflation	4.00 percent
Salary increase	4.00 to 8.10 percent, including wage inflation
Discount rate	7.50 percent

Schedule of Investment Returns

Life Insurance Trust

2017

Annual money weighted rate of return, net of investment expense	1.02%
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Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditor's report.

**Schedule of Administrative Expenses
 For the Fiscal Year Ended June 30, 2017 and 2016**

	<u>2017</u>	<u>2016</u>
Salaries	\$ 7,291,328	\$ 5,808,287
Other Personnel Costs	735,748	696,933
Professional Services and Contracts	395,216	647,708
Utilities	100,641	93,633
Rentals	23,607	20,991
Maintenance	56,520	93,521
Postage & Related Services	300,813	442,610
Printing	188,135	199,837
Insurance	175,768	183,329
Miscellaneous Services	159,272	164,405
Telecommunications	20,958	22,126
Computer Services	145,252	151,789
Supplies	63,097	51,059
Depreciation	1,996,821	1,535,843
Travel	40,734	45,221
Dues & Subscriptions	65,361	63,752
Miscellaneous Commodities	11,095	12,724
Furniture, Fixtures, & Equipment not Capitalized	110,821	85,604
Compensated Absences	-	30,891
Total Administrative Expenses	<u>\$ 11,881,187</u>	<u>\$ 10,350,263</u>

**Schedule of Professional Services and Contracts
 For the Fiscal Year Ended June 30, 2017 and 2016**

<u>Professional</u>	<u>Nature of Service</u>	<u>2017</u>	<u>2016</u>
Cavanaugh Macdonald Consulting	Actuarial Services	\$ 157,089	\$ 284,189
Segal Consulting	Actuarial Services	-	89,017
Auditor of Public Accounts	Auditing Services	-	32,200
Mountjoy Chilton Medley	Auditing Services	89,214	45,000
International Claim Specialist	Investigative Services	1,512	2,176
Ice Miller	Attorney Services	24,233	46,798
Reinhart, Boerner VanDeuren	Attorney Services	-	6,125
Stoll, Keenon, and Ogden	Attorney Services	3,168	21,672
Attorney General	Attorney Services	-	531
Peritus	Communications	120,000	120,000
Total Professional Services and Contracts		<u>\$ 395,216</u>	<u>\$ 647,708</u>

See accompanying independent auditor's report.

**Schedule of Contracted Investment Management Expenses
For the Fiscal Year Ended June 30, 2017**

	<u>Pension</u>	<u>Medical</u>	<u>Total</u>
Equity Managers			
Baillie Gifford	\$ 3,114,384	\$ -	\$ 3,114,384
Baring Asset Management, Inc.	2,473,839	-	2,473,839
Black Rock	336,647	217,848	554,495
Fort Washington Focused Equity	425,662	57,734	483,396
GE Asset Management	786,682	-	786,682
Todd-Veredus Asset Management LLC	1,325,541	-	1,325,541
UBS Global Asset Management	5,980,296	-	5,980,296
Wellington Management Company	3,168,837	-	3,168,837
Total Equity Managers	<u>17,611,888</u>	<u>275,582</u>	<u>17,887,470</u>
Fixed Income Managers			
Fort Washington Investment Broad Market	160,777	-	160,777
Galliard Capital Management	222,920	-	222,920
Total Fixed Income Managers	<u>383,697</u>	<u>-</u>	<u>383,697</u>
Real Estate	8,812,597	731,349	9,543,946
Additional Categories	9,454,366	849,061	10,303,427
Alternative Investments	17,428,907	1,162,667	18,591,574
Custodian			
The Bank of New York Mellon	481,653	53,386	535,039
Consultants			
Hewitt Ennis Knupp, Inc.	413,850	-	413,850
Bevis Longstreth	51,660	-	51,660
George Philip	33,965	-	33,965
Total Consultants	<u>499,475</u>	<u>-</u>	<u>499,475</u>
Legal & Research			
Reinhart, Boerner Van Deuren	5,936		5,936
Ice Miller	51,266	-	51,266
Total Legal & Research	<u>57,202</u>	<u>-</u>	<u>57,202</u>
Other			
Administrative and Operational (includes Personnel)	<u>3,116,857</u>	<u>98,822</u>	<u>3,215,679</u>
Total Contracted Investment Management Expenses	<u>\$ 57,846,642</u>	<u>\$ 3,170,867</u>	<u>\$ 61,017,509</u>

See accompanying independent auditor's report.

**Schedule of Contracted Investment Management Expenses
For the Fiscal Year Ended June 30, 2016**

	Pension	Medical	Total
Equity Managers			
Baillie Gifford	\$ 2,800,298	\$ -	\$ 2,800,298
Baring Asset Management, Inc.	2,419,271	-	2,419,271
Black Rock	265,816	191,346	457,162
GE Asset Management	800,000	-	800,000
Todd-Veredus Asset Management LLC	1,295,310	-	1,295,310
UBS Global Asset Management	2,980,341	-	2,980,341
Wellington Management Company	2,917,720	-	2,917,720
Total Equity Managers	13,478,756	191,346	13,670,102
Fixed Income Managers			
Fort Washington Investment Advisors	150,088	-	150,088
Galliard Capital Management	229,226	-	229,226
Total Fixed Income Managers	379,314	-	379,314
Real Estate	7,010,123	503,596	7,513,719
Additional Categories	8,701,619	683,241	9,384,860
Alternative Investments	14,469,348	794,844	15,264,192
Custodian			
The Bank of New York Mellon	380,233	30,275	410,508
Consultants			
Hewitt Ennis Knupp, Inc.	358,850	-	358,850
Bevis Longstreth	50,137	-	50,137
George Philip	38,962	-	38,962
Total Consultants	447,949	-	447,949
Legal & Research			
Reinhart, Boerner Van Deuren	5,560	-	5,560
Ice Miller	84,697	-	84,697
Total Legal & Research	90,257	-	90,257
Other			
Administrative and Operational (includes Personnel)	2,845,221	74,831	2,920,052
Total Contracted Investment Management Expenses	\$ 47,802,820	\$ 2,278,133	\$ 50,080,953

See accompanying independent auditor's report.



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*

Independent Auditor's Report

To the Board of Trustees
Teachers' Retirement System of the State of Kentucky
Frankfort, KY

We have audited, in accordance with the 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 the State of Kentucky, which comprise the statement of fiduciary net position as of June 30, 2017, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the Teachers' Retirement System of the State of Kentucky's basic financial statements, and have issued our report thereon dated November 14, 2017.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Teachers' Retirement System of the State of Kentucky'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 Teachers' Retirement System of the State of Kentucky's internal control. Accordingly, we do not express an opinion on the effectiveness of the Teachers' Retirement System of the State of Kentucky'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 over financial reporting that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Kentucky
Indiana
Ohio

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Teachers' Retirement System of the State of Kentucky'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 results of that testing, and not to provide an opinion on the effectiveness of the Teachers' Retirement System of the State of Kentucky'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 Teachers' Retirement System of the State of Kentucky's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



Louisville, Kentucky
November 14, 2017