



TEACHERS' RETIREMENT SYSTEM

of the State of Kentucky

Quarterly Meeting of the

TRS Board of Trustees

A G E N D A

Monday, December 19, 2022, 10 a.m. ET

BOARD OF TRUSTEES

BRENDA MCGOWN, Chair
Bowling Green

JOHN BOARDMAN, Vice Chair
Lexington

WILLIAM ALVERSON
Paris

FRANK COLLECCHIA
Louisville

HOLLIS GRITTON
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BEN LITTLEPAGE, Ed.D.
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Walton

JOSH UNDERWOOD
Tollesboro

ALISON WRIGHT
Georgetown

ALLISON BALL
State Treasurer

JASON GLASS, Ed.D.
Education Commissioner

GARY L. HARBIN, CPA
Executive Secretary

- Meeting Called to Order
- Roll Call
 1. Reports for Consent
 - 1.1. Consideration/Approval of Minutes
 - 1.1.1. Quarterly Meeting, Board of Trustees, September 19, 2022
 - 1.1.2. Special Meeting, Board of Trustees, November 21, 2022
 - 1.1.3. Special Meeting, Insurance Committee, September 19, 2022
 - 1.1.4. Special Meeting, Insurance Committee, November 14, 2022
 - 1.1.5. Special Meeting, Governance & Audit Committee, September 19, 2022
 - 1.1.6. Special Meeting, Governance & Audit Committee, November 14, 2022
 - 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. Report of the Insurance Committee
 4. Report of the Governance and Audit Committee
 5. Report of the Scholarship Committee
 6. Executive Secretary's Observations and Comments
- General Discussion
- Adjournment

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

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: December 19, 2022

SUBJECT: Reports for Consent

1.1. Consideration/Approval of Minutes

- 1.1.1. Quarterly Meeting, Board of Trustees, September 19, 2022
- 1.1.2. Special Meeting, Board of Trustees, November 21, 2022
- 1.1.3. Special Meeting, Insurance Committee, September 19, 2022
- 1.1.4. Special Meeting, Insurance Committee, November 14, 2022
- 1.1.5. Special Meeting, Governance and Audit Committee, September 19, 2022
- 1.1.6. Special Meeting, Governance and Audit Committee, November 14, 2022

Recommendation: The board and committees are requested to approve the minutes as presented.

1.2. Applications for Retirement and Annuity

The list of members who retired in September, October and November 2022 is included in the board materials. Attached is a summary of the payments and a comparison to the same period last year. Initial retirements for the period included 418 retirees with monthly payments totaling \$1,256,385.72. During the same period last year, 374 retirements resulted in monthly payments totaling \$1,158,091.68.

Recommendation: The board is requested to approve the initial payments listed as reported.

1.3. Survivor Benefits

The list of persons qualifying for survivor benefit payments for the quarter ended September 30, 2022, is included in the board materials. During the period, 10 survivor benefits commenced with a total monthly payment of \$4,359.84.

Recommendation: The board is requested to approve the survivor benefit payments as reported.

1.4. Life Insurance Benefits

The list of payments of life insurance benefits due to death of active and retired teachers for the quarter ended September 30, 2022, is included in the board materials. Thirteen payments to the estates or beneficiaries of active teachers and 343 payments to the estates or beneficiaries of retired teachers combined for total payments of \$1,741,000. During the same quarter in 2021, 311 payments amounted to \$1,513,000.

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

1.5. Refunds

The report of refunds for the quarter ended September 30, 2022, is included in the board materials. During the quarter, 544 refunds totaled \$8,644,056.00. The refunds are for the following categories:

Regular withdrawals	508	\$7,938,860.72
Deaths	<u>36</u>	<u>\$ 705,195.28</u>
Totals	544	\$8,644,056.00

During the same quarter in 2021, 484 refunds totaled \$7,128,666.74.

Recommendation: The board is requested to approve the payment of refunds as reported.

1.6. Interim Financial Statements

The Interim Financial Statements for the quarter ended September 30, 2022, are included in the board materials.

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

Teachers' Retirement System of Kentucky
Initial Applications for Retirement and Annuity
2022

	September	October	November	Total	Same Period 2021
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>6</i> \$14,889.12	<i>6</i> \$17,677.58	<i>10</i> \$31,152.11	<i>22</i> \$63,718.81	<i>20</i> \$55,883.28
Service Retirement	<i>166</i> \$517,575.51	<i>132</i> \$380,599.91	<i>96</i> \$289,927.41	<i>394</i> \$1,188,102.83	<i>349</i> \$1,079,132.79
Beneficiary of Member Eligible to Retire	<i>0</i> \$0.00	<i>0</i> \$0.00	<i>2</i> \$4,564.08	<i>2</i> \$4,564.08	<i>5</i> \$23,075.61
TOTALS	<i>172</i> \$532,464.63	<i>138</i> \$398,277.49	<i>108</i> \$325,643.60	<i>418</i> \$1,256,385.72	<i>374</i> \$1,158,091.68

Reports for Consent
Member Account Refunds
For the period July 2022 - September 2022

Active Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
July	135	953,627.44	238,392.47	474,048.28	1,666,068.19
August	177	1,769,436.29	445,490.89	849,199.69	3,064,126.87
September	202	1,652,893.89	410,030.00	1,145,741.77	3,208,665.66
Total	508				7,938,860.72

Deceased Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
July	9	118,804.62	28,434.50	0.00	147,239.12
August	13	202,812.46	36,249.08	97,773.15	336,834.69
September	14	66,726.60	16,629.89	137,764.98	221,121.47
Total	36				705,195.28

Total Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
July	144	1,072,432.06	266,826.97	474,048.28	1,813,307.31
August	190	1,972,248.75	481,739.97	946,972.84	3,400,961.56
September	216	1,719,620.49	426,659.89	1,283,506.75	3,429,787.13
Total	544				8,644,056.00

TEACHERS' RETIREMENT SYSTEM

OF THE STATE OF KENTUCKY



INTERIM FINANCIAL STATEMENTS

QUARTER ENDED SEPTEMBER 30, 2022

(FAIR VALUE - UNAUDITED)

Statements of Plan Net Assets
as of September 30, 2022 and 2021
(Fair Value - Unadjusted & Unaudited)

	Retirement Annuity Trust		Health Insurance Trust		Life Insurance Trust		Other Funds		TOTAL	
	FY 2023	FY 2022	FY 2023	FY 2022	FY 2023	FY 2022	FY 2023	FY 2022	FY 2023	FY 2022
ASSETS										
Cash	\$ 329,268,090	\$ 114,220,440	\$ 177,000,093	\$ 40,988,525	\$ 114,960	\$ 139,511	\$ 74,667	\$ 217,931	\$ 506,457,810	\$ 155,566,407
Receivables										
Contributions	50,526,572	49,630,590	14,111,640	10,344,680	54,426	47,267			64,692,638	60,022,537
State of Kentucky	-	-	-	-	-	37,040			-	37,040
Investment Income	49,654,767	45,254,996	3,099,024	3,441,069	290,175	263,725	3,160	2,645	53,047,126	48,962,435
Investment Sales Receivable	38,414,566	44,120,299	373,364,361	3,188,763	18,694	3,943			411,797,621	47,313,005
Installment Account Receivable	50,314	76,248							50,314	76,248
Other Receivables	24,667	33,756	37,307,867	37,951,111					37,332,534	37,984,867
Due from Other Funds	5,964,536	3,848,217							5,964,536	3,848,217
Total Receivables	144,635,422	142,964,106	427,882,892	54,925,623	363,295	351,975	3,160	2,645	572,884,769	198,244,349
Investments at Market Value										
Short Term Investments	657,444,055	903,800,280	74,553,031	192,364,974	5,931,862	9,344,101	349,314	351,128	738,278,262	1,105,860,483
Bonds and Mortgages	3,145,147,130	3,570,864,779	143,871,821	155,342,696	18,206,636	18,837,715	215,360	277,462	3,307,440,947	3,745,322,652
Stocks	11,638,682,393	15,724,938,808	1,085,589,815	1,253,577,203	45,146,610	66,558,718	398,045	482,458	12,769,816,863	17,045,557,187
Alternative Investments	2,245,459,327	1,833,188,837	194,941,557	180,739,732	3,539,053	1,772,233			2,443,939,937	2,015,700,802
Real Estate	1,751,171,058	1,474,861,621	157,598,759	122,070,115	7,911,721	5,760,371			1,916,681,538	1,602,692,107
Additional Categories	1,850,225,327	1,958,971,905	362,183,566	381,564,822	2,751,682	2,706,935			2,215,160,575	2,343,243,662
Total Investments	21,288,129,290	25,466,626,230	2,018,738,549	2,285,659,542	83,487,564	104,980,073	962,719	1,111,048	23,391,318,122	27,858,376,893
Capital Assets (net of accumulated depreciation)	9,255,981	10,255,925							9,255,981	10,255,925
Total Assets	21,771,288,783	25,734,066,701	2,623,621,534	2,381,573,690	83,965,819	105,471,559	1,040,546	1,331,624	24,479,916,682	28,222,443,574
LIABILITIES										
Liabilities										
Accrued Expenses and Other Liabilities	29,016,059	13,142,177	5,769,356	4,353,358					34,785,415	17,495,535
State of Kentucky			119,901	19,050,964	62,105				182,006	19,050,964
Investment Purchases Payable	44,487,470	87,837,010	374,434,213	11,149,003	30,619	19,272	-	-	418,952,302	99,005,285
Investment Fees Payable	15,073,093	18,620,079	1,610,807	1,643,815	49,320	52,158	-	-	16,733,220	20,316,052
Due to Other Funds	-	-	5,849,474	3,775,247	111,477	70,478	3,585	2,492	5,964,536	3,848,217
Total Liabilities	88,576,622	119,599,266	387,783,751	39,972,387	253,521	141,908	3,585	2,492	476,617,479	159,716,053
NET ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 21,682,712,161	\$ 25,614,467,435	\$ 2,235,837,783	\$ 2,341,601,303	\$ 83,712,298	\$ 105,329,651	\$ 1,036,961	\$ 1,329,132	\$ 24,003,299,203	\$ 28,062,727,521

Statements of Changes in Plan Net Assets
For the Three Months Ended September 30, 2022 and 2021
(Fair Value - Unadjusted & Unaudited)

	Retirement Annuity Trust		Health Insurance Trust		Life Insurance Trust		Other Funds		TOTAL	
	FY 2023	FY 2022	FY 2023	FY 2022	FY 2023	FY 2022	FY 2023	FY 2022	FY 2023	FY 2022
ADDITIONS										
Contributions										
Employer- State Paid	\$ 242,074,234	\$ 256,578,579	\$ 22,180,657	\$ 9,098,404	\$ 435,850	\$ 417,371	\$ -	\$ -	\$ 264,690,741	\$ 266,094,354
Employer- LSD, Other	22,969,941	26,169,755	22,014,050	23,283,421	128,595	130,877	-	2,281	45,112,586	49,586,334
Member- Active	66,156,325	70,826,446	26,591,069	28,510,294			618		92,748,012	99,336,740
Member- Retired			16,144,473	14,884,624					16,144,473	14,884,624
Recovery Income			25,448,989	22,657,038					25,448,989	22,657,038
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Total Contribution	331,200,500	353,574,780	112,379,238	98,433,781	564,445	548,248	618	2,281	444,144,801	452,559,090
Investment Income/(Loss)										
Net Appreciation/(Depreciation) in Fair Value of Investments	(1,030,401,484)	(154,665,673)	(68,584,288)	9,936,437	(3,849,779)	(1,389,380)	(45,379)	(2,128)	(1,102,880,930)	(146,120,744)
Interest	44,792,902	25,203,418	4,749,598	853,563	180,030	147,686	1,361	165	49,723,891	26,204,832
Dividends	58,708,668	55,862,005	1,066,837	3,021,553	176,060	152,283	1,656	1,445	59,953,221	59,037,286
Rental Income, Net	5,022,782	4,901,725							5,022,782	4,901,725
Securities Lending, Net	694,434	952,109			17,464	14,663	203	140	712,101	966,912
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Gross Investment Income	(921,182,698)	(67,746,416)	(62,767,853)	13,811,553	(3,476,225)	(1,074,748)	(42,159)	(378)	(987,468,935)	(55,009,989)
Less Investment Expense	(15,949,031)	(20,240,140)	(1,561,799)	(1,775,836)	(39,895)	(62,765)	-	-	(17,550,725)	(22,078,741)
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Net Investment Income	(937,131,729)	(87,986,556)	(64,329,652)	12,035,717	(3,516,120)	(1,137,513)	(42,159)	(378)	(1,005,019,660)	(77,088,730)
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Total Additions	(605,931,229)	265,588,224	48,049,586	110,469,498	(2,951,675)	(589,265)	(41,541)	1,903	(560,874,859)	375,470,360
DEDUCTIONS										
Benefits	599,034,054	576,383,767			1,716,530	1,508,000	37,856	38,139	600,788,440	577,929,906
Refunds of Contributions	8,640,592	7,368,837							8,640,592	7,368,837
Under 65 Insurance Expenses			25,855,025	25,738,497					25,855,025	25,738,497
Over 65 Insurance Expenses			55,532,467	43,634,114					55,532,467	43,634,114
Administrative Expense	3,634,334	3,147,391	-	-	-	-	-	-	3,634,334	3,147,391
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Total Deductions	611,308,980	586,899,995	81,387,492	69,372,611	1,716,530	1,508,000	37,856	38,139	694,450,858	657,818,745
Net Increase (Decrease)										
Net Increase (Decrease)	(1,217,240,209)	(321,311,771)	(33,337,906)	41,096,887	(4,668,205)	(2,097,265)	(79,397)	(36,236)	(1,255,325,717)	(282,348,385)
NET ASSETS HELD IN TRUST FOR PENSION BENEFITS										
Beginning of year	22,899,952,370	25,935,779,206	2,269,175,689	2,300,504,416	88,380,503	107,426,916	1,116,358	1,365,368	25,258,624,920	28,345,075,906
Ending of period	\$ 21,682,712,161	\$ 25,614,467,435	\$ 2,235,837,783	\$ 2,341,601,303	\$ 83,712,298	\$ 105,329,651	\$ 1,036,961	\$ 1,329,132	\$ 24,003,299,203	\$ 28,062,727,521
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TO: Board of Trustees of the Teachers' Retirement System of the State of Kentucky

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: December 19, 2022

RE: Report of the Investment Committee

1. Investment Committee Meeting and Actions: New investments presented at the November 17, 2022, Investment Committee meeting were as follows: an investment in NGP Resources XIII of up to \$40 million from the Retirement Annuity Trust and up to \$5 million from the Health Insurance Trust; and an investment in Carlyle Partners VIII of up to \$50 million from the Retirement Annuity Trust, up to \$10 million from the Health Insurance Trust and up to \$500,000 from the Life Insurance Trust.

Outside manager Wellington Asset Management presented a review of its portfolios.

2. Purchases and Disposals: The Report of the Investment Committee for the quarter ended September 30, 2022, is presented for review and approval. During this quarter, 2,404 purchases amounted to \$2,202,166,320.32 and 1,847 disposals amounted to \$2,243,905,956.23. The disposals consisted of 1,506 sales, 303 principal payments and 38 redemptions. While the 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, the TRS's invested securities had a book value of \$18,651,673,175.73 and a market value of \$21,288,433,804.87.

3. Staff's Comments on Economic and Market Conditions: In the quarter ended September 30, hopes for easing inflationary conditions and an eventual pivot to more accommodative monetary policy dominated investor sentiment, leading to strong gains for risk assets. As the quarter progressed, however, comments from Federal Reserve Open Market Committee (FOMC) members took an increasingly hawkish tone. Fed Chairman Jerome Powell's much anticipated speech at the annual Jackson Hole Economic Symposium on August 26 left little room for interpretation. He vowed to take "forceful and rapid steps to moderate demand" to push inflation back toward the statutory target of 2%. Risk assets sold off following the speech for the remainder of the quarter as the September core consumer price index (CPI) was higher than expected. From August 25 to the end of the quarter, yields on the two-year Treasury increased 0.87% and U.S. equities declined 14.6%. Gains prior to the Jackson Hole speech were erased entirely as markets made new calendar year lows. In aggregate for the quarter, global equities fell 6.8% as measured by the MSCI ACWI Index, with non-U.S. markets underperforming as the dollar soared to multi-decade highs. Fixed income markets suffered significant losses as inflationary dynamics forced global central banks into further tightening monetary policy. Commodity markets priced lower as well, as cyclical dynamics related to a potential global growth slowdown weighed on sentiment for raw materials.

Global economic pressures have continued to grow throughout the calendar year. Policymakers in Europe are contending with inflationary dynamics similar to those in the United States while simultaneously providing support to their economies amid an energy crisis resulting from the continent's shift away from Russian natural gas. China continues to lock down large swaths of its population centers periodically in an effort to enforce a strict zero-COVID policy, exacerbating supply chain issues globally. Global gross domestic product (GDP) growth forecasts continue to moderate because of these dynamics as well as the strong dollar. For instance, the forecast from the Organization for Economic Co-operation and Development for calendar 2022 global GDP growth has declined from 4.5% in December 2021, to 3% at the end of the September quarter.

U.S. equity markets experienced continued elevated volatility in the quarter and followed the same downward trend as the first six months of the calendar year. Following three consecutive calendar years with returns above 20%, the Russell 3000 Index has declined 26.4% in calendar 2022. During the quarter, the consumer discretionary and energy sectors provided investors with positive returns, while all other sectors were negative. Most market cap and style groups declined. Large-cap stocks fell most sharply, followed by mid-cap stocks. The only exception was small-cap growth stocks, which had slightly positive returns. Overall, in a reversal of the style trend during the first six months of the calendar year, growth stocks outperformed value stocks during the quarter. On average, active large-cap managers failed to provide downside protection during the first half of calendar 2022, a trend that continued in the quarter.

Developed international stocks significantly lagged domestic stocks during the quarter. European stocks slightly trailed other developed regions, although the returns of individual European countries continued to vary widely. Countries with the closest energy ties to Russia, such as Germany, faced significant sentiment headwinds. Japan, which has been largely unaffected by energy supply disruptions, was a relative bright spot among the largest developed international countries. Emerging markets underperformed developed international markets in the quarter. Unlike in developed international markets, value stocks outperformed growth, while large-cap stocks trailed small by a wide margin. Negative returns from China weighed heavily on emerging market equity results given its significant weight in emerging market indexes. The combination of continued pandemic-related lockdowns and the increasing geopolitical risks regarding Taiwan have clouded the country's economic outlook.

During the quarter, negative performance continued across fixed income markets. The 10-year U.S. Treasury yields rose to 3.83% from 2.98%. The federal funds rate was increased by three-quarters of a percent twice during the quarter, as the FOMC continued to respond to inflation. However, long-term rates remained anchored to market expectations for an eventual curbing of inflation and the risk of recession. The Bloomberg U.S. Aggregate Bond Index ended the quarter with a decline of 4.8%. Within credit, investment grade underperformed both high yield and bank loans, which have relatively less interest rate sensitivity.

Core private real estate generated a positive 0.5% return for the quarter, as reported by the NFI-ODCE Index, with a return contribution of 0.8% from income and a decline of 0.3% from price appreciation. The income return continues to trend at the lower end of historical levels while price appreciation turned negative. The current elevated inflationary environment, coupled with rising interest rates, is contributing to cap rate expansion, increased discount rates and

compression in real estate yields relative to BBB corporate bonds. Investors also are finding it increasingly difficult to secure financing in most sectors as banks pare back lending. While these factors are impacting most sectors, it is apparent that the office sector is most negatively impacted. Specifically, forecasts are clouded by uncertainty around when or if a reversal of the work-from-home or hybrid work model will be seen.

4. Performance: Investment performance was negative for the quarter, with private assets outperforming public assets. The Retirement Annuity Trust's portfolio fell 4.12%, compared to the policy index's 4.91% decline. TRS's domestic equity fell 4.12%, outperforming the S&P 1500 index, which decreased 4.76%. TRS's international stocks fell 9.92% and trailed the MSCI All Country ex-U.S. index, which declined 9.8%. Real estate increased 2.57%. TRS's fixed income declined 4.32%, outperforming the Bloomberg Barclays Gov/Credit Bond index, which declined 4.56%. Additional categories declined 1.85% and private equity declined 1.24%.

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 September 30, 2022

FINAL

	Market Value	Last Qtr	FYTD	1-Year	3-Year*	5-Year*	10-Year*	20-Year*
TOTAL PLAN	\$ 21,288,433,804.87	-4.12	-4.12	-14.12	5.34	5.74	7.85	7.27
Policy Benchmark		-4.91	-4.91	-13.83	4.67	5.52	7.50	-
Total Equity	\$ 11,788,268,812.61	-5.99	-5.99	-22.81	5.24	5.43	9.15	8.50
Domestic Equity	\$ 8,183,423,071.71	-4.12	-4.12	-18.90	7.91	8.17	11.32	9.76
<i>S&P 1500 Index</i>		-4.76	-4.76	-15.56	7.96	8.89	11.56	9.82
All-Cap Equities	\$ 463,251,241.17	-3.79	-3.79	-17.95	11.67	9.90	-	-
<i>Russell 3000 Index</i>		-4.46	-4.46	-17.62	7.71	8.62	-	-
Large-Cap Equities	\$ 6,645,263,889.08	-4.25	-4.25	-18.64	8.24	8.53	11.42	-
<i>S&P 500 Index</i>		-4.88	-4.88	-15.47	8.16	9.23	11.70	-
Mid-Cap Equities	\$ 645,670,044.58	-3.49	-3.49	-21.33	3.60	5.64	10.46	-
<i>S&P 400 Index</i>		-2.46	-2.46	-15.25	6.01	5.82	10.04	-
Small-Cap Equities	\$ 429,237,896.88	-3.53	-3.53	-20.52	5.45	4.67	10.15	-
<i>S&P 600 Index</i>		-5.20	-5.20	-18.82	5.48	4.85	10.09	-
International Equity	\$ 3,604,845,740.90	-9.92	-9.92	-30.65	-0.22	0.16	4.55	-
<i>MSCI AC World Ex US</i>		-9.80	-9.80	-24.78	-1.06	-0.34	3.48	-
Fixed Income	\$ 3,445,165,127.62	-4.32	-4.32	-14.05	-2.64	0.42	1.51	3.74
<i>Bloomberg Barclays Govt/Credit Index</i>		-4.56	-4.56	-14.95	-3.15	-0.05	1.02	3.18
Real Estate	\$ 1,751,171,057.71	2.57	2.57	24.13	12.75	11.35	11.17	10.03
In House Real Estate Equity	\$ 402,120,071.65	1.26	1.26	4.07	4.32	5.57	7.36	8.17
<i>CPI plus 2%</i>		0.98	0.98	10.39	7.07	5.86	4.59	4.50
Core Real Estate	\$ 851,964,217.07	4.05	4.05	30.25	14.26	11.89	11.82	-
<i>NCREIF ODCE (VW) Index</i>		0.52	0.52	22.09	12.37	10.24	10.92	-
Non-Core Real Estate	\$ 497,086,768.99	1.17	1.17	34.45	18.61	16.21	17.25	-
<i>NCREIF Property Index</i>		0.57	0.57	16.08	9.91	8.62	9.48	-
Private Equity	\$ 1,765,179,310.64	-1.24	-1.24	15.30	19.03	17.05	14.72	-
Mature Private Equity	\$ 973,911,884.73	-0.69	-0.69	17.55	18.19	15.34	12.29	-
<i>S&P 500 Index plus 3%</i>		-4.18	-4.18	-12.84	11.41	12.51	15.05	-
Private Equity < 5 Years	\$ 791,267,425.91	-1.80	-1.80	16.35	21.94	19.68	-	-
Timberland	\$ 480,280,016.87	0.47	0.47	9.44	2.49	0.87	3.48	-
<i>NCREIF Timberland Index</i>		2.38	2.38	12.54	5.80	4.69	5.90	-
Additional Categories	\$ 1,891,605,591.57	-1.85	-1.85	-6.22	2.50	3.80	4.87	-
<i>B of A U.S. High Yield Master II Index</i>		-0.70	-0.70	-14.10	-0.69	1.40	3.86	-
Cash (Unallocated)	\$ 166,763,887.85	0.48	0.48	0.83	0.55	1.12	0.69	1.38
<i>90 Day T-Bill</i>		0.46	0.46	0.62	0.59	1.15	0.67	1.20

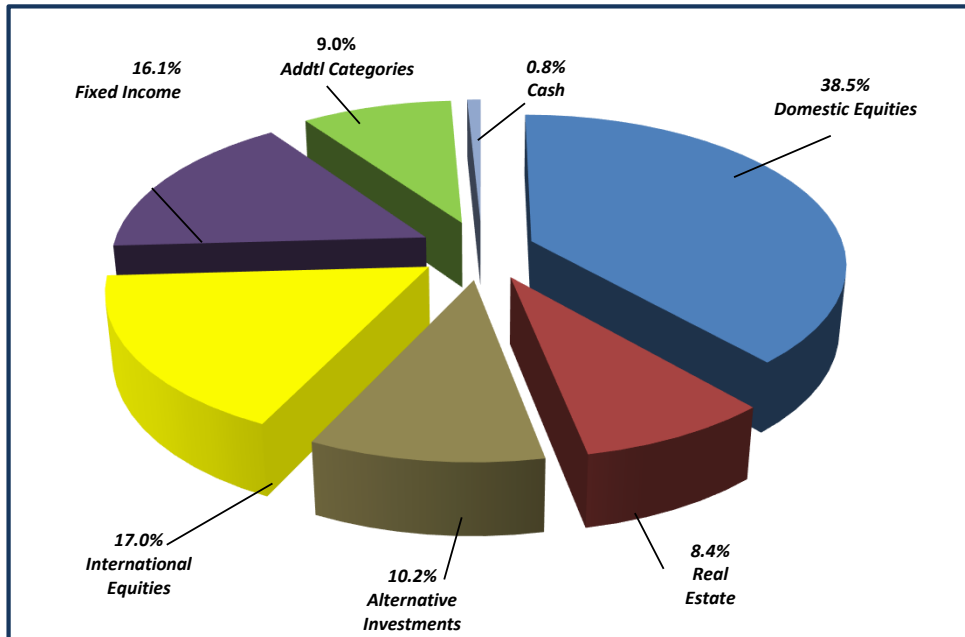
*Returns are annualized for periods longer than one year

** 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.

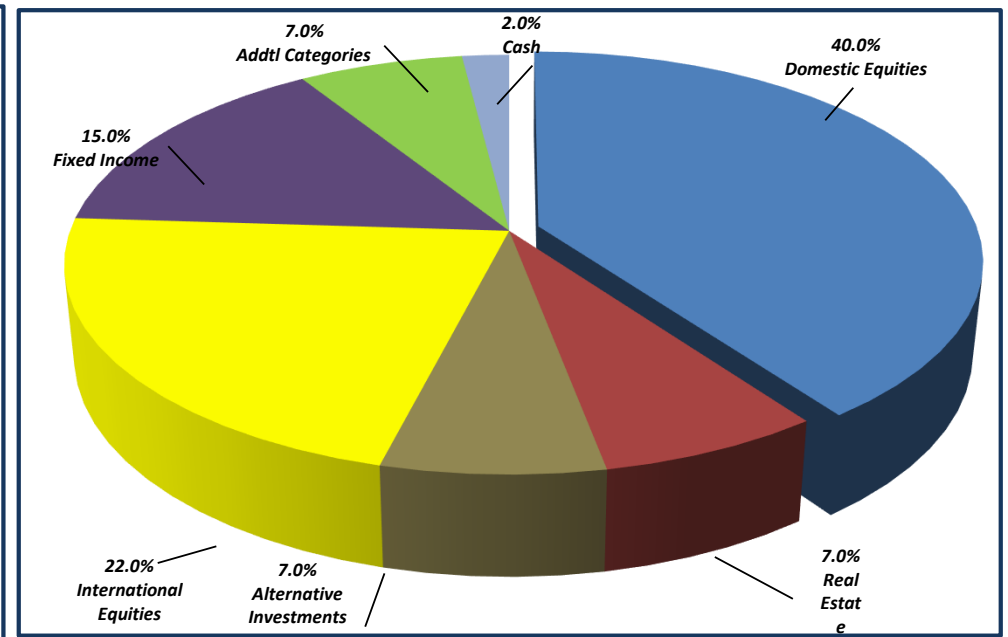
Teachers' Retirement System of Kentucky
Quarterly Investment Update
For the period ended September 30, 2022

(\$ in millions)	\$'s	9/30/2022 Actual %	6/30/2022 Actual %	Target %	Strategic Ranges
Domestic Equities	\$8,183.4	38.5%	37.5%	40.0%	32.0 - 48.0%
Real Estate	1,751.2	8.4%	7.6%	7.0%	4.0 - 10.0%
Alternative Inv.	2,245.4	10.2%	10.2%	7.0%	4.0 - 10.0%
International Equities	3,604.8	17.0%	17.7%	22.0%	16.0 - 27.0%
Fixed Income	3,445.2	16.1%	16.4%	15.0%	8.0 - 22.0%
Addtl Categories	1,891.6	9.0%	8.7%	7.0%	4.0 - 15.0%
Cash	166.8	0.8%	1.9%	2.0%	1.0 - 5.0%
Total	\$21,288.4	100.0%	100.0%	100.0%	

ACTUAL %



TARGET %



Teachers' Retirement System of the State of Kentucky
Health Insurance Trust
Quarterly Investment Performance
Gross Returns
For the Period Ended September 30, 2022

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>10-Year*</u>	<u>20-Year*</u>
TOTAL PLAN	\$ 2,018,738,549.41	-2.97	-2.97	-12.67	5.66	5.83	6.77	-
<i>Policy Benchmark</i>		-4.50	-4.50	-14.50	4.40	4.91	-	-
Total Equity	\$ 1,096,964,501.32	-5.29	-5.29	-23.02	4.28	4.63	7.66	
Domestic Equity	\$ 94,596,212.62	-0.88	-0.88	-42.12	2.82	4.19	-	-
<i>S&P 500 Index</i>		-4.88	-4.88	-15.47	8.16	9.24	-	-
<i>Russell 3000</i>		-4.46	-4.46	-17.63	7.70	8.62		
Global Equities	\$ 1,002,368,288.70	-5.90	-5.90	-20.56	4.27	4.59	7.71	-
<i>MSCI AC World IMI (Net)</i>		-6.64	-6.64	-21.18	3.64	4.16	7.25	-
Fixed Income	\$ 170,294,260.51	-3.29	-3.29	-11.05	-1.45	0.86	1.16	-
<i>Barclays Government Credit</i>		-4.56	-4.56	-14.95	-3.15	-0.05	1.02	
Real Estate	\$ 157,598,759.36	3.42	3.42	36.15	19.40	15.92	-	-
Core Real Estate	\$ 79,026,160.71	4.95	4.95	34.59	16.75	13.49	-	-
<i>NCREIF ODCE (VW)</i>		0.52	0.52	22.09	12.37	10.24	-	-
Non-Core Real Estate	\$ 78,572,598.65	1.93	1.93	37.86	21.91	18.07	-	-
<i>NCREIF Property Index</i>		0.57	0.57	16.08	9.91	8.62	-	-
Private Equity	\$ 194,941,557.25	-1.46	-1.46	17.92	21.10	17.88	17.43	-
Mature Private Equity	\$ 84,778,523.80	-0.03	-0.03	28.63	22.20	19.77	16.13	-
<i>S&P 500 plus 3%</i>		-4.18	-4.18	-12.94	11.41	12.51	15.05	-
Private Equity < 5 Years	\$ 110,163,033.45	-2.40	-2.40	6.83	17.25	15.59	-	-
Additional Categories	\$ 378,086,175.15	-1.75	-1.75	-8.01	1.77	3.19	4.19	-
<i>B of A Merrill Lynch High Yield Master II</i>		-0.70	-0.70	-14.10	-0.69	1.40	3.86	-
Cash (Unallocated)	\$ 20,853,295.82	0.56	0.56	1.78	0.87	1.35	0.80	
<i>90 Day T-Bill</i>		0.46	0.46	0.62	0.59	1.15	0.67	

*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

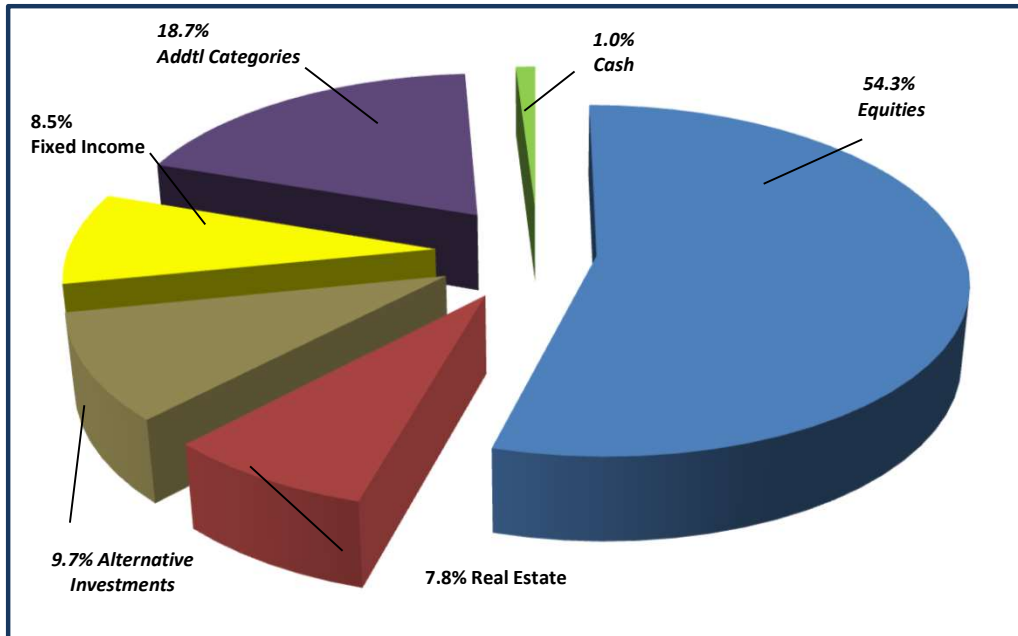
Insurance Trust Fund

Quarterly Investment Update

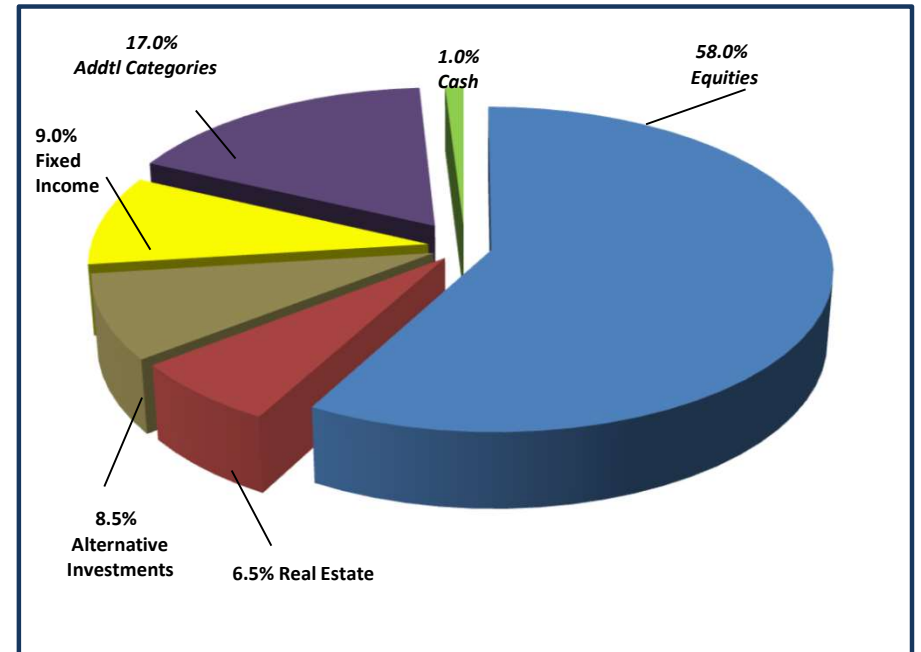
For the period ended September 30, 2022

(\$ in thousands)	\$'s	9/30/2022 Actual %	6/30/2022 Actual %	Target %	Strategic Ranges
Equities	\$1,096,964.5	54.3%	54.0%	58.0%	51.0 - 64.0%
Real Estate	\$157,598.7	7.8%	7.4%	6.5%	4.0 - 12.0%
Alternative Inv.	\$194,941.5	9.7%	10.1%	8.5%	5.0 - 12.0%
Fixed Income	\$170,294.3	8.5%	8.7%	9.0%	6.0 - 14.0%
Addtl Categories	\$378,086.2	18.7%	19.0%	17.0%	14.0 - 25.0%
Cash	\$20,853.3	1.0%	0.8%	1.0%	0.0 - 5.0%
Total	<u>\$2,018,738.5</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	

ACTUAL %



TARGET %



TOTAL BV INVESTED AT 06/30/22		\$ 18,693,412,811.64
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July Activity

Purchases	772,959,584.43	
Disposals	(687,283,056.84)	
Paydowns	(1,688,046.77)	
Redemptions	(6,462,198.34)	
Short-Term Pool Net	<u>(61,055,147.99)</u>	16,471,134.49

August Activity

Purchases	432,137,351.47	
Disposals	(332,076,866.80)	
Paydowns	(3,338,862.88)	
Redemptions	(3,222,289.63)	
Short-Term Pool Net	<u>7,887,255.55</u>	101,386,587.71

September Activity

Purchases	494,260,498.98	
Disposals	(321,658,909.47)	
Paydowns	(3,024,892.49)	
Redemptions	(15,710,657.67)	
Short-Term Pool Net	<u>(313,463,397.46)</u>	(159,597,358.11)

TOTAL BV INVESTED AT 09/30/22		<u><u>\$ 18,651,673,175.73</u></u>
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* 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, (\$6,072,899) 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	\$ 657,748,570
- Pending Payable	<u>6,072,899</u>
Net	<u><u>\$ 651,675,671</u></u>

INVESTMENT ACTIVITY

July 1, 2022 -- September 30, 2022

Total Book Value Invested @ 7/1/22 \$ 18,693,412,811.64

Purchases:

336	Cash Equivalents	\$ 502,808,885.44	
112	Fixed Income Securities	328,596,528.52	
0	Principal Paydowns	-	
0	Additional Redemptions / Maturities	-	
1646	Equity Securities	707,522,177.69	
34	Real Estate	75,119,566.15	
113	Alternative Investments	397,597,730.13	
163	Additional Categories	190,521,432.39	
<u>2404</u>	Total Purchases		\$ 2,202,166,320.32

Disposals:

288	Cash Equivalents	\$ 869,440,175.34	
89	Fixed Income Securities	219,848,185.02	
303	Principal Paydowns	8,051,802.14	
32	Redemptions / Maturities	22,208,665.39	
775	Equity Securities	550,495,526.61	
32	Real Estate	13,074,628.36	
167	Alternative Investments	377,003,996.48	
155	Additional Categories	180,596,496.64	
0	Additional Principal Paydowns	-	
6	Additional Redemptions / Maturities	3,186,480.25	
<u>1847</u>	Total Disposals		\$ 2,243,905,956.23

Total Book Value Invested @ 09/30/22 \$ 18,651,673,175.73

Total Par Value Invested @ 09/30/22 \$ 18,684,275,891.54

Total Market Value Invested @ 09/30/22 \$ 21,288,433,804.87

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Total Short Term	\$ 657,748,570
- Pending Payable	6,072,899
Net	\$ 651,675,671

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: December 19, 2022

RE: Report of the Insurance Committee

On November 14, 2022, the Insurance Committee met to discuss the following matters:

1. Some retirees on the MEHP will have to transfer prescriptions to be eligible for coverage because Express Scripts Inc. (ESI) and Kroger Co. have been unable to reach an agreement.
2. ESI is implementing the Inflation Reduction Act, which will impact what retirees pay for vaccines and insulin.
3. TRS staff is discussing matters related to reciprocity retirees who take their coverage through the Kentucky Public Pensions Authority (KPPA) with KPPA staff.

Recommendation: The reports were for the information of the committee and no action was taken.

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: December 19, 2022

SUBJECT: Report of the Governance and Audit Committee

The Governance and Audit Committee had a special meeting on November 14. The following is a summary of actions taken by the committee.

1. Independent Actuary's Valuations: Cavanaugh Macdonald Consulting presented the pension valuation and the health and life insurance trusts valuations as of June 30, 2022.

Committee Action: The committee unanimously accepted the independent actuary's pension valuation and the health and life insurance trusts valuation.

2. External Audit Report: Blue & Co. reported to the committee on the audit of the financial statements for the fiscal years ended June 30, 2022, and 2021. The auditor also reported to the committee concerning internal controls and compliance at TRS.

Committee Action: The committee unanimously accepted the external audit report.

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

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: December 19, 2022

SUBJECT: Report of the Scholarship Committee

The Scholarship Committee will meet on Monday, December 19, 2022, prior to the Board of Trustees meeting to consider scholarship awards for school year 2023-2024.

Background: Ms. Junita Losey was a retired teacher from Northern Kentucky who taught for 30 years in the Campbell County school district. Ms. Losey passed away in 1997, but during her retired years she was most appreciative of the benefits she received from TRS and left more than \$400,000 to TRS in her will. The board used these funds to establish a scholarship fund in Ms. Losey's name.

In the past, the board awarded a \$2,000 scholarship to each of the eight public universities in Kentucky (for a total of \$16,000 per year). The universities select the recipient who is to be a student majoring in education who:

1. Is a graduate of a Kentucky public high school;
2. Is a junior or senior in college majoring in education;
3. Is a full-time student;
4. Maintains a GPA of 2.8 on a 4.0 scale

Additionally, the board has also awarded a \$2,000 scholarship for tuition, books and fees to a Campbell County High School senior who intends to major in education in a Kentucky public university. This student must have an average GPA in high school of 2.8 on a 4.0 scale.

The committee also will receive a report from investment staff concerning funds available for scholarship awards.

Recommendation: This report is for the information of the board, and any recommendations by the committee will be communicated to the board at the time of the board's meeting.

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: December 19, 2022

SUBJECT: Executive Secretary's Observations and Comments

1. 2022 Award for Funding and Administration from the Public Pension Coordinating Council:

The Public Pension Coordinating Council awarded the Certificate of Achievement to the Teachers' Retirement System (TRS) for 2022 for implementing and maintaining high professional standards for plan funding and administering the affairs of the system. The award is based on compliance with principles judged to underlie exemplary retirement system achievements in the areas of funding, investment, disclosure, actuarial valuation, financial reporting and benefits. These principles are widely acknowledged to be marks of excellence for retirement systems and represent the highest standards of excellence in the public pension industry.

In addition to the certificate of achievement in administration, TRS again was awarded the certificate of achievement for funding. During the period of the state's history of underfunding the Retirement Annuity Trust, TRS did not receive this certificate. Since then, the renewed emphasis on funding by the legislature demonstrated in the current and recent budgets qualified the plan for the funding award again this year.

The Public Pension Coordinating Council is a confederation of the National Council on Teacher Retirement, the National Association of State Retirement System Administrators and the National Conference on Public Employee Retirement Systems.

2. Certificate of Achievement for Excellence in Financial Reporting: TRS, for the 34th consecutive year, has received an Award for Financial Reporting Achievement for its Annual Comprehensive Financial Report. This award, presented by the Government Finance Officers Association of the United States and Canada, is given to those governmental units and retirement systems that achieve the highest standards in government accounting and financial reporting. This certificate highlights the standards used in providing transparent information that is comparable to that information presented by other public plans.

3. Executive Secretary's Meetings: The executive secretary has had meetings with several groups recently and will report to the board concerning the following:

September 28, 2022	Meeting with Wellington Asset Management
September 29, 2022	Meeting with NGP
October 4, 2022	Public Sector Healthcare Roundtable board meeting
October 25, 2022	KYRx board meeting
November 3, 2022	Meeting with Todd Asset Management

November 9-11, 2022	Public Sector Healthcare Roundtable Conference
December 6, 2022	KYRx board meeting
December 12, 2022	Presented at Calloway County Retired Teachers Association

4. 2023 Board Meeting Dates: Dates for the board meetings for 2023 are listed below. The meetings will begin at 12:30 p.m. ET and conducted in person, unless otherwise announced.

Monday, March 20

Monday, June 19

Monday, September 18

Monday, December 18