

### What's going on in the marketplace?

Global equity markets rose during the month of November, driven by hopes for moderating inflation. In addition, slowing economic growth would appear to allow central banks to back-off planned monetary tightening. Bond yields were pushed lower by the potential of moderating central bank policy.

**The KPPA Pension Trust portfolio gained 3.58% during the month of November, underperforming a blended benchmark by 37bps.** The CERS and CERS-H portfolios returned 3.85% and 3.87%, respectively, while their benchmark returned 4.17%. The portfolios underperformed their respective benchmarks with similar drivers of attribution. Relative underperformance was primarily a product of weaker performance in the Public Equity, Core Fixed, and Specialty Credit portfolios. The overweight to Specialty Credit also hampered relative performance. The underweight to Real Return partially offset this relative underperformance as this was one of the weaker asset classes during the month.

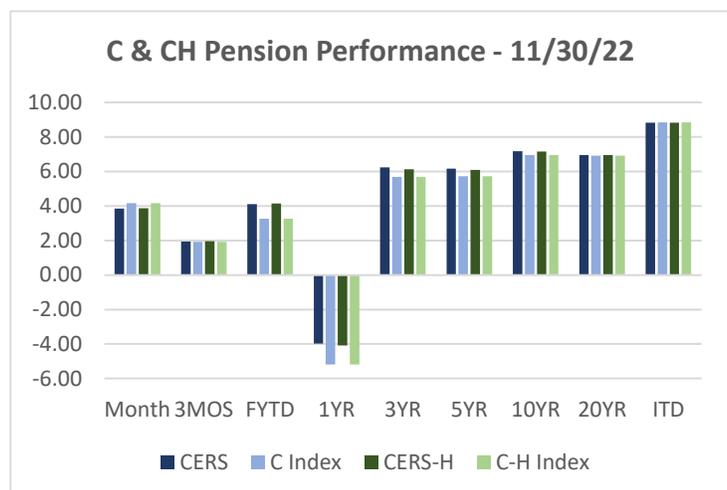
**Global equity markets** were strong during the month of November, as evidenced by the MSCI ACWI Index returning 7.76%, building upon October's significant performance. International markets, led by emerging markets, outpaced their US market counterpart (MSCI ACWI Ex-US: 11.49% versus R3000: 5.22%).

**US equity markets** gained 5.22% during the month (Russell 3000), while the KPPA portfolio returned 4.97%. All market segments provided positive returns, led by the 6.12% return from mid-caps; with value outpacing growth (R3000V: 6.05% versus R3000G: 4.37%). Relative outperformance was driven primarily by allocation as stock selection amongst the individual mandates was mixed. The portfolio's tilt smaller hampered relative performance as small caps were weaker, returning just 2.34%.

**NonUS equity markets** returned 11.49% (MSCI ACWI Ex-US) during the month. Developed markets returned 10.67% (MSCI World Ex-US) during the period while emerging markets gained 14.83% (MSCI EM). The KPPA portfolio gained 10.78% during the month, underperforming its benchmark by 71bps. Relative underperformance was driven by stock selection, as most individual mandates underperformed their respective benchmarks.

**The specialty credit portfolio** underperformed its benchmark during the month, returning 0.54% versus 1.71%. The High Yield market gained 2.17% building upon the prior month. The leveraged loan segment of the market returned 1.24% per the Morningstar LSTA Leveraged Loan Index. 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. The valuation for many of these private market mandates are updated on a quarterly basis. Over longer period this segment of the portfolio continues to contribute very strong relative performance.

**The core fixed income portfolio** gained 1.57% compared to the Bloomberg Aggregate Index return of 3.68%. Relative underperformance was attributable to positioning within the allocation; the portfolios remain



underweight overall duration given the potential for even higher rates and elevated volatility. Both shorter-term and intermediate credit market segments underperformed.

**The private equity allocation** gained 0.20% during the month.

**The real return portfolio** gained 0.99% during the month, compared to its benchmark return of 0.64%. As with the past few months, performance was driven by the MLP portion of the portfolio, as this portion of the portfolio gained 2.38%.

**Real estate** added 44bps during the month. The portfolio has benefitted from strength in industrial, multi-family, student housing, and storage properties.

**The cash portfolio** performed in line with its benchmark, the 3-month T-bill, returning 0.29% for the month.

**CERS & CERS-HAZ - PENSION FUND PLAN NET RETURNS - 11/30/22**

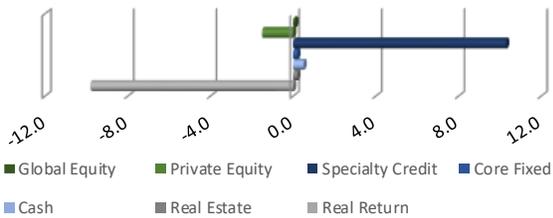
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
<b>CERS</b>	<b>8,216,138,762.27</b>	<b>3.85</b>	<b>1.95</b>	<b>4.11</b>	<b>-3.97</b>	<b>6.24</b>	<b>6.16</b>	<b>7.18</b>	<b>6.96</b>	<b>7.70</b>	<b>8.83</b>
KY Ret. CKERS Plan IPS Index		4.17	1.93	3.26	-5.18	5.69	5.73	6.95	6.92	7.63	8.84
<b>CERS- H</b>	<b>2,818,403,777.64</b>	<b>3.87</b>	<b>1.96</b>	<b>4.14</b>	<b>-4.09</b>	<b>6.13</b>	<b>6.09</b>	<b>7.15</b>	<b>6.95</b>	<b>7.69</b>	<b>8.82</b>
KY Ret. CERS Haz Plan IPS Index		4.17	1.93	3.26	-5.18	5.69	5.73	6.95	6.92	7.63	8.84

**KPPA PENSION FUND UNIT - NET RETURNS - 11/30/22 - PROXY PLAN ASSET PERFORMANCE**

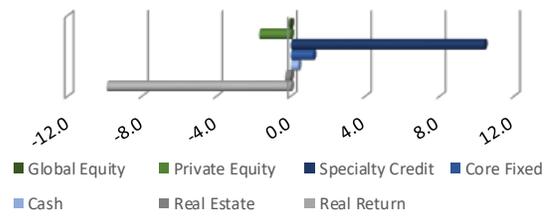
Structure	Month	QTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
<b>PUBLIC EQUITY</b>	<b>7.25</b>	<b>14.60</b>	<b>7.47</b>	<b>-11.93</b>	<b>6.17</b>	<b>6.09</b>	<b>8.58</b>	<b>7.69</b>	<b>8.50</b>	<b>10.11</b>
MSCI ACWI	7.76	14.26	6.47	-11.64	6.09	5.90	8.38	7.67	8.32	9.95
<b>PRIVATE EQUITY</b>	<b>0.20</b>	<b>-2.24</b>	<b>-4.09</b>	<b>4.42</b>	<b>16.80</b>	<b>15.36</b>	<b>13.86</b>	<b>12.82</b>		<b>12.03</b>
Russell 3000 + 3%(Qtr Lag)	-3.31	5.70	-10.68	-10.28	14.95	14.32	16.08	12.26		11.88
<b>SPECIALTY CREDIT</b>	<b>0.54</b>	<b>1.42</b>	<b>1.76</b>	<b>0.81</b>	<b>4.66</b>	<b>4.99</b>				<b>5.32</b>
50% BB US HY / 50% SP LSTA Leveraged Loan	1.71	3.55	3.96	-4.67	1.97	2.93				3.07
<b>CORE FIXED INCOME</b>	<b>1.57</b>	<b>1.08</b>	<b>-0.92</b>	<b>-6.20</b>	<b>0.07</b>	<b>1.66</b>				<b>2.31</b>
Bloomberg Barclays US Aggregate	3.68	2.33	-2.53	-12.84	-2.59	0.21				1.44
<b>CASH</b>	<b>0.29</b>	<b>0.56</b>	<b>1.12</b>	<b>1.33</b>	<b>0.84</b>	<b>1.43</b>	<b>1.00</b>	<b>1.63</b>	<b>2.70</b>	<b>3.30</b>
Citigroup Treasury Bill-3 Month	0.29	0.54	0.99	1.16	0.64	1.20	0.71	1.20	2.30	2.89
<b>REAL ESTATE</b>	<b>0.44</b>	<b>1.23</b>	<b>3.98</b>	<b>21.27</b>	<b>15.03</b>	<b>13.61</b>	<b>11.27</b>	<b>8.70</b>	<b>6.72</b>	<b>6.93</b>
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	0.00	0.00	4.54	28.31	11.66	9.55	10.15	7.84	7.76	6.81
<b>REAL RETURN</b>	<b>0.99</b>	<b>6.31</b>	<b>9.17</b>	<b>10.36</b>	<b>7.94</b>	<b>5.82</b>	<b>3.83</b>			<b>4.78</b>
US CPI +3%	0.64	1.10	3.16	9.98	7.81	5.74	3.92			4.01



CERS PEN Relative Weights



CERS-HAZ PEN Relative Weights

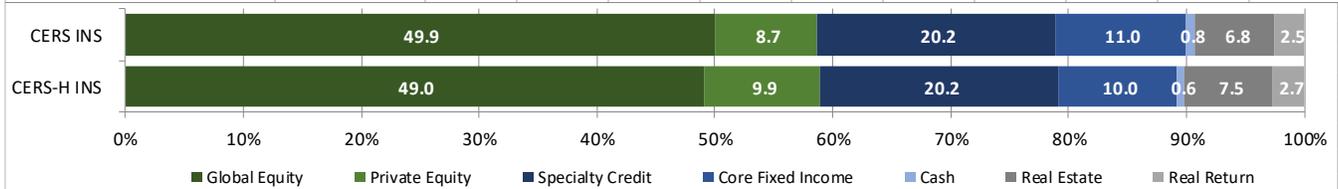


**CERS INS & CERS HAZ INS - INSURANCE FUND - PLAN NET RETURNS - 11/30/22**

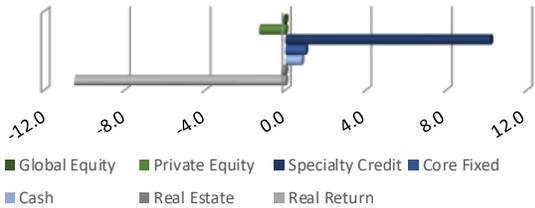
Plan	Market Value	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	ITD
<b>CERS INS</b>	<b>3,128,620,152.32</b>	<b>3.87</b>	<b>2.09</b>	<b>4.17</b>	<b>-3.54</b>	<b>6.03</b>	<b>6.09</b>	<b>7.09</b>	<b>6.72</b>	<b>6.87</b>	<b>7.32</b>
KY Ins. CERS Plan IPS Index		4.17	1.93	3.26	-5.18	5.33	5.53	6.91	6.92	7.10	7.51
<b>CERS - H INS</b>	<b>1,553,602,324.01</b>	<b>3.77</b>	<b>1.99</b>	<b>4.02</b>	<b>-3.40</b>	<b>6.16</b>	<b>6.20</b>	<b>7.16</b>	<b>6.76</b>	<b>6.90</b>	<b>7.34</b>
KY Ins. CERS Haz Plan IPS Index		4.17	1.93	3.26	-5.18	5.33	5.53	6.91	6.92	7.10	7.51

**KPPA INSURANCE FUND UNIT - NET RETURNS - 11/30/22 - 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>7.25</b>	<b>14.59</b>	<b>7.43</b>	<b>-11.80</b>	<b>6.19</b>	<b>6.06</b>	<b>8.62</b>	<b>7.63</b>		<b>8.42</b>
MSCI ACWI	7.76	14.26	6.47	-11.64	6.06	5.87	8.34	7.33		8.21
<b>PRIVATE EQUITY</b>	<b>0.21</b>	<b>-0.54</b>	<b>-0.64</b>	<b>13.82</b>	<b>16.45</b>	<b>15.44</b>	<b>14.98</b>	<b>12.00</b>		<b>11.15</b>
Russell 3000 + 3%(Qtr Lag)	-3.31	5.70	-10.68	-10.28	14.95	14.32	16.08	11.88		11.43
<b>SPECIALTY CREDIT</b>	<b>0.55</b>	<b>1.61</b>	<b>1.85</b>	<b>1.46</b>	<b>4.62</b>	<b>4.86</b>				<b>5.16</b>
50% BB US HY / 50% SP LSTA Leveraged Loan	1.71	3.55	3.96	-4.67	1.97	2.93				3.07
<b>CORE FIXED INCOME</b>	<b>1.64</b>	<b>1.14</b>	<b>-0.98</b>	<b>-6.55</b>	<b>-0.17</b>	<b>1.50</b>				<b>2.01</b>
Bloomberg Barclays US Aggregate	3.68	2.33	-2.53	-12.84	-2.59	0.21				1.44
<b>CASH</b>	<b>0.28</b>	<b>0.55</b>	<b>1.10</b>	<b>1.31</b>	<b>0.67</b>	<b>1.26</b>	<b>0.84</b>	<b>1.46</b>		<b>2.43</b>
Citigroup Treasury Bill-3 Month	0.29	0.54	0.99	1.16	0.64	1.20	0.71	1.20		2.31
<b>REAL ESTATE</b>	<b>0.44</b>	<b>1.28</b>	<b>3.92</b>	<b>20.95</b>	<b>14.91</b>	<b>13.57</b>	<b>11.14</b>			<b>10.60</b>
NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	0.00	0.00	4.54	28.31	11.66	9.55	10.15			7.12
<b>REAL RETURN</b>	<b>0.80</b>	<b>5.10</b>	<b>7.41</b>	<b>7.31</b>	<b>7.50</b>	<b>5.62</b>	<b>3.57</b>			<b>4.53</b>
US CPI +3%	0.64	1.10	3.16	7.84	7.68	5.73	3.98			4.06



CERS Insurance Relative Weights



CERS-HAZ Insurance Relative Weights

