Investment Performance Review Period Ending September 30, 2018

## City of Key West General Employees' Pension Fund

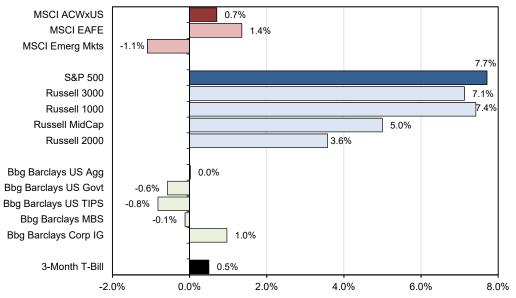


**3rd Quarter 2018 Market Environment** 

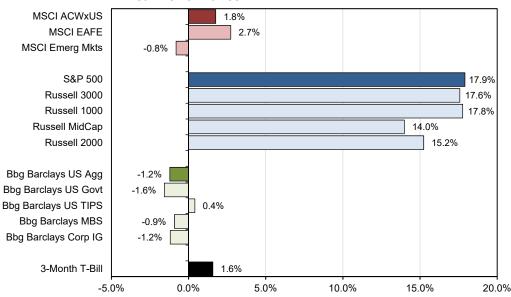


- Market returns were mixed across major equity and fixed income indices for the 3rd guarter of 2018 with many themes from the 2nd guarter repeating during the current period. Broad domestic equity indices pushed higher on continued strength in both economic and corporate earnings data. Corporate earnings continue to benefit from fiscal stimulus tailwinds in the form of the late 2017 tax reform. International indices underperformed domestic indices during the period, posting more muted returns in US dollar (USD) terms, as investors weighed relatively soft economic data, a strengthening USD and geopolitical concerns, especially around global trade relations. Fixed income returns were flat for the quarter as interest rates continued to rise. Domestic stocks rose as concerns around ongoing monetary policy tightening by the Federal Reserve (Fed) and an escalating trade war between the US and China were not substantial enough to dampen investor enthusiasm around the ongoing strength of the US economy. The US stock market represented by the Russell 3000 Index returned 7.1% and 17.6% for the guarter and 1-year period respectively.
- International equity returns finished the quarter slightly positive with the MSCI ACWI ex US Index returning 0.7%. Developed market stocks pushed higher through the period, however, relatively subdued economic growth and ongoing political and trade uncertainty tempered returns versus domestic equities. The developed market MSCI EAFE Index gained 1.4% during the quarter. Emerging market stocks struggled in comparison, posting negative returns for the period, as trade tensions grew between the US and China. In addition, a strengthening USD caused headwinds for most international markets, but caused particular difficulties for emerging market countries that issue debt in USD. The MSCI Emerging Markets Index posted a small decline of -1.1% during the 3rd quarter. The relative outperformance of developed markets can also be seen in the 1-year period with the MSCI EAFE and MSCI Emerging Markets indices returning 2.7% and -0.8% respectively.
- Interest rates on the US Treasury Yield Curve continued their year-to-date rise during the 3rd quarter as investor expectations for further Fed tightening of monetary policy increased during the period. The yield curve did flatten slightly as interest rates had the greatest increase in short-term maturities, but overall, the shift in rates was fairly consistent throughout the entire curve. The Fed did implement another interest rate increase following their September meeting citing the continued strength of the US economy and stable inflation. The broad market Bloomberg Barclays US Aggregate Index was flat for the quarter returning 0.0% and is slightly negative over the 1-year period returning -1.2%. Corporate issues rebounded following underperformance during the first half of the year and were the only investment grade sector to post a positive return during the quarter, as they benefitted from tightening credit spreads and strong investor demand.



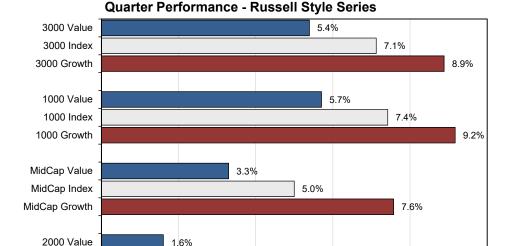


## 1-Year Performance





- US equity index returns were positive across the style and capitalization spectrum during the 3rd quarter of 2018. US equity markets were pushed higher by the ongoing strength in US economic data and corporate earnings. Positive data releases in GDP, unemployment, retail sales, consumer consumption and investor sentiment highlighted the continued health of the US economy. Corporate earnings released during the guarter were also impressive. Earnings reported for S&P 500 companies were up over 20% on a year-over-year basis for the second straight quarter as corporate profits continued to benefit from the new tax code. The current expansion in US equity markets now marks the longest bull market in history. While the positive economic data drove returns through the quarter, trade negotiations with China broke down with both the US and China instituting several rounds of new tariffs during the period. Currently the US is imposing tariffs on \$250 billion of Chinese imports with China placing tariffs on \$110 billion worth of goods. Further action has been threatened by both countries. While negotiations with China have been unsuccessful, progress was made in the renegotiation of the North American Free Trade Agreement (NAFTA) and discussions with the European Union (EU) appear to be moving ahead productively.
- During the quarter, large cap stocks outperformed mid and small cap equities across growth, value and core indices. The large cap Russell 1000 Index returned 7.4% for the quarter versus a 3.6% return for the Russell 2000 Index. The Russell 1000 benefitted from strong performance from some of its largest exposures. Apple Inc, Microsoft Corp and Amazon.com Inc alone make up over 10% of the index and posted quarterly returns of 22.4%, 16.4% and 17.8% respectively. Those same three stocks have gained 48.7%, 56.3% and 108.4% over the 1-year period. This strong performance from some of the index's largest constituents has helped large caps outperform small caps over the 1-year period as well with the Russell 1000 returning 17.8% over the trailing year while the Russell 2000 posted a still solid return of 15.2%.
- Growth stocks outperformed value stocks across the market cap spectrum during the 3rd quarter. The large cap Russell 1000 Growth Index was the best performing style index for the period returning a notable 9.2% for the quarter. The outperformance of growth indices relative to value indices is also evident over the 1-year period as growth indices continue to show significant outperformance relative to their value counterparts. The returns for growth indices more than double the returns of the corresponding value indices over the last 12 months. Growth benchmarks benefitted from larger exposures to more cyclical names within the information technology, consumer discretionary, health care and industrials sectors. They also benefitted from underweights to more defensive sectors such as REITs and utilities.



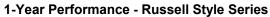
3.6%

4.0%

5.5%

6.0%

8.0%

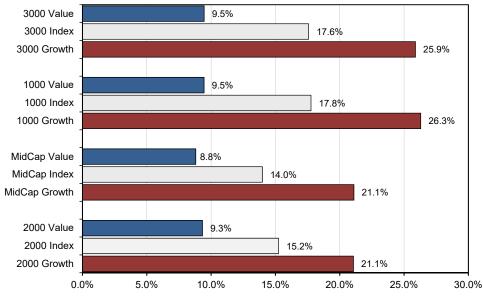


2.0%

2000 Index

2000 Growth

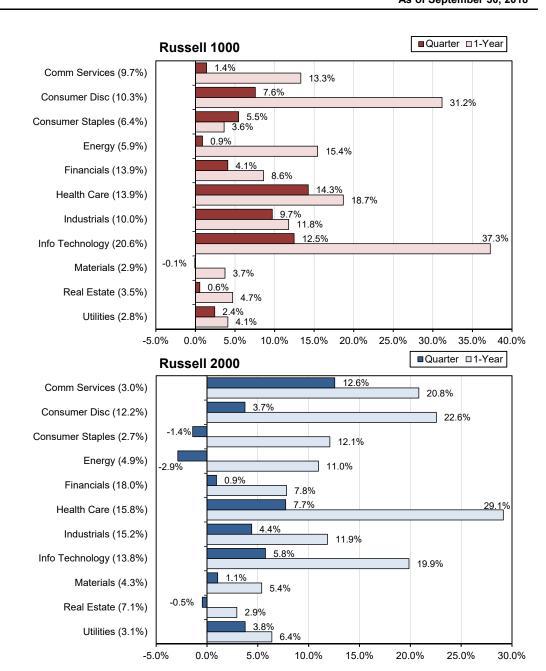
0.0%





10.0%

- Both S&P Dow Jones Indices and MSCI made changes to the Global Industry Classification Standard (GICS) sector configurations of their indices, creating a new GICS sector classification called Communication Services which replaced the Telecommunications sector on September 28, 2018. The Communication Services sector is comprised of companies in the Telecommunications sector, as well as certain companies formerly classified as Consumer Discretionary and Information Technology. As a result, the sector, went from a weighting of about 2% of the Russell 1000 Index to almost 10% post reclassification. Notable names now classified under Communication Services include Netflix, Alphabet, Facebook and Disney. This is just the second change to the GICS classifications since 1999.
- Sector performance was broadly positive across large cap sectors for the 3rd quarter. Ten of eleven sectors had positive returns for the quarter with four outpacing the Russell 1000 Index return. The consumer discretionary sector continues to do well on the back of strong retail sales and increased consumer spending, gaining 7.6% for the period. Health care and technology stocks increased 14.3% and 12.5% during the quarter respectively, with companies in both sectors reporting strong earnings. Industrials benefitted from continued economic strength returning 9.7%. The largest detractors for the quarter were the materials, real estate and energy sectors which returned -0.1%, 0.6% and 0.9% respectively. Over the trailing 1-year period, all large cap all sectors were positive. The information technology and consumer discretionary sectors were the best performers, returning over 30% over the last 12 months, and six of eleven sectors have returns over 10% for the year.
- Quarterly results for small cap sectors were generally lower relative to their large capitalization counterparts. Nine of eleven sectors had positive returns during the period with six of eleven economic sectors outpacing the Russell 2000 Index return for the quarter. Energy, consumer staples and real estate posted negative returns for the period returning -2.9%, -1.4% and -0.5% respectively. Communications services and health care were the best performers returning 12.6% and 7.7%. Over the trailing 1-year period, all eleven sectors posted gains. Health care stocks were the best performers within the Russell 2000 for the trailing year returning a solid 29.1%. Communication services, technology, and consumer discretionary also had particularly robust returns for the 1-year period.
- Using S&P 500 sector valuations as a proxy for the market, forward P/E ratios for seven of the eleven GICS sectors were higher than their long-term averages at quarter-end. Using these historical P/E measures, the utilities, consumer discretionary and real estate sectors appear the most extended. In contrast the financials, technology and health care sectors were trading at a discount to their long-term average P/E ratios.





Top 10 Weighted Stocks								
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector				
Apple Inc	3.97%	22.4%	48.7%	Information Technology				
Microsoft Corp	3.15%	16.4%	56.3%	Information Technology				
Amazon.com Inc	2.96%	17.8%	108.4%	Consumer Discretionary				
Berkshire Hathaway Inc B	1.51%	14.7%	16.8%	Financials				
Facebook Inc A	1.42%	-15.4%	-3.8%	Communication Services				
JPMorgan Chase & Co	1.37%	8.9%	20.7%	Financials				
Johnson & Johnson	1.35%	14.6%	9.1%	Health Care				
Alphabet Inc Class C	1.32%	7.0%	24.4%	Communication Services				
Alphabet Inc A	1.31%	6.9%	24.0%	Communication Services				
Exxon Mobil Corp	1.31%	3.8%	7.9%	Energy				

Top 10 Weighted Stocks								
Russell 2000	Weight	Weight 1-Qtr 1-Year Return Return		Sector				
Five Below Inc	0.31%	33.1%	137.0%	Consumer Discretionary				
Etsy Inc	0.27%	21.8%	204.4%	Consumer Discretionary				
Integrated Device Technology Inc	0.27%	47.5%	76.9%	Information Technology				
LivaNova PLC	0.27%	24.2%	76.9%	Health Care				
Haemonetics Corp	0.26%	27.8%	155.4%	Health Care				
Teladoc Health Inc	0.25%	48.8%	160.5%	Health Care				
Ligand Pharmaceuticals Inc	0.25%	32.5%	101.6%	Health Care				
HubSpot Inc	0.24%	20.4%	79.6%	Information Technology				
Primerica Inc	0.23%	21.3%	49.2%	Financials				
HealthEquity Inc	0.22%	25.7%	86.7%	Health Care				

Top 10 Performing Stocks (by Quarter)								
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector				
Advanced Micro Devices Inc	0.10%	106.1%	142.3%	Information Technology				
Square Inc A	0.10%	60.6%	243.7%	Information Technology				
Paycom Software Inc	0.03%	57.2%	107.3%	Information Technology				
Twilio Inc A	0.02%	54.0%	189.0%	Information Technology				
Atlassian Corporation PLC A	0.03%	53.8%	173.5%	Information Technology				
Molina Healthcare Inc	0.03%	51.8%	116.3%	Health Care				
DexCom Inc	0.05%	50.6%	192.4%	Health Care				
Match Group Inc	0.01%	49.5%	149.7%	Communication Services				
Fortinet Inc	0.05%	47.8%	157.4%	Information Technology				
IAC/InterActiveCorp	0.06%	42.1%	84.3%	Communication Services				

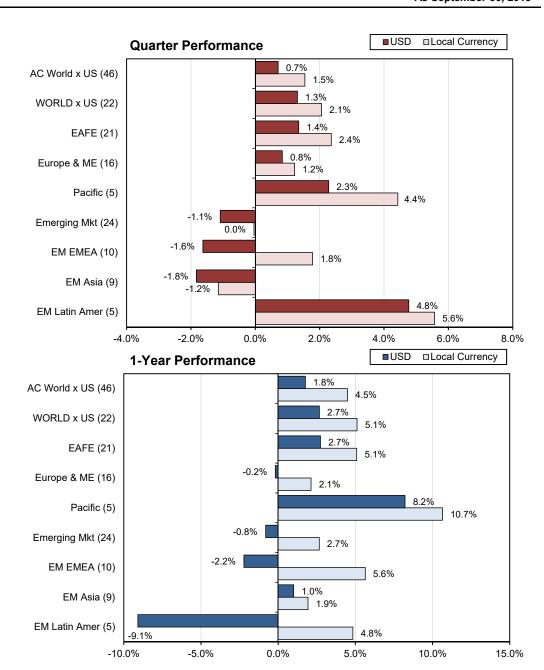
Top 10 Performing Stocks (by Quarter)									
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector					
CareDx Inc	0.04%	135.7%	679.7%	Health Care					
Reata Pharmaceuticals Inc A	0.07%	133.8%	162.9%	Health Care					
Invitae Corp	0.05%	127.6%	78.5%	Health Care					
RigNet Inc	0.01%	97.6%	18.3%	Energy					
Tandem Diabetes Care Inc	0.10%	94.6%	486.8%	Health Care					
Health Insurance Innovations Inc	0.03%	90.6%	325.2%	Financials					
Funko Inc Class A	0.01%	88.8%	N/A	Consumer Discretionary					
LSB Industries Inc	0.01%	84.5%	23.2%	Materials					
Viking Therapeutics Inc	0.04%	83.6%	812.0%	Health Care					
Ra Pharmaceuticals Inc	0.01%	81.8%	23.9%	Health Care					

Bottom 10 Performing Stocks (by Quarter)							
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector			
Floor & Decor Holdings Inc	0.01%	-38.8%	-22.5%	Consumer Discretionary			
Twitter Inc	0.07%	-34.8%	68.7%	Communication Services			
IPG Photonics Corp	0.02%	-29.3%	-15.7%	Information Technology			
Visteon Corp	0.01%	-28.1%	-24.9%	Consumer Discretionary			
Zillow Group Inc A	0.01%	-26.0%	10.1%	Communication Services			
Zillow Group Inc C	0.02%	-25.1%	10.0%	Communication Services			
Western Digital Corp	0.06%	-23.7%	-30.4%	Information Technology			
Wynn Resorts Ltd	0.05%	-23.7%	-13.3%	Consumer Discretionary			
Extraction Oil & Gas Inc	0.00%	-23.1%	-26.6%	Energy			
Tesla Inc	0.13%	-22.8%	-22.4%	Consumer Discretionary			

Bottom 10 Performing Stocks (by Quarter)								
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector				
Vital Therapies Inc	0.00%	-96.0%	-94.5%	Health Care				
GTx Inc	0.00%	-89.7%	-81.4%	Health Care				
Ampio Pharmaceuticals Inc	0.00%	-76.9%	-16.9%	Health Care				
Innovate Biopharmaceuticals Inc	0.01%	-71.0%	-2.4%	Health Care				
Zion Oil & Gas Inc	0.00%	-68.4%	-62.5%	Energy				
Endologix Inc	0.01%	-66.3%	-57.2%	Health Care				
Lannett Co Inc	0.01%	-65.1%	-74.3%	Health Care				
Maiden Holdings Ltd	0.01%	-62.6%	-61.1%	Financials				
Diebold Nixdorf Inc	0.02%	-62.3%	-80.1%	Information Technology				
Sears Holdings Corp	0.00%	-59.2%	-86.7%	Consumer Discretionary				



- Broad international equity returns were mixed for the quarter. Most developed markets were positive in local currency and USD terms whereas emerging markets were negative in both local currency and USD terms. Performance was largely driven by the same catalysts as the US equity markets for the second straight quarter. We saw global macroeconomic data slow, but remain generally positive through the period, with returns being tempered by global trade tensions and ongoing political uncertainty. The USD continued to strengthen against most currencies for the period as relatively strong US economic fundamentals and the continued divergence in global monetary policy hurt US investors in international markets. The MSCI ACWI ex US Index gained 1.5% in local currency terms and 0.7% in USD terms during the 3rd quarter. Returns over the 1-year period are modestly positive in both local currency and USD terms with the MSCI ACWI ex US returning 4.5% and 1.8% respectively.
- Third quarter results for developed market international indices were positive in local currency terms and USD terms with the MSCI EAFE Index returning 2.4% and 1.4% respectively. Returns were dampened for US investors as continued strength in the USD pushed returns lower. Developed markets were pushed higher by broadly positive, but slowing, global economic and earnings data despite several significant political events in Europe during the quarter. Concerns over a "no deal" Brexit and worries over a pending budget approval in Italy weighed on returns, while markets were encouraged by progress in trade negotiations between the US and the eurozone and signs of continued political stability in Japan. The MSCI EAFE Index returned 5.1% and 2.7% for the last twelve months in local currency and USD terms respectively.
- Emerging markets underperformed relative to developed markets for the 3rd quarter, posting a flat return in local currency terms that was exacerbated by the rising USD. The MSCI Emerging Markets Index returned 0.0% and -1.1% in local currency and USD terms respectively. Returns in emerging markets were the hurt by the deterioration in trade negotiations between the US and China followed by several rounds of new tariffs enacted by both countries. Emerging market stocks were also negatively affected by rising US interest rates coupled with an appreciating USD. Many emerging market countries and companies issue debt denominated in USD and the combination of higher interest rates and a relatively weaker local currency can put stress on the balance sheets of these borrowers, especially those heavily dependent on external capital. This was particularly problematic for Turkey, Argentina and South Africa during the 3rd quarter with Argentina having to expedite their request for an emergency bailout of \$50 billion from the World Monetary Fund. In positive news, Mexico and the US made progress toward the renegotiation of NAFTA. One year returns for the MSCI Emerging Market Index were 2.7% in local currency terms and -0.8% in USD terms.



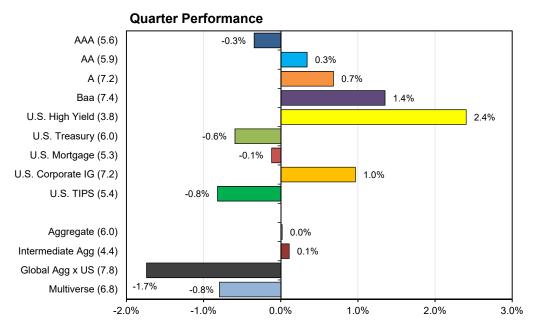


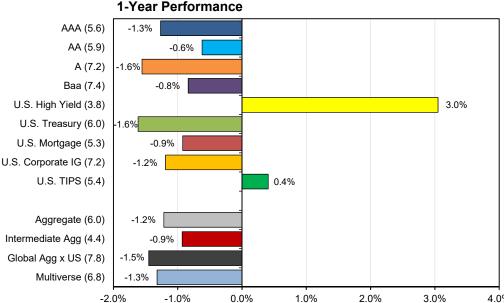
MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.4%	3.3%	-2.4%
Consumer Discretionary	11.1%	-0.5%	3.3%
Consumer Staples	11.3%	-0.1%	2.5%
Energy	6.0%	3.5%	24.6%
Financials	19.8%	0.9%	-4.0%
Health Care	10.9%	5.6%	7.1%
Industrials	14.3%	2.6%	4.2%
Information Technology	6.2%	0.3%	7.4%
Materials	8.1%	0.4%	5.1%
Real Estate	3.5%	-3.0%	1.0%
Utilities	3.3%	-0.6%	0.7%
Total	100.0%	1.4%	2.7%
MSCI - ACWIXUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	7.6%	-3.0%	-4.1%
Consumer Discretionary	10.7%	-3.2%	-1.4%
Consumer Staples	9.7%	-0.6%	1.6%
Energy	7.1%	4.1%	18.3%
Financials	22.0%	1.7%	-1.9%
Health Care	8.3%	4.5%	7.6%
Industrials	11.7%	2.8%	3.8%
Information Technology	8.5%	1.3%	5.6%
Materials	8.2%	0.4%	5.2%
Real Estate	3.2%	-3.5%	-2.7%
Utilities	3.0%	-0.9%	-1.2%
Total	100.0%	0.7%	1.8%
MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	14.8%	-9.4%	-6.0%
Consumer Discretionary	11.3%	-9.9%	-13.2%
Consumer Staples	6.7%	-2.9%	-1.9%
Energy	6.3%	14.5%	26.0%
Financials	23.3%	1.5%	0.4%
Health Care	3.1%	-7.2%	11.4%
Industrials	5.3%	2.5%	-4.3%
Information Technology	15.9%	2.2%	2.3%
Materials	7.8%	4.5%	8.6%
Real Estate	2.9%	-5.6%	-15.1%
Utilities	2.5%	-1.9%	-5.4%
Total	100.0%	-1.1%	-0.8%

	MSCI-EAFE	MSCI-ACWIXUS	Quarter	1- Year
Country	Weight	Weight	Return	Return
Japan	24.6%	16.9%	3.7%	10.2%
United Kingdom	17.5%	12.0%	-1.7%	2.9%
France	11.2%	7.7%	2.8%	4.2%
Germany	9.4%	6.5%	-0.6%	-5.4%
Switzerland	8.3%	5.7%	7.3%	1.6%
Australia	6.8%	4.7%	-0.9%	4.4%
Hong Kong	3.5%	2.4%	-1.0%	2.9%
Netherlands	3.3%	2.3%	-1.5%	-1.6%
Spain	3.0%	2.0%	-2.4%	-9.7%
Sweden	2.7%	1.9%	7.0%	-3.3%
Italy	2.3%	1.6%	-4.5%	-8.9%
Denmark	1.7%	1.2%	2.3%	-4.2%
Singapore	1.3%	0.9%	2.2%	6.9%
Finland	1.1%	0.7%	3.2%	10.3%
Belgium	1.0%	0.7%	-5.2%	-11.8%
Norway	0.8%	0.5%	6.7%	13.7%
Israel	0.6%	0.4%	5.1%	14.9%
Ireland	0.5%	0.4%	-5.4%	-6.1%
Austria	0.2%	0.2%	0.2%	-3.1%
New Zealand	0.2%	0.2%	2.4%	4.4%
Portugal	0.2%	0.1%	-0.6%	1.7%
Total EAFE Countries	100.0%	68.7%	1.4%	2.7%
Canada		6.7%	0.8%	1.9%
Total Developed Countries		75.3%	1.3%	2.7%
China		7.6%	-7.5%	-2.2%
Korea		3.7%	0.7%	1.4%
Taiwan		3.0%	6.5%	9.7%
India		2.1%	-2.3%	1.1%
Brazil		1.5%	6.1%	-14.0%
South Africa		1.5%	-7.4%	-5.1%
Russia		0.9%	6.2%	13.7%
Mexico		0.8%	6.9%	-4.4%
Thailand		0.6%	13.6%	15.2%
Malaysia		0.6%	3.8%	7.6%
Indonesia		0.5%	2.0%	-10.4%
Poland		0.3%	10.6%	-5.0%
Chile		0.3%	-2.0%	-5.7%
Philippines		0.2%	1.0%	-15.6%
Qatar		0.2%	12.8%	25.3%
United Arab Emirates		0.2%	3.1%	-6.9%
Turkey		0.2%	-20.5%	-41.7%
Colombia		0.1%	-2.5%	10.0%
Peru		0.1%	-2.1%	12.2%
Greece		0.1%	-17.6%	-14.8%
Hungary		0.1%	4.7%	-5.0%
Czech Republic		0.1%	4.0%	12.8%
Egypt		0.0%	-6.8%	-7.1%
Pakistan		0.0%	-4.9%	-20.6%
Total Emerging Countries		24.7%	-1.1%	-0.8%



- Broad fixed income benchmarks had mixed results during the 3rd quarter. Interest rates rose across all maturities on the US Treasury Yield Curve. The Federal Open Market Committee (FOMC), decided to increase short-term interest rates by 25 basis points at their September meeting citing continued strength in the economy and stable inflation. This is the third rate hike of 2018. The current Fed Funds Rate target range sits at 2.00%-2.25%. The FOMC also changed the language used in its policy statement, removing the word "accommodative", which investors took as a signal that the Fed plans to continue its trend of monetary policy tightening. The yield curve continued to flatten, although very gradually, as short-term yields rose at a greater rate than long-term yields during the quarter. The difference in yields between the 2year and 10-year Treasury now sits at just 0.24%. As the curve continues to flatten, it moves closer to becoming "inverted", which happens when shortterm maturities have greater yields than long-term securities. Historically, an inverted yield curve has signaled a greater probability of a recession. The Fed is also continuing the reduction of the size of its balance sheet by slowing its pace of reinvestment as the securities it holds mature. The Bloomberg Barclays US Aggregate Index was flat during the quarter, posting a 0.0% return. Over the 1-year period the index has fallen -1.2%.
- Within investment grade credit, lower quality corporate issues outperformed higher quality issues as credit spreads tightened steadily over the quarter. On an absolute basis, without negating the duration differences in the sub-indices, Baa rated credit was the best performing investment grade credit quality segment returning 1.4% for the quarter, while AAA was the worst performing, falling -0.3%. High yield debt outperformed relative to investment grade credit, returning 2.0%, as spreads tightened to a greater degree for these issues and the index benefitted from less sensitivity to rising interest rates due to its lower duration. Returns are negative for all investment grade quality segments when viewed over the 1-year period while high yield continues to outperform with a return of 3.0%.
- Of the Bloomberg Barclays US Aggregate Index's three broad sectors, US investment grade corporates were the best performing investment grade sector through the quarter, returning 1.0%, and the only sector to post a positive return for the period. Corporate credit outperformed as credit spreads tightened. Demand for these securities outweighed supply for the period despite considerable new issuance and a headwind from the sectors higher duration relative to other index sectors. Treasuries were the worst performing sector posting a -0.6% return. Over the 1-year period, all three broad investment grade sectors posted losses with mortgages, investment grade credit and Treasuries falling -0.9%, -1.2% and -1.6% respectively.







- Global fixed income indices continue to struggle relative to their domestic counterparts, underperforming during the 3rd quarter. These indices have lower yields and their relatively high duration acted as a headwind to performance in the current quarter as interest rates increased. The returns of these indices are also significantly influenced by fluctuations in their currency denomination relative to the USD. During the 3rd quarter the USD strengthened against most other currencies, negatively impacting the returns on global bond indices. The return on global bonds, as represented by the Bloomberg Barclays Global Aggregate ex US Index, was -1.7% and -1.5% for the guarter and 1-year period respectively. As the global economy continues to recover, several international central banks have started to move toward less accommodative postures. Notably, the ECB, began to slow its monthly bond purchase program in September, reducing new purchases to 15 billion euro per month from 30 billion euro per month, as well as forecasting an end to the program by the end of the year assuming the eurozone recovery continues to flourish. However, they have indicated a continuation of reinvestment in maturing securities and would likely not raise interest rates from current levels until summer 2019. The Bank of England increased interest rates by 0.25% during the guarter citing improvement in their near-term economic outlook and the Bank of Japan has changed its policy to allow flexibility for future tightening in the future.
- Much of the index performance detailed in the bar graphs on the previous page is visible on a time series basis by reviewing the line graphs to the right. The '1-Year Trailing Market Rates' chart illustrates that the 10-year Treasury yield (green line) rose steadily during the end of the 3rd quarter, ending the period at 3.05%. The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-Treasury issues. This line illustrates a steady increase in credit spreads through the first two quarters of 2018, followed by a smooth decline during the 3rd quarter. This decline is equivalent to an interest rate decrease on corporate bonds, which produces an additional tailwind for corporate bond index returns. These credit spreads have tightened by about 20 basis points over the last 3-months. The green band across the graph illustrates the gradual increase in the Federal Funds Rate (three increases in the last twelve months) due to the continued unwinding of accommodative US monetary policy.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four calendar quarters. As mentioned, the yield curve continues to flatten as yields on shorter-term maturities have risen more than interest rates on the long end of the curve. The upward momentum of interest rates as well as a general flattening of the yield curve are clearly visible over the last twelve months.

## 1-Year Trailing Market Rates

**Treasury Yield Curve** 

0.00

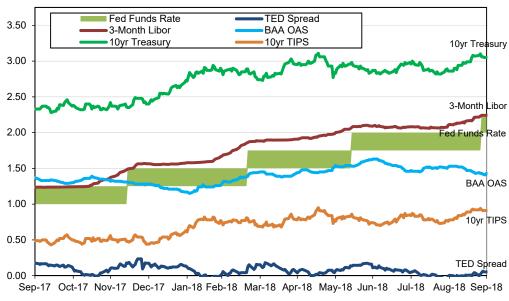
1 mo

3 mo

6 mo

1 yr

2 yr



3.50
3.50
3.00
3.00
12/31/2017
3/31/2018
9/30/2018
6/30/2018
3/31/2017
2.50
1.50
1.50

3 yr

5 yr

7 yr

10 yr

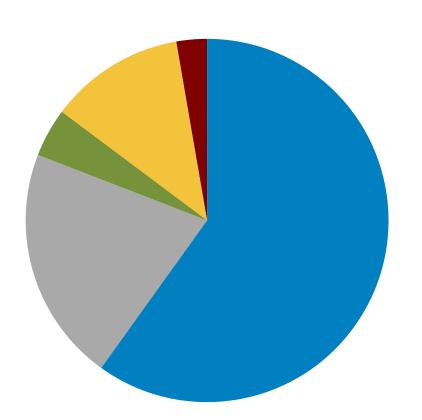
20 yr

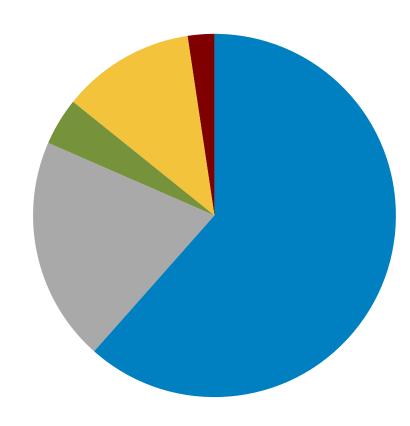


30 yr

Asset Allocation By Segment as of June 30, 2018 : \$55,273,229

Asset Allocation By Segment as of September 30, 2018 : \$57,293,652



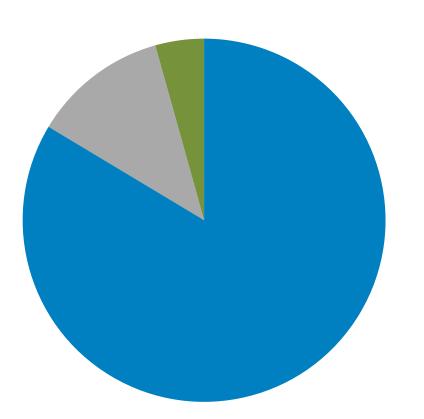


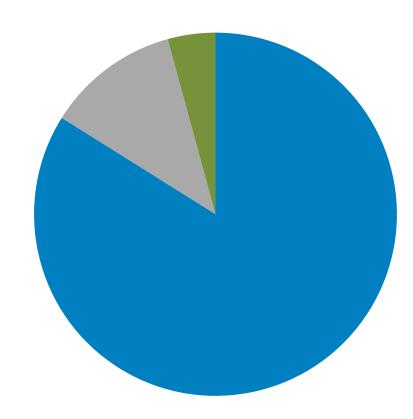
ocation			Allocation		
Segments	Market Value	Allocation	Segments	Market Value	Allocation
■ Equity	33,117,151	59.9	■ Equity	35,260,748	61.5
Domestic Fixed Income	11,583,591	21.0	Domestic Fixed Income	11,458,629	20.0
■ Global Fixed Income	2,398,855	4.3	Global Fixed Income	2,422,587	4.2
Real Estate	6,665,395	12.1	Real Estate	6,792,782	11.9
■ Cash Equivalent	1,508,237	2.7	Cash Equivalent	1,358,906	2.4



Asset Allocation By Manager as of June 30, 2018 : \$55,273,229

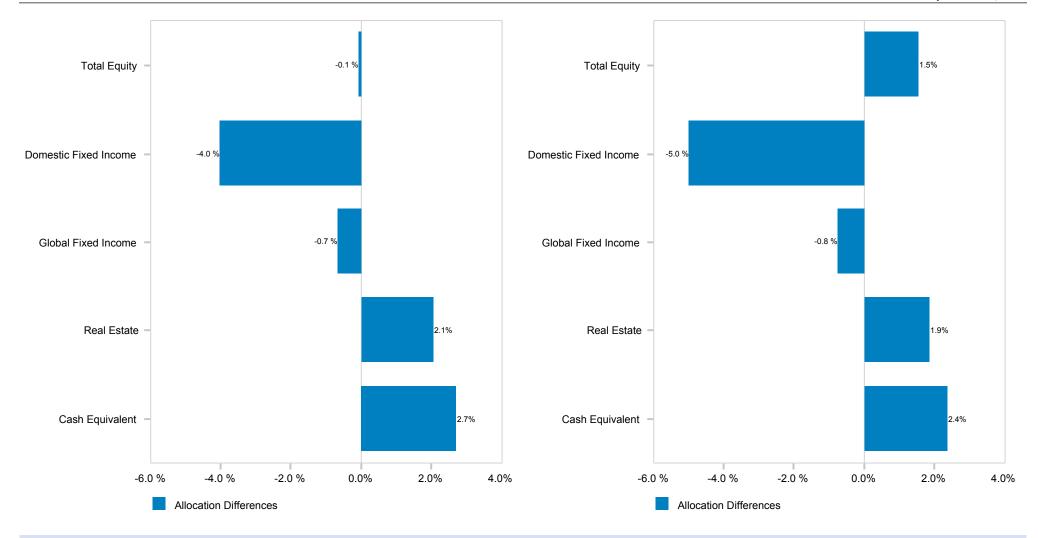
Asset Allocation By Manager as of September 30, 2018 : \$57,293,652





Allocation	Allocation						
	Market Value	Allocation		Market Value	Allocation		
■ Highland Capital	46,208,979	83.6	■ Highland Capital	48,066,676	83.9		
American Core Realty Fund	6,665,395	12.1	American Core Realty Fund	6,792,782	11.9		
Templeton Global	2,398,855	4.3	Templeton Global	2,434,194	4.2		

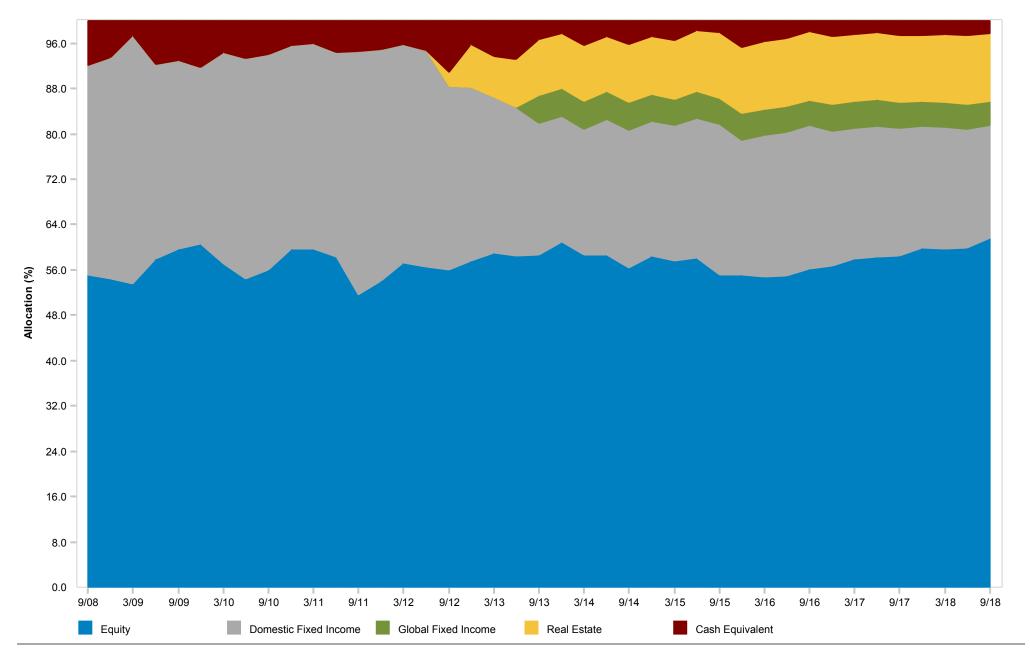




As of June 30, 2018				As of September 30, 2018				
	Market Value \$	Allocation (%)	Target (%)		Market Value \$	Allocation (%)	Target (%)	
Total Equity	33,117,151	59.9	60.0	Total Equity	35,260,748	61.5	60.0	
Domestic Fixed Income	11,583,591	21.0	25.0	Domestic Fixed Income	11,458,629	20.0	25.0	
Global Fixed Income	2,398,855	4.3	5.0	Global Fixed Income	2,422,587	4.2	5.0	
Real Estate	6,665,395	12.1	10.0	Real Estate	6,792,782	11.9	10.0	
Cash Equivalent	1,508,237	2.7	0.0	Cash Equivalent	1,358,906	2.4	0.0	
Total Fund	55,273,229	100.0	100.0	Total Fund	57,293,652	100.0	100.0	



## **Historical Asset Allocation by Segment**





Financial Reconciliation Qua	inancial Reconciliation Quarter to Date											
	Market Value 07/01/2018	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Income	Apprec./ Deprec.	Market Value 09/30/2018			
Highland Capital	46,208,979	-	540,819	-683,452	-91,744	-56,005	254,122	1,893,957	48,066,676			
Templeton Global	2,398,855	-	-	-	-	-	43,894	-8,554	2,434,194			
American Core Realty Fund	6,665,395	-	-	-	-18,733	-	61,735	84,384	6,792,782			
Mutual Fund Cash	-	-	-	-	-	-	-	-	-			
Total Fund	55,273,229	-	540,819	-683,452	-110,477	-56,005	359,751	1,969,787	57,293,652			

Financial Reconciliation Fisc	cal Year to Date								
	Market Value 10/01/2017	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Income	Apprec./ Deprec.	Market Value 09/30/2018
Highland Capital	44,922,120	-	1,815,066	-3,166,218	-183,025	-204,132	1,024,583	3,858,281	48,066,676
Templeton Global	2,473,920	-	-	-	-	-	123,200	-162,926	2,434,194
American Core Realty Fund	6,330,038	-	-	-	-72,875	-	267,401	268,218	6,792,782
Mutual Fund Cash	-	-	-	-	-	-	-	-	-
Total Fund	53,726,079	-	1,815,066	-3,166,218	-255,900	-204,132	1,415,184	3,963,573	57,293,652



	QT	R	FYT	'D	1 Y	R	3 Y	R	5 Y	R	Incep	tion	Inception Date
Total Fund (Net)	4.03		9.71		9.71		9.89		8.10		6.94		01/01/1998
Total Fund Policy	3.44		8.58		8.58		10.55		8.49		6.65		
Total Fund (Gross)	4.24	(8)	10.22	(14)	10.22	(14)	10.43	(36)	8.62	(20)	7.35	(12)	01/01/1998
Total Fund Policy	3.44	(33)	8.58	(41)	8.58	(41)	10.55	(33)	8.49	(25)	6.65	(52)	
All Public Plans-Total Fund Median	3.12		8.15		8.15		10.00		7.83		6.66		
Highland Capital Equity (Gross)	6.39	(51)	16.31	(55)	16.31	(55)	15.30	(50)	11.75	(69)	8.74	(75)	01/01/1998
Total Equity Policy	5.54	(62)	13.62	(76)	13.62	(76)	15.45	(48)	11.45	(70)	6.90	(98)	
IM U.S. All Cap Core Equity (SA+CF) Median	6.52		16.62		16.62		15.29		12.78		9.04		
Highland Capital Fixed (Gross)	0.20	(44)	-1.07	(75)	-1.07	(75)	2.20	(23)	2.55	(55)	4.54	(99)	01/01/1998
Total Fixed Policy	0.02	(83)	-1.22	(90)	-1.22	(90)	1.31	(89)	2.14	(91)	4.77	(86)	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.18		-0.74		-0.74		1.84		2.61		5.13		
Templeton Global	1.47	(5)	-1.61	(56)	-1.61	(56)	3.88	(14)	1.93	(33)	2.06	(27)	08/01/2013
FTSE World Government Bond Index	-1.62	(97)	-1.54	(56)	-1.54	(56)	1.68	(69)	0.20	(85)	0.49	(84)	
IM Global Fixed Income (MF) Median	-0.39		-1.19		-1.19		2.36		1.39		1.43		
American Core Realty Fund	2.19	(50)	8.50	(70)	8.50	(70)	8.35	(80)	10.28	(80)	10.61	(85)	07/01/2012
NCREIF Fund Index-Open End Diversified Core (EW)	2.08	(61)	8.82	(65)	8.82	(65)	9.08	(60)	10.84	(63)	11.13	(66)	
IM U.S. Open End Private Real Estate (SA+CF) Median	2.19		9.63		9.63		9.72		11.25		11.57		



	Oct-2 To Sep-2	)	Oct-2015 To Sep-2016	To	)	Oct-2 To Sep-2	)	Oct-2012 To Sep-2013	Oct-2 To Sep-2	)	Oct-2 To Sep-2	)	Oct-2 To Sep-2	0
Total Fund (Net)	12.52		7.49	1.11		10.06		12.76	14.76		-1.76		8.90	
Total Fund Policy	11.87		11.23	0.03		11.18		10.98	18.44		2.01		9.17	
Total Fund (Gross)	13.13	(31)	7.99 (85	) 1.48	(13)	10.65	(40)	13.18 (38)	15.22	(86)	-1.21	(82)	9.23	(70)
Total Fund Policy	11.87	(57)	11.23 (9)	0.03	(38)	11.18	(28)	10.98 (77)	18.44	(38)	2.01	(16)	9.17	(71)
All Public Plans-Total Fund Median	12.20		9.66	-0.50		10.17		12.49	17.99		0.29		9.85	
Highland Capital Equity (Gross)	20.57	(30)	9.30 (73	) -0.41	(51)	14.17	(72)	23.16 (62)	23.08	(80)	-6.76	(98)	10.14	(61)
Total Equity Policy	19.14	(48)	13.68 (37	) -3.37	(81)	15.61	(62)	20.14 (83)	27.76	(48)	-0.40	(64)		(75)
IM U.S. All Cap Core Equity (SA+CF) Median	18.78		11.70	-0.31		16.38		24.50	27.38		1.04		11.05	
Highland Capital Fixed (Gross)	0.85	(39)	7.00 (11	) 2.18	(88)	3.95	(81)	-2.75 (100)	7.18	(40)	5.29	(47)	8.31	(81)
Total Fixed Policy	0.07	(86)	5.19 (80	) 2.94	(59)	3.85	(88)	-1.86 (89)	5.28	(87)	5.23	(53)	8.00	(90)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.63		5.67	3.02		4.52		-1.22	6.70		5.25		9.28	
Templeton Global	13.17	(1)	0.68 (10	0) -7.69	(93)	6.34	(11)	N/A	N/A		N/A		N/A	
FTSE World Government Bond Index	-2.69	(94)	9.71 (20	-3.83	(50)	-0.07	(96)	-4.60 (82)	3.29	(96)	4.61	(8)	4.99	(88)
IM Global Fixed Income (MF) Median	1.02		7.42	-3.85		3.37		-1.81	7.17		1.74		7.68	
American Core Realty Fund	7.52	(67)	9.04 (97	13.98	(69)	12.49	(64)	12.27 (70)	N/A		N/A		N/A	
NCREIF Fund Index-Open End Diversified Core (EW)	7.81	(60)	10.62 (69	) 14.71	(62)	12.39	(68)	12.47 (67)	11.77	(66)	18.03	(44)	6.14	(55)
IM U.S. Open End Private Real Estate (SA+CF) Median	8.29		11.32	15.45		12.78		13.18	12.90		16.96		6.43	



## Plan Sponsor Peer Group Analysis - All Public Plans-Total Fund 16.00 20.00 14.00 17.00 12.00 14.00 0 00 0 0 0 0 10.00 11.00 0 0 0 0 0 0 8.00 8.00 0 Return Return 6.00 5.00 4.00 2.00 0 0 2.00 -1.00 0.00 -4.00 -2.00 -7.00 Oct-2017 Oct-2016 Oct-2015 Oct-2014 Oct-2013 Oct-2012 To To To To To To QTR **FYTD** 1 YR 2 YR 3 YR 4 YR 5 YR Sep-2018 Sep-2017 Sep-2016 Sep-2015 Sep-2014 Sep-2013 10.22 (14) Total Fund 4.24 (8) 10.22 (14) 11.67 (16) 10.43 (36) 8.12 (18) 8.62 (20) Total Fund 10.22 (14) 13.13 (31) 7.99 (85) 1.48 (13) 10.65 (40) 13.18 (38) Total Fund Policy 3.44 (33) 8.58 (41) 8.58 (41) 10.21 (52) 10.55 (33) 7.82 (26) 8.49 (25) Total Fund Policy 8.58 (41) 11.87 (57) 11.23 (9) 0.03 (38) 11.18 (28) 10.98 (77) Median 3.12 8.15 8.15 10.28 10.00 7.23 7.83 Median 8.15 12.20 9.66 -0.50 10.17 12.49 **Comparative Performance** 1 Qtr 1 Qtr 1 Qtr 1 Qtr 1 Qtr 1 Qtr Ending Ending Ending **Ending Ending** Ending Jun-2018 Mar-2018 Dec-2017 Sep-2017 Jun-2017 Mar-2017 Total Fund 1.98 (23) -0.62 (75) 4.34 (13) 3.70 (29) 2.22 (89) 4.15 (67) **Total Fund Policy** 1.39 (52)-0.41 (61) 3.96 (35)3.48 (46)2.93 (54)4.24 (62) All Public Plans-Total Fund Median 1.42 3.74 3.44 2.97 4.39 -0.28



9/18

## 3 Yr Rolling Under/Over Performance - 5 Years 15.0 Over Performance **Total Fund** (%) 9.0 0.0 Under Performance 3.0 6.0 9.0 3.0 12.0 15.0 Total Fund Policy (%) Over Performance Under Performance Earliest Date X Latest Date

## 3 Yr Rolling Percentile Ranking - 5 Years 25.0 50.0 100.0

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
<ul><li>Total Fund</li></ul>	20	6 (30%)	9 (45%)	3 (15%)	2 (10%)
<ul> <li>Total Fund Policy</li> </ul>	20	12 (60%)	5 (25%)	3 (15%)	0 (0%)

6/16

12/16

6/17

12/17

12/15

6/14

Peer Group Scattergram - 5 Years

12/13

12/14

6/15

## Peer Group Scattergram - 3 Years 10.80 Return (%) 10.4 10.4 10.00 9.80 5.18 5.25 5.32 5.39 5.46 5.53 5.60 5.67 5.74 Risk (Standard Deviation %)

8.91					
8.64					
8.64 = 8.37 = 8.10 = 8.70 = 8.70	O				
8.10 -					
7.83					
7.56					
5.6	5.7	5.8	5.9	6.0	6.1
		Risk (Sta	ndard Deviation %)		

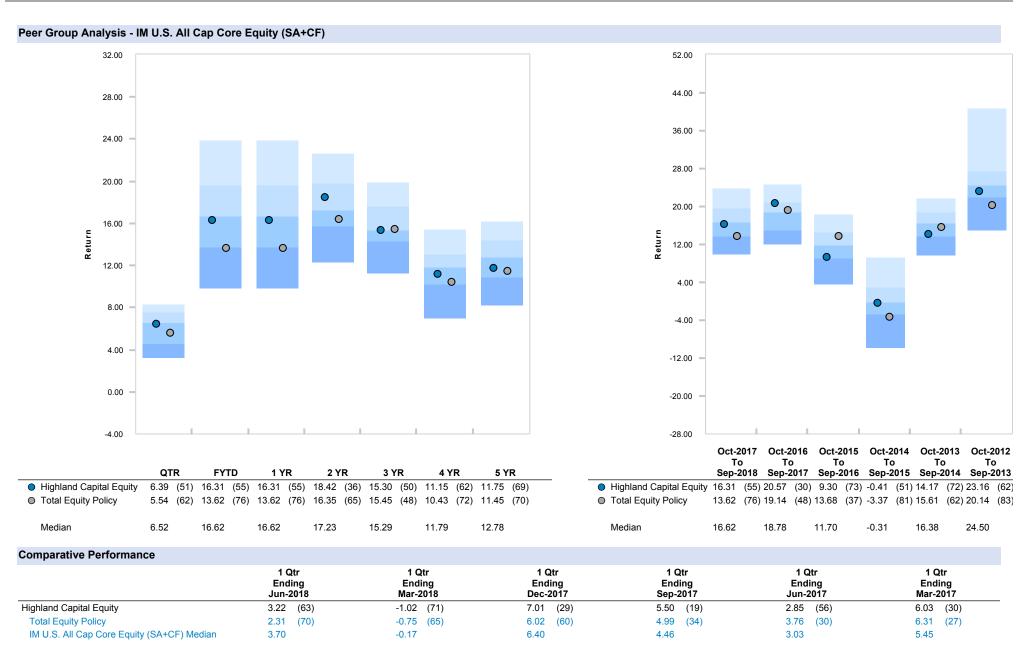
	Return	Standard Deviation
<ul><li>Total Fund</li></ul>	10.43	5.27
<ul> <li>Total Fund Policy</li> </ul>	10.55	5.45
Median	10.00	5.62

	Return	Standard Deviation
<ul><li>Total Fund</li></ul>	8.62	5.72
<ul> <li>Total Fund Policy</li> </ul>	8.49	5.65
Median	7.80	5.97

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund	1.25	97.99	95.28	0.48	-0.10	1.77	0.94	2.60
Total Fund Policy	0.00	100.00	100.00	0.00	N/A	1.73	1.00	2.62

Historical Statistics	- 5 Years							
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund	1.36	100.33	97.94	0.27	0.10	1.40	0.98	3.21
Total Fund Policy	0.00	100.00	100.00	0.00	N/A	1.39	1.00	3.04



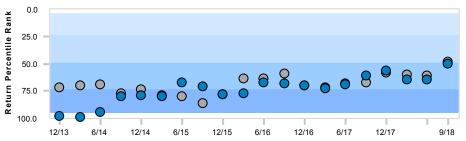




## 3 Yr Rolling Under/Over Performance - 5 Years % 25.0 **An it** 20.0 Over Performance ighland Capital 15.0 10.0 5.0 Under Performance 5.0 0.0 10.0 15.0 20.0 25.0 Total Equity Policy (%)

Under Performance

## 3 Yr Rolling Percentile Ranking - 5 Years

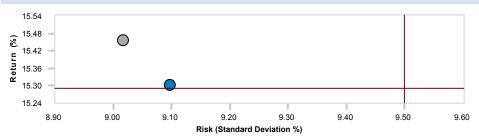


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
<ul> <li>Highland Capital Equity</li> </ul>	20	0 (0%)	1 (5%)	11 (55%)	8 (40%)	
<ul> <li>Total Equity Policy</li> </ul>	20	0 (0%)	1 (5%)	14 (70%)	5 (25%)	

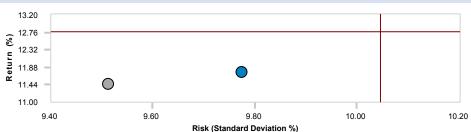
## Earliest Date X Latest Date

Over Performance

## Peer Group Scattergram - 3 Years



Peer (	Foup Scat	tergram	- 5 Y	rears
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	Return	Standard Deviation
<ul><li>Highland Capital Equity</li></ul>	15.30	9.10
<ul> <li>Total Equity Policy</li> </ul>	15.45	9.02
Median	15.29	9.50

	Return	Deviation
<ul><li>Highland Capital Equity</li></ul>	11.75	9.77
<ul> <li>Total Equity Policy</li> </ul>	11.45	9.51
Median	12.78	10.05

## **Historical Statistics - 3 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Highland Capital Equity	1.68	102.11	110.17	0.00	-0.08	1.53	0.99	4.70
Total Equity Policy	0.00	100.00	100.00	0.00	N/A	1.56	1.00	4.56

## **Historical Statistics - 5 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Highland Capital Equity	1.95	102.68	102.67	0.23	0.16	1.14	1.01	5.65
Total Equity Policy	0.00	100.00	100.00	0.00	N/A	1.14	1.00	5.45



## Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF) 5.30 10.00 4.49 8.00 3.68 6.00 0 2.87 4.00 00 0 2.06 0 0 Return 0 1.25 2.00 0.44 0 0.00 0 00 -0.37 0 -2.00 0 -1.18 -4.00 -1.99 -2.80 -6.00 Oct-2017 Oct-2016 Oct-2015 Oct-2014 Oct-2013 Oct-2012 To To To Τo To To QTR **FYTD** 1 YR 2 YR 3 YR 4 YR 5 YR Sep-2018 Sep-2017 Sep-2016 Sep-2015 Sep-2014 Sep-2013 Highland Fixed 0.20 (44) -1.07 (75) -1.07 (75) -0.11 (54) 2.20 (23) 2.20 (41) 2.55 (55) Highland Fixed -1.07 (75) 0.85 (39) 7.00 (11) 2.18 (88) 3.95 (81) Total Fixed Policy 0.02 (83) -1.22 (90) -1.22 (90) -0.57 (92) 1.31 (89) 1.72 (90) 2.14 (91) Total Fixed Policy -1.22 (90) 0.07 (86) 5.19 (80) 2.94 (59) 3.85 (88) -1.86 (89) Median 0.18 -0.74 -0.74 -0.06 1.84 2.10 2.61 Median -0.740.63 5.67 3.02 4.52 -1.22 **Comparative Performance** 1 Qtr 1 Qtr 1 Qtr 1 Qtr 1 Qtr 1 Qtr **Ending Ending Ending Ending** Ending **Ending** Jun-2018 Mar-2018 Dec-2017 Sep-2017 Jun-2017 Mar-2017 Highland Fixed -0.38 (97) -1.45 (66) 0.57 (35) 0.98 (37) 1.78 (14) 1.00 (44) **Total Fixed Policy** -0.16 (74) -1.46 (68) 0.39 (80)0.85 (77) 1.45 (76)0.82 (78)IM U.S. Broad Market Core Fixed Income (SA+CF) Median 0.93 1.54 0.94 -0.09-1.37 0.51



## 3 Yr Rolling Under/Over Performance - 5 Years 6.0 Over 4.5 4.5 1.5 1.5 Performance 0.00 Under Performance 0.0 3.0 6.0 0.0 1.5 4.5 Total Fixed Policy (%) Over Performance Under Performance

# 3 Yr Rolling Percentile Ranking - 5 Years 25.0 25.0 100.0 12/13 6/14 12/14 6/15 12/15 6/16 12/16 6/17 12/17 9/18

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
<ul><li>Highland Fixed</li></ul>	20	2 (10%)	6 (30%)	5 (25%)	7 (35%)
<ul> <li>Total Fixed Policy</li> </ul>	20	0 (0%)	0 (0%)	0 (0%)	20 (100%)

## Peer Group Scattergram - 3 Years 2.40 2.10 1.80 1.50 1.20 0.90 2.55 2.60 2.65 2.70 2.75 2.80 2.85 2.90 Risk (Standard Deviation %)

X Latest Date

Peer Group	Scattergram	- 5 Years					
2.80							
<u>§</u> 2.60 —							
2.40 — 2.20 —		0					
2.00	П		1	1	1	ı	
2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95
			Risk (Standard I	Deviation %)			

	Return	Standard Deviation
<ul> <li>Highland Fixed</li> </ul>	2.20	2.83
<ul> <li>Total Fixed Policy</li> </ul>	1.31	2.62
Median	1.84	2.60

Return	Standard Deviation
2.55	2.88
2.14	2.69
2.61	2.67
	2.55 2.14

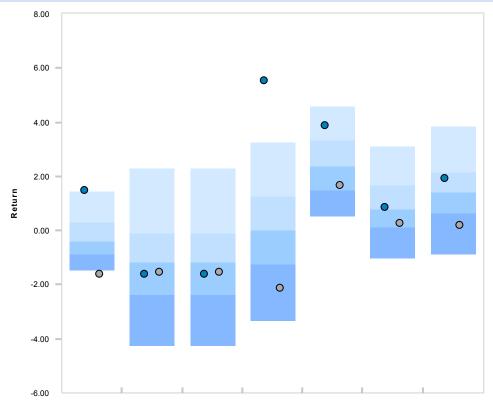
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Highland Fixed	0.81	121.16	99.33	0.84	1.09	0.50	1.03	1.81
Total Fixed Policy	0.00	100.00	100.00	0.00	N/A	0.20	1.00	1.81

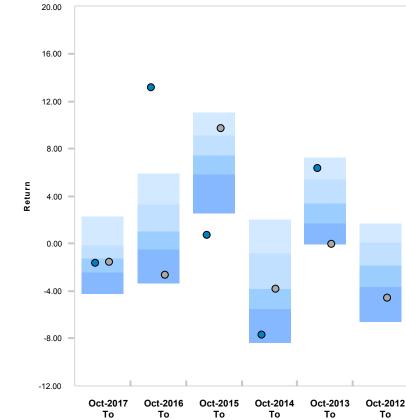
Historical Statistics - 5 Years										
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk		
Highland Fixed	0.87	111.30	105.16	0.35	0.47	0.71	1.02	1.71		
Total Fixed Policy	0.00	100.00	100.00	0.00	N/A	0.61	1.00	1.63		



Earliest Date

## Plan Sponsor Peer Group Analysis - IM Global Fixed Income (MF)





	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
<ul><li>Templeton GB</li></ul>	1.47 (5)	-1.61 (56)	-1.61 (56)	5.52 (1)	3.88 (14)	0.86 (48)	1.93 (33)
FTSE W/G Bond	-1.62 (97)	-1.54 (56)	-1.54 (56)	-2.11 (91)	1.68 (69)	0.27 (72)	0.20 (85)
Median	-0.39	-1.19	-1.19	0.00	2.36	0.78	1.39

	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014	Oct-2012 To Sep-2013
<ul><li>Templeton GB</li></ul>	-1.61 (56)	13.17 (1)	0.68 (100)	-7.69 (93)	6.34 (11)	N/A
FTSE W/G Bond	-1.54 (56)	-2.69 (94)	9.71 (20)	-3.83 (50)	-0.07 (96)	-4.60 (82)
Median	-1.19	1.02	7.42	-3.85	3.37	-1.81

Comparative Performance						
	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018	1 Qtr Ending Dec-2017	1 Qtr Ending Sep-2017	1 Qtr Ending Jun-2017	1 Qtr Ending Mar-2017
Templeton GB	-2.57 (52)	1.36 (31)	-1.81 (100)	1.19 (71)	-1.30 (100)	4.65 (5)
FTSE W/G Bond	-3.35 (65)	2.50 (5)	1.04 (19)	1.81 (29)	2.89 (21)	1.55 (67)
IM Global Fixed Income (MF) Median	-2.23	0.76	0.66	1.58	2.30	2.07



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## 3 Yr Rolling Under/Over Performance - 5 Years 6.0 Over **Year Deptor CB**2.0 0.0 -2.0 Performance × 4 Under Performance -4.0 -2.0 0.0 2.0 6.0 -4.0 4.0 FTSE W/G Bond (%)

Under Performance

X Latest Date

Over Performance

Earliest Date

## 3 Yr Rolling Percentile Ranking - 5 Years 25.0 75.0 75.0 100.0

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
<ul><li>Templeton GB</li></ul>	9	2 (22%)	3 (33%)	2 (22%)	2 (22%)	
FTSE W/G Bond	20	1 (5%)	3 (15%)	5 (25%)	11 (55%)	

6/16

12/16

6/17

12/17

Standard Deviation 6.20 5.17 4.19

12/15

6/14

12/13

12/14

6/15

# Peer Group Scattergram - 3 Years 4.50 3.75 3.00 2.25 1.50 0.75 3.68 4.14 4.60 5.06 5.52 5.98 6.44 6.90 7.36 Risk (Standard Deviation %)

Pee	er Gr	oup S	cattergram	- 5 Years						
	3.00									
(%)	2.00	-								
Return	1.00									
Ret	0.00	-								
	-1.00									
		3.6	4.0	4.4	4.8	5.2	5.6	6.0	6.4	6.8
					Risk (Sta	ndard Deviati	on %)			

	Return	Standard Deviation		Return	
<ul><li>Templeton GB</li></ul>	3.88	6.87	<ul><li>Templeton GB</li></ul>	1.93	
<ul><li>FTSE W/G Bond</li></ul>	1.68	5.79	<ul><li>FTSE W/G Bond</li></ul>	0.20	
Median	2.36	4.44	Median	1.39	

<b>Historical Statistics</b>	Historical Statistics - 3 Years								
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk	
Templeton GB	9.95	-5.37	-65.15	4.64	0.22	0.47	-0.27	4.02	
FTSE W/G Bond	0.00	100.00	100.00	0.00	N/A	0.18	1.00	4.07	

Historical Statistics - 5 Years									
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk	
empleton GB	8.62	-5.84	-37.26	2.19	0.21	0.26	-0.17	3.95	
FTSE W/G Bond	0.00	100.00	100.00	0.00	N/A	-0.03	1.00	3.81	



## Plan Sponsor Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF) 20.00 26.00 23.00 17.00 20.00 14.00 17.00 11.00 0 0 Return Return 0 14.00 00 00 0 00 0 00 00 8.00 11.00 0 5.00 8.00 00 0 0 2.00 5.00 2.00 -1.00 Oct-2017 Oct-2016 Oct-2015 Oct-2014 Oct-2013 Oct-2012 To To To To To QTR **FYTD** 1 YR 2 YR 3 YR 4 YR 5 YR Sep-2018 Sep-2017 Sep-2016 Sep-2015 Sep-2014 Sep-2013 American Core Realty 2.19 (50) 8.50 (70) 8.50 (70) 8.01 (70) 8.35 (80) 9.73 (85) 10.28 (80) American Core Realty 7.52 (67) 9.04 (97) 13.98 (69) 12.49 (64) 12.27 (70) NCREIF ODCE 2.08 (61) 8.82 (65) 8.82 (65) 8.31 (63) 9.08 (60) 10.46 (62) 10.84 (63) NCREIF ODCE 8.82 (65) 7.81 (60) 10.62 (69) 14.71 (62) 12.39 (68) 12.47 (67) Median 2.19 9.63 9.63 8.83 9.72 11.02 11.25 Median 9.63 8.29 11.32 15.45 12.78 13.18 **Comparative Performance** 1 Qtr 1 Qtr 1 Qtr 1 Qtr 1 Qtr 1 Qtr **Ending Ending** Ending **Ending** Ending Ending Jun-2018 Mar-2018 Dec-2017 Sep-2017 Jun-2017 Mar-2017 American Core Realty 2.09 (68) 2.23 (47) 1.73 (90) 1.88 (44) 1.97 (40) 2.27 (30)

(59)

2.15

2.26

1.89 (44)

1.75

1.71 (69)

1.91

2.17 (57)

2.22

2.13 (64)

2.25



1.83 (53)

1.91

NCREIF ODCE

IM U.S. Open End Private Real Estate (SA+CF) Median

Count

12 (86%)

1 (5%)

# 3 Yr Rolling Under/Over Performance - 5 Years Over Performance 16.0 Over Performance 10.0 1

NCREIF ODCE (%)

Earliest Date

Under Performance

X Latest Date

## 3 Yr Rolling Percentile Ranking - 5 Years Return Percentile Rank 25.0 50.0 75.0 100.0 6/14 6/15 12/15 6/16 12/16 12/17 9/18 12/13 12/14 5-25 25-Median Median-75 75-95 **Total Period**

Count

0 (0%)

0 (0%)

14

20

Count

0 (0%)

0 (0%)

Count

2 (14%)

19 (95%)

Pee	r Group S	cattergram	- 3 Years						
	10.12								
(%)	9.66								
© 	9.20 -								
Return	8.74 =		Ū						
œ	8.28 -								
	7.82	-	1	1		-			
	0.72	0.78	0.84	0.90	0.96	1.02	1.08	1.14	1.20
				Risk (Sta	ndard Deviation	on %)			

<b>-</b> ee	er Group Sca	ttergram - 5 Ye	ars				
	11.55						
Return (%)	11.22						
		0					
	10.56						
œ	10.23 -					)	
	9.90						
	1.2	1.3	1.4	1.5	1.6	1.7	1.8
			Risk (S	tandard Deviation	%)		

	Return	Standard Deviation
<ul> <li>American Core Realty</li> </ul>	8.35	0.99
<ul><li>NCREIF ODCE</li></ul>	9.08	0.83
Median	9.72	1.11

Return	Standard Deviation
10.28	1.64
10.84	1.32
11.25	1.70
	10.28 10.84

Historical Statistics -	istorical Statistics - 3 Years								
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk	
American Core Realty	0.90	92.25	N/A	0.11	-0.75	2.13	0.91	0.00	
NCREIF ODCE	0.00	100.00	N/A	0.00	N/A	2.18	1.00	0.00	

American Core Realty

NCREIF ODCE

<b>Historical Statistics -</b>	Historical Statistics - 5 Years							
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
American Core Realty	1.09	95.04	N/A	0.00	-0.48	2.15	0.95	0.00
NCREIF ODCE	0.00	100.00	N/A	0.00	N/A	2.23	1.00	0.00



Total Fund Compliance	YES	NO
The total plan gross return equaled or exceeded the total plan benchmark over the trailing three year period.		Х
The total plan gross return equaled or exceeded the total plan benchmark over the trailing five year period.	x	
The total plan gross return ranked within the top 40th percentile of its peer group over the trailing three year period.	х	
The total plan gross return ranked within the top 40th percentile of its peer group over the trailing five year period.	х	
The total plan gross return equaled or exceeded the 7.5% actuarial earnings assumption over the trailing three year period.	х	
The total plan gross return equaled or exceeded the 7.5% actuarial earnings assumption over the trailing five year period.	х	
Equity Compliance	YES	NO
The total equity returns meet or exceed the benchmark over the trailing three year period.		Х
The total equity returns meet or exceed the benchmark over the trailing five year period.	х	
The total equity returns ranked within the top 40th percentile of its peer group over the trailing three year period.		X
The total equity returns ranked within the top 40th percentile of its peer group over the trailing five year period.		X
The total equity allocation was less than 70% of the total plan assets at market.	х	
The total foreign equity was less than 25% of the total plan assets at market.	Х	
Fixed Income Compliance	YES	NO
The total domestic fixed income returns meet or exceed the benchmark over the trailing three year period.	х	
The total domestic fixed income returns meet or exceed the benchmark over the trailing five year period.	х	
The total domestic fixed income returns ranked within the top 40th percentile of its peer group over the trailing three year period.	х	
The total domestic fixed income returns ranked within the top 40th percentile of its peer group over the trailing five year period.		X
The average weight of the fixed income portfolio was "AA" or better.	х	

Manager Compliance		Highland - Equity			Highland - Fixed			Templeton Global		American Realty		
		NO	N/A	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
Manager outperformed the index over the trailing three and five year periods.		Х		Х			Х				Х	
Manager ranked within the top 40th percentile over trailing three and five year periods.		Х			Χ		Х				Х	
Less than four consecutive quarters of under performance relative to the benchmark.	х			Х			х			Χ		
Three and five year down-market capture ratio less than the index.		Х			X		Х					х



Structure	Annual	9/30/18	Annual	Notes
	Fee %*	Market Value	Fee \$	
Equity				
Highland Capital (Total Equity)	0.40%	\$35,260,748	\$141,043	0.40% on all assets. See Investment Management Contract for full detail.
Fixed Income				
Highland Capital (Core Fixed)	0.40%	\$11,458,629	\$45,835	0.40% on all assets. See Investment Management Contract for full detail.
Global Fixed Income				
Templeton Global Bond (Intl. Fixed)	0.56%	\$2,422,587	\$13,566	0.52% expense ratio on all assets. See Mutual Fund Prospectus for full detail.
Real Estate				
American Realty Advisors	1.10%	\$6,792,782	\$74,721	1.10% annually on all assets. See Subscription Agreement for full detail.
Cash Equivalent				
R&D Account (Money Market)	0.00%	\$1,358,906	\$0	
		, , ,	, -	
Total Investment Management Fees	0.48%	\$57,293,652	\$275,165	
· ·		, , ,	. ,	
Consulting				
AndCo	0.06%	\$57,293,652	\$35,500	\$35,500 hard dollar fee. See AndCo Consulting Contract for full detail.
		, - · , ,	<b>+</b> , <b>0</b>	
Custodial Fees				
Salem Trust	0.04%	\$50,500,870	\$18.180	0.036% on all custody assets. See Custody Agreement for full detail.
Caloni nuot	J.U-7/0	ψου,ουυ,ο <i>ι</i> υ	ψ10,100	occord on an occordy accord. Goo Cadrody regrounters for full docum.
Total Investment Management, Custodial				
and Consulting Fees	0.57%	\$57,293,652	\$328,845	



Total Fund Policy	
Allocation Mandate	Weight (%)
Dec-1975	
S&P 500 Index	50.00
ICE BofAML Govt/ Corp Master	50.00
Oct-2004	
S&P 500 Index	50.00
ICE BofAML US Domestic Master	40.00
MSCI EAFE Index	10.00
Jan-2014	
Russell 3000 Index	45.00
MSCI AC World ex USA	15.00
Blmbg. Barc. U.S. Aggregate Index	25.00
FTSE World Government Bond Index	5.00
NCREIF Fund Index-Open End Diversified Core (EW)	10.00

Total Equity Policy		
Allocation Mandate	Weight (%)	
Jan-1998		
S&P 500 Index	100.00	
Oct-2004		
S&P 500 Index	85.00	
MSCI EAFE Index	15.00	
Jan-2014		
Russell 3000 Index	75.00	
MSCI AC World ex USA	25.00	

Total Fixed Income Policy		
Allocation Mandate	Weight (%)	
Jan-1998		
ICE BofAML Govt/ Corp Master	100.00	
Oct-2004		
ICE BofAML US Domestic Master	100.00	
Jan-2014		
Blmbg. Barc. U.S. Aggregate Index	100.00	



Δ	cti	ve	R	۵tı	ırn

- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.

## Alpha

- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.

## Beta

- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.

## Consistency

- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.

## Distributed to Paid In (DPI)

- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.

## **Down Market Capture**

- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance

## **Downside Risk**

- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.

## **Excess Return**

- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.

## Excess Risk

- A measure of the standard deviation of a portfolio's performance relative to the risk free return.

## Information Ratio

- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.

## **Public Market Equivalent (PME)**

- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.

## R-Squared

- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.

## Return

- Compounded rate of return for the period.

## Sharpe Ratio

- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.

## Standard Deviation

- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.

## Total Value to Paid In (TVPI)

- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life

## **Tracking Error**

- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.

## **Treynor Ratio**

- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.

## **Up Market Capture**

- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.



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