

What’s going on in the marketplace?

Global equity markets rebounded sharply, gaining nearly 8%, opposed to the strong sell-offs experienced in the prior month and quarter. Several reasons were credited for the move. Data points towards a stabilizing of global growth, which had become a concern. Further, comments from the Fed pointed to the slowing of potential rate hikes which eased the nerves of investors. In addition, talks between the U.S. and China appeared to be moving towards a trade deal. During the month, both U.S. and Non-U.S. bonds performed positively as credit spreads tightened.

U.S. Equities

U.S. equity markets bounced back strong in January gaining 8.6% (R3000) after a terrible December. Small caps lead the market (11.3%), followed by midcaps (10.5%), and then large caps (8.0%). During the month, growth outpaced value by just over 1% (R3000G 9.2%, R3000V 8.0%).

The KRS U.S. Equity portfolio bested the Russell 3000 Index by 50 basis points during the month (9.1% vs 8.6%). The portfolio’s relative performance was driven by both stock selection and allocation decisions. From a stock selection perspective, the all cap strategies outperformed their respective indices. Further, the internal factor based portfolio added 60 basis points over its index, the S&P 500. From an allocation perspective, the portfolio benefited by being slightly smaller in terms of market cap.

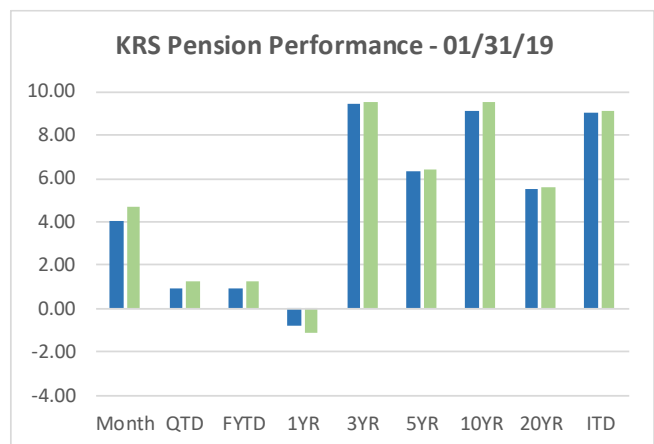
Non-U.S. Equities

Non-U.S. equities also had a strong January, gaining 7.6% per the MSCI ACWI Ex-U.S. Emerging markets outperformed their developed market counterparts. Though there was not much style bias in the Non-U.S. markets during the period, value seemed to perform a little better.

The KRS Non-U.S. Equity portfolio outpaced the index by 38 basis points during the month (8.0% vs 7.6%). Stock selection was primarily responsible for the relative outperformance as three of the four active large cap managers and the small cap manager outperformed their associated indices. Allocation decisions had little impact on relative performance.

Fixed Income

The fixed income market performed well during the month, with all market segments represented in the KRS portfolio providing positive performance. The high yield segment of the market performed the best and returned 4.5%; with the active strategies employed by KRS having mixed results in terms of relative performance. The leveraged loan segment of the market returned 2.6%; however, the strategies within the space trailed the index. Within the core segment of the fixed income portfolio, KRS strategies edged out the intermediate credit and aggregate indices, returning 1.6% and 1.1%, respectively.



Alternative Assets

The diversifying strategy group gained 2.7% during the period. The Real Return portfolio was the best performing of the strategies that make up the allocation, positing a 4.70% return. The Opportunistic, Real Estate, and Absolute Return portions of the allocation returned 1.0%, 0.6%, and -0.1%, respectively. The Private Equity portion of the portfolio gained 1.0%.

Cash

The cash portfolio performed inline during the month (0.2% vs 0.2%). The cash allocation finished the period above just above target in part due to the continued transitioning of assets to the newly approved asset allocation.

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%) 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%)	<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%) 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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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%)

Cash: Cit Grp 3-mos Treasury Bill (2.0%)

Insurance Benchmark Composite 06/01/18 to Present

US Equity: Russell 3000 (17.9%)

Non US Equity: MSCI AXCI Ex-US IMI (21.9%)

Global Fixed Income: Barclays Universal Index (13.0%)

Credit Fixed Income: Barclays US High Yield (11.0%)

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% (9.2%)

Cash: Cit Grp 3-mos Treasury Bill (2.0%)

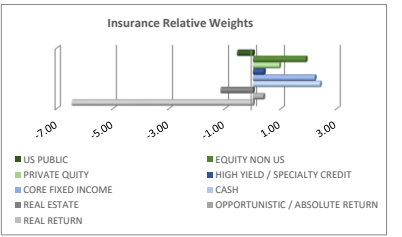
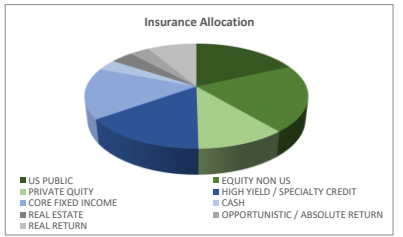
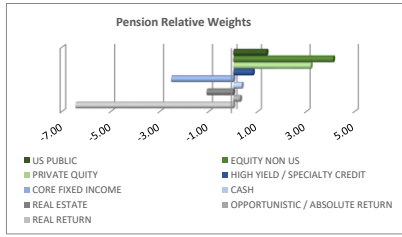
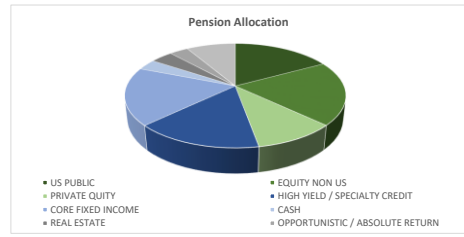
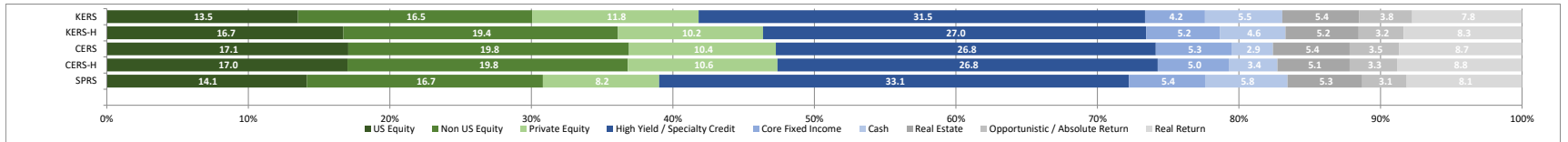
**Fund composite benchmark is a roll-up of individual plans, which may differ from one another.

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - NET RETURNS - 01/31/19

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	12,250,960,799.44	100.00	4.05	4.69	4.05	4.69	0.94	1.21	-0.78	-1.10	9.42	9.55	6.31	6.38	9.15	9.56	5.50	5.56	9.01	9.12
GROWTH			7,711,869,038.54	62.95	5.47	5.47	5.47	5.47	0.26													0.26
US PUBLIC	KY Domestic Equity Blend	4/1/1984	2,096,149,610.50	17.11	9.08	8.58	9.08	8.58	-1.34	-0.32	-2.62	-2.26	13.62	14.19	9.51	10.41	14.34	15.12	6.33	6.47	11.12	11.18
EQUITY NON US	KY Ret.Int'l Eq. Blended Index	7/1/2000	2,432,929,867.86	19.86	7.97	7.59	7.97	7.59	-4.91	-4.81	-11.66	-13.04	10.13	9.87	4.06	3.42	8.60	8.72			2.88	3.15
PRIVATE QUITY	Russell 3000 + 3%(Qtr Lag)	7/1/2002	1,246,917,590.92	10.18	0.99	0.99	0.99	0.99	11.12	11.12	17.56	17.56	13.49	13.49	13.47	13.47	11.94	17.88			11.47	11.17
HIGH YIELD / SPECIALTY CREDIT	Bloomberg Barclays US High Yield		1,935,871,969.26	15.80	1.76	1.76	1.76	1.76	2.53		3.64										5.34	5.34
FIXED INCOME / LIQUIDITY			2,611,211,858.97	21.31	0.98	0.98	0.98	0.98	2.41												2.41	2.41
CORE FIXED INCOME	Bloomberg Barclays US Aggregate		2,200,675,626.97	17.96	1.13	1.06	1.13	1.06	2.66	2.73	2.31	2.25	2.17	1.95	2.66	2.44					2.77	3.68
CASH	Citigroup Treasury Bill-3 Month	1/1/1988	410,536,232.00	3.35	0.22	0.20	0.22	0.20	1.29	1.27	2.11	1.96	1.50	1.05	0.98	0.64	0.82	0.37	2.25	1.80	3.57	3.12
DIVERSIFYING STRATEGIES			1,928,272,571.93	15.74	2.67	2.67	2.67	2.67	1.69												1.69	1.69
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index	7/1/1984	479,239,970.23	3.91	0.61	0.00	0.61	0.00	5.76	3.71	11.08	7.71	10.64	7.83	9.93	9.71	8.94	4.62	7.25	7.60	6.17	6.46
OPPORTUNISTIC / ABSOLUTE RETURN	HFRI Diversified		401,570,335.85	3.28	-0.12	2.78	-0.12	2.78	-1.14	-1.44	-1.33	-2.99	2.09	2.30	2.27	2.02					3.74	2.70
REAL RETURN	Pension Real Return Custom Benchmark	7/1/2011	1,047,462,265.85	8.55	4.70	4.70	4.70	4.70	0.90	0.90	-1.12	-1.12	6.96	6.96	2.74	2.74					3.54	2.44

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - PLAN NET RETURNS - 01/31/19

Plan	Benchmark	Inception	Market Value	% of Total	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	ITD									
KERS	KY Ret. KERS Plan Index		2,059,759,616.12	100.00	3.55	4.35	2.27	2.70	1.53	1.46	-0.02	-0.38	8.51	8.80	6.00	6.05	8.99	9.42	5.42	5.49	8.96	9.08
KERS-H	KY Ret. KERS Haz Plan Index		655,876,343.87	100.00	4.09	4.77	2.11	2.74	0.81	1.17	-0.97	-1.25	9.44	9.73	6.35	6.28	9.17	9.53	5.51	5.55	9.02	9.12
CERS	KY Ret. CERS Plan Index		6,942,310,419.08	100.00	4.16	4.77	2.13	2.74	0.77	1.17	-1.02	-1.25	9.60	9.78	6.36	6.28	9.18	9.53	5.51	5.54	9.02	9.11
CERS-H	KY Ret. CERS Haz Plan Index		2,326,060,526.87	100.00	4.15	4.77	2.14	2.74	0.78	1.17	-0.96	-1.25	9.60	9.76	6.38	6.28	9.19	9.53	5.52	5.54	9.02	9.11
SPRS	KY Ret. SPRS Plan Index		266,953,888.59	100.00	3.67	4.35	2.11	2.70	1.08	1.35	-0.63	-0.75	8.75	9.19	5.75	6.05	8.87	9.41	5.36	5.49	8.93	9.08



KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - NET RETURNS - 01/31/19

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	4/1/1987	5,172,391,249.34	100.00	4.02	4.66	4.02	4.66	0.66	0.96	-0.89	-1.17	9.72	9.85	6.35	6.65	9.68	10.52	4.95	5.21	7.35	7.71
GROWTH		7/1/2018	3,369,842,375.28	65.15	5.37	5.37	5.37	5.37	-0.09													-0.09
US PUBLIC	KY Domestic Equity Blend	7/1/1992	940,315,502.73	18.18	9.05	8.58	9.05	8.58	-1.31	-0.32	-2.64	-2.26	13.66	14.19	9.70	10.41	14.27	14.98	6.32	6.17	9.47	9.38
EQUITY NON US	KY Ret.Int'l Eq. Blended Index	4/1/2000	1,067,506,800.92	20.64	7.91	7.59	7.91	7.59	-4.98	-4.81	-11.89	-13.04	9.99	9.87	3.93	3.42	8.27	8.39			2.87	2.33
PRIVATE QUITY	Russell 3000 + 3%(Qtr Lag)	7/1/2002	565,792,005.13	10.94	0.69	0.69	0.69	0.69	8.91	8.91	18.84	18.64	15.18	15.18	15.72	15.72	14.27	17.76			10.45	10.62
HIGH YIELD / SPECIALTY CREDIT	Bloomberg Barclays US High Yield		796,228,066.50	15.39	1.47	1.47	1.47	1.47	2.54		3.63										4.99	4.99
FIXED INCOME / LIQUIDITY		7/1/2018	988,305,929.19	19.11	0.93	0.93	0.93	0.93	2.41												2.41	2.41
CORE FIXED INCOME	Bloomberg Barclays US Aggregate	7/1/2013	812,347,800.64	15.71	1.10	1.06	1.10	1.06	2.64	2.73	2.22	2.25	2.19	1.95	2.30	2.44					2.41	2.73
CASH	Citigroup Treasury Bill-3 Month	7/1/1992	175,958,128.55	3.40	0.22	0.20	0.22	0.20	1.30	1.27	2.01	1.96	1.22	1.05	0.81	0.64	0.55	0.37	1.98	1.80	2.63	2.50
DIVERSIFYING STRATEGIES		7/1/2018	814,508,291.15	15.75	2.41	2.41	2.41	2.41	1.69												1.69	1.69
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index	5/1/2009	198,790,095.59	3.84	0.58	0.00	0.58	0.00	5.76	3.71	11.01	7.71	10.80	7.83	9.74	9.71					9.27	6.00
OPPORTUNISTIC / ABSOLUTE RETURN	HFRI Diversified		174,334,852.52	3.37	-0.12	2.78	-0.12	2.78	-1.09	-1.44	-1.33	-2.99	2.09	2.30	2.28	2.02					3.68	2.70
REAL RETURN	Pension Real Return Custom Benchmark	7/1/2011	441,383,343.04	8.53	4.19	4.19	4.19	4.19	0.88	0.88	-0.89	-0.89	6.45	6.45	2.56	2.56					3.27	2.51

KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - PLAN NET RETURNS - 01/31/19

Plan	Benchmark	Inception	Market Value	% of Total	Month	3 Months	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	20 Years	ITD									
KERS INS	KY Ins. KERS Plan Index		859,746,455.48	100.00	4.26	4.44	1.79	2.46	0.03	0.91	-2.11	-1.33	9.17	10.02	5.82	6.36	9.37	10.39	4.80	5.15	7.25	7.67
KERS-H INS	KY Ins. KERS Haz Plan Index		507,201,633.37	100.00	4.00	4.49	2.02	2.71	0.61	1.17	-1.05	-0.93	9.67	10.08	6.29	6.48	9.67	10.46	4.95	5.18	7.34	7.69
CERS INS	KY Ins. CERS Plan Index		2,351,600,330.23	100.00	3.96	4.66	2.09	2.63	0.74	0.96	-0.70	-1.13	9.78	9.94	6.43	6.46	9.73	10.45	4.98	5.18	7.36	7.69
CERS-H INS	KY Ins. CERS Haz Plan Index		1,264,066,232.44	100.00	3.96	4.66	2.11	2.63	0.78	0.96	-0.72	-1.13	9.84	9.93	6.49	6.47	9.76	10.45	4.99	5.18	7.37	7.69
SPRS INS	KY Ins. SPRS Plan Index		189,776,602.95	100.00	3.97	4.66	2.11	2.63	0.78	0.96	-0.63	-1.13	9.82	9.93	6.47	6.47	9.75	10.45	4.99	5.18	7.37	7.69

