Memorandum

То	Kentucky Retirement System Investment Committee
From	RVK, Inc.
Subject	2014-2015 Fiscal Year Global Equity Market Commentary
Date	October 15, 2015

Economic Review

The fiscal year began July 1 with most U.S. economic data indicating the U.S. would experience continued economic expansion at a moderate rate. The International Monetary Fund (IMF) increased its U.S. Gross Domestic Product (GDP) growth forecast to 2.2% from a prior forecast of 1.7%, and projected 3.1% growth for 2015. The Federal Reserve (the Fed) maintained its commitment to end quantitative easing, while also signaling a slight bias toward maintaining an accommodative interest rate policy for the near-term. The unemployment rate fell to 5.9% in September with monthly job growth on pace to be the fastest annual job growth rate since 1999.

In the Eurozone, the economic data indicated continued challenges for the member countries, which led the European Central Bank (ECB) to announce additional measures to stimulate the economy. In Japan, investors blamed a devalued Yen and new consumption tax for weaker than expected industrial and retail sales. During this time, developed nations imposed sanctions on Russia's role in the Crimea crisis. Russia responded with import bans and a fifty-point interest rate increase in an effort to stabilize the currency and stem capital flight.

During the second fiscal quarter (CY4Q14), the U.S. economy continued to show stable growth compared to foreign regions. Economic data released during the quarter suggested that the recovery was unfettered by the Fed's reduction of quantitative easing, as proven by strong expansion in the manufacturing sector and continued decline of the unemployment rate to a calendar year-ending 5.6%. Despite the progress on the employment front, the Fed remained keenly aware of other indicators, including muted wage growth, which suggested pockets of weakness in economy. Core inflation, excluding food and energy prices, remained close to the Fed's stated 2% target, triggering views the Fed would raise interest rate by mid-2015 unless there were signs of disinflation.

Economic developments in Europe and emerging economies were less impressive. European monetary policy proven successful in recapitalizing the banking system, but weak loan demand from the private sector muted



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the flow of capital in the economy. In an effort to spur growth and make lending more attractive, the ECB announced quantitative easing plans, which included the purchase of up to €500 billion of investment grade securities. Within emerging economies, falling oil prices (caused by an oversupply in the market) and a rising U.S. dollar led to renewed concerns over possible balance of payments issues and capital flight. Russia's prospects deteriorated as the ruble declined 32% against the dollar, even as the Russian Central Bank increased rates from 6.5% to 17%.

In a reversal from the first half of the fiscal year, the U.S. experienced slower economic growth in the third fiscal quarter (CY1Q15), as the release of several key indicators were below expectations. While the unemployment rate remained steady at 5.5% in March, additional non-farm payroll jobs came in well below expectations followed by downward revisions of the January and February figures. The manufacturing sector, which showed growth through the first six months, fell throughout the third fiscal quarter. Despite softer-than-expected economic data, minutes from the March Federal Open Market Committee meeting indicated that while some members favored a potential June 2015 rate hike, Fed Chair Janet Yellen and others seemed more willing to wait for stronger wage inflation before considering an increase in the Federal Funds rate.

Globally, much attention was focused on oil prices, as OPEC producers refused to yield to pressure to cut production. Generally, non-OPEC producers also declined to curtail production despite lower prices due to the need to generate sufficient cash flow to service existing debt. In addition to price pressure from oversupply, weaker-than-expected global demand magnified downward pressure on oil prices. In Europe, Greece's Syriza leadership reached an agreement with the Troika to maintain the country's funding for several months while working toward an acceptable package of reforms. The second half of the fiscal year also saw the continued efforts of the European Central Bank and Bank of Japan to maintain their aggressive monetary easing policies. The impact of these policies on current and expected interest rates led to a strengthening of the U.S. dollar, which raised concerns regarding U.S. exports and the dollar value of earnings generated in foreign currencies.

Several events occurred during fourth quarter of the fiscal year (CY2Q15) that kept markets in turmoil. First, the U.S. dollar strength dissipated to a degree. Second, developed market interest rates, which had been trending lower and were negative in some markets, reversed sharply. Lastly, oil prices, in part helped by weakness in the U.S. dollar, bounced off the early 2015 lows and finished the fiscal year higher. Relatively benign equity volatility in April and May gave way to heightened volatility in the second half of June, with investors fixated on Greece's debt situation and government intervention in China.

In the U.S., the Fed took no action, having observed economic data that showed below target inflation, softer GDP growth, and lower labor productivity.



In Europe, Greece's problems deteriorated significantly after bailout talks failed, and the Syrizaled government missed a \$1.7 billion payment due to the IMF in June. In China, the government's desire to rotate investment from its real estate sector to the equity markets hit a snag, as the Shanghai Composite fell 20% in the final 10 trading days of June. In response, the People's Bank of China cut its benchmark interest rate by 0.25% before the end of June.

Global Equity Markets Review

U.S. equity markets outperformed international markets for the fiscal year, as evidenced by the Russell 3000 returning 7.3%, compared to -4.9% for the MSCI All Country World ex U.S. Index and -4.8% for the MSCI Emerging Market Index (in U.S. dollar terms).

The following chart illustrates the passive returns earned by each asset class included within the KRS Global Equity portfolio for fiscal year 2014-2015.



Over the trailing three-year period, the indices generated the following risk and return characteristics:





U.S. Equities

The U.S. stock market began the fiscal year relatively flat, but rallied significantly during the second fiscal quarter (CY4Q14) on a strengthening U.S. dollar, rapidly falling oil prices, and a positive revision to CY3Q14 GDP growth. Investor risk appetite remained low due to geopolitical concerns and anticipated interest rate increases. However, consumer spending and M&A activity supported U.S. equity returns. Volatility in the market also picked up, benefitting larger cap and higher quality companies. The increase in volatility, coupled with lower correlations, provided a tailwind for active managers. One frequent refrain communicated by active managers had been that stocks with higher debt levels and mega cap stocks, both typically underweighted by active managers, drove index returns above active management returns.

During a volatile third fiscal quarter (CY1Q15), the Russell 3000 Index generating negative returns in January and March, but a positive 1.8% return for the quarter due to a strong February rally. Growth stocks outperformed, with the Russell 3000 Growth Index exceeding the Russell 3000 Value Index by over 450 basis points during the quarter. Despite managers citing relatively attractive valuations in the large-cap segment, small- and mid-cap stocks outpaced large-cap stocks. One cause for this disparity is the strengthening of the U.S. dollar which provides a greater earnings drag on companies with a larger percentage of revenues derived from exports to non-U.S. regions. Companies with substantial sales in foreign markets tend to occupy the large cap segment.

CY2Q15 was relatively flat as market turmoil overseas impacted domestic markets and erased otherwise positive April and May performance. The Russell 3000 Index finished the quarter returning 0.14%, with growth moderately outperforming value. Large-cap stocks contributed mainly flat performance, while mid-cap stocks faced strong headwinds and ended in negative territory. Micro- and small-cap stocks were the top performers during the quarter. A strong U.S. dollar served as a hindrance to companies that derive significant earnings from non-U.S. regions.

Non-U.S. Equities: Developed and Emerging Markets

International markets performed the inverse of U.S. markets, with sharp negative performance the first half of the fiscal year, and a partial recovery the second half. Developed international markets experienced a strong downturn during the start of the fiscal year (CY3Q14), led by Europe, which was the worst performing region in the MSCI EAFE Index. Emerging economies with greater dependency on commodity exports were hurt by deflationary headwinds resulting from an oversupply of oil and weaker than expected demand in developed economies. Throughout most of the second half of the fiscal year (CY2H15), developed international markets significantly outperformed the U.S. market. Similar to the U.S., growth outperformed value and small-cap outperformed large-cap. Although deflation concerns regarding the potential exit of Greece from the European Union continued to weigh on European markets,



performance remained positive. Greece's debt crisis dominated the headlines yet its equity markets generated positive performance for the quarter.

For CY2Q15, the strongest contributor to performance, as measured by the MSCI EAFE Index, was Japan. Japan reported 2.4% growth for the previous quarter, giving investors some confidence that Abenomics had started to work. The emerging markets outperformed their developed counterparts. Within emerging markets, value stocks outperformed; reversing the strong performance of growth stocks within emerging markets over the past few years. Greece dominated the headlines because the debt-laden country did not make one of its debt payments. Greece saw positive performance for the quarter, but it has shed 25% of its value annually over the last 5 years. China had a strong positive quarter amid elevated volatility. Over the past year, the Shanghai composite rose over 150%, partially fueled by government intervention. The increased use of margin debt in China is generally viewed as a key reason for the sharp downturn in the local Chinese markets at the close of the fiscal year.

KRS Global Equity Portfolio

Overview Summary

The Kentucky Retirement System Pension Plans (comprised of five distinct pension plans: KERS Non-Hazardous and Hazardous, CERS Non-Hazardous and Hazardous, and SPRS) have an average target allocation of 43.4% to global equities. The Insurance Plans (same five distinct plans) have a target of 44.0% to global equities.

	Pension		Insurance	
	Actual	Target	Actual	Target
Global Equity	43.8%	43.4%	47.4%	44.0%
US Equity	20.7%	20.5%	23.5%	20.0%
Non-US Equity	20.0%	20.0%	20.0%	20.0%
Emerging Markets	3.1%	2.9%	3.9%	4.0%
Global Fixed Income	18.7%	19.3%	19.6%	20.0%
Real Return	9.7%	10.0%	9.3%	10.0%
Real Estate	5.3%	4.5%	5.4%	5.0%
Absolute Return	10.7%	10.0%	10.6%	10.0%
Private Equity	9.6%	10.0%	6.6%	10.0%
Cash Equivalents	2.1%	2.8%	1.1%	1.0%
Total	100.0%	100.0%	100.0%	100.0%

While posting a positive absolute return, the U.S. equity composite underperformed the Russell 3000 Index by approximately 125 basis points for the fiscal year (6.0% versus 7.3%), net of fees. The Non-U.S. equity composite outperformed its benchmark, the MSCI All Country World ex U.S. Index, by 86 basis points, but produced negative absolute returns based in a challenging environment (-4.0% versus -4.9%). The Emerging Markets equity composite detracted on both an absolute and relative performance basis, declining -6.7% versus -4.8% for the MSCI Emerging Markets Index.



	Pens	Pension		Insurance	
	Portfolio	Index	Portfolio	Index	
US Equity	6.0%	7.3%	6.3%	7.3%	
Non-US Equity	-4.0%	-4.9%	-4.2%	-4.9%	
Emerging Markets	-6.7%	-4.8%	-6.7%	-4.8%	

Note: Returns are net of fees.

Focusing on the Pension Plan (as returns for the Insurance Plan are similar if not identical in some cases), the top performing managers on a relative basis for the fiscal year were:

U.S. Equitv¹

Westwood (6.2% versus 3.9%) and Northern Trust Structured Small Cap (7.6% versus 6.5%)

Non-U.S. Equity: Developed and Emerging Markets²

Lazard International (-0.1% versus -4.9%), LSV (-3.4% versus -4.9%), American Century (-3.0% versus -4.9%), and Franklin Templeton (-1.9% versus -4.9%). Based on challenging market conditions, managers produced negative absolute returns, but outperformed the MSCI All Country World ex U.S. Index due to strong bottom-up, fundamental stock selection over the period.

The following managers detracted relative to their respective benchmarks during the fiscal year:

U.S. Equity³

River Road (2.5% versus 3.9%), Westfield (8.7% versus 10.7%), Invesco (4.5% versus 7.4%), Sasco (-8.8% versus 3.7%), and Systematic Financial (-0.7% versus 3.7%). The All-Cap and large cap managers produced positive absolute returns for the portfolio, but lagged their respective benchmarks. However, the two mid cap managers both produced negative returns on both an absolute and relative basis for the fiscal year.

Non-U.S. Equity: Developed and Emerging Markets⁴

The Boston Company (-6.6% versus -4.9%), Aberdeen EM (-8.6% versus -4.8%), and Wellington EM (-6.4% versus -4.8%).

¹ Westwood's benchmark is the Russell 3000 Value Index and Northern Trust benchmark is the Russell $^{\rm 2000}$ Index. $^{\rm 2}$ The benchmark for all listed managers is the MSCI ACW ex US Index

³ The benchmarks are the Russell 3000 Value Index, Russell 3000 Growth Index, S&P 500 Index, Russell Mid Cap Value Index, and Russell Mid Cap Value Index, respectively.

⁴ The benchmark for Boston Company is the MSCI ACW ex US Index and the benchmark for Aberdeen and Wellington is the MSCI Emerging Market Index.



Portfolio Modifications and Updates

Within the U.S. equity composite, Geneva Capital Management was terminated from the portfolio early in the fiscal year and the proceeds invested in the Internal U.S. Mid Cap Index portfolio. Additional analysis will be conducted in the next fiscal year to enhance the domestic equity portfolio, which will consider reducing the number of managers as well as resizing existing mandates. Furthermore, there is consideration to restructure the U.S. equity portfolio by introducing an alternative indexing mandate in an effort to reduce the level of portfolio volatility tied to the equity markets at a cost less than active management.

The non-U.S. composite was restructured at the end of last fiscal year to include diversified "core" strategies and concentrated "satellite" strategies to complement core exposures. During this fiscal year, Pyramis International Growth was removed from the portfolio based on organizational changes and ongoing performance concerns. The next fiscal year will begin the analysis to consider combining the non-U.S. and dedicated emerging market composite into a single international composite, potentially reducing the number of managers and focusing on flexible, global mandates.