

Teachers' Retirement System of the State of Kentucky
Retirement Annuity Trust
Quarterly Investment Performance
Net of Management Fee 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	\$ 21,288,433,804.87	-4.13	-4.13	-14.32	5.06	5.45	7.60	7.09
<i>Policy Benchmark</i>		-4.91	-4.91	-13.83	4.67	5.52	7.50	-
<u>Total Equity</u>	\$ 11,788,268,812.61	-5.99	-5.99	-22.92	5.09	5.28	-	-
<u>Domestic Equity</u>	\$ 8,183,423,071.71	-4.13	-4.13	-19.00	7.78	8.05	-	-
<i>S&P 1500 Index</i>		-4.76	-4.76	-15.56	7.96	8.89	-	-
<u>All-Cap Equities</u>	\$ 463,251,241.17	-3.79	-3.79	-18.25	11.29	9.52	-	-
<i>Russell 3000 Index</i>		-4.46	-4.46	-17.62	7.71	8.62	-	-
Fort Washington Focused Equity	\$ 463,251,241.17	-3.79	-3.79	-18.25	11.29	9.52	-	-
<u>Large-Cap Equities</u>	\$ 6,645,263,889.08	-4.25	-4.25	-18.70	8.16	8.45	-	-
<i>S&P 500 Index</i>		-4.88	-4.88	-15.47	8.16	9.23	-	-
Todd Asset Large Cap Intrinsic Value	\$ 1,071,639,311.51	-4.54	-4.54	-10.11	9.60	7.39	-	-
S&P 500 Stock Index	\$ 2,291,020,909.45	-5.01	-5.01	-15.32	8.54	9.60	-	-
UBS Value Oriented (Global)	\$ 738,090,370.94	-4.32	-4.32	-17.02	9.51	8.19	-	-
State Street US Premier Growth Equity	\$ 749,942,985.48	-5.70	-5.70	-25.30	9.63	10.35	-	-
Todd Asset Intrinsic Value Opportunity (Alpha)	\$ 531,191,146.94	-1.33	-1.33	-2.11	9.63	8.02	-	-
UBS Alpha Collective	\$ 328,589,354.74	-4.12	-4.12	-23.08	7.18	6.81	-	-
Wellington Large Cap Equity	\$ 674,707,749.11	-4.46	-4.46	-17.30	8.32	10.39	-	-
Baillie Gifford US Equity Growth	\$ 260,082,060.91	2.88	2.88	-57.17	-	-	-	-
<u>Mid-Cap Equities</u>	\$ 645,670,044.58	-3.50	-3.50	-21.61	3.26	5.31	-	-
<i>S&P 400 Index</i>		-2.46	-2.46	-15.25	6.01	5.82	-	-
S&P 400 Stock Index	\$ 266,767,454.61	-2.36	-2.36	-14.96	6.33	6.00	-	-
Wellington Mid Cap Equity	\$ 378,902,589.97	-4.29	-4.29	-25.90	1.33	5.29	-	-
<u>Small-Cap Equities</u>	\$ 429,237,896.88	-3.54	-3.54	-20.64	5.29	4.52	-	-
<i>S&P 600 Index</i>		-5.20	-5.20	-18.82	5.48	4.85	-	-
Wellington Small Cap Equity	\$ 196,615,554.36	-1.95	-1.95	-23.49	4.37	3.74	-	-
S&P 600 Stock Index	\$ 232,622,342.52	-4.84	-4.84	-18.12	6.12	5.09	-	-

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<u>International Equity</u>	\$ 3,604,845,740.90	-9.92	-9.92	-30.80	-0.44	-0.05	-	-
<i>MSCI AC World Ex US</i>		-9.80	-9.80	-24.78	-1.06	-0.34	-	-
Todd Asset International Intrinsic Value	\$ 726,887,256.43	-9.16	-9.16	-22.55	1.36	0.33	-	-
Baillie Gifford International	\$ 905,356,225.88	-10.48	-10.48	-44.57	-0.72	0.05	-	-
UBS All Country World Ex US Equity	\$ 845,774,640.56	-10.73	-10.73	-26.44	-0.80	-0.10	-	-
Barings All Country World Ex US	\$ 583,986,168.00	-9.12	-9.12	-23.52	-2.05	-0.48	-	-
Black Rock MSCI ACWI Ex US IMI Index	\$ 468,047,054.12	-9.65	-9.65	-25.48	-0.83	-0.38	-	-
Todd Asset International Intrinsic Value Opportunity	\$ 74,794,395.91	-9.61	-9.61	-20.89	-0.04	-2.40	-	-
<u>Fixed Income</u>	\$ 3,445,165,127.62	-4.32	-4.32	-14.06	-2.65	0.40	-	-
<i>Bloomberg Barclays Govt/Credit Index</i>		-4.56	-4.56	-14.95	-3.15	-0.05	-	-
<u>Intermediate</u>								
<i>Bloomberg Barclays Intermediate Govt/Credit Index</i>		-3.06	-3.06	-10.14	-1.64	0.38	-	-
Intermediate Bond	\$ 481,290,456.19	-2.06	-2.06	-7.89	-0.93	0.88	-	-
<u>Broad</u>								
<i>Bloomberg Barclays Govt/Credit Index</i>		-4.56	-4.56	-14.95	-3.15	-0.05	-	-
Fort Washington Core Fixed Income	\$ 638,240,077.44	-4.85	-4.85	-16.09	-3.02	0.14	-	-
Internal Bond	\$ 153,856,843.22	-3.84	-3.84	-12.05	-2.06	1.06	-	-
Broad Market Bond	\$ 794,570,169.66	-3.85	-3.85	-12.67	-2.57	0.41	-	-
403(b) Tax-Sheltered Trust	\$ 304,514.52	0.50	0.50	-0.68	0.49	1.02	-	-
Galliard Capital Management Core Fixed Income	\$ 624,230,805.24	-4.85	-4.85	-15.41	-3.21	0.17	-	-
<u>Long</u>								
<i>Hybrid Index</i>		-6.11	-6.11	-19.40	-4.56	-0.38	-	-
Long Term Bond	\$ 752,672,261.35	-5.57	-5.57	-16.82	-3.18	0.49	-	-

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<u>Real Estate</u>	\$ 1,751,171,057.71	2.57	2.57	23.10	11.76	10.37	-	-
In House Real Estate Equity	\$ 402,120,071.65	1.26	1.26	4.07	4.32	5.58	-	-
<i>CPI plus 2%</i>		0.98	0.98	10.39	7.07	5.86	-	-
<u>Core Real Estate</u>	\$ 851,964,217.07	4.05	4.05	29.28	13.43	11.08	-	-
<i>NCREIF ODCE (VW) Index</i>		0.52	0.52	22.09	12.37	10.24	-	-
Prudential PRISA	\$ 516,738,659.61	5.59	5.59	28.06	12.21	10.25	-	-
Carlyle Property Investors	\$ 97,670,755.80	-6.03	-6.03	19.46	14.08	11.55	-	-
TA Realty Core Property	\$ 237,554,801.66	5.29	5.29	36.78	16.67	-	-	-
<u>Non-Core Real Estate</u>	\$ 497,086,768.99	1.18	1.18	32.12	16.14	13.74	-	-
<i>NCREIF Property Index</i>		0.57	0.57	16.08	9.91	8.62	-	-
Carlyle Realty Partners VI	\$ 3,939,449.00	-3.01	-3.01	2.74	-6.95	-6.39	-	-
Blackstone Partners VII	\$ 11,814,242.60	1.35	1.35	38.44	7.70	9.30	-	-
Rockwood Capital Real Estate Partners IX	\$ 8,916,587.06	-1.11	-1.11	5.87	-8.25	-1.00	-	-
The Realty Associates X	\$ 37,532.00	6.69	6.69	34.38	9.03	13.75	-	-
Angelo Gordon Net Lease Realty III	\$ 44,419,077.00	2.28	2.28	9.85	7.79	7.72	-	-
Carlyle Realty Partners VII	\$ 12,289,065.00	-1.38	-1.38	12.77	8.93	11.28	-	-
Landmark Real Estate Partners VII	\$ 8,919,953.15	0.90	0.90	6.01	-0.50	1.12	-	-
Blackstone Partners VIII	\$ 41,032,943.06	-1.60	-1.60	46.88	25.82	20.24	-	-
The Realty Associates XI	\$ 54,974,595.00	-0.51	-0.51	46.81	27.39	20.37	-	-
Rockwood Capital Real Estate Partners X	\$ 33,648,536.17	-1.59	-1.59	15.22	12.95	10.14	-	-
Landmark Real Estate Partners VIII	\$ 23,872,447.84	7.79	7.79	47.73	18.72	16.03	-	-
Carlyle Realty Partners VIII	\$ 29,557,959.00	3.12	3.12	84.19	41.78	-25.50	-	-
Blackstone Partners IX	\$ 57,352,765.21	-0.72	-0.72	52.89	27.00	-	-	-
Angelo Gordon Net Lease Realty IV	\$ 33,775,482.00	2.13	2.13	6.26	5.89	-	-	-
Rockwood Capital Real Estate Partners XI	\$ 54,531,649.90	1.92	1.92	15.30	-	-	-	-
The Realty Associates XII	\$ 78,004,485.00	3.16	3.16	46.86	-	-	-	-

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<u>Alternative Investments</u>								
<u>Private Equity</u>	\$ 1,765,179,310.64	-1.27	-1.27	14.37	17.51	15.42	-	-
<u>Mature Private Equity</u>	\$ 973,911,884.73	-0.72	-0.72	16.38	16.83	14.09	-	-
<i>S&P 500 Index plus 3%</i>		-4.18	-4.18	-12.84	11.41	12.51	-	-
KKR 2006	\$ 1,431,146.00	-9.35	-9.35	-10.52	6.92	11.58	-	-
KKR European III	\$ 2,015,784.00	-10.10	-10.10	-35.61	-14.87	-3.92	-	-
Riverstone/Carlyle Energy and Power IV	\$ 236,090.00	-7.67	-7.67	68.39	23.94	10.20	-	-
Alinda Infrastructure II	\$ 10,048,340.00	-7.86	-7.86	-5.92	-7.64	-8.65	-	-
Capital South Partners III	\$ 1,000,968.00	-1.34	-1.34	4.94	11.93	9.95	-	-
Landmark Equity Partners XIV	\$ 2,574,610.11	-0.18	-0.18	3.79	8.02	4.50	-	-
Lexington Capital Partners VII	\$ 4,525,757.00	-2.47	-2.47	11.85	16.63	13.72	-	-
Stepstone Pioneer Capital III	\$ 7,811,101.00	-6.23	-6.23	8.42	12.37	12.14	-	-
Oaktree Mezzanine III	\$ 165,912.00	6.90	6.90	3.88	20.29	27.51	-	-
JP Morgan Global Maritime	\$ 49,190,512.58	7.28	7.28	61.69	26.45	16.05	-	-
Audax Mezzanine III	\$ 1,247,768.00	0.90	0.90	53.64	27.16	22.05	-	-
Hellman & Friedman Capital Partners VII	\$ 9,503,556.00	-9.25	-9.25	-1.47	24.17	28.13	-	-
Oaktree European Principal III	\$ 13,238,752.00	-7.81	-7.81	-11.94	-3.50	1.31	-	-
NGP Natural Resources X	\$ 7,391,310.00	14.82	14.82	41.20	-7.64	-8.18	-	-
Riverstone Energy and Power V	\$ 10,172,374.00	4.49	4.49	26.82	-13.76	-11.68	-	-
APAX VIII	\$ 11,363,573.00	-7.22	-7.22	-27.70	6.00	11.56	-	-
Actis Global IV	\$ 33,447,337.00	-0.04	-0.04	5.48	8.47	10.38	-	-
Audax PE IV	\$ 107,224.00	-1.31	-	-	-	-	-	-
Landmark Equity Partners XV	\$ 7,737,541.39	6.06	6.06	12.00	16.85	14.63	-	-
Fort Washington VIII	\$ 30,572,802.00	-2.44	-2.44	11.93	23.61	19.43	-	-
Public Pension Capital	\$ 148,657,031.52	4.00	4.00	23.30	28.01	32.73	-	-
NGP Natural Resources XI	\$ 39,774,166.00	15.83	15.83	58.16	13.04	8.88	-	-
Gavea Investments V	\$ 4,823,620.64	-32.01	-32.01	-16.35	70.37	48.93	-	-
Oaktree Mezzanine IV	\$ 4,891,044.00	3.05	3.05	16.06	11.21	9.97	-	-
Lexington Capital Partners VIII	\$ 24,159,964.00	-2.53	-2.53	15.03	20.32	17.95	-	-
KKR European IV	\$ 32,705,328.00	-3.85	-3.85	5.55	16.89	19.55	-	-
IFM Global Infrastructure	\$ 221,711,757.73	0.36	0.36	8.90	10.77	11.79	-	-
Carlyle Europe Partners IV	\$ 18,074,556.00	-5.53	-5.53	7.97	22.21	18.00	-	-
Audax PE V	\$ 19,670,395.06	6.06	6.06	83.27	52.09	33.07	-	-
Fort Washington IX	\$ 42,467,826.00	2.93	2.93	37.25	26.04	17.64	-	-
Fort Washington IX-K	\$ 42,126,855.00	2.04	2.04	35.63	26.73	16.75	-	-
Hellman & Friedman Capital Partners VIII	\$ 69,964,148.00	-11.87	-11.87	-5.34	19.31	16.99	-	-

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Riverstone Energy and Power VI	\$ 32,950,574.00	0.71	0.71	35.53	-3.77	-6.41	-	-
Audax Mezzanine IV	\$ 8,392,249.01	2.78	2.78	14.12	12.62	11.02	-	-
JP Morgan Global Maritime II	\$ 173,813.75	-28.49	-28.49	-7.69	3.34	5.32	-	-
APAX IX	\$ 59,586,097.94	-11.62	-11.62	-6.87	21.59	23.04	-	-

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<u>Private Equity < 5 Years</u>	\$ 791,267,425.91	-1.80	-1.80	14.86	20.47	17.97	-	-
Oaktree European Principal IV	\$ 40,885,132.00	-5.11	-5.11	1.31	8.88	-	-	-
KKR Americas XII	\$ 67,431,037.00	-10.66	-10.66	-7.72	27.40	-	-	-
NGP Natural Resources XII	\$ 39,203,700.00	12.88	12.88	41.92	16.37	-	-	-
JP Morgan Global Transport Income	\$ 77,464,792.60	2.21	2.21	11.30	9.52	-	-	-
APAX Digital	\$ 48,449,349.46	-10.64	-10.64	4.19	25.03	-	-	-
Landmark Equity Partners XVI	\$ 29,344,085.25	1.80	1.80	37.12	26.83	-	-	-
Carlyle Asia Partners V	\$ 30,367,915.00	-4.48	-4.48	-4.67	14.73	-	-	-
Carlyle Europe Partners V	\$ 31,843,944.00	-6.99	-6.99	5.76	2.25	-	-	-
Fort Washington X	\$ 24,250,745.00	4.00	4.00	26.43	22.34	-	-	-
Audax PE VI-A	\$ 40,750,200.70	8.46	8.46	67.27	68.16	-	-	-
Fort Washington X-S	\$ 17,741,341.00	4.94	4.94	21.32	17.03	-	-	-
Oaktree Mezzanine V	\$ 29,577,325.00	1.33	1.33	31.80	-	-	-	-
Lexington Capital Partners IX	\$ 46,865,559.00	-0.30	-0.30	28.42	-	-	-	-
Oaktree European Principal V	\$ 38,957,908.00	-1.06	-1.06	19.70	-	-	-	-
KKR European V	\$ 43,309,202.00	-11.08	-11.08	6.34	-	-	-	-
APAX X	\$ 31,196,843.15	1.45	1.45	7.10	-	-	-	-
AlpInvest Secondaries VII	\$ 15,259,793.00	0.48	0.48	34.92	-	-	-	-
Carlyle Renewable and Sustainable Energy	\$ 30,926,765.00	-0.60	-0.60	19.82	-	-	-	-
Fort Washington PE Opportunities IV	\$ 14,859,116.00	-2.49	-2.49	6.46	-	-	-	-
Fort Washington PE Opportunities IV-K	\$ 18,207,719.00	-2.40	-2.40	6.80	-	-	-	-
AlpInvest Co-Investment VIII	\$ 23,310,140.00	4.04	4.04	-	-	-	-	-
Silver Lake Alpine II	\$ 20,428,799.00	-3.40	-3.40	-	-	-	-	-
Baillie Gifford Private Companies II	\$ 16,883,791.00	-5.53	-5.53	-	-	-	-	-
KKR Health II	\$ 776,419.00	22.15	22.15	-	-	-	-	-
Audax Mezzanine V	\$ 3,835,118.57	12.93	12.93	-	-	-	-	-
NGP ETP IV	\$ 101,004.00	-	-	-	-	-	-	-
Manulife Cropland Plus	\$ 7,761,000.00	-	-	-	-	-	-	-
APAX Credit Opportunities	\$ 1,278,682.18	-	-	-	-	-	-	-
<u>Timberland</u>	\$ 480,280,016.87	0.47	0.47	8.86	1.85	0.16	-	-
<i>NCREIF Timberland Index</i>		2.38	2.38	12.54	5.80	4.69	-	-
Molpus Lake Superior Timberlands (Michigan)	\$ 82,779,683.51	0.60	0.60	13.30	-0.82	-2.02	-	-
Molpus Lake Superior Timberlands (Hiwassee)	\$ 8,696,687.59	0.33	0.33	0.96	0.03	-0.09	-	-
Molpus Seven States	\$ 46,344,229.94	0.68	0.68	3.12	2.26	3.00	-	-
Molpus Lake Superior Timberlands (Magnolia)	\$ 70,769,289.33	1.27	1.27	6.74	-	-	-	-
Molpus Lake Superior Timberlands (Toledo)	\$ 271,690,126.50	0.19	0.19	-	-	-	-	-

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<u>Additional Categories</u>	\$ 1,891,605,591.57	-1.85	-1.85	-6.56	1.99	3.24	-	-
<i>B of A Merrill Lynch U.S. High Yield Master II Index</i>		-0.70	-0.70	-14.10	-0.69	1.40	-	-
<u>Evergreen Funds</u>								
Fort Washington High Yield Bond	\$ 266,594,018.74	-0.54	-0.54	-14.02	-1.42	1.14	-	-
Marathon TRS Credit	\$ 579,149,104.08	-5.32	-5.32	-2.92	3.40	2.79	-	-
Shenkman Capital Management	\$ 310,504,289.72	0.95	0.95	-4.22	1.42	2.65	-	-
Barings Capital European Loan	\$ 90,980,000.00	0.10	0.10	-5.17	2.81	3.70	-	-
Columbia High Yield Bond	\$ 181,870,767.08	-0.11	-0.11	-13.02	-0.38	1.65	-	-
Lord Abbett High Yield Bond	\$ 91,657,569.49	-0.67	-0.67	-14.66	-	-	-	-
In House High Yield Bond	\$ 174,885,690.20	-0.31	-0.31	-12.36	-	-	-	-
<u>Non-Evergreen Funds</u>								
Avenue Special Situations VI	\$ 11,144,039.00	-0.81	-0.81	-3.46	17.74	12.78	-	-
Oaktree Opportunities IX	\$ 38,659,900.00	5.31	5.31	24.94	15.46	12.83	-	-
Highbridge Specialty Loan III	\$ 897,903.00	1.27	1.27	-9.25	-4.79	-1.22	-	-
Oaktree European Dislocation	\$ 446,387.00	-25.31	-25.31	-65.67	-43.21	-29.93	-	-
Marathon European Credit Opportunities II	\$ 1,919,842.65	-39.28	-39.28	-42.02	-16.89	-5.67	-	-
Oaktree Opportunities X	\$ 17,021,414.00	3.25	3.25	12.90	8.35	8.25	-	-
Oaktree European Capital Solutions	\$ 16,371,130.00	-4.08	-4.08	-5.12	6.90	7.91	-	-
Marathon European Credit Opportunities III	\$ 62,358,391.61	-5.97	-5.97	1.76	4.57	8.32	-	-
Oaktree Opportunities Xb	\$ 47,145,145.00	0.73	0.73	15.64	11.14	-	-	-
<u>Short Term</u>								
Cash (Unallocated)	\$ 166,763,887.85	0.48	0.48	0.83	0.55	1.12	-	-
<i>90 Day T-Bill</i>		0.46	0.46	0.62	0.59	1.15	-	-

*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.