

What's going on in the marketplace?

The second quarter was mixed in terms of regional stock market performance due to what appears to be a breaking down of synchronized global growth. While markets in the U.S. were volatile, they did gain nearly 4% during the period driven by solid economic data and strong earnings results. International markets experienced the flip side of the coin and fell over -2.6% during the quarter. In terms of developed countries, the slowdown in earnings in Europe and Japan were the main culprits for the discrepancy with U.S. market performance. During the quarter, emerging markets fell over -8% in response to a rising USD, higher U.S. interest rates, geopolitical concerns, and tariff worries. Investment grade bond returns weakened slightly during the period. Currency moves caused returns in the basket of Non-U.S. developed market bonds to turn negative despite their positive return in local market currency terms.

U.S. Equities

U.S. equity markets gained 0.7% (Russell 3000) during June. This brought the return for the quarter to just under 4%, and for the fiscal year to approximately 14.8%. Small caps outperformed both large and mid-caps during the quarter by over 3%. Also, during the final quarter of the fiscal year, there was a significant dispersion between style performance, growth outperformed value by just over 4% (5.9% vs 1.7% per the Russell 3000 style indices).

During the month, the KRS U.S. equity portfolio outperformed the Russell 300 Index by 6 basis points (0.7%) due primarily to stock selection from the internal and all cap value portfolios. For the quarter, the allocation outpaced its index by 32 bps and earned 4.2% primarily due to the strong stock selection of several strategies. During the fiscal year, the U.S. equity portfolio gained approximately 14.5% versus the 14.8% of the index. Despite decent relative stock selection, performance was hampered by the mid cap and value tilts in the portfolio which were out of favor (value underperformed growth by approximately 15% during the fiscal year).

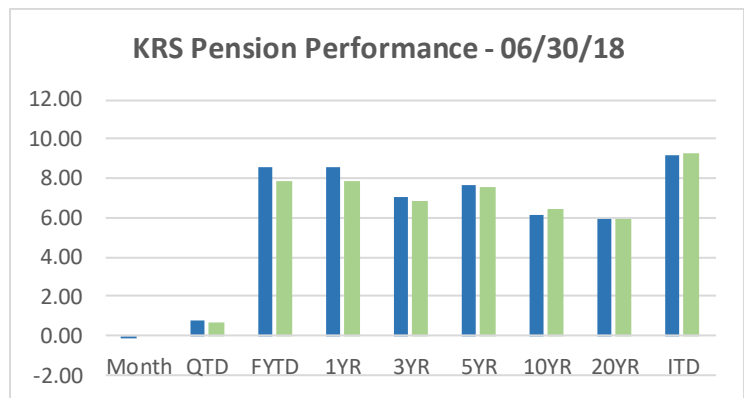
Non-U.S. Equities

Non-U.S. equities fell -2.0% during the month, bringing the quarter return to -2.6% (MSCI ACWI Ex-US). The quarter was volatile as earnings weakened, the global basket of currencies came under pressure, and geopolitical concerns primarily surrounding tariffs came to affront. Non-U.S. equities gained 7.8% for the fiscal year with developed countries rising over 7% (MSCI EAFE) and emerging markets growing just over 8% (MSCI EM).

The KRS Non-U.S. equity portfolio held up slightly better than the index, but still fell nearly -2.0% during the month and could be attributed to the mixed relative performance of the active mandates and slight overweight to small caps. Though the portfolio declined -1.8% during the quarter, it still provided nearly 80 bps of downside protection. Relative allocation had little impact on the portfolio's performance during the quarter.

For the fiscal year, the Non-U.S. portfolio earned 10.9% versus the index 7.8% return driven by the strong relative performance of three of the active mandates combined with an overweight to small caps.

Fixed Income



The KRS Fixed Income portfolio trailed its benchmark by 12 bps during the month, and by 40 bps during the quarter. For the fiscal year, the portfolio outperformed its index and returned 1.4% versus 1.2%. Those mandates that are considered more opportunistic, particularly those in the lending space, drove performance as those more traditional fixed income instruments provided limited to negative returns in response to rising rates.

Alternative Assets

For the month, three of the four sub-asset classes provided positive absolute returns. On the quarter, all four sub-asset classes provided positive absolute returns with three of those sub-asset classes also providing positive relative returns. On the fiscal year, all four sub-asset classes provided both positive absolute and relative returns: real return 2.0%, absolute return 5.5%, real estate 11.2%, and private equity 14.5%.

Cash

The cash portfolio performed well during both the month (0.2% vs 0.2%) and quarter (0.5% vs 0.4%). The slight overweight to cash in both the pension and insurance funds acted as a slight drag on the total portfolios' performance. However, the cash in and of itself performed well for the fiscal year, returning 1.9% versus the 3-month T-Bill return of 1.3%.

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.4).
- 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)

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)	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)
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- 5) 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.

<u>Pension Benchmark Composite 01/01/16 to 08/31/17</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%) <u>Pension Benchmark Composite 09/01/17 to 05/31/18 - Transition Period w/Sliding Targets</u> 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%)	<u>Insurance Benchmark Composite 01/01/16 to 08/31/17</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%) <u>Insurance Benchmark Composite 09/01/17 to 05/31/18 - Transition Period w/Sliding Targets</u> 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%)
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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%)
Pension Benchmark Composite 06/01/18 to Present
US Equity: Russell 3000 (17.0%)
Non US Equity: MSCI AXCI Ex-US IMI (21.0%)
Global Fixed Income: Barclays Universal Index (13.0%)
Credit Fixed Income: Barclays US High Yield (12.4%)
Real Estate: NCREIF ODCE (5.0%)
Absolute Return: HFRI Diversified FOF (10.0%)
Real Return<5yrs: Actual Performance
Real Return>5yrs: CPI+3% (10.0%)
Private Equity<5Yrs: Actual Performance
Private Equity>5Yrs: Russell 3000 Index+3% (9.4%)
Cash: Cit Grp 3-mos Treasury Bill (2.2%)

**Fund composite benchmark is a roll-up of individual plans, which may differ from one another.

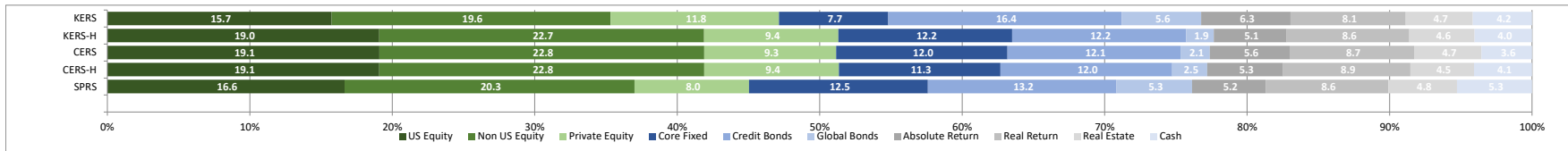
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KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - NET RETURNS - 06/30/18

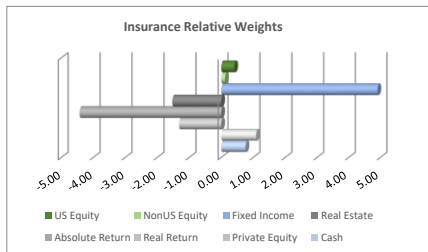
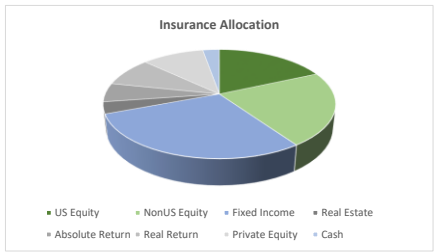
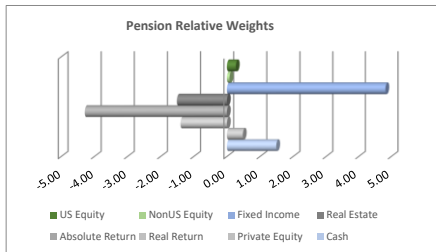
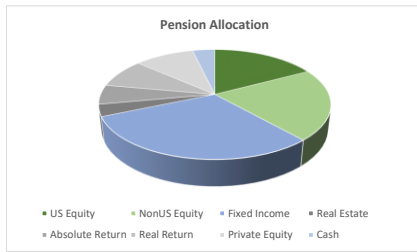
Structure	Benchmark	Inception	Market Value	% of Total	Month		QTD		Fiscal YTD		1 Year		3 Years		5 Years		10 Years		20 Years		ITD	
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark
TOTAL FUND	KY Ret. Blended Index	4/1/1984	12,291,474,002.91	100.00	-0.05	0.00	0.79	0.70	8.57	7.91	8.57	7.91	7.01	6.86	7.63	7.57	6.18	6.48	5.89	5.98	9.14	9.25
US PUBLIC	KY Domestic Equity Blend	4/1/1984	2,123,122,228.58	17.27	0.71	0.65	4.21	3.89	14.52	14.78	14.52	14.78	11.08	11.58	12.66	13.29	9.97	10.34	6.98	7.03	11.36	11.39
EQUITY NON US	KY Ret.Int'l Eq. Blended Index	7/1/2000	2,591,188,531.20	21.08	-1.95	-2.00	-1.80	-2.61	10.86	7.84	10.86	7.84	6.85	5.60	7.24	6.50	3.74	3.26			3.26	3.54
PUBLIC EQUITY	Global Equity Blended Index	4/1/1984	4,714,310,759.78	38.35	-0.74	-0.66	0.90	0.65	12.43	11.34	12.43	11.34	8.65	8.21	9.60	9.41	6.77	6.44	5.72	5.45	10.60	10.42
FIXED INCOME	KY Ret. Fixed Blended Index	4/1/1984	3,714,668,216.24	30.22	0.01	0.13	-0.02	0.38	1.41	1.17	1.41	1.17	4.22	5.08	4.21	4.40	4.90	4.79	5.44	5.46	7.50	7.32
REAL RETURN	PENSION REAL RETURN CUSTOM BM	7/1/2011	1,057,017,332.96	8.60	-0.56	-0.56	0.21	0.21	1.96	1.96	1.96	1.96	3.49	3.49	3.01	3.01					3.70	2.52
ABSOLUTE RETURN	HFRF Fund of Funds Diversified Index - 1 Month An	4/1/2010	701,704,751.68	5.71	0.18	-0.14	0.56	0.79	5.52	5.39	5.52	5.39	1.40	1.58	3.59	3.15					4.15	3.09
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	7/1/1984	428,489,599.23	3.49	0.91	1.97	2.29	1.97	11.22	7.11	11.22	7.11	10.09	9.00	9.23	10.42	8.34	4.16	6.51	7.85	6.10	6.46
PRIVATE EQUITY	Russell 3000 + 3%(Qtr Lag)	7/1/2002	1,214,463,846.34	9.88	2.61	2.61	2.59	2.59	14.52	14.52	14.52	14.52	10.84	10.84	12.87	12.87	8.80	13.38			11.17	11.31
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	1/1/1988	453,845,859.83	3.69	0.15	0.15	0.45	0.44	1.90	1.33	1.90	1.33	1.12	0.64	0.82	0.39	0.77	0.31	2.34	1.88	3.59	3.14

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - PLAN NET RETURNS - 06/30/18

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		2,007,001,932.45	100.00	-0.16	0.05	0.66	0.71	7.50	7.15	7.50	7.15	6.17	6.50	7.19	7.24	5.96	6.31	5.78	5.89	9.07	9.20
KERS-H	KY Ret. KERS Haz Plan Index		647,917,779.38	100.00	-0.05	0.00	0.79	0.70	8.68	8.22	8.68	8.22	7.14	6.91	7.70	7.52	6.21	6.45	5.91	5.96	9.15	9.24
CERS	KY Ret. CERS Plan Index		7,033,653,988.77	100.00	-0.04	0.00	0.79	0.70	8.75	8.22	8.75	8.22	7.18	6.91	7.71	7.52	6.22	6.45	5.91	5.96	9.15	9.24
CERS-H	KY Ret. CERS Haz Plan Index		2,345,934,278.53	100.00	-0.01	0.00	0.83	0.70	8.77	8.22	8.77	8.22	7.21	6.90	7.73	7.52	6.23	6.45	5.92	5.96	9.15	9.24
SPRS	KY Ret. SPRS Plan Index		256,966,022.40	100.00	-0.14	0.19	0.66	0.86	7.65	7.68	7.65	7.68	6.06	6.54	7.04	7.28	5.89	6.34	5.75	5.90	9.05	9.20



Note: The above chart displays the average monthly allocation.

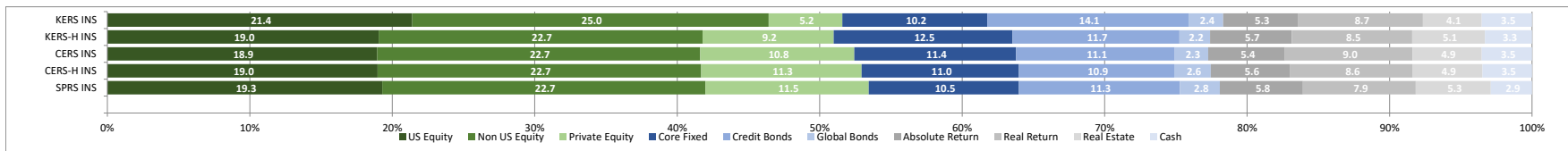


KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - NET RETURNS - 06/30/18

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	5,133,559,385.90	100.00	0.13	0.17	0.95	0.86	9.05	8.48	9.05	8.48	7.40	7.22	7.71	7.90	5.55	6.06	5.27	5.53	7.47	7.83
US PUBLIC	KY Domestic Equity Blend	7/1/1992	939,893,996.46	18.31	0.69	0.65	4.15	3.89	14.42	14.78	14.42	14.78	11.40	11.58	12.83	13.29	9.91	10.19	6.80	6.54	9.74	9.61
EQUITY NON US	KRS Ins.Int'l Eq Blend	4/1/2000	1,130,184,599.88	22.02	-1.96	-2.00	-1.89	-2.61	10.63	7.84	10.63	7.84	6.77	5.60	7.13	6.50	3.34	2.91			3.25	2.69
PUBLIC EQUITY	Global Equity Blended Index	7/1/1992	2,070,078,596.34	40.32	-0.75	-0.67	0.83	0.63	12.26	11.31	12.26	11.31	8.83	8.25	9.72	9.46	6.54	6.24	5.57	5.19	8.77	8.54
FIXED INCOME	KRS Ins. Fixed Blended Index	7/1/1992	1,484,295,753.05	28.91	-0.03	0.13	-0.06	0.38	1.34	1.17	1.34	1.17	4.10	5.08	3.78	4.40	4.42	4.49	5.82	5.82	6.32	6.30
REAL RETURN	INSURANCE REAL RET CUSTOM BM	7/1/2011	445,342,754.47	8.68	-0.47	-0.47	0.08	0.08	1.87	1.87	1.87	1.87	3.31	3.31	2.84	2.84					3.42	2.60
ABSOLUTE RETURN	HFRF Fund of Funds Diversified Index - 1 Month An	4/1/2010	286,003,081.27	5.57	0.14	-0.14	0.54	0.79	5.54	5.39	5.54	5.39	1.41	1.58	3.59	3.15					4.08	3.09
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^	5/1/2009	178,369,302.60	3.47	0.88	1.97	2.27	1.97	11.14	7.11	11.14	7.11	10.44	9.00	9.23	10.42					9.22	5.98
PRIVATE EQUITY	Russell 3000 + 3% (Qtr Lag)	7/1/2002	528,192,940.84	10.29	4.62	4.62	4.60	4.60	18.34	18.34	18.34	18.34	13.85	13.85	15.59	15.59	11.02	12.80			10.26	10.73
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	7/1/1992	141,494,852.45	2.76	0.15	0.15	0.45	0.44	1.57	1.33	1.57	1.33	0.83	0.64	0.59	0.39	0.49	0.31	2.06	1.88	2.64	2.51

KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - PLAN NET RETURNS - 06/30/18

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		834,385,736.12	100.00	-0.22	0.00	0.68	0.75	7.96	8.43	7.96	8.43	6.92	7.09	7.23	7.66	5.31	5.95	5.16	5.47	7.39	7.79
KERS-H INS	KY Ins. KERS Haz Plan Index		512,696,648.80	100.00	0.1	0.21	0.90	0.90	8.88	8.60	8.88	8.60	7.31	7.16	7.69	7.73	5.54	5.98	5.27	5.49	7.46	7.80
CERS INS	KY Ins. CERS Plan Index		2,333,374,335.88	100.00	0.2	0.21	1.00	0.90	9.21	8.60	9.21	8.60	7.46	7.18	7.79	7.76	5.59	5.99	5.29	5.50	7.48	7.80
CERS-H INS	KY Ins. CERS Haz Plan Index		1,264,027,342.42	100.00	0.23	0.21	1.02	0.90	9.32	8.60	9.32	8.60	7.55	7.18	7.84	7.76	5.61	5.99	5.31	5.50	7.49	7.80
SPRS INS	KY Ins. SPRS Plan Index		189,075,323.18	100.00	0.2	0.21	1.00	0.90	9.34	8.60	9.34	8.60	7.53	7.19	7.82	7.77	5.60	6.00	5.30	5.50	7.49	7.80



Note: The above chart displays the average monthly allocation.