

**What’s going on in the marketplace?**

In general, financial markets across the globe performed well during the month. Global equity markets rose on the back of solid earnings and mostly improved economic forecasts. Within the U.S., earnings season delivered stronger than forecasted profits, consumer confidence continued to climb, and oil inventories declined which pushed the price at the gas pump upward. Non-U.S. developed markets climbed higher on improved economics. Within the Eurozone earnings were generally positive. However, the ECB announced it would continue its stimulus program while inflation remains below the desired target. Japan posted its sixth straight quarter of growth, the longest winning streak for the nation in over a decade. Emerging market equities increased as commodity prices held firm. The global bond market was a little more mixed. In the U.S. the market was up and was led by corporates and munis, while Treasuries and agencies fell. Bond markets outside of the U.S. were generally negative.

**U.S. Equities**

U.S. equity markets gained 2.18% (Russell 3000) on the month. All cap segments provided positive performance with large caps leading the way, posting a 2.33% return. Mid- and small caps returned 2.26% and 0.85%, respectively. In a reversal from prior month, growth outperformed value as evidenced by the Russell 3000 style benchmarks’ performance; the Russell 3000 Growth earned 3.69%, while the Russell 3000 Value gained 0.68% on the month.

The KRS U.S. Equity portfolio trailed the Russell 3000 Index by 28 bps (1.90% vs 2.18%). The portfolio’s relative performance was hampered primarily by stock selection and to a lesser extent an overweight to small caps and tilt to value. From a stock selection perspective, the all cap mandates and the internal factor based portfolio struggled versus their respective benchmarks. Relative outperformance of the total fund was tempered by the underweight to U.S. equities which was the strongest performing asset class for the month.

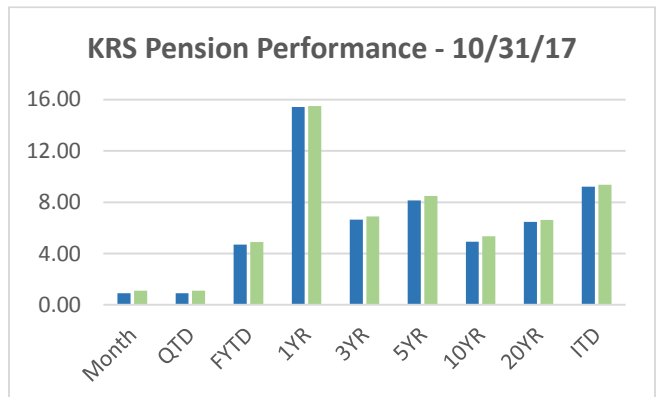
**Non-U.S. Equities**

Non-U.S. equities rose approximately 1.88% for the month. Emerging markets led the way returning roughly 3.4%. Developed markets posted an approximate return of 1.5% for the period. Unlike in the U.S., value names outperformed growth; there was little difference in the performance of large and small caps.

The KRS Non-U.S. Equity portfolio provided a 1.74% return, falling short of the index by 14 bps on the month. Relative underperformance was driven primarily by stock selection. The overweight of the allocation during the month was beneficial to the total fund’s performance as this was the second best performing asset class for the period.

**Fixed Income**

The fixed income market as a whole was positive for the month. The high yield market gained 0.42%, emerging market bonds were slightly positive, and the U.S. Aggregate rose 0.06%. The KRS Fixed Income portfolio trailed its benchmark for the month, gaining 0.13% versus the benchmark return of 0.27%. Performance amongst the individual mandates was mixed. KRS’ investments within the aggregate bond space matched the index, while relative performance within the high yield sector trailed. Strategies within the special opportunities space were split.



## Alternative Assets

Three of the four sub-asset classes were relatively flat on the month. The Real Return, Real Estate, and Private Equity portfolios returned 0.01%, -0.03% and -0.08%, respectively. The Absolute Return portfolio returned 0.44% compared to the 1.15% return of its benchmark.

## Cash

The cash portfolio performed inline during the month (0.10% vs 0.09%). The cash allocation finished the month just outside the allocation range at 5.09%.

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### NOTES:

- Returns displayed are "net". For the purposes of this report, total fund return information is net of fees and expenses, with audited data beginning in July 2011. At the manager level returns are net of fees beginning with July 2011, and gross of fees for prior data.
- Individual plan allocation and performance (pg.3).
- Prior to January 1, 2014, the inception date for the Private Equity asset class was stated as 10/1/1990 for Pension Fund and 6/1/2001 for Insurance Fund. Prior to 07/01/02, the characteristics of the allocation, and the benchmark itself, were more closely aligned with Real Estate. As such, it is not appropriate to report this portion of the return stream within the Private Equity allocation, whose true inception date has been determined to be 07/01/02 based on funding the Systems' first private equity mandate. The portion of the original return streams that are no longer reported within the Private Equity allocation (Pension from 10/1/90 to 06/30/02; Insurance 06/01/01 to 06/30/02) are reported within the Fund Level performance figures.
- |   |   |
|---|---|
| Private Equity Composite (Pension)<br>Inception (07/01/02) to 06/30/11<br>60.00% S&P 1500 Composite Index<br>40.00% Barclays US Corporate High Yield Index<br>07/01/11 to 12/31/15<br>100.00% Russell 3000 Index + 4% (Qtr Lag)<br><b>01/01/16 to Present</b><br><b>100.00% Russell 3000 Index + 3% (Qtr Lag)</b> | Private Equity Composite (Insurance)<br>Inception (07/01/02) to 06/30/11<br>80.00% S&P 1500 Composite Index<br>20.00% Barclays US Corporate High Yield Index<br>07/01/11 to 12/31/15<br>100.00% Russell 3000 Index + 4% (Qtr Lag)<br><b>01/01/16 to Present</b><br><b>100.00% Russell 3000 Index + 3% (Qtr Lag)</b> |
|---|---|
- The Private Equity & Real Return Benchmarks, from one month returns up until five year returns, is equal to the performance of the associated KRS allocations. Given there is not appropriate benchmark to use for short term performance evaluation, this will allow greater focus on longer term returns, which is more appropriate given the long term nature of these investments.

#### Pension Benchmark Composite 01/01/16 to 08/31/17

US Equity: Russell 3000 (25.6%)  
Non US Equity: MSCI AXCI Ex-US IMI (25.2%)  
Global Fixed Income: Barclays Universal Index (6.8%)  
Credit Fixed Income: Barclays US High Yield (7.2%)  
Real Estate: NCREIF ODCE (5.0%)  
Absolute Return: HFRI Diversified FOF (10.0%)  
Real Return: Allocation Specific (8.0%)  
Private Equity<5Yrs: Actual Performance  
Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)  
Cash: Cit Grp 3-mos Treasury Bill (2.2%)

#### Pension Benchmark Composite 09/01/17 to Present

US Equity: Russell 3000 (23.6%)  
Non US Equity: MSCI AXCI Ex-US IMI (23.2%)  
Global Fixed Income: Barclays Universal Index (9.0%)  
Credit Fixed Income: Barclays US High Yield (9.0%)  
Real Estate: NCREIF ODCE (5.0%)  
Absolute Return: HFRI Diversified FOF (10.0%)  
Real Return<5Yrs: Actual Performance  
Real Return>5Yrs: CPI+3% (8%)  
Private Equity<5Yrs: Actual Performance  
Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)  
Cash: Cit Grp 3-mos Treasury Bill (2.2%)

#### Insurance Benchmark Composite 01/01/16 to 08/31/17

US Equity: Russell 3000 (26.5%)  
Non US Equity: MSCI AXCI Ex-US IMI (26.5%)  
Global Fixed Income: Barclays Universal Index (6.0%)  
Credit Fixed Income: Barclays US High Yield (6.0%)  
Real Estate: NCREIF ODCE (5.0%)  
Absolute Return: HFRI Diversified FOF (10.0%)  
Real Return: Allocation Specific (8.0%)  
Private Equity<5Yrs: Actual Performance  
Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)  
Cash: Cit Grp 3-mos Treasury Bill (2.0%)

#### Insurance Benchmark Composite 09/01/17 to Present

US Equity: Russell 3000 (24.5%)  
Non US Equity: MSCI AXCI Ex-US IMI (24.5%)  
Global Fixed Income: Barclays Universal Index (8.0%)  
Credit Fixed Income: Barclays US High Yield (8.0%)  
Real Estate: NCREIF ODCE (5.0%)  
Absolute Return: HFRI Diversified FOF (10.0%)  
Real Return<5Yrs: Actual Performance  
Real Return>5Yrs: CPI+3% (8%)  
Private Equity<5Yrs: Actual Performance  
Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)  
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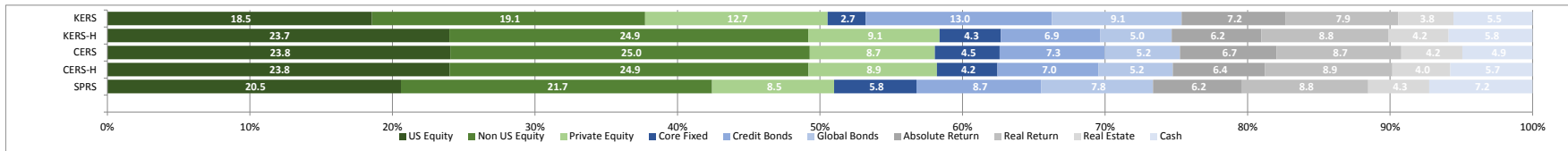
\*\*Fund composite benchmark is a roll-up of individual plans, which may differ from one another.

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - NET RETURNS - 10/31/17

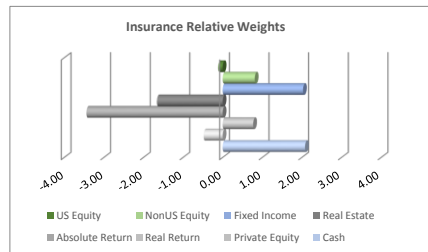
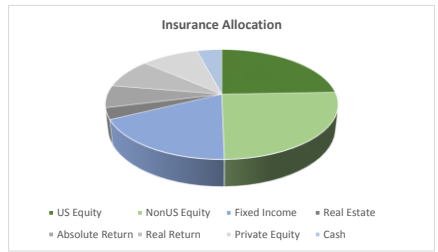
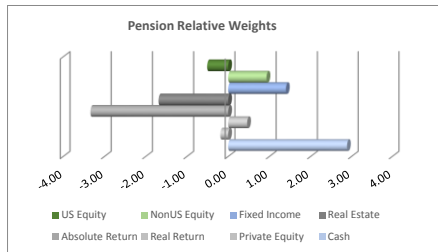
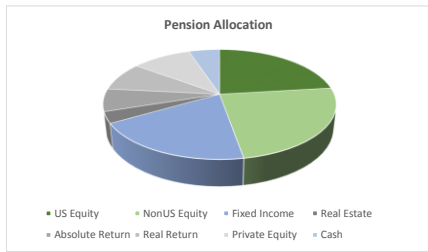
Structure	Benchmark	Inception	Market Value	% of Total	Month		QTD		Fiscal YTD		1 Year		3 Years		5 Years		10 Years		20 Years		ITD	
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark
TOTAL FUND	KY Ret. Blended Index	4/1/1984	12,172,171,780.72	100.00	0.90	1.11	0.90	1.11	4.71	4.89	15.42	15.50	6.65	6.89	8.15	8.48	4.92	5.35	6.46	6.63	9.21	9.35
US PUBLIC	KY Domestic Equity Blend	4/1/1984	2,810,902,635.54	23.09	1.90	2.18	1.90	2.18	6.34	6.85	22.93	23.98	9.83	10.53	14.40	15.12	7.35	7.69	7.61	7.72	11.36	11.39
EQUITY NON US	KY Ret.Int'l Eq. Blended Index	7/1/2000	2,937,078,570.44	24.13	1.74	1.88	1.74	1.88	8.63	8.36	24.50	24.32	6.88	6.25	8.44	7.80	1.92	1.58			3.27	3.71
PUBLIC EQUITY	Global Equity Blended Index	4/1/1984	5,747,981,205.98	47.22	1.82	2.03	1.82	2.03	7.52	7.60	23.86	24.26	8.00	7.85	10.91	10.78	4.57	4.30	6.50	6.33	10.67	10.53
FIXED INCOME	KY Ret. Fixed Blended Index	4/1/1984	2,360,838,527.65	19.40	0.13	0.27	0.13	0.27	1.34	1.77	4.97	5.29	4.33	5.52	4.02	4.10	5.28	5.35	5.73	5.77	7.65	7.49
REAL RETURN	PENSION REAL RETURN CUSTOM BM	7/1/2011	1,029,362,961.25	8.46	0.01	0.01	0.01	0.01	1.52	0.80	6.40	2.76	2.53	1.26	1.96	2.16					4.03	2.71
ABSOLUTE RETURN	HFRF Fund of Funds Diversified Index - 1 Month Ar	4/1/2010	810,755,193.21	6.66	0.44	1.15	0.44	1.15	2.44	3.46	5.25	7.40	2.06	2.49	4.72	4.03					4.12	3.11
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	7/1/1984	402,300,642.56	3.31	-0.03	0.00	-0.03	0.00	2.82	1.47	10.48	6.90	9.22	10.33	9.30	10.76	7.52	4.28	6.16	8.13	5.98	6.42
PRIVATE EQUITY	Russell 3000 + 3%(Qtr Lag)	7/1/2002	1,194,586,069.07	9.81	-0.08	-0.08	-0.08	-0.08	4.61	4.61	15.74	15.74	10.35	10.35	12.98	12.98	7.33	11.03			11.03	11.13
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	1/1/1988	619,434,046.91	5.09	0.10	0.09	0.10	0.09	0.39	0.35	0.90	0.71	0.65	0.32	0.56	0.21	0.92	0.39	2.45	2.00	3.62	3.18

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - PLAN NET RETURNS - 10/31/17

Plan	Benchmark	Inception	Market Value	% of Total	Month		3 Months		Fiscal YTD		1 Year		3 Years		5 Years		10 Years		20 Years		ITD	
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark
KERS	KY Ret. KERS Plan Index		2,067,812,613.31	100.00	0.75	0.96	2.57	2.90	4.23	4.45	13.50	13.71	6.00	6.53	7.82	8.21	4.76	5.21	6.38	6.57	9.16	9.31
KERS-H	KY Ret. KERS Haz Plan Index		630,356,573.80	100.00	0.92	1.15	2.90	3.25	4.78	5.10	15.71	16.02	6.76	6.76	8.21	8.42	4.95	5.31	6.47	6.62	9.22	9.34
CERS	KY Ret. CERS Plan Index		6,934,599,881.17	100.00	0.93	1.15	2.92	3.25	4.81	5.10	15.86	16.07	6.78	6.74	8.21	8.41	4.95	5.31	6.47	6.62	9.22	9.34
CERS-H	KY Ret. CERS Haz Plan Index		2,307,033,529.38	100.00	0.93	1.15	2.91	3.25	4.80	5.10	15.78	16.05	6.81	6.74	8.22	8.41	4.96	5.31	6.48	6.62	9.22	9.34
SPRS	KY Ret. SPRS Plan Index		254,262,771.94	100.00	0.82	1.02	2.62	2.98	4.37	4.68	14.40	14.66	5.83	6.41	7.67	8.19	4.69	5.21	6.34	6.56	9.14	9.30



Note: The above chart displays the average monthly allocation.

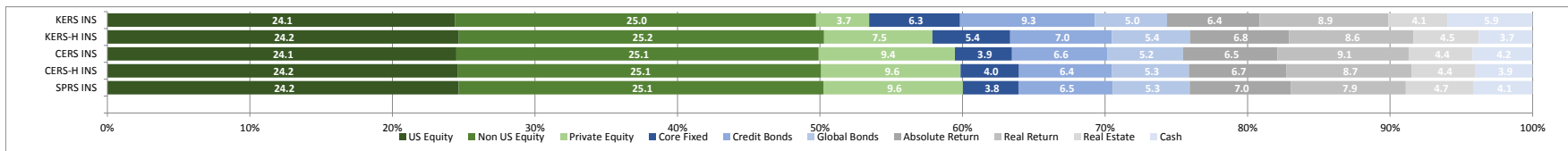


KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - NET RETURNS - 10/31/17

Structure	Benchmark	Inception	Market Value	% of Total	Month		QTD		Fiscal YTD		1 Year		3 Years		5 Years		10 Years		20 Years		ITD	
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark
TOTAL FUND	KY Ins. Blended Index	4/1/1987	4,971,990,291.62	100.00	0.95	1.16	0.95	1.16	4.83	5.05	15.91	16.00	6.90	7.23	8.01	8.68	3.79	4.40	5.81	6.12	7.50	7.89
US PUBLIC	KY Domestic Equity Blend	7/1/1992	1,212,761,560.76	24.39	1.90	2.18	1.90	2.18	6.30	6.85	23.10	23.98	10.23	10.53	14.58	15.12	7.28	7.58	7.38	7.12	9.69	9.57
EQUITY NON US	KRS Ins.Int'l Eq Blend	4/1/2000	1,258,635,681.21	25.31	1.73	1.88	1.73	1.88	8.61	8.36	24.51	24.32	6.79	6.25	8.32	7.80	1.56	1.23			3.27	2.82
PUBLIC EQUITY	Global Equity Blended Index	7/1/1992	2,471,397,241.97	49.71	1.82	2.03	1.82	2.03	7.48	7.61	24.00	24.26	8.22	7.92	11.04	10.73	4.38	4.11	6.31	5.96	8.82	8.63
FIXED INCOME	KRS Ins. Fixed Blended Index	7/1/1992	896,362,497.27	18.03	0.16	0.27	0.16	0.27	1.30	1.77	4.67	5.29	4.17	5.52	3.53	4.10	5.32	5.44	6.16	6.15	6.49	6.49
REAL RETURN	INSURANCE REAL RET CUSTOM BM	7/1/2011	436,122,836.98	8.77	0.10	0.10	0.10	0.10	1.50	0.96	5.75	2.80	2.37	1.46	1.64	2.29					3.73	2.81
ABSOLUTE RETURN	HFRF Fund of Funds Diversified Index - 1 Month Ar	4/1/2010	325,980,225.78	6.56	0.37	1.15	0.37	1.15	2.40	3.46	5.17	7.40	2.07	2.49	4.69	4.03					4.04	3.11
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	5/1/2009	166,129,313.84	3.34	-0.03	0.00	-0.03	0.00	2.86	1.47	11.04	6.90	9.39	10.33	8.96	10.76					8.99	5.78
PRIVATE EQUITY	Russell 3000 + 3% (Qtr Lag)	7/1/2002	473,171,607.08	9.52	-0.03	-0.03	-0.03	-0.03	4.67	4.67	16.42	16.42	13.28	13.28	14.96	14.96	9.12	10.16			9.84	10.53
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	7/1/1992	203,074,949.42	4.08	0.10	0.09	0.10	0.09	0.35	0.35	0.85	0.71	0.47	0.32	0.42	0.21	0.60	0.39	2.17	2.00	2.66	2.53

KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - PLAN NET RETURNS - 10/31/17

Plan	Benchmark	Inception	Market Value	% of Total	Month		3 Months		Fiscal YTD		1 Year		3 Years		5 Years		10 Years		20 Years		ITD	
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark
KERS INS	KY Ins. KERS Plan Index		807,729,335.66	100.00	0.98	1.16	2.81	3.20	4.67	5.12	15.76	16.37	6.58	6.87	7.71	8.46	3.65	4.29	5.74	6.07	7.45	7.85
KERS-H INS	KY Ins. KERS Haz Plan Index		502,569,750.33	100.00	0.96	1.16	2.96	3.27	4.80	5.13	15.96	16.24	6.83	6.93	8.02	8.50	3.80	4.31	5.81	6.08	7.50	7.86
CERS INS	KY Ins. CERS Plan Index		2,249,153,685.93	100.00	0.95	1.16	3.01	3.30	4.84	5.13	15.90	16.14	6.94	6.97	8.06	8.53	3.82	4.32	5.82	6.09	7.51	7.86
CERS-H INS	KY Ins. CERS Haz Plan Index		1,227,881,702.80	100.00	0.95	1.16	3.02	3.30	4.86	5.13	15.94	16.14	7.00	6.97	8.09	8.53	3.83	4.33	5.83	6.09	7.51	7.86
SPRS INS	KY Ins. SPRS Plan Index		184,655,819.05	100.00	0.95	1.16	3.04	3.30	4.87	5.13	15.94	16.13	6.96	6.99	8.07	8.54	3.82	4.33	5.83	6.09	7.51	7.87



Note: The above chart displays the average monthly allocation.