



TEACHERS' RETIREMENT SYSTEM

of the State of Kentucky

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Executive Secretary

Quarterly Meeting of the Board of Trustees

A G E N D A

March 18, 2019, 12:30 p.m.

Board Called to Order
Roll Call

1. Reports for Consent
 - 1.1. Consideration/Approval of Minutes
 - 1.1.1. Quarterly Meeting of the Board of Trustees, December 17, 2018
 - 1.1.2. Special Meeting of the Scholarship Committee, December 17, 2018
 - 1.1.3. Special Meeting of the Legislative Committee, December 17, 2018
 - 1.1.4. Special Meeting of the Administrative Appeals Committee, December 17, 2018
 - 1.2. Applications for Retirement and Annuity
 - 1.3. Survivor Benefits
 - 1.4. Life Insurance Benefits
 - 1.5. Refunds
 - 1.6. Interim Financial Statements
2. Report of the Investment Committee
3. Legislative Report
4. Executive Secretary's Observations and Comments

General Discussion
Adjournment

The meeting will take place in the boardroom at the office of the
Teachers' Retirement System of the State of Kentucky
479 Versailles Road, Frankfort, Kentucky.

TO: Board of Trustees of the
Teachers' Retirement System of Kentucky

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: March 18, 2019

SUBJECT: Reports for Consent

1.1. Consideration/Approval of Minutes

- 1.1.1. Regular Quarterly Meeting of the Board of Trustees, December 17, 2018
- 1.1.2. Special Meeting of the Scholarship Committee, December 17, 2018
- 1.1.3. Special Meeting of the Legislative Committee, December 17, 2018
- 1.1.4. Special Meeting of the Administrative Appeals Committee, December 17, 2018

1.2. Applications for Retirement and Annuity

The lists of members who retired in December 2018, January and February 2019 will be available for examination at the meeting. Attached is a summary of the particular payments and a comparison to the same period last year. Initial retirements for the period included 322 retirees with monthly payments totaling \$868,938.06.

Recommendation: The board is requested to approve the initial payments listed in the report.

During the same period last year, there were 343 retirements with monthly payments totaling \$952,091.85.

1.3. Survivor Benefits

The list of persons qualifying for survivor benefit payments for the quarter October 1, 2018, through December 31, 2018, will be available for examination at the meeting. During the period, there were 5 survivor benefits with a total monthly payment of \$1,987.30.

Recommendation: The board is requested to approve the survivor benefit payments for the period October 1, 2018, through December 31, 2018, as listed in the report.

1.4. Life Insurance Benefits

The list of payments of life insurance benefits due to death of active and retired teachers for the period October 1, 2018, through December 31, 2018, will be available for examination at the meeting. There were 5 payments to the estates or beneficiaries of active teachers and 214 payments to the estates or beneficiaries of retired teachers for total payments of 1,080,000.

Recommendation: The board is requested to approve the payment of life insurance benefits as listed in the report.

During the same quarter in 2017, there were 214 payments in the amount of \$1,058,000.

1.5. Refunds

The report of refunds for the quarter ended December 31, 2018, is attached. There were 819 refunds for the quarter October 1, 2018, through December 31, 2018, and the amount refunded was \$7,259,975.44. The refunds are for the following categories:

Regular withdrawals	790	\$6,776,867.17
Deaths	<u>29</u>	<u>\$ 483,108.27</u>
Totals	819	\$7,259,975.44

Recommendation: The board is requested to approve the payment of refunds as listed in the report.

During the same quarter in 2017 there were 1,045 refunds totaling \$8,923,083.54

1.6. Interim Financial Statements

Attached are the Interim Financial Statements for the quarter ended December 31, 2018.

Recommendation: The Interim Financial Statements are provided for informational purposes only and require no action by the board.

Teachers' Retirement System of Kentucky
Initial Applications for Retirement and Annuity
2018-2019

	December	January	February	Total	Same Period 2018
Handicapped Child	<i>0</i> \$0.00	<i>0</i> \$0.00	<i>0</i> \$0.00	<i>0</i> \$0.00	<i>0</i> \$0.00
Disability Retirement	<i>7</i> \$18,757.47	<i>9</i> \$24,517.68	<i>16</i> \$40,997.35	<i>32</i> \$84,272.50	<i>23</i> \$66,254.23
Service Retirement	<i>61</i> \$167,662.16	<i>162</i> \$448,983.94	<i>66</i> \$167,177.13	<i>289</i> \$783,823.23	<i>319</i> \$883,631.28
Beneficiary of Member Eligible to Retire	<i>0</i> \$0.00	<i>0</i> \$0.00	<i>1</i> \$842.33	<i>1</i> \$842.33	<i>1</i> \$2,206.34
TOTALS	<i>68</i> \$186,419.63	<i>171</i> \$473,501.62	<i>83</i> \$209,016.81	<i>322</i> \$868,938.06	<i>343</i> \$952,091.85

**Reports for Consent
Member Account Refunds
For the period October 2018 - December 2018**

Active Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
October	175	1,182,533.38	290,256.00	932,366.01	2,405,155.39
November	314	1,330,133.85	331,951.95	898,217.97	2,560,303.77
December	301	874,578.70	218,359.79	718,469.52	1,811,408.01
Total	790				6,776,867.17

Deceased Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
October	14	174,267.96	14,217.10	61,736.85	250,221.91
November	7	17,788.87	4,447.22	9,231.96	31,468.05
December	9	103,293.25	3,314.87	94,810.19	201,418.31
Total	29				483,108.27

Total Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
October	189	1,356,801.34	304,473.10	994,102.86	2,655,377.30
November	321	1,347,922.72	336,399.17	907,449.93	2,591,771.82
December	310	977,871.95	221,674.66	813,279.71	2,012,826.32
Total	819				7,259,975.44

TEACHERS' RETIREMENT SYSTEM

OF THE STATE OF KENTUCKY



INTERIM FINANCIAL STATEMENTS

QUARTER ENDED DECEMBER 31, 2018

(MARKET VALUE - UNAUDITED)

**Statements of Plan Net Assets
as of December 31, 2018 and 2017**

(Market Value - Unaudited)

	Defined Benefit Plan		Health Insurance Plans		Life Insurance Plan		Other Funds		TOTAL	
	FY 2019	FY 2018	FY 2019	FY 2018	FY 2019	FY 2018	FY 2019	FY 2018	FY 2019	FY 2018
ASSETS										
Cash	\$ 116,415,748	\$ 94,692,943	\$ 36,107,012	\$ 32,998,774	\$ 220,355	\$ 147,887	\$ 87,061	\$ 105,340	\$ 152,830,176	\$ 127,944,944
Receivables										
Contributions	30,237,329	28,779,827	18,012,814	18,456,779	13,374	105,264			48,263,517	47,341,870
State of Kentucky	6,573,046	13,640,427	10,277,791	5,580,025	35,965	32,617			16,886,802	19,253,069
Investment Income	44,151,888	40,623,372	2,061,568	1,685,597	732,657	1,036,228	3,043	2,693	46,949,156	43,347,890
Investment Sales Receivable	4,358,358	6,018,955	674,832	448,087	180	-			5,033,370	6,467,042
Installment Account Receivable	282,711	321,073							282,711	321,073
Other Receivables	20,189	81,058	25,249,342	18,050,797					25,269,531	18,131,855
Due from Other Funds	1,779,623	1,567,471							1,779,623	1,567,471
Total Receivables	87,403,144	91,032,183	56,276,347	44,221,285	782,176	1,174,109	3,043	2,693	144,464,710	136,430,270
Investments at Market Value										
Short Term Investments	446,108,561	585,367,056	42,385,152	52,455,104	3,987,055	3,401,233	371,469	401,217	492,852,237	641,624,610
Bonds and Mortgages	2,980,348,426	2,838,667,624	100,220,141	85,874,745	30,901,430	82,053,948	248,946	259,938	3,111,718,943	3,006,856,255
Stocks	10,777,210,819	12,573,899,120	600,121,020	565,977,822	41,614,549		286,543	308,924	11,419,232,931	13,140,185,866
Alternative Investments	1,369,268,640	1,257,306,697	97,847,485	69,498,398					1,467,116,125	1,326,805,095
Real Estate	1,191,999,695	1,102,298,830	69,921,922	55,426,213	874,222				1,262,795,839	1,157,725,043
Additional Categories	1,359,125,009	1,416,326,994	186,853,983	173,324,520	1,332,100				1,547,311,092	1,589,651,514
Total Investments	18,124,061,150	19,773,866,321	1,097,349,703	1,002,556,802	78,709,356	85,455,181	906,958	970,079	19,301,027,167	20,862,848,383
Capital Assets (net of accumulated depreciation)	16,324,647	18,046,639							16,324,647	18,046,639
Total Assets	18,344,204,689	19,977,638,086	1,189,733,062	1,079,776,861	79,711,887	86,777,177	997,062	1,078,112	19,614,646,700	21,145,270,236
LIABILITIES										
Liabilities										
Accounts Payable	1,189,081	-	-	-					1,189,081	-
Contributions Not Posted	46,629,538	38,872,841							46,629,538	38,872,841
Investment Purchases Payable	11,111,381	8,655,779	1,762,055	1,390,354	4,957		-	-	12,878,393	10,046,133
Investment Fees Payable	14,103,336	15,983,153	1,046,539	796,350	7,605		-	-	15,157,480	16,779,503
Due to Other Funds	-	-	1,747,561	1,538,573	30,979	27,690	1,083	1,208	1,779,623	1,567,471
Revenues Collected in Advance	-	-	1,749,168	3,437,483					1,749,168	3,437,483
Total Liabilities	73,033,336	63,511,773	6,305,323	7,162,760	43,541	27,690	1,083	1,208	79,383,283	70,703,431
NET ASSETS HELD IN TRUST FOR PENSION BENEFITS										
	\$ 18,271,171,353	\$ 19,914,126,313	\$ 1,183,427,739	\$ 1,072,614,101	\$ 79,668,346	\$ 86,749,487	\$ 995,979	\$ 1,076,904	\$ 19,535,263,417	\$ 21,074,566,805

Statements of Changes in Plan Net Assets
For the Six Months Ended December 31, 2018 and 2017
(Market Value - Unaudited)

	Defined Benefit Plan		Medical Insurance Plan		Life Insurance Plan		Other Funds		TOTAL	
	FY 2019	FY 2018	FY 2019	FY 2018	FY 2019	FY 2018	FY 2019	FY 2018	FY 2019	FY 2018
ADDITIONS										
Contributions										
Employer- State Paid	\$ 483,593,931	\$ 447,383,590	\$ 38,593,656	\$ 35,960,870	\$ 451,397	\$ 359,410	\$ -	\$ -	\$ 522,638,984	\$ 483,703,870
Employer- LSD, Other	33,886,636	36,631,266	44,575,963	42,787,442	92,484	73,276	-	162,975	78,555,083	79,654,959
Member- Active	134,872,932	129,093,620	54,759,438	52,459,759					189,632,370	181,553,379
Member- Retired			29,563,138	29,170,320					29,563,138	29,170,320
Recovery Income			37,933,920	45,239,731					37,933,920	45,239,731
Total Contribution	652,353,499	613,108,476	205,426,115	205,618,122	543,881	432,686	-	162,975	858,323,495	819,322,259
Investment Income/(Loss)										
Net Appreciation/(Depreciation) in										
Fair Value of Investments	(1,554,571,127)	1,388,976,811	(55,503,684)	63,342,156	(4,211,085)	(381,286)	(24,438)	29,797	(1,614,310,334)	1,451,967,478
Interest	80,867,432	72,020,190	3,187,261	2,496,059	827,790	1,368,713	12,032	6,317	84,894,515	75,891,279
Dividends	197,165,139	164,939,396	3,199,936	2,703,692	309,763		2,904	2,842	200,677,742	167,645,930
Rental Income, Net	14,134,700	15,062,675							14,134,700	15,062,675
Securities Lending, Net	1,502,520	2,002,481			11,627	1,075	248	158	1,514,395	2,003,714
Gross Investment Income	(1,260,901,336)	1,643,001,553	(49,116,487)	68,541,907	(3,061,905)	988,502	(9,254)	39,114	(1,313,088,982)	1,712,571,076
Less Investment Expense	(30,311,606)	(26,043,387)	(2,522,958)	(1,528,599)	(70,886)	-	(8,173)	-	(32,913,623)	(27,571,986)
Net Investment Income	(1,291,212,942)	1,616,958,166	(51,639,445)	67,013,308	(3,132,791)	988,502	(17,427)	39,114	(1,346,002,605)	1,684,999,090
Total Additions	(638,859,443)	2,230,066,642	153,786,670	272,631,430	(2,588,910)	1,421,188	(17,427)	202,089	(487,679,110)	2,504,321,349
DEDUCTIONS										
Benefits	1,046,559,653	1,000,458,660			2,205,000	2,449,106	108,912	87,681	1,048,873,565	1,002,995,447
Refunds of Contributions	19,789,877	18,442,280							19,789,877	18,442,280
Under 65 Insurance Expenses			58,162,858	59,282,507					58,162,858	59,282,507
Over 65 Insurance Expenses			102,476,881	99,124,495					102,476,881	99,124,495
Administrative Expense	5,252,770	4,738,414	-	-	-	-	-	-	5,252,770	4,738,414
Total Deductions	1,071,602,300	1,023,639,354	160,639,739	158,407,002	2,205,000	2,449,106	108,912	87,681	1,234,555,951	1,184,583,143
Net Increase (Decrease)	(1,710,461,743)	1,206,427,288	(6,853,069)	114,224,428	(4,793,910)	(1,027,918)	(126,339)	114,408	(1,722,235,061)	1,319,738,206
NET ASSETS HELD IN TRUST FOR PENSION BENEFITS										
Beginning of year	19,981,633,096	18,707,699,025	1,190,280,808	958,389,673	84,462,256	87,777,405	1,122,318	962,496	21,257,498,478	19,754,828,599
Ending of period	\$ 18,271,171,353	\$ 19,914,126,313	\$ 1,183,427,739	\$ 1,072,614,101	\$ 79,668,346	\$ 86,749,487	\$ 995,979	\$ 1,076,904	\$ 19,535,263,417	\$ 21,074,566,805

TO: Board of Trustees of the
Teachers' Retirement System of the State of Kentucky

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: March 18, 2019

SUBJECT: Report of the Investment Committee

1. Investment Committee Meeting and Actions: The investments approved at the February 14, 2019, Investment Committee meeting are as follows: Up to \$85 million from the TRS Retirement Annuity, up to \$15 million from the TRS Medical Trust and up to \$1 million from the TRS Life Insurance account into Rockwood Capital Real Estate Partners Fund XI LP. Additionally, outside managers Barings Asset Management and Todd Asset Management reported to the committee on their respective portfolios.

2. Purchases and Disposals: The Report of the Investment Committee for the quarter ended December 31, 2018, is presented for review and approval. During this quarter, 2,884 purchases amounted to \$3,211,714,641.78 and 2,254 disposals amounted to \$3,108,295,362.05. The disposals consisted of 1,909 sales, 316 principal payments and 29 redemptions. While TRS initiates each of these transactions, the custodian of securities is responsible for handling and securing each stock, bond or other type of investment. At the end of the quarter, TRS's invested securities had a book value of \$15,439,289,044.86 and a market value of \$18,145,276,505.19.

3. Staff's Comments on Economic and Market Conditions: The fourth quarter of calendar 2018 was characterized by a heightened level of volatility and negative returns for most risk assets. Though equity markets experienced an initial decline in October, the strongest risk-off environment emerged in December as global growth forecasts, inflation expectations and corporate earnings expectations began to roll over in unison. With this as a backdrop, market participants repriced global equities and moderated expectations for corporate earnings growth in 2019. On the other side of the spectrum, duration-sensitive assets and government bonds performed well during the December flight to safety, while high-yield credit and loan markets posted losses. Emerging market equities outperformed developed equity markets during the quarter, but still trailed their developed counterparts for the full year.

In a move that proved to be more controversial than many anticipated, the Federal Reserve Open Market Committee (FOMC) raised the target range for the federal funds rate by 0.25 percent for the fourth time in 2018 during its December meeting, resulting in a target range of 2.25 percent to 2.5 percent. Economic data in the United States remained strong, with non-farm payrolls up 312,000 in December on a 3.9 percent unemployment rate. However, with market attention focused on data indicating a potential Chinese economic slowdown, Chairman Jerome Powell's reference to the Federal Reserve's balance sheet normalization process being on "autopilot" generated further volatility in security pricing, particularly for equities. The turmoil in equity markets and uncertainty with respect to 2019 global growth has pushed market implied

expectations for another rate increase at the FOMC March meeting down to zero according to data provided by Chicago Mercantile Exchange (CME).

Amid broadening macroeconomic concerns, U.S. equity markets faltered during the fourth quarter as the S&P 500 Index posted returns of minus 13.5 percent, ranking within the top 15 largest quarterly drawdowns for the index since 1970. Despite a year-to-date return of 10.6 percent through September, fourth quarter losses drove total S&P 500 Index returns to minus 4.4 percent for the year, marking the first negative calendar-year result for the index since 2008.

The surge in volatility was met with a shift in investor preference from momentum-oriented stocks to bond-proxy and defensive segments. As a result, utilities, real estate and consumer staples bested all other sectors in the index, marking a notable reversal from the previous leadership from the technology, consumer discretionary, and health care sectors in the first nine months of the year. Consequently, low volatility and dividend-based factor indices outperformed their growth, high beta and momentum factor counterparts. Outside of this broad trend, the quarter's marked decline in oil prices led to sharp losses in energy as the S&P 500 Energy Index returned minus 23.8 percent, the largest loss across all sectors.

Active management results were mixed during the quarter. Value managers across styles and market capitalizations generally struggled due to persistent underweights in defensive, income-oriented sectors. Meanwhile, growth managers performed moderately better during the quarter, buoyed by exposure to companies with strong secular earnings and revenue growth as many experienced more muted declines than the broader market.

Developed international equity markets outperformed the U.S. equity market, but still ended the fourth quarter with negative double-digit returns. The international equity sell-off partially was induced by volatility in the U.S. market, but also driven by international economic tensions. For instance, Brexit-driven uncertainty continued to influence stock prices as did rioting in France in response to President Emmanuel Macron's fiscal agenda. Economic concerns also continued to rise in Europe due to a sharp decline in new manufacturing export orders and third quarter gross domestic product growth of only 0.2 percent, the slowest pace seen in years.

The emerging markets were the best performing region for equities in the fourth quarter, but still finished the quarter and year in negative territory. Overall emerging-markets investor sentiment weakened due to continued fears of growth moderation in China. These fears were reflected in recent economic data as well. For example, in China, year-over-year imports and exports declined 8 percent and 4 percent in December, respectively, compared to 37 percent and 11 percent growth, respectively, at the beginning of 2018. Thus far, China is responding to the recent slowdown by stimulating the economy through both monetary and fiscal measures; however investor sentiment remains mixed.

The Bloomberg U.S. Aggregate Index recouped losses from earlier in the year, returning 1.6 percent during the fourth quarter to end the year roughly flat. The yield spread between two-year and 10-year maturities, a popular range often cited as a recession indicator, narrowed to just 0.21 percent, the lowest quarter-end value since the second quarter of 2007.

Credit spreads widened over the quarter, as investors sought the safety of Treasuries amid elevated market volatility. Securities rated below investment grade were hit particularly hard in the fourth quarter, with the Bloomberg U.S. High Yield Index returning minus 4.5 percent after an otherwise positive year. While the highest-rated corporate bonds finished the quarter in positive territory, the negative returns of the large BBB-rated segment were an overall drag on the Bloomberg U.S. Corporate Investment Grade Index, which had a quarterly return of minus 0.2 percent.

Core private real estate returned a preliminary 1.8 percent during the fourth quarter, as tracked by the NCREIF-ODCE Index, with the total return comprised of 1 percent income and 0.7 percent price appreciation. This represented a 31-basis-point downtick over the prior quarter for the appreciation component of total return. While the income return component was lower, it remains in line with historical levels. Investors in publicly traded real estate significantly underperformed their private market counterparts during the fourth quarter. In 2018, the commercial real estate market experienced moderating year-over-year transaction volume. However, many view the moderation in transaction volume as a healthy signal that the overall market is operating in an efficient manner. During the quarter, investors in private real estate took notice of the public market volatility and continue to evaluate the signals from the Federal Reserve. During the fourth quarter, the U.S. 10-year Treasury crept above 3 percent, raising investor concerns about the potential impact on property valuations and future returns. By the end of the quarter, however, it ended near 2.7 percent, relieving some concerns about the potential negative impacts from increased borrowing costs and direction of capitalization rates.

4. Performance: Investment performance was negative for the quarter ended December 31, 2018. The Retirement Annuity Trust Fund's portfolio declined 9.18 percent for the quarter, underperforming the Policy Index which declined 8.35 percent. TRS's domestic equities declined 15.63 percent, as the S&P 1500 Stock Index declined 13.97 percent for the quarter. TRS's international stocks returned minus 15.53 percent, underperforming the MSCI All Country ex U.S. index which had a return of minus 11.41 percent for the quarter. Alternatives and real estate were positive contributors as private equity gained 4.29 percent while real estate returned 2.46 percent. TRS's fixed income returned 1.65 percent, outperforming the Bloomberg Barclays Gov/Credit Bond Index which returned 1.46 percent for the quarter.

Recommendation: The executive secretary recommends that the board accept and ratify the Report of the Investment Committee.

Teachers' Retirement System of the State of Kentucky
Retirement Annuity Trust
Quarterly Investment Performance
Gross Returns
For the Period Ended December 31, 2018

FINAL

	Market Value	Last Qtr	FYTD	1-Year	3-Year*	5-Year*	10-Year*	20-Year*
TOTAL PLAN	\$ 18,145,273,505.19	-9.18	-6.46	-4.78	6.65	5.62	9.42	5.64
<i>Policy Benchmark</i>		-8.35	-4.91	-4.17	7.15	5.65	9.15	-
Total Equity	\$ 10,907,446,056.91	-15.60	-12.36	-10.59	6.72	5.50	11.50	5.22
Domestic Equity	\$ 7,114,451,020.63	-15.63	-10.55	-7.70	7.85	7.42	13.03	5.97
<i>S&P 1500 Index</i>		-13.97	-7.65	-4.96	9.17	8.25	13.20	-
All-Cap Equities	\$ 289,425,748.72	-12.89	-7.43	-4.69	-	-	-	-
<i>Russell 3000</i>		-14.30	-8.20	-5.24	-	-	-	-
Large-Cap Equities	\$ 5,891,790,194.12	-15.25	-9.88	-7.48	7.79	7.55	12.87	-
<i>S&P 500 Index</i>		-13.52	-6.85	-4.38	9.26	8.49	13.12	-
Mid-Cap Equities	\$ 571,056,881.98	-17.30	-13.70	-8.91	8.74	7.28	13.98	-
<i>S&P 400 Index</i>		-17.28	-14.08	-11.08	7.66	6.03	13.68	-
Small-Cap Equities	\$ 362,178,195.81	-20.45	-17.28	-11.00	7.94	5.95	13.90	-
<i>S&P 600 Index</i>		-20.10	-16.34	-8.48	9.46	6.34	13.61	-
International Equity	\$ 3,792,995,036.28	-15.53	-15.51	-15.52	4.60	1.33	8.00	-
<i>MSCI AC World Ex US</i>		-11.41	-10.70	-13.78	4.98	1.14	7.06	-
Fixed Income	\$ 3,039,369,585.59	1.65	1.71	0.28	2.66	2.98	4.54	5.12
<i>Barclay's Govt./Credit Index</i>		1.46	1.51	-0.42	2.19	2.53	3.46	4.56
Real Estate								
In House Real Estate Equity	\$ 424,559,554.26	2.44	4.40	10.66	11.08	10.03	8.90	9.05
<i>CPI plus 2%</i>		0.79	1.75	3.98	4.09	3.52	3.84	4.17
Core Real Estate:	\$ 446,876,887.18	2.24	4.66	8.98	8.79	11.08	4.70	-
<i>NCREIF ODCE (VW)</i>		1.76	3.88	8.35	8.24	10.41	7.00	-
Non-Core Real Estate:	\$ 320,563,253.37	2.81	5.64	11.05	13.25	15.93	-	-
<i>NCREIF Property Index</i>		1.37	3.07	6.72	7.21	9.33	-	-
Alternative Investments								
Private Equity	\$ 1,187,639,090.02	4.29	8.81	16.42	13.76	13.53	12.27	-
Mature Private Equity	\$ 402,600,795.23	4.58	9.95	15.94	10.87	12.20	-	-
<i>S&P 500 plus 3%</i>		-12.88	-5.46	-1.52	12.53	11.75	-	-
Private Equity < 5 Years	\$ 785,038,294.79	3.85	7.96	16.60	16.48	14.49	-	-
Timberland:	\$ 181,629,549.70	0.39	1.61	-5.76	1.06	4.57	3.43	-
<i>NCREIF Timberland Index</i>		0.97	2.00	3.44	3.22	4.98	3.83	-
Additional Categories:	\$ 1,374,568,294.59	-1.57	0.97	2.86	6.05	4.00	-	-
<i>B of A Merrill Lynch High Yield Master II</i>		-4.67	-2.34	-2.27	7.27	3.82	-	-
Cash (Unallocated)	\$ 262,621,233.57	0.54	1.07	1.97	1.09	0.69	0.44	2.06
<i>90 Day T-Bill</i>		0.56	1.06	1.87	0.99	0.61	0.35	1.80

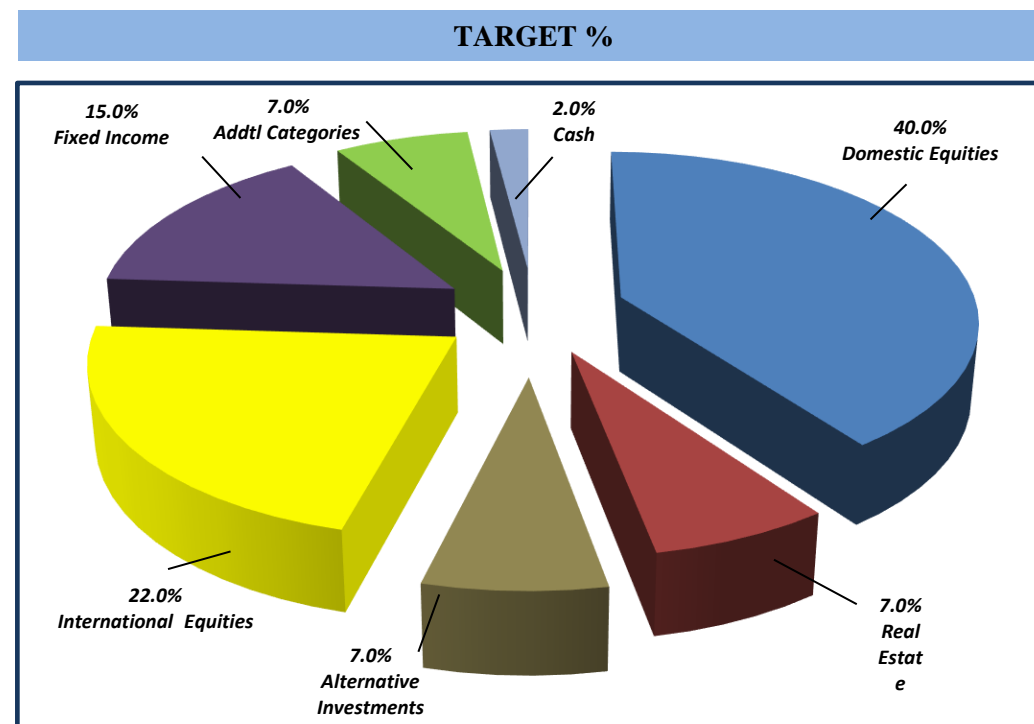
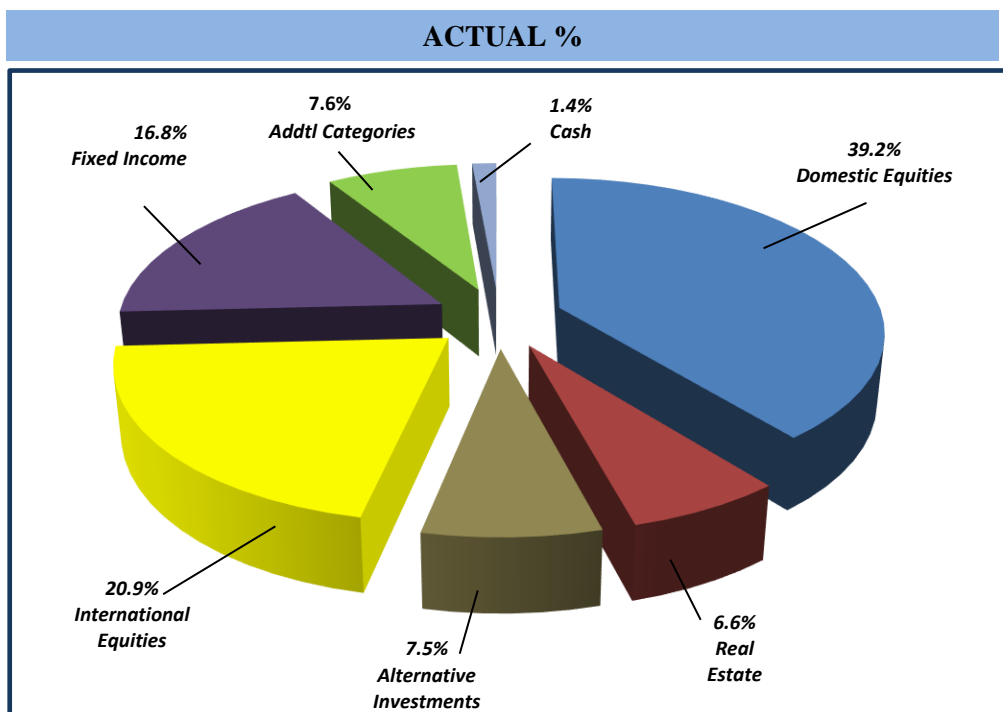
Total Plan Gross Return for 30-year period* 8.04

*Returns are annualized for periods longer than one year

** Prior to July 1, 2008, TRS did not benchmark overall fund performance. Effective July 1, 2008, the Board of Trustees approved a Policy Index that represents the returns of appropriate benchmarks for the various asset classes weighted by the mid-point of the strategic range for the current fiscal year.

Teachers' Retirement System of Kentucky
 Quarterly Investment Update
 For the period ended December 31, 2018

(\$ in millions)	\$'s	12/31/2018 Actual %	9/30/2018 Actual %	Target %	Strategic Ranges
Domestic Equities	\$7,114.4	39.2%	39.8%	40.0%	34.0 - 48.0%
Real Estate	1,192.0	6.6%	5.8%	7.0%	4.0 - 10.0%
Alternative Inv.	1,369.3	7.5%	6.6%	7.0%	4.0 - 10.0%
International Equities	3,793.0	20.9%	22.3%	22.0%	18.0 - 25.0%
Fixed Income	3,039.4	16.8%	17.4%	15.0%	12.0 - 19.0%
Addtl Categories	1,374.6	7.6%	7.0%	7.0%	4.0 - 10.0%
Cash	\$262.6	1.4%	1.1%	2.0%	1.0 - 3.0%
Total	\$18,145.3	100.0%	100.0%	100.0%	



Teachers' Retirement System of the State of Kentucky
Health Insurance Trust
Quarterly Investment Performance
Gross Returns
For the Period Ended December 31, 2018

FINAL

	<u>Market Value</u>	<u>Last Qtr</u>	<u>FYTD</u>	<u>1-Year</u>	<u>3-Year*</u>	<u>5-Year*</u>
<u>TOTAL PLAN</u>	\$ 1,076,453,805.09	-7.35	-4.29	-3.34	7.12	4.58
<i>Policy Benchmark</i>		-8.08	-5.25	-4.71	6.96	-
<u>Total Equity</u>	\$ 601,150,680.75	-13.26	-9.70	-9.55	6.77	4.52
<u>All Cap Equities</u>	\$ 32,237,797.87	-14.38	-9.03	-6.40	-	-
<i>Russell 3000</i>		-14.30	-8.20	-5.24	-	-
<u>Global Equities</u>	\$ 568,912,882.88	-13.20	-9.75	-9.76	6.91	4.60
<i>MSCI AC World IMI (Net)</i>		-13.28	-9.92	-10.08	6.49	4.17
<u>Fixed Income</u>	\$ 110,667,565.74	1.48	1.67	0.23	1.75	1.59
<i>Barclays Government Credit</i>		1.46	1.51	-0.42	2.19	2.53
<u>Core Real Estate</u>	\$ 31,859,785.66	1.94	5.43	9.26	-	-
<i>NCREIF ODCE (VW)</i>		1.76	3.88	8.35	-	-
<u>Non-Core Real Estate</u>	\$ 38,062,136.07	3.24	6.52	11.42	15.44	-
<i>NCREIF Property Index</i>		1.37	3.07	6.72	7.21	-
<u>Private Equity</u>	\$ 97,847,485.17	4.20	8.13	16.69	15.40	17.17
<u>Mature Private Equity</u>	\$ 8,178,909.00	5.88	15.78	22.25	15.84	15.63
<i>S&P 500 plus 3%</i>		-12.88	-5.46	-1.52	12.53	11.75
<u>Private Equity < 5 Years</u>	\$ 89,668,576.17	3.32	6.68	15.45	15.29	-
<u>Additional Categories:</u>	\$ 189,966,470.15	-2.26	0.33	1.40	6.48	3.59
<i>B of A Merrill Lynch High Yield Master II</i>		-4.67	-2.34	-2.27	7.27	3.82
<u>Cash (Unallocated)</u>	\$ 6,899,681.55	0.52	1.05	1.92	1.05	0.67
<i>90 Day T-Bill</i>		0.56	1.06	1.87	0.99	0.61

*Returns are annualized for periods longer than one year

** Prior to July 1, 2015, TRS did not benchmark overall fund performance. Effective July 1, 2015, the Board of Trustees approved a Policy Index that represents the returns of appropriate benchmarks for the various asset classes weighted by the mid point of the strategic range for the current fiscal year.

Teachers' Retirement System of Kentucky

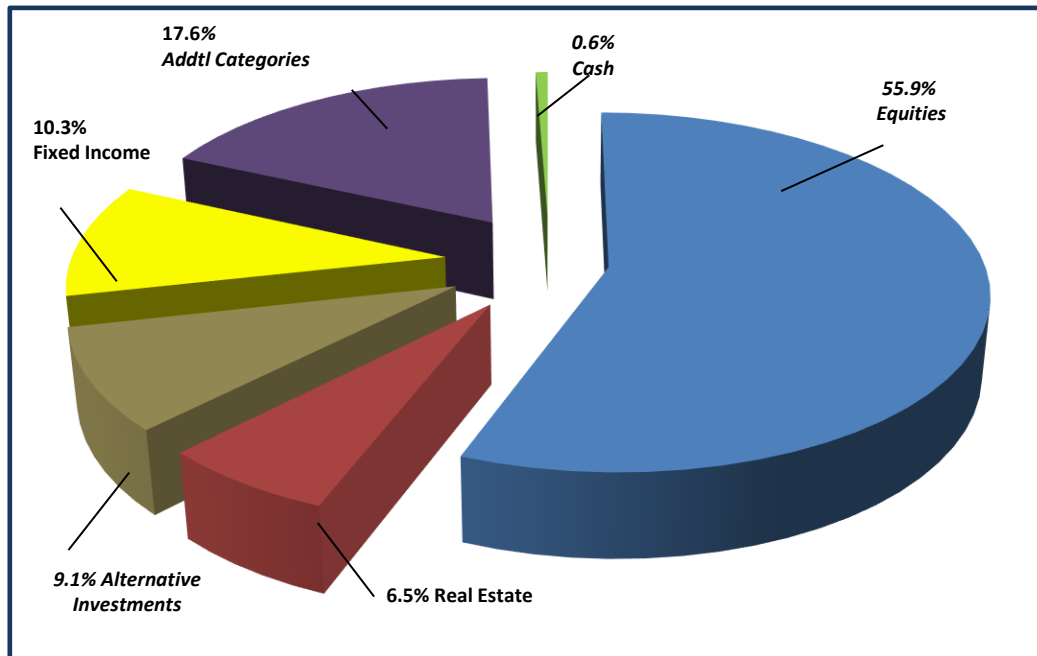
Insurance Trust Fund

Quarterly Investment Update

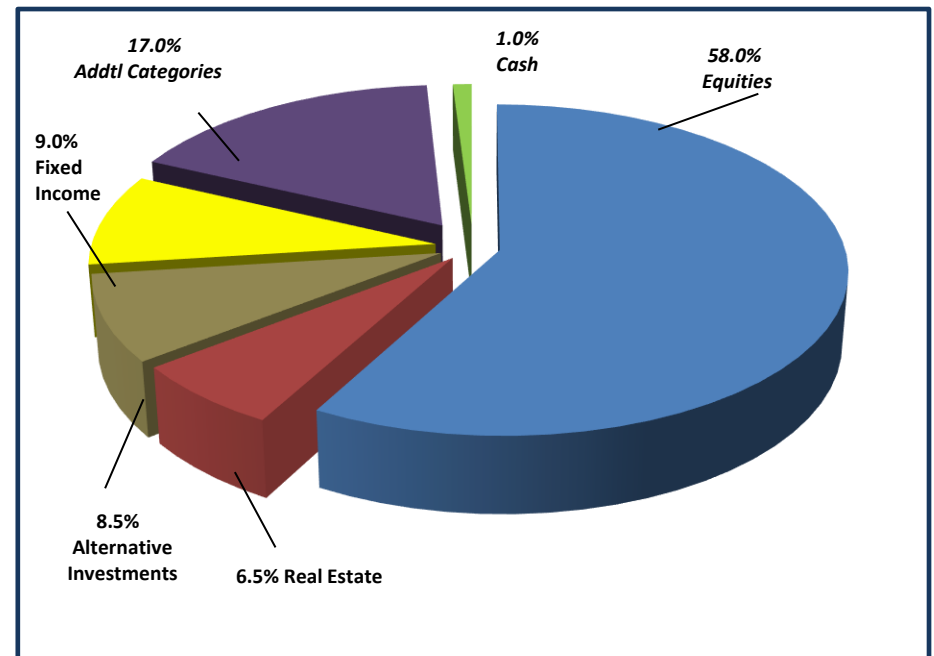
For the period ended December 31, 2018

(\$ in thousands)	\$'s	12/31/2018 Actual %	9/30/2018 Actual %	Target %	Strategic Ranges
Equities	\$601,150.7	55.9%	55.7%	58.0%	51.0 - 64.0%
Real Estate	\$69,921.9	6.5%	5.8%	6.5%	3.0 - 10.0%
Alternative Inv.	\$97,847.5	9.1%	7.5%	8.5%	3.0 - 11.0%
Fixed Income	\$110,667.6	10.3%	8.1%	9.0%	6.0 - 12.0%
Addtl Categories	\$189,966.5	17.6%	17.1%	17.0%	16.0 - 25.0%
Cash	\$6,899.7	0.6%	5.8%	1.0%	0.0 - 4.0%
Total	\$1,076,453.8	100.0%	100.0%	100.0%	

ACTUAL %



TARGET %



TOTAL BV INVESTED AT 9/30/18 \$ 15,335,869,765.13

October Activity

Purchases	678,561,762.82	
Disposals	(713,712,086.29)	
Paydowns	(1,581,699.75)	
Redemptions	(15,626,539.09)	
Short-Term Pool Net	37,291,804.83	(15,066,757.48)

November Activity

Purchases	401,533,541.19	
Disposals	(368,756,337.81)	
Paydowns	(1,119,816.24)	
Redemptions	(25,448,925.37)	
Short-Term Pool Net	86,110,576.21	92,319,037.98

December Activity

Purchases	799,658,361.11	
Disposals	(699,374,782.15)	
Paydowns	(1,900,207.13)	
Redemptions	(3,791,695.58)	
Short-Term Pool Net	(68,424,677.02)	26,166,999.23

TOTAL BV INVESTED AT 12/31/18 \$ 15,439,289,044.86

* TRS recognizes investment transactions on the date they occur. Transaction settlements, generally, occur days following transactions. The interim period between transaction date and settlement date represents a "pending period". At the time this statement was produced, (\$6,753,018.24) in net transactions had occurred but had not settled. The statement does not include either expected cash receipts or disbursements associated with these pending trades. Upon settlement of these pending

Total Short Term	467,320,917
- Pending Payable	6,753,018
Net	460,567,899

INVESTMENT ACTIVITY
October 1, 2018 -- December 31, 2018

Total Book Value Invested @ 10/1/18 \$ 15,335,869,765.13

Purchases:

352	Cash Equivalents	\$	1,331,960,976.66	
122	Fixed Income Securities		415,707,467.20	
2165	Equity Securities		1,176,038,446.65	
29	Real Estate		41,376,175.88	
79	Alternative Investments		96,643,892.04	
137	Additional Categories		149,987,683.35	
<hr/>				
2884	Total Purchases	\$		3,211,714,641.78

Disposals:

288	Cash Equivalents	\$	1,276,983,272.64	
179	Fixed Income Securities		881,279,661.97	
316	Principal Paydowns		4,601,723.12	
23	Redemptions / Maturities		43,314,598.79	
1141	Equity Securities		651,862,829.39	
37	Real Estate		23,949,728.97	
129	Alternative Investments		91,861,506.91	
135	Additional Categories		132,889,479.01	
0	Additional Principal Paydowns		-	
6	Additional Redemptions / Maturities		1,552,561.25	
<hr/>				
2254	Total Disposals	\$		3,108,295,362.05

Total Book Value Invested @ 12/31/18 \$ 15,439,289,044.86

Total Par Value Invested @ 12/31/18 \$ 15,436,208,015.74

Total Market Value Invested @ 12/31/18 \$ 18,145,273,505.19

* TRS recognizes investment transactions on the date they occur. Transaction settlements, generally, occur days following transactions. The interim period between transaction date and settlement date represents a "pending period". At the time this statement was produced, (\$6,753,018.24) in net transactions had occurred but had not settled. The statement does not include either expected cash receipts or disbursements associated with these pending trades. Upon settlement of these pending transactions, the net effect would be as follows:

Total Short Term	467,320,917
- Pending Payable	6,753,018
Net	<u><u>460,567,899</u></u>