

spreads tightened and rates fell. Leveraged loans gained 2.73% during the period but failed to keep pace given their lower rate exposure. For the fiscal year, the portfolio has underperformed its benchmark, gaining 3.63% versus 7.26%. The reported relative underperformance is largely driven by the issues associated with timing differences between the private market mandates and the public market benchmarks which tend to be exacerbated during periods of larger moves in the public markets. Individual strategy relative performance has been mixed fiscal year to date, especially with private market pricing playing catch-up, but continues to produce strong relative performance over longer periods.

**The core fixed income portfolio** gained 166bps compared to the Bloomberg Aggregate Index return of 3.08% as nominal bond yields were pulled lower by declining real yield and breakeven inflation. Relative underperformance was attributable to positioning within the allocation. While staff has begun to normalize the duration profile, the portfolios remain underweight overall duration given expectations for a further increase in rates and continued volatility. For the fiscal year, the portfolio has returned 1.11% compared to the benchmark return of 0.02%.

**The private equity allocation** was fairly flat during the month, gaining 9bps, and bringing the fiscal year return to -5.90%. Trailing public marks have significantly affected the overall performance of the portfolio, and the portfolio's 1-year return crossed into negative territory to -0.52% as of 01/31/23.

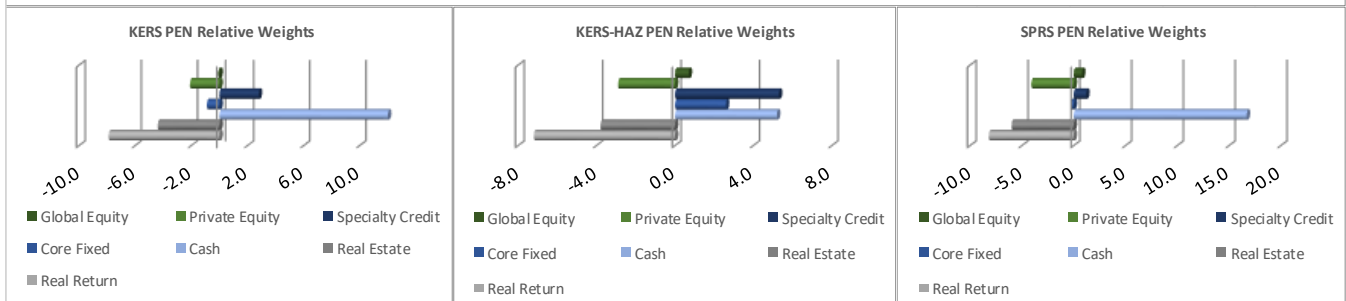
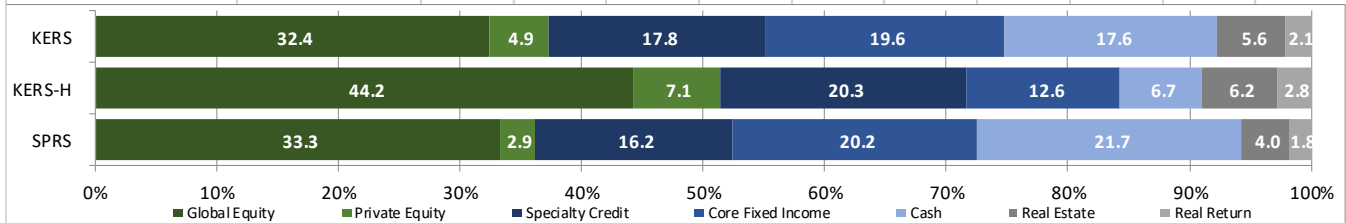
**The real return portfolio** gained 2.19% during the month, compared to its benchmark return of -0.06%. As with several of the previous months, performance was driven by the MLP portion of the portfolio (approximately 40% of the allocation); which gained 5.40%. Additionally, the investment in infrastructure debt performed well during the period. For the fiscal year, the portfolio has returned 10.06% versus 3.26% (benchmark).

**The real estate portfolio** fell -2.46% during the month of January. The 1-year return now stands at 10.33% versus the 20.96% return of its benchmark. This benchmark will fall to 6.5% next quarter as the negative impact of higher interest rates on 4Q 2022 valuations show up in the quarterly lagged returns. However, for calendar year 2022, all three of KPPA's open-end real estate funds (approximately 75% of the allocation) outperformed the benchmark by at least 250bps.

**The cash portfolio** returned 0.28% during the month compared with the 3-month T-bill's 0.37%. This brought the fiscal year return to 1.70%, in line with the benchmark.

KERS, KERS-HAZ, & SPRS - PENSION FUND - PLAN NET RETURNS - 01/31/23												
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD	
KERS	3,341,727,956.54	2.88	4.48	4.11	-2.57	5.66	5.21	6.49	6.98	7.52	8.71	
KY Ret. KERS Plan IPS Index		3.98	5.42	4.48	-2.21	5.09	4.85	6.47	7.05	7.52	8.77	
KERS- H	866,457,451.26	3.69	5.62	5.91	-2.09	6.18	5.50	6.92	7.20	7.66	8.83	
KY Ret. KERS Haz Plan IPS Index		4.66	5.75	5.11	-2.60	6.22	5.60	6.90	7.27	7.66	8.88	
SPRS	573,188,052.21	3.03	4.77	4.81	-1.44	5.77	5.26	6.46	6.97	7.51	8.71	
KY Ret. SPRS Plan IPS Index		3.98	5.42	4.48	-2.21	5.09	4.85	6.44	7.03	7.50	8.76	

Structure		Month	QTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
PUBLIC EQUITY		7.57	7.57	11.54	-6.94	6.74	5.42	8.18	8.35	8.53	10.17
MSCI ACWI		7.17	7.17	9.61	-7.99	6.36	5.06	7.94	8.27	8.33	9.99
PRIVATE EQUITY		0.09	0.09	-5.90	-0.52	16.24	14.16	13.49	12.85		11.83
Russell 3000 + 3%(Qtr Lag)		7.44	7.44	-12.43	-13.52	12.86	12.91	15.67	12.33		11.67
SPECIALTY CREDIT		1.30	1.30	3.63	1.74	4.82	5.18				5.50
50% BB US HY / 50% SP LSTA Leveraged Loan		3.27	3.27	7.26	-1.69	2.33	3.35				3.56
CORE FIXED INCOME		1.66	1.66	1.11	-3.41	0.27	2.12				2.48
Bloomberg Barclays US Aggregate		3.08	3.08	0.02	-8.36	-2.35	0.86				1.68
CASH		0.28	0.28	1.70	1.90	0.82	1.42	1.05	1.64	2.70	3.30
Citigroup Treasury Bill-3 Month		0.37	0.37	1.70	1.87	0.79	1.30	0.78	1.23	2.30	2.89
REAL ESTATE		-2.46	-2.46	1.34	10.33	13.15	12.38	10.97	8.37	6.66	6.83
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^		0.00	0.00	4.87	20.96	11.38	9.26	9.91	7.78	7.85	6.78
REAL RETURN		2.19	2.19	10.06	9.93	7.64	5.48	3.91			4.79
US CPI +3%		-0.06	-0.06	3.26	8.75	7.25	5.25	3.95			3.96

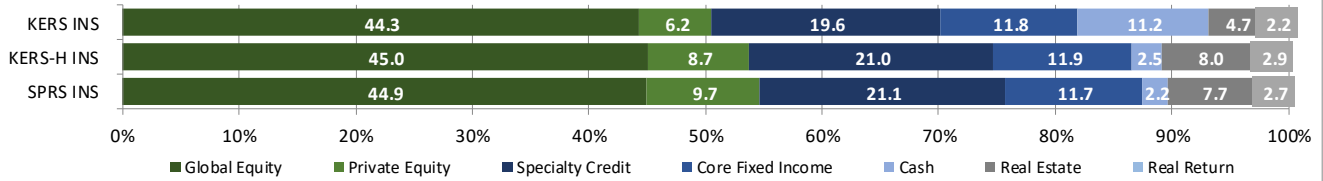


KERS INS, KERS-HAZ INS, SPRS INS - INSURANCE FUND - PLAN NET RETURNS - 01/31/23

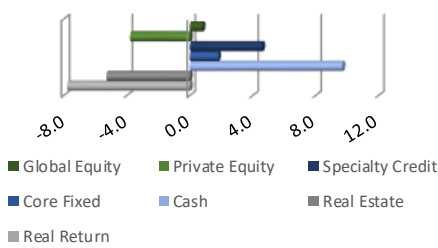
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
<b>KERS INS</b>	<b>1,386,221,200.28</b>	<b>3.70</b>	<b>5.61</b>	<b>6.29</b>	<b>-1.51</b>	<b>6.24</b>	<b>5.30</b>	<b>6.57</b>	<b>6.94</b>	<b>6.75</b>	<b>7.25</b>
KY Ins. KERS Plan IPS Index		4.66	5.75	5.11	-2.56	6.07	5.50	6.89	7.44	7.11	7.57
<b>KERS - H INS</b>	<b>602,812,788.10</b>	<b>3.58</b>	<b>5.43</b>	<b>5.84</b>	<b>-1.32</b>	<b>6.43</b>	<b>5.62</b>	<b>6.91</b>	<b>7.11</b>	<b>6.86</b>	<b>7.34</b>
KY Ins. KERS Haz Plan IPS Index		4.66	5.75	5.11	-2.56	6.01	5.44	6.87	7.43	7.10	7.57
<b>SPRS INS</b>	<b>239,819,501.75</b>	<b>3.63</b>	<b>5.55</b>	<b>5.87</b>	<b>-1.41</b>	<b>6.71</b>	<b>5.87</b>	<b>7.07</b>	<b>7.19</b>	<b>6.92</b>	<b>7.39</b>
KY Ins. SPRS Plan IPS Index		4.66	5.75	5.11	-2.56	6.01	5.44	6.89	7.44	7.11	7.57

KPPA INSURANCE FUND UNIT - NET RETURNS - 01/31/23 - PROXY PLAN ASSET PERFORMANCE

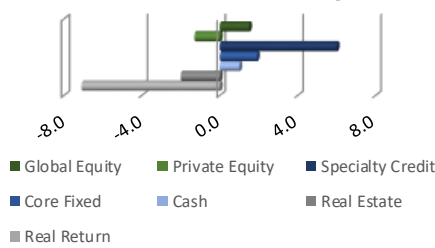
Structure	Month	QTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
<b>PUBLIC EQUITY</b>	<b>7.59</b>	<b>7.59</b>	<b>11.54</b>	<b>-6.90</b>	<b>6.76</b>	<b>5.40</b>	<b>8.23</b>	<b>8.26</b>		<b>8.50</b>
MSCI ACWI	7.17	7.17	9.61	-8.00	6.33	5.03	7.91	7.94		8.27
<b>PRIVATE EQUITY</b>	<b>0.09</b>	<b>0.09</b>	<b>-2.46</b>	<b>5.58</b>	<b>16.45</b>	<b>14.18</b>	<b>14.65</b>	<b>12.18</b>		<b>10.96</b>
Russell 3000 + 3%(Qtr Lag)	7.44	7.44	-12.43	-13.52	12.86	12.91	15.67	12.10		11.22
<b>SPECIALTY CREDIT</b>	<b>1.31</b>	<b>1.31</b>	<b>3.79</b>	<b>2.15</b>	<b>4.81</b>	<b>5.12</b>				<b>5.35</b>
50% BB US HY / 50% SP LSTA Leveraged Loan	3.27	3.27	7.26	-1.69	2.33	3.35				3.56
<b>CORE FIXED INCOME</b>	<b>1.68</b>	<b>1.68</b>	<b>1.05</b>	<b>-3.62</b>	<b>0.03</b>	<b>1.96</b>				<b>2.19</b>
Bloomberg Barclays US Aggregate	3.08	3.08	0.02	-8.36	-2.35	0.86				1.68
<b>CASH</b>	<b>0.28</b>	<b>0.28</b>	<b>1.68</b>	<b>1.88</b>	<b>0.77</b>	<b>1.29</b>	<b>0.88</b>	<b>1.47</b>		<b>2.43</b>
Citigroup Treasury Bill-3 Month	0.37	0.37	1.70	1.87	0.79	1.30	0.78	1.23		2.32
<b>REAL ESTATE</b>	<b>-2.43</b>	<b>-2.43</b>	<b>1.29</b>	<b>10.22</b>	<b>13.03</b>	<b>12.35</b>	<b>10.86</b>			<b>10.26</b>
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index <sup>A</sup>	0.00	0.00	4.87	20.96	11.38	9.26	9.91			7.05
<b>REAL RETURN</b>	<b>1.28</b>	<b>1.28</b>	<b>7.77</b>	<b>7.78</b>	<b>7.06</b>	<b>5.25</b>	<b>3.63</b>			<b>4.49</b>
US CPI +3%	-0.06	-0.06	3.26	8.06	7.15	5.31	4.01			4.01



KERS Insurance Relative Weights



KERS-HAZ Insurance Relative Weights



SPRS Insurance Relative Weights

