

Teachers' Retirement System of the State of Kentucky
Retirement Annuity Trust
Quarterly Investment Performance
Net of Management Fee Returns
For the Period Ended March 31, 2023

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	\$ 23,398,343,696.40	4.51	6.42	-4.52	11.99	6.75	7.94	7.49
<i>Policy Benchmark</i>		5.38	7.23	-4.47	12.39	7.29	8.03	-
<u>Total Equity</u>	\$ 13,808,674,156.83	6.63	10.74	-7.47	16.87	7.53	-	-
<u>Domestic Equity</u>	\$ 9,317,318,572.54	6.13	9.92	-9.38	19.17	9.71	-	-
<i>S&P 1500 Index</i>		7.16	10.01	-7.61	18.88	10.83	-	-
<u>All-Cap Equities</u>	\$ 540,607,128.46	8.73	12.16	-6.34	20.75	12.71	-	-
<i>Russell 3000 Index</i>		7.18	9.75	-8.58	18.48	10.45	-	-
Fort Washington Focused Equity	\$ 540,607,128.46	8.73	12.16	-6.34	20.75	12.71	-	-
<u>Large-Cap Equities</u>	\$ 7,566,309,028.82	6.43	9.97	-9.66	19.27	10.16	-	-
<i>S&P 500 Index</i>		7.50	9.98	-7.73	18.60	11.19	-	-
Todd Asset Large Cap Intrinsic Value	\$ 1,181,031,170.85	-0.43	6.62	-8.33	22.91	8.07	-	-
S&P 500 Stock Index	\$ 2,631,848,623.44	7.51	9.85	-7.73	18.87	11.50	-	-
UBS Value Oriented (Global)	\$ 845,238,327.15	4.96	10.27	-7.83	22.99	10.43	-	-
State Street US Premier Growth Equity	\$ 867,227,533.77	14.44	11.06	-11.98	16.26	12.73	-	-
Todd Asset Intrinsic Value Opportunity (Alpha)	\$ 608,751,687.84	2.28	14.38	-3.70	27.16	10.62	-	-
UBS Alpha Collective	\$ 380,670,336.32	6.45	11.00	-16.35	19.29	9.61	-	-
Wellington Large Cap Equity	\$ 759,032,114.62	6.52	7.95	-9.36	17.00	10.93	-	-
Baillie Gifford US Equity Growth	\$ 292,509,234.83	18.48	15.96	-28.42	7.21	-	-	-
<u>Mid-Cap Equities</u>	\$ 733,308,615.93	4.10	10.47	-8.11	17.04	6.48	-	-
<i>S&P 400 Index</i>		3.81	12.17	-5.12	22.10	7.67	-	-
S&P 400 Stock Index	\$ 306,269,450.98	4.05	12.49	-4.60	22.44	7.86	-	-
Wellington Mid Cap Equity	\$ 427,039,164.95	4.14	9.07	-10.49	13.52	5.79	-	-
<u>Small-Cap Equities</u>	\$ 477,093,799.33	1.88	5.90	-10.21	19.07	5.67	-	-
<i>S&P 600 Index</i>		2.57	6.17	-8.82	21.71	6.30	-	-
Wellington Small Cap Equity	\$ 211,339,097.37	0.86	4.96	-12.63	15.51	4.51	-	-
S&P 600 Stock Index	\$ 265,754,701.96	2.70	6.65	-8.18	22.31	6.56	-	-

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<u>International Equity</u>	\$ 4,491,355,584.29	7.69	12.52	-3.21	12.27	3.40	-	-
<i>MSCI AC World Ex US</i>		7.00	10.38	-4.56	12.32	2.97	-	-
Todd Asset International Intrinsic Value	\$ 886,313,560.62	4.58	12.20	-2.11	16.60	3.99	-	-
Baillie Gifford International	\$ 1,160,092,735.33	13.29	14.70	-4.96	8.51	3.41	-	-
UBS All Country World Ex US Equity	\$ 1,053,571,904.26	5.85	11.14	-3.35	13.28	3.06	-	-
Barings All Country World Ex US	\$ 732,840,007.00	7.55	13.81	0.74	11.15	3.46	-	-
Black Rock MSCI ACWI Ex US IMI Index	\$ 570,192,090.39	6.66	10.05	-5.49	12.73	2.81	-	-
Todd Asset International Intrinsic Value Opportunity	\$ 88,345,286.69	1.05	9.45	-5.92	14.74	1.40	-	-
<u>Fixed Income</u>	\$ 3,238,530,841.94	3.13	0.30	-4.58	-2.18	1.50	-	-
<i>Bloomberg Barclays Govt/Credit Index</i>		3.17	0.23	-4.81	-2.63	1.16	-	-
<u>Intermediate</u>								
<i>Bloomberg Barclays Intermediate Govt/Credit Index</i>		2.33	0.72	-1.66	-1.28	1.40	-	-
Intermediate Bond	\$ 460,485,471.95	2.10	1.39	-1.00	-0.34	1.71	-	-
<u>Broad</u>								
<i>Bloomberg Barclays Govt/Credit Index</i>		3.17	0.23	-4.81	-2.63	1.16	-	-
Fort Washington Core Fixed Income	\$ 588,130,195.97	3.18	1.08	-4.83	-1.41	1.58	-	-
Internal Bond	\$ 157,660,912.29	3.45	0.50	-3.41	-1.67	1.91	-	-
Broad Market Bond	\$ 723,442,216.75	2.95	0.17	-4.03	-2.71	1.38	-	-
403(b) Tax-Sheltered Trust	\$ 308,832.47	1.09	2.48	2.64	0.90	1.31	-	-
Galliard Capital Management Core Fixed Income	\$ 584,962,484.56	3.42	0.49	-4.67	-1.79	1.43	-	-
<u>Long</u>								
<i>Hybrid Index</i>		4.11	-0.22	-7.76	-3.86	1.04	-	-
Long Term Bond	\$ 723,540,727.95	3.65	-1.04	-7.29	-3.76	1.54	-	-

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<u>Real Estate</u>	\$ 1,798,236,399.51	-2.97	0.22	6.31	9.91	8.70	-	-
<u>In House Real Estate Equity</u>	\$ 401,370,071.73	1.29	4.00	5.00	4.54	4.91	-	-
<i>CPI plus 2%</i>		1.44	3.93	7.09	7.46	5.95	-	-
<u>Core Real Estate</u>	\$ 910,478,956.30	-4.84	0.55	7.34	11.07	9.52	-	-
<i>NCREIF ODCE (VW) Index</i>		-3.16	-7.49	-3.07	8.41	7.52	-	-
Prudential PRISA	\$ 486,953,198.49	-5.80	-0.50	5.58	9.10	8.15	-	-
Carlyle Property Investors	\$ 196,143,744.92	-1.46	-1.92	5.15	14.22	11.80	-	-
TA Realty Core Property	\$ 227,382,012.89	-5.59	0.78	8.84	13.37	-	-	-
<u>Non-Core Real Estate</u>	\$ 486,387,371.48	-2.79	-3.15	6.07	13.24	11.27	-	-
<i>NCREIF Property Index</i>		-1.81	-4.71	-1.63	7.15	6.71	-	-
Carlyle Realty Partners VI	\$ 4,140,186.00	-1.90	-3.75	-0.67	-5.75	-6.11	-	-
Blackstone Partners VII	\$ 10,088,006.09	-6.26	-8.07	-2.69	3.25	4.74	-	-
Rockwood Capital Real Estate Partners IX	\$ 8,857,533.28	-1.93	-1.77	1.31	-7.07	-3.73	-	-
The Realty Associates X	\$ 40,984.00	-5.72	16.50	49.80	10.93	13.95	-	-
Angelo Gordon Net Lease Realty III	\$ 42,408,108.00	0.00	3.83	5.00	7.65	7.25	-	-
Carlyle Realty Partners VII	\$ 12,266,454.00	0.35	-1.05	2.20	7.21	10.27	-	-
Landmark Real Estate Partners VII	\$ 7,289,936.06	-6.15	-10.17	-11.53	-4.06	-2.14	-	-
Blackstone Partners VIII	\$ 38,824,440.87	-4.28	-6.18	5.54	20.13	17.63	-	-
The Realty Associates XI	\$ 30,131,198.00	-5.44	-23.60	-11.51	14.59	13.26	-	-
Rockwood Capital Real Estate Partners X	\$ 30,605,933.50	-6.69	-8.66	0.20	8.64	7.94	-	-
Landmark Real Estate Partners VIII	\$ 25,676,103.31	-2.38	10.20	16.90	18.88	11.04	-	-
Carlyle Realty Partners VIII	\$ 28,212,509.00	-7.08	2.56	29.36	37.58	12.82	-	-
Blackstone Partners IX	\$ 58,685,506.41	1.13	-0.25	15.38	28.16	-	-	-
Angelo Gordon Net Lease Realty IV	\$ 41,461,227.00	0.00	4.07	6.80	7.23	-	-	-
Rockwood Capital Real Estate Partners XI	\$ 65,665,041.21	-2.00	1.10	4.77	-	-	-	-
The Realty Associates XII	\$ 72,348,891.00	-3.20	-3.79	8.62	19.86	-	-	-
Carlyle Realty Partners IX	\$ 2,941,892.00	-23.97	-	-	-	-	-	-
Angelo Gordon Realty Value XI	\$ 6,500,000.00	0.00	-	-	-	-	-	-
Blackstone X	\$ 243,421.75	-	-	-	-	-	-	-

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<u>Alternative Investments</u>								
<u>Private Equity</u>	\$ 1,846,186,864.38	1.88	-0.23	3.10	16.27	13.72	-	-
<u>Mature Private Equity</u>	\$ 1,056,441,218.82	1.71	0.27	6.09	15.62	12.73	-	-
<i>S&P 500 Index plus 3%</i>		8.29	12.44	-4.96	22.16	14.52	-	-
KKR 2006	\$ 13,514.00	53.68	54.34	48.96	19.85	24.74	-	-
KKR European III	\$ 1,406,691.00	3.63	-25.28	-32.79	-17.81	-8.81	-	-
Riverstone/Carlyle Energy and Power IV	\$ 24,180.00	-70.78	-74.84	-76.12	-15.12	-14.44	-	-
Alinda Infrastructure II	\$ 118,962.00	0.00	-14.02	-9.67	-10.58	-8.67	-	-
Capital South Partners III	\$ 954,822.43	0.00	1.25	4.43	12.04	8.88	-	-
Landmark Equity Partners XIV	\$ 2,214,793.99	1.37	-1.66	-8.35	6.86	4.27	-	-
Lexington Capital Partners VII	\$ 3,727,509.00	-1.30	-7.34	-6.00	14.44	11.83	-	-
Stepstone Pioneer Capital III	\$ 7,321,741.00	0.00	-8.07	-5.47	11.35	11.12	-	-
Oaktree Mezzanine III	\$ 160,945.00	1.84	29.04	28.89	26.71	30.59	-	-
JP Morgan Global Maritime	\$ 20,033,017.25	0.00	5.78	13.13	26.22	14.36	-	-
Audax Mezzanine III	\$ 1,415,846.00	0.00	14.49	68.78	29.16	23.63	-	-
Hellman & Friedman Capital Partners VII	\$ 9,639,759.00	0.00	-7.99	-4.23	21.40	23.95	-	-
Oaktree European Principal III	\$ 9,064,096.00	9.18	-3.88	-1.33	-3.38	-0.30	-	-
NGP Natural Resources X	\$ 6,209,870.00	-10.54	14.32	27.29	-2.00	-10.29	-	-
Riverstone Energy and Power V	\$ 8,451,461.00	-1.54	7.03	23.30	-4.31	-12.82	-	-
APAX VIII	\$ 8,196,204.00	-8.84	-24.74	-35.14	-3.43	5.06	-	-
Actis Global IV	\$ 27,700,718.00	-8.07	-12.79	-11.50	2.19	6.45	-	-
Audax PE IV	\$ 83,466.00	0.00	-23.18	-	-	15.86	-	-
Landmark Equity Partners XV	\$ 6,330,586.71	-1.81	-12.54	-15.61	8.79	8.18	-	-
Fort Washington VIII	\$ 27,787,823.00	1.28	-3.69	-0.07	21.33	17.44	-	-
Public Pension Capital	\$ 153,517,214.02	0.00	4.81	18.56	25.74	29.09	-	-
NGP Natural Resources XI	\$ 37,914,199.00	5.72	33.81	59.76	20.48	10.23	-	-
Gavea Investments V	\$ 4,739,597.00	2.13	-22.98	-20.81	42.60	46.47	-	-
Oaktree Mezzanine IV	\$ 4,802,345.00	0.85	3.98	9.63	9.92	9.36	-	-
Lexington Capital Partners VIII	\$ 21,527,144.00	0.40	-7.41	-3.28	17.27	15.63	-	-
KKR European IV	\$ 36,227,670.00	10.82	3.47	7.39	13.82	17.91	-	-
IFM Global Infrastructure	\$ 238,752,505.81	4.96	8.18	10.76	10.78	11.72	-	-
Carlyle Europe Partners IV	\$ 20,289,907.00	7.93	3.88	10.88	25.70	16.94	-	-
Audax PE V	\$ 19,209,911.56	0.00	6.24	48.73	46.45	32.90	-	-
Fort Washington IX	\$ 41,643,713.00	1.80	2.66	7.67	25.23	18.03	-	-
Fort Washington IX-K	\$ 40,698,452.00	0.93	0.28	4.97	25.33	16.25	-	-
Hellman & Friedman Capital Partners VIII	\$ 61,389,892.00	0.00	-22.26	-25.72	14.10	11.10	-	-

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Riverstone Energy and Power VI	\$ 32,200,784.00	2.15	9.54	27.17	8.24	-6.33	-	-
Audax Mezzanine IV	\$ 8,671,517.05	0.00	7.43	15.29	13.60	10.57	-	-
JP Morgan Global Maritime II	\$ 1.00	0.00	-56.15	-56.15	-12.01	-5.57	-	-
APAX IX	\$ 49,708,567.00	1.72	-11.14	-19.67	16.98	20.95	-	-
Oaktree European Principal IV	\$ 47,748,990.00	5.32	-5.30	-4.75	7.02	5.78	-	-
KKR Americas XII	\$ 58,581,861.00	-3.89	-19.43	-28.74	21.69	15.89	-	-
NGP Natural Resources XII	\$ 37,960,943.00	0.29	24.16	44.49	20.13	11.87	-	-
<u>Private Equity < 5 Years</u>	\$ 789,745,645.56	2.20	-0.18	1.50	19.55	16.01	-	-
JP Morgan Global Transport Income	\$ 75,525,917.08	0.00	3.83	6.98	8.95	-	-	-
APAX Digital	\$ 51,537,992.00	1.41	-9.02	-10.54	24.97	-	-	-
Landmark Equity Partners XVI	\$ 29,108,120.10	-4.41	-9.03	-5.76	22.35	-	-	-
Carlyle Asia Partners V	\$ 34,037,824.00	4.44	-4.13	-0.75	10.37	-	-	-
Carlyle Europe Partners V	\$ 28,956,210.00	15.98	4.50	8.18	6.09	-	-	-
Fort Washington X	\$ 26,854,422.00	0.82	7.60	9.32	25.84	-	-	-
Audax PE VI-A	\$ 46,598,713.30	0.00	11.63	47.94	52.85	-	-	-
Fort Washington X-S	\$ 19,985,019.00	-1.65	8.03	11.18	21.88	-	-	-
Oaktree Mezzanine V	\$ 31,538,775.00	1.30	3.94	21.07	16.05	-	-	-
Lexington Capital Partners IX	\$ 48,331,888.00	-1.19	-6.10	0.76	21.74	-	-	-
Oaktree European Principal V	\$ 58,010,874.00	20.05	19.04	13.09	23.80	-	-	-
KKR European V	\$ 44,300,094.00	2.48	-9.48	-2.18	8.09	-	-	-
APAX X	\$ 43,179,617.00	2.90	1.27	4.36	-	-	-	-
AlpInvest Secondaries VII	\$ 22,460,884.29	1.99	7.25	19.95	-	-	-	-
Carlyle Renewable and Sustainable Energy	\$ 50,627,358.00	1.43	4.96	12.33	-	-	-	-
Fort Washington PE Opportunities IV	\$ 16,937,404.00	-0.85	-7.71	-11.80	-	-	-	-
Fort Washington PE Opportunities IV-K	\$ 19,865,236.00	-0.92	-7.57	-11.52	-	-	-	-
AlpInvest Co-Investment VIII	\$ 30,621,148.15	5.00	7.65	10.50	-	-	-	-
Silver Lake Alpine II	\$ 26,765,260.00	2.19	-1.84	2.96	-	-	-	-
Baillie Gifford Private Companies II	\$ 18,931,183.29	0.00	-8.42	-11.65	-	-	-	-
KKR Health II	\$ 3,492,178.00	-3.91	7.68	-23.80	-	-	-	-
Audax Mezzanine V	\$ 9,482,656.60	0.00	16.07	-	-	-	-	-
NGP ETP IV	\$ 5,031,203.00	-3.21	-	-	-	-	-	-
Manulife Cropland Plus	\$ 13,576,909.00	0.00	-	-	-	-	-	-
APAX Credit Opportunities	\$ 5,328,171.98	0.00	-	-	-	-	-	-
APAX Digital II	\$ 515,134.00	-3.26	-	-	-	-	-	-
Carlyle Renewable and Sustainable Energy II	\$ 12,385,833.00	-8.46	-	-	-	-	-	-

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Fort Washington XI-K	\$ 2,000,000.00	0.00	-	-	-	-	-	-
Fort Washington II-K	\$ 2,660,000.00	0.00	-	-	-	-	-	-
Landmark Equity Partners XVII	\$ 3,377,500.77	-12.21	-	-	-	-	-	-
Carlyle Partners VIII	\$ 7,022,120.00	-	-	-	-	-	-	-
Fort Washington XI	\$ 700,000.00	-	-	-	-	-	-	-
<u>Timberland</u>	\$ 490,670,059.34	3.66	4.21	5.47	2.49	2.80	-	-
<i>NCREIF Timberland Index</i>		<i>1.75</i>	<i>9.27</i>	<i>11.31</i>	<i>8.09</i>	<i>5.59</i>	-	-
Molpus Lake Superior Timberlands (Michigan)	\$ 85,924,491.46	4.03	5.06	5.38	0.60	0.93	-	-
Molpus Lake Superior Timberlands (Hiwassee)	\$ 8,833,989.36	-0.68	1.92	2.33	-3.65	2.48	-	-
Molpus Seven States	\$ 49,775,227.89	7.78	10.64	10.11	4.12	4.59	-	-
Molpus Lake Superior Timberlands (Magnolia)	\$ 74,732,845.81	8.27	9.56	9.72	6.53	-	-	-
Molpus Lake Superior Timberlands (Toledo)	\$ 271,403,504.82	1.78	1.57	-	-	-	-	-
<u>Additional Categories</u>	\$ 2,022,640,322.67	2.87	2.96	-2.23	6.04	3.94	-	-
<i>B of A Merrill Lynch U.S. High Yield Master II Constrained</i>		<i>3.72</i>	<i>7.09</i>	<i>-3.61</i>	<i>5.79</i>	<i>3.02</i>	-	-
<u>Evergreen Funds</u>								
Fort Washington High Yield Bond	\$ 281,668,747.04	3.64	8.13	-2.73	5.55	2.99	-	-
Marathon TRS Credit	\$ 579,088,243.92	1.48	-5.73	-7.11	3.87	2.68	-	-
Shenkman Capital Management	\$ 327,107,653.67	2.84	6.99	1.62	7.37	3.41	-	-
Barings Capital European Loan	\$ 90,720,000.00	3.96	4.05	-2.25	9.46	4.00	-	-
Columbia High Yield Bond	\$ 198,976,087.11	3.94	8.12	-2.47	5.62	3.61	-	-
Lord Abbett High Yield Bond	\$ 98,994,030.91	3.16	6.16	-4.88	5.88	-	-	-
In House High Yield Bond	\$ 200,441,286.73	4.18	9.10	0.34	4.19	-	-	-
Deerpath Direct Lending	\$ 60,000,000.00	0.00	-	-	-	-	-	-
<u>Non-Evergreen Funds</u>								
Avenue Special Situations VI	\$ 11,113,568.00	0.58	-1.08	-2.66	17.24	12.55	-	-
Oaktree Opportunities IX	\$ 42,839,254.00	16.26	28.11	35.65	22.16	16.16	-	-
Highbridge Specialty Loan III	\$ 706,265.00	-4.78	-5.93	-10.38	-7.57	-3.26	-	-
Oaktree European Dislocation	\$ 342,293.00	-17.34	-42.72	-72.20	-43.87	-34.66	-	-
Marathon European Credit Opportunities II	\$ 1,523,480.13	-4.69	5.92	3.24	-0.72	3.09	-	-
Oaktree Opportunities X	\$ 16,011,365.00	3.88	8.16	9.46	10.14	7.77	-	-
Oaktree European Capital Solutions	\$ 16,356,090.00	11.04	-1.27	-2.25	6.49	7.24	-	-
Marathon European Credit Opportunities III	\$ 42,240,871.16	-4.54	-6.22	-2.45	3.83	6.84	-	-
Oaktree Opportunities Xb	\$ 54,511,087.00	2.44	5.79	9.22	15.03	-	-	-

*Teachers' Retirement System of the State of Kentucky
Retirement Annuity Trust
Quarterly Investment Performance
Net of Management Fee Returns
For the Period Ended March 31, 2023*

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>
<u>Short Term</u>								
Cash (Unallocated)	\$ 193,405,051.73	1.09	2.47	2.77	0.96	1.38	-	-
<i>90 Day T-Bill</i>		1.07	2.40	2.50	0.89	1.41	-	-

*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 midpoint of the strategic range for the current fiscal year.