

Investment Performance Review
Period Ending September 30, 2019

Employees' Retirement System of the City of Norfolk



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Executive Summary

HIGHLIGHTS

Winners for the recent quarter

- Blmb. Barclays Corp +3.0%
- Blmb. Barclays US Govt +2.4%
- Blmb. Barclays US Agg +2.3%

Losers for the recent quarter

- MSCI Emerging Markets -4.2%
- Russell 2000 -2.4%
- MSCI ACWI x US -1.8%

Areas of strength for the recent quarter

- Corporate Bonds
- US Government Bonds

Winners for the trailing year

- Blmb. Barclays Corp +13.0%
- Blmb. Barclays US Govt +10.4%
- Blmb. Barclays US Agg +10.3%

Losers for the trailing year

- Russell 2000 -8.9%
- MSCI Emerging Markets -2.0%

Areas of strength for the trailing year

- Corporate Bonds
- US Government Bonds

COMMENTARY

• Allocation to equities ended the quarter at 55%, inside the target range of 45%-65%. Market value for the **Total Fund** was \$1.104 billion by quarter-end versus \$ 1.086 billion in the previous quarter. The Total Fund posted an 0.2% return for the trailing quarter and 2.9% for the trailing 12 months. The Total Fund underperformed the Policy Index by 62 bps for the quarter and underperformed its Policy Index by 155 bps over the trailing year.

• The **Total Fund** ranked in the 88th percentile in the peer universe for the quarter and 83rd percentile over the last 12 months.

• The **Global Equity Composite** returned -0.1% for the quarter, overperforming the index by 10 bps and ranking in the 52nd percentile versus peers. Over the trailing 12 months, the portfolio returned 0.93%, outperforming the benchmark by 45 bps and ranking in the 57th percentile of the peer universe.

• The **Fixed Income Composite** returned 1.9% over the quarter, meeting the Bloomberg Barclays U.S. Aggregate and ranking in the 63rd percentile versus universe peers. Over the trailing 12 months, the composite returned 9.6% and outperformed the Index by 71 bps and ranked in the 37th percentile of the peer universe.

• The **Real Estate Composite** returned 0.7% for the quarter and 1.8% for the trailing 12 months.

• The **MLP Composite** returned -5.7% for the quarter, outperforming the index by 64 bps and ranking in the 79th percentile versus peers. For the trailing year, the composite has returned -8.3% and has underperformed the benchmark by 14 bps, ranking in the 61st percentile versus peers. Since inception, the MLP Composite is ahead of its Alerian MLP Index benchmark by 390 bps and has returned 1.5%.



REBALANCING ACTIVITY FOR THE QUARTER

Raise cash for benefit payments:

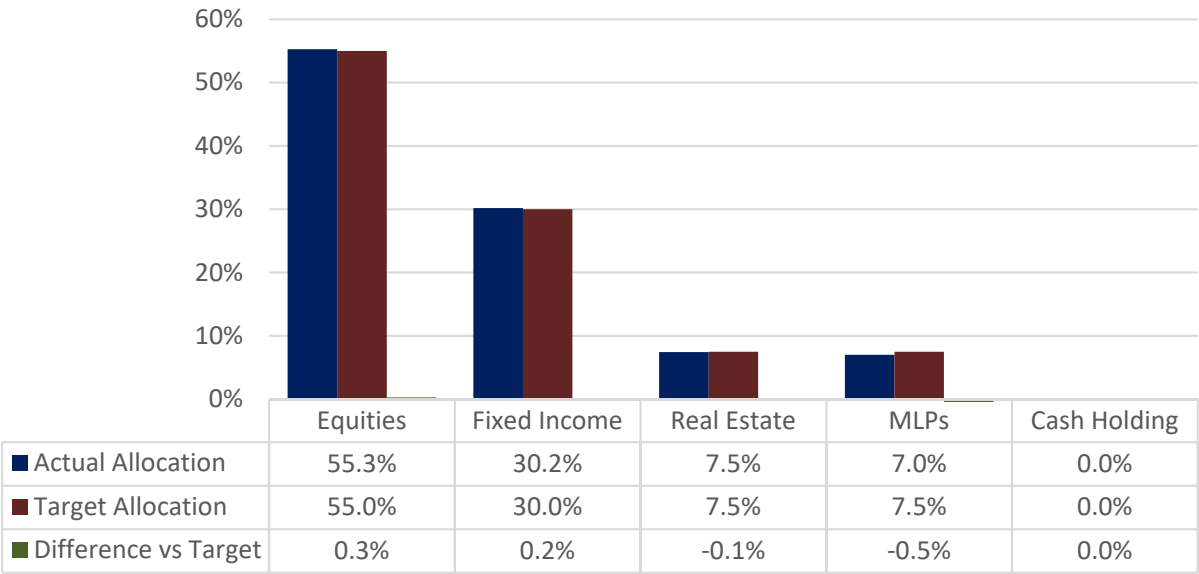
From Contribution
To cash \$8,000,000
July 2019

PIMCO Total Return
To cash \$2,950,000
August 2019

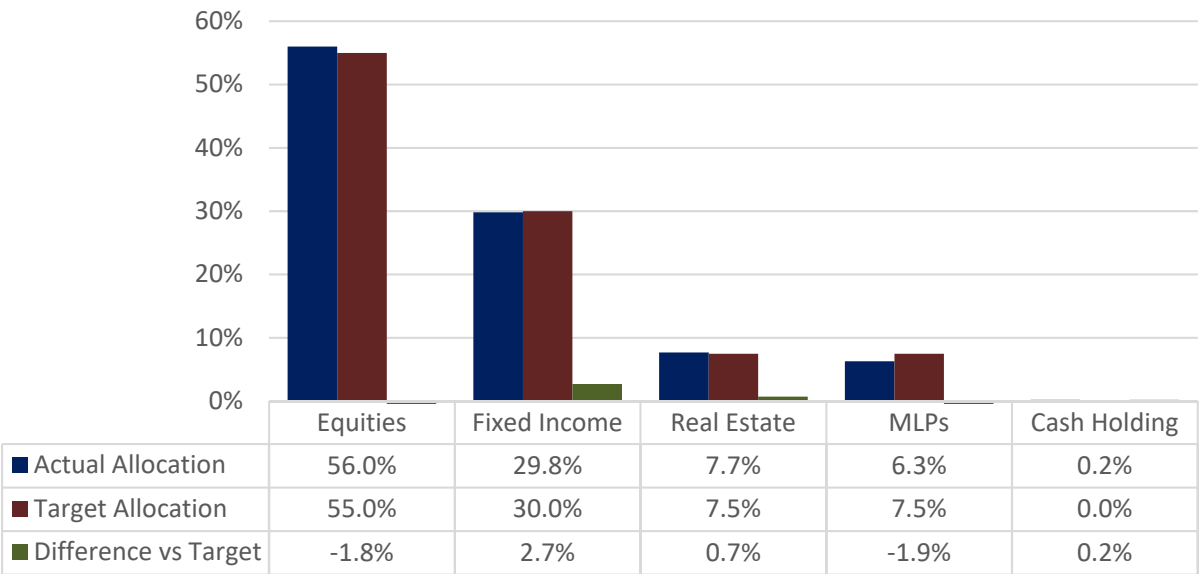
State Street ACWI IMI
To cash \$2,000,000
August 2019

State Street ACWI IMI
To cash \$6,000,000
September 2019

Asset Allocation – September 30, 2019



Asset Allocation – June 30, 2019

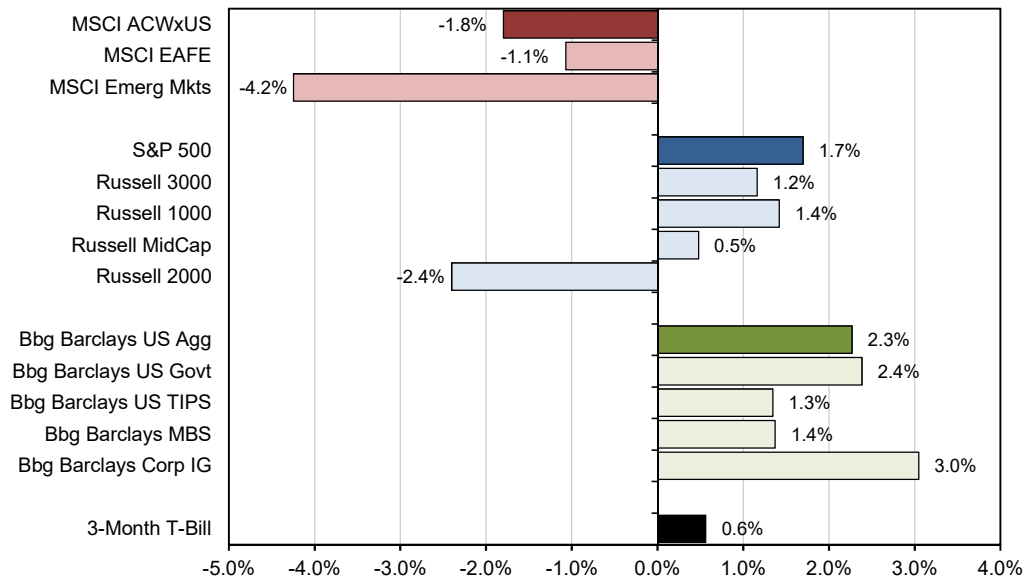


3rd Quarter 2019 Market Environment

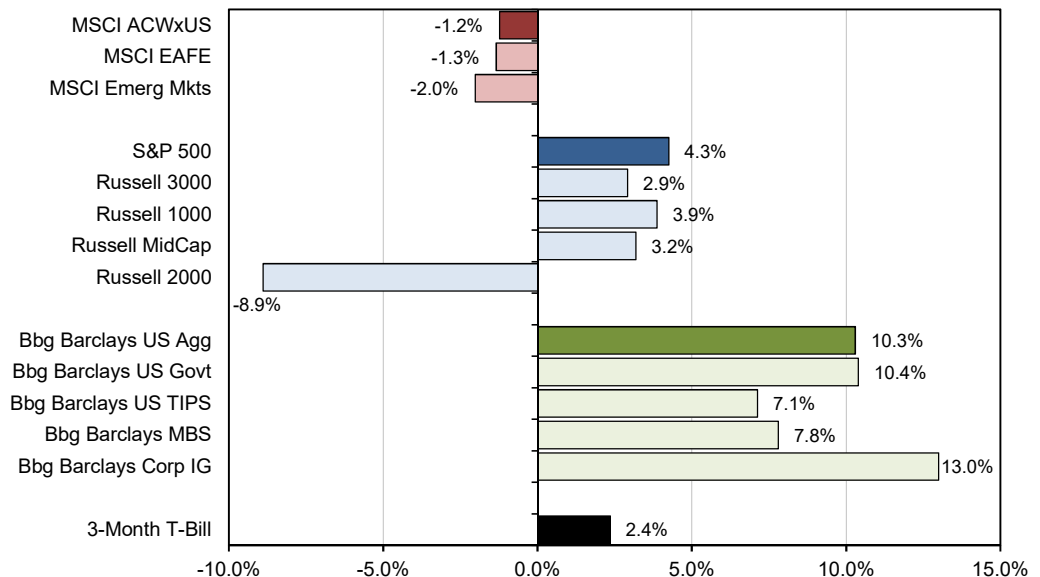


- Broad asset class returns were mixed during the 3rd quarter of 2019 with both US large cap equity and fixed income indices extending their year-to-date gains while US small cap and international indices declined. Volatility was high during the period as investors weighed the effects of ongoing trade 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

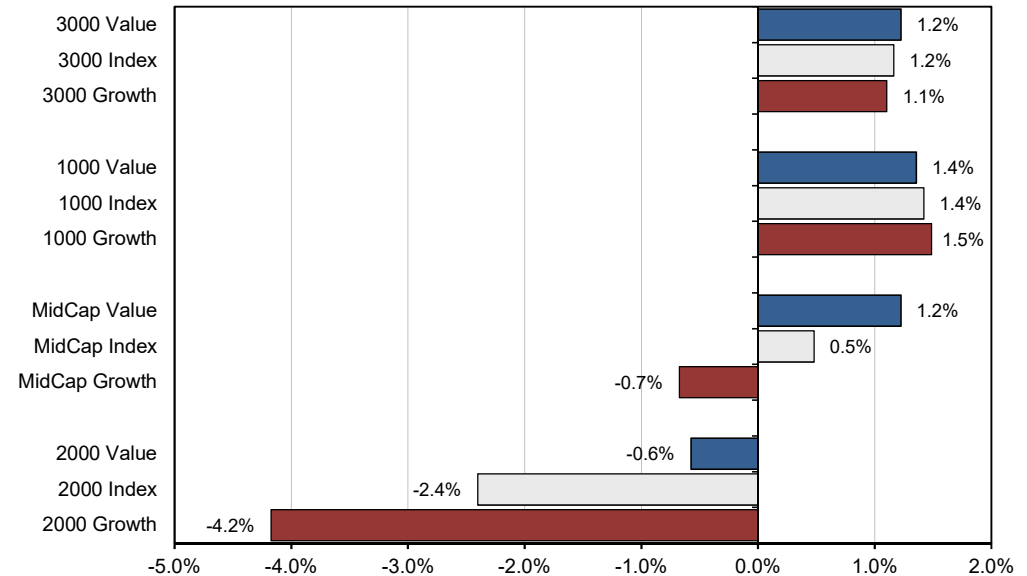


1-Year Performance

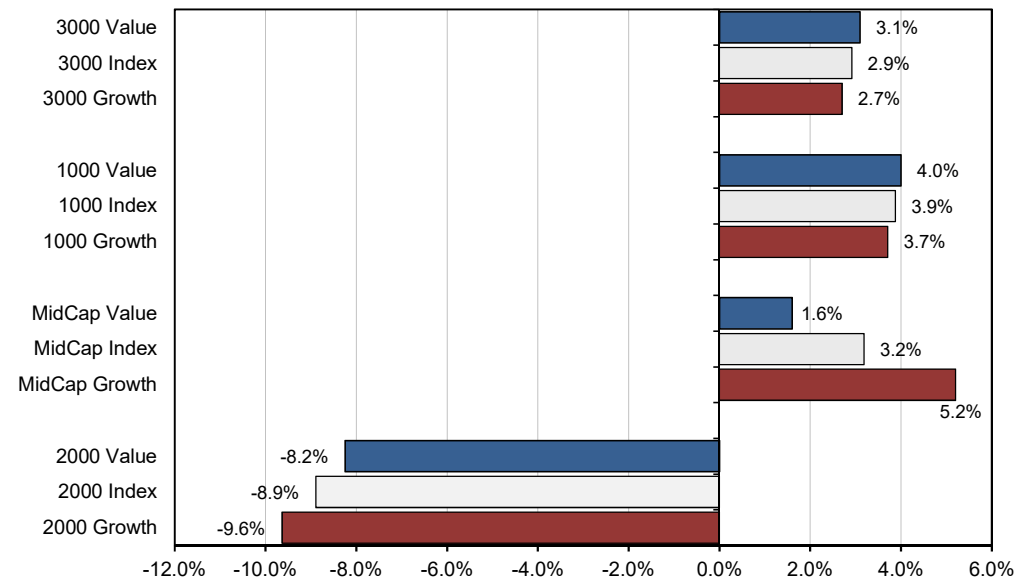


- US equity returns were modestly positive during the 3rd quarter, but results varied considerably across the style and capitalization spectrum. Data released during the quarter showed signs that the US economy could be slowing down. Weakening metrics around manufacturing and sentiment were particularly 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

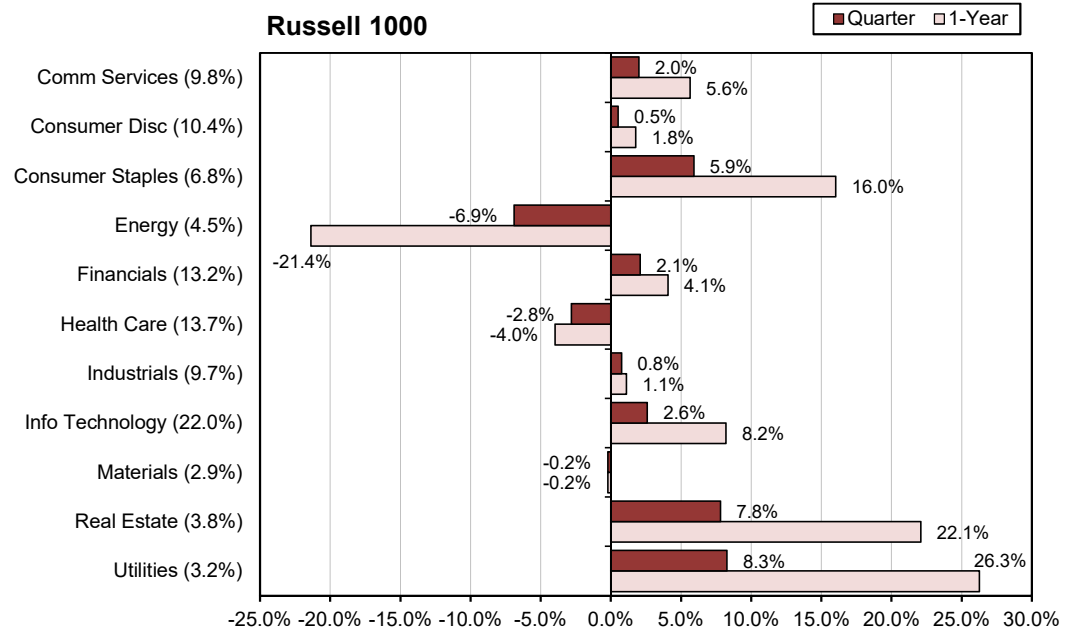


1-Year Performance - Russell Style Series

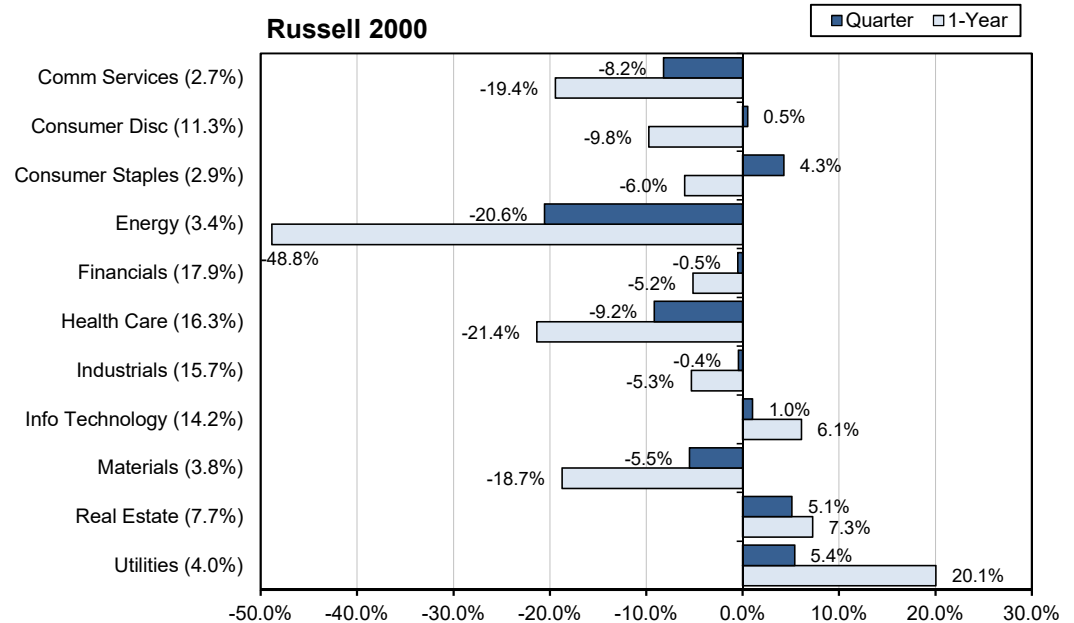


- Sector performance was mixed across large cap sectors for the 3rd quarter. There were gains for eight out of eleven sectors within the Russell 1000 Index during the period with six sectors outpacing the return of the index. Defensive sectors such as utilities, real estate and consumer staples were 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.

Russell 1000



Russell 2000



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

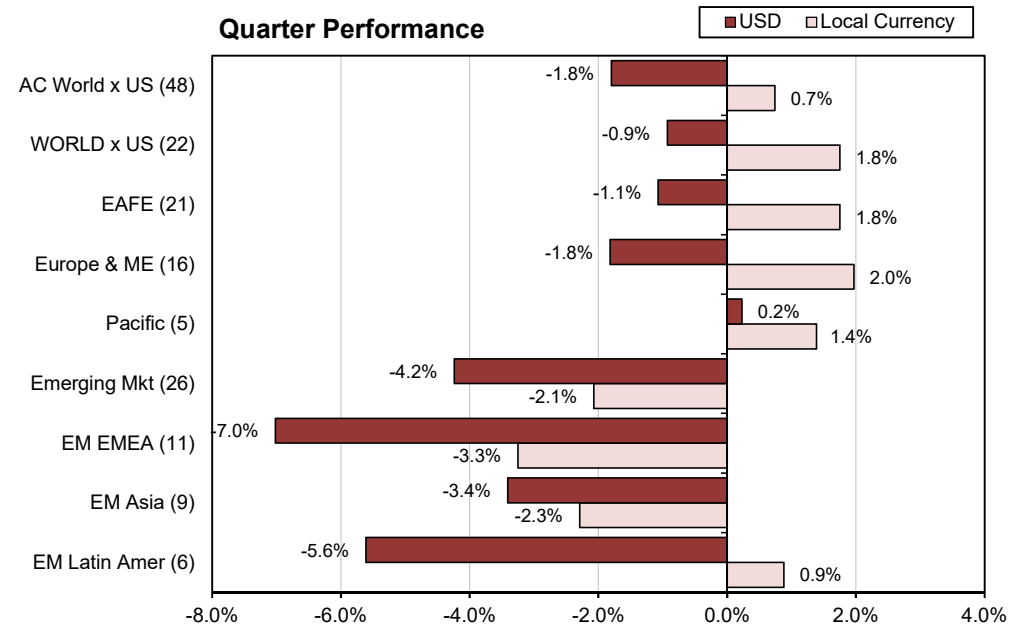
Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
NovoCure Ltd	0.34%	18.3%	42.7%	Health Care
Haemonetics Corp	0.33%	4.8%	10.1%	Health Care
Trex Co Inc	0.28%	26.8%	18.1%	Industrials
Science Applications International	0.27%	1.3%	10.4%	Information Technology
Portland General 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

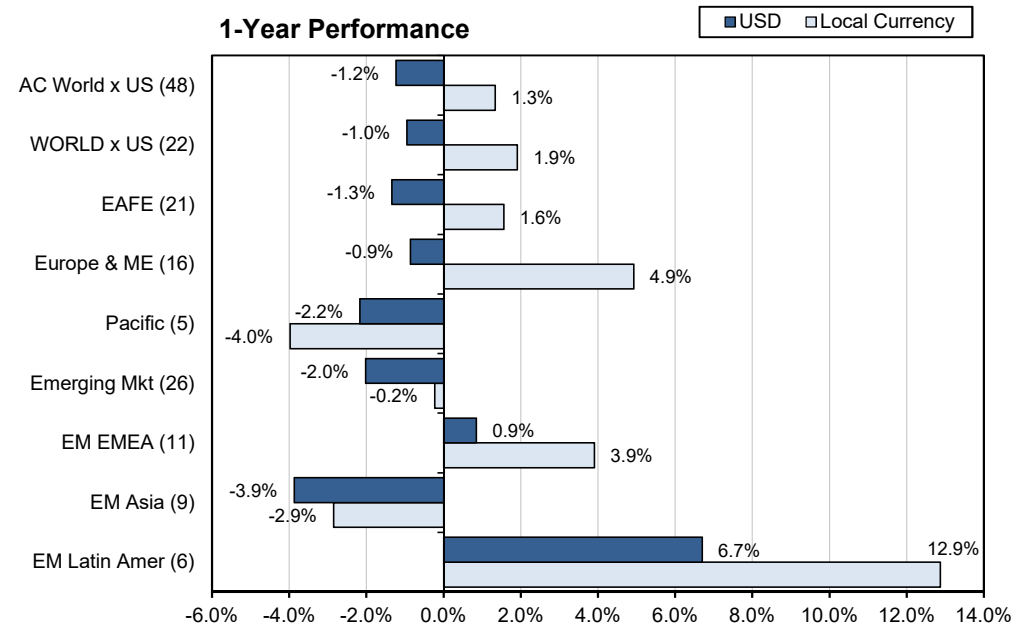
Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Tocagen Inc	0.00%	-90.1%	-95.8%	Health Care
Waitr Holdings Inc Class A	0.00%	-79.6%	-88.1%	Consumer Discretionary
McDermott International Inc	0.02%	-79.1%	-89.0%	Energy
Sonim Technologies Inc	0.00%	-77.0%	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%

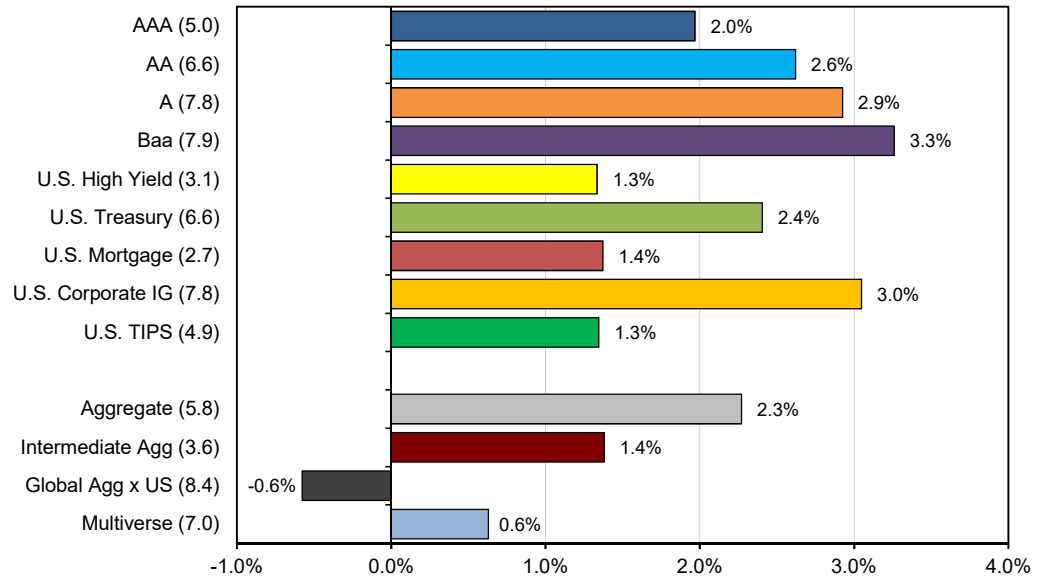
Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)

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.

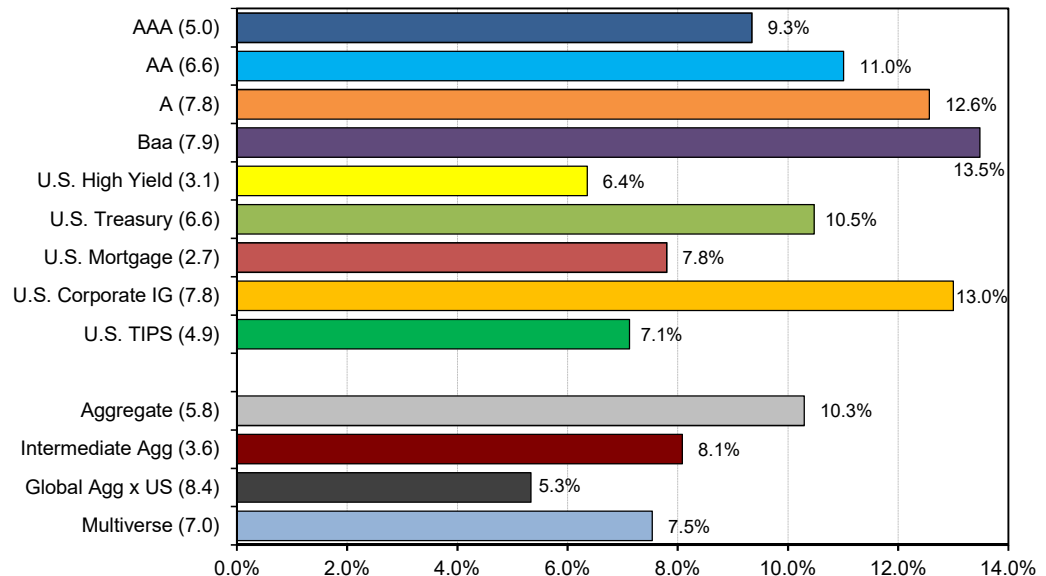


- Broad fixed income benchmarks continued their trend of 2019 gains during the 3rd quarter. Interest rates fell across the US Treasury Yield Curve through the quarter as the Fed continued to shift toward an easing of monetary policy in an attempt to combat slowing economic data. The Fed cut short-term 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

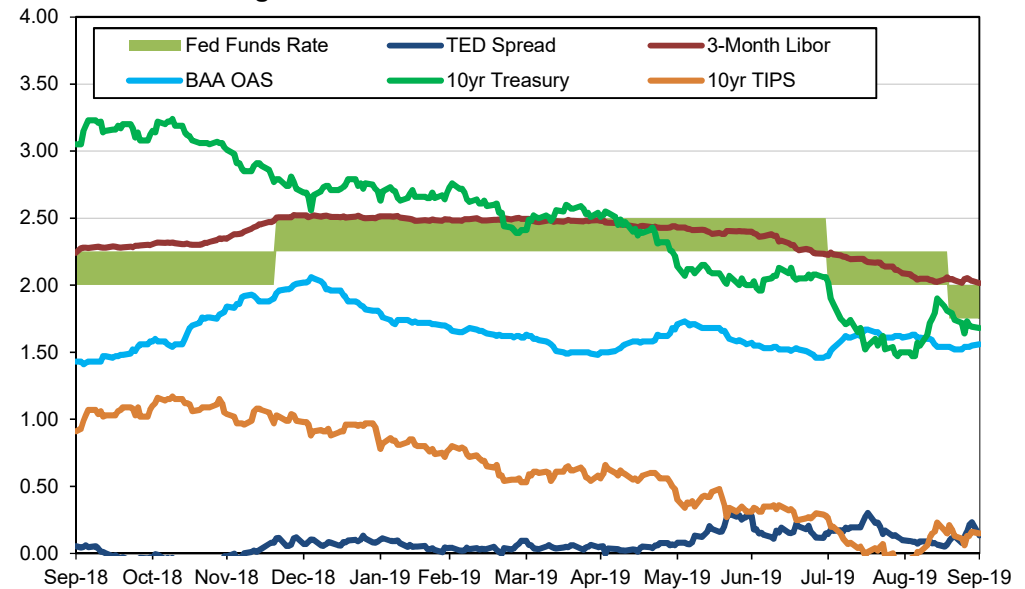


1-Year Performance

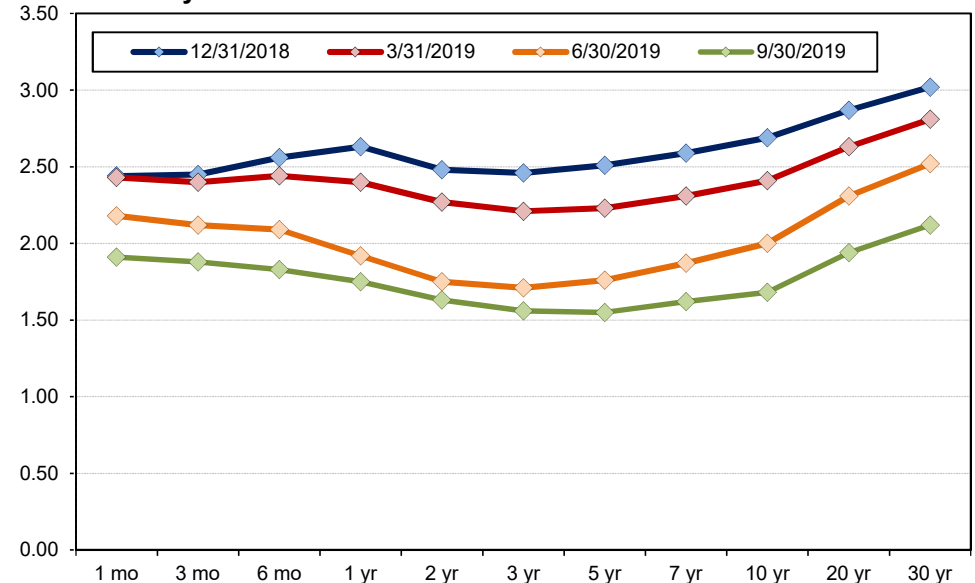


- Global fixed income returns underperformed their domestic counterparts during the 3rd quarter. These indices have lower, or in some cases (Germany, Japan), negative yields, but have higher durations. Given their higher durations, these issues would be expected to perform relatively well during periods 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



Employees' Retirement System of the City of Norfolk

Annual Asset Class Performance

September 30, 2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
Best ↑	MSCI Emerging Mkts (Net) 34.0 %	MSCI Emerging Mkts (Net) 32.2 %	MSCI Emerging Mkts (Net) 39.4 %	Blmbg Barc US Agg 5.2 %	MSCI Emerging Mkts (Net) 78.5 %	Russell 2000 Growth 29.1 %	NCREIF ODCE (EW) (Net) 15.0 %	MSCI Emerging Mkts (Net) 18.2 %	Russell 2000 Growth 43.3 %	S&P 500 13.7 %	NCREIF ODCE (EW) (Net) 14.2 %	Russell 2000 Value 31.7 %	MSCI Emerging Mkts (Net) 37.3 %	NCREIF ODCE (EW) (Net) 7.3 %	Russell 1000 Growth 23.3 %
	NCREIF ODCE (EW) (Net) 19.0 %	MSCI EAFE (Net) 26.3 %	NCREIF ODCE (EW) (Net) 15.0 %	Blmbg Barc Global Agg Ex USD 4.4 %	Blmbg Barc US Corp High Yield 58.2 %	Russell 2000 Value 24.5 %	Blmbg Barc US Agg 7.8 %	Russell 2000 Value 18.1 %	Russell 2000 Value 34.5 %	Russell 1000 Value 13.5 %	Russell 1000 Growth 5.7 %	Russell 1000 Value 17.3 %	Russell 1000 Growth 30.2 %	Blmbg Barc US Agg 0.0 %	S&P 500 20.6 %
	MSCI EAFE (Net) 13.5 %	Russell 2000 Value 23.5 %	Russell 1000 Growth 11.8 %	NCREIF ODCE (EW) (Net) -11.1 %	Russell 1000 Growth 37.2 %	MSCI Emerging Mkts (Net) 18.9 %	Blmbg Barc US Corp High Yield 5.0 %	Russell 1000 Value 17.5 %	Russell 1000 Growth 33.5 %	Russell 1000 Growth 13.1 %	S&P 500 1.4 %	Blmbg Barc US Corp High Yield 17.1 %	MSCI EAFE (Net) 25.0 %	Russell 1000 Growth -1.5 %	Russell 1000 Value 17.8 %
	Russell 1000 Value 7.1 %	Russell 1000 Value 22.2 %	MSCI EAFE (Net) 11.2 %	Strategic Policy -23.5 %	Russell 2000 Growth 34.5 %	Russell 1000 Growth 16.7 %	Blmbg Barc Global Agg Ex USD 4.4 %	MSCI EAFE (Net) 17.3 %	Russell 1000 Value 32.5 %	NCREIF ODCE (EW) (Net) 11.4 %	Blmbg Barc US Agg 0.5 %	S&P 500 12.0 %	Russell 2000 Growth 22.2 %	Blmbg Barc US Corp High Yield -2.1 %	Russell 2000 Growth 15.3 %
	Russell 1000 Growth 5.3 %	S&P 500 15.8 %	Blmbg Barc Global Agg Ex USD 11.0 %	Blmbg Barc US Corp High Yield -26.2 %	MSCI EAFE (Net) 31.8 %	Russell 1000 Value 15.5 %	Russell 1000 Growth 2.6 %	S&P 500 16.0 %	S&P 500 32.4 %	Strategic Policy 6.2 %	MSCI EAFE (Net) -0.8 %	Russell 2000 Growth 11.3 %	S&P 500 21.8 %	Blmbg Barc Global Agg Ex USD -2.1 %	Russell 2000 Value 12.8 %
	S&P 500 4.9 %	NCREIF ODCE (EW) (Net) 15.1 %	Strategic Policy 7.2 %	Russell 2000 Value -28.9 %	S&P 500 26.5 %	Blmbg Barc US Corp High Yield 15.1 %	S&P 500 2.1 %	Blmbg Barc US Corp High Yield 15.8 %	MSCI EAFE (Net) 22.8 %	Blmbg Barc US Agg 6.0 %	Russell 2000 Growth -1.4 %	MSCI Emerging Mkts (Net) 11.2 %	Strategic Policy 13.8 %	S&P 500 -4.4 %	MSCI EAFE (Net) 12.8 %
	Russell 2000 Value 4.7 %	Russell 2000 Growth 13.3 %	Russell 2000 Growth 7.0 %	Russell 1000 Value -36.8 %	Russell 2000 Value 20.6 %	NCREIF ODCE (EW) (Net) 15.1 %	Strategic Policy 0.7 %	Russell 1000 Growth 15.3 %	Strategic Policy 14.6 %	Russell 2000 Growth 5.6 %	Strategic Policy -1.9 %	NCREIF ODCE (EW) (Net) 8.4 %	Russell 1000 Value 13.7 %	Strategic Policy -5.8 %	Strategic Policy 12.5 %
	Russell 2000 Growth 4.2 %	Blmbg Barc US Corp High Yield 11.9 %	Blmbg Barc US Agg 7.0 %	S&P 500 -37.0 %	Strategic Policy 20.4 %	S&P 500 15.1 %	Russell 1000 Value 0.4 %	Russell 2000 Growth 14.6 %	NCREIF ODCE (EW) (Net) 12.4 %	Russell 2000 Value 4.2 %	Russell 1000 Value -3.8 %	Strategic Policy 7.9 %	Blmbg Barc Global Agg Ex USD 10.5 %	Russell 1000 Value -8.3 %	Blmbg Barc US Corp High Yield 11.4 %
	Strategic Policy 4.0 %	Strategic Policy 11.2 %	S&P 500 5.5 %	Russell 1000 Growth -38.4 %	Russell 1000 Value 19.7 %	Strategic Policy 12.0 %	Russell 2000 Growth -2.9 %	Strategic Policy 12.1 %	Blmbg Barc US Corp High Yield 7.4 %	Blmbg Barc US Corp High Yield 2.5 %	Blmbg Barc US Corp High Yield -4.5 %	Russell 1000 Growth 7.1 %	Russell 2000 Value 7.8 %	Russell 2000 Growth -9.3 %	Blmbg Barc US Agg 8.5 %
	Blmbg Barc US Corp High Yield 2.7 %	Russell 1000 Growth 9.1 %	Blmbg Barc US Corp High Yield 1.9 %	Russell 2000 Growth -38.5 %	Blmbg Barc Global Agg Ex USD 7.5 %	MSCI EAFE (Net) 7.8 %	Russell 2000 Value -5.5 %	NCREIF ODCE (EW) (Net) 9.9 %	Blmbg Barc US Agg -2.0 %	MSCI Emerging Mkts (Net) -2.2 %	Blmbg Barc Global Agg Ex USD -6.0 %	Blmbg Barc US Agg 2.6 %	Blmbg Barc US Corp High Yield 7.5 %	Russell 2000 Value -12.9 %	MSCI Emerging Mkts (Net) 5.9 %
Worst ↓	Blmbg Barc US Agg 2.4 %	Blmbg Barc Global Agg Ex USD 8.2 %	Russell 1000 Value -0.2 %	MSCI EAFE (Net) -43.4 %	Blmbg Barc US Agg 5.9 %	Blmbg Barc US Agg 6.5 %	MSCI EAFE (Net) -12.1 %	Blmbg Barc US Agg 4.2 %	MSCI Emerging Mkts (Net) -2.6 %	Blmbg Barc Global Agg Ex USD -3.1 %	Russell 2000 Value -7.5 %	Blmbg Barc Global Agg Ex USD 1.5 %	NCREIF ODCE (EW) (Net) 6.9 %	MSCI EAFE (Net) -13.8 %	Blmbg Barc Global Agg Ex USD 4.4 %
	Blmbg Barc Global Agg Ex USD -8.7 %	Blmbg Barc US Agg 4.3 %	Russell 2000 Value -9.8 %	MSCI Emerging Mkts (Net) -53.3 %	NCREIF ODCE (EW) (Net) -31.3 %	Blmbg Barc Global Agg Ex USD 4.9 %	MSCI Emerging Mkts (Net) -18.4 %	Blmbg Barc Global Agg Ex USD 4.1 %	Blmbg Barc Global Agg Ex USD -3.1 %	MSCI EAFE (Net) -4.9 %	MSCI Emerging Mkts (Net) -14.9 %	MSCI EAFE (Net) 1.0 %	Blmbg Barc US Agg 3.5 %	MSCI Emerging Mkts (Net) -14.6 %	NCREIF ODCE (EW) (Net) 3.8 %

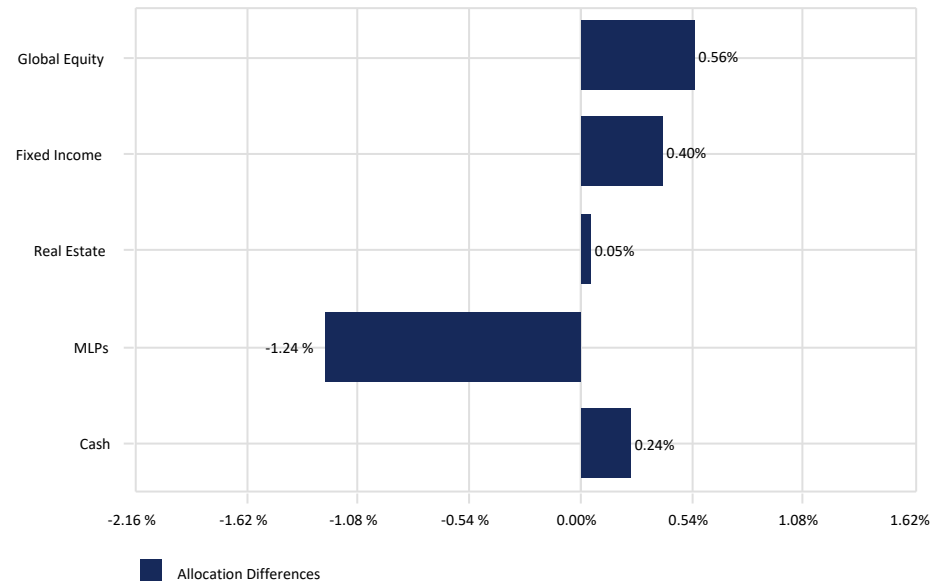
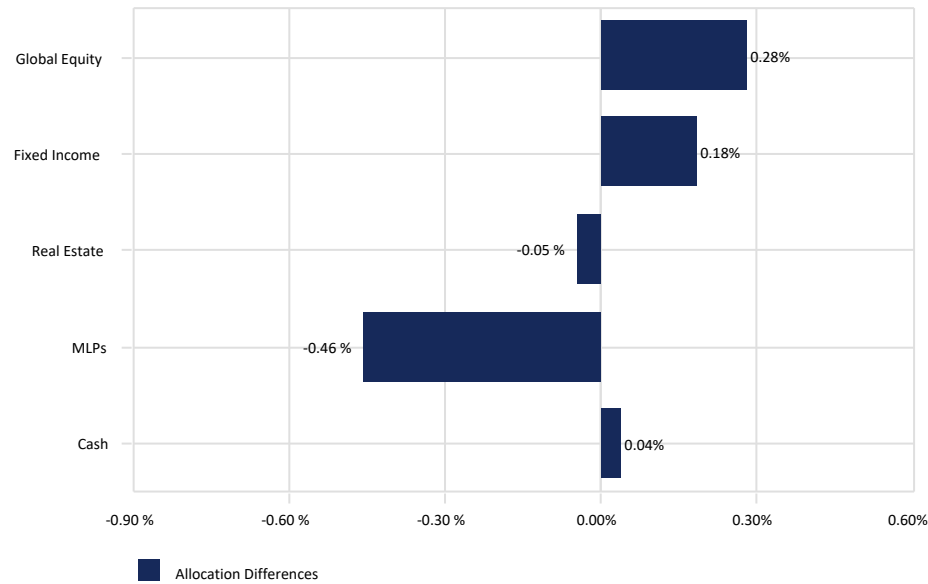


Total Fund

Employees' Retirement System of the City of Norfolk

Asset Allocation vs. Target Allocation

September 30, 2019



September 30, 2019

	Market Value (\$)	Allocation (%)	Target (%)
Global Equity	610,825,525	55.28	55.00
Fixed Income	333,499,666	30.18	30.00
Real Estate	82,355,114	7.45	7.50
MLPs	77,833,216	7.04	7.50
Cash	413,276	0.04	0.00
Total Fund	1,104,926,797	100.00	100.00

June 30, 2019

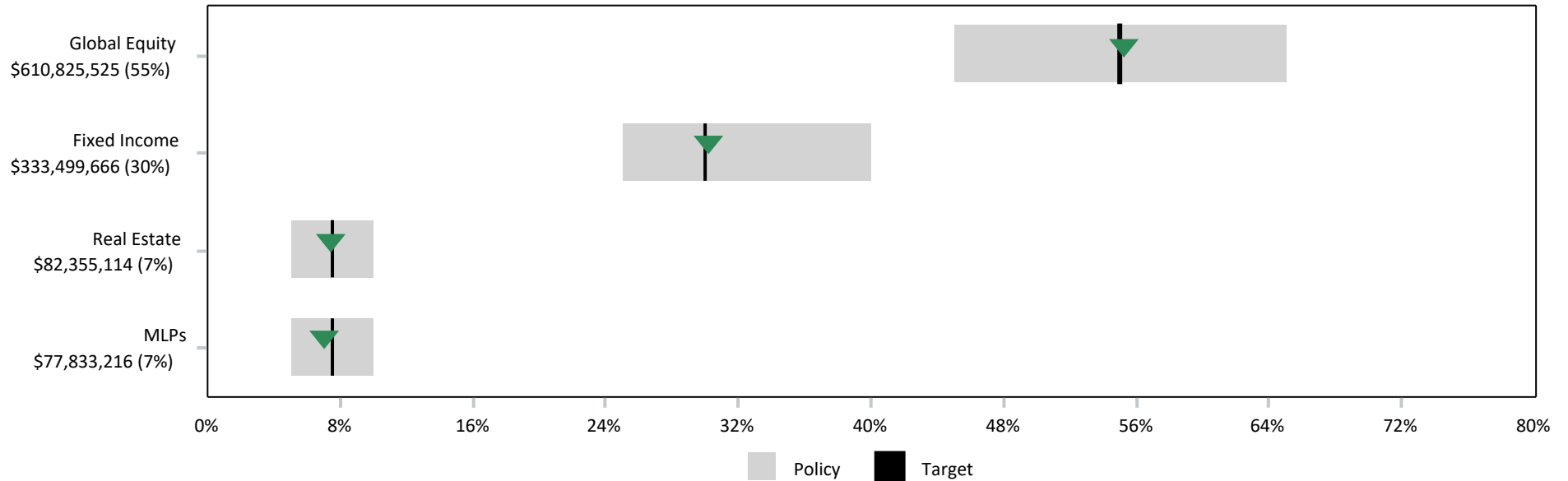
	Market Value (\$)	Allocation (%)	Target (%)
Global Equity	603,496,822	55.56	55.00
Fixed Income	330,215,935	30.40	30.00
Real Estate	81,997,636	7.55	7.50
MLPs	67,988,099	6.26	7.50
Cash	2,595,083	0.24	0.00
Total Fund	1,086,293,574	100.00	100.00

Employees' Retirement System of the City of Norfolk

Asset Allocation Compliance

September 30, 2019

Executive Summary



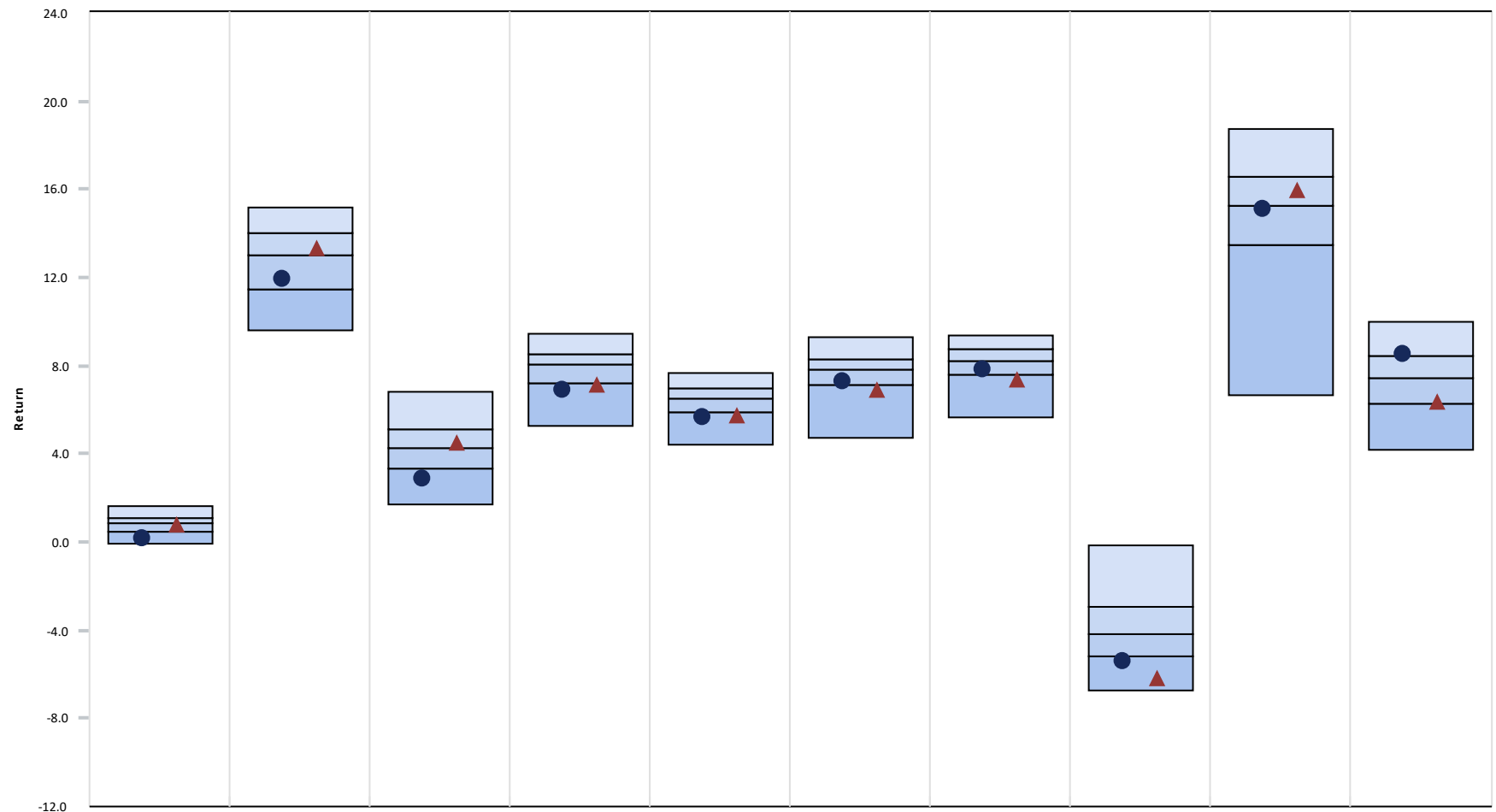
	Asset Allocation \$ (\$)	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Rebalance (\$)
Total Fund	1,104,926,797	100.00	100.00			
Global Equity	610,825,525	55.28	55.00	45.00	65.00	(3,115,787)
SSgA MSCI ACWI IMI Index Fund	610,825,525	55.28				
Fixed Income	333,499,666	30.18	30.00	25.00	40.00	(2,021,627)
PIMCO Total Return	167,766,175	15.18				
SSgA Bond Market Index	165,733,490	15.00				
Real Assets	160,188,330	14.50	15.00			5,550,689
Real Estate	82,355,114	7.45	7.50	5.00	10.00	514,395
JP Morgan Asset Management Strategic Property Fund	42,431,984	3.84				
UBS Trumbull Property Fund	39,923,130	3.61				
MLPs	77,833,216	7.04	7.50	5.00	10.00	5,036,294
Harvest MLP	39,338,637	3.56				
Tortoise Capital Advisors	38,494,578	3.48				
Cash	413,276	0.04				



Employees' Retirement System of the City of Norfolk

Plan Sponsor Peer Group Analysis - All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

September 30, 2019



	<u>3 Month</u>	<u>CYTD</u>	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>7 Year</u>	<u>10 Year</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
● Total Fund Composite	0.15 (88)	11.89 (69)	2.90 (83)	6.90 (83)	5.63 (82)	7.29 (69)	7.78 (69)	-5.43 (81)	15.10 (54)	8.48 (24)
▲ Total Fund Policy	0.77 (55)	13.30 (44)	4.45 (44)	7.09 (79)	5.75 (79)	6.92 (78)	7.36 (82)	-6.19 (90)	15.91 (38)	6.39 (74)
5th Percentile	1.62	15.19	6.79	9.44	7.69	9.26	9.33	-0.14	18.72	9.96
1st Quartile	1.11	14.00	5.14	8.48	6.95	8.32	8.75	-2.96	16.55	8.44
Median	0.84	12.97	4.26	8.05	6.48	7.79	8.20	-4.16	15.22	7.44
3rd Quartile	0.45	11.45	3.36	7.19	5.91	7.12	7.56	-5.18	13.49	6.28
95th Percentile	-0.08	9.58	1.72	5.25	4.45	4.74	5.65	-6.71	6.68	4.19

Parentheses contain percentile rankings.

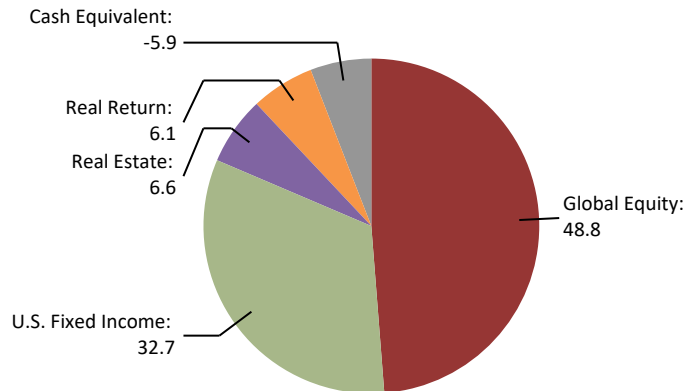


Employees' Retirement System of the City of Norfolk

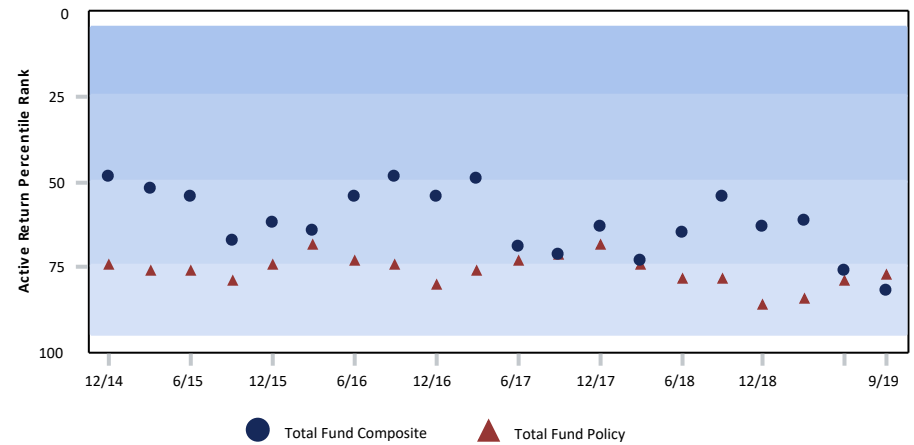
Total Fund Composite

September 30, 2019

Asset Allocation by Segment

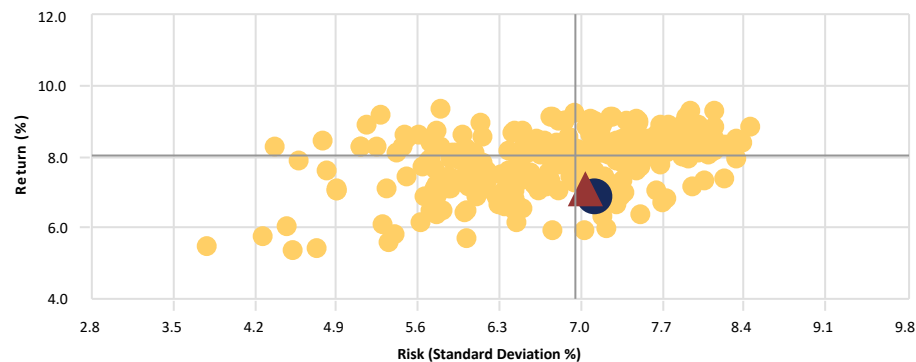


3 Year Rolling Return Rank



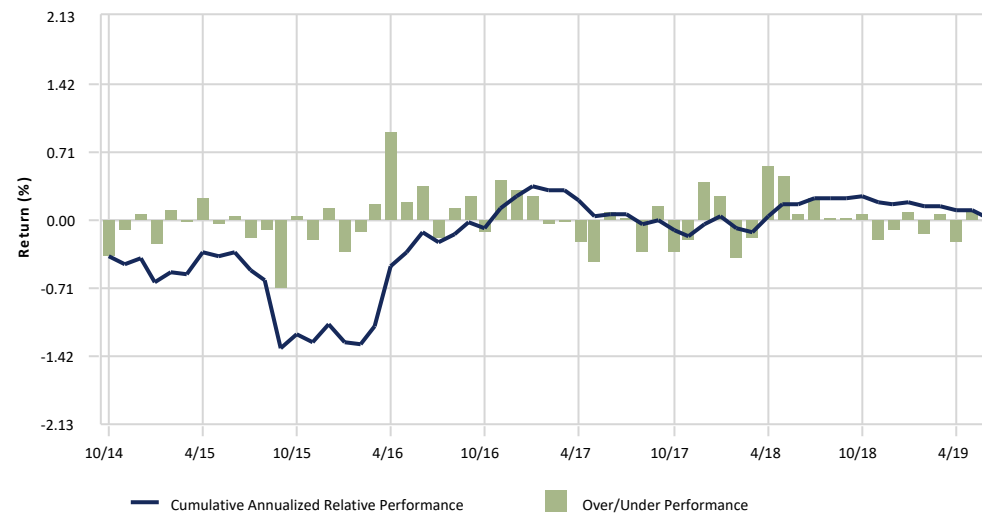
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
● Total Fund Composite	20	0 (0%)	3 (15%)	15 (75%)	2 (10%)
▲ Total Fund Policy	20	0 (0%)	0 (0%)	9 (45%)	11 (55%)

Risk vs. Return (10/01/16 - 09/30/19)



	Return	Standard Deviation
● Total Fund Composite	6.90	7.12
▲ Total Fund Policy	7.09	7.04
— Median	8.05	6.95

Relative Performance vs. Total Fund Policy



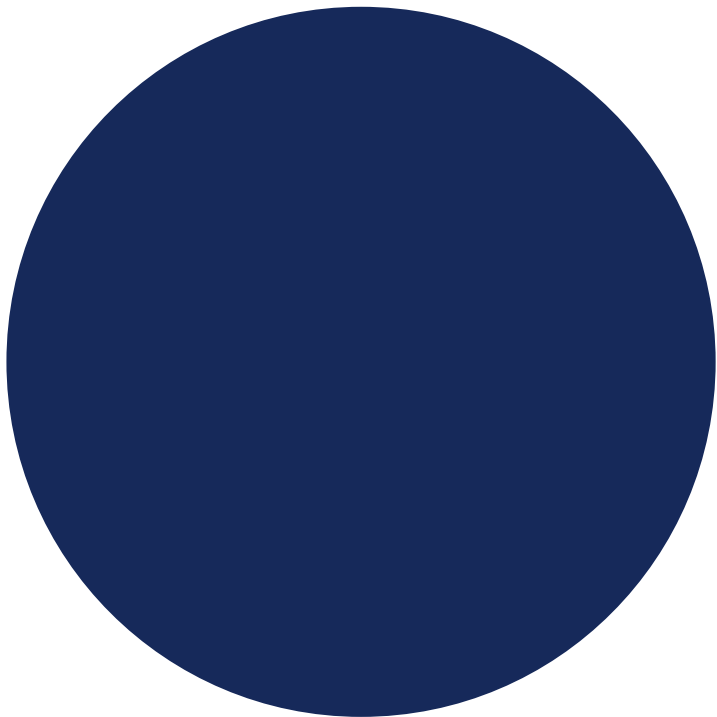
Note: Cash Equivalent allocation includes manager cash.



Global Equity

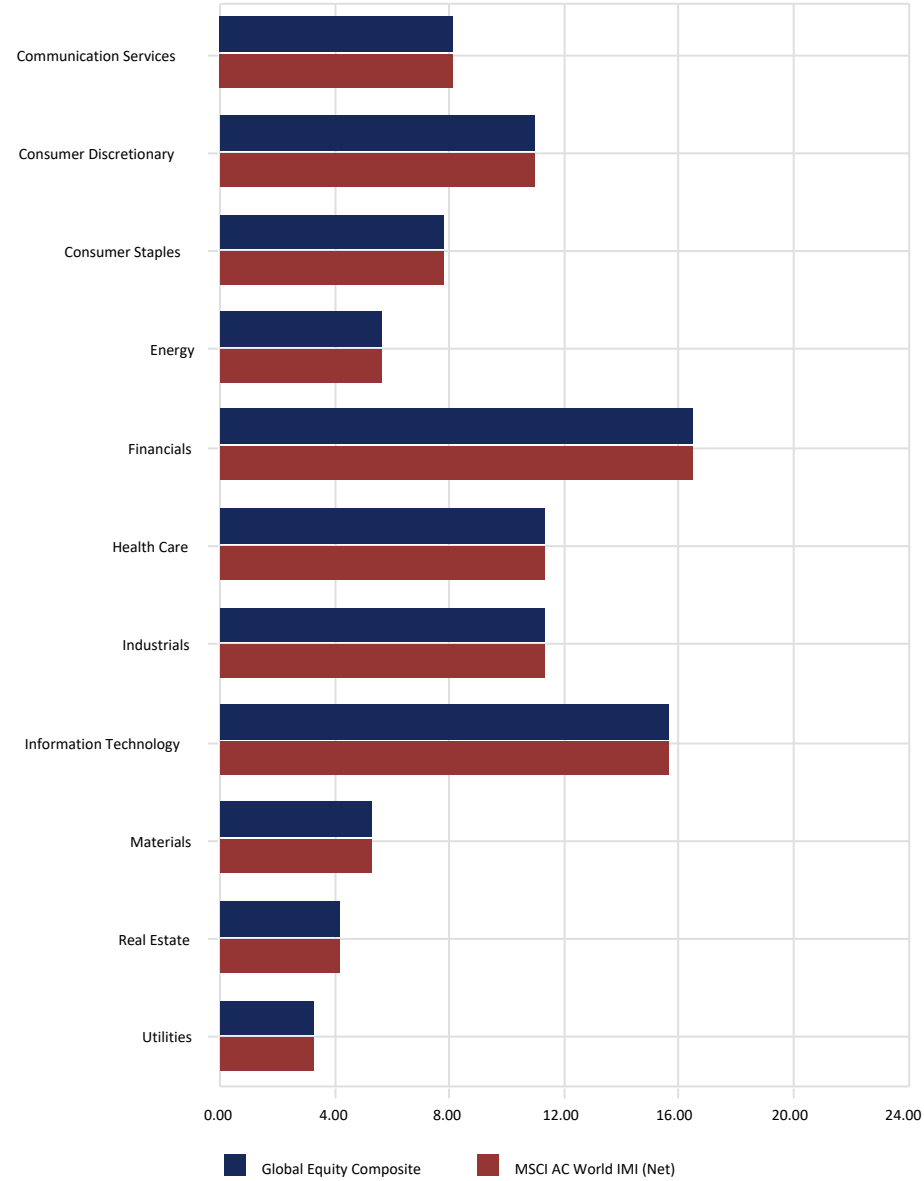
Manager Allocation

September 30, 2019 : \$610,825,525



	Market Value (\$)	Allocation (%)
■ SSgA MSCI ACWI IMI Index Fund	610,825,525	100.00

Sector Allocation - Holdings Based

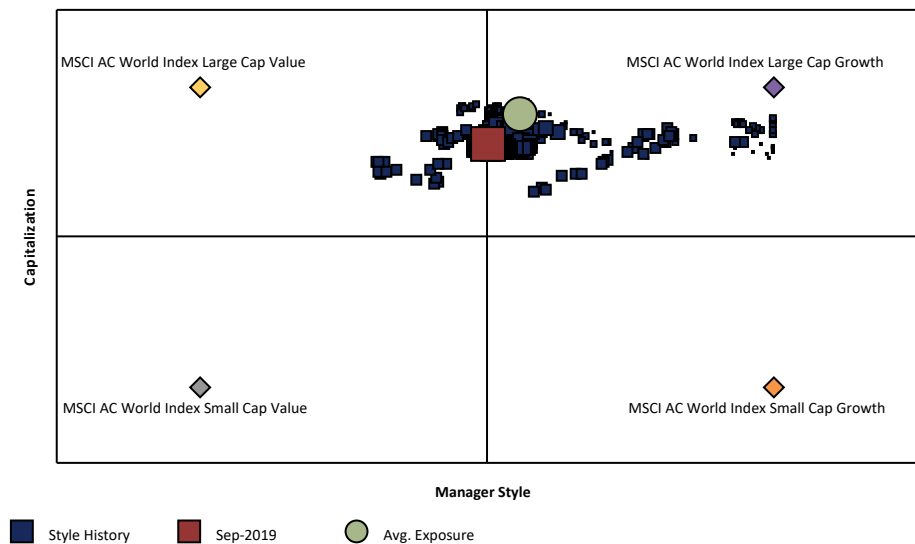


Employees' Retirement System of the City of Norfolk

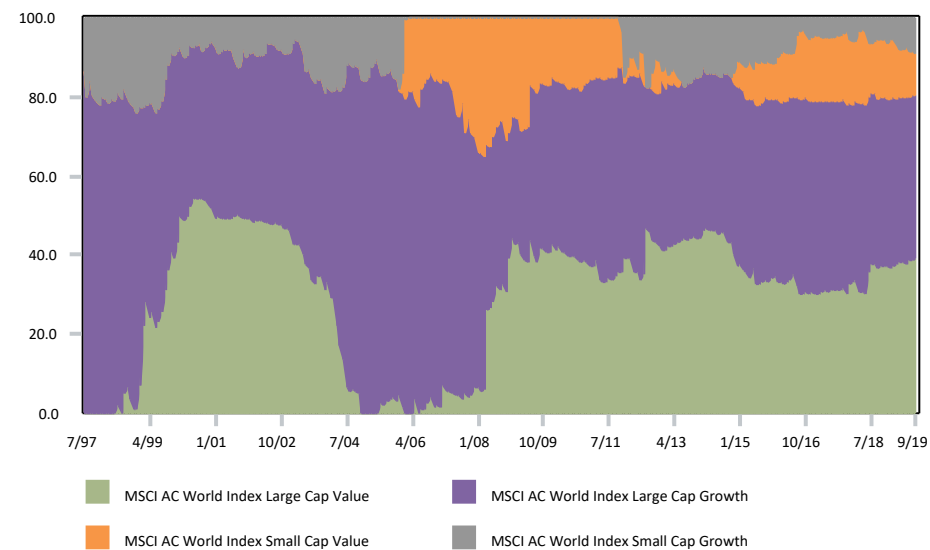
Global Equity Composite vs. MSCI AC World IMI (Net)

September 30, 2019

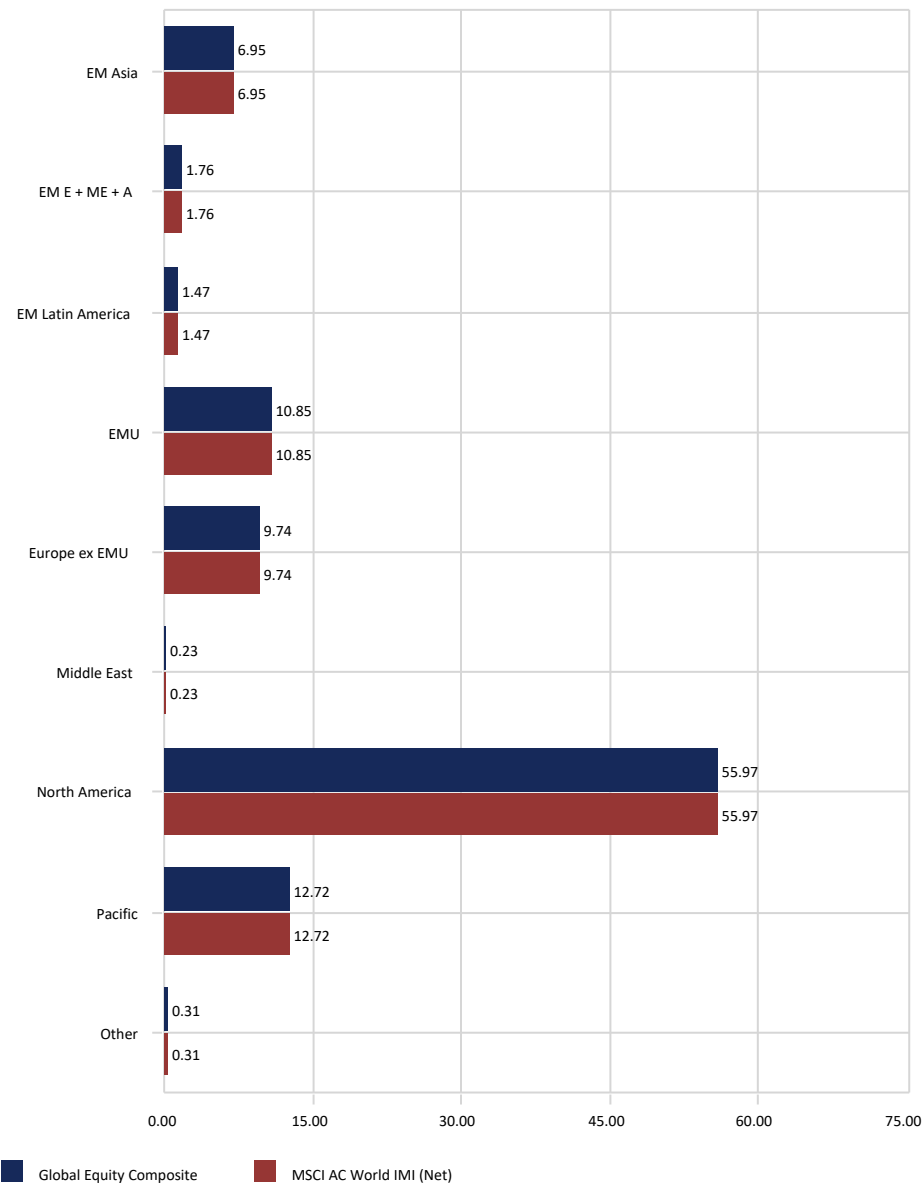
Style Analysis - Returns Based



3 Year Style Analysis



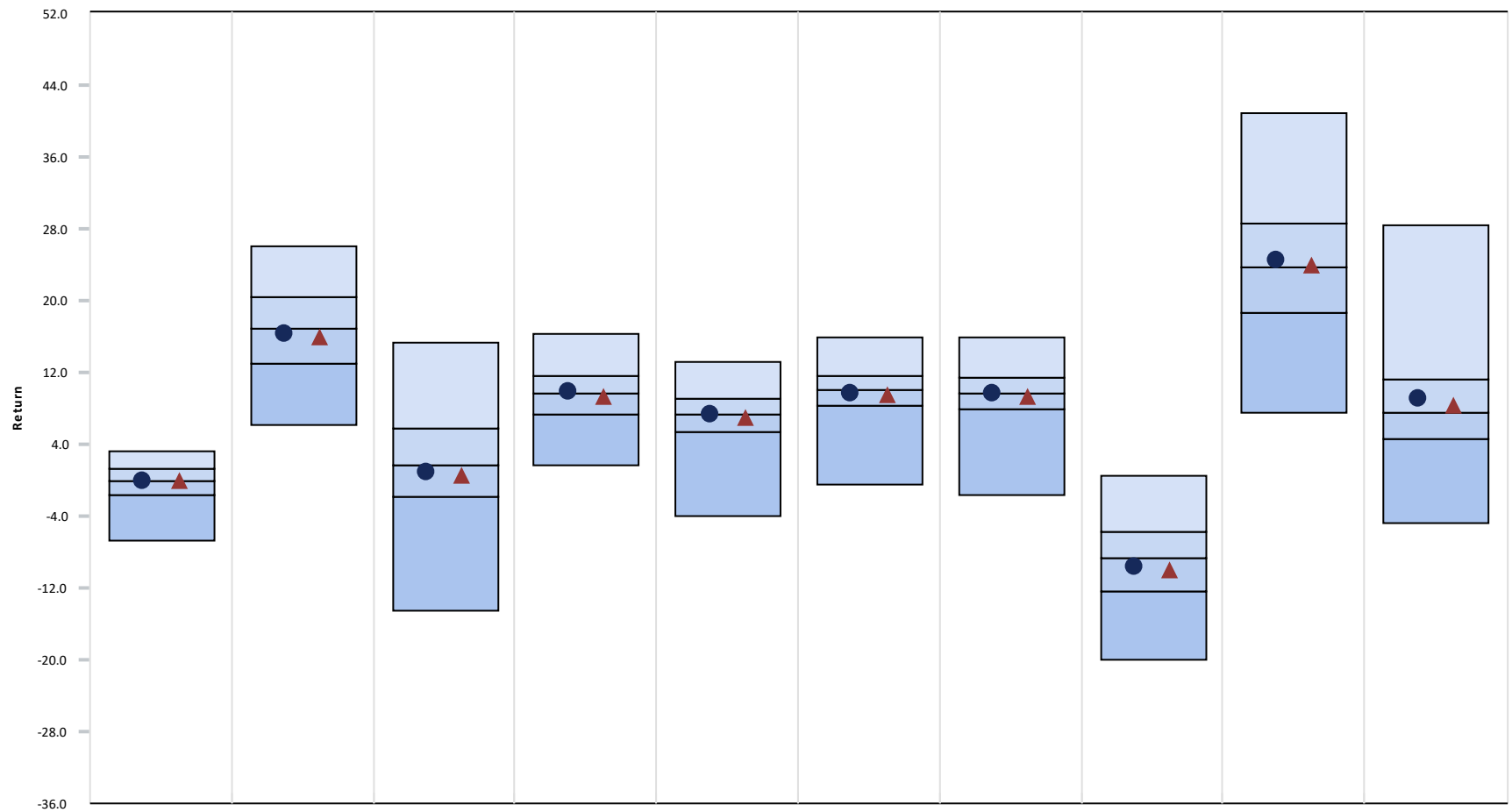
Region Allocation - Holdings Based



Employees' Retirement System of the City of Norfolk

Global Equity Composite vs. IM Global Equity (MF)

September 30, 2019



● Global Equity Composite
▲ Global Equity Policy

5th Percentile	3.14	26.13	15.39	16.33	13.18	15.89	15.95	0.45	40.96	28.33
1st Quartile	1.20	20.31	5.83	11.65	9.13	11.70	11.39	-5.77	28.57	11.15
Median	-0.01	16.84	1.71	9.63	7.27	10.11	9.71	-8.74	23.71	7.56
3rd Quartile	-1.69	13.06	-1.91	7.38	5.33	8.27	7.91	-12.46	18.59	4.54
95th Percentile	-6.64	6.19	-14.53	1.64	-4.06	-0.43	-1.67	-19.95	7.57	-4.82

gross of fees

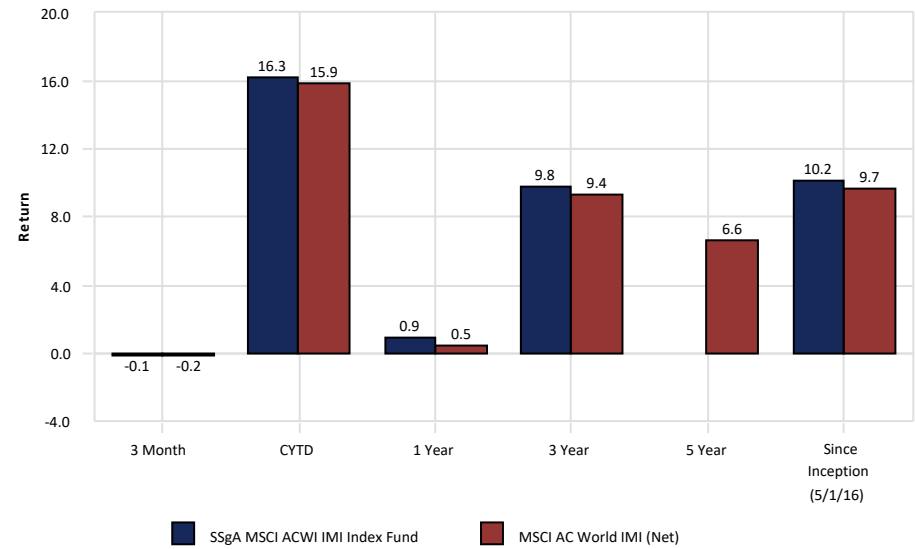


Employees' Retirement System of the City of Norfolk

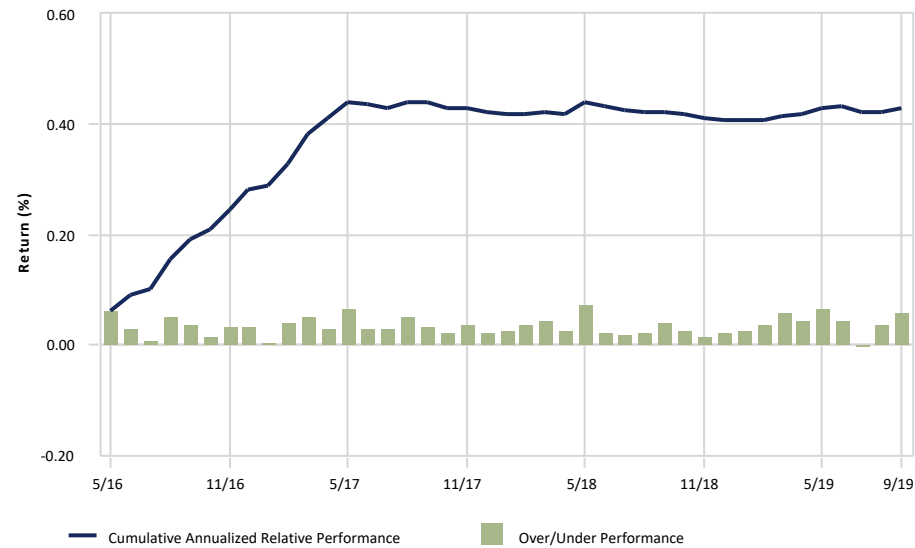
SSgA MSCI ACWI IMI Index Fund vs. IM Global Equity (SA+CF)

September 30, 2019

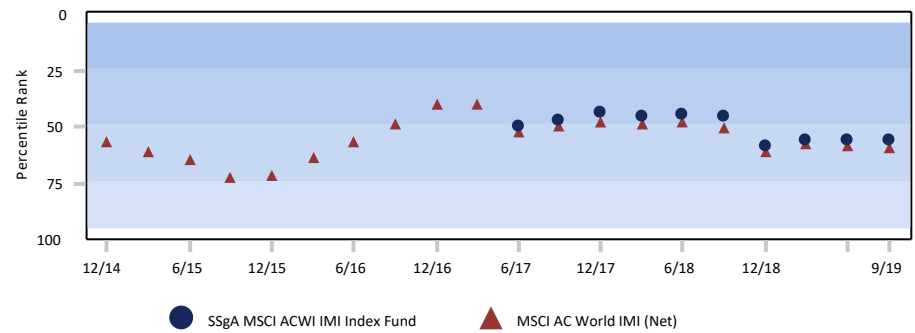
Comparative Performance



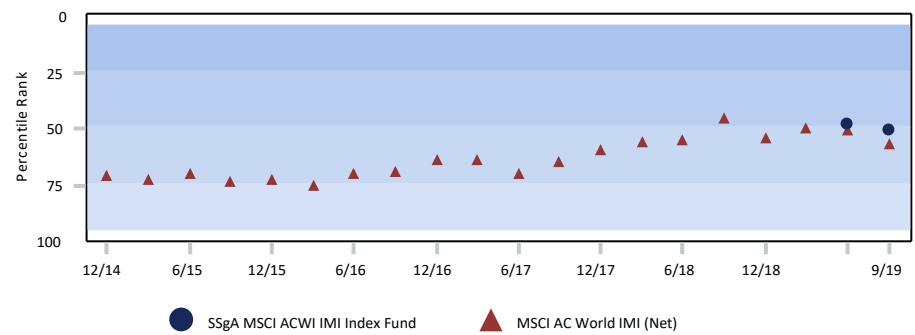
Relative Performance vs MSCI AC World IMI (Net)



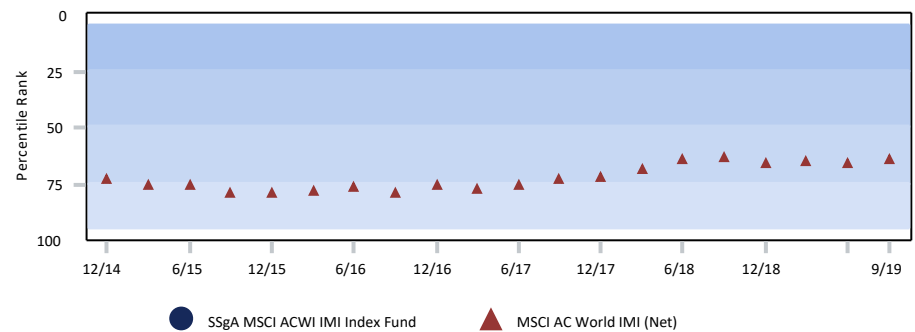
1 Year Rolling Percentile Ranking



3 Year Rolling Percentile Ranking



5 Year Rolling Percentile Ranking



gross of fees



Employees' Retirement System of the City of Norfolk

SSgA MSCI ACWI IMI vs. MSCI AC World IMI (Net)

September 30, 2019

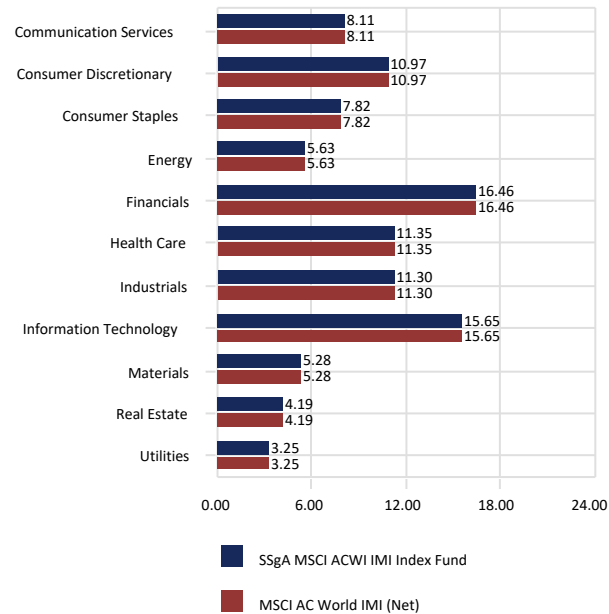
Portfolio Characteristics

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	141,017,131	141,017,131
Median Mkt. Cap (\$000)	1,642,929	1,642,929
Price/Earnings ratio	17.28	17.28
Price/Book ratio	2.81	2.81
5 Yr. EPS Growth Rate (%)	12.78	12.78
Current Yield (%)	2.53	2.53
Beta (3 Years, Monthly)	1.00	1.00
Number of Stocks	8,820	8,820

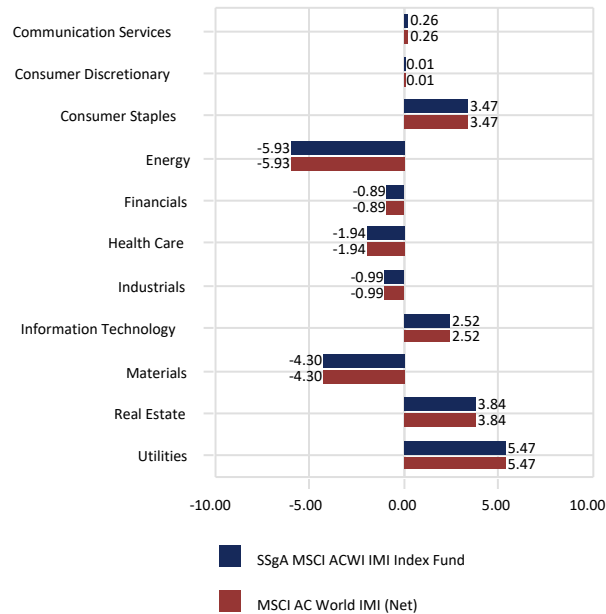
Top Ten Equity Holdings

	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Apple Inc	1.94	1.94	0.00	13.59
Microsoft Corp	1.91	1.91	0.00	4.14
Amazon.com Inc	1.37	1.37	0.00	-8.33
Facebook Inc	0.81	0.81	0.00	-7.73
Alphabet Inc	0.72	0.72	0.00	12.78
JPMorgan Chase & Co	0.72	0.72	0.00	6.01
Alphabet Inc Class A	0.69	0.69	0.00	12.78
Johnson & Johnson	0.65	0.65	0.00	-6.42
Nestle SA, Cham Und Vevey	0.63	0.63	0.00	4.79
Procter & Gamble Co (The)	0.59	0.59	0.00	14.17
% of Portfolio	10.03	10.03	0.00	

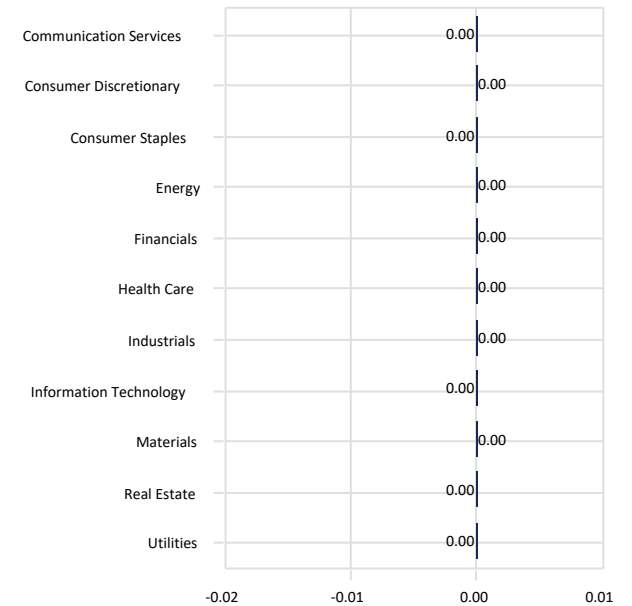
Sector Allocation



Sector Performance



Total Sector Attribution

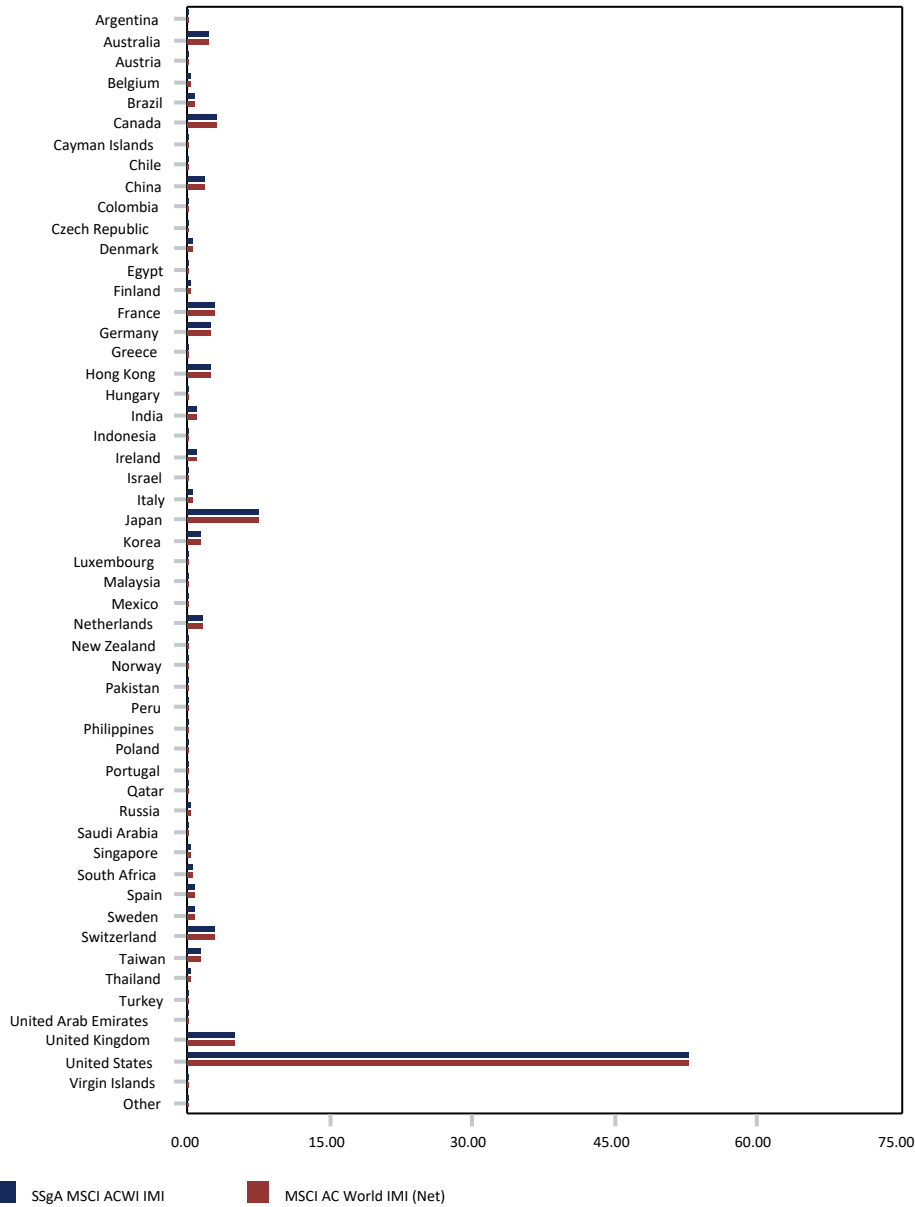


Employees' Retirement System of the City of Norfolk

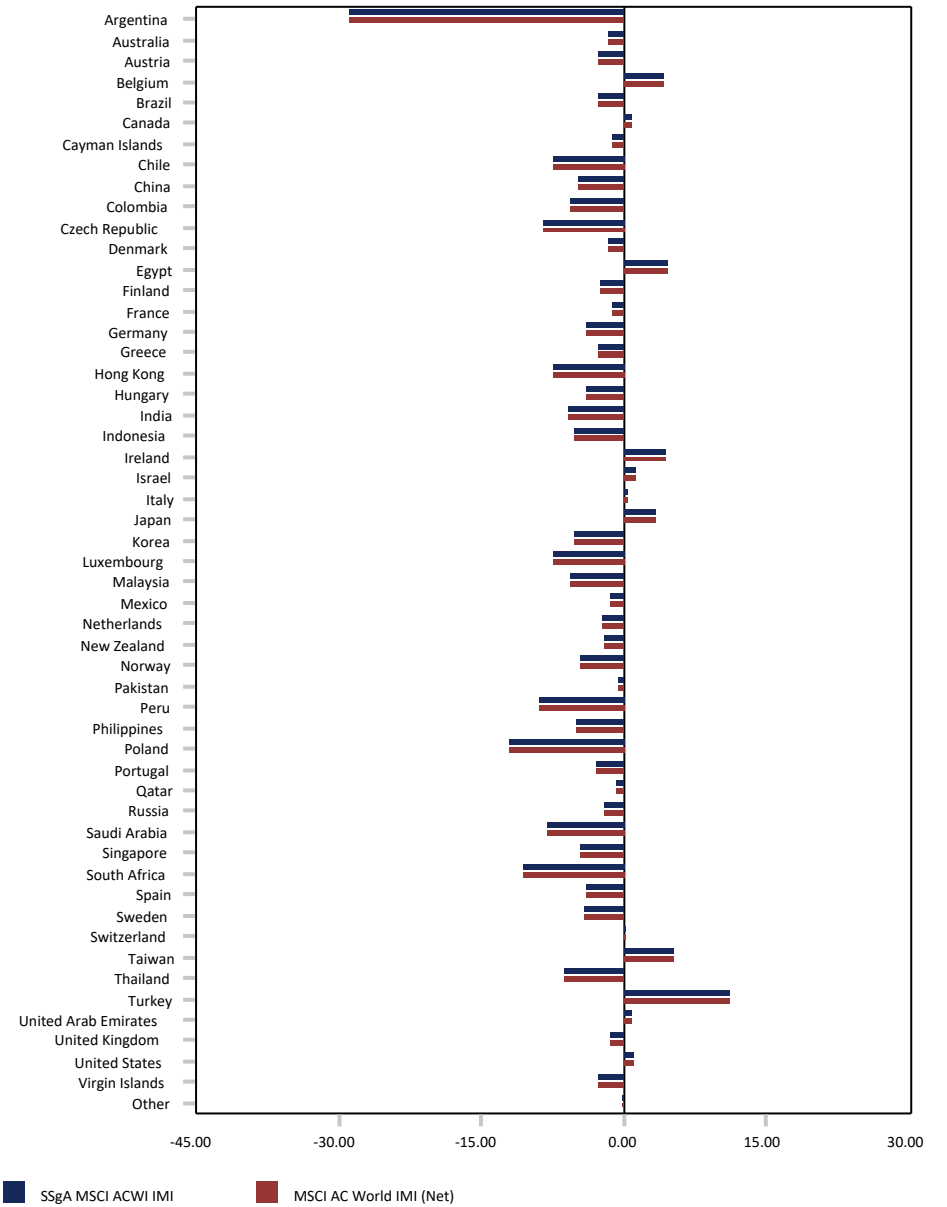
SSgA MSCI ACWI IMI vs. MSCI AC World IMI (Net)

September 30, 2019

Country Allocation



Country Performance



Fixed Income

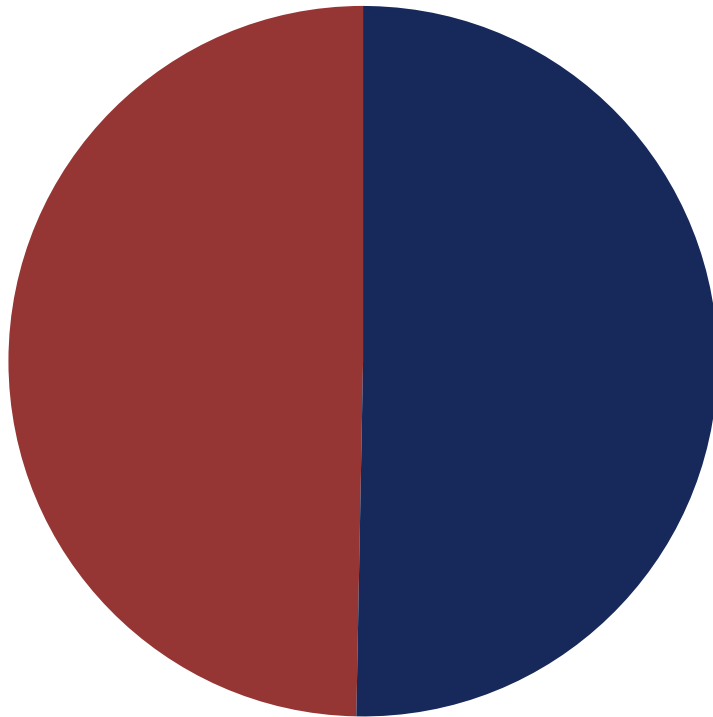
Employees' Retirement System of the City of Norfolk

Fixed Income

September 30, 2019

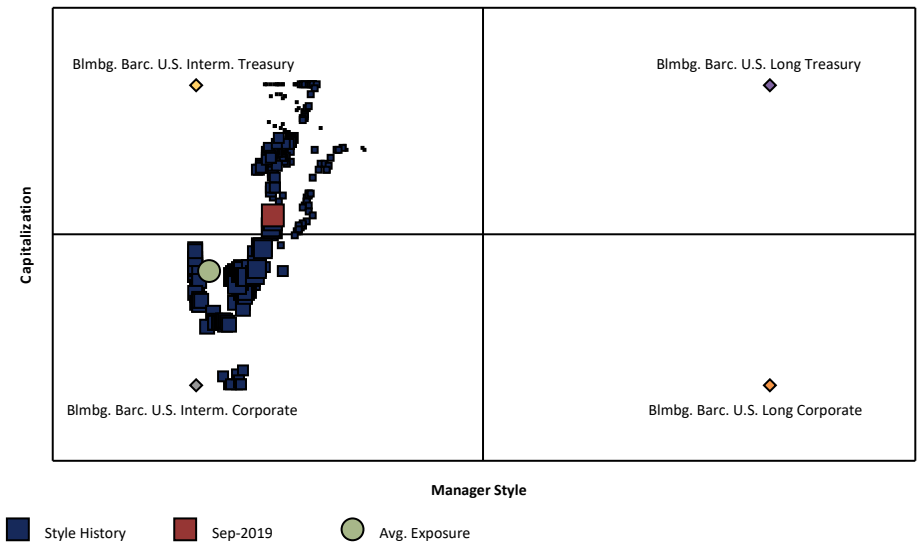
Manager Allocation

September 30, 2019 : \$333,499,666

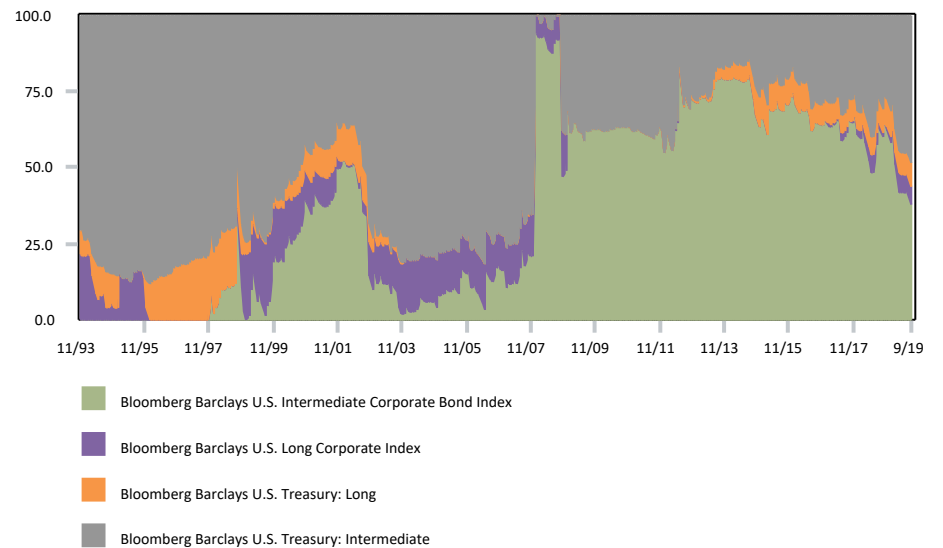


	Market Value (\$)	Allocation (%)
■ PIMCO Total Return	167,766,175	50.30
■ SSgA Bond Market Index	165,733,490	49.70

Style Analysis - Returns Based



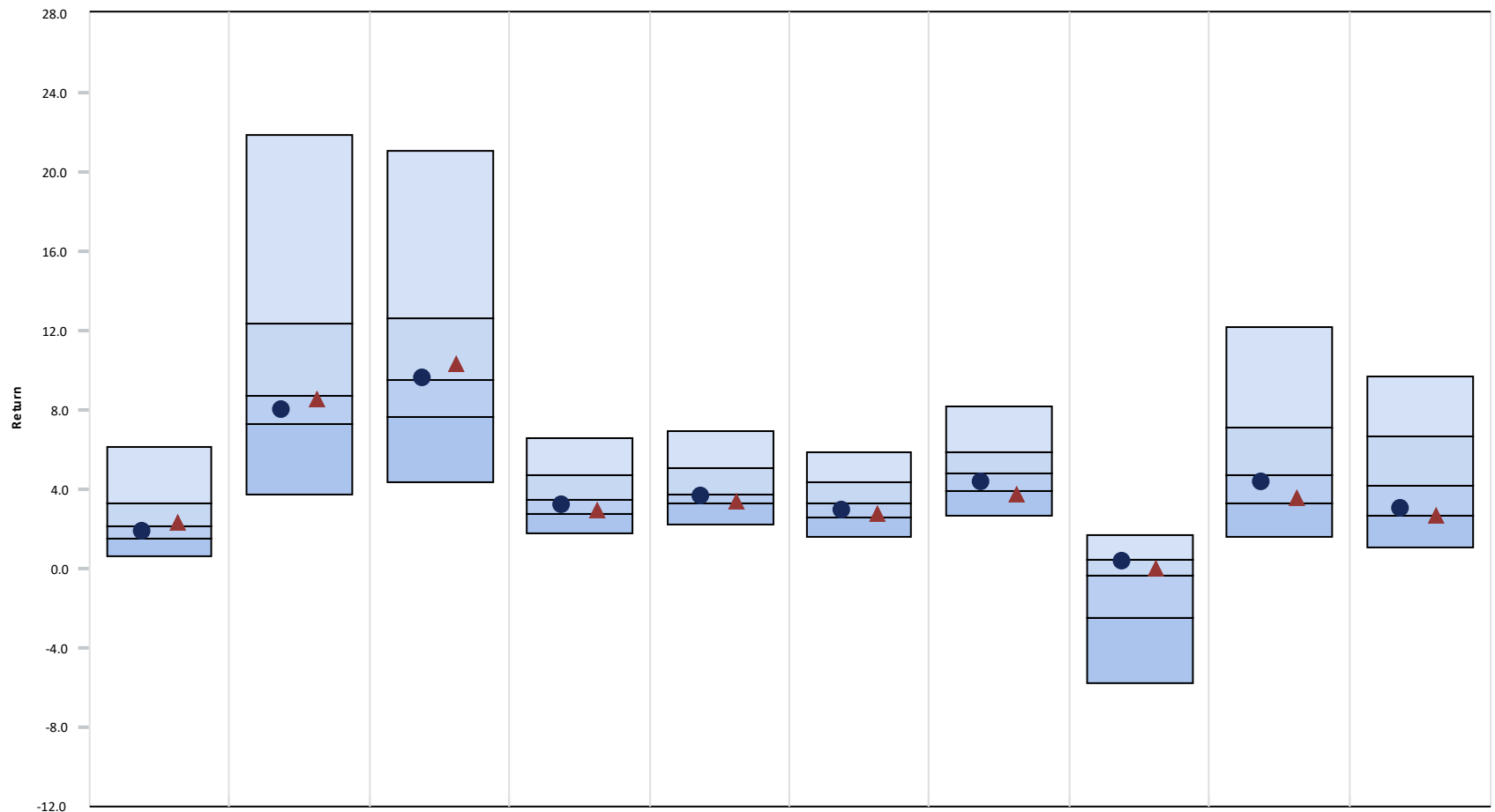
3 Year Style Analysis



Employees' Retirement System of the City of Norfolk

Plan Sponsor Peer Group Analysis - All Master Trust-US Fixed Income Segment

September 30, 2019



	<u>3 Month</u>	<u>CYTD</u>	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>7 Year</u>	<u>10 Year</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
● Fixed Income	1.89 (63)	8.03 (63)	9.59 (47)	3.22 (60)	3.64 (55)	2.91 (64)	4.37 (61)	0.35 (28)	4.34 (56)	3.05 (68)
▲ Blmbg. Barc. U.S. Aggregate	2.27 (42)	8.52 (54)	10.30 (37)	2.92 (70)	3.38 (68)	2.72 (72)	3.75 (82)	0.01 (37)	3.54 (68)	2.65 (77)
5th Percentile	6.13	21.85	21.11	6.60	6.92	5.87	8.18	1.73	12.17	9.65
1st Quartile	3.30	12.40	12.62	4.74	5.05	4.39	5.89	0.48	7.12	6.68
Median	2.12	8.70	9.47	3.47	3.72	3.27	4.80	-0.38	4.74	4.18
3rd Quartile	1.50	7.27	7.68	2.80	3.25	2.58	3.89	-2.52	3.31	2.69
95th Percentile	0.60	3.72	4.32	1.77	2.22	1.59	2.66	-5.82	1.60	1.08

gross of fees

Parentheses contain percentile rankings.

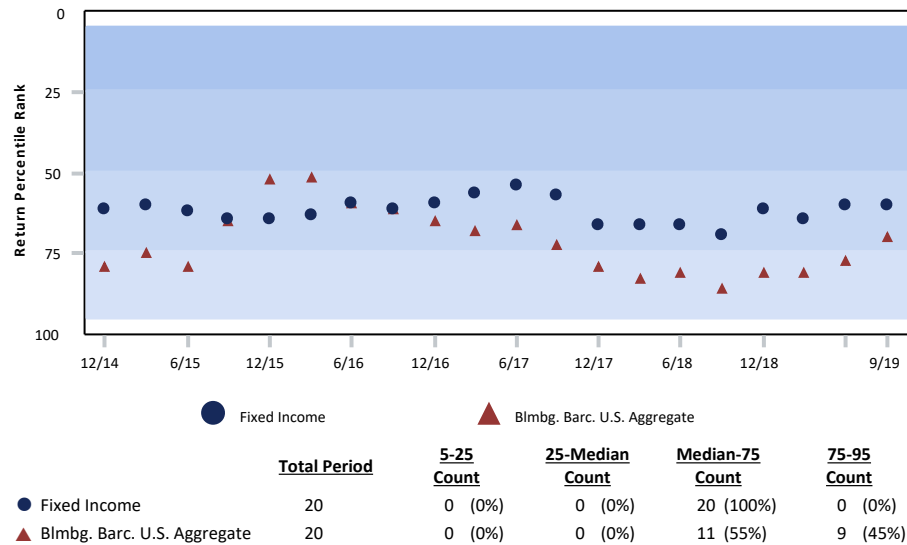


Employees' Retirement System of the City of Norfolk

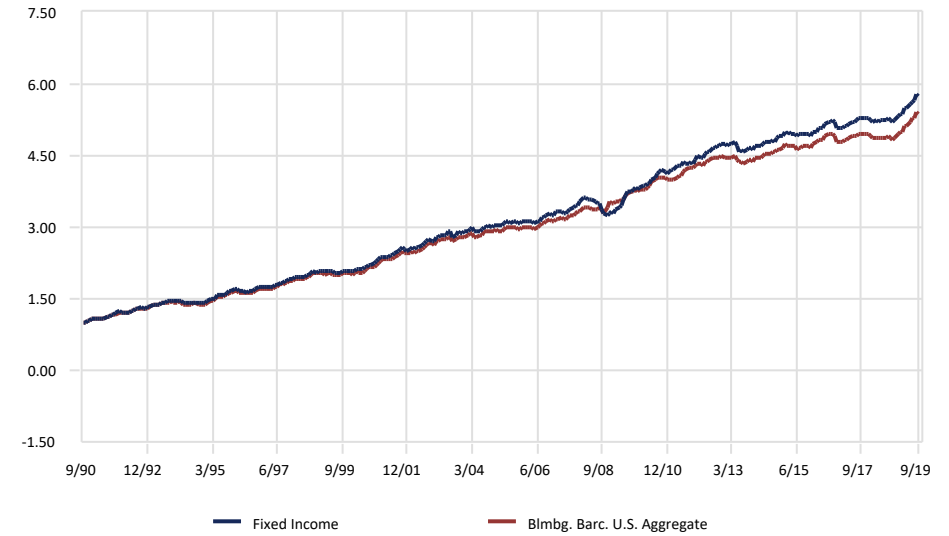
Fixed Income

September 30, 2019

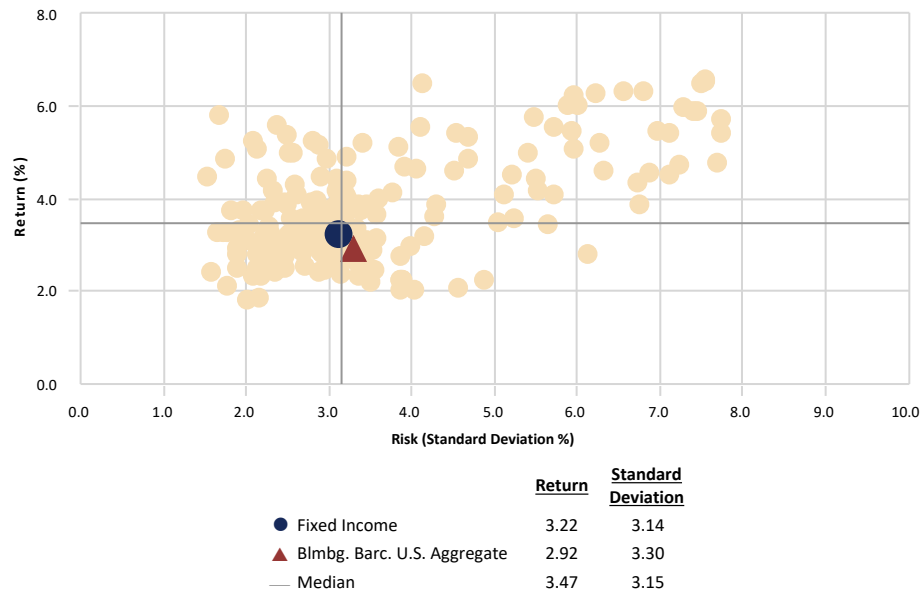
3 Year Rolling Return Rank



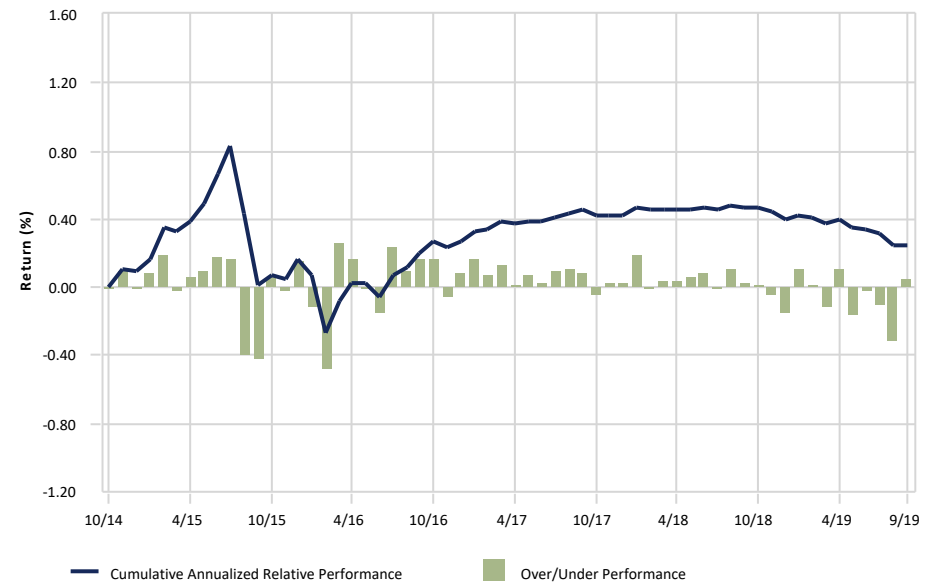
Growth of \$1 - Since Inception (10/01/90)



Risk vs. Return (10/01/16 - 09/30/19)



Relative Performance vs. Blmbg. Barc. U.S. Aggregate

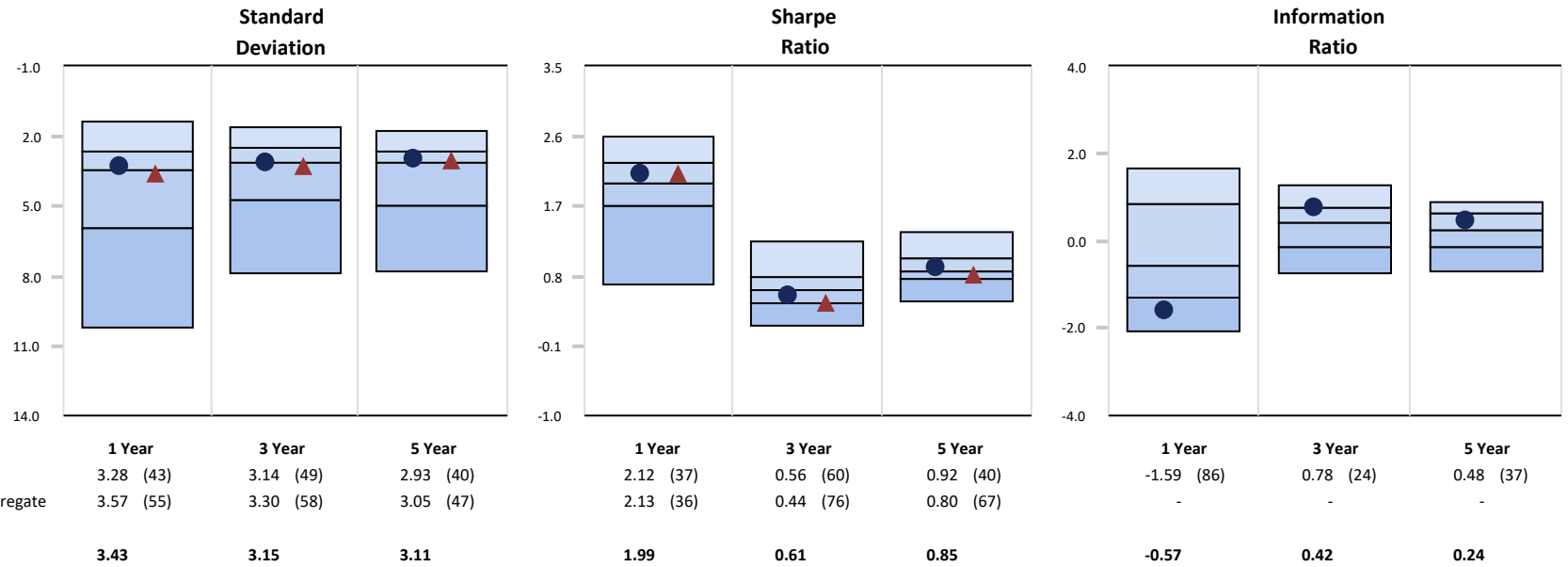


Employees' Retirement System of the City of Norfolk

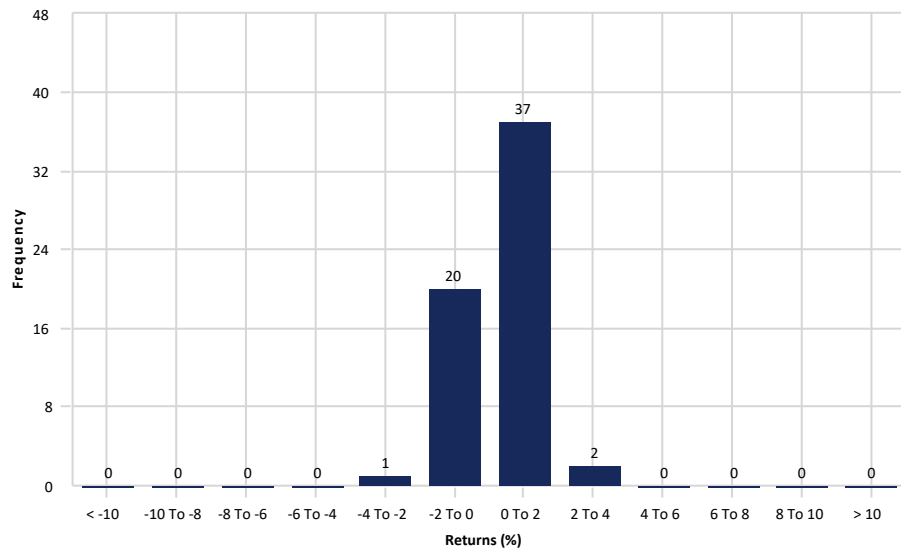
Fixed Income

September 30, 2019

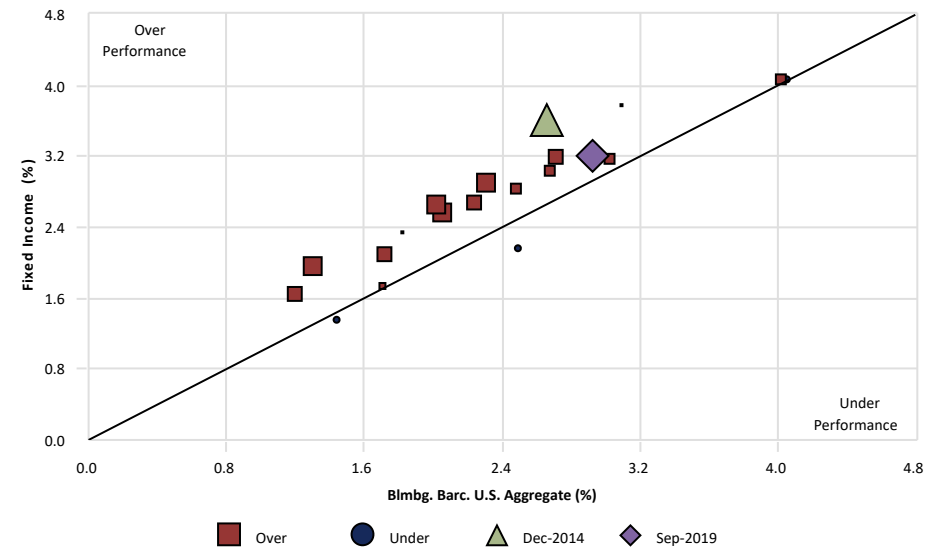
Peer Group Analysis: All Master Trust-US Fixed Income Segment



Monthly Distribution of Returns



3 Year Rolling Under/Over Performance

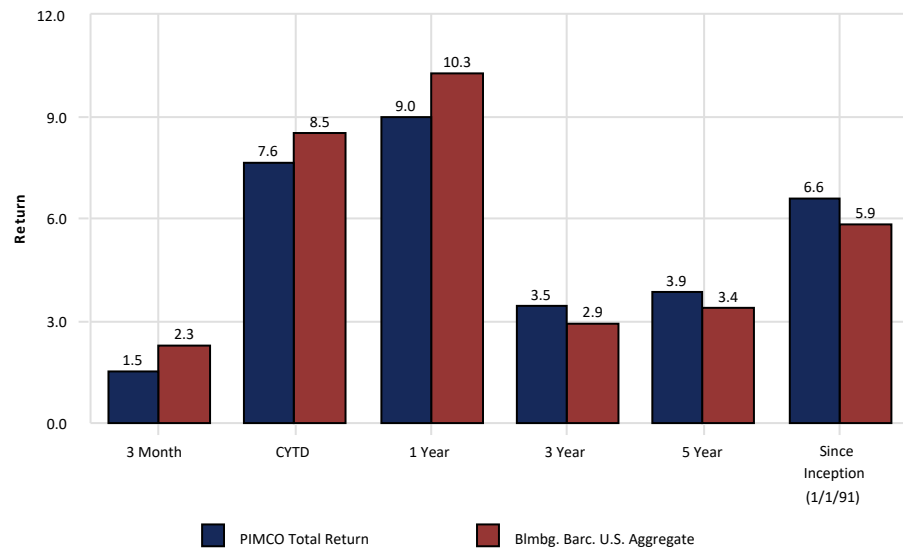


Employees' Retirement System of the City of Norfolk

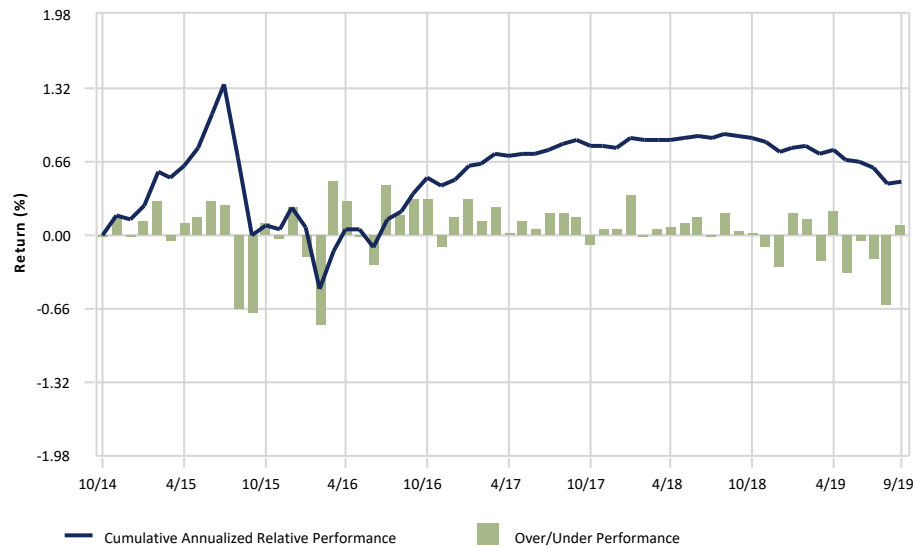
PIMCO Total Return vs. IM U.S. Broad Market Core Fixed Income (SA+CF)

September 30, 2019

Comparative Performance

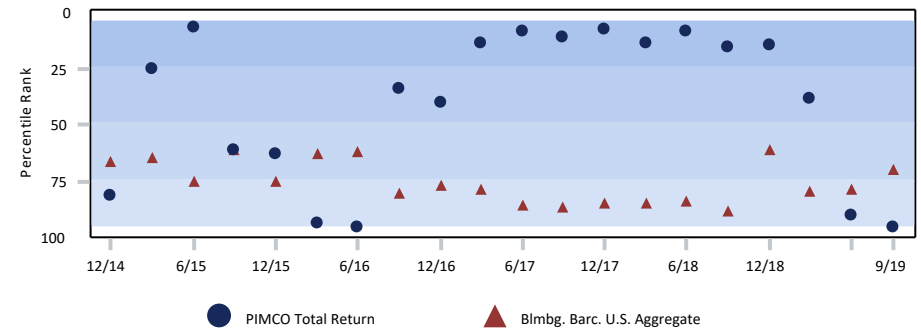


Relative Performance vs Blmbg. Barc. U.S. Aggregate

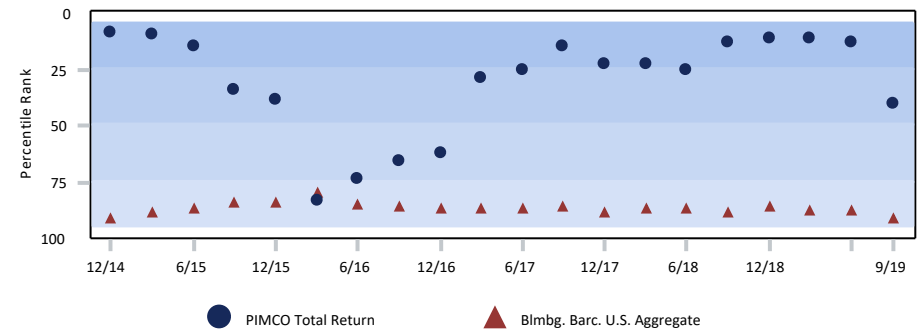


gross of fees

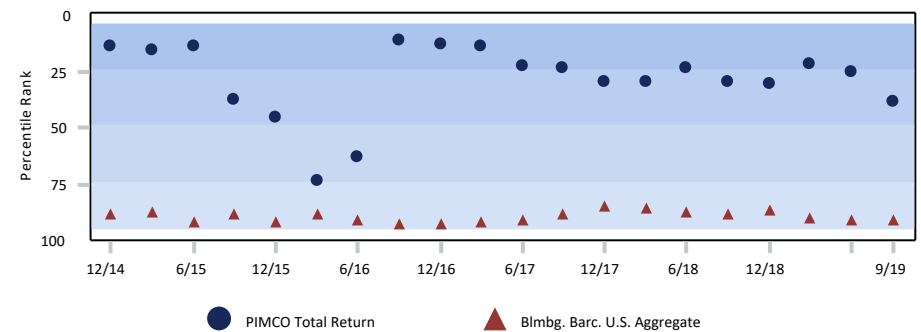
1 Year Rolling Percentile Ranking



3 Year Rolling Percentile Ranking



5 Year Rolling Percentile Ranking



Employees' Retirement System of the City of Norfolk

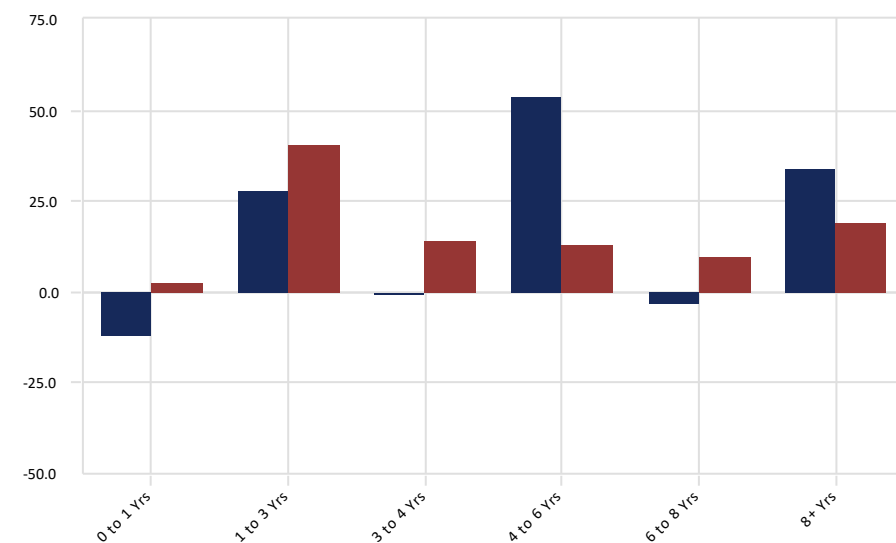
PIMCO Total Return vs. Blmbg. Barc. U.S. Aggregate

September 30, 2019

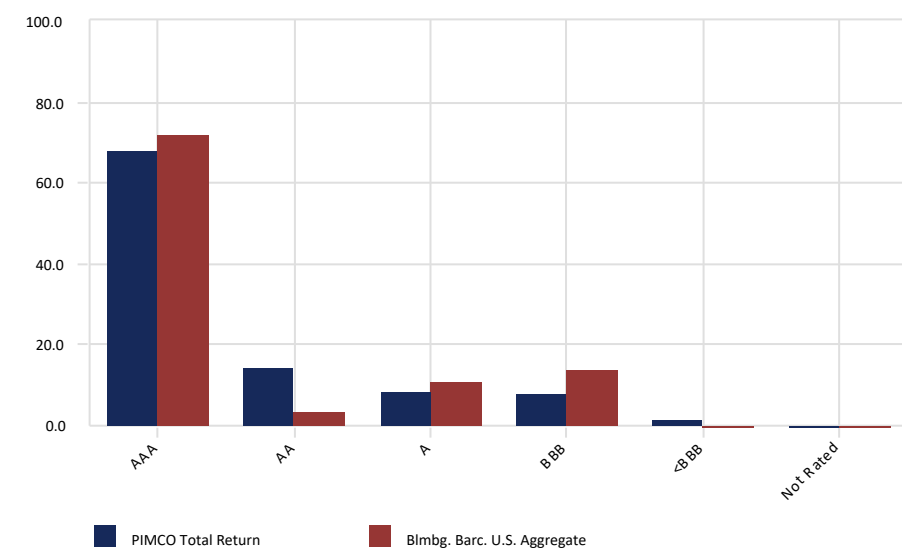
Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	6.56	7.80
Avg. Quality	AA	AA2
Coupon Rate (%)	3.19	3.21
Convexity	-	0.32
Effective Duration	5.34	5.72

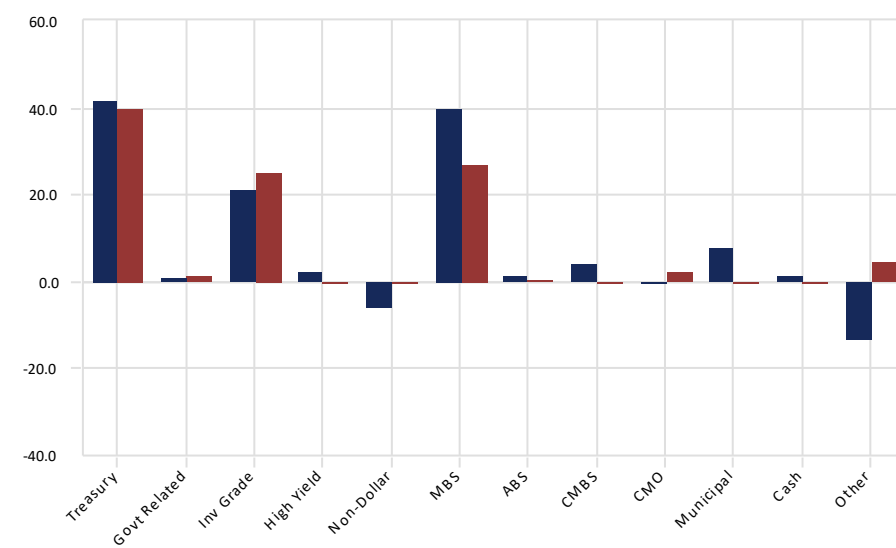
Duration Distribution (%)



Credit Quality Distribution (%)



Sector Distribution (%)

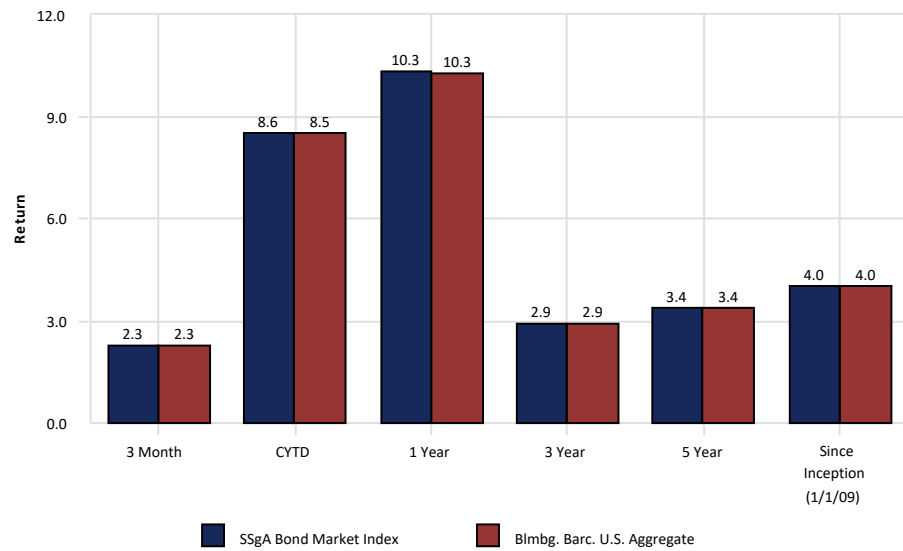


Employees' Retirement System of the City of Norfolk

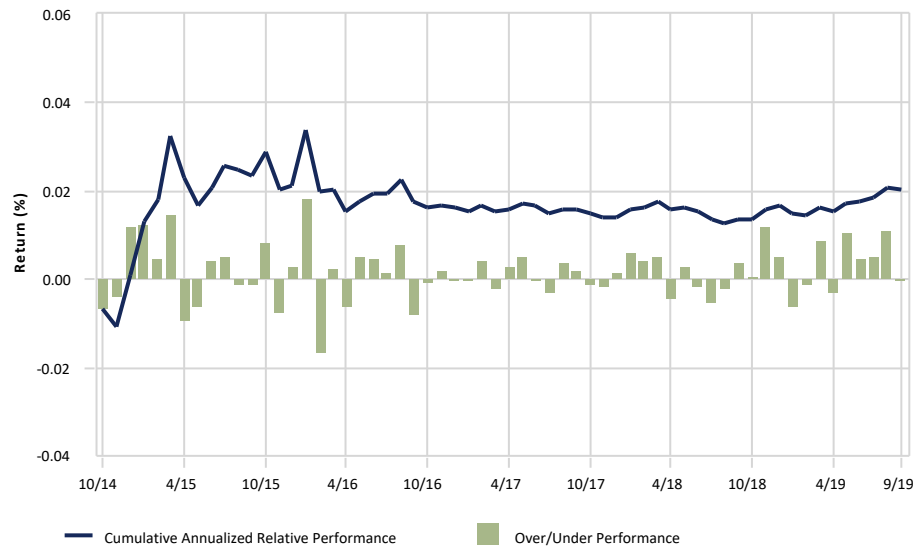
SSgA Bond Market Index vs. IM U.S. Broad Market Core Fixed Income (SA+CF)

September 30, 2019

Comparative Performance

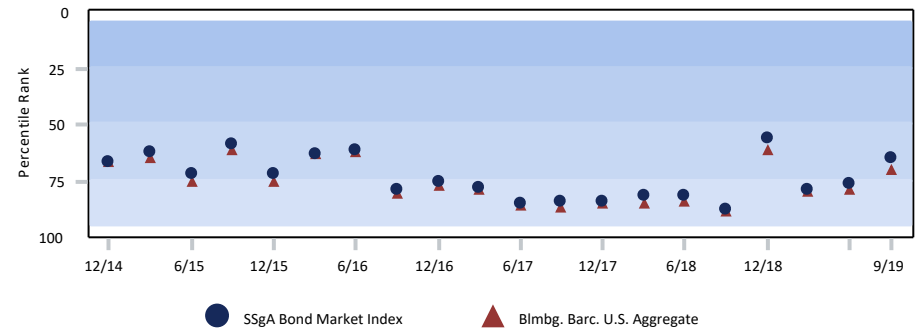


Relative Performance vs Blmbg. Barc. U.S. Aggregate

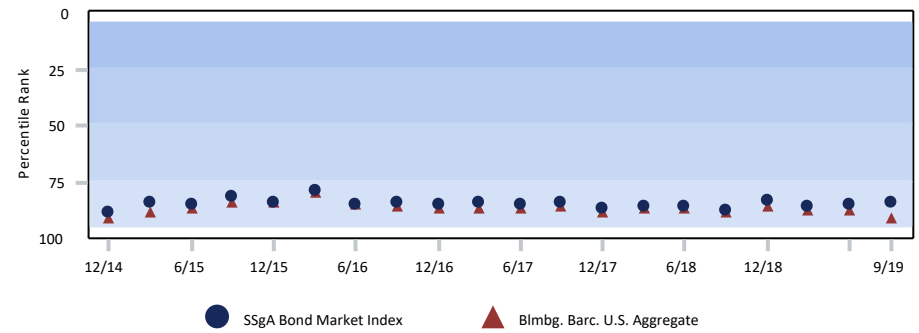


gross of fees

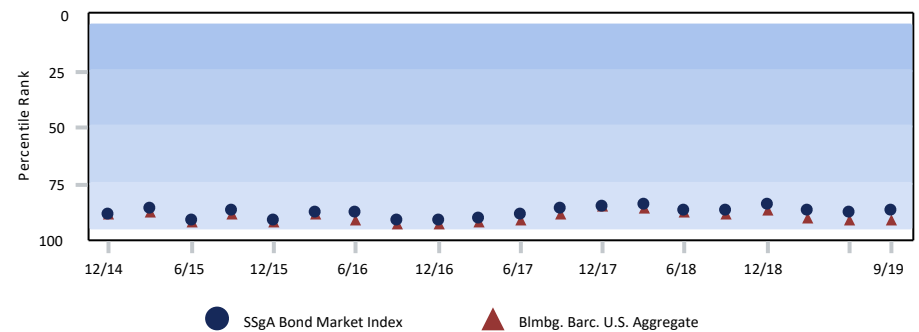
1 Year Rolling Percentile Ranking



3 Year Rolling Percentile Ranking



5 Year Rolling Percentile Ranking



Employees' Retirement System of the City of Norfolk

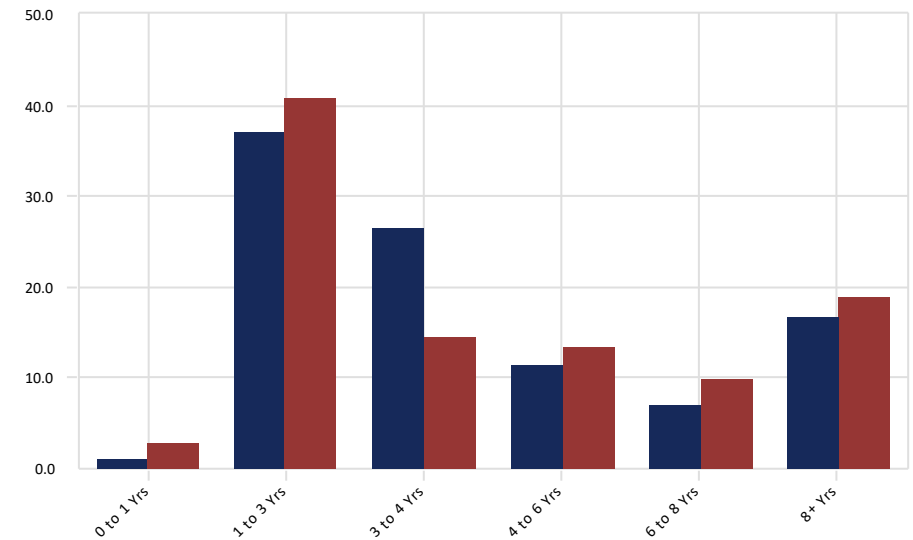
SSgA Bond Market Index vs. Blmbg. Barc. U.S. Aggregate

September 30, 2019

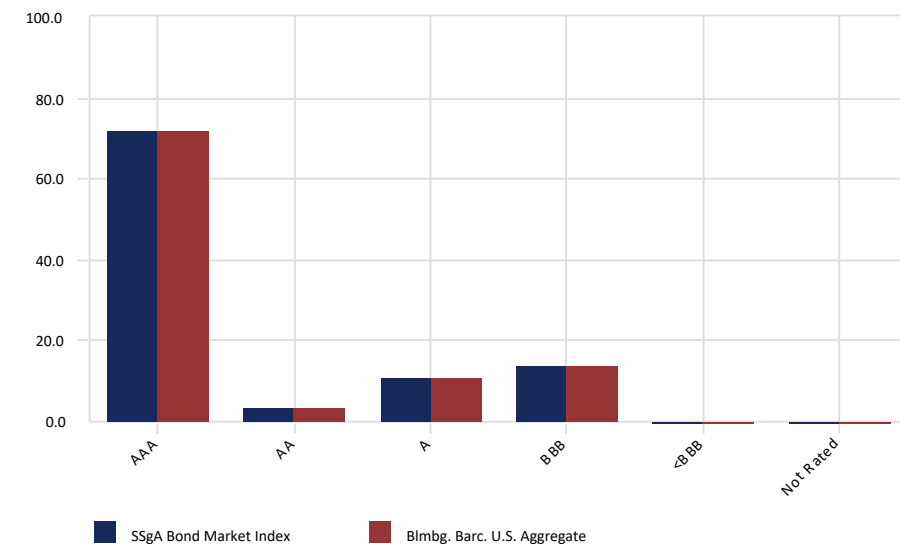
Portfolio Characteristics

	<u>Portfolio</u>	<u>Benchmark</u>
Avg. Maturity	7.87	7.80
Avg. Quality	Aa2	AA2
Yield To Maturity (%)	2.27	2.27
Modified Duration	-	6.01
Convexity	0.30	0.32

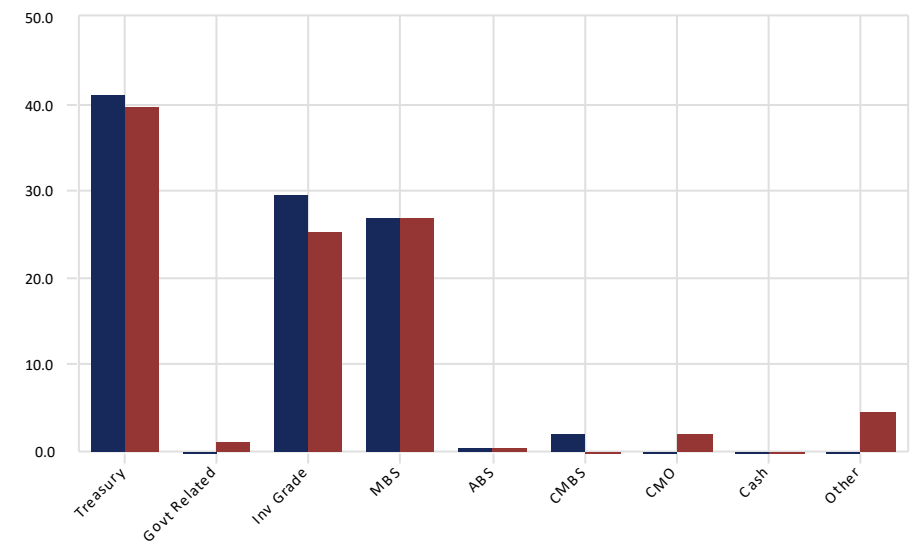
Duration Distribution (%)



Credit Quality Distribution (%)



Sector Distribution (%)



Real Estate

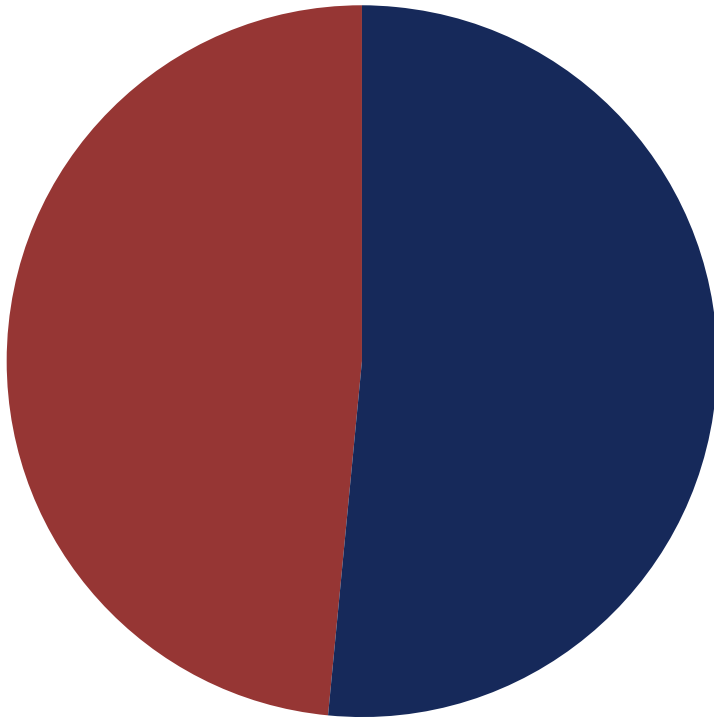
Employees' Retirement System of the City of Norfolk

Asset Allocation By Manager - Real Estate

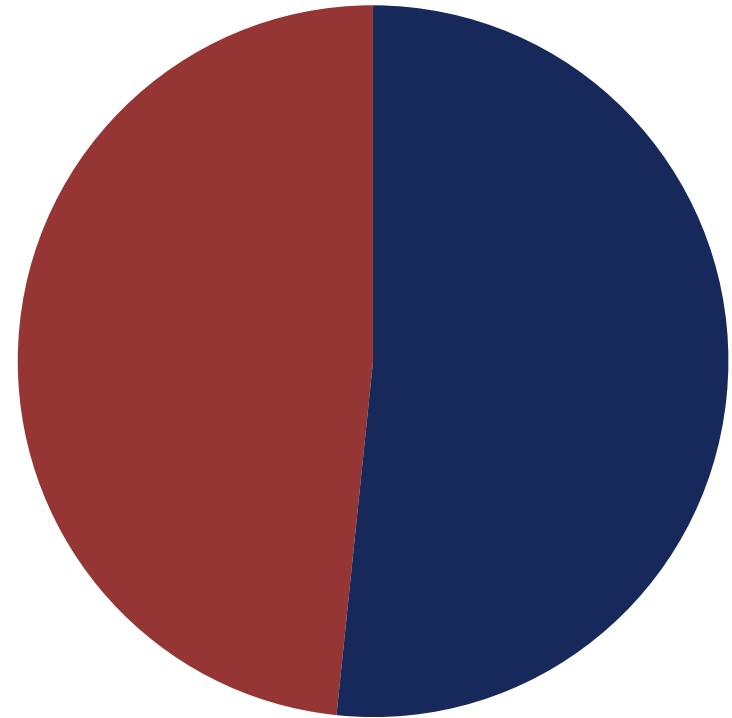
September 30, 2019

September 30, 2019 : \$82,355,114

June 30, 2019 : \$81,997,636



	Market Value (\$)	Allocation (%)
■ JP Morgan Asset Management Strategic Property Fund	42,431,984	51.52
■ UBS Trumbull Property Fund	39,923,130	48.48



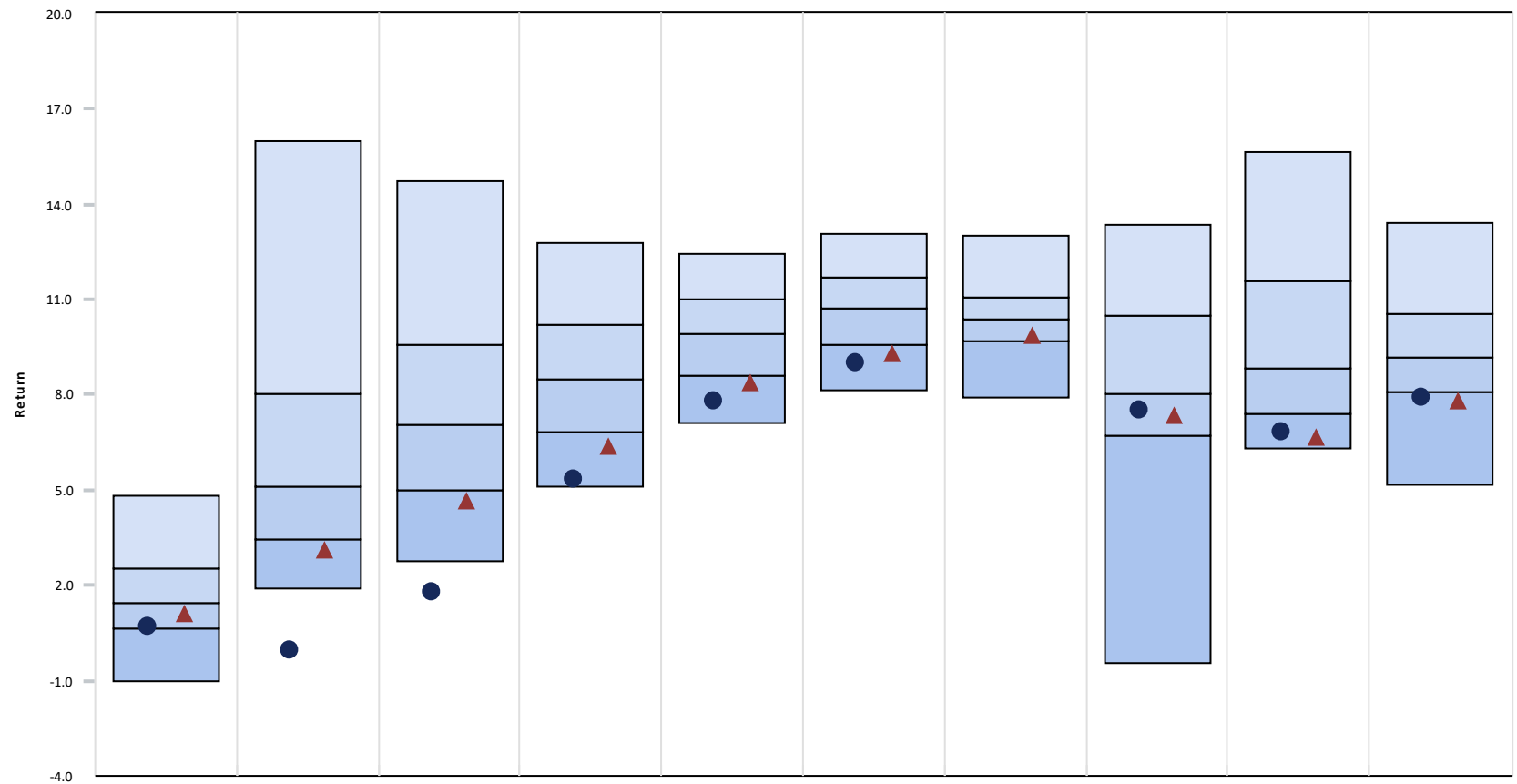
	Market Value (\$)	Allocation (%)
■ JP Morgan Asset Management Strategic Property Fund	42,347,520	51.64
■ UBS Trumbull Property Fund	39,650,116	48.36



Employees' Retirement System of the City of Norfolk

Plan Sponsor Peer Group Analysis - All Master Trust-Real Estate Segment

September 30, 2019



	<u>3 Month</u>	<u>CYTD</u>	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>7 Year</u>	<u>10 Year</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
● Real Estate	0.67 (75)	-0.03 (99)	1.79 (97)	5.36 (95)	7.79 (87)	9.00 (89)	-	7.52 (67)	6.81 (91)	7.90 (78)
▲ NCREIF Fund Index-ODCE (Net)	1.08 (63)	3.08 (83)	4.65 (80)	6.34 (92)	8.36 (81)	9.29 (82)	9.84 (68)	7.36 (69)	6.66 (95)	7.79 (79)
5th Percentile	4.83	15.97	14.73	12.79	12.45	13.09	13.03	13.38	15.63	13.44
1st Quartile	2.51	8.03	9.60	10.18	11.00	11.70	11.06	10.47	11.57	10.56
Median	1.45	5.12	7.07	8.46	9.94	10.72	10.38	8.03	8.85	9.18
3rd Quartile	0.62	3.45	5.01	6.83	8.58	9.57	9.70	6.74	7.41	8.06
95th Percentile	-1.04	1.87	2.77	5.10	7.11	8.17	7.91	-0.46	6.31	5.16
Population	135	119	110	69	52	35	22	87	84	83

gross of fees

Parentheses contain percentile rankings.



Master Limited Partnerships

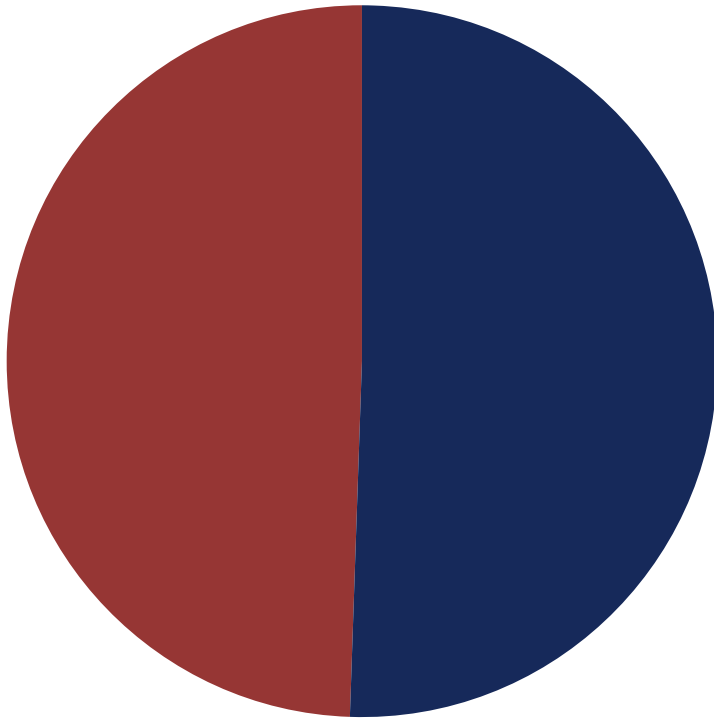
Employees' Retirement System of the City of Norfolk

Asset Allocation By Manager - MLPs

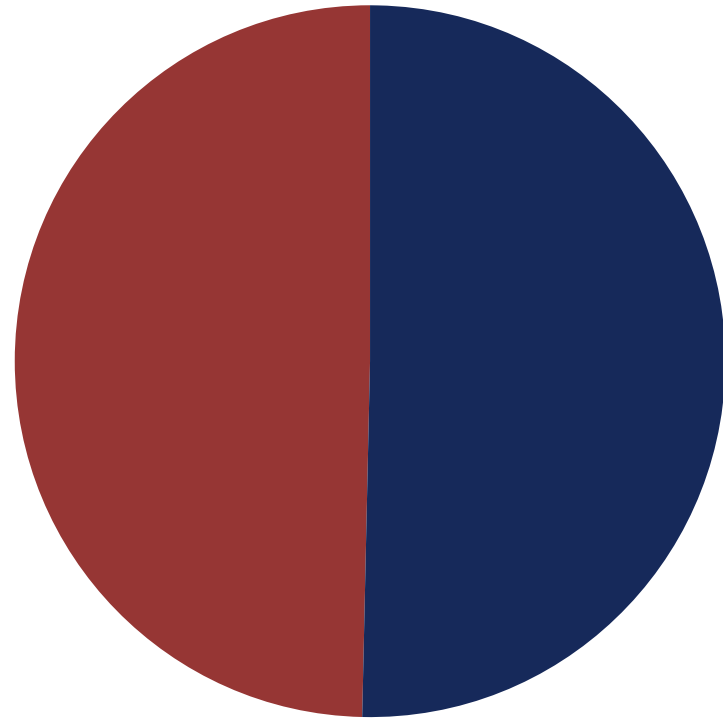
September 30, 2019

September 30, 2019 : \$77,833,216

June 30, 2019 : \$67,988,099



	Market Value (\$)	Allocation (%)
■ Harvest MLP	39,338,637	50.54
■ Tortoise Capital Advisors	38,494,578	49.46

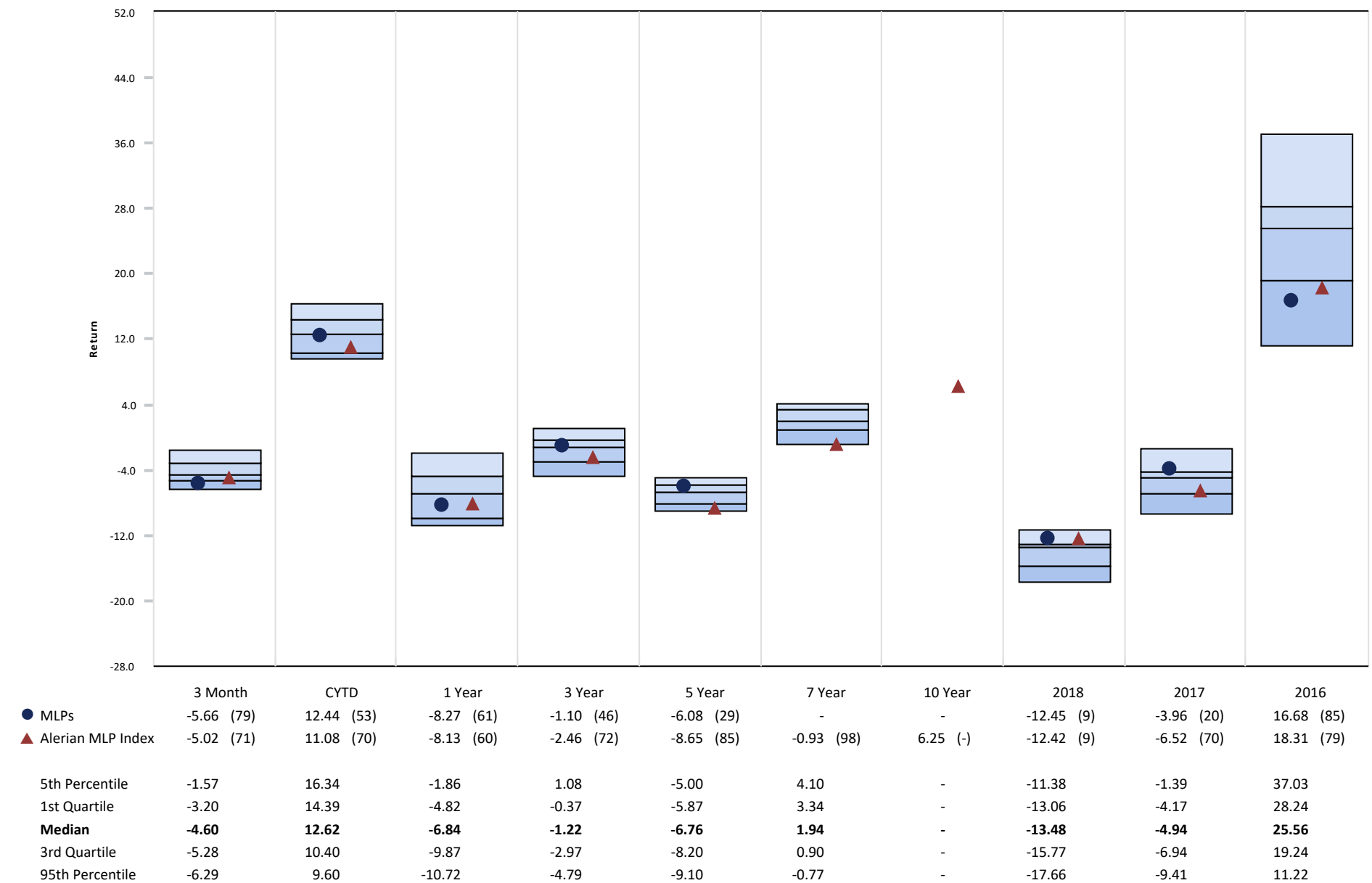


	Market Value (\$)	Allocation (%)
■ Harvest MLP	34,235,839	50.36
■ Tortoise Capital Advisors	33,752,260	49.64

Employees' Retirement System of the City of Norfolk

MLPs vs. Master Limited Partnerships (SA+CF)

September 30, 2019



gross of fees

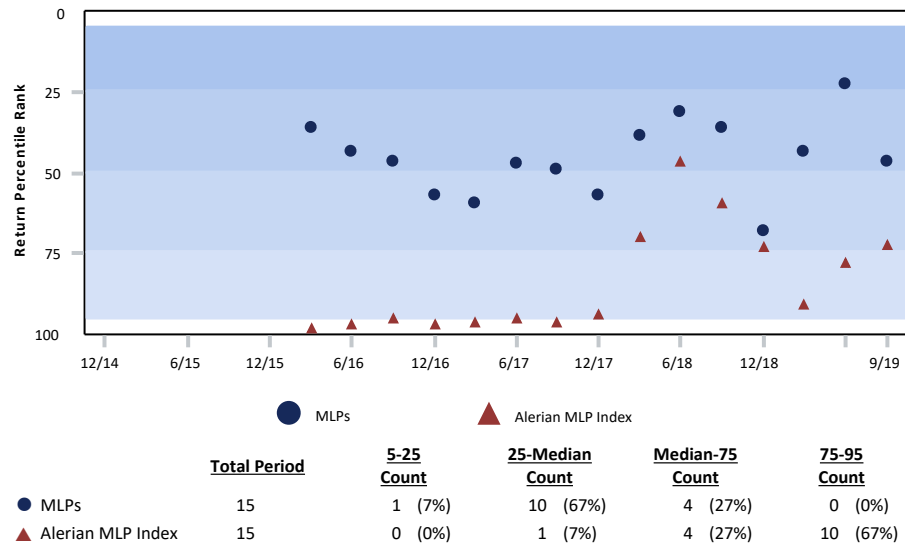


Employees' Retirement System of the City of Norfolk

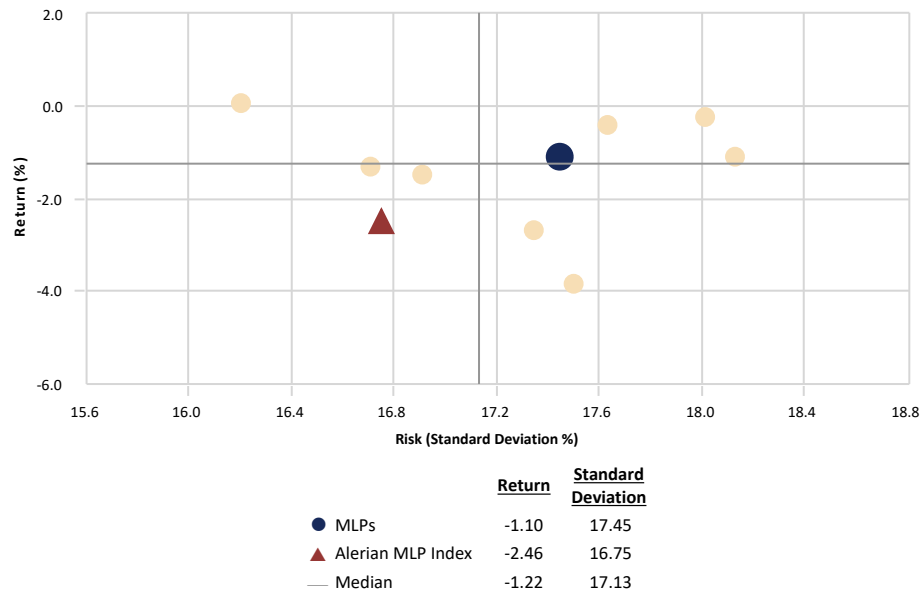
MLPs

September 30, 2019

3 Year Rolling Return Rank



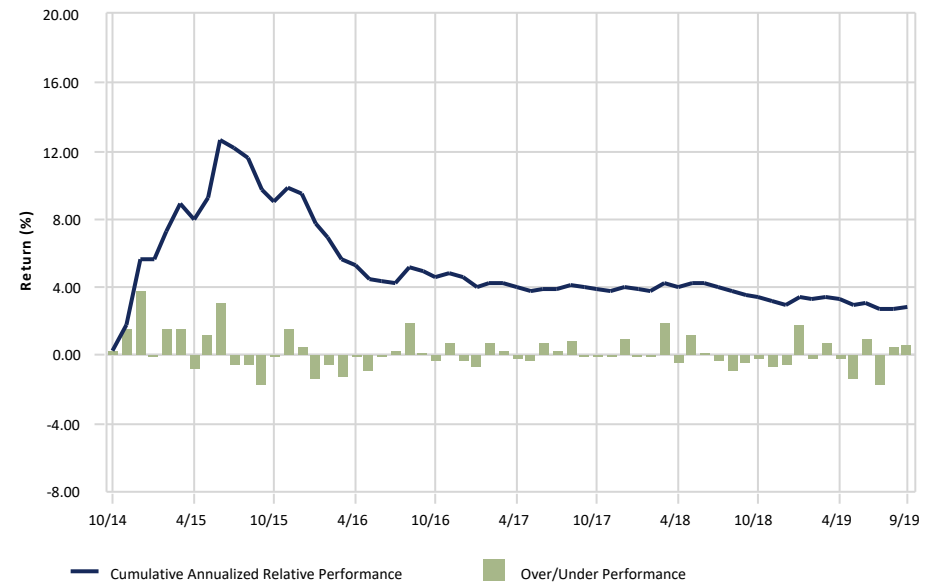
Risk vs. Return (10/01/16 - 09/30/19)



Growth of \$1 - Since Inception (03/01/13)



Relative Performance vs. Alerian MLP Index

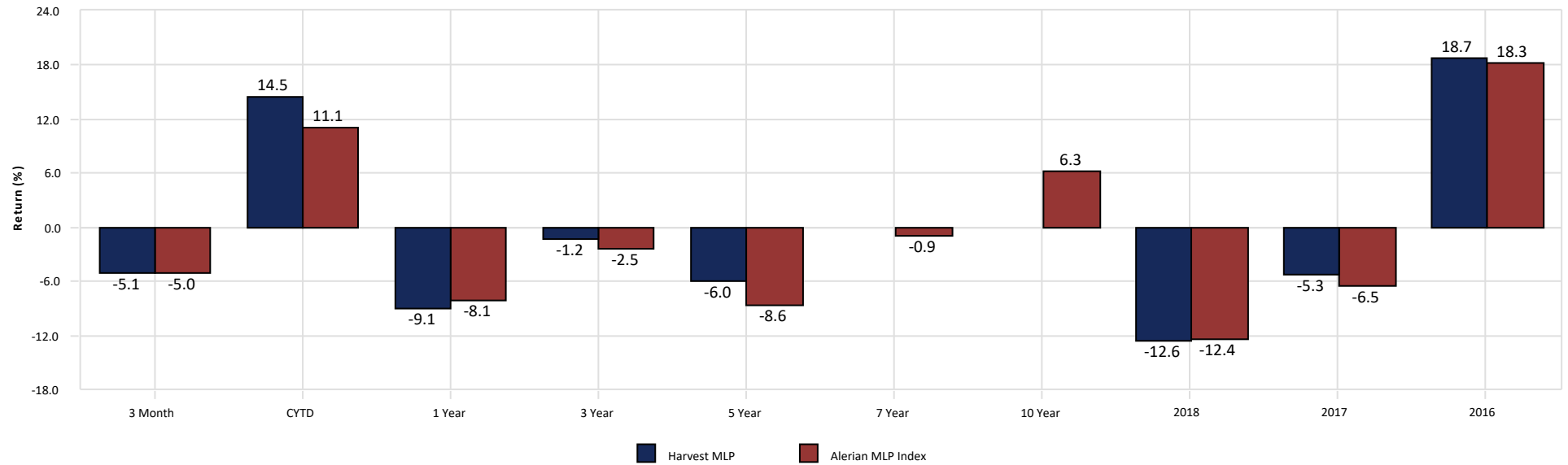


Employees' Retirement System of the City of Norfolk

Harvest MLP

September 30, 2019

Comparative Performance



Growth of \$1 - Since Inception (03/01/13)



Relative Performance vs. Alerian MLP Index



gross of fees

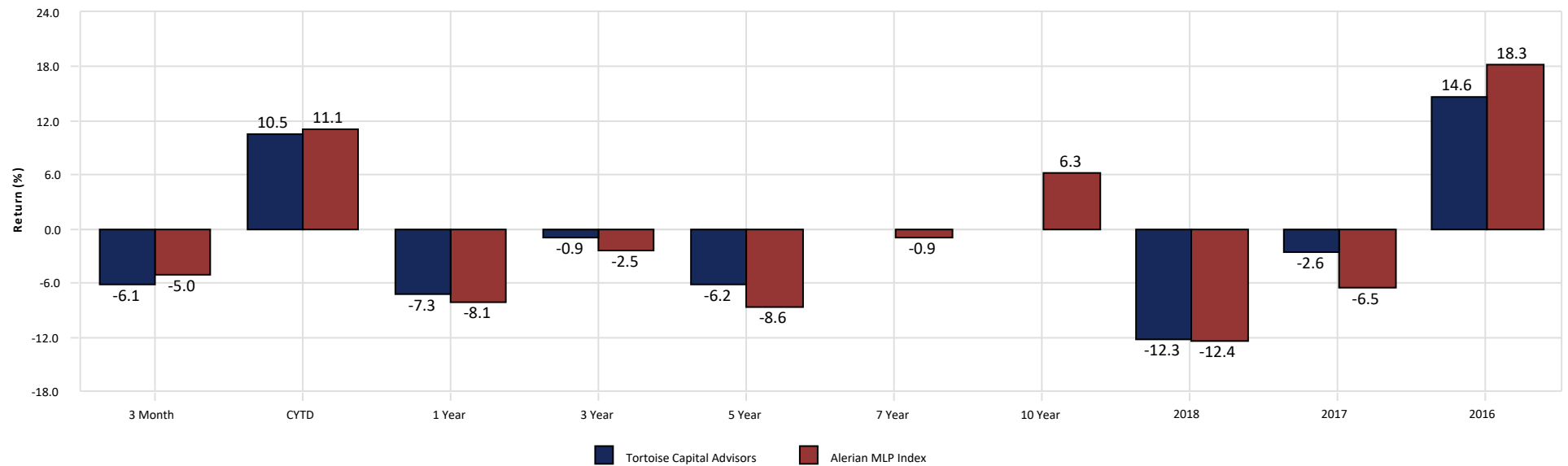


Employees' Retirement System of the City of Norfolk

Tortoise Capital Advisors

September 30, 2019

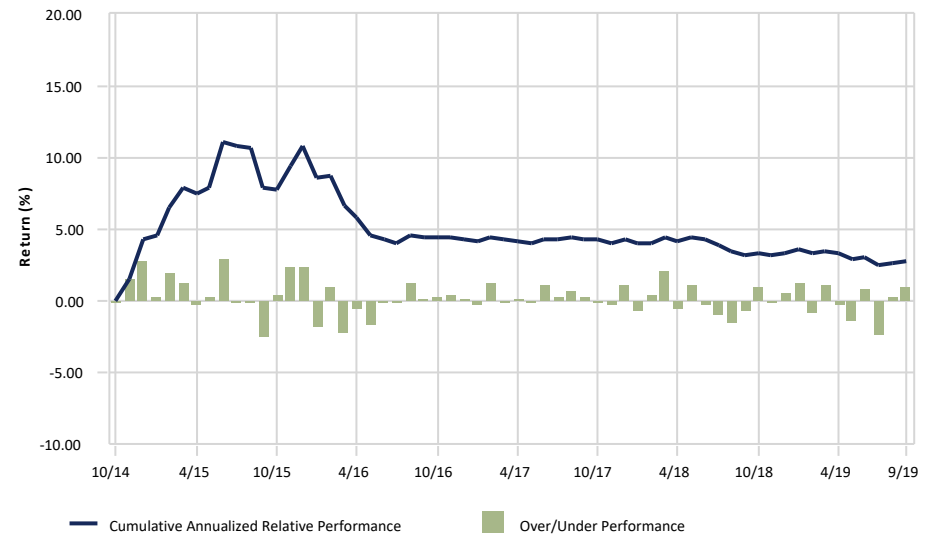
Comparative Performance



Growth of \$1 - Since Inception (04/01/13)



Relative Performance vs. Alerian MLP Index



gross of fees



Appendix

Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance (gross of fees)

September 30, 2019

	Asset \$	Asset %	3 Month	CYTD	1 Year	2 Year	3 Year	5 Year	Since Inception	Inception Date
Total Fund	1,104,926,797	100.00	0.15 (88)	11.89 (69)	2.90 (83)	4.68 (84)	6.90 (83)	5.63 (82)	8.17 (66)	Oct-1990
<i>Total Fund Policy</i>			0.77	13.30	4.45	4.99	7.09	5.75	8.08	
Excess Return			-0.62	-1.41	-1.55	-0.31	-0.19	-0.12	0.09	
<i>Total Fund Strategy Index</i>			0.31	12.53	3.38	4.66	6.49	5.23	8.06	
Excess Return			-0.16	-0.64	-0.48	0.02	0.41	0.40	0.11	
 Global Equity	 610,825,525	 55.28	 -0.08 (52)	 16.31 (55)	 0.93 (57)	 5.40 (53)	 9.82 (47)	 7.29 (50)	 9.08 (69)	 Oct-1990
<i>Global Equity Policy</i>			-0.18	15.87	0.48	4.95	9.36	6.85	9.19	
Excess Return			0.10	0.44	0.45	0.45	0.46	0.44	-0.11	
 Fixed Income	 333,499,666	 30.18	 1.89 (63)	 8.03 (63)	 9.59 (47)	 4.32 (53)	 3.22 (60)	 3.64 (55)	 6.22 (-)	 Oct-1990
<i>Blmbg. Barc. U.S. Aggregate</i>			2.27	8.52	10.30	4.38	2.92	3.38	5.98	
Excess Return			-0.38	-0.49	-0.71	-0.06	0.30	0.26	0.24	
 Real Estate	 82,355,114	 7.45	 0.67 (75)	 -0.03 (99)	 1.79 (97)	 4.74 (94)	 5.36 (95)	 7.79 (87)	 9.83 (81)	 Apr-2011
<i>NCREIF Fund Index-ODCE (Net)</i>			1.08	3.08	4.65	6.17	6.34	8.36	9.83	
Excess Return			-0.41	-3.11	-2.86	-1.43	-0.98	-0.57	0.00	
 MLPs	 77,833,216	 7.04	 -5.66 (79)	 12.44 (53)	 -8.27 (61)	 -0.81 (26)	 -1.10 (46)	 -6.08 (29)	 1.52 (38)	 Mar-2013
<i>Alerian MLP Index</i>			-5.02	11.08	-8.13	-1.83	-2.46	-8.65	-2.38	
Excess Return			-0.64	1.36	-0.14	1.02	1.36	2.57	3.90	
 Cash	 410,062	 0.04	 1.71	 6.51	 10.44	 5.94	 4.15	 2.59	 1.97	 Jul-2003
<i>FTSE 3 Month T-Bill</i>			0.56	1.78	2.36	1.97	1.52	0.96	1.30	
Excess Return			1.15	4.73	8.08	3.97	2.63	1.63	0.67	



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance (gross of fees)

September 30, 2019

	Asset \$	3 Month	CYTD	1 Year	2 Year	3 Year	5 Year	Since Inception	Inception Date
Global Equity									
SSgA MSCI ACWI IMI Index Fund	610,825,525	-0.08 (52)	16.31 (55)	0.93 (57)	5.40 (53)	9.82 (47)	-	10.21 (50)	May-2016
<i>MSCI AC World IMI (Net)</i>		-0.18	15.87	0.48	4.95	9.36	-	9.73	
Excess Return		0.10	0.44	0.45	0.45	0.46	-	0.48	
Fixed Income									
PIMCO Total Return	167,766,175	1.51 (97)	7.64 (96)	9.00 (96)	4.28 (91)	3.48 (40)	3.87 (39)	6.60 (8)	Jan-1991
<i>Blmbg. Barc. U.S. Aggregate</i>		2.27	8.52	10.30	4.38	2.92	3.38	5.85	
Excess Return		-0.76	-0.88	-1.30	-0.10	0.56	0.49	0.75	
SSgA Bond Market Index	165,733,490	2.29 (66)	8.55 (79)	10.35 (65)	4.41 (81)	2.95 (84)	3.40 (87)	4.04 (92)	Jan-2009
<i>Blmbg. Barc. U.S. Aggregate</i>		2.27	8.52	10.30	4.38	2.92	3.38	4.02	
Excess Return		0.02	0.03	0.05	0.03	0.03	0.02	0.02	
Real Assets									
JP Morgan Asset Management Strategic Property Fund	42,431,984	0.45 (100)	2.06 (95)	4.00 (95)	5.94 (95)	6.49 (92)	8.68 (87)	10.78 (74)	Apr-2011
<i>NCREIF Fund Index-ODCE (Net)</i>		1.08	3.08	4.65	6.17	6.34	8.36	9.83	
Excess Return		-0.63	-1.02	-0.65	-0.23	0.15	0.32	0.95	
UBS Trumbull Property Fund	39,923,130	0.90 (100)	-2.15 (100)	-0.46 (100)	3.50 (100)	4.12 (100)	6.74 (100)	7.97 (-)	Dec-2011
<i>NCREIF Fund Index-ODCE (Net)</i>		1.08	3.08	4.65	6.17	6.34	8.36	9.44	
Excess Return		-0.18	-5.23	-5.11	-2.67	-2.22	-1.62	-1.47	
MLPs									
Harvest MLP	39,338,637	-5.10 (74)	14.48 (24)	-9.12 (67)	-0.03 (9)	-1.23 (51)	-6.00 (27)	1.51 (38)	Mar-2013
<i>Alerian MLP Index</i>		-5.02	11.08	-8.13	-1.83	-2.46	-8.65	-2.38	
Excess Return		-0.08	3.40	-0.99	1.80	1.23	2.65	3.89	
Tortoise Capital Advisors	38,494,578	-6.14 (93)	10.52 (73)	-7.29 (55)	-1.55 (47)	-0.93 (41)	-6.17 (30)	0.77 (30)	Apr-2013
<i>Alerian MLP Index</i>		-5.02	11.08	-8.13	-1.83	-2.46	-8.65	-3.19	
Excess Return		-1.12	-0.56	0.84	0.28	1.53	2.48	3.96	

Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

September 30, 2019

	Asset \$	Asset %	1 Month	3 Month	CYTD	FYTD	1 Year	3 Year	5 Year	Since Inception	Inception Date
Total Fund Composite	1,104,926,797	100.00	1.16	0.11	11.76	0.11	2.73	6.71	5.46	7.98	Oct -1990
<i>Total Fund Policy</i>			<i>1.11</i>	<i>0.77</i>	<i>13.30</i>	<i>0.77</i>	<i>4.45</i>	<i>7.09</i>	<i>5.75</i>	<i>8.08</i>	
Excess Return			0.05	-0.66	-1.54	-0.66	-1.72	-0.38	-0.29	-0.10	
<i>Total Fund Strategy Index</i>			<i>1.13</i>	<i>0.31</i>	<i>12.53</i>	<i>0.31</i>	<i>3.38</i>	<i>6.49</i>	<i>5.23</i>	<i>8.06</i>	
Excess Return			0.03	-0.20	-0.77	-0.20	-0.65	0.22	0.23	-0.08	
Global Equity	610,825,525	55.28	2.16	-0.09	16.28	-0.09	0.89	9.79	7.26	8.91	Oct -1990
<i>Global Equity Policy</i>			<i>2.10</i>	<i>-0.18</i>	<i>15.87</i>	<i>-0.18</i>	<i>0.48</i>	<i>9.36</i>	<i>6.85</i>	<i>9.19</i>	
Excess Return			0.06	0.09	0.41	0.09	0.41	0.43	0.41	-0.28	
Fixed Income	333,499,666	30.18	-0.49	1.85	7.94	1.85	9.45	3.09	3.52	6.02	Oct -1990
<i>Blmbg. Barc. U.S. Aggregate</i>			<i>-0.53</i>	<i>2.27</i>	<i>8.52</i>	<i>2.27</i>	<i>10.30</i>	<i>2.92</i>	<i>3.38</i>	<i>5.98</i>	
Excess Return			0.04	-0.42	-0.58	-0.42	-0.85	0.17	0.14	0.04	
Real Estate	82,355,114	7.45	0.37	0.44	-0.72	0.44	0.98	4.43	6.79	8.82	Apr -2011
<i>NCREIF Fund Index-ODCE (VW) (Net)</i>			<i>1.08</i>	<i>1.08</i>	<i>3.08</i>	<i>1.08</i>	<i>4.65</i>	<i>6.34</i>	<i>8.36</i>	<i>9.83</i>	
Excess Return			-0.71	-0.64	-3.80	-0.64	-3.67	-1.91	-1.57	-1.01	
MLPs	77,833,216	7.04	1.33	-5.66	12.04	-5.66	-8.81	-1.78	-6.69	0.87	Mar -2013
<i>Alerian MLP Index</i>			<i>0.71</i>	<i>-5.02</i>	<i>11.08</i>	<i>-5.02</i>	<i>-8.13</i>	<i>-2.46</i>	<i>-8.65</i>	<i>-2.38</i>	
Excess Return			0.62	-0.64	0.96	-0.64	-0.68	0.68	1.96	3.25	
Cash	413,276	0.04	0.96	1.40	2.46	1.40	3.05	2.08	1.36	1.59	Jul -2003
<i>FTSE 3 Month T-Bill</i>			<i>0.17</i>	<i>0.56</i>	<i>1.78</i>	<i>0.56</i>	<i>2.36</i>	<i>1.52</i>	<i>0.96</i>	<i>1.30</i>	
Excess Return			0.79	0.84	0.68	0.84	0.69	0.56	0.40	0.29	



Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance - (net of fees)

September 30, 2019

	Asset \$	Asset %	1 Month	3 Month	CYTD	FYTD	1 Year	3 Year	5 Year	Since Inception	Inception Date
Global Equity											
SSgA MSCI ACWI IMI Index Fund	610,825,525	55.28	2.16	-0.09	16.28	-0.09	0.89	9.79	-	10.17	May -2016
<i>MSCI AC World IMI (Net)</i>			2.10	-0.18	15.87	-0.18	0.48	9.36	-	9.73	
Excess Return			0.06	0.09	0.41	0.09	0.41	0.43	-	0.44	
Fixed Income											
PIMCO Total Return	167,766,175	15.18	-0.44	1.43	7.48	1.43	8.75	3.26	3.67	6.35	Jan -1991
<i>Blmbg. Barc. U.S. Aggregate</i>			-0.53	2.27	8.52	2.27	10.30	2.92	3.38	5.85	
Excess Return			0.09	-0.84	-1.04	-0.84	-1.55	0.34	0.29	0.50	
SSgA Bond Market Index	165,733,490	15.00	-0.53	2.28	8.54	2.28	10.33	2.93	3.39	4.03	Jan -2009
<i>Blmbg. Barc. U.S. Aggregate</i>			-0.53	2.27	8.52	2.27	10.30	2.92	3.38	4.02	
Excess Return			0.00	0.01	0.02	0.01	0.03	0.01	0.01	0.01	
Real Estate											
JP Morgan Asset Management Strategic Property Fund	42,431,984	3.84	0.07	0.20	1.31	0.20	3.23	5.53	7.68	9.79	Apr -2011
<i>NCREIF Fund Index-ODCE (VW) (Net)</i>			1.08	1.08	3.08	1.08	4.65	6.34	8.36	9.83	
Excess Return			-1.01	-0.88	-1.77	-0.88	-1.42	-0.81	-0.68	-0.04	
UBS Trumbull Property Fund	39,923,130	3.61	0.69	0.69	-2.78	0.69	-1.31	3.22	5.73	6.98	Jan -2012
<i>NCREIF Fund Index-ODCE (VW) (Net)</i>			1.08	1.08	3.08	1.08	4.65	6.34	8.36	9.38	
Excess Return			-0.39	-0.39	-5.86	-0.39	-5.96	-3.12	-2.63	-2.40	
MLPs											
Harvest MLP	39,338,637	3.56	1.04	-5.10	14.07	-5.10	-9.66	-1.92	-6.62	0.85	Mar -2013
<i>Alerian MLP Index</i>			0.71	-5.02	11.08	-5.02	-8.13	-2.46	-8.65	-2.38	
Excess Return			0.33	-0.08	2.99	-0.08	-1.53	0.54	2.03	3.23	
Tortoise Capital Advisors	38,494,578	3.48	1.62	-6.14	10.13	-6.14	-7.83	-1.61	-6.78	0.11	Apr -2013
<i>Alerian MLP Index</i>			0.71	-5.02	11.08	-5.02	-8.13	-2.46	-8.65	-3.19	
Excess Return			0.91	-1.12	-0.95	-1.12	0.30	0.85	1.87	3.30	



Employees' Retirement System of the City of Norfolk

Fee Schedule

September 30, 2019

	Fee Schedule	Market Value As of 09/30/2019 (\$)	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Total Fund		1,104,926,797	2,294,768	0.21
Global Equity		610,825,525	244,330	0.04
SSgA MSCI ACWI IMI Index Fund	0.04 % of Assets	610,825,525	244,330	0.04
Fixed Income		333,499,666	720,988	0.22
PIMCO Total Return	0.41 % of Assets	167,766,175	687,841	0.41
SSgA Bond Market Index	0.02 % of Assets	165,733,490	33,147	0.02
Real Assets		160,188,330	1,329,450	0.83
Real Estate		82,355,114	745,701	0.91
JP Morgan Strategic Property Fund	1.00 % of Assets	42,431,984	424,320	1.00
UBS Trumbull Property Fund	0.81 % of Assets	39,923,130	321,381	0.81
MLPs		77,833,216	583,749	0.75
Harvest MLP	0.75 % of Assets	39,338,637	295,040	0.75
Tortoise Capital Advisors	0.75 % of Assets	38,494,578	288,709	0.75
Cash		413,276	-	-

Pimco has a minimum base fee of 15 bps. The maximum fee includes the base fee of 15 bps and a performance fee of 26 bps, with a total cap of 0.41%. UBS Trumbull has waived the TPF Variable fee (0-25 bps) through March 2020.



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

1 Quarter Ending September 30, 2019

	Market Value As of 07/01/2019	Net Transfers	Contributions	Distributions	Mgmt Fees	Income	Apprec./ Deprec.	Market Value As of 09/30/2019
Total Fund Composite	1,086,293,574	-	38,494,093	-21,000,000	-392,708	5,190,841	-3,641,505	1,104,926,797
Global Equity	603,496,822	8,000,000	-	-	-63,468	-	-607,828	610,825,525
SSgA MSCI ACWI IMI Index	603,496,822	8,000,000	-	-	-63,468	-	-607,828	610,825,525
Fixed Income	330,215,935	-2,819,184	-	-	-138,804	3,295,788	2,945,931	333,499,666
PIMCO Total Return	168,179,160	-2,819,184	-	-	-130,816	3,295,788	-758,773	167,766,175
SSgA Bond Market Index	162,036,775	-	-	-	-7,988	-	3,704,704	165,733,490
Real Estate	81,997,636	-60	-	-	-190,436	433,883	114,091	82,355,114
JP Morgan Strategic Property	42,347,520	-60	-	-	-104,927	60	189,391	42,431,984
UBS Trumbull Property	39,650,116	-	-	-	-85,509	433,824	-75,300	39,923,130
MLPs	67,988,099	14,500,000	-	-	-	1,438,022	-6,092,905	77,833,216
Harvest MLP	34,235,839	7,250,000	-	-	-	692,154	-2,839,355	39,338,637
Tortoise Capital Advisors	33,752,260	7,250,000	-	-	-	745,869	-3,253,550	38,494,578
Cash	2,595,083	-19,680,757	38,494,093	-21,000,000	-	23,147	-793	413,276



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

Year To Date Ending September 30, 2019

	Market Value As of 01/01/2019	Net Transfers	Contributions	Distributions	Mgmt Fees	Income	Apprec./ Deprec.	Market Value As of 09/30/2019
Total Fund Composite	1,013,822,346	-	38,494,093	-65,050,000	-1,269,342	10,121,961	108,826,863	1,104,926,797
Global Equity	539,745,314	-15,950,000	-	-	-187,222	-	87,217,433	610,825,525
SSgA MSCI ACWI IMI Index	539,745,314	-15,950,000	-	-	-187,222	-	87,217,433	610,825,525
Fixed Income	331,649,951	-23,200,018	-	-	-273,260	5,360,120	19,964,498	333,499,666
PIMCO Total Return	178,953,845	-23,200,018	-	-	-249,982	5,360,120	6,903,836	167,766,175
SSgA Bond Market Index	152,696,106	-	-	-	-23,278	-	13,060,662	165,733,490
Real Estate	82,948,272	-114	-	-	-571,412	849,817	-871,448	82,355,114
JP Morgan Strategic Property	41,884,538	-114	-	-	-312,647	114	860,093	42,431,984
UBS Trumbull Property	41,063,734	-	-	-	-258,765	849,703	-1,731,540	39,923,130
MLPs	57,042,763	14,737,448	-	-	-237,448	3,772,673	2,517,780	77,833,216
Harvest MLP	28,380,741	7,370,016	-	-	-120,016	1,843,000	1,864,897	39,338,637
Tortoise Capital Advisors	28,662,023	7,367,433	-	-	-117,433	1,929,673	652,883	38,494,578
Cash	2,436,046	24,412,684	38,494,093	-65,050,000	-	139,351	-1,401	413,276

Employees' Retirement System of the City of Norfolk

Historical Hybrid Composition

September 30, 2019

	<u>(%)</u>		<u>(%)</u>
Total Fund Policy : May-2016		Total Fund Strategy Index : Jul-2016	
MSCI AC World IMI (Net)	62.50	MSCI AC World IMI (Net)	55.00
Blmbg. Barc. U.S. Aggregate	37.50	Blmbg. Barc. U.S. Aggregate	30.00
		NCREIF Fund Index-ODCE (VW) (Net)	7.50
		Alerian MLP Index	7.50

Strategy Index is comprised of the returns of the various broad market benchmarks assigned to each manager and weighted to reflect the System's target asset allocation.



Employees' Retirement System of the City of Norfolk

Historical Hybrid Composition

September 30, 2019

Global Equity Policy

(%)

May-2016

MSCI AC World IMI (Net)	100.00
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Sep-2009

Russell 3000 Index	60.00
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MSCI AC World ex USA (Net)	40.00
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Jun-2009

Russell 3000 Index	70.00
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MSCI AC World ex USA (Net)	30.00
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Jun-2006

Russell 3000 Index	70.00
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MSCI EAFE Index	30.00
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Oct-1990

S&P 500	100.00
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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.

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