



TEACHERS' RETIREMENT SYSTEM

of the State of Kentucky

BOARD OF TRUSTEES

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GARY L. HARBIN, CPA
Executive Secretary

Regular Quarterly Meeting of the

TRS Board of Trustees

A G E N D A

September 19, 2022, 12:30 p.m. ET

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, June 20, 2022

1.1.2. Special Meeting of the Governance and Audit Committee,
June 20, 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. Executive Secretary's Observations and Comments

General Discussion

Adjournment

The meeting will take place in the boardroom at the offices 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 the State of Kentucky

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: September 19, 2022

SUBJECT: Reports for Consent

1.1. Consideration/Approval of Minutes

1.1.1. Regular Quarterly Meeting of the Board of Trustees, June 20, 2022

1.1.2. Governance and Audit Committee Special Meeting, June 20, 2022

Recommendation: The board is requested to approve the minutes as presented.

1.2. Applications for Retirement and Annuity

The list of members who retired in June, July and August 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 1,430 retirees with monthly payments totaling \$5,174,033.34. During the same period last year, 1,229 retirements resulted in monthly payments totaling \$4,150,489.77.

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

1.3. Survivor Benefits

The list of persons qualifying for survivor benefit payments for the quarter ended June 30, 2022, is included in the board materials. During the period, 18 survivor benefits commenced with a total monthly payment of \$2,920.

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 June 30, 2022, is included in the board materials. Fourteen payments to the estates or beneficiaries of active teachers and 264 payments to the estates or beneficiaries of retired teachers combined for total payments of \$1,348,000. During the same quarter in 2021, 277 payments amounted to \$1,361,000.

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 June 30, 2022, is included in the board materials. During the quarter, 436 refunds totaled \$4,966,373.02. The refunds are for the following categories:

Regular withdrawals	394	\$4,097,804.76
Deaths	<u>42</u>	<u>\$ 868,568.26</u>
Totals	436	\$4,966,373.02

During the same quarter in 2021, 352 refunds totaled \$4,781,134.17.

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 June 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

	June	July	August	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>7</i> \$21,705.33	<i>6</i> \$17,455.90	<i>9</i> \$29,081.95	<i>22</i> \$68,243.18	<i>26</i> \$69,174.07
Service Retirement	<i>278</i> \$962,308.41	<i>726</i> \$2,700,489.35	<i>401</i> \$1,432,857.39	<i>1,405</i> \$5,095,655.15	<i>1,199</i> \$4,057,606.56
Beneficiary of Member Eligible to Retire	<i>1</i> \$4,041.69	<i>1</i> \$4,873.67	<i>1</i> \$1,219.65	<i>3</i> \$10,135.01	<i>4</i> \$23,709.14
TOTALS	<i>286</i> \$988,055.43	<i>733</i> \$2,722,818.92	<i>411</i> \$1,463,158.99	<i>1,430</i> \$5,174,033.34	<i>1,229</i> \$4,150,489.77

Reports for Consent
Member Account Refunds
For the period April 2022 - June 2022

Active Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
April	181	804,489.92	200,790.63	815,601.28	1,820,881.83
May	120	518,940.78	129,654.70	425,315.08	1,073,910.56
June	94	511,222.01	126,481.80	565,308.56	1,203,012.37
Total	394				4,097,804.76

Deceased Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
April	12	241,048.37	38,502.14	98,694.82	378,245.33
May	13	67,177.49	9,940.96	33,623.92	110,742.37
June	17	290,711.77	8,130.06	80,738.73	379,580.56
Total	42				868,568.26

Total Refunds	Count	Net Refund	Taxes Withheld	Rollovers	Total
April	193	1,045,538.29	239,292.77	914,296.10	2,199,127.16
May	133	586,118.27	139,595.66	458,939.00	1,184,652.93
June	111	801,933.78	134,611.86	646,047.29	1,582,592.93
Total	436				4,966,373.02

TEACHERS' RETIREMENT SYSTEM

OF THE STATE OF KENTUCKY



INTERIM FINANCIAL STATEMENTS

QUARTER ENDED JUNE 30, 2022

(FAIR VALUE - UNAUDITED)

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

	Retirement Annuity Trust		Health Insurance Trust		Life Insurance Trust		Other Funds		TOTAL	
	FY 2022	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021
ASSETS										
Cash	\$ 408,408,436	\$ 150,555,445	\$ 196,428,780	\$ 68,774,605	\$ 684,821	\$ 274,743	\$ 110,372	\$ 253,916	\$ 605,632,409	\$ 219,858,709
Receivables										
Contributions	49,630,590	49,630,590	10,344,680	10,344,680	47,267	47,267			60,022,537	60,022,537
State of Kentucky	-	-	14,763,016	-	-	81,540			14,763,016	81,540
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	16,636,770	58,963,007	3,270,138	2,949,484	1,206	13,985			19,908,114	61,926,476
Installment Account Receivable	57,753	82,355							57,753	82,355
Other Receivables	24,667	33,756	37,955,464	37,947,151					37,980,131	37,980,907
Due from Other Funds	3,848,217	3,848,217							3,848,217	3,848,217
Total Receivables	119,852,764	157,812,921	69,432,322	54,682,384	338,648	406,517	3,160	2,645	189,626,894	212,904,467
Investments at Market Value										
Short Term Investments	1,018,196,544	1,065,314,674	67,213,821	157,506,899	8,345,378	9,405,976	347,626	349,252	1,094,103,369	1,232,576,801
Bonds and Mortgages	3,244,560,222	3,627,641,860	144,284,024	155,171,801	17,872,069	20,043,254	236,796	279,516	3,406,953,111	3,803,136,431
Stocks	12,267,081,370	16,068,066,132	1,095,262,160	1,274,610,864	48,063,588	68,281,332	421,988	482,531	13,410,829,106	17,411,440,859
Alternative Investments	2,292,264,807	1,758,133,237	204,919,107	170,660,050	3,283,908	1,420,802			2,500,467,822	1,930,214,089
Real Estate	1,693,627,935	1,405,889,581	150,214,503	111,459,521	7,489,602	5,181,114			1,851,332,040	1,522,530,216
Additional Categories	1,910,112,687	1,803,453,180	371,942,317	349,991,170	2,811,693	2,549,353			2,284,866,697	2,155,993,703
Total Investments	22,425,843,565	25,728,498,664	2,033,835,932	2,219,400,305	87,866,238	106,881,831	1,006,410	1,111,299	24,548,552,145	28,055,892,099
Capital Assets	9,255,981	10,255,925							9,255,981	10,255,925
(net of accumulated depreciation)										
Total Assets	22,963,360,746	26,047,122,955	2,299,697,034	2,342,857,294	88,889,707	107,563,091	1,119,942	1,367,860	25,353,067,429	28,498,911,200
LIABILITIES										
Liabilities										
Accrued Expenses and Other Liabilities	10,553,273	15,354,229	5,769,356	7,472,716					16,322,629	22,826,945
State of Kentucky			-	22,741,764	96,560				96,560	22,741,764
Investment Purchases Payable	33,914,300	77,369,441	5,107,720	6,719,338	685	13,539	-	-	39,022,705	84,102,318
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	-	-	3,775,247	3,775,245	70,478	70,478	2,492	2,492	3,848,217	3,848,215
Total Liabilities	59,540,666	111,343,749	16,263,130	42,352,878	217,043	136,175	2,492	2,492	76,023,331	153,835,294
NET ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 22,903,820,080	\$ 25,935,779,206	\$ 2,283,433,904	\$ 2,300,504,416	\$ 88,672,664	\$ 107,426,916	\$ 1,117,450	\$ 1,365,368	\$ 25,277,044,098	\$ 28,345,075,906

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

	Retirement Annuity Trust		Health Insurance Trust		Life Insurance Trust		Other Funds		TOTAL	
	FY 2022	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021
ADDITIONS										
Contributions										
Employer- State Paid	\$ 1,577,314,461	\$ 1,060,257,414	\$ 46,237,527	\$ 78,216,742	\$ 2,160,080	\$ 1,852,447	\$ -	\$ -	\$ 1,625,712,068	\$ 1,140,326,603
Employer- LSD, Other	110,869,655	86,720,255	117,603,284	106,670,323	553,168	285,928	2,281	365,866	229,028,388	194,042,372
Member- Active	354,625,105	327,833,177	144,778,344	127,753,430					499,403,449	455,586,607
Member- Retired			60,624,196	59,871,663					60,624,196	59,871,663
Recovery Income			145,318,404	120,747,316					145,318,404	120,747,316
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Total Contribution	2,042,809,221	1,474,810,846	514,561,755	493,259,474	2,713,248	2,138,375	2,281	365,866	2,560,086,505	1,970,574,561
Investment Income/(Loss)										
Net Appreciation/(Depreciation) in										
Fair Value of Investments	(3,087,370,553)	5,763,623,980	(232,131,186)	496,454,659	(16,493,405)	23,335,722	(103,264)	97,882	(3,336,098,408)	6,283,512,243
Interest	152,692,923	92,226,068	16,095,897	3,798,719	616,005	485,596	9,830	9,547	169,414,655	96,519,930
Dividends	250,357,857	208,073,365	3,035,184	9,586,461	727,170	583,808	7,309	6,489	254,127,520	218,250,123
Rental Income, Net	16,230,826	21,821,971							16,230,826	21,821,971
Securities Lending, Net	4,286,340	2,751,699			70,024	52,028	589	690	4,356,953	2,804,417
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Gross Investment Income	(2,663,802,607)	6,088,497,083	(213,000,105)	509,839,839	(15,080,206)	24,457,154	(85,536)	114,608	(2,891,968,454)	6,622,908,684
Less Investment Expense	(61,431,110)	(71,312,772)	(6,074,814)	(6,639,090)	(209,294)	(382,006)	-	-	(67,715,218)	(78,333,868)
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Net Investment Income	(2,725,233,717)	6,017,184,311	(219,074,919)	503,200,749	(15,289,500)	24,075,148	(85,536)	114,608	(2,959,683,672)	6,544,574,816
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Total Additions	(682,424,496)	7,491,995,157	295,486,836	996,460,223	(12,576,252)	26,213,523	(83,255)	480,474	(399,597,167)	8,515,149,377
DEDUCTIONS										
Benefits	2,305,852,772	2,235,240,616			6,178,000	6,120,000	164,663	166,555	2,312,195,435	2,241,527,171
Refunds of Contributions	26,745,203	25,373,818							26,745,203	25,373,818
Under 65 Insurance Expenses			106,170,919	106,822,555					106,170,919	106,822,555
Over 65 Insurance Expenses			206,386,429	204,080,504					206,386,429	204,080,504
Administrative Expense	16,936,655	12,601,841	-	1,728,008	-	34,498	-	939	16,936,655	14,365,286
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Total Deductions	2,349,534,630	2,273,216,275	312,557,348	312,631,067	6,178,000	6,154,498	164,663	167,494	2,668,434,641	2,592,169,334
Net Increase (Decrease)										
	(3,031,959,126)	5,218,778,882	(17,070,512)	683,829,156	(18,754,252)	20,059,025	(247,918)	312,980	(3,068,031,808)	5,922,980,043
NET ASSETS HELD IN TRUST FOR PENSION BENEFITS										
Beginning of year	25,935,779,206	20,717,000,324	2,300,504,416	1,616,675,260	107,426,916	87,367,891	1,365,368	1,052,388	28,345,075,906	22,422,095,863
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Ending of period	\$ 22,903,820,080	\$ 25,935,779,206	\$ 2,283,433,904	\$ 2,300,504,416	\$ 88,672,664	\$ 107,426,916	\$ 1,117,450	\$ 1,365,368	\$ 25,277,044,098	\$ 28,345,075,906
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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: September 19, 2022

RE: Report of the Investment Committee

1. Investment Committee Meeting and Actions: New investments approved at the August 25, 2022, Investment Committee meeting were as follows: A commitment of up to \$65 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 to Rockwood Capital Real Estate Partners XII. The committee also approved a resolution to change the asset classification for timber assets to additional categories from alternatives.

Outside manager Fort Washington Investment Advisors presented a review of its fixed income and focused equity portfolios.

2. Purchases and Disposals: The Report of the Investment Committee for the quarter ended June 30, 2022, is presented for review and approval. During this quarter, 2,055 purchases amounted to \$3,790,971,678.01 and 2,194 disposals amounted to \$3,253,831,628.01. The disposals consisted of 1,871 sales, 289 principal payments and 34 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 \$18,693,412,811.64 and a market value of \$22,426,147,424.09.

3. Staff's Comments on Economic and Market Conditions: Equity and fixed income markets declined significantly during the quarter ended June 30 while credit spreads widened amidst a very difficult period for nearly all asset classes. The inflationary environment worsened in the quarter; even as global central banks moved aggressively to tighten monetary policy. Supply chain disruptions tied to the war in Ukraine and China's zero-COVID policy kept inflation elevated and eroded the purchasing power of consumers, while global central banks consequently indicated increasingly restrictive monetary actions. Tightening financial conditions, falling growth and persistent inflationary pressure challenged investor portfolios. The S&P 500 lost 16.1% during the quarter, bringing its calendar year-to-date decline to 20%, the worst start for the index since 1970. Core bonds, normally a useful diversifier in down equity markets, fell 4.7%, bringing calendar year-to-date returns for the Bloomberg U.S. Aggregate Bond Index to a 10.3% decline. Even commodities, which performed extraordinarily well in the previous quarter, declined 5.7% in the second quarter, as the industrial metals industry rolled over amid global growth concerns. The value of the dollar increased 4.9% during the quarter on a trade-weighted basis as cross currency flows favored the higher path of interest rates in the United States. Inflation, as measured by the Consumer Price Index (CPI), increased to 9.1% by the end of June, defying earlier forecasts for moderation. Core CPI accelerated at a more modest 5.9%. Inflation is not just a U.S. phenomenon. The Organization for Economic Co-operation and Development (OECD) June Economic Outlook report forecasted global inflation to end 2022 near 9%,

roughly double its forecast from December. In response, the European Central Bank recently announced a plan to end its asset purchase program and begin raising interest rates at its July meeting, while the Bank of England similarly moved forward with a fifth straight 0.25% rate hike in June. The policy outlier across major central banks is China, where policy makers have moved toward easing as the country's zero-COVID policy and related lockdowns have brought into question the country's ability to hit annual growth targets without further government support.

U.S. equity markets fell sharply in the quarter amid increasing concerns of a coming recession as the Federal Reserve acted to respond to sustained, elevated levels of inflation. With declines affecting all sectors, investors fled to defensive stocks as these were comparatively resilient. Likewise, investors in energy stocks benefited as the sector was buoyed by commodity prices. Value stocks significantly outperformed growth stocks across all market capitalizations in the quarter, with the Russell 1000 Value and Russell 2000 Value indexes outperforming their growth counterparts by 8.7% and 4%, respectively.

Developed international markets fared better than the domestic market, albeit still finishing the quarter in negative territory with the MSCI EAFE Index notching a 14.5% decline for the period. Value stocks remained in favor with continued outperformance over growth stocks, while large-cap stocks outperformed small-cap stocks. All developed market countries and sectors were negative for the quarter, with the Asia-Pacific region and information technology sector leading markets lower, as no area was fully immune to the ongoing global inflationary pressures and recessionary risks. Emerging markets outperformed developed in the quarter with the MSCI EM Index falling 11.4%. Value stocks outperformed growth stocks and large-cap stocks outpaced small-cap stocks.

The fixed income market continued to experience significant volatility and negative performance during the quarter. Treasury yields rose to 2.98% from 2.32% with an intra-quarter high of 3.49%, as measured by the 10-year U.S. Treasury yield, demonstrating the meaningful interest rate increase and heightened volatility present during the period. Concerns regarding inflation and the Fed's response to rising prices remain top of mind with investors. The Bloomberg U.S. Aggregate Bond Index ended the quarter with a 4.7% decline. While fixed income broadly experienced negative absolute performance over the quarter, widening credit spreads presented additional headwinds to corporate credit across the quality spectrum. Investors flocked to higher-quality assets resulting in the relative underperformance of lower quality credit. For the quarter, U.S. investment grade credit fell 6.9%, while U.S. high yield declined 9.8%, as measured respectively by the Bloomberg U.S. Credit Index and Bloomberg U.S. High Yield Index.

Core private real estate generated a 4.8% return in the quarter as reported by the NFI-ODCE Index, representing income gain of 0.9% and 3.9% price appreciation. While the income return is trending at the lower end of historical levels, the price appreciation return remains elevated. Investors in publicly traded real estate significantly underperformed their private market counterparts by a meaningful margin. Publicly traded real estate fell 14.9% in the quarter, as measured by FTSE/NAREIT All REITs Index. Managers have noted emerging trends in real estate that point toward more return moderation in the coming quarters. While the industrial and apartment sectors continue to drive overall real estate returns, these sectors are showing some

early signs of softening. In particular, rent growth assumptions are being reduced and commercial real estate transaction volumes are falling from the post-pandemic record highs.

4. Performance: Investment performance was negative for the quarter ending June 30, 2022, with private assets doing well and public assets producing declines. The Retirement Annuity Trust's portfolio fell 10.18% in the quarter and fell 10.683% for the fiscal year, compared to the Policy Index's 10.91% decline for the quarter and 9.18% decline for the fiscal year. TRS's domestic equities declined 17.51%, underperforming the S&P 1500 Stock which decreased 16.02% for the quarter. TRS's international stocks fell 13.89% and trailed the MSCI All Country ex-U.S. index, which declined 13.54% for the quarter. Alternatives and real estate made strong contributions in the quarter as private equity gained 3.56% and real estate increased 6.54%. TRS's fixed income declined 4.86%, outperforming the Bloomberg Barclays Gov/Credit Bond index which declined 5.03% for the quarter. Additional categories declined 4.88% 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 June 30, 2022

FINAL

	Market Value	Last Qtr	FYTD	1-Year	3-Year*	5-Year*	10-Year*	20-Year*
TOTAL PLAN	\$ 22,426,147,424.09	-10.18	-10.68	-10.68	7.09	7.58	8.83	7.15
<i>Policy Benchmark</i>		-10.91	9.18	-9.18	6.79	7.42	8.55	-
Total Equity	\$ 12,373,996,194.48	-16.38	-19.52	-19.52	7.37	7.96	10.52	7.76
Domestic Equity	\$ 8,408,434,038.04	-17.51	-16.12	-16.12	9.73	10.05	12.48	8.90
<i>S&P 1500 Index</i>		-16.02	-11.02	-11.02	10.29	10.92	12.79	9.05
All-Cap Equities	\$ 481,706,896.34	-16.34	-13.64	-13.64	12.92	11.47	-	-
<i>Russell 3000 Index</i>		-16.70	-13.87	-13.87	9.77	10.60	-	-
Large-Cap Equities	\$ 6,814,860,157.49	-17.81	-15.65	-15.65	10.22	10.46	12.62	-
<i>S&P 500 Index</i>		-16.10	-10.62	-10.62	10.60	11.31	12.96	-
Mid-Cap Equities	\$ 664,867,175.08	-16.68	-20.63	-20.63	4.60	7.09	11.43	-
<i>S&P 400 Index</i>		-15.42	-14.64	-14.64	6.87	7.00	10.90	-
Small-Cap Equities	\$ 446,999,809.13	-15.15	-19.04	-19.04	6.51	6.58	11.19	-
<i>S&P 600 Index</i>		-14.11	-16.81	-16.81	7.30	7.20	11.26	-
International Equity	\$ 3,965,562,156.44	-13.89	-26.28	-26.28	2.64	3.97	6.33	-
<i>MSCI AC World Ex US</i>		-13.54	-19.01	-19.01	1.81	2.98	5.31	-
Fixed Income	\$ 3,697,099,773.81	-4.86	-10.23	-10.23	-0.32	1.49	2.19	4.30
<i>Bloomberg Barclays Govt/Credit Index</i>		-5.03	-10.85	-10.85	-0.77	1.05	1.67	3.71
Real Estate	\$ 1,693,627,935.30	6.54	26.93	26.93	12.30	11.65	11.14	10.01
In House Real Estate Equity	\$ 402,120,071.65	0.96	4.04	4.04	3.59	6.71	7.46	8.22
<i>CPI plus 2%</i>		3.16	11.17	11.17	7.07	5.96	4.65	4.51
Core Real Estate	\$ 810,649,626.87	7.16	31.14	31.14	13.39	11.35	11.64	-
<i>NCREIF ODCE (VW) Index</i>		4.77	29.51	29.51	12.66	10.54	11.16	-
Non-Core Real Estate	\$ 480,858,236.78	10.50	44.80	44.80	19.63	16.67	17.46	-
<i>NCREIF Property Index</i>		3.23	21.45	21.45	10.22	8.86	9.67	-
Private Equity	\$ 1,808,795,203.96	3.56	26.68	26.68	20.73	18.93	14.90	-
Mature Private Equity	\$ 963,962,084.36	6.34	26.80	26.80	19.20	17.16	12.77	-
<i>S&P 500 Index plus 3%</i>		-15.48	-7.93	-7.93	13.92	14.65	16.35	-
Private Equity < 5 Years	\$ 844,833,119.60	2.36	30.51	30.51	24.22	21.72	-	-
Timberland	\$ 483,469,602.68	1.46	9.88	9.88	2.69	1.10	3.45	-
<i>NCREIF Timberland Index</i>		1.87	12.01	12.01	5.03	4.32	5.73	-
Additional Categories	\$ 1,950,569,831.47	-4.88	-1.70	-1.70	3.60	4.52	5.63	-
<i>B of A Merrill Lynch U.S. High Yield Master II Index</i>		-9.99	-12.69	-12.69	-0.05	1.95	4.40	-
Cash (Unallocated)	\$ 418,588,882.39	0.30	0.35	0.35	0.56	1.08	0.64	1.37
<i>90 Day T-Bill</i>		0.11	0.17	0.17	0.63	1.11	0.63	1.20

Total Trust Gross Return for 30-year period* 7.75

*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.

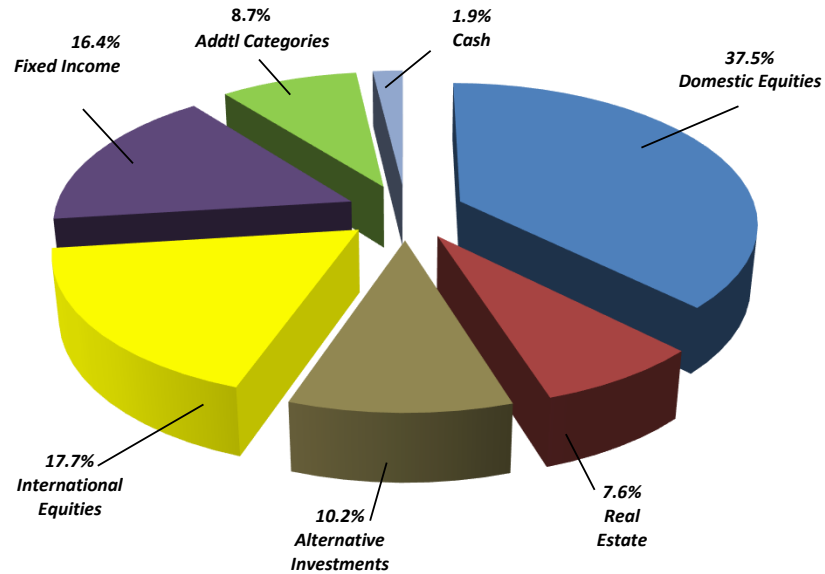
Teachers' Retirement System of Kentucky

Quarterly Investment Update

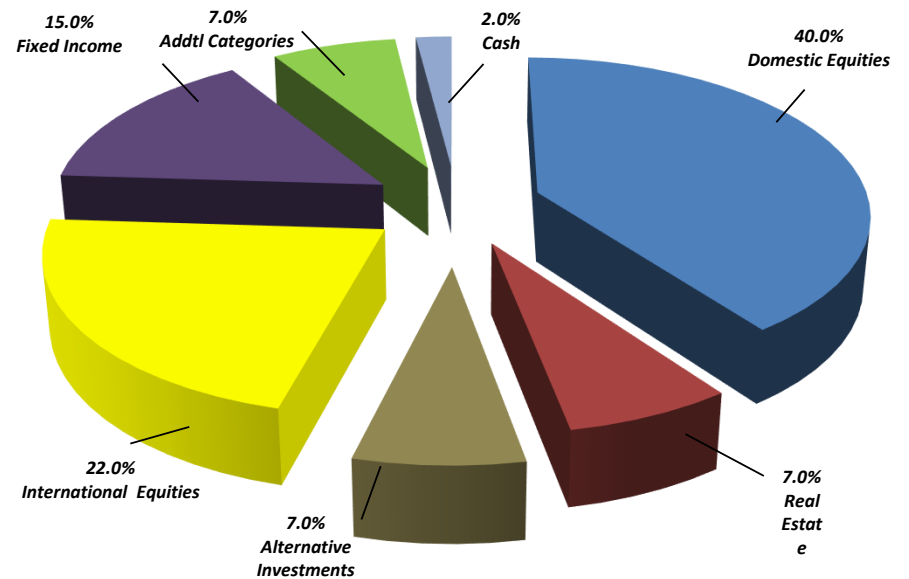
For the period ended June 30, 2022

(\$ in millions)	\$'s	6/30/2022 Actual %	3/31/2022 Actual %	Target %	Strategic Ranges
Domestic Equities	\$8,408.4	37.5%	42.3%	40.0%	34.0 - 48.0%
Real Estate	1,693.6	7.6%	6.6%	7.0%	4.0 - 10.0%
Alternative Inv.	2,292.3	10.2%	7.9%	7.0%	4.0 - 10.0%
International Equities	3,965.6	17.7%	18.8%	22.0%	18.0 - 25.0%
Fixed Income	3,697.1	16.4%	14.8%	15.0%	8.0 - 22.0%
Addtl Categories	1,950.5	8.7%	8.0%	7.0%	4.0 - 15.0%
Cash	418.6	1.9%	1.6%	2.0%	1.0 - 5.0%
Total	\$22,426.1	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 June 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	\$ 2,033,835,931.89	-10.35	-9.43	-9.43	6.95	7.26	7.53	-
<i>Policy Benchmark</i>		-11.37	-10.05	-10.05	6.25	6.72	-	-
Total Equity	\$ 1,099,199,885.64	-16.91	-20.01	-20.01	6.04	6.86	8.98	
Domestic Equity	\$ 95,324,259.06	-27.63	-44.45	-44.45	2.94	5.06	-	-
<i>S&P 500 Index</i>		-16.10	-10.62	-10.62	10.60	11.31	-	-
<i>Russell 3000</i>		-16.70	-13.87	-13.87	9.77	10.60		
Global Equities	\$ 1,003,875,626.58	-15.72	-16.49	-16.49	6.27	7.00	9.09	-
<i>MSCI AC World IMI (Net)</i>		-15.83	-16.52	-16.52	5.98	6.70	8.71	-
Fixed Income	\$ 176,287,536.43	-3.34	-8.11	-8.11	0.37	1.64	1.52	-
<i>Barclays Government Credit</i>		-5.03	-10.85	-10.85	-0.77	1.05	1.67	-
Real Estate	\$ 150,214,502.97	9.53	42.12	42.12	19.02	15.61	-	-
Core Real Estate	\$ 74,491,211.15	7.85	35.49	35.49	15.63	12.67	-	-
<i>NCREIF ODCE (VW)</i>		4.77	29.51	29.51	12.66	10.54	-	-
Non-Core Real Estate	\$ 75,723,291.82	11.23	49.05	49.05	22.29	18.27	-	-
<i>NCREIF Property Index</i>		3.23	21.45	21.45	10.22	8.86	-	-
Private Equity	\$ 204,919,106.49	2.61	30.88	30.88	22.69	19.73	18.13	-
Mature Private Equity	\$ 80,454,927.29	9.89	40.50	40.50	22.82	20.69	16.64	-
<i>S&P 500 plus 3%</i>		-15.48	-7.93	-7.93	13.92	14.65	16.35	-
Private Equity < 5 Years	\$ 124,464,179.20	-0.30	15.81	15.81	19.26	17.67	-	-
Additional Categories	\$ 386,629,644.85	-5.86	-3.96	-3.96	2.87	3.90	4.85	-
<i>B of A Merrill Lynch High Yield Master II</i>		-9.99	-12.69	-12.69	-0.05	1.95	4.40	-
Cash (Unallocated):	\$ 16,585,255.51	0.97	1.23	1.23	0.86	1.29	0.75	-
<i>90 Day T-Bill</i>		0.11	0.17	0.17	0.63	1.11	0.63	-

*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

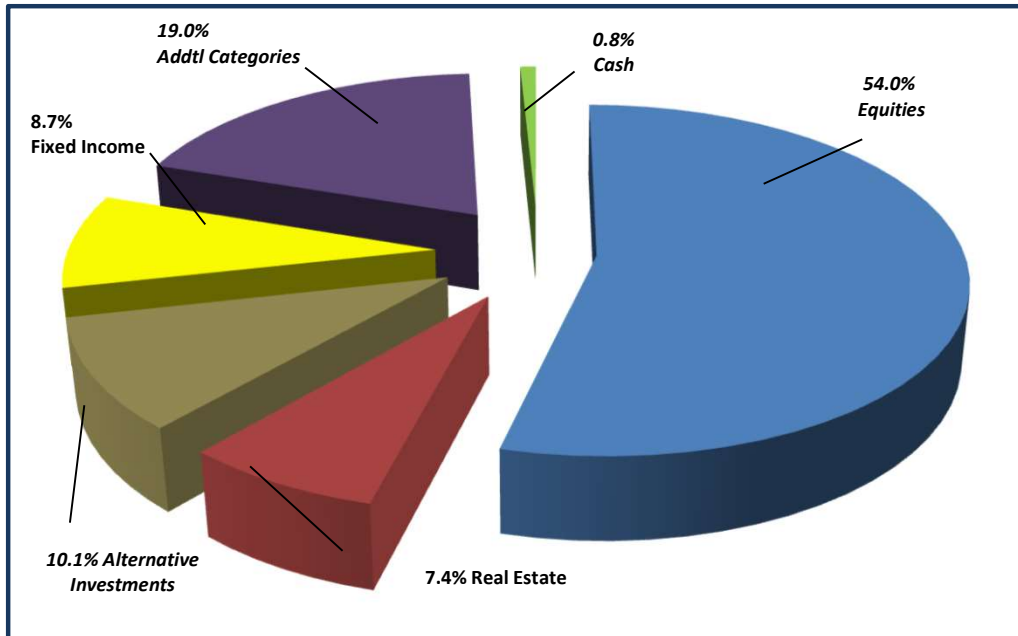
Insurance Trust Fund

Quarterly Investment Update

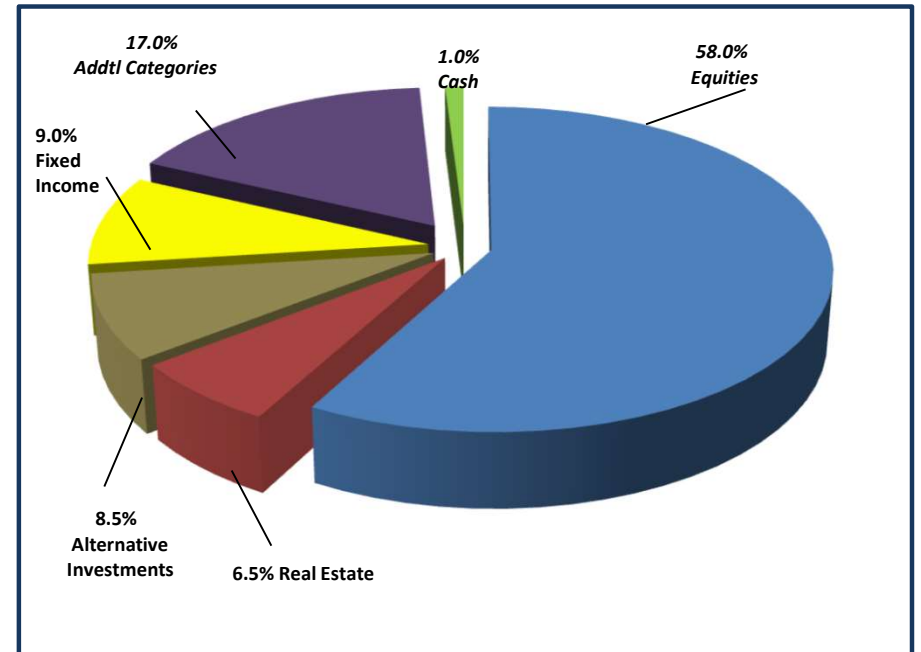
For the period ended June 30, 2022

(\$ in thousands)	\$'s	6/30/2022 Actual %	3/31/2022 Actual %	Target %	Strategic Ranges
Equities	\$1,099,199.9	54.0%	58.2%	58.0%	51.0 - 64.0%
Real Estate	\$150,214.5	7.4%	6.1%	6.5%	4.0 - 12.0%
Alternative Inv.	\$204,919.1	10.1%	8.6%	8.5%	5.0 - 12.0%
Fixed Income	\$176,287.5	8.7%	8.0%	9.0%	6.0 - 12.0%
Addtl Categories	\$386,629.6	19.0%	17.9%	17.0%	14.0 - 21.0%
Cash	\$16,585.3	0.8%	1.2%	1.0%	0.0 - 4.0%
Total	<u>\$2,033,835.9</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	

ACTUAL %



TARGET %



TOTAL BV INVESTED AT 03/31/22		\$ 18,156,272,761.64
-------------------------------	--	----------------------

April Activity

Purchases	721,707,712.94	
Disposals	(586,474,628.28)	
Paydowns	(4,334,244.06)	
Redemptions	(21,881,145.79)	
Short-Term Pool Net	<u>620,865,754.35</u>	729,883,449.16

May Activity

Purchases	477,514,049.33	
Disposals	(433,089,727.26)	
Paydowns	(1,692,638.13)	
Redemptions	(17,270,046.66)	
Short-Term Pool Net	<u>(130,546,592.60)</u>	(105,084,955.32)

June Activity

Purchases	1,010,163,068.51	
Disposals	(652,013,748.51)	
Paydowns	(1,917,677.45)	
Redemptions	(6,761,004.61)	
Short-Term Pool Net	<u>(437,129,081.78)</u>	(87,658,443.84)

TOTAL BV INVESTED AT 06/30/22		<u><u>\$ 18,693,412,811.64</u></u>
-------------------------------	--	------------------------------------

* 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, (\$17,277,524.54) 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	\$ 1,018,500,402
+ Pending Receivable	<u>17,277,525</u>
Net	<u><u>\$ 1,001,222,877</u></u>

INVESTMENT ACTIVITY

April 1, 2022 -- June 30, 2022

Total Book Value Invested @ 4/1/22 \$ 18,156,272,761.64

Purchases:

354	Cash Equivalents	\$ 1,581,586,847.21	
142	Fixed Income Securities	433,340,235.80	
1	Principal Paydowns	0.02	
0	Additional Redemptions / Maturities	-	
1160	Equity Securities	635,580,675.29	
30	Real Estate	33,202,972.84	
129	Alternative Investments	784,336,203.87	
239	Additional Categories	322,924,742.98	
<hr/>		<hr/>	
2055	Total Purchases		\$ 3,790,971,678.01

Disposals:

317	Cash Equivalents	\$ 1,528,396,767.24	
107	Fixed Income Securities	306,236,277.89	
289	Principal Paydowns	7,944,559.66	
27	Redemptions / Maturities	40,721,954.42	
1078	Equity Securities	627,437,603.51	
46	Real Estate	50,363,963.50	
189	Alternative Investments	451,267,649.23	
134	Additional Categories	236,272,609.92	
0	Additional Principal Paydowns	-	
7	Additional Redemptions / Maturities	5,190,242.64	
<hr/>		<hr/>	
2194	Total Disposals		\$ 3,253,831,628.01

Total Book Value Invested @ 06/30/22 \$ 18,693,412,811.64

Total Par Value Invested @ 06/30/22 \$ 18,718,762,639.00

Total Market Value Invested @ 06/30/22 \$ 22,426,147,424.09

* 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, (\$17,277,524.54) 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	\$ 1,018,500,402
- Pending Payable	17,277,525
Net	<u><u>\$ 1,001,222,877</u></u>

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: September 19, 2022

RE: Report of the Insurance Committee

On September 19, 2022, prior to the quarterly board meeting, the Insurance Committee will meet. Thereafter, the committee will report to the board on the following matters:

1. KEHP rates for 2023. A health insurance benefit supplement is being recommended to the committee for the Kentucky Employees' Health Plan (KEHP) up to \$767.56 per month in 2023 for those retirees fulfilling the necessary service requirements. This includes a KEHP administrative fee of \$8 per person per month (PPPM) for plan year 2023. (The administrative fee may increase beginning in July 2023 with the new fiscal year. Staff will report to the committee any such increase.)
2. MEHP rate for 2023. A rate is being recommended to the committee of up to \$217 per month for the 2023 TRS Medicare Eligible Health Plan (MEHP), which includes a combined UnitedHealthcare Medicare Advantage plan and Express Scripts Medicare Part D drug plan, for those retirees fulfilling the necessary service requirements.

Any actions by the Insurance Committee will be reported to the board with a request for those actions to be accepted and ratified.

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: September 19, 2022

SUBJECT: Executive Secretary's Observations and Comments

1. Trustee Education Program: The TRS Board of Trustees always has been devoted to gaining timely and relevant training on matters related to the proper administration of TRS. The board expressed its dedication to continuing education on November 17, 2008, when it adopted the Teachers' Retirement System Trustee Education Program in accordance with KRS 161.250(3)(c). The policy is contained in Appendix 9 of the Board Governance Manual. Chapter 3, subparagraph 6 of the policy provides that the executive secretary will report concerning this program each year at the September board meeting.

From July 2021 through June 2022, trustees attended 309 hours of combined approved training in accordance with the program. The approved training activities included a mix of programs and activities presented by national retirement associations, TRS staff and TRS service providers with expertise in investments, law and actuarial concepts. Topics covered a broad range of subjects, including pension and medical benefits administration, investment concepts, legal compliance, fiduciary duty and other matters that enhance the effectiveness of trustees in fulfilling their roles and satisfying their duties under law.

TRS staff also assisted with providing specific training to trustees. TRS staff presented a one-day workshop that focused primarily on investment concepts, ethics and governance matters.

2. Annual Trustee Workshop: TRS staff is planning a one-day trustee workshop that will focus on current issues in the administration of TRS. Staff anticipates presentations on funding, plan design, actuarial issues, investment concepts, ethics, governance and other matters. The trustee workshop tentatively is scheduled for Monday, November 21, 2022.

3. GASB Statement Nos. 67 and 68: In June 2012, the Governmental Accounting Standards Board (GASB) approved two statements concerning the accounting and financial reporting of pensions by state and local governments and pension plans. Statement No. 67, *Financial Reporting for Pension Plans*, addresses financial reporting for state and local government pension plans. Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes new accounting and financial reporting requirements for governments that provide their employees with pensions. While the two statements were being developed, TRS took an active role in communicating issues and concerns to GASB through a consortium of similarly situated public pension plans.

Statement No. 67 took effect for the fiscal year ending June 30, 2014. Statement No. 68 took effect for the state and universities for the fiscal year ending June 30, 2015.

Because of some concern expressed previously as to how these accounting standards apply to Kentucky school districts, particularly whether these new accounting standards would affect the budgets of the districts, two important points should be noted.

First, as a critical reminder, GASB standards generally apply only to financial reporting. They do not mandate how a governmental pension plan is to be funded. In Kentucky, the commonwealth has a statutory obligation to provide pension funding through the employer retirement contributions it makes on behalf of teachers and administrators and payments toward the unfunded liability. As such, the responsibility for making employer contributions and addressing the unfunded liability of TRS 1, TRS 2 and TRS 3 rests with the commonwealth, not the local school districts. These GASB accounting standards do not change the funding responsibility. GASB accounting standards do not require school districts to make employer contributions to TRS.

Second, while these GASB accounting standards impose financial reporting standards on governmental employers regarding pension liability, Kentucky is very different from other states in that Kentucky teachers and administrators generally are treated as employees of the commonwealth for pension and other purposes. Given this circumstance, GASB has confirmed that the commonwealth is responsible for reporting the annual required contributions and pension liabilities. Furthermore, GASB also has confirmed that Kentucky schools are not required to report a share of the pension liability in district financial statements.

TRS GASB 67 and 68 Reports: TRS published the accounting information required under Statement No. 67 in TRS's annual financial report for the fiscal years ending June 30, 2021 and 2020.

On July 12, 2022, TRS published the "GASB Statement No. 68 Report ... Prepared as of and for the year ended June 30, 2021" for use by the state and other TRS employers. TRS's report was audited by the external auditor, which expressed the opinion that the schedules present fairly, in all material respects, the employer allocation and other matters addressed.

GASB Statement Nos. 74 and 75: In June 2015, GASB approved two statements concerning the accounting and financial reporting of other postemployment benefits (OPEB) by state and local governments and benefit plans. Statement No. 74, *Financial Reporting for Postemployment Benefits Other Than Pension Plans*, addresses financial reporting for OPEB plans. Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, establishes new accounting and financial reporting requirements for governments that provide their employees with OPEB.

TRS GASB 74 and 75 Reports: TRS published the accounting information required under Statement No. 74 in TRS's annual financial report for the fiscal years ending June 30, 2021 and 2020.

On July 12, 2022, TRS published the "GASB Statement No. 75 Report ... Prepared as of and for the fiscal year ended June 30, 2021" for use by the state and other TRS employers. TRS's report was audited by the external auditor, which expressed the opinion that the schedules present

fairly, in all material respects, the employer allocation and other matters addressed.

The GASB Statement Nos. 68 and 75 reports and the external audit reports are available for review by the board.

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

June 22-23, 2022	Video filming with Coriell Life Sciences
June 29, 2022	Meeting with Fort Washington Capital Partners Group
July 14, 2022	Healthcare Roundtable Annual Congressional Forum
July 25, 2022	Meeting with AON
July 28, 2022	Meeting with Todd Asset Management
August 23, 2022	Meeting with AON
August 26, 2022	Presentation at Kentucky Retired Teachers' Association Fall Workshop
August 26, 2022	Meeting with Sagitec
September 2, 2002	Meeting with Molpus
September 7, 2022	Meeting with Mulloy Borland
September 13, 2022	KYRx Coalition Board Meeting
September 13, 2022	Meeting with Coalition to Sustain the Education Profession

5. Next Meeting: The next quarterly meeting of the board will be December 19, 2022.



Teachers' Retirement System of the State of Kentucky



Fall Workshops 2022

Gary L. Harbin, CPA
Executive Secretary

Doing It Right

What That Means at TRS



Providing security for Kentucky's retired teachers using a long-term investing process proven and refined over decades, avoiding the whims of the day, to achieve top returns on investments at the lowest costs.



Today's Topics



- About You and TRS
- Board of Trustees and Administration
- Investment Performance
- Funding Update
- Retiree Health Insurance and Personalized Medicine
- Member Services
- Retired Return to Work
- Issues Ahead



Consistency

Number of founding members of TRS
receiving a benefit as of June who were
members when the doors opened July 1, 1940

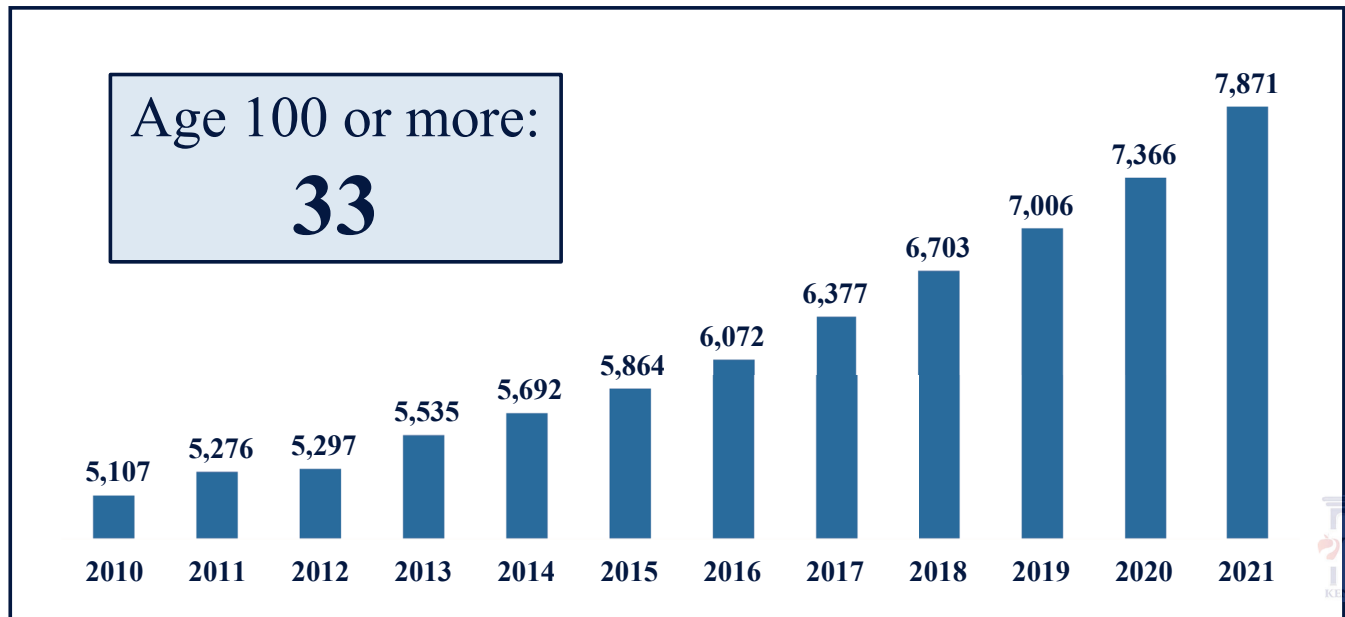
5

As of fall 2022



TRS Benefits Protect Teachers

Retirees over 80 as of Dec. 31



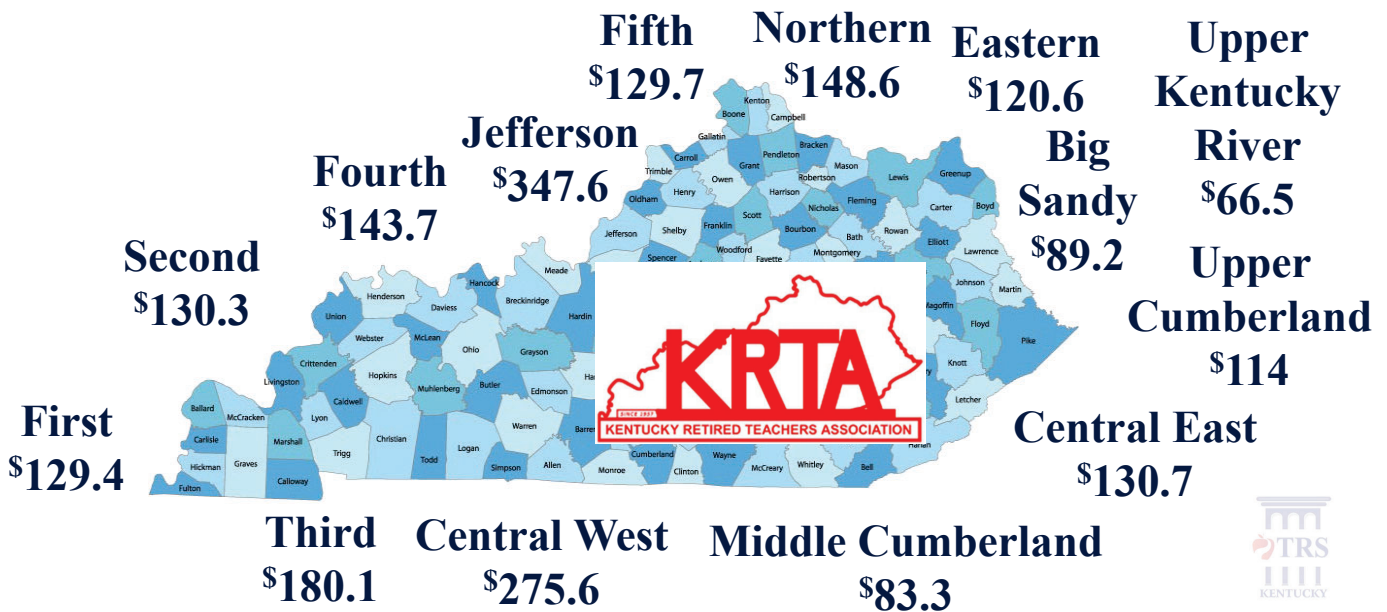
Retired Teachers Benefit Kentucky

- TRS pays retired teachers:
 - \$216.9 million in retirement annuity benefits (*July 2022*)
 - \$16.8 million in medical benefits (*monthly average*)
- 90% of TRS pension benefits stay in Kentucky
- 87% of TRS retirees live in Kentucky
- \$2.1 billion a year paid into Kentucky's economy because of pension benefits



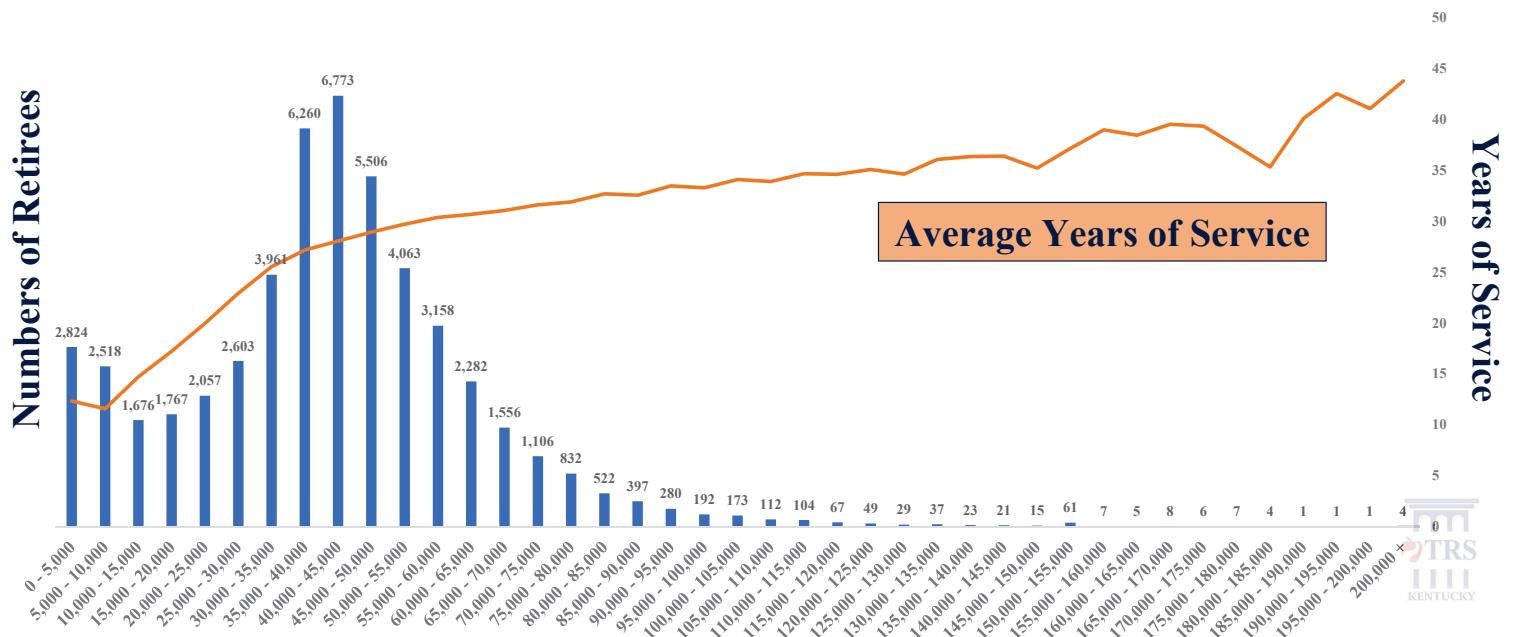
Retired Teachers Benefit Kentucky

Fiscal Year 2022 Annuity Benefits (in millions) by KRTA District



Annualized Gross Benefits

Service Retirees as of June 30, 2022



What the Chart Shows



- 46% of retirees received \$40,000 or less in Fiscal Year 2022
- 85% of retired teachers receive \$60,000 or less
- 1.44% of retirees receive more than \$100,000
- Careers of retirees receiving \$20,000 to \$40,000 averaged 25 years
- People receiving higher pensions also worked longer

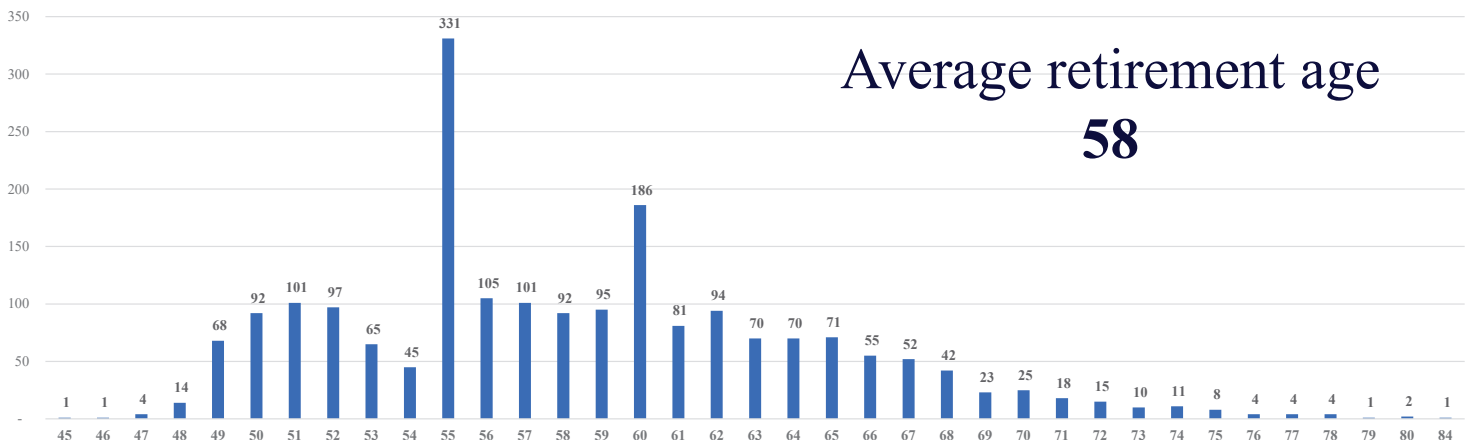
Remember: TRS replaces Social Security

Note: Excludes disability retirement payments



Retirees By Age At Retirement

Fiscal Year 2022: 2,059 Service Retirements



- Only 4% retire before age 50
- Four times as many people retire at 65 & over than under age 50
- Average career teacher retiring in FY 2022 worked 29 years



Board of Trustees

Fiduciaries of TRS



**BRENDA
MCGOWN**
Chair, Bowling Green



**JOHN
BOARDMAN**
Vice Chair, Lexington



**BILL
ALVERSON**
Paris



**ALLISON
BALL**
State Treasurer



**FRANK
COLLECCHIA**
Louisville



**JASON
GLASS, Ed.D.**
*Education
Commissioner*



**HOLLIS
GRITTON**
Union



**BEN
LITTLEPAGE, Ed.D.**
Murray



**LAURA
SCHNEIDER**
Walton



**JOSH
UNDERWOOD**
Tollesboro



**ALISON
WRIGHT**
Georgetown



Trustee Elections Each Spring

April

May

Please complete the ballot below, tear on perforation and mail. NO POSTAGE NECESSARY.

OFFICIAL BALLOT
Election of Board of Trustees Members per KRS 161.260
Mail no later than May 31,

This year the membership will be selecting one lay trustee and one active teacher trustee.

Please vote for ONLY ONE Lay Trustee and ONLY ONE Active Teacher Trustee.

An extra line is provided if you prefer to vote for a write-in candidate.

Candidates for Lay Trustee

☐ 1. _____
☐ 2. _____
☐ 3. _____

Candidates for Active Teacher Trustee

☐ 1. _____
☐ 2. _____
☐ 3. _____

TRS OFFICIAL BALLOT NUMBER: 12345

All contributing members and retirees have the privilege to vote.



TRS Expenses vs. Other Systems

As of June 30, 2021

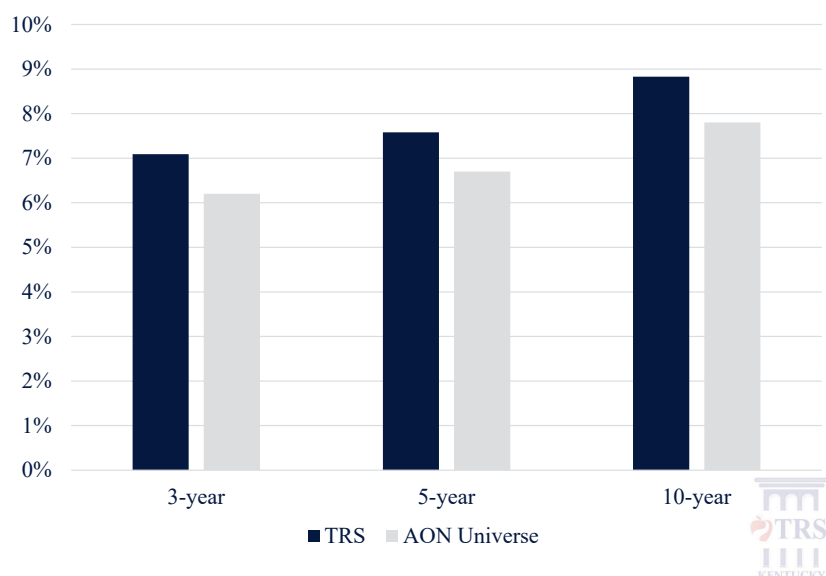
	Percentage of Liabilities
TRS Kentucky	0.0333%
Louisiana Teachers	0.0427%
New Mexico Public Employees	0.0545%
Kansas Public Employees	0.0556%
Ohio Teachers Retirement System	0.0669%
Kentucky Public Pensions Authority	0.0772%
Georgia Employees	0.081%
Indiana Public Employees	0.1025%



Investment Performance

Retirement Annuity Trust Gross Returns as of June 30, 2022

Quarter	-10.18%
1-year	-10.91%
3-year	7.09%
5-year	7.58%
10-year	8.83%
20-year	7.15%
30-year compounded	7.75%

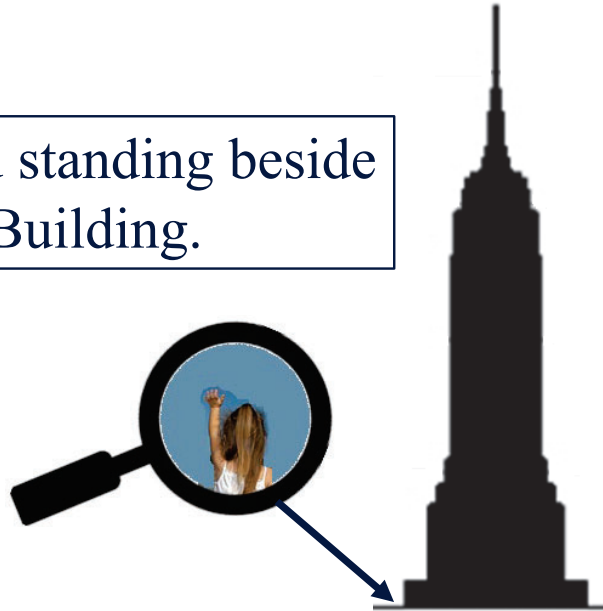


Year	Cumulative Outperformance (Billions \$)
2008	0.0
2009	0.4
2010	0.6
2011	0.8
2012	0.9
2013	1.2
2014	1.5
2015	1.9
2016	1.7
2017	2.2
2018	2.8
2019	3.0
2020	3.8
2021	5.4
2022	4.9

Transparent Low Investment Fees

What Is 28/100 of 1%?

A 4-foot-tall child standing beside the Empire State Building.



Funding Update



Funding Update

2022-24 Biennial Budget

- Means **eight** straight years of full or nearly full annuity funding
- More than \$1.36 billion to meet actuarially required contribution for annuities
 - About \$900 million more to TRS in salary contributions from education budget
- \$149 million for state statutory contribution for under-65 health insurance under Shared Responsibility
- \$479.2 million to pay off liabilities for certain previously awarded benefits that had been amortized over several years
- \$78 million up front for sick leave-related annuity liabilities projected to occur from retirements in next two years



Actuarial Analysis

As of June 30, 2021



Dollars in billions

	Assets	Liabilities	Unfunded	Percent
Retirement Annuity Trust	\$ 22.6	\$ 39.6	\$ 17.0	57.2%

Actuarial values





Retiree Health Insurance



Two Plans for TRS Health Benefits

KEHP **Kentucky** **Employees'** **Health Plan**

- Under 65 and not Medicare-eligible
- Same fund as active teachers and state employees
- Coverage options

MEHP **Medicare** **Eligible Health** **Plan**

- Medicare-eligible or 65 & over
- Exclusively TRS members
- One plan



Insurance Details Can Change

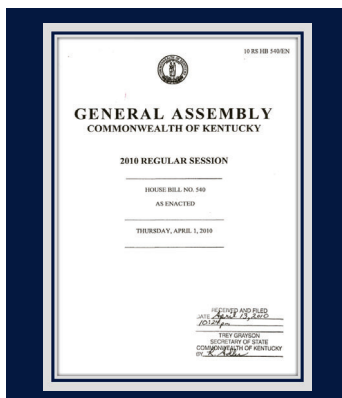
Kentucky law guarantees retired teachers access to group coverage, but the details of that coverage – including costs, subsidy and level of coverage – can change.



Shared Responsibility

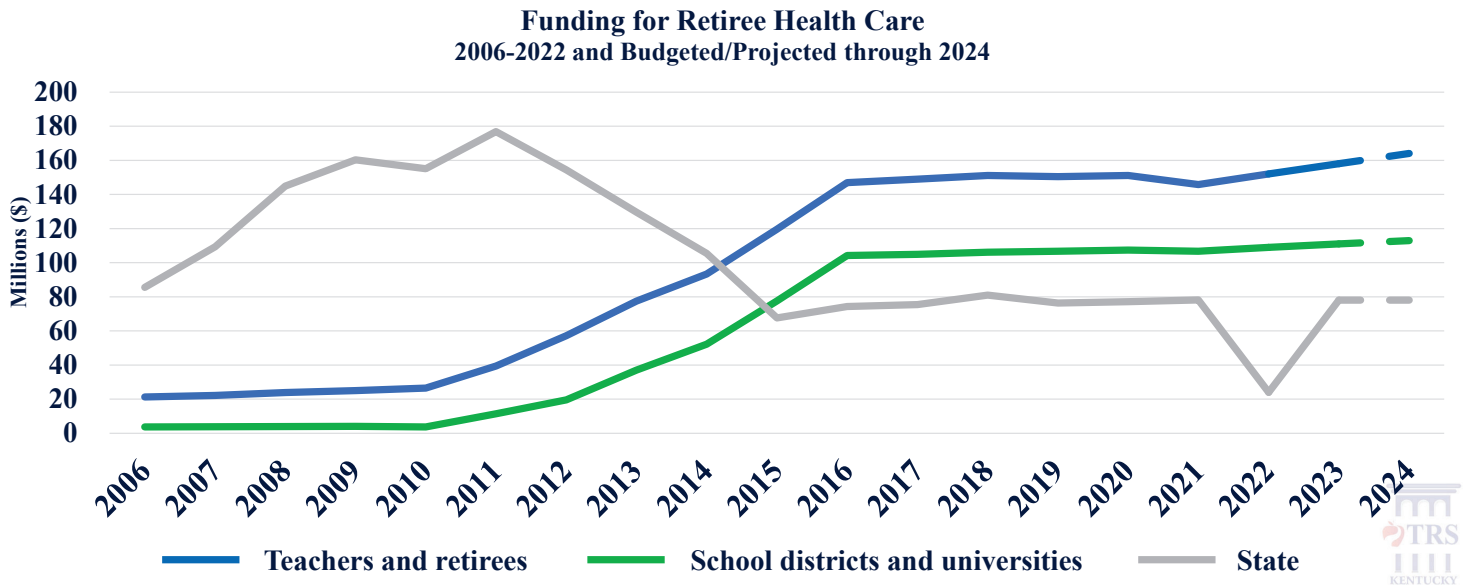
In Second Decade

Shared solution providing permanent funding for retiree health care



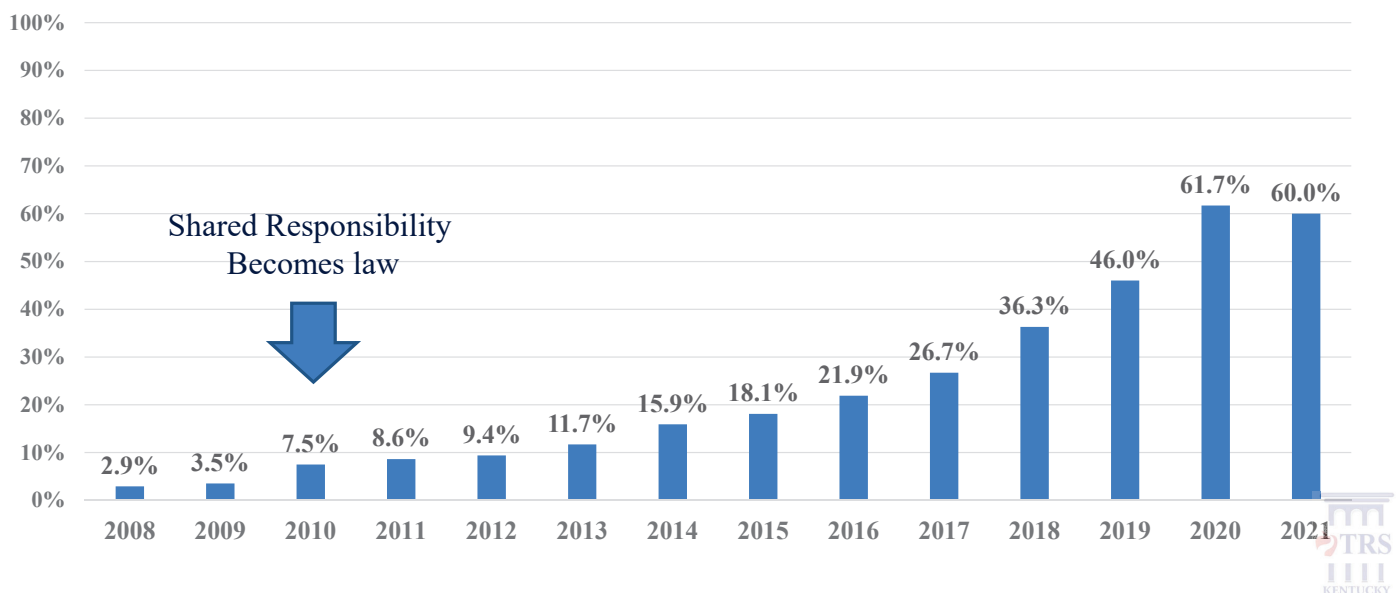
Shared Responsibility

How the Cost Has Been Shared



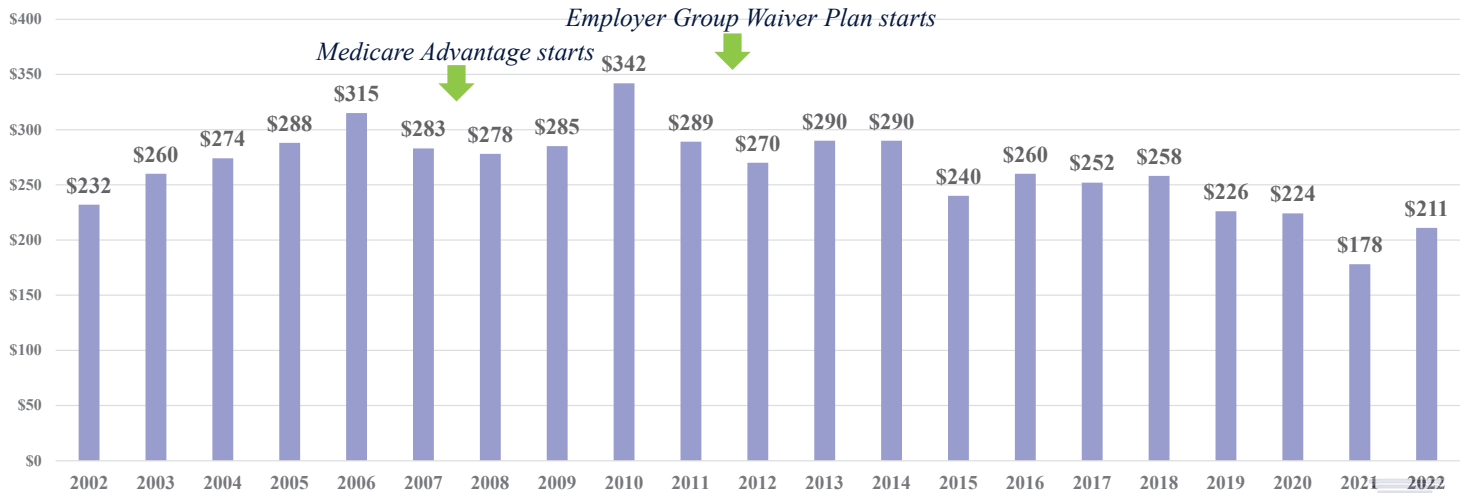
TRRS Health Insurance

Funded Status



MEHP

Premiums



Premiums Held Almost Constant For 20 Years

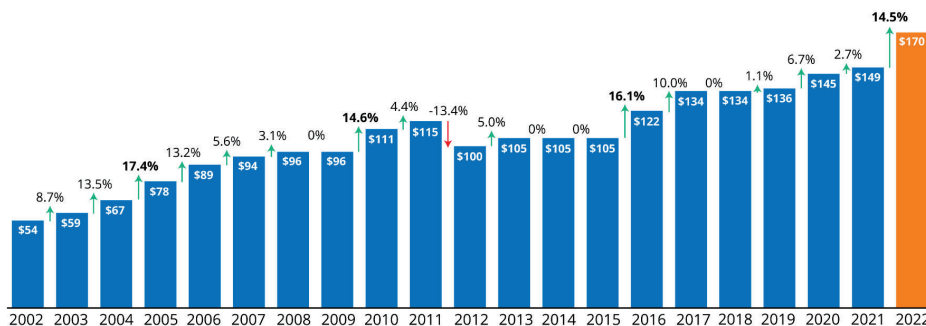


MEHP

Medicare Part B History

The Medicare Part B Premium Rose to \$170.10 per Month in 2022

14.5% Increase is Among the Largest in Program History



NOTE: Monthly premiums are rounded in this exhibit.
SOURCE: KFF analysis of the 2021 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds and CMS, "Medicare Program; Medicare Part B Monthly Actuarial Rates, Premium Rates, and Annual Deductible Beginning January 1, 2022," 86 Federal Register 64205, November 17, 2021.

KFF

Source: Kaiser Family Foundation



KEHP

MEHP

Know Your Rx Coalition

Free counseling with live pharmacists

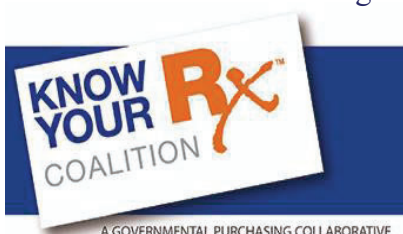
Know Your Rx Coalition *Pharm-Assist*

Hours: Monday to Friday, 8 a.m. to 6 p.m. ET

Phone: 855-218-5979

Email: KYRx@uky.edu

Website: www.KYRx.org



KEHP

MEHP

Personalized Medicine



TRS Solution: Personalized Medicine Partnership

CORIELL
LIFE SCIENCES

You
Your Doctor
Your Pharmacist



KEHP

MEHP

Personalized Medicine

Why It Works

- Helps avoid taking ineffective medications that even could be fatal
- Saves money for retirees and their insurance trust
- Uses DNA testing to help doctors making treatment decisions
- Results help make sure medications are beneficial from the start
- Avoids traditional trial-and-error process without DNA information



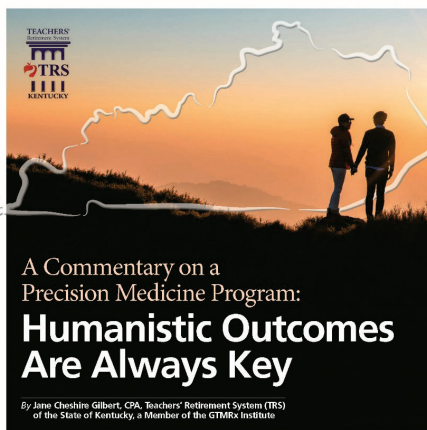
KEHP

MEHP

Personalized Medicine

Genetic Testing Wellness Program Gets National Attention

Journal of Precision Medicine



A Commentary on a Precision Medicine Program: Humanistic Outcomes Are Always Key

By Jane Cheshire Gilbert, CPA, Teachers' Retirement System (TRS) of the State of Kentucky, a Member of the GTRMx Institute

Introduction:
GTRMx and TRS Kentucky
Precision medicine is a personalized medicine in one like the TRS states (quote in #4) who voluntarily submitted a saliva sample for testing. Such a sample, and one of the many TRS retiree, could long-term inform on the scientific and financial investment made by TRS to achieve its precision medicine goals. Moreover, TRS puts

these goals into human terms, showing how and people express their own words how precision medicine is a goal for them. For them, the better work, a physician or doctor could have? Or for those who the pharmacogenetics research world and academic? Is for that matter, the director of retiree health care for Kentucky's retired teachers?

In the past few years, TRS has made countless virtual presentations on this program to others

interested in their employees' and retirees' wellness, drug cost containment and precise use of science that now is well over a decade old. In addition, TRS has presented a program to many health care professionals, including doctors and health plan administrators at the National Institutes of Health in Bethesda, Maryland, attendance at the Personalized Medicine Conference meeting at Harvard in Massachusetts, and, two, members of

<https://www.precisionmedicine.com>

#3 A deep dive into our population discovered that 84% of retirees are on medications that are influenced by genetics. Medicare-eligible retirees were on an average of 15 prescriptions. Roughly 75% of the population had high blood pressure, 58% had high cholesterol, and 50% were suffering from pain and inflammation. Using de-identified claims information, the PGM vendor provided an in-depth analysis of the possible return on investment with the program which found: 10% of members should stop taking a prescription immediately (potential savings: \$1.7 million), 57% of members might need to adjust dosage (potential savings: \$10 million) and 33% of members have a better alternative medication available.

Doctor-Patient Reports and Consultations
GTRMx develops a personalized medicine report that includes the relevant genetic data as well as knowing drug interactions, therapy factors and other relevant information. TRS made sure that its retired teachers would have their DNA tested, a pharmacist was in place who could communicate the results to the patient to language their understanding. Pharmacists have developed education on a plan for the "A99" program condition. In the patient and the physician receive a copy of the plan, which explains the results of the testing and the pharmacogenetics information. After these consultations with patients, the pharmacists have made it to the prescribing physician, with the patient's permission, and discuss the recommended medication changes. And these recommendations are also conveyed to the physician's acceptance of the initiative by printing and e-mailing, and have been validating the program. Prescribing physicians are not currently accepting the pharmacist's recommendations — 80% of the time. Like the retiree, physicians are generally appreciative. "You're helping me become a better doctor to take better care of my patients and to be able to prescribe the right drug at the right time for them."

Of the medication action plans submitted for these consultations in the program, only resulted in medication changes. Over 80% of the suggested medication changes are directly related to DNA drug interactions. The rest are the result of what GTRMx the "full effect" of working with

#4 Communicating with members early and consistently contributed to the program's successful launch. The overarching message: TRS is making smarter use of the health care dollar through the program because taking medications that do not work is bad for the member's health and for the TRS health insurance fund.

therapies and, for example, including to patients. Other examples from this medication therapy management process — in which the pharmacist prescribes dose or how with a patient adjust identifying drugs to drug interactions, side effects and other issues. The process of "test, report, consult" avoids the pressure of trial-and-error type of prescribing



known as training and playing with the device. In helping with GTRMx, TRS helps the medication is a right for the first time, early notices considerable pain and suffering and saving the plan a lot of money. The outcome has proven the concept. According to TRS, only gave 12% faster for those not enrolled in the PGM program than enrolled, based on charges amounts for medical claims at an 18-month retention. About 12% are saved on charges claims for every \$1 spent on PGM program costs. Despite these initial results, PGM is still face resistance — in some part from the

<https://www.precisionmedicine.com>

determination to allow PGM on specific criteria are not. Second, on the member side, some large companies, including United Healthcare, have incorporated use of PGM in their policies. For example, mismanagement for certain patients with depression. In addition to these positive signs, the accumulation of data and the weight of evidence will drive the PGM because the medication that patients are not on doing that is ineffective or unsafe for months or years.

What's next?
To implement PGM, engage your medical plan carrier and your pharmacy benefits manager (PBM) in the conversation. PBMs will see the value in lower cost, improved health outcomes and reduced costs. TRS will continue to negotiate the value of PGM as a tool to optimize medication through comprehensive medication management (CMM) — introducing a pharmacist who would

and highlight cost management trends these included programs. PGM, if included in these federal programs, would bring greater cost efficiency. In the end, the most rewarding part of the program, as indicated earlier, is not only the medication change that results from the testing and/or the data trend, it is also the reaction of Kentucky's retired teachers who take part in the program and the results. TRS receives the steady running time test.

The story will get better because the wellness and savings program is a lifetime benefit for each Kentucky retired teacher who volunteered to provide a DNA sample. Testing results that already have paid dividends for the retiree and their health plan can continue to inform every aspect of their pharmaceutical treatment for the rest of their lives.

References:
1. "Genetics and Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
2. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
3. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
4. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
5. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.

Jane Cheshire Gilbert, CPA
Director of Retiree Health Care for the Teachers' Retirement System (TRS) of the State of Kentucky. She has been with TRS since 2007. She is a member of the American College of Retirement Planners (ACRP) and the Kentucky Society of Certified Financial Planners (KSCFP). She is also a member of the Kentucky Society of Certified Financial Planners (KSCFP) and the Kentucky Society of Certified Financial Planners (KSCFP).

References:
1. "Genetics and Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
2. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
3. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
4. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.
5. "Precision Medicine: A Guide for Healthcare Providers." *Genetics and Precision Medicine*. 2018.

<https://www.precisionmedicine.com>

KEHP**MEHP**

Personalized Medicine

Peer-Reviewed Initial Results Receive Attention



Journal of
*Personalized
Medicine*

- 66% had genetic risks detected in a current medication
- 14.9% reduction in inpatient visits
- 6.8% reduction in emergency room visits
- \$37 million savings in direct medical charges over 32 months

**KEHP****MEHP**

Personalized Medicine

One Retiree's Story

I am *so grateful* for the information that was given to me and my physician. I was taking metropolol for my *heart condition*. Your tests showed that it *stayed too long in my system*. I sometimes had the feeling that I was on the verge of *fainting*. I *had not had that feeling since I started taking the new suggested medication*. I thank you from the bottom of my heart.

— Member, Teachers' Retirement System of the State of Kentucky



KEHP**MEHP**

Personalized Medicine

How to Sign Up

MEHP

MEHP enrollees can contact Coriell at 888-454-9024 or www.coriell.com/trs to request free DNA kit.

KEHP

Non-Medicare KEHP enrollees can contact Coriell and use HRA funds to pay the \$360 cost.

CORIELL
LIFE SCIENCES



A GOVERNMENTAL PURCHASING COLLABORATIVE

**KEHP****MEHP**

Personalized Medicine

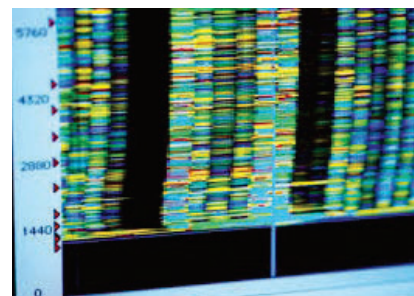
Reaching Further After Success of Pharmacogenomics



Pharmacogenomics
Fall 2017



Breast Cancer Index
2021



Possible Non-Small Cell
Lung Cancer
2022



MEHP

What's Jane Say

If Some Old Quarterback Says You Need More Coverage ...

Tell Joe (and others like him),
“No!”

If you are enrolled in the TRS Medicare Eligible Health Plan (MEHP), enrolling in another Medicare Advantage plan would “dynamite” your TRS MEHP coverage.

Watch video: https://youtu.be/r07m_jwc-wY
or <https://trs.ky.gov/videos>



Member Services



Retirements and Counseling

Fiscal 2022



2,777
Counseling
sessions



Retiree Annual Statements

Summarizes

- Personal information on file with TRS
- How to update that
- Annuity benefits received
- Federal and Kentucky state tax withholding
- How to change withholding
- Retiree health insurance
- Beneficiary information
- Annuity automatic deposit information
- Payment dates

Teachers' Retirement System of the State of Kentucky
475 Versailles Road
Frankfort, KY 40601-3800

This statement was prepared especially for:

STATEMENT OF RETIREE BENEFIT ACCOUNT

This is an important financial document for your information, but it is not a tax record. For taxes, use the IRS Form 1099-R, which TRS mails at the end of each January. Account information is subject to correction by TRS upon discovery of any error or any conflict with state or federal law. Review all information on this statement and contact TRS regarding errors or other concerns.

Personal Information

Your personal information can be updated directly through Pathway (<https://mss.trs.ky.gov/>) or by printing the form from Pathway or the TRS website (<https://trs.ky.gov/>) and mailing the completed form to TRS at the address shown above. It is important to keep your contact information on file with TRS updated.

TRS ID	Date of birth	Phone	Email

Retirement Account Summary

Service retirees are guaranteed a lifetime annuity with a 1.25% cost-of-living adjustment (COLA) each July. For retirement option descriptions, see the TRS website <https://trs.ky.gov/active-members/retirement-planning/options/>.

Benefit type	Retirement date	Retirement option	Gross monthly annuity

2020 Benefits Paid By TRS			2020 Annuity Deductions		
Annuity payments	Insurance premiums	Total	Insurance premiums	Federal tax	Kentucky tax

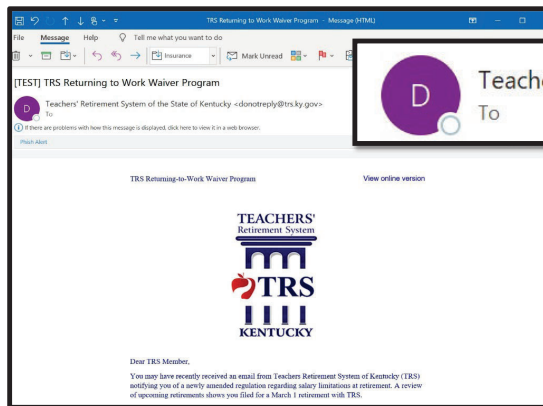
Through December 2020, TRS has paid you a cumulative lifetime annuity benefit of: \$

Account information is subject to correction upon discovery of any error or conflict with state or federal law.



Don't return with changes; using appropriate form or Pathway (<https://mss.trs.ky.gov/>).

Direct Emails



- Email from address of donotreply@trs.ky.gov
- Safe to open



New Benefits Program

TRS 4

**Applies only to members opening new
(including retired return-to-work)
accounts beginning Jan. 1, 2022**



TRS Account Types

Four TRS Account Types Delineated By Entry Date

TRS 1

Entry before
July 1, 2002

TRS 2

Entry on or
between
July 1, 2002, and
June 30, 2008

TRS 3

Entry on or
between
July 1, 2008, and
Dec. 31, 2021

TRS 4

Entry on or after
Jan. 1, 2022



TRS Videos

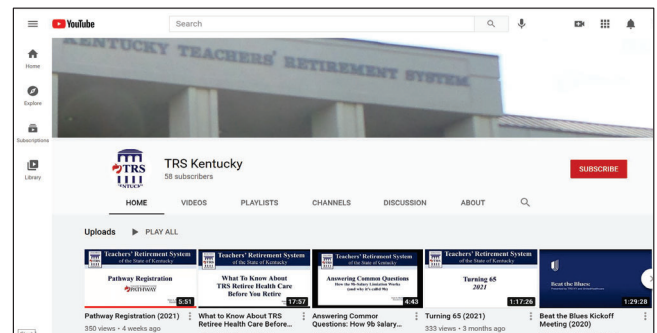
Seminars, Webinars, Other Educational Presentations

TRS Website



<https://trs.ky.gov/videos>

TRS YouTube Channel



Search for TRS Kentucky YouTube

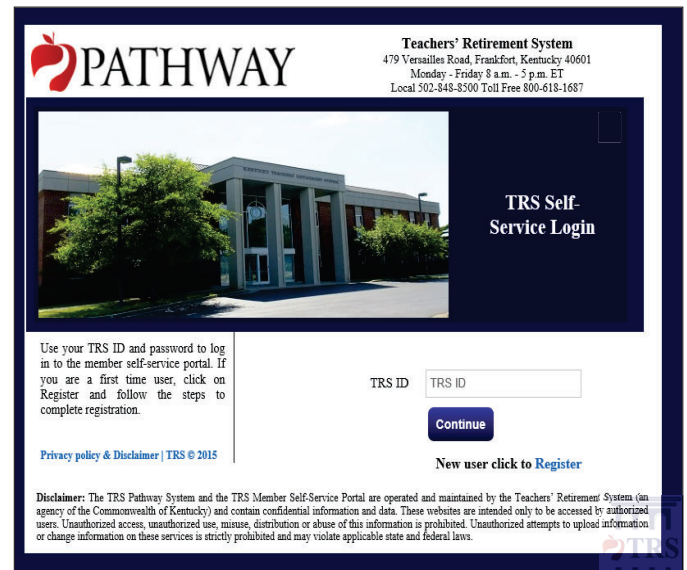
Topics Include:

Pathway Registration, Return to Work, Retiree Health Insurance, Turning 65
and Answering Common Questions



What is Pathway?

Pathway provides secure online access for members and retirees to access their TRS account information in real time.



The screenshot shows the Pathway login interface. At the top, the 'PATHWAY' logo is on the left, and contact information for the Teachers' Retirement System is on the right. Below the logo is a photo of a building. To the right of the photo is a dark blue box with 'TRS Self-Service Login' in white. Below the photo, there is a text box with instructions for first-time users and a 'Continue' button. To the right of the instructions is a 'TRS ID' input field and a 'Continue' button. Below the input field is a link for new users to click to register. At the bottom, there is a disclaimer about the system's security and confidentiality.

PATHWAY

Teachers' Retirement System
479 Versailles Road, Frankfort, Kentucky 40601
Monday - Friday 8 a.m. - 5 p.m. ET
Local 502-848-8500 Toll Free 800-618-1687

TRS Self-Service Login

Use your TRS ID and password to log in to the member self-service portal. If you are a first time user, click on Register and follow the steps to complete registration.

Privacy policy & Disclaimer | TRS © 2015

TRS ID

[Continue](#)

[New user click to Register](#)

Disclaimer: The TRS Pathway System and the TRS Member Self-Service Portal are operated and maintained by the Teachers' Retirement System (an agency of the Commonwealth of Kentucky) and contain confidential information and data. These websites are intended only to be accessed by authorized users. Unauthorized access, unauthorized use, misuse, distribution or abuse of this information is prohibited. Unauthorized attempts to upload information or change information on these services is strictly prohibited and may violate applicable state and federal laws.

What You Can Do in Pathway

- Edit or view personal information
- View active or payee account details
- Submit a request
- View schedule of upcoming seminars and webinars
- Vote in annual trustee elections
- Find links to TRS forms
- Submit health insurance applications

TRS News & Information



<https://trs.ky.gov>



facebook.com/KyTeachersRS



TEACHERS' RETIREMENT SYSTEM
PATHWAY



<https://mss.trs.ky.gov/>



[@KyTeachersRS](https://twitter.com/KyTeachersRS)



Retired Return to Work



Bona Fide Retirement



- According to the IRS, a bona fide retirement means there can be no pre-arranged agreement for returning to work.
- TRS must maintain compliance with the IRS to remain a qualified retirement plan.



TRS Retired Return To Work

Purposes of KRS 161.605

Allow retirees to help schools meet needs

Be actuarially sound

- making TRS contributions
- limits on days and earnings

Comply with federal law

- observing breaks in service
- no prearranged agreement



TRS Retired Return To Work

RTW Program	Permanent Rules
Part time	3-month break, day and wage limits
Full time	3- or 12-month break, wage limits
Critical shortage part time	3-month break, day limits
Critical shortage full time	3- or 12-month break

Return to work, including which program is used, is at the employer's discretion.



Temporary Changes Made

- From 2022 General Assembly regular session
- Provides temporary changes *only for local school districts* to address staffing concerns
- Relaxes certain aspects of RTW programs
- Law sunsets June 30, 2024, when all rules revert to permanent provisions



What Does Not Change for RTW?

- Federal and state laws continue to prohibit any member from having an agreement before retirement to return to work for any TRS employer in any position. For local school districts, this is regardless of whether position is certified or classified.
- Retirees returning in part- or full-time program still have limitation on wages (and potentially days).
- Reciprocity retirees must meet breaks in service for each system.
- Retirees must drop health insurance coverage through TRS if eligible for health insurance through employment.



Questions?

Visit TRS website for detailed RTW information

<https://trs.ky.gov/retired-members/returning-to-work/>

View presentation for retirees on permanent RTW rules

<https://trs.ky.gov/home/seminars-workshops/videos/#RTWEmployeeVid>

Permanent RTW presentation for non-university employers

<https://trs.ky.gov/home/seminars-workshops/videos/#RTWvidnonuemployer>

Contact TRS

800-618-1687 or info@trs.ky.gov





Issues Ahead



Doing It Right

What That Means at TRS



Providing security for Kentucky's retired teachers using a long-term investing process proven and refined over decades, avoiding the whims of the day, to achieve top returns on investments at the lowest costs.





***Our Members
Come First!***

800-618-1687

**8 a.m. – 5 p.m. ET
Monday – Friday**

info@trs.ky.gov

<https://trs.ky.gov>

Protecting & Preserving Teachers' Retirement Benefits

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

FROM: Gary L. Harbin, CPA
Executive Secretary

DATE: September 19, 2022

SUBJECT: Report of the Governance and Audit Committee

The Governance and Audit Committee will meet on September 19 before the meeting of the Board of Trustees to consider a report from staff concerning a request for proposals for incident response and digital forensic services.

The committee will report to the board at the board's quarterly meeting.

APPENDIX TO SEPTEMBER 19, 2022 QUARTERLY BOARD OF TRUSTEES MEETING

Attached is an updated Retirement Annuity Performance Report. The report presented to the board on September 19, included a typographical error in that the 1-year Policy Benchmark was expressed as 9.18% instead of negative 9.18%.

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

FINAL

	Market Value	Last Qtr	FYTD	1-Year	3-Year*	5-Year*	10-Year*	20-Year*
TOTAL PLAN	\$ 22,426,147,424.09	-10.18	-10.68	-10.68	7.09	7.58	8.83	7.15
<i>Policy Benchmark</i>		-10.91	-9.18	-9.18	6.79	7.42	8.55	-
Total Equity	\$ 12,373,996,194.48	-16.38	-19.52	-19.52	7.37	7.96	10.52	7.76
Domestic Equity	\$ 8,408,434,038.04	-17.51	-16.12	-16.12	9.73	10.05	12.48	8.90
<i>S&P 1500 Index</i>		-16.02	-11.02	-11.02	10.29	10.92	12.79	9.05
All-Cap Equities	\$ 481,706,896.34	-16.34	-13.64	-13.64	12.92	11.47	-	-
<i>Russell 3000 Index</i>		-16.70	-13.87	-13.87	9.77	10.60	-	-
Large-Cap Equities	\$ 6,814,860,157.49	-17.81	-15.65	-15.65	10.22	10.46	12.62	-
<i>S&P 500 Index</i>		-16.10	-10.62	-10.62	10.60	11.31	12.96	-
Mid-Cap Equities	\$ 664,867,175.08	-16.68	-20.63	-20.63	4.60	7.09	11.43	-
<i>S&P 400 Index</i>		-15.42	-14.64	-14.64	6.87	7.00	10.90	-
Small-Cap Equities	\$ 446,999,809.13	-15.15	-19.04	-19.04	6.51	6.58	11.19	-
<i>S&P 600 Index</i>		-14.11	-16.81	-16.81	7.30	7.20	11.26	-
International Equity	\$ 3,965,562,156.44	-13.89	-26.28	-26.28	2.64	3.97	6.33	-
<i>MSCI AC World Ex US</i>		-13.54	-19.01	-19.01	1.81	2.98	5.31	-
Fixed Income	\$ 3,697,099,773.81	-4.86	-10.23	-10.23	-0.32	1.49	2.19	4.30
<i>Bloomberg Barclays Govt/Credit Index</i>		-5.03	-10.85	-10.85	-0.77	1.05	1.67	3.71
Real Estate	\$ 1,693,627,935.30	6.54	26.93	26.93	12.30	11.65	11.14	10.01
In House Real Estate Equity	\$ 402,120,071.65	0.96	4.04	4.04	3.59	6.71	7.46	8.22
<i>CPI plus 2%</i>		3.16	11.17	11.17	7.07	5.96	4.65	4.51
Core Real Estate	\$ 810,649,626.87	7.16	31.14	31.14	13.39	11.35	11.64	-
<i>NCREIF ODCE (VW) Index</i>		4.77	29.51	29.51	12.66	10.54	11.16	-
Non-Core Real Estate	\$ 480,858,236.78	10.50	44.80	44.80	19.63	16.67	17.46	-
<i>NCREIF Property Index</i>		3.23	21.45	21.45	10.22	8.86	9.67	-
Private Equity	\$ 1,808,795,203.96	3.56	26.68	26.68	20.73	18.93	14.90	-
Mature Private Equity	\$ 963,962,084.36	6.34	26.80	26.80	19.20	17.16	12.77	-
<i>S&P 500 Index plus 3%</i>		-15.48	-7.93	-7.93	13.92	14.65	16.35	-
Private Equity < 5 Years	\$ 844,833,119.60	2.36	30.51	30.51	24.22	21.72	-	-
Timberland	\$ 483,469,602.68	1.46	9.88	9.88	2.69	1.10	3.45	-
<i>NCREIF Timberland Index</i>		1.87	12.01	12.01	5.03	4.32	5.73	-
Additional Categories	\$ 1,950,569,831.47	-4.88	-1.70	-1.70	3.60	4.52	5.63	-
<i>B of A Merrill Lynch U.S. High Yield Master II Index</i>		-9.99	-12.69	-12.69	-0.05	1.95	4.40	-
Cash (Unallocated)	\$ 418,588,882.39	0.30	0.35	0.35	0.56	1.08	0.64	1.37
<i>90 Day T-Bill</i>		0.11	0.17	0.17	0.63	1.11	0.63	1.20

Total Trust Gross Return for 30-year period* 7.75

*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.

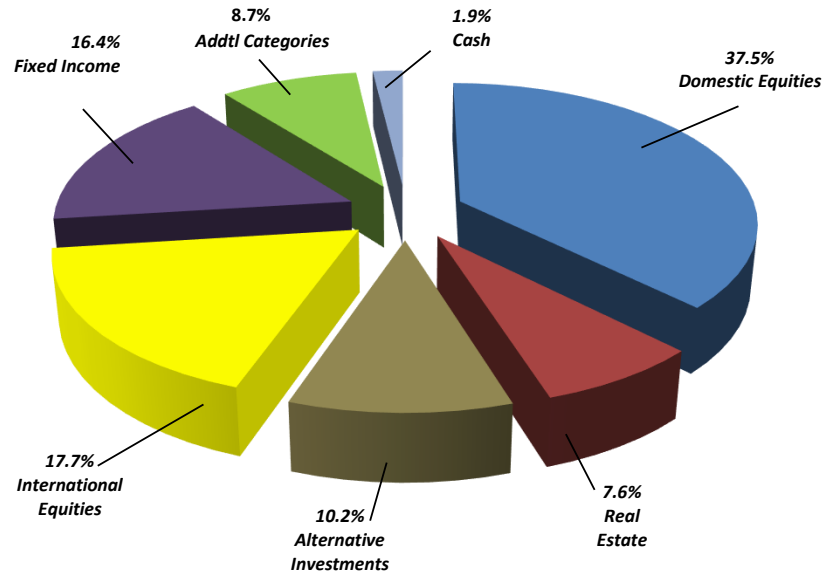
Teachers' Retirement System of Kentucky

Quarterly Investment Update

For the period ended June 30, 2022

(\$ in millions)	\$'s	6/30/2022 Actual %	3/31/2022 Actual %	Target %	Strategic Ranges
Domestic Equities	\$8,408.4	37.5%	42.3%	40.0%	34.0 - 48.0%
Real Estate	1,693.6	7.6%	6.6%	7.0%	4.0 - 10.0%
Alternative Inv.	2,292.3	10.2%	7.9%	7.0%	4.0 - 10.0%
International Equities	3,965.6	17.7%	18.8%	22.0%	18.0 - 25.0%
Fixed Income	3,697.1	16.4%	14.8%	15.0%	8.0 - 22.0%
Addtl Categories	1,950.5	8.7%	8.0%	7.0%	4.0 - 15.0%
Cash	418.6	1.9%	1.6%	2.0%	1.0 - 5.0%
Total	\$22,426.1	100.0%	100.0%	100.0%	

ACTUAL %



TARGET %

