

What's going on in the marketplace?

The second quarter was marked with the continued strong performance of risk assets across the globe. Economic data seemed to underpin the movement with relatively strong earnings and top line growth at the corporate level, job growth leading to lower unemployment figures, and muted inflation. The quarter also provided active investors hope for outperformance as dispersion amongst market factors emerged, which has not been the case in prior quarters with higher correlations. In general, emerging markets slightly edged their developed international counterparts, which outperformed the domestic market. Currency played a meaningful role in the performance of international equities for U.S. based investors as the USD weakened during the period.

U.S. Equities

U.S. equity markets gained 0.9% (Russell 3000) during June. This brought the return for the quarter to just over 3%, and for the fiscal year to approximately 18.5%. While the gains of the second quarter were not as strong as those prior to this fiscal year, they came with less volatility. This environment was partly created by optimism for growth with subdued inflation. While large caps outperformed small and mid caps during the quarter (2-3% each); there was a significant dispersion between style performance. Growth outperformed value during the quarter 4.7% vs 1.3% (Russell 3000 style indices).

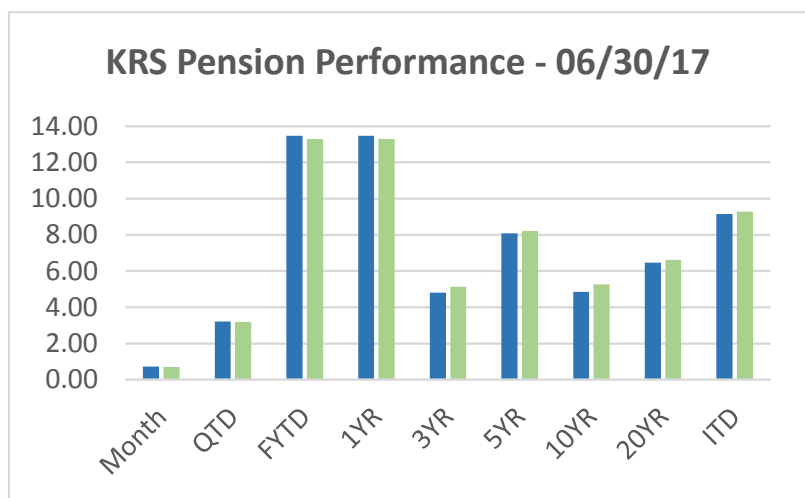
During the month, the KRS U.S. equity portfolio outperformed the Russell 300 Index (1.09% vs 0.90%) due primarily to positive relative performance from the internal factor based portfolio. For the quarter, the allocation trailed its index by 38 basis points as the mid cap value and all cap dividend value mandates struggled during the period. During the fiscal year, the U.S. equity portfolio gained approximately 18% versus the 18.5% of the index, with the internal factor based portfolio struggling to keep pace with the large cap market as its low volatility and value tilts were out of favor.

Non-U.S. Equities

Non-U.S. equities rose roughly 40 bps on the month, bringing the quarter return to just over 6% (MSCI ACWI Ex-US). For the most part, the rise in both developed and emerging markets was driven by signs of strength in economic growth. These advances came with increased volatility as uncertainty regarding several geopolitical risks weighed on investors (French election, North Korea). Stronger earnings, reduced political uncertainty (as elections cleared), and relatively attractive valuations led to the outperformance of international equities versus domestic. Non-U.S. equities have gained by nearly 21% for the fiscal year with developed countries rising approximately 20% (MSCI EAFE) and emerging markets growing nearly 24% (MSCI EM).

The KRS Non-U.S. equity portfolio was flat during the month, with mixed performance of the active mandates overpowering the benefit of being overweight small caps. For the quarter,

the portfolio added 6.27%, adding 22 basis points over the index. Three of the four active mandates performed inline or outperformed the index. Relative allocation had little impact on the portfolio's performance during the quarter. The non-U.S. portfolio earned 20.23% versus the index return of 20.97% during the fiscal year.



Fixed Income

During the month, the Fed Funds rate was increased by the FOMC, sighting sufficient job growth to continue to hold the unemployment rate near full employment. The increase in the fed rate combined with the current inflation environment led to a flattening of the yield curve.

The KRS Fixed Income portfolio provided 10 bps of relative outperformance during the month, and trailed its index for the quarter, returning 1.66% versus 1.85%. For the fiscal year, the fixed income portfolio trailed its index by 12 basis points, returning 6.54%. The opportunistic and corporate high yield mandates provided strong double digit returns.

Alternative Assets

For the month, all sub-asset classes provided positive absolute returns. Further, all sub-asset classes provided both positive absolute and relative returns during the quarter. The Real Return portfolio added 89 bps over its index. The Real Estate allocation returned 2.24% for the month and the Private Equity portfolio gained 5.57%. The Absolute Return portfolio gained 44 bps versus the 20 bps of its benchmark. On the fiscal year, all four sub-asset classes provided both positive absolute and relative returns: real return 7.52%, absolute return 5.41%, real estate 9.87%, and private equity 12.76%.

Cash

The cash portfolio performed well during both the month (0.08% vs 0.07%) and quarter (0.23% vs 0.18%). 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 nearly 1%.

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 (detailed return sheets pgs.4-5), returns are net of fees beginning with July 2011, and gross of fees for prior data.
- 2) Individual plan allocation and performance (pg.6).
- 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) | Private Equity Composite (Insurance) |
| Inception (07/01/02) to 06/30/11 | Inception (07/01/02) to 06/30/11 |
| 60.00% S&P 1500 Composite Index | 80.00% S&P 1500 Composite Index |
| 40.00% Barclays US Corporate High Yield Index | 20.00% Barclays US Corporate High Yield Index |
| 07/01/11 to 12/31/15 | 07/01/11 to 12/31/15 |
| 100.00% Russell 3000 Index + 4% (Qtr Lag) | 100.00% Russell 3000 Index + 4% (Qtr Lag) |
| 01/01/16 to Present | 01/01/16 to Present |
| 100.00% Russell 3000 Index + 3% (Qtr Lag) | 100.00% Russell 3000 Index + 3% (Qtr Lag) |
- 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)

| | |
|---|---|
| <u>Pension Benchmark Composite 01/01/14 to 12/31/15</u> | <u>Insurance Benchmark Composite 01/01/14 to 12/31/15</u> |
| US Equity: Russell 3000 (20.5%) | US Equity: Russell 3000 (20.0%) |
| Non US Equity: MSCI AXCI Ex-US (20.0%) | Non US Equity: MSCI AXCI Ex-US (20.0%) |
| Emerging Market: MSCI Emerging Markets (2.9%) | Emerging Market: MSCI Emerging Markets (4.0%) |

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%)
Pension Benchmark Composite 01/01/16 to Present
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%)

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%)
Insurance Benchmark Composite 01/01/16 to Present
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%)

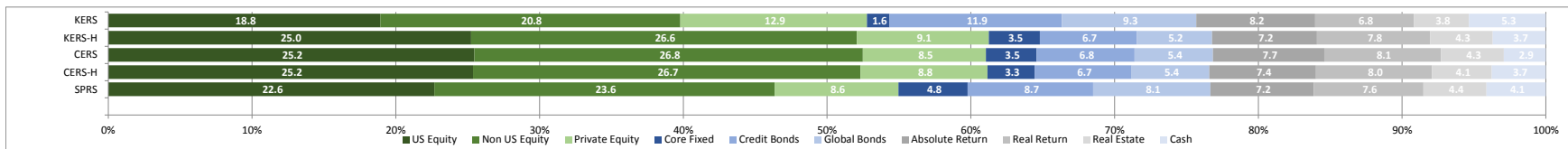
**Fund composite benchmark is a roll-up of individual plans, which may differ from one another.

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - NET RETURNS - 06/30/17

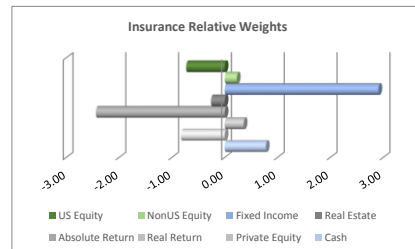
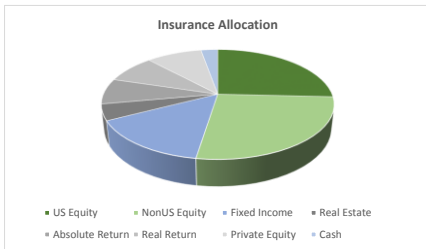
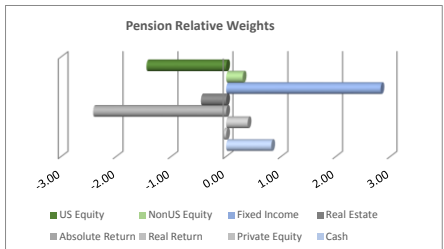
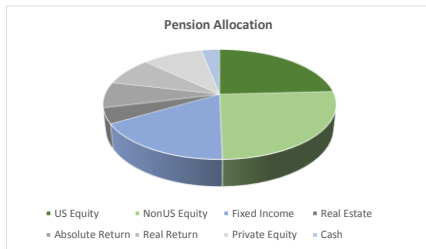
| Structure | Benchmark | Inception | Market Value | % of Total | Month | | QTD | | Fiscal YTD | | 1 Year | | 3 Years | | 5 Years | | 10 Years | | 20 Years | | ITD | |
|-----------------|---|-----------|-------------------|------------|-------|-----------|------|-----------|------------|-----------|--------|-----------|---------|-----------|---------|-----------|----------|-----------|----------|-----------|-------|-----------|
| | | | | | 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 | 11,765,921,797.91 | 100.00 | 0.73 | 0.70 | 3.22 | 3.19 | 13.47 | 13.29 | 13.47 | 13.29 | 4.81 | 5.13 | 8.08 | 8.22 | 4.86 | 5.26 | 6.46 | 6.63 | 9.16 | 9.29 |
| US PUBLIC | KY Domestic Equity Blend | 4/1/1984 | 2,841,318,569.16 | 24.15 | 1.09 | 0.90 | 2.64 | 3.02 | 17.99 | 18.51 | 17.99 | 18.51 | 8.27 | 9.10 | 13.99 | 14.59 | 7.01 | 7.29 | 7.55 | 7.62 | 11.27 | 11.29 |
| EQUITY NON US | KY Ret.Int'l Eq. Blended Index | 7/1/2000 | 3,000,241,205.46 | 25.50 | 0.01 | 0.37 | 6.27 | 6.05 | 20.23 | 20.97 | 20.23 | 20.97 | 1.85 | 1.29 | 8.30 | 7.72 | 1.65 | 1.38 | | | 2.83 | 3.29 |
| PUBLIC EQUITY | Global Equity Blended Index | 4/1/1984 | 5,841,559,774.62 | 49.65 | 0.53 | 0.64 | 4.48 | 4.52 | 19.18 | 19.83 | 19.18 | 19.83 | 4.72 | 4.63 | 10.67 | 10.51 | 4.22 | 3.97 | 6.38 | 6.20 | 10.54 | 10.39 |
| FIXED INCOME | KY Ret. Fixed Blended Index | 4/1/1984 | 1,979,070,426.86 | 16.82 | 0.13 | 0.03 | 1.66 | 1.85 | 6.54 | 6.66 | 6.54 | 6.66 | 4.23 | 5.24 | 4.47 | 4.21 | 5.57 | 5.61 | 5.90 | 5.92 | 7.69 | 7.51 |
| REAL RETURN | PENSION REAL RETURN CUSTOM BM | 7/1/2011 | 987,065,408.51 | 8.39 | 0.11 | -0.31 | 0.63 | -0.26 | 7.52 | 3.12 | 7.52 | 3.12 | 1.44 | 0.61 | 2.47 | 2.34 | | | | | 4.00 | 2.73 |
| ABSOLUTE RETURN | HFRI Fund of Funds Diversified Index - 1 Month Ar | 4/1/2010 | 891,916,328.25 | 7.58 | -0.05 | -0.44 | 0.44 | 0.20 | 5.41 | 5.08 | 5.41 | 5.08 | 1.39 | 1.73 | 4.89 | 3.66 | | | | | 3.96 | 2.75 |
| REAL ESTATE | NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^ | 7/1/1984 | 534,041,148.22 | 4.54 | 1.97 | 1.54 | 2.24 | 1.54 | 9.87 | 7.36 | 9.87 | 7.36 | 8.97 | 10.77 | 9.39 | 10.94 | 7.23 | 4.62 | 6.06 | 8.23 | 5.95 | 6.44 |
| PRIVATE EQUITY | Russell 3000 + 3%(Qtr Lag) | 7/1/2002 | 1,170,348,378.65 | 9.95 | 3.60 | 3.60 | 5.57 | 5.57 | 12.76 | 12.76 | 12.76 | 12.76 | 9.23 | 9.23 | 12.19 | 12.19 | 7.32 | 10.63 | | | 10.95 | 10.95 |
| CASH ACCOUNT | Citigroup Treasury Bill-3 Month | 1/1/1988 | 355,162,424.36 | 3.02 | 0.08 | 0.07 | 0.23 | 0.18 | 0.99 | 0.46 | 0.99 | 0.46 | 0.54 | 0.20 | 0.51 | 0.15 | 1.06 | 0.51 | 2.53 | 2.07 | 3.65 | 3.20 |

KENTUCKY RETIREMENT SYSTEMS - PENSION FUND - PLAN NET RETURNS - 06/30/17

| 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 | | 2,016,474,973.09 | 100.00 | 0.81 | 0.73 | 3.06 | 3.00 | 12.09 | 11.93 | 12.09 | 11.93 | 4.46 | 4.82 | 7.84 | 8.04 | 4.75 | 5.17 | 6.40 | 6.58 | 9.12 | 9.26 |
| KERS-H | KY Ret. KERS Haz Plan Index | | 600,383,970.69 | 100.00 | 0.73 | 0.69 | 3.26 | 3.24 | 13.44 | 13.58 | 13.44 | 13.58 | 4.86 | 4.81 | 8.12 | 8.11 | 4.88 | 5.20 | 6.47 | 6.60 | 9.16 | 9.27 |
| CERS | KY Ret. CERS Plan Index | | 6,688,757,842.98 | 100.00 | 0.71 | 0.67 | 3.25 | 3.22 | 13.81 | 13.64 | 13.81 | 13.64 | 4.89 | 4.80 | 8.12 | 8.11 | 4.88 | 5.20 | 6.47 | 6.60 | 9.16 | 9.27 |
| CERS-H | KY Ret. CERS Haz Plan Index | | 2,216,699,660.35 | 100.00 | 0.73 | 0.68 | 3.25 | 3.23 | 13.73 | 13.62 | 13.73 | 13.62 | 4.93 | 4.80 | 8.14 | 8.11 | 4.89 | 5.20 | 6.47 | 6.60 | 9.17 | 9.27 |
| SPRS | KY Ret. SPRS Plan Index | | 243,605,359.60 | 100.00 | 0.67 | 0.63 | 3.00 | 3.02 | 12.50 | 12.62 | 12.50 | 12.62 | 4.12 | 4.61 | 7.67 | 7.97 | 4.66 | 5.14 | 6.35 | 6.57 | 9.09 | 9.25 |



Note: The above chart displays the average monthly allocation.

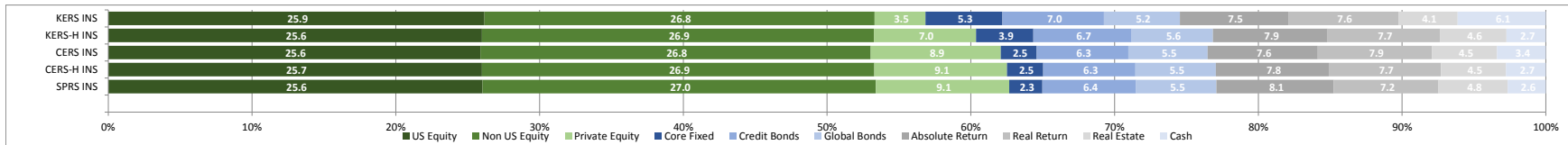


KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - NET RETURNS - 06/30/17

| 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 | 4,756,431,529.75 | 100.00 | 0.73 | 0.70 | 3.28 | 3.29 | 13.72 | 13.55 | 13.72 | 13.55 | 4.99 | 5.45 | 7.92 | 8.40 | 3.78 | 4.33 | 5.82 | 6.15 | 7.42 | 7.80 |
| US PUBLIC | KY Domestic Equity Blend | 7/1/1992 | 1,225,771,491.08 | 25.77 | 1.12 | 0.90 | 2.72 | 3.02 | 18.09 | 18.51 | 18.09 | 18.51 | 8.69 | 9.10 | 14.15 | 14.59 | 6.93 | 7.22 | 7.34 | 7.08 | 9.56 | 9.41 |
| EQUITY NON US | KRS Ins.Int'l Eq Blend | 4/1/2000 | 1,271,375,678.49 | 26.73 | 0.05 | 0.37 | 6.25 | 6.05 | 20.40 | 20.97 | 20.40 | 20.97 | 1.77 | 1.29 | 8.15 | 7.72 | 1.64 | 1.04 | | | 2.84 | 2.40 |
| PUBLIC EQUITY | Global Equity Blended Index | 7/1/1992 | 2,497,147,169.57 | 52.50 | 0.57 | 0.63 | 4.48 | 4.53 | 19.31 | 19.84 | 19.31 | 19.84 | 5.04 | 4.69 | 10.75 | 10.44 | 4.11 | 3.82 | 6.21 | 5.88 | 8.63 | 8.43 |
| FIXED INCOME | KRS Ins. Fixed Blended Index | 7/1/1992 | 709,024,662.99 | 14.91 | 0.11 | 0.03 | 1.53 | 1.85 | 5.90 | 6.66 | 5.90 | 6.66 | 3.69 | 5.24 | 4.00 | 4.21 | 5.78 | 5.85 | 6.34 | 6.33 | 6.53 | 6.51 |
| REAL RETURN | INSURANCE REAL RET CUSTOM BM | 7/1/2011 | 397,613,501.14 | 8.36 | 0.02 | -0.33 | 0.66 | -0.07 | 6.60 | 2.96 | 6.60 | 2.96 | 1.32 | 0.77 | 2.11 | 2.43 | | | | | 3.68 | 2.81 |
| ABSOLUTE RETURN | HFRI Fund of Funds Diversified Index - 1 Month Ar | 4/1/2010 | 359,494,838.32 | 7.56 | -0.03 | -0.45 | 0.42 | 0.17 | 5.32 | 5.05 | 5.32 | 5.05 | 1.41 | 1.72 | 4.87 | 3.65 | | | | | 3.89 | 2.75 |
| REAL ESTATE | NCREIF NFI-ODCE Net 1 Qtr in Arrears Index^ | 5/1/2009 | 225,257,998.38 | 4.74 | 2.08 | 1.54 | 2.21 | 1.54 | 10.44 | 7.36 | 10.44 | 7.36 | 9.32 | 10.77 | 9.09 | 10.94 | | | | | 8.99 | 5.84 |
| PRIVATE EQUITY | Russell 3000 + 3% (Qtr Lag) | 7/1/2002 | 436,133,044.48 | 9.17 | 3.52 | 3.52 | 5.84 | 5.84 | 12.76 | 12.76 | 12.76 | 12.76 | 12.63 | 12.63 | 14.16 | 14.16 | 8.94 | 9.81 | | | 9.74 | 10.34 |
| CASH ACCOUNT | Citigroup Treasury Bill-3 Month | 7/1/1992 | 132,119,150.59 | 2.78 | 0.08 | 0.07 | 0.23 | 0.18 | 0.62 | 0.46 | 0.62 | 0.46 | 0.38 | 0.20 | 0.37 | 0.15 | 0.76 | 0.51 | 2.24 | 2.07 | 2.69 | 2.55 |

KENTUCKY RETIREMENT SYSTEMS - INSURANCE FUND - PLAN NET RETURNS - 06/30/17

| 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 | | 768,806,027.96 | 100.00 | 0.53 | 0.37 | 3.17 | 3.11 | 13.78 | 13.90 | 13.78 | 13.90 | 4.72 | 4.97 | 7.65 | 8.17 | 3.65 | 4.22 | 5.76 | 6.10 | 7.37 | 7.77 |
| KERS-H INS | KY Ins. KERS Haz Plan Index | | 483,868,456.62 | 100.00 | 0.70 | 0.63 | 3.26 | 3.22 | 13.76 | 13.74 | 13.76 | 13.74 | 4.93 | 5.02 | 7.93 | 8.21 | 3.79 | 4.24 | 5.83 | 6.11 | 7.42 | 7.77 |
| CERS INS | KY Ins. CERS Plan Index | | 2,149,543,570.89 | 100.00 | 0.77 | 0.68 | 3.29 | 3.27 | 13.67 | 13.63 | 13.67 | 13.63 | 5.03 | 5.06 | 7.97 | 8.24 | 3.81 | 4.25 | 5.84 | 6.11 | 7.42 | 7.78 |
| CERS-H INS | KY Ins. CERS Haz Plan Index | | 1,176,799,435.27 | 100.00 | 0.78 | 0.68 | 3.31 | 3.28 | 13.70 | 13.62 | 13.70 | 13.62 | 5.08 | 5.06 | 8.00 | 8.24 | 3.82 | 4.25 | 5.84 | 6.11 | 7.43 | 7.78 |
| SPRS INS | KY Ins. SPRS Plan Index | | 177,414,049.66 | 100.00 | 0.77 | 0.68 | 3.33 | 3.28 | 13.70 | 13.62 | 13.70 | 13.62 | 5.03 | 5.08 | 7.98 | 8.25 | 3.81 | 4.26 | 5.84 | 6.12 | 7.42 | 7.78 |



Note: The above chart displays the average monthly allocation.