

Investment Performance Review  
Period Ending December 31, 2018

# **Employees' Retirement System of the City of Norfolk**



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As we start 2019, we first want to say "Thank you" for giving AndCo the opportunity to serve you. On behalf of our entire organization, we are extremely grateful for our client partnerships and we will continue working hard to maintain your trust and confidence. Our mission statement reads – "To represent the sole interest of our clients by redefining independence". We're happy to report we remain steadfast in this core belief and continue to build an organization and service model that is singularly focused and independent. This helps ensure all recommendations are truly in the best interest of our valued clients. We believe this approach will drive value for our client partnerships long into the future.

AndCo also remains committed to delivering high quality, customized services. As we start 2019, we are 89 employees strong advising approximately \$90 billion in client assets - both record highs for AndCo. In 2018 we hired 7 new team members including one consultant, two research professionals, one additional compliance officer, one technology administrator and two team members within our client solutions group. All hires were made to better service our clients.

2019 will represent another year of reinvestment in the organization to better serve our clients and make AndCo stronger. For example, we have already hired a new Senior Research Analyst bringing our dedicated research team to 15 professionals. As 2019 progresses, we are targeting additional hires in research, software development, content creation and our client solutions group. We will also be partnering with an external firm this year to conduct an in-depth client assessment to help ensure we are meeting the evolving needs of our clients and exceeding their service expectations. There will be more information regarding this survey from the firm and your consultant over the coming months.

Finally, we just completed our annual Firmwide retreat. This retreat was a great opportunity for our firm to spend time together with colleagues and get a clear understanding of where the company is going, and more importantly, why we're headed in that direction. Since the inception of AndCo, the idea has been to make the firm a multigenerational organization owned and managed by its employees. As a result, since 2015, along with the strategic elements of our annual retreat, we also started the process of announcing new partners of the firm to foster this succession plan and today we have 8 partners controlling 100% of the company.

The evolution of our firm would not be possible without great partners like you. Our name reminds us who we work for every day: "Our Client" &Co. You will always be first in our service approach. As we continue to discuss updates with our firm, please know every decision is made by asking "How does this benefit our clients?" If it doesn't benefit you, we don't do it, it's that simple. We know our clients are facing many challenges and we want to be there to help get you through all environments. We are honored and humbled you have chosen AndCo as your partner. We don't take that relationship for granted and will continue to work tirelessly to exceed your expectations.

On behalf of AndCo, thank you for your valued partnership and the opportunity to serve you.



Mike Welker, CFA®  
President/CEO

## **Executive Summary**

### HIGHLIGHTS

#### Winners for the recent quarter

- Barclays US Govt +2.5%
- Barclays MBS +2.1%
- Barclays US Agg +1.6%

#### Losers for the recent quarter

- Russell 2000 -20.2%
- Russell Mid Cap -15.4%

#### Areas of strength for the recent quarter

- Domestic Bonds
- Mortgage Backed Securities

#### Winners for the trailing year

- 3 Month T-Bill +1.9%
- Barclays MBS +1.0%
- Barclays US Govt +0.9%

#### Losers for the trailing year

- MSCI Emerging Markets -14.6%
- MSCI ACWI x US -14.2%

#### Areas of strength for the trailing year

- Domestic Bonds
- Real Estate

### COMMENTARY

• Allocation to equities ended the quarter at 53.2%, inside the target range of 45%-65%. Market value for the **Total Fund** was \$1.013 billion by quarter-end versus \$ 1.124 billion in the previous quarter. The Total Fund posted a -8.0% return for the trailing quarter and -5.4% for the trailing 12 months. The Total Fund underperformed its Policy Index by 23 bps for the quarter and outperformed its Policy Index by 77 bps over the trailing year.

• The **Total Fund** ranked in the 56th percentile in the peer universe for the quarter and 77th percentile over the last 12 months.

• The **Global Equity Composite** returned -13.2% for the quarter, underperforming the index by 6 bps and ranking in the 50th percentile versus peers. Over the trailing 12 months, the portfolio returned -9.7%, outperforming the benchmark by 35 bps and ranking in the 62nd percentile of the peer universe.

• The **Fixed Income Composite** returned 1.4% over the quarter, underperforming the Bloomberg Barclays U.S. Aggregate by 20 bps and ranking in the 16th percentile versus universe peers. Over the trailing 12 months, the composite returned 0.35% and outperformed the Index 34 bps and ranked in the 28<sup>th</sup> percentile of the peer universe.

• The **Real Estate Composite** returned 1.8% for the quarter and 7.5% for the trailing 12 months.

• The **MLP Composite** returned -18.4% for the quarter, underperforming the index by 111 bps and ranking in the 73rd percentile versus peers. For the trailing year, the composite has returned -12.5% and has underperformed the benchmark by 3 bps, ranking in the 9<sup>th</sup> percentile versus peers. Since inception, the MLP Composite is ahead of its Alerian MLP Index benchmark by 412 bps and has returned -0.3%.

### REBALANCING ACTIVITY FOR THE QUARTER

#### Raise cash for benefit payments:

##### SSgA MSCI ACWI IMI

To cash \$6,700,000

October 2018

##### SSgA MSCI ACWI IMI

To cash \$7,000,000

November 2018

##### PIMCO Total Return

To cash \$6,700,000

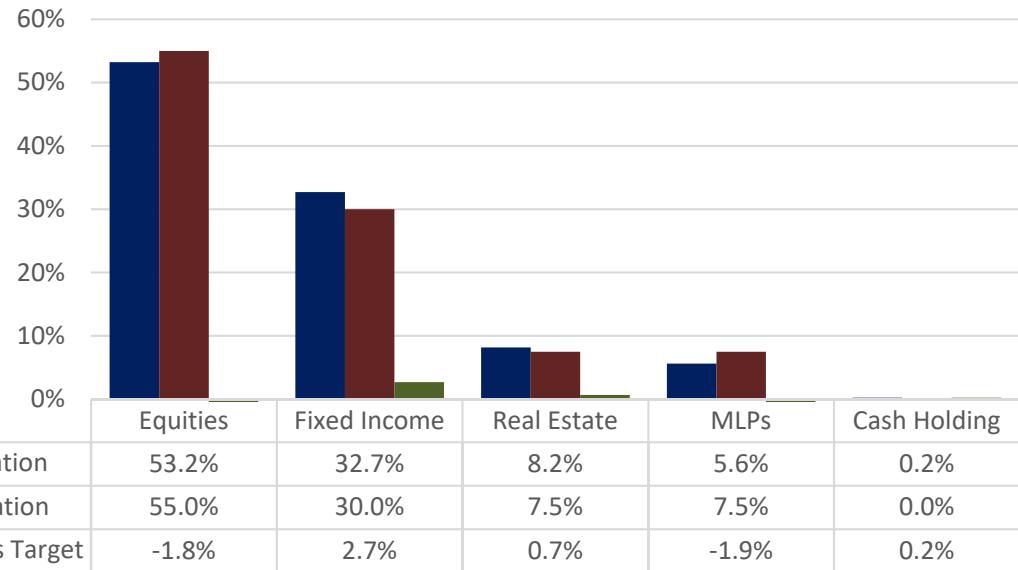
December 2018

Total quarterly transfer from cash to checking

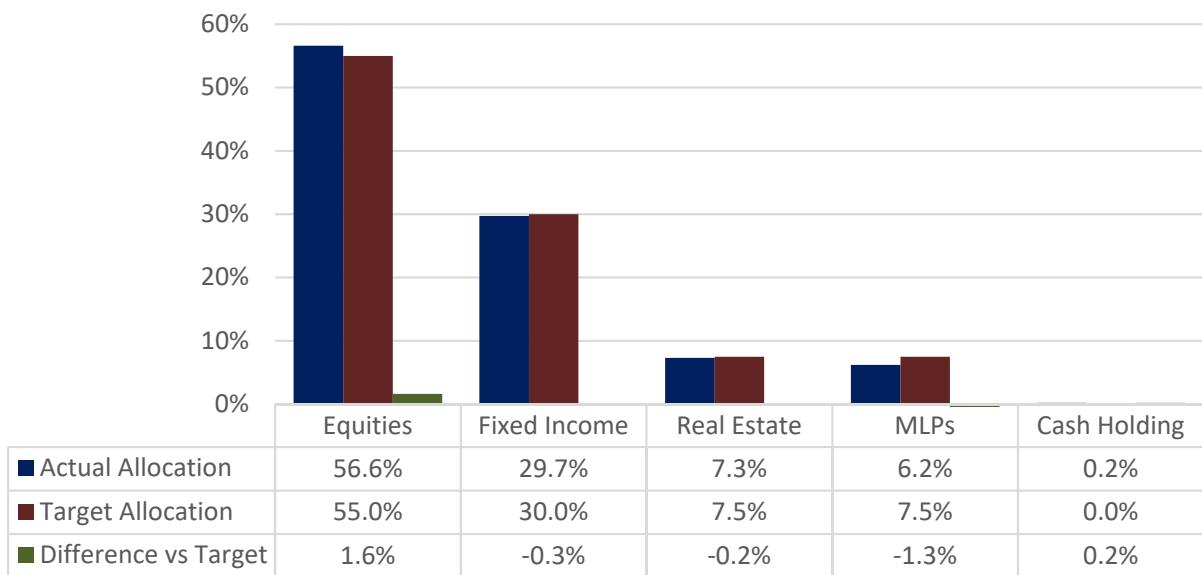
account:

\$20,400,000

Asset Allocation – December 31, 2018



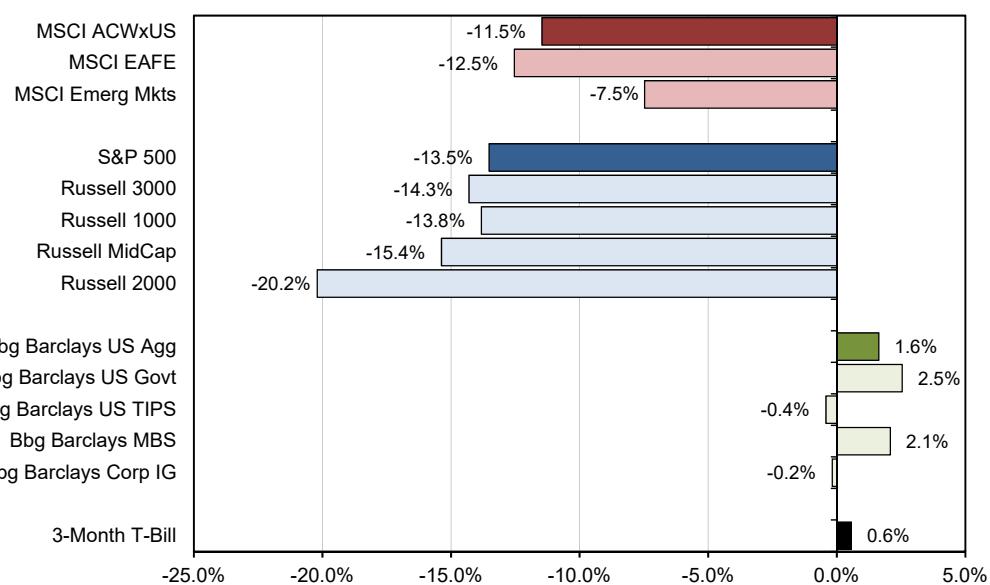
Asset Allocation – September 30, 2018



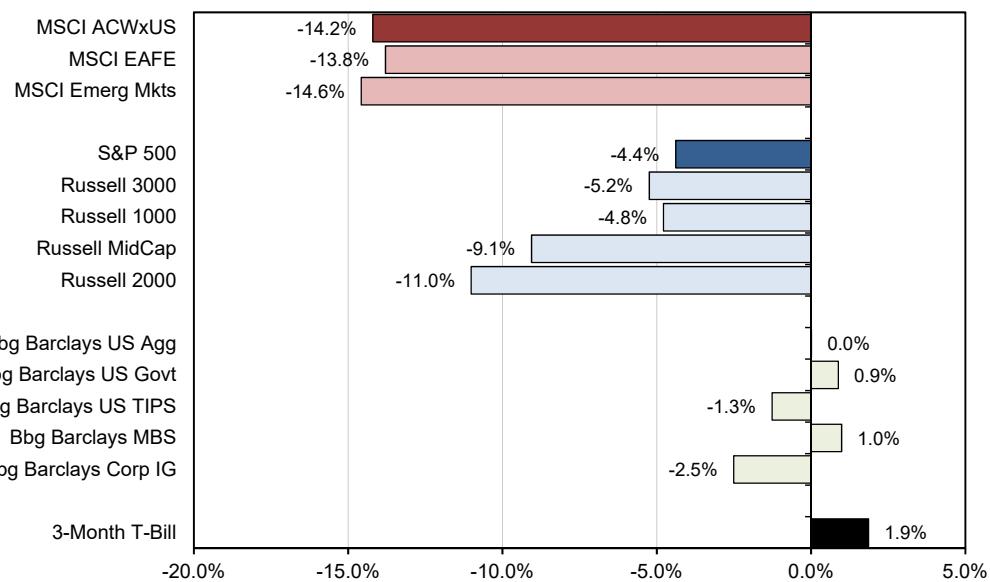
## **Market Environment**

- Markets were volatile to end the 2018 calendar year. Both international and domestic equity markets had considerable losses during the 4<sup>th</sup> quarter while fixed income returns were muted, but outperformed relative to equities. Within equities, domestic stocks trailed international markets, reversing the 2018 trend of US market strength. Trade tensions between the US and China, midterm elections in US Congress, the effects of ongoing monetary policy tightening by the Federal Reserve (Fed), federal debt ceiling negotiations and the subsequent partial government shutdown outweighed generally positive corporate earnings and macroeconomic data reported during the quarter. The large cap S&P 500 Index returned -13.5% during the quarter while the small cap Russell 2000 Index fell by over 20% for the period. The drop in equity prices over the last three months was enough to take the returns for major US equity indices into negative territory for the 2018 calendar year. Returns over the 1-year period were -4.4% and -11.0% for the S&P 500 and Russell 2000 respectively.
- Similar to US equities, international equity index returns finished the quarter in negative territory with the MSCI ACWI ex US Index returning -11.5%. International markets faced headwinds from softening global macroeconomic data, tightening global monetary policy, uncertainty around Brexit negotiations, turmoil surrounding global trade relations, falling commodity prices and continued US Dollar (USD) strength. The developed market MSCI EAFE Index fell -12.5% during the 4<sup>th</sup> quarter, ending the year down -13.8%. Emerging markets performed well by comparison, only losing -7.5% during the quarter. Despite the 4<sup>th</sup> quarter outperformance, returns for emerging market equities trailed developed markets over the 1-year period with the MSCI Emerging Markets Index returning -14.6% versus a -13.8% return for the MSCI EAFE Index.
- Fixed income securities outperformed equities through both the 4<sup>th</sup> quarter and calendar year 2018 with the broad market Bloomberg Barclays Aggregate Index returning 1.6% and 0.0% respectively. Interest rates on the US Treasury Yield Curve continued their 2018 flattening trend as short-term rates increased to near-term highs while long-term rates fell during the quarter. Some of the increase in short-term rates can be attributed to the late December Fed interest rate hike. This marked the fourth Fed interest rate increase of 2018. This movement in rates did lead to some short-term rates being higher than those of longer dated maturities. More conservative fixed income sectors such as Treasuries and mortgage backed securities outperformed during the quarter and for the year as investors moved toward the relative safety these securities provide while widening credit spreads acted as a headwind to corporate issues.

### Quarter Performance

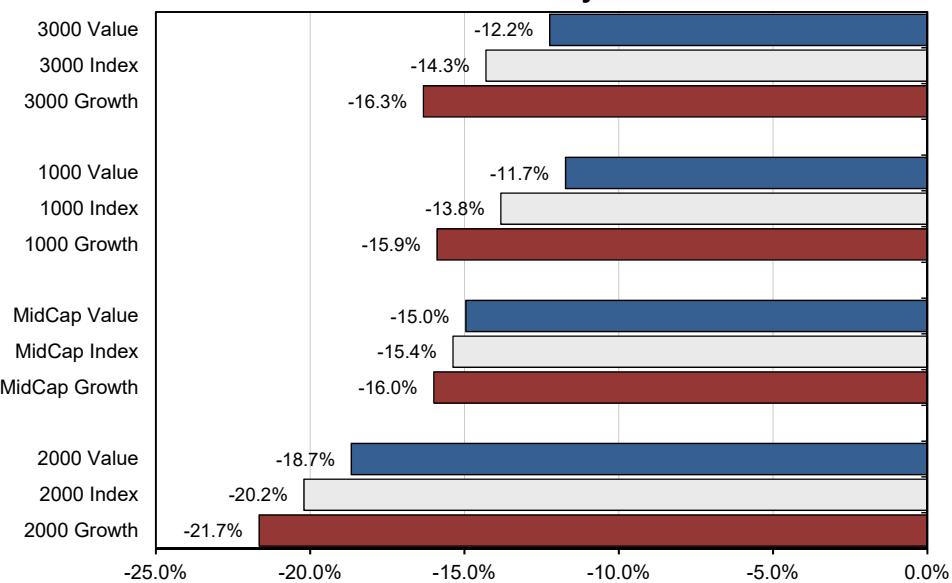


### 1-Year Performance

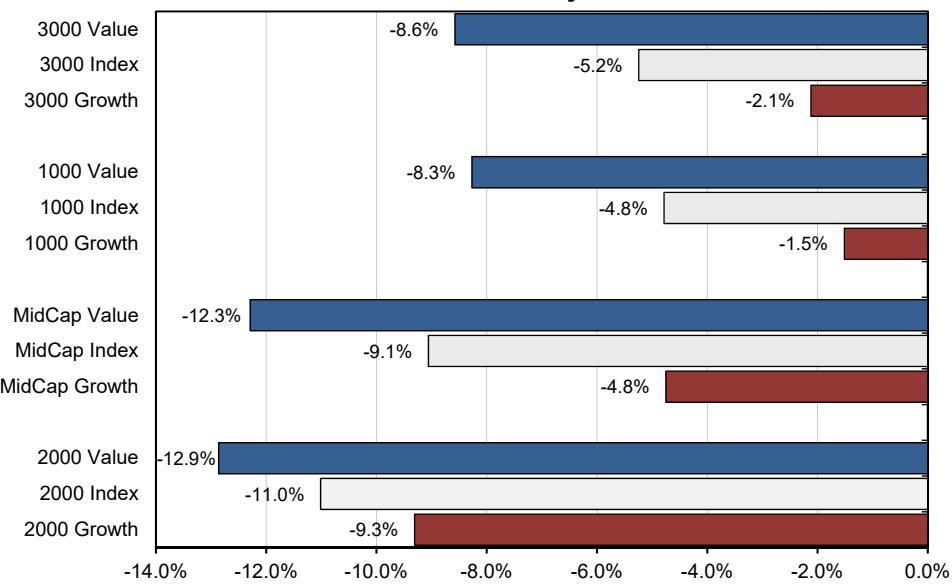


- US equity index returns were strongly negative across the style and capitalization spectrum during the 4<sup>th</sup> quarter of 2018. Despite these negative results, there was positive data in GDP, unemployment, wage growth, retail sales, and corporate earnings during the period. These positive economic factors were offset by softening data in housing, consumer confidence and manufacturing, tightening monetary policy, negative guidance for future corporate earnings and signs of slowing global growth which all contributed to the heavy selling in equities. Investors also considered the effects of ongoing trade negotiations, especially between the US and China, and the results of the US congressional midterm elections which likely reduced the chances of any major policy changes or new fiscal stimulus measures. The effects of partisan politics was particularly evident at the end of the quarter as budget negotiations between Democrats and Republicans collapsed over disagreement around the inclusion of funds for a border wall with Mexico, leading to a partial government shutdown to end the year.
- During the quarter, large cap stocks outperformed mid and small cap equities across growth, value and core indices. The large cap Russell 1000 Index fell -13.8% during the 4<sup>th</sup> quarter versus a -20.2% drop for the Russell 2000 Index. Part of the reason for weakness in small cap names is the steady increase in interest rates that occurred over 2018 as small cap companies typically maintain a higher percentage of debt than their large cap peers. Small cap names are also typically more volatile than larger companies and they have historically underperformed during market downturns. Similar to the most recent quarter, large cap stocks outperformed relative to small caps through calendar year 2018. The Russell 1000 returned -4.8% for the 1-year periods compared to a -11.0% return for the Russell 2000.
- Value indices outperformed growth indices across the market cap spectrum during the 4<sup>th</sup> quarter, reversing a year-to-date trend of growth stock outperformance. The large cap Russell 1000 Value Index was the best performing style index for the period, returning -11.7% for the quarter, while the Russell 2000 Growth Index was the worst performer, returning -21.7%. Value benchmarks tend to outperform in down markets as they benefit from their relative safety and higher dividend yields. Despite the short-term underperformance, growth benchmarks continue to outperform over the 1-year period, however, many of the sector exposures that drove growth stock outperformance during the first three quarters of the year, such as technology and consumer discretionary, were relative detractors during the 4<sup>th</sup> quarter.

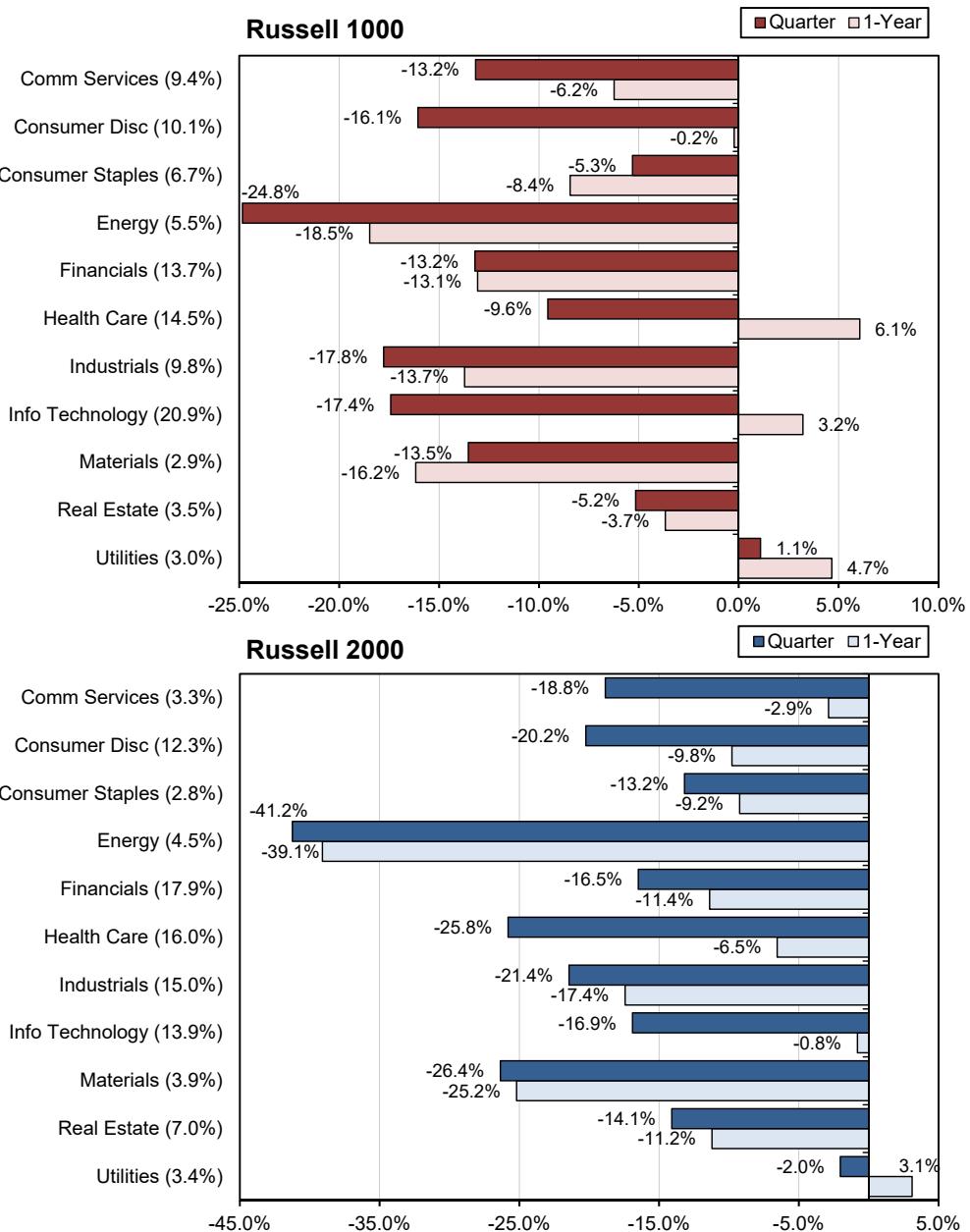
### Quarter Performance - Russell Style Series



### 1-Year Performance - Russell Style Series



- Both S&P Dow Jones Indices and MSCI made changes to the Global Industry Classification Standard (GICS) sector configurations of their indices, creating a new GICS sector classification called Communication Services which replaced the Telecommunications sector on September 28, 2018. The Communication Services sector is comprised of companies in the Telecommunications sector, as well as certain companies formerly classified as Consumer Discretionary and Information Technology. As a result, the sector, went from a weighting of about 2% of the Russell 1000 Index to almost 10% post reclassification. Notable names now classified under Communication Services include Netflix, Alphabet, Facebook and Disney. This is just the second change to the GICS classifications since 1999.
- Sector performance was broadly negative across large cap sectors for the 4<sup>th</sup> quarter. All sectors within the Russell 1000 Index with the exception of the utilities sector posted negative returns for the period with seven sectors outpacing the return on the index. Cyclical sectors such as energy, industrials and technology were the worst performers through the quarter returning -24.8%, -17.8% and -17.4% respectively. Energy companies were hurt by a steep decline in oil prices during the quarter while technology and industrial companies fell on negative guidance for future earnings. More defensive, higher dividend paying sectors such as utilities, REITs and consumer staples were the strongest performing sectors with returns of 1.1%, -5.2% and -5.3% respectively. Only three sectors (health care, utilities, technology) posted positive results over the 1-year period with the remaining sectors losing ground during the calendar year.
- Quarterly results for small cap sectors were generally lower relative to their large capitalization counterparts. All eleven sectors had negative returns during the period with six of eleven economic sectors outpacing the Russell 2000 Index return for the quarter. Energy, materials and healthcare posted the worst returns for the period returning -41.2%, -26.4% and -25.8% respectively. Similar to large caps, defensive sectors performed well with utilities, consumer staples and real estate detracting the least returning -2.0%, -13.2% and -14.1% respectively. Over the trailing 1-year period, only utilities posted a gain returning 3.1%. Energy stocks were the worst performers in 2018, falling a considerable -41.2%.
- Using S&P 500 sector valuations as a proxy for the market, forward P/E ratios for three of the eleven GICS sectors were higher than their long-term averages at quarter-end. Using these historical P/E measures, the utilities, consumer discretionary and real estate sectors appear the most extended. In contrast the financials, technology and energy sectors were trading at a discount to their long-term average P/E ratios.



**The Market Environment**  
**Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000**  
As of December 31, 2018

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Microsoft Corp	3.27%	-11.2%	20.3%	Information Technology
Apple Inc	3.24%	-29.9%	-5.4%	Information Technology
Amazon.com Inc	2.59%	-25.0%	28.4%	Consumer Discretionary
Berkshire Hathaway Inc B	1.68%	-4.6%	3.0%	Financials
Johnson & Johnson	1.47%	-6.0%	-5.1%	Health Care
JPMorgan Chase & Co	1.39%	-12.9%	-6.6%	Financials
Alphabet Inc Class C	1.34%	-13.2%	-1.0%	Communication Services
Alphabet Inc A	1.32%	-13.4%	-0.8%	Communication Services
Facebook Inc A	1.32%	-20.3%	-25.7%	Communication Services
Exxon Mobil Corp	1.23%	-19.0%	-15.1%	Energy

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Integrated Device Technology Inc	0.35%	3.0%	62.9%	Information Technology
Etsy Inc	0.32%	-7.4%	132.6%	Consumer Discretionary
Five Below Inc	0.31%	-21.3%	54.3%	Consumer Discretionary
Haemonetics Corp	0.29%	-12.7%	72.3%	Health Care
Ciena Corp	0.27%	8.5%	62.0%	Information Technology
Planet Fitness Inc A	0.26%	-0.8%	54.8%	Consumer Discretionary
Idacorp Inc	0.26%	-5.6%	4.6%	Utilities
HubSpot Inc	0.26%	-16.7%	42.2%	Information Technology
LivaNova PLC	0.25%	-26.2%	14.5%	Health Care
Cree Inc	0.24%	13.0%	15.2%	Information Technology

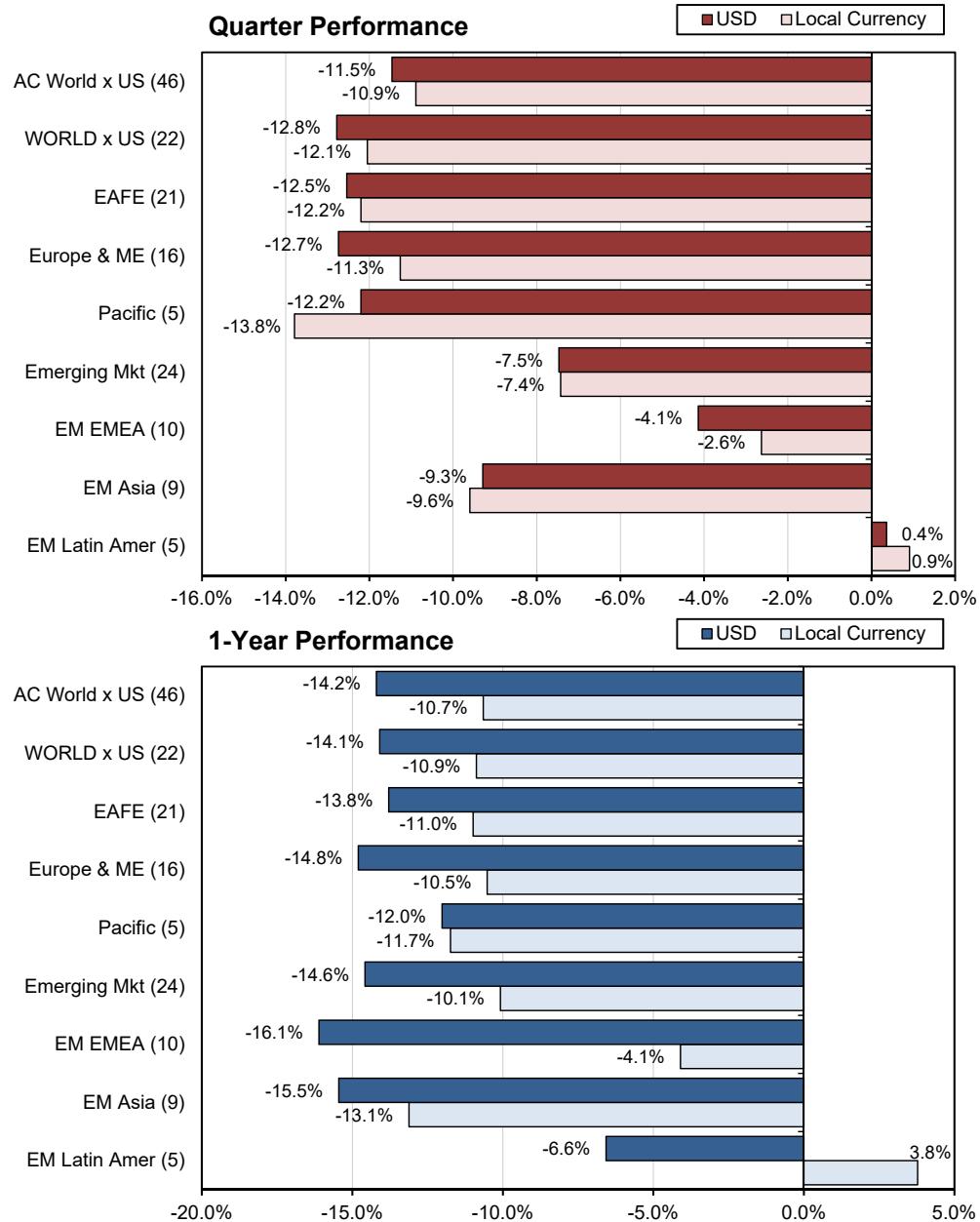
Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Tesaro Inc	0.01%	90.3%	-10.4%	Health Care
Red Hat Inc	0.13%	28.9%	46.2%	Information Technology
Virtu Financial Inc A	0.00%	27.1%	45.9%	Financials
Tesla Inc	0.19%	25.7%	6.9%	Consumer Discretionary
SCANA Corp	0.03%	23.2%	23.1%	Utilities
Tribune Media Co A	0.02%	18.9%	9.7%	Communication Services
MarketAxess Holdings Inc	0.03%	18.6%	5.6%	Financials
ARRIS International PLC	0.02%	17.6%	19.0%	Information Technology
United States Cellular Corp	0.00%	16.1%	38.1%	Communication Services
Newmont Mining Corp	0.08%	15.2%	-6.2%	Materials

Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Electro Scientific Industries Inc	0.05%	71.7%	39.8%	Information Technology
Fluent Inc	0.01%	67.4%	3.4%	Communication Services
Mitek Systems Inc	0.02%	53.3%	20.8%	Information Technology
Arsanis Inc	0.00%	43.2%	-81.8%	Health Care
Inovalon Holdings Inc	0.05%	41.1%	-5.5%	Health Care
K12 Inc	0.05%	40.1%	55.9%	Consumer Discretionary
Investment Technology Group Inc	0.05%	39.9%	59.0%	Financials
Eidos Therapeutics Inc	0.01%	37.9%	N/A	Health Care
Belmond Ltd Class A	0.13%	37.2%	104.3%	Consumer Discretionary
Pacific Biosciences of California Inc	0.06%	36.8%	180.3%	Health Care

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Weatherford International PLC	0.00%	-79.4%	-86.6%	Energy
Nabors Industries Ltd	0.00%	-66.8%	-69.3%	Energy
Extraction Oil & Gas Inc	0.00%	-62.0%	-70.0%	Energy
Adient PLC	0.01%	-61.4%	-80.4%	Consumer Discretionary
Whiting Petroleum Corp	0.01%	-57.2%	-14.3%	Energy
Kosmos Energy Ltd	0.00%	-56.5%	-40.6%	Energy
Chesapeake Energy Corp	0.01%	-53.2%	-47.0%	Energy
Conduent Inc	0.01%	-52.8%	-34.2%	Information Technology
NVIDIA Corp	0.33%	-52.4%	-30.8%	Information Technology
SM Energy Co	0.01%	-50.8%	-29.6%	Energy

Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Synergy Pharmaceuticals Inc	0.00%	-93.3%	-94.9%	Health Care
Sanchez Energy Corp	0.00%	-88.3%	-94.9%	Energy
Sienna Biopharmaceuticals Inc	0.00%	-84.3%	-87.2%	Health Care
Cloud Peak Energy Inc	0.00%	-84.1%	-91.8%	Energy
Selecta Biosciences Inc	0.00%	-82.9%	-72.9%	Health Care
Clearside Biomedical Inc	0.00%	-82.6%	-84.7%	Health Care
Key Energy Services Inc	0.00%	-81.9%	-82.4%	Energy
AAC Holdings Inc	0.00%	-81.7%	-84.4%	Health Care
PHI Inc Non-Voting Shares	0.00%	-80.2%	-84.0%	Energy
Bristow Group Inc	0.00%	-80.0%	-82.0%	Energy

- Broad international equity returns were negative for the quarter in both local currency and USD terms. Geopolitical concerns, weakening economic data and the tightening of global monetary policy drove most of the negative performance. The USD also continued to strengthen against most currencies for the period which provided a headwind for USD based investors. The MSCI ACWI ex US Index fell -10.9% in local currency terms and -11.5% in USD terms during the 4<sup>th</sup> quarter. Returns for international indices were also broadly negative over the 1-year period in both local currency and USD terms with the MSCI ACWI ex US returning -10.7% and -14.2% respectively.
- Fourth quarter results for developed market international indices were negative in both local currency and USD terms with the MSCI EAFE Index returning -12.2% and -12.5% respectively. Returns were dampened for US investors as the USD continued to appreciate against most currencies, pushing returns lower. Global economic reporting during the quarter fueled concerns that global growth was beginning to slow. Japanese economic data faced headwinds from several natural disasters and data out of Europe was generally disappointing. Investors also weighed the effects of several significant political events in Europe including riots in France, ongoing budget negotiations between Italy and the EU and uncertainty around Brexit. Concerns over a “no deal” Brexit grew during the quarter as the draft withdrawal agreement presented by UK Prime Minister Theresa May was poorly received leading to a wave of cabinet resignations, a delay in the parliamentary vote and a “no confidence” vote which she ultimately won. The MSCI EAFE Index returned -11.0% and -13.8% for the last twelve months in local currency and USD terms respectively.
- Emerging markets outperformed relative to developed markets for the 4<sup>th</sup> quarter, but still declined in both local currency and USD terms with the MSCI Emerging Markets Index returning -7.4% and -7.5% respectively. Returns in emerging markets were hurt by the continued uncertainty surrounding trade relations between the US and China as both countries agreed to a 90-day hold on any new tariffs to allow for continued negotiations. Chinese economic data also appeared to be slowing during the quarter prompting the announcement of additional monetary and fiscal stimulus. The election of President Andres Manuel Lopez Obrador hurt returns in Mexico as investors feared the potential ramifications of his nationalist campaign promises. In contrast, Brazil was one of the few bright spots during the quarter as market participants looked favorably on the election of President Jair Bolsonaro in anticipation of market friendly economic reforms, including reforms associated with the country's bloated state pension system which has weighed heavily on the country's debt load. One year returns for the MSCI Emerging Market Index were -10.1% in local currency terms and -14.6% in USD terms.



**The Market Environment**  
**US Dollar International Index Attribution & Country Detail**  
As of December 31, 2018

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.6%	-7.7%	-12.1%
Consumer Discretionary	11.2%	-14.2%	-16.1%
Consumer Staples	11.6%	-8.4%	-10.8%
Energy	5.9%	-17.5%	-7.2%
Financials	19.5%	-13.7%	-20.1%
Health Care	11.2%	-10.3%	-4.3%
Industrials	14.3%	-14.6%	-15.7%
Information Technology	6.0%	-16.7%	-15.6%
Materials	7.4%	-15.2%	-17.5%
Real Estate	3.7%	-5.4%	-9.9%
Utilities	3.8%	-0.1%	1.1%
<b>Total</b>	<b>100.0%</b>	<b>-12.5%</b>	<b>-13.8%</b>

MSCI - ACWIxUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	7.6%	-5.5%	-11.9%
Consumer Discretionary	10.6%	-14.1%	-20.2%
Consumer Staples	9.9%	-7.4%	-11.2%
Energy	7.3%	-16.3%	-8.1%
Financials	22.2%	-10.7%	-16.8%
Health Care	8.4%	-11.2%	-6.2%
Industrials	11.7%	-13.7%	-15.1%
Information Technology	8.0%	-14.6%	-17.6%
Materials	7.7%	-13.4%	-15.9%
Real Estate	3.4%	-3.8%	-11.6%
Utilities	3.4%	0.5%	-0.9%
<b>Total</b>	<b>100.0%</b>	<b>-11.5%</b>	<b>-14.2%</b>

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	14.1%	-3.7%	-14.9%
Consumer Discretionary	10.4%	-13.5%	-32.5%
Consumer Staples	6.7%	-4.6%	-13.7%
Energy	8.0%	-10.6%	4.7%
Financials	24.8%	-0.9%	-8.7%
Health Care	2.8%	-16.2%	-20.9%
Industrials	5.5%	-3.8%	-12.6%
Information Technology	14.2%	-12.7%	-19.3%
Materials	7.7%	-10.8%	-11.6%
Real Estate	3.0%	1.4%	-17.2%
Utilities	2.7%	3.6%	-3.8%
<b>Total</b>	<b>100.0%</b>	<b>-7.5%</b>	<b>-14.6%</b>

Country	MSCI-EAFE Weight	MSCI-ACWIxUS Weight	Quarter Return	1- Year Return
Japan	24.6%	16.6%	-14.2%	-12.9%
United Kingdom	16.9%	11.4%	-11.8%	-14.2%
France	11.1%	7.5%	-15.1%	-12.8%
Germany	8.8%	6.0%	-15.5%	-22.2%
Switzerland	8.7%	5.8%	-8.9%	-9.1%
Australia	6.9%	4.7%	-10.0%	-12.0%
Hong Kong	3.9%	2.6%	-4.5%	-7.8%
Netherlands	3.4%	2.3%	-11.0%	-13.1%
Spain	3.1%	2.1%	-8.7%	-16.2%
Sweden	2.7%	1.8%	-14.2%	-13.7%
Italy	2.3%	1.5%	-11.8%	-17.8%
Denmark	1.8%	1.2%	-9.8%	-15.4%
Singapore	1.4%	0.9%	-6.7%	-9.4%
Finland	1.0%	0.7%	-14.7%	-3.4%
Belgium	1.0%	0.6%	-18.5%	-26.9%
Norway	0.7%	0.5%	-18.1%	-8.6%
Ireland	0.5%	0.4%	-17.7%	-25.3%
Israel	0.5%	0.4%	-14.4%	-5.5%
Austria	0.2%	0.2%	-20.7%	-27.4%
New Zealand	0.2%	0.2%	-6.6%	-4.0%
Portugal	0.2%	0.1%	-14.3%	-11.1%
<b>Total EAFE Countries</b>	<b>100.0%</b>	<b>67.5%</b>	<b>-12.5%</b>	<b>-13.8%</b>
Canada		6.5%	-15.3%	-17.2%
<b>Total Developed Countries</b>		<b>74.0%</b>	<b>-12.8%</b>	<b>-14.1%</b>
China		7.9%	-10.7%	-18.9%
Korea		3.6%	-13.1%	-20.9%
Taiwan		3.0%	-13.7%	-8.9%
India		2.4%	2.5%	-7.3%
Brazil		2.0%	13.4%	-0.5%
South Africa		1.6%	-3.8%	-24.8%
Russia		1.0%	-9.0%	-0.7%
Mexico		0.7%	-18.8%	-15.5%
Malaysia		0.6%	-5.8%	-6.0%
Thailand		0.6%	-10.2%	-5.5%
Indonesia		0.6%	9.7%	-9.2%
Poland		0.3%	-3.0%	-12.9%
Philippines		0.3%	5.3%	-16.5%
Qatar		0.3%	8.4%	29.8%
Chile		0.3%	-8.7%	-19.7%
United Arab Emirates		0.2%	-5.5%	-7.7%
Turkey		0.2%	4.8%	-41.4%
Colombia		0.1%	-19.0%	-11.5%
Peru		0.1%	-2.9%	1.6%
Hungary		0.1%	5.9%	-6.1%
Greece		0.1%	-16.0%	-36.8%
Czech Republic		0.0%	-8.7%	-4.5%
Egypt		0.0%	-9.4%	-14.0%
Pakistan		0.0%	-22.4%	-34.8%
<b>Total Emerging Countries</b>		<b>26.0%</b>	<b>-7.5%</b>	<b>-14.6%</b>
<b>Total ACWIxUS Countries</b>		<b>100.0%</b>	<b>-11.5%</b>	<b>-14.2%</b>

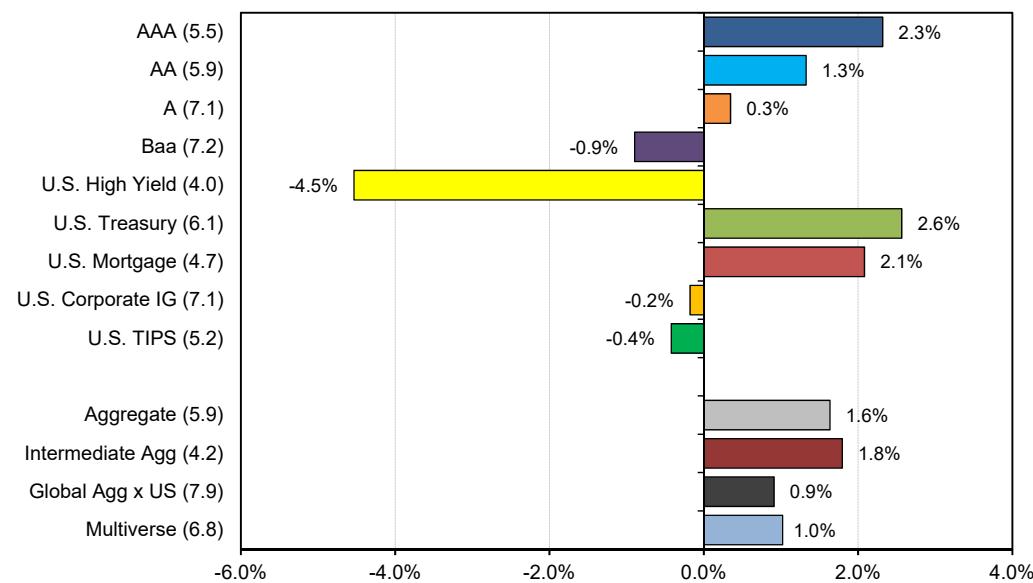
Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)

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.

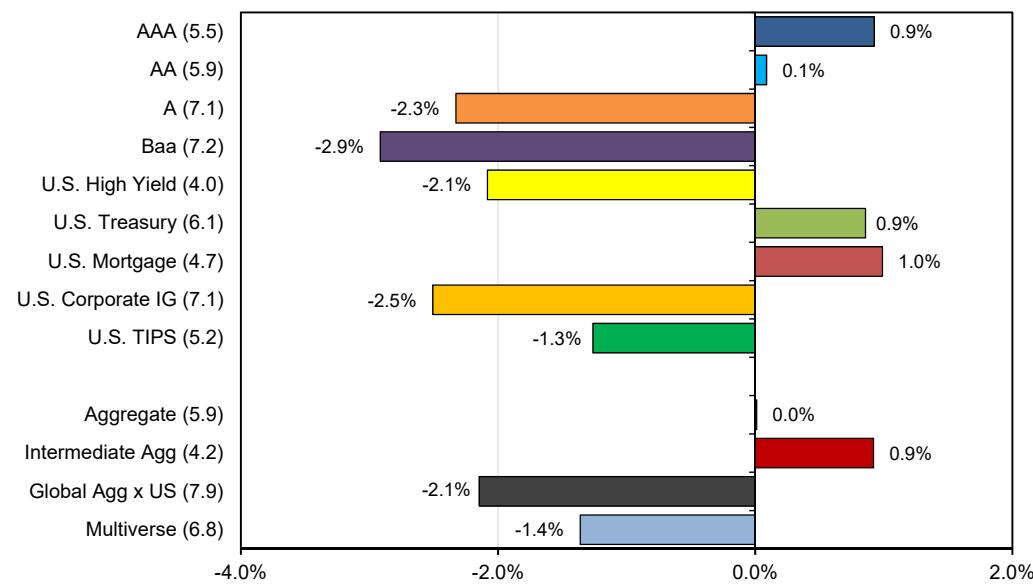


- Broad fixed income benchmarks had mixed results during the 4<sup>th</sup> quarter. Interest rates rose across short-term maturities, but fell on those on the middle and long end of the US Treasury Yield Curve. The Federal Open Market Committee (FOMC), decided to increase short-term interest rates by 25 basis points at their December meeting citing the strength of the US economy which caused an increase in short-term interest rates, but equity market volatility led market participants toward less volatile assets, pushing rates lower on maturities greater than 1-year. This was the fourth rate hike of 2018. The current Fed Funds Rate target range sits at 2.25%-2.50%. This caused continued flattening in the yield curve with some moderate inversion, which happens when short-term maturities have greater yields than long-term securities, in the middle of curve. The difference in yields between the 2-year and 10-year Treasury now sits at just 0.21%. Historically, an inverted yield curve has signaled a greater probability of a recession. The Fed is also continuing the reduction of the size of its balance sheet by slowing its pace of reinvestment as the securities it holds mature. However, the Fed did lower its guidance for future rate increases in 2019 following a reduction in expectations for GDP and inflation. The Fed is now projecting just two additional interest rate increases in 2019. The Bloomberg Barclays US Aggregate Index was positive during the quarter, posting a 1.6% return, but was flat, returning 0.0% over the 1-year period.
- Within investment grade credit, higher quality issues outperformed lower quality issues as investors preferred more conservative securities. On an absolute basis, without negating the duration differences in the sub-indices, AAA rated credit was the best performing investment grade credit quality segment returning 2.3% for the quarter, while Baa was the worst performing, falling -0.9%. High yield debt trailed investment grade credit as spreads widened the most for these issues, returning -4.5%. Returns are mixed for the investment grade quality segments when viewed over the 1-year period with higher quality issues outperforming lower quality securities. High yield performed well relative to lower quality investment grade debt due to the relatively strong returns experienced during the first three quarters of 2018.
- During the 4<sup>th</sup> quarter, the more defensive Treasury and mortgage backed sectors of the Bloomberg Barclays US Aggregate Index's three broad sectors were the best performers returning 2.6% and 2.1% respectively. Investment grade corporate credit underperformed, returning -0.2%, as credit spreads widened considerably during the period. This trend carried through to the 1-year period as both Treasuries and mortgage backed securities outperformed both investment grade and high yield corporate debt. Calendar year 2018 performance for the Treasury, mortgage backed and investment grade corporate issues was 0.9%, 1.0% and -2.5% respectively. US TIPS returned -0.4% and -1.3% for the 4<sup>th</sup> quarter and 1-year period.

### Quarter Performance

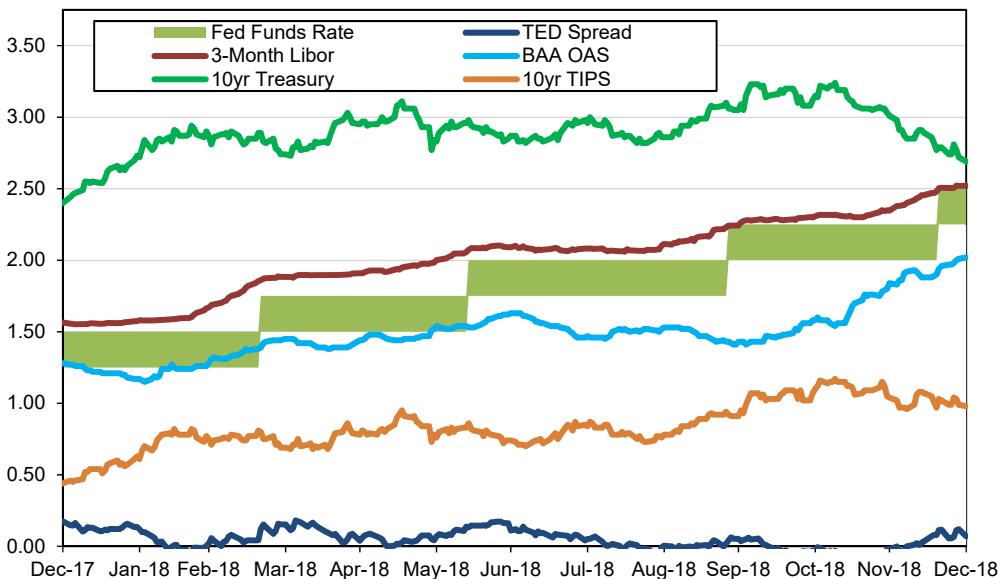


### 1-Year Performance

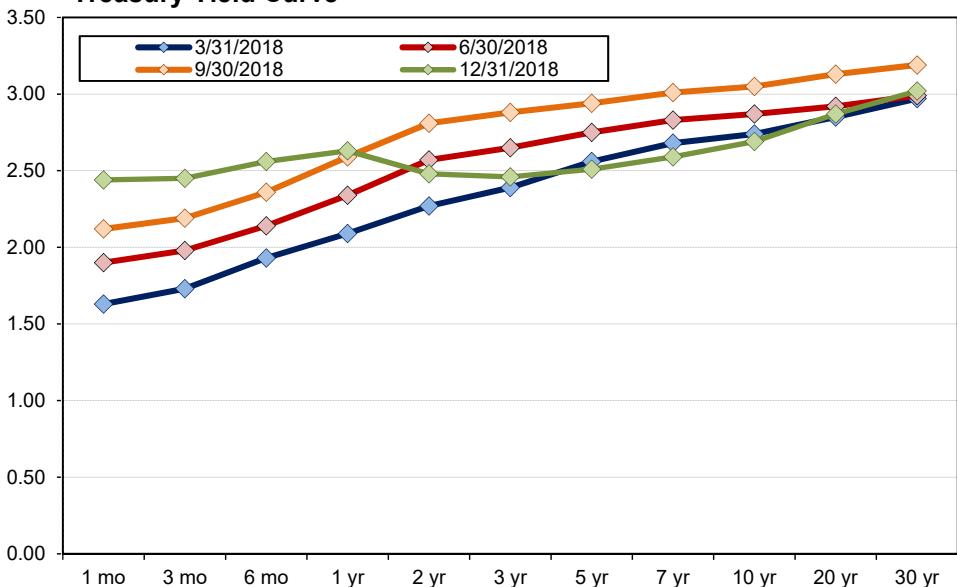


- Global fixed income indices continue to struggle relative to their domestic counterparts, underperforming during the 4<sup>th</sup> quarter. These indices have lower yields and the returns of these indices are also significantly influenced by fluctuations in their currency denomination relative to the USD. During the 4<sup>th</sup> quarter the USD strengthened against most other currencies, negatively impacting the returns on global bond indices. The return on global bonds, as represented by the Bloomberg Barclays Global Aggregate ex US Index, was 0.9% and -2.1% for the quarter and 1-year period respectively. As the global economy continues to recover, several international central banks have started to move toward less accommodative postures. Notably, the ECB, began to slow its monthly bond purchase program in September, reducing new purchases to 15 billion euro per month from 30 billion euro per month and ended the program entirely at year end. However, they have indicated a continuation of reinvestment in maturing securities and would likely not raise interest rates from current levels until summer 2019. The Bank of England 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 the 10-year Treasury yield (green line) fell during the 4<sup>th</sup> quarter after rising steadily through most of the year as investors moved to safe haven assets during the period, ending the year at 2.69%. The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-Treasury issues. This line illustrates a relatively tight range in credit spreads throughout most of 2018, but highlights an abrupt increase during the 4<sup>th</sup> quarter as investors moved to higher quality assets. This increase is equivalent to an interest rate increase on corporate bonds, which produces an additional headwind for corporate bond index returns. These credit spreads have widened by about 59 basis points over the last 3-months. The green band across the graph illustrates the gradual increase in the Federal Funds Rate (four increases in the last twelve months) due to the continued tightening of US monetary policy.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four calendar quarters. As mentioned, the yield curve continues to flatten as yields on shorter-term maturities have risen more than interest rates on the long end of the curve. The upward momentum of interest rates as well as a general flattening of the yield curve are clearly visible over the last twelve months with some minor inversion visible in the middle of the yield curve.

**1-Year Trailing Market Rates**



**Treasury Yield Curve**



## Annual Asset Class Performance

Annual Asset Class Performance															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Best	MSCI Emerging Markets (Net) Index 25.6 %	MSCI Emerging Markets (Net) Index 34.0 %	MSCI Emerging Markets (Net) Index 32.2 %	MSCI Emerging Markets (Net) Index 39.4 %	Bloomberg Barc. U.S. Aggregate Index 5.2 %	MSCI Emerging Markets (Net) Index 78.5 %	Russell 2000 Growth Index 29.1 %	NCREIF Fund Index-ODCE (EW) (Net) 15.0 %	MSCI Emerging Markets (Net) Index 18.2 %	Russell 2000 Growth Index 43.3 %	S&P 500 Index 13.7 %	NCREIF Fund Index-ODCE (EW) (Net) 14.2 %	Russell 2000 Value Index 31.7 %	MSCI Emerging Markets (Net) Index 37.3 %	NCREIF Fund Index-ODCE (EW) (Net) 7.3 %
	Russell 2000 Value Index 22.2 %	NCREIF Fund Index-ODCE (EW) (Net) 19.0 %	MSCI EAFE (Net) Index 26.3 %	NCREIF Fund Index-ODCE (EW) (Net) 15.0 %	Bloomberg Barclays Global Aggregate Ex USD 4.4 %	Bloomberg Barc. U.S. Corp High Yield 58.2 %	Russell 2000 Index 26.9 %	Bloomberg Barc. U.S. Aggregate Index 7.8 %	Russell 2000 Value Index 18.1 %	Russell 2000 Index 38.8 %	Russell 1000 Value Index 13.5 %	Russell 1000 Growth Index 5.7 %	Russell 2000 Index 21.3 %	Russell 1000 Growth Index 30.2 %	Bloomberg Barc. U.S. Aggregate Index 0.0 %
	MSCI EAFE (Net) Index 20.2 %	MSCI EAFE (Net) Index 13.5 %	Russell 2000 Value Index 23.5 %	Russell 1000 Growth Index 11.8 %	NCREIF Fund Index-ODCE (EW) (Net) -11.1 %	Russell 1000 Growth Index 37.2 %	Russell 2000 Value Index 24.5 %	Bloomberg Barc. U.S. Corp High Yield 5.0 %	Russell 1000 Value Index 17.5 %	Russell 2000 Value Index 34.5 %	Russell 1000 Growth Index 13.1 %	S&P 500 Index 1.4 %	Russell 1000 Value Index 17.3 %	MSCI EAFE (Net) Index 25.0 %	Russell 1000 Growth Index -1.5 %
	Russell 2000 Index 18.3 %	Russell 1000 Value Index 7.1 %	Russell 1000 Value Index 22.2 %	MSCI EAFE (Net) Index 11.2 %	Bloomberg Barc. U.S. Corp High Yield -26.2 %	Russell 2000 Growth Index 34.5 %	MSCI Emerging Markets (Net) Index 18.9 %	Bloomberg Barclays Global Aggregate Ex USD 4.4 %	MSCI EAFE (Net) Index 17.3 %	Russell 1000 Growth Index 33.5 %	NCREIF Fund Index-ODCE (EW) (Net) 11.4 %	Bloomberg Barc. U.S. Aggregate Index 0.5 %	Bloomberg Barc. U.S. Corp High Yield 17.1 %	Russell 2000 Growth Index 22.2 %	Bloomberg Barc. U.S. Corp High Yield -2.1 %
	Russell 1000 Value Index 16.5 %	Russell 1000 Growth Index 5.3 %	Russell 2000 Index 18.4 %	Bloomberg Barclays Global Aggregate Ex USD 11.0 %	Russell 2000 Value Index -28.9 %	MSCI EAFE (Net) Index 31.8 %	Russell 1000 Growth Index 16.7 %	Russell 1000 Value Index 2.6 %	Russell 2000 Index 16.3 %	Russell 1000 Value Index 32.5 %	Bloomberg Barc. U.S. Aggregate Index 6.0 %	MSCI EAFE (Net) Index -0.8 %	S&P 500 Index 12.0 %	S&P 500 Index 21.8 %	Bloomberg Barclays Global Aggregate Ex USD -2.1 %
	Russell 2000 Growth Index 14.3 %	S&P 500 Index 4.9 %	S&P 500 Index 15.8 %	Russell 2000 Growth Index 7.0 %	Russell 2000 Index -33.8 %	Russell 2000 Index 27.2 %	Russell 1000 Value Index 15.5 %	S&P 500 Index 2.1 %	S&P 500 Index 16.0 %	S&P 500 Index 32.4 %	Russell 2000 Growth Index 5.6 %	Russell 2000 Growth Index -1.4 %	Russell 2000 Growth Index 11.3 %	Russell 2000 Index 14.6 %	S&P 500 Index -4.4 %
	Bloomberg Barclays Global Aggregate Ex USD 12.5 %	Russell 2000 Value Index 4.7 %	NCREIF Fund Index-ODCE (EW) (Net) 15.1 %	Bloomberg Barc. U.S. Aggregate Index 7.0 %	Russell 1000 Value Index -36.8 %	S&P 500 Index 26.5 %	Bloomberg Barc. U.S. Corp High Yield 15.1 %	Russell 1000 Value Index 0.4 %	Bloomberg Barc. U.S. Corp High Yield 15.8 %	MSCI EAFE (Net) Index 22.8 %	Russell 2000 Index 4.9 %	Russell 1000 Value Index -3.8 %	MSCI Emerging Markets (Net) Index 11.2 %	Russell 1000 Value Index 13.7 %	Russell 1000 Value Index -8.3 %
	NCREIF Fund Index-ODCE (EW) (Net) 11.5 %	Russell 2000 Index 4.6 %	Russell 2000 Growth Index 13.3 %	S&P 500 Index 5.5 %	S&P 500 Index -37.0 %	Russell 2000 Value Index 20.6 %	NCREIF Fund Index-ODCE (EW) (Net) 15.1 %	Russell 2000 Growth Index -2.9 %	Russell 1000 Growth Index 15.3 %	NCREIF Fund Index-ODCE (EW) (Net) 12.4 %	Russell 2000 Value Index 4.2 %	Russell 2000 Index -4.4 %	NCREIF Fund Index-ODCE (EW) (Net) 8.4 %	Bloomberg Barclays Global Aggregate Ex USD 10.5 %	Russell 2000 Growth Index -9.3 %
Performance	Bloomberg Barc. U.S. Corp High Yield 11.1 %	Russell 2000 Growth Index 4.2 %	Bloomberg Barc. U.S. Corp High Yield 11.9 %	Bloomberg Barc. U.S. Corp High Yield 1.9 %	Russell 1000 Growth Index -38.4 %	Russell 1000 Value Index 19.7 %	S&P 500 Index 15.1 %	Russell 2000 Index -4.2 %	Russell 2000 Growth Index 14.6 %	Bloomberg Barc. U.S. Corp High Yield 7.4 %	Bloomberg Barc. U.S. Corp High Yield 2.5 %	Bloomberg Barc. U.S. Corp High Yield -4.5 %	Russell 1000 Growth Index 7.1 %	Russell 2000 Value Index 7.8 %	Russell 2000 Index -11.0 %
	S&P 500 Index 10.9 %	Bloomberg Barc. U.S. Corp High Yield 2.7 %	Russell 1000 Growth Index 9.1 %	Russell 1000 Value Index -0.2 %	Russell 2000 Growth Index -38.5 %	Bloomberg Barclays Global Aggregate Ex USD 7.5 %	MSCI EAFE (Net) Index 7.8 %	Russell 2000 Value Index -5.5 %	NCREIF Fund Index-ODCE (EW) (Net) 9.9 %	Bloomberg Barc. U.S. Aggregate Index -2.0 %	MSCI Emerging Markets (Net) Index -2.2 %	Bloomberg Barclays Global Aggregate Ex USD -6.0 %	Bloomberg Barc. U.S. Aggregate Index 2.6 %	Bloomberg Barc. U.S. Corp High Yield 7.5 %	Russell 2000 Value Index -12.9 %
	Russell 1000 Growth Index 6.3 %	Bloomberg Barc. U.S. Aggregate Index 2.4 %	Bloomberg Barclays Global Aggregate Ex USD 8.2 %	Russell 2000 Index -1.6 %	MSCI EAFE (Net) Index -43.4 %	Bloomberg Barc. U.S. Aggregate Index 5.9 %	Bloomberg Barc. U.S. Aggregate Index 6.5 %	MSCI EAFE (Net) Index -12.1 %	Bloomberg Barc. U.S. Aggregate Index 4.2 %	MSCI Emerging Markets (Net) Index -2.6 %	Bloomberg Barclays Global Aggregate Ex USD -3.1 %	Russell 2000 Value Index -7.5 %	Bloomberg Barc. U.S. Aggregate Ex USD 1.5 %	NCREIF Fund Index-ODCE (EW) (Net) 6.9 %	MSCI EAFE (Net) Index -13.8 %
Worst	Bloomberg Barc. U.S. Aggregate Index 4.3 %	Bloomberg Barc. U.S. Aggregate Ex USD -8.7 %	Bloomberg Barc. U.S. Aggregate Index 4.3 %	Russell 2000 Value Index -9.8 %	MSCI Emerging Markets (Net) Index -53.3 %	NCREIF Fund Index-ODCE (EW) (Net) -31.3 %	Bloomberg Barclays Global Aggregate Ex USD 4.9 %	MSCI Emerging Markets (Net) Index -18.4 %	Bloomberg Barclays Global Aggregate Ex USD 4.1 %	Bloomberg Barclays Global Aggregate Ex USD -3.1 %	MSCI EAFE (Net) Index -4.9 %	MSCI Emerging Markets (Net) Index -14.9 %	MSCI EAFE (Net) Index 1.0 %	Bloomberg Barc. U.S. Aggregate Index 3.5 %	MSCI Emerging Markets (Net) Index -14.6 %
	Year														

Source: Investment Metrics

Past performance is no guarantee of future results. This document is provided for informational purposes only and should not be regarded as investment advice or as a recommendation regarding any particular course of action. The material provided herein is valid as of the date of distribution and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available, or circumstances existing or changes occurring after such date. Certain information is based on sources and data believed to be reliable, but AndCo cannot guarantee the accuracy, adequacy or completeness of the information. AndCo Consulting is an investment adviser registered with the U.S. Securities and Exchange Commission ("SEC"). Registration as an investment adviser does not constitute an endorsement of the firm by securities regulators nor does it indicate that the adviser has attained a particular level of skill or ability.

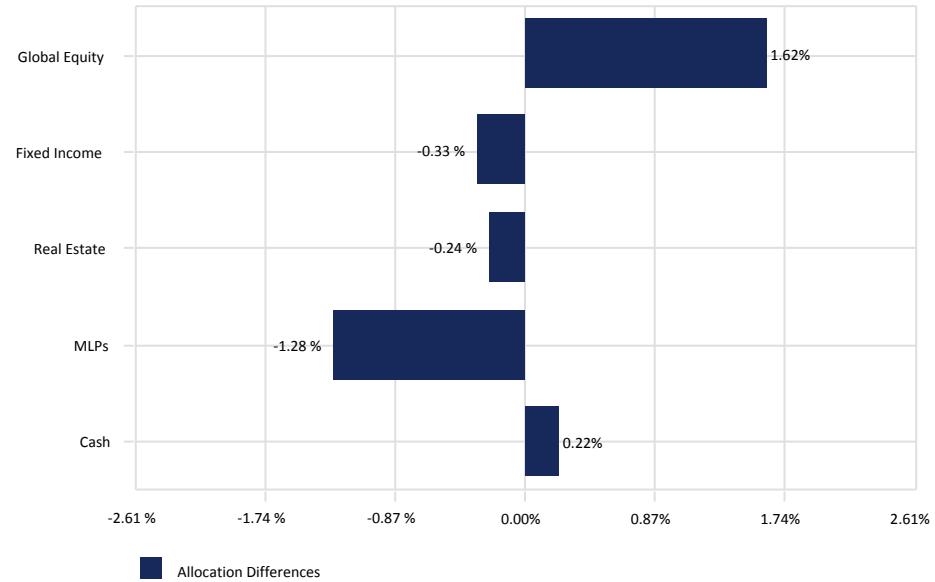
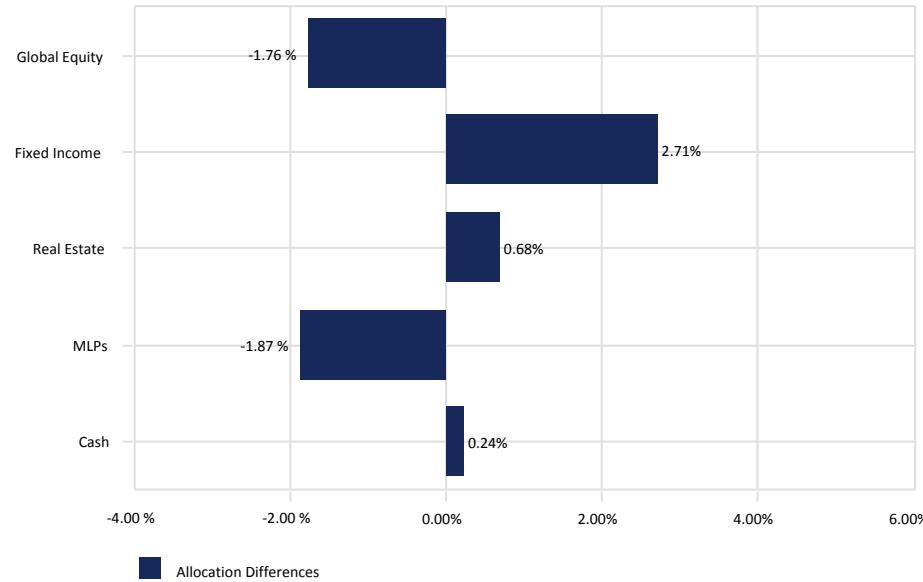


## **Total Fund**

# Employees' Retirement System of the City of Norfolk

## Asset Allocation vs. Target Allocation

December 31, 2018



December 31, 2018

	Market Value (\$)	Allocation (%)	Target (%)
Global Equity	539,745,314	53.24	55.00
Fixed Income	331,649,951	32.71	30.00
Real Estate	82,948,272	8.18	7.50
MLPs	57,042,763	5.63	7.50
Cash	2,436,046	0.24	0.00
Total Fund	1,013,822,346	100.00	100.00

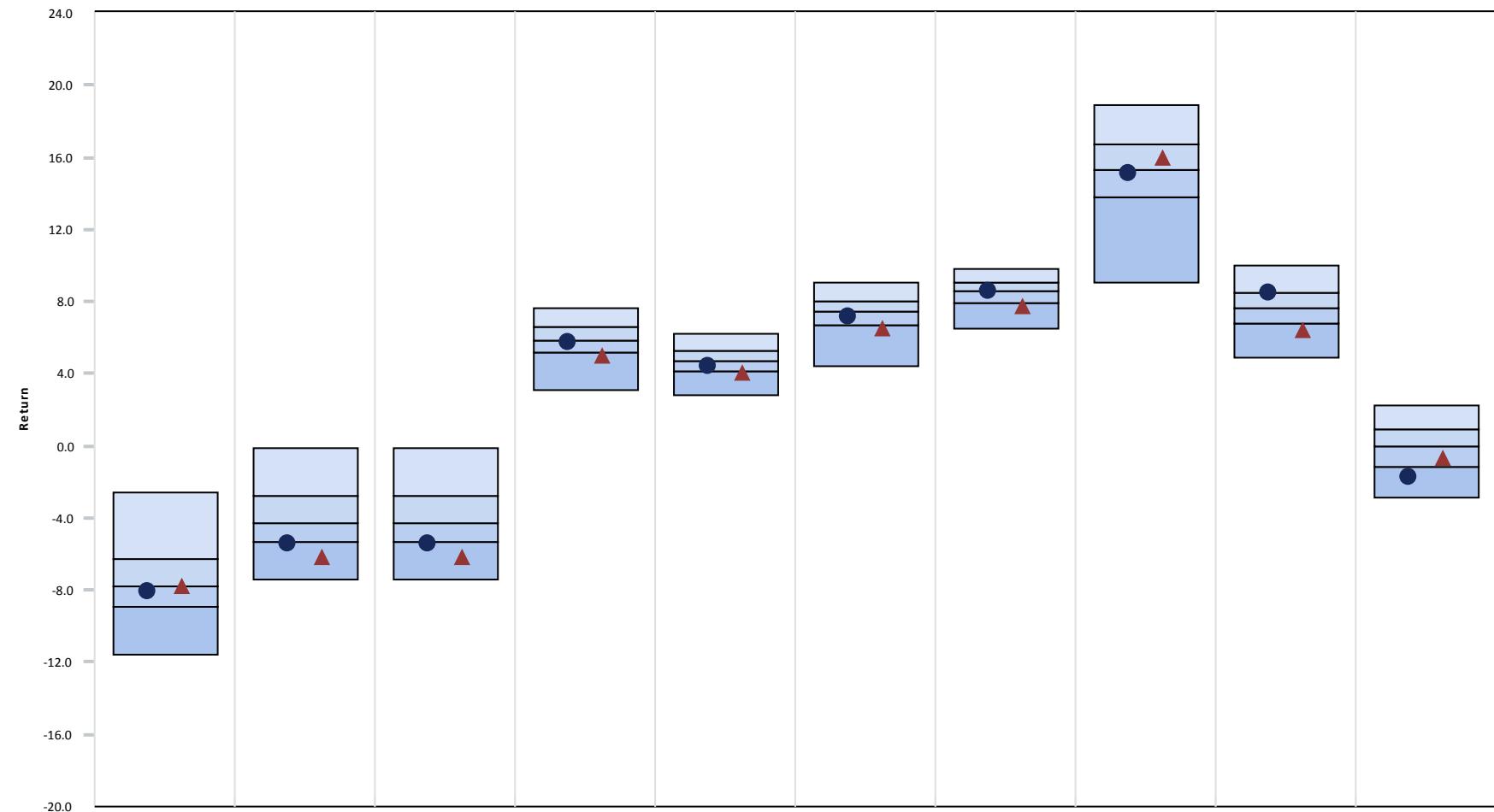
September 30, 2018

	Market Value (\$)	Allocation (%)	Target (%)
Global Equity	636,607,963	56.62	55.00
Fixed Income	333,595,855	29.67	30.00
Real Estate	81,654,643	7.26	7.50
MLPs	69,916,524	6.22	7.50
Cash	2,484,621	0.22	0.00
Total Fund	1,124,259,607	100.00	100.00

# Employees' Retirement System of the City of Norfolk

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

December 31, 2018



	<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>2017</u>	<u>2016</u>	<u>2015</u>
● Total Fund Composite	-8.04 (56)	-5.42 (77)	-5.42 (77)	5.70 (59)	4.39 (65)	7.20 (58)	8.58 (47)	15.10 (54)	8.48 (24)	-1.70 (84)
▲ Total Fund Policy	-7.81 (51)	-6.19 (87)	-6.19 (87)	4.98 (82)	3.99 (80)	6.47 (83)	7.69 (83)	15.91 (40)	6.39 (83)	-0.74 (67)
5th Percentile	-2.55	-0.10	-0.10	7.61	6.25	9.02	9.82	18.86	9.97	2.24
1st Quartile	-6.26	-2.81	-2.81	6.59	5.26	8.04	9.03	16.68	8.45	0.91
<b>Median</b>	<b>-7.76</b>	<b>-4.28</b>	<b>-4.28</b>	<b>5.87</b>	<b>4.73</b>	<b>7.42</b>	<b>8.54</b>	<b>15.30</b>	<b>7.61</b>	<b>-0.03</b>
3rd Quartile	-8.89	-5.38	-5.38	5.21	4.10	6.66	7.88	13.77	6.76	-1.14
95th Percentile	-11.54	-7.40	-7.40	3.12	2.81	4.41	6.45	9.02	4.90	-2.88

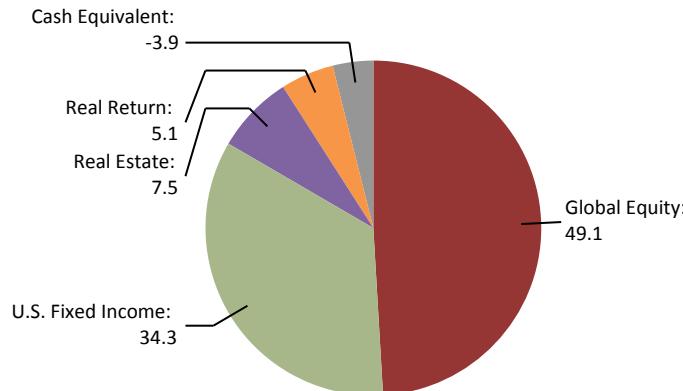
Parentheses contain percentile rankings.



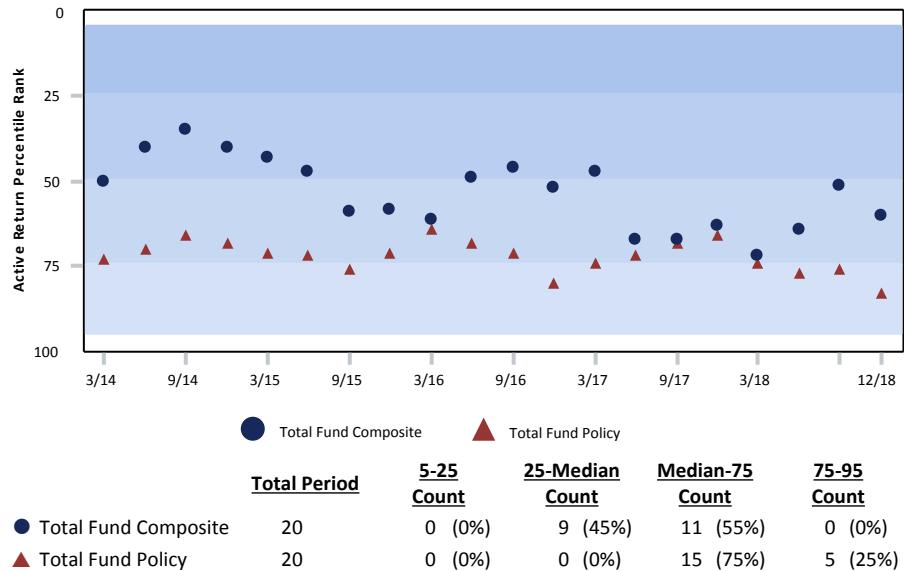
# Employees' Retirement System of the City of Norfolk

Total Fund Composite  
December 31, 2018

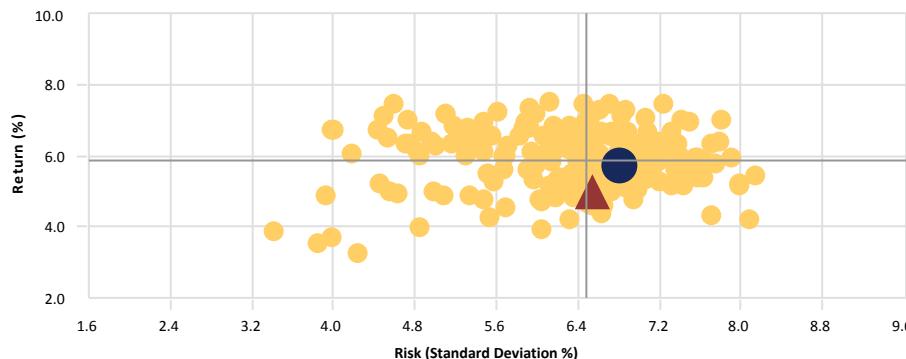
## Asset Allocation by Segment



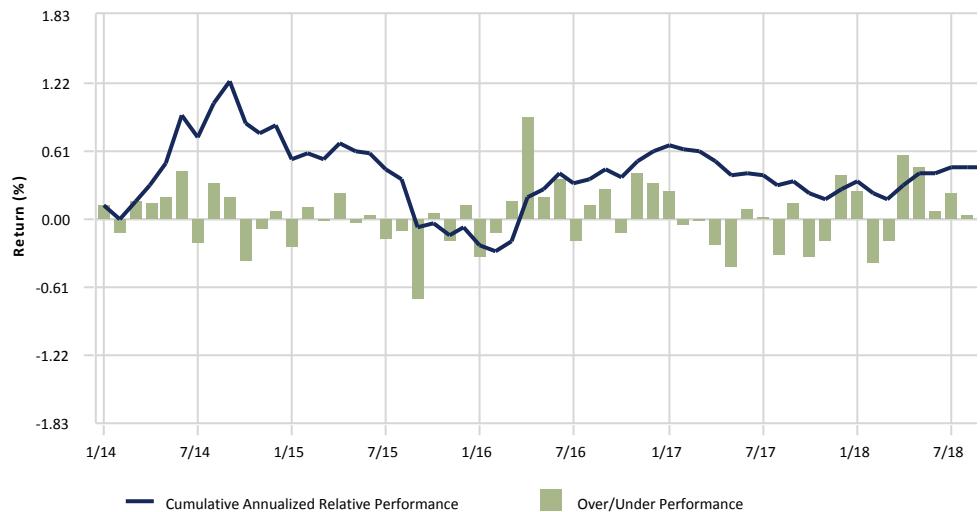
## 3 Year Rolling Return Rank



## Risk vs. Return (01/01/16 - 12/31/18)



## Relative Performance vs. Total Fund Policy



Note: Cash Equivalent allocation includes manager cash.



## **Global Equity**

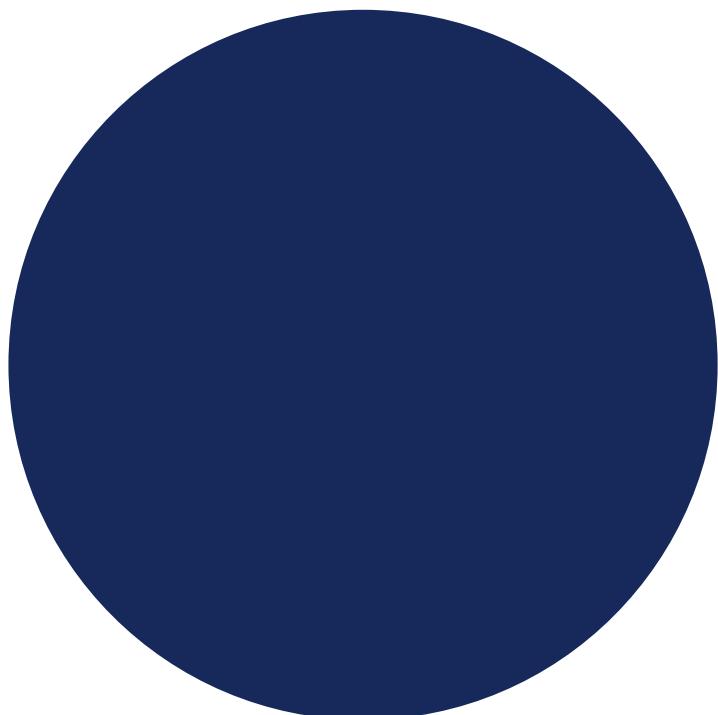
# Employees' Retirement System of the City of Norfolk

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

December 31, 2018

## Manager Allocation

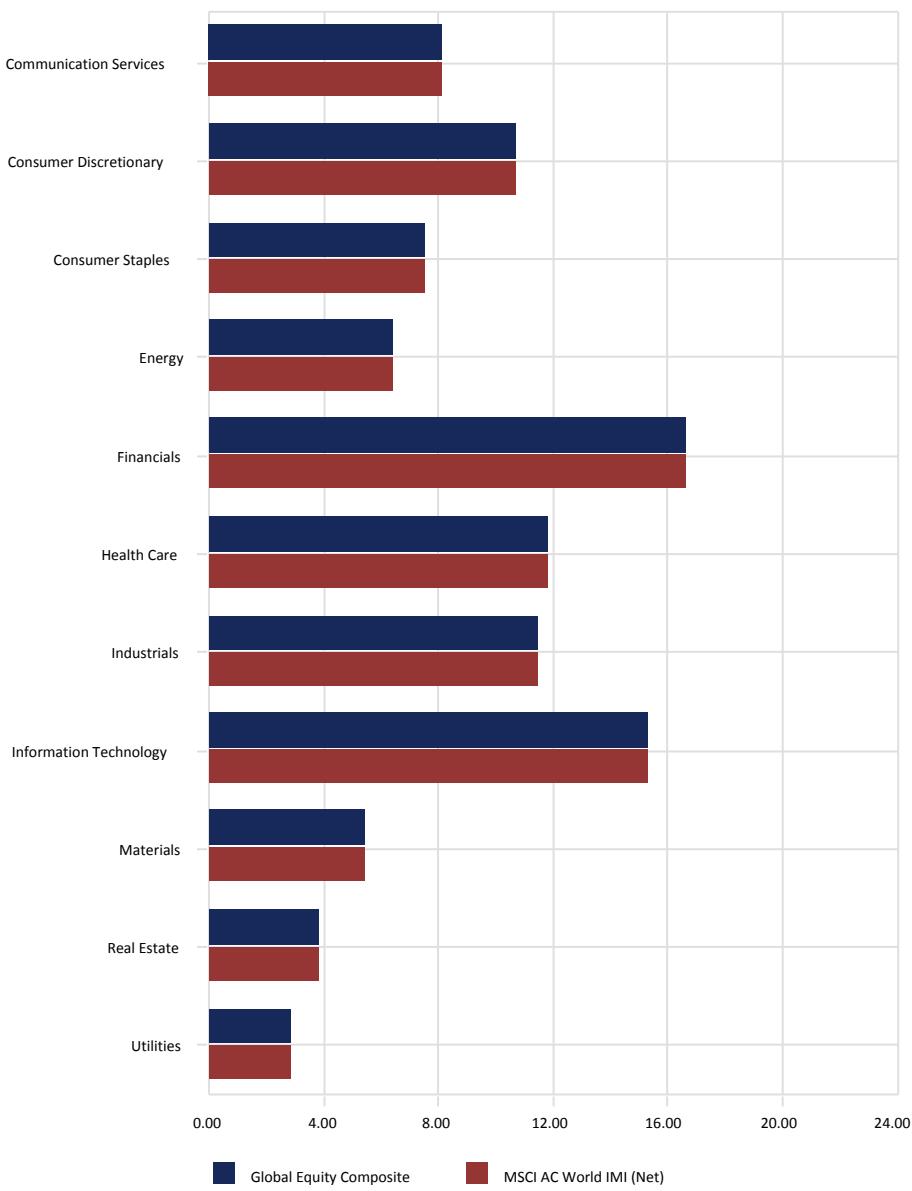
December 31, 2018 : \$539,745,314



■ SSgA MSCI ACWI IMI Index Fund

	Market Value (\$)	Allocation (%)
SSgA MSCI ACWI IMI Index Fund	539,745,314	100.00

## Sector Allocation - Holdings Based

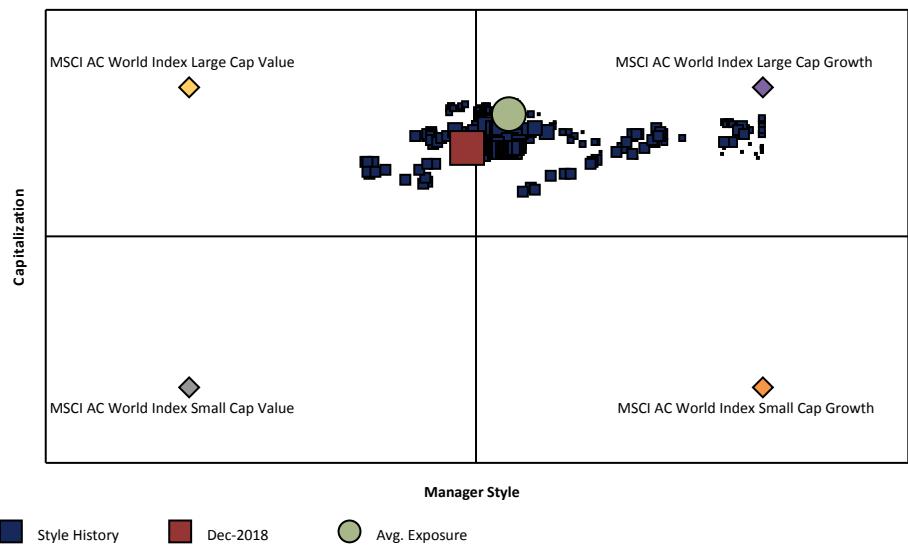


# Employees' Retirement System of the City of Norfolk

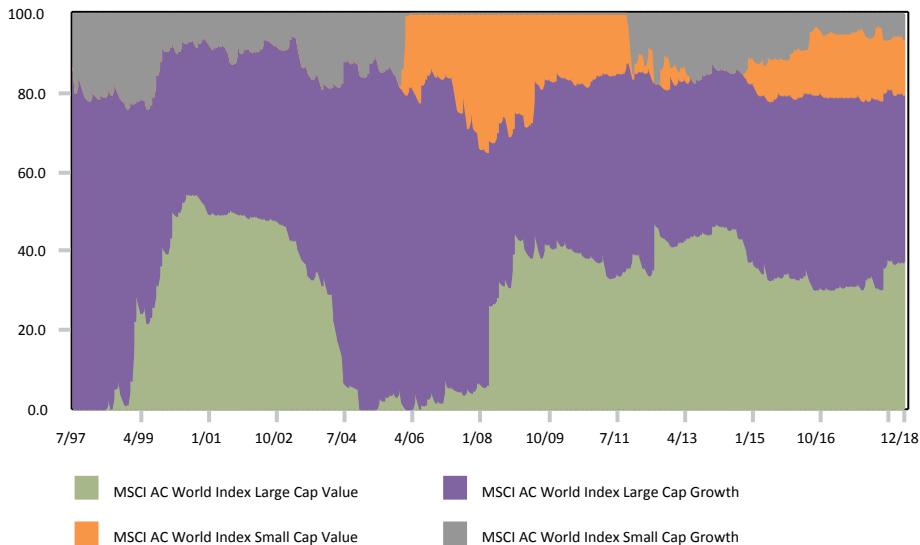
Global Equity Composite vs. MSCI AC World IMI (Net)

December 31, 2018

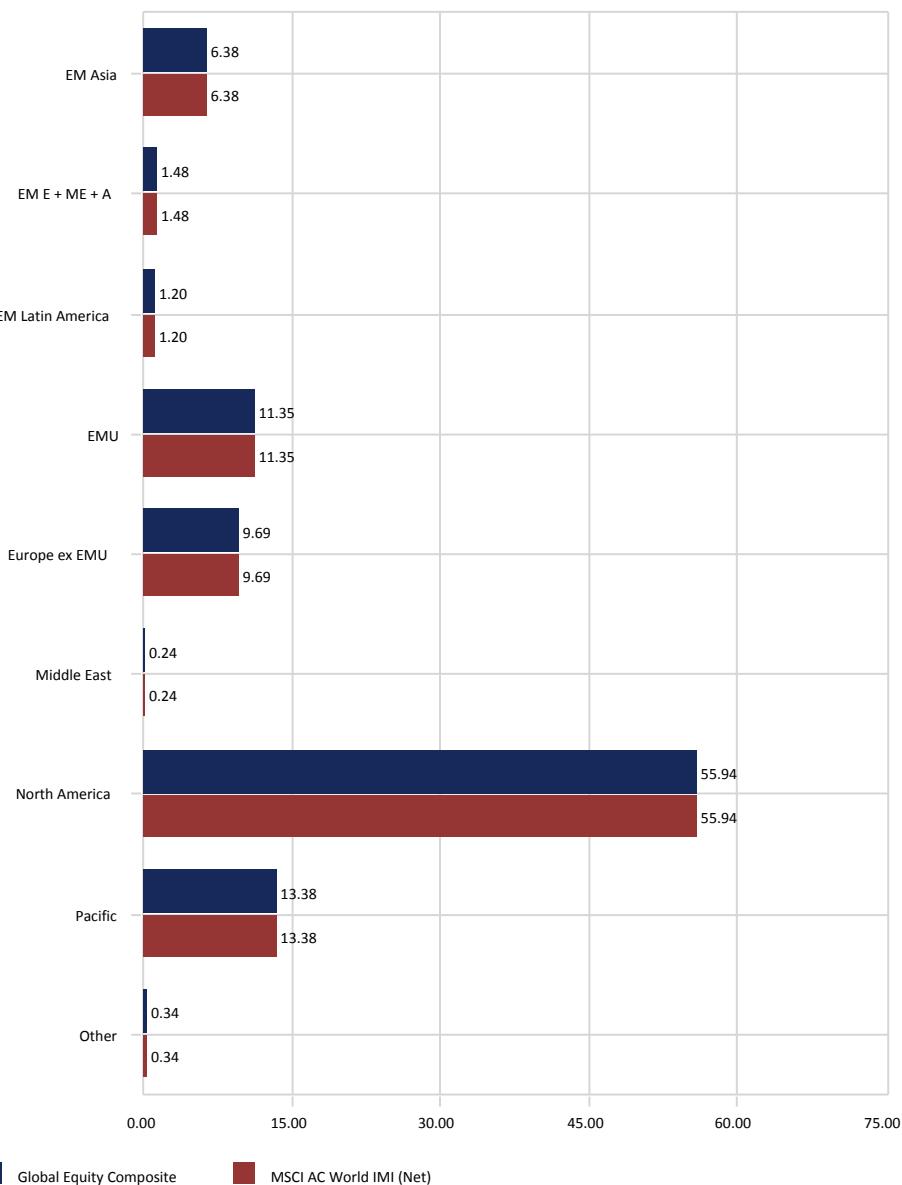
## Style Analysis - Returns Based



## 3 Year Style Analysis



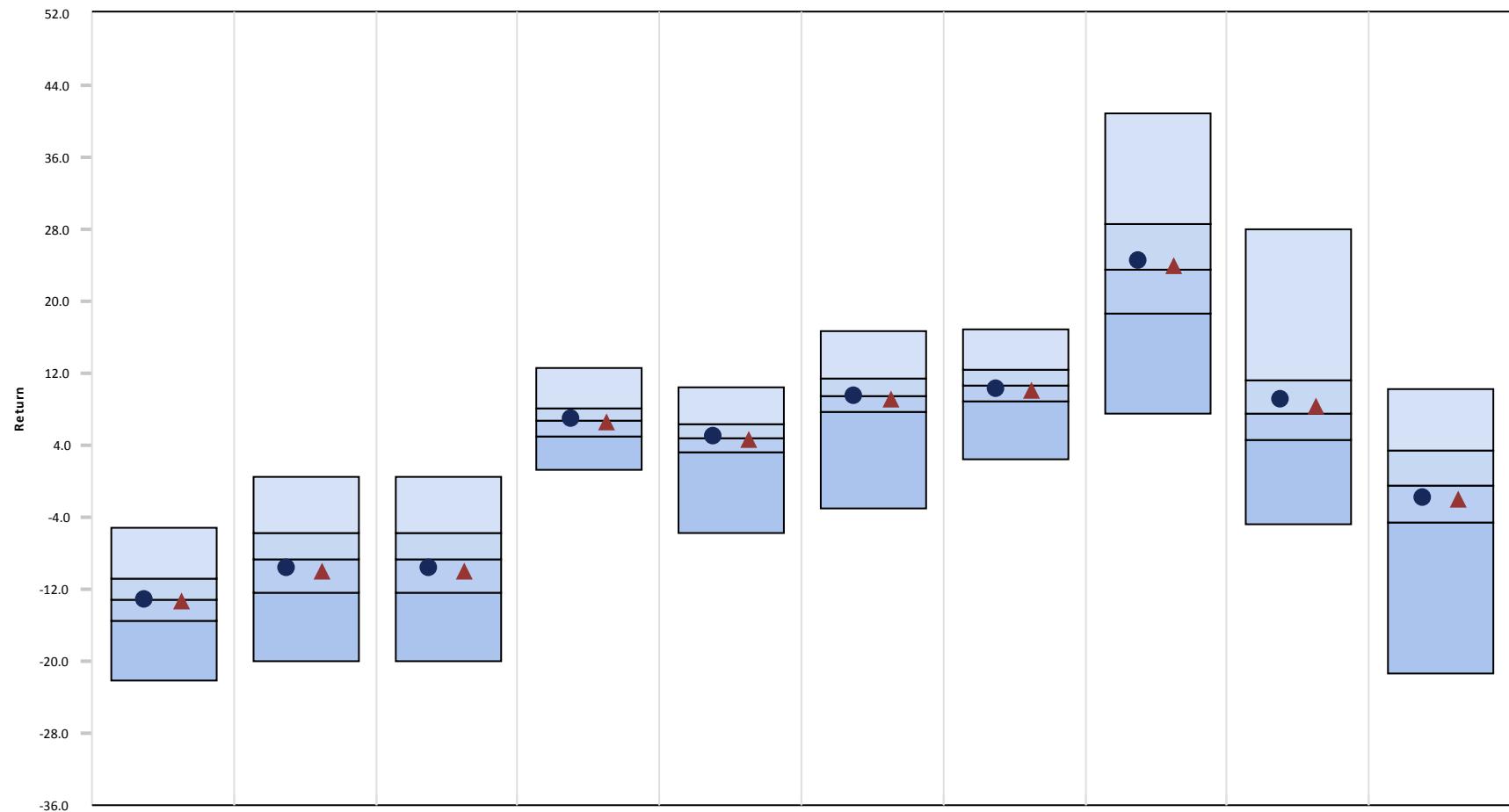
## Region Allocation - Holdings Based



# Employees' Retirement System of the City of Norfolk

Global Equity Composite vs. IM Global Equity (MF)

December 31, 2018



	3 Month	CYTD	1 Year	3 Year	5 Year	7 Year	10 Year	2017	2016	2015
● Global Equity Composite	-13.22 (50)	-9.73 (62)	-9.73 (62)	6.99 (45)	4.98 (48)	9.43 (50)	10.32 (56)	24.48 (47)	8.99 (38)	-1.83 (65)
▲ Global Equity Policy	-13.28 (51)	-10.08 (65)	-10.08 (65)	6.49 (55)	4.59 (57)	9.11 (56)	10.04 (58)	23.95 (49)	8.34 (42)	-1.96 (65)
5th Percentile	-5.20	0.47	0.47	12.64	10.39	16.64	16.84	40.97	28.03	10.22
1st Quartile	-10.76	-5.73	-5.73	8.12	6.30	11.38	12.31	28.52	11.19	3.51
<b>Median</b>	<b>-13.24</b>	<b>-8.74</b>	<b>-8.74</b>	<b>6.75</b>	<b>4.87</b>	<b>9.39</b>	<b>10.66</b>	<b>23.60</b>	<b>7.55</b>	<b>-0.52</b>
3rd Quartile	-15.50	-12.44	-12.44	4.96	3.12	7.75	8.80	18.61	4.53	-4.66
95th Percentile	-22.20	-19.99	-19.99	1.18	-5.75	-3.00	2.41	7.52	-4.73	-21.43

gross of fees

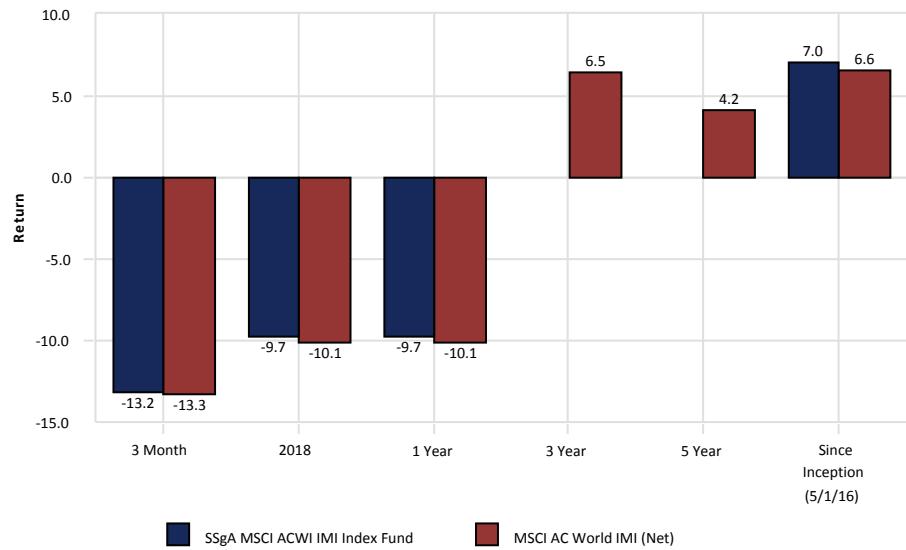


# Employees' Retirement System of the City of Norfolk

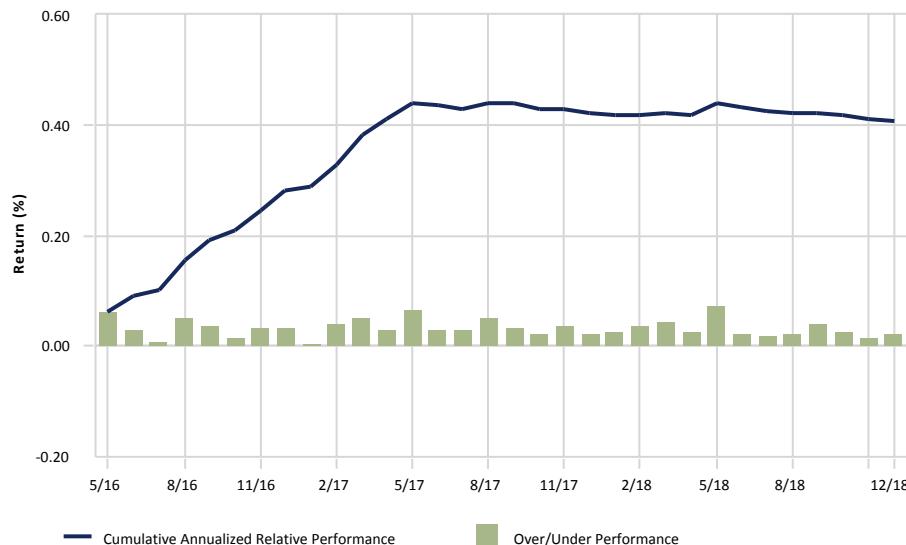
SSgA MSCI ACWI IMI Index Fund vs. IM Global Equity (SA+CF)

December 31, 2018

## Comparative Performance

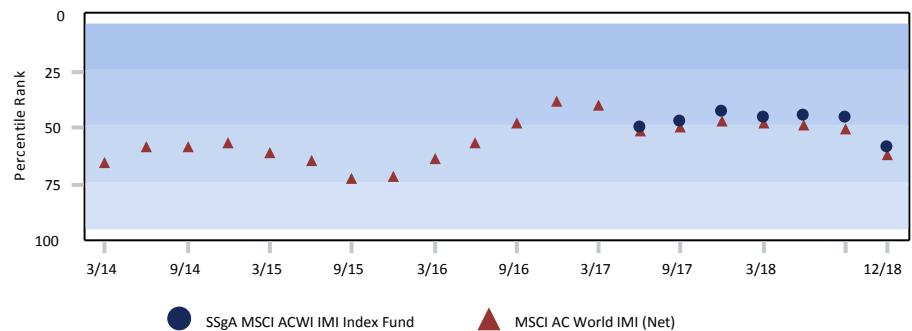


## Relative Performance vs MSCI AC World IMI (Net)

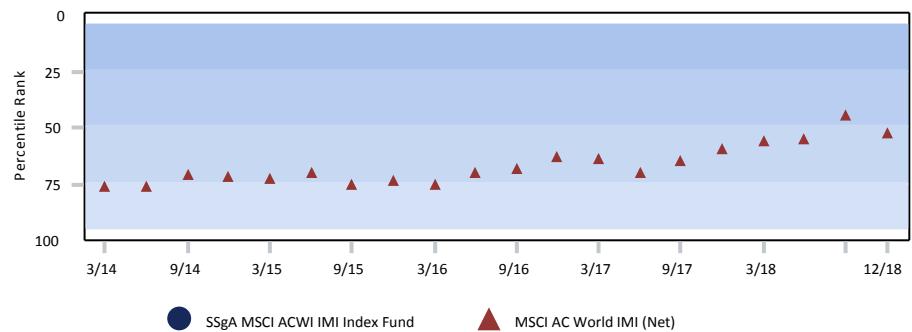


gross of fees

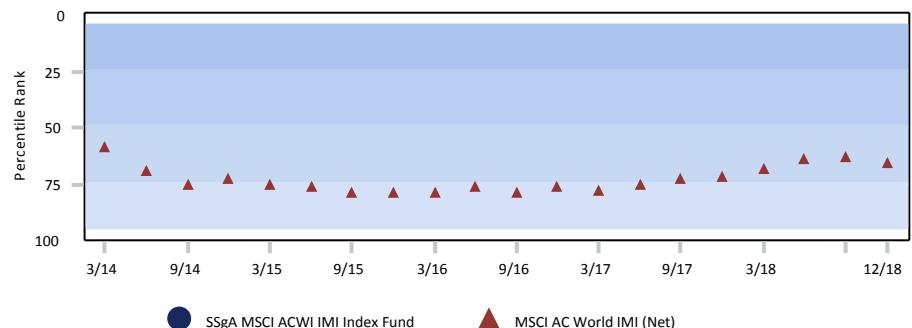
## 1 Year Rolling Percentile Ranking



## 3 Year Rolling Percentile Ranking



## 5 Year Rolling Percentile Ranking



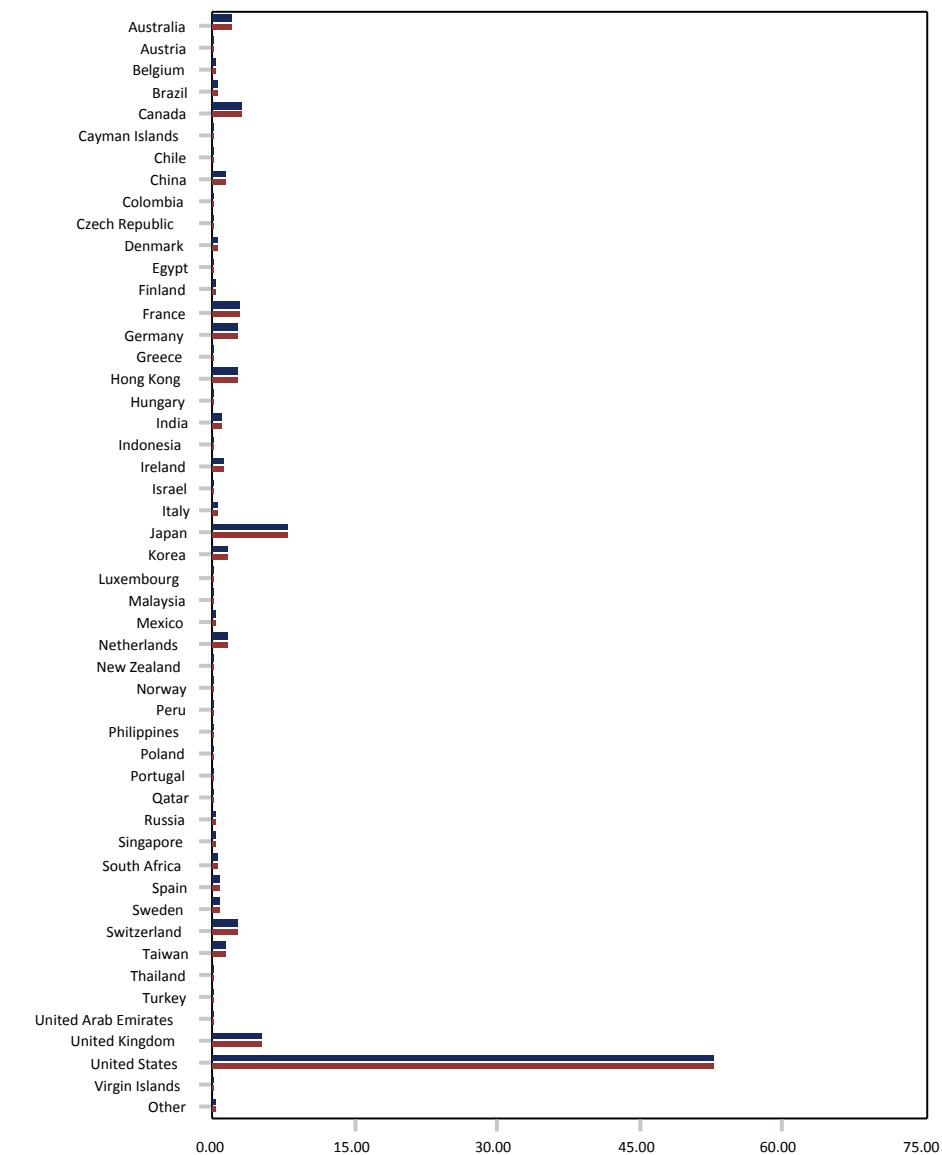


# Employees' Retirement System of the City of Norfolk

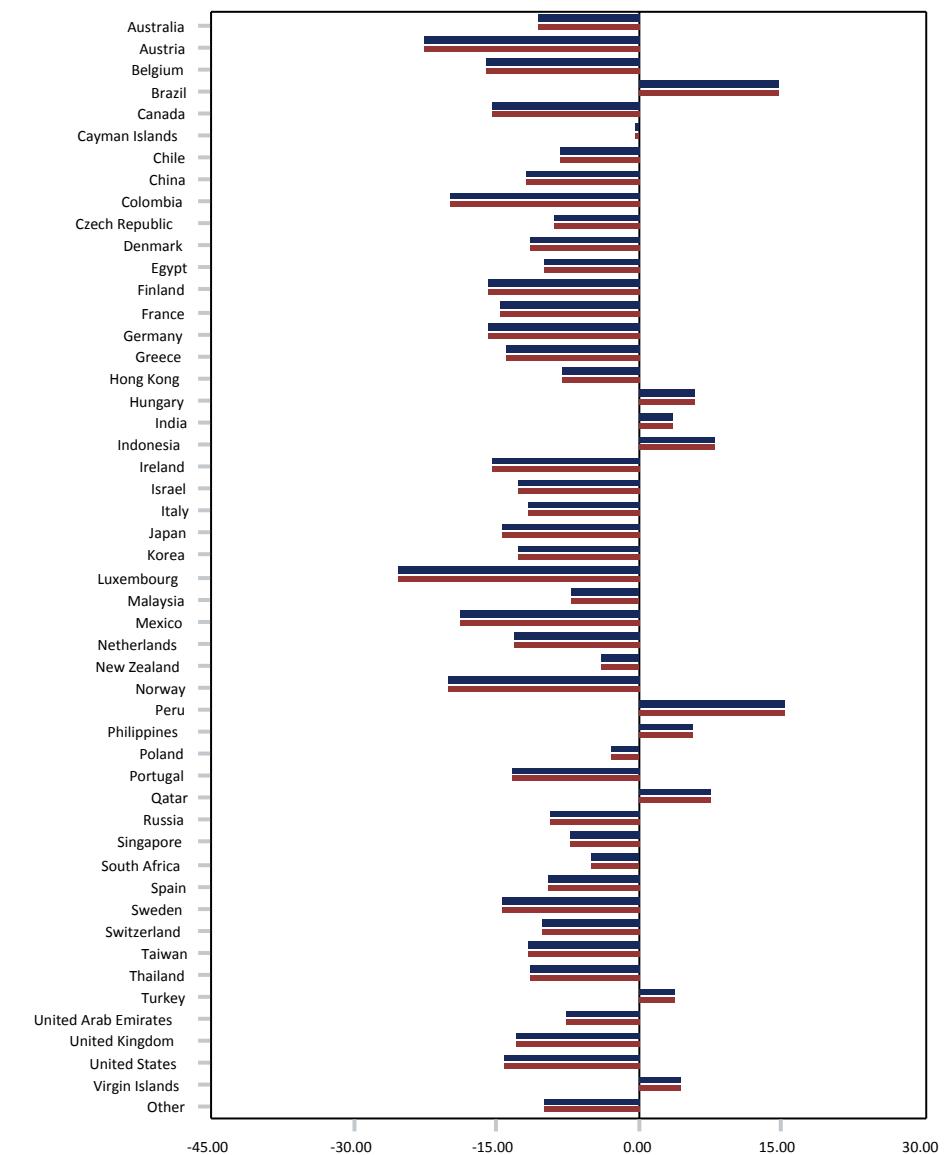
SSgA MSCI ACWI IMI vs. MSCI AC World IMI (Net)

December 31, 2018

## Country Allocation



## Country Performance



SSgA MSCI ACWI IMI

MSCI AC World IMI (Net)

SSgA MSCI ACWI IMI

MSCI AC World IMI (Net)

## **Fixed Income**

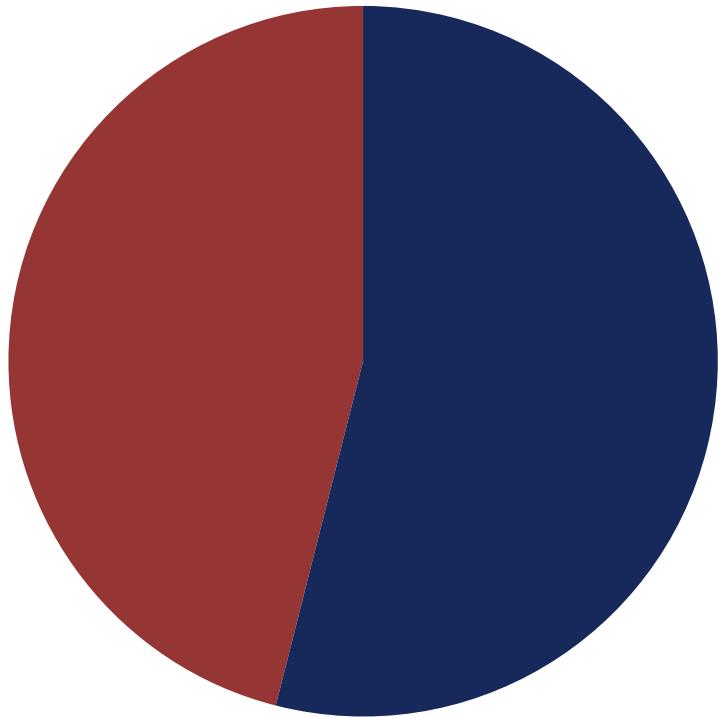
# Employees' Retirement System of the City of Norfolk

Fixed Income

December 31, 2018

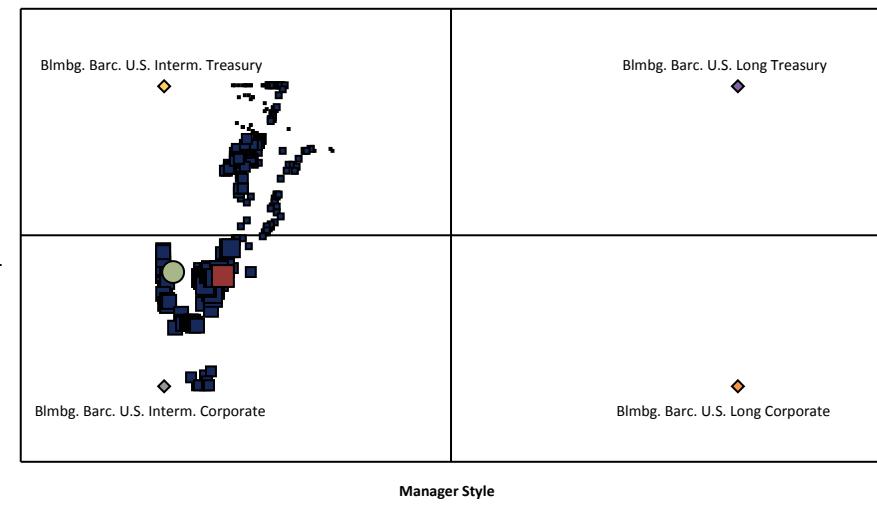
## Manager Allocation

December 31, 2018 : \$331,649,951

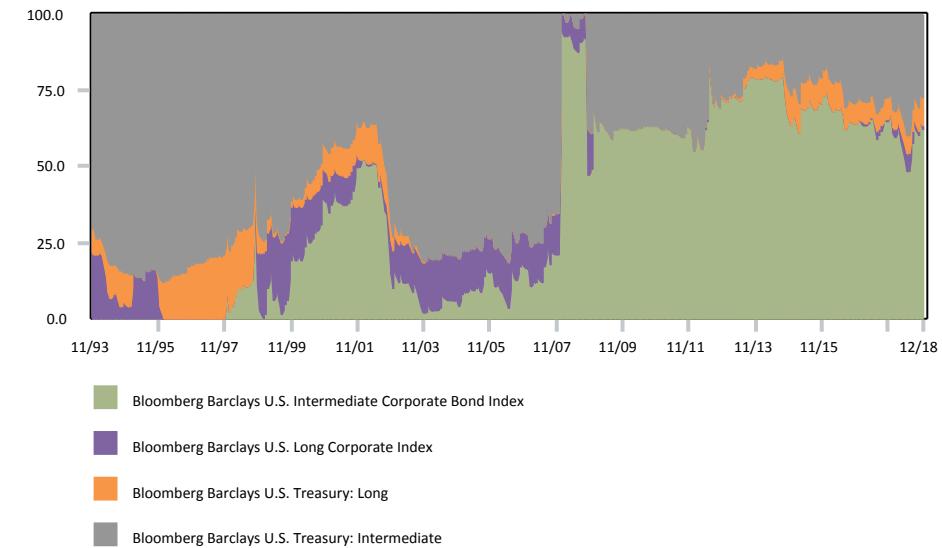


	Market Value (\$)	Allocation (%)
PIMCO Total Return	178,953,845	53.96
SSgA Bond Market Index	152,696,106	46.04

## Style Analysis - Returns Based



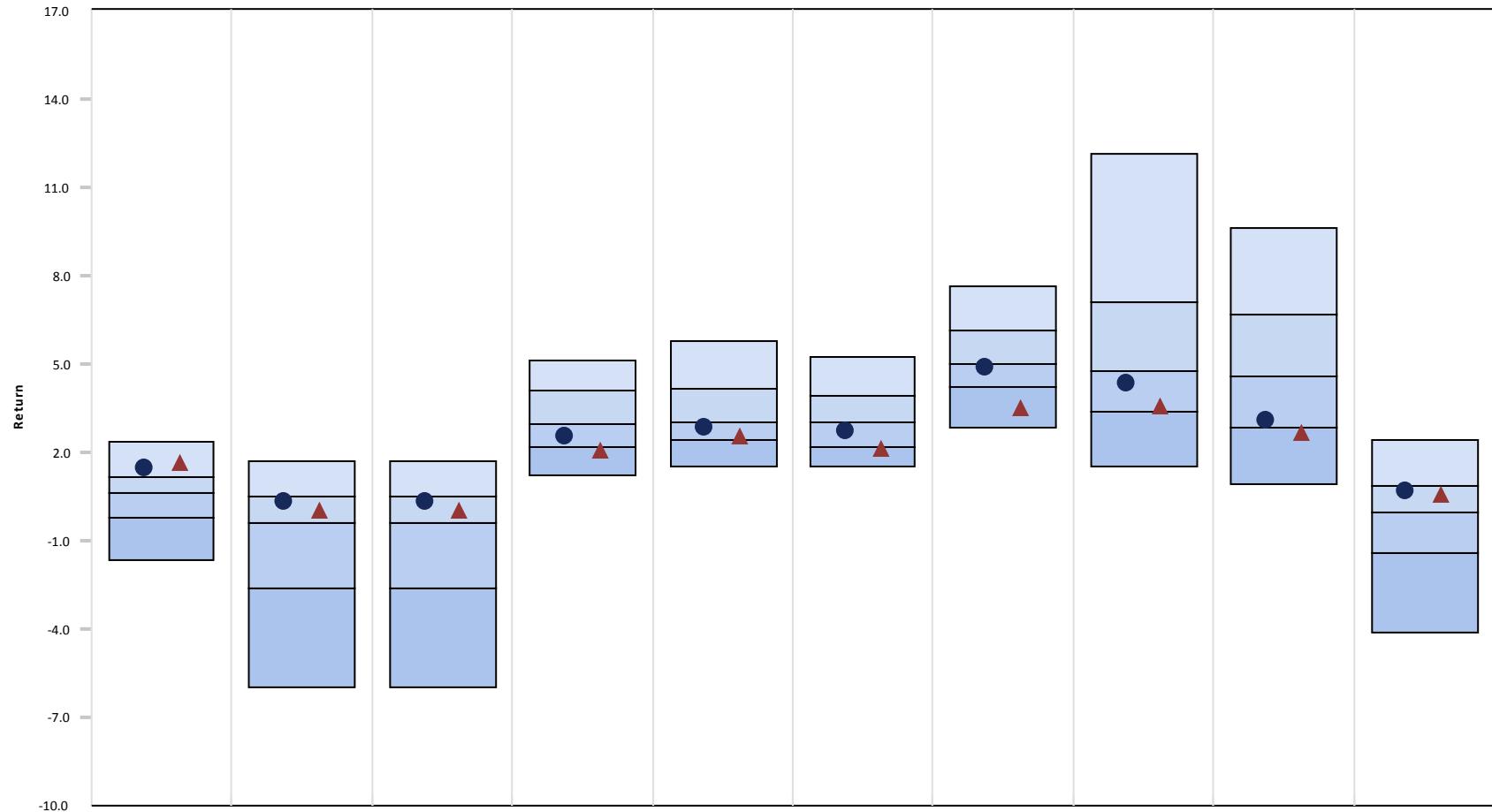
## 3 Year Style Analysis



# Employees' Retirement System of the City of Norfolk

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

December 31, 2018



	<b>3 Month</b>	<b>CYTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>	<b>7 Year</b>	<b>10 Year</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
● Fixed Income	1.44 (16)	0.35 (28)	0.35 (28)	2.57 (63)	2.83 (56)	2.74 (62)	4.88 (53)	4.34 (56)	3.05 (71)	0.66 (31)
▲ Blmbg. Barc. U.S. Aggregate	1.64 (10)	0.01 (36)	0.01 (36)	2.06 (83)	2.52 (68)	2.10 (78)	3.48 (87)	3.54 (69)	2.65 (78)	0.55 (33)
5th Percentile	2.37	1.73	1.73	5.10	5.81	5.26	7.64	12.11	9.60	2.40
1st Quartile	1.19	0.47	0.47	4.07	4.17	3.95	6.14	7.07	6.69	0.86
<b>Median</b>	<b>0.62</b>	<b>-0.39</b>	<b>-0.39</b>	<b>2.96</b>	<b>3.01</b>	<b>3.01</b>	<b>4.98</b>	<b>4.79</b>	<b>4.60</b>	<b>-0.04</b>
3rd Quartile	-0.23	-2.64	-2.64	2.18	2.41	2.16	4.20	3.36	2.81	-1.44
95th Percentile	-1.67	-5.97	-5.97	1.19	1.50	1.49	2.83	1.52	0.94	-4.13

**gross of fees**

Parentheses contain percentile rankings.

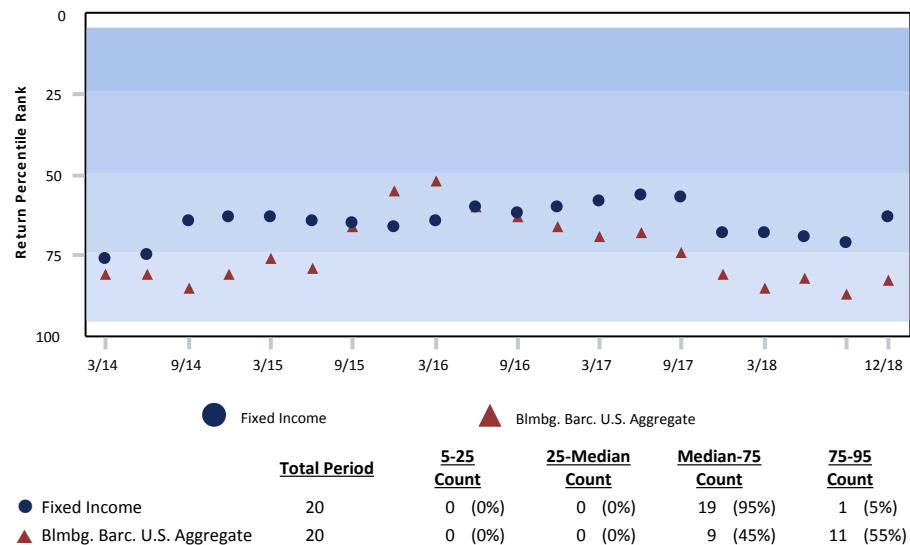


# Employees' Retirement System of the City of Norfolk

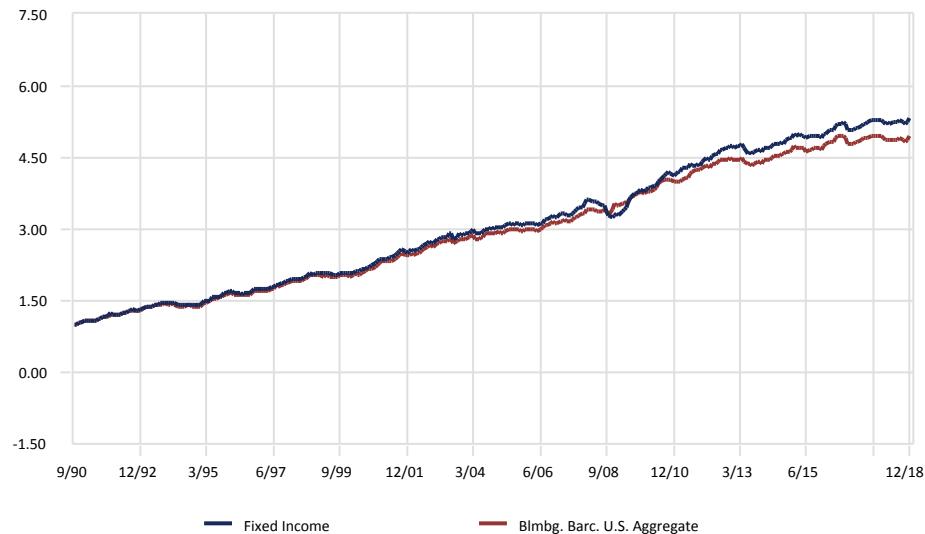
## Fixed Income

December 31, 2018

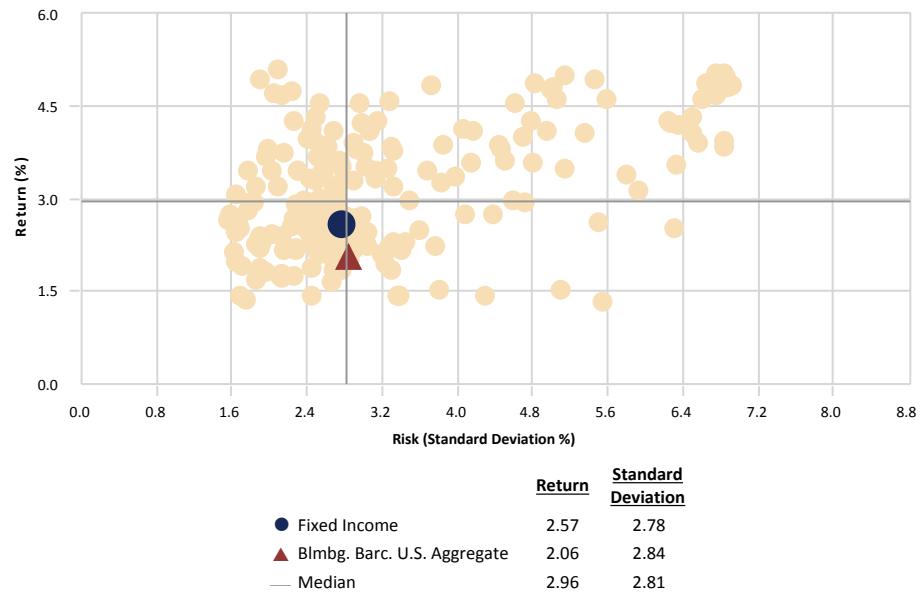
### 3 Year Rolling Return Rank



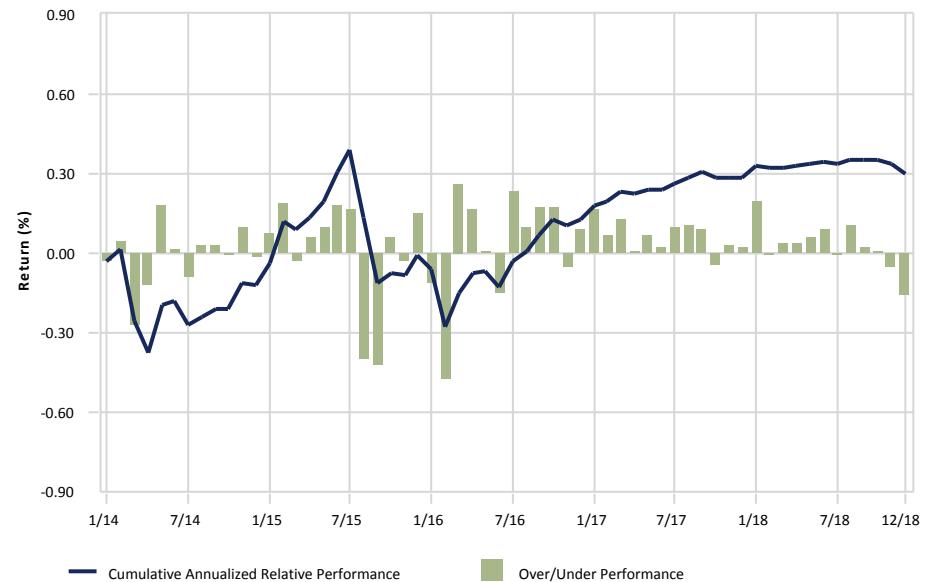
### Growth of \$1 - Since Inception (10/01/90)



### Risk vs. Return (01/01/16 - 12/31/18)



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

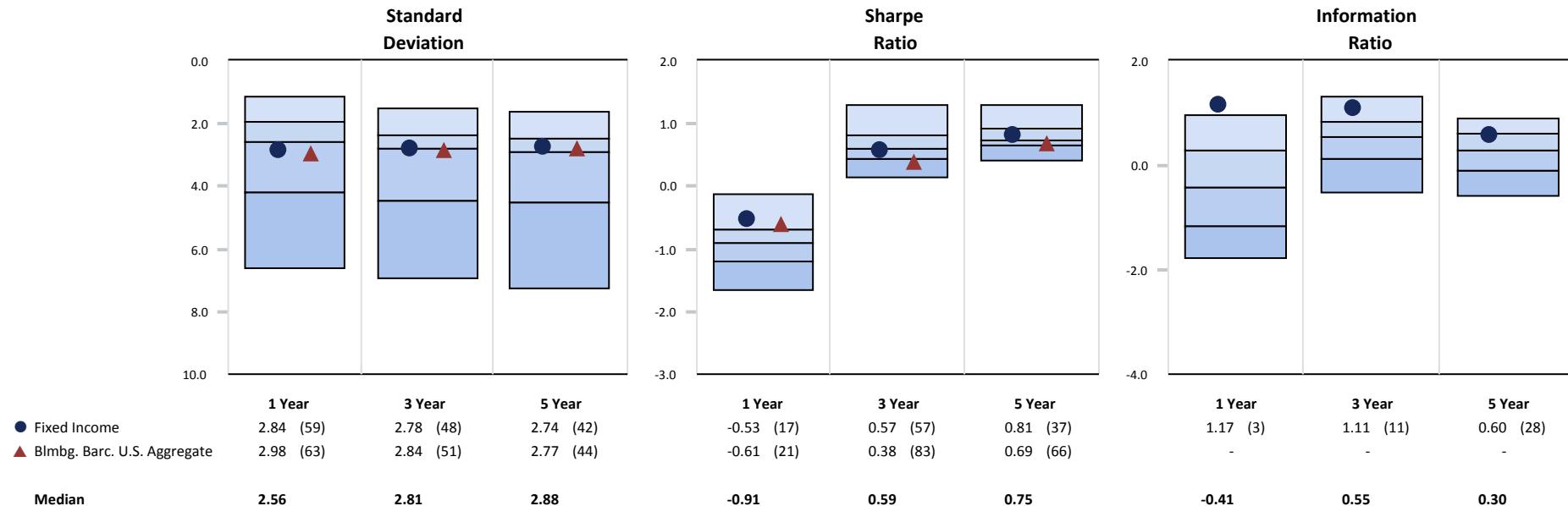


# Employees' Retirement System of the City of Norfolk

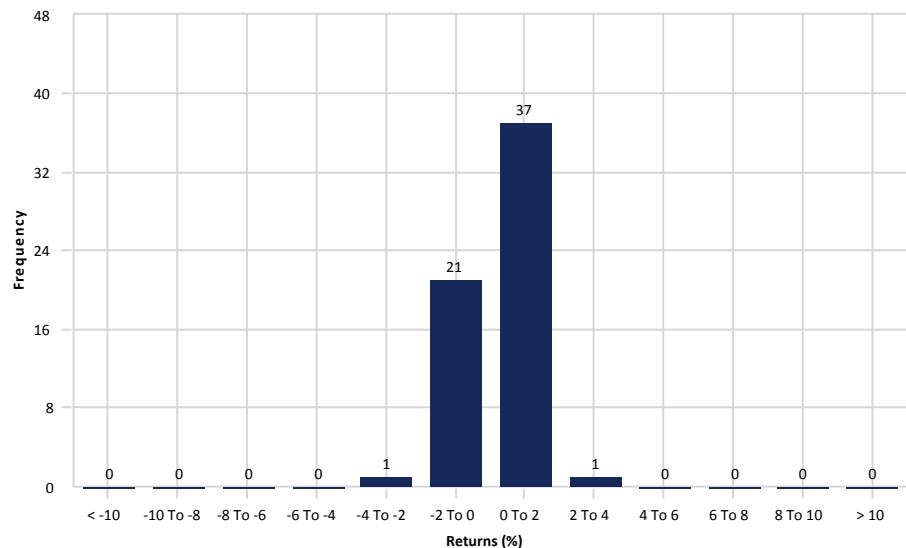
Fixed Income

December 31, 2018

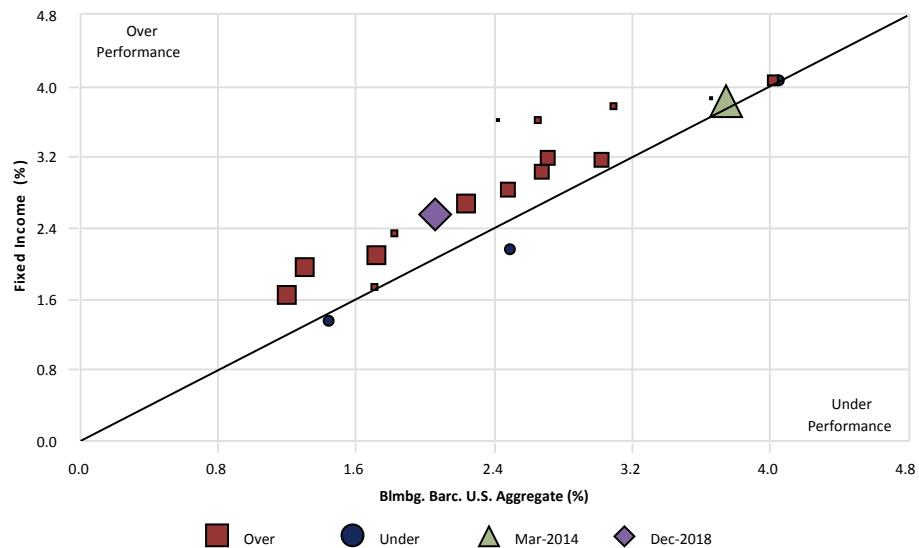
## Peer Group Analysis: All Master Trust-US Fixed Income Segment



## Monthly Distribution of Returns



## 3 Year Rolling Under/Over Performance

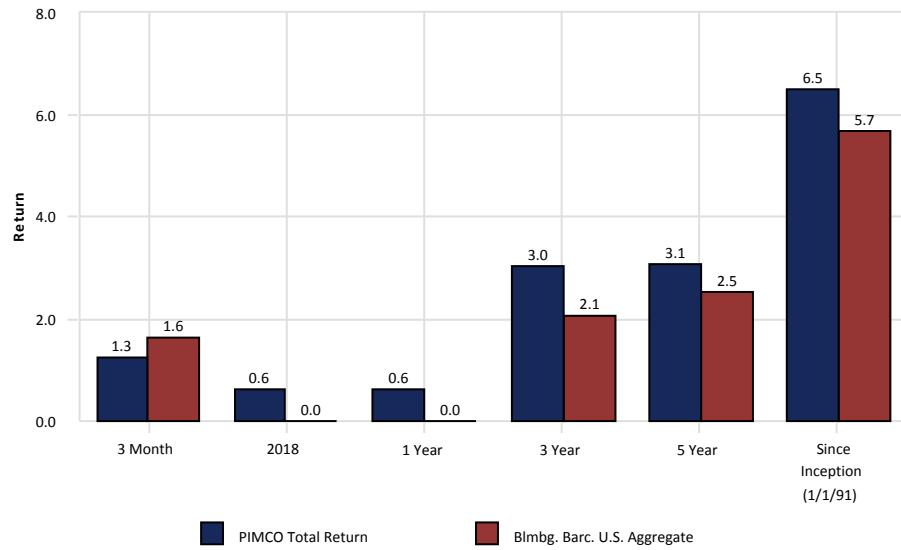


# Employees' Retirement System of the City of Norfolk

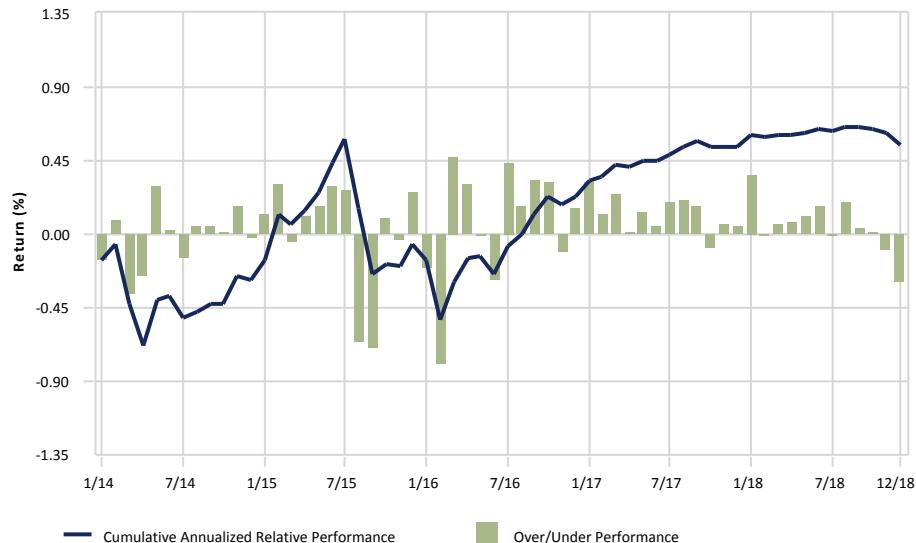
PIMCO Total Return vs. IM U.S. Broad Market Core Fixed Income (SA+CF)

December 31, 2018

## Comparative Performance

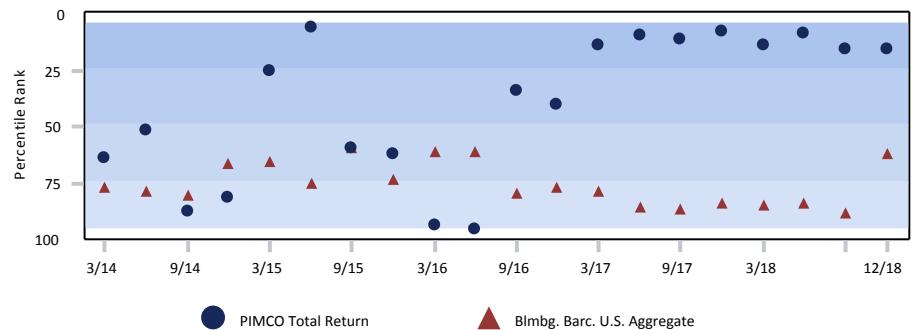


## Relative Performance vs Blmbg. Barc. U.S. Aggregate

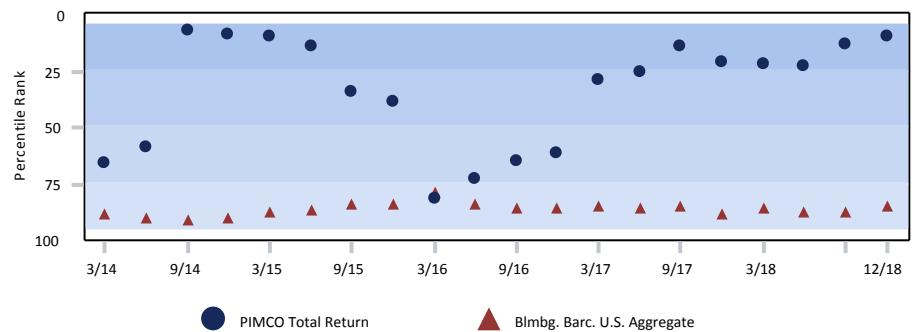


gross of fees

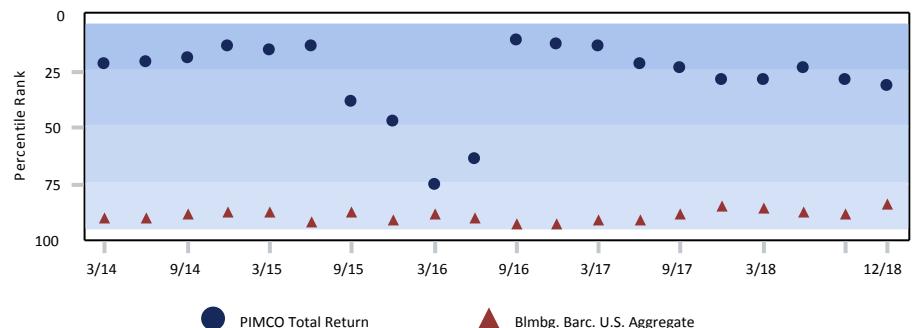
## 1 Year Rolling Percentile Ranking



## 3 Year Rolling Percentile Ranking



## 5 Year Rolling Percentile Ranking



# Employees' Retirement System of the City of Norfolk

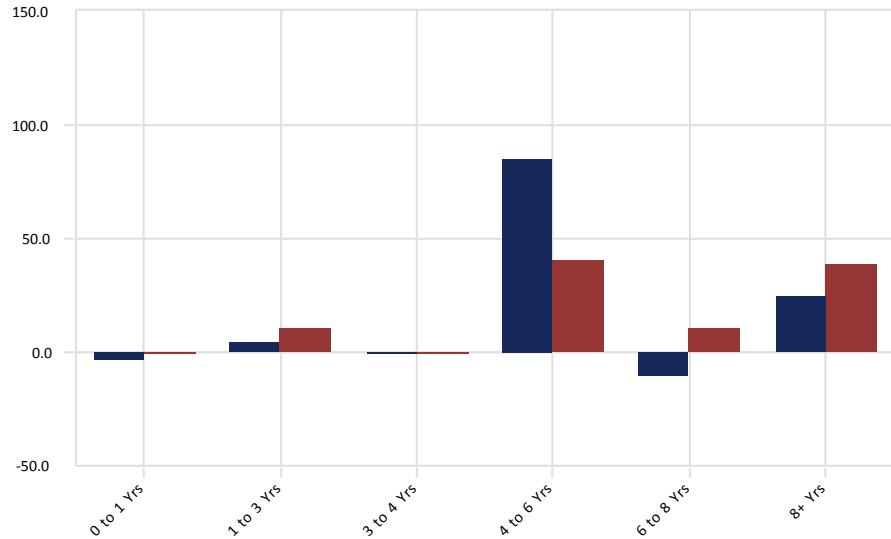
PIMCO Total Return vs. Blmbg. Barc. U.S. Aggregate

December 31, 2018

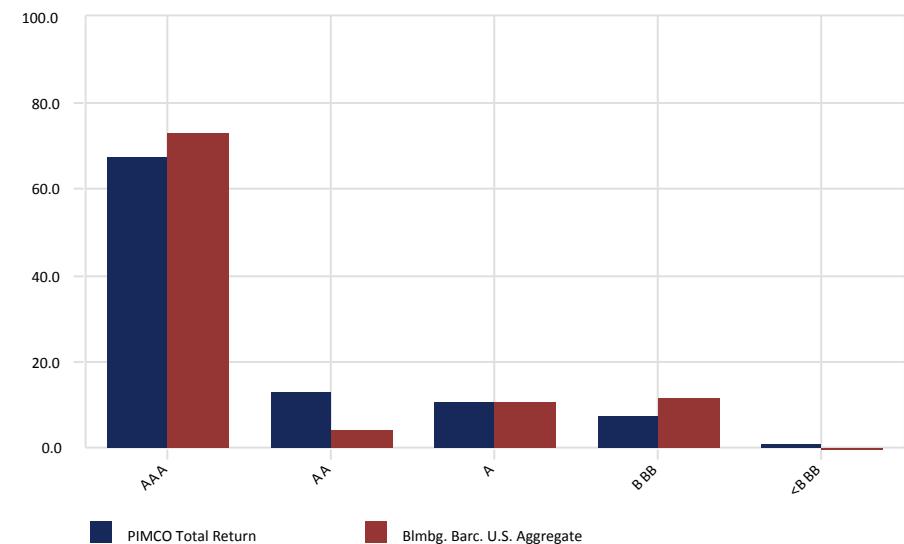
## Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	6.71	8.22
Avg. Quality	AA	Aa2/AA
Coupon Rate (%)	2.98	3.24
Convexity	-1.22	0.23
Effective Duration	4.48	5.87

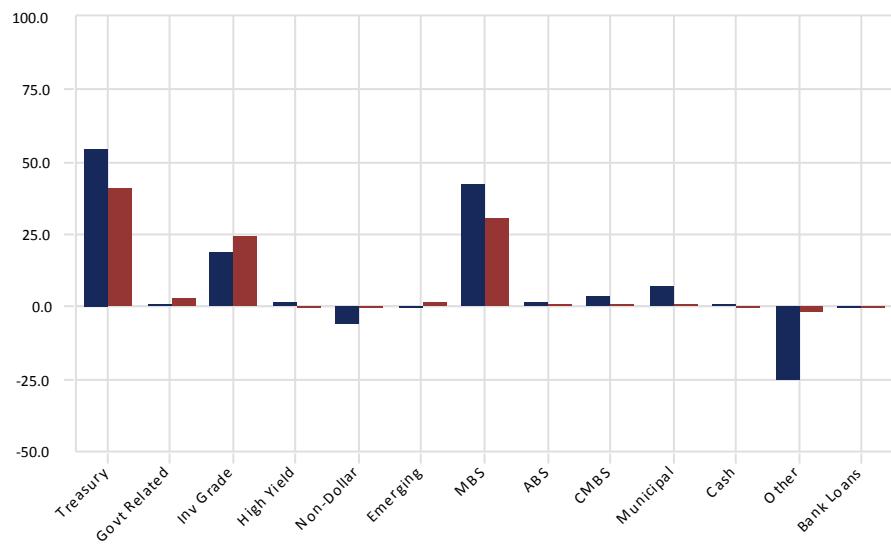
## Duration Distribution (%)



## Credit Quality Distribution (%)



## Sector Distribution (%)

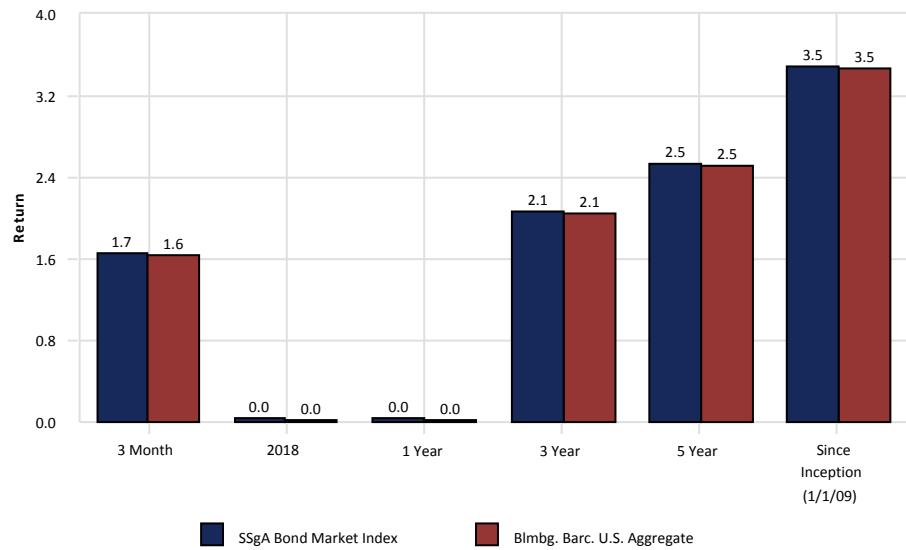


# Employees' Retirement System of the City of Norfolk

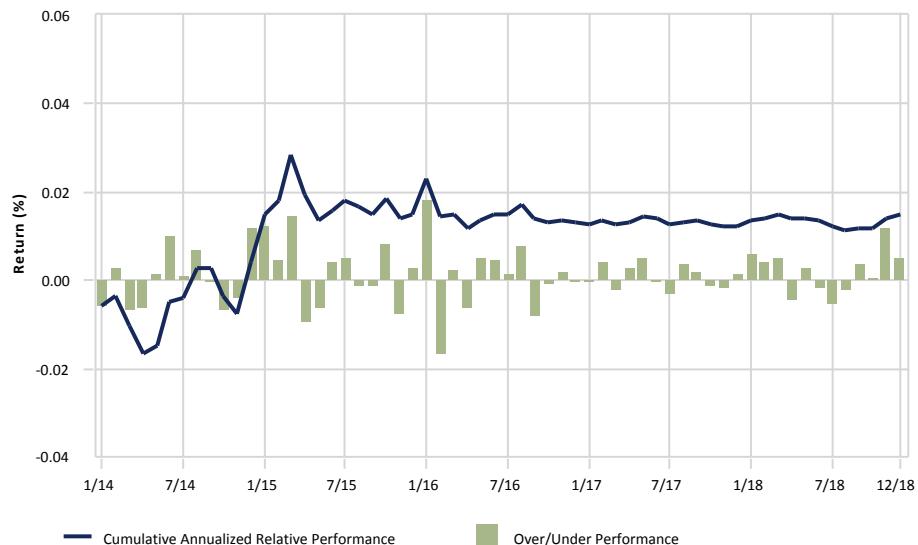
SSgA Bond Market Index vs. IM U.S. Broad Market Core Fixed Income (SA+CF)

December 31, 2018

## Comparative Performance

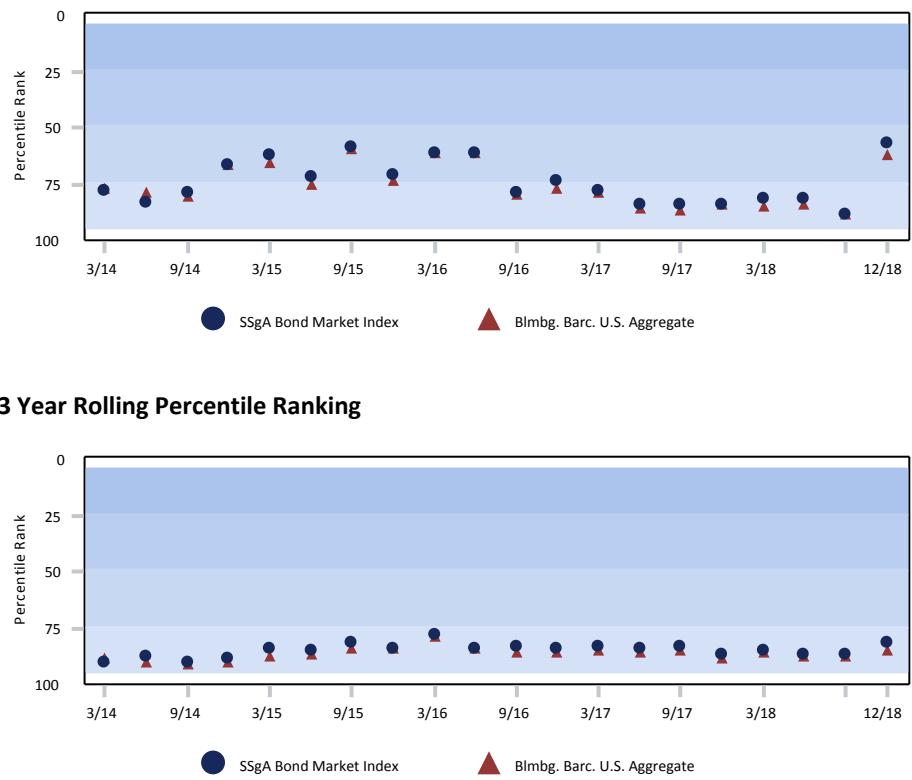


## Relative Performance vs Blmbg. Barc. U.S. Aggregate

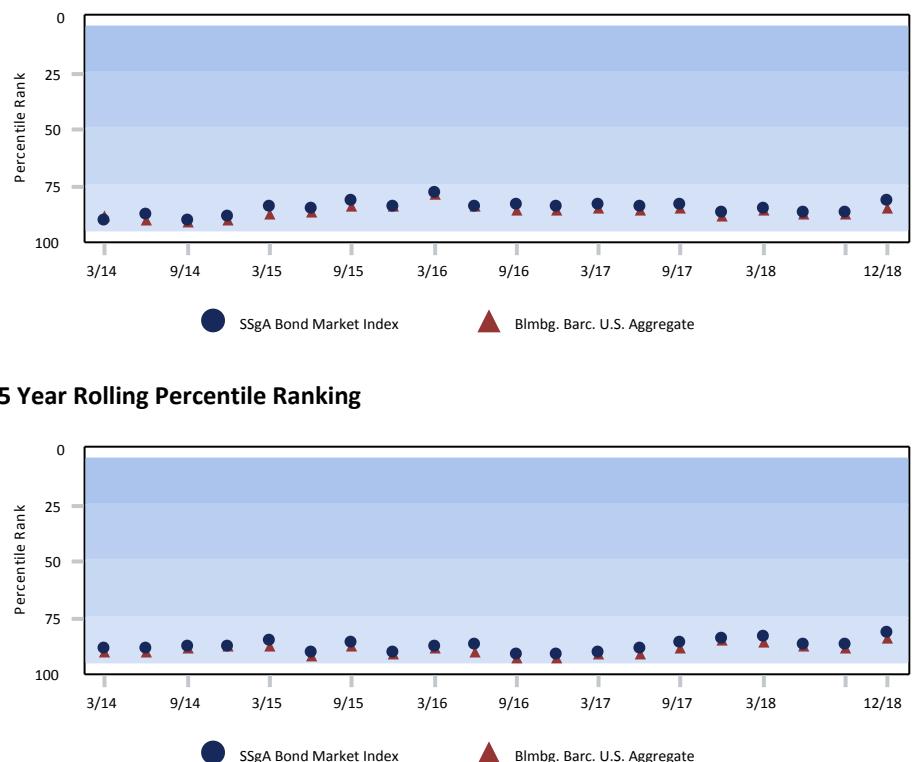


gross of fees

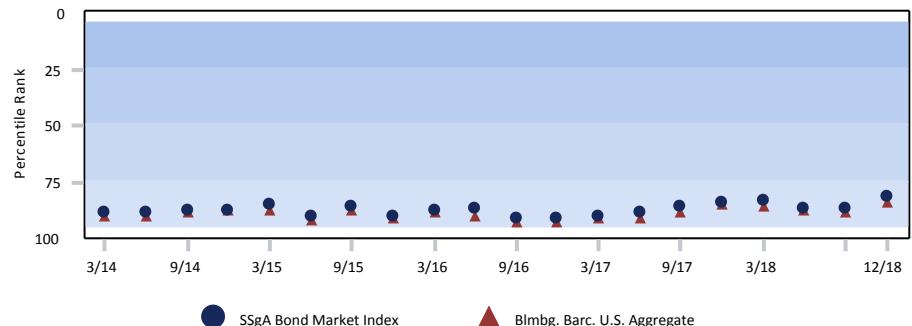
## 1 Year Rolling Percentile Ranking



## 3 Year Rolling Percentile Ranking



## 5 Year Rolling Percentile Ranking



# Employees' Retirement System of the City of Norfolk

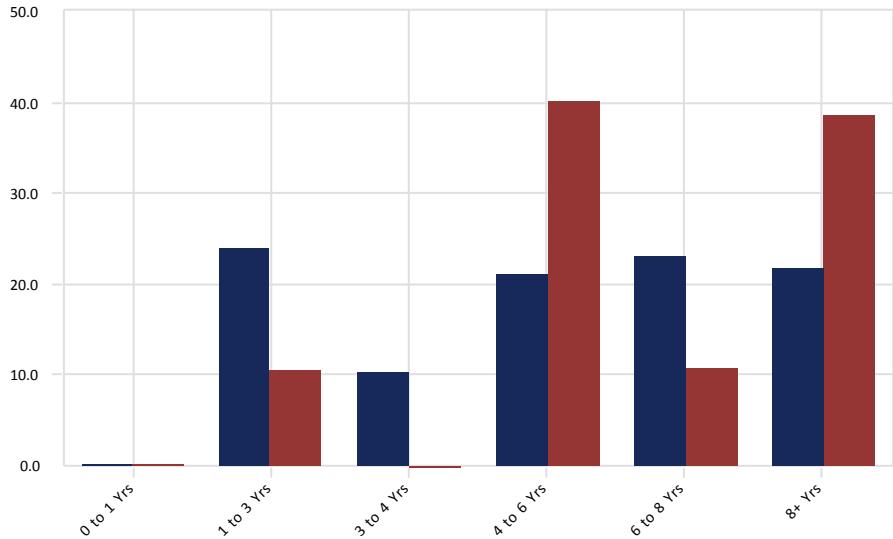
SSgA Bond Market Index vs. Blmbg. Barc. U.S. Aggregate

December 31, 2018

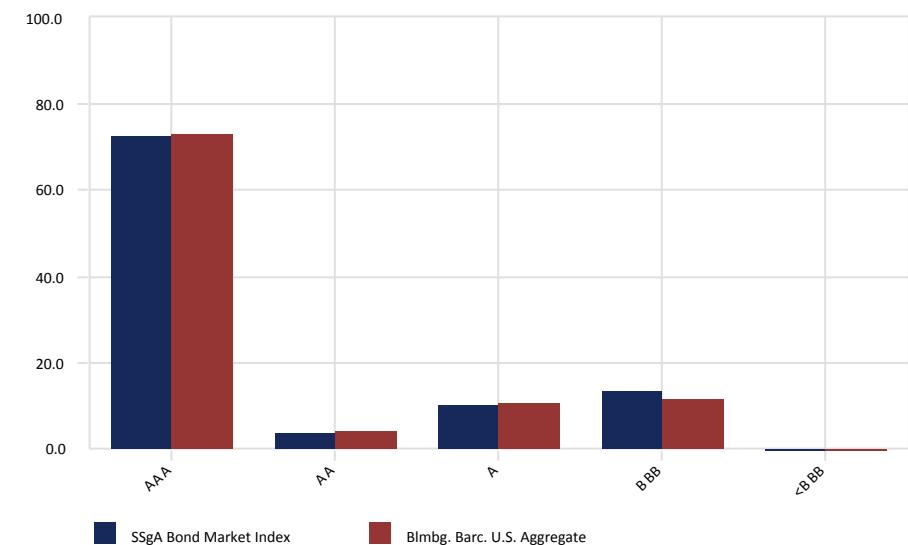
## Portfolio Characteristics

	<u>Portfolio</u>	<u>Benchmark</u>
Avg. Maturity	8.23	8.22
Avg. Quality	Aa2	Aa2/AA
Yield To Maturity (%)	3.28	3.28
Modified Duration	5.88	5.87
Convexity	0.23	0.23

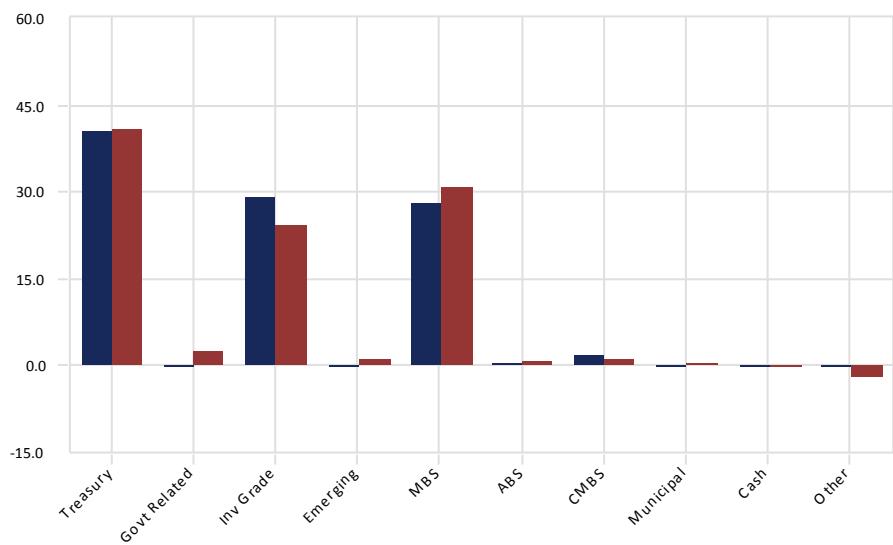
## Duration Distribution (%)



## Credit Quality Distribution (%)



## Sector Distribution (%)



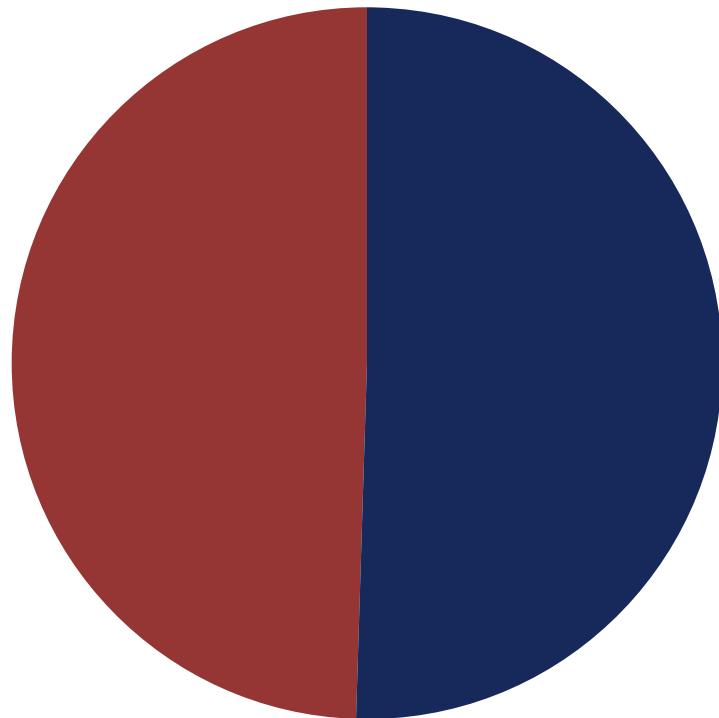
**Real Estate**

## Employees' Retirement System of the City of Norfolk

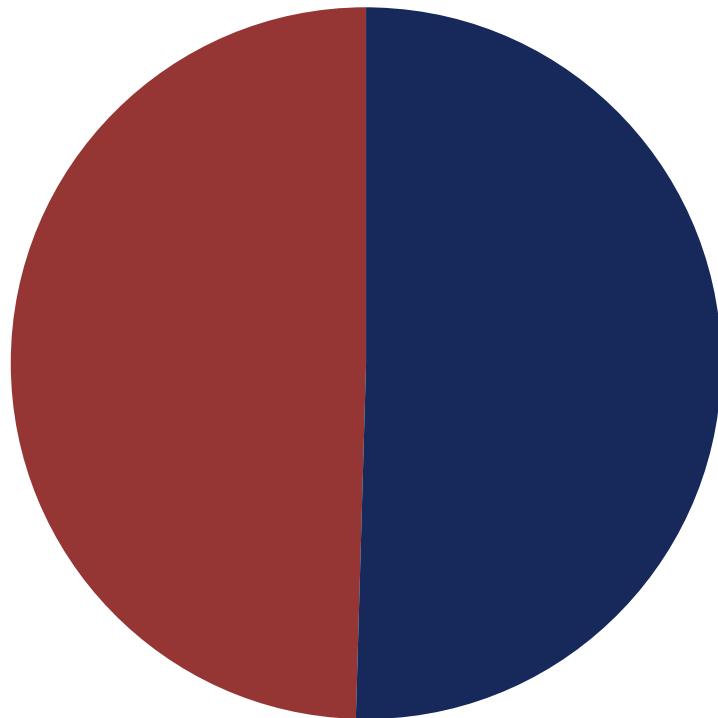
Asset Allocation By Manager - Real Estate

December 31, 2018

December 31, 2018 : \$82,948,272



September 30, 2018 : \$81,654,643



■ JP Morgan Asset Management Strategic Property Fund  
■ UBS Trumbull Property Fund

	Market Value (\$)	Allocation (%)
JP Morgan Asset Management Strategic Property Fund	41,884,538	50.49
UBS Trumbull Property Fund	41,063,734	49.51

■ JP Morgan Asset Management Strategic Property Fund  
■ UBS Trumbull Property Fund

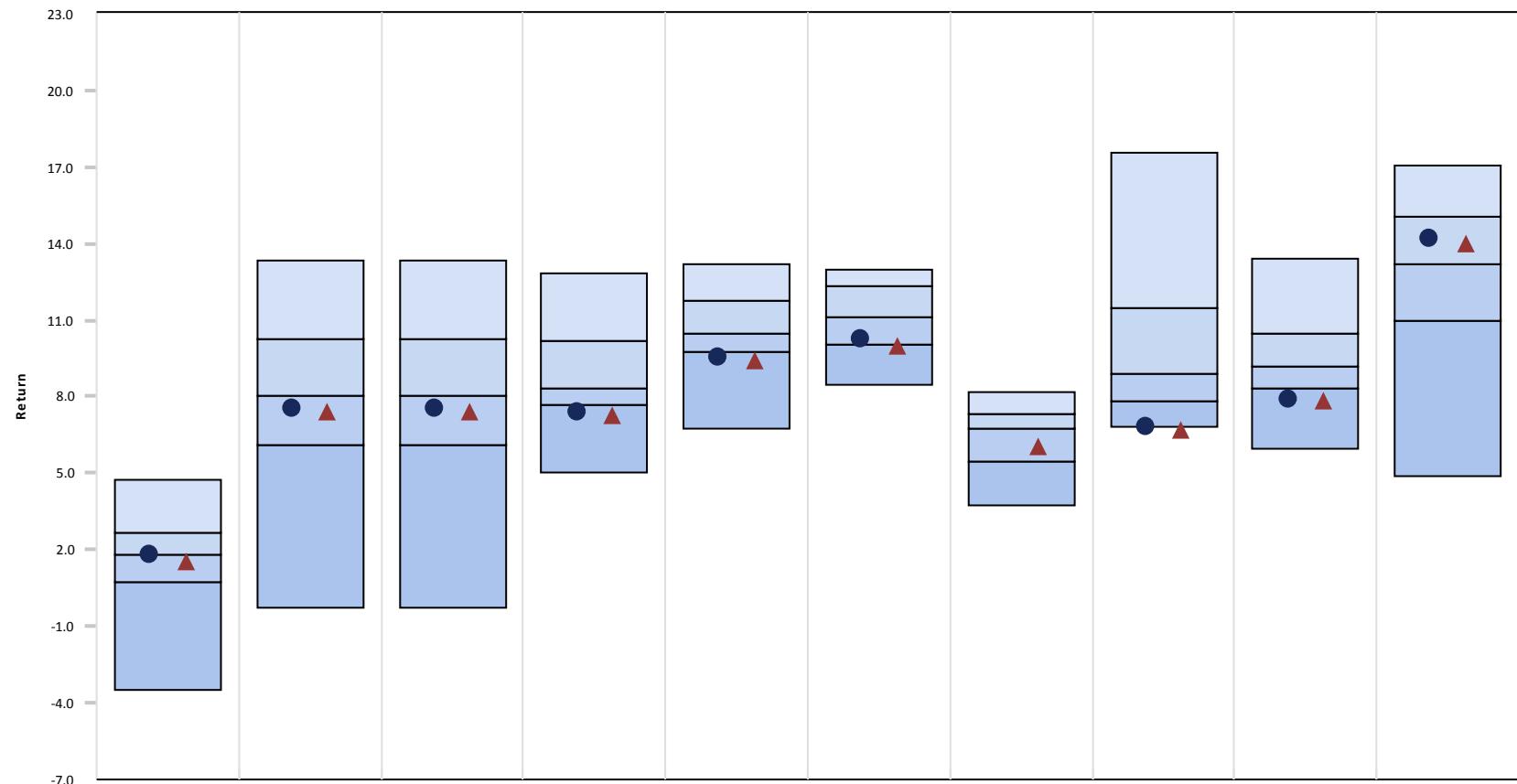
	Market Value (\$)	Allocation (%)
JP Morgan Asset Management Strategic Property Fund	41,203,537	50.46
UBS Trumbull Property Fund	40,451,106	49.54



# Employees' Retirement System of the City of Norfolk

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

December 31, 2018



	<b>3 Month</b>	<b>CYTD</b>	<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>	<b>7 Year</b>	<b>10 Year</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
● Real Estate	1.82 (50)	7.52 (66)	7.52 (66)	7.41 (78)	9.52 (80)	10.27 (68)	-	6.81 (96)	7.90 (81)	14.23 (29)
▲ NCREIF Fund Index-ODCE (Net)	1.52 (63)	7.36 (67)	7.36 (67)	7.27 (80)	9.41 (80)	9.96 (77)	6.01 (70)	6.66 (98)	7.79 (82)	13.95 (35)
5th Percentile	4.77	13.33	13.33	12.81	13.17	13.00	8.20	17.55	13.44	17.08
1st Quartile	2.64	10.23	10.23	10.15	11.72	12.32	7.34	11.46	10.49	15.08
<b>Median</b>	<b>1.82</b>	<b>8.03</b>	<b>8.03</b>	<b>8.35</b>	<b>10.44</b>	<b>11.11</b>	<b>6.76</b>	<b>8.92</b>	<b>9.18</b>	<b>13.18</b>
3rd Quartile	0.73	6.12	6.12	7.71	9.74	10.01	5.44	7.84	8.33	10.99
95th Percentile	-3.47	-0.26	-0.26	5.05	6.72	8.45	3.74	6.81	5.94	4.89
Population	138	92	92	61	47	34	22	81	65	42

gross of fees

Parentheses contain percentile rankings.



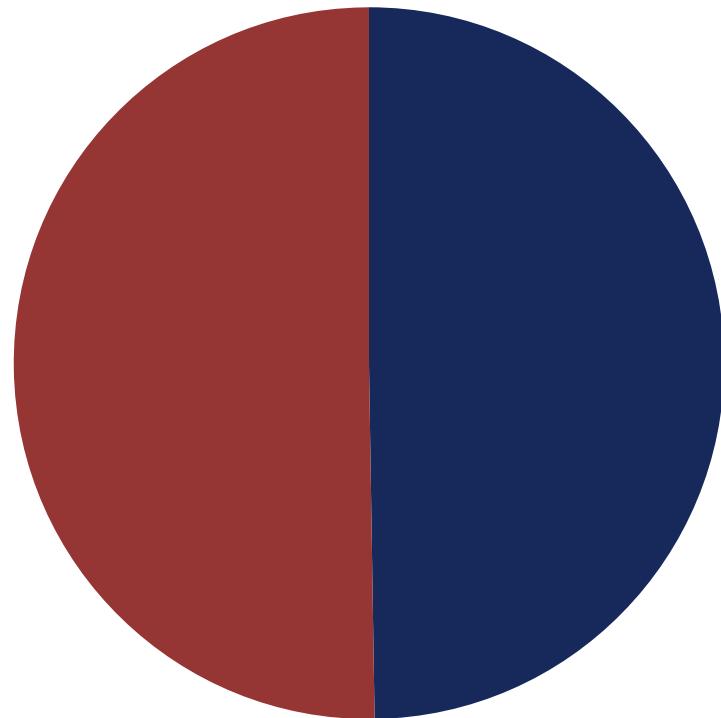
## **Master Limited Partnerships**

## Employees' Retirement System of the City of Norfolk

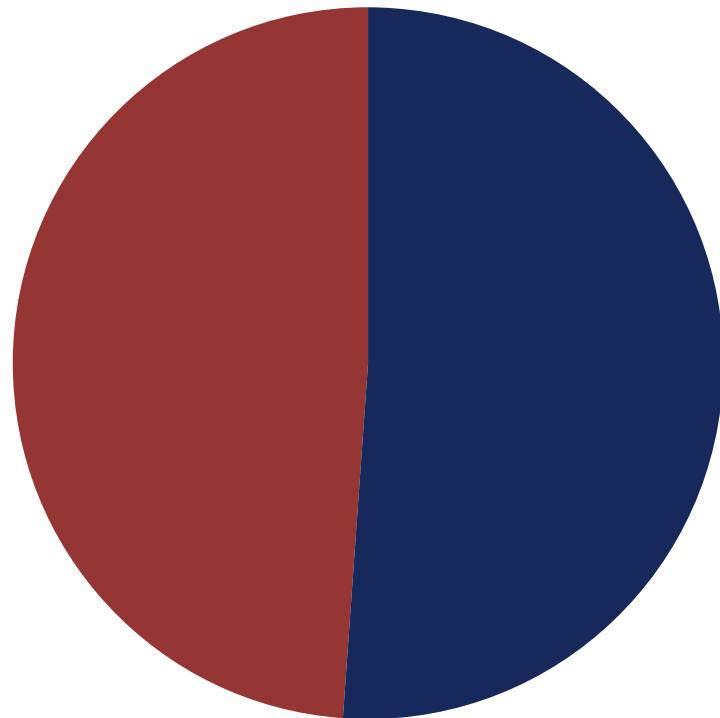
Asset Allocation By Manager - MLPs

December 31, 2018

December 31, 2018 : \$57,042,763



September 30, 2018 : \$69,916,524



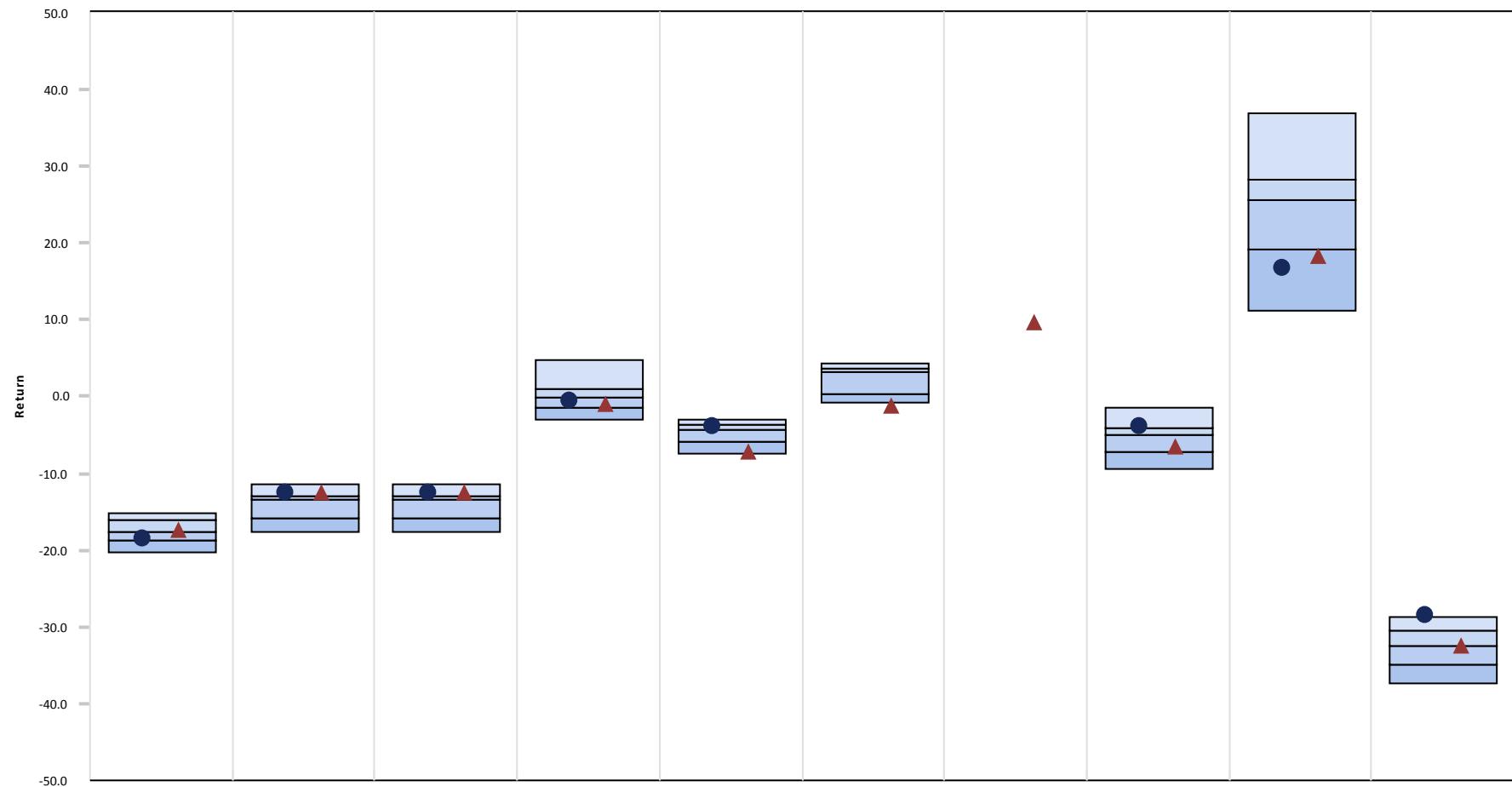
	Market Value (\$)	Allocation (%)
Harvest MLP	28,380,741	49.75
Tortoise Capital Advisors	28,662,023	50.25

	Market Value (\$)	Allocation (%)
Harvest MLP	35,748,067	51.13
Tortoise Capital Advisors	34,168,457	48.87

# Employees' Retirement System of the City of Norfolk

MLPs vs. Master Limited Partnerships (SA+CF)

December 31, 2018



	3 Month	CYTD	1 Year	3 Year	5 Year	7 Year	10 Year	2017	2016	2015
● MLPs	-18.41 (73)	-12.45 (9)	-12.45 (9)	-0.64 (68)	-3.84 (29)	-	-	-3.96 (20)	16.68 (85)	-28.47 (5)
▲ Alerian MLP Index	-17.30 (44)	-12.42 (8)	-12.42 (8)	-1.06 (73)	-7.31 (94)	-1.26 (100)	9.58 (-)	-6.52 (63)	18.31 (79)	-32.59 (51)
5th Percentile	-15.12	-11.38	-11.38	4.85	-3.09	4.32	-	-1.40	37.03	-28.73
1st Quartile	-16.05	-13.08	-13.08	1.09	-3.71	3.63	-	-4.17	28.24	-30.54
<b>Median</b>	<b>-17.70</b>	<b>-13.48</b>	<b>-13.48</b>	<b>-0.09</b>	<b>-4.23</b>	<b>3.11</b>	-	<b>-5.10</b>	<b>25.56</b>	<b>-32.44</b>
3rd Quartile	-18.69	-15.77	-15.77	-1.54	-5.85	0.36	-	-7.14	19.24	-35.01
95th Percentile	-20.36	-17.66	-17.66	-2.98	-7.42	-0.78	-	-9.41	11.22	-37.37

gross of fees

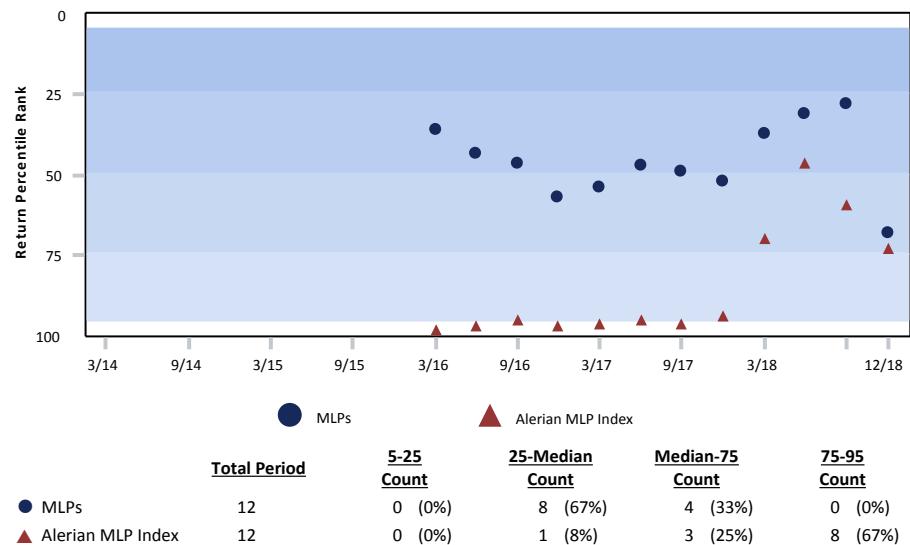


# Employees' Retirement System of the City of Norfolk

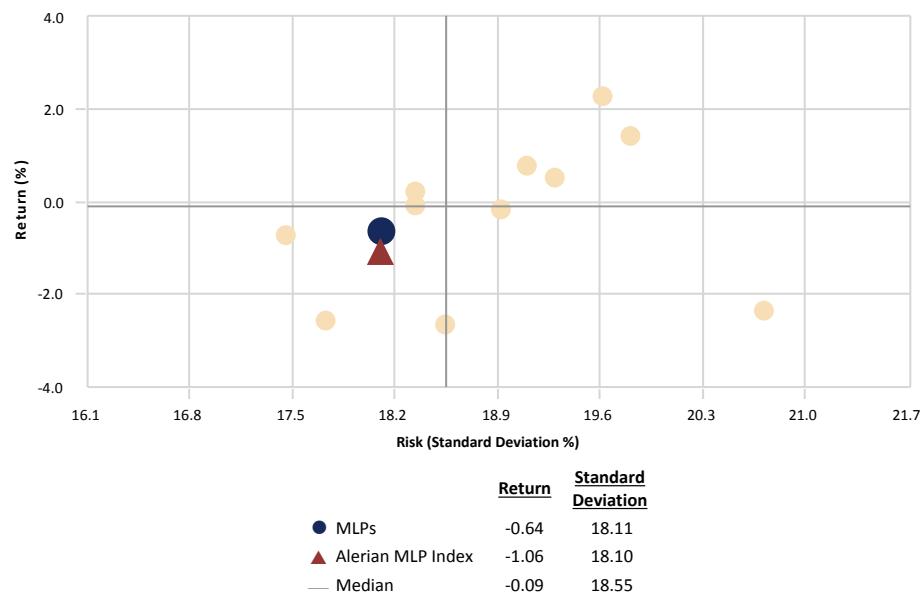
MLPs

December 31, 2018

## 3 Year Rolling Return Rank



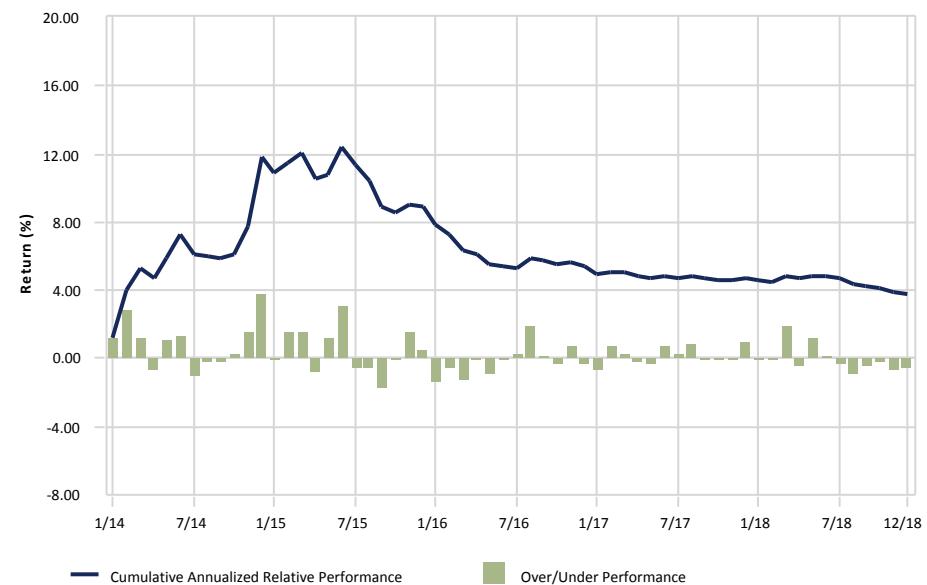
## Risk vs. Return (01/01/16 - 12/31/18)



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



## Relative Performance vs. Alerian MLP Index

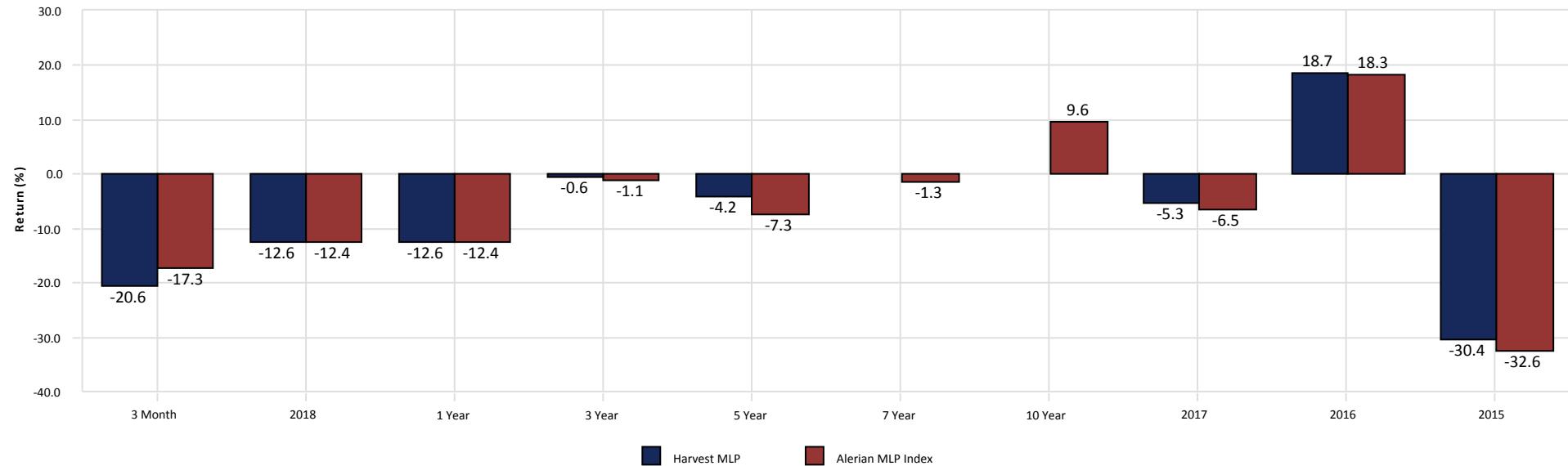


# Employees' Retirement System of the City of Norfolk

Harvest MLP

December 31, 2018

## Comparative Performance



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



gross of fees

## Relative Performance vs. Alerian MLP Index

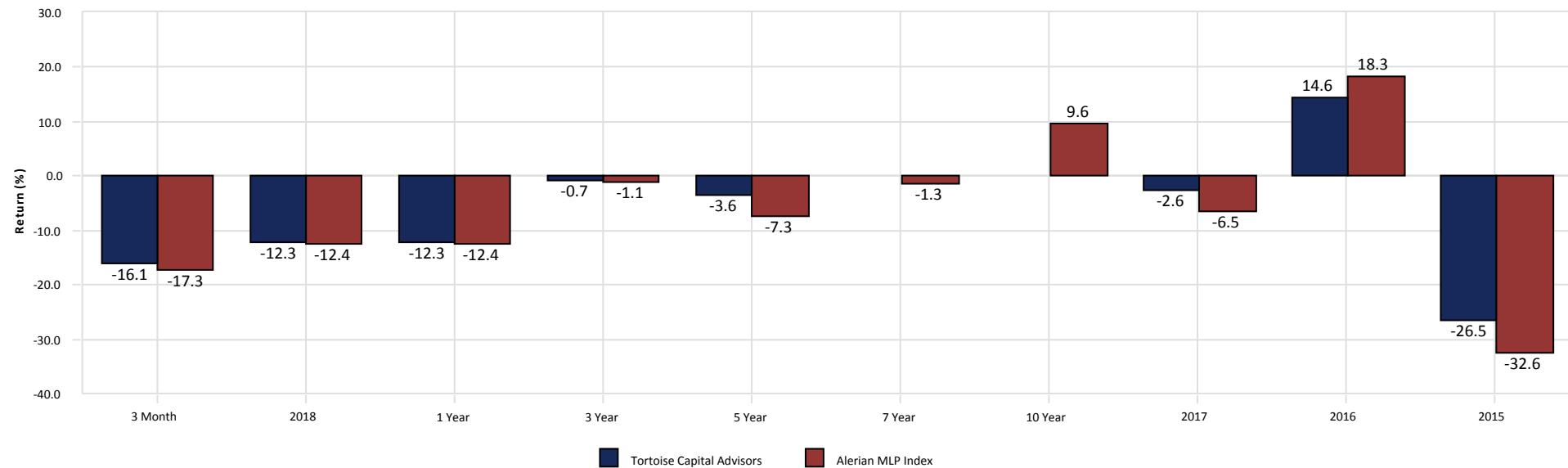


# Employees' Retirement System of the City of Norfolk

Tortoise Capital Advisors

December 31, 2018

## Comparative Performance



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



## **Appendix**

## Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance (gross of fees)

December 31, 2018

	Asset \$	Asset %	3 Month	CYTD	1 Year	2 Year	3 Year	5 Year	Since Inception	Inception Date
<b>Total Fund</b>	<b>1,013,822,346</b>	<b>100.00</b>	<b>-8.04 (56)</b>	<b>-5.42 (77)</b>	<b>-5.42 (77)</b>	<b>4.34 (67)</b>	<b>5.70 (59)</b>	<b>4.39 (65)</b>	<b>7.97 (68)</b>	<b>Oct-1990</b>
<i>Total Fund Policy</i>			-7.81	-6.19	-6.19	4.28	4.98	3.99	7.82	
Excess Return			-0.23	0.77	0.77	0.06	0.72	0.40	0.15	
<i>Total Fund Strategy Index</i>			-8.14	-5.80	-5.80	3.54	4.99	3.82	7.83	
Excess Return			0.10	0.38	0.38	0.80	0.71	0.57	0.14	
Global Equity	539,745,314	53.24	-13.22 (50)	-9.73 (62)	-9.73 (62)	6.00 (54)	6.99 (45)	4.98 (48)	8.75 (70)	Oct-1990
<i>Global Equity Policy</i>			-13.28	-10.08	-10.08	5.57	6.49	4.59	8.87	
Excess Return			0.06	0.35	0.35	0.43	0.50	0.39	-0.12	
Fixed Income	331,649,951	32.71	1.44 (16)	0.35 (28)	0.35 (28)	2.32 (41)	2.57 (63)	2.83 (56)	6.10 (-)	Oct-1990
<i>Blmbg. Barc. U.S. Aggregate</i>			1.64	0.01	0.01	1.76	2.06	2.52	5.84	
Excess Return			-0.20	0.34	0.34	0.56	0.51	0.31	0.26	
Real Estate	82,948,272	8.18	1.82 (50)	7.52 (66)	7.52 (66)	7.16 (79)	7.41 (78)	9.52 (80)	10.83 (64)	Apr-2011
<i>NCREIF Fund Index-ODCE (Net)</i>			1.52	7.36	7.36	7.01	7.27	9.41	10.40	
Excess Return			0.30	0.16	0.16	0.15	0.14	0.11	0.43	
MLPs	57,042,763	5.63	-18.41 (73)	-12.45 (9)	-12.45 (9)	-8.31 (15)	-0.64 (68)	-3.84 (29)	-0.30 (52)	Mar-2013
<i>Alerian MLP Index</i>			-17.30	-12.42	-12.42	-9.52	-1.06	-7.31	-4.42	
Excess Return			-1.11	-0.03	-0.03	1.21	0.42	3.47	4.12	
Cash	2,430,845	0.24	3.69	5.04	5.04	2.94	2.13	1.33	1.65	Jul-2003
<i>FTSE 3 Month T-Bill</i>			0.57	1.86	1.86	1.35	0.99	0.60	1.25	
Excess Return			3.12	3.18	3.18	1.59	1.14	0.73	0.40	

## Employees' Retirement System of the City of Norfolk

Asset Allocation & Performance (gross of fees)

December 31, 2018

	Asset \$	3 Month	CYTD	1 Year	2 Year	3 Year	5 Year	Since Inception	Inception Date
<b>Global Equity</b>									
SSgA MSCI ACWI IMI Index Fund	539,745,314	-13.22 (50)	-9.73 (62)	-9.73 (62)	6.00 (54)	-	-	7.02 (46)	May-2016
<i>MSCI AC World IMI (Net)</i>		-13.28	-10.08	-10.08	5.57	-	-	6.59	
Excess Return		0.06	0.35	0.35	0.43	-	-	0.43	
<b>Fixed Income</b>									
PIMCO Total Return	178,953,845	1.26 (67)	0.62 (16)	0.62 (16)	2.81 (4)	3.04 (10)	3.09 (32)	6.51 (7)	Jan-1991
<i>Blmbg. Barc. U.S. Aggregate</i>		1.64	0.01	0.01	1.76	2.06	2.52	5.71	
Excess Return		-0.38	0.61	0.61	1.05	0.98	0.57	0.80	
SSgA Bond Market Index	152,696,106	1.65 (22)	0.04 (57)	0.04 (57)	1.78 (83)	2.07 (82)	2.54 (82)	3.49 (92)	Jan-2009
<i>Blmbg. Barc. U.S. Aggregate</i>		1.64	0.01	0.01	1.76	2.06	2.52	3.48	
Excess Return		0.01	0.03	0.03	0.02	0.01	0.02	0.01	
<b>Real Assets</b>									
JP Morgan Asset Management Strategic Property Fund	41,884,538	1.90 (37)	8.03 (75)	8.03 (75)	7.61 (75)	7.87 (79)	9.96 (74)	11.59 (64)	Apr-2011
<i>NCREIF Fund Index-ODCE (Net)</i>		1.52	7.36	7.36	7.01	7.27	9.41	10.40	
Excess Return		0.38	0.67	0.67	0.60	0.60	0.55	1.19	
UBS Trumbull Property Fund	41,063,734	1.73 (66)	6.99 (95)	6.99 (95)	6.63 (91)	6.81 (95)	8.93 (98)	9.19 (-)	Dec-2011
<i>NCREIF Fund Index-ODCE (Net)</i>		1.52	7.36	7.36	7.01	7.27	9.41	10.00	
Excess Return		0.21	-0.37	-0.37	-0.38	-0.46	-0.48	-0.81	
<b>MLPs</b>									
Harvest MLP	28,380,741	-20.61 (100)	-12.62 (11)	-12.62 (11)	-9.04 (23)	-0.59 (66)	-4.16 (46)	-0.62 (54)	Mar-2013
<i>Alerian MLP Index</i>		-17.30	-12.42	-12.42	-9.52	-1.06	-7.31	-4.42	
Excess Return		-3.31	-0.20	-0.20	0.48	0.47	3.15	3.80	
Tortoise Capital Advisors	28,662,023	-16.12 (29)	-12.28 (7)	-12.28 (7)	-7.56 (12)	-0.70 (71)	-3.55 (21)	-0.87 (22)	Apr-2013
<i>Alerian MLP Index</i>		-17.30	-12.42	-12.42	-9.52	-1.06	-7.31	-5.35	
Excess Return		1.18	0.14	0.14	1.96	0.36	3.76	4.48	

## Employees' Retirement System of the City of Norfolk

Historical Hybrid Composition

December 31, 2018

	<u>(%)</u>		<u>(%)</u>
<b>Total Fund Policy : May-2016</b>		<b>Total Fund Strategy Index : Jul-2016</b>	
MSCI AC World IMI (Net)	62.50	MSCI AC World IMI (Net)	55.00
Bloomberg Barc. U.S. Aggregate	37.50	Bloomberg 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

December 31, 2018

#### Global Equity Policy

	(%)
<b>May-2016</b>	
MSCI AC World IMI (Net)	100.00
<b>Sep-2009</b>	
Russell 3000 Index	60.00
MSCI AC World ex USA (Net)	40.00
<b>Jun-2009</b>	
Russell 3000 Index	70.00
MSCI AC World ex USA (Net)	30.00
<b>Jun-2006</b>	
Russell 3000 Index	70.00
MSCI EAFE Index	30.00
<b>Oct-1990</b>	
S&P 500	100.00

<b>Active Return</b>	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
<b>Alpha</b>	- 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.
<b>Beta</b>	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
<b>Consistency</b>	- 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.
<b>Distributed to Paid In (DPI)</b>	- 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.
<b>Down Market Capture</b>	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
<b>Downside Risk</b>	- 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.
<b>Excess Return</b>	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
<b>Excess Risk</b>	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
<b>Information Ratio</b>	- 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.
<b>Public Market Equivalent (PME)</b>	- 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.
<b>R-Squared</b>	- 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.
<b>Return</b>	- Compounded rate of return for the period.
<b>Sharpe Ratio</b>	- 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.
<b>Standard Deviation</b>	- 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.
<b>Total Value to Paid In (TVPI)</b>	- 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
<b>Tracking Error</b>	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
<b>Treynor Ratio</b>	- 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.
<b>Up Market Capture</b>	- 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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