TEACHERS' RETIREMENT
SYSTEM OF THE
STATE OF KENTUCKY

Financial Statements

June 30, 2018 and 2017

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CPAs / ADVISORS

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

We have audited the accompanying financial statements of the Teachers' Retirement System of the State of Kentucky (TRS), a component unit of the Commonwealth of Kentucky, as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the component unit financial statements on pages 10 throught 17.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from 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 TRS's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of TRS's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinions

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 as of June 30, 2018, and the changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

The financial statements of the Teachers' Retirement System of the State of Kentucky for the year ended June 30, 2017, were audited by other auditors whose report dated November 14, 2017, expressed unmodified opinions on those statements.

Report on Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis on pages 4 through 8, and the defined benefit pension plan and other postemployment benefit plan supplemental schedules on pages 68 through 77, 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 audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise TRS's basic financial statements. The 2018 information on the additional supporting schedules (pages 78 through 80) is presented for purposes of additional analysis and is 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. The 2017 information on the additional supporting schedules (pages 78 through 80) was subjected to the auditing procedures applied in the 2017 audit of the basic financial statement by other auditors, whose report on such information stated that it was fairly statement in all material respects in relation to the 2017 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 15, 2018 on our consideration of the TRS's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is 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 TRS's internal control over financial reporting and compliance.

Blue & Co., LLC

Lexington, Kentucky
November 15, 2018

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, 2018. 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.

TEACHERS' RETIREMENT SYSTEM AS A WHOLE

In the fiscal year ended June 30, 2018, the System's combined fiduciary net position increased by $1,502.7 million – from $19,754.8 million in 2017 to $21,257.5 million in 2018. In 2016, the combined net position totaled $17,638.5 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.

Summary of Fiduciary Net Position
(In Millions)

	Defined Benefit Plan			Medical Insurance Plan			Life Insurance Plan		
Categories	2018	2017	2016	2018	2017	2016	2018	2017	2016
Cash & Investments	$ 19,885.8	$ 18,649.0	$ 16,707.7	$ 1,140.7	$ 922.6	$ 681.4	$ 83.7	$ 86.6	$ 90.1
Receivables	110.8	135.0	119.5	59.0	44.6	58.3	0.8	1.2	1.2
Capital Assets	16.3	18.1	17.0	-	-	-	-	-	-
Total Assets	20,012.9	18,802.1	16,844.2	1,199.7	967.2	739.7	84.5	87.8	91.3
Total Liabilities	(31.3)	(94.4)	(31.4)	(9.4)	(8.8)	(5.9)	-	-	(0.4)
Net Position	$ 19,981.6	$ 18,707.7	$ 16,812.8	$ 1,190.3	$ 958.4	$ 733.8	$ 84.5	$ 87.8	$ 90.9

*Totals	2018	2017	2016**
Cash & Investments	$ 21,110.2	$ 19,658.2	$ 17,479.2
Receivables	170.6	180.8	179.0
Capital Assets	16.3	18.1	17.0
Total Assets	21,297.1	19,857.1	17,675.2
Total Liabilities	(40.7)	(103.2)	(37.7)
Net Position	$ 21,256.4	$ 19,753.9	$ 17,637.5

**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 $1.1 million for the year ended 2018 and $1.0 million for years ended 2017 and 2016.*
***Reflects revised amounts reported for 2016 as described in Note 2 in the 2017 report.*

The fiduciary net position of the defined benefit retirement annuity plan increased by 6.8 percent ($19,981.6 million compared to $18,707.7 million) and in 2016, the fiduciary net position of the defined benefit plan totaled $16,812.8 million. The increases are primarily due to additional employer contributions from the state and improvements in market conditions. Net investment income increased net position by approximately $2 billion in 2018 and the 2017 net investment income was $2.7 billion more than 2016. 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 24.2 percent ($1,190.3 million compared to $958.4 million) primarily due to increased contributions from members and employers due to legislation passed in 2010. This compares to 2016 where fiduciary net position of the medical insurance fund totaled $733.8 million. Plan assets are restricted to providing hospital and medical insurance benefits to members and their spouses.

Summary of Changes in Fiduciary Net Position
(In Millions)

Categories	Defined Benefit Plan 2018	Defined Benefit Plan 2017	Defined Benefit Plan 2016	Medical Insurance Plan 2018	Medical Insurance Plan 2017	Medical Insurance Plan 2016	Life Insurance Plan 2018	Life Insurance Plan 2017	Life Insurance Plan 2016
Additions									
Member Contributions	$ 319.1	$ 313.6	$ 313.0	$ 130.8	$ 128.8	$ 128.1	$ -	$ -	$ -
Employer Contributions	1,048.7	1,060.7	565.5	187.1	180.3	178.6	1.1	1.0	1.0
Net Investment Income/(Loss)	1,953.2	2,475.8	(245.2)	76.8	95.5	(9.3)	1.1	1.0	4.8
Total Additions	3,321.0	3,850.1	633.3	394.7	404.6	297.4	2.2	2.0	5.8
Deductions									
Benefit Payments	2,004.6	1,918.6	1,833.2	-	-	-	5.5	5.2	4.6
Refunds	31.1	26.3	27.8	-	-	-	-	-	-
Administrative Expense	11.4	10.3	8.6	1.7	1.5	1.7	-	-	-
Insurance Expenses	-	-	-	161.1	178.5	188.9	-	-	-
Total Deductions	2,047.1	1,955.2	1,869.6	162.8	180.0	190.6	5.5	5.2	4.6
Increase/(Decrease) in Net Position	$ 1,273.9	$ 1,894.9	$ (1,236.3)	$ 231.9	$ 224.6	$ 106.8	$ (3.3)	$ (3.2)	$ 1.2

*Totals	2018	2017	2016**
Additions			
Member Contributions	$ 449.9	$ 442.4	$ 441.1
Employer Contributions	1,236.9	1,242.0	745.1
Net Investment Income/(Loss)	2,031.1	2,572.3	(249.7)
Other Income	-	-	-
Total Additions	3,717.9	4,256.7	936.5
Deductions			
Benefit Payments	2,010.1	1,923.8	1,837.8
Refunds	31.1	26.3	27.8
Administrative Expense	13.1	11.8	10.3
Insurance Expenses	161.1	178.5	188.9
Total Deductions	2,215.4	2,140.4	2,064.8
Increase/(Decrease) in Net Position	$ 1,502.5	$ 2,116.3	$ (1,128.3)

**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 $0.1 million for the year ended 2018 and $0 for years ended 2017 and 2016.*
***Reflects revised amounts reported for 2016 as described in Note 2 in the 2017 report.*

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.

In 2018, Employer contributions totaled $1,048.7 million, a net decrease of $12 million from the prior fiscal year. The decrease was due to employer contributions recommended by the actuary and paid by the state being less than the prior year. In 2017, Employer contributions recommended by the actuary and paid by the state increased $495.2 million compared 2016.

In 2018, the defined benefit plan experienced net investment income of $1,953.2 million compared to the previous year of $2,475.8 million. For 2016, net investment income totaled negative $245.2 million. The increases in net investment income are due to favorable market conditions for the years ended June 30, 2018 and 2017 compared to 2016. Total deductions in 2018 increased $91.9 million compared to 2017 and also increased $85.6 million in 2017 compared to 2016. The increases can be attributed to increases in the number of benefit recipients. There was an increase of 1,411members and beneficiaries on the retired payroll as of June 30, 2018. Also, there was an increase of 1,403 members and beneficiaries on the retired payroll as of June 30, 2017.

OTHER POSTEMPLOYMENT BENEFIT ACTIVITIES

During the 2018 fiscal year, the medical insurance plan member contributions increased $2 million from 2017 and $0.7 million from 2016. Also during the 2018 fiscal year, employer contributions increased $6.8 million from 2017 and $1.7 million from 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.

In 2018, the medical insurance plan experienced net investment income of $76.8 million compared to the previous year of $95.5 million. For 2016, net investment income totaled negative $9.3 million. The increases in net investment income are due to favorable market conditions for the years ended June 30, 2018 and 2017 compared to 2016.

The life insurance plan has an actuarial valuation conducted independently from the defined benefit plan. Total life insurance benefits paid for 2018, 2017 and 2016 were $5.5, $5.2 and $4.6 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, 2018. This report reflects the System's actuarial value of assets totaling $19.5 billion and $18.5 billion at the end of fiscal year 2018 and 2017. The actuarial determined liabilities totalled $33.8 billion and $32.8 billion at June 30, 2018 and 2017. The funded ratio of actuarial assets to liabilities is 57.7% and 56.4% at fiscal year end 2018 and 2017. The additional funding provided in the budget resulted in 97% of the Actuarially Determined Employer Contribution being made for fiscal year 2018 and 99% 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 funding of the medical insurance and life insurance plans is presented in the Required Supplementary Information in accordance with Governmental Accounting Standards Board (GASB) Statement No. 74. Although the medical insurance plan continues to have a large net Other Post Employemnt Benefits (OPEB) 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. The Actuarially Determined Employer Contribution of the medical and life insurance plans are provided in the Schedule of Employer Contributions presented in the Required Supplementary Information.

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. For the defined benefit plan, the blended discount rate mandated by accounting standards results 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.

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, 2018

	Defined Benefit Plan	Medical Insurance Plan	Life Insurance Plan	Other Funds	Total
Assets					
Cash	$ 104,214,766	$ 58,452,151	$ 432,786	$ 186,882	$ 163,286,585
Prepaid Expenses	105,795	19,600	-	-	125,395
Receivables					
Contributions	30,237,329	18,012,814	13,374	-	48,263,517
Due from Other Trust Funds	1,779,623	-	-	-	1,779,623
State of Kentucky	16,199,596	10,277,791	35,965	-	26,513,352
Investment Income	44,151,888	2,061,568	732,657	3,043	46,949,156
Investment Sales Receivable	18,104,128	424,710	-	-	18,528,838
Other Receivables	361,346	28,260,451	-	-	28,621,797
Total Receivables	110,833,910	59,037,334	781,996	3,043	170,656,283
Investments at Fair Value (See Note 5)					
Short Term Investments	403,309,780	56,993,634	3,724,036	373,549	464,400,999
Fixed Income	2,983,975,575	89,681,931	47,825,436	247,914	3,121,730,856
Equities	12,544,141,125	605,705,867	29,895,479	312,013	13,180,054,484
Alternative Investments	1,282,830,325	81,232,638	-	-	1,364,062,963
Real Estate	1,150,694,282	62,962,565	541,107	-	1,214,197,954
Additional Categories	1,416,514,873	185,613,170	1,300,000	-	1,603,428,043
Total Investments	19,781,465,960	1,082,189,805	83,286,058	933,476	20,947,875,299
Capital Assets	26,513,139	-	-	-	26,513,139
Accumulated Depreciation	(10,188,492)	-	-	-	(10,188,492)
Net Capital Assets	16,324,647	-	-	-	16,324,647
Total Assets	20,012,945,078	1,199,698,890	84,500,840	1,123,401	21,298,268,209
Liabilities					
Accrued Expenses and Other Liabilities	2,280,864	5,177,013	7,605	-	7,465,482
Due To Other Trust Funds	-	1,747,561	30,979	1,083	1,779,623
Investment Purchases Payable	29,031,118	2,493,508	-	-	31,524,626
Total Liabilities	31,311,982	9,418,082	38,584	1,083	40,769,731
Net Position - Restricted for Pension and Other Postemployment Benefits	$ 19,981,633,096	$ 1,190,280,808	$ 84,462,256	$ 1,122,318	$ 21,257,498,478

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, 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	17,996,752	-	-	18,435,055
Total Receivables	135,023,151	44,634,253	1,174,109	2,693	180,834,206
Investments at Fair Value (See Note 5)					
Short Term Investments	521,348,977	46,008,715	4,150,029	398,093	571,905,814
Fixed Income	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	26,065,842	-	-	-	26,065,842
Accumulated Depreciation	(8,019,203)	-	-	-	(8,019,203)
Net Capital Assets	18,046,639	-	-	-	18,046,639
Total Assets	18,802,077,050	967,254,232	87,805,095	963,704	19,858,100,081
Liabilities					
Accrued Expenses and Other Liabilities	2,201,644	3,485,911	-	-	5,687,555
Due To Other Trust Funds	-	1,538,574	27,690	1,208	1,567,472
Investment Purchases Payable	92,176,381	3,840,074	-	-	96,016,455
Total Liabilities	94,378,025	8,864,559	27,690	1,208	103,271,482
Net Position - Restricted for Pension and Other Postemployment 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 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, 2018

	Defined Benefit Plan	Medical Insurance Plan	Life Insurance Plan	Other Funds	Total
Additions					
Contributions					
State of Kentucky	$ 969,698,496	$ 80,959,003	$ 896,974	$ -	$ 1,051,554,473
Other Employers	78,972,705	106,143,410	161,355	325,950	185,603,420
Members	319,127,087	130,777,471	-	-	449,904,558
Total Contributions	1,367,798,288	317,879,884	1,058,329	325,950	1,687,062,451
Investment Income/(Loss)					
Net Appreciation/(Depreciation) in Fair Value of Investments	1,574,056,951	68,954,490	(1,270,937)	20,861	1,641,761,365
Interest	138,027,758	6,195,753	2,446,305	14,895	146,684,711
Dividends	262,669,598	5,633,011	40,895	5,898	268,349,402
Rental Income, Net	29,957,783	-	-	-	29,957,783
Securities Lending, Gross Earnings	16,275,779	-	42,020	1,246	16,319,045
Gross Investment Income/(Loss)	2,020,987,869	80,783,254	1,258,283	42,900	2,103,072,306
Less: Investment Expense	(55,500,376)	(3,942,742)	(113,453)	(16,346)	(59,572,917)
Less: Securities Lending Expense	(12,273,462)	-	(34,409)	(973)	(12,308,844)
Net Investment Income/(Loss)	1,953,214,031	76,840,512	1,110,421	25,581	2,031,190,545
Total Additions	3,321,012,319	394,720,396	2,168,750	351,531	3,718,252,996
Deductions					
Benefits	2,004,617,334	-	5,452,920	190,626	2,010,260,880
Refunds of Contributions	31,072,421	-	-	-	31,072,421
Insurance Expenses	-	161,081,700	-	-	161,081,700
Administrative Expense	11,388,493	1,747,561	30,979	1,083	13,168,116
Total Deductions	2,047,078,248	162,829,261	5,483,899	191,709	2,215,583,117
Net Increase/(Decrease)	1,273,934,071	231,891,135	(3,315,149)	159,822	1,502,669,879
Net Position - Restricted for Pension and Other Postemployment Benefits					
Beginning of Year	18,707,699,025	958,389,673	87,777,405	962,496	19,754,828,599
End of Year	$ 19,981,633,096	$ 1,190,280,808	$ 84,462,256	$ 1,122,318	$ 21,257,498,478

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, 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	1,374,345,427	309,195,229	1,049,683	220,001	1,684,810,340
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	5,794,696	-	3,965	491	5,799,152
Gross Investment Income/(Loss)	2,536,823,611	98,623,465	927,355	23,463	2,636,397,894
Less: Investment Expense	(57,836,050)	(3,170,868)	(10,478)	(114)	(61,017,510)
Less: Securities Lending Expense	(3,234,763)	-	(1,380)	(329)	(3,236,472)
Net Investment Income/(Loss)	2,475,752,798	95,452,597	915,497	23,020	2,572,143,912
Total Additions	3,850,098,225	404,647,826	1,965,180	243,021	4,256,954,252
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	1,955,231,083	180,039,120	5,178,703	225,836	2,140,674,742
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	16,812,831,883	733,780,967	90,990,928	945,311	17,638,549,089
End of Year	$ 18,707,699,025	$ 958,389,673	$ 87,777,405	$ 962,496	$ 19,754,828,599

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, 2018

	403(b) Tax Shelter	Supplemental Benefit Fund	Losey Scholarship	Total
Assets				
Cash	$ -	$ 186,882	$ -	$ 186,882
Receivables				
Investment Income	481	-	2,562	3,043
Investments at Fair Value				
Short Term Investments	324,303	-	49,246	373,549
Fixed Income	-	-	247,914	247,914
Equities	-	-	312,013	312,013
Total Investments	324,303	-	609,173	933,476
Total Assets	324,784	186,882	611,735	1,123,401
Liabilities				
Due to Other Trust Funds	54	927	102	1,083
Total Liabilities	54	927	102	1,083
Net Position - Restricted for Pension and Other Postemployment Benefits	$ 324,730	$ 185,955	$ 611,633	$ 1,122,318

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
Fixed Income	-	-	258,962	258,962
Equities	-	-	280,104	280,104
Total Investments	343,750	-	593,409	937,159
Total Assets	343,983	23,852	595,869	963,704
Liabilities				
Due to Other Trust Funds	56	1,055	97	1,208
Total Liabilities	56	1,055	97	1,208
Net Position - Restricted for Pension and Other Postemployment Benefits	$ 343,927	$ 22,797	$ 595,772	$ 962,496

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, 2018

	403(b) Tax Shelter	Supplemental Benefit Fund	Losey Scholarship	Total
Additions				
Other Employers	$ -	$ 325,950	$ -	$ 325,950
Investment Income				
Net Appreciation in				
Fair Value of Investments	-	-	20,861	20,861
Interest	4,101	1,109	9,685	14,895
Dividends	-	-	5,898	5,898
Securities Lending, Gross	-	-	1,246	1,246
Gross Investment Income	4,101	1,109	37,690	42,900
Less: Investment Expense	(13,592)	-	(2,754)	(16,346)
Less: Securities Lending Expense	-	-	(973)	(973)
Net Investment Income	(9,491)	1,109	33,963	25,581
Total Additions	(9,491)	327,059	33,963	351,531
Deductions				
Benefits	9,651	162,975	18,000	190,626
Administrative Expense	55	926	102	1,083
Total Deductions	9,706	163,901	18,102	191,709
Net Increase/(Decrease)	(19,197)	163,158	15,861	159,822
Net Position - Restricted for Pension and Other Postemployment Benefits				
Beginning of Year	343,927	22,797	595,772	962,496
End of Year	$ 324,730	$ 185,955	$ 611,633	$ 1,122,318

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

	403(b) Tax Shelter	Supplemental Benefit Fund	Losey Scholarship	Total
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	-	-	491	491
Gross Investment Income	1,638	-	21,825	23,463
Less: Investment Expense	(42)	-	(72)	(114)
Less: Securities Lending Expense	-	-	(329)	(329)
Net Investment Income	1,596	-	21,424	23,020
Total Additions	1,596	220,001	21,424	243,021
Deductions				
Benefits	10,387	196,241	18,000	224,628
Administrative Expense	56	1,055	97	1,208
Total Deductions	10,443	197,296	18,097	225,836
Net Increase/(Decrease)	(8,847)	22,705	3,327	17,185
Net Position - Restricted for Pension and Other Postemployment Benefits				
Beginning of Year	352,774	92	592,445	945,311
End of Year	$ 343,927	$ 22,797	$ 595,772	$ 962,496

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 or the System) 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 (the Commonwealth or the State) 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, 2018, 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 and No. 74 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:

	2018	2017
Active contributing members:		
Vested	47,735	48,211
Non-vested	24,830	23,919
Inactive members, vested	8,814	8,624
Retirees and beneficiaries currently receiving benefits	54,377	52,966
Total members, retirees, and beneficiaries	135,756	133,720

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 computed using 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 computed using 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 postemployment 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, 2018, the retirement annuity cash account totaled $54,859,888, the control cash account totaled $49,354,878 for a total of $104,214,766 as carrying value of cash in the defined benefit plan. The medical insurance trust cash account totaled $41,705,664, the medical insurance 401(h) cash account totaled $16,632,595 and the medical insurance claims cash account totaled $113,892 for a total of $58,452,151 as carrying value of cash in the medical insurance plan. The life insurance plan cash account totaled $432,786. The supplemental benefit fund cash account contained $186,882. Therefore, the carrying value of cash was $163,286,585 and the bank balance was $161,372,064. The variance is primarily due to outstanding checks and items not processed by the bank as of June 30, 2018.

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 supplemental 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. 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.

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. Other investments such as private equity, timberland, real estate funds and other additional categories, such as opportunistic credit, high yield bonds, and direct lending are valued using the most recent general partner statement at net asset value.

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, 2018 and 2017, accrued compensated absences were included in accrued expenses and other liabilities on the statements of fiduciary net position amounting to $1,189,181 and $1,272,405, 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, 2018 and 2017 installment contract receivables were $361,346 and $438,303, 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

TRS implemented the provisions of GASB Statement No. 85, "Omnibus 2017," for the year ended June 30, 2018. GASB 85 addresses several issues identified during the implementation and application of certain GASB pronouncements. OPEB related issues applicable to TRS's medical and life insurance funds addressed in this new standard include the presentation of payroll-related measures in the schedules of Required Supplementary Information by Other postemployement benefits (OPEB) plans.

In January 2017, GASB issued Statement No. 84, "Fiduciary Activities," that establishes criteria for identifying fiduciary activities and guidance on reporting those activities. This Statement provides guidance on four fiduciary funds that should be reported if applicable: pension (and other employee benefit) trust funds, investment trust funds, private purpose trust funds, and custodial funds. GASB 84 will be effective for periods beginning after December 15, 2018. TRS has not adopted GASB 84 and has not yet determined the impact of this standard on its financial statements and disclosures.

K. RECLASSIFICATIONS

In accordance with GASB Statement No. 28, additions and deductions related to securities lending transactions should be reported at their gross amounts. Previously, amounts related to gross borrower rebate expenses were reported net of securities lending gross earnings and have been reclassified to be reported as securities lending expense on the Statement of Changes in Fiduciary Net Position. The reclassification had no effect on total net position and change in 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 postemployment benefit contributions to the medical and life insurance plans. The member postemployment medical contribution is 3.75 percent of salary. The employer postemployment 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, 2018 and June 30, 2017 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]
2018	$ 33,708,555	$ 19,981,633	$ 13,726,922	59.3%	$ 3,455,660	397.23%
2017	$ 46,966,822	$ 18,707,699	$ 28,259,123	39.8%	$ 3,415,432	827.40%

B. SUMMARY OF ACTUARIAL ASSUMPTIONS

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

Valuation Date	6/30/2017
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	3.89%
Single Equivalent Interest Rate	7.50%

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, 2017 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	Target Allocation	Long-Term Expected Real Rate of Return
U.S. Equity	40.0%	4.2%
International Equity	22.0%	5.2%
Fixed Income	15.0%	1.2%
Additional Categories	8.0%	3.3%
Real Estate	6.0%	3.8%
Private Equity	7.0%	6.3%
Cash	2.0%	0.9%
Total	100.0%	

D. DISCOUNT RATE

For 2018, the discount rate used to measure the total pension liability was 7.50%. 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 the Actuarially Determined Contribution rates, adjusted by 95%, for all fiscal years in the future. 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. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The following table presents the net pension liability of the System for 2018. The 2018 net pension liability of the System is calculated using the discount rate of 7.50%, 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 (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

2018

(in thousands)	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Systems' net pension liability	$ 17,595,452	$ 13,726,922	$ 10,472,071

For 2017, 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 table presents the net pension liability of the System for 2017. 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

(in thousands)	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

For 2018, June 30, 2017 is the actuarial valuation date upon which the total pension liability (TPL) is based. An expected TPL is determined as of June 30, 2018 using standard roll forward techniques for the TPL using a discount rate of 7.50%. An expected TPL was also determined using the prior year discount rate of 4.49%, which was based on a municipal bond index rate of 3.56%. 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, 2018 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, 2018 based on the TPL roll-forward in the June 30, 2017 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 2018

(In Thousands)

	Expected	Actual Before Assumption Change	Actual After Assumption Change
(a) Interest Rate	4.49%	4.49%	7.50%
(b) TPL as of June 30, 2017	$ 46,966,822	$ 46,753,909	$ 32,819,887
(c) Entry Age Normal Cost for the Year July 1, 2017 - June 30, 2018	1,104,102	1,104,102	539,205
(d) Actual Benefit Payments (including refunds) For the year July 1, 2017 - June 30, 2018	2,035,690	2,035,690	2,035,690
(e) TPL as of June 30, 2018 (b) x (1 + (a)) + (c) - (d) x (1 + 0.5 x (a))	48,098,343	47,875,870	33,708,555
(f) Difference between Expected and Actual Experience (Gain)/Loss		(222,473)	
(g) Difference due to change in Assumptions and Other Inputs (Gain)/Loss			(14,167,315)

For 2017, 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 2017
(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 on June 30, 2018 was $161,372,064. 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.

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, 2018, the System’s cash balance in the amount of $161,372,064 was not exposed to custodial credit risk because this amount was fully insured by the FDIC limit of $250,000 and collateralized with a Letter of Credit in the amount of $200,000,000 as well as securities held by the Federal Reserve Bank of New York in the name of the Commonwealth of Kentucky-Teachers’ Retirement valued at $52,303,290.

As of June 30, 2017, the System’s cash balance in the amount of $222,173,747 was not exposed to custodial credit risk because this amount was fully insured by the FDIC limit of $250,000 and collateralized with a Letter of Credit in the amount of $189,000,000 as well as securities held by the Federal Reserve Bank of New York in the name of the Commonwealth of Kentucky-Teachers’ Retirement valued at $32,955,776.

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 charts represents the fair values of the investments of the Teachers’ Retirement System of the State of Kentucky for June 30, 2018 and 2017.

Schedule of Investments
Retirement Annuity Trust

	Fair Value June 30, 2018	Fair Value June 30, 2017
Money Market Fund	$ 403,683,329	$ 521,747,070
Total Short Term Investments	403,683,329	521,747,070
U. S. Government	1,145,850,222	992,857,941
Agency Bonds	47,262,531	48,416,092
Mortgage Backed Securities	90,483,215	77,624,095
Asset Backed Securities	34,611,394	52,576,134
Commercial Mtg Backed Securities	40,736,773	40,167,581
Collateralized Mtg Obligations	17,929,295	27,820,939
Municipal Bonds	335,376,929	359,500,198
Corporate Bonds	1,271,973,130	1,272,699,183
Total Fixed Income	2,984,223,489	2,871,662,163
International Equity	4,891,933,955	4,460,064,917
U. S. Equity	7,652,519,183	7,129,871,825
Total Equities	12,544,453,138	11,589,936,742
Real Estate	1,150,694,282	1,046,760,134
Private Equity	1,095,289,506	854,635,619
Timberland	187,540,819	208,219,943
Total Alternative Investments	1,282,830,325	1,062,855,562
Opportunistic Credit	553,448,443	539,082,990
Corporate Securities	158,697,881	-
Corporate Bonds	327,919,948	491,088,604
Corporate Loans	376,448,601	389,435,564
Total Additional Categories	1,416,514,873	1,419,607,158
TOTAL INVESTMENTS*	$ 19,782,399,436	$ 18,512,568,829

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

Schedule of Investments
Health Insurance Trust

	Fair Value June 30, 2018	Fair Value June 30, 2017
Money Market Fund	$ 56,993,634	$ 46,008,715
Total Short Term Investments	56,993,634	46,008,715
Municipal Bonds	3,013,547	-
US Government	28,274,922	20,457,755
Corporate Bonds	58,393,462	49,825,322
Total Fixed Income	89,681,931	70,283,077
Global Equities	571,646,533	442,726,237
U. S. Equity	34,059,334	30,548,164
Total Equities	605,705,867	473,274,401
Real Estate	62,962,565	42,701,494
Total Real Estate	62,962,565	42,701,494
Private Equity	81,232,638	42,340,364
Total Alternative Investments	81,232,638	42,340,364
Opportunistic Credit	58,388,152	49,620,098
Corporate Securities	42,477,060	-
Corporate Bonds	46,908,752	81,742,713
Corporate Loans	37,839,206	28,807,364
Total Additional Categories	185,613,170	160,170,175
TOTAL INVESTMENTS	$ 1,082,189,805	$ 834,778,226

Schedule of Investments
Life Insurance Fund

	Fair Value June 30, 2018	Fair Value June 30, 2017
Money Market Fund	$ 3,724,036	$ 4,150,029
Total Short Term Investments	3,724,036	4,150,029
U. S. Government	17,296,920	8,825,290
Mortgage Backed Securities	752,789	1,123,884
Municipal Bonds	8,720,060	25,088,970
Corporate Bonds	21,055,667	47,255,156
Total Fixed Income	47,825,436	82,293,300
International Equity	7,884,256	-
U. S. Equity	22,011,223	-
Total Equities	29,895,479	-
Real Estate	541,107	-
Total Real Estate	541,107	-
Opportunistic Credit	1,300,000	-
Total Additional Categories	1,300,000	-
TOTAL INVESTMENTS	$ 83,286,058	$ 86,443,329

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, 2018, 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 $1,297,943,833 related to $1,268,089,422 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, 2018 and 2017, the retirement annuity trust and health insurance trusts had the following investment fair values and weighted average maturities. Life Insurance Fund was broken out into a separate entity in February 2018:

2018 Retirement Annuity Trust

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
U.S Government	$ 1,145,850,222	$ -	8.79
Agency	47,262,531		6.89
MBS	90,483,214		16.95
CMO	17,929,295		9.26
ABS	34,611,394		15.20
CMBS	40,736,773		21.54
Muni	335,376,929		12.21
Corporate Bonds and Securities	1,271,973,131	486,617,830	7.85
Corporate Loans*		369,365,652	4.60
Total	$ 2,984,223,489	$ 855,983,482	8.60

** Does not include $7,082,948 in cash held directly at Barings European Loan Fund*

2017 Retirement Annuity Trust

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
U.S Government	$ 992,857,941	$ -	10.81
Agency	48,416,092		8.06
MBS	77,624,096		11.67
CMO	27,820,939		13.05
ABS	52,576,134		11.99
CMBS	40,167,581		20.92
Muni	359,500,198		11.93
Corporate Bonds	1,272,699,183	491,088,604	8.13
Corporate Loans*		381,101,026	4.76
Total	$ 2,871,662,164	$ 872,189,630	7.72

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

2018 Health Insurance Trust

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
U.S. Government	$ 28,274,923	$ -	9.32
Muni	3,013,547		8.35
Corporate Bonds and Securities	58,393,462	89,385,812	6.3
Corporate Loans		37,839,206	5.27
Total	$ 89,681,932	$ 127,225,018	6.54

2017 Health Insurance Trust

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
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	$ 70,283,077	$ 110,550,077	6.17

2018 Life Insurance Fund

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
U.S. Government	$ 17,296,920		8.86
Muni	8,720,060		14.64
MBS	752,789		13.5
Corporate Bonds	21,055,667		5.29
Total	$ 47,825,436	-	8.42

2017 Life Insurance Fund

Investment Type	Fixed Income	Additional Categories	Average Maturity (Yrs)
U.S. Government	$ 8,825,290		9.62
Muni	25,088,970		12.74
MBS	1,123,884		11.28
Corporate Bonds	47,255,156		5.42
Total	$ 82,293,300	-	8.25

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 $464,400,624 and had a weighted average maturity of seventeen (17) 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 $90.4 million in mortgage-backed securities as of June 30, 2018, compared to $77.6 million as of June 30, 2017.

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 $17.9 million in collateralized mortgage obligations as of June 30, 2018, compared to $27.8 million as of June 30, 2017.

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 $34.6 million as of June 30, 2018, compared to $52.6 million as of June 30, 2017.

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 $40.7 million in commercial mortgage-backed securities investments as of June 30, 2018, compared to $40.2 million as of June 30, 2017.

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, 2018 and 2017:

2018 Retirement Annuity Trust

Rating	Fixed Income	Additional Categories	Total	%
U.S. Government	$ 1,145,850,222	$ -	$ 1,145,850,222	29.84%
AAA	253,972,006	(91,711)	253,880,295	6.60%
AA	474,173,415		474,173,415	12.35%
A	569,839,193		569,839,193	14.84%
BBB	522,885,079	38,886,604	561,771,683	14.63%
BB	6,899,630	302,177,281	309,076,911	8.05%
B		381,391,910	381,391,910	9.93%
CCC		25,168,121	25,168,121	0.66%
CC		2,032,593	2,032,593	0.05%
D		63,853	63,853	0.00%
Not Rated	10,603,944	106,354,831	116,958,775	3.05%
Total	$ 2,984,223,489	$ 855,983,482	$ 3,840,206,971	100.00%

2017 Retirement Annuity Trust

Rating	Fixed Income	Additional Categories	Total	%
U.S. Government	$ 992,857,941	$ -	$ 992,857,941	26.52%
AAA	208,371,963		208,371,963	5.56%
AA	574,902,212		574,902,212	15.36%
A	530,984,214	1,131,449	532,115,663	14.21%
BBB	523,726,097	37,033,244	560,759,341	14.98%
BB	22,804,994	329,217,429	352,022,423	9.40%
B	4,048,200	329,149,508	333,197,708	8.90%
CCC		22,858,417	22,858,417	0.61%
CC				0.00%
D	1,045,762	46,000	1,091,762	0.03%
Not Rated	12,920,781	152,753,583	165,674,364	4.43%
Total	$ 2,871,662,164	$ 872,189,630	$ 3,743,851,794	100.00%

2018 Health Insurance Trust

Rating	Fixed Income	Additional Categories	Total	%
U.S. Government	$ 28,274,923	$ -	$ 28,274,923	13.04%
AAA	5,287,825	(25,195)	5,262,630	2.43%
AA	18,339,237		18,339,237	8.45%
A	25,897,007		25,897,007	11.94%
BBB	11,434,235	6,338,732	17,772,967	8.19%
BB	448,705	56,379,687	56,828,392	26.20%
B		59,084,935	59,084,935	27.24%
CCC		3,725,529	3,725,529	1.72%
CC		93,982	93,982	0.04%
D		4,115	4,115	0.00%
Not Rated		1,623,233	1,623,233	0.75%
Total	$ 89,681,932	$ 127,225,018	$ 216,906,950	100.00%

2017 Health Insurance Trust

Rating	Fixed Income	Additional Categories	Total	%
U.S. Government	$ 20,457,755	$ -	$ 20,457,755	11.31%
AAA	6,427,010		6,427,010	3.55%
AA	11,828,663		11,828,663	6.55%
A	21,162,730		21,162,730	11.70%
BBB	9,938,419	5,546,635	15,485,054	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%
Not Rated		1,691,028	1,691,028	0.94%
Total	$ 70,283,077	$ 110,550,077	$ 180,833,154	100.00%

2018 Life Insurance Fund

Rating	Fixed Income	Additional Categories	Total	%
U.S. Government	$ 17,296,920	$ -	$ 17,296,920	36.17%
AAA	6,594,675		6,594,675	13.79%
AA	12,120,689		12,120,689	25.34%
A	3,932,440		3,932,440	8.22%
BBB	5,548,537		5,548,537	11.60%
BB	1,346,115		1,346,115	2.82%
Not Rated	986,060		986,060	2.06%
Total	$ 47,825,436	$ -	$ 47,825,436	100.00%

2017 Life Insurance Fund

Rating	Fixed Income	Additional Categories	Total	%
U.S. Government	$ 8,825,290	$ -	$ 8,825,290	10.72%
AAA	11,472,920		11,472,920	13.94%
AA	28,916,597		28,916,597	35.14%
A	8,651,610		8,651,610	10.51%
BBB	21,986,273		21,986,273	26.72%
BB	1,405,500		1,405,500	1.71%
Not Rated	1,035,110		1,035,110	1.26%
Total	$ 82,293,300	$ -	$ 82,293,300	100.00%

Total fair value of the retirement annuity trust's fixed income portfolio was $3,840,206,971 on June 30, 2018. The health insurance trust's fixed income portfolio was valued at $216,906,950 on June 30, 2018. The life insurance trust was broken into a separate entity as of February 2018. Total fair value of the life insurance trust's fixed income portfolio was $47,825,436 on June 30, 2018. 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 $403,682,956 in short term investments through the Dreyfus Institutional Cash Advantage Fund. The health insurance trust held $56,993,634 in the Dreyfus Institutional Cash Advantage Fund. The life insurance fund held $3,724,034 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, 2018, the System's exposure to foreign currency risk consisted of $5,069,506,319 in the retirement annuity trust, $330,759,576 in the health insurance trust and $10,751,475 in the life insurance fund.

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, 2018 and 2017:

Retirement Annuity Trust

	2018	2017
Commingled Funds		
Babson Capital European Loan Fd	$ 83,937,661	$ 83,529,164
Baillie Gifford Intrntl EAFE	985,849,831	826,304,923
Baring All Country World ex US	590,455,660	576,106,295
BlackRock ACWI EX-US IMI	787,140,750	712,902,870
UBS All Country World ex US	819,861,910	704,979,730
Alternative Funds		
Carlyle Europe Partners IV, L.P.	39,101,810	19,731,527
KKR & Co European Fund III	24,592,112	33,809,458
KKR & Co European Fund IV	38,790,070	26,265,452
Oaktree European Principal III	21,295,962	22,839,529
ADRs (Equities)	783,159,050	658,341,208
Cross-Listed Equities	539,646,891	688,122,140
Bonds (Fixed Income)	143,961,909	206,555,302
Additional Categories (Fixed Income)	83,826,303	83,459,203
Additional Categories (Opportunistic)	127,886,400	109,262,717
Total	$ 5,069,506,319	$ 4,752,209,518

Health Insurance Trust

	2018	2017
Commingled Funds		
Black Rock Fund B	$ 275,988,587	$ 206,320,676
Alternative Funds		
Carlyle Europe IV	7,820,364	3,946,307
KKR European IV	7,758,012	5,253,090
Bonds (Fixed Income)	5,363,945	4,503,370
ADRs (Equities)	3,562,059	3,658,163
Additional Categories (Fixed Income)	15,875,004	15,306,108
Additional Categories (Opportunistic)	14,391,605	9,963,117
Total	$ 330,759,576	$ 248,950,831

Life Insurance Fund

	2018	2017
Commingled Funds		
Black Rock Fund B	$ 7,812,225	$ -
Bonds (Fixed Income)	2,939,250	9,003,670
Total	$ 10,751,475	$ 9,003,670

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

Retirement Annuity Trust

Currency	2018	2017	Currency	2018	2017
Australian Dollar	$ 80,056,199	$ 116,620,840	Mexican Peso	78,431,730	70,822,257
Bermudian Dollar	82,563,565	66,974,641	Netherlands Antillean Guilder	26,993,189	24,156,367
Brazilian Real	30,670,609	36,631,654	New Zealand Dollar	1,706,541	1,600,934
British Pound Sterling	542,534,671	651,726,435	Norwegian Krone	40,615,351	26,977,335
Canadian Dollar	235,825,292	297,523,837	Omani Rial	-	1,045,762
Cayman Islands Dollar	43,991,379	54,684,123	Pakastani Rupee	294,114	426,623
Chilean Peso	17,492,964	14,187,093	Panamanian Balboa	27,813,694	35,045,435
Chinese Yuan	139,954,752	72,872,379	Papua New Guinean Kina	288,958	-
Columbian Peso	16,129,857	6,717,571	Peruvian Nuevo Sol	-	19,274
Czech Koruna	326,311	266,000	Philippine Peso	3,301,664	3,568,672
Danish Krone	70,488,935	77,878,375	Polish Zloty	3,614,767	3,811,229
Egyptian Pound	447,034	320,624	Qatari Rial	1,473,771	1,127,736
Euro	1,840,824,814	1,665,892,188	Russian Ruble	34,420,677	4,174,638
Guernsey Pound	13,630,804	-	Singapore Dollar	29,249,156	29,311,066
Hong Kong Dollar	264,619,956	231,547,001	Sol	101,565	-
Hungarian Forint	524,979	483,670	South African Rand	48,035,919	33,764,272
Indian Rupee	79,415,592	71,413,664	Swedish Krona	137,087,835	147,404,707
Indonesian Rupiah	9,063,489	8,323,019	Swiss Franc	201,063,978	165,092,155
Israeli New Shekel	7,585,527	18,361,613	Taiwan New Dollar	49,926,329	62,467,815
Japanese Yen	713,224,851	627,530,830	Thai Baht	9,857,556	4,953,021
Jersey Pound	73,558,462	-	Trinidadian Dollar	580,613	-
Korean Won	72,938,027	77,277,317	Turkish Lira	10,651,999	4,346,512
Liberian Dollar	1,968,400	2,086,293	UAE Dirham	1,152,862	10,010,413
Macanese Pataca	662,798	-	Uruguayan Peso	1,627,660	-
Malaysian Ringgit	15,668,077	14,649,584	Various	7,049,047	8,114,544
			Total	$ 5,069,506,319	$ 4,752,209,518

Health Insurance Trust

Currency	2018	2017	Currency	2018	2017
Argentine Peso	$ 135,555	$ -	Malaysian Ringgit	$ 1,577,332	$ 1,235,840
Australian Dollar	14,952,558	12,204,361	Mexican Peso	1,929,849	1,800,372
Bermudian Dollar	2,086,554	1,006,412	Netherlands Antillean Guilder	589,060	-
Brazilian Real	3,688,755	3,139,989	New Zealand Dollar	579,374	486,228
British Pound Sterling	33,230,738	28,771,704	Norwegian Krone	1,598,858	453,325
Canadian Dollar	24,439,457	20,587,815	Pakastani Rupee	94,341	1,168,560
Cayman Islands Dollar	994,258	117,062	Panamanian Balboa	597,706	121,971
Chilean Peso	745,806	526,286	Papua New Guinean Kina	97,332	-
Chinese Yuan	18,830,555	497,440	Peruvian Nuevo Sol	-	592,818
Columbian Peso	296,733	209,996	Philippine Peso	617,753	5,171
Czech Koruna	106,784	82,136	Polish Zloty	696,247	584,439
Danish Krone	3,168,754	2,465,213	Qatari Rial	508,713	647,019
Egyptian Pound	146,934	107,526	Russian Ruble	2,079,235	331,098
Euro	104,404,801	74,200,106	Singapore Dollar	2,549,367	885,415
Guernsey Pound	62,516	-	Sol	33,943	-
Hong Kong Dollar	8,146,300	14,669,785	South African Rand	4,046,539	2,024,219
Hungarian Forint	168,560	149,091	Swedish Krona	5,504,183	3,339,571
Indian Rupee	6,048,862	4,713,176	Swiss Franc	16,421,811	4,739,818
Indonesian Rupiah	1,266,203	1,222,441	Taiwan New Dollar	8,036,220	12,797,324
Israeli New Shekel	1,364,123	564,024	Thai Baht	1,514,111	6,542,493
Japanese Yen	45,957,033	36,155,429	Trinidadian Dollar	119,100	-
Jersey Pound	253,049	-	Turkish Lira	533,627	1,173,463
Korean Won	9,730,528	7,793,916	UAE Dirham	393,174	517,208
Liberian Dollar	192,830	-	Various	-	320,571
Macanese Pataca	223,455	-	Total	$ 330,759,576	$ 248,950,831

Life Insurance Fund

Currency	2018	2017
Australian Dollar	$ 2,328,511	$ 2,003,620
Bermudian Dollar	11,322	-
Brazilian Real	109,096	-
British Pound Sterling	1,808,287	1,000,790
Canadian Dollar	524,742	4,000,040
Cayman Islands Dollar	1,159	-
Chilean Peso	21,887	-
Chinese Yuan	514,591	-
Columbian Peso	8,629	-
Czech Koruna	3,238	-
Danish Krone	91,546	-
Egyptian Pound	4,437	-
Euro	1,811,311	-
Guernsey Pound	1,862	-
Hong Kong Dollar	239,681	-
Hungarian Forint	5,210	-
Indian Rupee	178,964	-
Indonesian Rupiah	37,499	-
Israeli New Shekel	38,914	-
Japanese Yen	1,353,133	-
Jersey Pound	4,038	-
Korean Won	287,376	-
Macanese Pataca	6,578	-
Malaysian Ringgit	$ 46,475	$ -
Mexican Peso	57,007	-
New Zealand Dollar	16,936	-
Norwegian Krone	44,961	-
Pakastani Rupee	2,919	-
Panamanian Balboa	96	-
Papua New Guinean Kina	2,868	-
Philippine Peso	17,896	-
Polish Zloty	20,423	-
Qatari Rial	14,626	-
Russian Ruble	61,397	-
Singapore Dollar	72,064	-
Sol	1,008	-
South African Rand	119,374	-
Swedish Krona	158,408	1,999,220
Swiss Franc	414,458	-
Taiwan New Dollar	237,004	-
Thai Baht	44,335	-
Turkish Lira	15,313	-
UAE Dirham	11,441	-
Various	455	-
Total	$ 10,751,475	$ 9,003,670

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 $783,159,050 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 $539,646,891, 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 readably 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. TRS categorizes its fair value measurements within the fair value hierarchy established by accounting principles generally accepted in the United States of America (GAAP). The hierarchy is based on the valuation inputs used to measure the fair value of the asset and is not necessarily indicative of risk.

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 – inputs other than quoted prices included within Level 1 – that are observable for an asset or liability. Level 2 inputs may include quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets of liabilities in non-active markets; and inputs other than quoted prices that are observable for the assets or liabilities, either directly or indirectly. Level 3 inputs are unobservable inputs for an asset or liability such as property appraisals, third party valuations, and public market comparables of similar assets where applicable. Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy. 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, 2018:

2018 Retirement Annuity Trust

Investments at Fair Value Level	Level 1	Level 2	Level 3	Fair Value
Cash Equivalents	$ 403,683,329			$ 4,036,833,329
Fixed Income:				
Asset Backed Securities		34,611,394		34,611,394
Agency Bonds		47,262,531		47,262,531
Commercial Mtg Backed Securities		40,736,773		40,736,773
Collateralized Mtg Obligations		17,929,295		17,929,295
Corporate Bonds	2,404,473	1,269,568,657		1,271,973,130
Mortgage Backed Securities		89,105,435	1,377,780	90,483,215
Municipal Bonds		335,376,929		335,376,929
US Government	1,139,006,569	6,843,653		1,145,850,222
Total Fixed Income	1,141,411,042	1,841,434,667	1,377,780	2,984,223,489
Equities:				
International	1,306,678,614	1,999,811,083		3,306,489,697
US Equity	7,387,805,408	33,688		7,387,839,096
Total Equity	8,694,484,022	1,999,844,771		10,694,328,793
Real Estate	-	-	420,940,001	420,940,001
Timberland	-	-	153,111,010	153,111,010
Additional Categories:				
Corporate Bonds and Securities	(91,711)	486,709,541		486,617,830
Corporate Loans			186,153,181	186,153,181
Total Additional Categories	(91,711)	486,709,541	186,153,181	672,771,011
Total Investments by Fair Value Level	**$ 10,239,486,682**	**$ 4,327,988,979**	**$ 761,581,972**	**$ 18,962,207,633**
Investments Measured at the NAV				
Commingled European Loan Fund				$ 102,070,000
Commingled International Equity Funds				1,585,444,258
Commingled Domestic Equity Funds				264,680,086
Private Equity Funds				1,095,289,506
Private Loan Fund				88,225,420
Private Real Estate Funds				729,754,281
Private Timber Funds				34,429,809
Private Opportunistic Credit Funds				553,448,443
Total Investments Measured at the NAV				**$ 4,453,341,803**
Total Investments at Fair Value				**$ 19,782,399,436**

2017 Retirement Annuity Trust

Investments at Fair Value Level	Level 1	Level 2	Level 3	Fair Value
Cash Equivalents	$ 521,747,070	$ -	$ -	$ 521,747,070
Fixed Income:				
Asset Backed Securities		47,346,318	5,229,816	52,576,134
Agency Bonds		48,416,092		48,416,092
Commercial Mtg Backed Securities		40,167,581		40,167,581
Collateralized Mtg Obligations		27,820,939		27,820,939
Corporate Bonds	4,109,212	1,267,511,651	1,078,320	1,272,699,183
Mortgage Backed Securities		75,772,409	1,851,686	77,624,095
Municipal Bonds		354,276,082	5,224,116	359,500,198
US Government	983,646,901	9,211,040		992,857,941
Total Fixed Income	987,756,113	1,870,522,112	13,383,938	2,871,662,163
Equities:				
International	1,326,738,184	1,712,181,097		3,038,919,281
US Equity	6,888,437,450		164	6,888,437,614
Total Equity	8,215,175,634	1,712,181,097	164	9,927,356,895
Real Estate			392,640,022	392,640,022
Timberland			174,936,255	174,936,255
Additional Categories:				
Corporate Bonds	19,262	491,069,342		491,088,604
Corporate Loans		388,090	162,816,233	163,204,323
Total Additional Categories	19,262	491,457,432	162,816,233	654,292,927
Total Investments by Fair Value Level	**$ 9,724,698,079**	**$ 4,074,160,641**	**$ 743,776,612**	**$ 14,542,635,332**
Investments Measured at the NAV				
Commingled European Loan Fund				$ 103,170,000
Commingled International Equity Funds				1,421,145,636
Commingled Domestic Equity Funds				241,434,211
Private Equity Funds				854,635,619
Private Loan Fund				123,061,241
Private Real Estate Funds				654,120,112
Private Timber Funds				33,283,688
Private Opportunistic Credit Funds				539,082,990
Total Investments Measured at the NAV				**$ 3,969,933,497**
Total Investments at Fair Value				**$ 18,512,568,829**

Investments Measured at the Net Asset Value (NAV)
Retirement Annuity Trust

	6/30/2018	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Commingled European Loan Fund	$ 102,070,000		Daily	30 days
Commingled International Equity Fund	1,585,444,258		Daily	1-30 days
Commingled Domestic Equity Fund	264,680,086		Daily	1-30 days
Private Equity Funds:				
Open Ended Funds	209,885,810	71,168,561	Quarterly, Annually	90 days
Closed Ended Funds	885,403,696	553,049,047	N/A	N/A
Private Loan Fund	88,225,420		Quarterly	30 days
Private Real Estate Funds:				
Open Ended*	417,556,034	22,944,664	Quarterly	45-90 days
Closed Ended Funds	312,198,247	239,906,810	N/A	N/A
Private Timber Funds	34,429,809		Biennial	90 days
Private Opportunistic Credit Funds:				
Open Ended Funds	336,849,775		Semi-Annual	75 Days
Closed Ended Funds	216,598,668	203,145,926	N/A	N/A
Total Investments Measured at the NAV	**$ 4,453,341,803**			

** Regarding the Open Ended Private Real Estate Funds, there are a few restrictions remaining that would prevent redemption at this time. One fund currently valued at $53,988,311 in the Retirement Annuity Trust and $10,797,661 in the Health Insurance Trust has a 2-year lock-up period that expires January 2019. Another fund currently valued at $27,055,336 in the Retirement Annuity Trust, $5,411,067 in the Health Insurance Trust, and $541,107 in the Life Insurance Fund has a 180 day lock-up period that expires October of 2018.*

2018 Health Insurance Trust

Investments at Fair Value Level	Level 1	Level 2	Level 3	Fair Value
Cash Equivalents	$ 56,993,634	$ -	$ -	$ 56,993,634
Fixed Income:				
Corporate Bonds		58,393,462		58,393,462
Municipal Bonds		3,013,547		3,013,547
US Government	27,301,552	973,370		28,274,922
Total Fixed Income	27,301,552	62,380,379		89,681,931
Equities:				
Global Equity		571,646,533		571,646,533
US Equity	34,059,334			34,059,334
Total Equity	34,059,334	571,646,533		605,705,867
Additional Categories:				
Corporate Bonds and Securities	(25,195)	89,411,007		89,385,812
Corporate Loans		252,711	37,586,495	37,839,206
Total Additional Categories	(25,195)	89,663,718	37,586,495	127,225,018
Total Investments by Fair Value Level	**$ 118,329,325**	**$ 723,690,630**	**$ 37,586,495**	**$ 879,606,450**

Investments Measured at the NAV	
Private Equity Funds	$ 81,232,638
Private Real Estate Funds	62,962,565
Private Opportunistic Credit Funds	58,388,152
Total Investments Measured at the NAV	**$ 202,583,355**
Total Investments Measured at Fair Value	**$ 1,082,189,805**

2017 Health Insurance Trust

Investments at Fair Value Level	Level 1	Level 2	Level 3	Fair Value
Cash Equivalents	$ 46,008,714	$ -	$ -	$ 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
Additional Categories:				
Corporate Bonds	5,253	81,586,060	151,400	81,742,713
Corporate Loans		182,662	28,624,702	28,807,364
Total Additional Categories	5,253	81,768,722	28,776,102	110,550,077
Total Investments by Fair Value Level	**$ 96,026,557**	**$ 575,313,612**	**$ 28,776,102**	**$ 700,116,271**

Investments Measured at the NAV	
Private Equity Funds	$ 42,340,364
Private Real Estate Funds	42,701,494
Private Opportunistic Credit Funds	49,620,097
Total Investments Measured at the NAV	**$ 134,661,955**
Total Investments Measured at Fair Value	**$ 834,778,226**

Investments Measured at the Net Asset Value (NAV)
Health Insurance Trust

	6/30/2018	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private Real Estate Funds:				
Open Ended	$ 28,142,915	$ 4,588,933	Quarterly	45-90 days
Closed Ended Funds	34,819,650	30,271,003	N/A	N/A
Private Equity Funds:				
Closed Ended Funds	81,232,638	76,482,322	N/A	N/A
Private Opportunistic Credit Funds:				
Open Ended Funds	41,599,592	-	Semi-Annual	75 days
Closed Ended Funds	16,788,560	11,778,187	N/A	N/A
Total Investments Measured at the NAV	**$ 202,583,355**			

2018 Life Insurance Fund

Investments at Fair Value Level	Level 1	Level 2	Level 3	Fair Value
Cash Equivalents	$ 3,724,036	$ -	$ -	$ 3,724,036
Fixed Income:				
Corporate Bonds		21,055,667		21,055,667
Mortgage Backed Securities		752,789		752,789
Municipal Bonds		8,720,060		8,720,060
US Government	17,296,920			17,296,920
Total Fixed Income	17,296,920	30,528,516		47,825,436
Equities:				
International Equity		7,884,256		7,884,256
US Equity	22,011,223			22,011,224
Total Equity	22,011,223	7,884,256		29,895,479
Total Investments by Fair Value Level	**$ 43,032,179**	**$ 38,412,772**	**$ -**	**$ 81,444,951**
Investments Measured at the NAV				
Private Real Estate Funds				$ 541,107
Private Opportunistic Credit Funds				1,300,000
Total Investments Measured at the NAV				**$ 1,841,107**
Total Investments Measured at Fair Value				**$ 83,286,058**

2017 Life Insurance Fund

Investments at Fair Value Level	Level 1	Level 2	Level 3	Fair Value
Cash Equivalents	$ 4,150,028	$ -	$ -	$ 4,150,028
Fixed Income:				
Corporate Bonds		47,255,156		47,255,156
Mortgage Backed Securities		1,123,884		1,123,884
Municipal Bonds		25,088,970		25,088,970
US Government	8,825,290			8,825,290
Total Fixed Income	8,825,290	73,468,010		82,293,300
Total Investments by Fair Value Level	**$ 12,975,318**	**$ 73,468,010**	**$ -**	**$ 86,443,328**
Investments Measured at the NAV				**N/A**
Total Investments Measured at Fair Value				**$ 86,443,328**

Investments Measured at the Net Asset Value (NAV)
Life Insurance Fund

	6/30/2018	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Private Real Estate Funds:				
Open Ended	$ 541,107	$ 458,893	Quarterly	45 days
Private Opportunistic Credit Funds:				
Open Ended	1,300,000		Semi-Annual	75 days
Total Investments Measured at the NAV	**$ 1,841,107**			

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 – Debt and 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 may use inputs such as market quotations, yields, maturities, call features and ratings or may be valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Debt 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.

Timberland - 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. These funds are not available for redemption. Rather, these funds make distributions to TRS as the underlying assets are sold.

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. Corporate Bonds falling within Level 1 classification are valued using prices quoted in active markets issued by pricing vendors for these securities. Corporate Bonds listed in Level 2 of the fair value hierarchy may use inputs such as market quotations, yields, maturities, call features and rating or may be valued using a matrix pricing technique that values securities based on their relationship to benchmark quoted prices. Corporate Loans at level 3 of the fair value hierarchy are valued by third-party pricing vendors such as Markit or Reuters.

Commingled Funds – These funds hold European loans, international equities, and domestic equities. Commingled funds are valued at the net asset value held at the end of the period based upon the fair value of the underlying investments.

Private Equity Funds - 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. Two of these funds are redeemable, but the majority of these investments do not allow redemptions. Alternatively, TRS receives distributions as the underlying assets of the funds liquidate, usually over a 5-10 year liquidation period. These are investments for which exchange quotations are not readily available. The fair value for most of these funds is determined using net asset value.

Private Loan Fund – TRS is the sole investor in a private loan fund. The majority of these loans are valued using a multiple analysis technique in which loans are first reviewed to determine which loans might be credit impaired. Credit impaired loans are valued using the enterprise value analysis or liquidation basis analysis to determine fair value. For debt investments that are not determined to be credit impaired, management uses a market interest rate yield analysis to determine fair value. Debt investments without readily available market quotations are subject to review by an independent valuation party, with each portfolio investment reviewed at least once during a rolling twelve-month period. This fund is valued at the net asset value held at the end of the period based upon the fair value of the underlying investments.

Private Real Estate Funds – There are three open-ended private real estate investments. The remaining private real estate investments are not redeemable. Rather, TRS receives distributions as the underlying assets of the fund liquidate, usually over a 5-10 year liquidation period. These are investments for which exchange quotations are not readily available. The fair value for most of these funds is determined using net assets valued one quarter in arrears plus current quarter cash flows.

Private Timber Funds - TRS has one Private Timberland fund that is valued using the net asset value practical expedient method. Like most Private Funds, the fair value for this fund is determined using net assets valued one quarter in arrears plus current quarter cash flows.

Private Opportunistic Credit Funds – There is one private opportunistic credit fund that is redeemable. The remainder of the private opportunistic credit funds are closed funds that issue distributions as the underlying assets of the fund liquidate, usually over a 5-10 year liquidation period. Like most of the other Private Funds, the fair value for these funds is determined using net assets valued one month to one quarter in arrears plus current period cash flows.

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, 2018, 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, 2018 and 2017:

Item	2018 Earnings	2017 Earnings
Gross Earnings (Interest and Fees)	$ 16,319,045	$ 5,799,152
Gross Borrower Rebates	(10,590,816)	(2,138,664)
Bank Fees	(1,718,028)	(1,097,808)
Net Earnings	**$ 4,010,201**	**$ 2,562,680**

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, 2018, 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 two (2) 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, 2018 and 2017:

2018

Type of Security Lent	Fair Value	Cash Collateral Received	Non-Cash Collateral Value-Received	Total Collateral Received
Fixed Income	$ 121,361,472	$ 35,699,643	$ 88,466,188	$ 124,165,830
Equities	1,146,727,951	846,169,120	327,608,882	1,173,778,002
Total	$ 1,268,089,422	$ 881,868,763	$ 416,075,070	$ 1,297,943,833

2017

Type of Security Lent	Fair Value	Cash Collateral Received	Non-Cash Collateral Value-Received	Total Collateral Received
Fixed Income	$ 309,194,938	$ 37,740,812	$ 282,265,094	$ 320,005,906
Equities	1,061,977,571	926,925,925	158,036,460	1,084,962,385
Total	$ 1,371,172,509	$ 964,666,737	$ 440,301,554	$ 1,404,968,291

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

	2018	2017
Retirement Annuity Trust	10.50%	15.00%
Health Insurance Trust	8.44%	14.37%

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 and other postemployment benefits 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 2018, 2017 and 2016 were $961,413, $893,635 and $820,077, 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 2018, 2017 and 2016 were 49.47 percent, 48.59 percent and 38.77 percent and TRS's annual required contributions to KERS were $673,457, $675,300 and $547,105, 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, 2018, the six 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 2018 and 2017 were $57,683,452 and $57,941,968, 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, 2018, TRS insurance covered 40,230 retirees and 7,595 dependents and at June 30, 2017, TRS insurance covered 39,497 retirees and 7,189 dependents. There are 207 participating employers with 72,205 and 72,130 active members contributing to the medical plan at June 30, 2018 and 2017, respectively.

Retiree health care premiums received reduce the amount of benefit payments reported in the deductions section in the Statement of Changes in Fiduciary Net Position for the Medical Insurance Plan. The Medical Insurance Expenditures are summarized in the following table:

	2018	2017
65 and Over Group Expenditures	$ 186,856,718	$ 167,013,299
Under 65 Group Expenditures	120,519,991	124,079,802
Subtotal	307,376,709	291,093,101
Less: Amounts Paid by Retirees	(57,683,452)	(57,941,968)
Less: Medicare Subsidies and Formulary Rebates	(88,611,557)	(54,650,587)
Total Insurance Expenditures	$ 161,081,700	$ 178,500,546

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, 2018 and 2017 is shown in the following table.

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]
2018	$ 4,659,996	$ 1,190,281	$ 3,469,715	25.5%	$ 3,455,660	100.41%
2017	$ 4,524,172	$ 958,390	$ 3,565,782	21.2%	$ 3,415,432	104.40%

** The TOL includes the additional consideration for the current treatment of KEHP implicit subsidies that may be needed in the future. This is an additional liability from our funding MIF accrued liabilities.*

C. SUMMARY OF ACTUARIAL ASSUMPTIONS

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

Valuation Date	6/30/2017
Actuarial Assumptions:	
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent of Payroll
Amortization Period	23 years, closed
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	3.89%
Discount Rate	8.00%
Single Equivalent Interest Rate	8.00%, net of OPEB plan investment expense, including price inflation
Health Care Cost Trends	
Under Age 65	7.75% for fiscal year 2018 decreasing to an ultimate rate of 5.00% by fiscal year 2024
Ages 65 and Older	5.75% fiscal year 2018 decreasing to an ultimate rate of 5.00% by fiscal year 2021
Medicare Part B Premiums	0.00% for fiscal year 2018 with an ultimate rate of 5.00% by 2030

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, 2017 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, 2017 valuation. The health care cost trend rate assumption was updated for the June 30, 2017 valuation and was shown as an assumption change in the TOL roll forward while the change in initial per capita claims costs were included with experience in the TOL roll forward.

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	58.0%	4.6%
Fixed Income	9.0%	1.2%
Real Estate	5.5%	3.8%
Private Equity	6.5%	6.3%
Additional Categories	20.0%	3.3%
Cash	1.0%	0.9%
Total	100.0%	

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, 2017. In addition to the actuarial methods and assumptions of the June 30, 2017 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%.

- The retiree health care costs of members under age 65 who retired on or after July 1, 2010 were assumed to be paid by either the state or the retirees themselves in all years except in fiscal year 2020. If these costs are not paid by the state or the retirees themselves and are instead paid by the TRS Medical Fund for all future years, we have calculated that the FNP would be projected to be depleted in 2040 and the SEIR of 4.88% would need to be used in the determination of the TOL as of the measurement date.

- 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, 2017).

Based on these assumptions, the MIF's FNP was <u>not</u> 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 exhibits present 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 exhibits present 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 2018
(in thousands)

	Health Care Cost Trend Rates		
Discount Rate	1% Decrease	Current	1% Increase
1% Increase (9.00%)		$ 2,970,711	
Current (8.00%)	$ 2,877,113	3,469,715	$ 4,200,835
1% Decrease (7.00%)		4,068,745	

Systems' Net OPEB Liability 2017
(in thousands)

	Health Care Cost Trend Rates		
Discount Rate	1% Decrease	Current	1% Increase
1% Increase (9.00%)		$ 3,077,710	
Current (8.00%)	$ 2,986,442	3,565,782	$ 4,281,487
1% Decrease (7.00%)		4,152,539	

The TOL of the MIF for 2018 is based upon an actuarial valuation performed as of the Valuation Date, June 30, 2017. An expected TOL is determined as of June 30, 2018 using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2017, 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, 2018, is shown in the following table:

TOL Roll-Forward 2018

(In Thousands)

	Expected	Actual
(a) TOL as of June 30, 2017*	$ 4,524,172	$ 4,329,311
(b) Actual Benefit Payments and Refunds for the Year July 1, 2017 - June 30, 2018	(161,082)	$ (161,082)
(c) Interest on TOL = [(a) x (0.080)] + [(b) x (0.0400]	355,491	339,902
(d) Service Cost for the Year July 1, 2017 - June 30, 2018 at the End of the Year	95,382	95,382
(e) Changes of Benefit Terms	-	-
(f) Changes of Assumptions (updated health care trend)	56,483	56,483
(g) TOL Rolled Forward to June 30, 2018 = (a) + (b) + (c) + (d) + (e) + (f)	$ 4,870,446	$ 4,659,996
(h) Difference between Expected and Actual Experience		$ (210,450)

** The TOL used in the roll-forward as of June 30, 2017 is calculated using the discount rate as of the Prior Measurement Date*

The TOL of the MIF for 2017 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 2017
(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, 2018 and 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]
2018	$ 112,660	$ 84,462	$ 28,198	75.0%	$ 3,455,660	0.82%
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	6/30/2017
Actuarial Assumptions:	
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percent of Payroll
Amortization Period	30 years, closed
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	3.89%
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, 2017 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	Expected Geometric Real Rate of Return
U.S. Equity	40.0%	4.2%
International Equity	23.0%	5.2%
Fixed Income	18.0%	1.2%
Real Estate	6.0%	3.8%
Private Equity	5.0%	6.3%
Additional Categories	6.0%	3.3%
Cash	2.0%	0.9%
Total	100.0%	

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, 2017. In addition to the actuarial methods and assumptions of the June 30, 2017 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 schedules 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 2018
(in thousands)

1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
$ 42,929	$ 28,198	$ 16,114

Systems' Net OPEB Liability 2017
(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 for 2018 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 2018

(In Thousands)

	Expected	Actual
(a) TOL as of June 30, 2017*	$ 109,736	$ 109,069
(b) Actual Benefit Payments and Refunds for the Year July 1, 2017 - June 30, 2018	(5,453)	$ (5,453)
(c) Interest on TOL = [(a) x (0.075)] + [(b) x (0.0375]	8,026	7,976
(d) Service Cost for the Year July 1, 2017 - June 30, 2018 at the End of the Year	1,068	1,068
(e) Changes of Benefit Terms	-	-
(f) Changes of Assumptions or Other Inputs	-	-
(g) TOL Rolled Forward to June 30, 2018 = (a) + (b) + (c) + (d) + (e) + (f)	$ 113,377	$ 112,660
(h) Difference between Expected and Actual Experience		$ (717)

* *The TOL used in the roll-forward as of June 30, 2017 is calculated using the discount rate as of the Prior Measurement Date*

The TOL of the LIF for 2017 is based upon an actuarial valuation performed as of the Valuation Date, June 30, 2017. An expected TOL is determined as of June 30, 2018 using standard roll-forward techniques. The roll-forward calculation begins with the TOL, as of June 30, 2017, 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 2017

(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*

NOTE 10: COMMITMENTS AND CONTIGENCIES

During the 2018 legislative session, the Kentucky General Assembly passed significant pension changes with SB 151 and was signed into law by the Governor on April 10, 2018. TRS has been enjoined from implementing SB 151 by the Franklin Circuit Court in a ruling dated June 20, 2018. The case is pending before the Kentucky Supreme Court.

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

Change in the total pension liability	2018	2017	2016	2015	2014
Total pension liability					
Service Cost	$ 1,104,102	$ 1,332,587	$ 1,120,893	$ 1,015,080	$ 1,002,338
Interest	2,063,109	1,964,107	2,027,457	2,029,372	1,956,610
Difference between expected and actual experience	(222,473)	199,471	(58,035)	-	-
Changes of assumptions	(14,167,315)	(2,321,327)	4,030,834	1,511,960	(353,043)
Benefit payments	(2,004,617)	(1,918,612)	(1,833,199)	(1,741,456)	(1,654,376)
Refunds of contributions	(31,073)	(26,305)	(27,748)	(23,033)	(25,462)
Net change in total pension liability	(13,258,267)	(770,079)	5,260,202	2,791,923	926,067
Total pension liability - beginning	46,966,822	47,736,901	42,476,699	39,684,776	38,758,709
Total pension liability - ending (a)	$ 33,708,555	$ 46,966,822	$ 47,736,901	$ 42,476,699	$ 39,684,776
Plan Net Position					
Contributions - State of Kentucky	$ 969,698	$ 981,417	$ 484,987	$ 480,073	$ 483,330
Contributions - Other Employers	78,973	79,303	80,468	79,506	79,996
Contributions - Members	319,127	313,625	313,044	308,160	304,982
Net investment income	1,953,214	2,475,753	(245,215)	862,179	2,803,249
Benefit payments	(2,004,617)	(1,918,612)	(1,833,199)	(1,741,456)	(1,654,376)
Administrative expense	(11,388)	(10,314)	(8,636)	(8,869)	(7,956)
Refunds of contributions	(31,073)	(26,305)	(27,748)	(23,033)	(25,462)
Net change in plan net position	1,273,934	1,894,867	(1,236,299)	(43,440)	1,983,763
Plan net position - beginning	18,707,699	16,812,832	18,049,131	18,092,571	16,108,808
Plan net position - ending (b)	19,981,633	18,707,699	16,812,832	18,049,131	18,092,571
Net pension liability - ending (a) - (b)	$ 13,726,922	$ 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)

	2018	2017	2016	2015	2014
Total pension liability	$ 33,708,555	$ 46,966,822	$ 47,736,901	$ 42,476,699	$ 39,684,776
Plan net position	19,981,633	18,707,699	16,812,832	18,049,131	18,092,571
Net pension liability	$ 13,726,922	$ 28,259,123	$ 30,924,069	$ 24,427,568	$ 21,592,205
Ratio of plan net position to total pension liability	59.28%	39.83%	35.22%	42.49%	45.59%
Covered payroll	$ 3,455,660	$ 3,415,432	$ 3,390,539	$ 3,455,008	$ 3,317,422
Net pension liability as a percentage of covered payroll	397.23%	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
2018	$ 3,455,660	$ 1,048,671	$ 1,083,466	$ (34,795)	30.35%
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%

** 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

	2018	2017	2016	2015	2014
Annual money weighted rate of return, net of investment expense	10.50%	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)

Change in the net OPEB liability	2018	2017
Total OPEB liability		
Service Cost	$ 95,382	$ 95,625
Interest	355,491	333,990
Changes of benefit terms	-	8,926
Difference between expected and actual experience	(210,450)	-
Changes of assumptions	56,483	-
Benefit payments	(161,082)	(178,500)
Net change in total OPEB liability	135,824	260,041
Total OPEB liability - beginning	4,524,172	4,264,131
Total OPEB liability - ending (a)	$ 4,659,996	$ 4,524,172
Plan Net Position		
Contributions - State of Kentucky	$ 80,959	$ 75,497
Contributions - Other Employers	106,143	104,879
Contributions - Active Members	130,778	128,819
Net investment income	76,841	95,453
Benefit payments	(161,082)	(178,500)
Administrative expense	(1,748)	(1,539)
Other	-	-
Net change in plan net position	231,891	224,609
Plan net position - beginning	958,390	733,781
Plan net position - ending (b)	1,190,281	958,390
Net OPEB liability - ending (a) - (b)	$ 3,469,715	$ 3,565,782

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 Positon as a Percentage of the Total OPEB Liability	Covered Payroll	Net OPEB Liability as a Percentage of Covered Payroll
2018	$ 4,659,996	$ 1,190,281	$ 3,469,715	25.54%	$ 3,455,660	100.41%
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
2018	$ 118,837	$ 187,102	$ (68,265)	$ 3,455,660	5.41%
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%

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	23 years, closed
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

	2018	2017	2016	2015	2014
Annual money weighted rate of return, net of investment expense	8.44%	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	2018	2017
Total OPEB liability		
Service Cost	$ 1,068	$ 1,067
Interest	8,026	7,761
Changes of benefit terms	-	-
Difference between expected and actual experience	(717)	-
Changes of assumptions	-	-
Benefit payments	(5,453)	(5,151)
Net change in total OPEB liability	2,924	3,677
Total OPEB liability - beginning	109,736	106,059
Total OPEB liability - ending (a)	$ 112,660	$ 109,736
Plan Net Position		
Contributions - State of Kentucky	$ 897	$ 882
Contributions - Other Employers	161	168
Contributions - Active Members	-	-
Net investment income	1,111	915
Benefit payments	(5,453)	(5,151)
Administrative expense	(31)	(28)
Other	-	-
Net change in plan net position	(3,315)	(3,214)
Plan net position - beginning	87,777	90,991
Plan net position - ending (b)	84,462	87,777
Net OPEB liability - ending (a) - (b)	$ 28,198	$ 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 Positon as a Percentage of the Total OPEB Liability	Covered Payroll	Net OPEB Liability as a Percentage of Covered Payroll
2018	$ 112,660	$ 84,462	$ 28,198	74.97%	$ 3,455,660	0.82%
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
2018	$ 1,075	$ 1,058	$ 17	$ 3,455,660	0.03%
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%

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 – TRS began separate reporting of its life insurance fund effective February 1, 2018 as it was previously reported as part of the pension fund's gross and net performance. Gross and net of fees returns for the life insurance fund are being constructed for publication in the June 30, 2019 financial reports.

See accompanying independent auditor's report.

Schedule of Administrative Expenses
For the Fiscal Year Ended June 30, 2018 and 2017

	2018	2017
Salaries	$ 7,362,335	$ 7,185,686
Other Personnel Costs	669,764	735,748
Professional Services and Contracts	796,286	395,216
Utilities	106,115	100,641
Rentals	25,175	23,607
Maintenance	66,229	56,520
Postage & Related Services	321,972	300,813
Printing	211,541	188,135
Insurance	190,420	175,768
Miscellaneous Services	162,597	159,272
Telecommunications	21,002	20,958
Computer Services	171,465	145,252
Supplies	40,962	63,097
Depreciation	2,168,364	1,996,821
Travel	45,427	40,734
Dues & Subscriptions	82,987	65,361
Miscellaneous Commodities	11,914	11,095
Office Systems and Equipment	796,885	110,821
Compensated Absences	(83,324)	105,642
Total Administrative Expenses	$ 13,168,116	$ 11,881,187

Schedule of Professional Services and Contracts
For the Fiscal Year Ended June 30, 2018 and 2017

Professional	Nature of Service	2018	2017
Cavanaugh Macdonald Consulting	Actuarial Services	$ 292,886	$ 157,089
Mountjoy Chilton Medley	Auditing Services	69,704	89,214
International Claim Specialist	Investigative Services	-	1,512
Ice Miller	Attorney Services	111,020	24,233
Attorney General	Attorney Services	313	-
Stoll, Keenon, and Ogden	Attorney Services	9,063	3,168
Aon Hewitt	Consulting Services	193,300	-
Peritus	Communications	120,000	120,000
Total Professional Services and Contracts		$ 796,286	$ 395,216

See accompanying independent auditor's report.

Schedule of Contracted Investment Management Expenses
For the Fiscal Year Ended June 30, 2018

	Defined Benefit Plan*	Medical	Life	Total
Equity Managers				
Baillie Gifford	$ 4,160,155	$ -	$ -	$ 4,160,155
Baring Asset Management, Inc.	2,852,707	-	-	2,852,707
Black Rock	402,156	194,711	-	596,867
Fort Washington Focused Equity	881,923	120,165	-	1,002,088
GE Asset Management	-	-	-	-
State Street	799,463	-	-	799,463
Todd-Veredus Asset Management LLC	1,394,388	-	-	1,394,388
UBS Global Asset Management	805,403	-	-	805,403
Wellington Management Company	3,397,200	-	-	3,397,200
Total Equity Managers	14,693,395	314,876	-	15,008,271
Fixed Income Managers				
Fort Washington Investment Advisors	184,885	-	-	184,885
Galliard Capital Management	258,151	-	-	258,151
Total Fixed Income Managers	443,036	-	-	443,036
Real Estate	10,106,962	997,685	1,027	11,105,674
Additional Categories	9,256,358	977,406	2,167	10,235,931
Alternative Investments	17,051,168	1,313,059	-	18,364,227
Custodian				
The Bank of New York Mellon	517,884	84,018	4,412	606,314
Consultants				
Hewitt Ennis Knupp, Inc.	419,789	-	-	419,789
Bevis Longstreth	52,905	-	-	52,905
George Philip	33,399	-	-	33,399
Total Consultants	506,093	-	-	506,093
Legal & Research				
Reinhart, Boerner Van Deuren		-	-	-
Ice Miller	59,131	-	-	59,131
Total Legal & Research	59,131	-	-	59,131
Other				
Administrative and Operational (includes Personnel)	2,882,695	255,698	105,847	3,244,240
Total Contracted Investment Management Expenses	$ 55,516,722	$ 3,942,742	$ 113,453	$ 59,572,917

** Includes expenses for the 403(b) Tax Shelter and Losey Scholarship funds.*

See accompanying independent auditor's report.

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

	Defined Benefit Plan*	Medical	Life	Total
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	17,611,888	275,582	-	17,887,470
Fixed Income Managers				
Fort Washington Investment Broad Market	160,777	-	-	160,777
Galliard Capital Management	222,920	-	-	222,920
Total Fixed Income Managers	383,697	-	-	383,697
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	499,475	-	-	499,475
Legal & Research				
Reinhart, Boerner Van Deuren	5,936	-	-	5,936
Ice Miller	51,266	-	-	51,266
Total Legal & Research	57,202	-	-	57,202
Other				
Administrative and Operational (includes Personnel)	3,106,379	98,823	10,478	3,215,680
Total Contracted Investment Management Expenses	$ 57,836,164	$ 3,170,868	$ 10,478	$ 61,017,510

** Includes expenses for the 403(b) Tax Shelter and Losey Scholarship funds.*

See accompanying independent auditor's report.

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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
Kentucky Teachers Retirement System
Frankfort, Kentucky

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 Kentucky Teachers Retirement System, which comprise the statement of fiduciary net position as of June 30, 2018, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the Kentucky Teachers Retirement System's basic financial statements, and have issued our report thereon dated November 15, 2018.

Internal Control over Financial Reporting

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

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

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

Compliance and Other Matters

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

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Kentucky Teachers Retirement System'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 Kentucky Teachers Retirement System's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Blue & Co., LLC

Lexington, Kentucky
November 15, 2018