

Investment Performance Review
Period Ending September 30, 2019

Delray Beach Firefighters' Retirement System

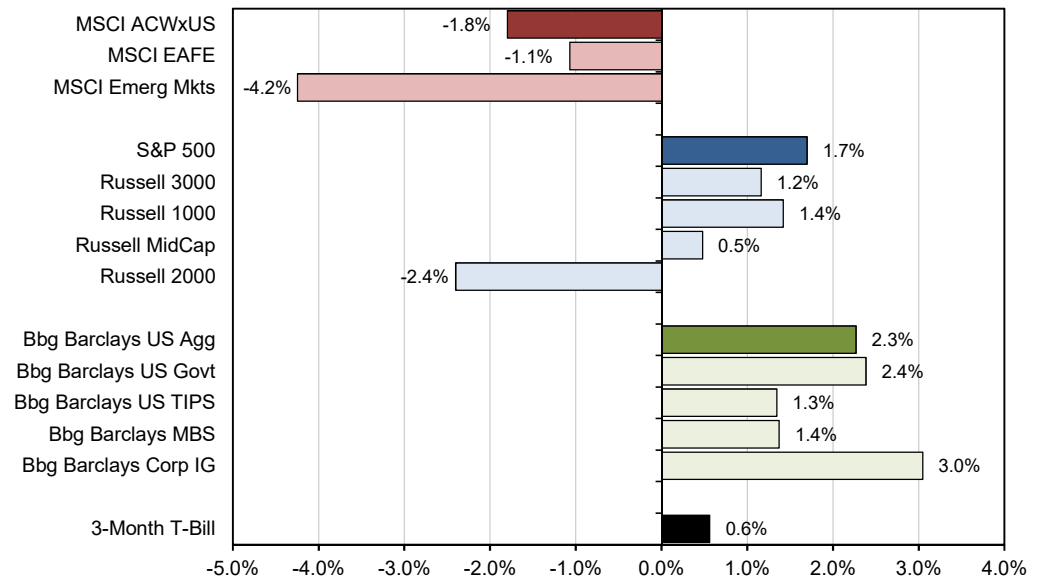


3rd Quarter 2019 Market Environment

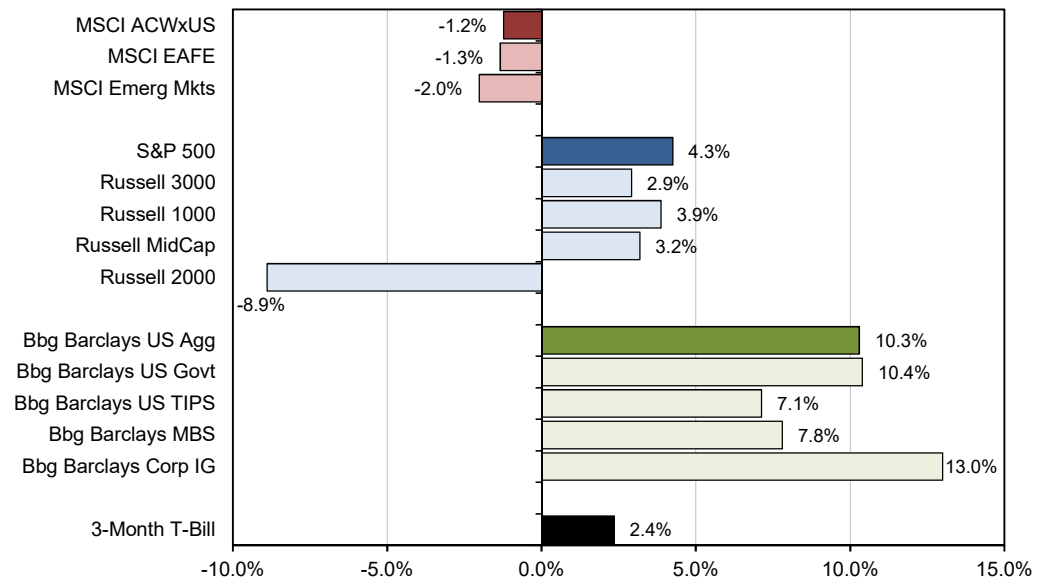


- Broad asset class returns were mixed during the 3rd quarter of 2019 with both US large cap equity and fixed income indices extending their year-to-date gains while US small cap and international indices declined. Volatility was high during the period as investors weighed the effects of ongoing trade disruption and slowing global economic data against the announcement of several new central bank stimulus measures. US stocks continued their year-to-date outperformance relative to international stocks during the period. US markets faced headwinds from continued escalation in the ongoing trade dispute with China, slowing economic data, particularly with regards to manufacturing, and political uncertainty following a late quarter impeachment inquiry against President Donald Trump. However, markets were supported by easing monetary policy from the Federal Reserve (Fed) which cut interest rates twice during the period. In general, lower risk assets performed better through the period as investors weighed the increased risk of a recession. Within domestic equity markets, large cap stocks outperformed small cap equities during the quarter with the S&P 500 Index returning 1.7% versus a -2.4% return on the small cap Russell 2000 Index. US equity returns over the 1-year period were positive for large and mid-cap stocks, returning 4.3% and 3.2% respectively, but small cap stocks posted a loss, falling -8.9%.
- International markets posted negative returns for the 3rd quarter. Similar to US markets, international returns were impacted by continued weakness in economic data, heightened geopolitical uncertainty around global trade and Brexit and newly announced stimulus measures from global central banks including the European Central Bank (ECB) and Peoples Bank of China (PBoC). International returns also faced headwinds from a strengthening US dollar (USD) which appreciated against most major currencies during the period. Developed markets continued their outperformance relative to emerging markets during the period with the MSCI EAFE Index falling -1.1% versus a -4.2% decline for the MSCI Emerging Markets Index. Both developing and emerging markets posted slight losses over the 1-year period, returning -1.3% and -2.0% respectively.
- Fixed income returns outperformed equities during the 3rd quarter as investors looked for relative safety amid the equity market volatility. The broad market Bloomberg Barclays Aggregate Index gained 2.3% as interest rates fell following central bank stimulus from the Fed and other global central banks. The US Treasury Yield Curve also inverted in August, contributing to growing concern around the potential for an upcoming recession. Investment grade corporate issues were the best performing securities for the third quarter in a row, returning 3.0%, outperforming Treasury and securitized issues. Corporate issues benefitted from their relatively high duration and yield. The bond market has meaningfully outperformed the equity market over the trailing 1-year period with the Bloomberg Barclays Aggregate posting a solid 10.3% return.

Quarter Performance



1-Year Performance

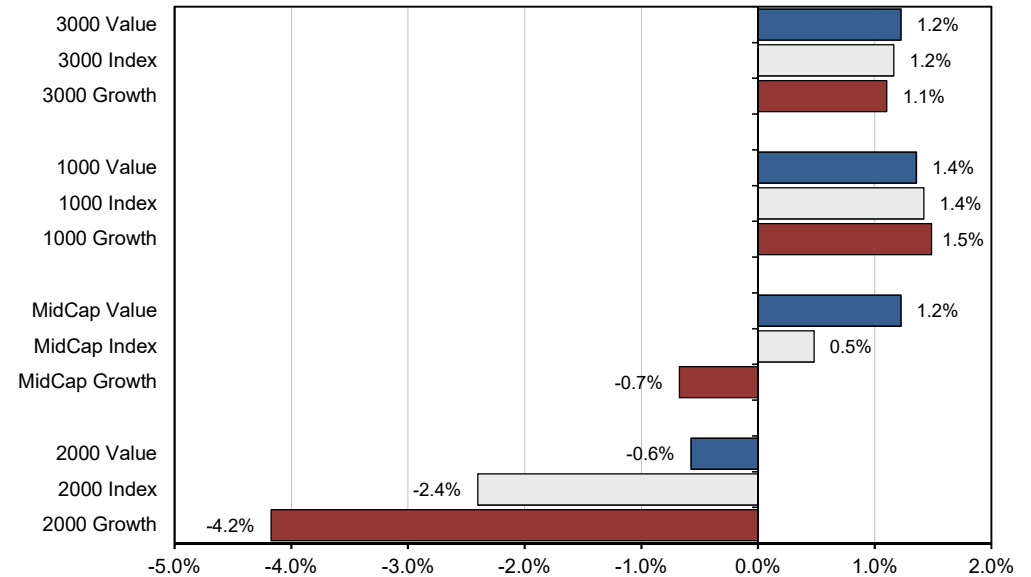


- US equity returns were modestly positive during the 3rd quarter, but results varied considerably across the style and capitalization spectrum. Data released during the quarter showed signs that the US economy could be slowing down. Weakening metrics around manufacturing and sentiment were particularly concerning and employment, typically a bright spot for the US economy, missed expectations for the pace of new jobs and hours worked. A likely contributor to the softening economic data is the ongoing trade war between the US and China. Despite last quarter's agreement to cease escalations following a meeting between President Trump and President Jinping at the G20 summit, the 3rd quarter saw the announcement and implementation of a series of new tariffs from both the US and China. Additionally, in response to new tariffs, the PBoC allowed the yuan to depreciate to its lowest level since 2008 leading US Treasury officials to accuse China of currency manipulation. Even with the apparent breakdown in relations between the two sides, both China and the US agreed to continue negotiations set to take place in October. Markets also reacted to the late quarter announcement of a formal impeachment inquiry against President Trump following a whistle blower report alleging that President Trump pressured the government of Ukraine to investigate the son of political opponent Joe Biden. Despite these substantial headwinds, the US equity market found support from Fed easing of monetary policy in the form of two separate interest rate cuts and ended the period with a gain. The Russell 3000 Index returned 1.2% and 2.9% for the quarter and 1-year period respectively.

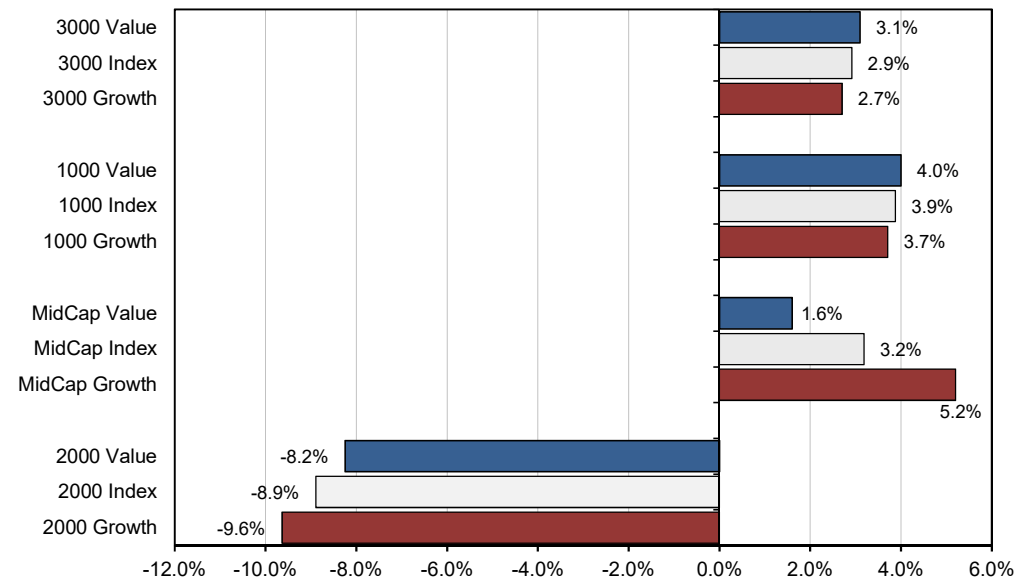
- During the quarter, higher market cap stocks outperformed lower market cap stocks across the style spectrum. The large cap Russell 1000 Index gained 1.4% during the period versus a -2.4% return for the small cap Russell 2000 Index. Investors may have been attracted to large cap names as a result of the quarter's volatility as large cap stocks are typically viewed as less risky than their small cap counterparts. When viewed over the most recent 1-year period, large cap stocks significantly outperformed small cap stocks with the Russell 1000 posting a 3.9% gain while the Russell 2000 had considerable losses, declining -8.9%.

- In general, value stocks outperformed growth stocks during the 3rd quarter as investors gravitated toward the relative safety these securities typically provide. However, large cap growth stocks slightly outperformed large cap value stocks due to favorable holdings in the technology and industrials sectors as well as a large underweight to the underperforming energy sector. The Russell 1000 Growth Index was the best performing style index for the period, returning 1.5%, with the small cap growth index posting the lowest relative return, a loss of -4.2%. Results over the 1-year period are mixed with value stocks outperforming in large and small cap and growth stocks outperforming in mid-cap.

Quarter Performance - Russell Style Series

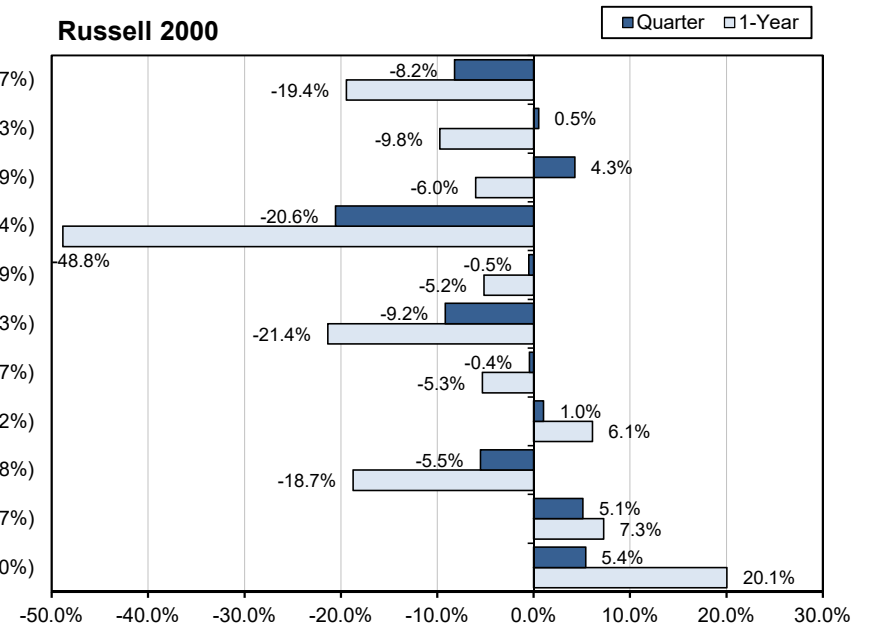
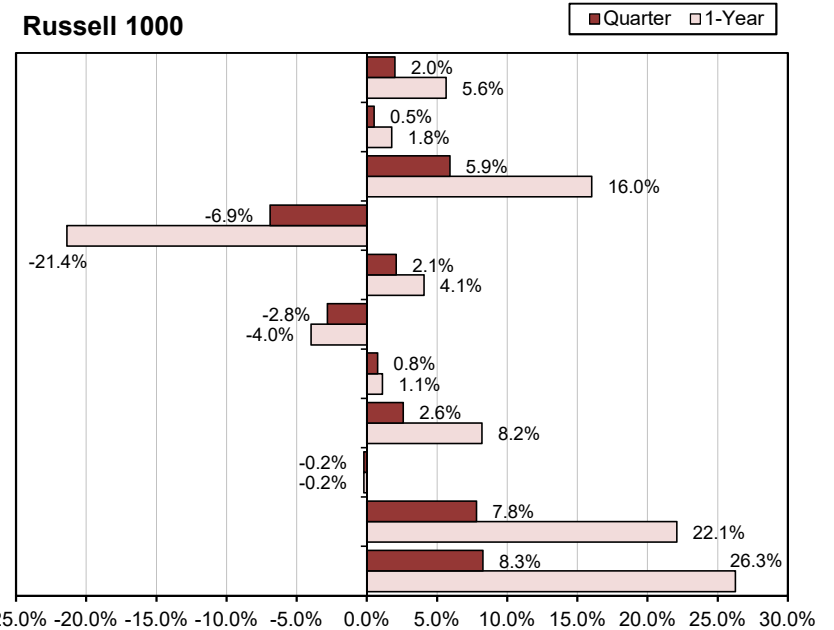


1-Year Performance - Russell Style Series



- Sector performance was mixed across large cap sectors for the 3rd quarter. There were gains for eight out of eleven sectors within the Russell 1000 Index during the period with six sectors outpacing the return of the index. Defensive sectors such as utilities, real estate and consumer staples were the best performers through the quarter returning 8.3%, 7.8% and 16.0% respectively as investors looked toward these sectors for their higher yields and lower historical volatility. Energy, health care and materials stocks were the worst performers during the period. Energy stocks fell -6.9% as crude oil prices fell during the period despite a sharp upward spike in September following a terrorist attack in Saudi Arabia that temporarily reduced the country's oil production, causing a large disruption in supply. Health care stocks also lagged, declining -2.8%, as discussions in Washington around the potential for increased regulation on drug pricing acted as a headwind. Health care reform has also been a major topic of discussion among candidates for the 2020 US Presidential election, creating additional uncertainty within the sector. Materials returned -0.2% as demand concerns weighed on the economically sensitive sector. Returns over the 1-year period were also generally positive with eight out of eleven sectors posting gains. Similar to the quarter's results, defensive sectors outperformed by a considerable margin. Utilities, real estate and consumer staples performed well returning 26.3%, 22.1% and 16.0% respectively. Technology returns were also strong gaining 8.2%. Energy, health care and materials were the only sectors to post negative results over the 1-year period with energy falling -21.4%, health care dropping -4.0% and materials returning -0.2%.

- Quarterly results for small cap sectors were worse than their large capitalization counterparts with all eleven sectors trailing their corresponding large cap equivalents. Five of eleven economic sectors produced gains during the period with seven of eleven sectors outpacing the Russell 2000 Index return for the quarter. Similar to large caps, defensive sectors performed well as investors gravitated toward their relative safety and higher yields. Utilities were the best performers, returning 5.4% followed closely by REITs and consumer staples which returned 5.1% and 4.3% respectively. The cyclically oriented energy sector was the largest detractor for the period, posting a loss of -20.6%. Health care and communication services stocks also experienced notable declines, falling -9.2% and -8.2% respectively. Over the trailing 1-year period, returns were broadly negative. Utilities, real estate and technology were the only sectors to post gains returning 20.1%, 7.3% and 6.1%. The energy sector was an outlier in terms of negative returns dropping -48.8% during the period. There were also notable losses in health care, communication services and materials which declined -21.4%, -19.4% and -18.7% respectively.



The Market Environment
Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000
As of September 30, 2019

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Microsoft Corp	3.82%	4.1%	22.9%	Information Technology
Apple Inc	3.68%	13.6%	0.8%	Information Technology
Amazon.com Inc	2.61%	-8.3%	-13.3%	Consumer Discretionary
Facebook Inc A	1.55%	-7.7%	8.3%	Communication Services
Berkshire Hathaway Inc B	1.48%	-2.4%	-2.8%	Financials
JPMorgan Chase & Co	1.36%	6.0%	7.4%	Financials
Alphabet Inc Class C	1.35%	12.8%	2.1%	Communication Services
Alphabet Inc A	1.33%	12.8%	1.2%	Communication Services
Johnson & Johnson	1.25%	-6.4%	-3.8%	Health Care
Procter & Gamble Co	1.12%	14.2%	54.0%	Consumer Staples

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Insulet Corp	0.04%	38.2%	55.7%	Health Care
CyrusOne Inc	0.03%	37.9%	28.8%	Real Estate
KLA Corp	0.09%	35.7%	61.1%	Information Technology
New York Community Bancorp Inc	0.02%	27.6%	28.7%	Financials
Entegris Inc	0.02%	26.3%	63.9%	Information Technology
Pilgrims Pride Corp	0.01%	26.2%	77.1%	Consumer Staples
Western Digital Corp	0.06%	25.4%	5.6%	Information Technology
DocuSign Inc	0.03%	24.6%	17.8%	Information Technology
Target Corp	0.19%	24.4%	24.3%	Consumer Discretionary
XPO Logistics Inc	0.02%	23.8%	-37.3%	Industrials

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
2U Inc	0.00%	-56.7%	-78.3%	Information Technology
PG&E Corp	0.02%	-56.4%	-78.3%	Utilities
Covetrus Inc	0.00%	-51.4%	N/A	Health Care
Sarepta Therapeutics Inc	0.02%	-50.4%	-53.4%	Health Care
Nektar Therapeutics Inc	0.01%	-48.8%	-70.1%	Health Care
DXC Technology Co	0.03%	-46.2%	-67.9%	Information Technology
Antero Resources Corp	0.00%	-45.4%	-82.9%	Energy
Range Resources Corp	0.00%	-45.0%	-77.3%	Energy
Pluralsight Inc Class A	0.00%	-44.6%	-47.5%	Information Technology
Fluor Corp	0.01%	-42.5%	-66.1%	Industrials

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
NovoCure Ltd	0.34%	18.3%	42.7%	Health Care
Haemonetics Corp	0.33%	4.8%	10.1%	Health Care
Trex Co Inc	0.28%	26.8%	18.1%	Industrials
Science Applications International	0.27%	1.3%	10.4%	Information Technology
Portland General Electric Co	0.26%	4.8%	27.2%	Utilities
ONE Gas Inc	0.26%	7.0%	19.5%	Utilities
First Industrial Realty Trust Inc	0.26%	8.3%	29.3%	Real Estate
Southwest Gas Holdings Inc	0.26%	2.2%	18.2%	Utilities
Maximus Inc	0.25%	6.9%	20.4%	Information Technology
Teladoc Health Inc	0.25%	2.0%	-21.6%	Health Care

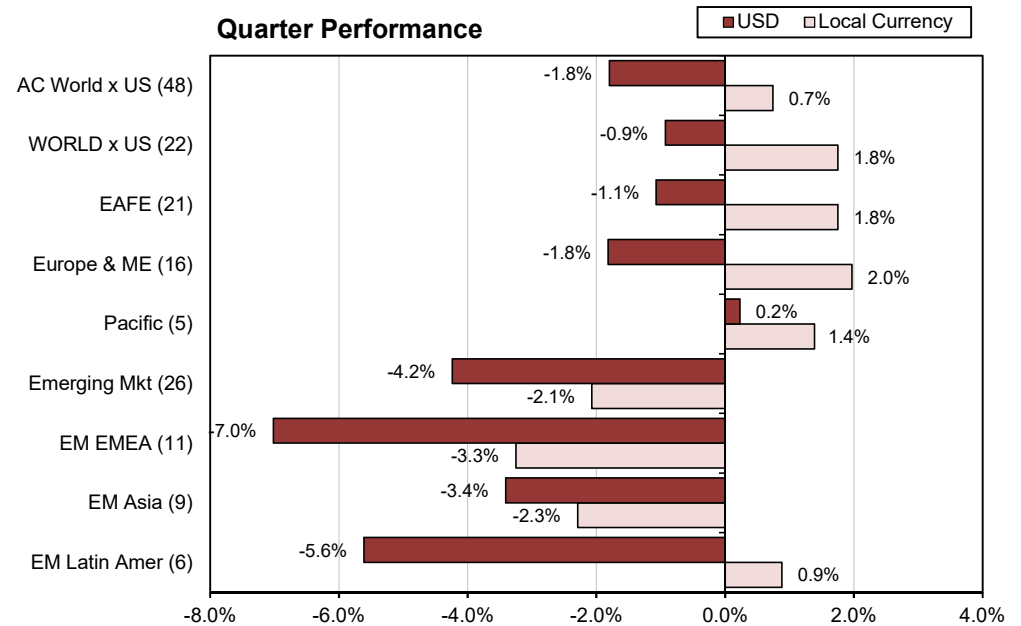
Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
NextCure Inc	0.00%	105.9%	N/A	Health Care
Dova Pharmaceuticals Inc	0.01%	98.2%	33.3%	Health Care
WW International Inc	0.09%	98.0%	-47.5%	Consumer Discretionary
R.R.Donnelley & Sons Co	0.01%	94.7%	-27.6%	Industrials
Infinera Corp	0.05%	87.3%	-25.3%	Information Technology
Lannett Co Inc	0.02%	84.8%	135.8%	Health Care
Owens & Minor Inc	0.02%	81.6%	-64.4%	Health Care
Allakos Inc	0.08%	81.5%	74.8%	Health Care
Solid Biosciences Inc	0.01%	79.8%	-78.1%	Health Care
Ardelyx Inc	0.01%	74.7%	8.0%	Health Care

Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Tocagen Inc	0.00%	-90.1%	-95.8%	Health Care
Waitr Holdings Inc Class A	0.00%	-79.6%	-88.1%	Consumer Discretionary
McDermott International Inc	0.02%	-79.1%	-89.0%	Energy
Sonim Technologies Inc	0.00%	-77.0%	N/A	Information Technology
Synlogic Inc	0.00%	-74.8%	-83.9%	Health Care
Mallinckrodt PLC	0.01%	-73.7%	-91.8%	Health Care
Clovis Oncology Inc	0.01%	-73.6%	-86.6%	Health Care
Bloom Energy Corp Class A	0.01%	-73.5%	-90.5%	Industrials
Chaparral Energy Inc Class A	0.00%	-71.5%	-92.4%	Energy
Pacific Drilling SA	0.01%	-69.3%	-99.7%	Energy

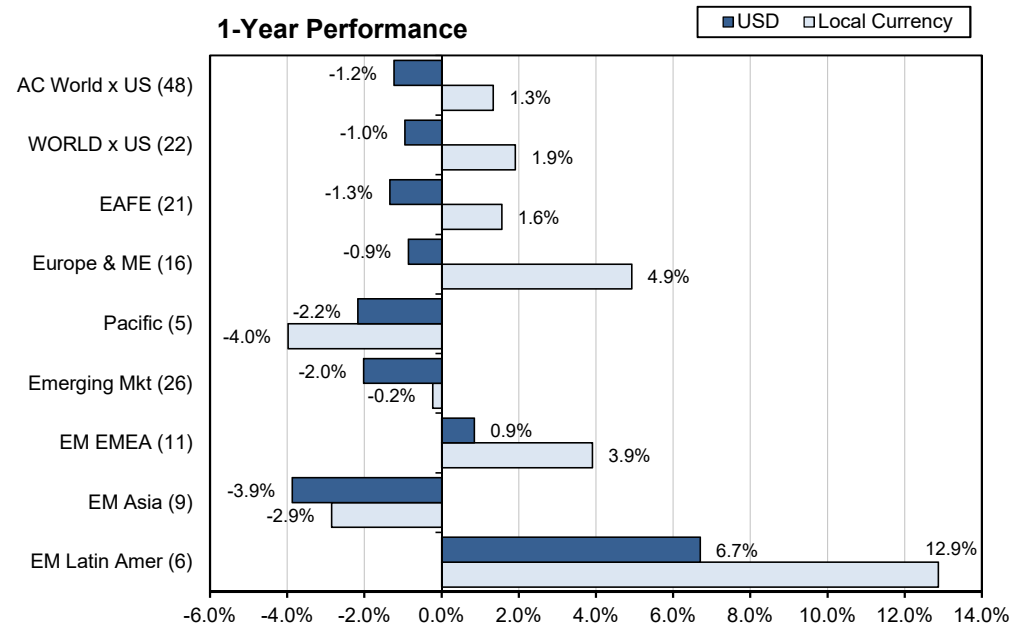


- Broad international equity returns were negative in USD terms for the 3rd quarter as US investors in international markets faced a meaningful headwind from a USD that strengthened against most major currencies. In local currency terms, developed markets were generally positive while emerging markets posted losses. The MSCI ACWI ex US Index gained 0.7% in local currency terms, but a USD investor experienced a loss of -1.8% due to the currency effect. Similar to US markets, international equity markets balanced headwinds from slowing economic data and concerns around global trade with tailwinds from central bank shifts toward more accommodative policies. Among others, the ECB and PBoC announced new stimulus measures during the quarter. The ECB cut its policy rate and committed to a new quantitative easing program and the PBoC announced new stimulus measures designed to encourage bank lending and reduce borrowing costs as it tries to counteract a cooling economy and the effects of its ongoing trade war with the US. The recent USD strength can also be seen over the 1-year period with USD returns trailing most local currency returns. Returns for the MSCI ACWI ex US Index were 1.3% in local currency terms and -1.2% in USD terms for the trailing year.
- Results for developed market international indices were generally positive in local currency terms, but negative in USD terms for the 3rd quarter, with the MSCI EAFE Index returning 1.8% and -0.9% respectively. Outside of central bank policy and trade, there were notable developments within the political sphere. In Europe, Christine Lagarde was nominated to succeed Mario Draghi as the head of the ECB. Japanese stocks rose as election results appeared to support continuity for Prime Minister Abe's ongoing policy efforts. In the UK, pro-Brexit Boris Johnson was appointed to prime minister, replacing Theresa May. The UK continues to face uncertainty around Brexit as its late October deadline to agree to a withdrawal agreement with the European Union (EU) quickly approaches. Stocks in Hong Kong fell as the government dealt with major pro-democracy protests throughout the quarter. The MSCI EAFE Index returned 1.6% and -1.3% for the last twelve months in local currency and USD terms respectively.
- Emerging markets continued their trend of 2019 underperformance relative to developed markets during the 3rd quarter, posting negative returns in both local currency and USD terms. The MSCI Emerging Markets Index fell -2.1% and -4.2% respectively. As expected, geopolitical tensions around trade continued to put pressure on emerging market stocks. Countries with greater sensitivities to commodity prices or a strong USD tended to underperform during the period. Argentina's stock market fell -46.8% as primary elections in the country saw the defeat of the country's current market friendly president. One year returns for the MSCI Emerging Market Index were -0.2% in local currency terms and -2.0% in USD terms.

Quarter Performance



1-Year Performance



The Market Environment
US Dollar International Index Attribution & Country Detail
As of September 30, 2019

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.4%	-0.9%	-0.7%
Consumer Discretionary	11.5%	0.3%	-2.0%
Consumer Staples	12.0%	1.9%	6.9%
Energy	5.1%	-6.5%	-14.5%
Financials	18.6%	-2.6%	-6.3%
Health Care	11.6%	2.4%	4.3%
Industrials	14.7%	-2.0%	-2.1%
Information Technology	6.7%	-0.5%	1.8%
Materials	7.0%	-5.4%	-5.7%
Real Estate	3.6%	-1.3%	4.3%
Utilities	3.8%	2.4%	13.2%
Total	100.0%	-1.1%	-1.3%

MSCI - ACWIxUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	6.8%	-2.9%	-1.0%
Consumer Discretionary	11.4%	-0.7%	-1.6%
Consumer Staples	10.2%	1.5%	6.8%
Energy	6.7%	-4.6%	-9.8%
Financials	21.6%	-3.6%	-3.2%
Health Care	8.5%	1.1%	0.9%
Industrials	11.9%	-2.5%	-2.4%
Information Technology	8.9%	2.2%	4.1%
Materials	7.3%	-6.5%	-7.2%
Real Estate	3.2%	-3.1%	5.0%
Utilities	3.5%	1.3%	12.6%
Total	100.0%	-1.8%	-1.2%

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	11.6%	-5.2%	-2.5%
Consumer Discretionary	13.1%	-3.1%	0.1%
Consumer Staples	6.9%	-0.8%	3.0%
Energy	7.7%	-4.0%	-2.3%
Financials	24.7%	-8.0%	1.6%
Health Care	2.6%	-6.6%	-24.2%
Industrials	5.4%	-5.2%	-4.4%
Information Technology	15.1%	5.6%	3.9%
Materials	7.3%	-10.7%	-15.9%
Real Estate	2.9%	-8.8%	6.8%
Utilities	2.8%	-3.6%	7.2%
Total	100.0%	-4.2%	-2.0%

Country	MSCI-EAFE Weight	MSCI-ACWIxUS Weight	Quarter Return	1-Year Return
Japan	24.6%	16.5%	3.1%	-4.7%
United Kingdom	16.4%	11.0%	-2.5%	-2.9%
France	11.4%	7.6%	-1.7%	-1.6%
Switzerland	9.4%	6.3%	0.3%	12.0%
Germany	8.5%	5.7%	-4.0%	-7.1%
Australia	7.0%	4.7%	-1.4%	6.1%
Netherlands	4.0%	2.7%	2.4%	9.5%
Hong Kong	3.5%	2.4%	-11.9%	-1.8%
Spain	2.9%	2.0%	-3.8%	-3.5%
Sweden	2.6%	1.7%	-4.8%	-8.0%
Italy	2.3%	1.6%	-0.1%	3.9%
Denmark	1.8%	1.2%	-1.0%	2.3%
Singapore	1.3%	0.9%	-5.8%	-0.2%
Belgium	1.0%	0.7%	3.4%	-0.8%
Finland	1.0%	0.7%	-1.8%	-9.3%
Norway	0.7%	0.4%	-3.4%	-13.4%
Israel	0.6%	0.4%	-3.7%	-12.5%
Ireland	0.5%	0.4%	-0.6%	-4.6%
New Zealand	0.2%	0.2%	-2.9%	10.0%
Austria	0.2%	0.2%	-3.1%	-16.0%
Portugal	0.2%	0.1%	1.6%	-2.5%
Total EAFE Countries	100.0%	67.0%	-1.1%	-1.3%
Canada		7.0%	0.5%	3.0%
Total Developed Countries		74.0%	-0.9%	-1.0%
China		8.3%	-4.7%	-3.9%
Korea		3.2%	-4.5%	-13.8%
Taiwan		3.0%	5.2%	-0.2%
India		2.3%	-5.2%	4.7%
Brazil		2.0%	-4.6%	25.4%
South Africa		1.2%	-12.6%	-6.4%
Russia		1.0%	-1.4%	18.0%
Thailand		0.8%	-6.0%	-0.9%
Saudi Arabia		0.7%	-9.5%	4.0%
Mexico		0.7%	-1.7%	-14.8%
Indonesia		0.5%	-5.2%	11.9%
Malaysia		0.5%	-6.3%	-10.4%
Philippines		0.3%	-4.6%	13.1%
Poland		0.3%	-12.1%	-12.2%
Qatar		0.3%	-0.2%	5.0%
Chile		0.3%	-7.3%	-16.8%
United Arab Emirates		0.2%	-0.2%	-0.3%
Turkey		0.2%	11.7%	16.5%
Colombia		0.1%	-6.1%	-7.3%
Peru		0.1%	-9.3%	-4.0%
Greece		0.1%	-3.1%	6.8%
Hungary		0.1%	-3.9%	3.4%
Argentina		0.1%	-46.8%	-32.3%
Czech Republic		0.0%	-10.1%	-12.6%
Egypt		0.0%	7.4%	21.5%
Pakistan		0.0%	1.1%	-32.7%
Total Emerging Countries		26.0%	-4.2%	-2.0%
Total ACWIxUS Countries		100.0%	-1.8%	-1.2%

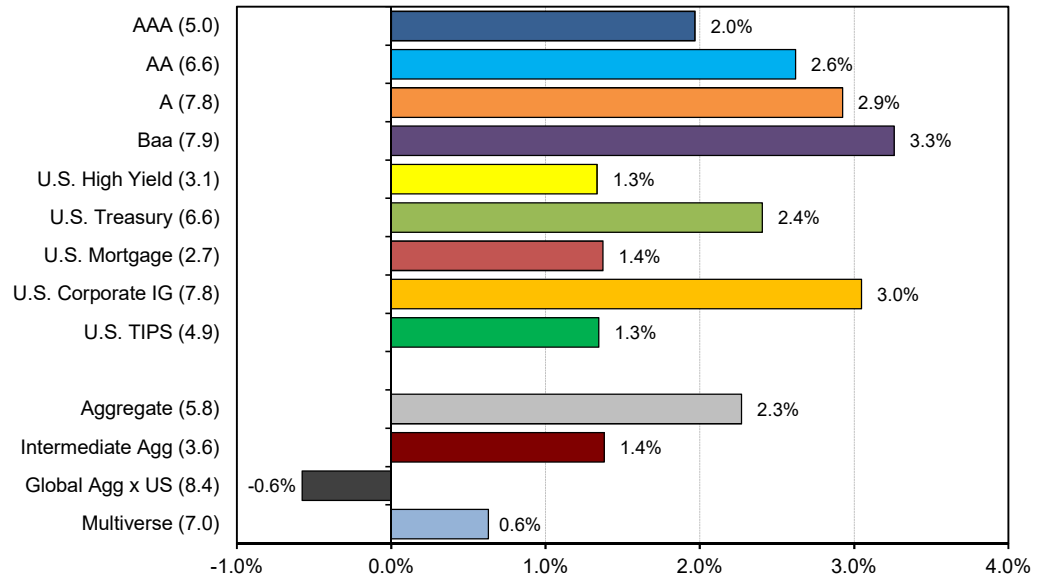
Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)

As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

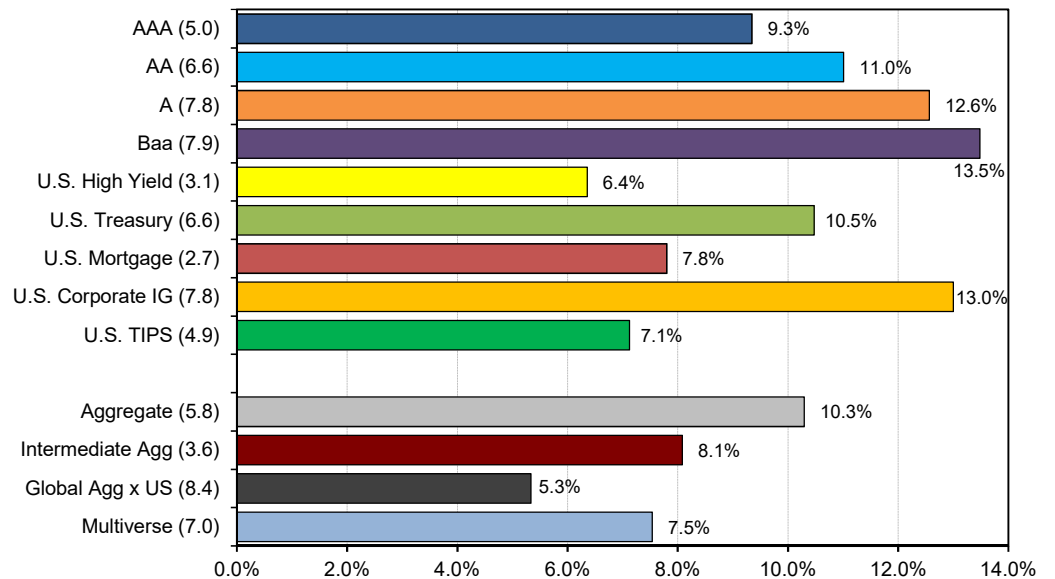


- Broad fixed income benchmarks continued their trend of 2019 gains during the 3rd quarter. Interest rates fell across the US Treasury Yield Curve through the quarter as the Fed continued to shift toward an easing of monetary policy in an attempt to combat slowing economic data. The Fed cut short-term interest rates twice during the period following their July and September meetings. In addition, it ended its balance sheet reduction plan in September which represents a further easing of monetary policy. After its September meeting, the Fed issued a statement commenting that future changes to monetary policy are not on a preset course and will be evaluated as the Fed receives new information on the state of the economy, but that Fed officials “will continue to monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion.” The Fed response provided market support in a quarter where we saw the formal inversion of the yield curve. Treasury yields on 2-year issues briefly surpassed the yield on 10-year issues in August. This inversion of the yield curve has historically preceded a recession within the next 6-24 months. However, the magnitude of the inversion was mild and short in duration with rates on the 10-year Treasury rising above the yield of the 2-year by early September. The bellwether Bloomberg Barclays US Aggregate Index posted positive returns for both the 3rd quarter and the 1-year period, returning 2.3% and 10.3% respectively.
- Within investment grade credit, lower quality issues outperformed higher quality issues during the quarter. Lower quality issues benefitted from their higher durations as interest rates fell during 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 3.3% for the quarter, while AAA was the worst performing, returning 2.0%. High yield issues returned 1.3% for the quarter as these issues did not commensurately benefit from the drop in interest rates due to their relatively low durations. Returns over the 1-year period show lower quality securities outperforming higher quality issues with Baa rated issues returning 13.5% versus a 9.3% return for AAA securities.
- Investment grade corporates outperformed the more defensive Treasury and mortgage backed sectors of the Bloomberg Barclays US Aggregate Index’s three broad sectors during the 3rd quarter. Investment grade corporate credit returned 3.0%, as they benefitted from their higher sensitivity to interest rates, low credit spreads and high investor demand for yield. When viewed over the 1-year period, corporate credit outperformed both Treasuries and mortgage backed securities. Corporate issues returned 13.0% versus a 7.8% return for mortgages and 10.5% gain on Treasury securities.

Quarter Performance

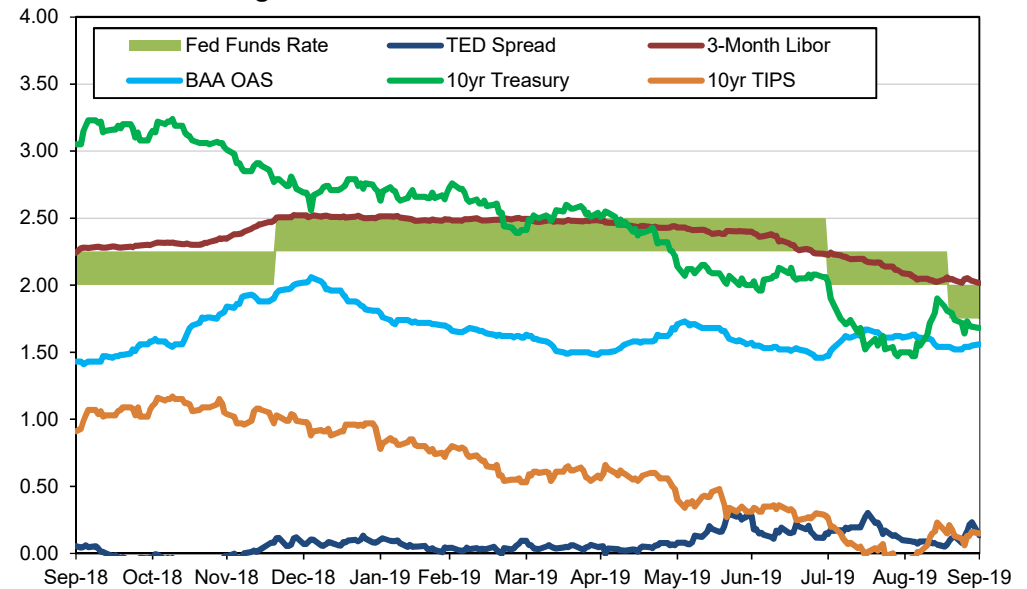


1-Year Performance

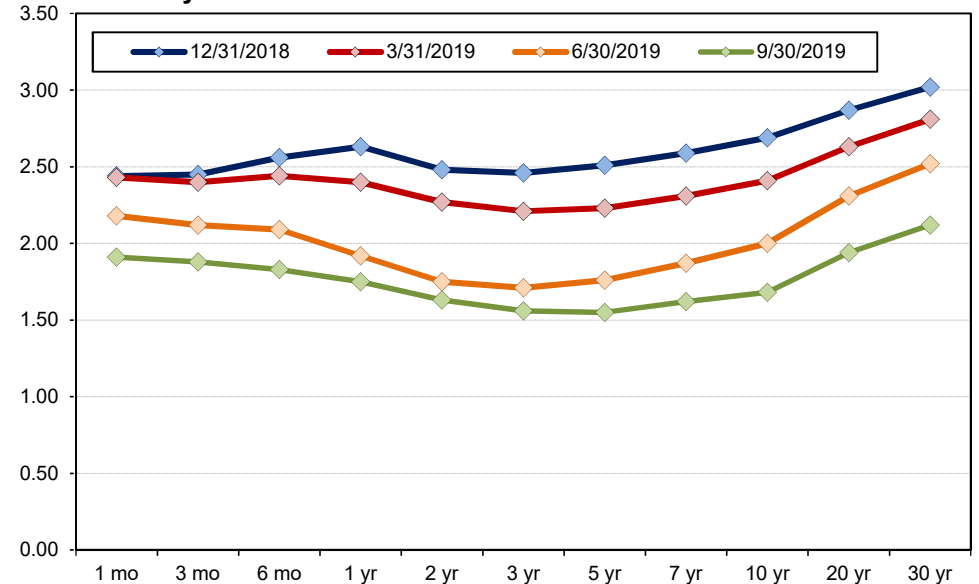


- Global fixed income returns underperformed their domestic counterparts during the 3rd quarter. These indices have lower, or in some cases (Germany, Japan), negative yields, but have higher durations. Given their higher durations, these issues would be expected to perform relatively well during periods of falling rates, however, the returns of these indices are also significantly influenced by fluctuations in their currency denomination relative to the USD. As mentioned, the USD appreciated against most other developed currencies during the quarter, acting as a headwind to global bond indices. The return on global bonds, as represented by the Bloomberg Barclays Global Aggregate ex US Index, was -0.6%. Global bonds also trailed over the 1-year period with the Global Aggregate ex US Index returning 5.3% versus a 10.3% return on the domestically focused Bloomberg Barclays Aggregate Index. As global growth has shown signs of stalling, several international central banks have started to step back from more restrictive postures. The ECB and the PBoC have moved toward an easing of monetary policy and implemented various stimulus programs designed to support their respective economies. The Bank of England and the Bank of Japan made no major policy changes during the quarter as they continue to review macroeconomic data within their respective countries.
- 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 over the last year, the 10-year Treasury yield (green line) fell from high's greater than 3.0%, to yields below 1.5% before ending the quarter at 1.68%. 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 an abrupt increase in credit spreads during the 4th quarter of 2018 as investors moved to higher quality assets during the quarter's risk-off environment. Subsequently, spreads declined steadily, remaining somewhat range bound with increases in May and August. There was little change through the quarter with spreads tightening by about 1 basis point. Spread tightening is equivalent to an interest rate decrease on corporate bonds, which produces an additional tailwind for corporate bond index returns. The green band across the graph illustrates the decrease in the Federal Funds Rate due to the recent easing in US monetary policy. The rate cuts in July and September have pushed the Fed Funds Rate to 1-year lows.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four calendar quarters. The downward shift in interest rates as well as a general flattening of the yield curve are clearly visible over the last quarter. As mentioned, the yield curve continues to invert as yields on shorter- and middle-term maturities fell less than interest rates at the long-end of the curve.

1-Year Trailing Market Rates



Treasury Yield Curve



**Delray Beach Fire Pension Plan
Compliance Checklist
As of September 30, 2019**

Total Fund Compliance:	Yes	No	N/A
	1. The Total Plan return equaled or exceeded the 7.25% actuarial earnings assumption over the trailing three and five year periods.		•
2. The Total Plan return equaled or exceeded the total plan benchmark over the trailing three and five year periods.		•	
3. The Total Plan return ranked within the top 40th percentile of its peer group over the trailing three and five year periods.	•		

* Based off gross of fees and public plan peer group.

Total Equity Compliance:	Yes	No	N/A
	1. Total equity returns meet or exceed the benchmark over the trailing three and five year periods.		•
2. Total equity returns ranked within the top 40th percentile of its peer group over the trailing three and five year periods.			•
3. The total equity allocation was less than 70% of the total plan assets at market.	•		
4. Total foreign equity was less than 25% of the total plan assets at market.	•		

Total Fixed Income Compliance:	Yes	No	N/A
	1. Total fixed income returns meet or exceed the benchmark over the trailing three and five year periods.	•	
2. Total fixed income returns ranked within the top 40th percentile of its peer group over the trailing three and five year periods.	•		
3. No more than 15% of the fixed income portfolio was rated below BBB/Baa.	•		

	VG Total Stock Mkt			Boston			Rhumblin R1000G		
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*			•			•			•
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*			•			•			•
3. Less than four consecutive quarters of under performance relative to the benchmark.			•	•			•		
4. Three and five-year down-market capture ratio less than the index.*			•			•			•
5. Manager reports compliance with PFIA.			•			•			•

	Polen LCG			VG Mid-Cap			Yes	No	N/A
	Yes	No	N/A	Yes	No	N/A			
1. Manager outperformed the index over the trailing three and five year periods.*			•		•				
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*			•	•					
3. Less than four consecutive quarters of under performance relative to the benchmark.	•			•					
4. Three and five-year down-market capture ratio less than the index.*			•		•				
5. Manager reports compliance with PFIA.			•			•			

*3 years used when 5 years unavailable



**Delray Beach Fire Pension Plan
Compliance Checklist
As of September 30, 2019**

	H.L. Intl Equity			GHA			Templeton Global		
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*	•					•		•	
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*	•					•		•	
3. Less than four consecutive quarters of under performance relative to the benchmark.	•			•			•		
4. Three and five-year down-market capture ratio less than the index.*		•				•	•		
5. Manager reports compliance with PFIA.			•	•					•

	American Realty								
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*		•							
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*		•							
3. Less than four consecutive quarters of under performance relative to the benchmark.	•								
4. Three and five-year down-market capture ratio less than the index.*			•						
5. Manager reports compliance with PFIA.			•						

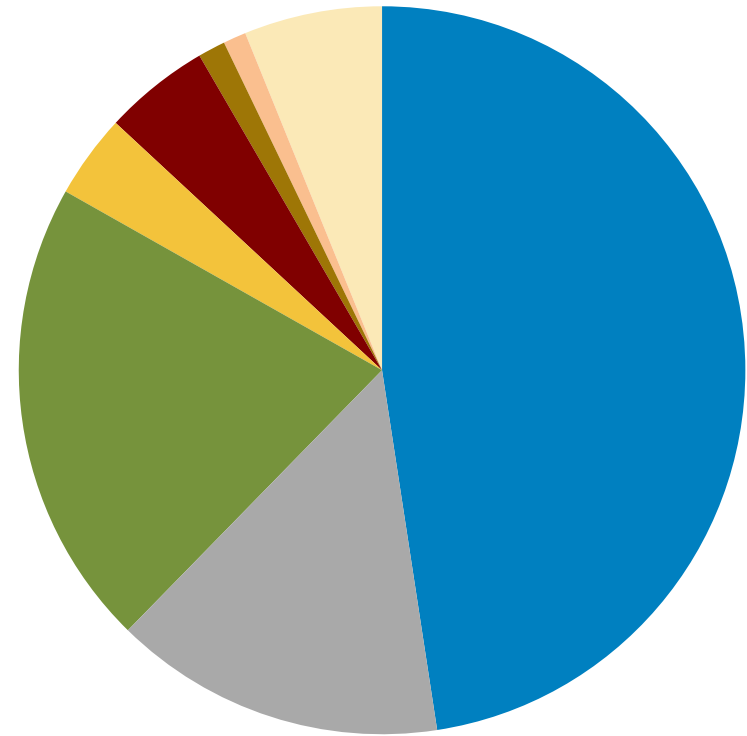
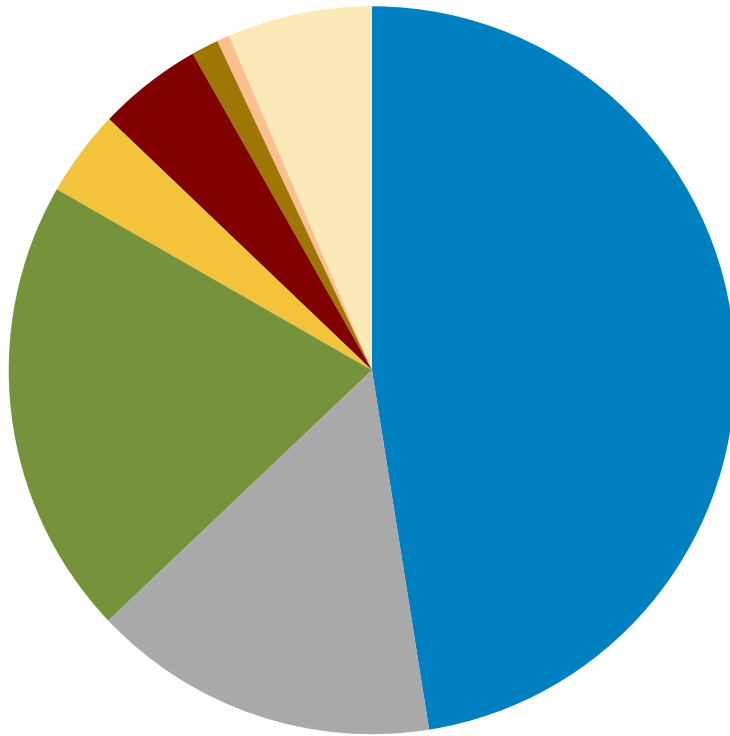
*3 years used when 5 years unavailable



Asset Allocation By Asset Class
Total Fund (Composite)
 As of September 30, 2019

June 30, 2019 : \$109,059,719

September 30, 2019 : \$109,003,435

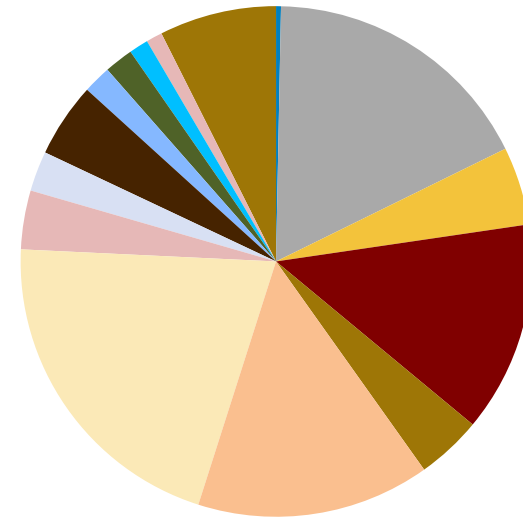
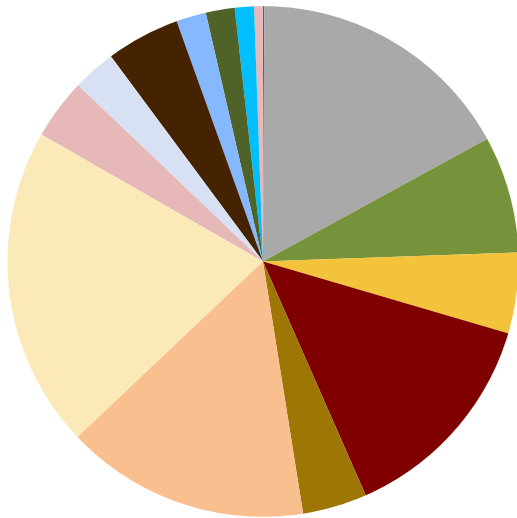


Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
■ US Equity	51,791,572	47.5	■ US Equity	51,861,548	47.6
■ International Equity	16,834,482	15.4	■ International Equity	16,086,255	14.8
■ US Fixed Income	22,202,591	20.4	■ US Fixed Income	22,715,527	20.8
■ Global Fixed Income	4,186,533	3.8	■ Global Fixed Income	4,057,331	3.7
■ US Private Real Estate	5,085,190	4.7	■ US Private Real Estate	5,144,225	4.7
■ US Real Return	1,320,879	1.2	■ US Real Return	1,325,625	1.2
■ Cash	613,084	0.6	■ Cash	1,110,696	1.0
■ US Private Equity	7,025,387	6.4	■ US Private Equity	6,702,228	6.1



June 30, 2019 : \$109,059,719

September 30, 2019 : \$109,003,435



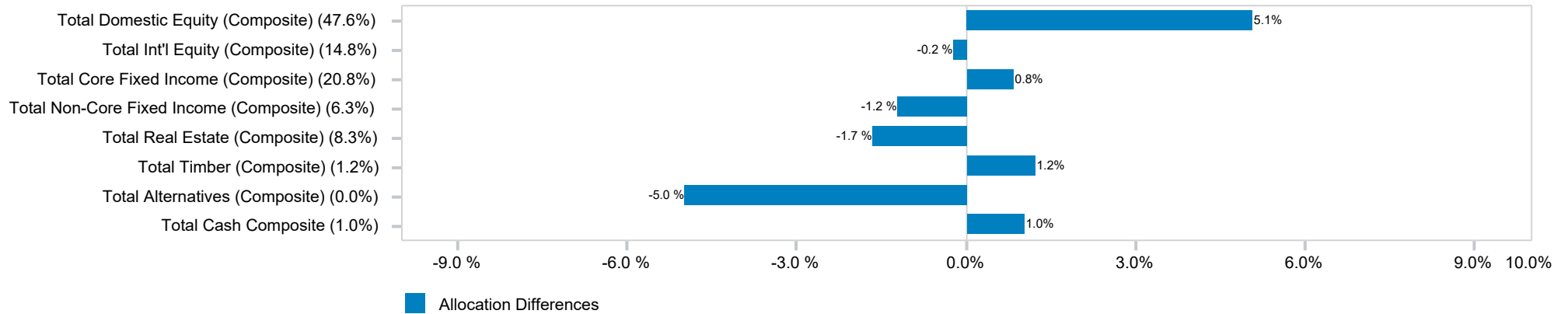
Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
Vanguard Total Stock Mkt (VTSAX)	87,980	0.1	Vanguard Total Stock Mkt (VTSAX)	338,783	0.3
Boston LCV	18,483,494	16.9	Boston LCV	18,977,428	17.4
Lazard SMid Cap Core	8,076,425	7.4	Lazard SMid Cap Core	1	0.0
Vanguard Mid-Cap Index (VIMAX)	5,571,542	5.1	Vanguard Mid-Cap Index (VIMAX)	5,398,559	5.0
Polen Capital LCG	15,128,422	13.9	Polen Capital LCG	14,554,755	13.4
Rhumblin R1000G	4,443,708	4.1	Rhumblin R1000G	4,509,941	4.1
Harding Loevner Intl Equity (HLMIX)	16,834,482	15.4	Harding Loevner Intl Equity (HLMIX)	16,086,255	14.8
Garcia Hamilton Fixed Income	22,202,591	20.4	Garcia Hamilton Fixed Income	22,715,527	20.8
Templeton Global Total Return (FTTRX)	4,186,533	3.8	Templeton Global Total Return (FTTRX)	4,057,331	3.7
Crescent Direct Lending Levered Fund	2,969,262	2.7	Crescent Direct Lending Levered Fund	2,770,591	2.5
American Core Realty	5,085,190	4.7	American Core Realty	5,144,225	4.7
Angelo Gordon Net Lease Realty Fund III, L.P.	2,061,672	1.9	Angelo Gordon Net Lease Realty Fund III, L.P.	1,937,184	1.8
Dune Real Estate Fund III	1,994,453	1.8	Dune Real Estate Fund III	1,994,453	1.8
Molpus Woodlands Timber	1,320,879	1.2	Molpus Woodlands Timber	1,325,625	1.2
Mutual Fund Cash	3,128	0.0	Mutual Fund Cash	3,246	0.0
R&D	609,956	0.6	R&D	1,107,450	1.0
Great Lakes SMid Cap	-	0.0	Great Lakes SMid Cap	8,082,080	7.4



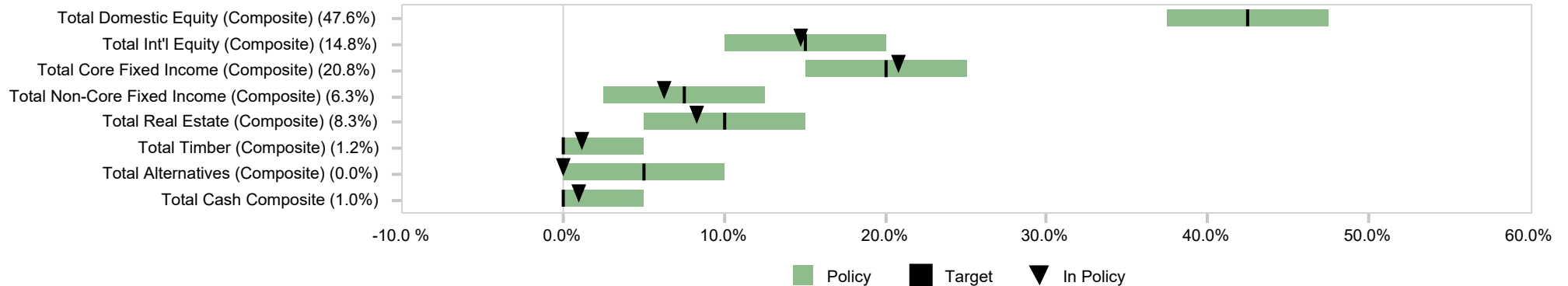
Asset Allocation Compliance
Delray Beach Firefighters' Retirement System Total Fund (Composite)
As of September 30, 2019

Asset Allocation Compliance

	Asset Allocation \$	Current Allocation (%)	Target Allocation (%)	Differences (%)	Target Rebal. (\$000)
Total Fund (Composite)	109,003,435	100.00	100.00	0.00	-
Total Domestic Equity (Composite)	51,861,548	47.58	42.50	5.08	-5,535,088
Total Int'l Equity (Composite)	16,086,255	14.76	15.00	-0.24	264,260
Total Core Fixed Income (Composite)	22,715,527	20.84	20.00	0.84	-914,840
Total Non-Core Fixed Income (Composite)	6,827,922	6.26	7.50	-1.24	1,347,336
Total Real Estate (Composite)	9,075,862	8.33	10.00	-1.67	1,824,482
Total Timber (Composite)	1,325,625	1.22	0.00	1.22	-1,325,625
Total Alternatives (Composite)	-	0.00	5.00	-5.00	5,450,172
Total Cash Composite	1,110,696	1.02	0.00	1.02	-1,110,696



Executive Summary



Comparative Performance
Total Fund Trailing Returns
As of September 30, 2019

Comparative Performance																	
	QTR		YTD		FYTD		1 YR		2 YR		3 YR		5 YR		Inception	Inception Date	
Total Fund (Net)	0.85	(55)	14.09	(22)	4.62	(42)	4.62	(42)	6.44	(13)	7.96	(12)	6.23	(17)	5.35	(51)	10/01/2005
Total Fund Policy	0.94	(50)	13.71	(28)	5.02	(34)	5.02	(34)	6.79	(11)	8.47	(7)	7.20	(5)	6.33	(17)	
Difference	-0.09		0.38		-0.40		-0.40		-0.35		-0.51		-0.97		-0.98		
IM Mixed-Asset Target Alloc Moderate (MF) Median	0.93		12.51		4.00		4.00		4.60		6.35		4.98		5.35		
Total Fund (Gross)	0.93	(41)	14.33	(17)	4.93	(31)	4.93	(31)	6.78	(17)	8.33	(30)	6.67	(41)	5.81	(83)	10/01/2005
Total Fund Policy	0.94	(41)	13.71	(33)	5.02	(29)	5.02	(29)	6.79	(17)	8.47	(25)	7.20	(15)	6.33	(57)	
Difference	-0.01		0.62		-0.09		-0.09		-0.01		-0.14		-0.53		-0.52		
All Public Plans-Total Fund Median	0.83		12.90		4.31		4.31		5.90		8.01		6.45		6.42		
Total Equity	0.55		20.35		3.19		3.19		8.05		10.76		7.89		6.82		10/01/2005
Total Equity Policy	0.12		17.57		1.49		1.49		7.37		11.10		7.83		6.38		
Difference	0.43		2.78		1.70		1.70		0.68		-0.34		0.06		0.44		
Total Domestic Equity	1.48	(27)	22.56	(19)	5.47	(19)	5.47	(19)	10.66	(29)	12.09	(43)	9.31	(39)	7.83	(48)	10/01/2005
Total Domestic Equity Policy	0.75	(48)	19.62	(45)	2.36	(41)	2.36	(41)	9.78	(36)	12.65	(35)	10.15	(29)	8.64	(33)	
Difference	0.73		2.94		3.11		3.11		0.88		-0.56		-0.84		-0.81		
IM U.S. All Cap Equity (SA+CF+MF) Median	0.67		18.95		0.96		0.96		8.20		11.37		8.55		7.72		
Total Int'l Equity	-2.38	(85)	13.79	(46)	-3.33	(73)	-3.33	(73)	1.16	(37)	6.69	(44)	3.68	(59)	3.77	(11)	05/01/2007
Total Int'l Policy	-1.80	(64)	11.56	(72)	-1.23	(47)	-1.23	(47)	0.26	(53)	6.33	(52)	2.90	(82)	1.04	(98)	
Difference	-0.58		2.23		-2.10		-2.10		0.90		0.36		0.78		2.73		
IM International Large Cap Core Equity (SA+CF) Median	-1.42		13.38		-1.56		-1.56		0.38		6.45		3.87		2.71		
Total Fixed Income	1.35	(80)	6.06	(93)	7.41	(79)	7.41	(79)	4.15	(52)	4.08	(19)	4.02	(20)	5.16	(24)	10/01/2005
Total Fixed Policy	2.27	(34)	8.52	(64)	10.30	(28)	10.30	(28)	4.38	(38)	2.92	(70)	3.38	(54)	4.34	(68)	
Difference	-0.92		-2.46		-2.89		-2.89		-0.23		1.16		0.64		0.82		
IM U.S. Broad Market Fixed Income (SA+CF+MF) Median	2.10		8.85		9.65		9.65		4.17		3.28		3.44		4.65		
Total Real Estate	2.53	(24)	6.13	(30)	7.96	(33)	7.96	(33)	9.02	(33)	9.29	(28)	10.30	(45)	4.67	(100)	07/01/2007
NCREIF ODCE	1.38	(86)	4.47	(79)	6.16	(87)	6.16	(87)	7.48	(78)	7.59	(80)	9.59	(73)	5.51	(74)	
Difference	1.15		1.66		1.80		1.80		1.54		1.70		0.71		-0.84		
IM U.S. Open End Private Real Estate (SA+CF) Median	1.80		5.34		7.05		7.05		8.35		8.43		9.97		5.83		
Total Timber	0.36		1.34		5.58		5.58		-2.19		-1.37		1.74		2.87		07/01/2007
NCREIF Timberland Index	0.18		1.34		2.10		2.10		3.05		3.12		4.36		5.07		
Difference	0.18		0.00		3.48		3.48		-5.24		-4.49		-2.62		-2.20		



Comparative Performance
Total Fund Trailing Returns
As of September 30, 2019

	QTR	YTD	FYTD	1 YR	2 YR	3 YR	5 YR	Inception	Inception Date
Total Domestic Equity (Composite)	1.48	22.56	5.47	5.47	10.66	12.09	9.31	7.83	10/01/2005
Vanguard Total Stock Mkt (VTSAX)	1.09 (38)	N/A	N/A	N/A	N/A	N/A	N/A	5.22 (36)	04/01/2019
CRSP U.S. Total Market TR Index	1.11 (38)	20.03 (37)	2.92 (34)	2.92 (34)	10.02 (30)	12.82 (28)	10.43 (25)	5.24 (36)	
Difference	-0.02	N/A	N/A	N/A	N/A	N/A	N/A	-0.02	
IM U.S. Equity (MF) Median	0.37	18.14	0.13	0.13	6.71	9.99	8.29	3.96	
Boston LCV	2.78 (20)	20.10 (28)	3.47 (40)	3.47 (40)	N/A	N/A	N/A	5.42 (35)	01/01/2018
Russell 1000 Value Index	1.36 (58)	17.81 (50)	4.00 (37)	4.00 (37)	6.69 (52)	9.43 (69)	7.79 (63)	4.54 (47)	
Difference	1.42	2.29	-0.53	-0.53	N/A	N/A	N/A	0.88	
IM U.S. Large Cap Value Equity (SA+CF) Median	1.63	17.67	2.14	2.14	6.75	10.45	8.20	4.28	
Great Lakes SMid Cap	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.98 (50)	08/01/2019
Russell 2500 Index	-1.28 (76)	17.72 (67)	-4.04 (63)	-4.04 (63)	5.59 (71)	9.51 (76)	8.57 (78)	-2.30 (77)	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.32	
IM U.S. SMID Cap Core Equity (SA+CF) Median	-0.12	19.41	-2.14	-2.14	6.16	10.17	9.92	-0.98	
Total Growth	1.08 (28)	25.12 (18)	11.18 (5)	11.18 (5)	16.55 (16)	15.93 (48)	11.81 (60)	6.64 (96)	07/01/2007
Russell 1000 Growth Index	1.49 (20)	23.30 (28)	3.71 (39)	3.71 (39)	14.45 (35)	16.89 (30)	13.39 (27)	10.12 (30)	
Difference	-0.41	1.82	7.47	7.47	2.10	-0.96	-1.58	-3.48	
IM U.S. Large Cap Growth Equity (SA+CF+MF) Median	0.16	21.59	2.72	2.72	13.35	15.78	12.33	9.55	
Rhumblin R1000G	1.49 (31)	23.27 (37)	3.70 (54)	3.70 (54)	N/A	N/A	N/A	11.72 (51)	01/01/2018
Russell 1000 Growth Index	1.49 (31)	23.30 (37)	3.71 (54)	3.71 (54)	14.45 (44)	16.89 (37)	13.39 (39)	11.73 (51)	
Difference	0.00	-0.03	-0.01	-0.01	N/A	N/A	N/A	-0.01	
IM U.S. Large Cap Growth Equity (SA+CF) Median	0.74	22.15	3.90	3.90	14.02	16.14	12.77	11.79	
Polen Capital LCG	0.96 (45)	25.68 (21)	N/A	N/A	N/A	N/A	N/A	25.68 (21)	01/01/2019
Russell 1000 Growth Index	1.49 (31)	23.30 (37)	3.71 (54)	3.71 (54)	14.45 (44)	16.89 (37)	13.39 (39)	23.30 (37)	
Difference	-0.53	2.38	N/A	N/A	N/A	N/A	N/A	2.38	
IM U.S. Large Cap Growth Equity (SA+CF) Median	0.74	22.15	3.90	3.90	14.02	16.14	12.77	22.17	
Vanguard Mid-Cap Index (VIMAX)	0.61 (62)	22.60 (21)	3.65 (24)	3.65 (24)	8.43 (16)	10.67 (22)	N/A	8.47 (21)	07/01/2015
CRSP U.S. Mid Cap TR Index	0.62 (61)	22.66 (19)	3.70 (22)	3.70 (22)	8.46 (14)	10.70 (20)	9.24 (17)	8.51 (19)	
Difference	-0.01	-0.06	-0.05	-0.05	-0.03	-0.03	N/A	-0.04	
IM U.S. Mid Cap Core Equity (MF) Median	0.98	19.85	1.09	1.09	5.78	8.86	7.01	6.28	
Total Int'l Equity (Composite)	-2.38	13.79	-3.33	-3.33	1.16	6.69	3.68	3.77	05/01/2007
Harding Loevner Intl Equity (HLMIX)	-2.40 (61)	13.78 (31)	-3.34 (62)	-3.34 (62)	1.15 (26)	6.68 (29)	N/A	6.63 (34)	09/01/2016
MSCI AC World ex USA (Net)	-1.80 (47)	11.56 (49)	-1.23 (44)	-1.23 (44)	0.26 (35)	6.33 (34)	2.90 (48)	6.58 (36)	
Difference	-0.60	2.22	-2.11	-2.11	0.89	0.35	N/A	0.05	
IM International Equity (MF) Median	-1.90	11.44	-1.94	-1.94	-1.10	5.44	2.81	5.82	



Comparative Performance
Total Fund Trailing Returns
As of September 30, 2019

	QTR	YTD	FYTD	1 YR	2 YR	3 YR	5 YR	Inception	Inception Date
Total Core Fixed Income	2.37	7.39	8.74	8.74	3.93	2.88	3.65	4.34	10/01/2005
Core Fixed Policy	2.27	8.52	10.30	10.30	4.38	2.92	3.38	4.28	
Difference	0.10	-1.13	-1.56	-1.56	-0.45	-0.04	0.27	0.06	
Garcia Hamilton Fixed Income	2.37 (45)	7.39 (97)	8.74 (96)	8.74 (96)	N/A	N/A	N/A	4.74 (85)	01/01/2018
Blmbg. Barc. U.S. Aggregate Index	2.27 (73)	8.52 (83)	10.30 (70)	10.30 (70)	4.38 (85)	2.92 (92)	3.38 (91)	4.79 (81)	
Difference	0.10	-1.13	-1.56	-1.56	N/A	N/A	N/A	-0.05	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	2.34	9.01	10.48	10.48	4.71	3.38	3.76	5.09	
Total Non-Core Fixed Income	-1.82	1.95	3.13	3.13	4.05	6.37	4.46	7.56	07/01/2010
Bloomberg Barclays Global Aggregate	0.71	6.32	7.60	7.60	3.05	1.59	2.00	2.66	
Difference	-2.53	-4.37	-4.47	-4.47	1.00	4.78	2.46	4.90	
Templeton Global Total Return (FTTRX)	-3.09 (100)	0.24 (100)	2.50 (99)	2.50 (99)	0.28 (94)	4.60 (6)	1.52 (75)	3.05 (31)	07/01/2011
Blmbg. Barc. Global Multiverse	0.63 (58)	6.45 (69)	7.54 (51)	7.54 (51)	3.02 (52)	1.81 (65)	2.14 (51)	1.93 (64)	
Difference	-3.72	-6.21	-5.04	-5.04	-2.74	2.79	-0.62	1.12	
IM Global Fixed Income (MF) Median	1.01	7.12	7.65	7.65	3.05	2.29	2.16	2.29	
Total Real Estate (Composite)	2.53	6.13	7.96	7.96	9.02	9.29	10.30	4.67	07/01/2007
American Core Realty	1.44 (81)	4.78 (75)	6.81 (60)	6.81 (60)	7.65 (75)	7.61 (78)	9.14 (84)	5.55 (69)	07/01/2007
NCREIF ODCE	1.38 (86)	4.47 (79)	6.16 (87)	6.16 (87)	7.48 (78)	7.59 (80)	9.59 (73)	5.51 (74)	
Difference	0.06	0.31	0.65	0.65	0.17	0.02	-0.45	0.04	
IM U.S. Open End Private Real Estate (SA+CF) Median	1.80	5.34	7.05	7.05	8.35	8.43	9.97	5.83	
Total Timber (Composite)	0.36	1.34	5.58	5.58	-2.19	-1.37	1.74	2.87	07/01/2007
Molpus Woodlands Timber	0.36	1.33	5.90	5.90	1.53	1.41	2.38	2.68	06/01/2008
NCREIF Timberland Index	0.18	1.34	2.10	2.10	3.05	3.12	4.36	3.85	
Difference	0.18	-0.01	3.80	3.80	-1.52	-1.71	-1.98	-1.17	

^ Some products shown on IRR page.



As of September 30, 2019

Comparative Performance - IRR

	QTR	Inception	Inception Date
Molpus Woodlands Timber	0.36	2.21	06/24/2008
Angelo Gordon Net Lease Realty Fund III, L.P.	0.00	6.75	03/10/2014
Dune Real Estate Fund III	1.70	12.87	11/06/2014
Crescent Direct Lending Levered Fund	0.00	7.60	10/09/2014



Comparative Performance
Total Fund Trailing Returns
As of September 30, 2019

Comparative Performance												
	FYTD	Oct-2018 To Sep-2019	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	Oct-2011 To Sep-2012	Oct-2010 To Sep-2011		
Total Fund (Net)	4.62 (42)	4.62 (42)	8.29 (13)	11.09 (29)	8.82 (51)	-1.22 (28)	10.01 (29)	10.96 (41)	16.79 (51)	1.26 (20)		
Total Fund Policy	5.02 (34)	5.02 (34)	8.59 (12)	11.90 (17)	10.34 (19)	0.55 (5)	10.23 (26)	10.24 (52)	15.21 (75)	2.15 (12)		
Difference	-0.40	-0.40	-0.30	-0.81	-1.52	-1.77	-0.22	0.72	1.58	-0.89		
IM Mixed-Asset Target Alloc Moderate (MF) Median	4.00	4.00	5.07	10.00	8.82	-2.35	8.37	10.34	16.89	-0.53		
Total Fund (Gross)	4.93 (31)	4.93 (31)	8.66 (23)	11.49 (58)	9.41 (61)	-0.72 (49)	10.58 (38)	11.52 (58)	17.35 (53)	1.61 (34)		
Total Fund Policy	5.02 (29)	5.02 (29)	8.59 (24)	11.90 (50)	10.34 (33)	0.55 (21)	10.23 (46)	10.24 (71)	15.21 (77)	2.15 (24)		
Difference	-0.09	-0.09	0.07	-0.41	-0.93	-1.27	0.35	1.28	2.14	-0.54		
All Public Plans-Total Fund Median	4.31	4.31	7.09	11.82	9.74	-0.78	9.93	12.00	17.58	0.67		
Total Equity	3.19	3.19	13.13	16.40	11.59	-3.61	13.96	21.06	25.94	-0.85		
Total Equity Policy	1.49	1.49	13.60	18.94	13.34	-6.20	11.73	19.62	22.72	-4.71		
Difference	1.70	1.70	-0.47	-2.54	-1.75	2.59	2.23	1.44	3.22	3.86		
Total Domestic Equity	5.47 (19)	5.47 (19)	16.10 (45)	14.99 (78)	12.80 (36)	-1.73 (53)	17.23 (34)	22.56 (56)	27.44 (46)	3.01 (15)		
Total Domestic Equity Policy	2.36 (41)	2.36 (41)	17.73 (32)	18.62 (46)	14.77 (18)	-1.18 (47)	17.67 (29)	22.03 (60)	29.64 (25)	0.48 (32)		
Difference	3.11	3.11	-1.63	-3.63	-1.97	-0.55	-0.44	0.53	-2.20	2.53		
IM U.S. All Cap Equity (SA+CF+MF) Median	0.96	0.96	15.09	18.19	11.49	-1.47	15.77	23.35	26.94	-1.62		
Total Int'l Equity	-3.33 (73)	-3.33 (73)	5.85 (14)	18.68 (69)	7.98 (50)	-8.63 (65)	6.07 (50)	16.67 (89)	21.58 (5)	-10.95 (69)		
Total Int'l Policy	-1.23 (47)	-1.23 (47)	1.76 (60)	19.61 (59)	9.26 (33)	-12.16 (90)	4.77 (63)	16.48 (90)	14.49 (83)	-10.81 (69)		
Difference	-2.10	-2.10	4.09	-0.93	-1.28	3.53	1.30	0.19	7.09	-0.14		
IM International Large Cap Core Equity (SA+CF) Median	-1.56	-1.56	2.46	20.20	7.91	-7.16	6.04	22.60	17.31	-9.42		
Total Fixed Income	7.41 (79)	7.41 (79)	0.99 (13)	3.93 (19)	5.81 (48)	2.09 (44)	6.00 (22)	2.81 (8)	11.79 (14)	3.12 (76)		
Total Fixed Policy	10.30 (28)	10.30 (28)	-1.22 (64)	0.07 (84)	5.19 (68)	2.94 (17)	3.96 (74)	-2.35 (90)	5.75 (84)	5.96 (9)		
Difference	-2.89	-2.89	2.21	3.86	0.62	-0.85	2.04	5.16	6.04	-2.84		
IM U.S. Broad Market Fixed Income (SA+CF+MF) Median	9.65	9.65	-0.90	1.29	5.72	1.84	4.74	-0.97	7.75	4.40		
Total Real Estate	7.96 (33)	7.96 (33)	10.10 (27)	9.82 (31)	9.06 (97)	14.70 (62)	12.33 (69)	8.10 (100)	13.00 (46)	14.11 (90)		
NCREIF ODCE	6.16 (87)	6.16 (87)	8.82 (59)	7.81 (60)	10.62 (69)	14.71 (62)	12.39 (68)	12.47 (67)	11.77 (63)	18.03 (44)		
Difference	1.80	1.80	1.28	2.01	-1.56	-0.01	-0.06	-4.37	1.23	-3.92		
IM U.S. Open End Private Real Estate (SA+CF) Median	7.05	7.05	9.04	8.29	11.32	15.45	12.78	13.18	12.87	16.96		
Total Timber	5.58	5.58	-9.38	0.28	6.48	6.70	9.49	4.51	-5.86	3.87		
NCREIF Timberland Index	2.10	2.10	4.00	3.28	3.28	9.26	10.38	9.68	2.25	0.26		
Difference	3.48	3.48	-13.38	-3.00	3.20	-2.56	-0.89	-5.17	-8.11	3.61		
Total Alternatives	N/A	N/A	4.94	8.16	9.11	-3.68	6.84	-9.88	-8.55	-0.85		
Alternatives Policy	7.72	7.72	8.07	9.04	10.41	1.10	7.56	-3.91	-2.59	1.58		
Difference	N/A	N/A	-3.13	-0.88	-1.30	-4.78	-0.72	-5.97	-5.96	-2.43		



**Comparative Performance
Total Fund Trailing Returns**

As of September 30, 2019

	FYTD	Oct-2018 To Sep-2019	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	Oct-2011 To Sep-2012	Oct-2010 To Sep-2011
Total Domestic Equity (Composite)	5.47	5.47	16.10	14.99	12.80	-1.73	17.23	22.56	27.44	3.01
Vanguard Total Stock Mkt (VTSAX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRSP U.S. Total Market TR Index	2.92 (34)	2.92 (34)	17.62 (31)	18.64 (40)	14.99 (27)	-0.55 (46)	17.77 (23)	21.59 (55)	29.96 (29)	0.46 (32)
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. Equity (MF) Median	0.13	0.13	13.30	17.48	12.13	-0.93	13.75	22.53	27.33	-1.87
Macquarie (Delaware Value)	N/A	N/A	N/A	12.49 (89)	19.29 (10)	-3.67 (57)	21.59 (17)	24.74 (40)	29.80 (34)	6.36 (7)
Russell 1000 Value Index	4.00 (37)	4.00 (37)	9.45 (77)	15.12 (75)	16.19 (26)	-4.42 (65)	18.89 (42)	22.30 (60)	30.92 (26)	-1.89 (62)
Difference	N/A	N/A	N/A	-2.63	3.10	0.75	2.70	2.44	-1.12	8.25
IM U.S. Large Cap Value Equity (SA+CF) Median	2.14	2.14	11.72	17.89	13.33	-3.29	18.40	23.73	28.15	-0.98
Boston LCV	3.47 (40)	3.47 (40)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Value Index	4.00 (37)	4.00 (37)	9.45 (77)	15.12 (75)	16.19 (26)	-4.42 (65)	18.89 (42)	22.30 (60)	30.92 (26)	-1.89 (62)
Difference	-0.53	-0.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. Large Cap Value Equity (SA+CF) Median	2.14	2.14	11.72	17.89	13.33	-3.29	18.40	23.73	28.15	-0.98
Great Lakes SMid Cap	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 2500 Index	-4.04 (63)	-4.04 (63)	16.19 (57)	17.79 (71)	14.44 (35)	0.38 (74)	8.97 (72)	29.79 (58)	30.93 (41)	-2.22 (71)
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. SMID Cap Core Equity (SA+CF) Median	-2.14	-2.14	16.28	18.86	12.61	2.28	11.29	30.27	30.24	-0.86
Total Growth	11.18 (5)	11.18 (5)	22.19 (73)	14.70 (95)	7.63 (88)	4.20 (36)	18.19 (40)	18.74 (62)	29.37 (35)	8.43 (2)
Russell 1000 Growth Index	3.71 (39)	3.71 (39)	26.30 (38)	21.94 (31)	13.76 (19)	3.17 (48)	19.15 (28)	19.27 (56)	29.19 (37)	3.78 (22)
Difference	7.47	7.47	-4.11	-7.24	-6.13	1.03	-0.96	-0.53	0.18	4.65
IM U.S. Large Cap Growth Equity (SA+CF+MF) Median	2.72	2.72	24.86	20.27	11.16	3.02	17.25	19.76	27.49	0.80
Rhumblin R1000G	3.70 (54)	3.70 (54)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	3.71 (54)	3.71 (54)	26.30 (36)	21.94 (37)	13.76 (23)	3.17 (54)	19.15 (40)	19.27 (64)	29.19 (39)	3.78 (30)
Difference	-0.01	-0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	3.90	3.90	24.38	20.81	11.64	3.53	18.19	20.25	27.69	1.38
Sawgrass Large Cap Growth	N/A	N/A	21.72 (66)	14.70 (92)	7.63 (87)	4.20 (40)	18.19 (51)	18.74 (69)	29.37 (38)	N/A
Russell 1000 Growth Index	3.71 (54)	3.71 (54)	26.30 (36)	21.94 (37)	13.76 (23)	3.17 (54)	19.15 (40)	19.27 (64)	29.19 (39)	3.78 (30)
Difference	N/A	N/A	-4.58	-7.24	-6.13	1.03	-0.96	-0.53	0.18	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	3.90	3.90	24.38	20.81	11.64	3.53	18.19	20.25	27.69	1.38
Polen Capital LCG	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	3.71 (54)	3.71 (54)	26.30 (36)	21.94 (37)	13.76 (23)	3.17 (54)	19.15 (40)	19.27 (64)	29.19 (39)	3.78 (30)
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	3.90	3.90	24.38	20.81	11.64	3.53	18.19	20.25	27.69	1.38



**Comparative Performance
Total Fund Trailing Returns**

As of September 30, 2019

	FYTD	Oct-2018 To Sep-2019	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	Oct-2011 To Sep-2012	Oct-2010 To Sep-2011
Lazard SMid Cap Core	N/A	N/A	13.70 (69)	20.53 (25)	10.26 (88)	4.02 (40)	11.99 (36)	31.12 (33)	30.14 (52)	-9.00 (97)
Russell 2500 Index	-4.04 (63)	-4.04 (63)	16.19 (57)	17.79 (71)	14.44 (35)	0.38 (74)	8.97 (72)	29.79 (58)	30.93 (41)	-2.22 (71)
Difference	N/A	N/A	-2.49	2.74	-4.18	3.64	3.02	1.33	-0.79	-6.78
IM U.S. SMID Cap Core Equity (SA+CF) Median	-2.14	-2.14	16.28	18.86	12.61	2.28	11.29	30.27	30.24	-0.86
Vanguard Mid-Cap Index (VIMAX)	3.65 (24)	3.65 (24)	13.42 (30)	15.30 (48)	12.63 (40)	N/A	N/A	N/A	N/A	N/A
CRSP U.S. Mid Cap TR Index	3.70 (22)	3.70 (22)	13.44 (30)	15.33 (47)	12.68 (39)	1.76 (22)	15.94 (13)	28.08 (41)	26.23 (50)	-0.18 (22)
Difference	-0.05	-0.05	-0.02	-0.03	-0.05	N/A	N/A	N/A	N/A	N/A
IM U.S. Mid Cap Core Equity (MF) Median	1.09	1.09	10.84	15.23	11.87	-1.05	12.32	27.52	26.17	-3.68
Total Int'l Equity (Composite)	-3.33	-3.33	5.85	18.68	7.98	-8.63	6.07	16.67	21.58	-10.95
Harding Loevner Intl Equity (HLMIX)	-3.34 (62)	-3.34 (62)	5.85 (10)	18.65 (58)	N/A	N/A	N/A	N/A	N/A	N/A
MSCI AC World ex USA (Net)	-1.23 (44)	-1.23 (44)	1.76 (34)	19.61 (48)	9.26 (51)	-12.16 (64)	4.77 (43)	16.48 (56)	14.49 (65)	-10.81 (38)
Difference	-2.11	-2.11	4.09	-0.96	N/A	N/A	N/A	N/A	N/A	N/A
IM International Equity (MF) Median	-1.94	-1.94	0.08	19.36	9.32	-8.75	4.26	17.81	16.20	-12.08



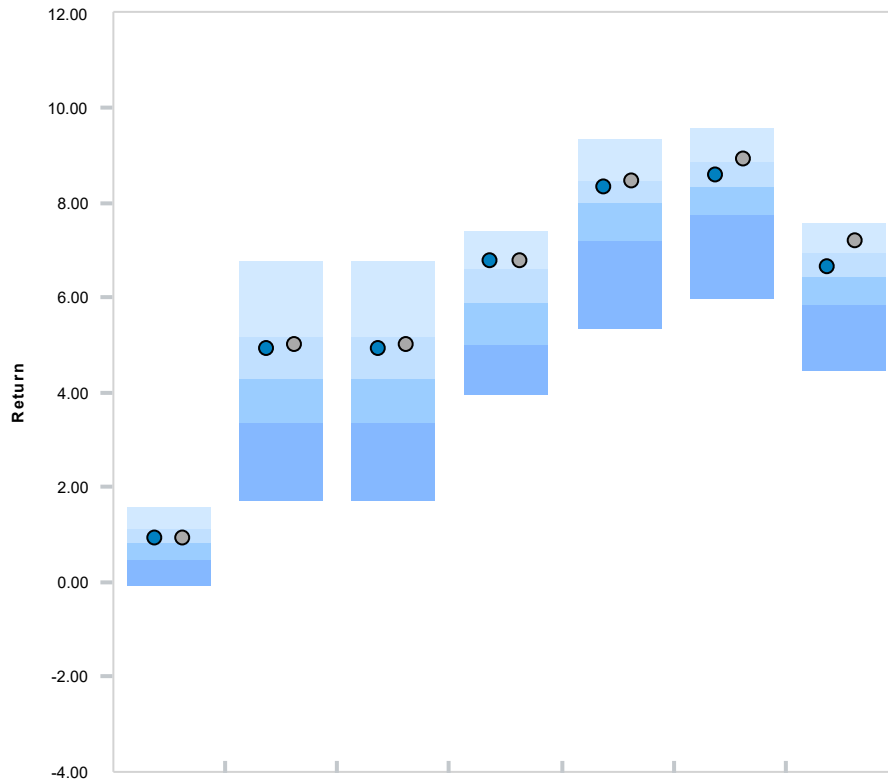
**Comparative Performance
Total Fund Trailing Returns**

As of September 30, 2019

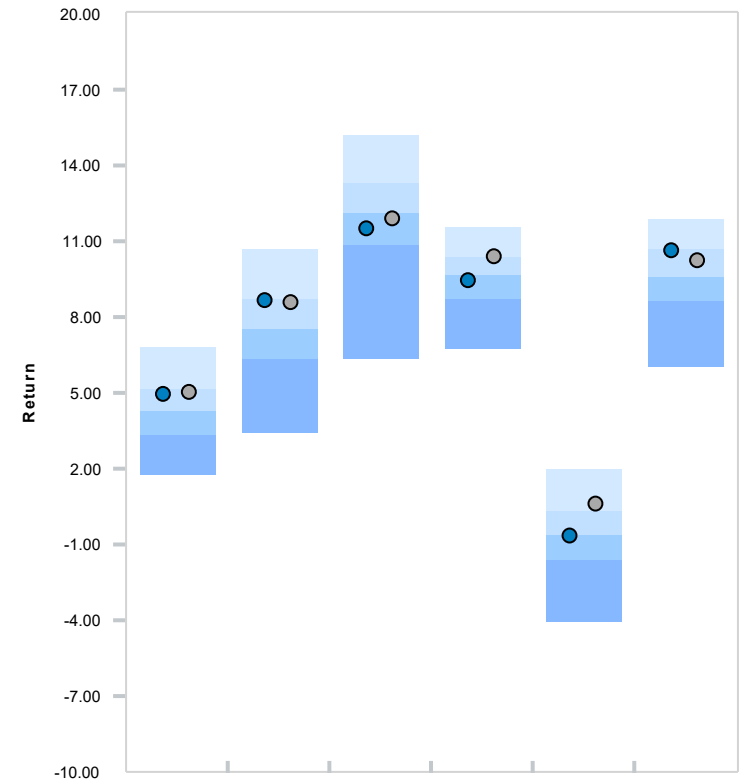
	FYTD	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014	Oct-2012 To Sep-2013	Oct-2011 To Sep-2012	Oct-2010 To Sep-2011
Total Core Fixed Income	8.74	8.74	-0.67	0.82	5.78	3.88	4.40	-1.26	7.71	4.42
Core Fixed Policy	10.30	10.30	-1.22	0.07	5.19	2.94	3.96	-1.68	5.16	5.26
Difference	-1.56	-1.56	0.55	0.75	0.59	0.94	0.44	0.42	2.55	-0.84
Garcia Hamilton Fixed Income	8.74 (96)	8.74 (96)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Aggregate Index	10.30 (70)	10.30 (70)	-1.22 (89)	0.07 (87)	5.19 (81)	2.94 (61)	3.96 (81)	-1.68 (79)	5.16 (91)	5.26 (50)
Difference	-1.56	-1.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	10.48	10.48	-0.73	0.63	5.67	3.02	4.51	-1.23	6.61	5.26
Mutual of America Core Fixed	N/A	N/A	N/A	0.82 (40)	5.78 (44)	3.88 (7)	4.43 (53)	-1.01 (39)	7.24 (38)	N/A
Blmbg. Barc. U.S. Aggregate Index	10.30 (70)	10.30 (70)	-1.22 (89)	0.07 (87)	5.19 (81)	2.94 (61)	3.96 (81)	-1.68 (79)	5.16 (91)	5.26 (50)
Difference	N/A	N/A	N/A	0.75	0.59	0.94	0.47	0.67	2.08	N/A
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	10.48	10.48	-0.73	0.63	5.67	3.02	4.51	-1.23	6.61	5.26
Total Non-Core Fixed Income	3.13	3.13	4.97	11.18	6.07	-2.56	9.33	11.74	24.76	-3.22
Bloomberg Barclays Global Aggregate	7.60	7.60	-1.31	-1.26	8.83	-3.26	1.19	-2.64	5.07	4.00
Difference	-4.47	-4.47	6.28	12.44	-2.76	0.70	8.14	14.38	19.69	-7.22
Templeton Global Total Return (FTTRX)	2.50 (99)	2.50 (99)	-1.90 (66)	13.82 (1)	2.64 (94)	-8.23 (95)	5.71 (22)	5.29 (2)	15.90 (3)	N/A
Blmbg. Barc. Global Multiverse	7.54 (51)	7.54 (51)	-1.32 (51)	-0.56 (77)	9.23 (25)	-3.56 (42)	1.40 (79)	-2.22 (56)	5.57 (81)	3.85 (11)
Difference	-5.04	-5.04	-0.58	14.38	-6.59	-4.67	4.31	7.51	10.33	N/A
IM Global Fixed Income (MF) Median	7.65	7.65	-1.29	1.02	7.42	-3.85	3.37	-1.81	7.17	1.74
Total Real Estate (Composite)	7.96	7.96	10.10	9.82	9.06	14.70	12.33	8.10	13.00	14.11
American Core Realty	6.81 (60)	6.81 (60)	8.50 (66)	7.52 (67)	9.04 (97)	13.98 (69)	12.49 (64)	12.27 (70)	11.56 (65)	16.11 (65)
NCREIF ODCE	6.16 (87)	6.16 (87)	8.82 (59)	7.81 (60)	10.62 (69)	14.71 (62)	12.39 (68)	12.47 (67)	11.77 (63)	18.03 (44)
Difference	0.65	0.65	-0.32	-0.29	-1.58	-0.73	0.10	-0.20	-0.21	-1.92
IM U.S. Open End Private Real Estate (SA+CF) Median	7.05	7.05	9.04	8.29	11.32	15.45	12.78	13.18	12.87	16.96
Total Timber (Composite)	5.58	5.58	-9.38	0.28	6.48	6.70	9.49	4.51	-5.86	3.87
Amsouth Timber Fund	N/A	N/A	-15.26	-0.52	6.12	11.73	7.98	3.85	-1.33	2.00
NCREIF Timberland Index	2.10	2.10	4.00	3.28	3.28	9.26	10.38	9.68	2.25	0.26
Difference	N/A	N/A	-19.26	-3.80	2.84	2.47	-2.40	-5.83	-3.58	1.74
Molpus Woodlands Timber	5.90	5.90	-2.66	1.18	6.08	1.64	10.96	5.25	-10.32	5.68
NCREIF Timberland Index	2.10	2.10	4.00	3.28	3.28	9.26	10.38	9.68	2.25	0.26
Difference	3.80	3.80	-6.66	-2.10	2.80	-7.62	0.58	-4.43	-12.57	5.42
Alternatives										
Westwood Income Opportunity Fund (WHGIX)	N/A	N/A	4.94 (36)	8.14 (60)	9.20 (40)	-3.83 (46)	N/A	N/A	N/A	N/A
Alternatives Policy	7.72 (15)	7.72 (15)	8.07 (18)	9.04 (50)	10.41 (24)	1.10 (11)	7.56 (55)	-3.91 (95)	-2.59 (100)	1.58 (24)
Difference	N/A	N/A	-3.13	-0.90	-1.21	-4.93	N/A	N/A	N/A	N/A
IM Flexible Portfolio (MF) Median	2.58	2.58	3.38	9.02	8.55	-4.22	7.99	8.17	15.66	-0.87



Peer Group Analysis - All Public Plans-Total Fund



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Total Fund (Composite)	0.93 (41)	4.93 (31)	4.93 (31)	6.78 (17)	8.33 (30)	8.60 (40)	6.67 (41)
● Total Fund Policy	0.94 (41)	5.02 (29)	5.02 (29)	6.79 (17)	8.47 (25)	8.93 (23)	7.20 (15)
Median	0.83	4.31	4.31	5.90	8.01	8.35	6.45



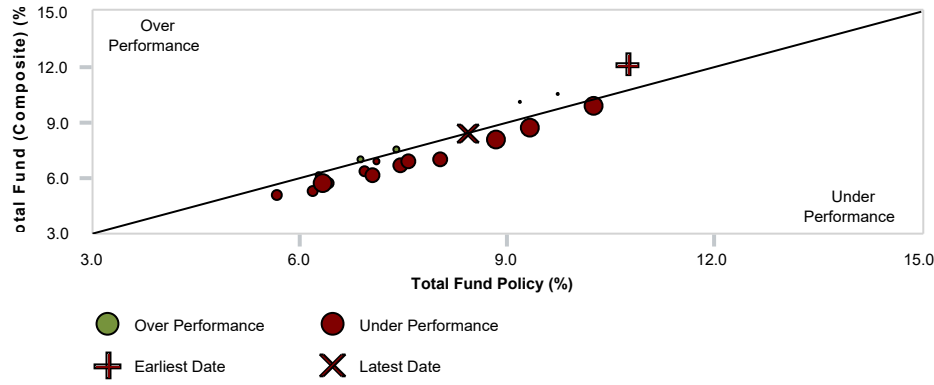
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Total Fund (Composite)	4.93 (31)	8.66 (27)	11.49 (62)	9.41 (59)	-0.72 (53)	10.58 (29)
● Total Fund Policy	5.02 (29)	8.59 (29)	11.90 (53)	10.34 (26)	0.55 (20)	10.23 (37)
Median	4.31	7.50	12.10	9.68	-0.59	9.54

Comparative Performance

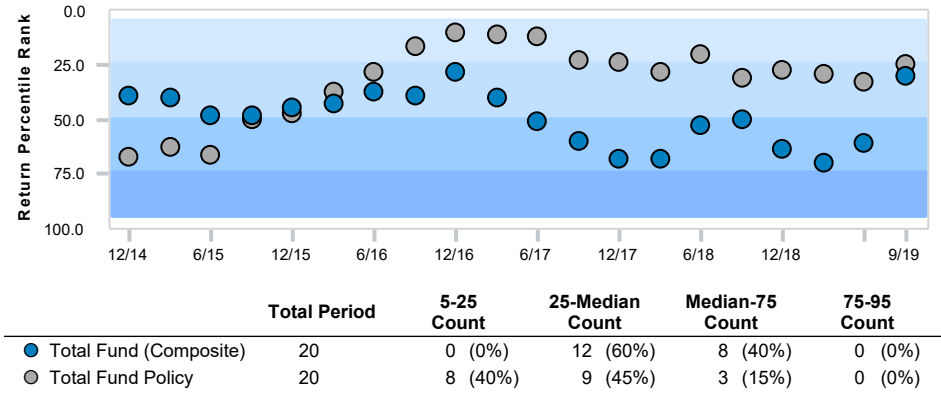
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Total Fund (Composite)	4.09 (3)	8.83 (39)	-8.22 (68)	3.54 (13)	1.89 (15)	-0.29 (48)
Total Fund Policy	3.41 (31)	8.94 (33)	-7.65 (52)	3.50 (14)	1.60 (25)	-0.65 (71)
All Public Plans-Total Fund Median	3.26	8.45	-7.54	2.58	1.03	-0.32



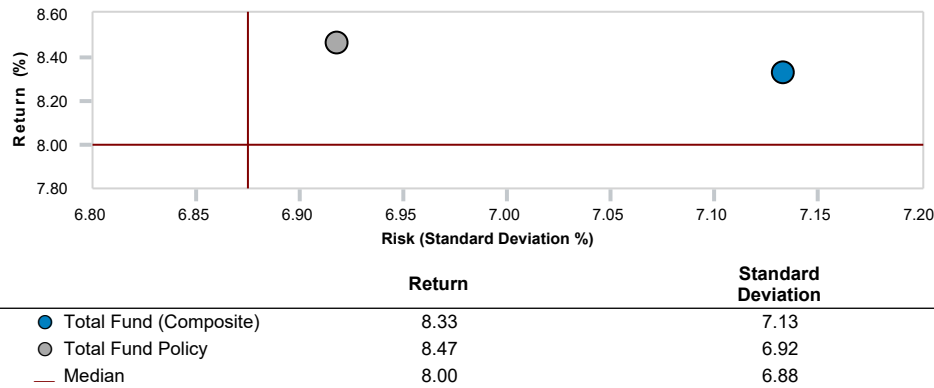
3 Yr Rolling Under/Over Performance - 5 Years



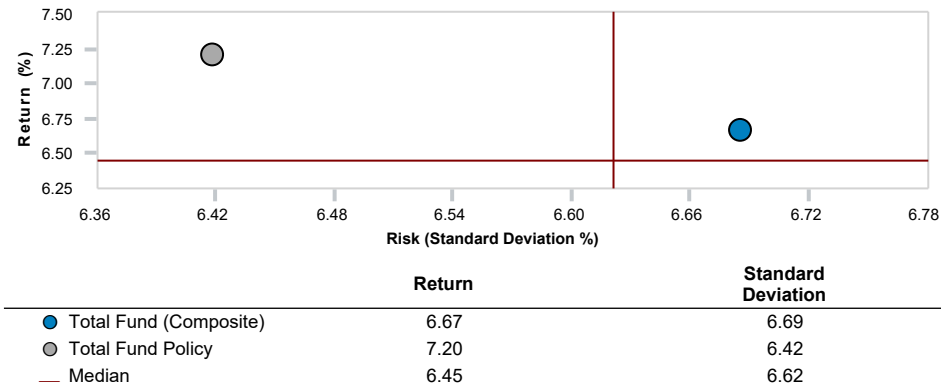
3 Yr Rolling Percentile Ranking - 5 Years



Peer Group Scattergram - 3 Years



Peer Group Scattergram - 5 Years



Historical Statistics - 3 Years

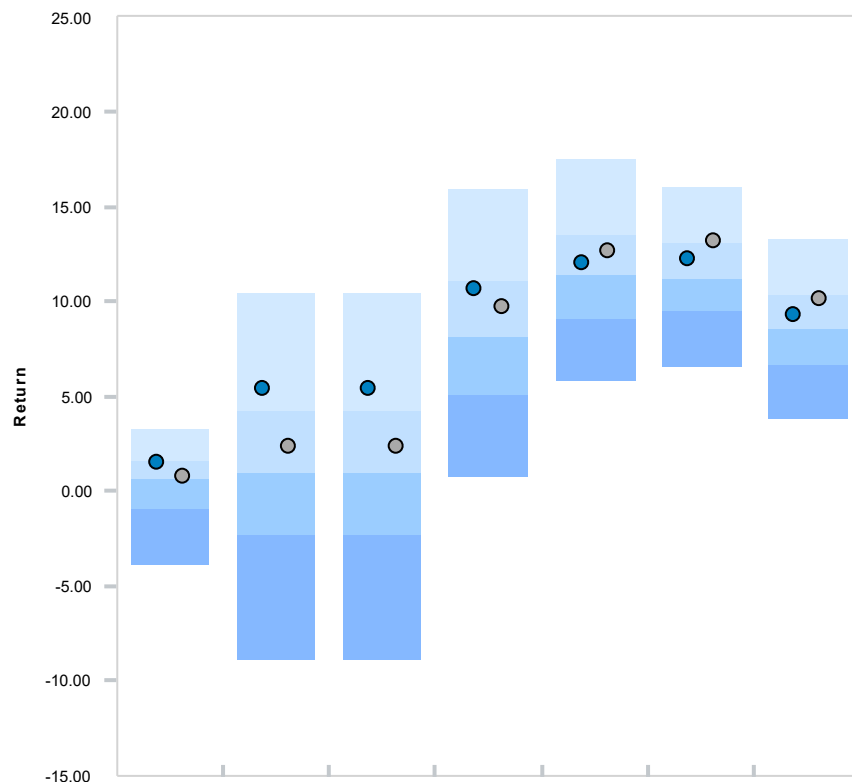
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund (Composite)	1.02	100.38	102.84	-0.29	-0.11	0.95	1.02	4.73
Total Fund Policy	0.00	100.00	100.00	0.00	N/A	0.99	1.00	4.49

Historical Statistics - 5 Years

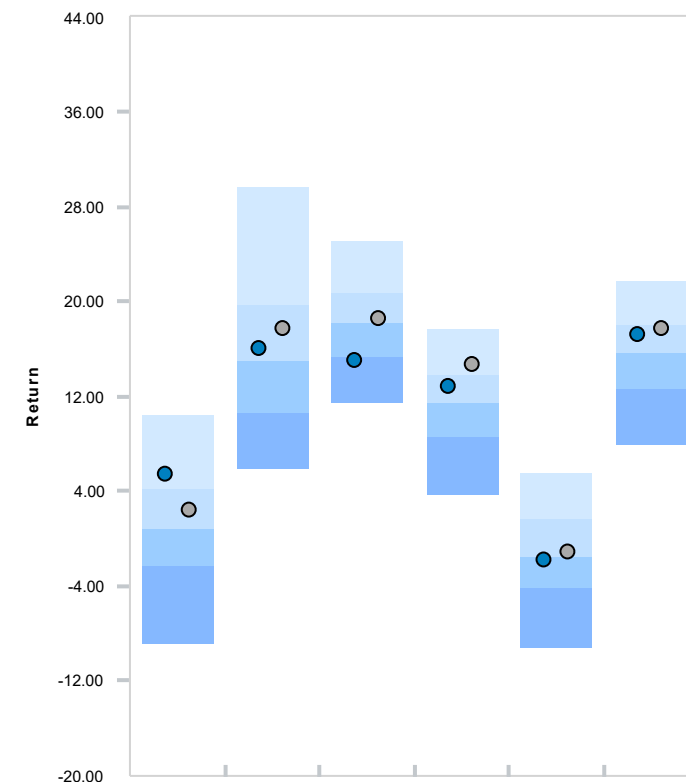
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund (Composite)	0.99	97.22	109.10	-0.71	-0.49	0.87	1.03	4.25
Total Fund Policy	0.00	100.00	100.00	0.00	N/A	0.98	1.00	3.85



Peer Group Analysis - IM U.S. All Cap Equity (SA+CF+MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Total Domestic Equity	1.48 (27)	5.47 (19)	5.47 (19)	10.66 (29)	12.09 (43)	12.26 (35)	9.31 (39)
● Total Domestic Equity Policy	0.75 (48)	2.36 (41)	2.36 (41)	9.78 (36)	12.65 (35)	13.18 (25)	10.15 (29)
Median	0.67	0.96	0.96	8.20	11.37	11.19	8.55



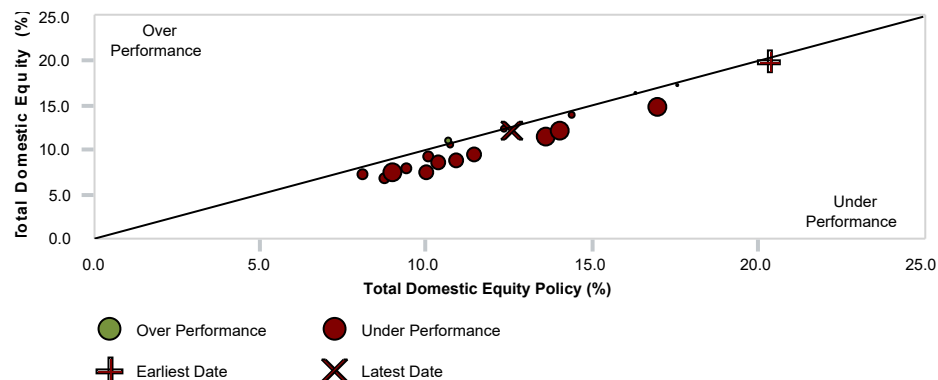
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Total Domestic Equity	5.47 (19)	16.10 (45)	14.99 (78)	12.80 (36)	-1.73 (53)	17.23 (34)
● Total Domestic Equity Policy	2.36 (41)	17.73 (32)	18.62 (46)	14.77 (18)	-1.18 (47)	17.67 (29)
Median	0.96	15.09	18.19	11.49	-1.47	15.77

Comparative Performance

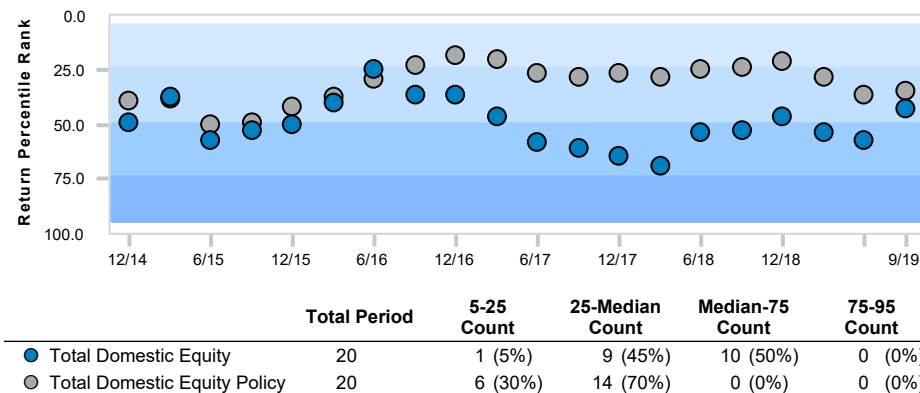
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Total Domestic Equity	5.64 (17)	14.32 (42)	-13.94 (34)	6.44 (44)	4.44 (23)	-1.22 (66)
Total Domestic Equity Policy	3.94 (50)	14.23 (43)	-14.43 (43)	7.06 (32)	4.11 (28)	-0.70 (56)
IM U.S. All Cap Equity (SA+CF+MF) Median	3.92	13.67	-14.88	5.91	2.85	-0.51



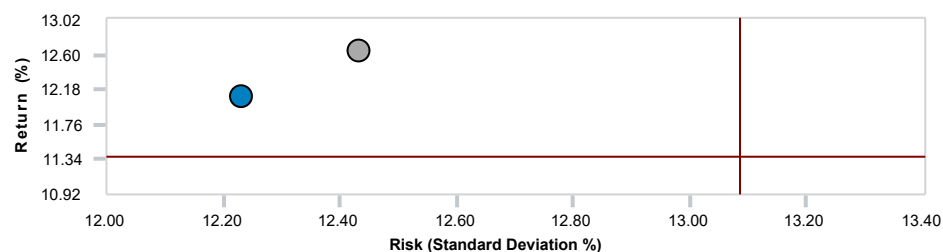
3 Yr Rolling Under/Over Performance - 5 Years



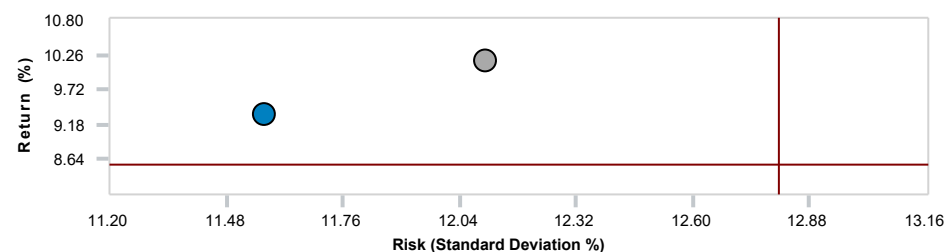
3 Yr Rolling Percentile Ranking - 5 Years



Peer Group Scattergram - 3 Years



Peer Group Scattergram - 5 Years



Historical Statistics - 3 Years

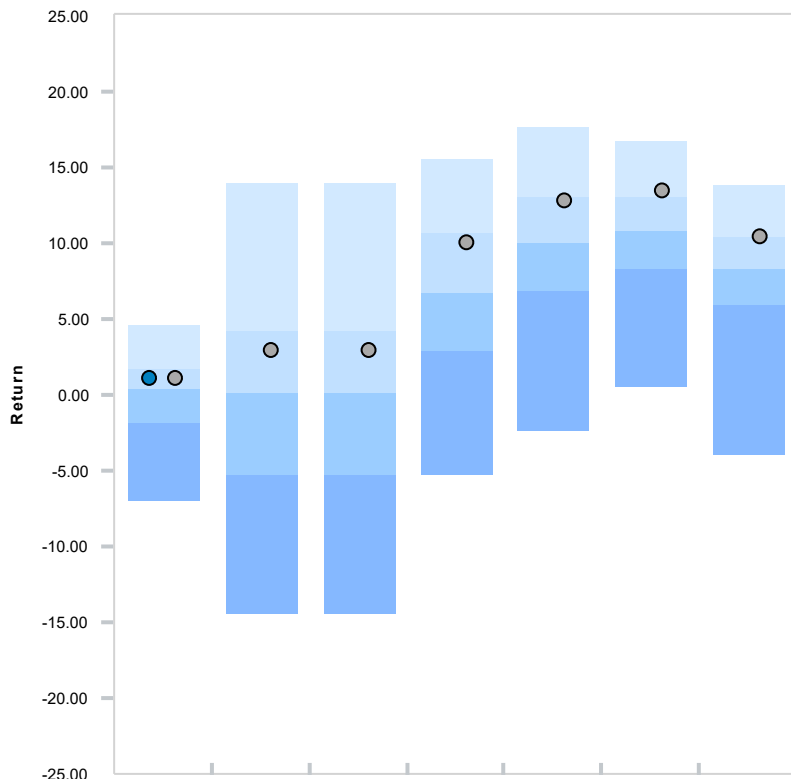
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	1.64	95.95	96.11	-0.22	-0.33	0.87	0.98	8.23
Total Domestic Equity Policy	0.00	100.00	100.00	0.00	N/A	0.90	1.00	8.40

Historical Statistics - 5 Years

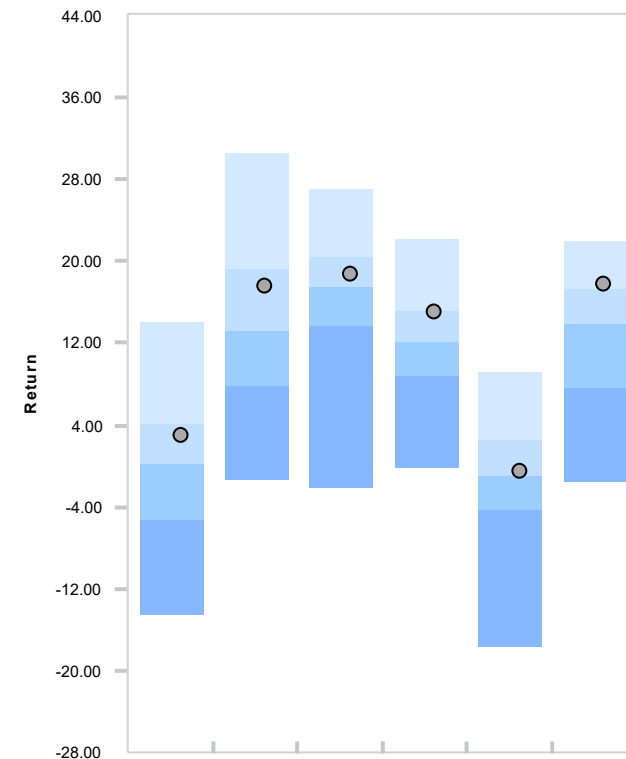
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	2.02	92.59	93.07	-0.24	-0.41	0.75	0.94	7.52
Total Domestic Equity Policy	0.00	100.00	100.00	0.00	N/A	0.78	1.00	7.83



Peer Group Analysis - IM U.S. Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Vanguard Total Stock Mkt (VTSAX)	1.09 (38)	N/A	N/A	N/A	N/A	N/A	N/A
● CRSP U.S. Total Market TR Index	1.11 (38)	2.92 (34)	2.92 (34)	10.02 (30)	12.82 (28)	13.36 (22)	10.43 (25)
Median	0.37	0.13	0.13	6.71	9.99	10.77	8.29



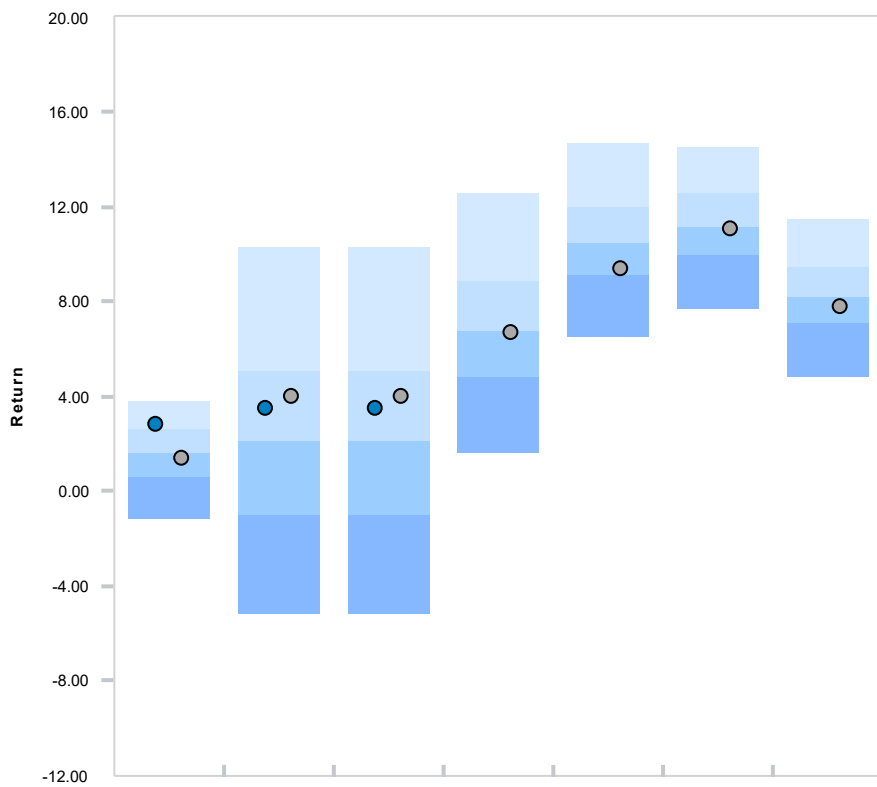
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Vanguard Total Stock Mkt (VTSAX)	N/A	N/A	N/A	N/A	N/A	N/A
● CRSP U.S. Total Market TR Index	2.92 (34)	7.62 (31)	8.64 (40)	4.99 (27)	0.55 (46)	7.77 (23)
Median	0.13	3.30	7.48	2.13	0.93	3.75

Comparative Performance

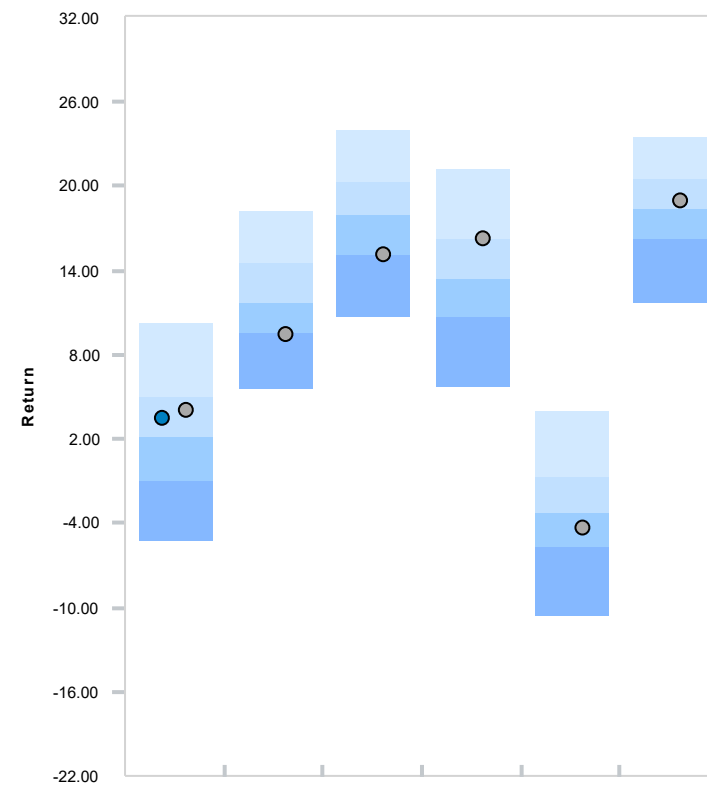
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Vanguard Total Stock Mkt (VTSAX)	4.09 (40)	N/A	N/A	N/A	N/A	N/A
CRSP U.S. Total Market TR Index	4.08 (40)	14.06 (46)	-14.26 (41)	7.08 (30)	3.91 (45)	-0.60 (45)
IM U.S. Equity (MF) Median	3.52	13.62	-15.37	5.34	3.47	-0.86



Peer Group Analysis - IM U.S. Large Cap Value Equity (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Boston LCV	2.78 (20)	3.47 (40)	3.47 (40)	N/A	N/A	N/A	N/A
● Russell 1000 Value Index	1.36 (58)	4.00 (37)	4.00 (37)	6.69 (52)	9.43 (69)	11.08 (53)	7.79 (63)
Median	1.63	2.14	2.14	6.75	10.45	11.18	8.20



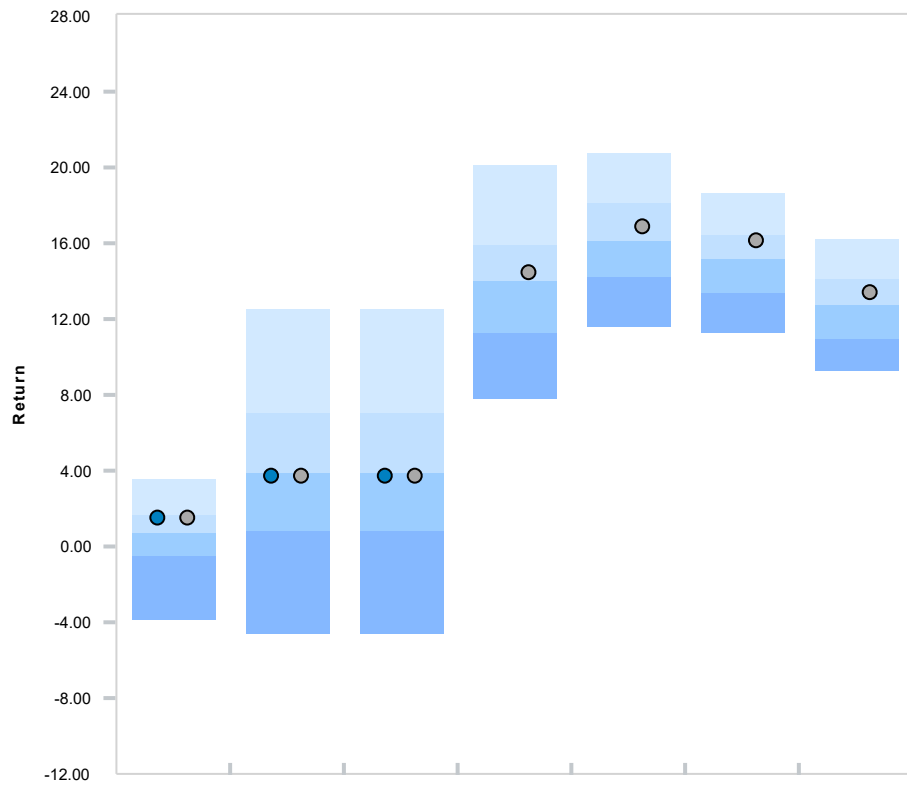
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Boston LCV	3.47 (40)	N/A	N/A	N/A	N/A	N/A
● Russell 1000 Value Index	4.00 (37)	9.45 (77)	15.12 (75)	16.19 (26)	-4.42 (65)	18.89 (42)
Median	2.14	11.72	17.89	13.33	-3.29	18.40

Comparative Performance

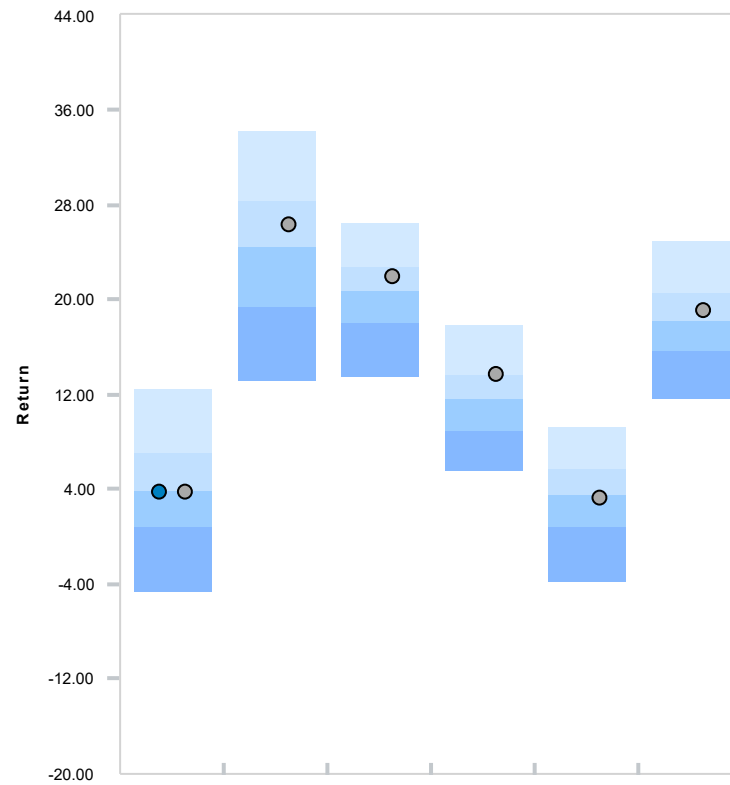
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Boston LCV	5.51 (13)	10.75 (72)	-13.85 (57)	6.11 (40)	2.23 (35)	-2.29 (61)
Russell 1000 Value Index	3.84 (53)	11.93 (45)	-11.72 (30)	5.70 (50)	1.18 (66)	-2.83 (75)
IM U.S. Large Cap Value Equity (SA+CF) Median	3.95	11.74	-13.51	5.70	1.74	-1.97



Peer Group Analysis - IM U.S. Large Cap Growth Equity (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Rhumblin R1000G	1.49 (30)	3.70 (54)	3.70 (54)	N/A	N/A	N/A	N/A
● Russell 1000 Growth I	1.49 (30)	3.71 (54)	3.71 (54)	14.45 (44)	16.89 (37)	16.10 (30)	13.39 (38)
Median	0.74	3.90	3.90	14.02	16.13	15.11	12.73



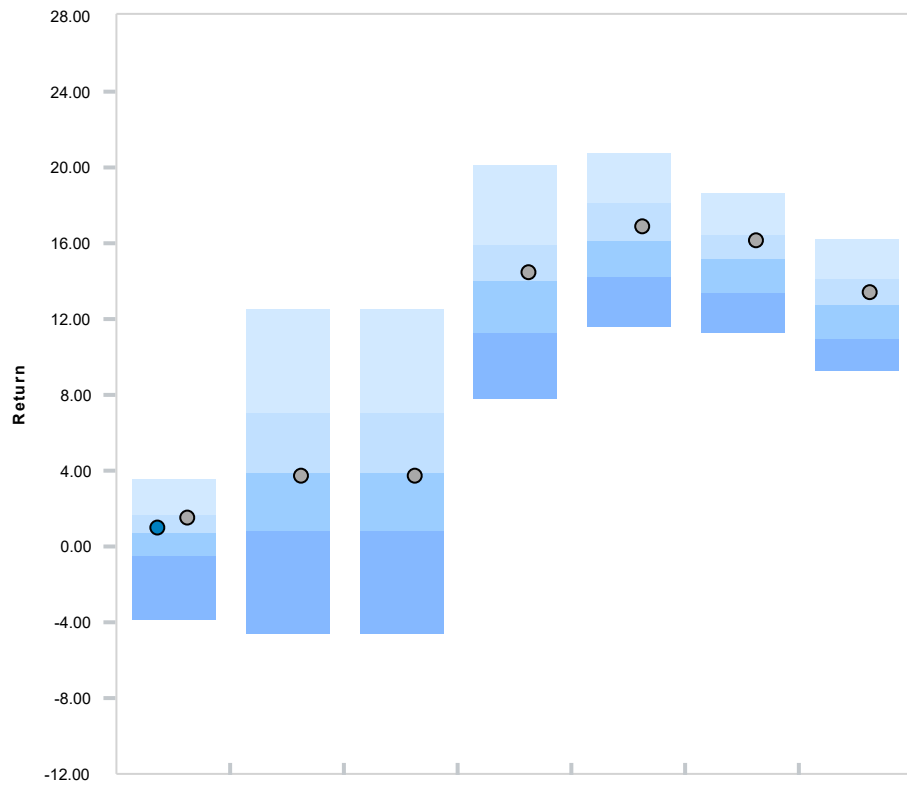
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Rhumblin R1000G	3.70 (54)	N/A	N/A	N/A	N/A	N/A
● Russell 1000 Growth I	3.71 (54)	26.30 (36)	21.94 (37)	13.76 (23)	3.17 (54)	19.15 (40)
Median	3.90	24.38	20.81	11.64	3.53	18.19

Comparative Performance

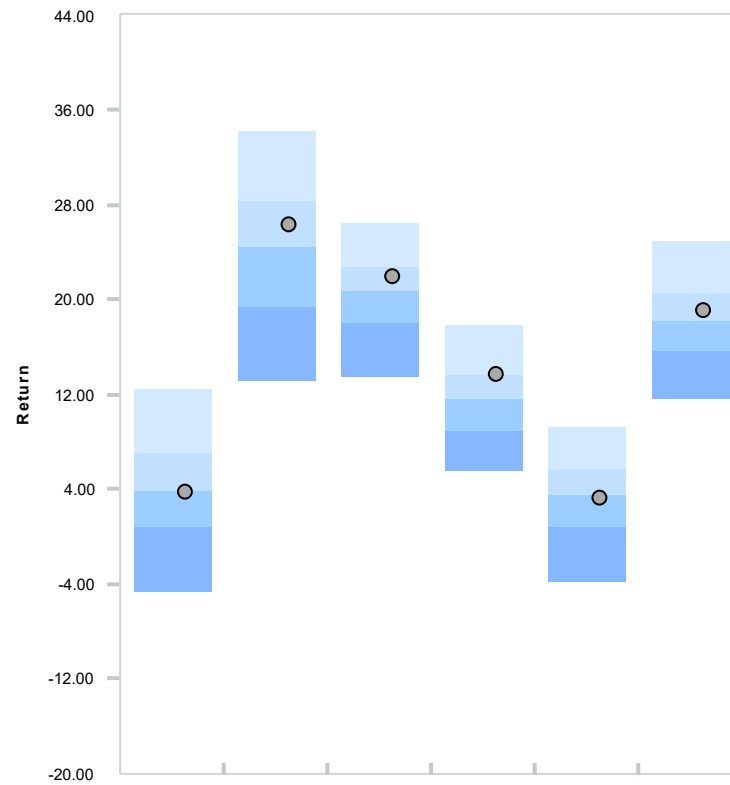
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Rhumblin R1000G	4.63 (60)	16.08 (47)	-15.87 (61)	9.16 (23)	5.76 (42)	1.41 (60)
Russell 1000 Growth Index	4.64 (59)	16.10 (47)	-15.89 (61)	9.17 (23)	5.76 (42)	1.42 (60)
IM U.S. Large Cap Growth Equity (SA+CF) Median	5.11	15.98	-15.25	8.13	5.31	2.03



Peer Group Analysis - IM U.S. Large Cap Growth Equity (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Polen Capital LCG	0.96 (45)	N/A	N/A	N/A	N/A	N/A	N/A
● Russell 1000 Growth I	1.49 (30)	3.71 (54)	3.71 (54)	14.45 (44)	16.89 (37)	16.10 (30)	13.39 (38)
Median	0.74	3.90	3.90	14.02	16.13	15.11	12.73



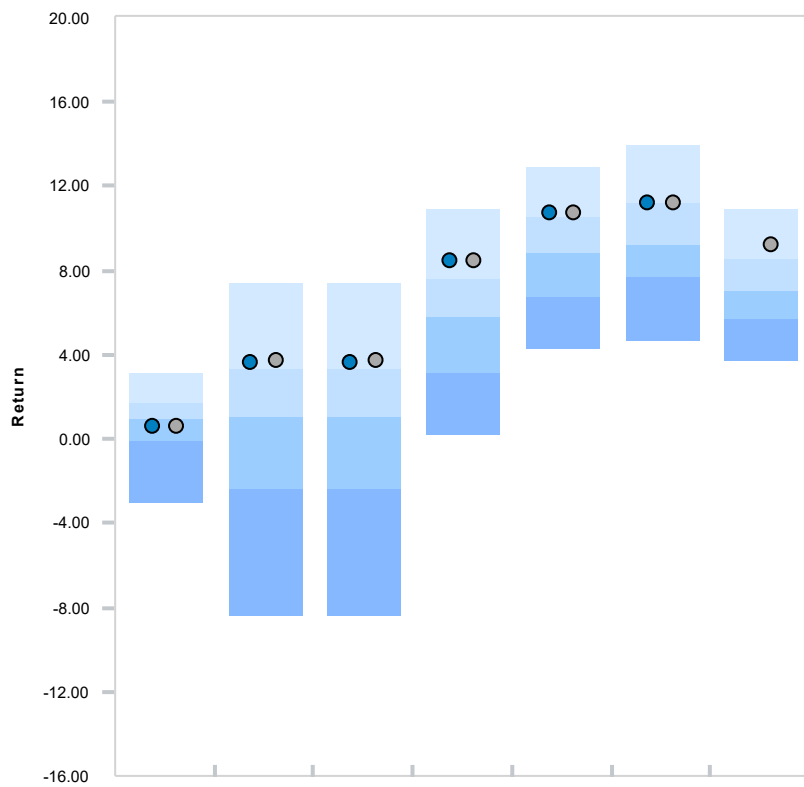
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Polen Capital LCG	N/A	N/A	N/A	N/A	N/A	N/A
● Russell 1000 Growth I	3.71 (54)	26.30 (36)	21.94 (37)	13.76 (23)	3.17 (54)	19.15 (40)
Median	3.90	24.38	20.81	11.64	3.53	18.19

Comparative Performance

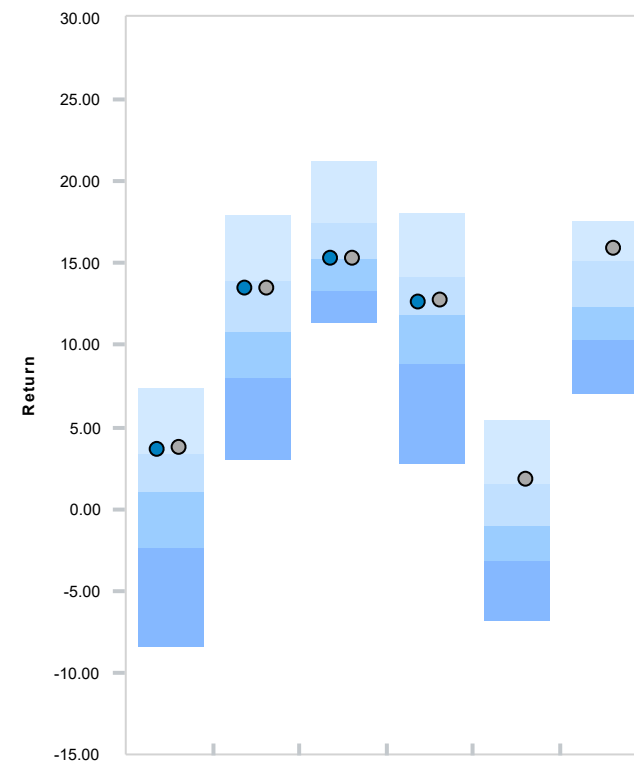
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Polen Capital LCG	6.15 (24)	17.27 (28)	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	4.64 (59)	16.10 (47)	-15.89 (61)	9.17 (23)	5.76 (42)	1.42 (60)
IM U.S. Large Cap Growth Equity (SA+CF) Median	5.11	15.98	-15.25	8.13	5.31	2.03



Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Vanguard Mid-Cap Index (VIMAX)	0.61 (62)	3.65 (24)	3.65 (24)	8.43 (16)	10.67 (22)	11.16 (25)	N/A
● CRSP U.S. Mid Cap TR Index	0.62 (61)	3.70 (22)	3.70 (22)	8.46 (14)	10.70 (20)	11.19 (23)	9.24 (17)
Median	0.98	1.09	1.09	5.78	8.86	9.24	7.01



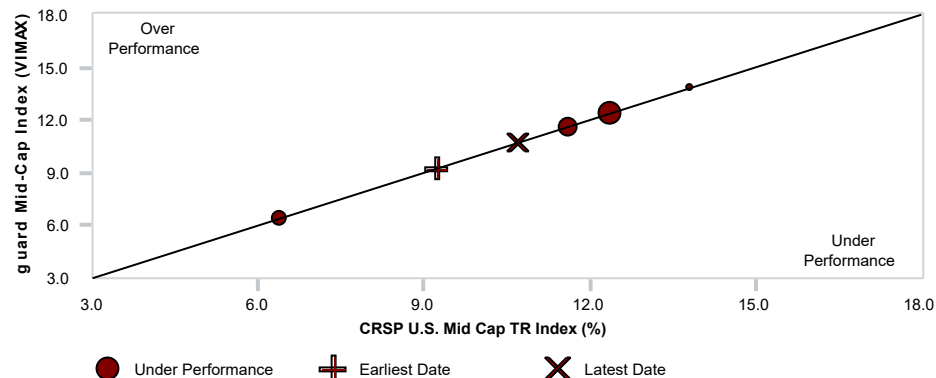
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Vanguard Mid-Cap Index (VIMAX)	3.65 (24)	3.42 (30)	5.30 (48)	2.63 (40)	N/A	N/A
● CRSP U.S. Mid Cap TR Index	3.70 (22)	3.44 (30)	5.33 (47)	2.68 (39)	1.76 (22)	5.94 (13)
Median	1.09	0.84	5.23	1.87	-1.05	2.32

Comparative Performance

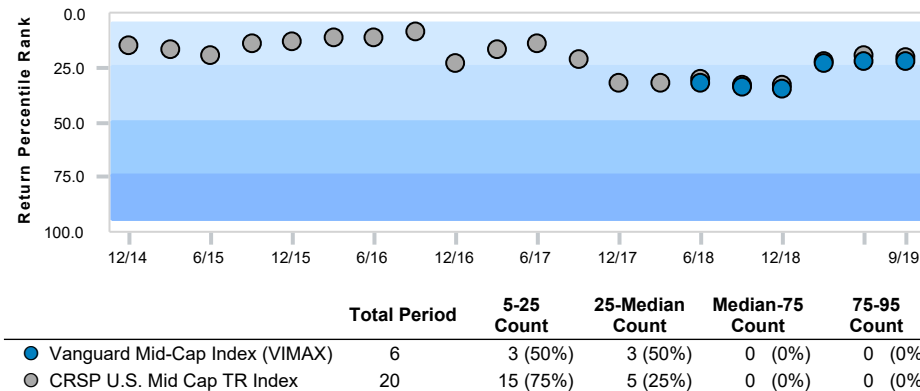
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Vanguard Mid-Cap Index (VIMAX)	4.36 (41)	16.77 (8)	-15.46 (45)	4.66 (42)	2.57 (42)	0.01 (20)
CRSP U.S. Mid Cap TR Index	4.37 (40)	16.79 (6)	-15.46 (45)	4.65 (42)	2.58 (40)	0.03 (19)
IM U.S. Mid Cap Core Equity (MF) Median	4.14	14.57	-15.85	4.20	2.32	-1.26



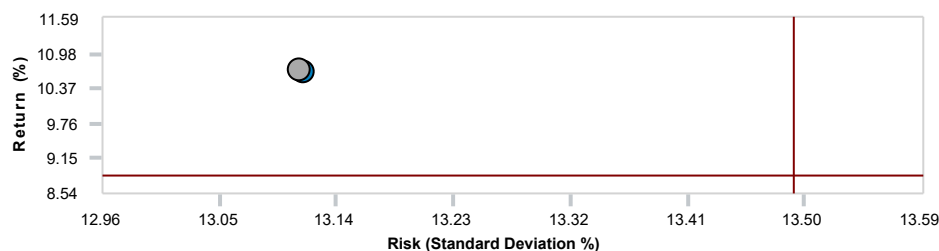
3 Yr Rolling Under/Over Performance - 5 Years



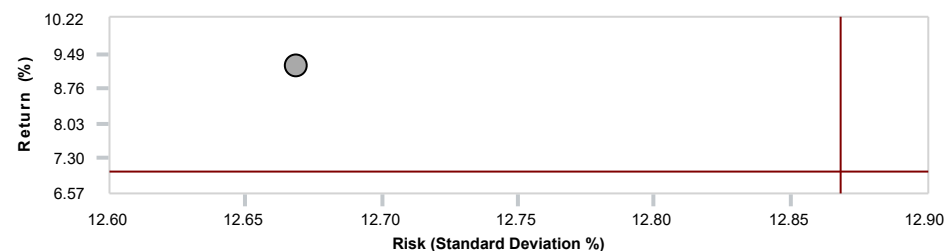
3 Yr Rolling Percentile Ranking - 5 Years



Peer Group Scattergram - 3 Years



Peer Group Scattergram - 5 Years



Historical Statistics - 3 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard Mid-Cap Index (VIMAX)	0.02	99.94	100.14	-0.03	-1.45	0.73	1.00	8.92
CRSP U.S. Mid Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.73	1.00	8.91

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Vanguard Mid-Cap Index (VIMAX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CRSP U.S. Mid Cap TR Index	0.00	100.00	100.00	0.00	N/A	0.69	1.00	8.34



Fund Information

Fund Name : Vanguard Index Funds: Vanguard Mid-Cap Index Fund; Admiral Shares
 Fund Family : Vanguard Group Inc
 Ticker : VIMAX
 Inception Date : 11/12/2001
 Fund Assets : \$45,117 Million
 Portfolio Turnover : 16%

Portfolio Assets : \$110,878 Million
 Portfolio Manager : Butler/Johnson
 PM Tenure : 2001--2016
 Fund Style : IM U.S. Mid Cap Core Equity (MF)
 Style Benchmark : CRSP U.S. Mid Cap TR Index

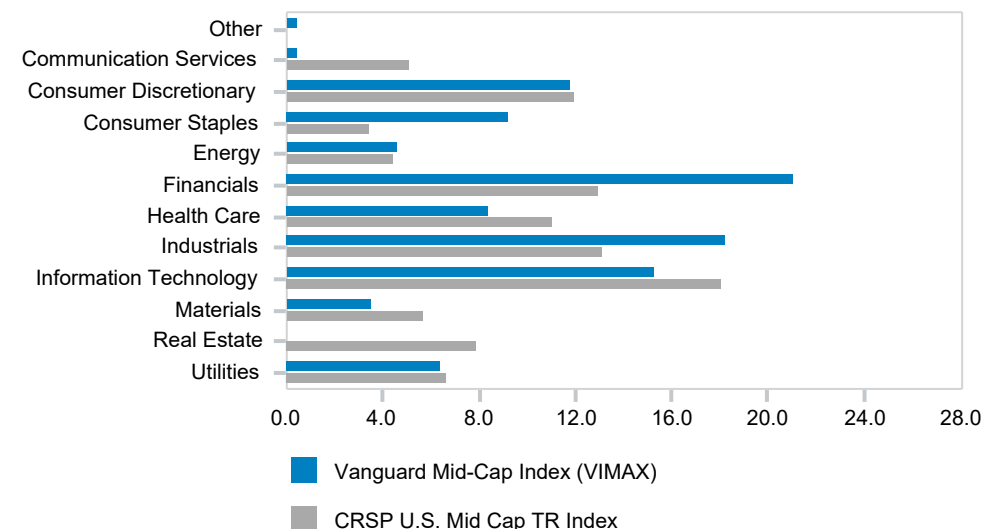
Portfolio Characteristics As of 07/31/2019

	Portfolio	Benchmark
Total Securities	373	354
Avg. Market Cap (\$)	17,605,287,789	13,109,349,300
Price/Earnings (P/E)	30.21	21.63
Price/Book (P/B)	5.58	3.07
Dividend Yield	2.29	1.61
Annual EPS	24.12	4.08
5 Yr EPS	12.97	11.51
3 Yr EPS Growth	18.04	N/A
Beta (3 Years, Monthly)	1.00	1.00

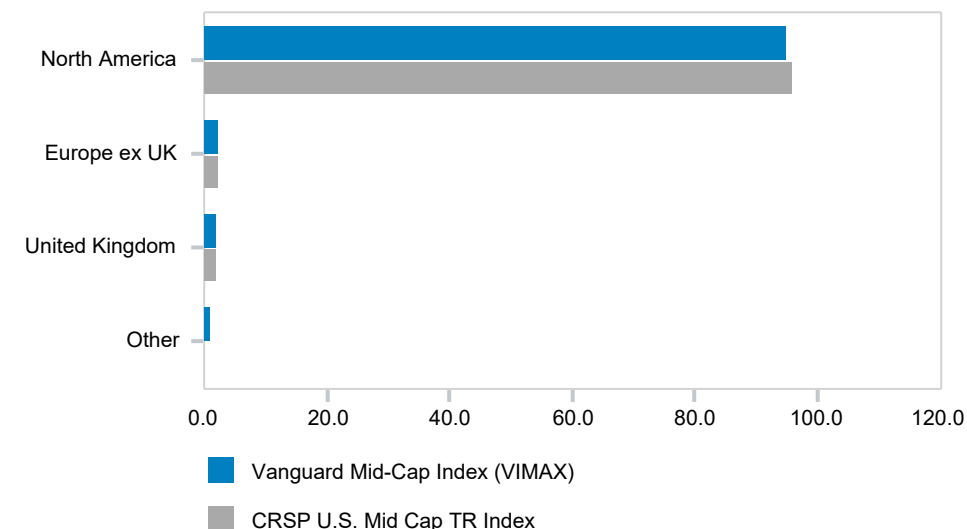
Top Ten Securities As of 07/31/2019

Twitter Inc ORD	0.7 %
Newmont Goldcorp Corp ORD	0.7 %
Fiserv Inc ORD	0.7 %
Advanced Micro Devices Inc ORD	0.7 %
Xilinx Inc ORD	0.7 %
ONEOK Inc ORD	0.7 %
Amphenol Corp ORD	0.7 %
SBA Communications Corp ORD	0.6 %
Motorola Solutions Inc ORD	0.6 %
WEC Energy Group Inc ORD	0.6 %

Sector Weights As of 07/31/2019



Region Weights As of 07/31/2019



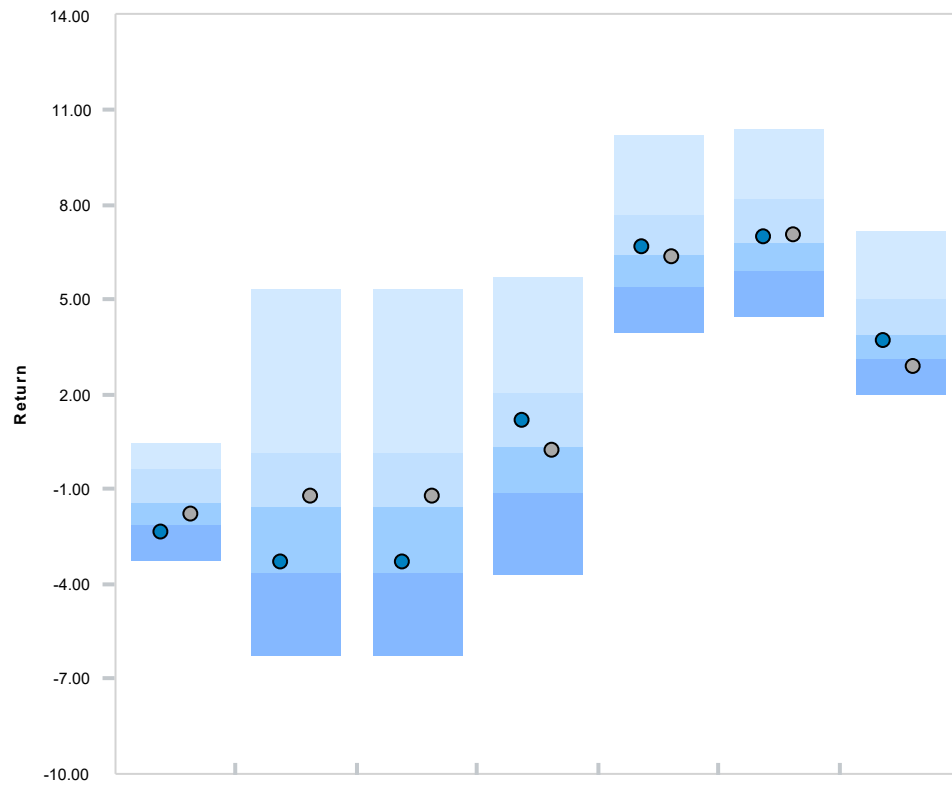
Statistics provided by Lipper. Most recent available data shown.



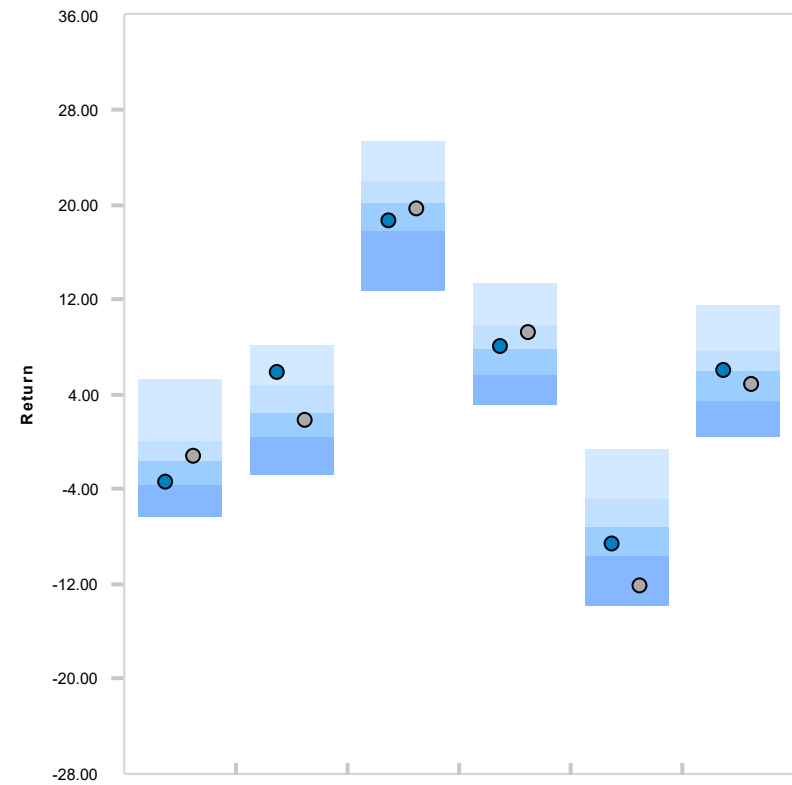
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Peer Group Analysis - IM International Large Cap Core Equity (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Total Int'l Equity	-2.38 (85)	-3.33 (73)	-3.33 (73)	1.16 (37)	6.69 (44)	7.01 (45)	3.68 (59)
● Total Int'l Policy	-1.80 (64)	-1.23 (47)	-1.23 (47)	0.26 (53)	6.33 (52)	7.06 (44)	2.90 (82)
Median	-1.42	-1.56	-1.56	0.38	6.45	6.78	3.87



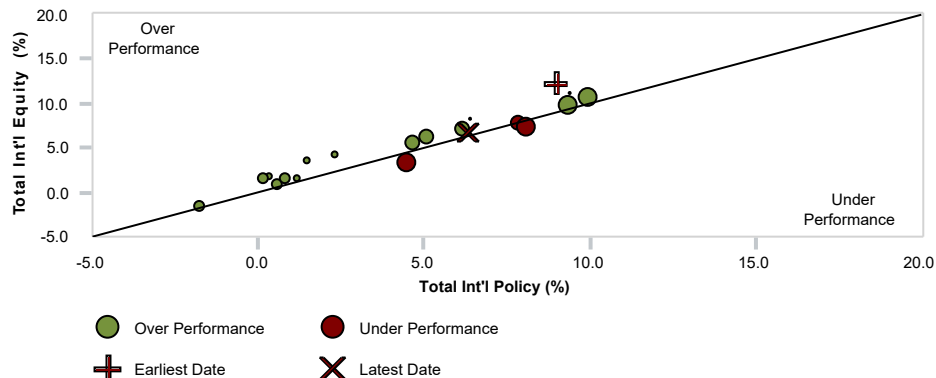
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Total Int'l Equity	-3.33 (73)	5.85 (14)	18.68 (69)	7.98 (50)	-8.63 (65)	6.07 (50)
● Total Int'l Policy	-1.23 (47)	1.76 (60)	19.61 (59)	9.26 (33)	-12.16 (90)	4.77 (63)
Median	-1.56	2.46	20.20	7.91	-7.16	6.04

Comparative Performance

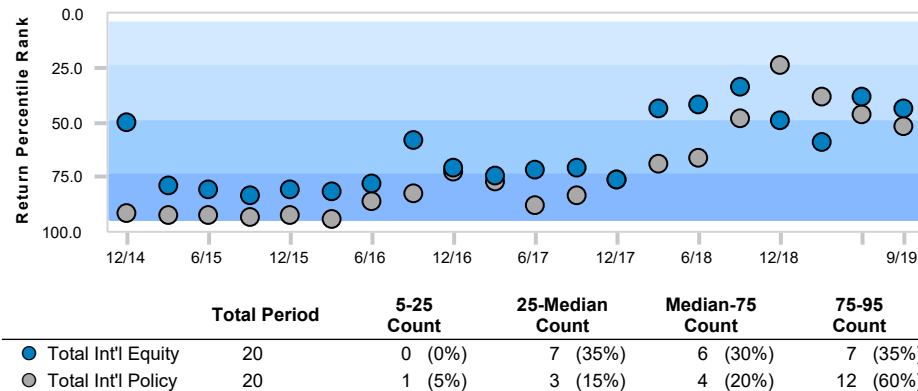
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Total Int'l Equity	4.45 (23)	11.60 (34)	-15.04 (86)	1.67 (30)	-1.30 (41)	0.92 (9)
Total Int'l Policy	2.98 (64)	10.31 (63)	-11.46 (20)	0.71 (62)	-2.61 (70)	-1.18 (60)
IM International Large Cap Core Equity (SA+CF) Median	3.58	10.85	-13.18	1.01	-1.81	-0.87



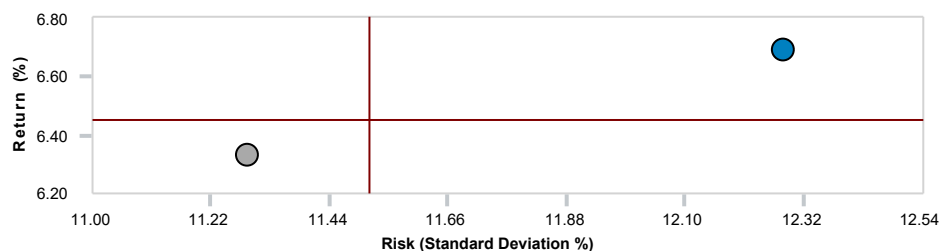
3 Yr Rolling Under/Over Performance - 5 Years



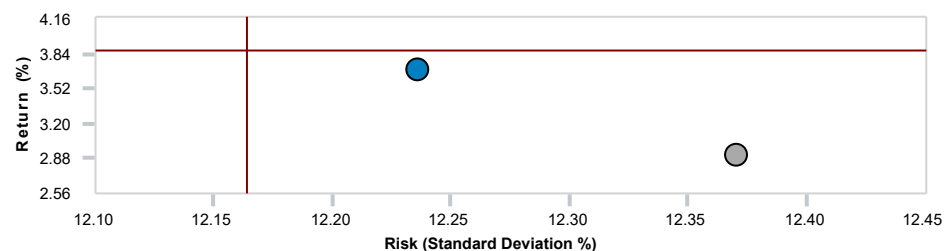
3 Yr Rolling Percentile Ranking - 5 Years



Peer Group Scattergram - 3 Years



Peer Group Scattergram - 5 Years



Historical Statistics - 3 Years

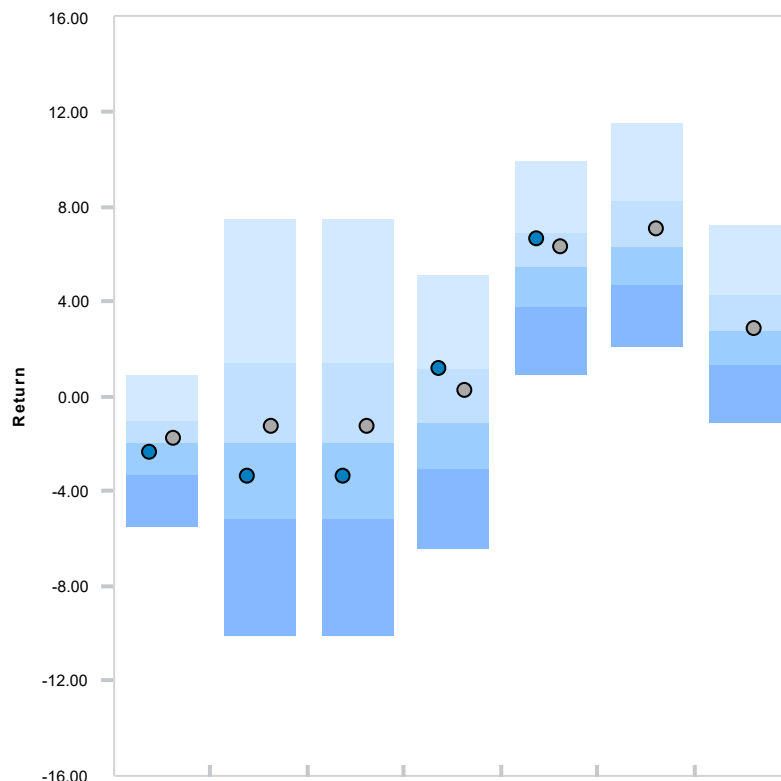
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Equity	3.21	102.76	100.63	0.11	0.14	0.47	1.05	8.42
Total Int'l Policy	0.00	100.00	100.00	0.00	N/A	0.47	1.00	7.58

Historical Statistics - 5 Years

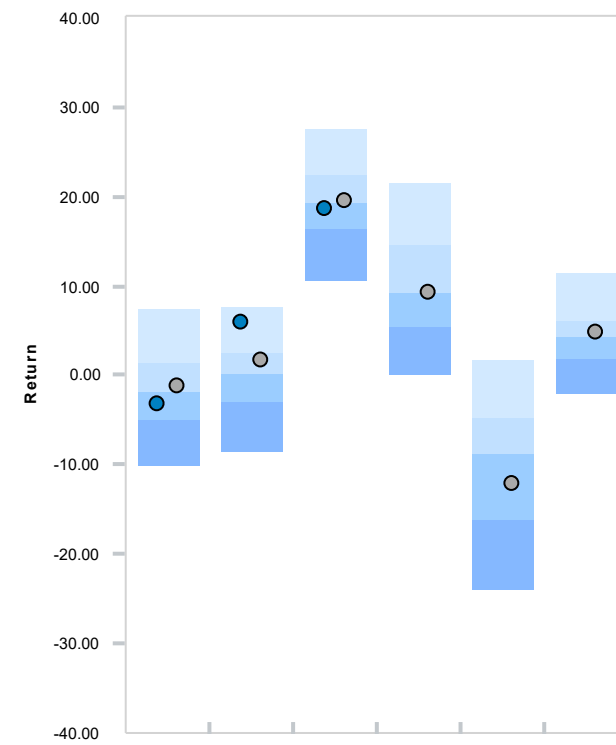
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Equity	3.73	95.84	90.02	0.96	0.20	0.28	0.94	8.35
Total Int'l Policy	0.00	100.00	100.00	0.00	N/A	0.22	1.00	8.24



Peer Group Analysis - IM International Equity (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Harding Loevner Intl Equity (HLMIX)	-2.40 (61)	-3.34 (62)	-3.34 (62)	1.15 (26)	6.68 (29)	N/A	N/A
○ MSCI AC World ex USA (Net)	-1.80 (47)	-1.23 (44)	-1.23 (44)	0.26 (35)	6.33 (34)	7.06 (39)	2.90 (48)
Median	-1.90	-1.94	-1.94	-1.10	5.44	6.35	2.81



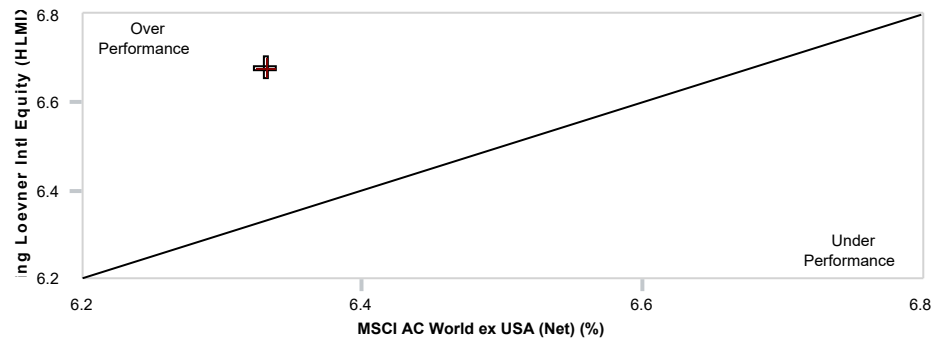
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Harding Loevner Intl Equity (HLMIX)	3.34 (62)	5.85 (10)	8.65 (58)	N/A	N/A	N/A
○ MSCI AC World ex USA (Net)	1.23 (44)	1.76 (34)	9.61 (48)	9.26 (51)	2.16 (64)	4.77 (43)
Median	1.94	0.08	9.36	9.32	8.75	4.26

Comparative Performance

	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Harding Loevner Intl Equity (HLMIX)	4.45 (18)	11.60 (35)	-15.04 (81)	1.67 (13)	-1.30 (22)	0.92 (36)
MSCI AC World ex USA (Net)	2.98 (43)	10.31 (54)	-11.46 (44)	0.71 (31)	-2.61 (41)	-1.18 (76)
IM International Equity (MF) Median	2.58	10.54	-12.22	-0.27	-3.33	-0.07

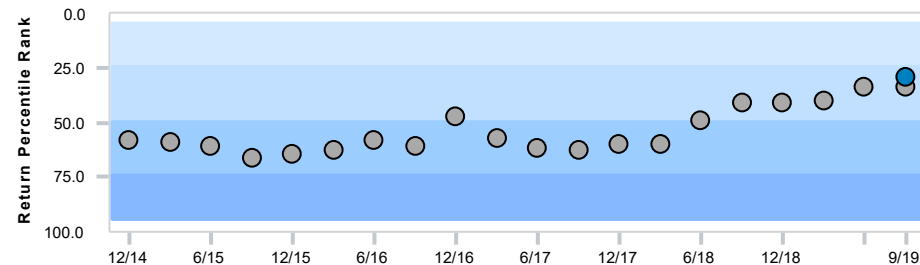


3 Yr Rolling Under/Over Performance - 5 Years



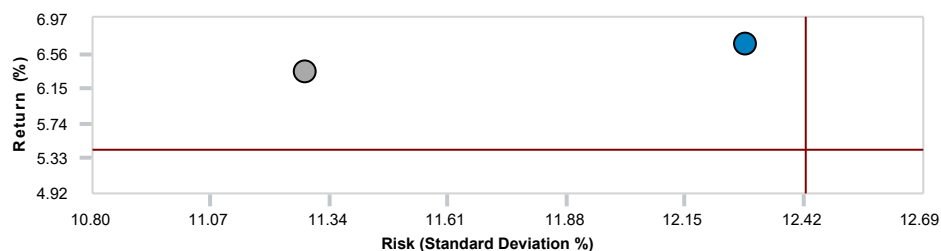
⊕ Earliest Date ⊗ Latest Date

3 Yr Rolling Percentile Ranking - 5 Years



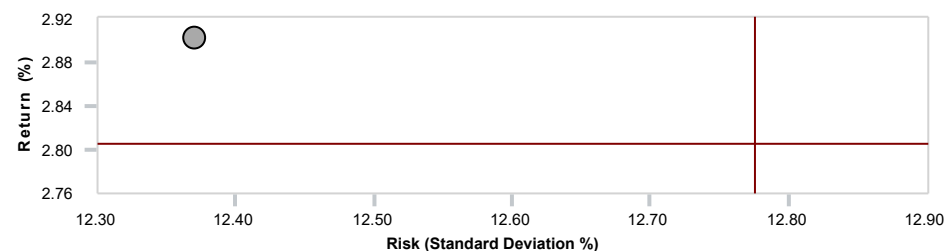
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
● Harding Loevner Intl Equity (HLMIX)	1	0 (0%)	1 (100%)	0 (0%)	0 (0%)
● MSCI AC World ex USA (Net)	20	0 (0%)	7 (35%)	13 (65%)	0 (0%)

Peer Group Scattergram - 3 Years



	Return	Standard Deviation
● Harding Loevner Intl Equity (HLMIX)	6.68	12.29
● MSCI AC World ex USA (Net)	6.33	11.29
— Median	5.44	12.43

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
● Harding Loevner Intl Equity (HLMIX)	N/A	N/A
● MSCI AC World ex USA (Net)	2.90	12.37
— Median	2.81	12.78

Historical Statistics - 3 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Harding Loevner Intl Equity (HLMIX)	3.21	102.79	100.78	0.09	0.14	0.46	1.05	8.43
MSCI AC World ex USA (Net)	0.00	100.00	100.00	0.00	N/A	0.47	1.00	7.58

Historical Statistics - 5 Years

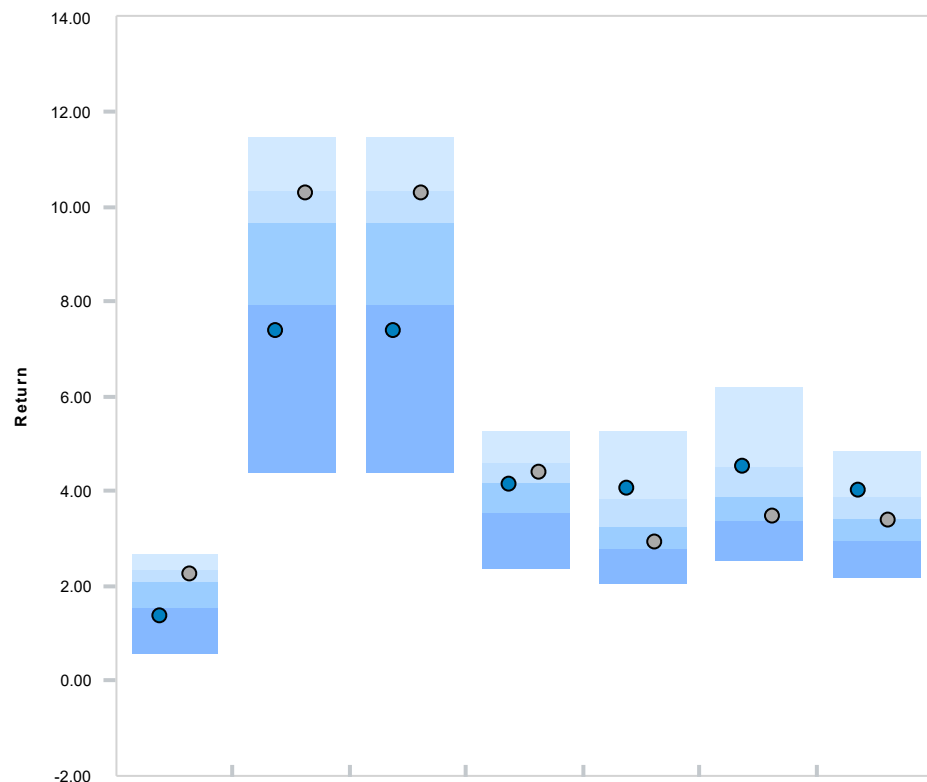
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Harding Loevner Intl Equity (HLMIX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI AC World ex USA (Net)	0.00	100.00	100.00	0.00	N/A	0.22	1.00	8.24



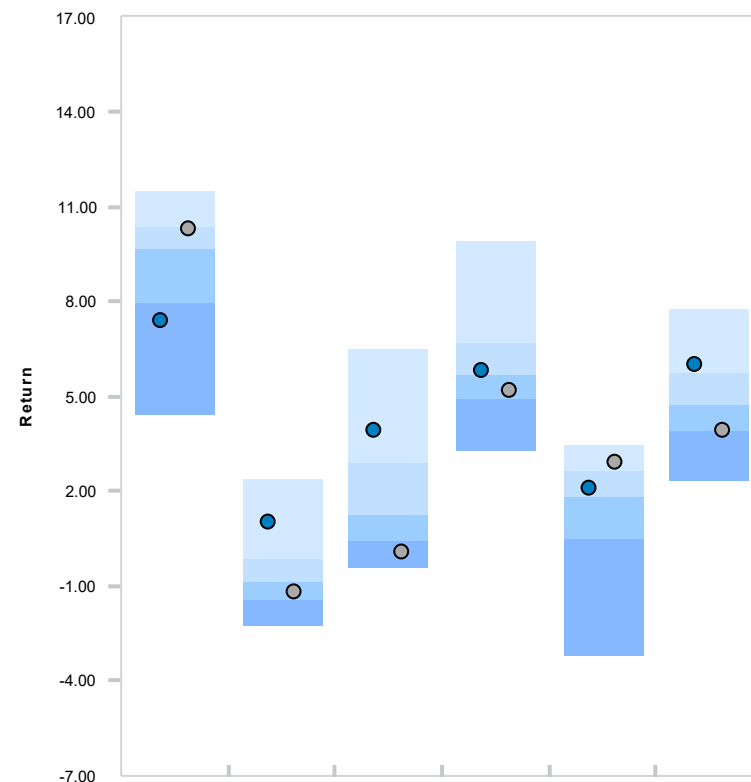
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Peer Group Analysis - IM U.S. Broad Market Fixed Income (SA+CF+MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Total Fixed Income	1.35 (80)	7.41 (79)	7.41 (79)	4.15 (52)	4.08 (19)	4.51 (26)	4.02 (20)
● Total Fixed Policy	2.27 (34)	10.30 (28)	10.30 (28)	4.38 (39)	2.92 (70)	3.49 (71)	3.38 (54)
Median	2.10	9.65	9.65	4.17	3.28	3.89	3.45



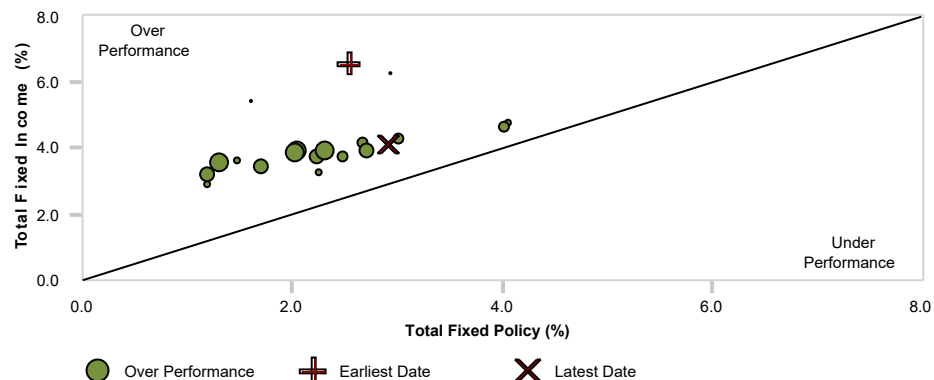
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Total Fixed Income	7.41 (79)	0.99 (13)	3.93 (19)	5.81 (48)	2.09 (44)	6.00 (22)
● Total Fixed Policy	10.30 (28)	-1.22 (64)	0.07 (84)	5.19 (68)	2.94 (17)	3.96 (74)
Median	9.65	-0.90	1.29	5.72	1.84	4.74

Comparative Performance

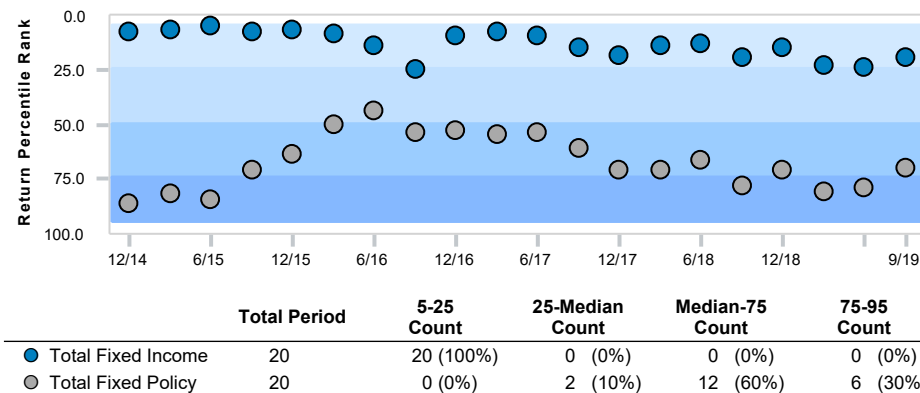
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Total Fixed Income	2.23 (89)	2.36 (93)	1.28 (26)	0.46 (35)	0.13 (15)	0.21 (5)
Total Fixed Policy	3.08 (46)	2.94 (78)	1.64 (9)	0.02 (79)	-0.16 (39)	-1.46 (65)
IM U.S. Broad Market Fixed Income (SA+CF+MF) Median	3.04	3.42	0.72	0.26	-0.24	-1.33



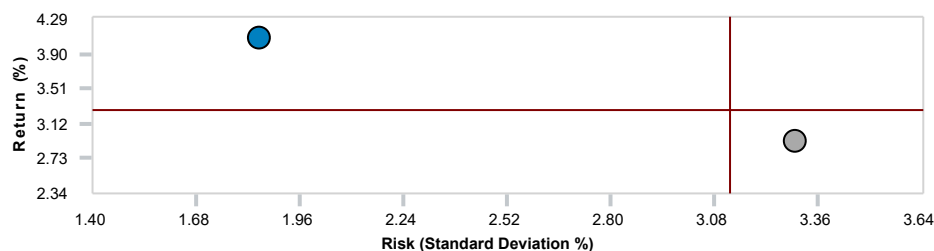
3 Yr Rolling Under/Over Performance - 5 Years



3 Yr Rolling Percentile Ranking - 5 Years

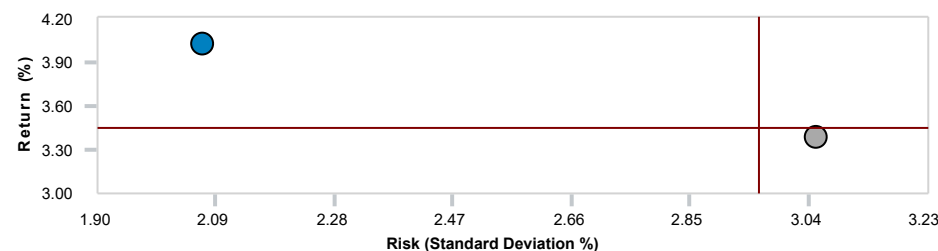


Peer Group Scattergram - 3 Years



	Return	Standard Deviation
● Total Fixed Income	4.08	1.85
● Total Fixed Policy	2.92	3.30
— Median	3.28	3.12

Peer Group Scattergram - 5 Years



	Return	Standard Deviation
● Total Fixed Income	4.02	2.07
● Total Fixed Policy	3.38	3.05
— Median	3.45	2.96

Historical Statistics - 3 Years

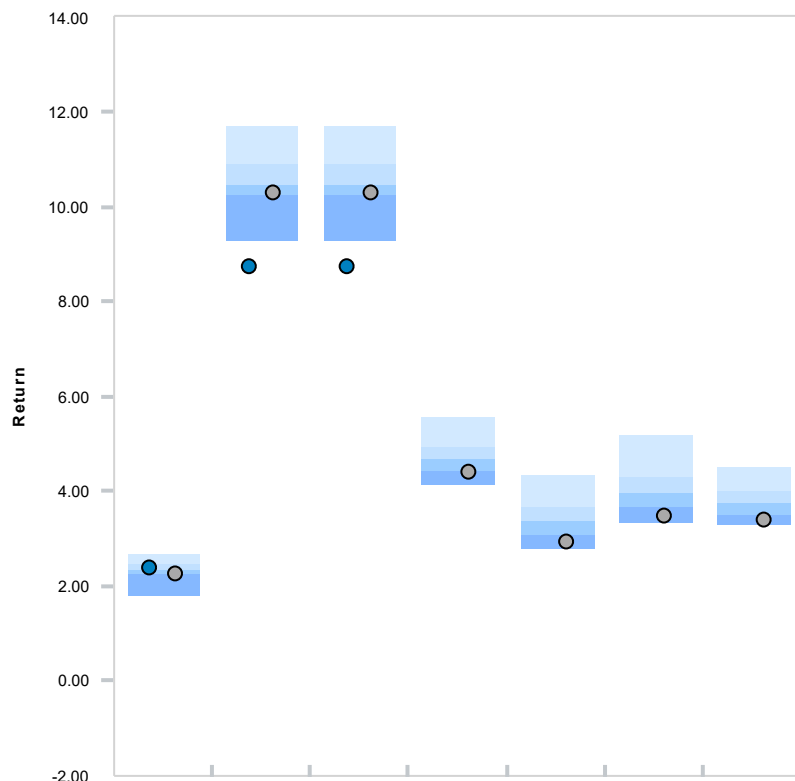
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fixed Income	2.07	72.65	9.04	2.70	0.52	1.39	0.46	0.90
Total Fixed Policy	0.00	100.00	100.00	0.00	N/A	0.44	1.00	1.88

Historical Statistics - 5 Years

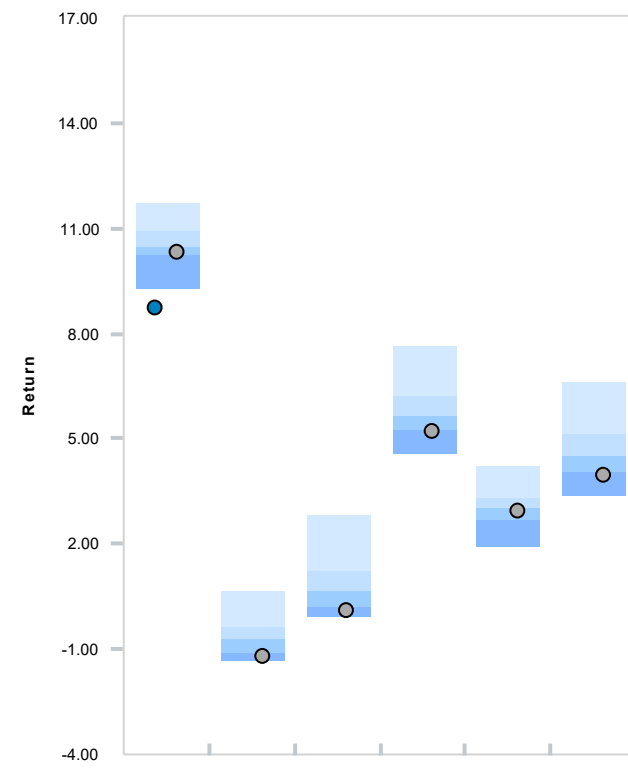
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fixed Income	1.91	75.20	17.53	2.19	0.31	1.48	0.53	0.91
Total Fixed Policy	0.00	100.00	100.00	0.00	N/A	0.81	1.00	1.61



Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Garcia Hamilton Fixed Income	2.37 (45)	8.74 (96)	8.74 (96)	N/A	N/A	N/A	N/A
● Blmbg. Barc. U.S. Aggregate Index	2.27 (73)	10.30 (70)	10.30 (70)	4.38 (85)	2.92 (92)	3.49 (90)	3.38 (91)
Median	2.34	10.48	10.48	4.71	3.38	3.97	3.76



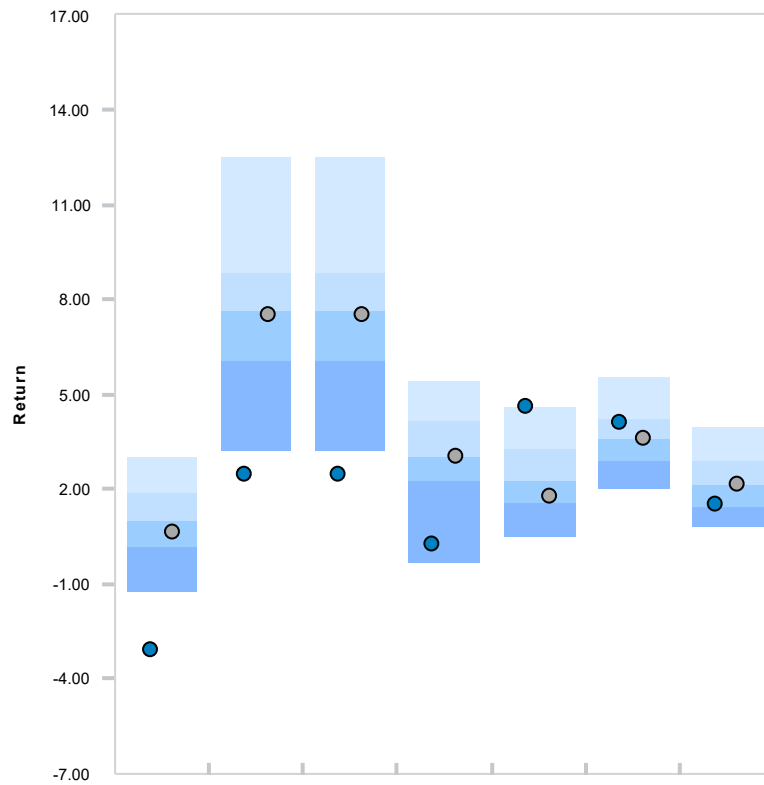
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Garcia Hamilton Fixed Income	8.74 (96)	N/A	N/A	N/A	N/A	N/A
● Blmbg. Barc. U.S. Aggregate Index	0.30 (70)	-1.22 (89)	0.07 (87)	5.19 (81)	2.94 (61)	3.96 (81)
Median	0.48	-0.73	0.63	5.67	3.02	4.51

Comparative Performance

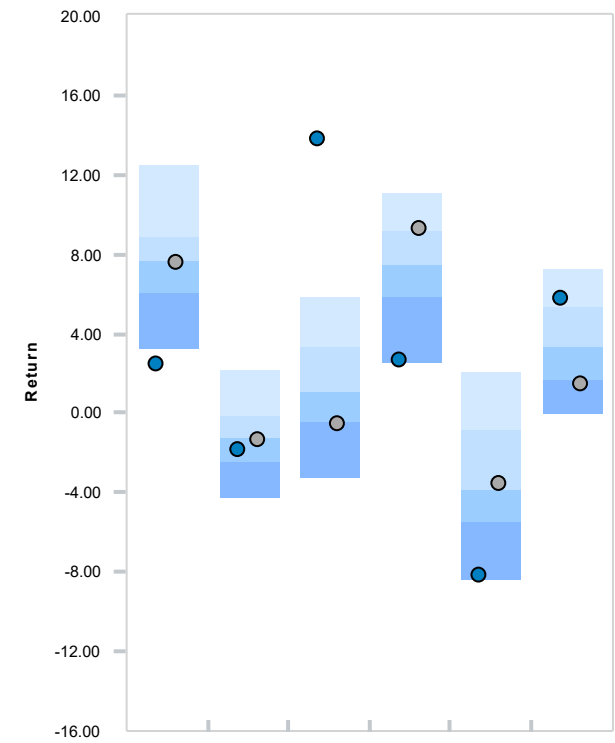
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Garcia Hamilton Fixed Income	2.34 (98)	2.50 (96)	1.25 (65)	-0.19 (95)	0.47 (4)	-0.54 (6)
Blmbg. Barc. U.S. Aggregate Index	3.08 (71)	2.94 (83)	1.64 (23)	0.02 (84)	-0.16 (73)	-1.46 (67)
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	3.14	3.22	1.39	0.18	-0.09	-1.37



Peer Group Analysis - IM Global Fixed Income (MF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● Templeton Global Tol Return (FTTRX)	-3.09 (100)	2.50 (99)	2.50 (99)	0.28 (94)	4.60 (6)	4.11 (32)	1.52 (75)
● Blmbg. Barc. Global Multiverse	0.63 (58)	7.54 (51)	7.54 (51)	3.02 (52)	1.81 (65)	3.61 (54)	2.14 (51)
Median	1.01	7.65	7.65	3.05	2.29	3.64	2.16



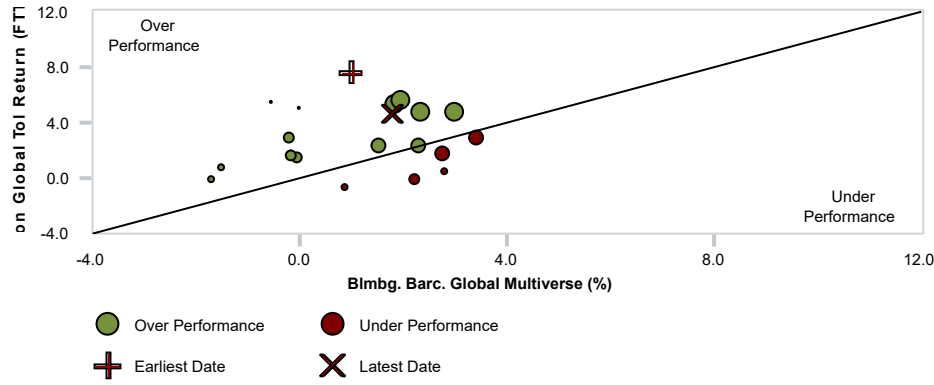
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● Templeton Global Tol Return (FTTRX)	2.50 (99)	1.90 (66)	3.82 (1)	2.64 (94)	8.23 (95)	5.71 (22)
● Blmbg. Barc. Global Multiverse	7.54 (51)	1.32 (51)	0.56 (77)	9.23 (25)	3.56 (42)	1.40 (79)
Median	7.65	1.29	1.02	7.42	3.85	3.37

Comparative Performance

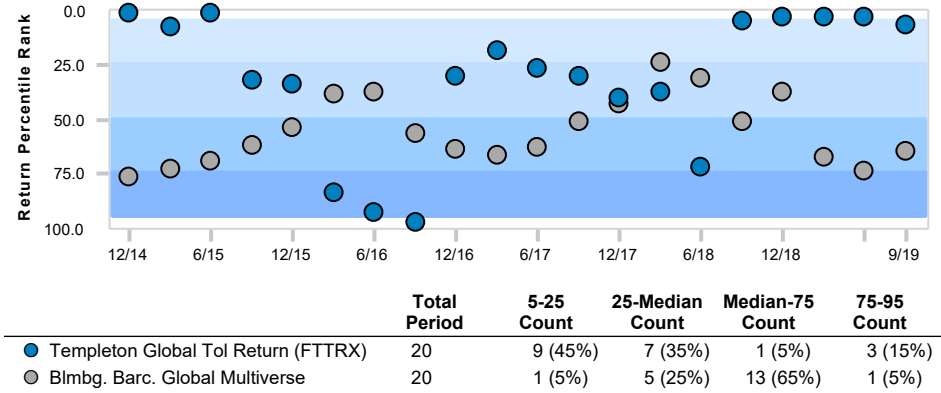
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
Templeton Global Tol Return (FTTRX)	1.46 (98)	1.94 (87)	2.26 (2)	1.38 (5)	-3.13 (55)	1.64 (27)
Blmbg. Barc. Global Multiverse	3.31 (55)	2.39 (76)	1.02 (23)	-0.80 (66)	-2.83 (53)	1.30 (34)
IM Global Fixed Income (MF) Median	3.37	3.10	0.35	-0.39	-2.29	0.80



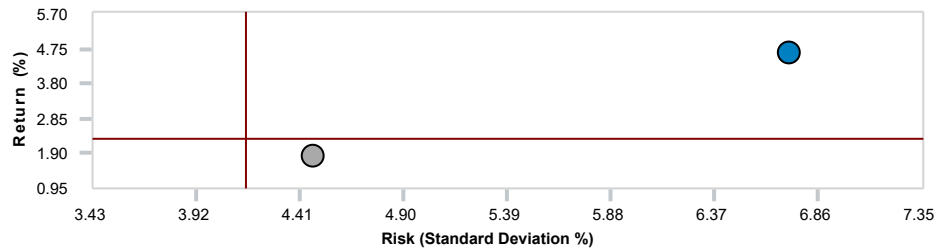
3 Yr Rolling Under/Over Performance - 5 Years



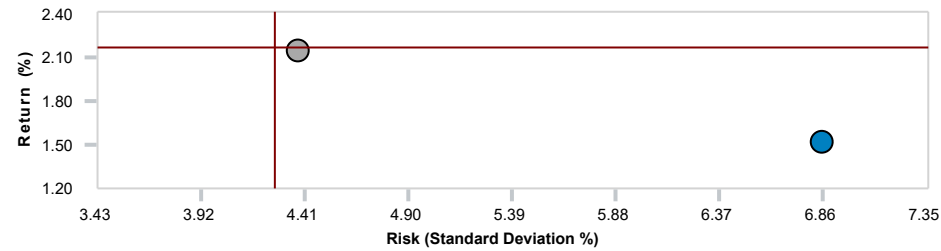
3 Yr Rolling Percentile Ranking - 5 Years



Peer Group Scattergram - 3 Years



Peer Group Scattergram - 5 Years



Historical Statistics - 3 Years

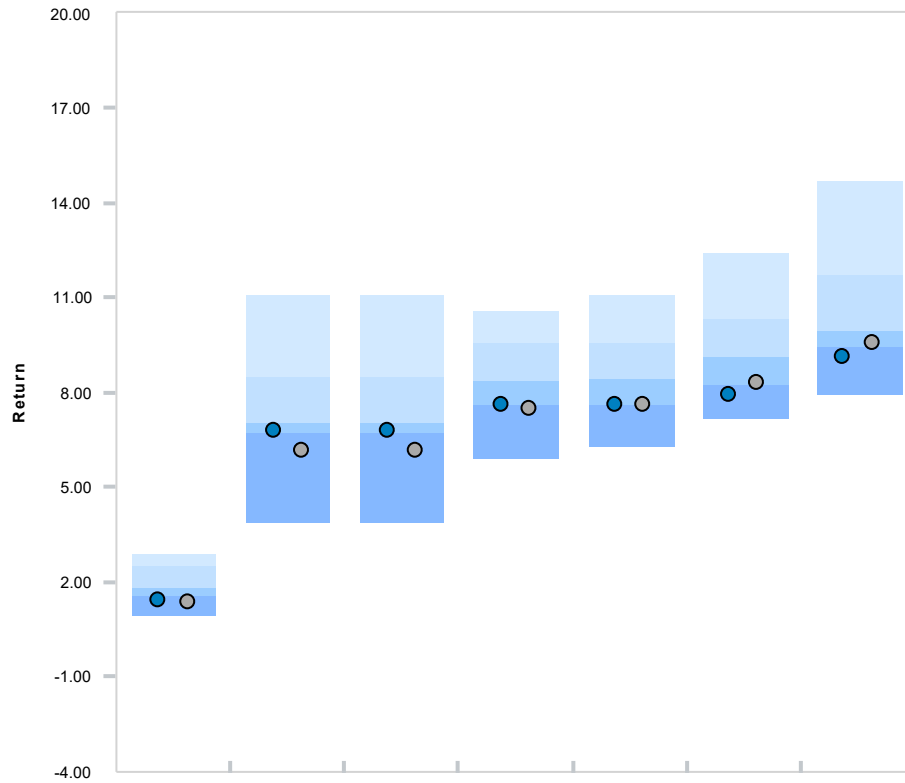
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Templeton Global Tol Return (FTTRX)	9.08	0.15	-90.67	5.68	0.31	0.47	-0.42	4.42
Blmbg. Barc. Global Multiverse	0.00	100.00	100.00	0.00	N/A	0.08	1.00	3.16

Historical Statistics - 5 Years

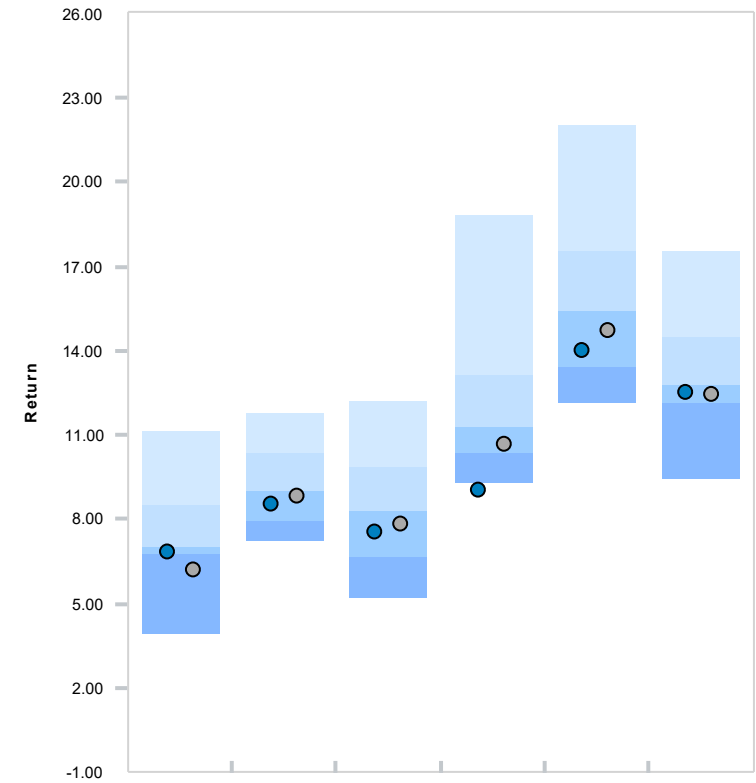
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Templeton Global Tol Return (FTTRX)	8.55	-12.72	-54.38	2.16	-0.06	0.11	-0.18	4.66
Blmbg. Barc. Global Multiverse	0.00	100.00	100.00	0.00	N/A	0.29	1.00	2.83



Peer Group Analysis - IM U.S. Open End Private Real Estate (SA+CF)



	QTR	FYTD	1 YR	2 YR	3 YR	4 YR	5 YR
● American Core Realty	1.44 (81)	6.81 (60)	6.81 (60)	7.65 (75)	7.61 (78)	7.96 (85)	9.14 (84)
● NCREIF ODCE	1.38 (86)	6.16 (87)	6.16 (87)	7.48 (78)	7.59 (80)	8.34 (72)	9.59 (73)
Median	1.80	7.05	7.05	8.35	8.43	9.15	9.97



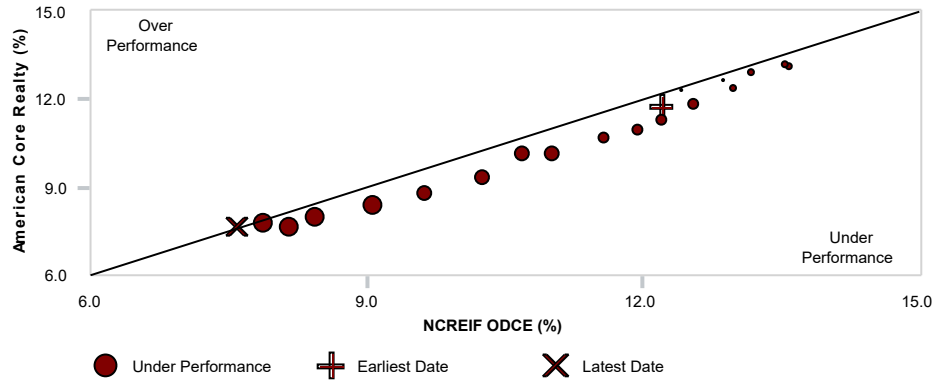
	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015	Oct-2013 To Sep-2014
● American Core Realty	6.81 (60)	8.50 (66)	7.52 (67)	9.04 (97)	13.98 (69)	12.49 (64)
● NCREIF ODCE	6.16 (87)	8.82 (59)	7.81 (60)	10.62 (69)	14.71 (62)	12.39 (68)
Median	7.05	9.04	8.29	11.32	15.45	12.78

Comparative Performance

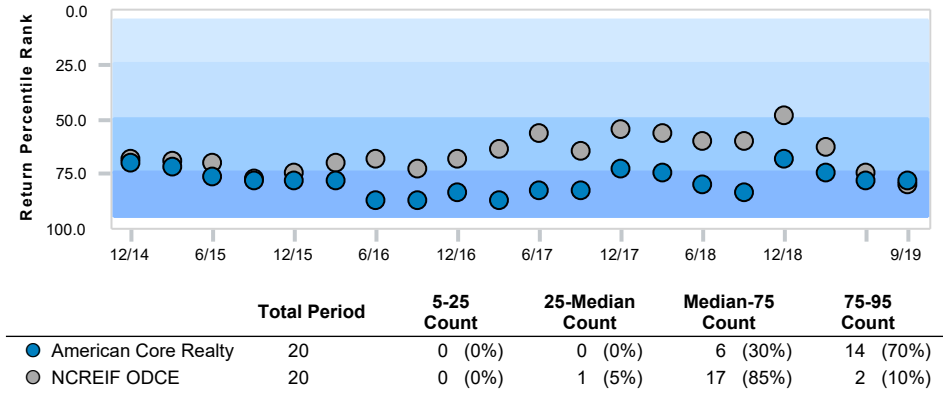
	1 Qtr Ending Jun-2019	1 Qtr Ending Mar-2019	1 Qtr Ending Dec-2018	1 Qtr Ending Sep-2018	1 Qtr Ending Jun-2018	1 Qtr Ending Mar-2018
American Core Realty	1.53 (31)	1.74 (76)	1.94 (27)	2.19 (47)	2.09 (66)	2.23 (45)
NCREIF ODCE	1.34 (66)	1.69 (81)	1.62 (62)	2.09 (54)	2.13 (61)	2.17 (55)
IM U.S. Open End Private Real Estate (SA+CF) Median	1.46	1.99	1.76	2.10	2.22	2.21



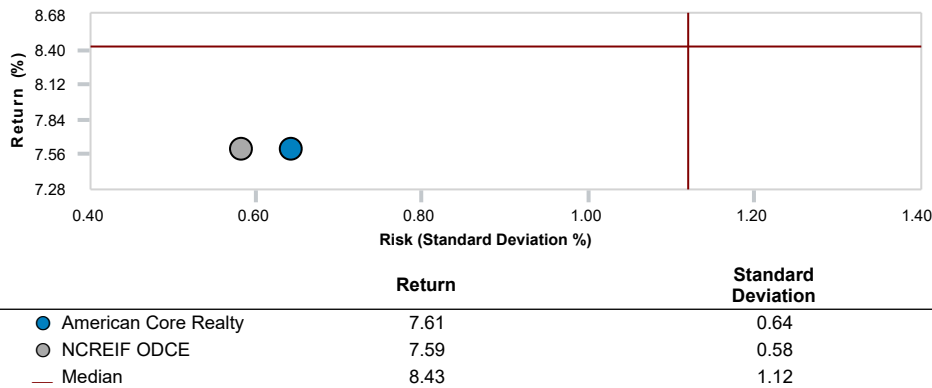
3 Yr Rolling Under/Over Performance - 5 Years



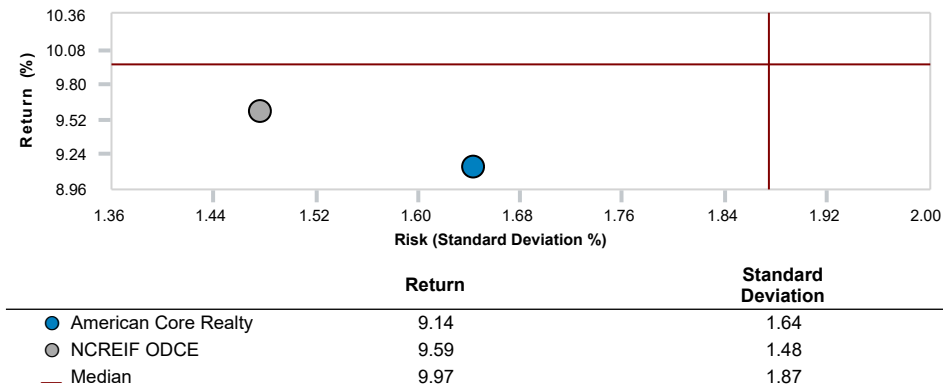
3 Yr Rolling Percentile Ranking - 5 Years



Peer Group Scattergram - 3 Years



Peer Group Scattergram - 5 Years



Historical Statistics - 3 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
American Core Realty	0.71	100.19	N/A	0.17	0.02	1.90	0.98	0.00
NCREIF ODCE	0.00	100.00	N/A	0.00	N/A	1.91	1.00	0.00

Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
American Core Realty	1.04	95.53	N/A	0.09	-0.40	1.98	0.95	0.00
NCREIF ODCE	0.00	100.00	N/A	0.00	N/A	2.03	1.00	0.00



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**Delray Beach Firefighters' Retirement System
Illiquid Investments
September 30, 2019**

	Market Value	Uncalled Capital Commitment	QTD IRR	Inception IRR	Inception Date	Expected Termination
*Angelo Gordon Net Lease Realty Fund III, L.P.	\$1,937,184.00	\$84,111	0	6.75	3/10/2014	4/1/2027
*Crescent Direct Lending Levered Fund	\$2,770,591.00	\$668,697	0	7.59	10/9/2014	12/1/2022
*Dune Real Estate Fund III	\$1,994,453	\$135,491	0.88	13.13	11/6/2014	12/1/2024
*Molpus Woodlands Timber	\$1,325,625.00	\$0	0	2.18	6/24/2008	5/2018-5/2022

* Market Value as of 09-30-2019
Market Value includes contributions & distributions since end of period.



Benchmark History
Investment Policy Benchmarks
As of September 30, 2019

Total Fund Policy			
Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
Jan-1978		Oct-2013	
S&P 500 Index	65.00	Wilshire 5000 Total Market Index (full-cap) Index	35.00
Blmbg. Barc. U.S. Gov't/Credit	30.00	MSCI AC World ex USA (Net)	15.00
FTSE 3 Month T-Bill	5.00	Blmbg. Barc. U.S. Aggregate Index	27.50
Apr-2007		NCREIF ODCE	5.00
Blmbg. Barc. U.S. Gov't/Credit	30.00	Quadrant Custom Policy	5.00
Blmbg. Barc. U.S. TIPS 1-10 Year	5.00	NCREIF Timberland Index	5.00
S&P 500 Index	60.00	CPI+5%	7.50
MSCI EAFE (Net) Index	5.00	May-2014	
Oct-2007		Wilshire 5000 Total Market Index (full-cap) Index	35.00
MSCI EAFE (Net) Index	10.00	MSCI AC World ex USA (Net)	15.00
Bloomberg Barclays Intermed Aggregate Index	30.00	Blmbg. Barc. U.S. Aggregate Index	27.50
Blmbg. Barc. U.S. TIPS 1-10 Year	5.00	NCREIF ODCE	10.00
Russell 3000 Index	50.00	NCREIF Timberland Index	5.00
NCREIF Property Index	5.00	CPI+5%	7.50
Jan-2010		Jul-2015	
MSCI AC World ex USA (Net)	15.00	Wilshire 5000 Total Market Index (full-cap) Index	35.00
Blmbg. Barc. U.S. Aggregate Index	30.00	MSCI AC World ex USA (Net)	15.00
Bloomberg Barclays U.S. TIPS Index	5.00	Blmbg. Barc. U.S. Aggregate Index	27.50
Russell 3000 Index	45.00	NCREIF ODCE	10.00
NCREIF Property Index	5.00	NCREIF Timberland Index	5.00
Jul-2010		Alternatives Policy	7.50
Wilshire 5000 Total Market Index (full-cap) Index	35.00	Nov-2015	
MSCI AC World ex USA (Net)	15.00	Wilshire 5000 Total Market Index (full-cap) Index	42.50
Blmbg. Barc. U.S. Aggregate Index	25.00	MSCI AC World ex USA (Net)	15.00
Bloomberg Barclays U.S. TIPS Index	5.00	Blmbg. Barc. U.S. Aggregate Index	27.50
NCREIF ODCE	5.00	NCREIF ODCE	10.00
Barclay BTOP 50	5.00	Alternatives Policy	5.00
Quadrant Custom Policy	5.00		
NCREIF Timberland Index	5.00		



Benchmark History
Investment Policy Benchmarks
As of September 30, 2019

Total Equity Policy	
Allocation Mandate	Weight (%)
Oct-2005	
S&P 500 Index	95.00
FTSE 3 Month T-Bill	5.00
Apr-2007	
FTSE 3 Month T-Bill	5.00
S&P 500 Index	85.00
MSCI EAFE (Net) Index	10.00
Oct-2007	
MSCI EAFE (Net) Index	15.00
Russell 3000 Index	85.00
Jan-2010	
MSCI AC World ex USA (Net)	25.00
Russell 3000 Index	75.00
Jul-2010	
MSCI AC World ex USA (Net)	45.00
Wilshire 5000 Total Market Index (full-cap) Index	55.00
Nov-2015	
MSCI AC World ex USA (Net)	25.00
Wilshire 5000 Total Market Index (full-cap) Index	75.00

Domestic Equity Policy	
Allocation Mandate	Weight (%)
Oct-2005	
S&P 500 Index	100.00
Oct-2007	
Russell 3000 Index	100.00
Jul-2010	
Wilshire 5000 Total Market Index (full-cap) Index	100.00

Total Int'l Policy	
Allocation Mandate	Weight (%)
Jan-1970	
MSCI EAFE (Net) Index	100.00
Jan-2010	
MSCI AC World ex USA (Net)	100.00
Alternatives Policy	
Allocation Mandate	Weight (%)
Aug-2010	
Barclay BTOP 50	100.00
Nov-2013	
CPI+5%	100.00
Jul-2015	
S&P 500 Index	50.00
Blmbg. Barc. U.S. Aggregate Index	50.00

Total Fixed Policy	
Allocation Mandate	Weight (%)
Oct-2005	
Blmbg. Barc. U.S. Gov't/Credit	95.00
FTSE 3 Month T-Bill	5.00
Jan-2007	
Blmbg. Barc. U.S. Gov't/Credit	85.00
Blmbg. Barc. U.S. TIPS 1-10 Year	15.00
Oct-2007	
Blmbg. Barc. U.S. TIPS 1-10 Year	15.00
Bloomberg Barclays Intermed Aggregate Index	85.00
Jan-2010	
Bloomberg Barclays U.S. TIPS Index	15.00
Blmbg. Barc. U.S. Aggregate Index	85.00
Oct-2013	
Blmbg. Barc. U.S. Aggregate Index	100.00



Delray Beach Firefighters' Retirement System

Fee Analysis

As of September 30, 2019

	Market Value (\$)	Estimated Annual Fee (\$)	Estimated Annual Fee (%)	Fee Schedule
Vanguard Total Stock Mkt (VTSAX)	338,783	136	0.04	0.04 % of Assets
Boston LCV	18,977,428	104,376	0.55	0.55 % of First \$25 M 0.45 % of Next \$25 M 0.35 % of Next \$50 M 0.25 % Thereafter
Great Lakes SMid Cap	8,082,080	-		
Rhumblin R1000G	4,509,941	1,804	0.04	0.04 % of Assets
Polen Capital LCG	14,554,755	87,329	0.60	0.60 % of Assets
Vanguard Mid-Cap Index (VIMAX)	5,398,559	4,319	0.08	0.08 % of Assets
Harding Loevner Intl Equity (HLMIX)	16,086,255	135,125	0.84	0.84 % of Assets
Garcia Hamilton Fixed Income	22,715,527	56,789	0.25	0.25 % of Assets
Templeton Global Total Return (FTTRX)	4,057,331	27,184	0.67	0.67 % of Assets
American Core Realty	5,144,225	56,586	1.10	1.10 % of Assets
Total Fund (Composite)	109,003,435	473,647	0.43	



Active Return	- 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.



AndCo compiled this report for the sole use of the client for which it was prepared. AndCo is responsible for evaluating the performance results of the Total Fund along with the investment advisors by comparing their performance with indices and other related peer universe data that is deemed appropriate. AndCo uses the results from this evaluation to make observations and recommendations to the client.

AndCo uses time-weighted calculations which are founded on standards recommended by the CFA Institute. The calculations and values shown are based on information that is received from custodians. AndCo analyzes transactions as indicated on the custodian statements and reviews the custodial market values of the portfolio. As a result, this provides AndCo with a reasonable basis that the investment information presented is free from material misstatement. This methodology of evaluating and measuring performance provides AndCo with a practical foundation for our observations and recommendations. Nothing came to our attention that would cause AndCo to believe that the information presented is significantly misstated.

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