January	KRS MONTHLY PERFORMANCE UPDATE
2018	

What's going on in the marketplace?

During the month of January, global equity markets were very strong, fueled by an improved global economic outlook, optimism spurred by U.S. tax reform, and a robust corporate profit season. Toward the end of the month, a rise in global bond yields spooked equity investors which caused a slight market sell-off. Global fixed income markets declined during the month as a result of an increase in interest rates within the U.S. The U.S. dollar continued to weaken during the period which added to the positive performance of those investing in international markets.

U.S. Equities

U.S. equity markets gained approximately 5.3% (Russell 3000) on the month. Large caps led the market and returned over 5.7%, while the mid- and small caps gained approximately 2.9% and 2.6%, respectively. After a brief break in December, growth continued to lead the market during January by returning 6.8% (R3000G) while value rose 3.7% (R3000V).

The KRS U.S. Equity portfolio trailed the Russell 3000 Index by 42 bps (4.85% vs 5.27%) during the month. The portfolio's relative performance was hampered by stock selection, primarily within the internal factor based portfolio (4.4% vs 5.7%). The portfolio has a structural tilt towards value and is smaller in market cap, which were two headwinds for the period (see prior paragraph). In addition, the portfolio has a beta close to 0.8 so it struggles to keep up in strong markets.

Non-U.S. Equities

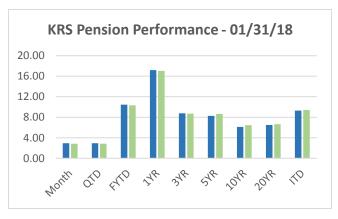
Non-U.S. equities had a strong month where they gained approximately 5.5%, which continued to build on a strong fiscal year (18%). While developed markets performed very well (5%), emerging markets added 8.4% for the month. While there was not a strong style bias, unlike in the U.S., international markets exhibited a value lean (outpacing growth by 70 bps).

The KRS Non-U.S. Equity portfolio provided a 5.9% return and outperformed the index by 42 bps on the month. Relative outperformance was driven primarily by stock selection, with three of the four active managers outperforming the index; the two growth mandates returning 7.2% and 8.9%. In addition, the overweight to the allocation was beneficial as Non-U.S. equities were the strongest performing asset class for the period.

Fixed Income

The fixed income market as a whole was negative for the month. The U.S. Aggregate fell 115 bps, and intermediate credit lost nearly 80 bps; however, the high yield market was up approximately 0.6%. The emerging market bond market was relatively flat to slightly negative on the month.

The KRS Fixed Income portfolio outperformed its benchmark for the month by 31 bps (0.13% vs -0.18%). Manager selection was the driving force behind the positive relative performance. While individual manager relative performance was mixed, a



couple of managers within the high yield and opportunistic fixed income buckets provided strong outsized performance.

Alternative Assets

All four sub-asset classes posted positive absolute returns for the month. The Absolute Return, Real Return, Private Equity, and Real Estate portfolios returned 2.3%, 1.7%, 0.1%, and 0.1%, respectively. This brought performance for the fiscal year for the Private Equity, Real Estate, Absolute Return, and Real Return portfolios to 8.2%, 5.9%, 5.7%, and 4.0%, respectively.

The real return allocation has performed well in part due to gains in energy and materials as the prospect for global growth looks better. Real estate investmentshave also performed well, but could face some challenges looking forward due to current valuation levels and the potential for higher interest rates.

Cash

The cash portfolio outperformed during the month (0.17% vs 0.11%). The cash allocation finished the period at 3.23%.

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) 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)**

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.

term returns, which is more appropriate given the long term	
Pension Benchmark Composite 01/01/16 to 08/31/17	Insurance Benchmark Composite 01/01/16 to 08/31/17
US Equity: Russell 3000 (25.6%)	US Equity: Russell 3000 (26.5%)
Non US Equity: MSCI AXCI Ex-US IMI (25.2%)	Non US Equity: MSCI AXCI Ex-US IMI (26.5%)
Global Fixed Income: Barclays Universal Index (6.8%)	Global Fixed Income: Barclays Universal Index (6.0%)
Credit Fixed Income: Barclays US High Yield (7.2%)	Credit Fixed Income: Barclays US High Yield (6.0%)
Real Estate: NCREIF ODCE (5.0%)	Real Estate: NCREIF ODCE (5.0%)
Absolute Return: HFRI Diversified FOF (10.0%)	Absolute Return: HFRI Diversified FOF (10.0%)
Real Return: Allocation Specific (8.0%)	Real Return: Allocation Specific (8.0%)
Private Equity<5Yrs: Actual Performance	Private Equity<5Yrs: Actual Performance
Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)	Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)
Cash: Cit Grp 3-mos Treasury Bill (2.2%)	Cash: Cit Grp 3-mos Treasury Bill (2.0%)
Pension Benchmark Composite 09/01/17 to Present	Insurance Benchmark Composite 09/01/17 to Present
US Equity: Russell 3000 (23.6%)	US Equity: Russell 3000 (24.5%)
Non US Equity: MSCI AXCI Ex-US IMI (23.2%)	Non US Equity: MSCI AXCI Ex-US IMI (24.5%)
Global Fixed Income: Barclays Universal Index (9.0%)	Global Fixed Income: Barclays Universal Index (8.0%)
Credit Fixed Income: Barclays US High Yield (9.0%)	Credit Fixed Income: Barclays US High Yield (8.0%)
Real Estate: NCREIF ODCE (5.0%)	Real Estate: NCREIF ODCE (5.0%)
Absolute Return: HFRI Diversified FOF (10.0%)	Absolute Return: HFRI Diversified FOF (10.0%)
Real Return<5yrs: Actual Performance	Real Return<5yrs: Actual Performance
Real Return>5yrs: CPI+3% (8%)	Real Return>5yrs: CPI+3% (8%)
Private Equity<5Yrs: Actual Performance	Private Equity<5Yrs: Actual Performance
Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)	Private Equity>5Yrs: Russell 3000 Index+3% (10.0%)
Cash: Cit Grp 3-mos Treasury Bill (2.2%)	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.

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					KENTU	CKY RETIRE	VENT SYS	STEMS - PE	NSION F	UND - NET R	ETURNS -	01/31/18										
Structure	Benchmark	Inception	Market Value	% of Total	Ma	nth	Q	TD	Fisca	I YTD	1 Ye	ar	3 Ye	ars	5 Y	'ears	10 Ye	ars	20 Ye	ears	ITD	
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	<u>Benchmark</u>	KRS	Benchmark	KRS	Benchmark	KRS	<u>Benchmark</u>	KRS	Benchmark	KRS E	Benchmark
TOTAL FUND	KY Ret. Blended Index	4/1/1984	12,709,818,594.84	100.00	2.95	2.84	2.95	2.84	10.45	10.34	17.19	17.02	8.77	8.70	8.28	B 8.64	6.12	6.48	6.51	6.64	9.31	9.44
US PUBLIC	KY Domestic Equity Blend	4/1/1984	3,052,116,252.66	24.01	4.85	5.27	4.85	5.27	16.03	17.06	22.94	25.16	13.24	14.11	14.67	7 15.53	9.55	9.96	7.78	7.88	11.55	11.60
EQUITY NON US	KY Ret.Int'l Eq. Blended Index	7/1/2000	3,213,294,263.12	25.28	5.90	5.48	5.90	5.48	19.33	18.04	32.49	30.64	11.32	10.44	8.37	7 7.64	4.42	4.03			3.78	4.16
PUBLIC EQUITY	Global Equity Blended Index	4/1/1984	6,265,410,515.78	49.30	5.38	5.37	5.38	5.37	17.73	17.56	27.72	27.89	11.98	11.83	11.02	2 10.89	6.87	6.61	6.69	6.47	10.89	10.73
FIXED INCOME	KY Ret.Fixed Blended Index	4/1/1984	2,562,667,561.46	20.16	0.13	-0.18	0.13	-0.18	1.82	1.76	4.36	4.65	4.19	4.73	3.85	5 4.15	4.87	4.84	5.62	5.63	7.61	7.43
REAL RETURN	PENSION REAL RETURN CUSTOM BM	7/1/2011	1,025,934,248.01	8.07	1.74	1.74	1.74	1.74	4.04	4.04	7.41	7.41	3.90	3.90	2.35	5 2.35					4.26	2.99
ABSOLUTE RETU	HFRI Fund of Funds Diversified Index - 1 Month	Arr 4/1/2010	829,988,783.96	6.53	2.33	1.90	2.33	1.90	5.72	6.26	7.02	7.88	2.94	3.05	4.92	2 4.30					4.40	3.37
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index ^A	7/1/1984	403,531,295.61	3.17	0.09	0.00	0.09	0.00	5.89	3.14	11.32	6.70	9.91	9.84	9.58	B 10.57	7.82	4.08	6.19	8.04	6.03	6.42
PRIVATE EQUITY	Russell 3000 + 3%(Qtr Lag)	7/1/2002	1,204,298,446.55	9.48	0.24	0.24	0.24	0.24	8.24	8.24	17.41	17.41	11.32	11.32	12.82	2 12.82	8.23	12.45			11.09	11.28
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	1/1/1988	411,090,227.22	3.23	0.17	0.11	0.17	0.11	1.08	0.65	1.42	0.91	0.87	0.42	0.68	B 0.27	0.83	0.33	2.42	1.95	3.62	3.16

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - PLAN NET RETURNS - 01/31/18 Plan Ben on Market Value % of Total Fiscal YT 1 Yea 10 Yea Mc KERS KY Ret. KERS Plan Index 2,122,890,721.59 100.00 5.88 6.53 9.24 2.52 2.36 4.73 4.39 9.16 9.05 15.21 15.08 7.79 8.15 7.79 8.20 6.27 6.39 KERS- H KY Ret. KERS Haz Plan Index 663,664,995.53 100.00 3.00 2.96 5.58 5.39 10.63 10.78 17.50 17.63 8.93 8.80 8.36 8.61 6.16 6.47 6.52 6.64 9.33 CERS KY Ret. CERS Plan Index 7,260,802,655.17 100.00 3.04 2.96 5.64 5.39 10.72 10.78 17.61 17.63 8.98 8.79 8.38 8.61 6.17 6.47 6.53 6.63 9.33 CERS- H KY Ret. CERS Haz Plan Index 2,417,402,960.08 100.00 3.03 2.96 5.61 5.39 10.67 10.78 17.55 17.63 8.99 8.79 8.38 8.61 6.17 6.47 6.53 6.63 9.33 SPRS KY Ret. SPRS Plan Index 266,954,004.84 100.00 2.64 2.57 4.92 4.74 9.51 9.66 15.77 15.94 7.77 8.24 7.68 8.26 5.83 6.29 6.36 6.55 9.22

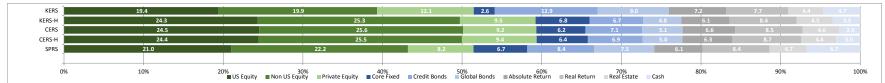
9.37

9.44

9.43

9.43

9.38



Note: The above chart displays the average monthly allocation.



KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - NET RETURNS - 01/31/18

Structure	Benchmark	Inception	Market Value	% of Total	Mc	onth	Q	TD	Fiscal	I YTD	1 Ye	ar	3 Yo	ears	5 Ye	ars	10 \	ears	20 Y	ears	ITD	۵
					KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS	Benchmark	KRS E	Benchmark
TOTAL FUND	KY Ins. Blended Index	4/1/1987	5,239,018,177.65	100.00	3.03	2.94	3.03	2.94	10.75	10.73	17.63	17.68	9.10	9.11	8.21	8.90	5.39	5.95	5.89	6.17	7.63	8.01
US PUBLIC	KY Domestic Equity Blend	7/1/1992	1,316,905,184.44	25.14	4.84	5.27	4.84	5.27	15.99	17.06	22.96	25.16	13.65	14.11	14.82	15.53	9.41	9.79	7.60	7.34	9.97	9.86
EQUITY NON US	KRS Ins.Int'l Eq Blend	4/1/2000	1,380,258,048.39	26.35	5.88	5.48	5.88	5.48	19.31	18.04	32.35	30.64	11.26	10.44	8.19	7.64	4.14	3.67			3.76	3.27
PUBLIC EQUITY	Global Equity Blended Index	7/1/1992	2,697,163,232.83	51.48	5.37	5.37	5.37	5.37	17.68	17.57	27.62	27.91	12.21	11.88	11.14	10.87	6.65	6.41	6.54	6.16	9.12	8.91
FIXED INCOME	KRS Ins. Fixed Blended Index	7/1/1992	997,832,245.79	19.05	0.06	-0.18	0.06	-0.18	1.66	1.76	4.01	4.65	4.00	4.73	3.37	4.15	4.57	4.64	6.01	5.99	6.44	6.43
REAL RETURN	INSURANCE REAL RET CUSTOM BM	7/1/2011	437,410,217.19	8.35	1.54	1.54	1.54	1.54	3.69	3.69	7.19	7.19	3.60	3.60	2.02	2.02					3.92	3.04
ABSOLUTE RETU	R HFRI Fund of Funds Diversified Index - 1 Month	Arr 4/1/2010	334,557,440.65	6.39	2.38	1.90	2.38	1.90	5.80	6.26	7.08	7.88	2.97	3.05	4.92	4.30					4.34	3.37
REAL ESTATE	NCREIF NFI-ODCE Net 1 Qtr in Arrears Index ^A	5/1/2009	167,176,623.05	3.19	0.08	0.00	0.08	0.00	5.88	3.14	11.46	6.70	9.94	9.84	9.38	10.57					9.08	5.81
PRIVATE EQUITY	' Russell 3000 + 3% (Qtr Lag)	7/1/2002	495,284,353.41	9.45	0.25	0.25	0.25	0.25	8.64	8.64	18.20	18.20	14.28	14.28	15.12	15.12	10.11	11.75			9.94	10.69
CASH ACCOUNT	Citigroup Treasury Bill-3 Month	7/1/1992	109,856,796.45	2.10	0.12	0.11	0.12	0.11	0.86	0.65	1.20	0.91	0.63	0.42	0.47	0.27	0.54	0.33	2.13	1.95	2.66	2.52

				KEN	ITUCKY RET	IREMEN	T SYSTEMS	- INSURA	NCE FUNE	D - PLAN N	IET RETURI	NS - 01/31	L/18									
Plan	Benchmark	Inception	Market Value	% of Total	Month		3 Mont	hs	Fiscal Y		1 Yea		3 Years		5 Years		10 Year		20 Year			
KERS INS	KY Ins. KERS Plan Index		852,111,539.33	100.00	2.99	2.94	5.39	5.39	10.32	10.80	16.91	17.63	8.71	8.92	7.86	8.68	5.22	5.84	5.80	6.12	7.57	7.97
KERS - H INS	KY Ins. KERS Haz Plan Index		527,189,039.12	100.00	3.04	2.94	5.64	5.39	10.71	10.81	17.56	17.72	9.02	8.97	8.22	8.72	5.39	5.86	5.89	6.13	7.63	7.98
CERS INS	KY Ins. CERS Plan Index		2,374,041,099.38	100.00	3.02	2.94	5.68	5.39	10.80	10.82	17.72	17.77	9.14	9.01	8.27	8.75	5.42	5.87	5.90	6.14	7.64	7.98
CERS - H INS	KY Ins. CERS Haz Plan Index		1,291,781,050.85	100.00	3.03	2.94	5.72	5.39	10.85	10.82	17.82	17.78	9.22	9.01	8.31	8.75	5.44	5.87	5.91	6.14	7.64	7.98
SPRS INS	KY Ins. SPRS Plan Index		193,895,453.20	100.00	3.04	2.94	5.74	5.39	10.89	10.82	17.86	17.77	9.19	9.02	8.29	8.76	5.43	5.88	5.91	6.14	7.64	7.98

KERS INS		24.6		25.5		5.1	9.3		9.0	4.8	6.2	8.6	4.1	2.8
KERS-H INS		24.9		25.8		8.9		6.8	6.8	5.2	6.7	8.4	5.0	1.5
CERS INS		24.6		25.5		10.6		5.8	6.4	5.0	6.4	8.9	4.8	2.0
CERS-H INS		24.7		25.7		11.0		5.2	6.2	5.1	6.6	8.5	4.8	2.3
SPRS INS		24.8		25.7		11.	2	4.8	6.3	5.1	6.8	7.8		2.3
0	10)% 2	0% US Equity Non US Equ		0% re Fixed Credit Bonds	50% Global Bonds ■Ab	60% solute Return	Real Return	70% Real Estate	Cash	80%	90%		100%

Note: The above chart displays the average monthly allocation.