

Investment Performance Review  
Period Ending September 30, 2022

# Employees' Retirement System of the City of Norfolk

---



## **3rd Quarter 2022 Market Environment**

## **The Economy**

- Broadly, global markets declined during the 3rd quarter as inflation remained elevated, causing global central banks further drain liquidity from the market, and geopolitical risks increased as the conflict in Ukraine escalated.
- While inflation moderated slightly in the US, it showed signs of increasing, especially in Europe, where UK and German inflation reached multi-decade highs. US CPI was 8.3% in August, down from 9.1% at the end of the 2nd quarter.
- The US Federal Reserve Bank (the Fed) continued to increase interest rates during the quarter by raising 0.75% at the July and September meetings. Importantly, the Fed signaled it was committed to fight inflation by additional rate hikes if needed.
- The US labor market showed its resiliency during the quarter by adding an estimated 1.1 million jobs. As a result, the unemployment rate fell to 3.5% in September. The number of workers re-entering the workforce increased slightly during the period as wage growth remained strong.
- Real estate markets were under pressure during the quarter as rising interest rates pushed mortgages to their highest levels since 2007. As of September, the average 30-year fixed mortgage was roughly 6.7%, up from roughly 3.0% last year at the same time.

## **Equity (Domestic and International)**

- US equities declined during the 3rd quarter as concerns regarding inflation, the path of interest rates, and a slowing global economy acted as headwinds. Small cap growth was the best performing domestic segment of the equity market relative to other US market capitalizations and styles during the period while large cap value performed the worst.
- Momentum was decidedly negative in international stocks during the 3rd quarter. The escalating conflict in Ukraine, rising inflation in Europe, and tightening monetary policy all contributed to the decline. The continued strength of the US dollar, which rose against most major developed market and emerging market currencies, also acted as a headwind. Finally, China continued its zero-tolerance policy regarding Covid-19, which led to additional restrictions.

## **Fixed Income**

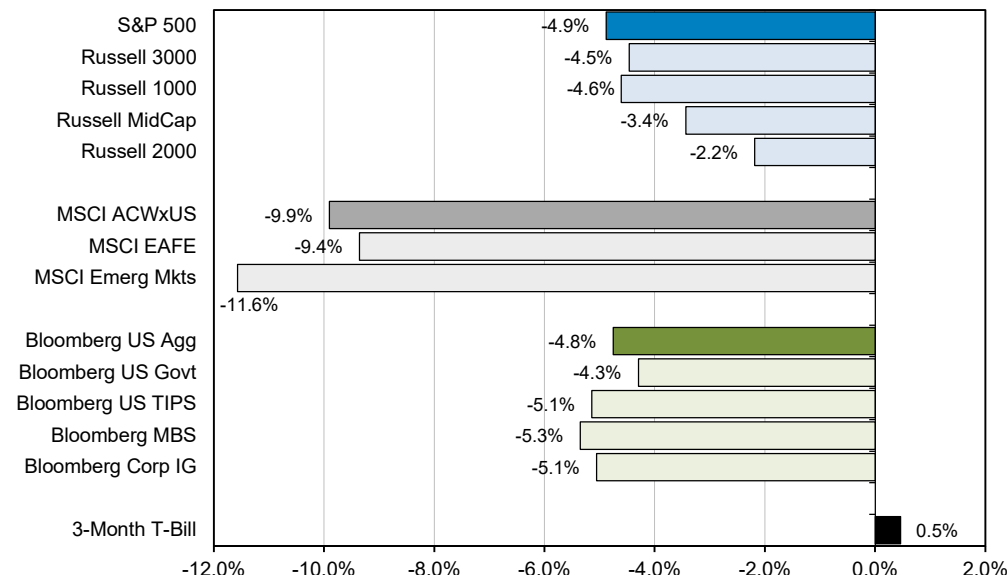
- While inflation fell slightly during the quarter, the Fed continued increasing interest rates which acted as a headwind for fixed income performance during the quarter. US interest rates moved significantly higher during the quarter with the US 10-Year Treasury bond rising 83 basis points to close at 3.80%.
- Performance across all bond market sectors was negative during the quarter, with US high yield corporate bonds and US Treasury bonds down the least.
- The combination of higher coupons and a shorter maturity profile relative to high quality government bonds was the primary driver of the relative outperformance of high yield bonds during the period.
- US Treasury bonds declined less than other investment grade bond market sectors during the quarter. During periods of increased volatility, investors have historically preferred the safety of government bonds over those with credit risk.

## **Market Themes**

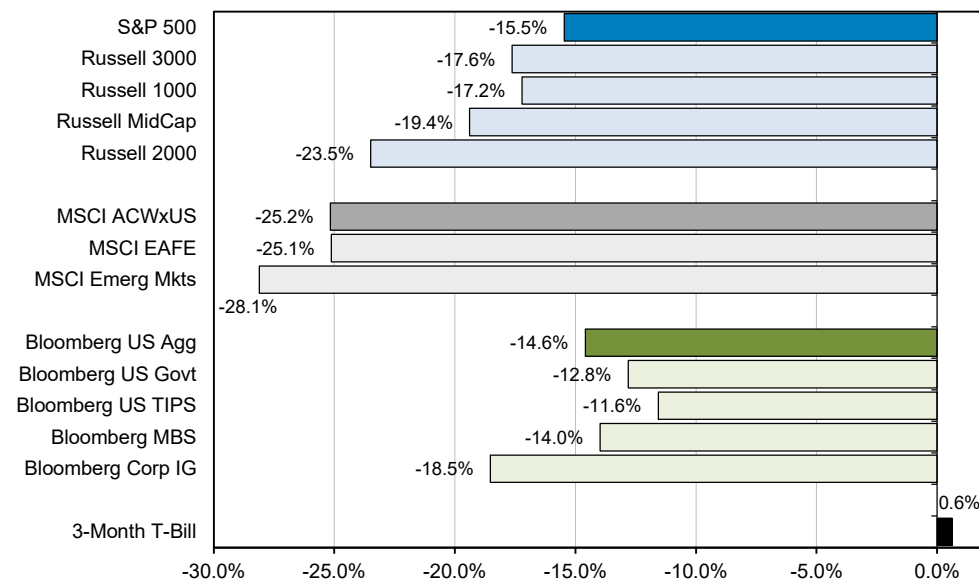
- Central banks remained hawkish during the quarter with several banks raising interest rates to fight higher inflation. The Fed, the Bank of England, and European Central Bank all raised rates during the quarter. Additionally, the Fed is currently allowing bonds to mature without reinvesting (quantitative tightening), while other banks are also considering similar actions. The outcome would be additional liquidity from the market.
- The escalating crisis in Ukraine spilled over as several gas pipelines were attacked in the Baltic Sea. The result was further disruption of energy supplies to Europe, Germany in particular. Energy costs have risen significantly since the start of the conflict which have negatively impacted economic activity in the region.
- US equity markets experienced their third consecutive quarter of negative performance during the 3rd quarter. Growth-oriented stocks outperformed value stocks as investors believe the Fed will begin slowing the rise of interest rates as economic growth declines. Historically, growth stocks have outperformed value stocks as the economy reaches the trough following a recession.
- Interest rates rose across the Treasury yield curve during the quarter as the Fed hiked interest rates by 0.75% at both the July and September meetings. The 3rd quarter marks the third consecutive quarter the bond market has suffered negative absolute returns. Long-term mortgage and investment grade corporate bonds underperformed during the quarter given their maturity profiles. High yield bonds outperformed primarily due to their shorter maturity profile and higher coupons.

- Negative momentum continued during the 3rd quarter as broad US equity markets experienced negative returns. Factors that contributed to performance included elevated inflation, tighter monetary policy, continued geopolitical events in Ukraine, and expectations of slower economic growth. For the period, the S&P 500 large cap benchmark returned -4.9%, compared to -3.4% for mid-cap and -2.2% for small cap indices.
- Like domestic equities, developed markets international equities also suffered negative results for the 3rd quarter. Europe was negatively impacted by higher-than-expected inflation, the conflict in Ukraine, uncertainty regarding energy supplies, and rising interest rates. Emerging markets were also negatively impacted by war in Ukraine and a strengthening USD. During the period, the MSCI EAFE Index returned -9.4% while the MSCI Emerging Markets Index declined by -11.6%.
- For the quarter, performance of the bond market was broadly negative due to continued concerns about inflation and the FOMC's decision to raise interest rates twice during the period. The Bloomberg (BB) US Aggregate Index returned -4.8%, for the period while Investment Grade Corporate bonds posted a return of -5.1%.
- Performance for developed equity markets was strongly negative over the trailing 1-year period. The primary drivers of return during the period were weakening global economic growth, more restrictive monetary policy from global central banks, and elevated inflation. The S&P 500 large cap stock index led equity market performance for the year with a return of -15.5%. The outlier was the MSCI ACWI ex-US index which declined by -25.2% for the year.
- Over the trailing 1-year period, international markets fell with the developed market MSCI EAFE Index returning -25.1% while the MSCI Emerging Markets Index fell by -28.1%. Global economic growth slowed throughout the year and both developed and emerging markets were negatively impacted by a strong USD and continued geopolitical concerns.
- Bond market returns disappointed over the trailing 1-year period due primarily to concerns about rising inflation and the expectation of higher future interest rates. US TIPS were the best performing sector returning -11.6% while investment grade corporate bonds was the worst, falling -18.5%.

### Quarter Performance



### 1-Year Performance

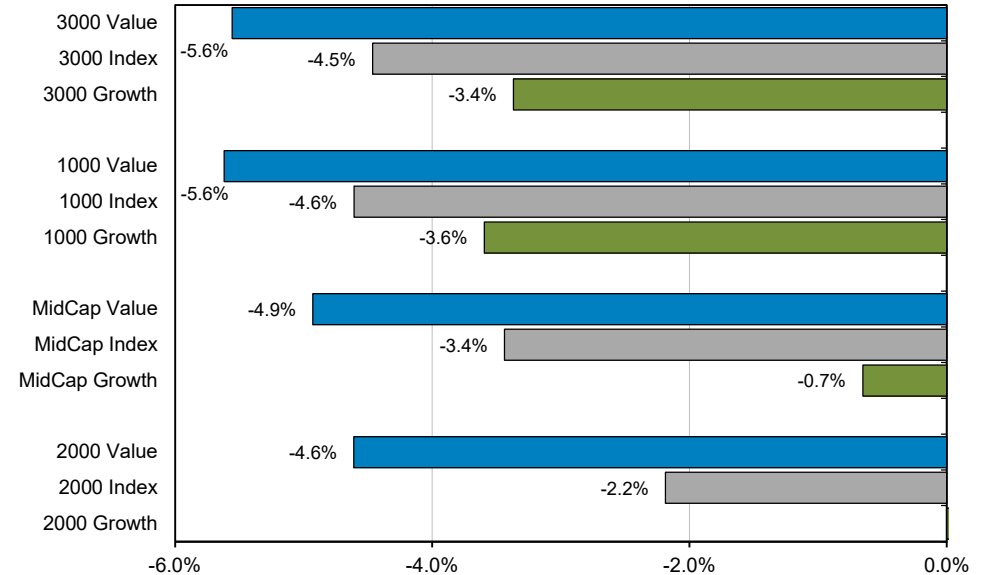


Source: Investment Metrics

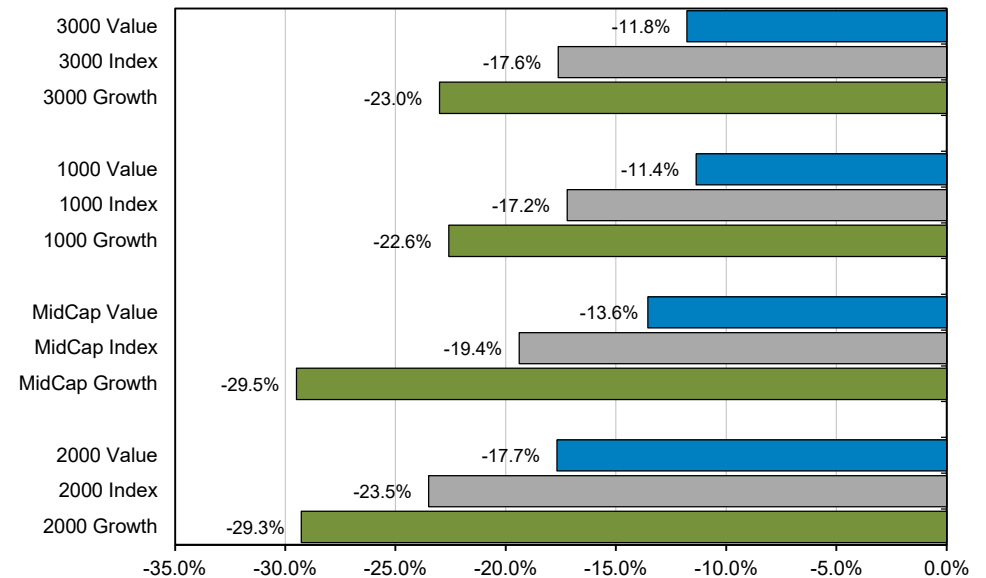


- Volatility was high during the 3rd quarter as broad US equity markets rose sharply before falling to close the period with negative results across both the style and market capitalization spectrums. Leadership switched during the quarter with small cap stocks outperforming, followed by mid and large cap issues. The Russell 2000 Index declined by -2.2% for the quarter while the Russell Mid Cap Index and the Russell 1000 Index fell by -3.4% and -4.6%, respectively.
- Performance across styles and market capitalizations was disparate during the quarter. Large, mid, and small cap growth stocks all outperformed their value counterparts. For the period, the Russell 2000 Growth Index was the best relative performing style index, posting a return of 0.0%. Large and mid cap value stocks were the laggards during the period with the Russell Large Cap Value Index and Russell Mid Cap Value Index falling by -5.6% and -4.9%, respectively.
- Performance across all market capitalizations and styles was negative over the trailing 1-year period. Unlike the 3rd quarter, large cap stocks outperformed mid and small cap stocks for the year. The Russell 1000 Index return of -17.2% for the year, significantly outperformed both its mid and small cap growth index counterparts. The outlier during the period was the Russell 2000 Index which returned -23.5%.
- There was wide performance dispersion within across all style-based indexes. Value significantly outperformed growth over the year. Within large cap stocks, the Russell 1000 Value returned -11.4% compared to -22.6% for the Russell Large Cap Growth benchmark. The Russell Mid Cap Value Index returned -13.6% while the Russell 2000 Value Index returned -17.7% for the period. In comparison, the Russell Mid Cap Growth Index returned -29.5%, while the Russell 2000 Growth Index declined by -29.3%.

### Quarter Performance - Russell Style Series



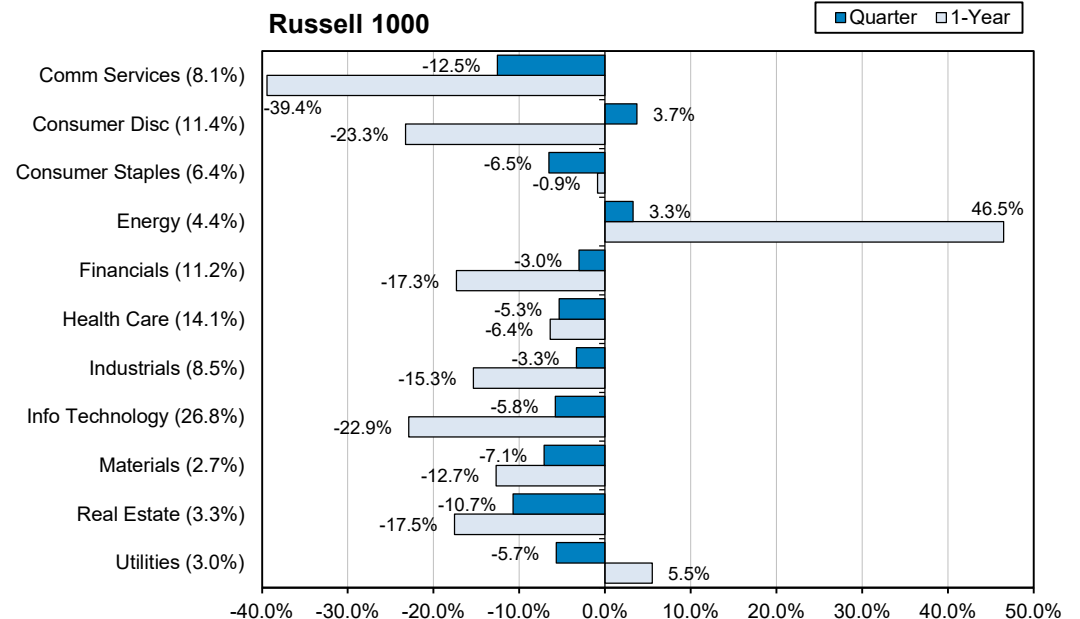
### 1-Year Performance - Russell Style Series



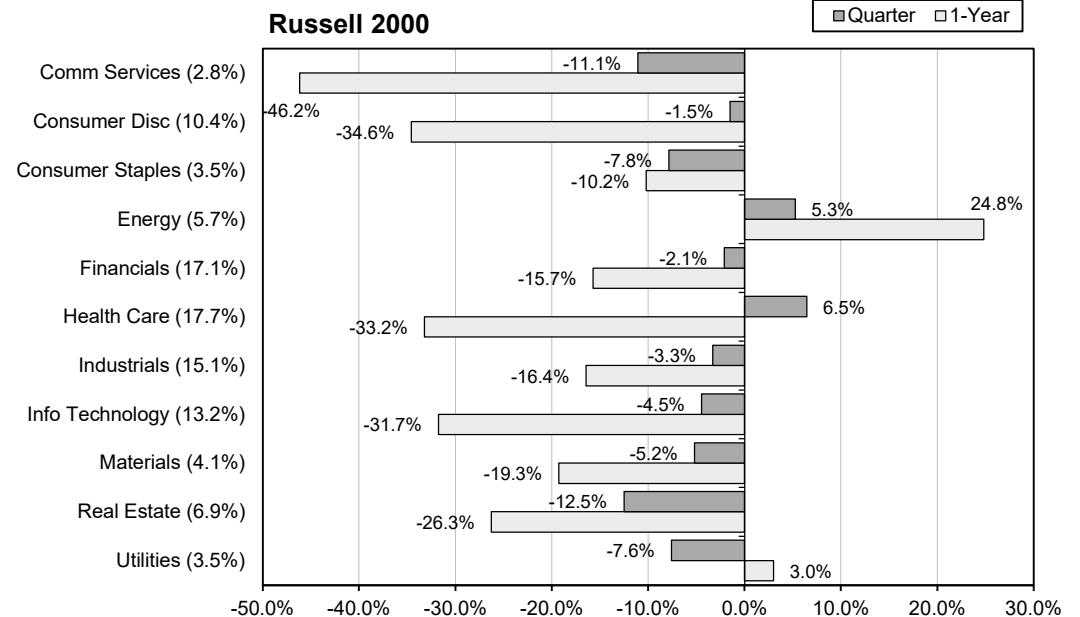
Source: Investment Metrics



- Economic sector performance was negative across nine of the eleven large cap economic sectors for the 3rd quarter. Four sectors outpaced the return of the broad index on a relative basis during the period.
- Consumer Discretionary (3.7%) and Energy (3.3%) were the only sectors with positive absolute performance during the period. Additionally, Financials (-3.0%) and Industrials (-3.3%) outperformed the broad index. Strong consumer demand acted as a tailwind for consumer-related stocks during the quarter. Energy continued its relative outperformance as the price of oil remained elevated.
- For the full year, six sectors exceeded the return of the broad large cap benchmark: Energy (46.5%), Utilities (5.5%), Consumer Staples (-0.9%), Health Care (-6.4%), Materials (-12.7%), and Industrials (-15.3%). The weakest economic sector performance in the Russell 1000 for the year was Communication Services which declined by returns (-39.4%).



- Small cap sector performance was also mixed during the quarter with two economic sectors posting positive performance relative to return of the broader Russell 2000 Index (-2.2%). Health Care (6.5%), and Energy (5.3%) were the best performing sectors for the period. Real Estate (-12.5%), and Communication Services (-11.1%) were the worst performing sectors for the quarter.
- For the trailing 1-year period, six of the eleven sectors outpaced the broad benchmark's return. Not surprisingly, sector performance was led by Energy (24.8%), Utilities (3.0%), Consumer Staples (-10.2%), Financials (-15.7%), and Industrials (-16.4%). The weakest sector over the full year was Communication Services (-46.2%), followed by Consumer Discretionary (-34.6%).



Source: Morningstar Direct  
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.



**The Market Environment**  
**Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000**  
As of September 30, 2022

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Apple Inc	6.31%	1.22%	-1.79%	Information Technology
Microsoft Corp	5.21%	-9.12%	-16.69%	Information Technology
Amazon.com Inc	3.00%	6.39%	-31.20%	Consumer Discretionary
Tesla Inc	2.02%	18.17%	2.61%	Consumer Discretionary
Alphabet Inc Class A	1.72%	-12.22%	-28.45%	Communication Services
Alphabet Inc Class C	1.55%	-12.09%	-27.85%	Communication Services
Berkshire Hathaway Inc Class B	1.44%	-2.20%	-2.17%	Financials
UnitedHealth Group Inc	1.41%	-1.36%	30.94%	Health Care
Johnson & Johnson	1.28%	-7.35%	3.82%	Health Care
Exxon Mobil Corp	1.09%	2.91%	55.15%	Energy

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Signify Health Inc Ordinary Shares	0.01%	111.23%	63.12%	Health Care
First Solar Inc	0.04%	94.14%	38.56%	Information Technology
Wolfsped Inc	0.04%	62.90%	28.03%	Information Technology
Penumbra Inc	0.02%	52.26%	-28.86%	Health Care
Oak Street Health Inc Ordinary Shares	0.01%	49.15%	-42.35%	Health Care
Sarepta Therapeutics Inc	0.03%	47.47%	19.53%	Health Care
Constellation Energy Corp	0.08%	45.54%	N/A	Energy
The Trade Desk Inc Class A	0.08%	42.64%	-15.01%	Information Technology
Nutanix Inc Class A	0.01%	42.38%	-44.75%	Information Technology
Enphase Energy Inc	0.11%	42.12%	85.02%	Energy

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Sotera Health Co Ordinary Shares	0.00%	-65.2%	-73.9%	Health Care
Novavax Inc	0.00%	-64.6%	-91.2%	Health Care
Spectrum Brands Holdings Inc	0.00%	-52.1%	-58.4%	Consumer Staples
AMC Entertainment Holdings Inc	0.01%	-48.6%	-81.7%	Communication Services
WeWork Inc	0.00%	-47.2%	N/A	Real Estate
The Scotts Miracle Gro Co A	0.01%	-45.4%	-70.1%	Materials
AppLovin Corp Ordinary Shares	0.01%	-43.4%	-73.1%	Information Technology
Azenta Inc	0.01%	-40.6%	-58.1%	Health Care
NCR Corp	0.01%	-38.9%	-51.0%	Information Technology
Enhabit Inc Shs	0.00%	-38.9%	N/A	Health Care

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
ShockWave Medical Inc	0.45%	45.5%	35.1%	Health Care
Biohaven Pharmaceutical Holding Co	0.43%	3.7%	8.8%	Health Care
Chart Industries Inc	0.31%	10.1%	-3.5%	Industrials
Karuna Therapeutics Inc	0.30%	77.8%	83.9%	Health Care
Apellis Pharmaceuticals Inc	0.28%	51.0%	107.2%	Health Care
Murphy USA Inc	0.28%	18.2%	65.3%	Consumer Discretionary
Texas Roadhouse Inc	0.27%	19.8%	-2.4%	Consumer Discretionary
SouthState Corp	0.27%	3.2%	8.5%	Financials
RBC Bearings Inc	0.27%	12.4%	-2.1%	Industrials
EMCOR Group Inc	0.27%	12.3%	0.5%	Information Technology

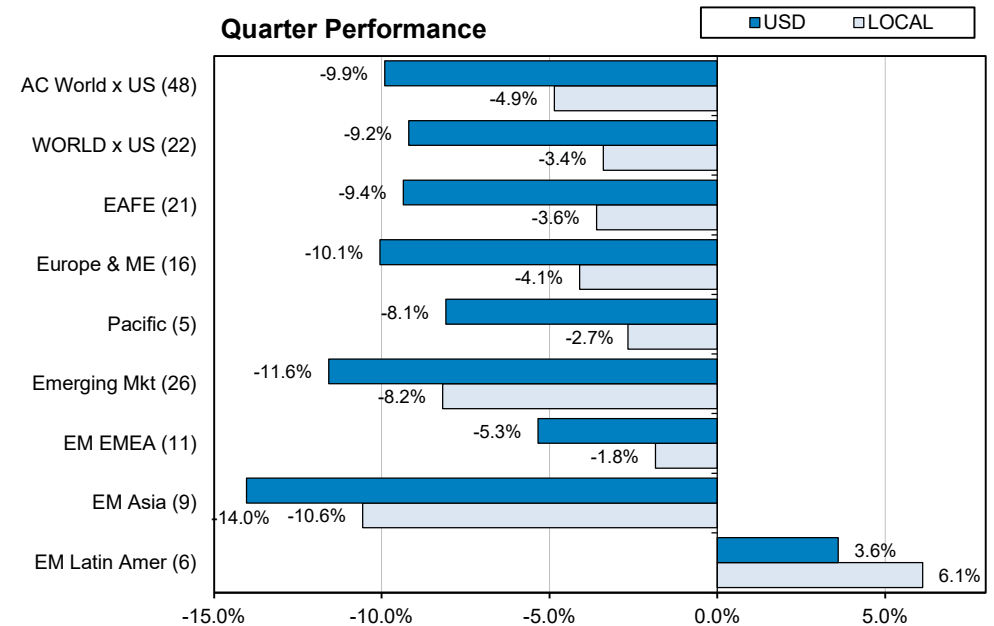
Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Akero Therapeutics Inc	0.04%	260.3%	52.3%	Health Care
Forma Therapeutics Holdings Inc	0.03%	189.6%	-14.0%	Health Care
Velo3D Inc	0.01%	185.5%	-52.9%	Industrials
Ventyx Biosciences Inc	0.04%	185.4%	N/A	Health Care
Verve Therapeutics Inc	0.06%	124.8%	-26.9%	Health Care
AN2 Therapeutics Inc	0.00%	124.3%	N/A	Health Care
Prothena Corp PLC	0.10%	123.3%	-14.9%	Health Care
Target Hospitality Corp Class A	0.02%	121.0%	238.3%	Consumer Discretionary
1Life Healthcare Inc Ordinary Shares	0.14%	118.8%	-15.3%	Health Care
Global Blood Therapeutics Inc	0.19%	113.1%	167.3%	Health Care

Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Leafly Holdings Inc	0.00%	-84.9%	0.0%	Communication Services
VistaGen Therapeutics Inc	0.00%	-82.7%	N/A	Health Care
Faraday Future Intelligent Electric Inc	0.00%	-75.5%	N/A	Consumer Discretionary
SelectQuote Inc Ordinary Shares	0.00%	-70.6%	-94.4%	Financials
IronNet Inc	0.00%	-68.8%	N/A	Information Technology
Core Scientific Inc Ord Shs - Class A	0.00%	-67.9%	N/A	Consumer Discretionary
Rockley Photonics Holdings Ltd	0.00%	-67.4%	N/A	Information Technology
Loyalty Ventures Inc Ordinary Shares	0.00%	-66.1%	0.0%	Communication Services
Cryptide Inc	0.00%	-65.9%	0.0%	Materials
Vintage Wine Estates Inc	0.00%	-64.8%	-72.9%	Consumer Staples

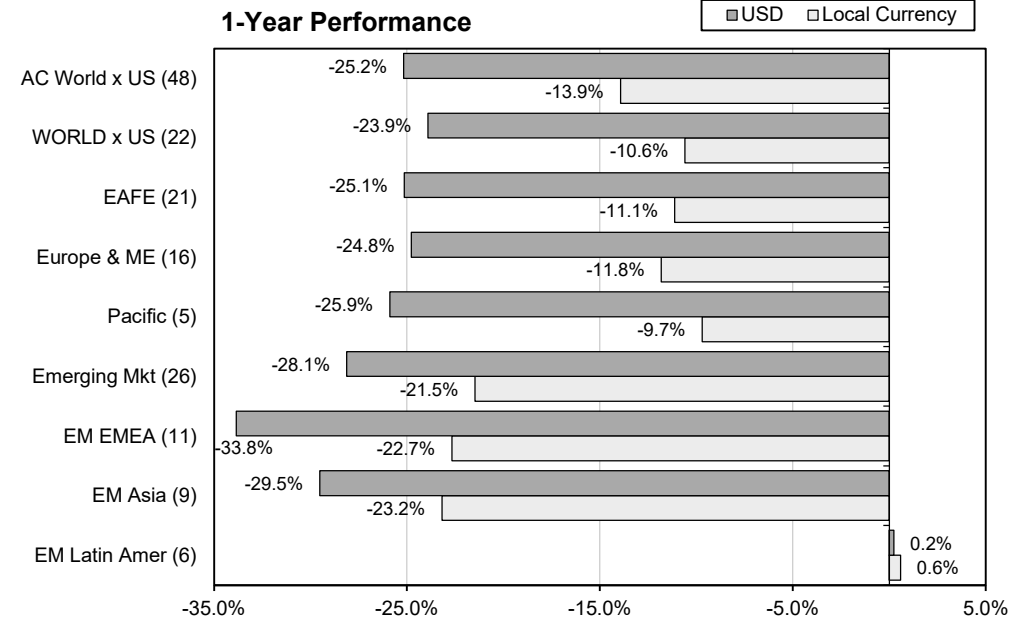
Source: Morningstar Direct



- Most developed and emerging market international equity indexes tracked in the chart posted negative returns in both US dollar (USD) and local currency (LC) terms for the 3rd quarter. The outlier during the period was the Latin America region. Higher commodity prices and demand benefited export-driven countries like Brazil. The developed market MSCI EAFE Index returned -9.4% in USD and -3.6% in LC terms for the period, while the MSCI Emerging Markets Index declined by -11.6% in USD and -8.2% in LC terms.



- The trailing 1-year results for international developed and emerging markets were broadly negative across most regions and currencies. The MSCI EAFE Index returned -25.1% in USD for the year and -11.1% in LC terms. Similarly, returns across emerging markets were broadly lower with the exception being Latin America with the MSCI Emerging Markets Index declining by -28.1% in USD and -21.5% in LC terms. Latin America regional index's return were the outlier, rising by 0.2% in USD and 0.6% in LC term. In contrast, performance in the EMEA regional benchmark significantly detracted from emerging market index performance with the EMEA Index returning -33.8% in USD and -22.7% in LC terms, respectively, due primarily to concerns related to Ukraine.



Source: MSCI Global Index Monitor (Returns are Net)



**The Market Environment**  
**US Dollar International Index Attribution & Country Detail**  
As of September 30, 2022

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	4.8%	-13.7%	-28.6%
Consumer Discretionary	11.3%	-9.8%	-32.3%
Consumer Staples	11.3%	-7.1%	-17.3%
Energy	4.9%	-5.0%	6.0%
Financials	17.6%	-9.6%	-22.1%
Health Care	13.5%	-10.6%	-19.8%
Industrials	15.0%	-8.3%	-31.5%
Information Technology	7.9%	-8.3%	-38.9%
Materials	7.5%	-8.9%	-21.3%
Real Estate	2.8%	-13.1%	-29.1%
Utilities	3.4%	-13.3%	-20.3%
<b>Total</b>	<b>100.0%</b>	<b>-9.4%</b>	<b>-25.1%</b>

MSCI - ACWixUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	6.1%	-16.5%	-32.0%
Consumer Discretionary	11.4%	-13.0%	-32.3%
Consumer Staples	9.4%	-6.4%	-16.7%
Energy	6.2%	-6.3%	-5.0%
Financials	20.7%	-7.9%	-18.3%
Health Care	9.6%	-11.0%	-23.5%
Industrials	12.1%	-8.2%	-28.7%
Information Technology	10.8%	-12.1%	-39.3%
Materials	8.2%	-7.9%	-21.1%
Real Estate	2.4%	-14.5%	-29.8%
Utilities	3.4%	-10.9%	-16.0%
<b>Total</b>	<b>100.0%</b>	<b>-9.9%</b>	<b>-25.2%</b>

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	9.7%	-19.3%	-36.2%
Consumer Discretionary	14.0%	-18.7%	-33.7%
Consumer Staples	6.6%	-4.5%	-17.8%
Energy	5.3%	-2.6%	-30.1%
Financials	22.6%	-5.1%	-14.3%
Health Care	3.9%	-13.8%	-42.8%
Industrials	5.8%	-9.9%	-20.8%
Information Technology	18.3%	-15.5%	-36.1%
Materials	8.7%	-7.4%	-26.3%
Real Estate	2.0%	-19.3%	-31.9%
Utilities	3.2%	-4.3%	-8.0%
<b>Total</b>	<b>100.0%</b>	<b>-11.6%</b>	<b>-28.1%</b>

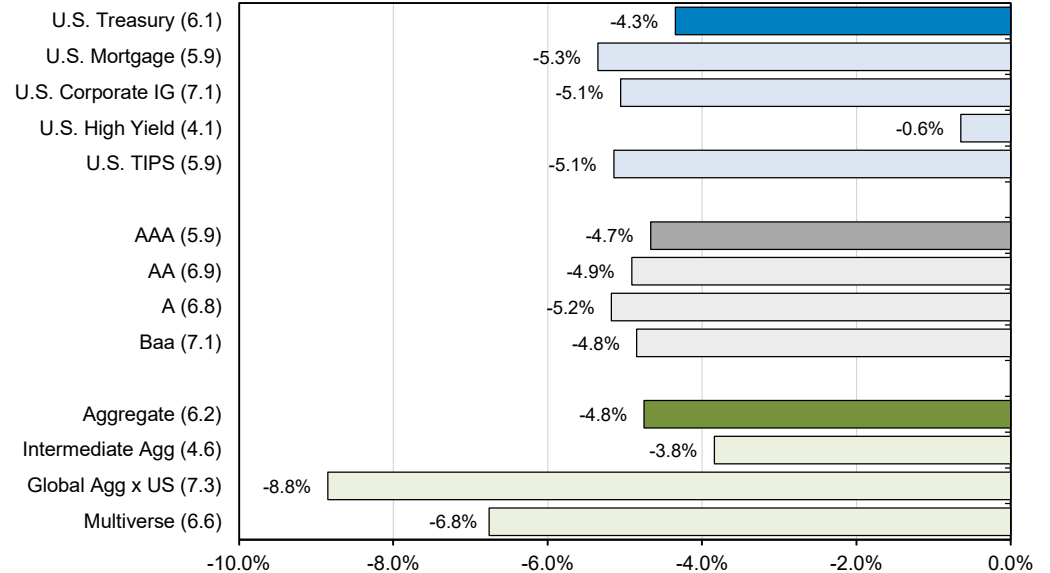
Country	MSCI-EAFE Weight	MSCI-ACWixUS Weight	Quarter Return	1-Year Return
Japan	22.6%	14.1%	-7.7%	-29.3%
United Kingdom	15.5%	9.7%	-10.8%	-14.1%
France	11.3%	7.1%	-8.9%	-24.0%
Switzerland	10.7%	6.7%	-7.5%	-16.5%
Australia	8.0%	5.0%	-6.7%	-16.4%
Germany	7.6%	4.7%	-12.6%	-37.1%
Netherlands	4.1%	2.6%	-10.7%	-38.2%
Sweden	3.4%	2.1%	-8.8%	-35.7%
Hong Kong	3.0%	1.9%	-17.0%	-22.3%
Denmark	2.6%	1.7%	-12.3%	-23.5%
Spain	2.4%	1.5%	-14.1%	-25.6%
Italy	2.3%	1.4%	-8.5%	-28.5%
Singapore	1.6%	1.0%	-1.5%	-22.1%
Belgium	1.0%	0.6%	-13.2%	-27.3%
Finland	1.0%	0.6%	-7.2%	-25.0%
Norway	0.8%	0.5%	-15.3%	-20.7%
Israel	0.8%	0.5%	-1.9%	-21.8%
Ireland	0.6%	0.4%	-5.5%	-38.9%
Portugal	0.2%	0.1%	-11.0%	-12.9%
Austria	0.2%	0.1%	-15.2%	-40.9%
New Zealand	0.2%	0.1%	-8.6%	-33.4%
<b>Total EAFE Countries</b>	<b>100.0%</b>	<b>62.5%</b>	<b>-9.4%</b>	<b>-25.1%</b>
Canada		8.2%	-7.8%	-12.6%
<b>Total Developed Countries</b>		<b>70.7%</b>	<b>-9.2%</b>	<b>-23.9%</b>
China		9.2%	-22.5%	-35.4%
Taiwan		4.0%	-14.5%	-30.5%
India		4.5%	6.5%	-9.9%
Korea		3.1%	-16.4%	-40.7%
Brazil		1.7%	8.5%	4.3%
Saudi Arabia		1.4%	-0.1%	1.9%
South Africa		1.0%	-12.3%	-19.2%
Mexico		0.7%	-5.4%	-7.4%
Thailand		0.6%	-2.9%	-6.8%
Indonesia		0.6%	7.8%	14.3%
Malaysia		0.4%	-7.1%	-15.9%
United Arab Emirates		0.4%	-2.5%	5.1%
Qatar		0.4%	3.1%	12.7%
Kuwait		0.3%	-5.5%	6.4%
Philippines		0.2%	-13.6%	-26.3%
Poland		0.2%	-25.1%	-51.9%
Chile		0.2%	3.2%	0.6%
Turkey		0.1%	16.3%	3.8%
Peru		0.1%	-0.9%	3.0%
Greece		0.1%	-7.5%	-25.2%
Colombia		0.0%	-18.5%	-23.6%
Czech Republic		0.0%	-19.2%	-9.8%
Hungary		0.0%	-15.0%	-54.3%
Egypt		0.0%	-1.3%	-28.8%
<b>Total Emerging Countries</b>		<b>29.3%</b>	<b>-11.6%</b>	<b>-28.1%</b>
<b>Total ACWixUS Countries</b>		<b>100.0%</b>	<b>-9.9%</b>	<b>-25.2%</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.

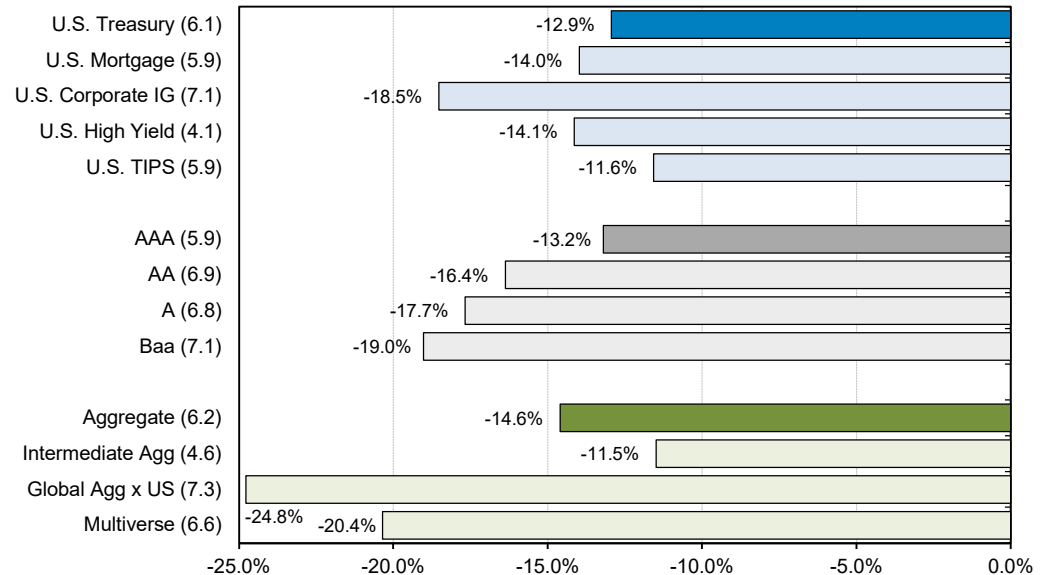


- Fixed income market results were broadly negative during the 3rd quarter. Investors' concerns about rising inflation, combined with expectations of higher US interest rates, detracted from performance. As a result, US Treasury yields continued to rise across the maturity curve throughout the quarter.
- The return for the BB US Aggregate Bond Index, the bellwether investment grade benchmark, was down -4.8% for the period.
- Performance across the investment grade index's segments was also negative during the period with the US Corporate Investment Grade bonds returning -5.1% and the US Mortgage index component posting a return of -5.3%.
- High yield bonds outperformed their investment grade counterparts, but still declined by -0.6%. US TIPS, which have delivered strong performance in recent periods, posted a decline of -5.1% as investors' expectations of future inflation declined.
- Outside of domestic markets, the BB Global Aggregate ex US Index posted a return of -8.8% for the quarter. Like domestic bonds, global bond index performance was negatively impacted by rising interest rates and a strengthening USD, which acted as a drag on domestic index returns.
- Over the trailing 1-year period, domestic investment grade benchmark performance was negative, led lower by investment grade corporate bonds (-18.5%), followed by mortgage-backed bonds (-14.0%), US Treasury bonds (-12.9%), and US TIPS (-11.6%). The bellwether Bloomberg US Aggregate Bond Index (-14.6%) declined for the year.
- Lower quality high yield corporate bonds outperformed their investment grade counterparts on a relative basis with the Bloomberg US High Yield Index returning -14.1% for the period.
- Performance for non-US bonds was broadly negative for the year with the developed market Bloomberg Global Aggregate ex US Index falling by -24.9%. The combination of rising interest rates overseas, persistent inflation, and USD strength hindered index performance for the year.

### Quarter Performance



### 1-Year Performance

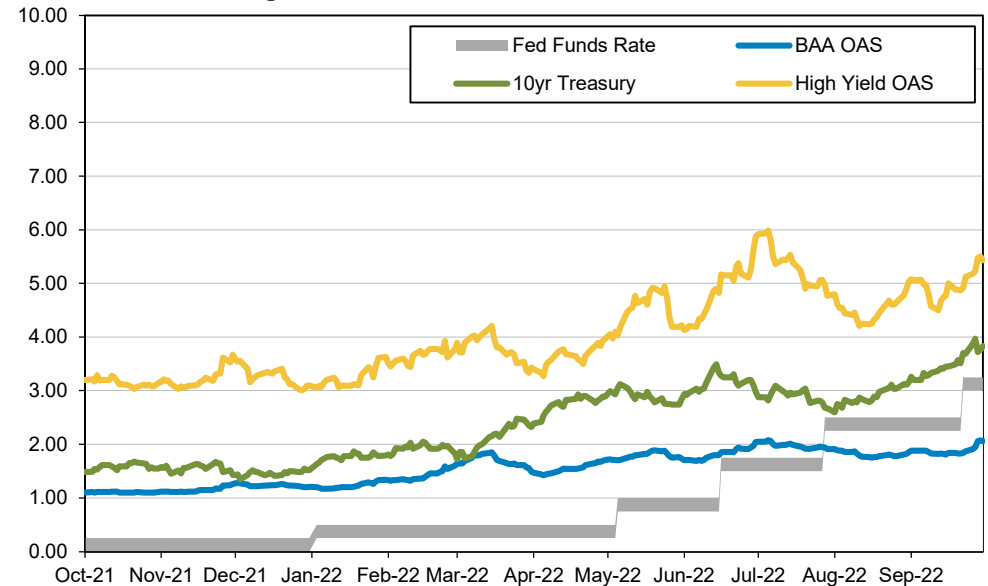


Source: Bloomberg

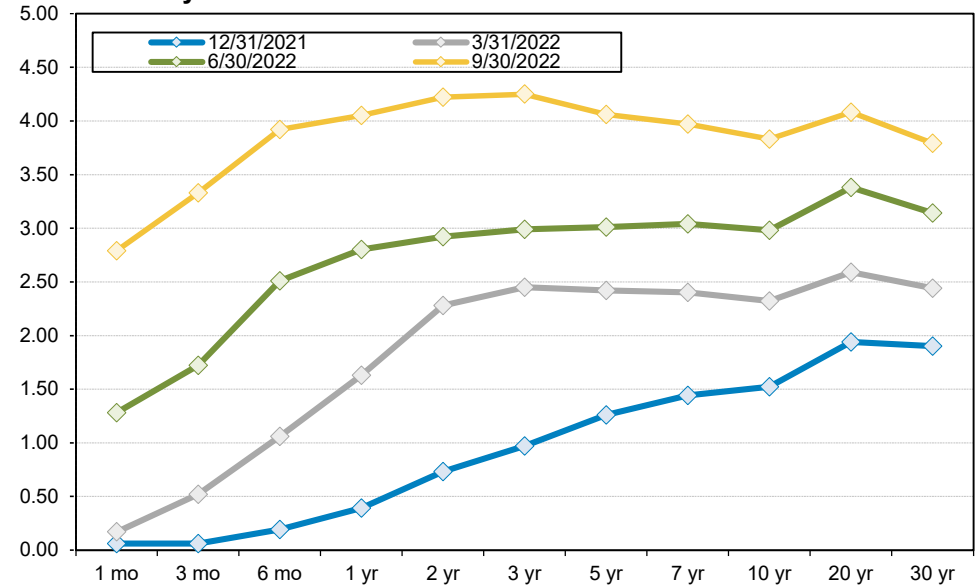


- The gray band across the graph illustrates the range of the current Fed Funds Rate. In the 3rd quarter this year, the Fed raised its target rate range from 1.75% to 3.25%. During its recent September meeting, the Federal Open Market Committee (FOMC) stated it intends to continue to remove liquidity from the market by raising interest rates and also allowing bonds held on its balance sheet to mature without reinvesting those proceeds. Importantly, the FOMC stated that it will remain vigilant in its fight against persistently higher inflation.
- The yield on the US 10-year Treasury (green line) ended the period higher as concerns over the pace of inflation, combined with the Fed's announced rate increase, drove yields higher. Interest rates continued to climb during the quarter, reaching a high of roughly 4.00% during the latter part of September 2022, before settling at 3.83% at the end of the month.
- 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-US Treasury investment grade issues. For the full year, the spread widened slightly from 1.10% to 2.06%. High Yield OAS was largely unchanged during the year as spreads rose from 3.17% to 5.43%. High Yield spreads reached as high as 5.80% in early July before trading lower the remainder of the quarter.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. Short-term rates continued to rise during the 3rd quarter as the FOMC continued raising rates to combat rising inflation. Both intermediate and longer-term rates were modestly higher across the curve, albeit less dramatically than short-term rates. The curve remained inverted between 2-year rates and 10-year rates. Said differently, the short-term rate was higher than the long-term rate. Historically, a persistent inversion of these two key rates has been an indication of a future recession withing 6- to 24-months.

**1-Year Trailing Market Rates**



**Treasury Yield Curve**



Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)

Page Intentionally Left Blank

# Annual Asset Class Performance

## Strategic Policy

As of September 30, 2022

### Annual Asset Class Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD
Best	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 36.4 %	Russell 1000 Growth 38.5 %	S&P 500 28.7 %	NCREIF ODCE (EW) (Net) 13.3 %
	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 31.5 %	Russell 2000 Growth 34.6 %	Russell 2000 Value 28.3 %	Blmbg Barc US Agg -14.6 %
	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 2000 Growth 28.5 %	S&P 500 18.4 %	Russell 1000 Growth 27.6 %	Blmbg Barc US Corp High Yield -14.7 %
	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 1000 Value 26.5 %	MSCI Emerging Mkts (Net) 18.3 %	Russell 1000 Value 25.2 %	Strategic Policy -16.8 %
	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 22.4 %	Strategic Policy 10.8 %	NCREIF ODCE (EW) (Net) 21.9 %	Russell 1000 Value -17.8 %
	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) 22.0 %	Blmbg Barc Global Agg Ex USD 10.1 %	Strategic Policy 13.8 %	Russell 2000 Value -21.1 %
	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 %	MSCI Emerging Mkts (Net) 18.4 %	MSCI EAFE (Net) 7.8 %	MSCI EAFE (Net) 11.3 %	S&P 500 -23.9 %
	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 %	Strategic Policy 17.9 %	Blmbg Barc US Agg 7.5 %	Blmbg Barc US Corp High Yield 5.3 %	Blmbg Barc Global Agg Ex USD -23.9 %
	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 Corp High Yield 14.3 %	Blmbg Barc US Corp High Yield 7.1 %	Russell 2000 Growth 2.8 %	MSCI EAFE (Net) -27.1 %
	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 %	Blmbg Barc US Agg 8.7 %	Russell 2000 Value 4.6 %	Blmbg Barc US Agg -1.5 %	MSCI Emerging Mkts (Net) -27.2 %
	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 %	NCREIF ODCE (EW) (Net) 5.2 %	Russell 1000 Value 2.8 %	MSCI Emerging Mkts (Net) -2.5 %	Russell 2000 Growth -29.3 %
Worst	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 %	Blmbg Barc Global Agg Ex USD 5.1 %	NCREIF ODCE (EW) (Net) 0.8 %	Blmbg Barc Global Agg Ex USD -7.1 %	Russell 1000 Growth -30.7 %

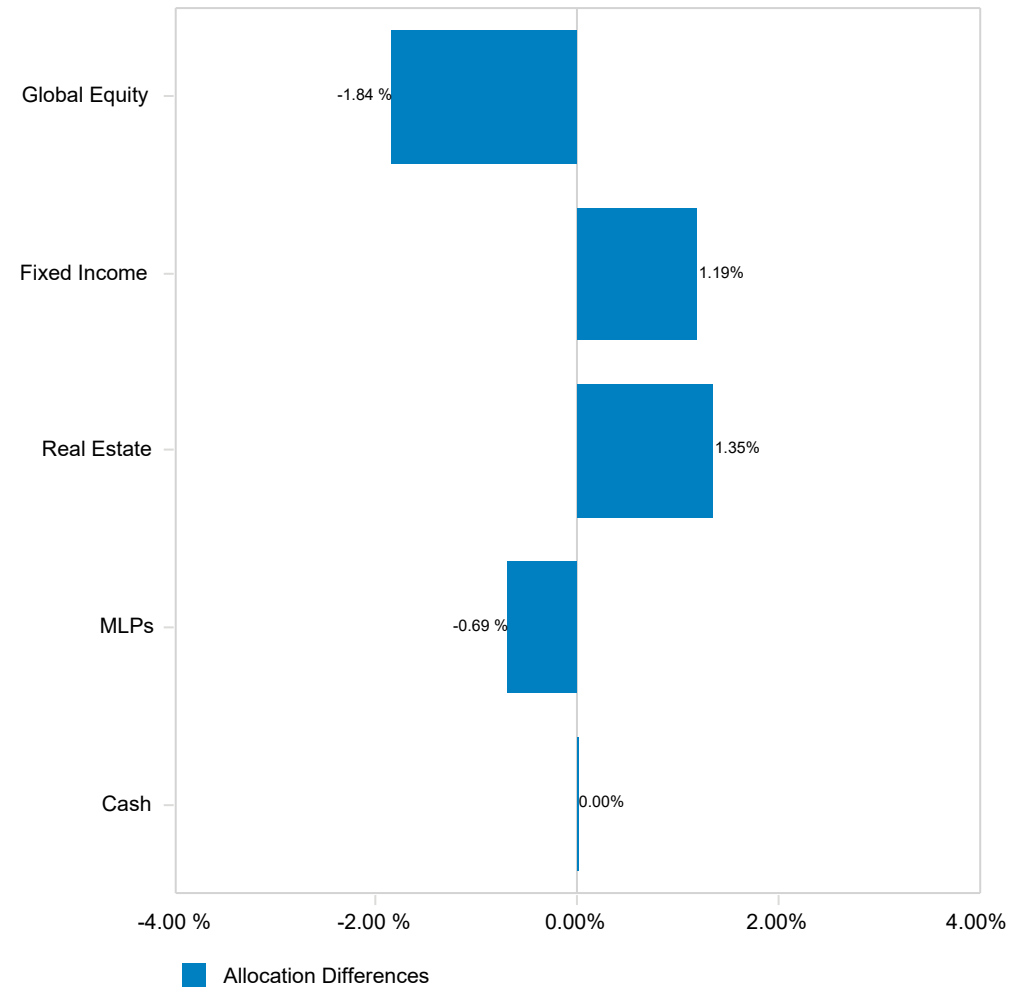
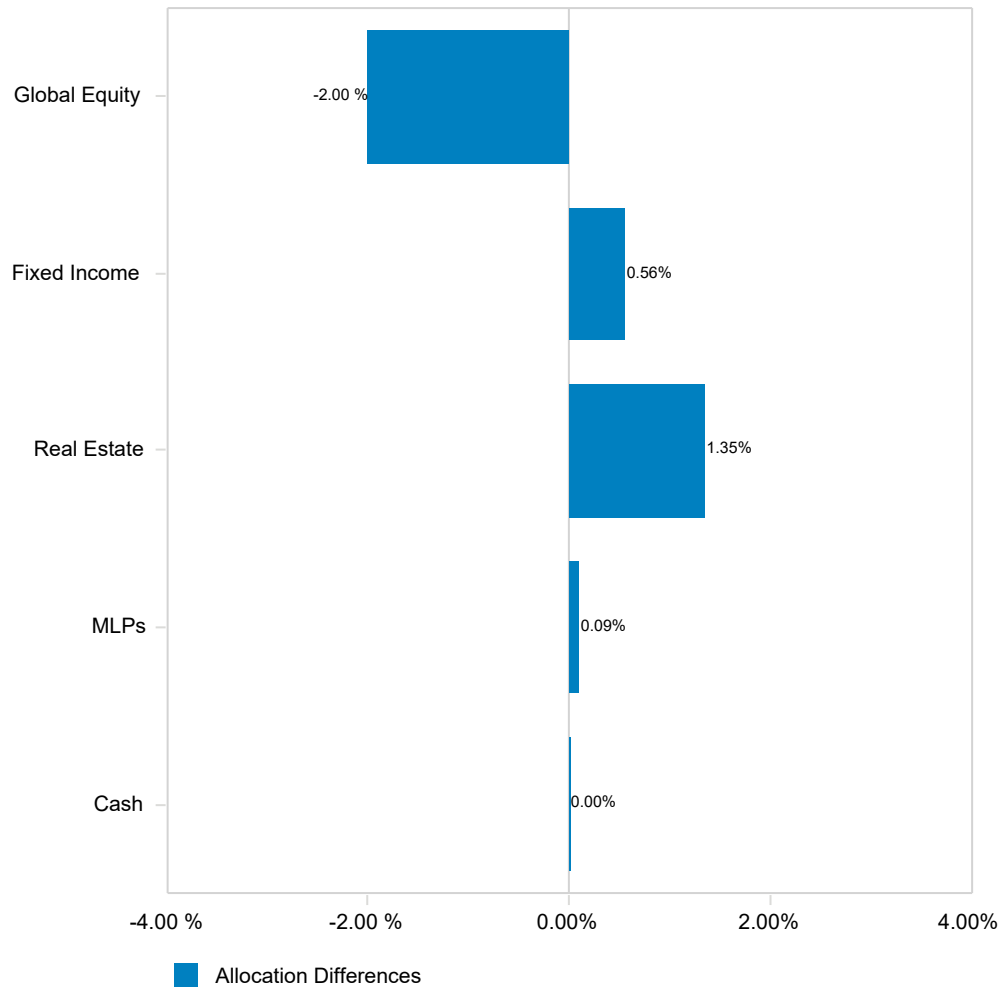


**Total Fund**

## Schedule of Investable Assets



**Employees' Retirement System of the City of Norfolk**  
**Asset Allocation vs. Target Allocation**  
**As of September 30, 2022**

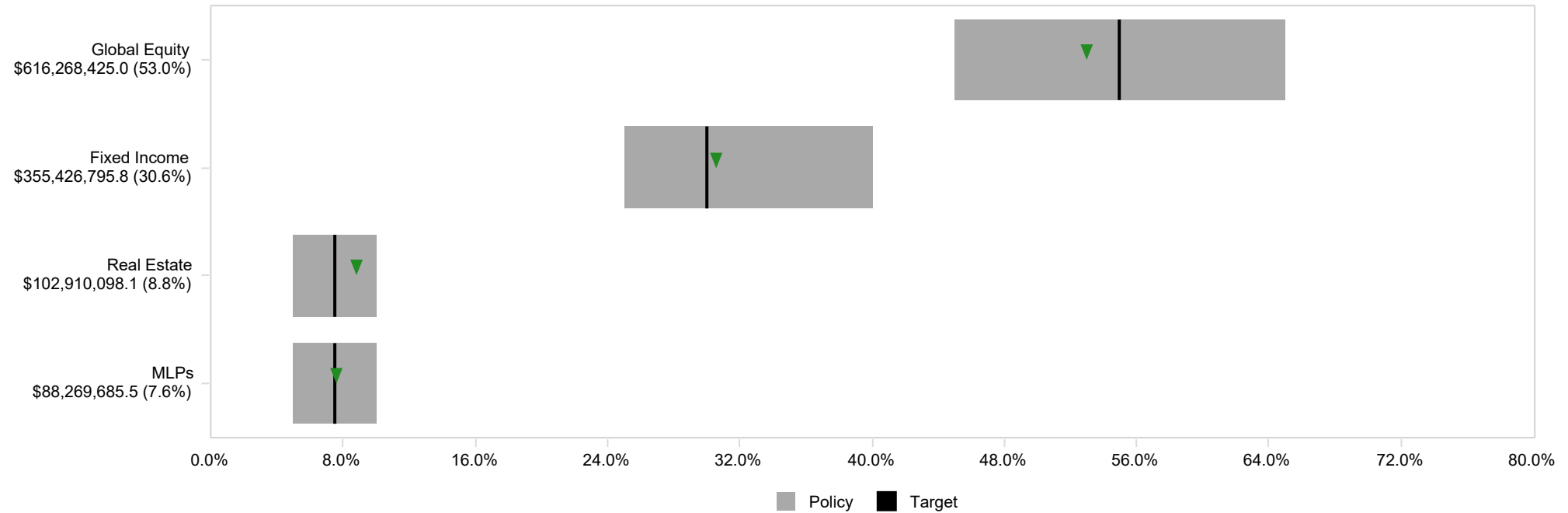


September 30, 2022				June 30, 2022			
	Market Value \$	Allocation (%)	Target (%)		Market Value \$	Allocation (%)	Target (%)
Global Equity	616,268,425	53.0	55.0	Global Equity	640,443,527	53.2	55.0
Fixed Income	355,426,796	30.6	30.0	Fixed Income	375,735,264	31.2	30.0
Real Estate	102,910,098	8.8	7.5	Real Estate	106,621,398	8.8	7.5
MLPs	88,269,686	7.6	7.5	MLPs	82,025,265	6.8	7.5
Cash	4,781	0.0	0.0	Cash	4,491	0.0	0.0
Total Fund	1,162,879,785	100.0	100.0	Total Fund	1,204,829,944	100.0	100.0





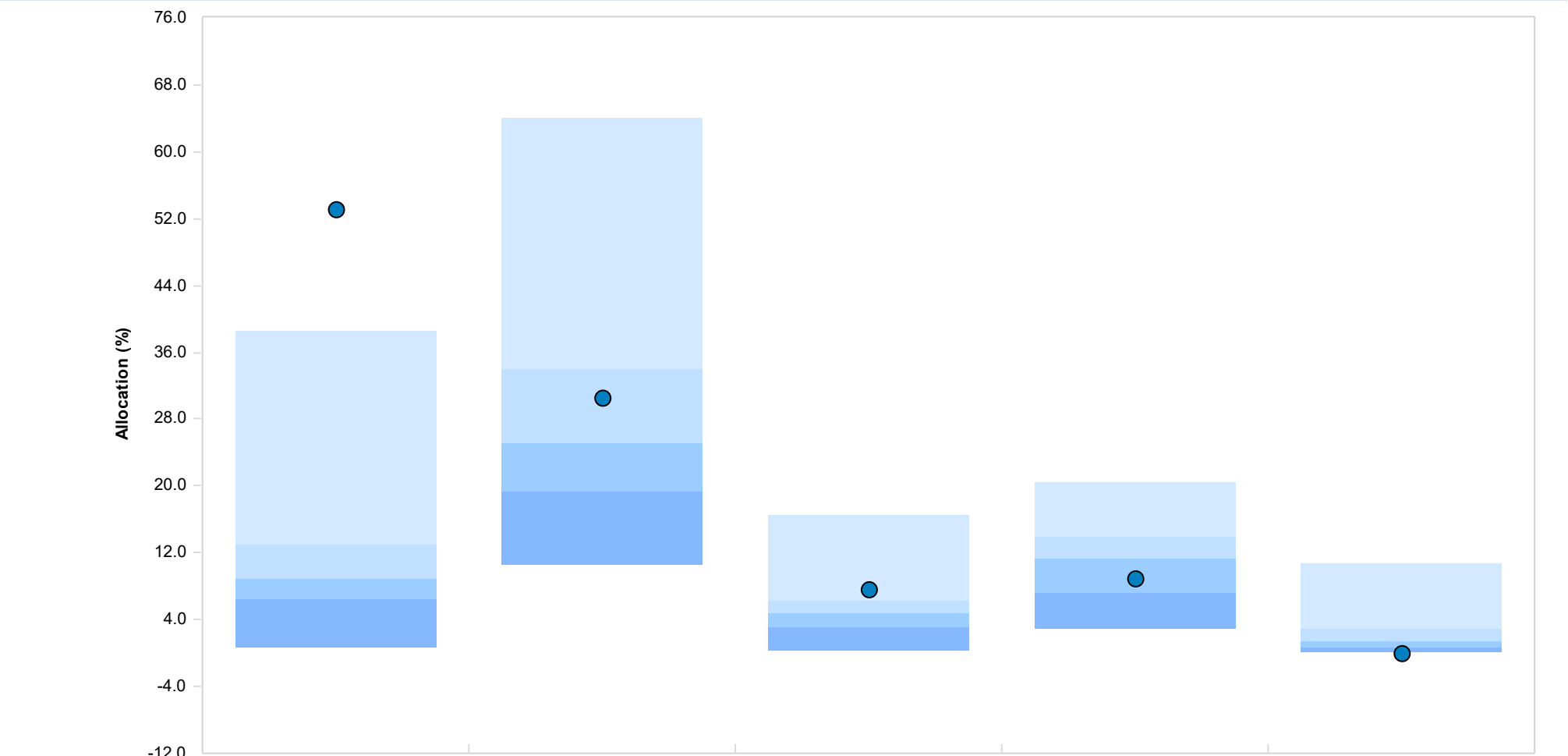
## Executive Summary



## Asset Allocation Compliance

	Asset Allocation \$	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)	Target Rebal. (\$000)
<b>Total Fund</b>	<b>1,162,879,785</b>	<b>100.0</b>	<b>100.0</b>			
Global Equity	616,268,425	53.0	55.0	45.0	65.0	23,315,457
SSgA MSCI ACWI IMI Index Fund	616,268,425	53.0				
Fixed Income	355,426,796	30.6	30.0	25.0	40.0	-6,562,860
PIMCO Total Return	174,252,165	15.0				
SSgA Bond Market Index	181,174,631	15.6				
Real Assets	191,179,784	16.4	15.0			-16,747,816
Real Estate	102,910,098	8.8	7.5	5.0	10.0	-15,694,114
JP Morgan Asset Management Strategic Property Fund	56,970,427	4.9				
UBS Trumbull Property Fund	32,020,889	2.8				
Vanguard Real Estate Index (VGSNX)	13,918,783	1.2				
MLPs	88,269,686	7.6	7.5	5.0	10.0	-1,053,702
Harvest MLP	44,330,758	3.8				
Tortoise Capital Advisors	43,938,928	3.8				
Cash	4,781	0.0				

Plan Sponsor TF Asset Allocation vs. All Public Plans-Total Fund

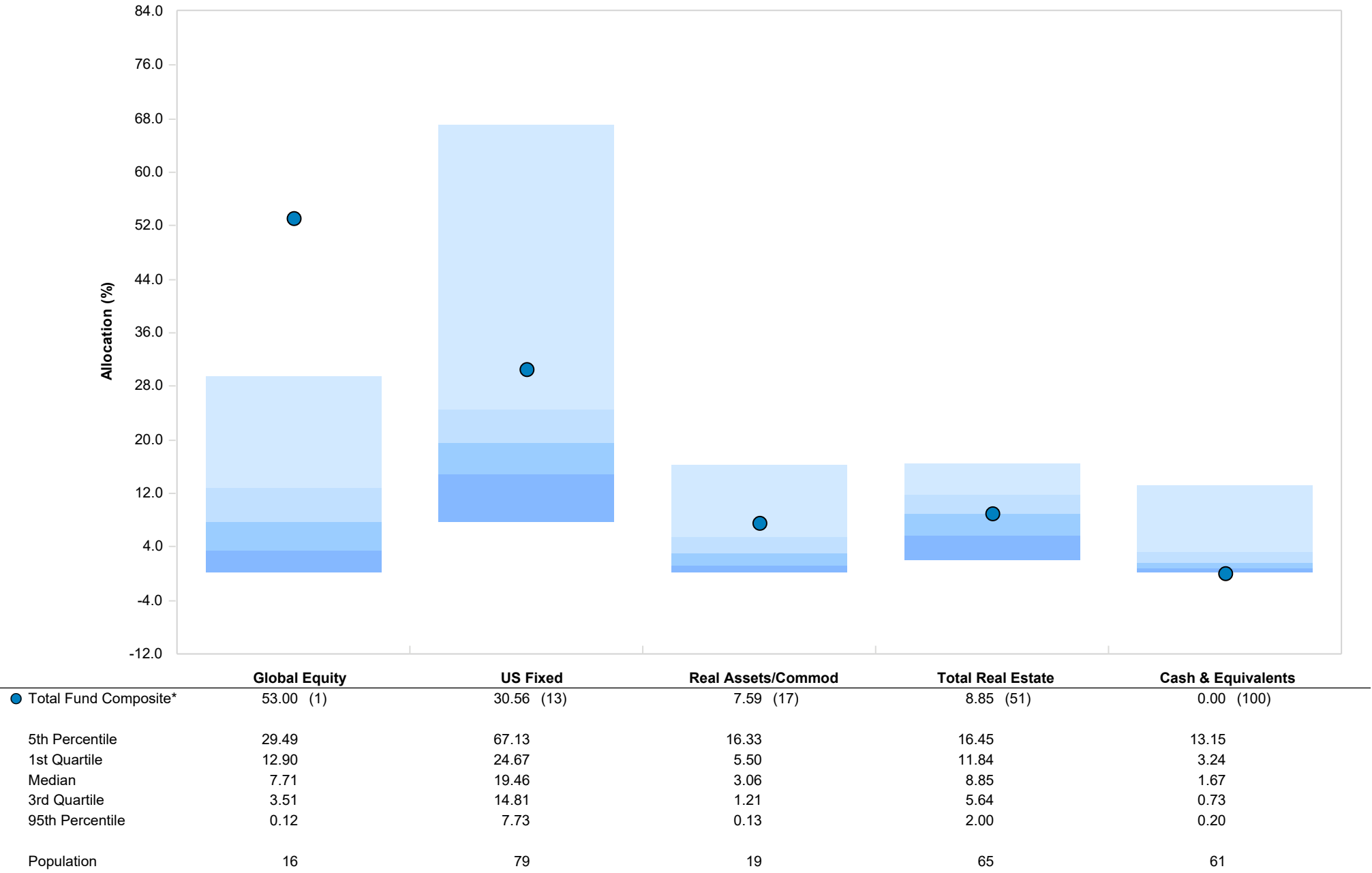


	Global Equity	US Fixed	Real Assets/Commod	Total Real Estate	Cash & Equivalents
● Total Fund Composite*	53.00 (3)	30.56 (34)	7.59 (21)	8.85 (66)	0.00 (100)
5th Percentile	38.50	64.00	16.45	20.40	10.79
1st Quartile	13.00	34.13	6.24	13.90	2.87
Median	8.87	25.14	4.72	11.30	1.45
3rd Quartile	6.55	19.23	3.10	7.19	0.64
95th Percentile	0.62	10.56	0.27	2.87	0.08
Population	46	468	73	317	414

Parentheses contain percentile rankings.



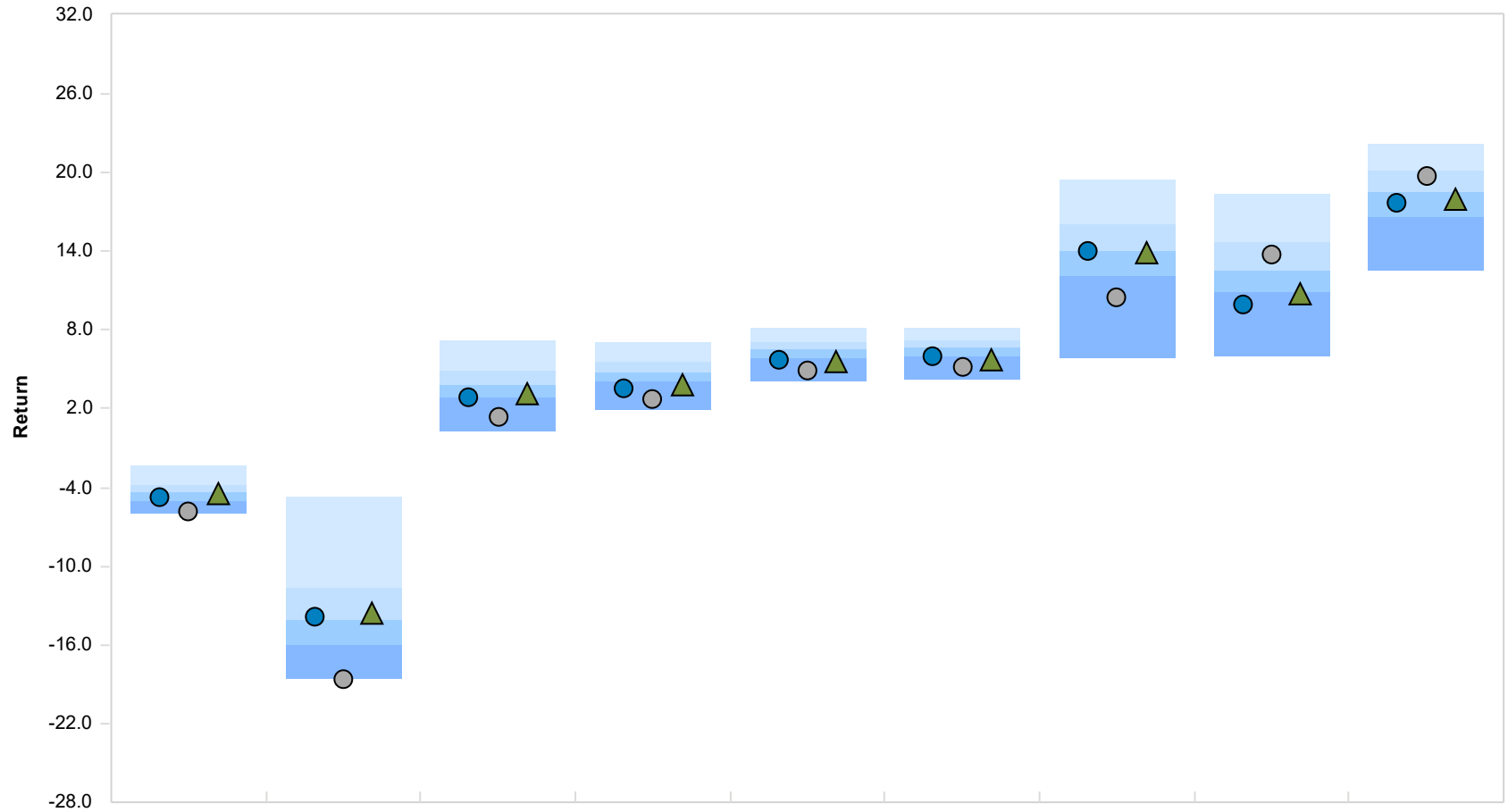
Plan Sponsor TF Asset Allocation vs. All Public Plans > \$1B-Total Fund



Parentheses contain percentile rankings.



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

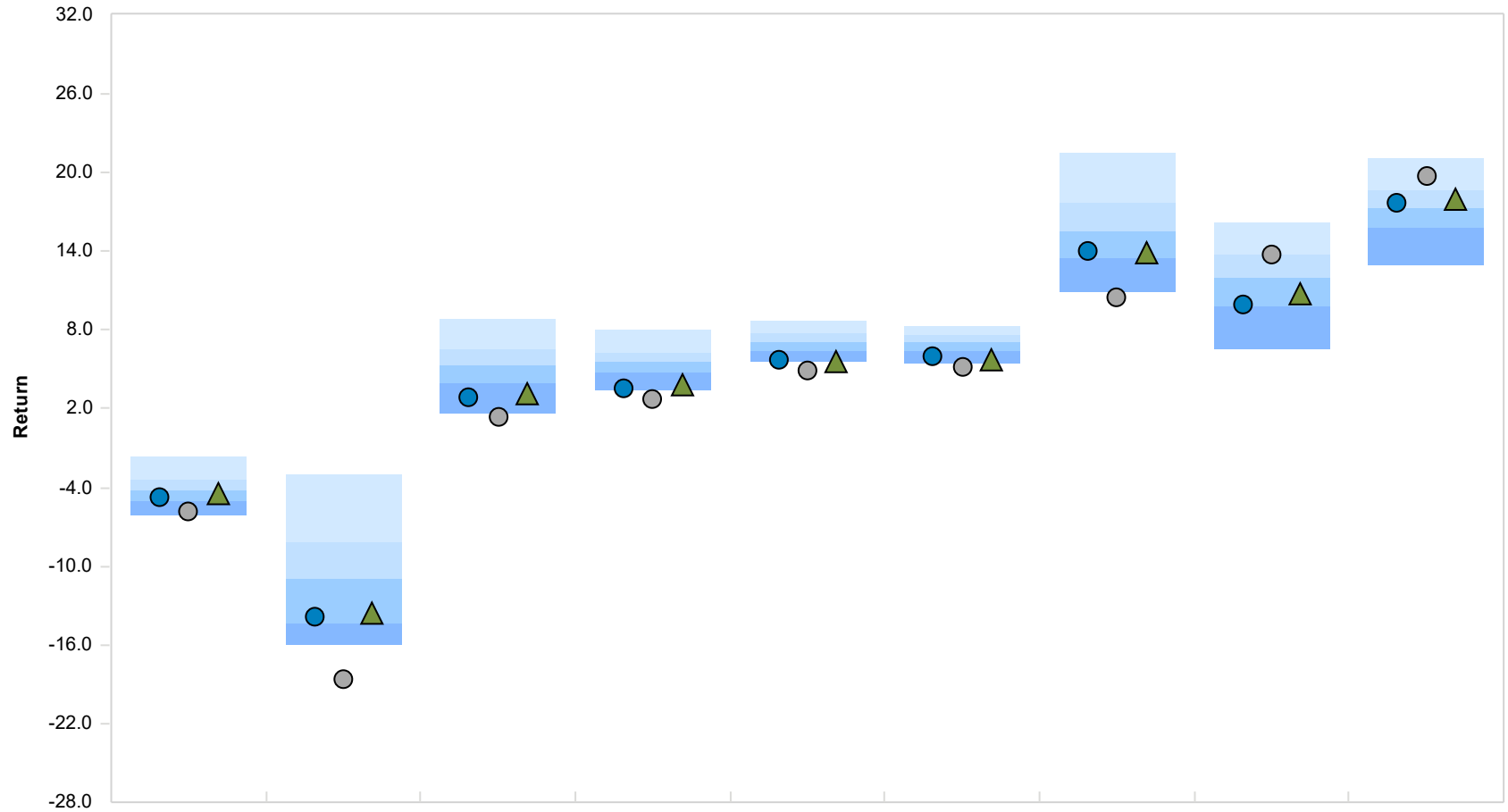


	3 Month	1 Year	3 Year	5 Year	7 Year	10 Year	2021	2020	2019
● Total Fund Composite	-4.67 (62)	-13.82 (47)	2.92 (73)	3.62 (82)	5.77 (80)	5.96 (77)	14.05 (49)	9.92 (82)	17.67 (62)
● Fund Policy (62.5% ACWI/37.5% Agg)	-5.87 (95)	-18.57 (95)	1.38 (90)	2.81 (93)	4.97 (90)	5.22 (90)	10.53 (89)	13.76 (35)	19.72 (33)
▲ Fund Strategy Index	-4.41 (52)	-13.51 (44)	3.20 (65)	3.78 (80)	5.65 (82)	5.68 (83)	13.85 (53)	10.81 (76)	17.92 (59)
5th Percentile	-2.30	-4.79	7.29	7.06	8.17	8.19	19.53	18.42	22.16
1st Quartile	-3.75	-11.65	4.95	5.55	7.13	7.26	16.09	14.70	20.19
Median	-4.37	-14.09	3.81	4.75	6.53	6.75	13.99	12.53	18.57
3rd Quartile	-5.04	-16.09	2.82	4.06	5.90	6.01	12.19	10.93	16.65
95th Percentile	-5.90	-18.58	0.32	1.98	4.07	4.31	5.85	5.97	12.61
Population	327	314	308	297	281	253	659	727	757

Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



Plan Sponsor Peer Group Analysis vs. All Public Plans > \$1B-Total Fund

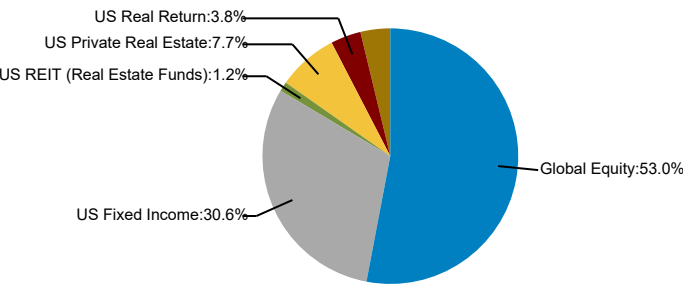


	3 Month	1 Year	3 Year	5 Year	7 Year	10 Year	2021	2020	2019
● Total Fund Composite	-4.67 (68)	-13.82 (73)	2.92 (88)	3.62 (92)	5.77 (94)	5.96 (83)	14.05 (68)	9.92 (74)	17.67 (42)
● Fund Policy (62.5% ACWI/37.5% Agg)	-5.87 (95)	-18.57 (100)	1.38 (96)	2.81 (97)	4.97 (97)	5.22 (96)	10.53 (96)	13.76 (27)	19.72 (16)
▲ Fund Strategy Index	-4.41 (59)	-13.51 (71)	3.20 (86)	3.78 (91)	5.65 (95)	5.68 (93)	13.85 (71)	10.81 (66)	17.92 (37)
5th Percentile	-1.55	-2.99	8.89	8.09	8.74	8.36	21.51	16.24	21.11
1st Quartile	-3.31	-8.13	6.60	6.31	7.79	7.69	17.71	13.78	18.69
Median	-4.14	-10.96	5.32	5.58	7.10	7.09	15.53	12.05	17.30
3rd Quartile	-4.96	-14.38	3.93	4.78	6.42	6.48	13.43	9.80	15.76
95th Percentile	-6.04	-16.02	1.62	3.41	5.55	5.50	10.87	6.61	12.89
Population	80	76	75	75	74	70	215	239	233

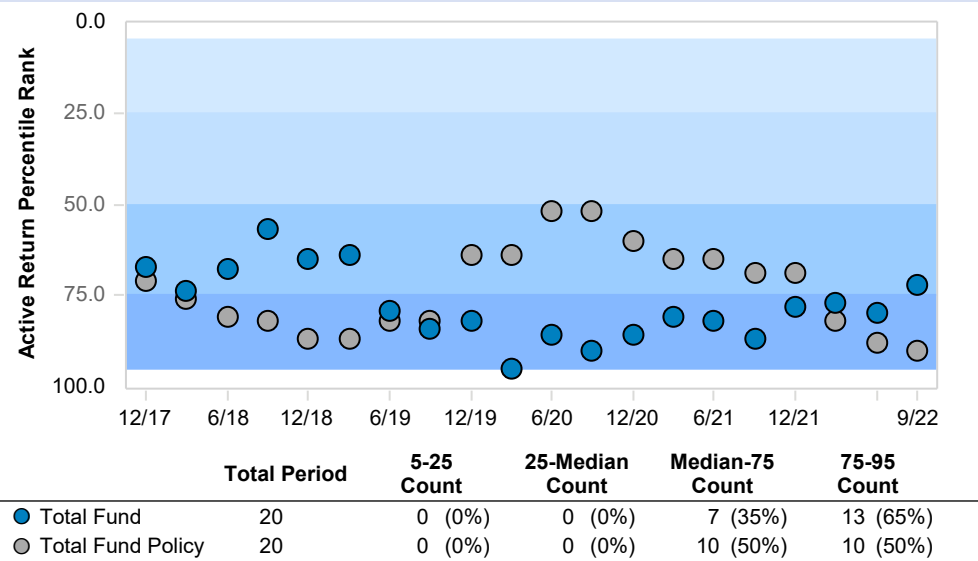
Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



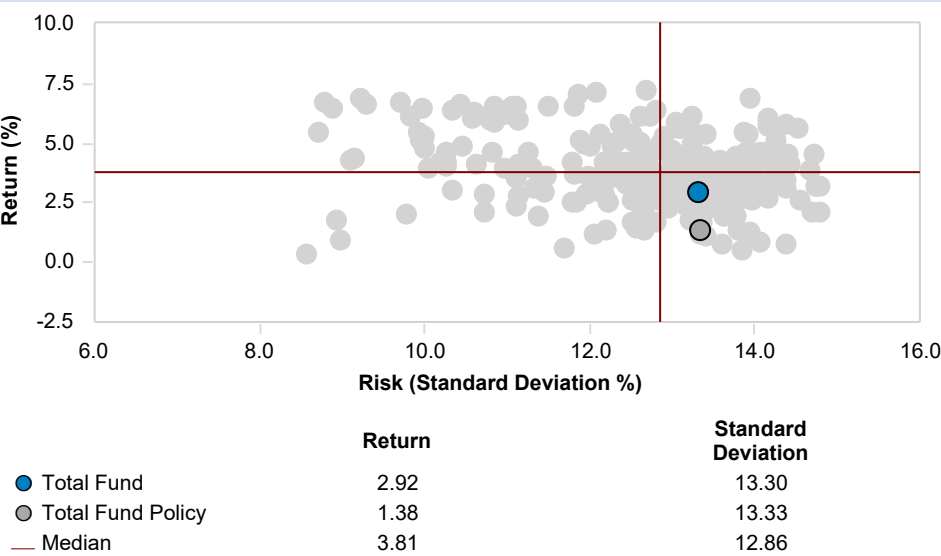
Asset Allocation By Asset Class



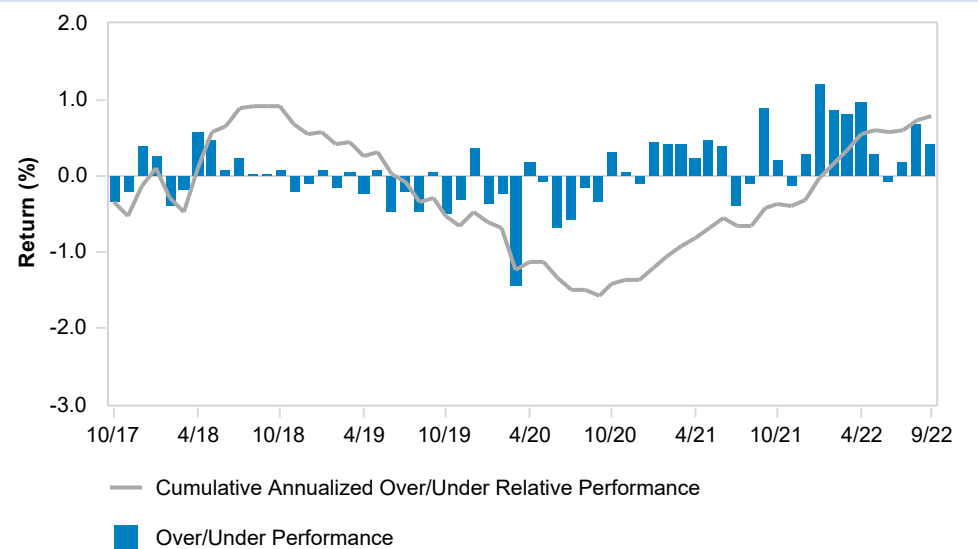
Rolling Percentile Ranking vs. All Public Plans-Total Fund



Risk vs. Return (October 1, 2019 - September 30, 2022)



Relative Performance vs. Total Fund Policy



**Employees' Retirement System of the City of Norfolk**  
**Asset Allocation & Performance (gross of fees)**  
As of September 30, 2022

**Asset Allocation & Performance**

	Market Value \$	%	Performance(%)									
			3 Month	FYTD	1 Year	2 YR	3 Year	5 Year	7 YR	Since Inception	Inception Date	
Total Fund	1,162,879,785	100.0	-4.67 (62)	-4.67 (62)	-13.82 (47)	1.99 (44)	2.92 (73)	3.62 (82)	5.77 (80)	7.67 (77)	Oct-1990	
Total Fund Policy			-5.87	-5.87	-18.57	-2.36	1.38	2.81	4.97	7.43		
Excess Return			1.20	1.20	4.75	4.35	1.54	0.81	0.80	0.24		
All Public Plans-Total Fund Median			-4.37	-4.37	-14.09	1.71	3.81	4.75	6.53	7.94		
Total Fund Strategy Index			-4.41	-4.41	-13.51	2.62	3.20	3.78	5.65	7.59		
Excess Return			-0.26	-0.26	-0.31	-0.63	-0.28	-0.16	0.12	0.08		
Global Equity	616,268,425	53.0	-6.51 (45)	-6.51 (45)	-20.79 (43)	1.42 (39)	4.21 (32)	4.68 (35)	7.82 (26)	8.62 (43)	Oct-1990	
Global Equity Policy			-6.64	-6.64	-21.18	0.80	3.64	4.16	7.29	8.65		
Excess Return			0.13	0.13	0.39	0.62	0.57	0.52	0.53	-0.03		
IM Global Equity (MF) Median			-7.07	-7.07	-22.48	-1.10	2.72	3.67	6.31	8.32		
Fixed Income	355,426,796	30.6	-4.61 (70)	-4.61 (70)	-14.77 (60)	-7.89 (79)	-2.92 (76)	-0.08 (90)	0.87 (84)	5.33 (81)	Oct-1990	
Blmbg. U.S. Aggregate Index			-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	5.08		
Excess Return			0.14	0.14	-0.17	0.11	0.34	0.19	0.33	0.25		
IM U.S. Broad Market Fixed Income (SA+CF) Median			-4.43	-4.43	-14.51	-7.22	-2.54	0.31	1.22	5.59		
Real Estate	102,910,098	8.8	-2.27 (88)	-2.27 (88)	11.64 (86)	10.53 (93)	6.86 (91)	6.01 (87)	6.56 (86)	9.05 (86)	Apr-2011	
NCREIF Fund Index-ODCE (Net)			0.35	0.35	21.00	17.26	11.39	9.27	8.87	10.24		
Excess Return			-2.62	-2.62	-9.36	-6.73	-4.53	-3.26	-2.31	-1.19		
IM U.S. Open End Private Real Estate (SA+CF)			0.56	0.56	20.19	18.12	12.14	10.65	10.12	11.73		
MLPs	88,269,686	7.6	7.61 (22)	7.61 (22)	24.64 (1)	46.43 (20)	7.61 (13)	4.16 (12)	4.54 (14)	3.39 (12)	Mar-2013	
Alerian MLP Index			8.05	8.05	19.56	48.57	4.46	1.90	2.55	-0.29		
Excess Return			-0.44	-0.44	5.08	-2.14	3.15	2.26	1.99	3.68		
Master Limited Partnerships (SA+CF) Median			6.55	6.55	16.63	42.63	4.61	2.19	2.59	1.29		
Cash	4,781	0.0										



**Employees' Retirement System of the City of Norfolk**  
**Asset Allocation & Performance (gross of fees)**  
As of September 30, 2022

**Asset Allocation & Performance**

	Market Value \$	Performance(%)									
		3 Month	1 Year	2 Year	3 Year	5 Year	7 YR	Since Inception	Inception Date		
Global Equity											
SSgA MSCI ACWI IMI Index Fund	616,268,425	-6.51 (45)	-20.79 (43)	1.29 (39)	4.13 (34)	4.63 (36)	-	7.32 (33)		May-2016	
MSCI AC World IMI (Net)		-6.64	-21.18	0.80	3.64	4.16	-	6.84			
Excess Return		0.13	0.39	0.49	0.49	0.47	-	0.48			
IM Global Equity (MF) Median		-7.07	-22.48	-1.10	2.72	3.67	-	6.11			
Fixed Income											
PIMCO Total Return	174,252,165	-4.48 (42)	-14.94 (70)	-7.82 (64)	-2.65 (44)	0.07 (67)	1.15 (42)	5.69 (8)		Jan-1991	
Blmbg. U.S. Aggregate Index		-4.75	-14.60	-8.00	-3.26	-0.27	0.54	4.96			
Excess Return		0.27	-0.34	0.18	0.61	0.34	0.61	0.73			
IM U.S. Broad Market Core Fixed Income (SA+CF) Median		-4.55	-14.48	-7.58	-2.70	0.18	1.07	5.38			
SSgA Bond Market Index	181,174,631	-4.74 (71)	-14.61 (61)	-7.98 (78)	-3.22 (92)	-0.24 (93)	0.57 (96)	2.41 (94)		Jan-2009	
Blmbg. U.S. Aggregate Index		-4.75	-14.60	-8.00	-3.26	-0.27	0.54	2.39			
Excess Return		0.01	-0.01	0.02	0.04	0.03	0.03	0.02			
IM U.S. Broad Market Core Fixed Income (SA+CF) Median		-4.55	-14.48	-7.58	-2.70	0.18	1.07	3.24			
Real Estate											
JP Morgan Asset Management Strategic Property Fund	56,970,427	-1.27 (79)	19.60 (57)	16.79 (59)	11.55 (57)	9.27 (64)	9.09 (66)	10.98 (66)		Apr-2011	
NCREIF Fund Index-ODCE (VW) (Net)		0.35	21.00	17.26	11.39	9.27	8.87	10.24			
Excess Return		-1.62	-1.40	-0.47	0.16	0.00	0.22	0.74			
IM U.S. Open End Private Real Estate (SA+CF) Median		0.56	20.19	18.12	12.14	10.65	10.12	11.73			
UBS Trumbull Property Fund	32,020,889	0.22 (57)	17.83 (63)	13.22 (78)	7.85 (86)	6.09 (87)	6.37 (87)	7.94 (-)		Dec-2011	
NCREIF Fund Index-ODCE (VW) (Net)		0.35	21.00	17.26	11.39	9.27	8.87	10.13			
Excess Return		-0.13	-3.17	-4.04	-3.54	-3.18	-2.50	-2.19			
IM U.S. Open End Private Real Estate (SA+CF) Median		0.56	20.19	18.12	12.14	10.65	10.12	-			
Vanguard Real Estate Index (VGSNX)	13,918,783	-10.97 (74)	-18.18 (68)	-	-	-	-	-14.36 (77)		Jul-2021	
Vanguard Spliced REIT Index		-10.98	-18.62	-	-	-	-	-14.72			
Excess Return		0.01	0.44	-	-	-	-	0.36			
IM Real Estate Sector (MF) Median		-10.54	-16.57	-	-	-	-	-12.69			
MLPs											
Harvest MLP	44,330,758	6.85 (34)	26.49 (1)	47.30 (18)	9.73 (1)	5.72 (1)	5.24 (1)	4.02 (2)		Mar-2013	
Alerian MLP Index		8.05	19.56	48.57	4.46	1.90	2.55	-0.29			
Excess Return		-1.20	6.93	-1.27	5.27	3.82	2.69	4.31			
Master Limited Partnerships (SA+CF) Median		6.55	16.63	42.63	4.61	2.19	2.59	1.29			





**Employees' Retirement System of the City of Norfolk**  
**Asset Allocation & Performance (gross of fees)**  
As of September 30, 2022

	Market Value \$	Performance(%)								
		3 Month	1 Year	2 Year	3 Year	5 Year	7 YR	Since Inception	Inception Date	
Tortoise Capital Advisors	43,938,928	8.40 (1)	22.85 (15)	46.14 (31)	5.68 (34)	2.73 (36)	3.91 (30)	2.29 (41)	Apr-2013	
Alerian MLP Index		8.05	19.56	48.57	4.46	1.90	2.55	-0.84		
Excess Return		0.35	3.29	-2.43	1.22	0.83	1.36	3.13		
Master Limited Partnerships (SA+CF) Median		6.55	16.63	42.63	4.61	2.19	2.59	0.64		

## Asset Allocation &amp; Performance

	Market Value \$	%	Performance(%)								Inception Date
			3 Month	FYTD	1 Year	2 YR	3 Year	5 Year	7 YR	Since Inception	
<b>Total Fund</b>	<b>1,162,879,785</b>	<b>100.0</b>	<b>-4.69</b>	<b>-4.69</b>	<b>-13.94</b>	<b>1.85</b>	<b>2.78</b>	<b>3.46</b>	<b>5.61</b>	<b>7.48</b>	<b>Oct-1990</b>
Total Fund Policy			-5.87	-5.87	-18.57	-2.36	1.38	2.81	4.97	7.43	
Excess Return			1.18	1.18	4.63	4.21	1.40	0.65	0.64	0.05	
Total Fund Strategy Index			-4.41	-4.41	-13.51	2.62	3.20	3.78	5.65	7.59	
Excess Return			-0.28	-0.28	-0.43	-0.77	-0.42	-0.32	-0.04	-0.11	
Global Equity	616,268,425	53.0	-6.52	-6.52	-20.83	1.37	4.17	4.65	7.79	8.45	Oct-1990
Global Equity Policy			-6.64	-6.64	-21.18	0.80	3.64	4.16	7.29	8.65	
Excess Return			0.12	0.12	0.35	0.57	0.53	0.49	0.50	-0.20	
Fixed Income	355,426,796	30.6	-4.61	-4.61	-14.82	-7.97	-3.01	-0.20	0.77	5.14	Oct-1990
Blmbg. U.S. Aggregate Index			-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	5.08	
Excess Return			0.14	0.14	-0.22	0.03	0.25	0.07	0.23	0.06	
Real Estate	102,910,098	8.8	-2.46	-2.46	10.51	9.42	5.86	5.05	5.57	8.04	Apr-2011
NCREIF Fund Index-ODCE (Net)			0.35	0.35	21.00	17.26	11.39	9.27	8.87	10.24	
Excess Return			-2.81	-2.81	-10.49	-7.84	-5.53	-4.22	-3.30	-2.20	
MLPs	88,269,686	7.6	7.61	7.61	24.34	46.07	7.20	3.65	3.97	2.81	Mar-2013
Alerian MLP Index			8.05	8.05	19.56	48.57	4.46	1.90	2.55	-0.29	
Excess Return			-0.44	-0.44	4.78	-2.50	2.74	1.75	1.42	3.10	
Cash	4,781	0.0									

**Employees' Retirement System of the City of Norfolk**  
**Asset Allocation & Performance (net of fees)**  
As of September 30, 2022

**Asset Allocation & Performance**

	Market Value \$	%	Performance(%)								
			3 Month	FYTD	1 Year	2 Year	3 Year	5 Year	7 YR	Since Inception	Inception Date
Global Equity											
SSgA MSCI ACWI IMI Index Fund	616,268,425	53.0	-6.52	-6.52	-20.83	1.26	4.09	4.60	N/A	7.29	May-2016
MSCI AC World IMI (Net)			-6.64	-6.64	-21.18	0.80	3.64	4.16	N/A	6.84	
Excess Return			0.12	0.12	0.35	0.46	0.45	0.44	N/A	0.45	
Fixed Income											
PIMCO Total Return	174,252,165	15.0	-4.48	-4.48	-15.02	-7.95	-2.81	-0.14	0.97	5.45	Jan-1991
Blmbg. U.S. Aggregate Index			-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	4.96	
Excess Return			0.27	0.27	-0.42	0.05	0.45	0.13	0.43	0.49	
SSgA Bond Market Index	181,174,631	15.6	-4.74	-4.74	-14.63	-7.99	-3.24	-0.26	0.55	2.39	Jan-2009
Blmbg. U.S. Aggregate Index			-4.75	-4.75	-14.60	-8.00	-3.26	-0.27	0.54	2.39	
Excess Return			0.01	0.01	-0.03	0.01	0.02	0.01	0.01	0.00	
Real Estate											
JP Morgan Asset Management Strategic Property Fund	56,970,427	4.9	-1.50	-1.50	17.98	15.43	10.41	8.23	8.04	9.96	Apr-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.35	0.35	21.00	17.26	11.39	9.27	8.87	10.24	
Excess Return			-1.85	-1.85	-3.02	-1.83	-0.98	-1.04	-0.83	-0.28	
UBS Trumbull Property Fund	32,020,889	2.8	0.00	0.00	16.57	12.00	6.77	5.10	5.35	6.86	Dec-2011
NCREIF Fund Index-ODCE (VW) (Net)			0.35	0.35	21.00	17.26	11.39	9.27	8.87	10.13	
Excess Return			-0.35	-0.35	-4.43	-5.26	-4.62	-4.17	-3.52	-3.27	
Vanguard Real Estate Index (VGSNX)	13,918,783	1.2	-11.00	-11.00	-18.27	N/A	N/A	N/A	N/A	-14.45	Jul-2021
Vanguard Spliced REIT Index			-10.98	-10.98	-18.62	N/A	N/A	N/A	N/A	-14.72	
Excess Return			-0.02	-0.02	0.35	N/A	N/A	N/A	N/A	0.27	
MLPs											
Harvest MLP	44,330,758	3.8	6.85	6.85	26.49	47.11	9.50	5.31	4.73	3.48	Mar-2013
Alerian MLP Index			8.05	8.05	19.56	48.57	4.46	1.90	2.55	-0.29	
Excess Return			-1.20	-1.20	6.93	-1.46	5.04	3.41	2.18	3.77	
Tortoise Capital Advisors	43,938,928	3.8	8.40	8.40	22.27	45.58	5.09	2.12	3.26	1.66	Apr-2013
Alerian MLP Index			8.05	8.05	19.56	48.57	4.46	1.90	2.55	-0.84	
Excess Return			0.35	0.35	2.71	-2.99	0.63	0.22	0.71	2.50	



**Employees' Retirement System of the City of Norfolk**  
**Asset Allocation & Performance (net of fees)**  
As of September 30, 2022

Fiscal Returns										
	Performance(%)									
	FYTD	Jul-2021 To Jun-2022	Jul-2020 To Jun-2021	Jul-2019 To Jun-2020	Jul-2018 To Jun-2019	Jul-2017 To Jun-2018	Jul-2016 To Jun-2017	Jul-2015 To Jun-2016	Jul-2014 To Jun-2015	Jul-2013 To Jun-2014
<b>Total Fund</b>	<b>-4.69</b>	<b>-9.97</b>	<b>25.93</b>	<b>0.59</b>	<b>5.35</b>	<b>7.10</b>	<b>11.66</b>	<b>0.49</b>	<b>1.98</b>	<b>17.30</b>
Total Fund Policy	-5.87	-14.06	24.13	4.56	6.17	6.77	11.42	0.49	2.16	15.82
Excess Return	1.18	4.09	1.80	-3.97	-0.82	0.33	0.24	0.00	-0.18	1.48
Total Fund Strategy Index	-4.41	-9.98	26.49	1.30	5.91	6.25	10.62	0.97	1.54	16.12
Excess Return	-0.28	0.01	-0.56	-0.71	-0.56	0.85	1.04	-0.48	0.44	1.18
Global Equity	-6.52	-16.21	41.90	1.61	4.97	11.60	19.46	-2.82	2.33	23.89
Global Equity Policy	-6.64	-16.52	40.94	1.17	4.56	11.14	19.01	-3.37	2.20	23.86
Excess Return	0.12	0.31	0.96	0.44	0.41	0.46	0.45	0.55	0.13	0.03
Fixed Income	-4.61	-10.49	0.24	8.59	7.58	0.18	0.76	5.10	2.38	4.31
Blmbg. U.S. Aggregate Index	-4.75	-10.29	-0.34	8.74	7.87	-0.40	-0.31	6.00	1.86	4.37
Excess Return	0.14	-0.20	0.58	-0.15	-0.29	0.58	1.07	-0.90	0.52	-0.06
Real Estate	-2.46	18.07	3.74	-0.28	1.90	6.82	5.89	9.79	11.93	11.24
NCREIF Fund Index-ODCE (Net)	0.35	28.31	7.09	1.33	5.46	7.47	6.90	10.80	13.39	11.74
Excess Return	-2.81	-10.24	-3.35	-1.61	-3.56	-0.65	-1.01	-1.01	-1.46	-0.50
MLPs	7.61	14.01	52.25	-37.78	1.24	-0.49	2.94	-17.50	-11.33	35.63
Alerian MLP Index	8.05	4.33	63.98	-41.43	3.09	-4.58	0.40	-13.11	-19.81	21.57
Excess Return	-0.44	9.68	-11.73	3.65	-1.85	4.09	2.54	-4.39	8.48	14.06

Employees' Retirement System of the City of Norfolk

Financial Reconciliation

1 Quarter Ending September 30, 2022

Financial Reconciliation								
	Market Value 07/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 09/30/2022
<b>Total Fund</b>	<b>1,204,829,944</b>	<b>-</b>	<b>31,417,431</b>	<b>-16,400,000</b>	<b>-286,872</b>	<b>5,170,266</b>	<b>-61,850,985</b>	<b>1,162,879,785</b>
<b>Global Equity</b>	<b>640,443,527</b>	<b>19,314,662</b>	-	-	<b>-71,452</b>	-	<b>-43,418,312</b>	<b>616,268,425</b>
SSgA MSCI ACWI IMI Index Fund	640,443,527	19,314,662	-	-	-71,452	-	-43,418,312	616,268,425
<b>Fixed Income</b>	<b>375,735,264</b>	<b>-3,159,024</b>	-	-	<b>-9,591</b>	<b>2,997,583</b>	<b>-20,137,436</b>	<b>355,426,796</b>
PIMCO Total Return	185,545,098	-3,159,024	-	-	-	2,997,583	-11,131,492	174,252,165
SSgA Bond Market Index	190,190,166	-	-	-	-9,591	-	-9,005,944	181,174,631
<b>Real Estate</b>	<b>106,621,398</b>	<b>-1,125,630</b>	-	-	<b>-205,829</b>	<b>823,786</b>	<b>-3,203,627</b>	<b>102,910,098</b>
JP Morgan Asset Management Strategic Property Fund	57,836,636	-61	-	-	-133,266	400,635	-1,133,518	56,970,427
UBS Trumbull Property Fund	33,146,457	-1,125,568	-	-	-69,816	262,731	-192,916	32,020,889
Vanguard Real Estate Index (VGSNX)	15,638,304	-	-	-	-2,747	160,420	-1,877,194	13,918,783
<b>MLPs</b>	<b>82,025,265</b>	-	-	-	-	<b>1,335,208</b>	<b>4,909,212</b>	<b>88,269,686</b>
Harvest MLP	41,490,231	-	-	-	-	656,446	2,184,081	44,330,758
Tortoise Capital Advisors	40,535,034	-	-	-	-	678,762	2,725,131	43,938,928
Cash	4,491	-15,030,008	31,417,431	-16,400,000	-	13,689	-822	4,781



Employees' Retirement System of the City of Norfolk

Financial Reconciliation

July 1, 2022 To September 30, 2022

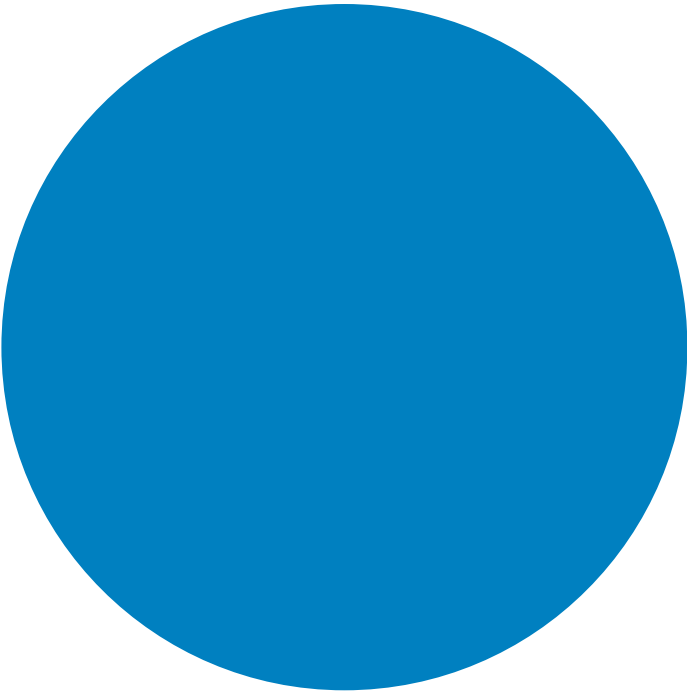
Financial Reconciliation								
	Market Value 07/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Income	Apprec./ Deprec.	Market Value 09/30/2022
<b>Total Fund</b>	<b>1,204,829,944</b>	<b>-</b>	<b>31,417,431</b>	<b>-16,400,000</b>	<b>-286,872</b>	<b>5,170,266</b>	<b>-61,850,985</b>	<b>1,162,879,785</b>
<b>Global Equity</b>	<b>640,443,527</b>	<b>19,314,662</b>	-	-	<b>-71,452</b>	-	<b>-43,418,312</b>	<b>616,268,425</b>
SSgA MSCI ACWI IMI Index Fund	640,443,527	19,314,662	-	-	-71,452	-	-43,418,312	616,268,425
<b>Fixed Income</b>	<b>375,735,264</b>	<b>-3,159,024</b>	-	-	<b>-9,591</b>	<b>2,997,583</b>	<b>-20,137,436</b>	<b>355,426,796</b>
PIMCO Total Return	185,545,098	-3,159,024	-	-	-	2,997,583	-11,131,492	174,252,165
SSgA Bond Market Index	190,190,166	-	-	-	-9,591	-	-9,005,944	181,174,631
<b>Real Estate</b>	<b>106,621,398</b>	<b>-1,125,630</b>	-	-	<b>-205,829</b>	<b>823,786</b>	<b>-3,203,627</b>	<b>102,910,098</b>
JP Morgan Asset Management Strategic Property Fund	57,836,636	-61	-	-	-133,266	400,635	-1,133,518	56,970,427
UBS Trumbull Property Fund	33,146,457	-1,125,568	-	-	-69,816	262,731	-192,916	32,020,889
Vanguard Real Estate Index (VGSNX)	15,638,304	-	-	-	-2,747	160,420	-1,877,194	13,918,783
<b>MLPs</b>	<b>82,025,265</b>	-	-	-	-	<b>1,335,208</b>	<b>4,909,212</b>	<b>88,269,686</b>
Harvest MLP	41,490,231	-	-	-	-	656,446	2,184,081	44,330,758
Tortoise Capital Advisors	40,535,034	-	-	-	-	678,762	2,725,131	43,938,928
Cash	4,491	-15,030,008	31,417,431	-16,400,000	-	13,689	-822	4,781



## Global Equity

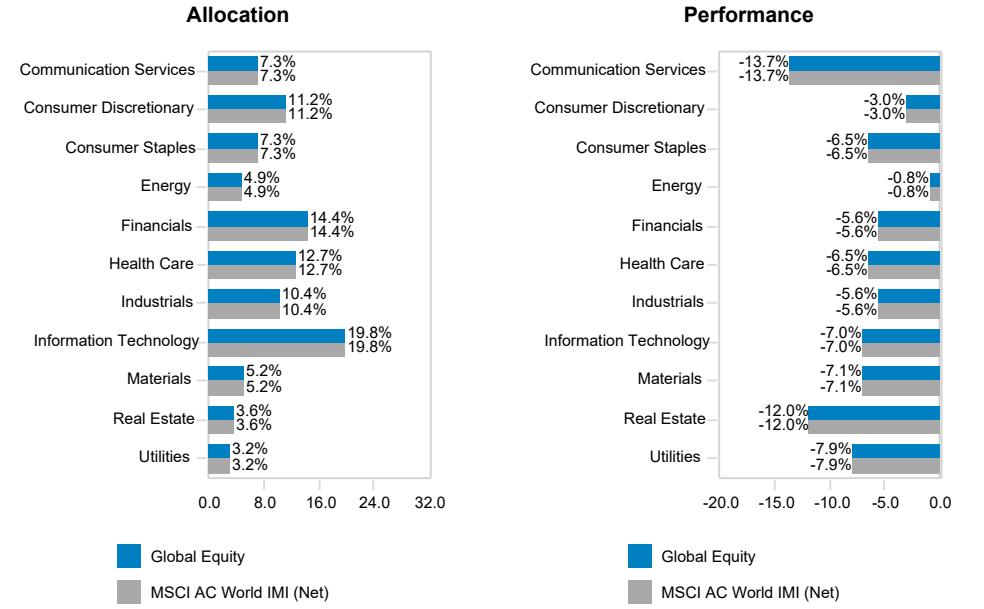
Manager Allocation

September 30, 2022 : \$616,268,425

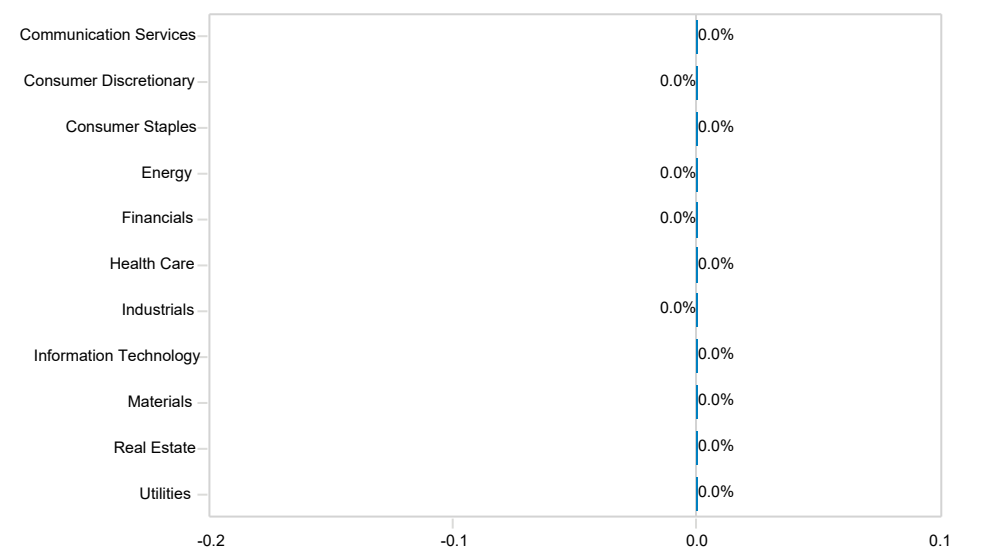


	Market Value	Allocation
SSgA MSCI ACWI IMI Index Fund	616,268,425	100.0

Sector Allocation - Holdings Based



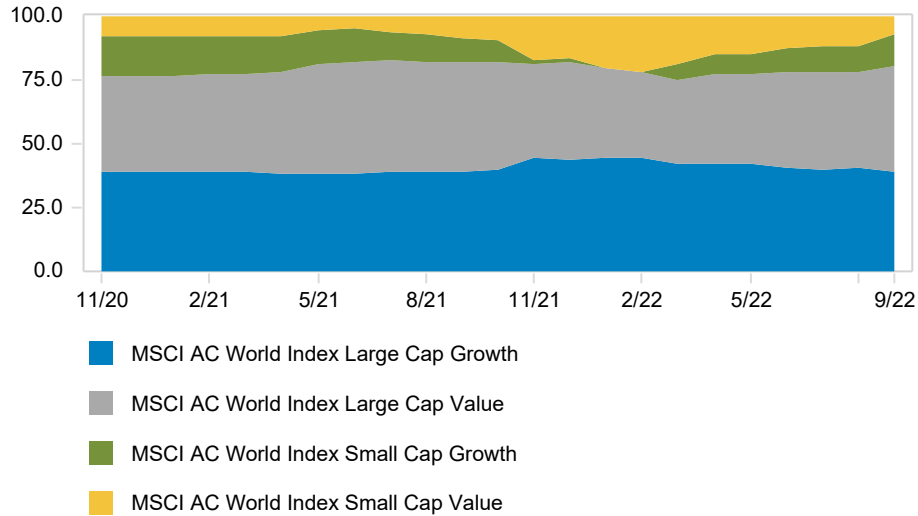
Total Attribution





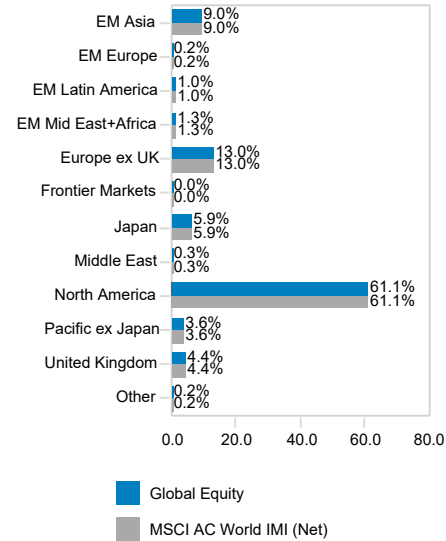
### Style Analysis - Returns Based

#### Style History(12 Months)

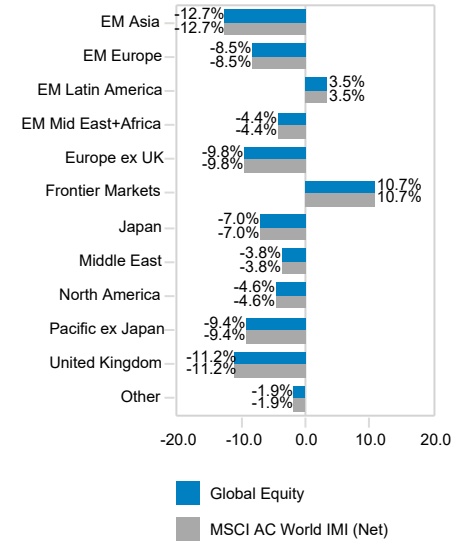


### Region Allocation - Holdings Based

#### Allocation



#### Performance

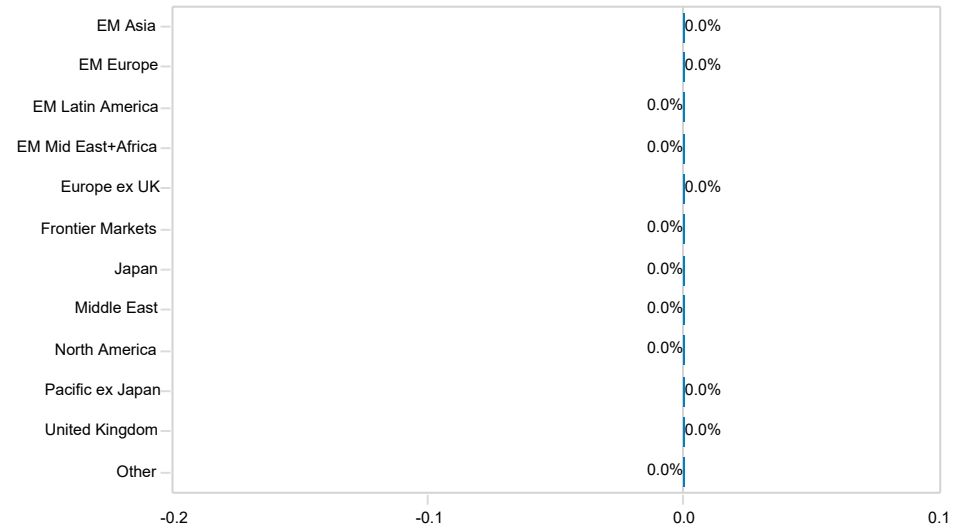


### 3 Year Style Analysis

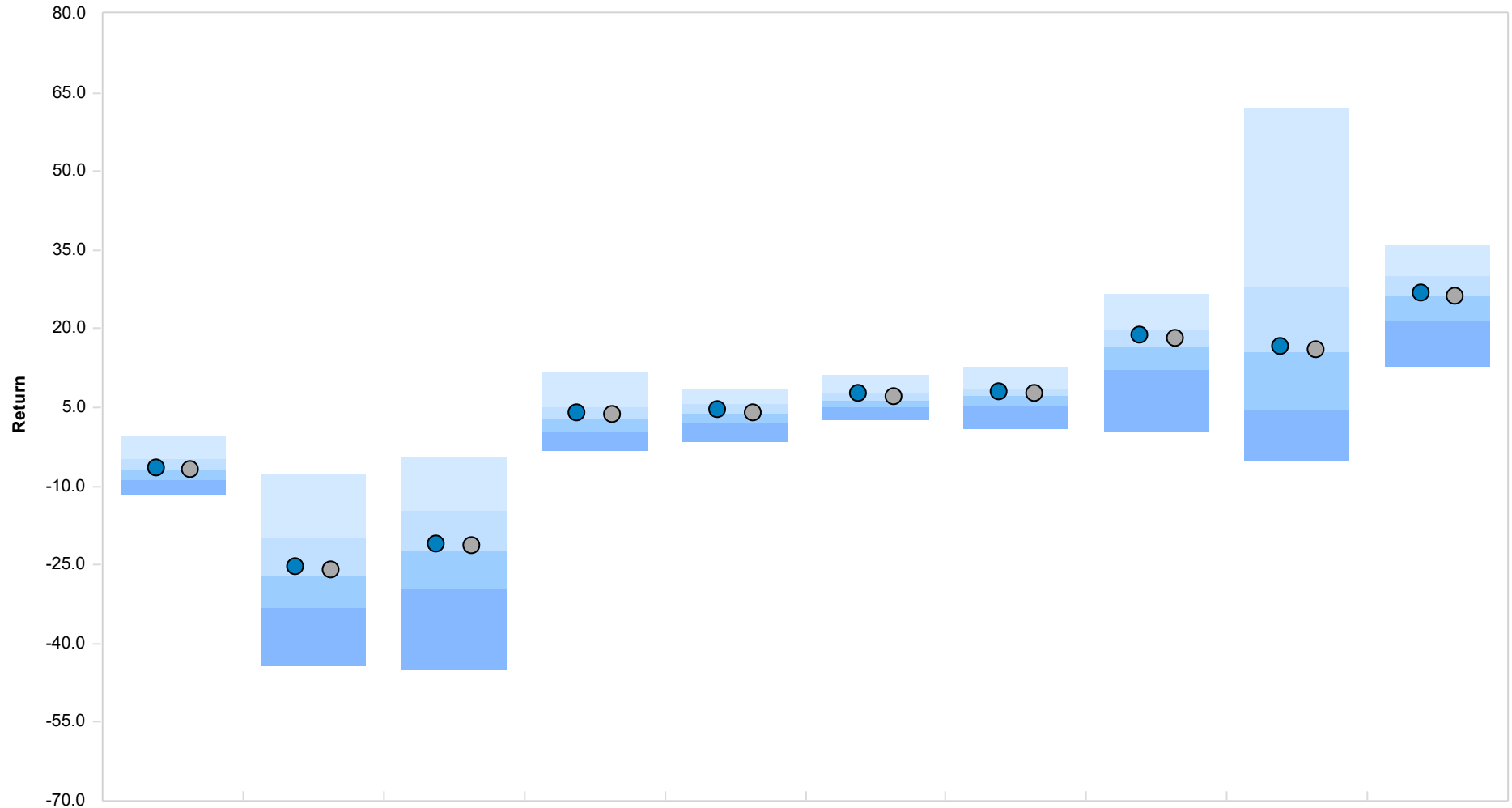
#### Style Map(12 Months)



### Total Attribution



Peer Group Analysis - IM Global Equity (MF)



	3 Month	CYTD	1 Year	3 Year	5 Year	7 Year	10 Year	2021	2020	2019
● Global Equity	-6.51 (45)	-25.40 (42)	-20.79 (43)	4.21 (32)	4.68 (35)	7.82 (26)	8.05 (33)	18.95 (31)	16.88 (44)	26.92 (47)
● Global Equity Policy	-6.64 (47)	-25.72 (43)	-21.18 (45)	3.64 (38)	4.16 (43)	7.29 (35)	7.63 (40)	18.22 (36)	16.25 (46)	26.35 (51)
5th Percentile	-0.67	-7.56	-4.50	11.70	8.40	11.08	12.81	26.69	62.21	35.78
1st Quartile	-4.79	-20.13	-14.63	5.01	5.52	7.87	8.51	19.86	27.82	30.03
Median	-7.07	-27.24	-22.48	2.72	3.67	6.31	7.06	16.55	15.37	26.38
3rd Quartile	-8.80	-33.27	-29.66	0.44	1.90	5.01	5.33	12.24	4.27	21.47
95th Percentile	-11.60	-44.53	-44.94	-3.19	-1.56	2.54	1.09	0.33	-5.16	12.73

Parenttheses contain percentile rankings.  
Calculation based on monthly periodicity.

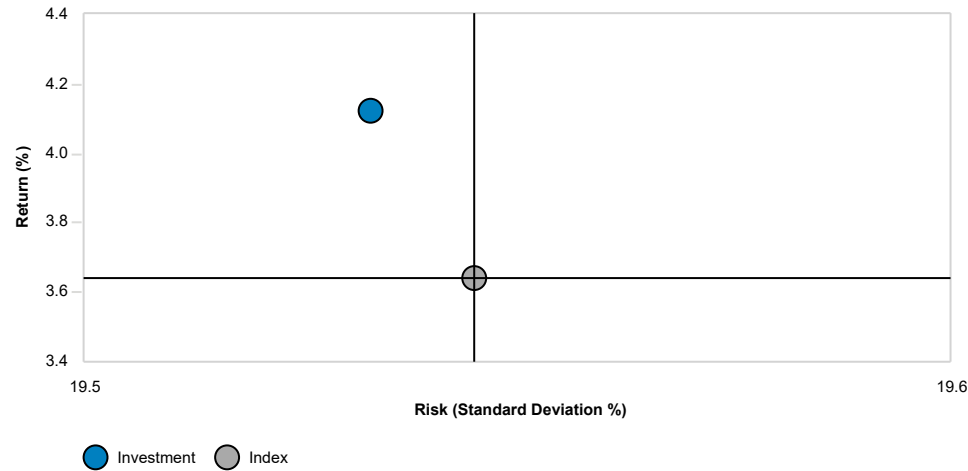
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.13	19.53	0.27	100.87	7	99.17	5
Index	3.64	19.55	0.25	100.00	7	100.00	5

### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.63	17.32	0.28	101.05	12	99.17	8
Index	4.16	17.32	0.26	100.00	12	100.00	8

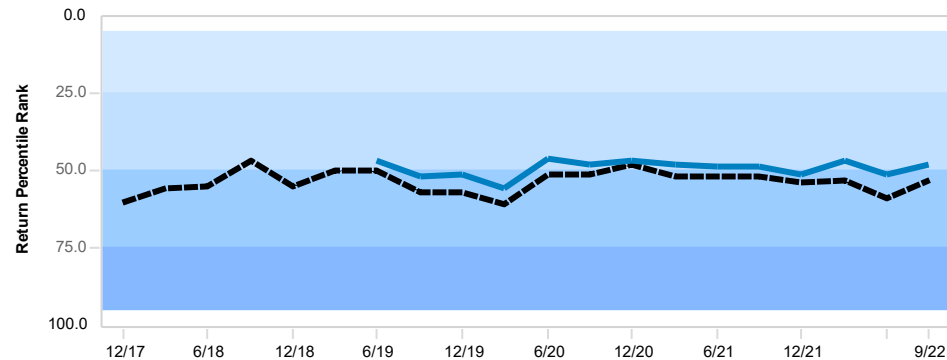
### Risk and Return 3 Years



### Risk and Return 5 Years

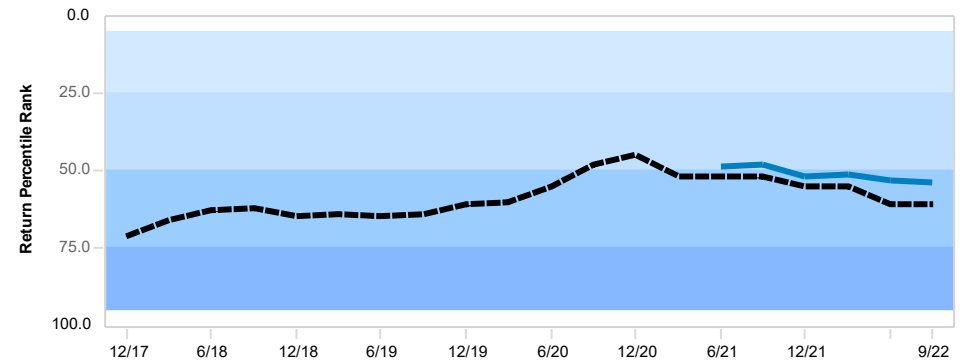


### 3 Year Rolling Percentile Rank IM Global Equity (SA+CF)



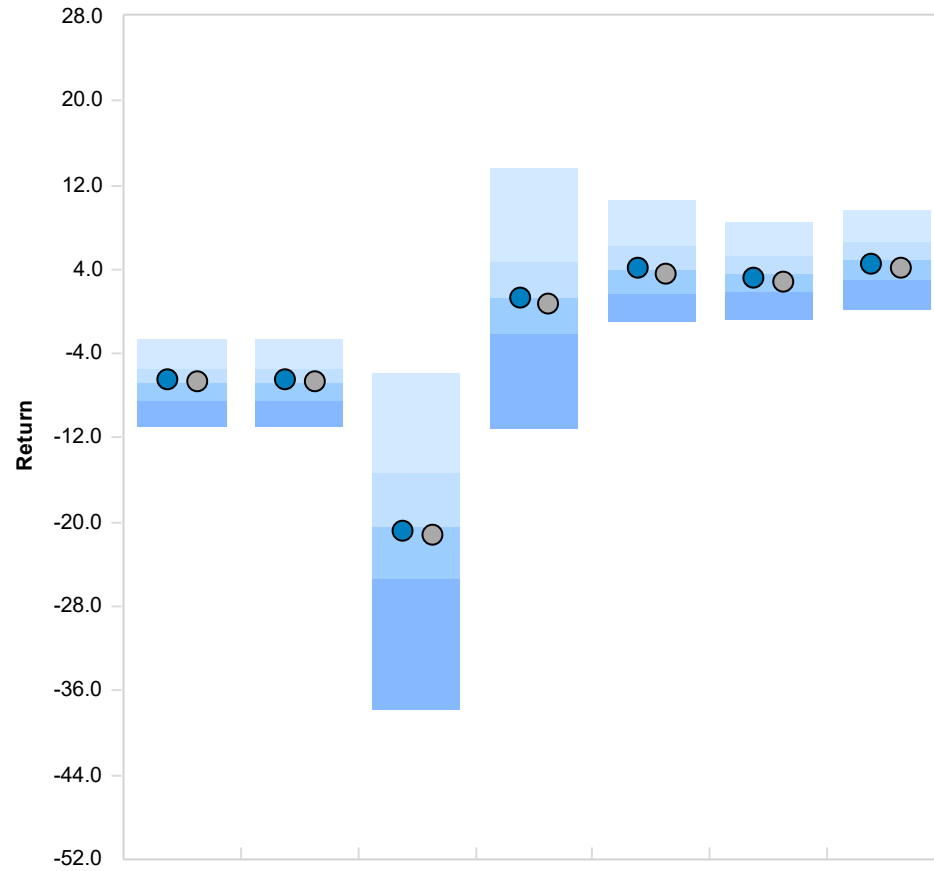
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	14	0 (0%)	9 (64%)	5 (36%)	0 (0%)
Index	20	0 (0%)	4 (20%)	16 (80%)	0 (0%)

### 5 Year Rolling Percentile Rank IM Global Equity (SA+CF)

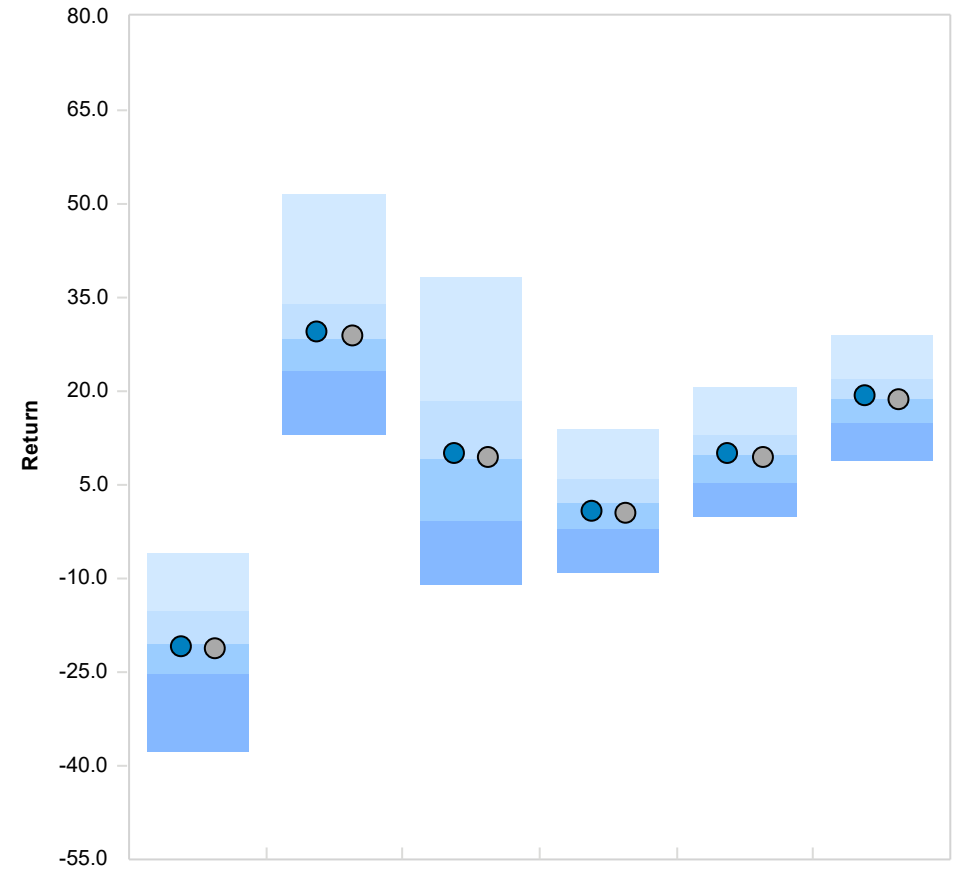


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	6	0 (0%)	2 (33%)	4 (67%)	0 (0%)
Index	20	0 (0%)	2 (10%)	18 (90%)	0 (0%)

**Peer Group Analysis - IM Global Equity (SA+CF)**



**Peer Group Analysis - IM Global Equity (SA+CF)**



**Comparative Performance**

	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022	1 Qtr Ending Dec-2021	1 Qtr Ending Sep-2021	1 Qtr Ending Jun-2021	1 Qtr Ending Mar-2021
Investment	-15.68	-5.37	6.18	-1.05	7.25	5.31
Index	-15.83	-5.47	6.10	-1.11	7.18	5.14



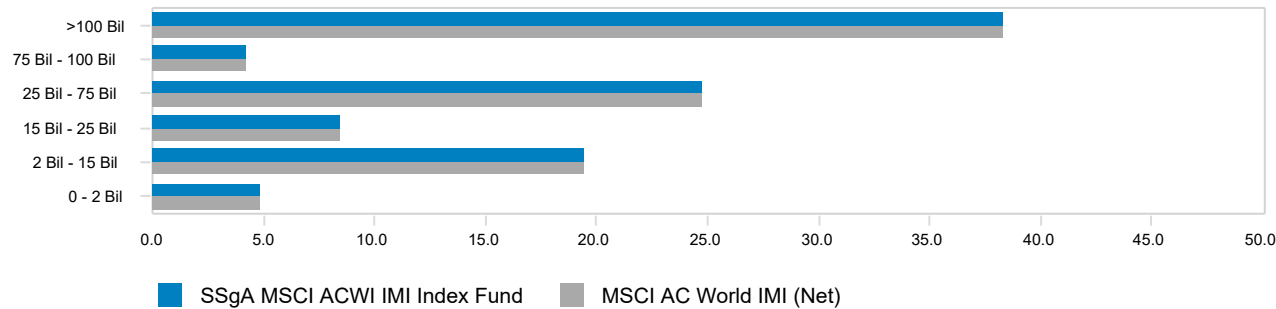
**Portfolio Characteristics (Benchmark: MSCI AC World IMI (Net))**

	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$)	265,847,035,871	265,847,035,806
Median Mkt. Cap (\$)	1,576,363,218	1,576,363,218
Price/Earnings ratio	14.00	14.00
Price/Book ratio	3.02	3.02
5 Yr. EPS Growth Rate (%)	16.55	16.55
Current Yield (%)	2.51	2.51
Beta (5 Years, Monthly)	1.00	1.00
Number of Stocks	9,248	9,248

**Top Ten Equity Holdings (Benchmark: MSCI AC World IMI (Net))**

	Portfolio (%)	Benchmark (%)	Active (%)	Qtr Rtn (%)
Apple Inc	3.83	3.83	0.00	1.22
Microsoft Corp	2.83	2.83	0.00	-9.12
Amazon.com Inc	1.77	1.77	0.00	6.39
Tesla Inc	1.20	1.20	0.00	18.17
Alphabet Inc	0.98	0.98	0.00	-12.22
Alphabet Inc	0.93	0.93	0.00	-12.09
Unitedhealth Group Inc	0.81	0.81	0.00	-1.36
Johnson & Johnson	0.74	0.74	0.00	-7.35
Exxon Mobil Corp	0.63	0.63	0.00	2.91
Berkshire Hathaway Inc	0.59	0.59	0.00	-2.20

**Distribution of Market Capitalization (%)**



**Ten Best Performers**

	Portfolio (%)	Benchmark (%)
Rhythm Pharmaceuticals Inc	0.00	0.00
Akero Therapeutics Inc	0.00	0.00
BioArctic AB (publ)	0.00	0.00
Forma Therapeutics Holdings Inc	0.00	0.00
Velo3D Inc	0.00	0.00
Verve Therapeutics Inc	0.00	0.00
Prothena Corp Plc	0.00	0.00
Target Hospitality Corp	0.00	0.00
1Life Healthcare Inc	0.00	0.00
Global Blood Therapeutics Inc	0.01	0.01

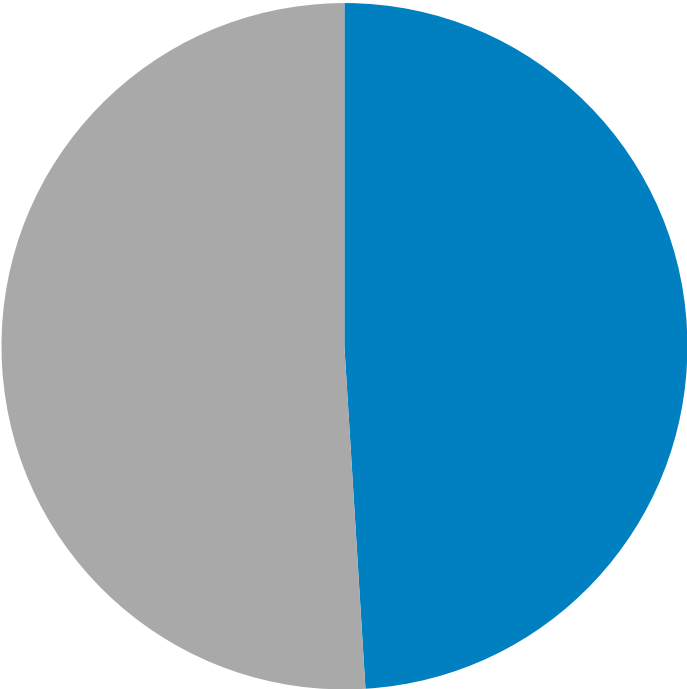
**Ten Worst Performers**

	Port folio (%)	Ben chm ark (%)
Sunkwan Properties Group Limited	0.00	0.00
CIFI Holdings Group Co Ltd	0.00	0.00
Saipem SPA	0.00	0.00
Faraday Future Intelligent Electric Inc	0.00	0.00
Uniper SE	0.00	0.00
Kizilbuk Gayrimenkul Yatirim Ortakligi Anonim Sirketi	0.00	0.00
Ronshine China Holdings Ltd	0.00	0.00
SelectQuote Inc	0.00	0.00
Ever Sunshine Lifestyle	0.00	0.00
BICO Group AB (publ)	0.00	0.00

Buy and Hold Sector Attribution	Allocation		Performance		Stock	Attribution	
	Portfolio	Benchmark	Portfolio	Benchmark		Sector	Total
Communication Services	7.3	7.3	-13.72	-13.72	0.00	0.00	0.00
Consumer Discretionary	11.2	11.2	-3.04	-3.04	0.00	0.00	0.00
Consumer Staples	7.3	7.3	-6.54	-6.54	0.00	0.00	0.00
Energy	4.9	4.9	-0.82	-0.82	0.00	0.00	0.00
Financials	14.4	14.4	-5.57	-5.57	0.00	0.00	0.00
Health Care	12.7	12.7	-6.53	-6.53	0.00	0.00	0.00
Industrials	10.4	10.4	-5.57	-5.57	0.00	0.00	0.00
Information Technology	19.8	19.8	-7.04	-7.04	0.00	0.00	0.00
Materials	5.2	5.2	-7.07	-7.07	0.00	0.00	0.00
Real Estate	3.6	3.6	-11.97	-11.97	0.00	0.00	0.00
Utilities	3.2	3.2	-7.85	-7.85	0.00	0.00	0.00
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>-6.52</b>	<b>-6.52</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

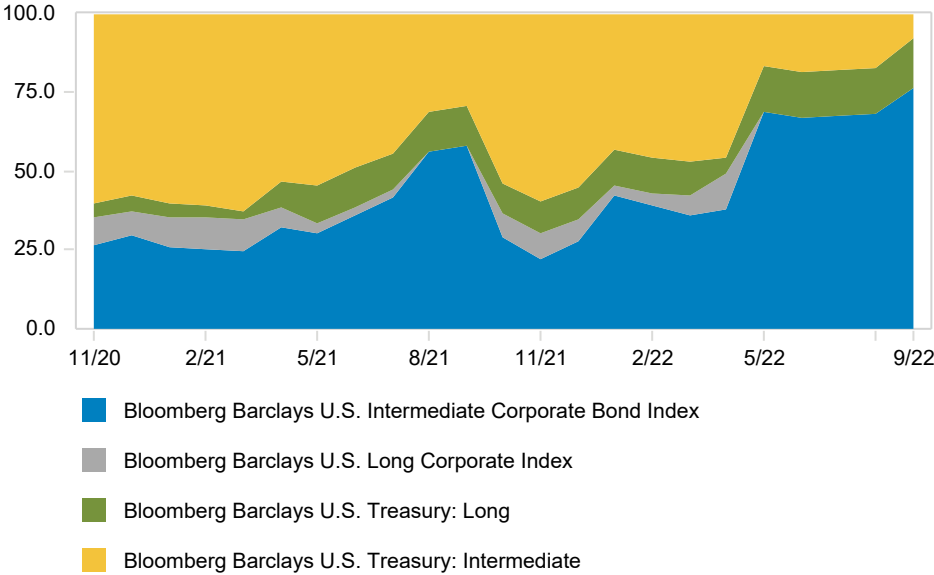
## **Fixed Income**

Manager Allocation
September 30, 2022 : \$355,426,796

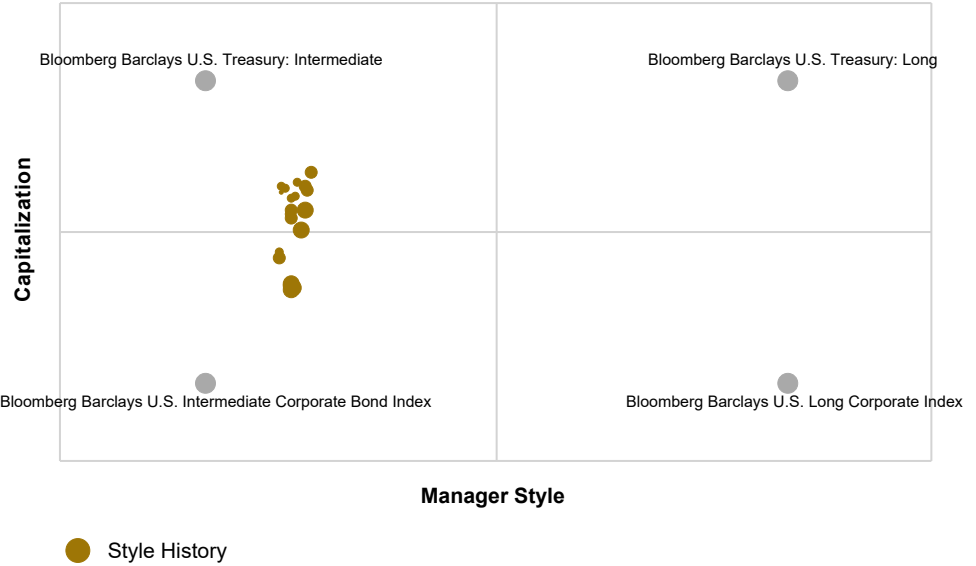


	Market Value	Allocation
■ PIMCO Total Return	174,252,165	49.0
■ SSgA Bond Market Index	181,174,631	51.0

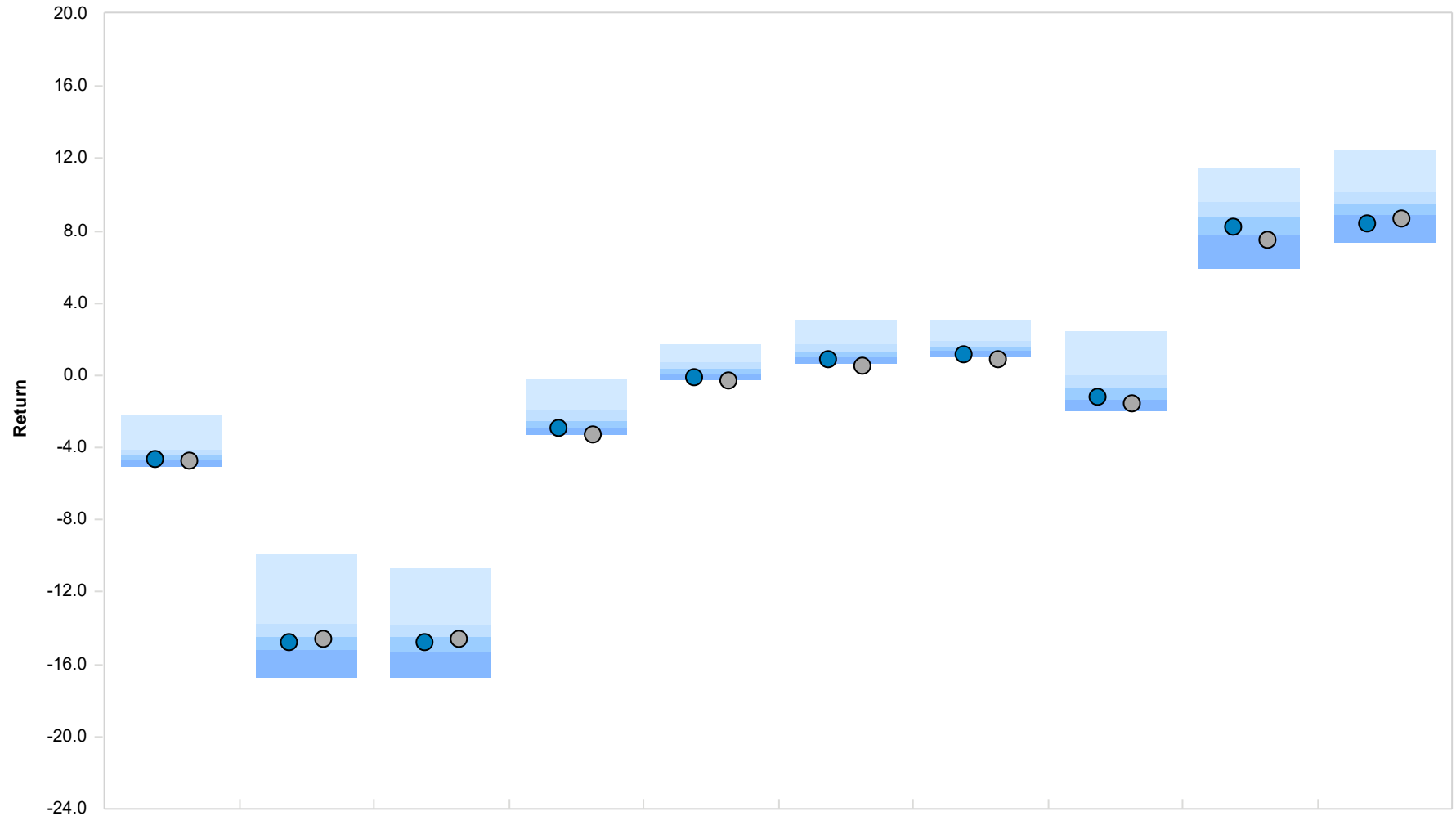
Style Analysis - Returns Based



3 Year Style Analysis



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

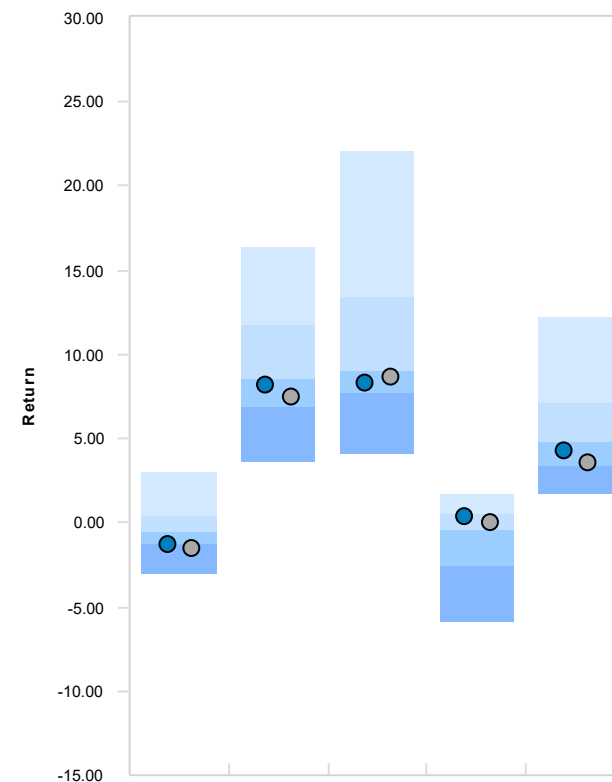
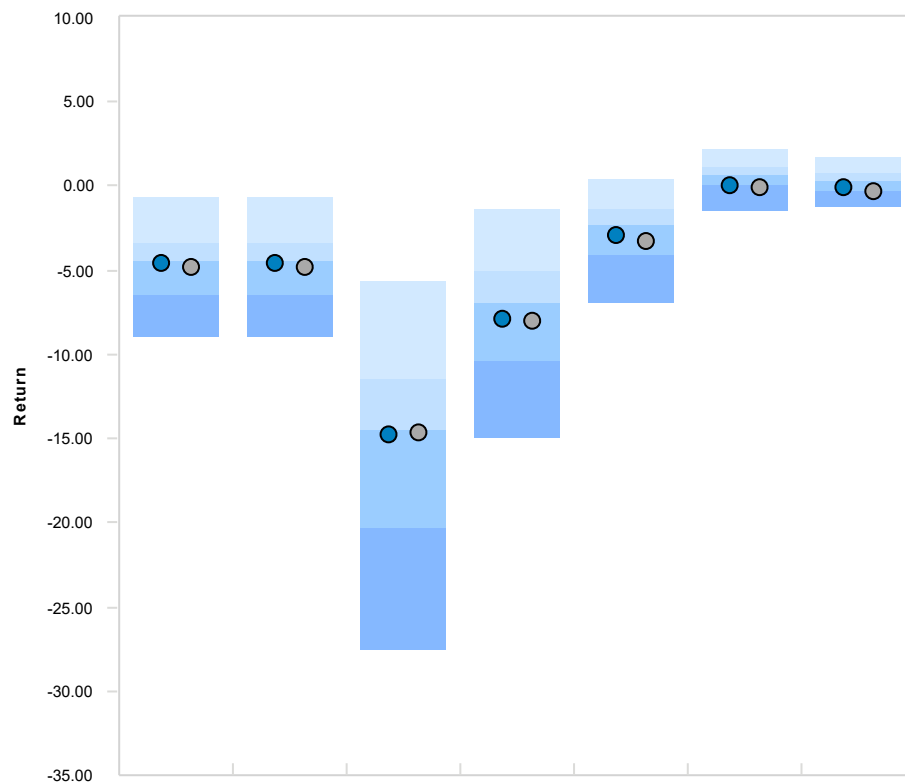


Percentiles contain percentile rankings.  
Calculation based on monthly periodicity.





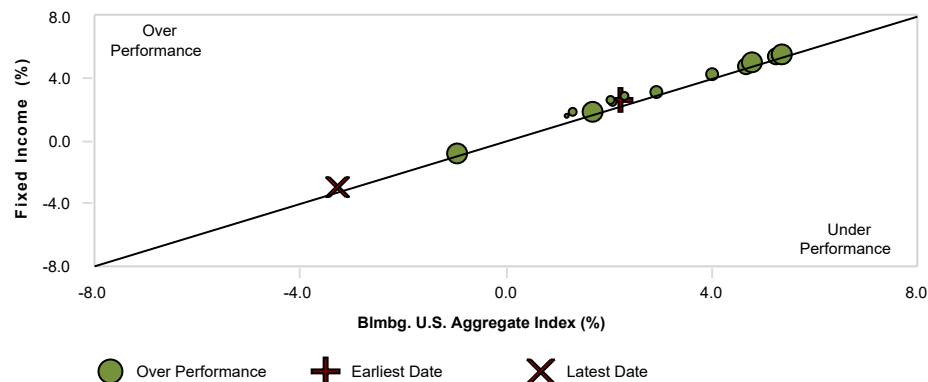
Plan Sponsor Peer Group Analysis - All Master Trust-US Fixed Income Segment



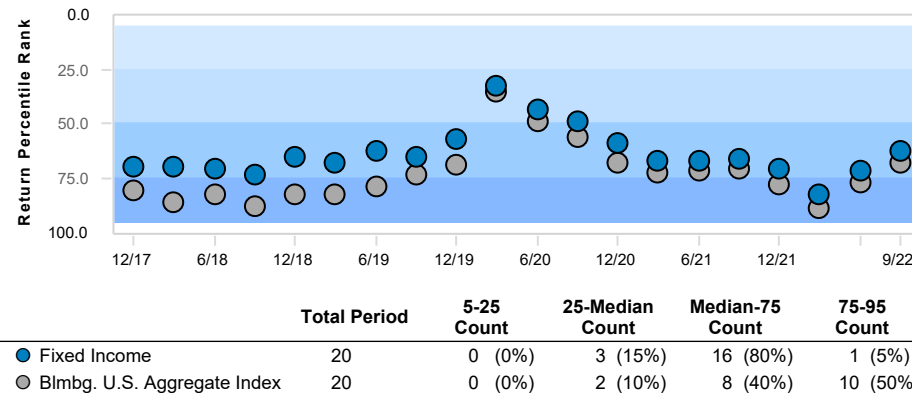
Comparative Performance

	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022	1 Qtr Ending Dec-2021	1 Qtr Ending Sep-2021	1 Qtr Ending Jun-2021	1 Qtr Ending Mar-2021
Fixed Income	-4.88	-6.02	-0.05	0.26	1.99	-3.34
Blmbg. U.S. Aggregate Index	-4.69	-5.93	0.01	0.05	1.83	-3.38

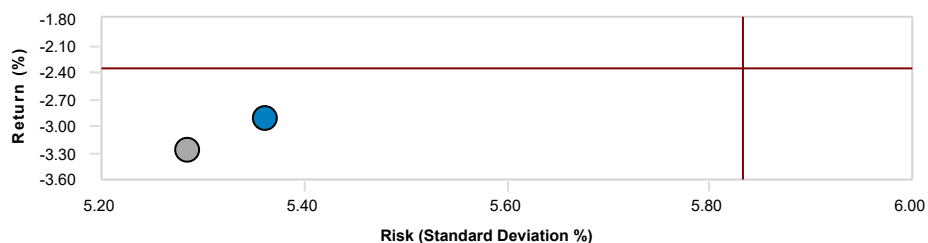
### 3 Yr Rolling Under/Over Performance - 5 Years



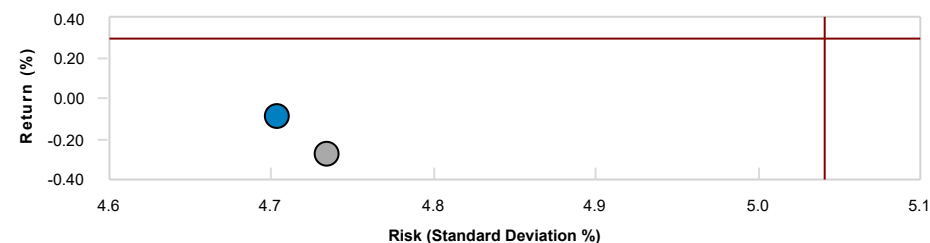
### 3 Yr Rolling Percentile Ranking - 5 Years



### Peer Group Scattergram - 3 Years



### Peer Group Scattergram - 5 Years



### Historical Statistics - 3 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Fixed Income	0.51	104.49	98.61	0.39	0.69	-0.63	1.01	4.58
Blmbg. U.S. Aggregate Index	0.00	100.00	100.00	0.00	N/A	-0.70	1.00	4.59

### Historical Statistics - 5 Years

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Fixed Income	0.46	100.49	97.39	0.19	0.40	-0.24	0.99	3.65
Blmbg. U.S. Aggregate Index	0.00	100.00	100.00	0.00	N/A	-0.28	1.00	3.67

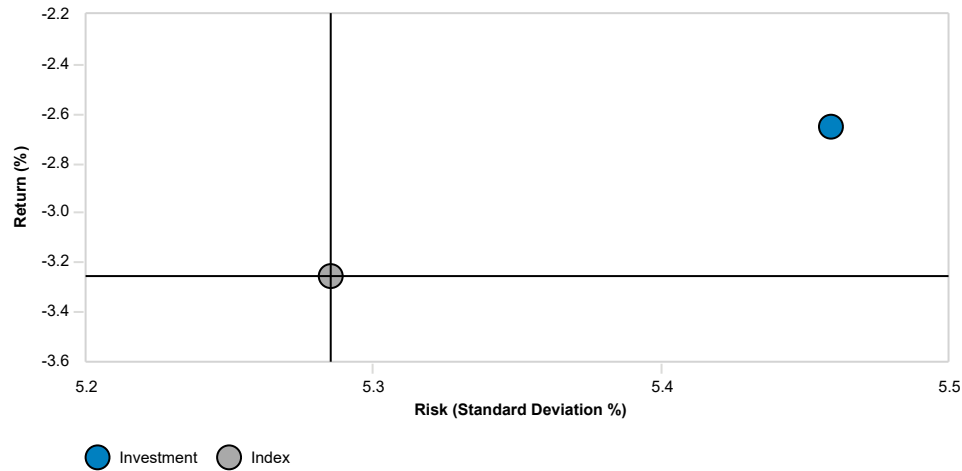
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-2.65	5.46	-0.57	107.41	7	97.16	5
Index	-3.26	5.29	-0.70	100.00	8	100.00	4

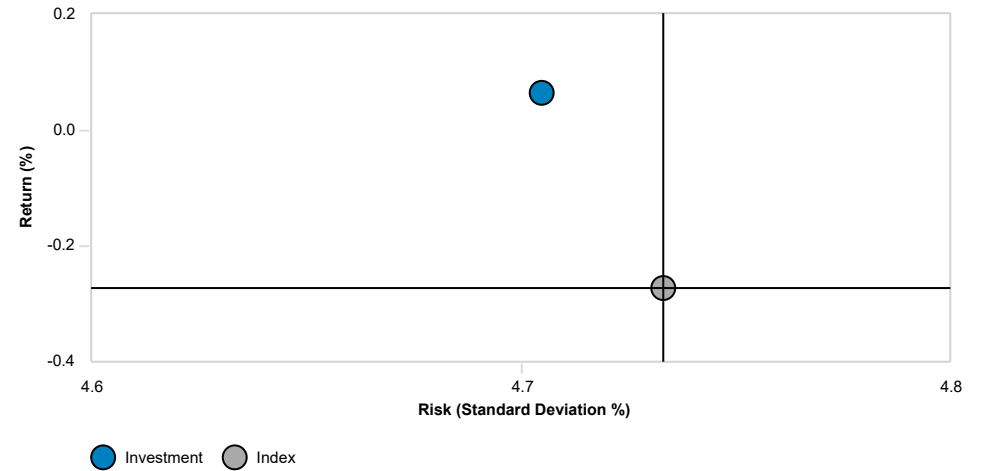
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.07	4.70	-0.21	100.05	14	94.55	6
Index	-0.27	4.73	-0.28	100.00	14	100.00	6

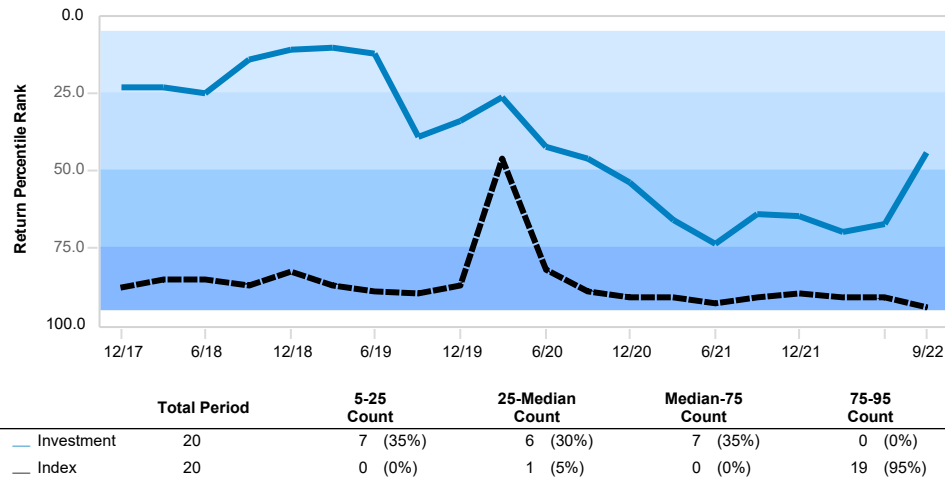
### Risk and Return 3 Years



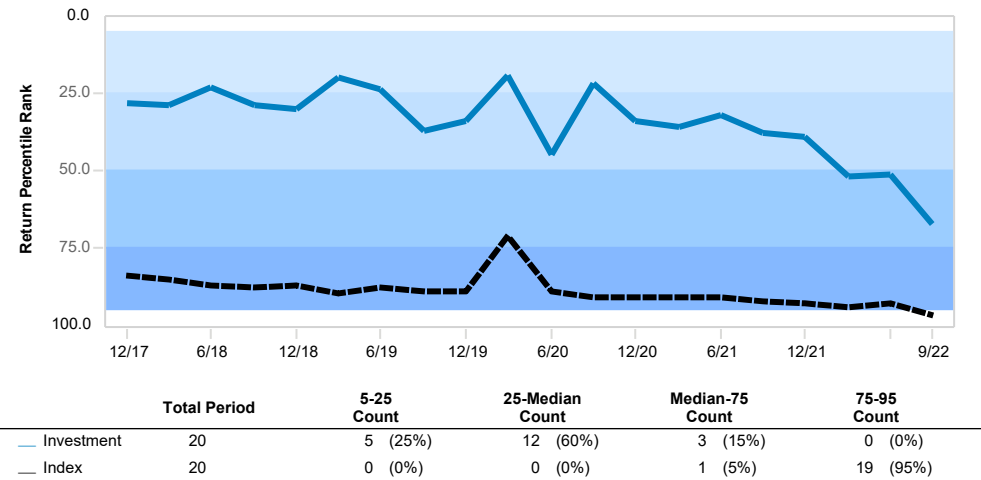
### Risk and Return 5 Years



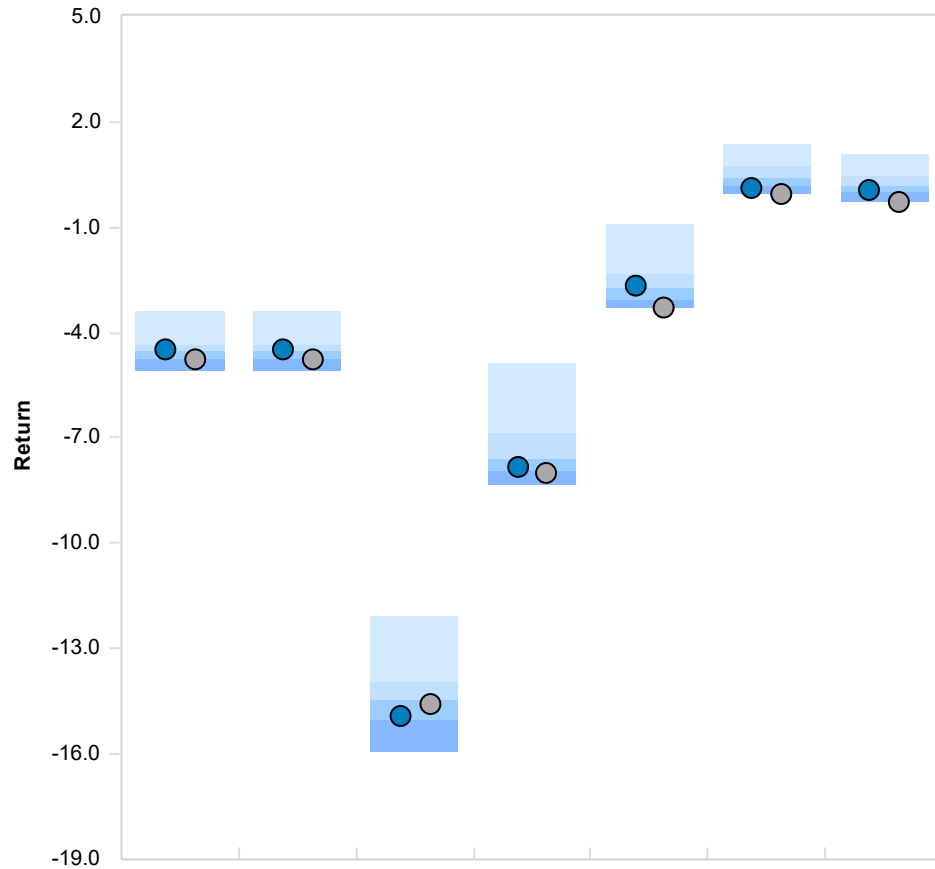
### 3 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



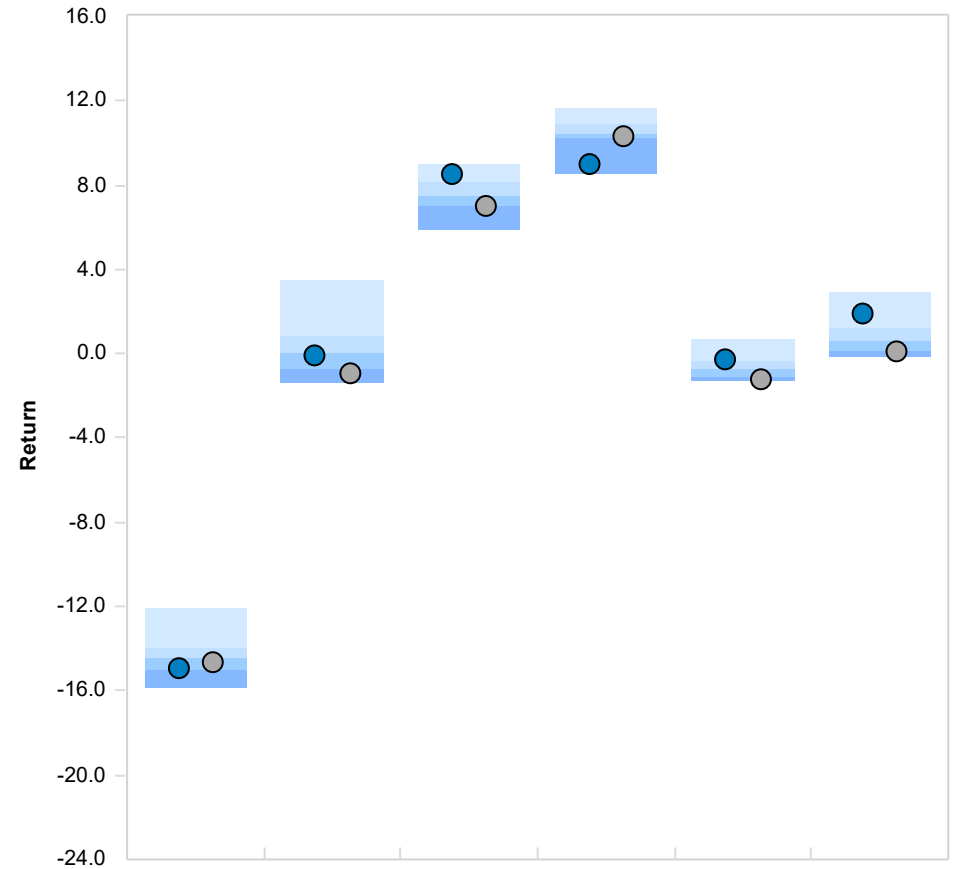
### 5 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



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



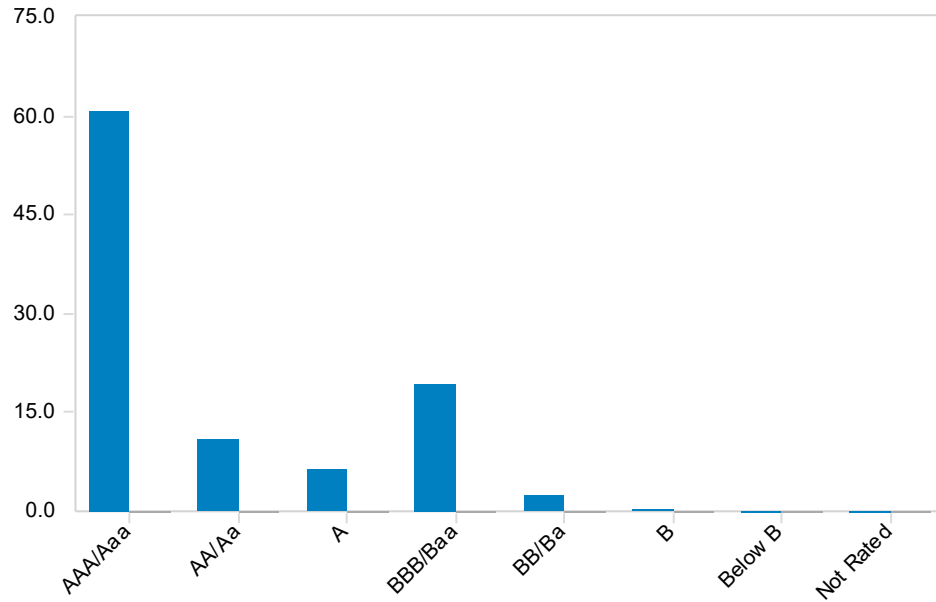
Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)



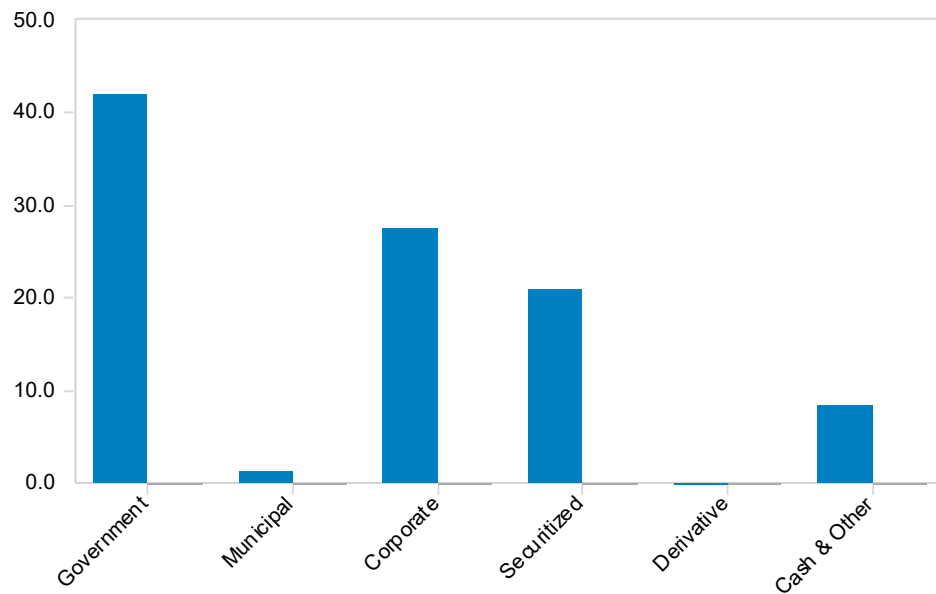
Comparative Performance

	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022	1 Qtr Ending Dec-2021	1 Qtr Ending Sep-2021	1 Qtr Ending Jun-2021	1 Qtr Ending Mar-2021
Investment	-5.04	-6.14	-0.09	0.45	2.12	-3.34
Index	-4.69	-5.93	0.01	0.05	1.83	-3.38

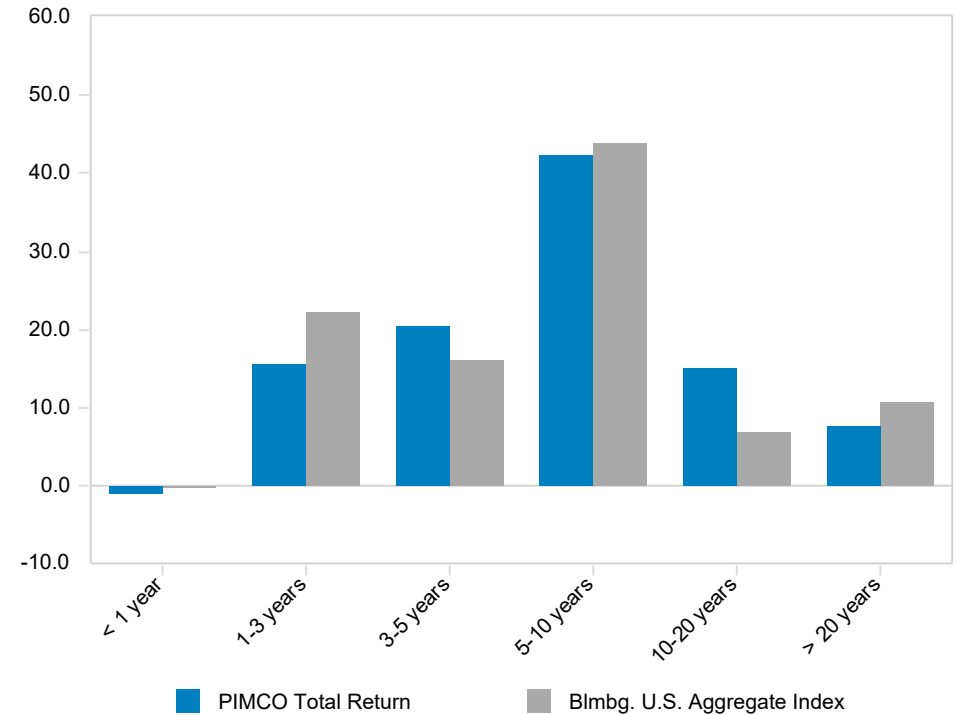
#### Credit Quality Distribution (%)



#### Sector Distribution (%)



#### Maturity Distribution (%)



#### Portfolio Characteristics

	Portfolio	Benchmark
Avg. Maturity	9.44	8.52
Avg. Quality	AA	AA1/AA2
Coupon Rate (%)	2.40	2.58
Yield To Maturity (%)	2.20	4.75
Current Yield	2.24	4.75
Effective Duration	5.84	6.12
Holdings Count	528	12,641

### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-3.22	5.30	-0.70	101.20	7	100.31	5
Index	-3.26	5.29	-0.70	100.00	8	100.00	4

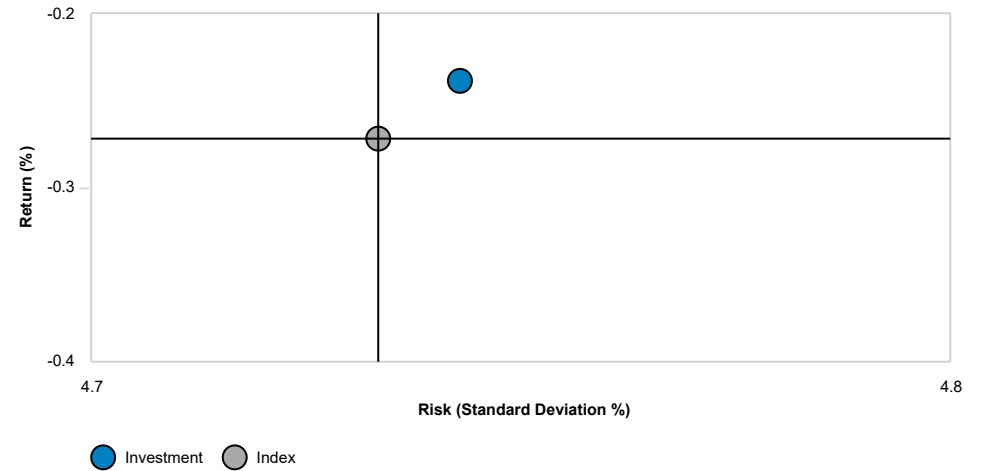
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.24	4.74	-0.27	100.80	13	100.24	7
Index	-0.27	4.73	-0.28	100.00	14	100.00	6

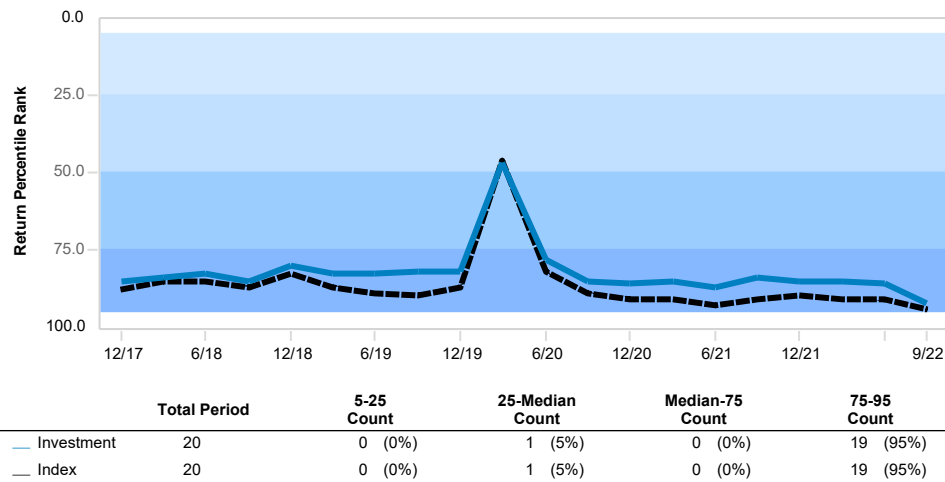
### Risk and Return 3 Years



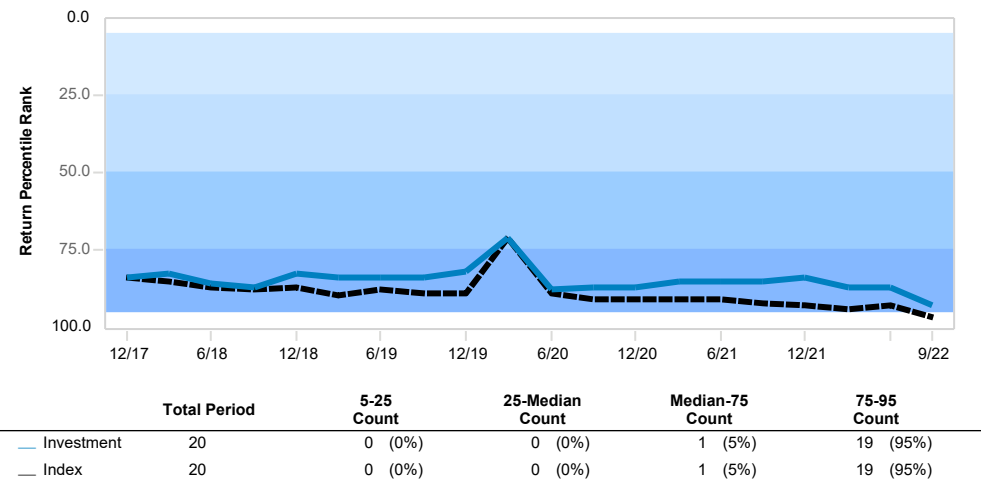
### Risk and Return 5 Years



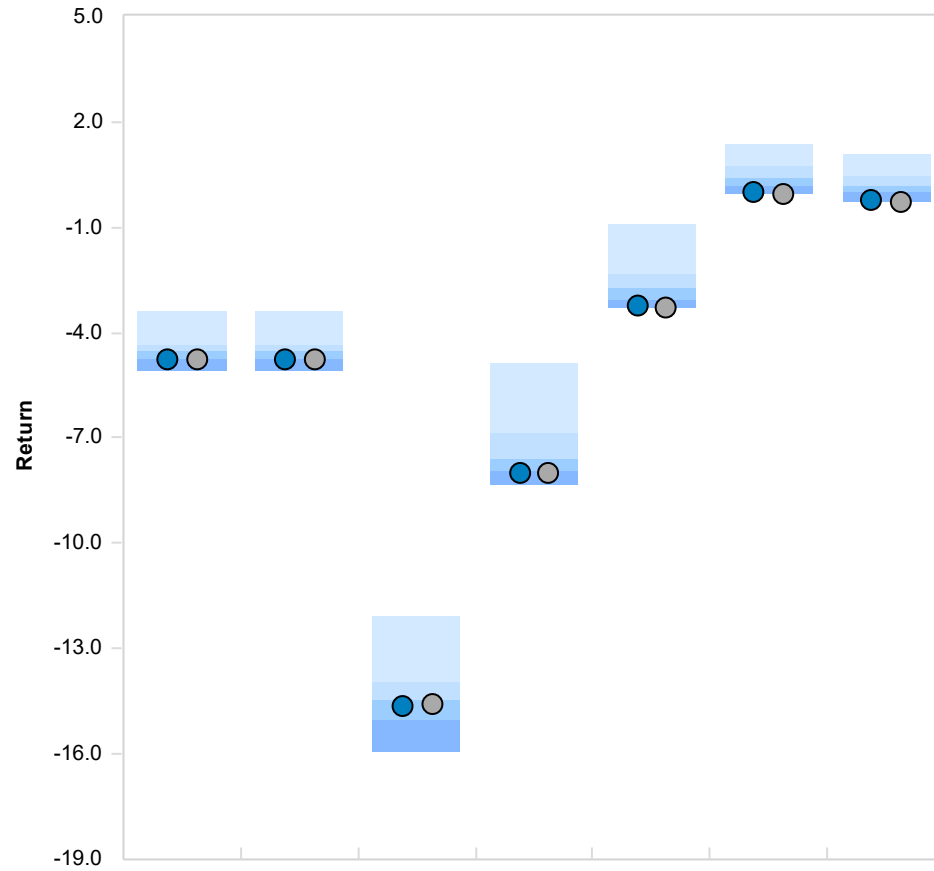
### 3 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



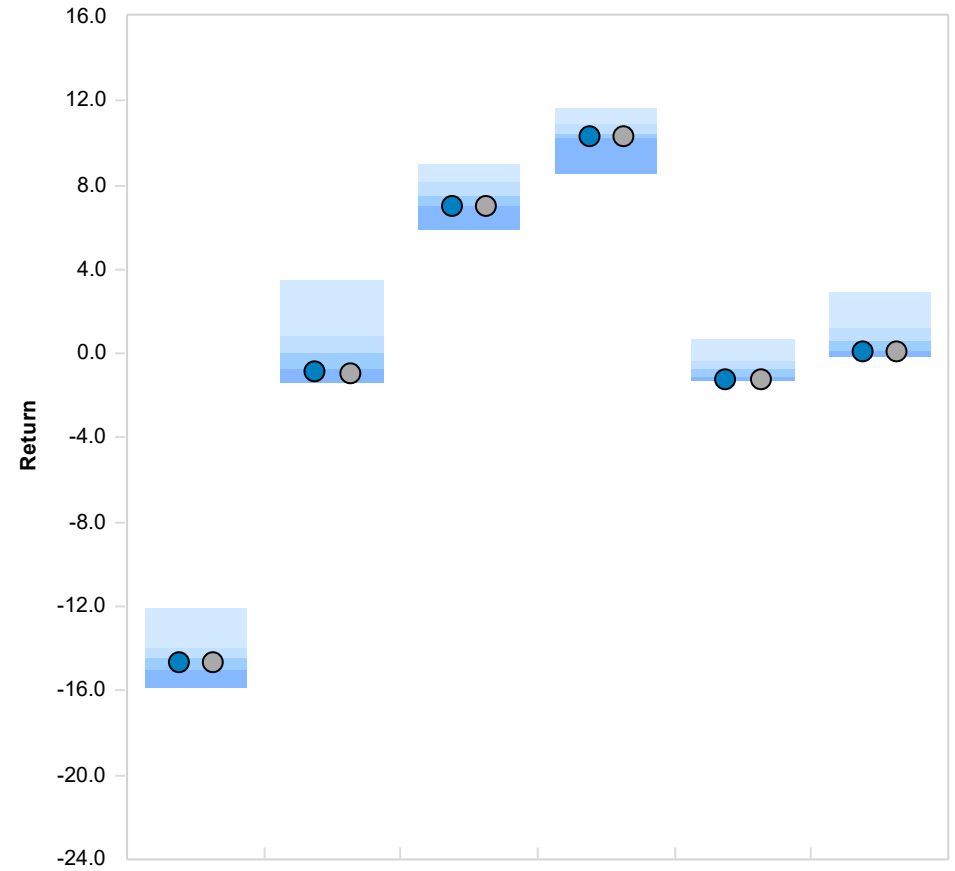
### 5 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (SA+CF)



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



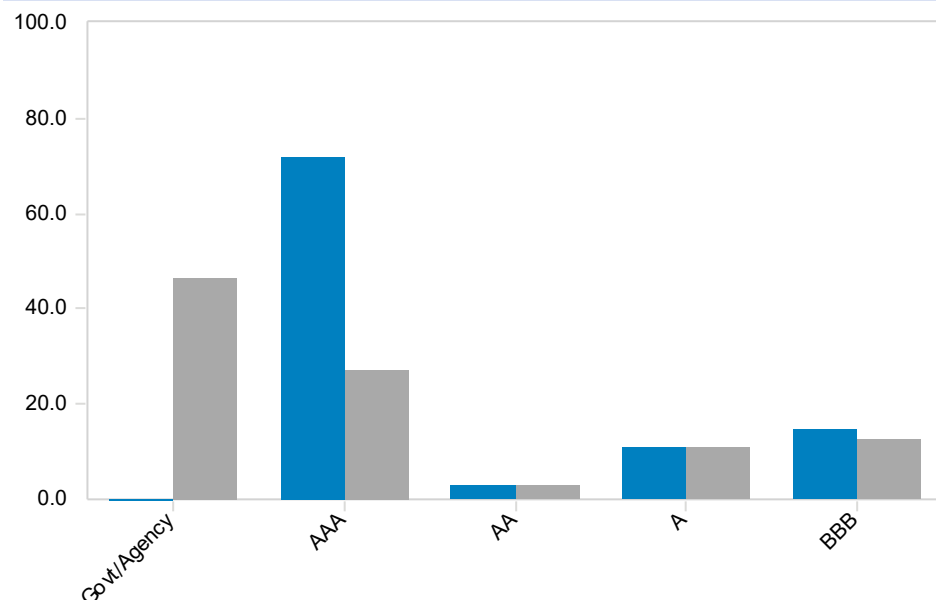
**Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (SA+CF)**



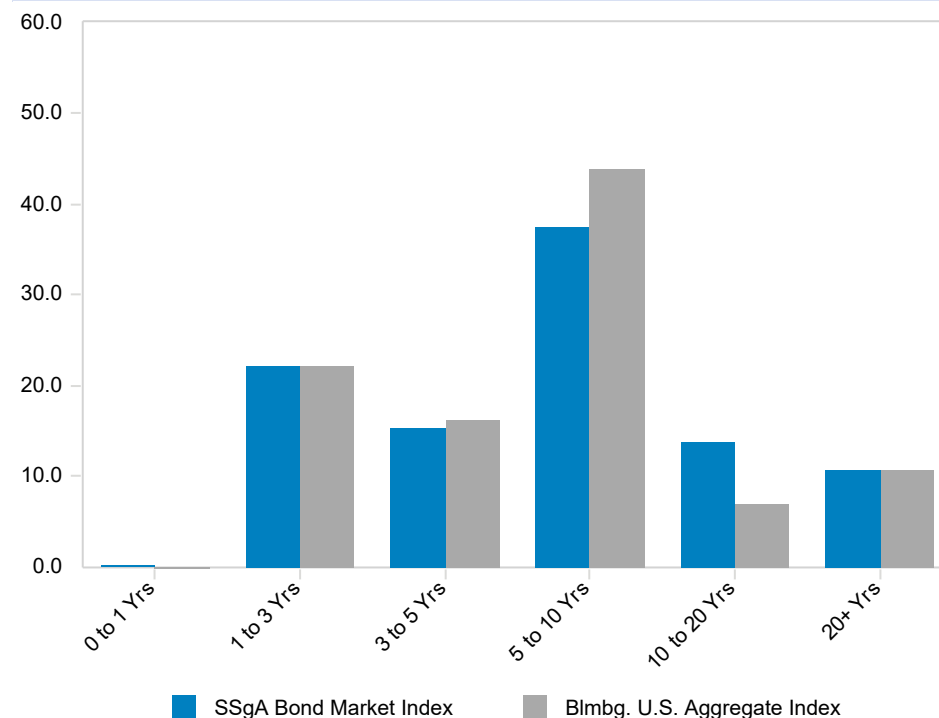
**Comparative Performance**

	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022	1 Qtr Ending Dec-2021	1 Qtr Ending Sep-2021	1 Qtr Ending Jun-2021	1 Qtr Ending Mar-2021
Investment	-4.72	-5.91	-0.02	0.06	1.85	-3.35
Index	-4.69	-5.93	0.01	0.05	1.83	-3.38

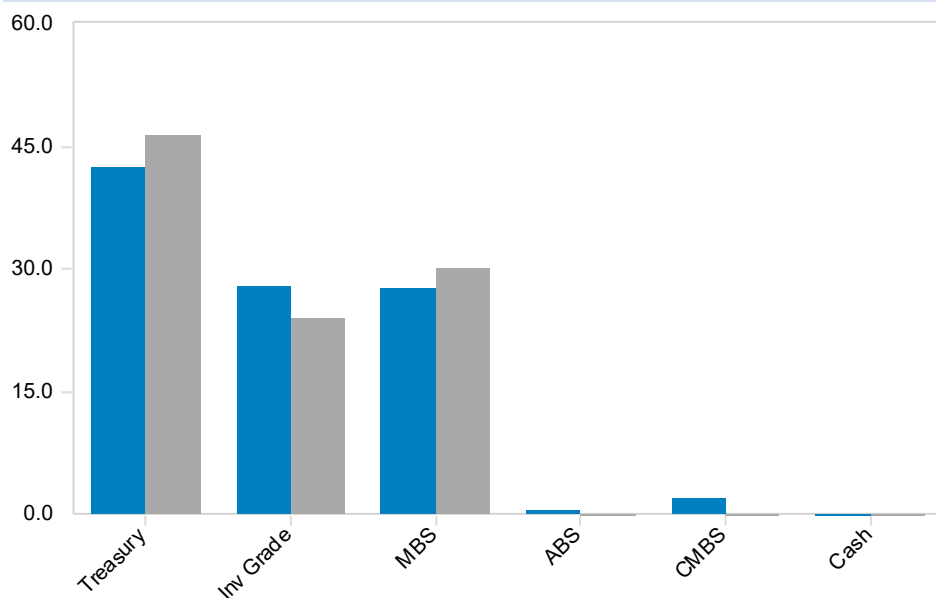
### Credit Quality Distribution (%)



### Maturity Distribution (%)



### Sector Distribution (%)



### Portfolio Characteristics

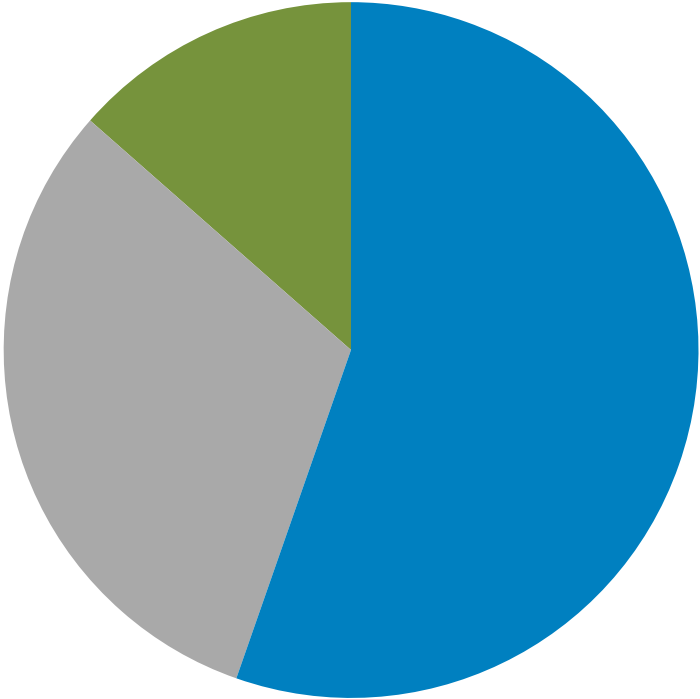
	Portfolio	Benchmark
Avg. Maturity	8.65	8.52
Avg. Quality	Aa2	AA1/AA2
Coupon Rate (%)	2.66	2.58
Yield To Maturity (%)	4.75	4.75
Current Yield	2.99	4.75
Effective Duration	6.19	6.12
Holdings Count	9,507	12,641



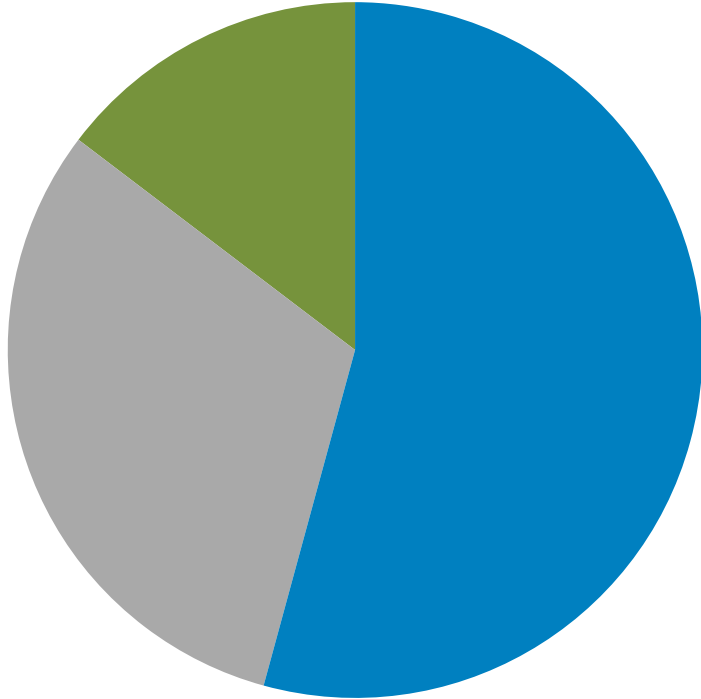
## Real Estate

September 30, 2022 : \$102,910,098

June 30, 2022 : \$106,621,398



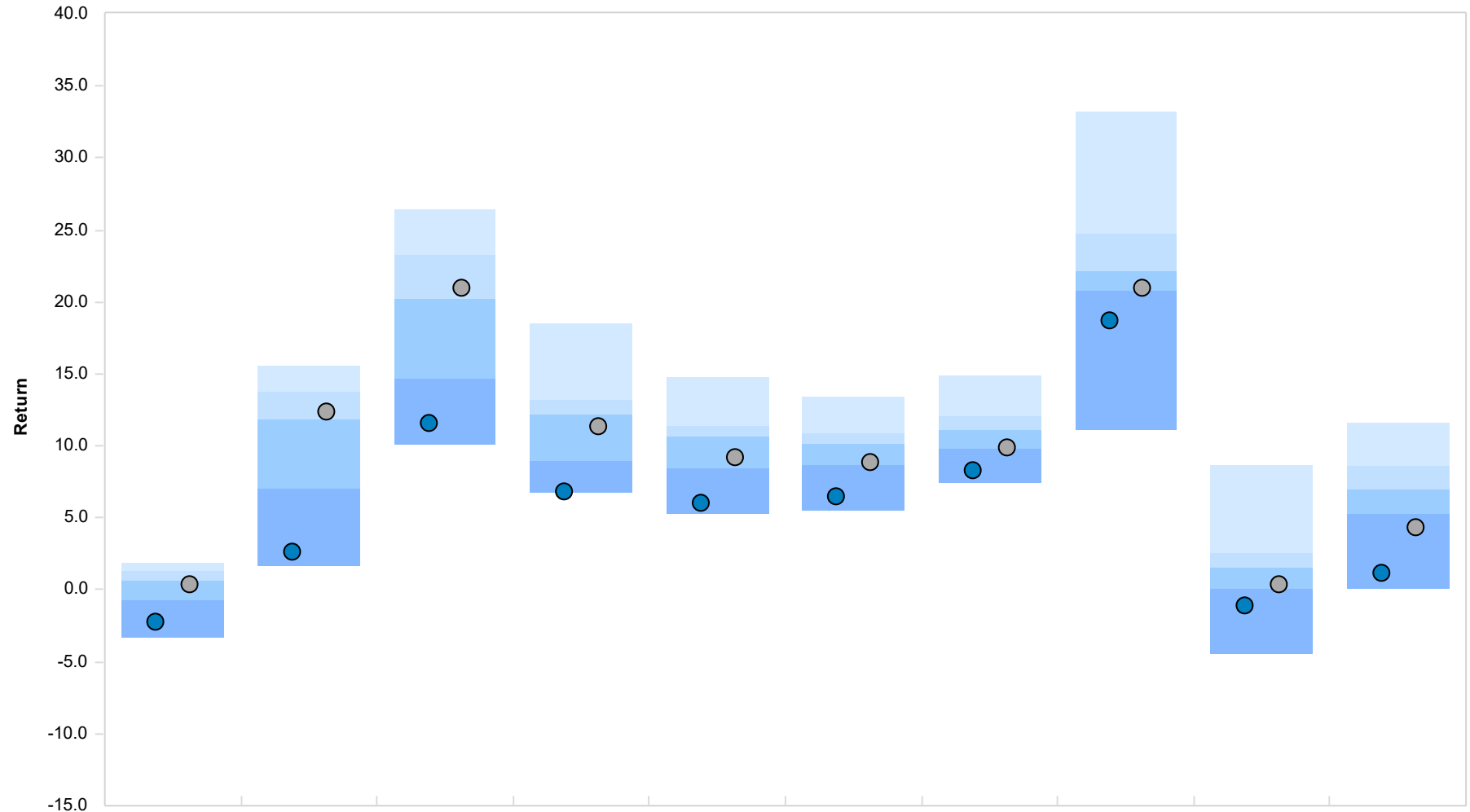
	Market Value	Allocation
JP Morgan Asset Management Strategic Property Fund	56,970,427	55.4
UBS Trumbull Property Fund	32,020,889	31.1
Vanguard Real Estate Index (VGSNX)	13,918,783	13.5



	Market Value	Allocation
JP Morgan Asset Management Strategic Property Fund	57,836,636	54.2
UBS Trumbull Property Fund	33,146,457	31.1
Vanguard Real Estate Index (VGSNX)	15,638,304	14.7



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



	3 Month	CYTD	1 Year	3 Year	5 Year	7 Year	10 Year	2021	2020	2019
● Real Estate	-2.27 (88)	2.60 (91)	11.64 (86)	6.86 (91)	6.01 (87)	6.56 (86)	8.35 (88)	18.78 (82)	-1.07 (87)	1.18 (95)
● NCREIF ODCE (VW) (Net)	0.35 (55)	12.40 (45)	21.00 (40)	11.39 (59)	9.27 (64)	8.87 (71)	9.92 (74)	21.02 (68)	0.34 (73)	4.39 (81)
5th Percentile	1.89	15.59	26.40	18.55	14.82	13.41	14.84	33.27	8.65	11.57
1st Quartile	1.25	13.73	23.28	13.23	11.36	10.97	12.10	24.68	2.52	8.62
Median	0.56	11.79	20.19	12.14	10.65	10.12	11.19	22.11	1.56	7.01
3rd Quartile	-0.74	7.11	14.63	8.98	8.43	8.63	9.73	20.76	0.00	5.29
95th Percentile	-3.30	1.62	10.11	6.76	5.26	5.50	7.44	11.10	-4.46	0.05

Parentheses contain percentile rankings.  
Calculation based on quarterly periodicity.

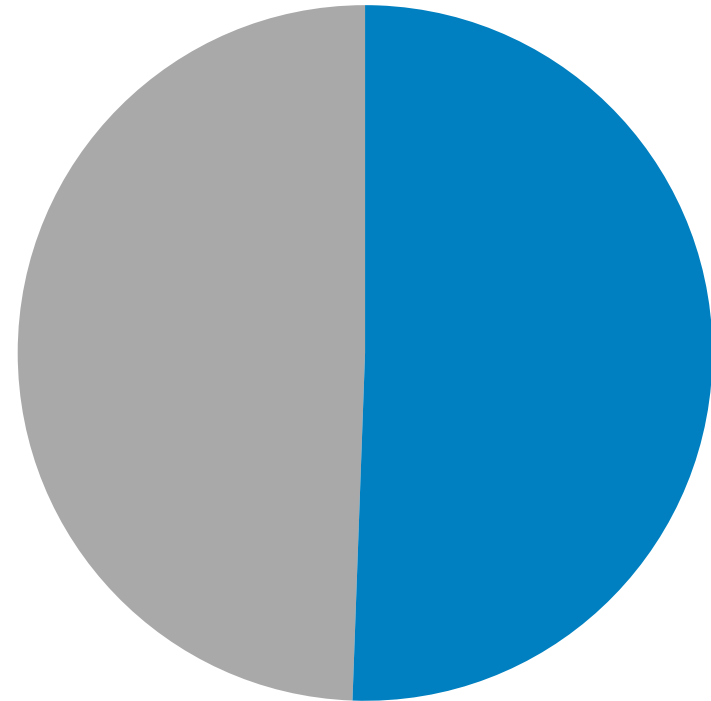
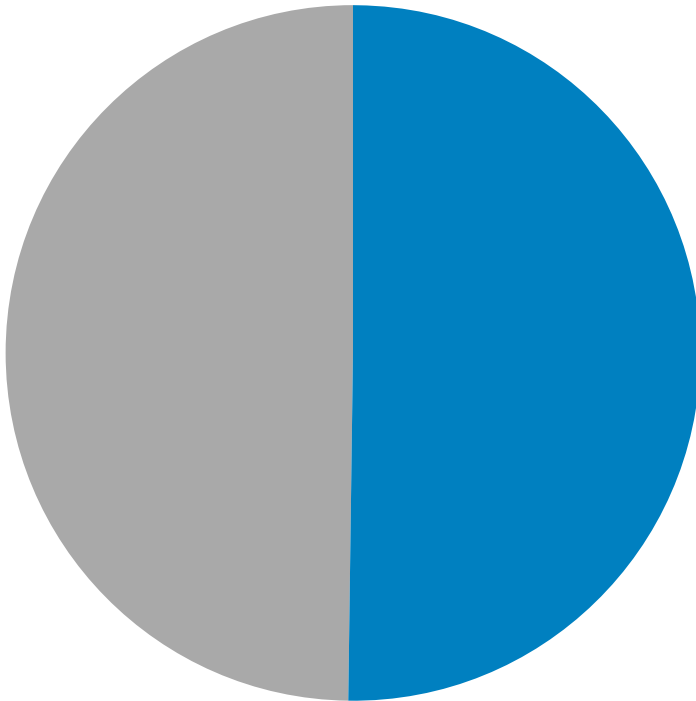


## **Master Limited Partnerships**



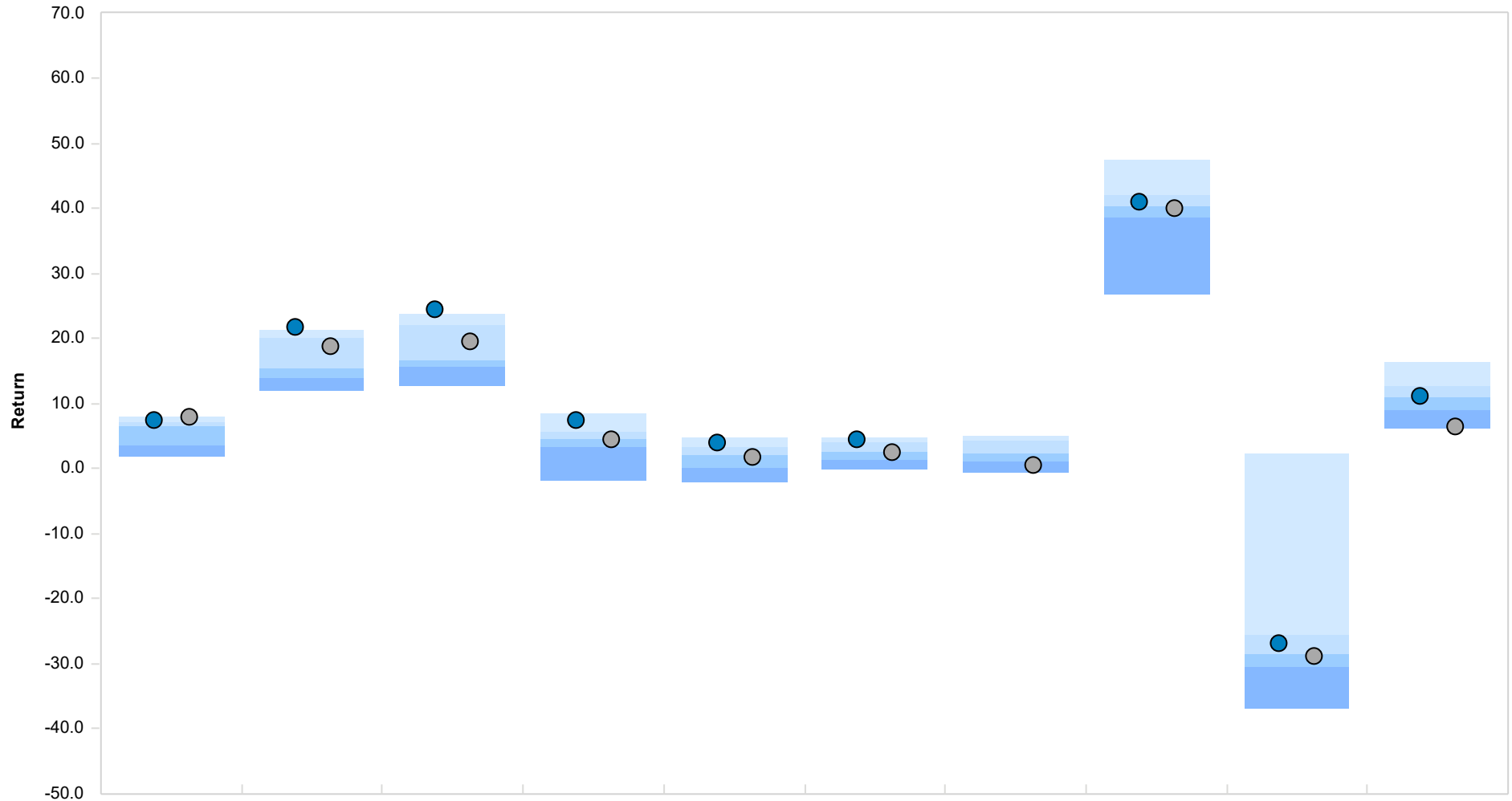
**September 30, 2022 : \$88,269,686**

**June 30, 2022 : \$82,025,265**



	Market Value	Allocation		Market Value	Allocation
Harvest MLP	44,330,758	50.2	Harvest MLP	41,490,231	50.6
Tortoise Capital Advisors	43,938,928	49.8	Tortoise Capital Advisors	40,535,034	49.4

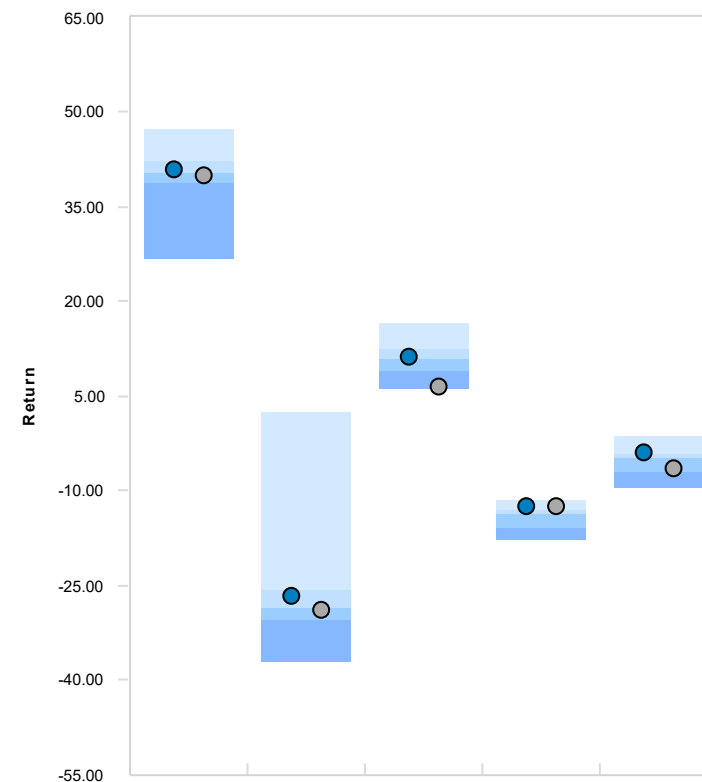
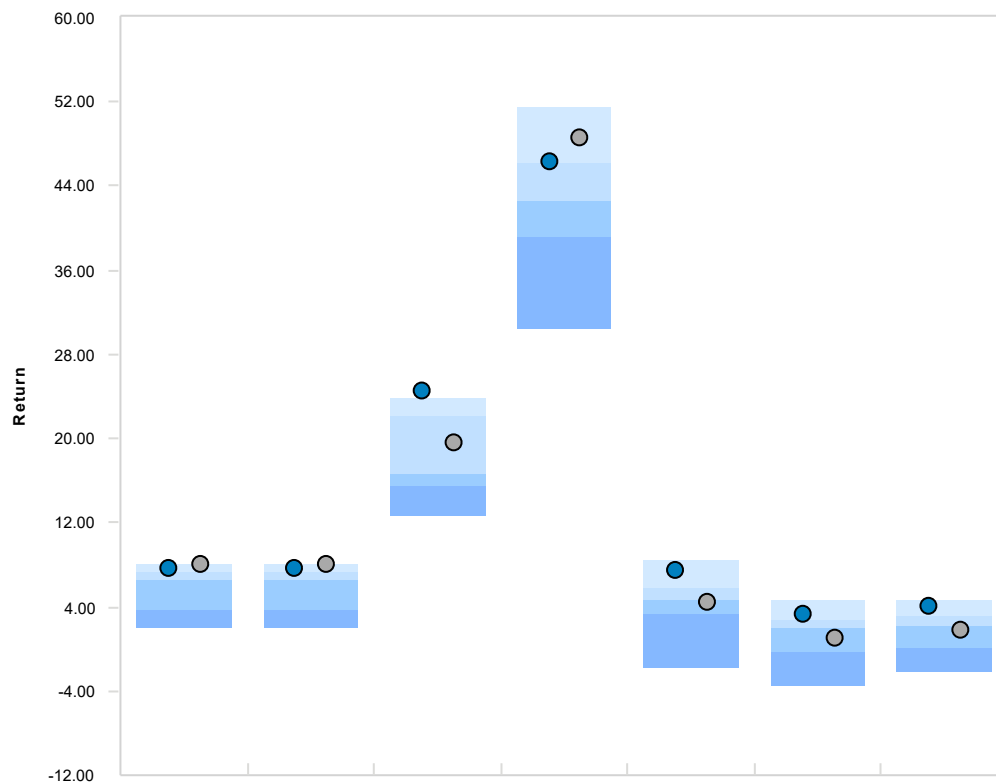
Peer Group Analysis - Master Limited Partnerships (SA+CF)



Parentheses contain percentile rankings.  
Calculation based on monthly periodicity.



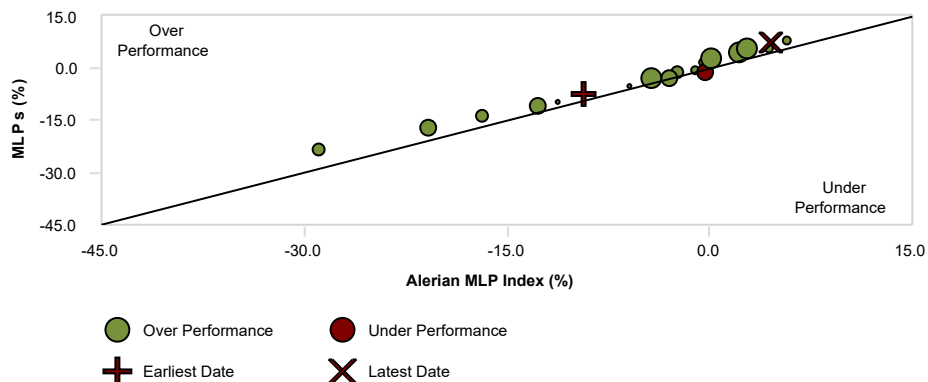
Plan Sponsor Peer Group Analysis - Master Limited Partnerships (SA+CF)



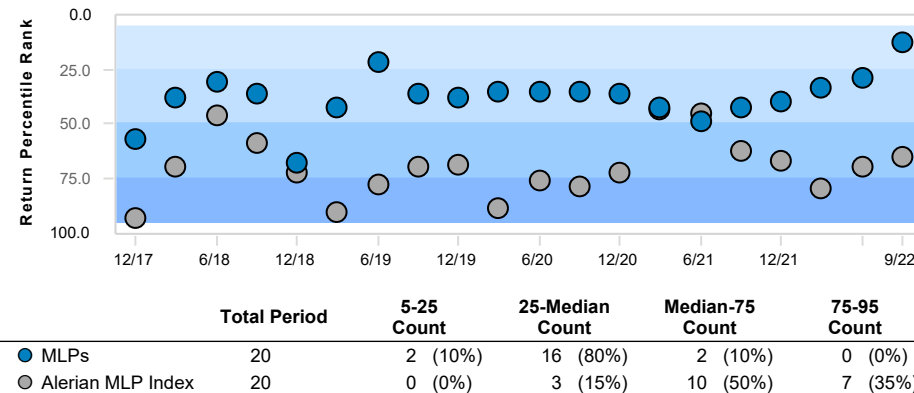
Comparative Performance

	1 Qtr Ending Jun-2022	1 Qtr Ending Mar-2022	1 Qtr Ending Dec-2021	1 Qtr Ending Sep-2021	1 Qtr Ending Jun-2021	1 Qtr Ending Mar-2021
MLPs	-8.67	23.96	2.31	-1.33	19.57	16.88
Alerian MLP Index	-7.38	18.81	0.55	-5.71	21.23	21.95

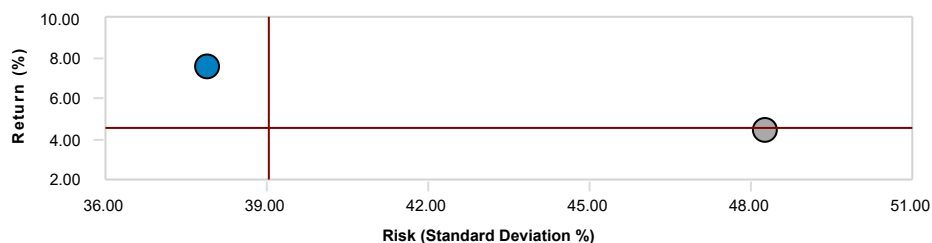
### 3 Yr Rolling Under/Over Performance - 5 Years



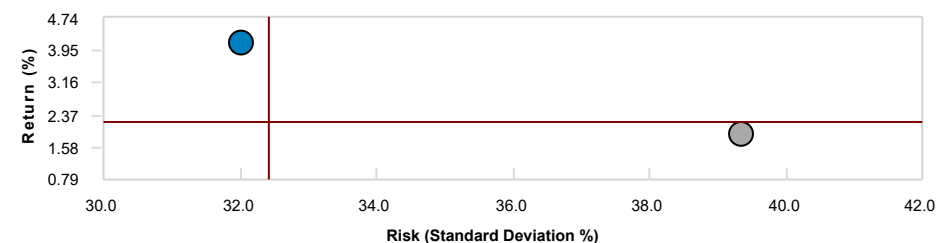
### 3 Yr Rolling Percentile Ranking - 5 Years



### Peer Group Scattergram - 3 Years



### Peer Group Scattergram - 5 Years



### Historical Statistics - 3 Years

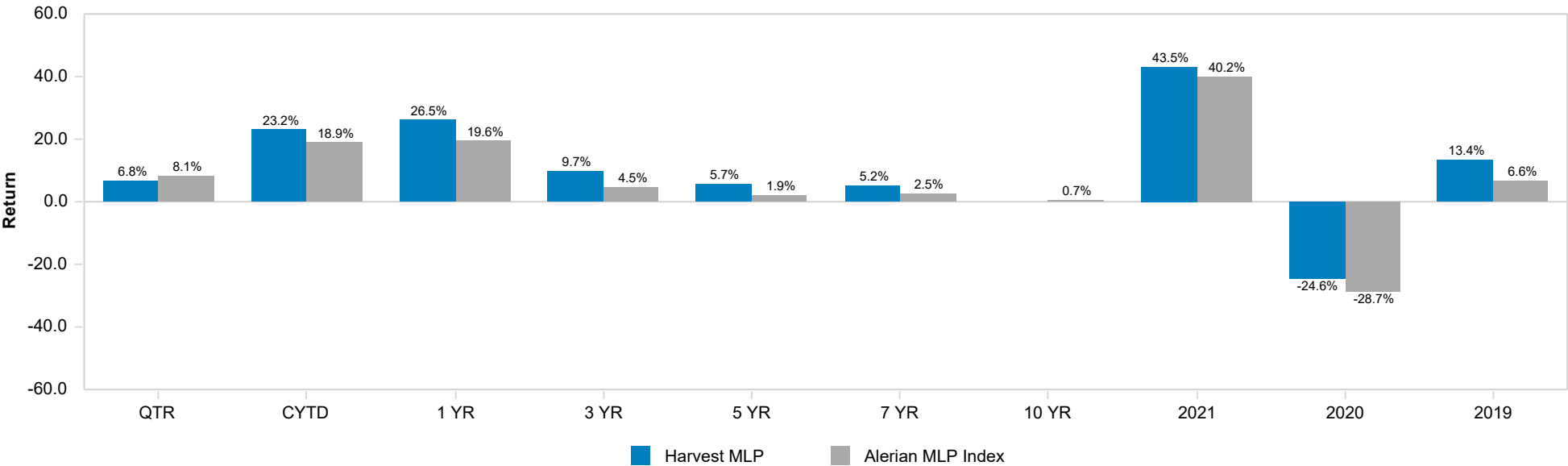
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MLPs	12.50	83.54	81.06	2.23	-0.13	0.39	0.77	27.18
Alerian MLP Index	0.00	100.00	100.00	0.00	N/A	0.34	1.00	32.38

### Historical Statistics - 5 Years

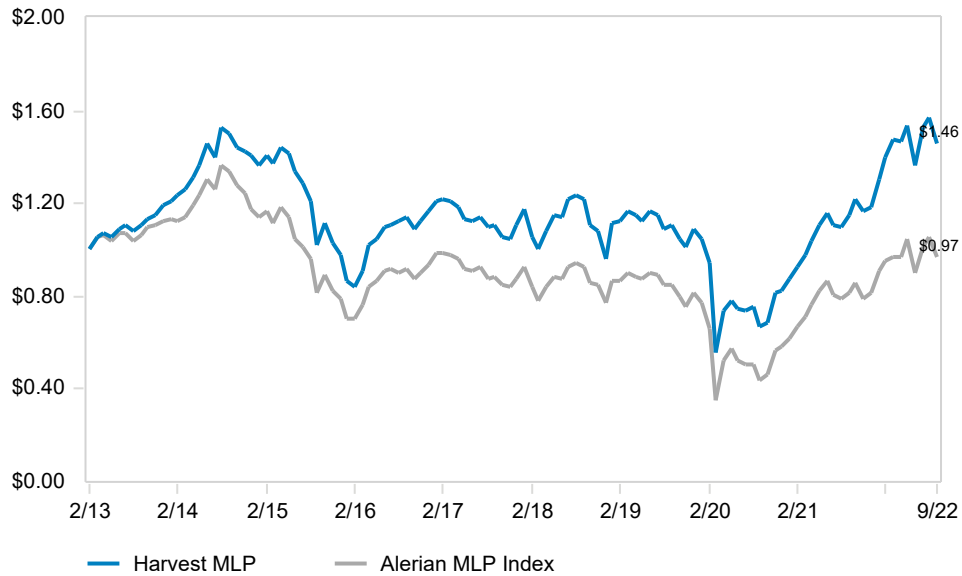
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
MLPs	9.89	89.02	87.40	1.56	-0.05	0.26	0.80	22.64
Alerian MLP Index	0.00	100.00	100.00	0.00	N/A	0.23	1.00	26.45



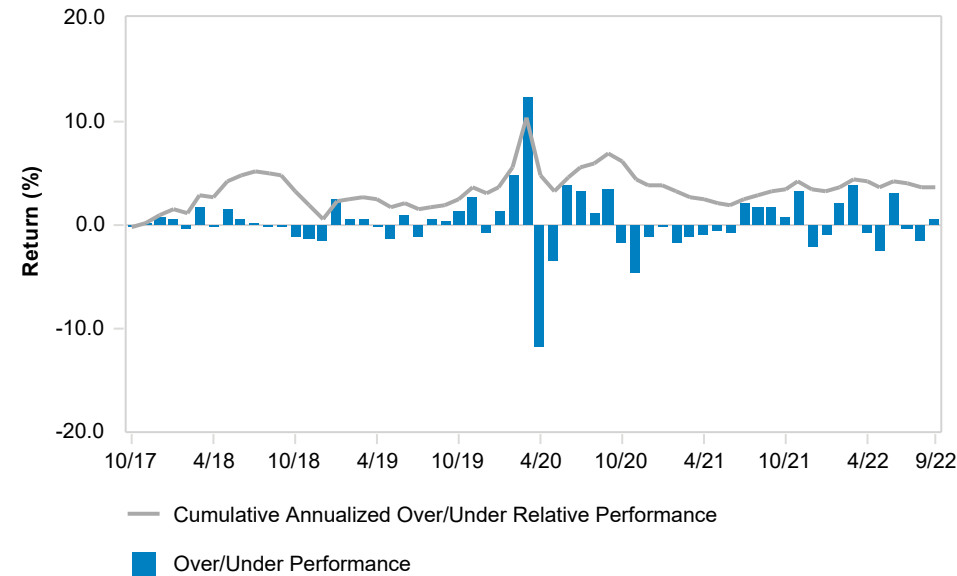
Comparative Performance



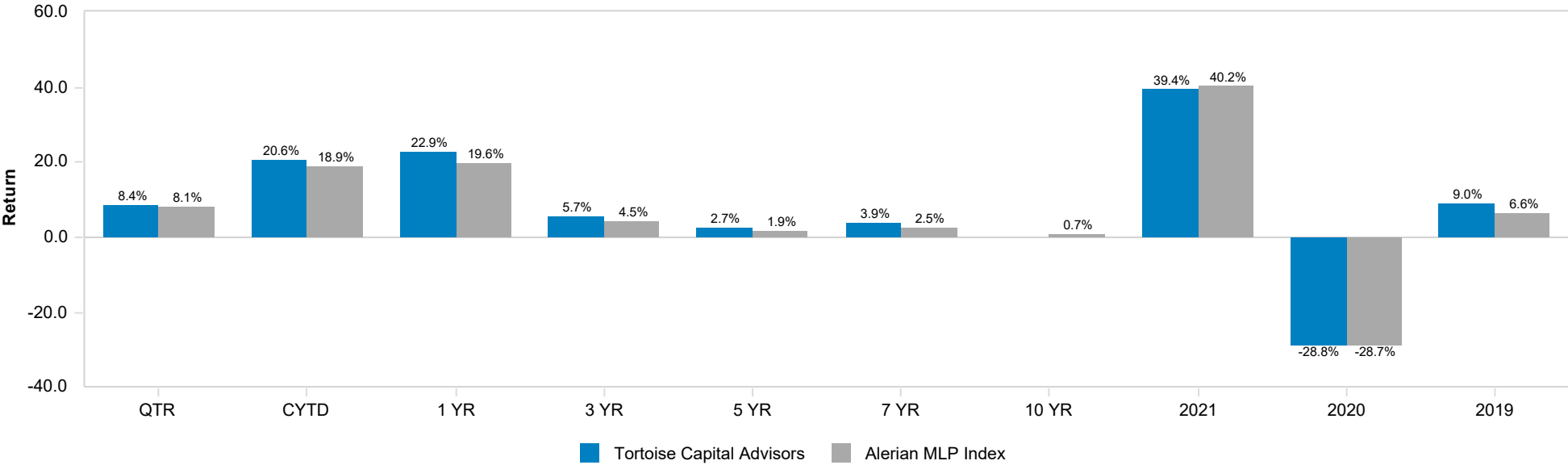
Growth of \$1 - Since Inception (03/01/13)



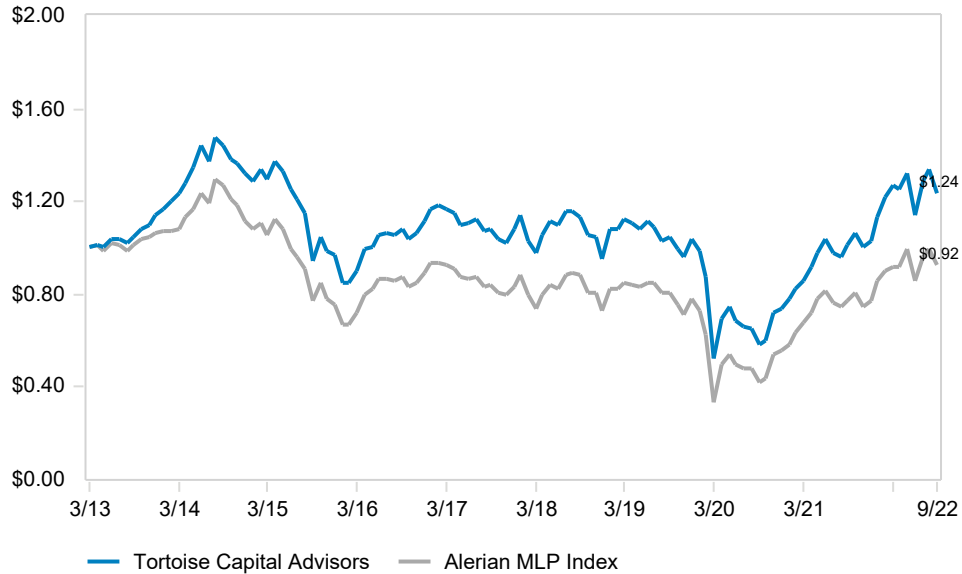
Relative Performance vs. Alerian MLP Index



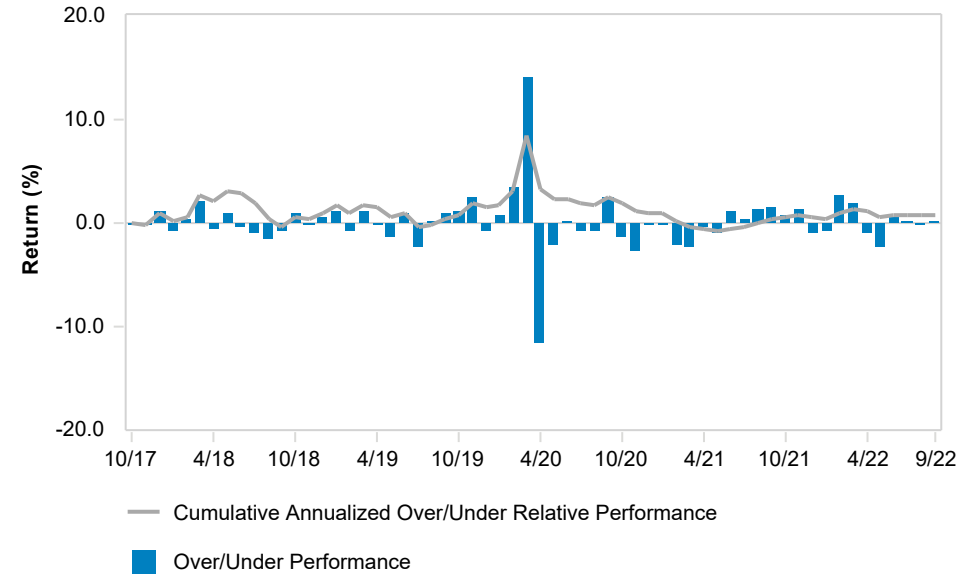
Comparative Performance



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



Relative Performance vs. Alerian MLP Index



# Appendix

Employees' Retirement System of the City of Norfolk

Fee Analysis

As of September 30, 2022

	Fee Schedule	Market Value (\$)	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
<b>Total Fund</b>		<b>1,162,879,785</b>	<b>2,369,039</b>	<b>0.20</b>
<b>Global Equity</b>		<b>616,268,425</b>	<b>246,507</b>	<b>0.04</b>
SSgA MSCI ACWI IMI Index Fund	0.04 % of Assets	616,268,425	246,507	0.04
<b>Fixed Income</b>		<b>355,426,796</b>	<b>750,669</b>	<b>0.21</b>
PIMCO Total Return	0.41 % of Assets	174,252,165	714,434	0.41
SSgA Bond Market Index	0.02 % of Assets	181,174,631	36,235	0.02
<b>Real Assets</b>		<b>191,179,784</b>	<b>1,371,863</b>	<b>0.72</b>
<b>Real Estate</b>		<b>102,910,098</b>	<b>775,748</b>	<b>0.75</b>
JP Morgan Asset Management Strategic Property Fund	1.00 % of Assets	56,970,427	569,704	1.00
UBS Trumbull Property Fund	0.60 % of Assets	32,020,889	192,125	0.60
Vanguard Real Estate Index (VGSNX)	0.10 % of Assets	13,918,783	13,919	0.10
<b>MLPs</b>		<b>88,269,686</b>	<b>596,114</b>	<b>0.68</b>
Harvest MLP	0.75 % of Assets	44,330,758	332,481	0.75
Tortoise Capital Advisors	0.60 % of Assets	43,938,928	263,634	0.60
Cash		4,781	-	



**Employees' Retirement System of the City of Norfolk**  
**Historical Hybrid Composition**  
**As of September 30, 2022**

**Total Fund Policy**

Allocation Mandate	Weight (%)
<b>May-2016</b>	
MSCI AC World IMI (Net)	62.50
Blmbg. U.S. Aggregate Index	37.50

**Total Fund Strategy Index**

Allocation Mandate	Weight (%)
<b>Jul-2016</b>	
MSCI AC World IMI (Net)	55.00
Blmbg. U.S. Aggregate Index	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.



**Global Equity Policy**

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

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

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

This performance report is based on data obtained by the client's custodian(s), investment fund administrator, or other sources believed to be reliable. While these sources are believed to be reliable, the data providers are responsible for the accuracy and completeness of their statements. Clients are encouraged to compare the records of their custodian(s) to ensure this report fairly and accurately reflects their various asset positions.

The strategies listed may not be suitable for all investors. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. Past performance is not an indication of future performance. Any information contained in this report is for informational purposes only and should not be construed to be an offer to buy or sell any securities, investment consulting, or investment management services.

Additional information included in this document may contain data provided by from index databases, public economic sources and the managers themselves.

This document may contain data provided by Bloomberg Barclays. Bloomberg Barclays Index data provided by way of Barclays Live.

This document may contain data provided by Standard and Poor's. Nothing contained within any document, advertisement or presentation from S&P Indices constitutes an offer of services in jurisdictions where S&P Indices does not have the necessary licenses. All information provided by S&P Indices is impersonal and is not tailored to the needs of any person, entity or group of persons. Any returns or performance provided within any document is provided for illustrative purposes only and does not demonstrate actual performance. Past performance is not a guarantee of future investment results.

This document may contain data provided by MSCI, Inc. Copyright MSCI, 2017. Unpublished. All Rights Reserved. This information may only be used for your internal use, may not be reproduced or disseminated in any form and may not be used to create any financial instruments or products or any indices. This information is provided on an "as is" basis and the user of this information assumes the entire risk of any use it may make or permit to be made of this information. Neither MSCI, any of its affiliates or any other person involved in or related to compiling, computing or creating this information makes any express or implied warranties or representations with respect to such information or the results to be obtained by the use thereof, and MSCI, its affiliates and each such other person hereby expressly disclaim all warranties (including, without limitation, all warranties of originality, accuracy, completeness, timeliness, non-infringement, merchantability and fitness for a particular purpose) with respect to this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any other person involved in or related to compiling, computing or creating this information have any liability for any direct, indirect, special, incidental, punitive, consequential or any other damages (including, without limitation, lost profits) even if notified of, or if it might otherwise have anticipated, the possibility of such damages.

This document may contain data provided by Russell Investment Group. Russell Investment Group is the source owner of the data contained or reflected in this material and all trademarks and copyrights related thereto. The material may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited. This is a user presentation of the data. Russell Investment Group is not responsible for the formatting or configuration of this material or for any inaccuracy in presentation thereof.

This document may contain data provided by Morningstar. All rights reserved. Use of this content requires expert knowledge. It is to be used by specialist institutions only. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied, adapted or distributed; and (3) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information, except where such damages or losses cannot be limited or excluded by law in your jurisdiction. Past financial performance is not guarantee of future results.





**Clients first.**



CHICAGO | CLEVELAND | DALLAS | DETROIT | ORLANDO | PITTSBURGH | RENO

**AndCo Consulting** | (844) 44-ANDCO | *AndCoConsulting.com*