

What’s going on in the marketplace?

July’s good performance slowed in the month of August because of concerns about North Korean tensions. This caused a flight to safety/quality that manifested by selling equities and purchasing fixed income, particularly government bonds. Central banks maintained current stimulus practices, and inflation remained subdued. Equity markets recovered by the end of the month and edged forward, with Non-U.S. markets outperforming domestic markets. One item of interest was that Japan reported annualized growth of 4%, the highest level in over a decade.

U.S. Equities

U.S. equity markets gained 19 bps (Russell 3000) on the month. Large caps provided a positive return of 0.31% in stark contrast to mid- and small caps, which fell -1.53% and -1.27%, respectively. Growth continued to be heavily favored over value as evidenced by the Russell 3000 style benchmarks’ performance; the Russell 3000 Growth earned 1.68%, while the Russell 3000 Value lost 187 bps on the month.

The KRS U.S. equity portfolio fell short of the Russell 300 Index (-0.19% vs 0.19%). The portfolio’s relative performance suffered due to its slight overweight coming down and the slight lean towards value. From a stock selection perspective, the internal factor based portfolio lost ground to the S&P 500 as its value and smaller cap bent was not rewarded (-0.30% vs 0.31%), and the active all cap value strategies trailed their associated index (approx. combined return of -1.67% vs -1.26%).

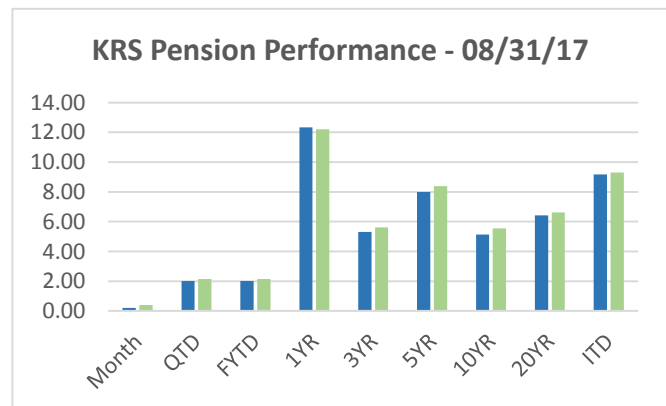
Non-U.S. Equities

Non-U.S. equities rose approximately 0.6% on the month. Emerging markets led the way, returning roughly 2.35%, while developed markets were relatively flat. Like in the U.S., growth names outperformed value, but in contrast, small caps outperformed their large cap counterparts.

The KRS Non-U.S. equity portfolio performed well just slightly trailing the index by 2 bps, returning 0.60% on the month. Relative allocation had little influence on the performance of the portfolio. Stock selection also had little effect on performance. Strategy relative performance was split, as two of the four active mandates outperformed the index.

Fixed Income

The fixed income market as a whole performed well during the month, with diverging individual sector performance. Emerging market bonds gained nearly 1.8%, with the aggregate bond index earning 0.90%. Intermediate credit returned approximately 0.6%, while high yield was down a few basis points. The KRS Fixed Income portfolio trailed its benchmark by 3 bps, which returned 0.41%. Performance amongst the individual mandates was mixed. KRS’ investments within the aggregate bond, intermediate credit, and loan strategies performed relatively well, matching and in some cases surpassing their respective benchmarks. Performance amongst the high yield managers was somewhat mixed.



Alternative Assets

Sub-asset classes were mixed with three of the four providing positive absolute performance during the month; however, only one was able to outpace its benchmark. The Real Return portfolio added 16 bps over its index return on 0.10%. The

Absolute Return portfolio returned 0.33% compared to the 1.19% return of its benchmark. The Real Estate portfolio fell 45 bps on the month, while the Private Equity portfolio was relative flat.

Cash

The cash portfolio performed inline during the month (0.10% vs 0.09%). The cash allocation finished the month within the allowable range at 2.78%.

NOTES:

- 1) 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.
- 2) Individual plan allocation and performance (pg.3).
- 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.
- 4)

<p>Private Equity Composite (Pension) Inception (07/01/02) to 06/30/11 60.00% S&P 1500 Composite Index 40.00% Barclays US Corporate High Yield Index 07/01/11 to 12/31/15 100.00% Russell 3000 Index + 4% (Qtr Lag) 01/01/16 to Present 100.00% Russell 3000 Index + 3% (Qtr Lag)</p>	<p>Private Equity Composite (Insurance) Inception (07/01/02) to 06/30/11 80.00% S&P 1500 Composite Index 20.00% Barclays US Corporate High Yield Index 07/01/11 to 12/31/15 100.00% Russell 3000 Index + 4% (Qtr Lag) 01/01/16 to Present 100.00% Russell 3000 Index + 3% (Qtr Lag)</p>
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- 5) The Private Equity Benchmark, from one month returns up until five year returns, is equal to the performance of the KRS Private Equity allocation. 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 private equity investments.
- 6)

<p><u>Pension Benchmark Composite 01/01/14 to 12/31/15</u> US Equity: Russell 3000 (20.5%) Non US Equity: MSCI AXCI Ex-US (20.0%) Emerging Market: MSCI Emerging Markets (2.9%) Fixed Income: Barclays Universal Index (19.3%) Real Estate: NCREIF ODCE (4.5%) Absolute Return: HFRI Diversified FOF (10.0%) Real Return: Allocation Specific (10.0%) Private Equity<5Yrs: Actual Performance Private Equity>5Yrs: Russell 3000 Index+4% (10.0%) Cash: Cit Grp 3-mos Treasury Bill (2.8%) <u>Pension Benchmark Composite 01/01/16 to Present</u> 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%)</p>	<p><u>Insurance Benchmark Composite 01/01/14 to 12/31/15</u> US Equity: Russell 3000 (20.0%) Non US Equity: MSCI AXCI Ex-US (20.0%) Emerging Market: MSCI Emerging Markets (4.0%) Fixed Income: Barclays Universal Index (20.0%) Real Estate: NCREIF ODCE (5.0%) Absolute Return: HFRI Diversified FOF (10.0%) Real Return: Allocation Specific (10.0%) Private Equity<5Yrs: Actual Performance Private Equity>5Yrs: Russell 3000 Index+4% (10.0%) Cash: Cit Grp 3-mos Treasury Bill (1.0%) <u>Insurance Benchmark Composite 01/01/16 to Present</u> 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%)</p>
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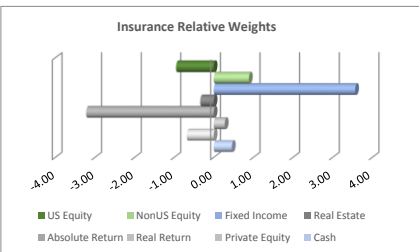
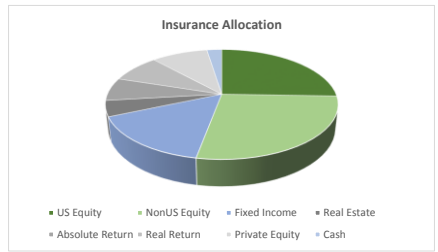
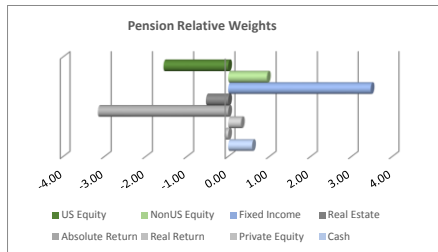
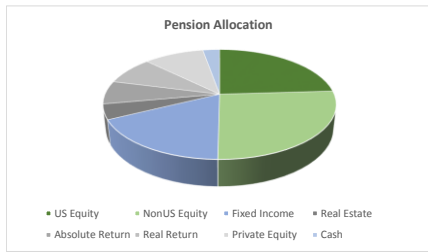
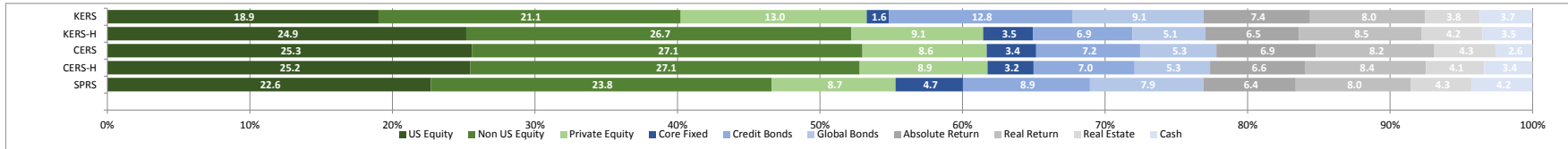
**Fund composite benchmark is a roll-up of individual plans, which may differ from one another.

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - NET RETURNS - 08/31/17

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	11,945,795,847.71	100.00	0.21	0.40	2.01	2.14	2.01	2.14	12.33	12.20	5.32	5.61	8.00	8.39	5.13	5.55	6.42	6.62	9.17	9.31
US PUBLIC	KY Domestic Equity Blend	4/1/1984	2,871,072,519.52	24.03	-0.19	0.19	1.55	2.08	1.55	2.08	14.97	16.06	8.17	9.08	13.52	14.27	7.43	7.75	7.45	7.59	11.26	11.30
EQUITY NON US	KY Ret.Int'l Eq. Blended Index	7/1/2000	3,122,775,350.52	26.14	0.60	0.62	4.51	4.34	4.51	4.34	19.43	19.51	3.69	2.87	8.51	7.87	2.42	2.12			3.07	3.51
PUBLIC EQUITY	Global Equity Blended Index	4/1/1984	5,993,847,870.04	50.18	0.22	0.41	3.07	3.20	3.07	3.20	17.32	17.86	5.52	5.31	10.59	10.47	4.80	4.56	6.36	6.22	10.59	10.44
FIXED INCOME	KY Ret.Fixed Blended Index	4/1/1984	2,086,653,924.39	17.47	0.38	0.41	1.20	1.22	1.20	1.22	5.67	4.94	4.44	5.39	4.32	4.11	5.47	5.49	5.87	5.89	7.69	7.51
REAL RETURN	PENSION REAL RETURN CUSTOM BM	7/1/2011	992,756,844.10	8.31	0.26	0.10	1.55	0.82	1.55	0.82	7.19	3.14	1.74	0.71	2.30	2.47					4.15	2.79
ABSOLUTE RETURN	HFRF Fund of Funds Diversified Index - 1 Month Ar	4/1/2010	817,025,150.17	6.84	0.33	1.19	1.39	2.13	1.39	2.13	4.72	5.70	1.76	2.30	4.89	4.02					4.07	3.00
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	7/1/1984	533,044,146.86	4.46	-0.45	0.00	-0.33	0.00	-0.33	0.00	9.50	7.36	8.82	10.77	8.80	10.94	7.19	4.62	6.06	8.23	5.91	6.40
PRIVATE EQUITY	Russell 3000 + 3%(Qtr Lag)	7/1/2002	1,183,795,563.70	9.91	0.04	0.04	0.62	0.62	0.62	0.62	13.46	13.46	9.48	9.48	12.22	12.22	7.18	11.16			10.87	11.02
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	1/1/1988	331,824,091.42	2.78	0.10	0.09	0.20	0.17	0.20	0.17	1.12	0.58	0.60	0.26	0.54	0.18			2.50	2.04	3.64	3.19

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - PLAN NET RETURNS - 08/31/17

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		2,036,990,635.35	100.00	0.21	0.38	2.65	2.65	1.82	1.89	11.14	10.96	4.94	5.31	7.73	8.16	5.00	5.43	6.35	6.56	9.13	9.27
KERS-H	KY Ret. KERS Haz Plan Index		613,527,627.78	100.00	0.20	0.40	2.77	2.92	2.03	2.20	12.51	12.50	5.37	5.33	8.05	8.29	5.15	5.50	6.43	6.59	9.18	9.29
CERS	KY Ret. CERS Plan Index		6,793,020,017.63	100.00	0.20	0.40	2.78	2.92	2.05	2.21	12.60	12.52	5.39	5.31	8.06	8.29	5.16	5.50	6.43	6.59	9.18	9.29
CERS-H	KY Ret. CERS Haz Plan Index		2,253,622,583.81	100.00	0.20	0.40	2.79	2.92	2.04	2.21	12.53	12.51	5.43	5.31	8.07	8.29	5.16	5.50	6.43	6.59	9.18	9.29
SPRS	KY Ret. SPRS Plan Index		248,634,992.40	100.00	0.22	0.40	2.61	2.72	1.93	2.06	11.73	11.57	4.60	5.08	7.58	8.13	4.92	5.42	6.31	6.55	9.11	9.27



KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - NET RETURNS - 08/31/17

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	4,845,198,795.16	100.00	0.22	0.41	2.01	2.18	2.01	2.18	12.51	12.46	5.48	5.94	7.83	8.55	4.14	4.72	5.77	6.10	7.44	7.84
US PUBLIC	KY Domestic Equity Blend	7/1/1992	1,237,789,078.11	25.55	-0.22	0.19	1.51	2.08	1.51	2.08	15.02	16.06	8.63	9.08	13.68	14.27	7.32	7.64	7.23	6.98	9.56	9.43
EQUITY NON US	KRS Ins.Int'l Eq Blend	4/1/2000	1,327,118,797.91	27.39	0.62	0.62	4.50	4.34	4.50	4.34	19.50	19.51	3.60	2.87	8.36	7.87	2.33	1.77			3.07	2.62
PUBLIC EQUITY	Global Equity Blended Index	7/1/1992	2,564,907,876.02	52.94	0.21	0.41	3.04	3.21	3.04	3.21	17.39	17.88	5.81	5.39	10.66	10.40	4.65	4.39	6.18	5.84	8.70	8.51
FIXED INCOME	KRS Ins. Fixed Blended Index	7/1/1992	754,552,072.92	15.57	0.50	0.41	1.15	1.22	1.15	1.22	5.48	4.94	3.91	5.39	3.83	4.11	5.57	5.64	6.30	6.29	6.53	6.51
REAL RETURN	INSURANCE REAL RET CUSTOM BM	7/1/2011	401,115,556.97	8.28	0.33	0.27	1.51	0.98	1.51	0.98	6.44	3.10	1.63	0.92	1.96	2.59					3.83	2.89
ABSOLUTE RETURN	HFRF Fund of Funds Diversified Index - 1 Month Ar	4/1/2010	328,617,215.43	6.78	0.31	1.19	1.37	2.13	1.37	2.13	4.60	5.70	1.77	2.30	4.87	4.02					3.99	3.00
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	5/1/2009	225,694,220.04	4.66	-0.46	0.00	-0.34	0.00	-0.34	0.00	10.05	7.36	9.14	10.77	8.48	10.94					8.76	5.72
PRIVATE EQUITY	Russell 3000 + 3% (Qtr Lag)	7/1/2002	451,646,570.82	9.32	0.06	0.06	0.40	0.40	0.40	0.40	13.23	13.23	12.82	12.82	14.17	14.17	8.97	10.33			9.66	10.42
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	7/1/1992	118,964,272.73	2.46	0.08	0.09	0.17	0.17	0.17	0.17	0.74	0.58	0.43	0.26	0.40	0.18	0.68	0.44	2.21	2.04	2.67	2.54

KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - PLAN NET RETURNS - 08/31/17

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		785,846,161.25	100.00	0.24	0.42	2.59	2.85	2.05	2.29	12.41	12.64	5.22	5.48	7.57	8.34	4.01	4.62	5.71	6.05	7.40	7.80
KERS-H INS	KY Ins. KERS Haz Plan Index		491,464,667.47	100.00	0.22	0.42	2.73	2.88	2.02	2.23	12.54	12.55	5.42	5.51	7.85	8.36	4.14	4.63	5.78	6.05	7.45	7.81
CERS INS	KY Ins. CERS Plan Index		2,190,604,832.32	100.00	0.21	0.41	2.78	2.91	2.00	2.20	12.50	12.50	5.52	5.55	7.88	8.38	4.16	4.64	5.79	6.06	7.45	7.81
CERS-H INS	KY Ins. CERS Haz Plan Index		1,196,996,213.41	100.00	0.21	0.41	2.79	2.91	2.00	2.19	12.53	12.49	5.57	5.55	7.91	8.38	4.17	4.64	5.79	6.06	7.46	7.81
SPRS INS	KY Ins. SPRS Plan Index		180,286,887.01	100.00	0.21	0.41	2.77	2.91	1.99	2.19	12.53	12.49	5.53	5.57	7.88	8.39	4.16	4.64	5.79	6.06	7.45	7.81

