

**December 31, 2019**

**Pennsylvania SERS**



**Investment Measurement Service  
Quarterly Review**

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## Anticipated Recession Fails to Materialize

### ECONOMY

**2** GDP grew at 2.1% for the fourth quarter, **PAGE** unemployment fell to a generational low, wages and incomes showed robust gains, inflation remained contained, and, of course, stock and bond markets soared in 2019. So much for the most anticipated recession in history.

## Strong Gains for Year Amid Equity Boom

### INSTITUTIONAL INVESTORS

**4** Corporate DB plans **PAGE** gained the most among plan types in 2019. Over the last 20 years, public DB plans topped the performance list, but all plan types rose in a narrowly bound range between 6.0%-6.1%, exceeding a 60% stocks-40% bonds benchmark.

## Jump in Quarter Fuels Notable Year

### EQUITY

**6** The fourth quarter closed **PAGE** out a near-historic year for equity markets; the S&P 500 ended 2019 up 31.5%—enough to become the second-strongest year of the decade. Global equity markets bounced back in the fourth quarter as geopolitical uncertainties abated.

## Yields Are Mixed but Returns Are Strong

### FIXED INCOME

**8** Yield movement was **PAGE** mixed in the U.S. as short-term rates fell and long-term rates rose amid ongoing trade negotiations. Major U.S. bond indices showed strong gains for the year. Global fixed income markets also posted broad increases for the quarter and the year.

## Real Estate Healthy; Real Assets Gain

### REAL ESTATE/REAL ASSETS

**10** U.S. core real estate **PAGE** returns continued to moderate; Industrial outperformed other property types. REITs gained but lagged global equities. Asian and European markets were affected by geopolitical tensions. Real assets returns were strong in the quarter.

## Most Activity Fell Moderately in 2019

### PRIVATE EQUITY

**12** Except for fundraising, **PAGE** all private equity activity measures declined moderately in 2019. The drops largely owe to record-level prices throughout the year. But overall private equity and capital market liquidity remained healthy and transaction volume is brisk.

## Party Like It's 1999 ... or Not

### HEDGE FUNDS/MACs

**13** While stocks celebrated **PAGE** the end of 2019, hedge funds were the party's designated driver. Portfolios exposed to EM and long-short equity topped those emphasizing equity market neutral or macro strategies. MAC returns varied depending on net market exposures.

## DC Index Gains, Tops Age 45 TDF

### DEFINED CONTRIBUTION

**15** The Callan DC Index™ **PAGE** rose 0.6% in the third quarter, compared to 0.5% for the Age 45 Target Date Fund. The Index's growth in balances of 0.1% was much smaller than the first and second quarters. Asset allocation to TDFs hit 29.6%, the lowest since the first quarter of 2017.

## Broad Market Quarterly Returns

**U.S. Equity**  
Russell 3000



**9.1%**

**Global ex-U.S. Equity**  
MSCI ACWI ex USA



**8.9%**

**U.S. Fixed Income**  
Bloomberg Barclays Agg



**0.2%**

**Global ex-U.S. Fixed Income**  
Bloomberg Barclays GBI ex US



**0.7%**

Sources: Bloomberg Barclays, FTSE Russell, MSCI

# The Most Anticipated Recession in History Fails to Materialize

ECONOMY | Jay Kloepfer

Real GDP grew at 2.1% for the fourth quarter of 2019, capping off a year pretty much no one anticipated for growth or the capital markets. GDP growth for the year came in at 2.3%, unemployment fell to yet another generational low, wages and incomes continued to show robust gains, and yet inflation remained contained. The Fed paused on its path to interest rate normalization in January 2019, cut rates twice in the third quarter and once more in October, before declaring its work done. The trade war dominated headlines and jerked around market sentiment, but the actual impact on U.S. GDP growth has been held below a cumulative hit of 1 percentage point.

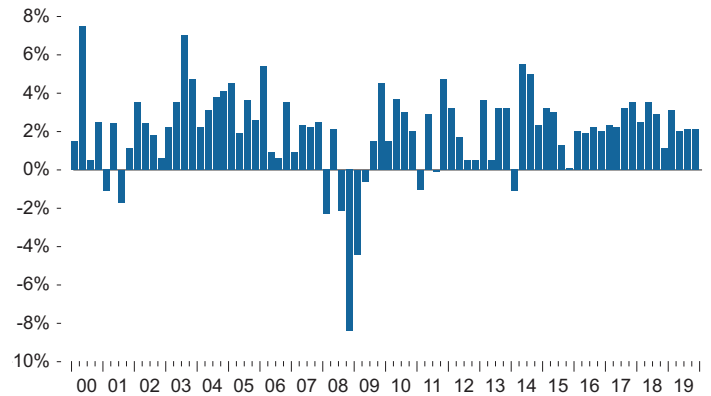
Stock markets around the globe rallied during 2019, with the **S&P 500** climbing 31.5%, **MSCI ACWI ex-USA** up 21.5%, and **MSCI Emerging Markets** up 18.4%. The most eye-opening development of the year was the bond market rally following the Fed pivot in policy, driving a gain of 8.7% for the **Bloomberg Barclays US Aggregate Bond Index** and almost 20% for the **Long Government/Credit Index**. So much for the most anticipated recession in history.

Many analysts have begun touting that we already touched bottom in the global growth cycle during the fourth quarter of 2019. The “growth recession” was over before we knew it was fully upon us. The consensus short-term outlook is far more bullish than it was a year ago, although the medium-term outlook (three to five years) contains more concerns. Persistent low inflation gives central banks the cover to continue supportive monetary policy, but this support could evaporate if inflation is resurgent. The volume of corporate credit has exploded, and much of it is lower rated; any sign of real weakness in the economy raises concerns about quality and spread widening. Finally, it is entirely unclear how the current negative interest rate environment across much of Europe evolves.

Buried in the GDP numbers are several developments that support continuing growth in the U.S. economy, at least over the shorter term. First, the 2.1% increase in the fourth quarter

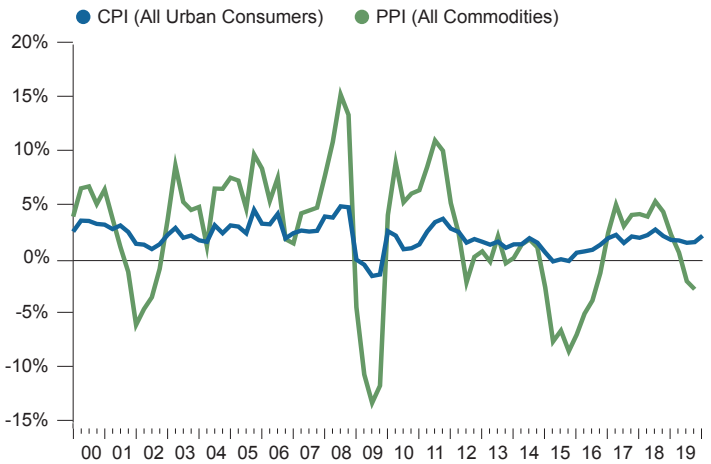
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

includes the drag on growth from the GM strike and the slow-down in Boeing 737 Max production.

Second, inventory accumulation slowed substantially in the fourth quarter, another drag on growth. The end of the GM strike, the eventual resumption of 737 Max production, and the rebuilding of inventories all point toward sustained growth in the U.S. in 2020.

Consumer spending remains strong, fueled by buoyant consumer confidence, a strong labor market, a generational low unemployment rate (3.5%), and personal income growth of just under 4%. The reversal in interest rates will find its way into lower debt costs for consumers, and household debt levels are far below pre-GFC levels. The Fed lowered the federal funds rate by 75 basis points, and given expectations for three rate INCREASES a year ago, rates now sit 150 bps lower than expected. This Fed pivot has greatly benefited interest-sensitive sectors of the economy and consumer balance sheets.

One more support for GDP growth has been a reduction in imports (which are a negative in the GDP calculation), and a corresponding increase in net exports. Imports surged in advance of the application of tariffs early in 2019. U.S. suppliers appear to have quickly found alternatives to China, increasing our imports from Asian countries ex-China to offset some of the decline in imports from China.

Not only did the recession not appear in 2019, near-term recession risks are abating. The announced phase one trade deal between the U.S. and China will suspend some tariffs and address issues of intellectual property and forced transfers of technology. The largest impact is on investor and business sentiment. World GDP growth slowed from 4% at the end of 2017 to below 3% by mid-2019, as a collection of negative shocks (Brexit, trade, geopolitical uncertainty) and lagged effects of monetary tightening hit some of the world's largest economies. The drag from these shocks has faded and monetary policy has loosened around the world. The emerging markets have already embarked on a cyclical upturn, and the developed

### The Long-Term View

Index	2019 4th Qtr	Periods Ended 12/31/19			
		Year	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	9.1	31.0	11.2	13.4	10.2
S&P 500	9.1	31.5	11.7	13.6	10.2
Russell 2000	9.9	25.5	8.2	11.8	9.4
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	8.2	22.0	5.7	5.5	5.2
MSCI ACWI ex USA	8.9	21.5	5.5	5.0	--
MSCI Emerging Markets	11.8	18.4	5.6	3.7	--
MSCI ACWI ex USA Small Cap	11.0	22.4	7.0	6.9	5.9
<b>Fixed Income</b>					
Bloomberg Barclays Agg	0.2	8.7	3.0	3.7	5.6
90-Day T-Bill	0.5	2.3	1.1	0.6	2.5
Bloomberg Barclays Long G/C	-1.1	19.6	5.4	7.6	7.9
Bloomberg Barclays GI Agg ex US	0.7	5.1	1.6	1.5	4.4
<b>Real Estate</b>					
NCREIF Property	1.5	6.4	8.2	10.2	9.3
FTSE Nareit Equity	-0.8	26.0	7.2	11.9	10.6
<b>Alternatives</b>					
CS Hedge Fund	2.4	9.3	2.6	4.3	7.8
Cambridge PE*	0.9	9.5	12.4	13.8	15.3
Bloomberg Commodity	4.4	16.8	13.8	11.6	15.5
Gold Spot Price	3.4	18.9	5.2	3.3	5.7
<b>Inflation – CPI-U</b>	0.1	2.3	1.8	1.8	2.2

\*Data for most recent period lags by a quarter. Data as of Sept. 30, 2019.  
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices, Refinitiv/Cambridge

economies are about to join them, led by the U.S. The fourth quarter of 2019 likely marked the trough in global GDP growth. The recovery in trade should help lead the way, after the collapse in trade volumes in late 2018.

### Recent Quarterly Economic Indicators

	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18
Employment Cost–Total Compensation Growth	2.7%	2.8%	2.7%	2.8%	2.9%	2.8%	2.8%	2.7%
Nonfarm Business–Productivity Growth	0.0%*	-0.2%	2.5%	3.5%	0.1%	1.2%	1.8%	0.9%
GDP Growth	2.1%	2.1%	2.0%	3.1%	1.1%	2.9%	3.5%	2.5%
Manufacturing Capacity Utilization	74.9%	75.4%	75.5%	76.4%	77.0%	76.9%	76.4%	76.1%
Consumer Sentiment Index (1966=100)	97.2	93.8	98.4	94.5	98.2	98.1	98.3	98.9

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

\* Estimated figure provided by IHS Markit

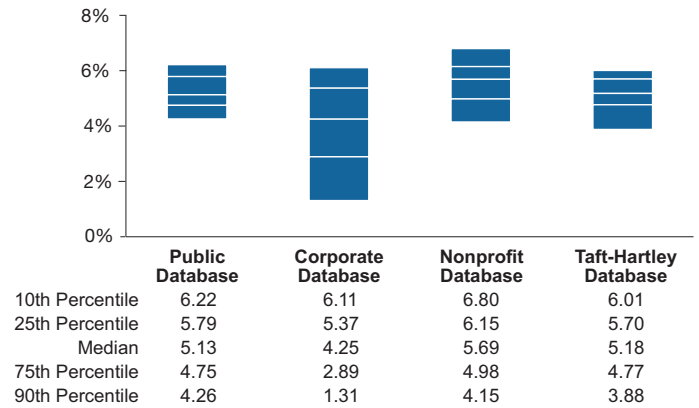


# Steady Returns Continue Amid Equities Rebound

## INSTITUTIONAL INVESTORS

- A quarterly rebalanced 60% S&P 500/40% Bloomberg Barclays Aggregate portfolio increased 22.2% over the one year ended Dec. 31, 2019, driven by the stock market's huge gains and exceptionally strong returns from bonds. All broad institutional investor groups underperformed this benchmark.
- U.S. equity markets continued their pattern of outperforming global ex-U.S. equity, a pattern that has persisted since 2018.
- Corporate defined benefit (DB) plans gained the most among plan types over the one-year period. Public DB plans trailed all investor types.
- Over most longer time periods, Taft-Hartley plans have been the top performer. Over the last 20 years, public DB plans topped the performance list, but all plan types rose in a narrowly bound range between 6.0%-6.1%. In that time period, all plan types exceeded the stocks-bonds benchmark.
- In the current market environment, institutional investors are focused on reevaluating the purpose and implementation of all diversifiers, including real assets, hedge funds and liquid alternatives, fixed income, and private markets.

### Quarterly Returns, Callan Database Groups



Source: Callan

- Return enhancement remains a top priority for public and corporate DB plans and nonprofits. Corporate DB plans also see funding status as a top priority. DC plans see fees as the top priority.
- Public DB plans are also concerned about their high risk exposures but resist de-risking when their shorter-horizon projected return on assets (ROA) is lower than their long-term ROA.

### Callan Database Median and Index Returns\* for Periods Ended 12/31/19

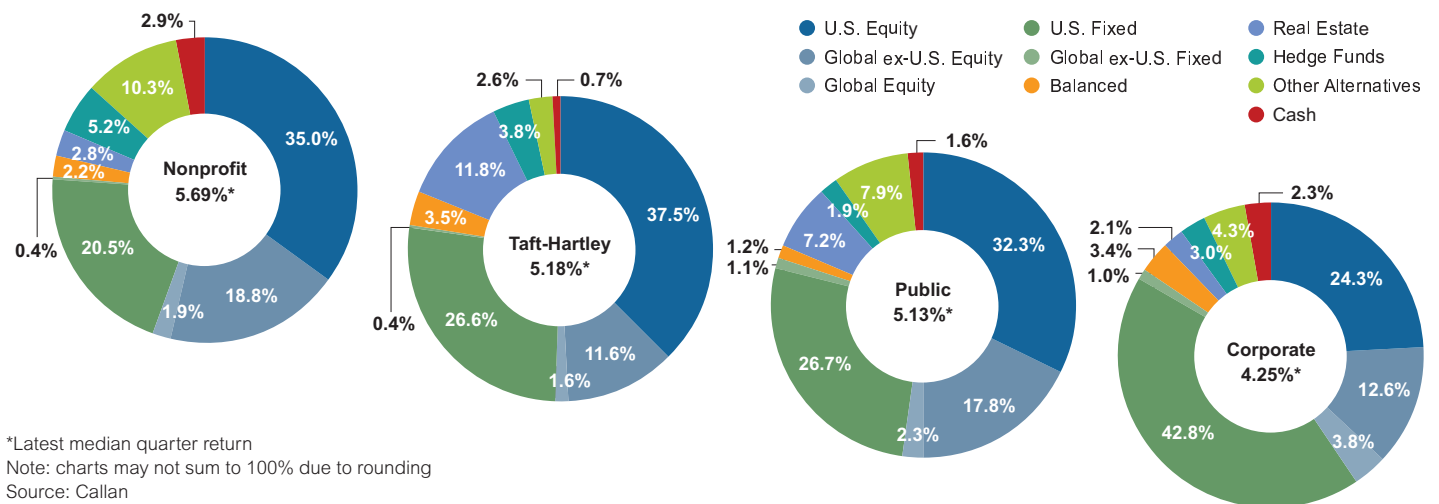
Database Group	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Public Database	5.13	17.75	9.40	7.11	8.25	6.73
Corporate Database	4.25	19.87	9.55	6.96	8.40	6.80
Nonprofit Database	5.69	18.81	9.38	6.81	8.12	6.58
Taft-Hartley Database	5.18	18.00	9.36	7.50	8.66	6.59
All Institutional Investors	5.19	18.53	9.41	7.08	8.35	6.67
Large (>\$1 billion)	4.79	17.56	9.59	7.26	8.59	6.88
Medium (\$100mm - \$1bn)	5.20	18.55	9.42	7.15	8.35	6.58
Small (<\$100 million)	5.38	18.93	9.29	6.91	8.16	6.55

\*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, nonprofits, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- Callan has seen a surge in asset-liability studies, with substantial changes to many policy portfolios.
- Institutional investors are also taking steps to de-risk (less equity) and looking at risk mitigation (diversification and implementation), but there is some dissatisfaction with hedge funds, risk premia, and absolute return strategies. Some DB plans have terminated their hedge fund exposures; thus far, nonprofits have largely retained confidence in their hedge fund allocations.
- There are continued signs of interest in environmental, social, and governance (ESG) factors, with many public DB plans having had some discussions around the subject.
- Defined contribution (DC) plans are grappling with the implications of the SECURE Act (for Setting Every Community Up for Retirement Enhancement), whose sweeping nature means that the impact on policy cannot be underestimated within the retirement industry, since major changes (target date funds, auto features, etc.) were largely driven by previous regulatory and legislative catalysts.
- DC plans are also continuing to examine their default option, looking at the suitability of the current option in light of other alternatives both in the same asset class (often target date funds) but also in light of other options (e.g., managed accounts).
- In assessing the capital market environment, institutional investors are focused on how long the current expansion can continue. In evaluating specific investment alternatives, they face three key questions:
  1. Is value dead?
  2. Is there any hope for active management?
  3. Why should they bother with global ex-U.S. equities?
- For investors, the reversal in Fed policy has changed the landscape. It has created an added role for central banks, that of sustaining the expansion, which is a positive for equity ownership. The new yield environment and capital market assumptions going forward also create a challenge for investors, as they try to determine how to diversify their growth/equity risk without incurring a huge opportunity cost.
- In examining alternatives, institutional investors are looking at the most effective ways they can implement allocations in the private market. Is it worth the trouble to create a bespoke program implementation, and at what size and how much effort is required? This applies to private equity, real assets, absolute return, and diversifying assets.

Average Asset Allocation, Callan Database Groups



# Equity

## U.S. Equities

The fourth quarter closed out a near-historic year for equity markets, in particular the S&P 500, which ended 2019 up 31.5%—enough to claim second place behind 2013 for the strongest year of the decade (during which large cap equities only saw one down year). Both Apple (+85%) and Microsoft (+54%) reached over \$1 trillion in market cap and accounted for 15% of the S&P 500's advance for the year. Investors globally were spurred by three interest rate cuts by the Fed, a potential U.S.-China trade armistice, continued low inflation, and some clarity around Brexit.

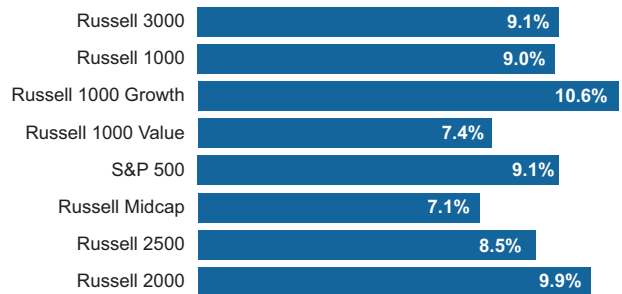
**Small cap vs. large cap** ▶ *Russell 2000: +9.9% | Russell 1000: +9.0%*

- Small cap trailed for most of 2019 but eclipsed large cap stocks in the fourth quarter due to notable contributions from the Health Care sector, where the biotech and pharmaceutical industries saw heightened new drug approvals and M&A activity during the quarter.
- Small growth outpaced small value for the quarter, the year, and the decade; the **Russell 2000 Growth Index** outpaced the **Russell 2000 Value Index** by 3% annualized over the past 10 years as the low interest rate environment favored growth stocks and challenged the Russell 2000 Value's heavy exposure to Financials.
- While small cap outpaced large cap in the fourth quarter, large cap stocks led for the third straight year, owing much to Tech (+50.3%) and Communication Services (+32.7%).

**Growth vs. Value** ▶ *Russell 1000 Growth: +10.6% | Russell 1000 Value: +7.4%*

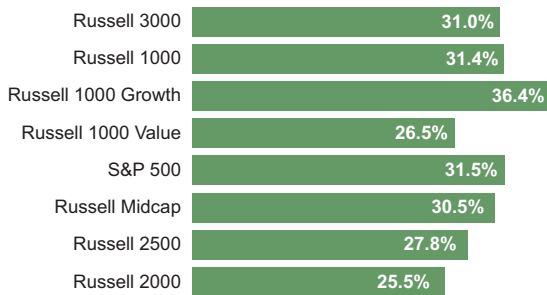
- Growth continued its dominance over value during the quarter, closing out a decade-long trend.
- Tech giants Facebook, Apple, Microsoft, and Alphabet/Google remained meaningful contributors for the quarter, with Health Care (+14.4%) also among the top sector performers.

## U.S. Equity: Quarterly Returns



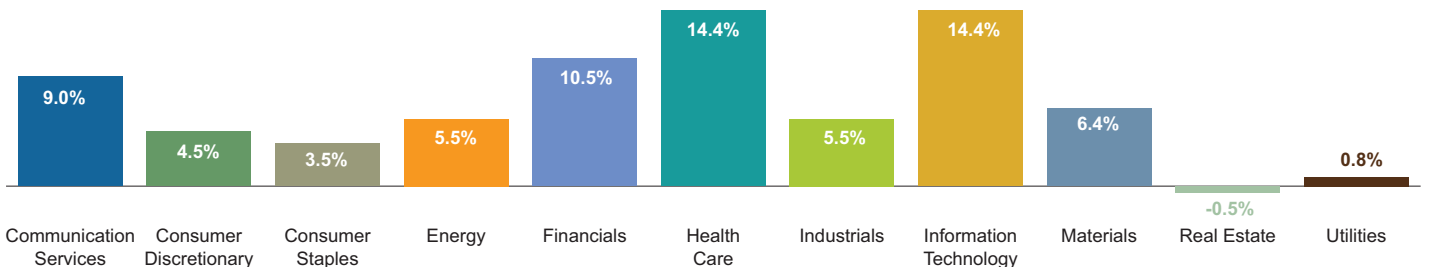
Sources: FTSE Russell and S&P Dow Jones Indices

## U.S. Equity: One-Year Returns



Sources: FTSE Russell and S&P Dow Jones Indices

## Quarterly Performance of Industry Sectors



Source: S&P Dow Jones Indices

- The fourth quarter saw a rotation away from the more defensive sectors (e.g., Consumer Staples (+3.5%), Utilities (+0.8%), and Real Estate (-0.5%)) and into Cyclical, further supporting growth stocks.

### Global/Global ex-U.S. Equity

Global equity markets bounced back in the fourth quarter as uncertainties abated. De-escalation of the U.S.-China trade war coupled with some Brexit clarity boosted markets. With this backdrop, trade-related areas of the market led the rally.

**Global/Developed ex-U.S.** ► *MSCI EAFE: +8.2% | MSCI World ex USA: +8.0% | MSCI ACWI ex USA: +8.9% | MSCI Pacific ex Japan: +5.8% | MSCI Japan: +7.6%*

- British Prime Minister Boris Johnson gained command of the Parliament as a result of the Dec. 12 election, adding further clarity to Brexit and sparking the pound to its best quarterly results in a decade by rising 7.5% relative to the dollar.
- Accommodative policies such as a fiscal stimulus program and dovish monetary rhetoric continued to support the Japanese economy and its market.
- Despite GDP contraction of 3.2% and its first recession in a decade due to political protests, Hong Kong rose 7.3% as U.S.-China trade tensions improved.
- Every sector rose, led by Technology.

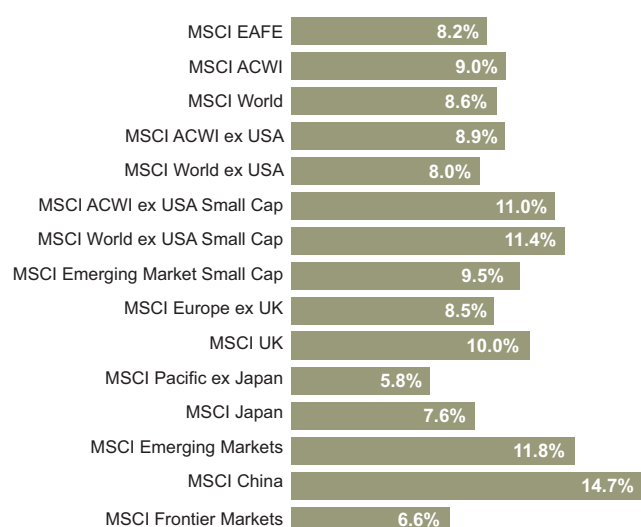
**Emerging Markets** ► *MSCI Emerging Markets Index: +11.8%*

- Emerging markets were the best-performing among the global ex-U.S. markets as trade war uncertainty receded.
- China soared 14.7% with easing trade tensions and expected fiscal and monetary stimulus packages in 2020.
- Brazil posted a 14.2% gain, its best quarter since late 2017, emboldened by President Jair Bolsonaro's deregulation policies, the country's 1.2% GDP growth, and pending pension reform.
- Russia was the best-performing country in 2019 (+50.9%) and a top five performer in the quarter (+16.8%) as rising oil prices over the past year helped fuel sentiment.
- Every sector generated positive returns, led by Asian technology companies, given the "phase one" trade deal, chip demands for 5G, and growth in China.

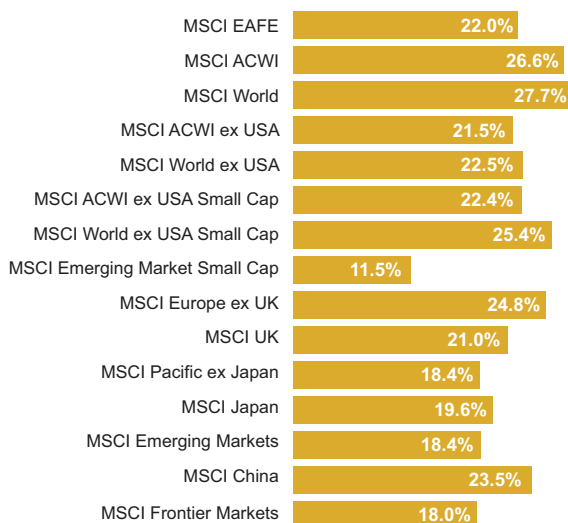
**Global ex-U.S. Small Cap** ► *MSCI World ex USA Small Cap: +11.4% | MSCI EM Small Cap: +9.5%*

- The "risk-on" market environment triggered by the U.S.-China trade war de-escalation enabled small caps to outperform large caps.
- Additional Brexit clarity drove the U.K. as the top country performer (+19.4%) within developed ex-U.S.
- Argentina (+33.5%) and Brazil (+24.8%) were two of the top EM country performers as key appointments in the Argentinian government, and deregulation and pension reform in Brazil, boosted market sentiment.

### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar)



### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar)



Source: MSCI

# Fixed Income

The Federal Open Market Committee (FOMC) cut short-term interest rates by 25 basis points once in the fourth quarter to 1.50%-1.75%, citing weak business investment and export data, along with muted inflation. The overall economic backdrop remained strong supported by a solid labor market, which led to a pause in rate cuts at the most recent FOMC meeting. The FOMC indicated its current monetary policy stance is appropriate to sustain the economic expansion. The European Central Bank kept rates steady while continuing to purchase assets in the open market. Yield movement was mixed in the U.S. as short-term rates fell and long-term rates rose amid ongoing trade negotiations.

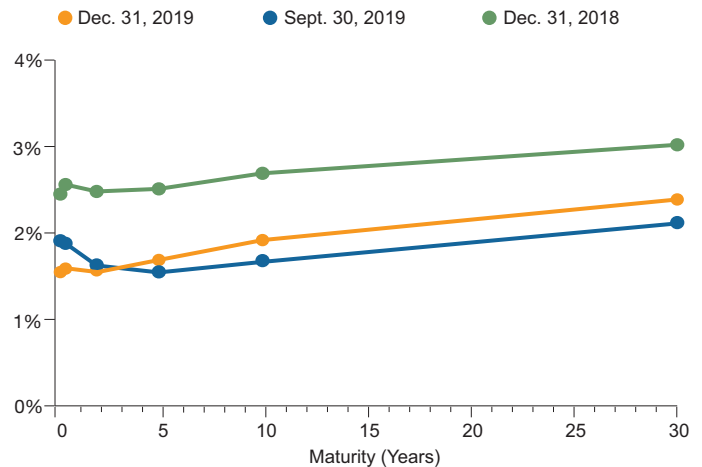
## Core Fixed Income ► *Bloomberg Barclays US Agg: +0.2%*

- Treasuries fell 0.8% as the Treasury yield curve steepened, with yields falling on the short end and rising modestly in the intermediate and long end of the curve on expectations of stronger economic growth.
- The spread between the 2-year and 10-year Treasury remained positive, ending the year at 34 bps.
- Long Treasuries fell 4.1% as the 30-year yield rose 27 bps to end the year at 2.39% as investors favored risk assets.
- TIPS outperformed nominal Treasuries as inflation expectations rose; the 10-year breakeven spread was 1.77% at quarter end, up from 1.53% as of Sept. 30.

## Investment-Grade Corporates ► *Bloomberg Barclays Corporate (Inv. Grade): +1.2%*

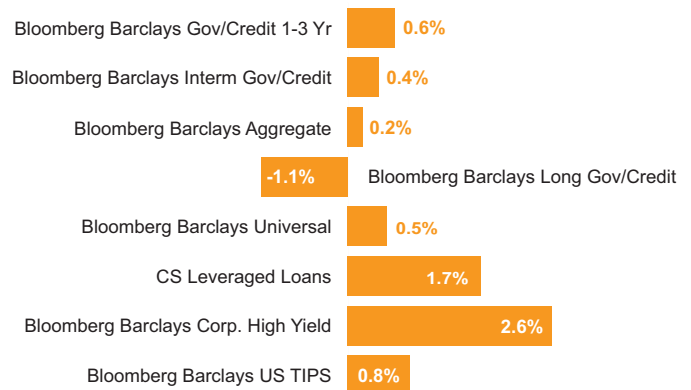
- Investment grade corporate credit spreads narrowed in the fourth quarter and posted the best results within the Bloomberg Barclays US Aggregate Bond Index amid a risk-on market environment; BBB-rated corporates (+1.7%) outperformed single A-rated or higher corporates (+0.7%), indicating investors' willingness to extend risk down the credit spectrum.
- Issuance in the corporate bond market was \$200 billion in the fourth quarter, which was \$8 billion lower than that from a year ago. Issuance was \$140 billion lower compared to

## U.S. Treasury Yield Curves



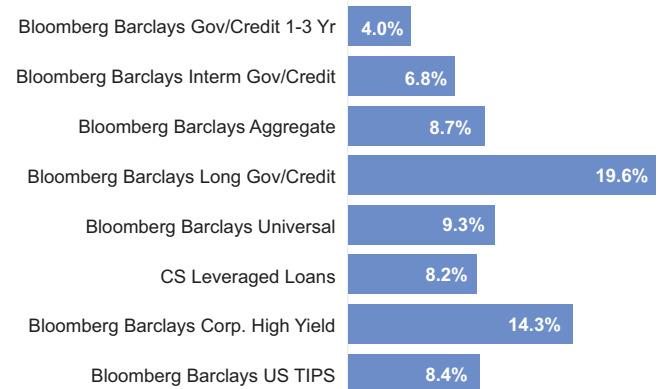
Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

## U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and Credit Suisse

## FIXED INCOME (Continued)

the third quarter, as is typical toward year-end; demand remained strong amid the risk-on market tone as global investors continued their hunt for positive-yielding assets.

### High Yield ► *Bloomberg Barclays Corporate HY: +2.6%*

- CCC-rated corporates (+3.7%) outperformed BB-rated corporates (+2.5%), as the risk-on market sentiment spurred demand for lower-rated securities.
- Spreads across credit quality buckets tightened in the fourth quarter, as the market anticipated improvements in credit fundamentals.

### Leveraged Loans ► *CS Leveraged Loans: +1.7%*

- Bank loans, which have floating-rate coupons, underperformed high yield as investors shunned loans in favor of high yield bonds.
- CLO issuance remained consistent, providing technical support for the leveraged loan market.

### Global Fixed Income ► *Bloomberg Barclays Global Aggregate (unhedged): +0.5% | (hedged): -0.5%*

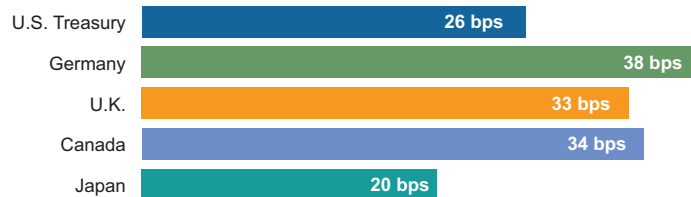
- Developed market sovereign bond yields rose modestly in the fourth quarter as global financial conditions improved, but ended lower on the year. The ECB kept the deposit rate steady at its December meeting; negative-yielding debt totaled less than \$12 trillion, down from \$17 trillion in the third quarter.
- The U.S. dollar declined in the fourth quarter versus the euro, Australian dollar, and British pound; however, it had a modest gain versus the Japanese yen.

### Emerging Market Debt (\$US) ► *JPM EMBI Global Diversified: +1.8% | (Local currency) ► JPM GBI-EM Global Diversified: +5.2%*

- Broadly, emerging market debt benefited from dovish global central banks and a risk-on environment.
- Within the dollar-denominated benchmark, which posted mixed results, Lebanon (-29.4%) was an outlier as the debt-to-GDP ratio continued to swell and anti-government protests persisted; Argentina rallied (+20.8%) to end the year down 23.6% as a new president was inaugurated.

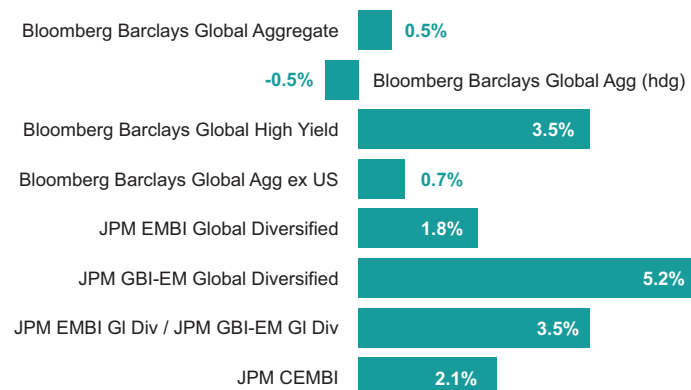
## Change in 10-Year Global Government Bond Yields

3Q19 to 4Q19



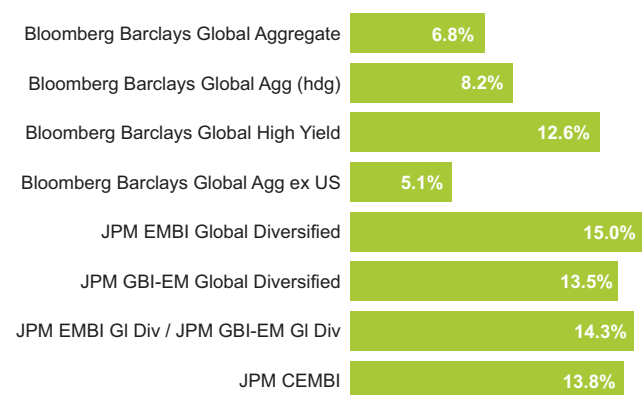
Source: Bloomberg Barclays

## Global ex-U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

## Global ex-U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Returns in the local debt benchmark were largely positive, with only Chile (-6.2%) and the Dominican Republic (-0.7%) declining. South Africa (+10.2%) and Russia (+10.0%) were top performers.



# Real Estate Stays the Course; Real Assets See Strong Gains

REAL ESTATE/REAL ASSETS | Munir Iman and David Welsch

## Returns continue to moderate

- U.S. core real estate returns continued to be driven by income, with limited appreciation this late in the cycle.
- Returns came from net operating income (NOI) growth rather than further capitalization rate compression.
- Industrial kept outperforming other property types.
- Retail continued to show signs of depreciation.
- Defensive posturing and disciplined asset acquisitions were critical.

## U.S. real estate fundamentals remain healthy

- Steady returns continued, driven by above inflation-level rent growth in many metro areas.
- Within the **NCREIF Property Index**, the vacancy rate for Industrial decreased; all other property types increased.
- NOI has been growing annually and is expected to be the primary return driver. Office, Apartment, and Industrial NOI growth have fallen slightly since the third quarter of 2019.

## Pricing remains expensive in the U.S.

- Transaction volumes increased and remained robust.
- Capitalization rates fell slightly; the market remained close to full valuations.

## Global equities outperform REITs

- Global REITs gained 2.0% in the fourth quarter compared to 9.1% for global equities (**MSCI ACWI IMI**).
- U.S. and global ex-U.S. REITs were trading just below NAV.
- Large cap stocks, especially those with higher debt levels, modestly outperformed.
- U.S. REITs lost 1.0% in the fourth quarter, lagging the S&P 500 Index, which rose 9.1%.

## Asia impacted by trade tensions

- U.S.-China trade talks and unrest in Hong Kong impacted real estate markets in the region. Managers continued to find attractive opportunities in some sectors of the market such

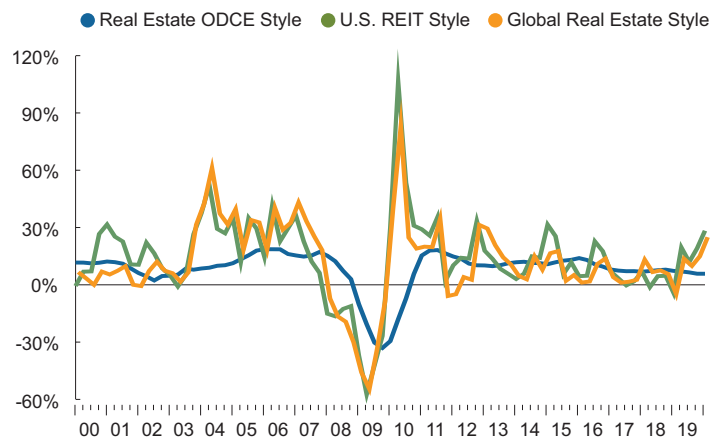
as restructuring opportunities, necessity-based retail, multi-family rental, and logistics.

- The number of open-end core funds operating in the Asia Pacific market, primarily focused on Japan, Australia, South Korea, and Singapore, increased over recent years and includes both sector-diversified and sector-specific (e.g., logistics) funds.
- India had its first successful REIT IPO in 2019, contributing to the institutionalization of the asset class in that country.

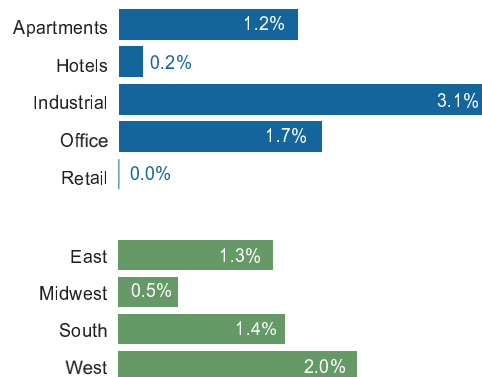
## Fundamentals remain strong in Europe's gateway markets

- Political uncertainty weighed on overall economic growth throughout Europe, but real estate fundamentals remain

## Rolling One-Year Returns



## Sector Quarterly Returns by Property Type and Region



Source: NCREIF

## REAL ESTATE/REAL ASSETS (Continued)

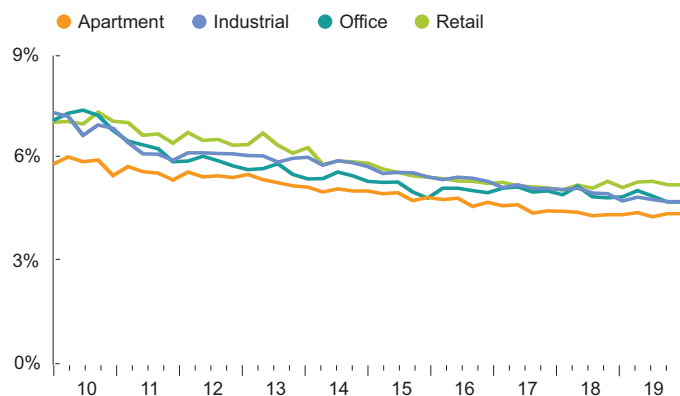
strong in key gateway markets given strong demand and the continued lack of new supply. Cap rates for prime real estate remained low, as real estate continued to be attractive as a result of low interest rates throughout the region.

- Yields between prime and secondary real estate remained wide, providing opportunities for investors targeting transitional assets.

### Infrastructure continues to mature

- Open end funds raised significant capital, and the universe of investible funds increased as the sector matured.
- The closed end fund market kept expanding, with additional offerings in infrastructure debt, emerging markets, and sector-specific areas (e.g., communications and renewables).
- Two mega funds raised in excess of \$20 billion in 2019.

### NCREIF Capitalization Rates by Property Type

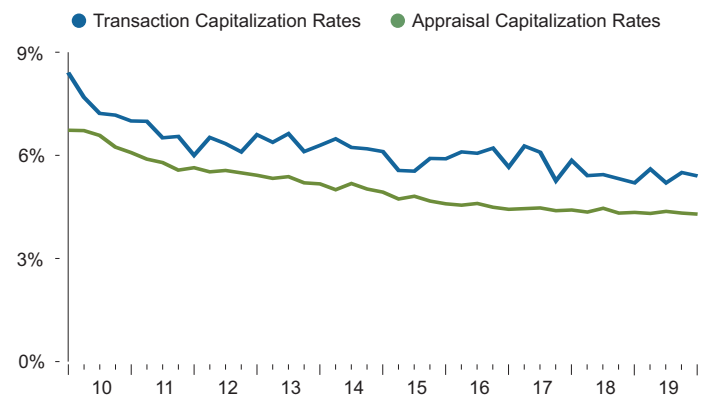


Source: NCREIF. Capitalization rates (net operating income / current market value (or sale price)) are appraisal-based.

### Real assets mostly see gains

- Real assets returns were mostly strong in the fourth quarter. The **Bloomberg Commodity Index** gained 4.4% and the **S&P GSCI Commodity Index** was up 8.3%.
- MLPs, however, declined (**Alerian MLP Index**: -4.1%).
- Spot gold prices were up 3.4%.
- The **DJ-Brookfield Infrastructure Index** rose 4.0%.
- REITs (**FTSE Nareit Equity Index**) modestly fell (-0.8%).
- The **Bloomberg Barclays TIPS Index** rose 0.8%.
- For the year, returns of these indices were positive with Infrastructure (+28.7%) and REITs (+26.0%) leading the pack. MLPs (+6.6%) posted the lowest full-year return.

### NCREIF Transaction and Appraisal Capitalization Rates



Source: NCREIF  
Note: Transaction capitalization rate is equal weighted.

### Callan Database Median and Index Returns\* for Periods Ended 12/31/19

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
<b>Real Estate ODCE Style</b>	<b>1.6</b>	<b>5.8</b>	<b>5.8</b>	<b>6.8</b>	<b>8.4</b>	<b>10.5</b>	<b>6.8</b>
NFI-ODCE (value wt net)	1.3	4.4	4.4	6.1	8.0	10.4	6.7
NCREIF Property	1.5	6.4	6.4	6.7	8.2	10.2	8.3
NCREIF Farmland	1.0	3.4	3.4	5.4	6.7	10.9	13.3
NCREIF Timberland	0.0	1.3	1.3	2.7	3.1	4.4	6.6
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>2.8</b>	<b>24.9</b>	<b>24.9</b>	<b>10.3</b>	<b>7.2</b>	<b>9.9</b>	<b>7.2</b>
FTSE EPRA Nareit Developed	1.7	21.9	21.9	8.3	5.6	8.4	--
<b>Global ex-U.S. Real Estate Style</b>	<b>6.8</b>	<b>25.0</b>	<b>25.0</b>	<b>12.3</b>	<b>7.0</b>	<b>8.4</b>	<b>7.1</b>
FTSE EPRA Nareit Dev ex US	5.6	21.0	21.0	10.8	5.8	6.9	--
<b>U.S. REIT Style</b>	<b>0.0</b>	<b>28.3</b>	<b>28.3</b>	<b>9.2</b>	<b>7.9</b>	<b>12.6</b>	<b>8.6</b>
EPRA Nareit Equity REITs	-0.8	26.0	26.0	8.1	7.2	11.9	7.9

\*Returns less than one year are not annualized.  
Sources: Callan, FTSE Russell, NCREIF



# Cheap and Dear

## PRIVATE EQUITY | Gary Robertson

Global private equity fundraising has now surpassed 2007's famed peak of \$615 billion for two years in a row, with \$658 billion in 2018 and \$692 billion in 2019 (unless otherwise noted, PitchBook provided all private equity data cited). Private equity market liquidity and transactions were brisk in 2019, albeit with moderate declines relative to 2018. Venture capital prices also increased year-over-year.

In 2019, the \$692 billion raised by private equity partnerships holding final closes globally was across 924 partnerships. The dollar amount rose 5% from 2018, but the number of funds fell 1%. Fourth quarter final closes totaled \$188 billion, down 11% from the third quarter. The number of funds totaled 255, up 9%.

New buyout investments for 2019 totaled 7,555, down 15% from 2018. Dollar volume fell 24% to \$522 billion. The fourth quarter saw 1,642 new investments, a 17% decline, and dollar volume fell 13% to \$137 billion.

The year produced 28,868 rounds of new investment in venture capital (VC) companies, down 12% from 2018. The year's announced volume of \$257 billion was down 13%. The fourth quarter saw 5,301 new rounds, a 27% decline, and dollar volume fell 6% to \$59 billion.

Last year also saw 2,054 buyout-backed private M&A exits, down 28% from 2018, with proceeds of \$608 billion, down 13%. The

### Funds Closed 1/1/2019 to 12/31/2019

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	412	74,014	11%
Growth Equity	66	80,931	12%
Buyouts	256	381,368	55%
Mezzanine Debt	67	76,986	11%
Distressed	11	15,823	2%
Energy	9	9,724	1%
Secondary and Other	59	37,854	5%
Fund-of-funds	44	15,663	2%
<b>Totals</b>	<b>924</b>	<b>692,363</b>	<b>100%</b>

Source: PitchBook (Figures may not total due to rounding.)

fourth quarter had 420 private exits, down 23%, with proceeds of \$154 billion, down 35%. The year's 95 buyout-backed IPOs declined 41% from 2018, with proceeds of \$30 billion, down 32%. Fourth quarter buyout-backed IPOs were a bright spot, with 24 offerings, a jump of 41% from the third quarter, and \$7 billion of proceeds, up 17%.

Venture-backed M&A exits for the year totaled 1,554, down 8% from 2018. Announced dollar volume of \$122 billion was down 13%. The final quarter had 323 exits, down 19%, but announced value was up 22%. The year's 209 venture-backed IPOs fell 5% from 2018, with proceeds of \$42 billion, down 9%. The fourth quarter had 61 VC-backed offerings, an 11% rise, but the \$6 billion of proceeds dropped 33% from the third quarter.

### Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/2019\*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years
All Venture	-0.37	13.01	14.56	14.39	14.83	11.41	11.02
Growth Equity	1.32	12.76	16.02	12.77	14.03	13.41	13.13
All Buyouts	1.43	8.85	15.32	12.83	14.59	13.65	12.04
Mezzanine	0.87	6.02	10.86	10.00	10.85	10.58	8.60
Credit Opportunities	-0.36	0.61	7.73	5.49	10.47	9.28	9.90
Control Distressed	1.05	4.38	8.86	7.83	11.17	10.52	10.58
<b>All Private Equity</b>	<b>0.92</b>	<b>9.59</b>	<b>14.41</b>	<b>12.33</b>	<b>14.03</b>	<b>12.72</b>	<b>11.72</b>
S&P 500	1.70	4.25	13.39	10.84	13.24	9.01	6.33

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and S&P Dow Jones Indices

\*Most recent data available at time of publication

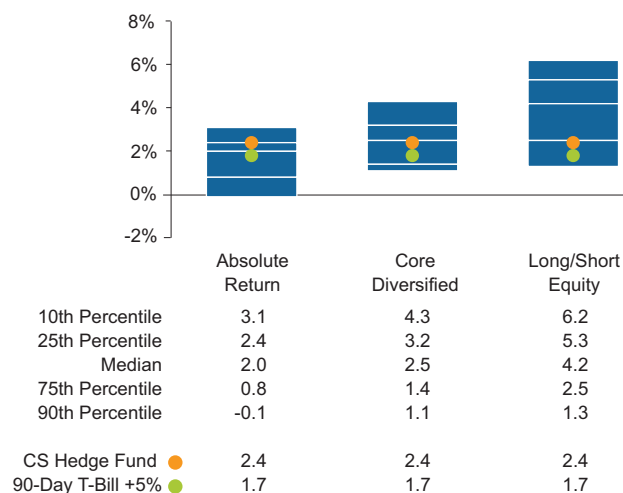
Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of *Capital Market Review* and other Callan publications.

# Party Like it's 1999 ... or Not

HEDGE FUNDS/MACs | Jim McKee

- Hedge funds participated more cautiously in the fourth quarter risk-on market, as expected.
- Portfolios with exposure to EM and long-short equity fared much better than those emphasizing equity market neutral or macro strategies.
- In the fourth quarter, *Long/Short Equity* (+5.1%) rode the wave of market beta, but alpha was more sporadic, leaving little extra risk-adjusted return. Tech and health care were positive outliers.
- *Equity Market Neutral* (+1.1%) barely clawed back its recent September loss, with stocks lacking dispersion to create trading opportunities.
- *Managed Futures* fell 2.6% as bond rates reversed their downward trend, but it finished 2019 with a solid 9% gain.
- *Distressed* (+1.3%) continued to struggle with chronically weak credits like energy, finishing 2019 up 1.4%, making it the **Credit Suisse Hedge Fund Index's** weakest performer for the year, just below *Equity Market Neutral* (+1.6%).

## Hedge Fund-of-Funds Style Group Returns



Sources: Callan, Credit Suisse, and Federal Reserve

## Callan Database Median and Index Returns\* for Periods Ended 12/31/19

Hedge Fund Universe	Quarter	Year	3 Years	5 Years	10 Years	15 Years
Callan Fund-of-Funds Database	2.69	7.10	4.32	3.08	4.49	4.49
Callan Absolute Return FOF Style	1.99	5.63	3.16	3.01	4.46	4.00
Callan Core Diversified FOF Style	2.47	6.70	3.59	2.41	4.25	4.16
Callan Long/Short Equity FOF Style	4.24	12.79	5.95	4.00	5.03	5.49
Credit Suisse Hedge Fund	2.44	9.31	4.27	2.65	4.25	4.75
CS Convertible Arbitrage	3.34	8.15	3.54	3.59	4.17	3.90
CS Distressed	1.27	1.39	2.29	1.52	4.23	4.86
CS Emerging Markets	7.75	13.38	5.98	4.41	4.62	6.06
CS Equity Market Neutral	1.06	1.58	1.53	0.31	1.37	-0.58
CS Event-Driven Multi	2.66	11.42	3.79	1.11	3.17	4.73
CS Fixed Income Arb	2.29	6.10	4.54	3.69	5.44	3.80
CS Global Macro	0.75	10.38	4.04	3.16	4.73	6.18
CS Long/Short Equity	5.06	12.17	6.66	3.94	5.15	5.58
CS Managed Futures	-2.59	9.01	1.67	-0.61	1.56	2.63
CS Multi-Strategy	1.28	7.25	4.27	4.21	6.02	5.76
CS Risk Arbitrage	1.98	4.89	3.59	3.40	2.72	3.68
HFRI Asset Wtd Composite	2.32	7.57	4.45	3.21	4.46	--
90-Day T-Bill + 5%	1.67	7.28	6.67	6.07	5.58	6.39

\*Gross of fees. Sources: Callan, Credit Suisse, Hedge Fund Research

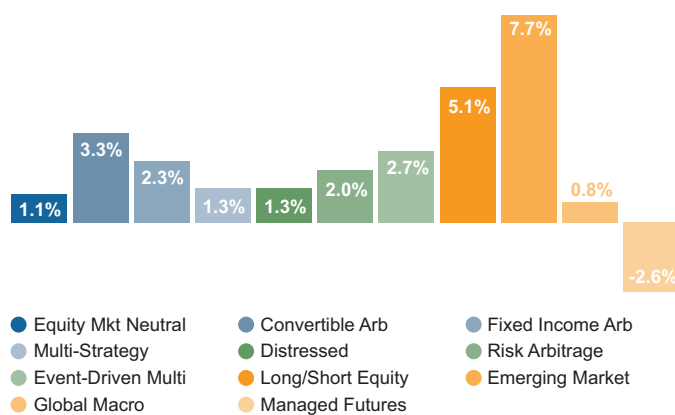
### Long Biased MACs rebounded; Risk Parity settled down

- MAC performance varied depending on net market exposures.
- Last quarter’s 5.5% return of the 60% MSCI ACWI and 40% Bloomberg Aggregate benchmark was a tough hurdle to beat.
- *Long-Biased MACs* benefited from their typically heavy equity exposure, particularly EM.
- **HFR Risk Parity Index** targeting 10% volatility was moderately positive (+2.7%), reflecting strong stock gains partially offset by tepid bond returns.
- **Eurekahedge Multi-Factor Risk Premia Index** gained 3.7% based on solid returns from carry trades in risk-on markets offset by a reversal of last year’s downward trend in yields.
- *Absolute Return MACs* edged ahead with their higher-quality asset bias amid the quarter’s less discriminating risk-on market.

### Volatility suppressed

- With the Fed lowering rates by another quarter point in the fourth quarter while rescuing repo funding markets with unprecedented cash infusions, the Fed openly served the punch bowl of liquidity for “risk on” investors.

### Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

- Equity volatility, as illustrated by VIX, continued to settle at below-average levels, indicating fewer trading opportunities for hedge funds.
- While last quarter’s melt-up reflected increased comfort with today’s easy monetary and fiscal policies, a revived trade war with China or another geopolitical conflict could quickly undo that market sentiment.

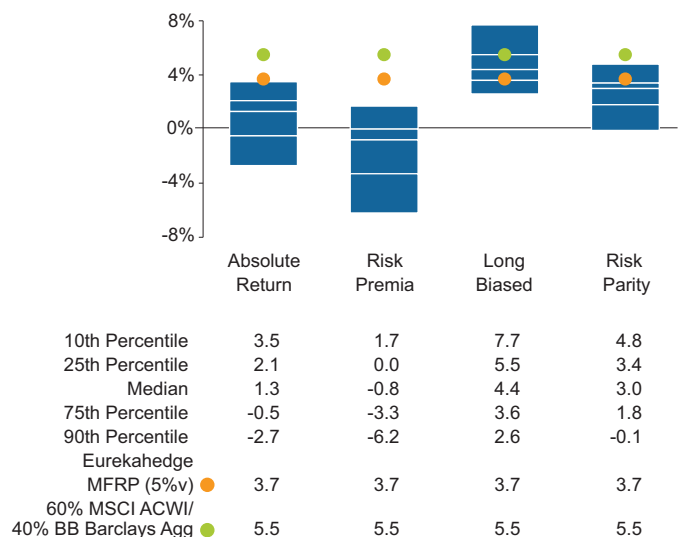
### Falling cash returns remove any hint of a tailwind for hedge funds

- As short rates fell, dwindling cash returns and short interest rebates removed previously favorable trade winds from hedge fund sails.

### Callan Institutional Hedge Fund Peer Group to launch

- To provide a more representative benchmark for our clients directly investing in hedge funds, Callan has created the Callan Institutional Hedge Fund Peer Group, a select collection of hedge funds meeting minimum size and other criteria that make them more attractive to institutional investors.

### MAC Style Group Returns



Sources: Bloomberg Barclays, Callan, Eurekahedge, S&P Dow Jones Indices

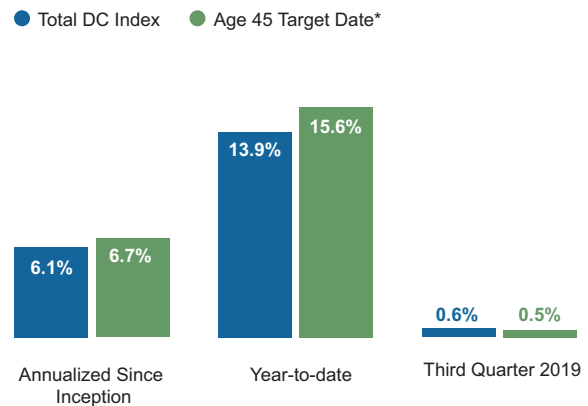
# DC Index Gains Slightly but Tops Age 45 TDF

DEFINED CONTRIBUTION | Patrick Wisdom

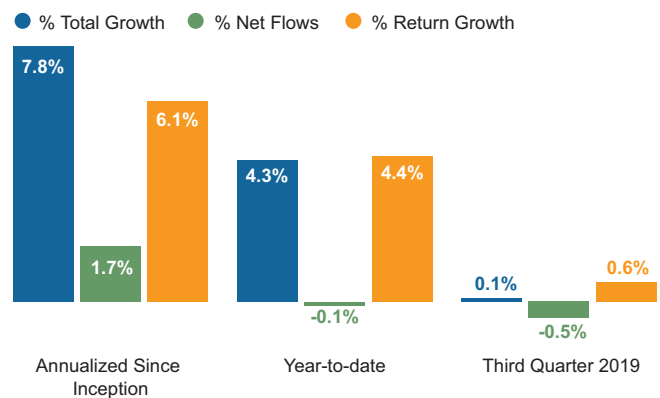
- The **Callan DC Index™** rose 0.6% in the third quarter after gains of 9.6% and 3.3% in the first and second quarters. The Age 45 Target Date Fund's smaller gain of 0.5% was largely due to its higher allocation to equity, which lagged fixed income during the quarter. The Age 45 TDF's bigger equity allocation, however, has contributed to a higher since-inception return (6.7% vs. 6.1%).
- The Index's growth in balances of 0.1% was much smaller than the first quarter (9.8%) and second quarter (3.3%).
- U.S. fixed income saw the largest inflows for the quarter (57.7%), for the first time since the third quarter of 2010. TDFs saw the second-largest inflow (26.2%), much lower than in recent quarters. U.S. large cap equity (-52.2%), and U.S. small/mid cap equity (-19.1%) had the largest outflows.
- Third-quarter turnover (i.e., net transfer activity levels within DC plans) decreased to 0.35% from the previous quarter's 0.54%.
- The allocation to equity within the Index fell to 69.5% from 70.0% in the previous quarter, after two quarters of increases.
- The percentage of assets allocated to U.S. fixed income increased by 0.5% to 6.3%. Similarly, the allocation to stable value increased by 0.3% to an overall allocation of 10.4%.
- TDFs experienced the largest decrease in asset allocation (-0.6%). With this decrease, 29.6% of assets were allocated to TDFs, the lowest since the first quarter of 2017.
- Stable value's prevalence within DC plans decreased for the first time in eight quarters and now sits at 76%, but still up nearly 3 percentage points from a year ago.
- Fees decreased across all plan sizes from the previous year, driven by a combination of increased adoption of passive mandates, as well as lower breakpoints and the use of less expensive vehicles and share classes for active options.

*The Callan DC Index is an equally weighted index tracking the cash flows and performance of nearly 90 plans, representing more than one million DC participants and over \$150 billion in assets. The Index is updated quarterly and is available on Callan's website, as is the quarterly DC Observer newsletter.*

## Investment Performance



## Growth Sources



## Net Cash Flow Analysis (Third Quarter 2019) (Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
U.S. Fixed Income	57.73%
Target Date Funds	26.18%
U.S. Smid Cap	-19.09%
U.S. Large Cap	-52.23%
<b>Total Turnover**</b>	<b>0.35%</b>

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

Note: DC Index inception date is January 2006.

\* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

\*\* Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.



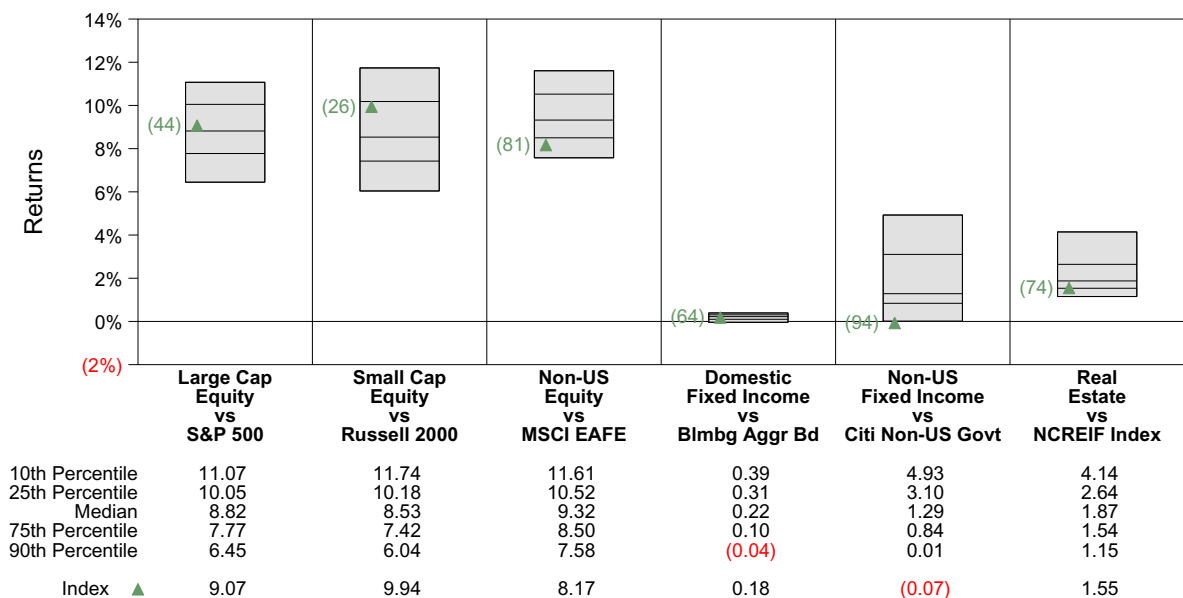
## Market Overview

### Active Management vs Index Returns

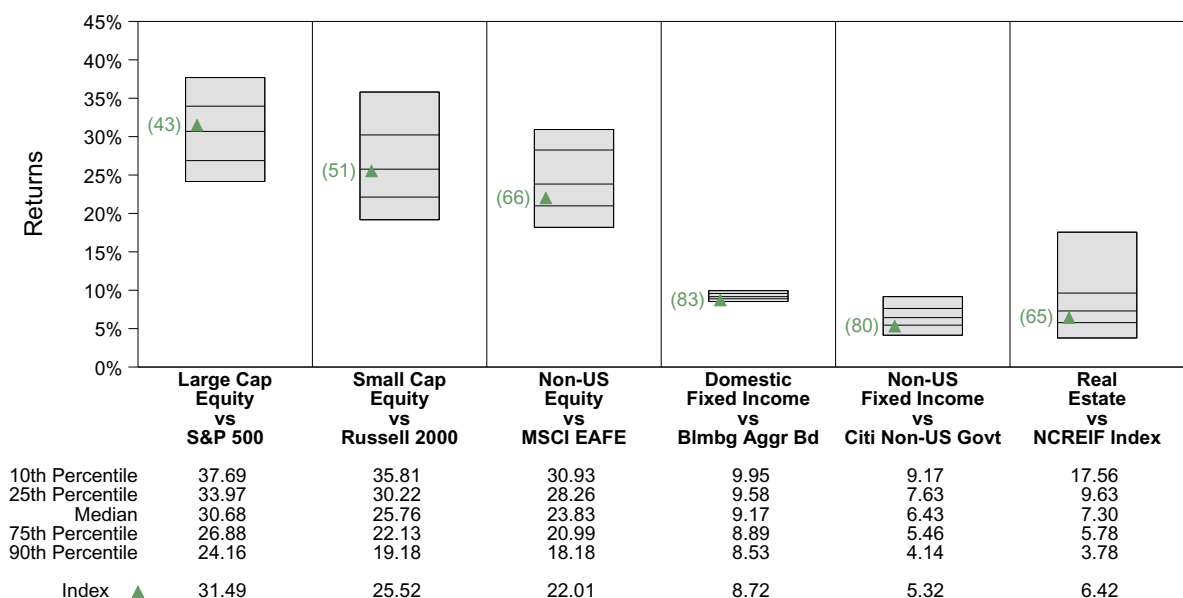
#### Market Overview

The charts below illustrate the range of returns across managers in Callan's Separate Account database over the most recent one quarter and one year time periods. The database is broken down by asset class to illustrate the difference in returns across those asset classes. An appropriate index is also shown for each asset class for comparison purposes. As an example, the first bar in the upper chart illustrates the range of returns for domestic equity managers over the last quarter. The triangle represents the S&P 500 return. The number next to the triangle represents the ranking of the S&P 500 in the Large Cap Equity manager database.

#### Range of Separate Account Manager Returns by Asset Class One Quarter Ended December 31, 2019



#### Range of Separate Account Manager Returns by Asset Class One Year Ended December 31, 2019





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## ASSET ALLOCATION AND PERFORMANCE

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### **Asset Allocation and Performance**

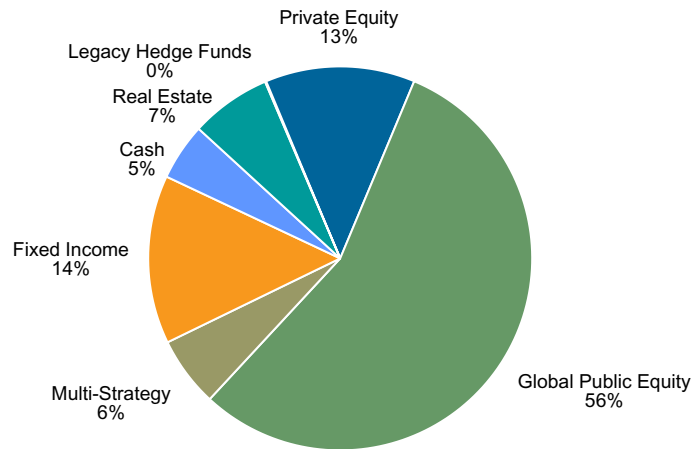
This section begins with an overview of the fund's asset allocation at the broad asset class level. This is followed by a top down performance attribution analysis which analyzes the fund's performance relative to the performance of the fund's policy target asset allocation. The fund's historical performance is then examined relative to funds with similar objectives. Performance of each asset class is then shown relative to the asset class performance of other funds. Finally, a summary is presented of the holdings of the fund's investment managers, and the returns of those managers over various recent periods.



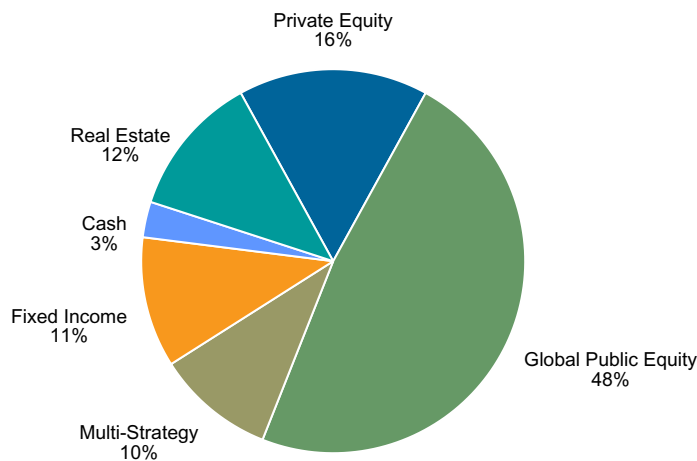
## Actual vs Target Asset Allocation As of December 31, 2019

The first chart below shows the Fund's asset allocation as of December 31, 2019. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.

**Actual Asset Allocation**



**Target Asset Allocation**

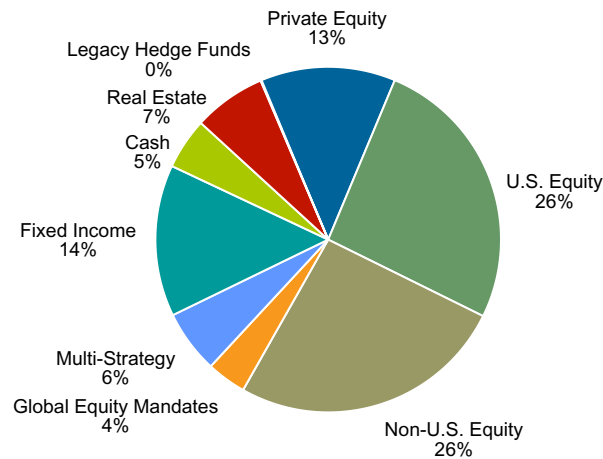


Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Private Equity	3,936,535	12.7%	16.0%	(3.3%)	(1,005,246)
Global Public Equity	17,164,048	55.6%	48.0%	7.6%	2,338,707
Multi-Strategy	1,816,976	5.9%	10.0%	(4.1%)	(1,271,637)
Fixed Income	4,375,547	14.2%	11.0%	3.2%	978,073
Cash	1,471,400	4.8%	3.0%	1.8%	544,816
Real Estate	2,085,504	6.8%	12.0%	(5.2%)	(1,620,831)
Legacy Hedge Funds	36,118	0.1%	0.0%	0.1%	36,118
<b>Total</b>	<b>30,886,127</b>	<b>100.0%</b>	<b>100.0%</b>		

## Actual Asset Allocation As of December 31, 2019

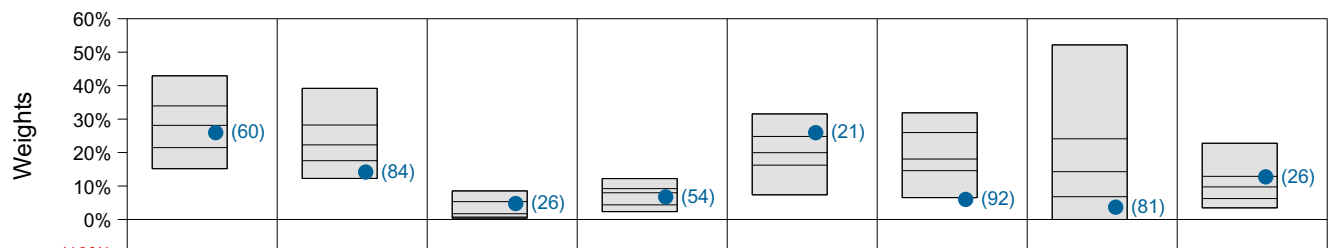
The first chart below shows the Fund's asset allocation as of December 31, 2019. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spons- V Lg DB (>10B).

### Actual Asset Allocation



Asset Class	\$000s Actual	Weight Actual
Private Equity	3,936,535	12.7%
U.S. Equity	8,016,584	26.0%
Non-U.S. Equity	8,011,181	25.9%
Global Equity Mandates	1,134,976	3.7%
Multi-Strategy	1,816,976	5.9%
Fixed Income	4,375,547	14.2%
Cash	1,471,400	4.8%
Real Estate	2,085,504	6.8%
Legacy Hedge Funds	36,118	0.1%
<b>Total</b>	<b>30,884,821</b>	<b>100.0%</b>

### Asset Class Weights vs Callan Public Fund Spons- V Lg DB (>10B)



	U.S. Equity	Fixed Income	Cash	Real Estate	Intl Equity	Alternative	Global Equity Mandates	Private Equity
10th Percentile	42.94	39.19	8.54	12.23	31.56	31.88	52.18	22.79
25th Percentile	33.95	28.23	5.34	9.22	24.82	25.98	24.11	12.90
Median	28.13	22.30	1.73	7.98	19.97	18.07	14.29	9.74
75th Percentile	21.49	17.58	0.73	4.37	16.24	14.59	6.82	6.26
90th Percentile	15.19	12.27	0.42	2.35	7.38	6.53	0.00	3.48
<b>Fund</b>	<b>25.96</b>	<b>14.17</b>	<b>4.76</b>	<b>6.75</b>	<b>25.94</b>	<b>6.00</b>	<b>3.67</b>	<b>12.75</b>

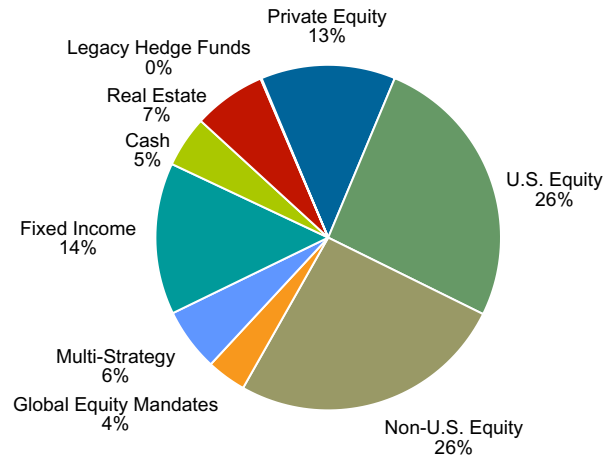
% Group Invested	U.S. Equity	Fixed Income	Cash	Real Estate	Intl Equity	Alternative	Global Equity Mandates	Private Equity
	100.00%	100.00%	80.77%	88.46%	100.00%	73.08%	23.08%	30.77%

\*Excludes transition accounts

## Actual Asset Allocation As of December 31, 2019

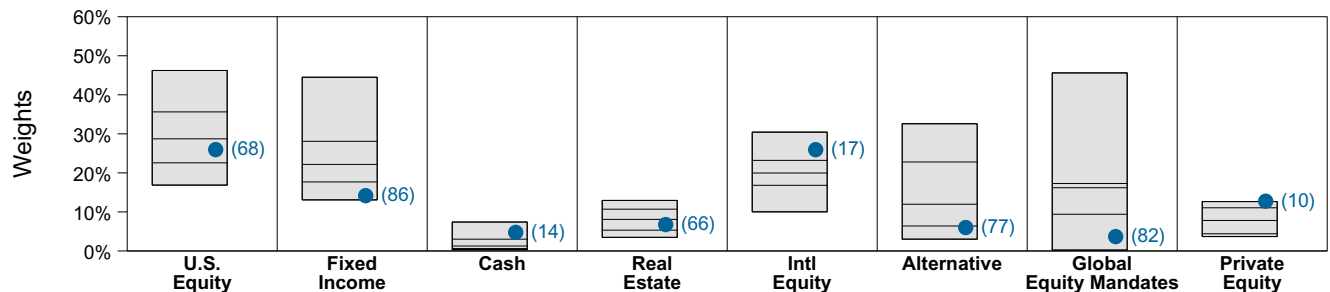
The first chart below shows the Fund's asset allocation as of December 31, 2019. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spns - Large (>1B).

### Actual Asset Allocation



Asset Class	\$000s Actual	Weight Actual
Private Equity	3,936,535	12.7%
U.S. Equity	8,016,584	26.0%
Non-U.S. Equity	8,011,181	25.9%
Global Equity Mandates	1,134,976	3.7%
Multi-Strategy	1,816,976	5.9%
Fixed Income	4,375,547	14.2%
Cash	1,471,400	4.8%
Real Estate	2,085,504	6.8%
Legacy Hedge Funds	36,118	0.1%
<b>Total</b>	<b>30,884,821</b>	<b>100.0%</b>

### Asset Class Weights vs Callan Public Fund Spns - Large (>1B)



10th Percentile	46.23	44.49	7.41	12.94	30.44	32.59	45.61	12.65
25th Percentile	35.62	28.09	3.02	10.70	23.20	22.79	17.28	11.06
Median	28.72	22.17	1.27	8.09	19.97	11.97	16.19	7.81
75th Percentile	22.57	17.68	0.62	5.33	16.82	6.40	9.40	4.40
90th Percentile	16.87	13.08	0.34	3.48	10.02	3.02	0.23	3.69

<b>Fund</b>	●	25.96	14.17	4.76	6.75	25.94	6.00	3.67	12.75
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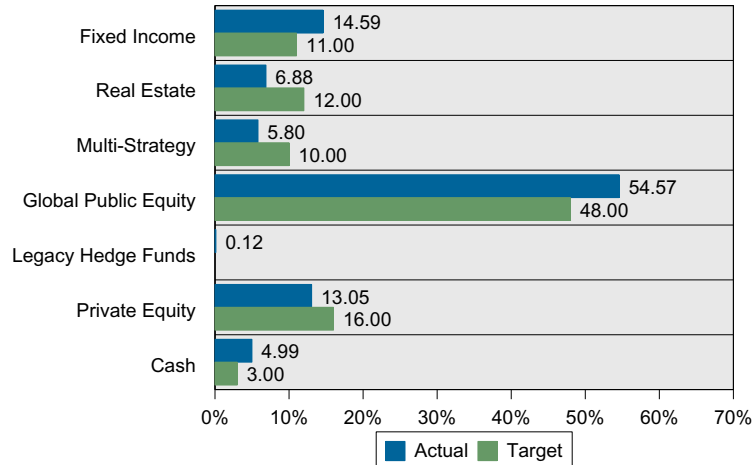
% Group Invested	96.77%	96.77%	79.03%	82.26%	96.77%	64.52%	19.35%	41.94%
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\*Excludes transition accounts

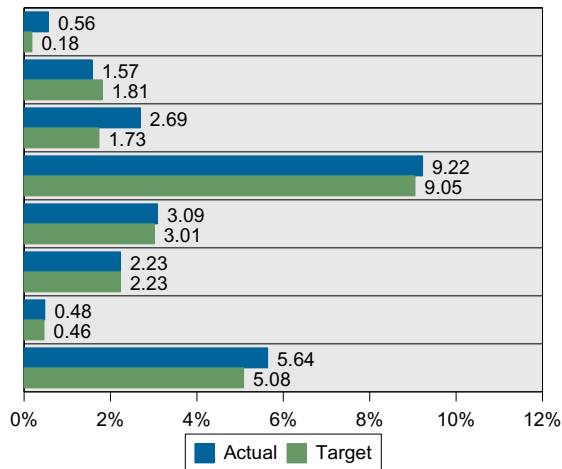
## Quarterly Total Fund Absolute Attribution - December 31, 2019

The following analysis approaches Total Fund Attribution from the perspective of Absolute Return Contribution. Absolute return attribution quantifies the contribution of each asset class to total fund absolute performance as well as target performance. Absolute return contribution is a function of both the size of the exposure (\$ weight) to each asset class as well as the actual return of each asset class.

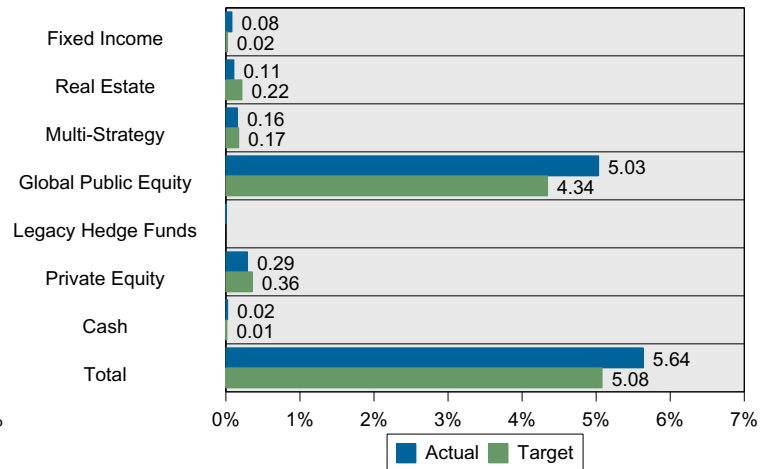
**Actual and Target Weights**



**Actual and Target Returns**



**Absolute Return Contributions**



### Absolute Attribution Effects for Quarter ended December 31, 2019

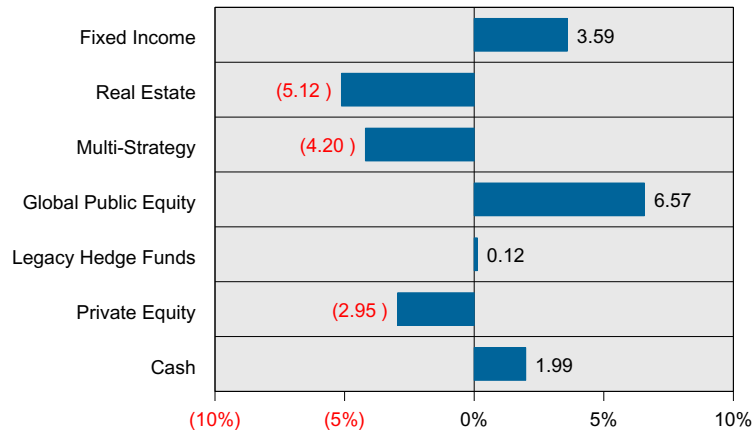
	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
Fixed Income	15%	0.56%	0.08%	11%	0.18%	0.02%	0.06%
Real Estate	7%	1.57%	0.11%	12%	1.81%	0.22%	(0.11%)
Multi-Strategy	6%	2.69%	0.16%	10%	1.73%	0.17%	(0.02%)
Global Public Equity	55%	9.22%	5.03%	48%	9.05%	4.34%	0.69%
Legacy Hedge Funds	0%	3.09%	0.00%	0%	3.01%	0.00%	0.00%
Private Equity	13%	2.23%	0.29%	16%	2.23%	0.36%	(0.07%)
Cash	5%	0.48%	0.02%	3%	0.46%	0.01%	0.01%
<b>Total Fund Return</b>		<b>5.64%</b>		<b>Target Return</b>	<b>5.08%</b>		<b>0.56%</b>

\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

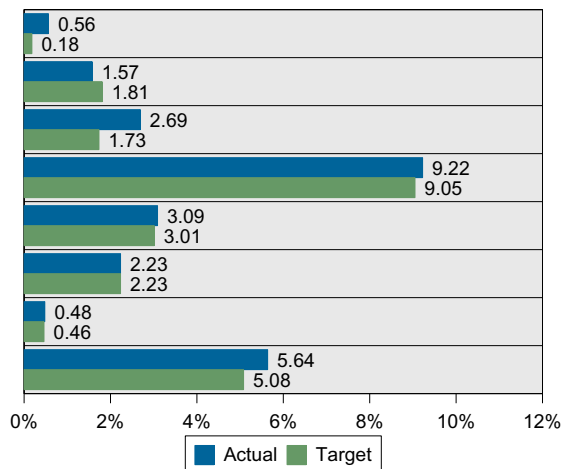
## Quarterly Total Fund Relative Attribution - December 31, 2019

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

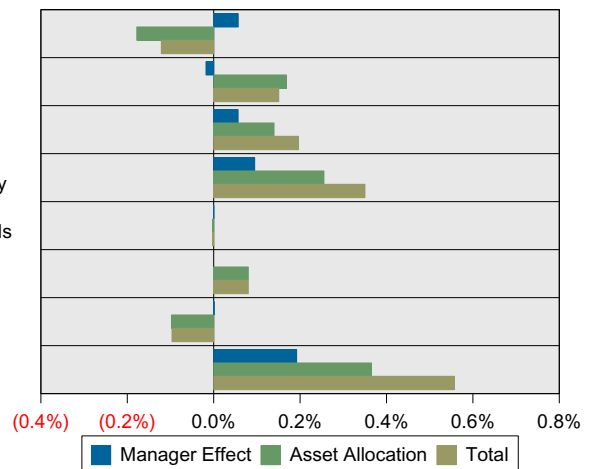
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended December 31, 2019

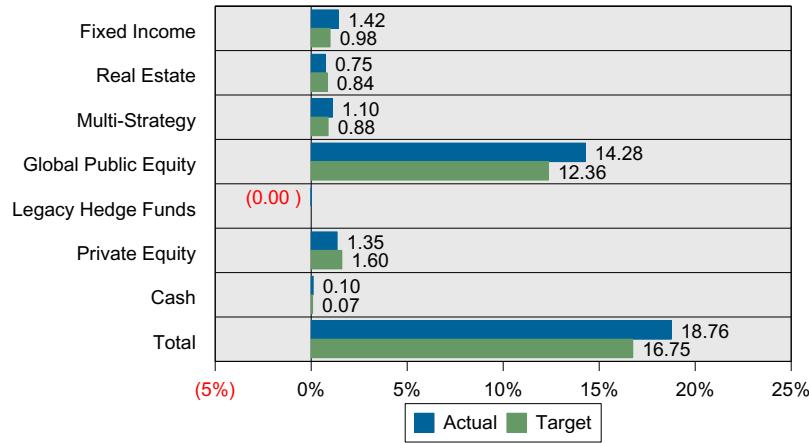
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Fixed Income	15%	11%	0.56%	0.18%	0.06%	(0.18%)	(0.12%)
Real Estate	7%	12%	1.57%	1.81%	(0.02%)	0.17%	0.15%
Multi-Strategy	6%	10%	2.69%	1.73%	0.06%	0.14%	0.20%
Global Public Equity	55%	48%	9.22%	9.05%	0.09%	0.26%	0.35%
Legacy Hedge Funds	0%	0%	3.09%	3.01%	0.00%	(0.00%)	(0.00%)
Private Equity	13%	16%	2.23%	2.23%	0.00%	0.08%	0.08%
Cash	5%	3%	0.48%	0.46%	0.00%	(0.10%)	(0.10%)
<b>Total</b>			<b>5.64%</b>	<b>5.08%</b>	<b>+ 0.19%</b>	<b>+ 0.37%</b>	<b>0.56%</b>

\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

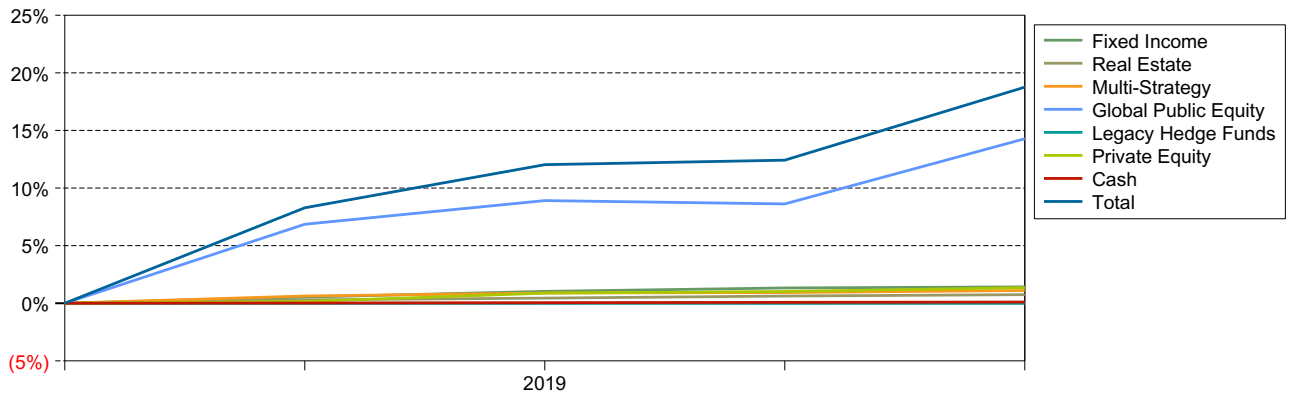
## Cumulative Total Fund Absolute Attribution - December 31, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of absolute total fund Performance and target performance. These cumulative results quantify the longer-term contribution of each asset class to absolute total fund return as well as the target return.

### One Year Absolute Return Contributions



### Cumulative Absolute Return Contributions



### One Year Absolute Attribution Effects

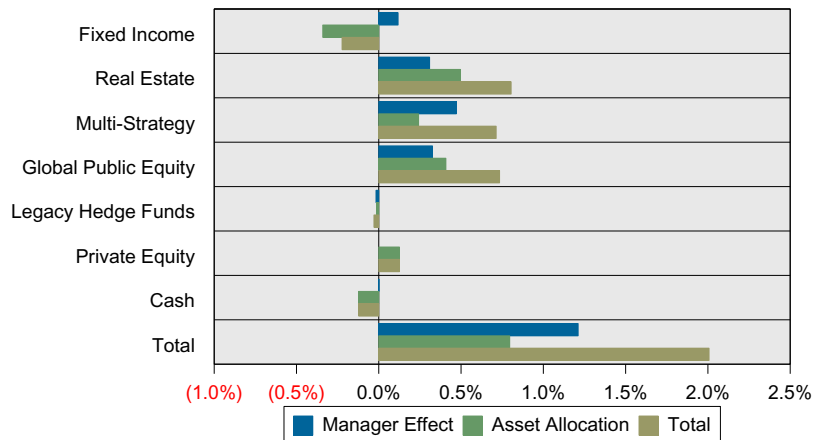
	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
Fixed Income	15%	9.51%	1.42%	11%	8.72%	0.98%	0.44%
Real Estate	7%	10.98%	0.75%	12%	6.59%	0.84%	(0.09%)
Multi-Strategy	7%	14.71%	1.10%	10%	8.64%	0.88%	0.22%
Global Public Equity	54%	27.00%	14.28%	48%	26.35%	12.36%	1.92%
Legacy Hedge Funds	0%	(1.49%)	(0.00%)	0%	8.32%	0.00%	(0.00%)
Private Equity	13%	9.55%	1.35%	16%	9.55%	1.60%	(0.25%)
Cash	4%	2.31%	0.10%	3%	2.28%	0.07%	0.03%
<b>Total Fund Return</b>			<b>18.76%</b>		<b>Target Return</b>	<b>16.75%</b>	<b>2.01%</b>

\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

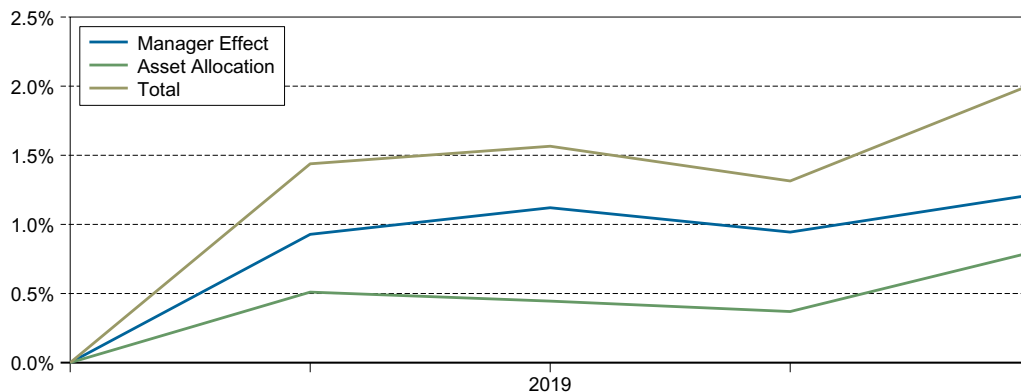
## Cumulative Total Fund Relative Attribution - December 31, 2019

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### One Year Relative Attribution Effects



### Cumulative Relative Attribution Effects



### One Year Relative Attribution Effects

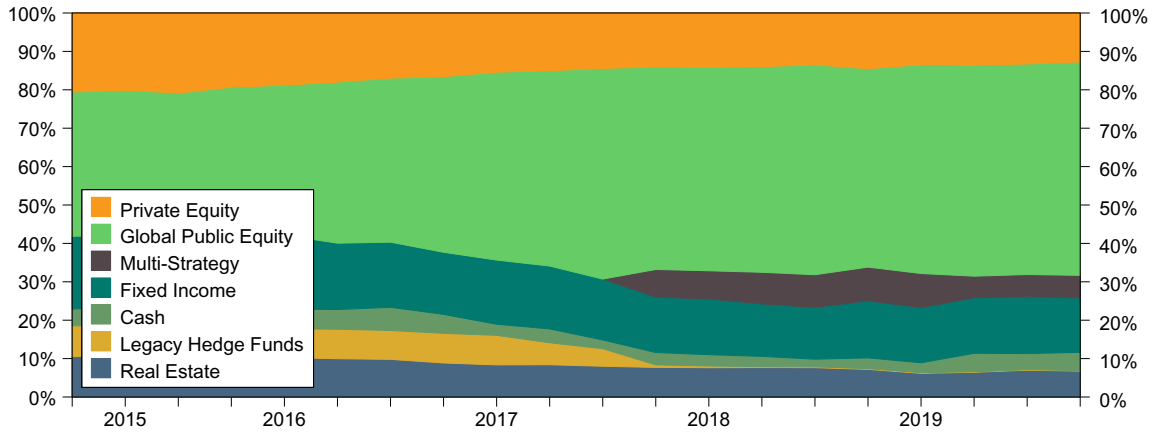
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Fixed Income	15%	11%	9.51%	8.72%	0.12%	(0.34%)	(0.22%)
Real Estate	7%	12%	10.98%	6.59%	0.31%	0.50%	0.80%
Multi-Strategy	7%	10%	14.71%	8.64%	0.47%	0.24%	0.71%
Global Public Equity	54%	48%	27.00%	26.35%	0.33%	0.41%	0.73%
Legacy Hedge Funds	0%	0%	(1.49%)	8.32%	(0.02%)	(0.01%)	(0.03%)
Private Equity	13%	16%	9.55%	9.55%	0.00%	0.13%	0.13%
Cash	4%	3%	2.31%	2.28%	0.00%	(0.12%)	(0.12%)
<b>Total</b>			<b>18.76%</b>	<b>16.75%</b>	<b>+ 1.21%</b>	<b>+ 0.80%</b>	<b>2.01%</b>

\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

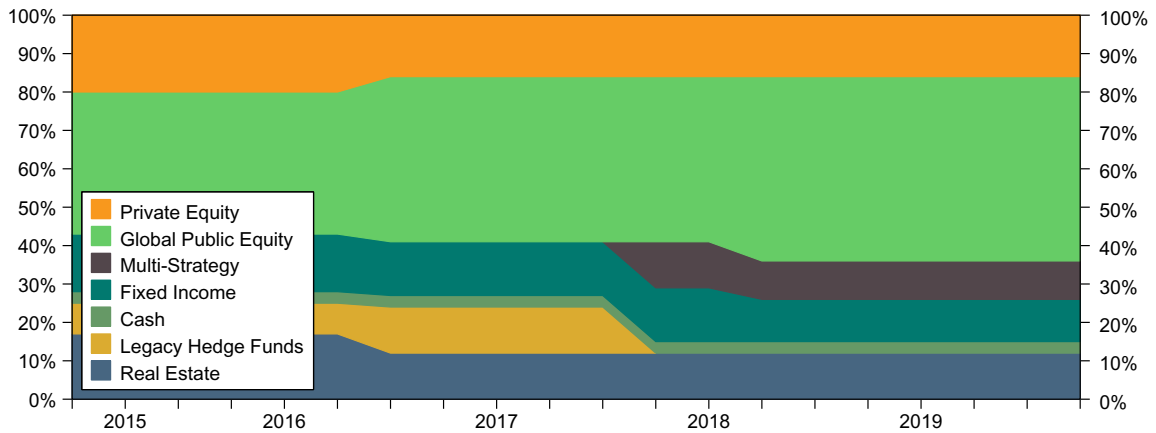
## Actual vs Target Historical Asset Allocation

The Historical asset allocation for a fund is by far the largest factor explaining its performance. The charts below show the fund's historical actual asset allocation, the fund's historical target asset allocation, and the historical asset allocation of the average fund in the Callan Public Fund Spons- V Lg DB (>10B).

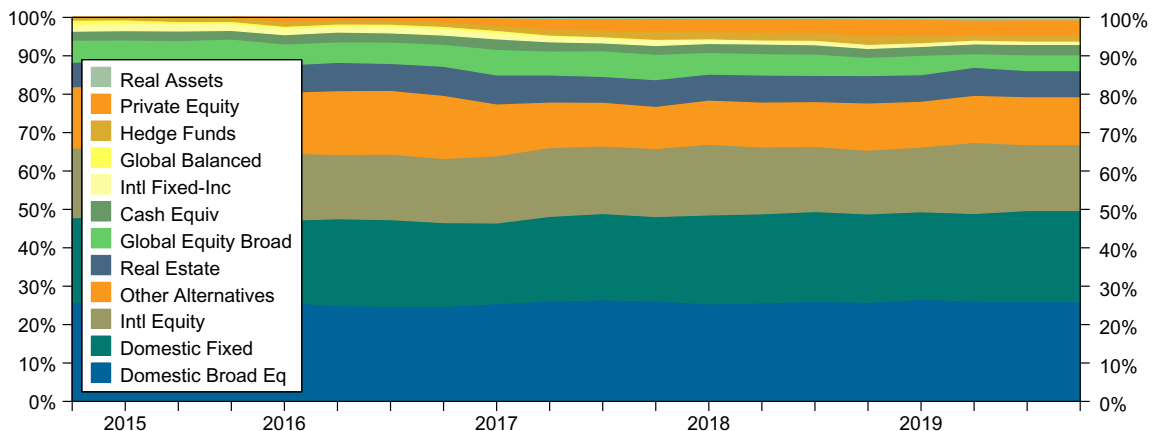
### Actual Historical Asset Allocation



### Target Historical Asset Allocation



### Average Callan Public Fund Spons- V Lg DB (>10B) Historical Asset Allocation





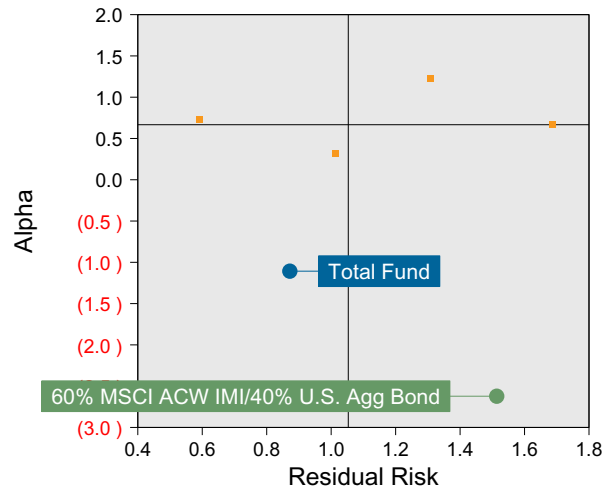
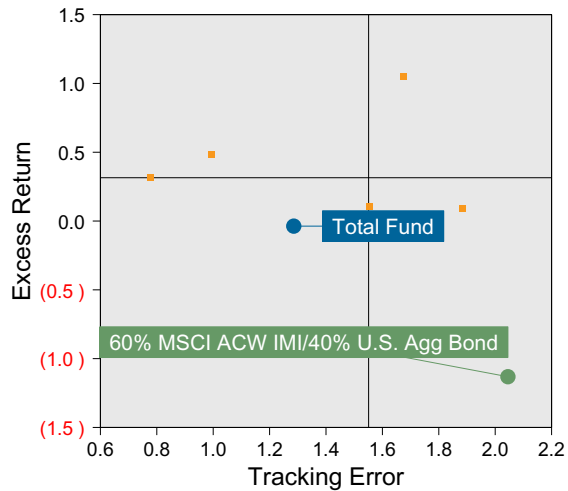
# Total Fund

## Total Fund vs Target Risk Analysis

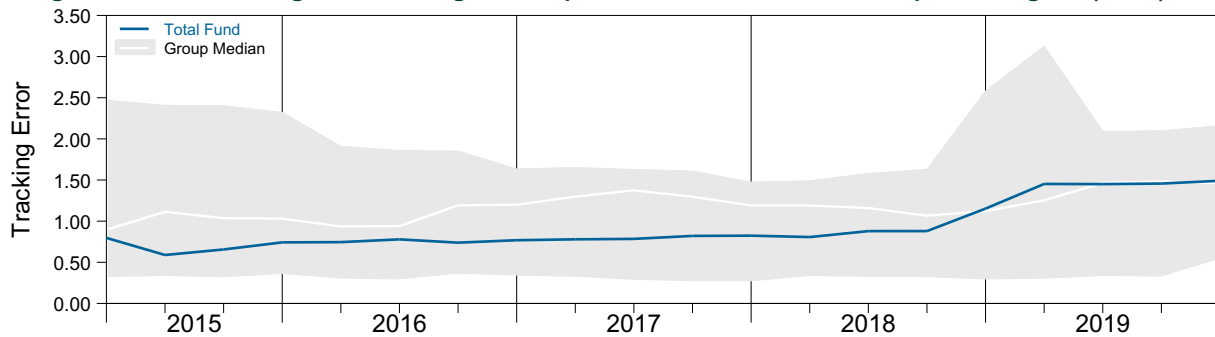
### Risk Analysis

The graphs below analyze the performance and risk of the fund relative to the appropriate target mix. This relative performance is compared to a peer group of funds wherein each member fund is measured against its own target mix. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the target. The second scatter chart displays the relationship, sometimes called Information Ratio, between alpha (market-risk or "beta" adjusted return) and residual risk (non-market or "unsystematic" risk). The third chart shows tracking error patterns over time compared to the range of tracking error patterns for the peer group. The last two charts show the ranking of the fund's risk statistics versus the peer group.

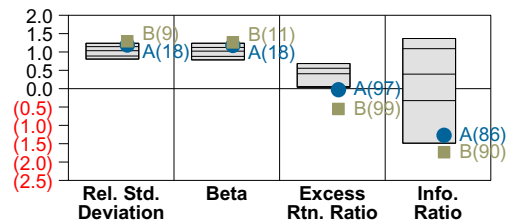
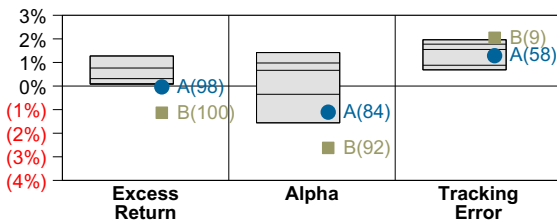
### Risk Analysis vs Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Targets Compared to Callan Public Fund Spons- V Lg DB (>10B)



### Risk Statistics Rankings vs Targets Rankings Against Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended December 31, 2019

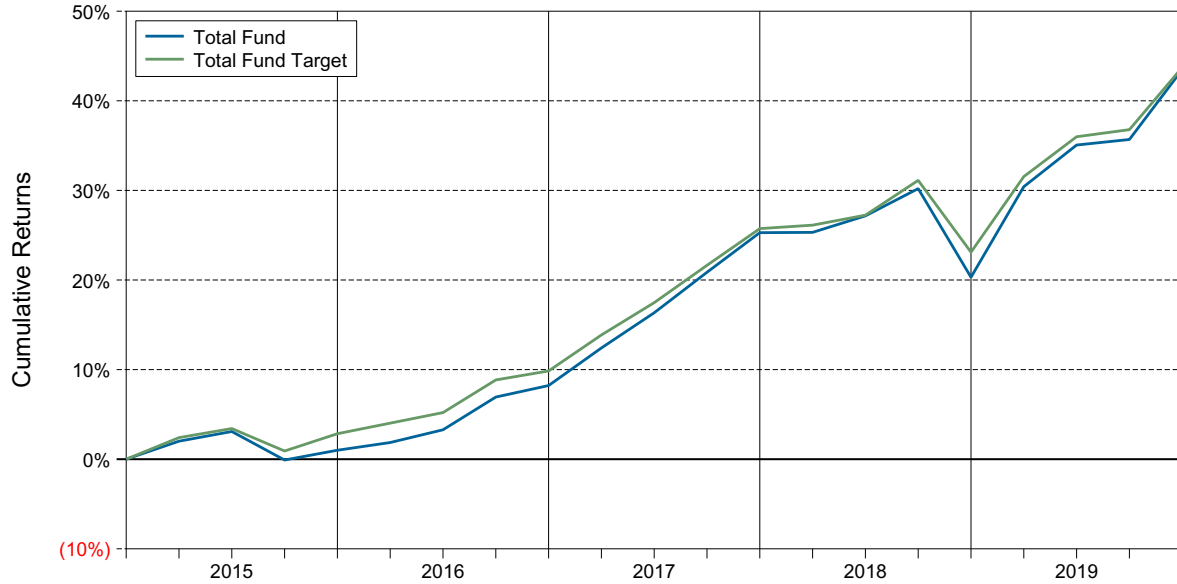


	Excess Return	Alpha	Tracking Error	Rel. Std. Deviation	Beta	Excess Rtn. Ratio	Info. Ratio
10th Percentile	1.28	1.42	1.96	1.24	1.24	0.68	1.37
25th Percentile	0.76	0.98	1.78	1.15	1.12	0.56	1.09
Median	0.31	0.67	1.55	1.03	1.02	0.41	0.40
75th Percentile	0.10	(0.35)	0.88	0.89	0.88	0.06	(0.33)
90th Percentile	0.08	(1.56)	0.69	0.81	0.78	0.04	(1.49)
Total Fund	● A (0.04)	(1.11)	1.29	● A 1.19	1.18	(0.03)	(1.27)
60% MSCI ACW IMI/40% U.S. Agg Bond	■ B (1.13)	(2.62)	2.05	■ B 1.29	1.26	(0.55)	(1.73)

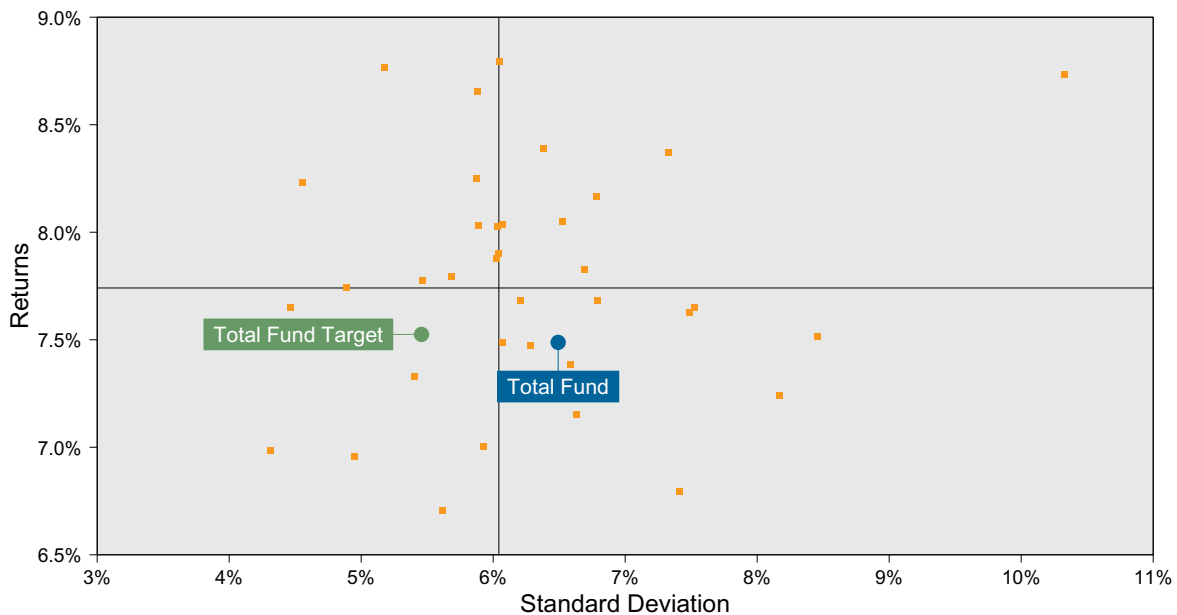
## Cumulative Performance Relative to Target

The first chart below illustrates the cumulative performance of the Total Fund relative to the cumulative performance of the Fund's Target Asset Mix. The Target Mix is assumed to be rebalanced each quarter with no transaction costs. The second chart below shows the return and the risk of the Total Fund and the Target Mix, contrasted with the returns and risks of the funds in the Callan Public Fund Spons- V Lg DB (>10B).

### Cumulative Returns Actual vs Target



### Five Year Annualized Risk vs Return

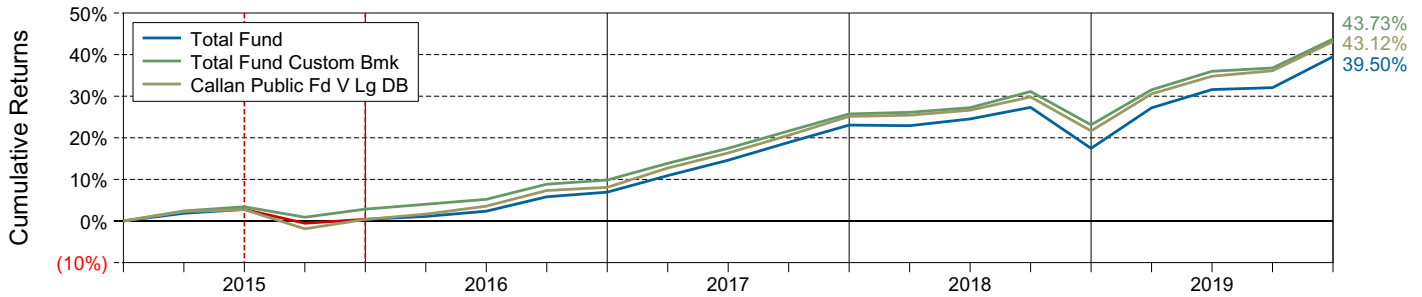


Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)

# Total Fund Drawdown Analysis for Five Years Ended December 31, 2019

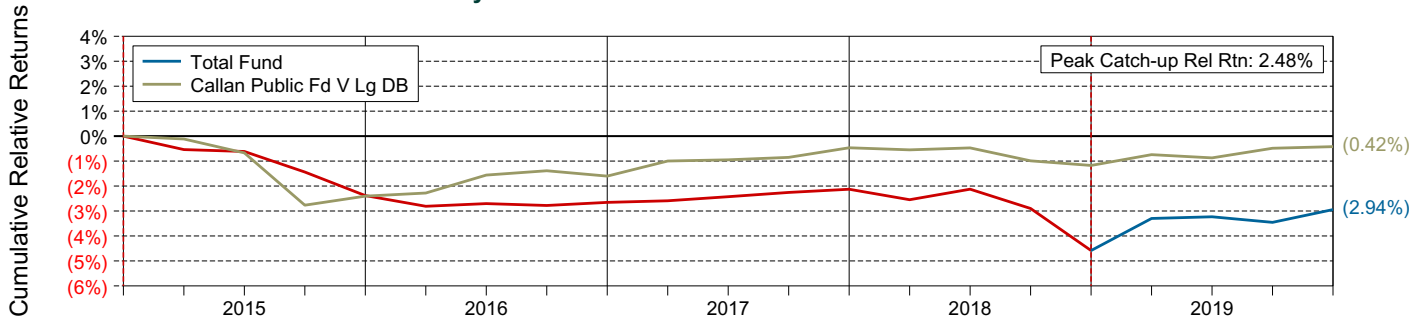
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute Drawdown as well as the Current Drawdown (cumulative return from high-water mark to now). The second chart focuses on Relative Drawdown (negative excess return vs. index). The bottom charts highlight the portfolio's peer rankings during drawdown periods.

## Absolute Cumulative Drawdown Analysis



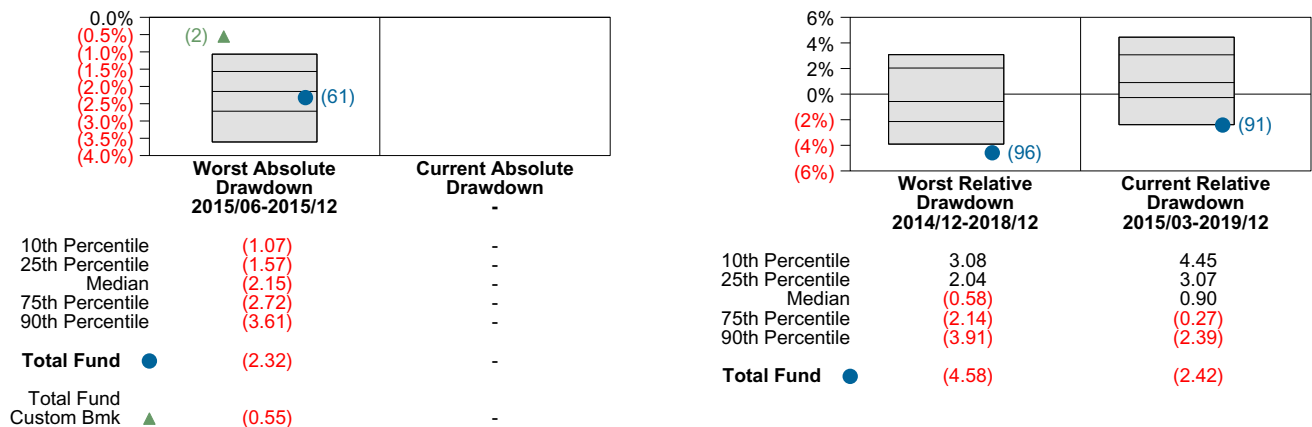
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Total Fund	(2.32)%	0.50	2015/06-2015/12	(0.55)%	(2.29)%	-	-	-	-	-
Recovery from Trough	5.40%	0.75	2015/12-2016/09	5.83%	6.94%	-	-	-	-	-
Total Fund Custom Bmk	(6.11)%	0.25	2018/09-2018/12	-	-	-	-	-	-	-
Callan Public Fd V Lg DB	(6.29)%	0.25	2018/09-2018/12	-	-	-	-	-	-	-

## Relative Cumulative Drawdown Analysis vs. Total Fund Custom Bmk



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
Total Fund	(4.58)%	4.00	2014/12-2018/12	(1.18)%	(2.42)%	4.75	2015/03-2019/12	(0.31)%
Recovery from Trough	1.35%	0.25	2018/12-2019/03	0.44%	1.72%	1.00+	2018/12-2019/12	0.76%
Callan Public Fd V Lg DB	(2.77)%	0.75	2014/12-2015/09	-	(0.31)%	4.75	2015/03-2019/12	-

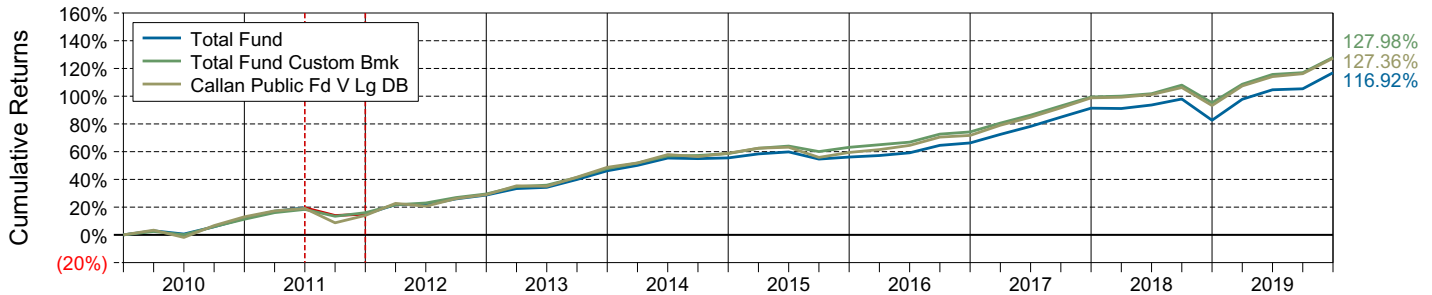
## Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended December 31, 2019



# Total Fund Drawdown Analysis for Ten Years Ended December 31, 2019

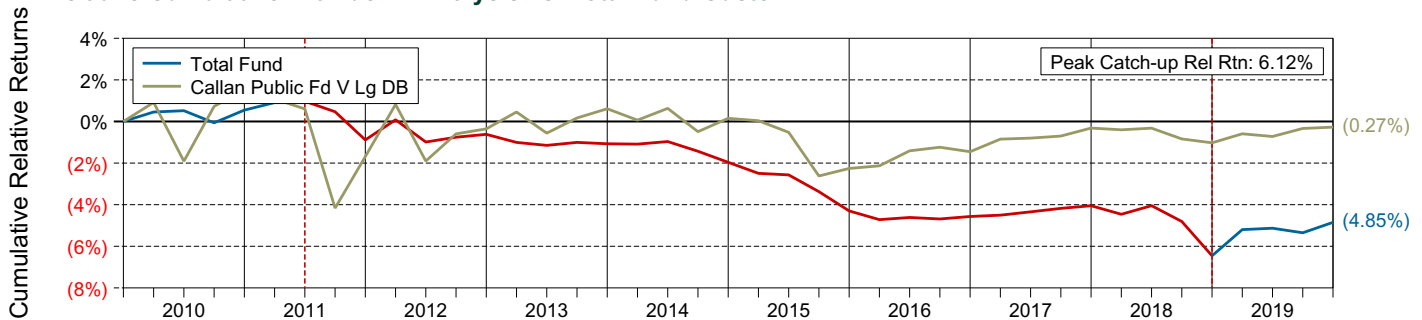
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute Drawdown as well as the Current Drawdown (cumulative return from high-water mark to now). The second chart focuses on Relative Drawdown (negative excess return vs. index). The bottom charts highlight the portfolio's peer rankings during drawdown periods.

## Absolute Cumulative Drawdown Analysis



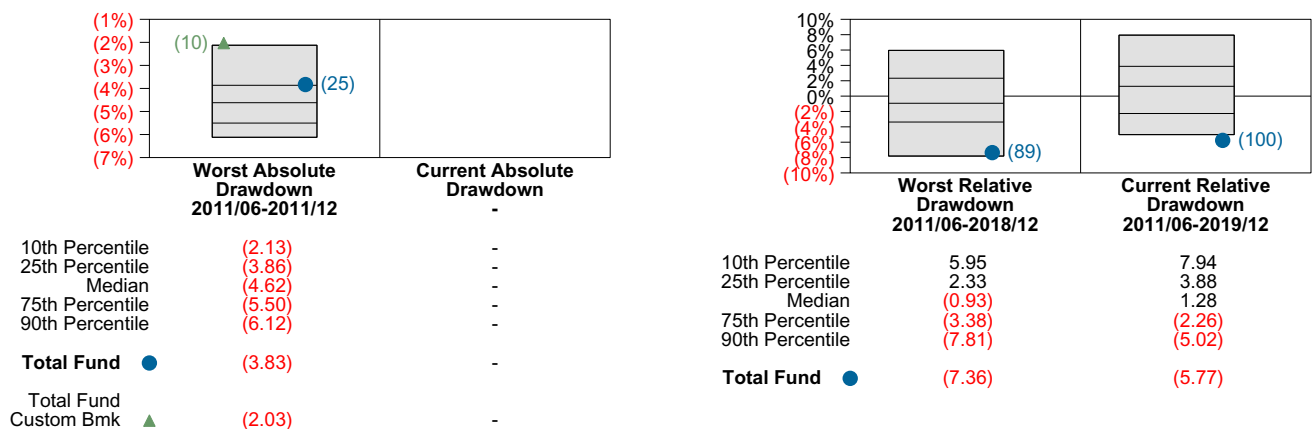
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Total Fund	(3.83)%	0.50	2011/06-2011/12	(2.03)%	(4.26)%	-	-	-	-	-
Recovery from Trough	5.98%	0.25	2011/12-2012/03	4.95%	7.63%	-	-	-	-	-
Total Fund Custom Bmk	(6.11)%	0.25	2018/09-2018/12	-	-	-	-	-	-	-
Callan Public Fd V Lg DB	(6.29)%	0.25	2018/09-2018/12	-	-	-	-	-	-	-

## Relative Cumulative Drawdown Analysis vs. Total Fund Custom Bmk



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
Total Fund	(7.36)%	7.50	2011/06-2018/12	(1.62)%	(5.77)%	8.50	2011/06-2019/12	(0.87)%
Recovery from Trough	1.72%	1.00+	2018/12-2019/12	0.76%	1.72%	1.00+	2018/12-2019/12	0.76%
Callan Public Fd V Lg DB	(5.63)%	0.75	2010/12-2011/09	-	(1.79)%	9.00	2010/12-2019/12	-

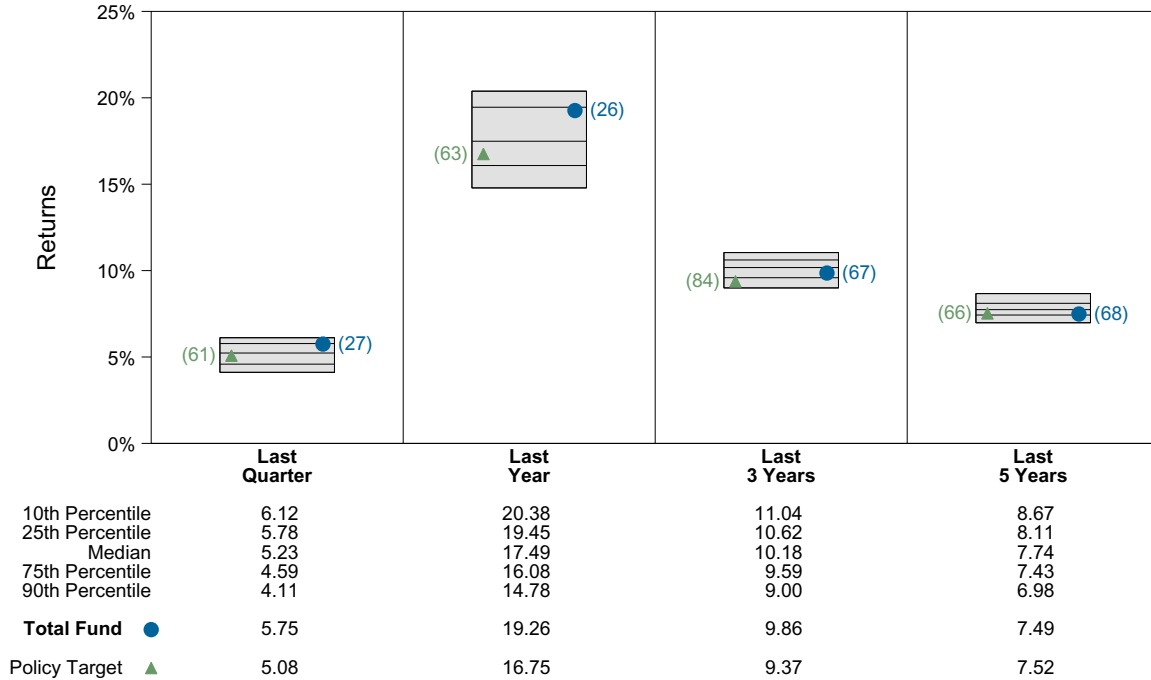
## Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Ten Years Ended December 31, 2019



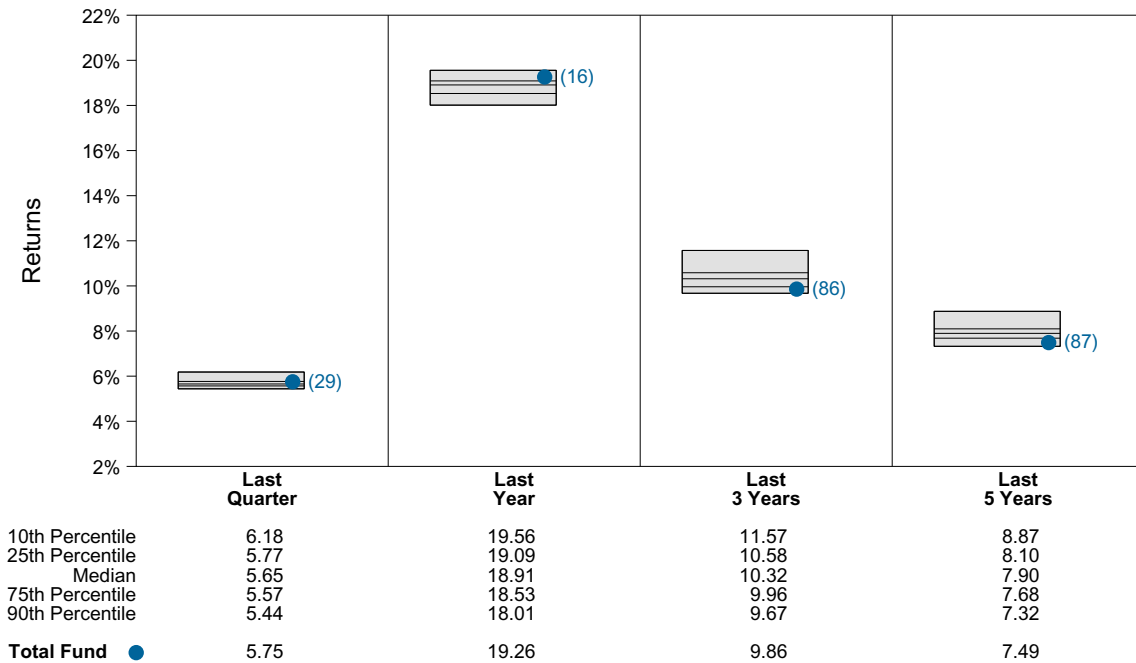
## Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Spons- V Lg DB (>10B) for periods ended December 31, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

### Callan Public Fund Spons- V Lg DB (>10B)



### Asset Allocation Adjusted Ranking

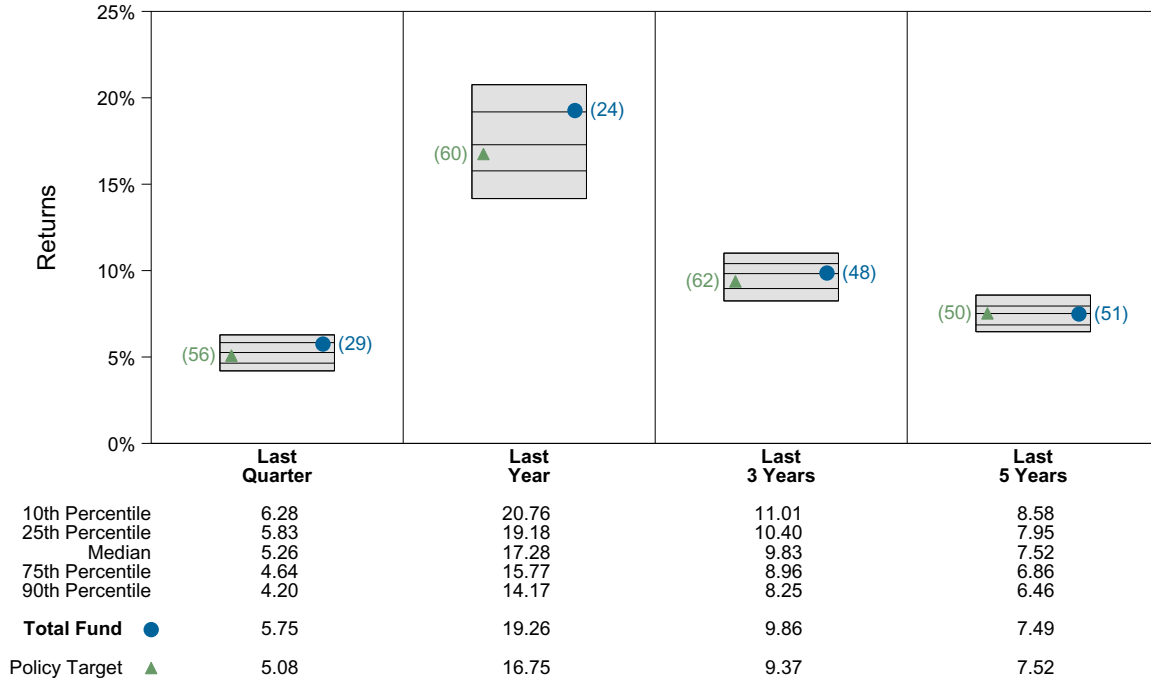


\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

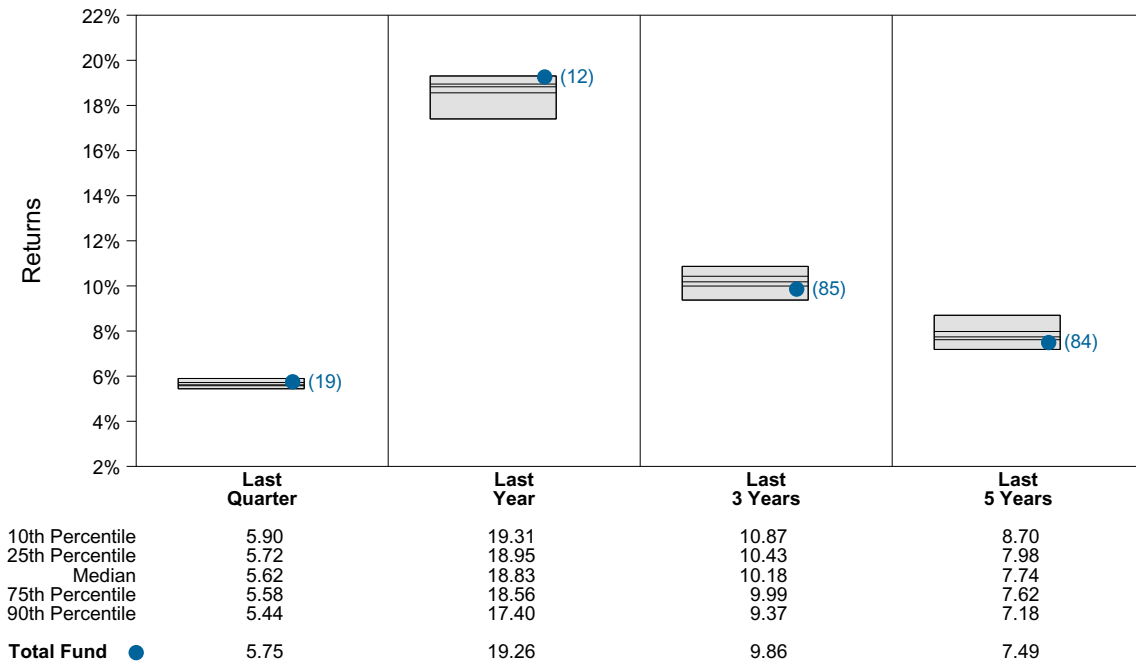
## Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Spons - Large (>1B) for periods ended December 31, 2019. The first chart is a standard unadjusted ranking. In the second chart each fund in the database is adjusted to have the same historical asset allocation as that of the Total Fund.

### Callan Public Fund Spons - Large (>1B)



### Asset Allocation Adjusted Ranking



\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

# Total Fund

## Period Ended December 31, 2019

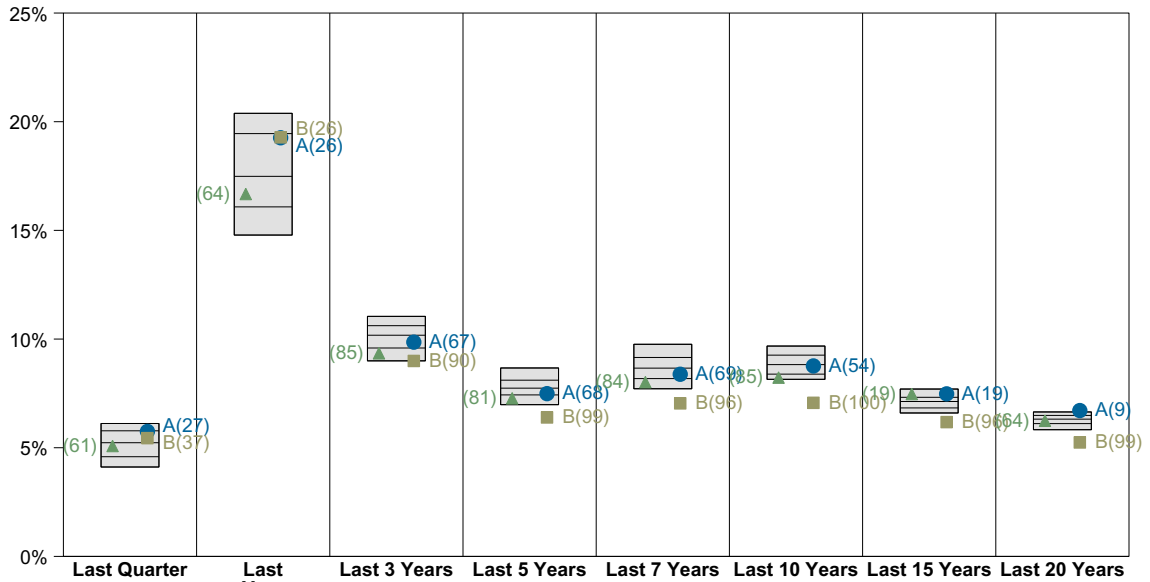
### Quarterly Summary and Highlights

- Total Fund's portfolio posted a 5.75% return for the quarter placing it in the 27 percentile of the Callan Public Fund Spons- V Lg DB (>10B) group for the quarter and in the 26 percentile for the last year.
- Total Fund's portfolio outperformed the Total Fund Custom Benchmark by 0.67% for the quarter and outperformed the Total Fund Custom Benchmark for the year by 2.59%.

### Quarterly Asset Growth

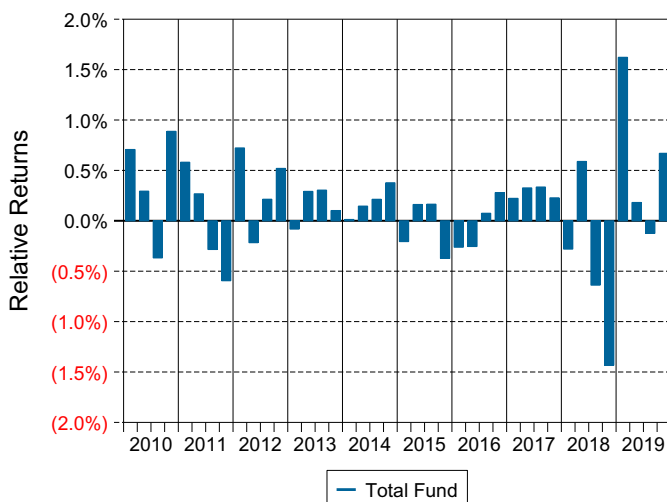
Beginning Market Value	\$29,460,278,835
Net New Investment	-\$235,854,191
Investment Gains/(Losses)	\$1,661,702,699
Ending Market Value	\$30,886,127,343

### Performance vs Callan Public Fund Spons- V Lg DB (>10B) (Gross)

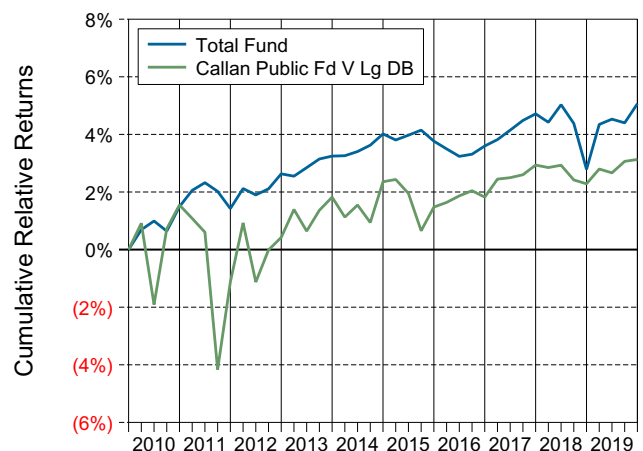


		Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
10th Percentile		6.12	20.38	11.04	8.67	9.76	9.68	7.70	6.65
25th Percentile		5.78	19.45	10.62	8.11	9.15	9.26	7.32	6.49
Median		5.23	17.49	10.18	7.74	8.66	8.82	7.13	6.32
75th Percentile		4.59	16.08	9.59	7.43	8.18	8.39	6.83	6.11
90th Percentile		4.11	14.78	9.00	6.98	7.71	8.15	6.60	5.83
Total Fund	● A	5.75	19.26	9.86	7.49	8.38	8.76	7.48	6.71
60% MSCI ACW	■ B	5.44	19.28	8.99	6.39	7.04	7.07	6.18	5.24
Total Fund Custom Benchmark	▲	5.08	16.67	9.34	7.27	8.02	8.23	7.47	6.24

### Relative Returns vs Total Fund Custom Benchmark



### Cumulative Returns vs Total Fund Custom Benchmark



# Total Fund

## Period Ended December 31, 2019

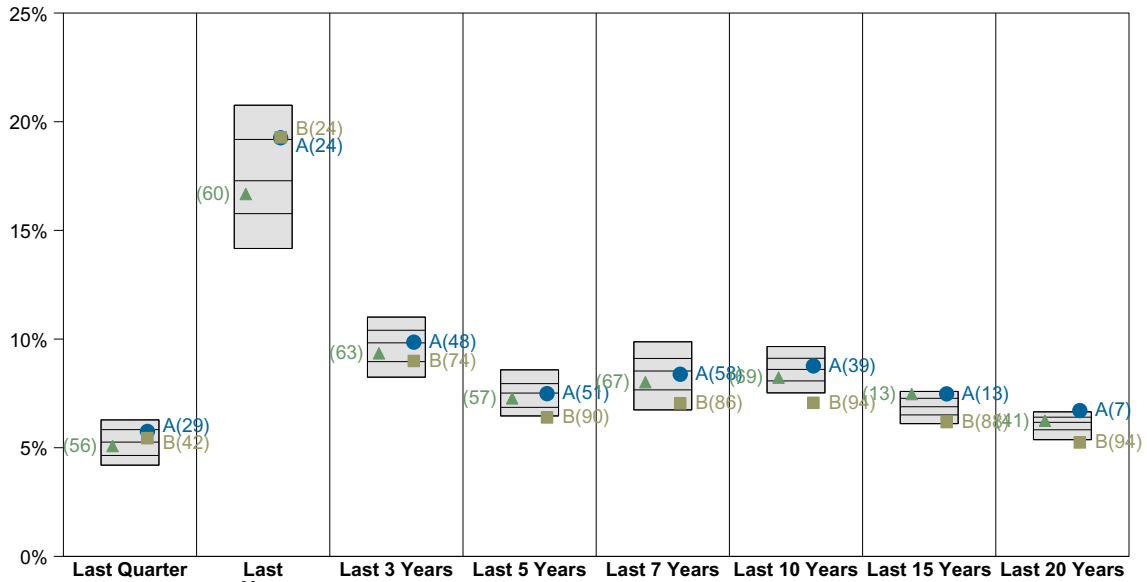
### Quarterly Summary and Highlights

- Total Fund's portfolio posted a 5.75% return for the quarter placing it in the 29 percentile of the Callan Public Fund Spons - Large (>1B) group for the quarter and in the 24 percentile for the last year.
- Total Fund's portfolio outperformed the Total Fund Custom Benchmark by 0.67% for the quarter and outperformed the Total Fund Custom Benchmark for the year by 2.59%.

### Quarterly Asset Growth

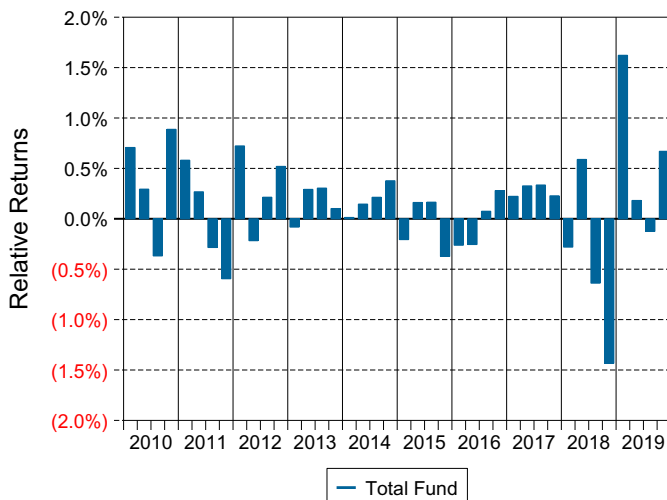
Beginning Market Value	\$29,460,278,835
Net New Investment	-\$235,854,191
Investment Gains/(Losses)	\$1,661,702,699
Ending Market Value	\$30,886,127,343

### Performance vs Callan Public Fund Spons - Large (>1B) (Gross)

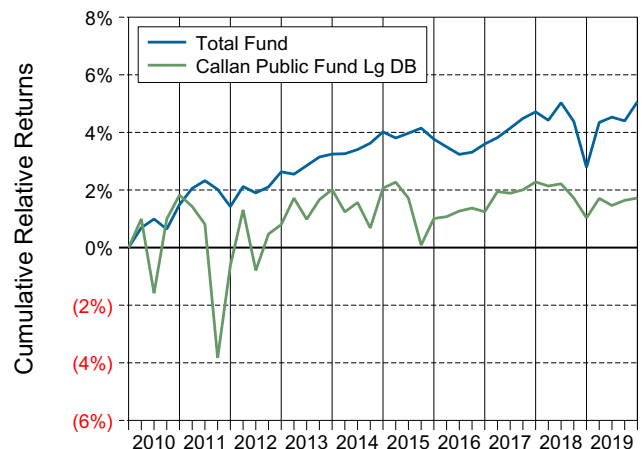


		Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
10th Percentile		6.28	20.76	11.01	8.58	9.87	9.66	7.59	6.65
25th Percentile		5.83	19.18	10.40	7.95	9.11	9.12	7.27	6.41
Median		5.26	17.28	9.83	7.52	8.53	8.60	6.89	6.17
75th Percentile		4.64	15.77	8.96	6.86	7.66	8.07	6.51	5.83
90th Percentile		4.20	14.17	8.25	6.46	6.74	7.52	6.11	5.37
Total Fund	● A	5.75	19.26	9.86	7.49	8.38	8.76	7.48	6.71
60% MSCI ACW IMI/40% U.S. Agg Bond	■ B	5.44	19.28	8.99	6.39	7.04	7.07	6.18	5.24
Total Fund Custom Benchmark	▲	5.08	16.67	9.34	7.27	8.02	8.23	7.47	6.24

### Relative Returns vs Total Fund Custom Benchmark



### Cumulative Returns vs Total Fund Custom Benchmark

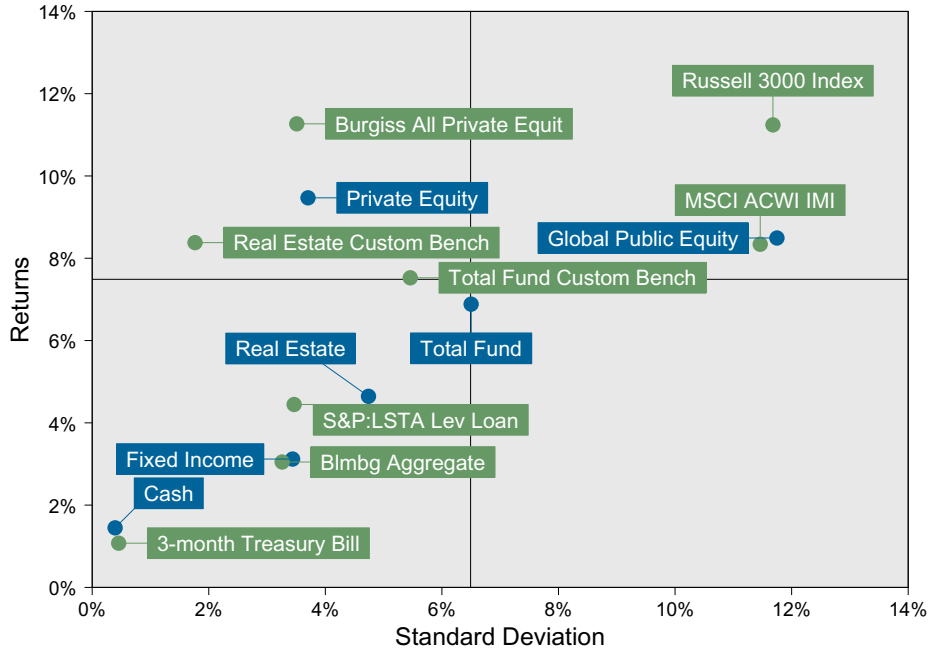




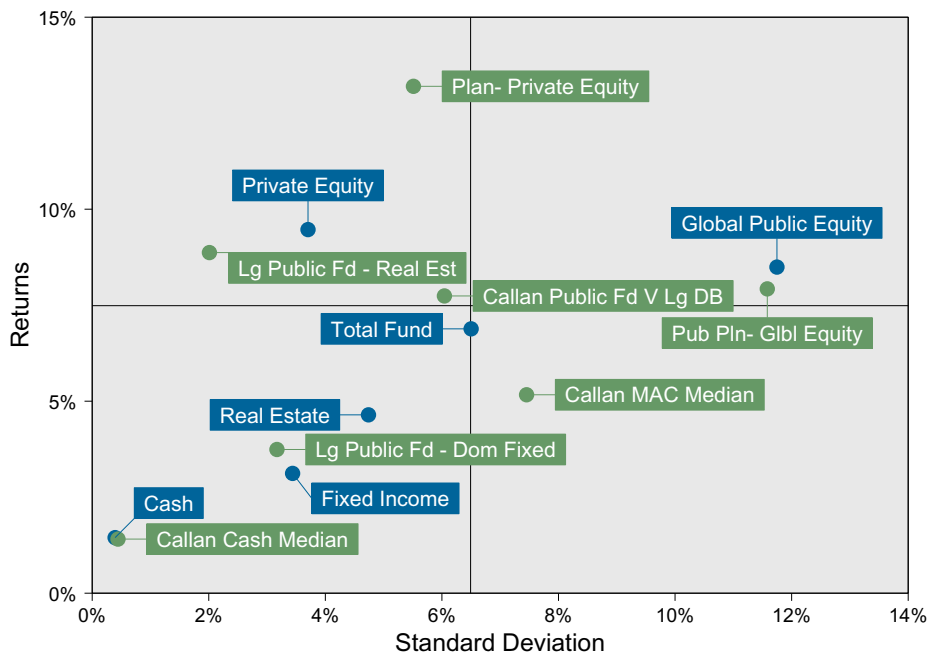
## Asset Class Risk and Return

The charts below show the five year annualized risk and return for each asset class component of the Total Fund. The first graph contrasts these values with those of the appropriate index for each asset class. The second chart contrasts them with the risk and return of the median portfolio in each of the appropriate CAI comparative databases. In each case, the crosshairs on the chart represent the return and risk of the Total Fund.

### Five Year Annualized Risk vs Return Asset Classes vs Benchmark Indices



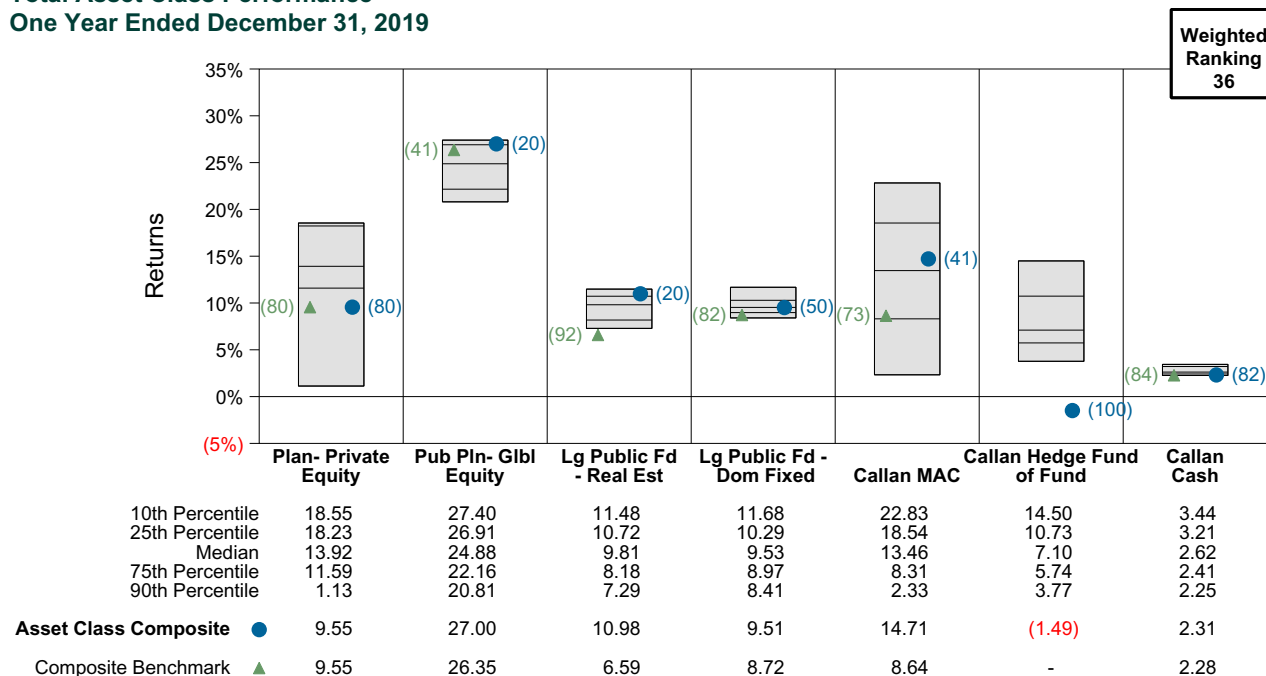
### Five Year Annualized Risk vs Return Asset Classes vs Asset Class Median



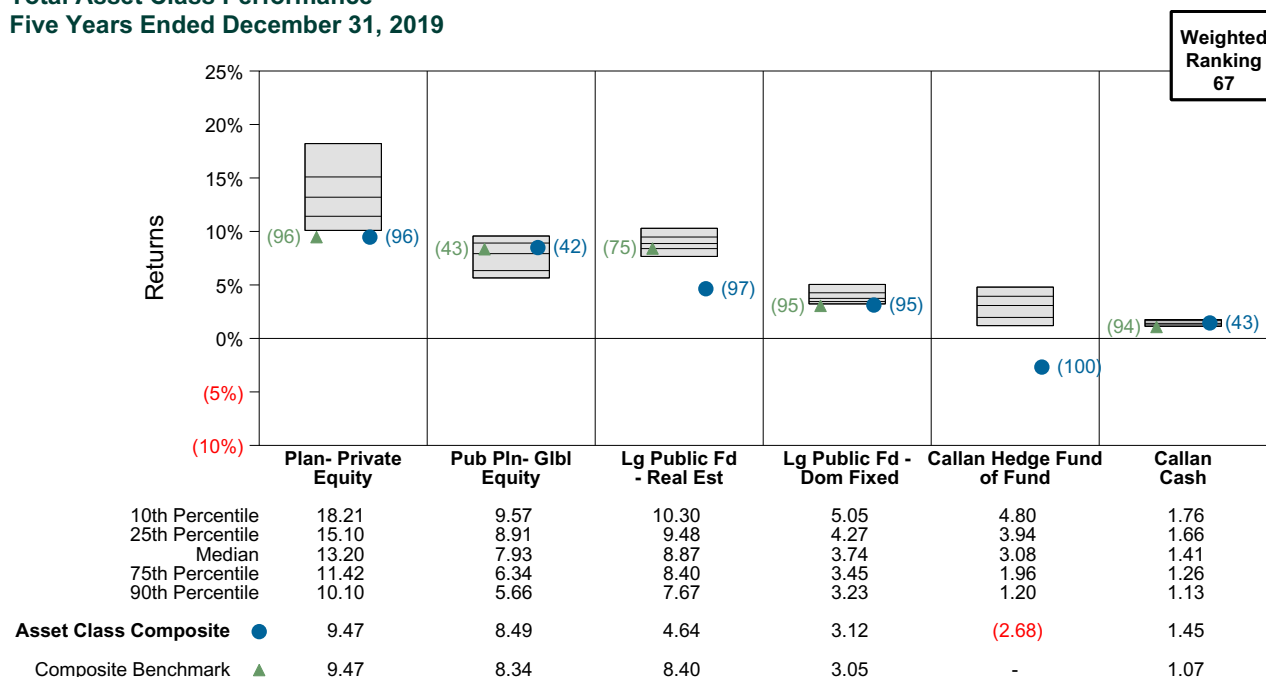
## Asset Class Rankings

The charts below show the rankings of each asset class component of the Total Fund relative to appropriate comparative databases. In the upper right corner of each graph is the weighted average of the rankings across the different asset classes. The weights of the fund's actual asset allocation are used to make this calculation. The weighted average ranking can be viewed as a measure of the fund's overall success in picking managers and structuring asset classes.

### Total Asset Class Performance One Year Ended December 31, 2019



### Total Asset Class Performance Five Years Ended December 31, 2019



\* Current Quarter Target = 48.0% MSCI ACWI IMI, 16.0% Private Equity, 11.0% Blmbg Aggregate, 10.8% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 10.0% S&P:LSTA Lev Loan, 3.0% 3-month Treasury Bill, 1.2% FTSE EP/NA US Index lagged 3 months and 0.0% HFRI Fund of Funds Compos.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2019, with the distribution as of September 30, 2019.

### Asset Distribution Across Investment Managers

	December 31, 2019					September 30, 2019		
	Market Value	% of Total	(min)	Target	(max)	Market Value	% of Total	Target
	\$(000)	Weight	Weight	\$(000)	Weight	Weight		
<b>Total Equity</b>	<b>\$21,100,516</b>	<b>68.32%</b>	<b>59.00%</b>	<b>64.00%</b>	<b>69.00%</b>	<b>\$20,063,811</b>	<b>68.10%</b>	<b>64.00%</b>
<b>Global Public Equity</b>	<b>\$17,164,048</b>	<b>55.57%</b>	-	-	-	<b>\$16,154,037</b>	<b>54.83%</b>	-
Global Mandates	1,134,976	3.67%				1,046,367	3.55%	
U.S. Equity	8,016,584	25.96%				7,791,715	26.45%	
Non-U.S. Developed Markets Equity	5,984,277	19.38%				5,515,280	18.72%	
Emerging Mkts Equity	2,026,904	6.56%				1,799,407	6.11%	
<b>Private Equity (1)</b>	<b>\$3,936,535</b>	<b>12.75%</b>	-	-	-	<b>\$3,909,776</b>	<b>13.27%</b>	-
Buyouts	1,910,502	6.19%				1,779,780	6.04%	
Special Situations	514,508	1.67%				559,227	1.90%	
Venture Capital	763,661	2.47%				747,225	2.54%	
Keystone Legacy (2)	747,864	2.42%				823,543	2.80%	
<b>Fixed Income</b>	<b>\$4,375,547</b>	<b>14.17%</b>	<b>8.00%</b>	<b>11.00%</b>	<b>14.00%</b>	<b>\$4,350,899</b>	<b>14.77%</b>	<b>11.00%</b>
Core Fixed Income	1,994,145	6.46%				1,983,351	6.73%	
Core-Plus Fixed Income	911,329	2.95%				893,170	3.03%	
Nominal U.S. Treasuries	596,944	1.93%				606,576	2.06%	
Global TIPS	873,130	2.83%				867,802	2.95%	
<b>Multi-Strategy</b>	<b>\$1,816,976</b>	<b>5.88%</b>	<b>7.00%</b>	<b>10.00%</b>	<b>13.00%</b>	<b>\$1,714,470</b>	<b>5.82%</b>	<b>10.00%</b>
Opportunistic Equity & Fixed Income	548,891	1.78%				547,471	1.86%	
Private Credit (1)	298,315	0.97%				233,064	0.79%	
Credit Focused Strategies	969,770	3.14%				933,935	3.17%	
<b>Real Estate (1)</b>	<b>\$2,085,504</b>	<b>6.75%</b>	<b>9.00%</b>	<b>12.00%</b>	<b>15.00%</b>	<b>\$2,056,433</b>	<b>6.98%</b>	<b>12.00%</b>
Core/Core Plus Real Estate Funds	734,576	2.38%				708,960	2.41%	
Value Add/Opp. Real Estate	1,061,411	3.44%				1,055,731	3.58%	
REITS	283,625	0.92%				286,283	0.97%	
Natural Resources/Infrastructure	5,893	0.02%				5,460	0.02%	
<b>Legacy Hedge Funds</b>	<b>\$36,118</b>	<b>0.12%</b>	-	-	-	<b>\$35,702</b>	<b>0.12%</b>	-
<b>Cash</b>	<b>\$1,471,400</b>	<b>4.76%</b>	<b>0.00%</b>	<b>3.00%</b>	<b>6.00%</b>	<b>\$1,238,962</b>	<b>4.21%</b>	<b>3.00%</b>
<b>Total Fund</b>	<b>\$30,886,127</b>	<b>100.0%</b>		<b>100.0%</b>		<b>\$29,460,279</b>	<b>100.0%</b>	<b>100.0%</b>

(1) Private Equity, Real Estate, and Private Debt Market Values have a 1 Qtr lag

(2) As of 7/31/2018, Keystone Legacy SPV consists of 163 non-core funds, prior performance in previous sub-asset classes

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2019, with the distribution as of September 30, 2019. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

	December 31, 2019			Net New Inv. \$(000)	Inv. Return \$(000)	September 30, 2019	
	Market Value \$(000)	% of Total Weight				Market Value \$(000)	% of Total Weight
<b>Global Public Equity</b>	<b>\$17,164,048</b>	<b>55.57%</b>		<b>\$(453,243)</b>	<b>\$1,463,253</b>	<b>\$16,154,037</b>	<b>54.83%</b>
Global Mandates	1,134,976	3.67%		0	88,609	1,046,367	3.55%
<b>U.S. Equity</b>	<b>\$8,016,584</b>	<b>25.96%</b>		<b>\$(457,069)</b>	<b>\$681,939</b>	<b>\$7,791,715</b>	<b>26.45%</b>
U.S. Large/Mid Cap Equity	6,312,057	20.44%		(457,069)	526,656	6,242,470	21.19%
U.S. Small Cap Equity	1,704,527	5.52%		0	155,282	1,549,245	5.26%
<b>Non-U.S. Equity</b>	<b>\$8,011,181</b>	<b>25.94%</b>		<b>\$1,150</b>	<b>\$695,344</b>	<b>\$7,314,687</b>	<b>24.83%</b>
<b>Non-U.S. Developed Markets Equity</b>	<b>\$5,984,277</b>	<b>19.38%</b>		<b>\$232</b>	<b>\$468,765</b>	<b>\$5,515,280</b>	<b>18.72%</b>
Non-U.S. Dev Large/Mid Cap Equity	5,133,931	16.62%		232	376,546	4,757,153	16.15%
Non-U.S. Dev Small Cap Equity	850,346	2.75%		0	92,219	758,127	2.57%
<b>Emerging Mkts Equity</b>	<b>\$2,026,904</b>	<b>6.56%</b>		<b>\$918</b>	<b>\$226,579</b>	<b>\$1,799,407</b>	<b>6.11%</b>
<b>Fixed Income</b>	<b>\$4,375,547</b>	<b>14.17%</b>		<b>\$183</b>	<b>\$24,464</b>	<b>\$4,350,899</b>	<b>14.77%</b>
<b>Core Fixed Income</b>	<b>\$1,994,145</b>	<b>6.46%</b>		<b>\$(7)</b>	<b>\$10,800</b>	<b>\$1,983,351</b>	<b>6.73%</b>
<b>Core-Plus Fixed Income</b>	<b>\$911,329</b>	<b>2.95%</b>		<b>\$190</b>	<b>\$17,969</b>	<b>\$893,170</b>	<b>3.03%</b>
<b>Nominal U.S. Treasuries</b>	<b>\$596,944</b>	<b>1.93%</b>		<b>\$0</b>	<b>\$(9,633)</b>	<b>\$606,576</b>	<b>2.06%</b>
<b>Global TIPS</b>	<b>\$873,130</b>	<b>2.83%</b>		<b>\$0</b>	<b>\$5,328</b>	<b>\$867,802</b>	<b>2.95%</b>
<b>Multi-Strategy</b>	<b>\$1,816,976</b>	<b>5.88%</b>		<b>\$55,917</b>	<b>\$46,589</b>	<b>\$1,714,470</b>	<b>5.82%</b>
Opportunistic Equity & Fixed Income	548,891	1.78%		759	662	547,471	1.86%
Private Credit (1)	298,315	0.97%		55,159	10,092	233,064	0.79%
Credit Focused Strategies	969,770	3.14%		0	35,835	933,935	3.17%
<b>Private Equity (1)</b>	<b>\$3,936,535</b>	<b>12.75%</b>		<b>\$(59,764)</b>	<b>\$86,523</b>	<b>\$3,909,776</b>	<b>13.27%</b>
Buyouts	1,910,502	6.19%		83,653	47,069	1,779,780	6.04%
Special Situations	514,508	1.67%		(70,758)	26,038	559,227	1.90%
Venture Capital	763,661	2.47%		(20,699)	37,135	747,225	2.54%
Keystone Legacy (2)	747,864	2.42%		(51,959)	(23,720)	823,543	2.80%
<b>Real Estate (1)</b>	<b>\$2,085,504</b>	<b>6.75%</b>		<b>\$(3,284)</b>	<b>\$32,355</b>	<b>\$2,056,433</b>	<b>6.98%</b>
Core/Core Plus Real Estate Funds	734,576	2.38%		11,265	14,351	708,960	2.41%
Value Add/Opp. Real Estate	1,061,411	3.44%		(14,449)	20,129	1,055,731	3.58%
REITS	283,625	0.92%		0	(2,657)	286,283	0.97%
Natural Resources/Infrastructure	5,893	0.02%		(100)	532	5,460	0.02%
<b>Legacy Hedge Funds</b>	<b>\$36,118</b>	<b>0.12%</b>		<b>\$(684)</b>	<b>\$1,100</b>	<b>\$35,702</b>	<b>0.12%</b>
<b>Cash</b>	<b>\$1,471,400</b>	<b>4.76%</b>		<b>\$225,020</b>	<b>\$7,419</b>	<b>\$1,238,962</b>	<b>4.21%</b>
<b>Total Fund*</b>	<b>\$30,886,127</b>	<b>100.0%</b>		<b>\$(235,854)</b>	<b>\$1,661,703</b>	<b>\$29,460,279</b>	<b>100.0%</b>

\*Total Fund target allocation is: 48% Global Public Equity, 11% Fixed Income, 10% Multi-Strategy, 16% Private Equity, 12% Real Estate, 3% Cash, 0% Legacy Hedge Funds

\*Sub-composite market values may not sum to asset class composites as a result of accounts in liquidation.

(1) Private Equity, Real Estate, and Private Debt Market Values have a 1 Qtr lag

(2) As of 7/31/2018, Keystone Legacy SPV consists of 163 non-core funds, prior performance in previous sub-asset classes

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance</b>						
<b>Total Fund</b>	<b>\$30,886</b>	<b>100.00%</b>	<b>5.64%</b>	<b>18.76%</b>	<b>9.27%</b>	<b>6.88%</b>
Total Fund Custom Benchmark(1)	-	-	5.08%	16.67%	9.34%	7.27%
Public Market Equiv Benchmark(2)	-	-	4.93%	16.28%	10.14%	7.82%
60/40 Index(3)	-	-	5.44%	19.28%	8.99%	6.39%
<b>Global Public Equity</b>	<b>\$17,164</b>	<b>55.57%</b>	<b>9.22%</b>	<b>27.00%</b>	<b>12.20%</b>	<b>8.49%</b>
MSCI ACWI IMI	-	-	9.05%	26.35%	12.09%	8.34%
<b>Fixed Income</b>	<b>\$4,376</b>	<b>14.17%</b>	<b>0.56%</b>	<b>9.51%</b>	<b>4.31%</b>	<b>3.12%</b>
Blmbg Aggregate	-	-	0.18%	8.72%	4.03%	3.05%
<b>Multi-Strategy</b>	<b>\$1,817</b>	<b>5.88%</b>	<b>2.69%</b>	<b>14.71%</b>	<b>-</b>	<b>-</b>
S&P/LSTA Leveraged Loan	-	-	1.73%	8.64%	4.35%	4.45%
Russell 3000 Index	-	-	9.10%	31.02%	14.57%	11.24%
<b>Real Estate</b>	<b>\$2,086</b>	<b>6.75%</b>	<b>1.57%</b>	<b>10.98%</b>	<b>3.41%</b>	<b>4.64%</b>
Real Estate Custom Benchmark	-	-	1.81%	6.47%	6.44%	8.38%
CPI +3% (Qtr lag)	-	-	0.98%	4.71%	5.07%	4.53%
<b>Private Equity</b>	<b>\$3,937</b>	<b>12.75%</b>	<b>2.23%</b>	<b>9.55%</b>	<b>11.42%</b>	<b>9.47%</b>
Burgiss Private Equity Custom Index	-	-	0.85%	7.20%	13.09%	11.27%
Russell 3000 +3% (Qtr lag)	-	-	1.89%	6.65%	16.16%	13.74%
<b>Cash</b>	<b>\$1,471</b>	<b>4.76%</b>	<b>0.48%</b>	<b>2.31%</b>	<b>1.97%</b>	<b>1.45%</b>
3-month Treasury Bill	-	-	0.46%	2.28%	1.67%	1.07%

(1) Total Fund Custom Benchmark returns provided by RVK prior to 12/31/2018.

Benchmark consists of: 16% SERS Private Equity Composite, 48% MSCI ACWI IM Index, 12% Real Estate Custom Benchmark, 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index

(2) Public Market Equivalent Benchmark returns provided by RVK prior to 12/31/2018.

Benchmark consists of: 16% Russell 3000+3% (Qtr Lag), 48% MSCI ACWI IM Index, 12% CPI+3% (Qtr Lag), 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index

(3) Benchmark consists of 60% MSCI ACWI IM Index, 40% Bloomberg U.S. Agg Bond Index

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Net Performance</b>						
<b>Total Fund</b>	<b>8.05%</b>	<b>6.69%</b>	<b>5.95%</b>	<b>8.44%</b>	<b>9.55%</b>	(1/81)
Total Fund Custom Benchmark(1)	8.23%	7.47%	6.24%	8.62%	-	
Public Market Equiv Benchmark(2)	8.93%	7.94%	6.59%	8.90%	-	
60/40 Index(3)	7.07%	6.18%	5.24%	6.89%	-	
<b>Global Public Equity</b>	<b>9.49%</b>	<b>6.70%</b>	-	-	<b>7.07%</b>	(1/02)
MSCI ACWI IMI	8.91%	7.02%	4.84%	7.24%	7.37%	(1/02)
<b>Fixed Income</b>	<b>4.77%</b>	<b>5.00%</b>	<b>5.75%</b>	<b>6.41%</b>	<b>8.40%</b>	(1/81)
Blmbg Aggregate	3.75%	4.15%	5.03%	5.56%	7.63%	(1/81)
<b>Multi-Strategy</b>	-	-	-	-	<b>7.41%</b>	(10/17)
S&P/LSTA Leveraged Loan	5.00%	4.74%	4.86%	-	4.47%	(10/17)
Russell 3000 Index	13.42%	9.03%	6.39%	10.21%	13.14%	(10/17)
<b>Real Estate</b>	<b>6.99%</b>	<b>5.81%</b>	<b>6.80%</b>	<b>7.78%</b>	<b>8.39%</b>	(3/84)
Real Estate Custom Benchmark	9.86%	7.21%	7.80%	-	-	
CPI +3% (Qtr lag)	4.75%	5.03%	5.15%	5.19%	5.63%	(3/84)
<b>Private Equity</b>	<b>11.35%</b>	<b>11.54%</b>	<b>9.65%</b>	<b>13.69%</b>	<b>10.91%</b>	(1/86)
Burgiss Private Equity Custom Index	13.02%	12.90%	11.30%	15.10%	16.84%	(1/86)
Russell 3000 +3% (Qtr lag)	16.40%	12.57%	10.22%	13.31%	14.51%	(1/86)
<b>Cash</b>	<b>0.87%</b>	<b>1.69%</b>	<b>2.31%</b>	<b>2.83%</b>	<b>3.63%</b>	(1/87)
3-month Treasury Bill	0.58%	1.39%	1.78%	2.47%	3.27%	(1/87)

(1) Total Fund Custom Benchmark returns provided by RVK prior to 12/31/2018.

Benchmark consists of: 16% SERS Private Equity Composite, 48% MSCI ACW IM Index, 12% Real Estate Custom Benchmark, 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index

(2) Public Market Equivalent Benchmark returns provided by RVK. Benchmark consists of: 16% Russell 3000+3% (Qtr Lag), 48% MSCI ACW IM Index, 12% CPI+3% (Qtr Lag), 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index

(3) 60% MSCI ACW IMI/ 40% Bloomberg Agg Bond Index

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance- Equity</b>						
<b>Global Public Equity</b>	<b>\$17,164</b>	<b>100.00%</b>	<b>9.22%</b>	<b>27.00%</b>	<b>12.20%</b>	<b>8.49%</b>
MSCI ACWI IMI	-	-	9.05%	26.35%	12.09%	8.34%
<b>Global Mandates</b>	<b>\$1,135</b>	<b>6.61%</b>	<b>8.47%</b>	<b>31.07%</b>	<b>18.28%</b>	<b>12.49%</b>
MSCI World	-	-	8.56%	27.67%	12.57%	8.74%
Walter Scott & Prtnrs Gbl Gr Eq	1,135	6.61%	8.47%	31.07%	18.28%	12.49%
MSCI World	-	-	8.56%	27.67%	12.57%	8.74%
<b>U.S. Equity</b>	<b>\$8,017</b>	<b>46.71%</b>	<b>9.20%</b>	<b>30.37%</b>	<b>13.29%</b>	<b>9.96%</b>
Russell 3000 Index(1)	-	-	9.10%	31.02%	14.57%	11.24%
<b>U.S. Mid/Large Cap Equity</b>	<b>\$6,312</b>	<b>36.77%</b>	<b>8.99%</b>	<b>31.43%</b>	<b>14.48%</b>	<b>10.82%</b>
Russell 1000 Index	-	-	9.04%	31.43%	15.05%	11.48%
MCM Russell 1000 Index	6,312	36.77%	9.02%	31.37%	15.07%	11.52%
Russell 1000 Index	-	-	9.04%	31.43%	15.05%	11.48%
<b>U.S. Small Cap Equity</b>	<b>\$1,705</b>	<b>9.93%</b>	<b>10.02%</b>	<b>26.28%</b>	<b>8.98%</b>	<b>6.16%</b>
Russell 2000 Index(1)	-	-	9.94%	25.52%	8.59%	7.89%
S&P 600 Small Cap Index	-	-	8.21%	22.78%	8.36%	9.56%
MCM Russell 2000 Core Index	348	2.03%	9.97%	25.51%	8.57%	-
Russell 2000 Index	-	-	9.94%	25.52%	8.59%	8.23%
MCM Russell 2000 Val Index	622	3.62%	8.49%	22.35%	4.73%	-
Russell 2000 Value Index	-	-	8.49%	22.39%	4.77%	6.99%
Emerald Adv Div Sm Cap Grth	735	4.28%	11.38%	30.17%	13.41%	-
Russell 2000 Growth Index	-	-	11.39%	28.48%	12.49%	9.34%

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(1) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance- Equity</b>					
<b>Global Public Equity</b>	<b>9.49%</b>	<b>6.70%</b>	-	-	<b>7.07%</b> (1/02)
MSCI ACWI IMI	8.91%	7.02%	4.84%	7.24%	7.37% (1/02)
<b>Global Mandates</b>	<b>11.77%</b>	-	-	-	<b>8.98%</b> (11/06)
MSCI World	9.47%	6.92%	4.50%	7.39%	6.06% (11/06)
Walter Scott & Prtnrs Gbl Gr Eq	11.43%	-	-	-	9.53% (10/06)
MSCI World	9.47%	6.92%	4.50%	7.39%	6.31% (10/06)
<b>U.S. Equity</b>	<b>12.98%</b>	<b>7.95%</b>	<b>6.10%</b>	<b>9.79%</b>	<b>10.73%</b> (1/81)
Russell 3000 Index(1)	13.42%	9.03%	6.39%	10.14%	11.04% (1/81)
<b>U.S. Mid/Large Cap Equity</b>	<b>13.51%</b>	<b>8.57%</b>	<b>6.12%</b>	<b>10.09%</b>	<b>9.72%</b> (1/94)
Russell 1000 Index	13.54%	9.12%	6.29%	10.33%	9.93% (1/94)
MCM Russell 1000 Index	-	-	-	-	14.80% (1/12)
Russell 1000 Index	13.54%	9.12%	6.29%	10.33%	14.82% (1/12)
<b>U.S. Small Cap Equity</b>	<b>10.49%</b>	<b>6.84%</b>	<b>7.02%</b>	<b>9.85%</b>	<b>9.23%</b> (1/94)
Russell 2000 Index(1)	12.05%	8.44%	8.42%	10.92%	10.37% (1/94)
S&P 600 Small Cap Index	13.35%	9.20%	9.80%	11.21%	10.55% (1/94)
MCM Russell 2000 Core Index	-	-	-	-	9.31% (12/16)
Russell 2000 Index	11.83%	7.92%	7.59%	9.35%	9.33% (12/16)
MCM Russell 2000 Val Index	-	-	-	-	5.97% (12/16)
Russell 2000 Value Index	10.56%	6.92%	9.41%	10.15%	6.02% (12/16)
Emerald Adv Div Sm Cap Grth	-	-	-	-	13.52% (12/16)
Russell 2000 Growth Index	13.01%	8.81%	5.57%	8.13%	12.63% (12/16)

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## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance- Equity</b>						
<b>Non-U.S. Equity</b>	<b>\$8,011</b>	<b>36.40%</b>	<b>9.51%</b>	<b>23.24%</b>	<b>10.96%</b>	<b>6.29%</b>
MSCI ACWI ex US IMI(1)	-	-	9.20%	21.63%	9.84%	5.71%
<b>Non-U.S. Developed Markets Equity</b>	<b>\$5,984</b>	<b>27.19%</b>	<b>8.50%</b>	<b>23.90%</b>	<b>10.86%</b>	<b>6.41%</b>
MSCI ACWI ex US IMI	-	-	9.20%	21.63%	9.84%	5.71%
MSCI World ex US	-	-	7.86%	22.49%	9.34%	5.42%
<b>Non-U.S. Dev Mid/Large Cap Equity</b>	<b>\$5,134</b>	<b>23.33%</b>	<b>7.92%</b>	<b>22.94%</b>	<b>11.78%</b>	<b>6.68%</b>
MSCI World ex US	-	-	7.86%	22.49%	9.34%	5.42%
BlackRock MSCI World Ex US Index	5,125	23.29%	7.92%	23.00%	-	-
MSCI World ex US	-	-	7.86%	22.49%	9.34%	5.42%
<b>Non-U.S. Dev Small Cap Equity</b>	<b>\$850</b>	<b>3.86%</b>	<b>12.16%</b>	<b>30.13%</b>	<b>8.92%</b>	<b>6.96%</b>
MSCI World ex US Sm Cap	-	-	11.40%	25.41%	10.42%	8.17%
FIS Group Non-U.S. Small Cap	214	0.97%	12.46%	22.83%	-	-
MSCI ACWI ex US Small Cap	-	-	11.01%	22.42%	9.65%	7.04%
Harris Assoc Int'l SCV	636	2.89%	12.06%	32.78%	8.98%	7.00%
MSCI World ex US Sm Cap	-	-	11.40%	25.41%	10.42%	8.17%
<b>Emerging Mkts Equity</b>	<b>\$2,027</b>	<b>9.21%</b>	<b>12.59%</b>	<b>21.32%</b>	<b>13.02%</b>	<b>6.89%</b>
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
BlackRock Emg Mkts Index	737	3.35%	11.72%	18.11%	-	-
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
Leading Edge Emg Mkts Fund	236	1.07%	11.34%	21.84%	-	-
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
Macquarie Emg Mkts Equity	468	2.12%	14.23%	21.24%	14.14%	7.31%
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
Martin Currie Emg Mkts Equity	489	2.22%	13.45%	26.98%	16.17%	8.91%
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
GlobeFlex Emerging Small Cap	97	0.44%	10.27%	15.17%	9.26%	3.71%
MSCI EM Small Cap	-	-	9.52%	11.51%	6.71%	2.97%
Northern Trust Equity Transition	1	0.01%	2.99%	3.69%	20.22%	-

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## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Net Performance- Equity</b>						
<b>Non-U.S. Equity</b>	<b>5.80%</b>	<b>4.95%</b>	<b>4.30%</b>	-	<b>6.43%</b>	(11/95)
MSCI ACWI ex US IMI(1)	5.19%	5.62%	4.54%	5.72%	5.78%	(11/95)
<b>Non-U.S. Developed Markets Equity</b>	<b>6.60%</b>	<b>4.99%</b>	-	-	<b>6.40%</b>	(1/02)
MSCI ACWI ex US IMI	5.21%	5.48%	3.96%	5.33%	6.97%	(1/02)
MSCI World ex US	5.32%	4.90%	3.45%	5.31%	6.09%	(1/02)
<b>Non-U.S. Dev Mid/Large Cap Equity</b>	<b>6.63%</b>	<b>4.53%</b>	-	-	<b>5.87%</b>	(1/02)
MSCI World ex US	5.32%	4.90%	3.45%	5.31%	6.09%	(1/02)
BlackRock MSCI World Ex US Index	-	-	-	-	6.36%	(6/17)
MSCI World ex US	5.32%	4.90%	3.45%	5.31%	5.90%	(6/17)
<b>Non-U.S. Dev Small Cap Equity</b>	<b>7.49%</b>	<b>7.15%</b>	<b>5.97%</b>	<b>7.35%</b>	<b>7.14%</b>	(10/93)
MSCI World ex US Sm Cap	8.04%	6.64%	-	-	-	
FIS Group Non-U.S. Small Cap	-	-	-	-	5.46%	(10/18)
MSCI ACWI ex US Small Cap	6.92%	6.93%	6.72%	5.93%	3.79%	(10/18)
Harris Assoc Int'l SCV	7.87%	8.17%	-	-	11.00%	(7/03)
MSCI World ex US Sm Cap	8.04%	6.64%	-	-	9.57%	(7/03)
<b>Emerging Mkts Equity</b>	<b>3.24%</b>	<b>5.11%</b>	-	-	<b>7.53%</b>	(1/02)
MSCI EM	3.68%	7.48%	-	-	9.84%	(1/02)
BlackRock Emg Mkts Index	-	-	-	-	6.35%	(7/17)
MSCI EM	3.68%	7.48%	-	-	6.59%	(7/17)
Leading Edge Emg Mkts Fund	-	-	-	-	17.09%	(11/18)
MSCI EM	3.68%	7.48%	-	-	16.96%	(11/18)
Macquarie Emg Mkts Equity	-	-	-	-	5.17%	(5/13)
MSCI EM	3.68%	7.48%	-	-	3.56%	(5/13)
Martin Currie Emg Mkts Equity	-	-	-	-	6.12%	(1/14)
MSCI EM	3.68%	7.48%	-	-	4.27%	(1/14)
GlobeFlex Emerging Small Cap	-	-	-	-	4.33%	(8/13)
MSCI EM Small Cap	2.95%	7.51%	6.83%	4.05%	3.13%	(8/13)

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## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance - Fixed Income</b>						
<b>Fixed Income</b>	<b>\$4,376</b>	<b>100.00%</b>	<b>0.56%</b>	<b>9.51%</b>	<b>4.31%</b>	<b>3.12%</b>
Blmbg Aggregate	-	-	0.18%	8.72%	4.03%	3.05%
<b>Core Fixed Income</b>	<b>\$1,994</b>	<b>45.57%</b>	<b>0.54%</b>	<b>9.64%</b>	<b>4.38%</b>	<b>3.32%</b>
Blmbg Aggregate	-	-	0.18%	8.72%	4.03%	3.05%
MCM Bond Index	1,118	25.56%	0.15%	8.64%	4.00%	3.00%
Blmbg Aggregate(1)	-	-	0.18%	8.72%	4.03%	3.05%
PIMCO Core Bond Fund	671	15.33%	0.88%	9.80%	4.57%	3.45%
Blmbg Agg ex Treasury	-	-	0.82%	9.93%	4.48%	3.47%
Taplin, Canida & Habacht Corp FI	205	4.68%	1.61%	14.84%	5.90%	4.34%
Blmbg Credit	-	-	1.05%	13.80%	5.75%	4.39%
<b>Core-Plus Fixed Income</b>	<b>\$911</b>	<b>20.83%</b>	<b>2.01%</b>	<b>10.84%</b>	<b>4.95%</b>	<b>3.28%</b>
Brandywine Global Opp	204	4.67%	4.17%	9.41%	5.46%	2.43%
FTSE WGBI	-	-	(0.35%)	5.90%	4.12%	2.03%
Pyramis Gbl Adv HY CMBS	341	7.79%	0.29%	8.11%	5.73%	4.84%
Blmbg US Univ CMBS ex Aaa	-	-	(0.66%)	10.39%	6.10%	4.56%
Stone Harbor Gbl HY	197	4.51%	2.07%	14.00%	5.42%	4.98%
FTSE US High Yield	-	-	2.83%	14.09%	6.13%	5.87%
Stone Harbor EMD	169	3.86%	2.94%	14.68%	5.66%	6.03%
JPM EMBI Global	-	-	2.09%	14.42%	6.06%	5.88%
<b>Global TIPS</b>	<b>\$873</b>	<b>19.95%</b>	<b>0.61%</b>	<b>8.36%</b>	<b>3.42%</b>	<b>2.61%</b>
Blmbg US TIPS	-	-	0.79%	8.43%	3.32%	2.62%
Brown Brothers TIPS	232	5.29%	0.64%	8.41%	3.24%	2.69%
Blmbg US TIPS	-	-	0.79%	8.43%	3.32%	2.62%
NISA Inv Adv TIPS	521	11.91%	0.81%	8.34%	3.31%	2.63%
Blmbg US TIPS(1)	-	-	0.79%	8.43%	3.32%	2.62%
New Century Global TIPS	120	2.75%	(0.26%)	8.32%	4.26%	2.40%
Blmbg Wld Gov I-L Undhdg	-	-	0.02%	8.21%	4.05%	2.23%
<b>Nominal U.S. Treasuries</b>	<b>\$597</b>	<b>13.64%</b>	<b>(1.59%)</b>	<b>8.78%</b>	<b>3.87%</b>	<b>2.65%</b>
Blmbg US Treas Bell 10Y	-	-	(1.77%)	8.90%	3.61%	2.31%
PIMCO US Treasuries	597	13.64%	(1.59%)	8.78%	4.03%	2.94%
Blmbg US Treas Bell 10Y	-	-	(1.77%)	8.90%	3.61%	2.31%

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## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Fixed Income</b>					
<b>Fixed Income</b>	<b>4.77%</b>	<b>5.00%</b>	<b>5.75%</b>	<b>6.41%</b>	<b>8.40%</b> (1/81)
Blmbg Aggregate	3.75%	4.15%	5.03%	5.56%	7.63% (1/81)
<b>Core Fixed Income</b>	<b>4.50%</b>	<b>4.57%</b>	-	-	<b>4.86%</b> (1/02)
Blmbg Aggregate	3.75%	4.15%	5.03%	5.56%	4.49% (1/02)
MCM Bond Index	3.65%	4.04%	5.02%	5.66%	7.12% (4/84)
Blmbg Aggregate(1)	3.75%	4.15%	5.14%	5.74%	7.40% (4/84)
PIMCO Core Bond Fund	-	-	-	-	2.88% (1/13)
Blmbg Agg ex Treasury	4.11%	-	-	-	3.15% (1/13)
Taplin, Canida & Habacht Corp FI	5.52%	5.22%	-	-	5.92% (11/00)
Blmbg Credit	5.32%	5.10%	5.97%	6.41%	5.92% (11/00)
<b>Core-Plus Fixed Income</b>	-	-	-	-	<b>4.57%</b> (10/12)
Brandywine Global Opp	-	-	-	-	4.02% (2/11)
FTSE WGBI	1.85%	2.73%	4.21%	4.65%	1.50% (2/11)
Pyramis Gbl Adv HY CMBS	10.83%	6.65%	8.39%	-	8.56% (4/97)
Blmbg US Univ CMBS ex Aaa	8.37%	0.88%	-	-	-
Stone Harbor Gbl HY	6.44%	6.40%	-	-	7.55% (7/00)
FTSE US High Yield	7.27%	6.84%	6.93%	7.48%	7.20% (7/00)
Stone Harbor EMD	6.41%	-	-	-	7.48% (4/05)
JPM EMBI Global	6.57%	7.08%	8.53%	9.99%	7.30% (4/05)
<b>Global TIPS</b>	<b>2.50%</b>	<b>3.30%</b>	-	-	<b>3.26%</b> (2/03)
Blmbg US TIPS	3.36%	3.78%	5.51%	-	4.30% (2/03)
Brown Brothers TIPS	-	-	-	-	1.69% (2/12)
Blmbg US TIPS	3.36%	3.78%	5.51%	-	1.52% (2/12)
NISA Inv Adv TIPS	2.29%	-	-	-	3.15% (4/07)
Blmbg US TIPS(1)	2.29%	3.06%	4.96%	-	3.15% (4/07)
New Century Global TIPS	-	-	-	-	2.17% (2/12)
Blmbg Wld Gov I-L Undhdg	3.13%	3.55%	5.41%	-	1.82% (2/12)
<b>Nominal U.S. Treasuries</b>	-	-	-	-	<b>2.59%</b> (9/11)
Blmbg US Treas Bell 10Y	4.19%	4.20%	5.07%	5.52%	2.61% (9/11)
PIMCO US Treasuries	-	-	-	-	2.80% (9/11)
Blmbg US Treas Bell 10Y	4.19%	4.20%	5.07%	5.52%	2.61% (9/11)

\*Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

(1) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance - Multi-Strategy</b>						
<b>Multi-Strategy</b>	<b>\$1,817</b>	<b>100.00%</b>	<b>2.69%</b>	<b>14.71%</b>	-	-
S&P/LSTA Leveraged Loan	-	-	1.73%	8.64%	4.35%	4.45%
Russell 3000 Index	-	-	9.10%	31.02%	14.57%	11.24%
<b>Credit Focused Strategies</b>	<b>\$970</b>	<b>53.37%</b>	<b>3.84%</b>	<b>11.18%</b>	-	-
Blackstone Keystone(1)	970	53.37%	3.84%	11.18%	6.15%	4.72%
HFRI Fund of Funds Compos	-	-	3.01%	8.32%	3.86%	2.35%
<b>Opp. Equity &amp; Fixed Income</b>	<b>\$549</b>	<b>30.21%</b>	<b>0.12%</b>	<b>15.58%</b>	-	-
SEI Str. Credit: HY Bank Loans(2)	336	18.47%	(2.40%)	0.19%	6.70%	6.13%
FTSE US High Yield	-	-	2.83%	14.09%	6.13%	5.87%
Eaton Vance GMARA	213	11.73%	4.36%	12.62%	-	-
3 month LIBOR + 6%	-	-	1.94%	8.35%	7.99%	7.40%
<b>Private Credit(3)</b>	<b>\$298</b>	<b>16.42%</b>	<b>3.83%</b>	<b>9.95%</b>	-	-

(1) Blackstone Keystone since inception returns are included in the Legacy Hedge Fund composite through 9/30/2017.

(2) SEI HY Bank Loans since inception returns are included in the Fixed Income composite through 9/30/2017.

(3) Private Credit performance has a 1 Qtr lag.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Multi-Strategy</b>					
<b>Multi-Strategy</b>	-	-	-	-	<b>7.41%</b> (10/17)
S&P/LSTA Leveraged Loan	5.00%	4.74%	4.86%	-	4.47% (10/17)
Russell 3000 Index	13.42%	9.03%	6.39%	10.21%	13.14% (10/17)
<b>Credit Focused Strategies</b>	-	-	-	-	<b>5.33%</b> (10/17)
Blackstone Keystone(1)	-	-	-	-	7.60% (7/12)
HFRI Fund of Funds Compos	2.82%	2.81%	3.40%	5.09%	3.69% (7/12)
<b>Opp. Equity &amp; Fixed Income</b>	-	-	-	-	<b>8.18%</b> (10/17)
SEI Str. Credit: HY Bank Loans(2)	11.21%	-	-	-	11.75% (5/08)
FTSE US High Yield	7.27%	6.84%	6.93%	7.48%	7.36% (5/08)
Eaton Vance GMARA	-	-	-	-	4.13% (6/18)
3 month LIBOR + 6%	6.87%	7.79%	8.08%	8.79%	8.43% (6/18)
<b>Private Credit(3)</b>	-	-	-	-	<b>8.80%</b> (12/17)

(1) Blackstone Keystone since inception returns are included in the Legacy Hedge Fund composite through 9/30/2017.

(2) SEI HY Bank Loans since inception returns are included in the Fixed Income composite through 9/30/2017.

(3) Private Credit performance has a 1 Qtr lag.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance - Real Estate</b>						
<b>Real Estate</b>	<b>\$2,086</b>	<b>100.00%</b>	<b>1.57%</b>	<b>10.98%</b>	<b>3.41%</b>	<b>4.64%</b>
Real Estate Custom Benchmark	-	-	1.81%	6.47%	6.44%	8.38%
CPI +3% (Qtr lag)	-	-	0.98%	4.71%	5.07%	4.53%
<b>Core/Core Plus Real Estate Funds</b>	<b>\$735</b>	<b>35.22%</b>	<b>2.01%</b>	<b>4.00%</b>	<b>6.22%</b>	<b>8.12%</b>
NCREIF ODCE Index (Qtr lag)	-	-	1.18%	5.26%	6.69%	8.68%
<b>Value Add/Opp. Real Estate</b>	<b>\$1,061</b>	<b>50.89%</b>	<b>1.92%</b>	<b>11.64%</b>	<b>2.85%</b>	<b>3.88%</b>
NCREIF ODCE Index (Qtr lag)	-	-	1.18%	5.26%	6.69%	8.68%
Real Estate Separate Accounts	623	29.89%	2.76%	15.76%	1.06%	2.35%
NCREIF ODCE Index (Qtr lag)	-	-	1.18%	5.26%	6.69%	8.68%
Non-Core Closed End Funds	438	21.01%	0.75%	5.60%	7.53%	7.61%
NCREIF ODCE Index (Qtr lag)	-	-	1.18%	5.26%	6.69%	8.68%
<b>Natural Resources/Infrastructure</b>	<b>\$6</b>	<b>0.28%</b>	<b>9.85%</b>	<b>10.41%</b>	<b>(1.47%)</b>	<b>(0.10%)</b>
CPI +3% (Qtr lag)	-	-	0.98%	4.71%	5.07%	4.53%
<b>REITS</b>	<b>\$284</b>	<b>13.60%</b>	<b>(0.93%)</b>	<b>26.81%</b>	<b>5.24%</b>	<b>6.80%</b>
FTSE NAREIT US Index (Qtr lag)	-	-	7.59%	18.02%	6.58%	9.72%

\*Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019					
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Real Estate</b>					
<b>Real Estate</b>	<b>6.99%</b>	<b>5.81%</b>	<b>6.80%</b>	<b>7.78%</b>	<b>8.39%</b> (3/84)
Real Estate Custom Benchmark	9.86%	7.21%	7.80%	-	-
CPI +3% (Qtr lag)	4.75%	5.03%	5.15%	5.19%	5.63% (3/84)
<b>Core/Core Plus Real Estate Funds</b>	<b>10.36%</b>	<b>7.53%</b>	<b>7.78%</b>	<b>8.87%</b>	<b>7.10%</b> (9/86)
NCREIF ODCE Index (Qtr lag)	9.89%	6.78%	7.09%	7.81%	6.01% (9/86)
<b>Value Add/Opp. Real Estate</b>	<b>6.64%</b>	<b>5.14%</b>	<b>6.09%</b>	<b>7.28%</b>	<b>6.71%</b> (3/84)
NCREIF ODCE Index (Qtr lag)	9.89%	6.78%	7.09%	7.81%	6.27% (3/84)
Real Estate Separate Accounts	4.90%	4.10%	4.88%	6.20%	5.17% (6/88)
NCREIF ODCE Index (Qtr lag)	9.89%	6.78%	7.09%	7.81%	6.05% (6/88)
Non-Core Closed End Funds	9.87%	6.68%	7.78%	8.82%	7.84% (3/84)
NCREIF ODCE Index (Qtr lag)	9.89%	6.78%	7.09%	7.81%	6.27% (3/84)
<b>Natural Resources/Infrastructure</b>	<b>(0.60%)</b>	<b>2.29%</b>	<b>2.72%</b>	<b>4.22%</b>	<b>4.44%</b> (3/93)
CPI +3% (Qtr lag)	4.75%	5.03%	5.15%	5.19%	5.23% (3/93)
<b>REITS</b>	<b>9.33%</b>	<b>8.43%</b>	<b>10.55%</b>	<b>-</b>	<b>9.99%</b> (4/96)
FTSE NAREIT US Index (Qtr lag)	12.65%	8.72%	11.04%	11.07%	10.75% (4/96)

\*Market values may not sum as a result of accounts funded within the quarter or accounts in the process of liquidation. The market values and performance of such accounts are included within their relevant composites.



## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

	Returns for Periods Ended December 31, 2019					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance - Private Equity</b>						
<b>Private Equity</b>	<b>\$3,937</b>	<b>100.00%</b>	<b>2.23%</b>	<b>9.55%</b>	<b>11.42%</b>	<b>9.47%</b>
Burgiss Private Eqty Idx (Qtr Lag)	-	-	0.85%	7.20%	13.09%	11.27%
Russell 3000 + 3% (Qtr Lag)	-	-	1.89%	6.65%	16.16%	13.74%
<b>Buyouts</b>	<b>\$1,911</b>	<b>48.53%</b>	<b>2.58%</b>	<b>8.69%</b>	<b>12.32%</b>	<b>11.10%</b>
Burgiss Buyout Idx (Qtr Lag)	-	-	0.85%	5.48%	13.23%	11.31%
<b>Special Situations</b>	<b>\$515</b>	<b>13.07%</b>	<b>5.00%</b>	<b>17.28%</b>	<b>14.01%</b>	<b>8.79%</b>
Burgiss Special Sits Idx (Qtr Lag)	-	-	0.32%	2.36%	7.25%	6.17%
<b>Venture Capital</b>	<b>\$764</b>	<b>19.40%</b>	<b>5.05%</b>	<b>22.47%</b>	<b>16.43%</b>	<b>11.14%</b>
Burgiss Venture Cap Idx (Qtr Lag)	-	-	1.26%	14.70%	16.12%	14.63%
<b>Keystone Legacy (Qtr Lag) (1)</b>	<b>\$748</b>	<b>19.00%</b>	<b>(2.98%)</b>	<b>(1.97%)</b>	-	-

(1) As of 7/31/2018, Keystone Legacy SPV consists of 163 non-core funds, prior performance in previous sub-asset classes

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019					
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Private Equity</b>					
<b>Private Equity</b>	<b>11.35%</b>	<b>11.54%</b>	<b>9.65%</b>	<b>13.69%</b>	<b>10.91%</b> <sup>(1/86)</sup>
Burgiss Private Eqty Idx (Qtr Lag)	13.02%	12.90%	11.30%	15.10%	16.84% <sup>(1/86)</sup>
Russell 3000 + 3% (Qtr Lag)	16.40%	12.57%	10.22%	13.31%	14.51% <sup>(1/86)</sup>
<b>Buyouts</b>	<b>13.43%</b>	<b>13.99%</b>	<b>11.65%</b>	<b>16.55%</b>	<b>13.12%</b> <sup>(4/86)</sup>
Burgiss Buyout Index (Qtr Lag)	13.15%	13.79%	11.88%	13.74%	19.50% <sup>(4/86)</sup>
<b>Special Situations</b>	<b>11.28%</b>	<b>12.33%</b>	<b>12.26%</b>	<b>12.40%</b>	<b>12.40%</b> <sup>(1/95)</sup>
Burgiss Special Sits Idx (Qtr Lag)	9.22%	8.85%	9.92%	10.41%	10.41% <sup>(1/95)</sup>
<b>Venture Capital</b>	<b>10.27%</b>	<b>7.23%</b>	<b>3.57%</b>	<b>8.11%</b>	<b>7.10%</b> <sup>(1/86)</sup>
Burgiss Venture Cap Idx (Qtr Lag)	14.97%	11.40%	7.90%	15.83%	13.64% <sup>(1/86)</sup>
<b>Keystone Legacy (Qtr Lag) (1)</b>	-	-	-	-	<b>(3.63%)</b> <sup>(7/18)</sup>

(1) As of 7/31/2018, Keystone Legacy SPV consists of 163 non-core funds, prior performance in previous sub-asset classes

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance</b>						
<b>Total Fund</b>	<b>\$30,886</b>	<b>100.00%</b>	<b>5.75%</b>	<b>19.26%</b>	<b>9.86%</b>	<b>7.49%</b>
Total Fund Custom Benchmark(1)	-	-	5.08%	16.67%	9.34%	7.27%
Public Market Equiv Benchmark(2)	-	-	4.93%	16.28%	10.14%	7.82%
60/40 Index(3)	-	-	5.44%	19.28%	8.99%	6.39%
<b>Global Public Equity</b>	<b>\$17,164</b>	<b>55.57%</b>	<b>9.29%</b>	<b>27.16%</b>	<b>12.36%</b>	<b>8.69%</b>
MSCI ACWI IMI	-	-	9.05%	26.35%	12.09%	8.34%
<b>Fixed Income</b>	<b>\$4,376</b>	<b>14.17%</b>	<b>0.62%</b>	<b>9.73%</b>	<b>4.54%</b>	<b>3.37%</b>
Blmbg Aggregate	-	-	0.18%	8.72%	4.03%	3.05%
<b>Multi-Strategy</b>	<b>\$1,817</b>	<b>5.88%</b>	<b>2.84%</b>	<b>15.24%</b>	-	-
S&P/LSTA Leveraged Loan	-	-	1.73%	8.64%	4.35%	4.45%
Russell 3000 Index	-	-	9.10%	31.02%	14.57%	11.24%
<b>Real Estate(4)</b>	<b>\$2,086</b>	<b>6.75%</b>	<b>1.57%</b>	<b>10.98%</b>	<b>3.41%</b>	<b>4.67%</b>
Real Estate Custom Benchmark	-	-	1.81%	6.47%	6.44%	8.38%
CPI +3% (Qtr lag)	-	-	0.98%	4.71%	5.07%	4.53%
<b>Private Equity(4)</b>	<b>\$3,937</b>	<b>12.75%</b>	<b>2.23%</b>	<b>9.55%</b>	<b>11.42%</b>	<b>9.47%</b>
Burgiss Private Equity Custom Index	-	-	0.85%	7.20%	13.09%	11.27%
Russell 3000 +3% (Qtr lag)	-	-	1.89%	6.65%	16.16%	13.74%
<b>Cash</b>	<b>\$1,471</b>	<b>4.76%</b>	<b>0.48%</b>	<b>2.31%</b>	<b>1.97%</b>	<b>1.45%</b>
3-month Treasury Bill	-	-	0.46%	2.28%	1.67%	1.07%

(1) Prior to 12/31/2018, Total Fund Custom Benchmark returns provided by RVK. Benchmark consists of: 16% SERS Private Equity Composite, 48% MSCI ACWI IM Index, 12% Real Estate Custom Benchmark, 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index

(2) Public Market Equivalent Benchmark returns provided by RVK. Benchmark consists of: 16% Russell 3000+3% (Qtr Lag), 48% MSCI ACWI IM Index, 12% CPI+3% (Qtr Lag), 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index.

(3) Benchmark consists of 60% MSCI ACWI IMI, 40% Bloomberg Agg Bond Index.

(4) Private Equity, Real Estate, and Private Credit (within Multi-Strategy) performance are shown Net of Fees.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance</b>					
<b>Total Fund</b>	<b>8.76%</b>	<b>7.48%</b>	<b>6.71%</b>	<b>-</b>	<b>8.51%</b> <sup>(1/96)</sup>
Total Fund Custom Benchmark(1)	8.23%	7.47%	6.24%	8.62%	7.96% <sup>(1/96)</sup>
Public Market Equiv Benchmark(2)	8.93%	7.94%	6.59%	8.90%	8.25% <sup>(1/96)</sup>
60/40 Index(3)	7.07%	6.18%	5.24%	6.89%	6.45% <sup>(1/96)</sup>
<b>Global Public Equity</b>	<b>9.73%</b>	<b>6.95%</b>	<b>-</b>	<b>-</b>	<b>7.32%</b> <sup>(1/02)</sup>
MSCI ACWI IMI	8.91%	7.02%	4.84%	7.24%	7.37% <sup>(1/02)</sup>
<b>Fixed Income</b>	<b>5.01%</b>	<b>5.25%</b>	<b>6.00%</b>	<b>6.64%</b>	<b>7.68%</b> <sup>(1/85)</sup>
Blmbg Aggregate	3.75%	4.15%	5.03%	5.56%	6.80% <sup>(1/85)</sup>
<b>Multi-Strategy</b>					
S&P/LSTA Leveraged Loan	5.00%	4.74%	4.86%	-	-
Russell 3000 Index	13.42%	9.03%	6.39%	10.21%	11.28% <sup>(1/85)</sup>
<b>Real Estate(4)</b>	<b>7.01%</b>	<b>5.82%</b>	<b>6.81%</b>	<b>7.79%</b>	<b>8.39%</b> <sup>(3/84)</sup>
Real Estate Custom Benchmark	9.86%	7.21%	7.80%	-	-
CPI +3% (Qtr lag)	4.75%	5.03%	5.15%	5.19%	5.63% <sup>(3/84)</sup>
<b>Private Equity(4)</b>	<b>11.35%</b>	<b>11.54%</b>	<b>9.65%</b>	<b>13.69%</b>	<b>10.91%</b> <sup>(1/86)</sup>
Burgiss Private Equity Custom Index	13.02%	12.90%	11.30%	15.10%	16.84% <sup>(1/86)</sup>
Russell 3000 +3% (Qtr lag)	16.40%	12.57%	10.22%	13.31%	14.51% <sup>(1/86)</sup>
<b>Cash</b>	<b>0.88%</b>	<b>1.73%</b>	<b>2.13%</b>	<b>2.86%</b>	<b>4.03%</b> <sup>(1/87)</sup>
3-month Treasury Bill	0.58%	1.39%	1.78%	2.47%	3.27% <sup>(1/87)</sup>

(1) Prior to 12/31/2018, Total Fund Custom Benchmark returns provided by RVK. Benchmark consists of: 16% SERS Private Equity Composite, 48% MSCI ACW IM Index, 12% Real Estate Custom Benchmark, 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index.

(2) Prior to 12/31/2018 Public Market Equivalent Benchmark returns provided by RVK. Benchmark consists of: 16% Russell 3000+3% (Qtr Lag), 48% MSCI ACW IM Index, 12% CPI+3% (Qtr Lag), 10% S&P/LSTA Leveraged Loan Index, 11% Bloomberg US Agg Bond Index, 3% ICE BofAML 3 Mo US T-Bill Index.

(3) Benchmark consists of 60% MSCI ACW IMI, 40% Bloomberg Agg Bond Index.

(4) Private Equity, Real Estate, and Private Credit (within Multi-Strategy) performance are shown Net of Fees.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value (\$mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance- Equity</b>						
<b>Global Public Equity</b>	<b>\$17,164</b>	<b>100.00%</b>	<b>9.29%</b>	<b>27.16%</b>	<b>12.36%</b>	<b>8.69%</b>
MSCI ACWI IMI	-	-	9.05%	26.35%	12.09%	8.34%
<b>Global Mandates</b>	<b>\$1,135</b>	<b>6.61%</b>	<b>8.57%</b>	<b>31.56%</b>	<b>18.73%</b>	<b>12.93%</b>
MSCI World	-	-	8.56%	27.67%	12.57%	8.74%
Walter Scott & Prtnrs Gbl Gr Eq	1,135	6.61%	8.57%	31.56%	18.73%	12.93%
MSCI World	-	-	8.56%	27.67%	12.57%	8.74%
<b>U.S. Equity</b>	<b>\$8,017</b>	<b>46.71%</b>	<b>9.23%</b>	<b>30.47%</b>	<b>13.37%</b>	<b>10.10%</b>
Russell 3000 Index(1)	-	-	9.10%	31.02%	14.57%	11.24%
<b>U.S. Large/Mid Cap Equity</b>	<b>\$6,312</b>	<b>36.77%</b>	<b>9.01%</b>	<b>31.48%</b>	<b>14.53%</b>	<b>10.92%</b>
Russell 1000 Index	-	-	9.04%	31.43%	15.05%	11.48%
MCM Russell 1000 Index	6,312	36.77%	9.02%	31.39%	15.08%	11.53%
Russell 1000 Index	-	-	9.04%	31.43%	15.05%	11.48%
Iridian Asset Mgmt MCV	0	0.00%	5.05%	28.22%	6.74%	4.28%
Russell MidCap Index	-	-	7.06%	30.54%	12.06%	9.33%
Russell MidCap Value Idx	-	-	6.36%	27.06%	8.10%	7.62%
<b>U.S. Small Cap Equity</b>	<b>\$1,705</b>	<b>9.93%</b>	<b>10.08%</b>	<b>26.55%</b>	<b>9.20%</b>	<b>6.45%</b>
Russell 2000 Index(1)	-	-	9.94%	25.52%	8.59%	7.89%
S&P 600 Small Cap Index	-	-	8.21%	22.78%	8.36%	9.56%
MCM Russell 2000 Core Index	348	2.03%	9.97%	25.55%	8.59%	-
Russell 2000 Index	-	-	9.94%	25.52%	8.59%	8.23%
MCM Russell 2000 Val Index	622	3.62%	8.50%	22.39%	4.75%	-
Russell 2000 Value Index	-	-	8.49%	22.39%	4.77%	6.99%
Emerald Adv Div Sm Cap Grth	735	4.28%	11.51%	30.75%	13.90%	-
Russell 2000 Growth Index	-	-	11.39%	28.48%	12.49%	9.34%
<b>Non-U.S. Equity</b>	<b>\$8,011</b>	<b>46.67%</b>	<b>9.60%</b>	<b>23.43%</b>	<b>11.18%</b>	<b>6.54%</b>
MSCI ACWI ex US IMI(1)	-	-	9.20%	21.63%	9.84%	5.71%
<b>Non-U.S. Developed Markets Equity</b>	<b>\$5,984</b>	<b>34.87%</b>	<b>8.58%</b>	<b>24.01%</b>	<b>11.02%</b>	<b>6.61%</b>
MSCI ACWI ex US IMI	-	-	9.20%	21.63%	9.84%	5.71%
MSCI World ex US	-	-	7.86%	22.49%	9.34%	5.42%
<b>Non-U.S. Dev Large/Mid Cap Equity</b>	<b>\$5,134</b>	<b>29.91%</b>	<b>7.92%</b>	<b>22.97%</b>	<b>11.83%</b>	<b>6.80%</b>
MSCI World ex US	-	-	7.86%	22.49%	9.34%	5.42%
BlackRock MSCI World Ex US Index	5,125	29.86%	7.93%	23.01%	-	-
MSCI World ex US	-	-	7.86%	22.49%	9.34%	5.42%
<b>Non-U.S. Dev Small Cap Equity</b>	<b>\$850</b>	<b>4.95%</b>	<b>12.74%</b>	<b>30.83%</b>	<b>9.56%</b>	<b>7.63%</b>
MSCI ACWI ex US Small Cap	-	-	11.01%	22.42%	9.65%	7.04%
FIS Group Non-U.S. Small Cap	214	1.25%	12.69%	23.18%	-	-
MSCI ACWI ex US Small Cap	-	-	11.01%	22.42%	9.65%	7.04%
Harris Assoc Int'l SCV	636	3.71%	12.75%	33.60%	9.70%	7.72%
MSCI World ex US Sm Cap	-	-	11.40%	25.41%	10.42%	8.17%
<b>Emerging Mkts Equity</b>	<b>\$2,027</b>	<b>11.81%</b>	<b>12.71%</b>	<b>21.75%</b>	<b>13.60%</b>	<b>7.40%</b>
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
BlackRock Emg Mkts Index	737	4.30%	11.77%	18.25%	-	-
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
Leading Edge Emg Mkts Fund	236	1.38%	11.56%	22.25%	-	-
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
Macquarie Emg Mkts Equity	468	2.72%	14.39%	21.83%	14.83%	7.92%
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
Martin Currie Emg Mkts Equity	489	2.85%	13.59%	27.65%	17.00%	9.55%
MSCI EM	-	-	11.84%	18.44%	11.58%	5.61%
GlobeFlex Emerging Small Cap	97	0.56%	10.45%	15.91%	9.96%	4.37%
MSCI EM Small Cap	-	-	9.52%	11.51%	6.71%	2.97%
Northern Trust Equity Transition	1	0.01%	2.99%	3.69%	20.22%	-

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The market values and performance of such accounts are included within their relevant composites.

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## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Gross Performance- Equity</b>						
<b>Global Public Equity</b>	<b>9.73%</b>	<b>6.95%</b>	-	-	<b>7.32%</b>	(1/02)
MSCI ACWI IMI	8.91%	7.02%	4.84%	7.24%	7.37%	(1/02)
<b>Global Mandates</b>	<b>12.25%</b>	-	-	-	<b>9.46%</b>	(11/06)
MSCI World	9.47%	6.92%	4.50%	7.39%	6.06%	(11/06)
Walter Scott & Prtnrs Gbl Gr Eq	11.89%	-	-	-	9.98%	(10/06)
MSCI World	9.47%	6.92%	4.50%	7.39%	6.31%	(10/06)
<b>U.S. Equity</b>	<b>13.13%</b>	<b>8.10%</b>	<b>6.24%</b>	<b>9.90%</b>	<b>10.80%</b>	(1/81)
Russell 3000 Index(1)	13.42%	9.03%	6.39%	10.14%	11.04%	(1/81)
<b>U.S. Large/Mid Cap Equity</b>	<b>13.62%</b>	<b>8.68%</b>	<b>6.22%</b>	<b>10.19%</b>	<b>9.74%</b>	(1/94)
Russell 1000 Index	13.54%	9.12%	6.29%	10.33%	9.93%	(1/94)
MCM Russell 1000 Index	-	-	-	-	14.81%	(1/12)
Russell 1000 Index	13.54%	9.12%	6.29%	10.33%	14.82%	(1/12)
Iridian Asset Mgmt MCV	12.40%	10.31%	10.34%	-	13.16%	(3/95)
Russell MidCap Index	13.19%	9.49%	9.01%	11.47%	11.23%	(3/95)
Russell MidCap Value Idx	12.41%	8.82%	9.97%	11.53%	11.27%	(3/95)
<b>U.S. Small Cap Equity</b>	<b>10.84%</b>	<b>7.25%</b>	<b>7.44%</b>	<b>10.25%</b>	<b>9.62%</b>	(1/94)
Russell 2000 Index(1)	12.05%	8.44%	8.42%	10.92%	10.37%	(1/94)
S&P 600 Small Cap Index	13.35%	9.20%	9.80%	11.21%	10.55%	(1/94)
MCM Russell 2000 Core Index	-	-	-	-	9.33%	(12/16)
Russell 2000 Index	11.83%	7.92%	7.59%	9.35%	9.33%	(12/16)
MCM Russell 2000 Val Index	-	-	-	-	6.00%	(12/16)
Russell 2000 Value Index	10.56%	6.92%	9.41%	10.15%	6.02%	(12/16)
Emerald Adv Div Sm Cap Grth	-	-	-	-	14.01%	(12/16)
Russell 2000 Growth Index	13.01%	8.81%	5.57%	8.13%	12.63%	(12/16)
<b>Non-U.S. Equity</b>	<b>6.09%</b>	<b>5.28%</b>	<b>4.62%</b>	-	<b>6.75%</b>	(11/95)
MSCI ACWI ex US IMI(1)	5.19%	5.62%	4.54%	5.72%	5.78%	(11/95)
<b>Non-U.S. Developed Markets Equity</b>	<b>6.86%</b>	<b>5.30%</b>	-	-	<b>6.72%</b>	(1/02)
MSCI ACWI ex US IMI	5.21%	5.48%	3.96%	5.33%	6.97%	(1/02)
MSCI World ex US	5.32%	4.90%	3.45%	5.31%	6.09%	(1/02)
<b>Non-U.S. Dev Large/Mid Cap Equity</b>	<b>6.83%</b>	<b>4.76%</b>	-	-	<b>6.13%</b>	(1/02)
MSCI World ex US	5.32%	4.90%	3.45%	5.31%	6.09%	(1/02)
BlackRock MSCI World Ex US Index	-	-	-	-	6.37%	(6/17)
MSCI World ex US	5.32%	4.90%	3.45%	5.31%	5.90%	(6/17)
<b>Non-U.S. Dev Small Cap Equity</b>	<b>8.18%</b>	<b>7.84%</b>	<b>6.59%</b>	<b>7.91%</b>	<b>7.69%</b>	(10/93)
MSCI ACWI ex US Small Cap	6.92%	6.93%	6.72%	5.93%	-	
FIS Group Non-U.S. Small Cap	-	-	-	-	5.70%	(10/18)
MSCI ACWI ex US Small Cap	6.92%	6.93%	6.72%	5.93%	3.79%	(10/18)
Harris Assoc Int'l SCV	8.60%	8.93%	-	-	11.77%	(7/03)
MSCI World ex US Sm Cap	8.04%	6.64%	-	-	9.57%	(7/03)
<b>Emerging Mkts Equity</b>	<b>3.65%</b>	<b>5.52%</b>	-	-	<b>7.89%</b>	(1/02)
MSCI EM	3.68%	7.48%	-	-	9.84%	(1/02)
BlackRock Emg Mkts Index	-	-	-	-	6.43%	(7/17)
MSCI EM	3.68%	7.48%	-	-	6.59%	(7/17)
Leading Edge Emg Mkts Fund	-	-	-	-	17.43%	(11/18)
MSCI EM	3.68%	7.48%	-	-	16.96%	(11/18)
Macquarie Emg Mkts Equity	-	-	-	-	5.88%	(5/13)
MSCI EM	3.68%	7.48%	-	-	3.56%	(5/13)
Martin Currie Emg Mkts Equity	-	-	-	-	6.69%	(1/14)
MSCI EM	3.68%	7.48%	-	-	4.27%	(1/14)
GlobeFlex Emerging Small Cap	-	-	-	-	4.94%	(8/13)
MSCI EM Small Cap	2.95%	7.51%	6.83%	4.05%	3.13%	(8/13)

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The market values and performance of such accounts are included within their relevant composites.

(1) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance - Fixed Income</b>						
<b>Fixed Income</b>	<b>\$4,376</b>	<b>100.00%</b>	<b>0.62%</b>	<b>9.73%</b>	<b>4.54%</b>	<b>3.37%</b>
Blmbg Aggregate	-	-	0.18%	8.72%	4.03%	3.05%
<b>Core Fixed Income</b>	<b>\$1,994</b>	<b>45.57%</b>	<b>0.57%</b>	<b>9.74%</b>	<b>4.48%</b>	<b>3.43%</b>
Blmbg Aggregate	-	-	0.18%	8.72%	4.03%	3.05%
MCM Bond Index	1,118	25.56%	0.16%	8.68%	4.03%	3.02%
Blmbg Aggregate(1)	-	-	0.18%	8.72%	4.03%	3.05%
PIMCO Core Bond Fund	671	15.33%	0.92%	9.97%	4.76%	3.63%
Blmbg Agg ex Treasury	-	-	0.82%	9.93%	4.48%	3.47%
Taplin, Canida & Habacht Corp FI	205	4.68%	1.67%	15.08%	6.15%	4.60%
Blmbg Credit	-	-	1.05%	13.80%	5.75%	4.39%
<b>Core-Plus Fixed Income</b>	<b>\$911</b>	<b>20.83%</b>	<b>2.21%</b>	<b>11.43%</b>	<b>5.56%</b>	<b>3.91%</b>
Brandywine Global Opp	204	4.67%	4.27%	9.83%	5.86%	2.83%
FTSE WGBI	-	-	(0.35%)	5.90%	4.12%	2.03%
Pyramis Gbl Adv HY CMBS	341	7.79%	0.44%	8.94%	6.44%	5.50%
Blmbg US Univ CMBS ex Aaa	-	-	(0.66%)	10.39%	6.10%	4.56%
Stone Harbor Gbl HY	197	4.51%	2.37%	14.45%	5.85%	5.41%
FTSE US High Yield	-	-	2.83%	14.09%	6.13%	5.87%
Stone Harbor EMD	169	3.86%	3.24%	15.14%	6.08%	6.46%
JPM EMBI Global	-	-	2.09%	14.42%	6.06%	5.88%
<b>Global TIPS</b>	<b>\$873</b>	<b>19.95%</b>	<b>0.65%</b>	<b>8.51%</b>	<b>3.55%</b>	<b>2.74%</b>
Blmbg US TIPS	-	-	0.79%	8.43%	3.32%	2.62%
Brown Brothers TIPS	232	5.29%	0.70%	8.54%	3.37%	2.83%
Blmbg US TIPS	-	-	0.79%	8.43%	3.32%	2.62%
NISA Inv Adv TIPS	521	11.91%	0.83%	8.48%	3.41%	2.73%
Blmbg US TIPS(1)	-	-	0.79%	8.43%	3.32%	2.62%
New Century Global TIPS	120	2.75%	(0.20%)	9.42%	4.78%	2.81%
Blmbg Wld Gov I-L Undhdg	-	-	0.02%	8.21%	4.05%	2.23%
<b>Nominal U.S. Treasuries</b>	<b>\$597</b>	<b>13.64%</b>	<b>(1.56%)</b>	<b>8.88%</b>	<b>3.97%</b>	<b>2.74%</b>
Blmbg:Treas Bellwethr 10Y	-	-	(1.77%)	8.90%	3.61%	2.31%
PIMCO US Treasuries	597	13.64%	(1.56%)	8.88%	4.13%	3.04%
Blmbg:Treas Bellwethr 10Y	-	-	(1.77%)	8.90%	3.61%	2.31%

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## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance - Fixed Income</b>					
<b>Fixed Income</b>	<b>5.01%</b>	<b>5.25%</b>	<b>6.00%</b>	<b>6.64%</b>	<b>7.68%</b> (1/85)
Blmbg Aggregate	3.75%	4.15%	5.03%	5.56%	6.80% (1/85)
<b>Core Fixed Income</b>	<b>4.66%</b>	<b>4.75%</b>	-	-	<b>5.03%</b> (1/02)
Blmbg Aggregate	3.75%	4.15%	5.03%	5.56%	4.49% (1/02)
MCM Bond Index	3.68%	4.08%	5.07%	5.71%	5.24% (9/93)
Blmbg Aggregate(1)	3.75%	4.15%	5.14%	5.74%	5.28% (9/93)
PIMCO Core Bond Fund	-	-	-	-	3.06% (1/13)
Blmbg Agg ex Treasury	4.11%	-	-	-	3.15% (1/13)
Taplin, Canida & Habacht Corp FI	5.79%	5.48%	-	-	6.21% (12/00)
Blmbg Credit	5.32%	5.10%	5.97%	6.41%	5.88% (12/00)
<b>Core-Plus Fixed Income</b>	-	-	-	-	<b>5.23%</b> (10/12)
Brandywine Global Opp	-	-	-	-	4.41% (2/11)
FTSE WGBI	1.85%	2.73%	4.21%	4.65%	1.50% (2/11)
Pyramid Gbl Adv HY CMBS	11.54%	7.35%	9.09%	-	9.25% (4/97)
Blmbg US Univ CMBS ex Aaa	8.37%	0.88%	-	-	-
Stone Harbor Gbl HY	6.91%	6.85%	-	-	7.74% (7/00)
FTSE US High Yield	7.27%	6.84%	6.93%	7.48%	7.20% (7/00)
Stone Harbor EMD	6.85%	-	-	-	7.93% (4/05)
JPM EMBI Global	6.57%	7.08%	8.53%	9.99%	7.30% (4/05)
<b>Global TIPS</b>	<b>2.62%</b>	<b>3.42%</b>	-	-	<b>3.39%</b> (2/03)
Blmbg US TIPS	3.36%	3.78%	5.51%	-	4.30% (2/03)
Brown Brothers TIPS	-	-	-	-	1.81% (2/12)
Blmbg US TIPS	3.36%	3.78%	5.51%	-	1.52% (2/12)
NISA Inv Adv TIPS	2.39%	-	-	-	3.25% (4/07)
Blmbg US TIPS(1)	2.29%	3.06%	4.96%	-	3.15% (4/07)
New Century Global TIPS	-	-	-	-	2.52% (2/12)
Blmbg Wld Gov I-L Undhdg	3.13%	3.55%	5.41%	-	1.82% (2/12)
<b>Nominal U.S. Treasuries</b>	-	-	-	-	<b>2.68%</b> (9/11)
Blmbg US Treas Bell 10Y	4.19%	4.20%	5.07%	5.52%	2.61% (9/11)
PIMCO US Treasuries	-	-	-	-	2.89% (9/11)
Blmbg US Treas Bell 10Y	4.19%	4.20%	5.07%	5.52%	2.61% (9/11)

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## Investment Manager Returns

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Returns for Periods Ended December 31, 2019						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance - Multi-Strategy</b>						
<b>Multi-Strategy</b>	<b>\$1,817</b>	<b>100.00%</b>	<b>2.84%</b>	<b>15.24%</b>	-	-
S&P/LSTA Leveraged Loan	-	-	1.73%	8.64%	4.35%	4.45%
Russell 3000 Index	-	-	9.10%	31.02%	14.57%	11.24%
<b>Credit Focused Strategies</b>	<b>\$970</b>	<b>53.37%</b>	<b>4.01%</b>	<b>11.67%</b>	-	-
Blackstone Keystone(1)(5)	970	53.37%	4.01%	11.67%	6.30%	4.81%
HFRI Fund of Funds Compos	-	-	3.01%	8.32%	3.86%	2.35%
<b>Opp. Equity &amp; Fixed Income</b>	<b>\$549</b>	<b>30.21%</b>	<b>0.29%</b>	<b>16.29%</b>	-	-
SEI Str. Credit: HY Bank Loans(2)	336	18.47%	(2.18%)	1.07%	7.69%	7.07%
FTSE US High Yield	-	-	2.83%	14.09%	6.13%	5.87%
Eaton Vance GMARA	213	11.73%	4.45%	13.07%	-	-
3 month LIBOR + 6%	-	-	1.94%	8.35%	7.99%	7.40%
<b>Private Credit(4)</b>	<b>\$298</b>	<b>16.42%</b>	<b>3.83%</b>	<b>9.95%</b>	-	-

(1) Blackstone Keystone since inception returns are included in the Legacy Hedge Fund composite through 9/30/2017.

(2) SEI HY Bank Loans since inception returns are included in the Fixed Income composite through 9/30/2017.

(3) Russell 3000 Index since inception returns are included in the Global Public Equity composite through 9/30/2017.

(4) Private Credit performance is shown Net of Fees with a 1 Qtr lag.

(5) Blackstone Keystone performance is shown Net of Fees.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2019. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended December 31, 2019

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance - Multi-Strategy</b>					
<b>Multi-Strategy</b>	-	-	-	-	<b>7.71%</b> (10/17)
S&P/LSTA Leveraged Loan	5.00%	4.74%	4.86%	-	4.47% (10/17)
Russell 3000 Index	13.42%	9.03%	6.39%	10.21%	13.14% (10/17)
<b>Credit Focused Strategies</b>	-	-	-	-	<b>5.53%</b> (10/17)
Blackstone Keystone(1)(5)	-	-	-	-	7.66% (7/12)
HFRI Fund of Funds Compos	2.82%	2.81%	3.40%	5.09%	3.69% (7/12)
<b>Opp. Equity &amp; Fixed Income</b>	-	-	-	-	<b>8.62%</b> (10/17)
SEI Str. Credit: HY Bank Loans(2)	12.22%	-	-	-	12.78% (5/08)
FTSE US High Yield	7.27%	6.84%	6.93%	7.48%	7.36% (5/08)
Eaton Vance GMARA	-	-	-	-	4.39% (6/18)
3 month LIBOR + 6%	6.87%	7.79%	8.08%	8.79%	8.43% (6/18)
<b>Private Credit(4)</b>	-	-	-	-	<b>8.80%</b> (12/17)

(1) Blackstone Keystone since inception returns are included in the Legacy Hedge Fund composite through 9/30/2017.

(2) SEI HY Bank Loans since inception returns are included in the Fixed Income composite through 9/30/2017.

(3) Russell 3000 Index since inception returns are included in the Global Public Equity composite through 9/30/2017.

(4) Private Credit performance is shown Net of Fees with a 1 Qtr lag.

(5) Blackstone Keystone performance is shown Net of Fees.



# Global Public Equity Period Ended December 31, 2019

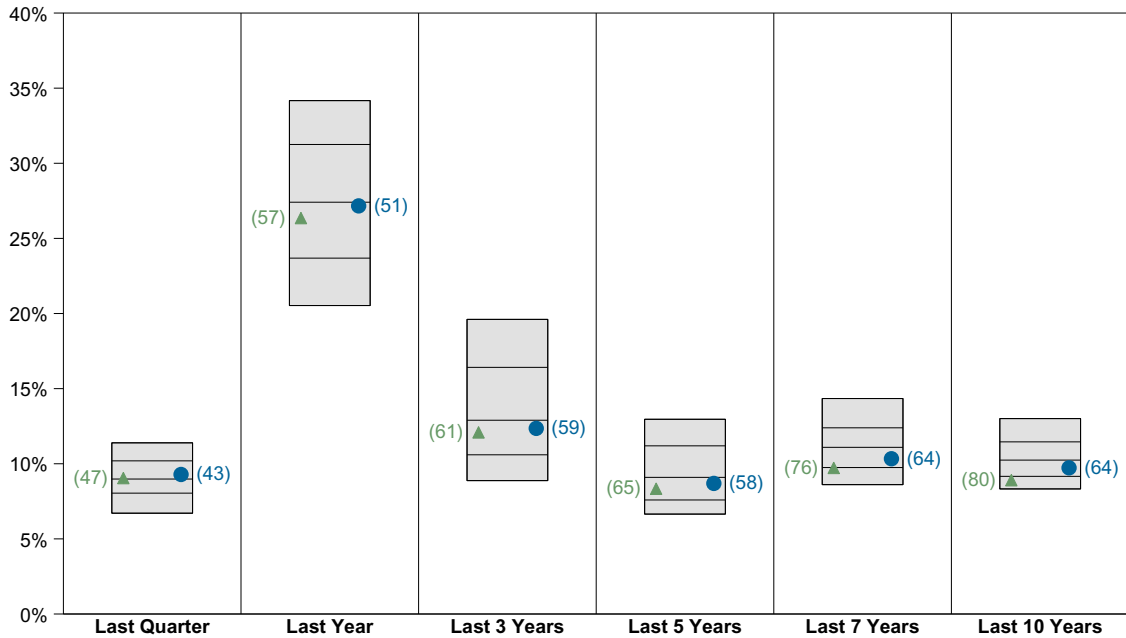
## Quarterly Summary and Highlights

- Global Public Equity's portfolio posted a 9.29% return for the quarter placing it in the 43 percentile of the Callan Global Equity group for the quarter and in the 51 percentile for the last year.
- Global Public Equity's portfolio outperformed the MSCI ACWI IMI by 0.24% for the quarter and outperformed the MSCI ACWI IMI for the year by 0.81%.

## Quarterly Asset Growth

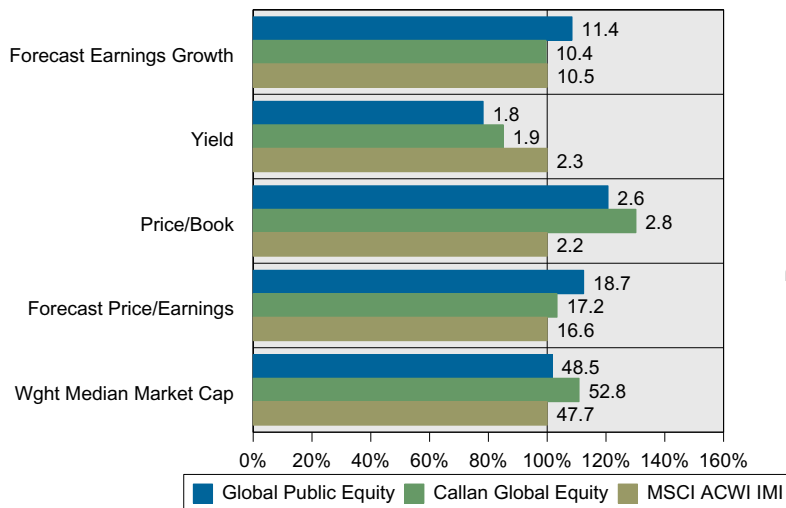
Beginning Market Value	\$16,154,037,277
Net New Investment	\$-453,242,808
Investment Gains/(Losses)	\$1,463,253,366
Ending Market Value	\$17,164,047,835

## Performance vs Callan Global Equity (Gross)

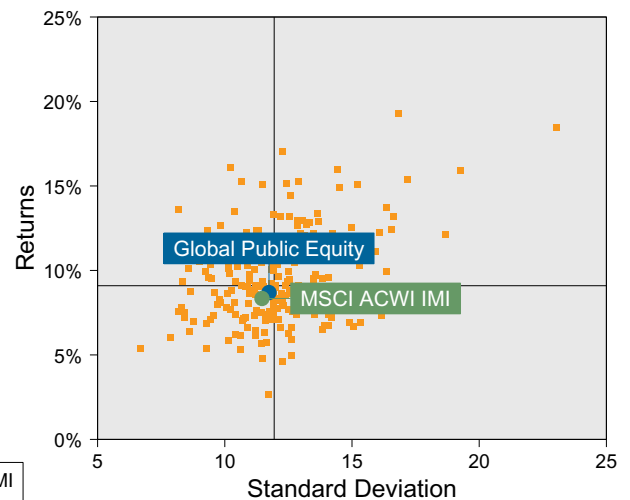


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	11.39	34.17	19.61	12.96	14.34	13.01
25th Percentile	10.19	31.25	16.42	11.19	12.39	11.46
Median	8.98	27.41	12.90	9.10	11.09	10.24
75th Percentile	8.04	23.69	10.60	7.59	9.75	9.16
90th Percentile	6.71	20.53	8.88	6.65	8.61	8.32
<b>Global Public Equity</b> ●	9.29	27.16	12.36	8.69	10.33	9.73
MSCI ACWI IMI ▲	9.05	26.35	12.09	8.34	9.73	8.91

## Portfolio Characteristics as a Percentage of the MSCI ACWI IMI



## Callan Global Equity (Gross) Annualized Five Year Risk vs Return

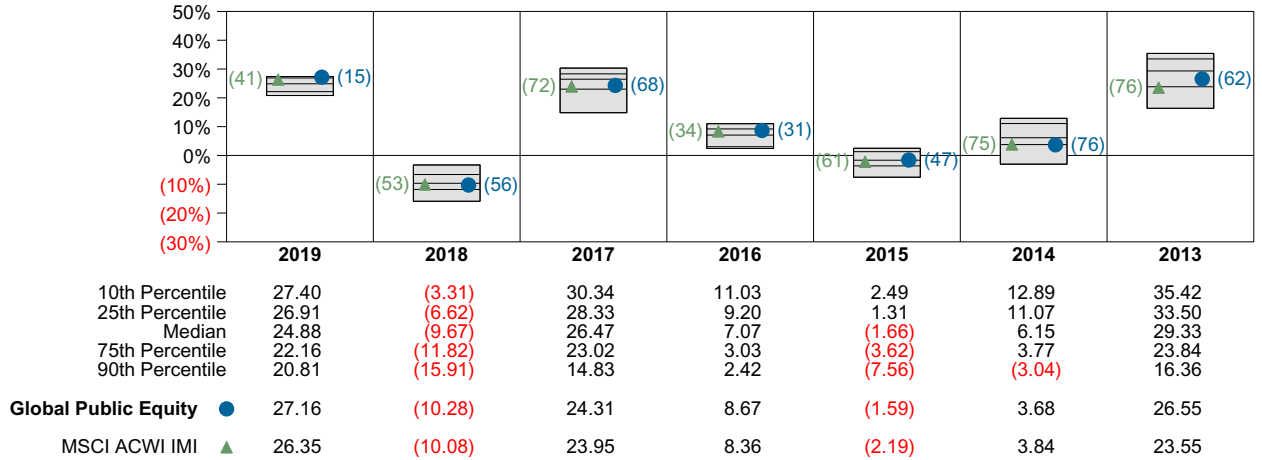


# Global Public Equity Return Analysis Summary

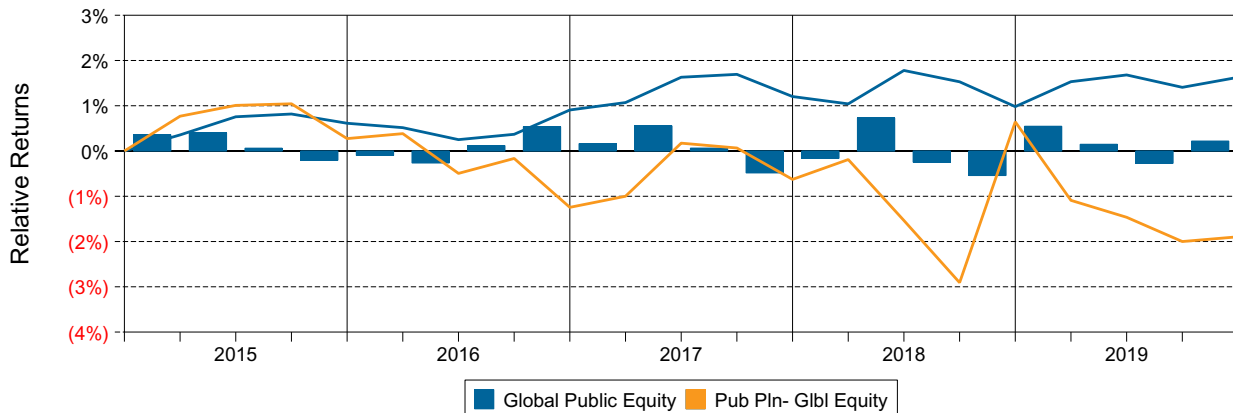
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

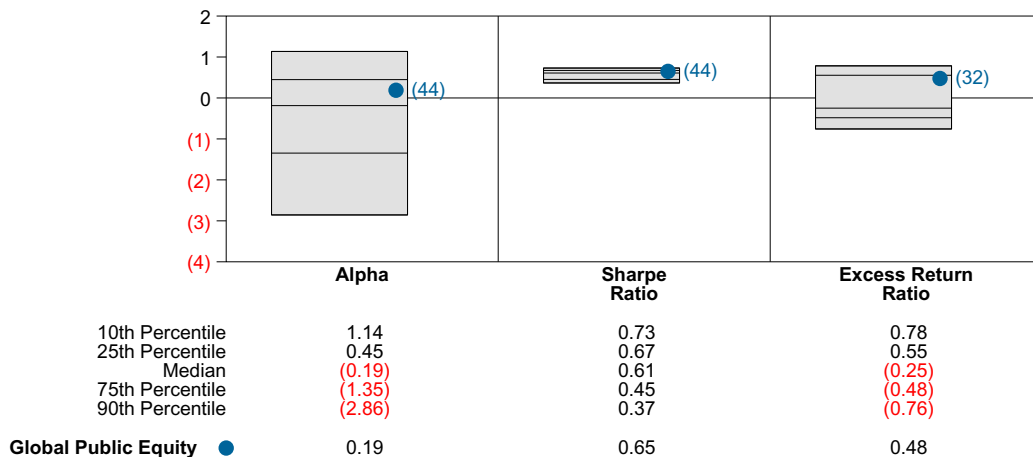
### Performance vs Public Fund - Global Equity (Gross)



### Cumulative and Quarterly Relative Return vs MSCI ACWI IMI



### Risk Adjusted Return Measures vs MSCI ACWI IMI Rankings Against Public Fund - Global Equity (Gross) Five Years Ended December 31, 2019

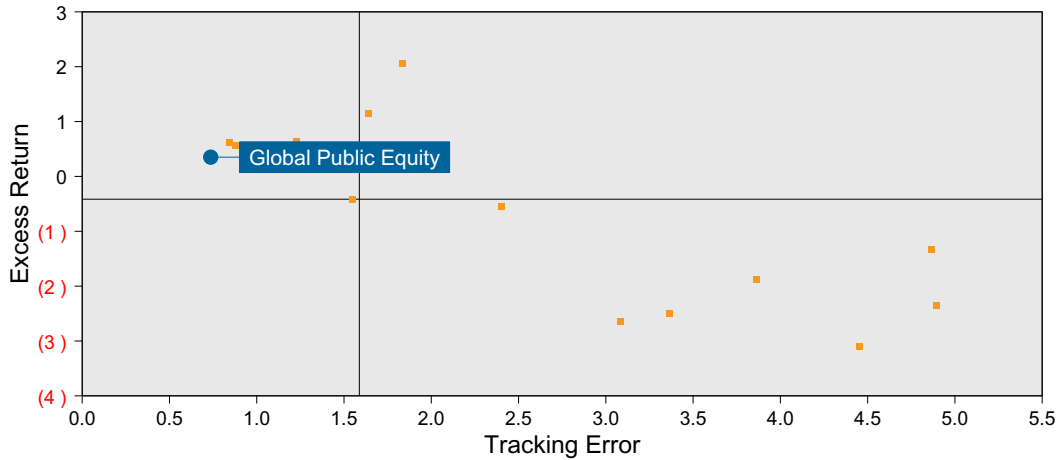


# Global Public Equity Risk Analysis Summary

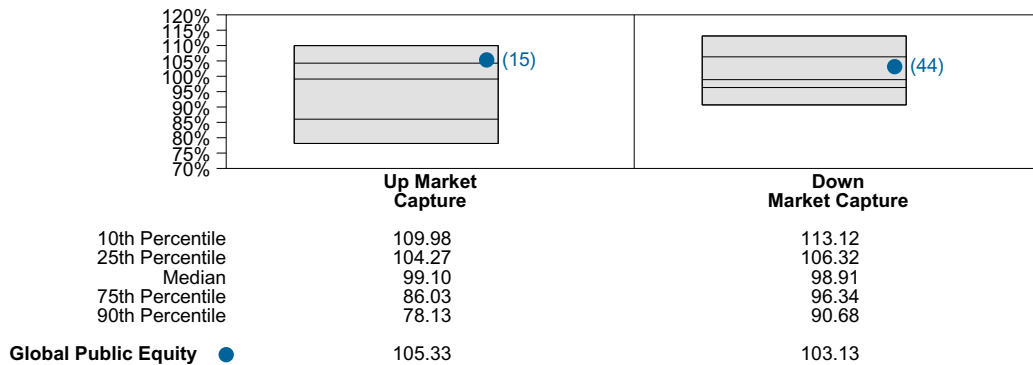
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

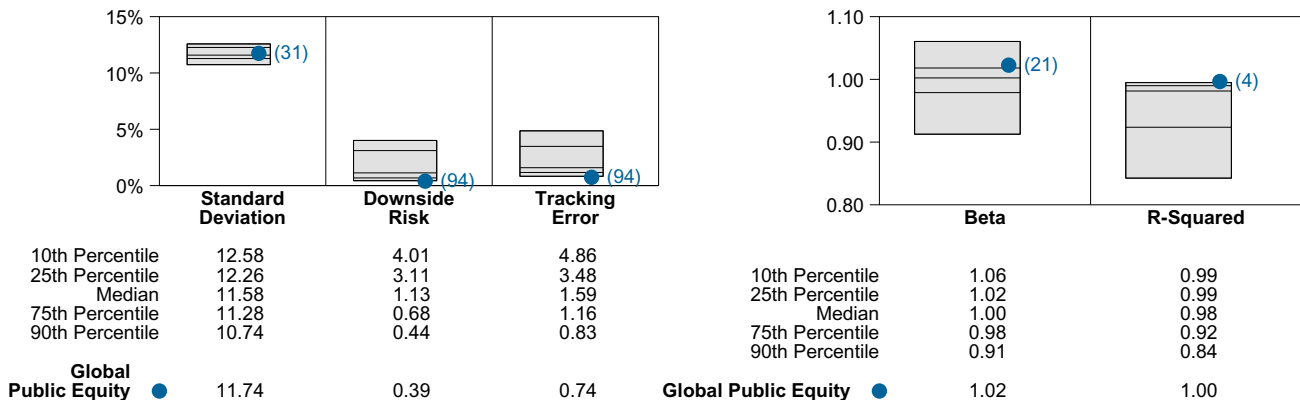
### Risk Analysis vs Public Fund - Global Equity (Gross) Five Years Ended December 31, 2019



### Market Capture vs MSCI ACWI IMI Index (USD Net Div) Rankings Against Public Fund - Global Equity (Gross) Five Years Ended December 31, 2019



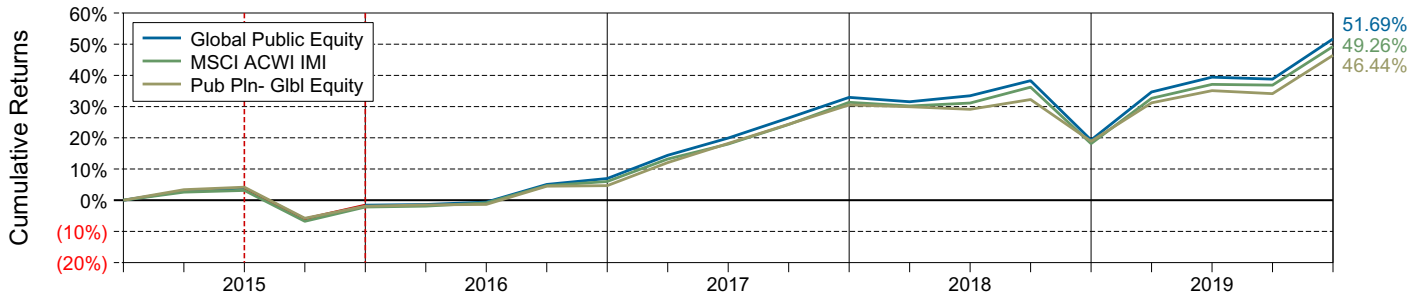
### Risk Statistics Rankings vs MSCI ACWI IMI Index (USD Net Div) Rankings Against Public Fund - Global Equity (Gross) Five Years Ended December 31, 2019



# Global Public Equity Drawdown Analysis for Five Years Ended December 31, 2019

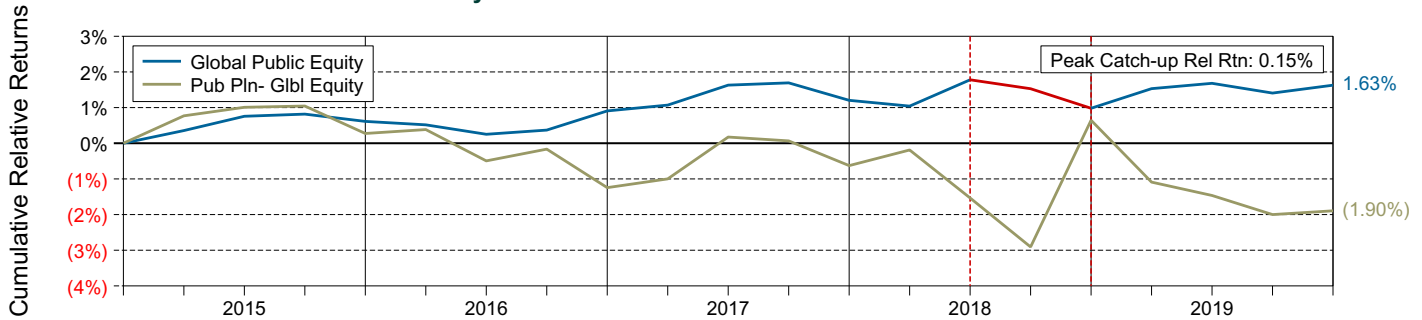
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute Drawdown as well as the Current Drawdown (cumulative return from high-water mark to now). The second chart focuses on Relative Drawdown (negative excess return vs. index). The bottom charts highlight the portfolio's peer rankings during drawdown periods.

## Absolute Cumulative Drawdown Analysis



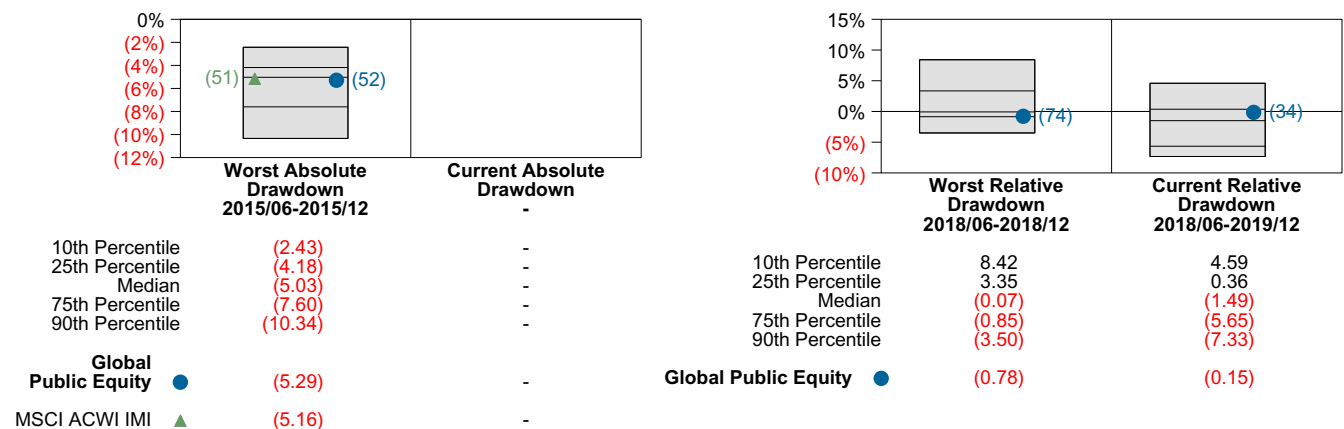
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Global Public Equity	(5.29)%	0.50	2015/06-2015/12	(5.16)%	(5.85)%	-	-	-	-	-
Recovery from Trough	6.74%	0.75	2015/12-2016/09	7.00%	6.53%	-	-	-	-	-
MSCI ACWI IMI	(5.16)%	0.50	2015/06-2015/12	-	-	-	-	-	-	-
Pub Pln- Gbl Equity	(5.85)%	0.50	2015/06-2015/12	-	-	-	-	-	-	-

## Relative Cumulative Drawdown Analysis vs. MSCI ACWI IMI



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
Global Public Equity	(0.78)%	0.50	2018/06-2018/12	2.21%	(0.15)%	1.50	2018/06-2019/12	(0.37)%
Recovery from Trough	0.64%	1.00+	2018/12-2019/12	(2.52)%	0.64%	1.00+	2018/12-2019/12	(2.52)%
Pub Pln- Gbl Equity	(3.91)%	3.00	2015/09-2018/09	-	(2.91)%	4.25	2015/09-2019/12	-

## Drawdown Rankings vs. MSCI ACWI IMI Rankings against Public Fund - Global Equity Five Years Ended December 31, 2019



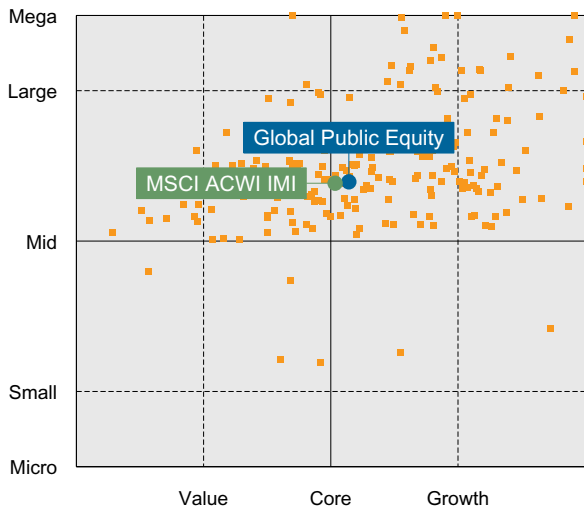
# Current Holdings Based Style Analysis

## Global Public Equity

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

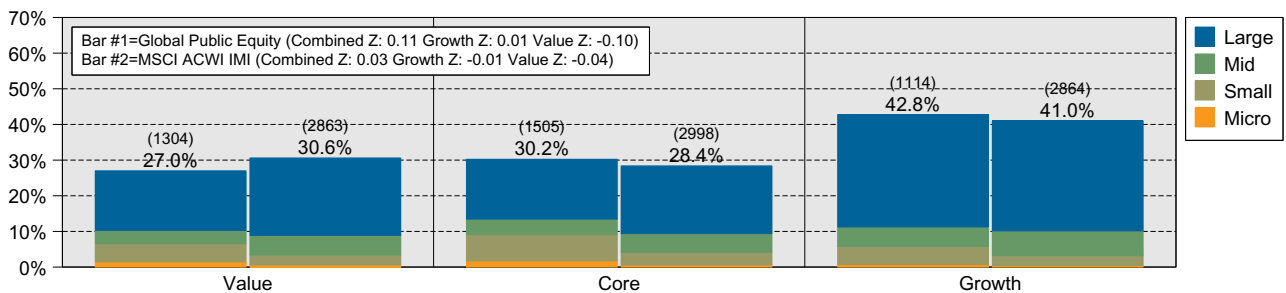
**Style Map vs Callan Global Equity Holdings as of December 31, 2019**



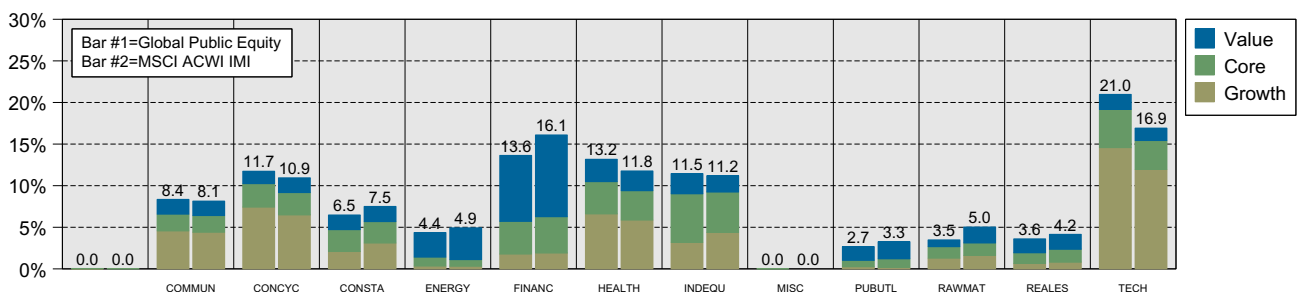
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	16.7% (141)	16.8% (140)	31.5% (171)	65.0% (452)
	21.7% (296)	19.0% (251)	30.9% (325)	71.5% (872)
Mid	3.8% (213)	4.4% (212)	5.4% (253)	13.6% (678)
	5.6% (521)	5.3% (525)	7.0% (699)	17.8% (1745)
Small	5.1% (444)	7.3% (602)	5.1% (392)	17.6% (1438)
	2.8% (1098)	3.5% (1347)	2.7% (1045)	9.0% (3490)
Micro	1.5% (506)	1.7% (551)	0.7% (298)	3.9% (1355)
	0.6% (948)	0.6% (875)	0.5% (795)	1.7% (2618)
Total	27.0% (1304)	30.2% (1505)	42.8% (1114)	100.0% (3923)
	30.6% (2863)	28.4% (2998)	41.0% (2864)	100.0% (8725)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**



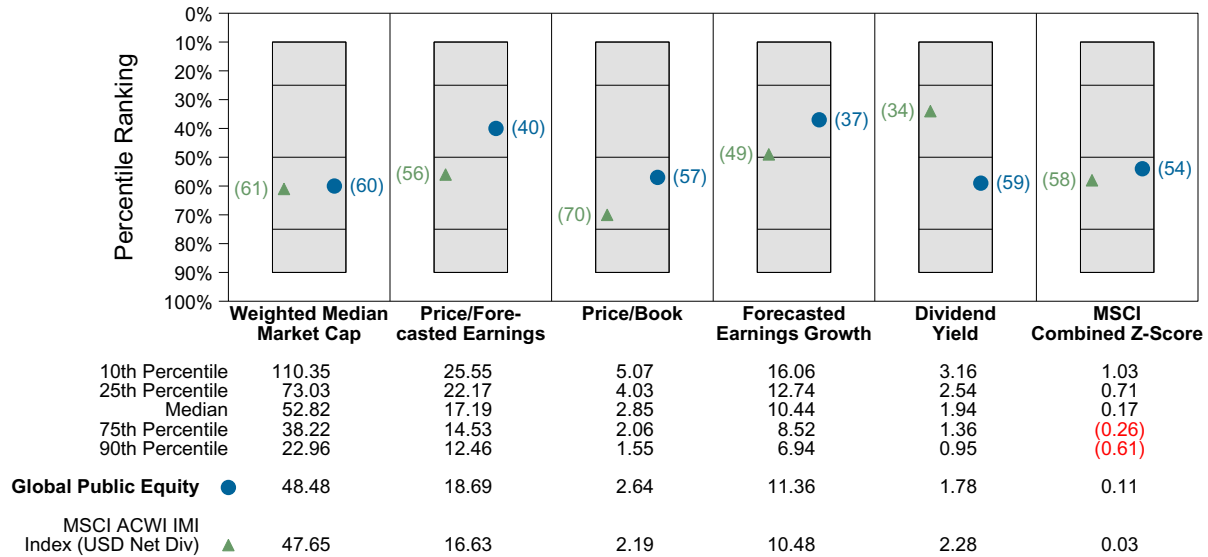


# Global Public Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

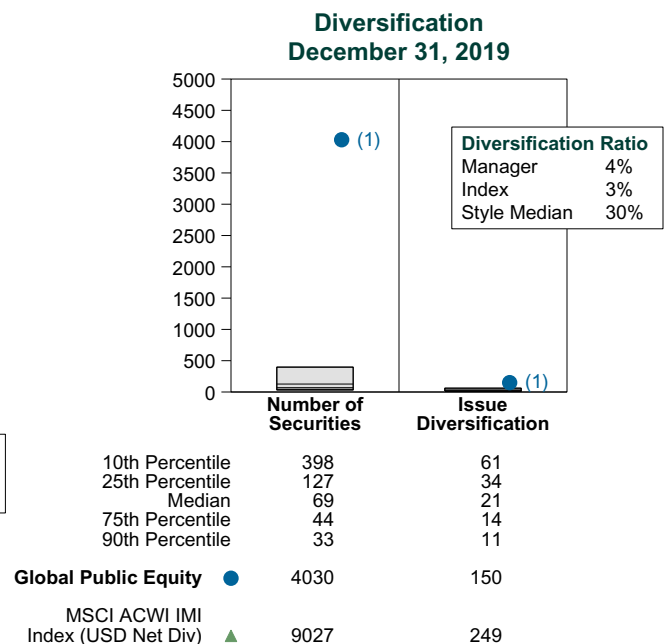
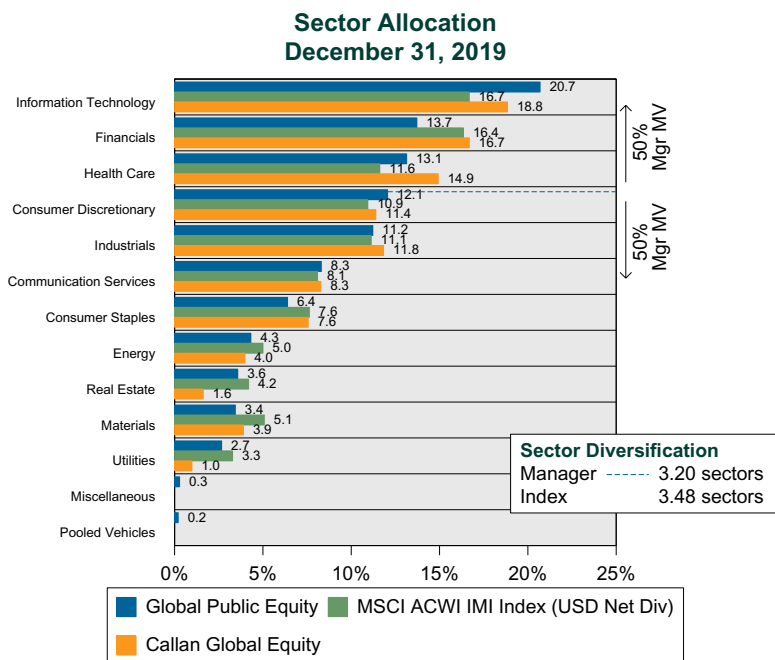
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Global Equity as of December 31, 2019



## Sector Weights

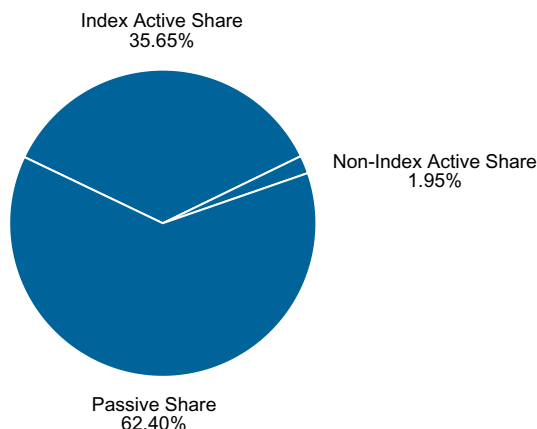
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



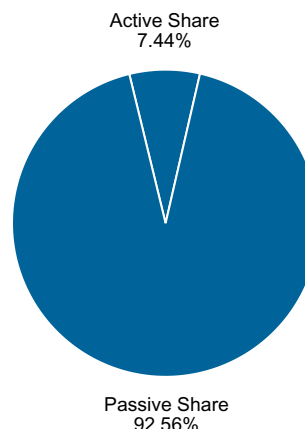
## Global Public Equity Active Share Analysis as of December 31, 2019 vs. MSCI ACWI IMI Index (USD Net Div)

Active Share analysis compares the holdings of a portfolio to an index to measure how aggressively it differs from the index. Active share is measured at the individual stock level ("holdings-level active share") and using sector weights ("sector exposure active share"). Holdings-level active share comes from: 1) Index Active Share - over/under weighting of stocks in the index, and 2) Non-Index Active Share - positions in stocks not in the index. This analysis displays active share by sector and compares the portfolio to a relevant peer group.

### Holdings-Level Active Share



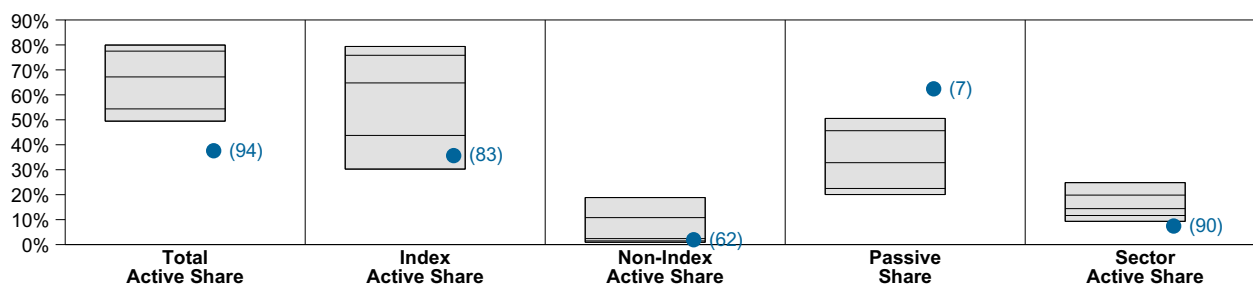
### Sector Exposure Active Share



**Total Active Share: 37.60%**

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	26.27%	2.05%	28.32%	8.09%	8.31%	2.38%
Consumer Discretionary	36.05%	2.07%	38.12%	10.94%	12.06%	4.56%
Consumer Staples	41.85%	1.77%	43.62%	7.63%	6.39%	2.76%
Energy	41.07%	3.47%	44.54%	5.00%	4.32%	1.91%
Financials	45.86%	2.76%	48.62%	16.35%	13.71%	6.70%
Health Care	28.48%	1.19%	29.67%	11.61%	13.14%	3.89%
Industrials	45.61%	1.77%	47.38%	11.13%	11.22%	5.37%
Information Technology	23.13%	0.78%	23.91%	16.68%	20.69%	4.79%
Materials	59.76%	1.50%	61.26%	5.08%	3.44%	2.34%
Miscellaneous	50.00%	50.00%	100.00%	-	0.28%	0.12%
Pooled Vehicles	50.00%	50.00%	100.00%	-	0.21%	0.10%
Real Estate	42.66%	1.60%	44.27%	4.19%	3.58%	1.56%
Utilities	41.87%	0.65%	42.52%	3.28%	2.66%	1.09%
<b>Total</b>	<b>35.65%</b>	<b>1.95%</b>	<b>37.60%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>37.56%</b>

### Active Share vs. Pub Pln- Gbl Equity



	Total Active Share	Index Active Share	Non-Index Active Share	Passive Share	Sector Active Share
10th Percentile	79.95	79.38	18.84	50.54	24.83
25th Percentile	77.51	75.84	10.81	45.63	19.83
Median	67.18	64.77	2.40	32.82	14.41
75th Percentile	54.37	43.74	1.49	22.49	11.66
90th Percentile	49.46	30.24	0.95	20.05	9.32

Global Public Equity ● 37.60

35.65

1.95

62.40

7.44



# Walter Scott & Prtnrs Gbl Gr Eq Period Ended December 31, 2019

## Investment Philosophy

Walter Scott believes that the objective for all long term investors is to maintain and enhance the real after inflation purchasing power of their assets. This is most likely to be achieved by investing in companies with high rates of internal wealth generation which in time translates into total return for the investor. Thus, the firm's research efforts are directed towards identifying companies that meet its investment criteria. Their research process combines historic and forecasted financial analysis with business and management analysis at the company level.

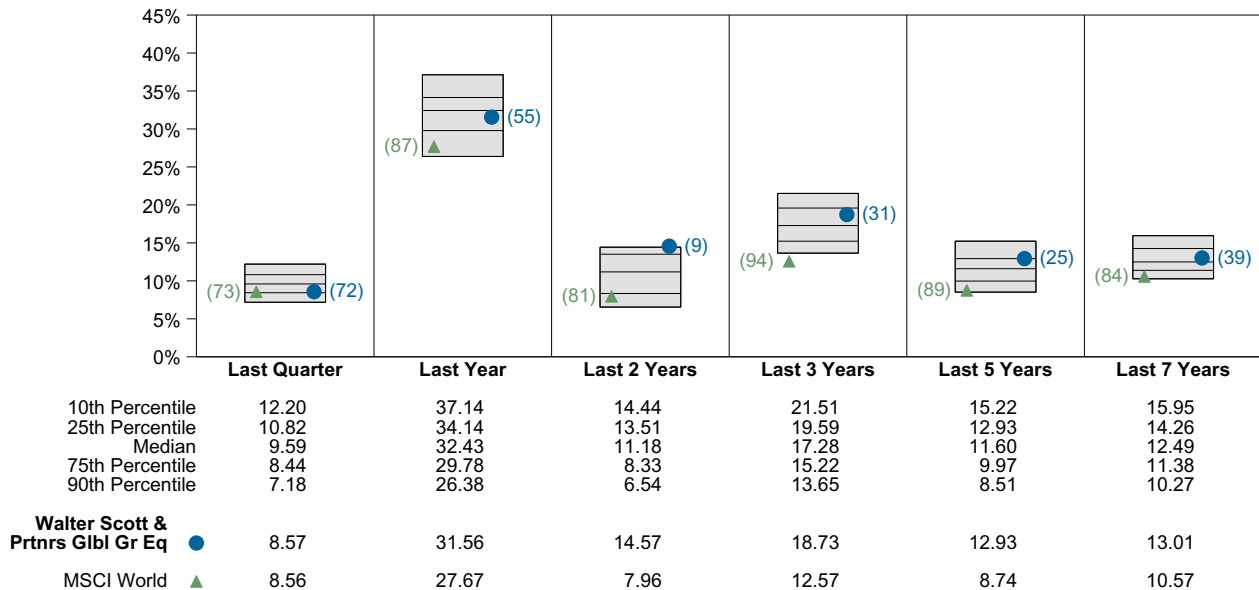
## Quarterly Summary and Highlights

- Walter Scott & Prtnrs Gbl Gr Eq's portfolio posted a 8.57% return for the quarter placing it in the 72 percentile of the Callan Global Broad Growth Equity group for the quarter and in the 55 percentile for the last year.
- Walter Scott & Prtnrs Gbl Gr Eq's portfolio outperformed the MSCI World by 0.01% for the quarter and outperformed the MSCI World for the year by 3.89%.

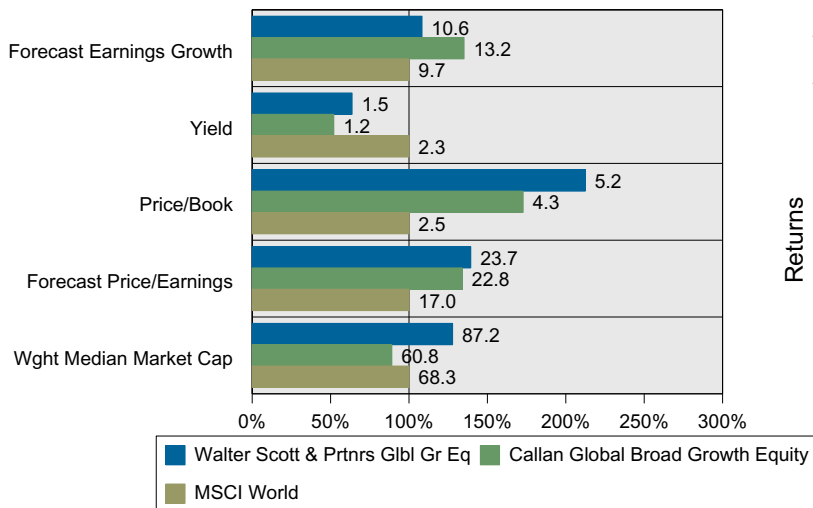
## Quarterly Asset Growth

Beginning Market Value	\$1,046,366,894
Net New Investment	\$0
Investment Gains/(Losses)	\$88,609,075
Ending Market Value	\$1,134,975,969

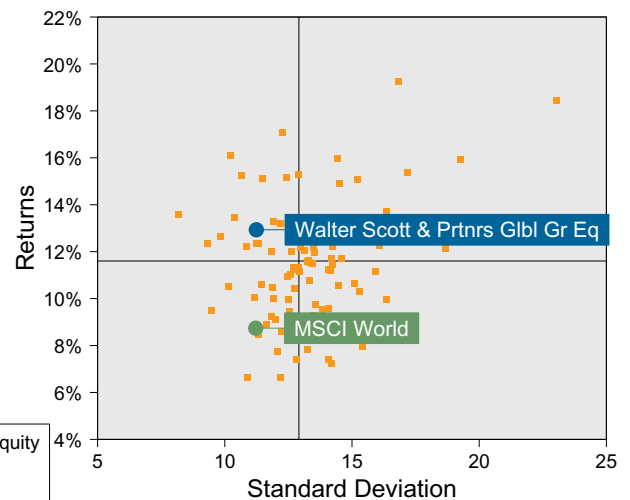
## Performance vs Callan Global Broad Growth Equity (Gross)



## Portfolio Characteristics as a Percentage of the MSCI World



## Callan Global Broad Growth Equity (Gross) Annualized Five Year Risk vs Return

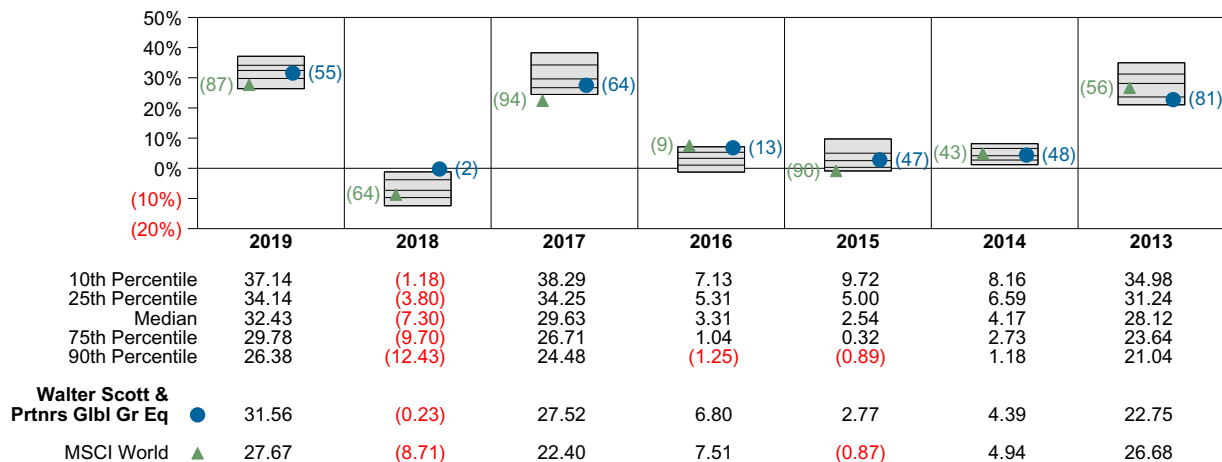


# Walter Scott & Prtnrs Gbl Gr Eq Return Analysis Summary

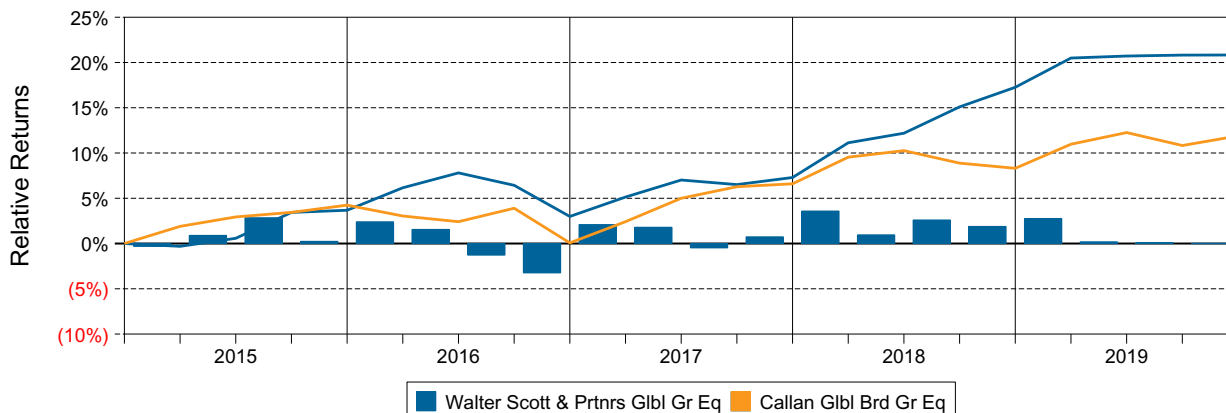
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

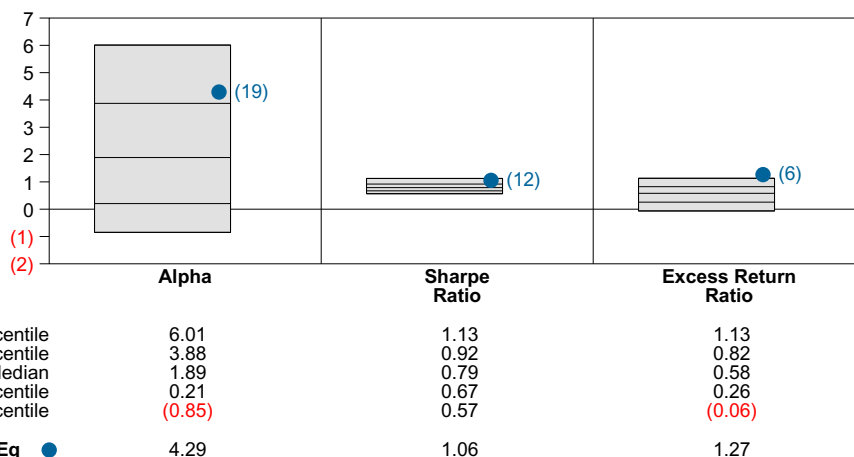
### Performance vs Callan Global Broad Growth Equity (Gross)



### Cumulative and Quarterly Relative Return vs MSCI World



### Risk Adjusted Return Measures vs MSCI World Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2019

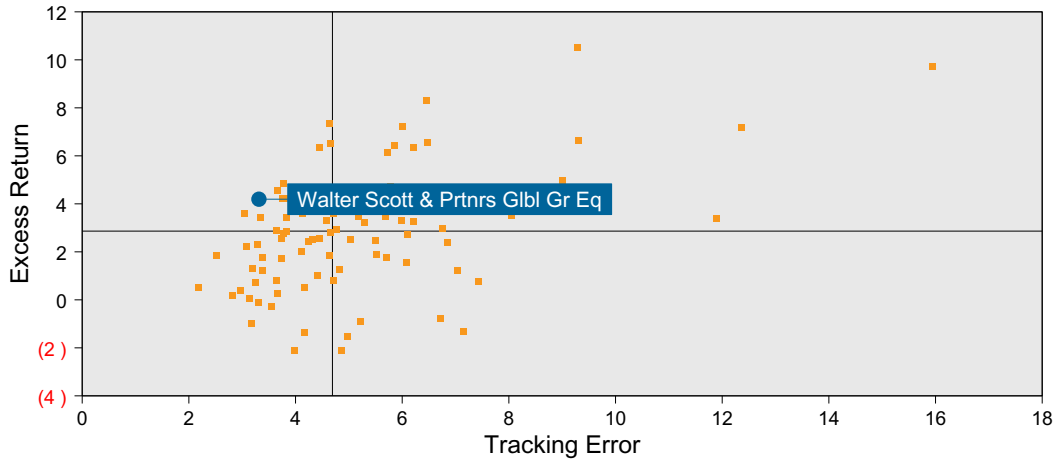


# Walter Scott & Prtnrs Gbl Gr Eq Risk Analysis Summary

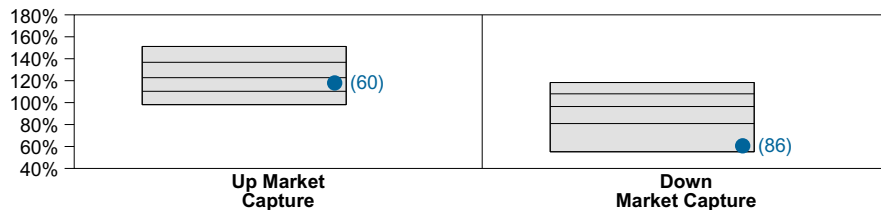
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

### Risk Analysis vs Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2019



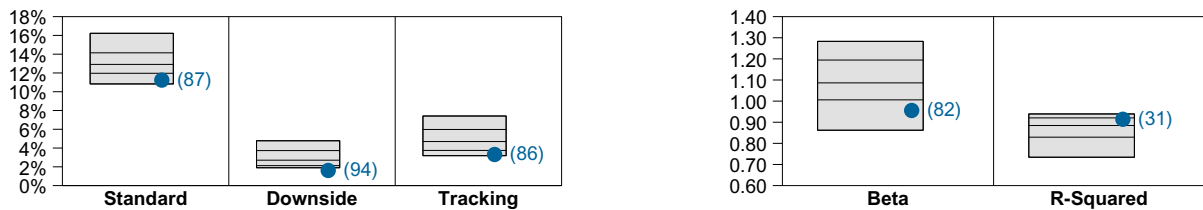
### Market Capture vs MSCI World Index (USD Net Div) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2019



	<b>Up Market Capture</b>	<b>Down Market Capture</b>
10th Percentile	151.18	118.31
25th Percentile	136.74	108.00
Median	122.73	96.43
75th Percentile	110.32	80.92
90th Percentile	98.14	55.20

Walter Scott & Prtnrs Gbl Gr Eq ● 117.93 60.61

### Risk Statistics Rankings vs MSCI World Index (USD Net Div) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2019



	<b>Standard Deviation</b>	<b>Downside Risk</b>	<b>Tracking Error</b>		<b>Beta</b>	<b>R-Squared</b>
10th Percentile	16.22	4.78	7.42	10th Percentile	1.28	0.94
25th Percentile	14.14	3.73	5.98	25th Percentile	1.19	0.92
Median	12.91	2.71	4.69	Median	1.09	0.88
75th Percentile	11.97	2.13	3.75	75th Percentile	1.01	0.83
90th Percentile	10.83	1.90	3.19	90th Percentile	0.86	0.73

Walter Scott & Prtnrs Gbl Gr Eq ● 11.24 1.61 3.31 Walter Scott & Prtnrs Gbl Gr Eq ● 0.96 0.91

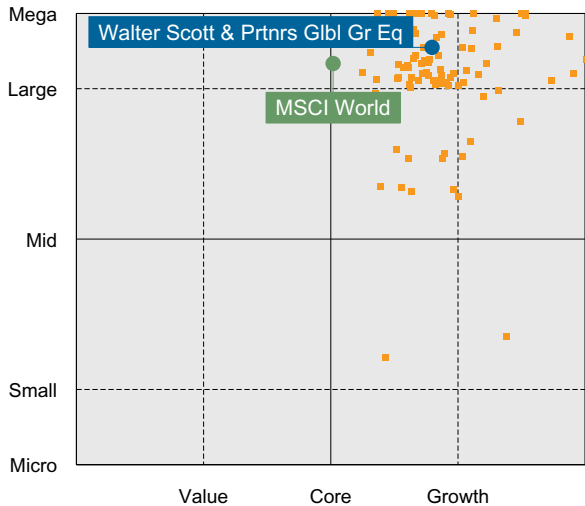
# Current Holdings Based Style Analysis

## Walter Scott & Prtnrs Gbl Gr Eq

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left chart illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

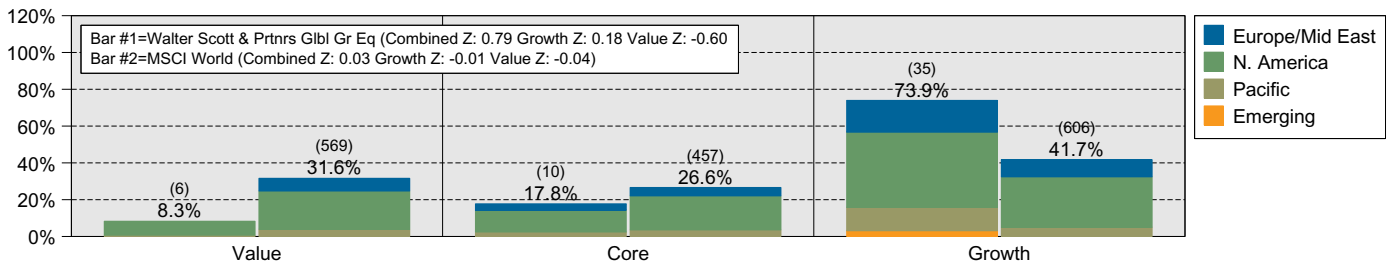
**Style Map vs Callan Gbl Brd Gr Eq Holdings as of December 31, 2019**



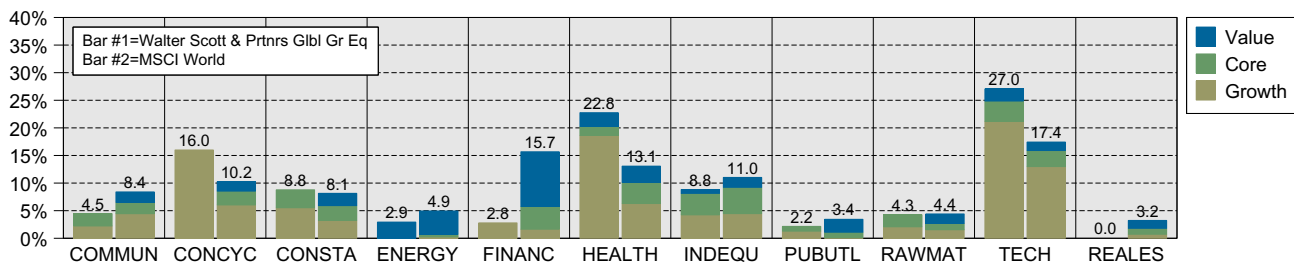
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Europe/Mid East	0.0% (0)	3.5% (2)	17.3% (10)	20.7% (12)
N. America	6.9% (148)	4.6% (106)	9.3% (185)	20.8% (439)
Pacific	7.6% (5)	11.9% (6)	40.9% (18)	60.3% (29)
Emerging	20.8% (265)	18.5% (212)	27.4% (246)	66.7% (723)
<b>Total</b>	<b>8.3% (6)</b>	<b>17.8% (10)</b>	<b>73.9% (35)</b>	<b>100.0% (51)</b>
	31.6% (569)	26.6% (457)	41.7% (606)	100.0% (1632)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

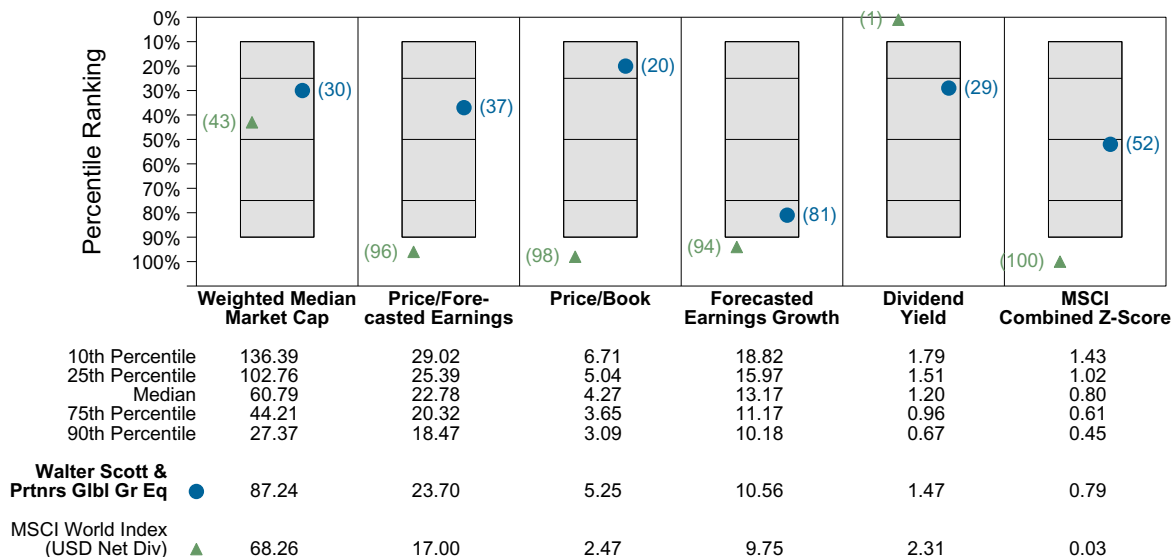


# Walter Scott & Prtnrs Gbl Gr Eq Equity Characteristics Analysis Summary

## Portfolio Characteristics

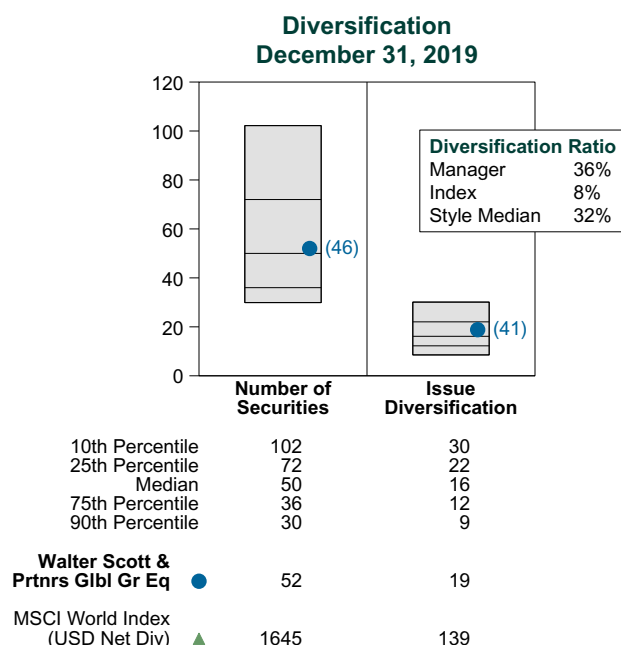
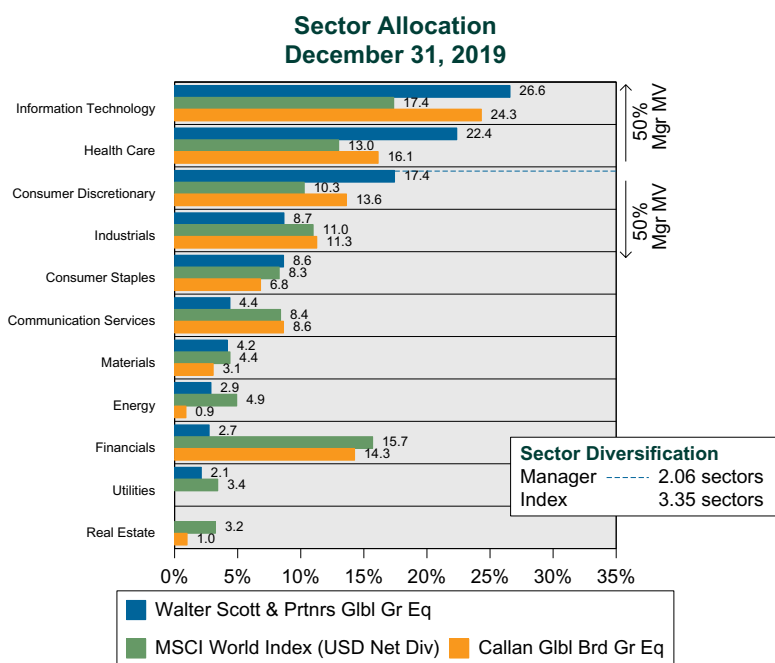
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Global Broad Growth Equity as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.





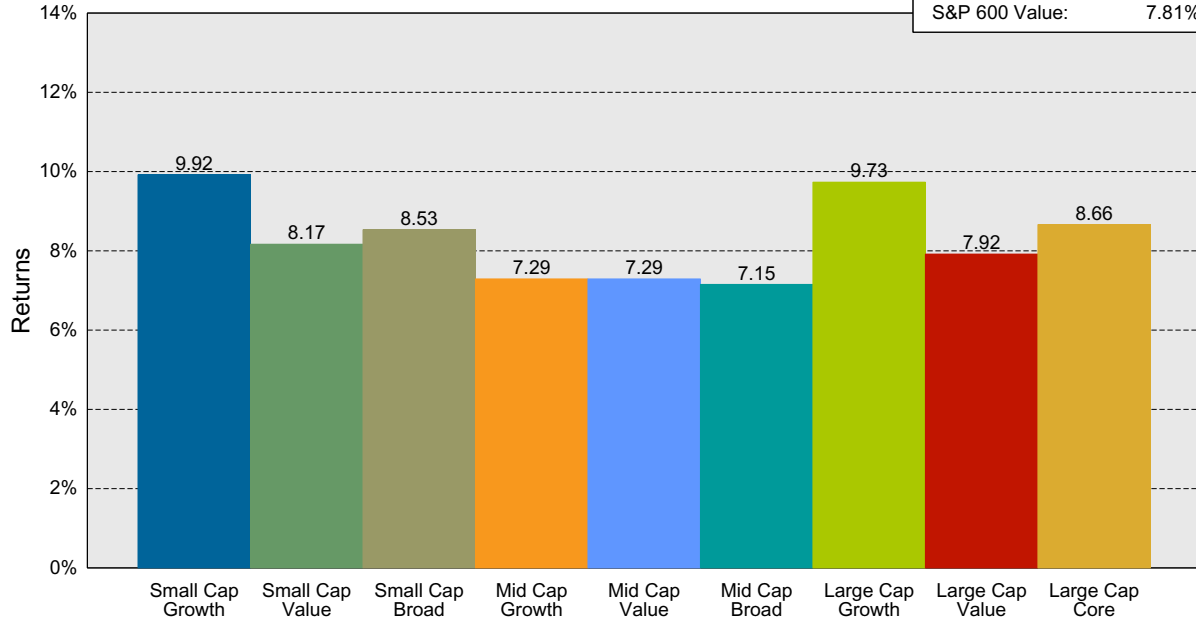


## Domestic Equity Active Management Overview

The S&P 500 Index rose 9.1% in the fourth quarter, bringing its year-to-date result to a whopping 31.5%, the best calendar year return since 2013 and capping a decade of strong performance. Small cap stocks outperformed in the fourth quarter, but trailed for the year (Russell 2000: +9.9%; +25.5% vs. Russell 1000: 9.0%; +31.4%). Growth stocks outperformed for both periods (Russell 1000 Growth: +10.6%; +36.3%; Russell 1000 Value: +7.4%; +26.5). From a sector perspective, Real Estate (-0.5%) was the only sector to post a negative return in the fourth quarter, though Utilities (+0.8%) was only modestly positive. Technology and Health Care (both +14.4%) were the twin "winners." For the year, all sectors posted double-digit returns; Energy (+11.8%) and Technology (+50.3%) were the bookends.

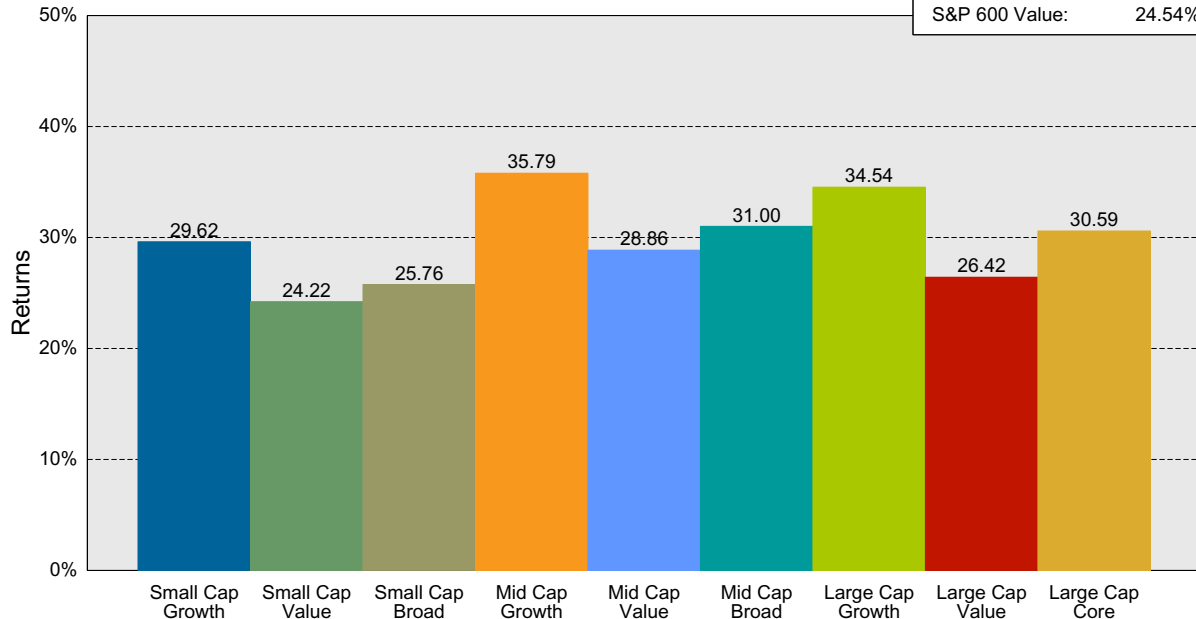
S&P 500:	9.07%
S&P 500 Growth:	8.32%
S&P 500 Value:	9.93%
S&P Mid Cap:	7.06%
S&P 600:	8.21%
S&P 600 Growth:	8.64%
S&P 600 Value:	7.81%

### Separate Account Style Group Median Returns for Quarter Ended December 31, 2019



S&P 500:	31.49%
S&P 500 Growth:	31.13%
S&P 500 Value:	31.93%
S&P Mid Cap:	26.20%
S&P 600:	22.78%
S&P 600 Growth:	21.13%
S&P 600 Value:	24.54%

### Separate Account Style Group Median Returns for One Year Ended December 31, 2019



# U.S. Equity

## Period Ended December 31, 2019

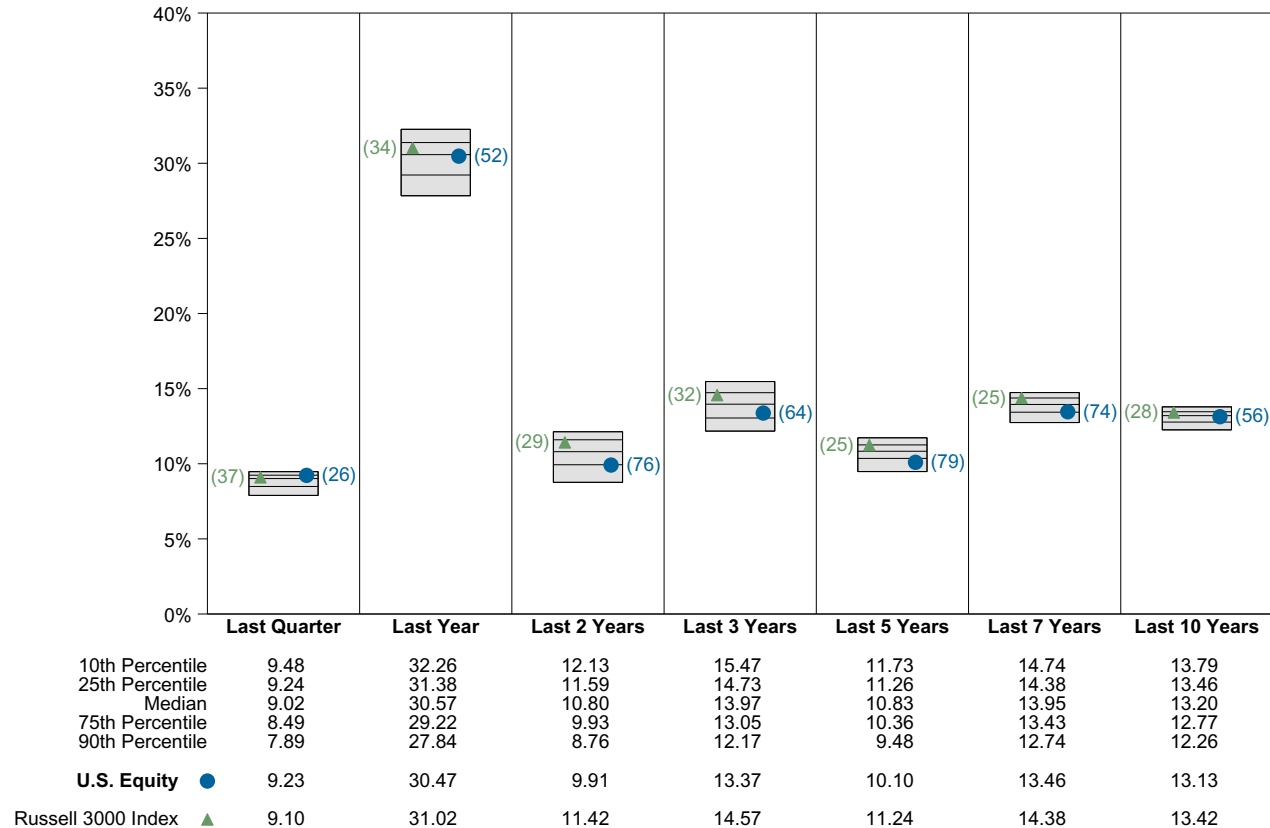
### Quarterly Summary and Highlights

- U.S. Equity's portfolio posted a 9.23% return for the quarter placing it in the 26 percentile of the Public Fund - Domestic Equity group for the quarter and in the 52 percentile for the last year.
- U.S. Equity's portfolio outperformed the Russell 3000 Index by 0.13% for the quarter and underperformed the Russell 3000 Index for the year by 0.55%.

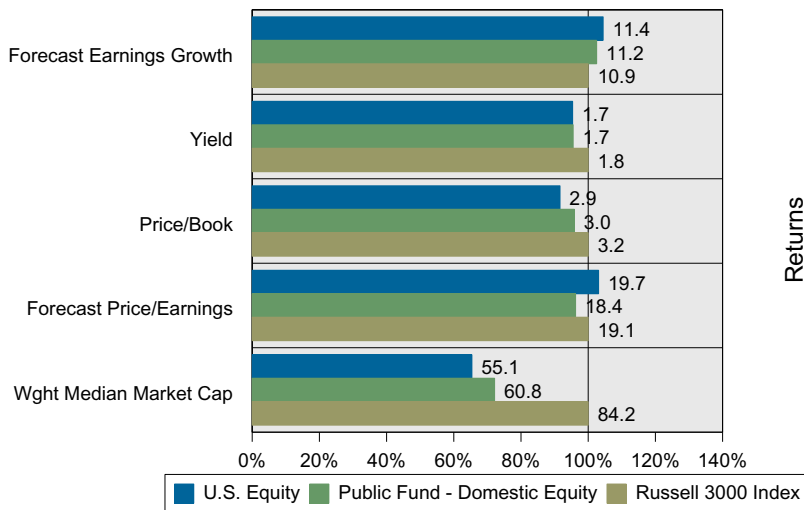
### Quarterly Asset Growth

Beginning Market Value	\$7,791,714,727
Net New Investment	\$-457,069,080
Investment Gains/(Losses)	\$681,938,546
Ending Market Value	\$8,016,584,192

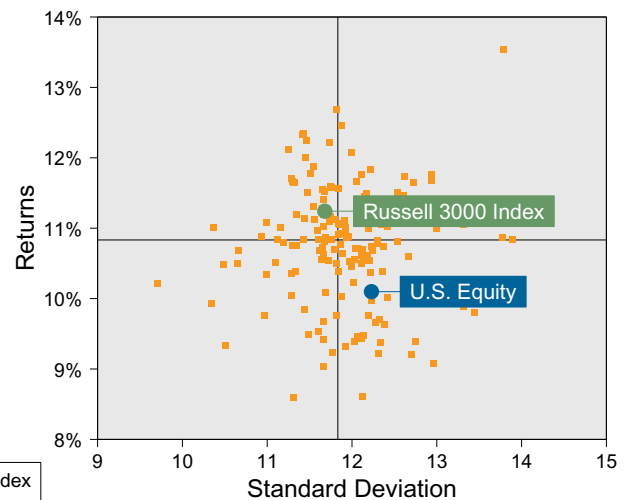
### Performance vs Public Fund - Domestic Equity (Gross)



### Portfolio Characteristics as a Percentage of the Russell 3000 Index



### Public Fund - Domestic Equity (Gross) Annualized Five Year Risk vs Return

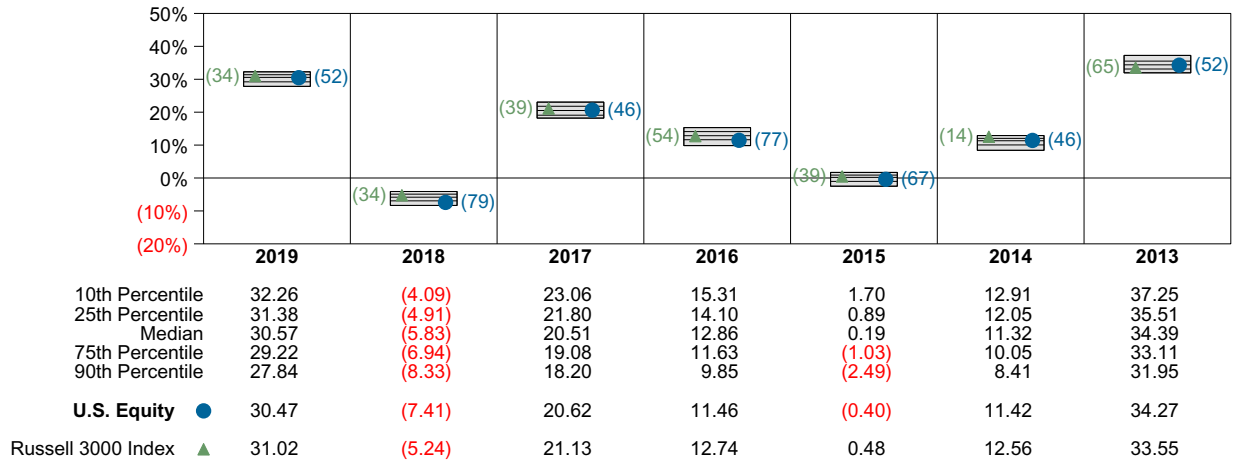


# U.S. Equity Return Analysis Summary

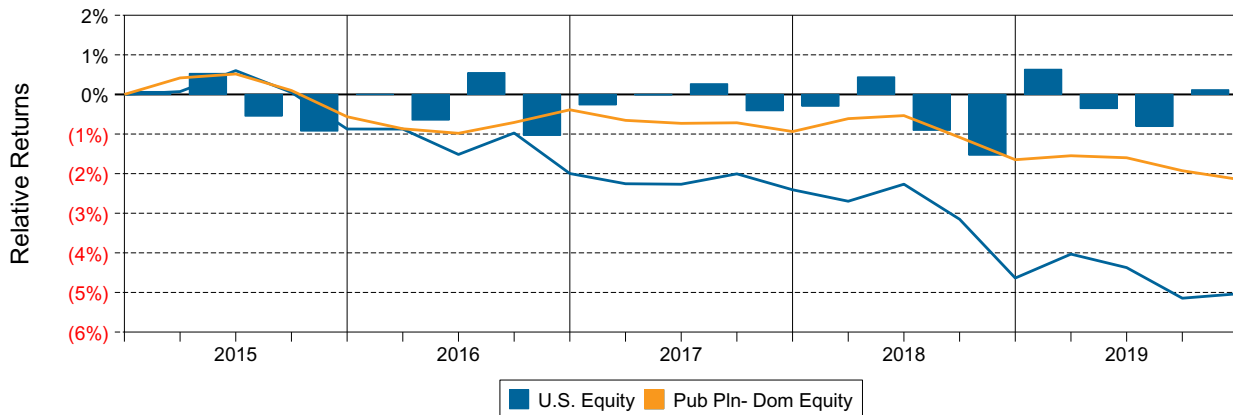
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

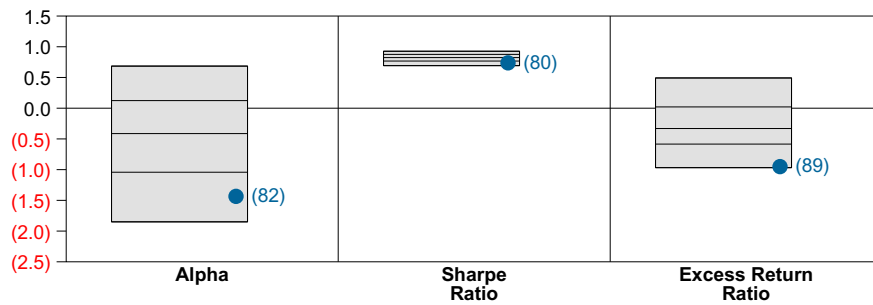
### Performance vs Public Fund - Domestic Equity (Gross)



### Cumulative and Quarterly Relative Return vs Russell 3000 Index



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2019



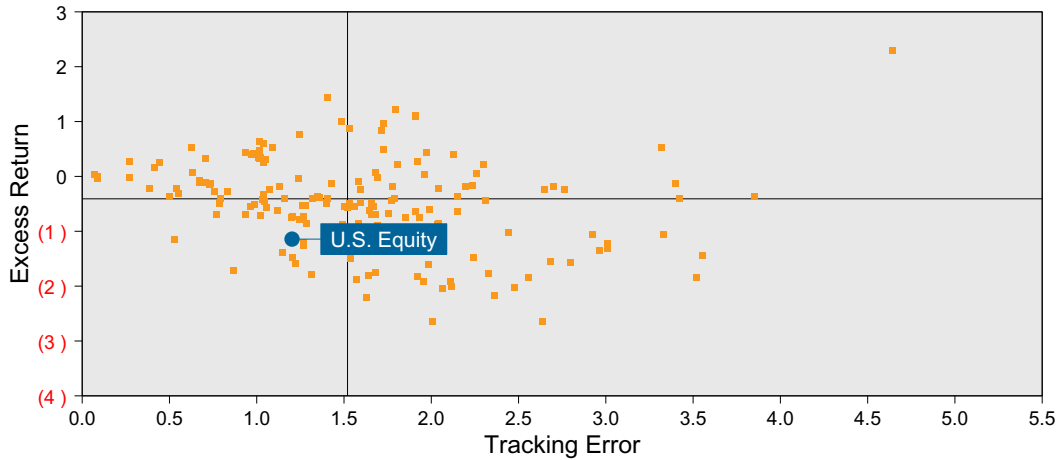
10th Percentile	0.69	0.93	0.49
25th Percentile	0.12	0.88	0.02
Median	(0.41)	0.82	(0.33)
75th Percentile	(1.04)	0.77	(0.58)
90th Percentile	(1.85)	0.69	(0.97)
<b>U.S. Equity</b> ●	(1.43)	0.74	(0.95)

# U.S. Equity Risk Analysis Summary

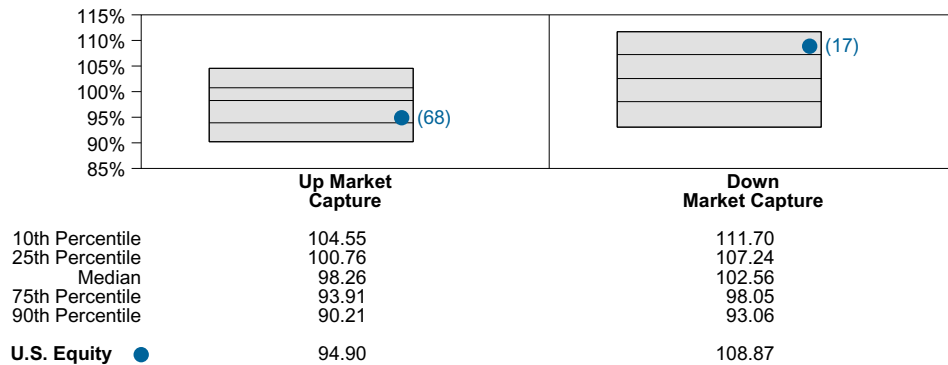
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

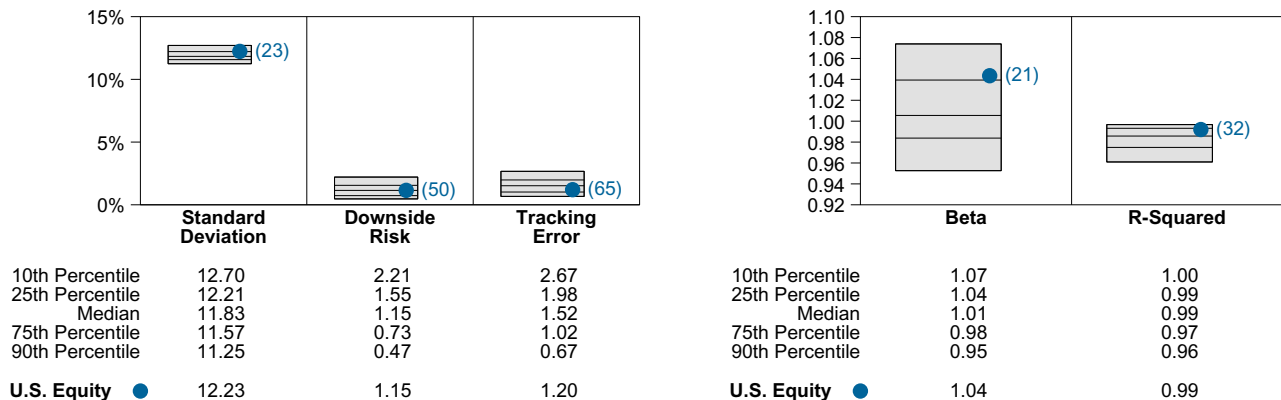
### Risk Analysis vs Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2019



### Market Capture vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2019



### Risk Statistics Rankings vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2019



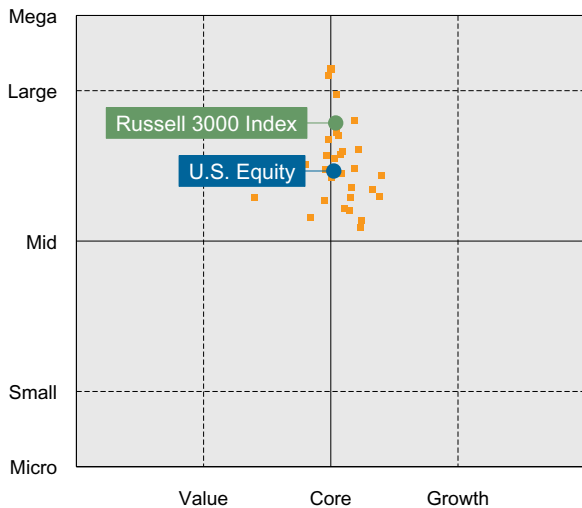
# Current Holdings Based Style Analysis

## U.S. Equity

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

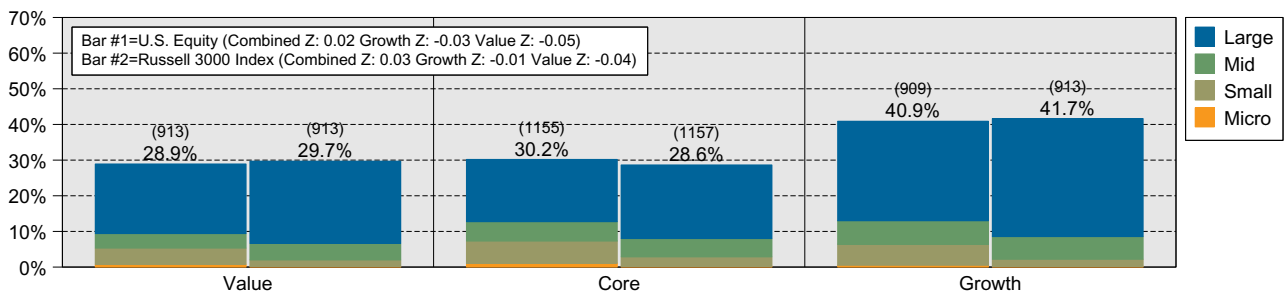
**Style Map vs Pub Pln- Dom Equity Holdings as of December 31, 2019**



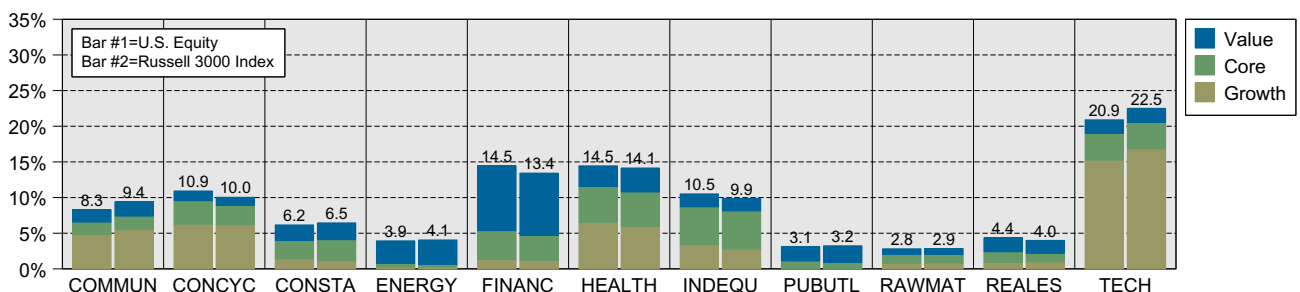
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	19.5% (107)	17.5% (85)	27.9% (106)	64.9% (298)
	23.0% (106)	20.6% (85)	33.1% (107)	76.8% (298)
Mid	4.1% (170)	5.4% (190)	6.6% (237)	16.1% (597)
	4.7% (170)	5.1% (189)	6.4% (237)	16.2% (596)
Small	4.5% (324)	6.2% (500)	5.9% (372)	16.6% (1196)
	1.7% (324)	2.6% (498)	2.0% (372)	6.3% (1194)
Micro	0.8% (312)	1.1% (380)	0.5% (194)	2.4% (886)
	0.3% (313)	0.3% (385)	0.2% (197)	0.7% (895)
Total	28.9% (913)	30.2% (1155)	40.9% (909)	100.0% (2977)
	29.7% (913)	28.6% (1157)	41.7% (913)	100.0% (2983)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



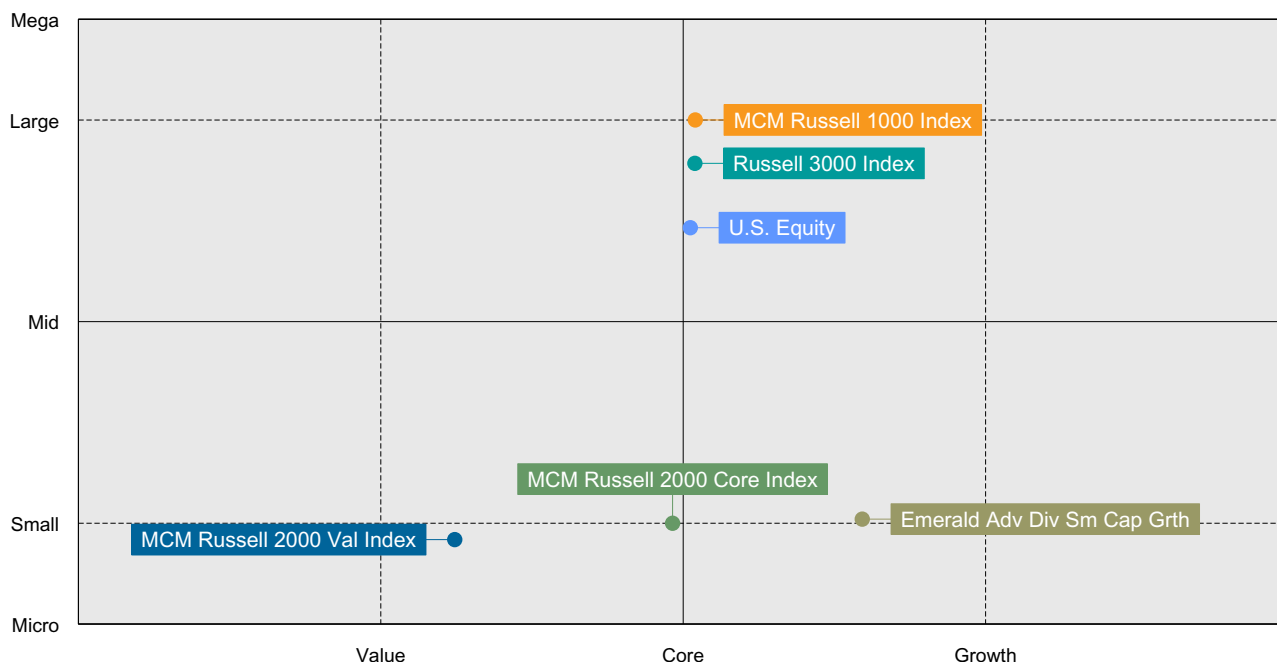
**Sector Weights Distribution Holdings as of December 31, 2019**



## Holdings Based Style Analysis For One Quarter Ended December 31, 2019

This page analyzes and compares the investment styles of multiple portfolios using a detailed holdings-based style analysis methodology. The size component of style is measured by the weighted median market capitalization of the holdings. The value/core/growth style dimension is captured by the "Combined Z-Score" of the portfolio. This score is based on eight fundamental factors used in the MSCI stock style scoring system. The table below gives a more detailed breakdown of several relevant style metrics on the portfolios.

### Style Map Holdings for One Quarter Ended December 31, 2019



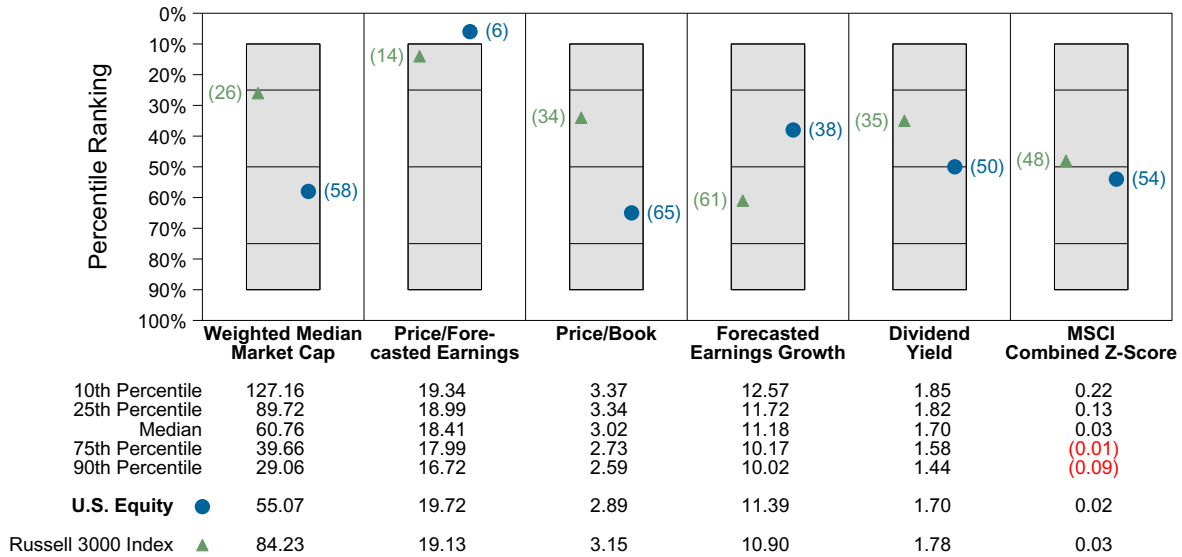
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
MCM Russell 2000 Val Index	7.75%	1.94	(0.61)	(0.23)	0.38	1388	198.80
MCM Russell 2000 Core Index	4.34%	2.22	(0.03)	(0.10)	(0.08)	1996	335.46
Emerald Adv Div Sm Cap Grth	9.16%	2.43	0.46	(0.02)	(0.48)	121	32.72
MCM Russell 1000 Index	78.74%	103.89	0.03	(0.00)	(0.04)	997	60.49
U.S. Equity	100.00%	55.07	0.02	(0.03)	(0.05)	2999	113.88
Russell 3000 Index	-	84.23	0.03	(0.01)	(0.04)	3008	72.23

# U.S. Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

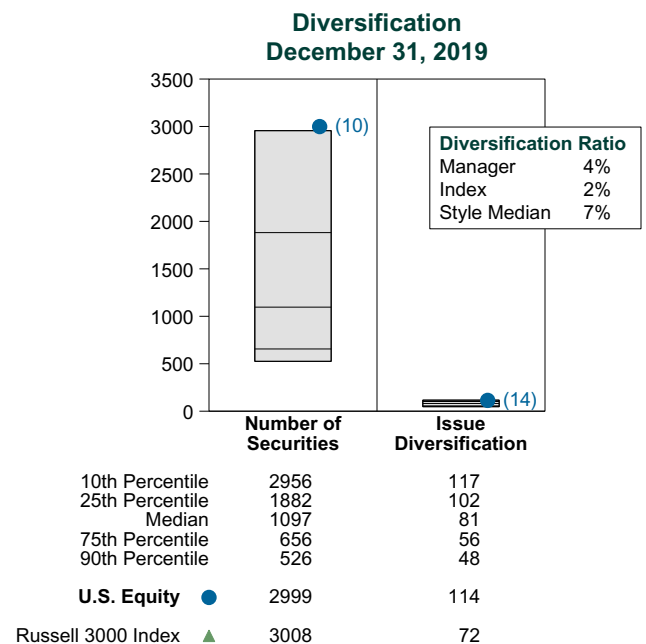
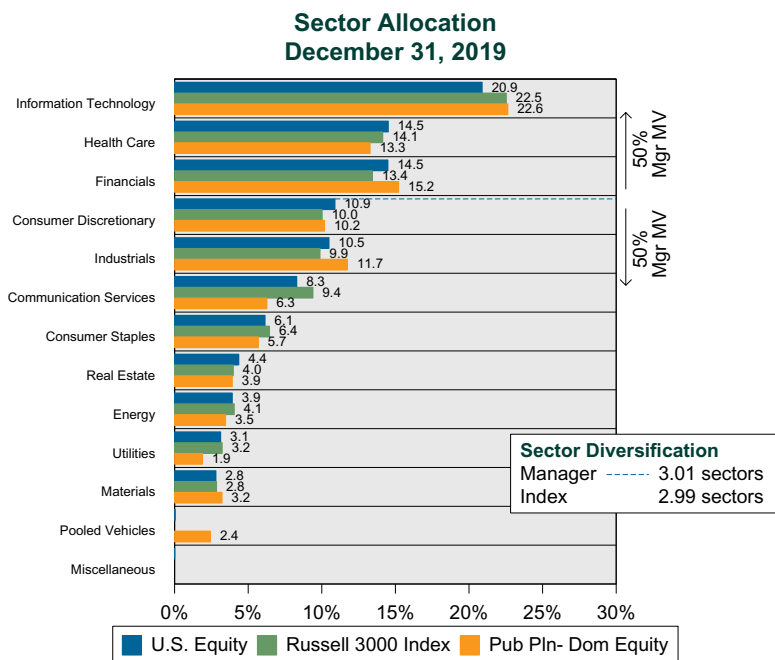
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.

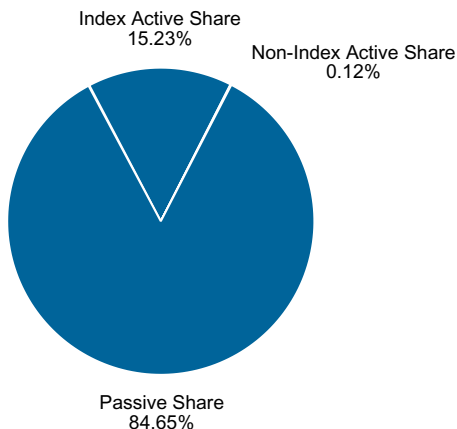




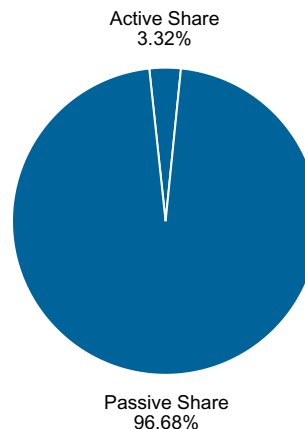
## U.S. Equity Active Share Analysis as of December 31, 2019 vs. Russell 3000 Index

Active Share analysis compares the holdings of a portfolio to an index to measure how aggressively it differs from the index. Active share is measured at the individual stock level ("holdings-level active share") and using sector weights ("sector exposure active share"). Holdings-level active share comes from: 1) Index Active Share - over/under weighting of stocks in the index, and 2) Non-Index Active Share - positions in stocks not in the index. This analysis displays active share by sector and compares the portfolio to a relevant peer group.

### Holdings-Level Active Share



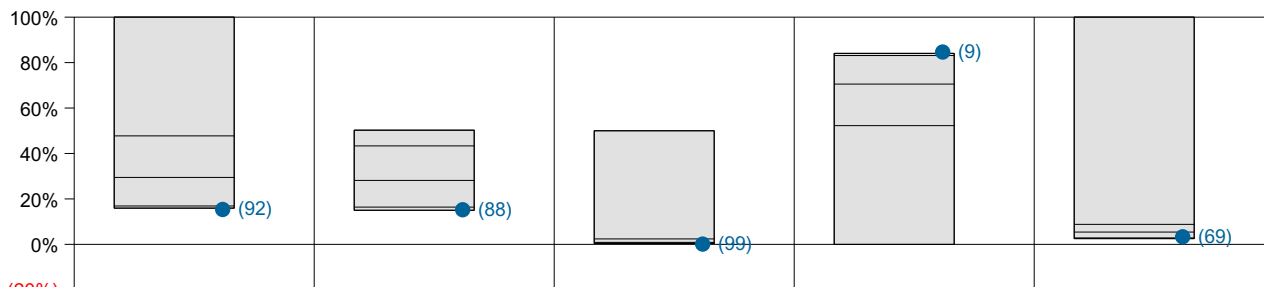
### Sector Exposure Active Share



**Total Active Share: 15.35%**

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	4.57%	0.00%	4.57%	9.40%	8.30%	0.91%
Consumer Discretionary	21.42%	0.00%	21.42%	10.03%	10.89%	1.94%
Consumer Staples	11.66%	0.00%	11.66%	6.44%	6.14%	0.86%
Energy	11.11%	1.20%	12.32%	4.05%	3.92%	0.54%
Financials	19.58%	0.06%	19.64%	13.44%	14.49%	2.41%
Health Care	17.99%	0.18%	18.17%	14.14%	14.52%	2.46%
Industrials	19.48%	0.00%	19.48%	9.88%	10.49%	1.78%
Information Technology	9.62%	0.08%	9.70%	22.54%	20.90%	2.81%
Materials	13.50%	0.00%	13.50%	2.85%	2.81%	0.40%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.04%	0.02%
Real Estate	21.60%	0.00%	21.60%	3.99%	4.36%	0.79%
Utilities	12.43%	0.00%	12.43%	3.23%	3.13%	0.43%
<b>Total</b>	<b>15.23%</b>	<b>0.12%</b>	<b>15.35%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>15.35%</b>

### Active Share vs. Pub Pln- Dom Equity



	Total Active Share	Index Active Share	Non-Index Active Share	Passive Share	Sector Active Share
10th Percentile	100.00	50.25	50.00	84.06	100.00
25th Percentile	47.75	43.34	2.39	83.11	8.80
Median	29.47	28.14	0.88	70.53	5.41
75th Percentile	16.89	16.39	0.51	52.25	2.84
90th Percentile	15.94	14.99	0.39	0.00	2.52
<b>U.S. Equity</b>	<b>15.35</b>	<b>15.23</b>	<b>0.12</b>	<b>84.65</b>	<b>3.32</b>



# MCM Russell 1000 Index Period Ended December 31, 2019

## Investment Philosophy

The Russell 1000 Stock Index Fund attempts to replicate the performance and portfolio characteristics of the Russell 1000 Index.

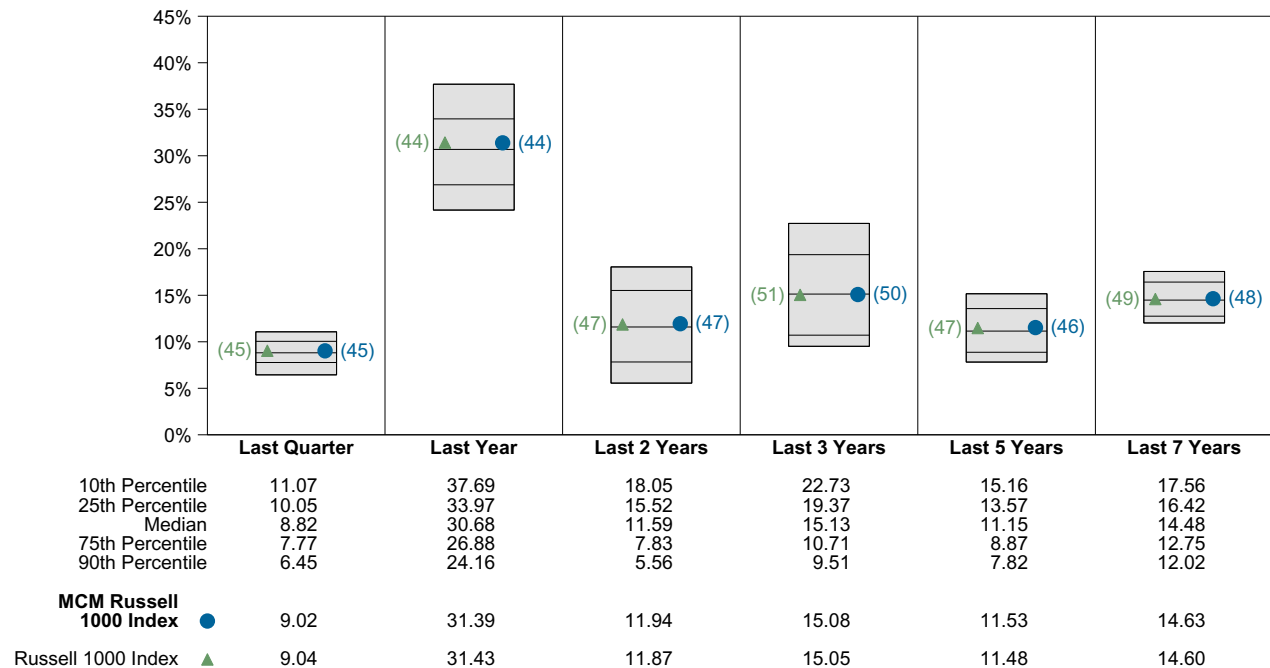
## Quarterly Summary and Highlights

- MCM Russell 1000 Index's portfolio posted a 9.02% return for the quarter placing it in the 45 percentile of the Callan Large Capitalization group for the quarter and in the 44 percentile for the last year.
- MCM Russell 1000 Index's portfolio underperformed the Russell 1000 Index by 0.01% for the quarter and underperformed the Russell 1000 Index for the year by 0.04%.

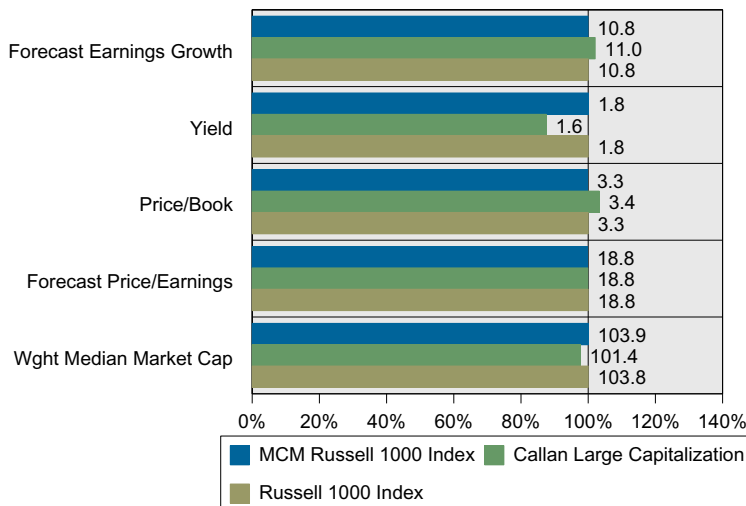
## Quarterly Asset Growth

Beginning Market Value	\$5,789,578,086
Net New Investment	\$0
Investment Gains/(Losses)	\$522,412,308
Ending Market Value	\$6,311,990,394

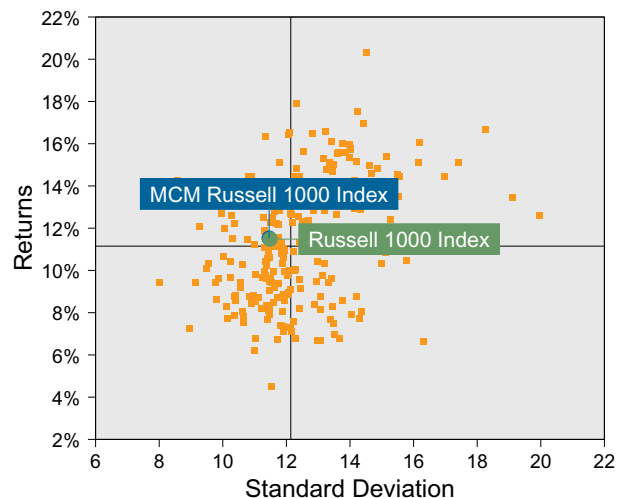
## Performance vs Callan Large Capitalization (Gross)



## Portfolio Characteristics as a Percentage of the Russell 1000 Index



## Callan Large Capitalization (Gross) Annualized Five Year Risk vs Return

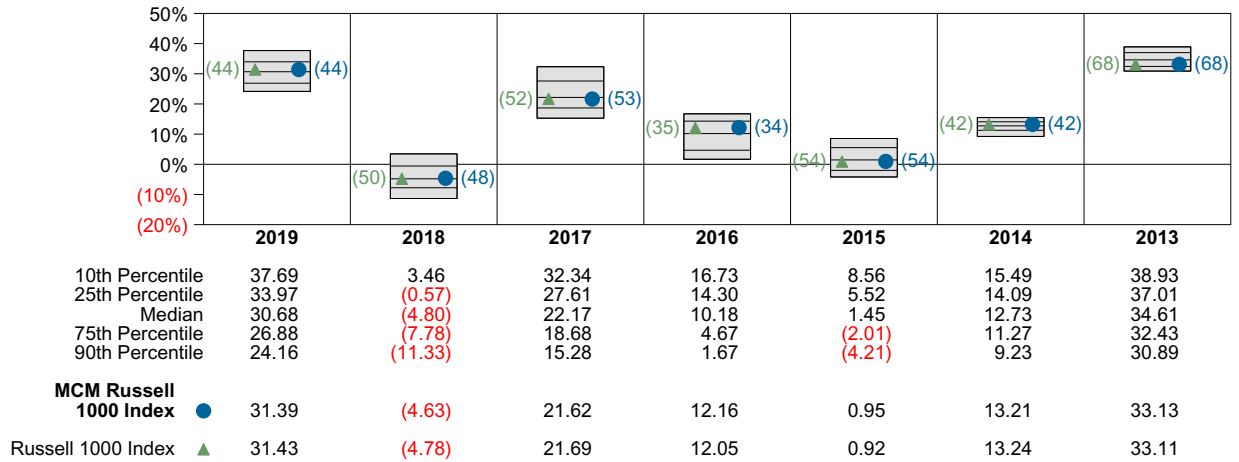


# MCM Russell 1000 Index Return Analysis Summary

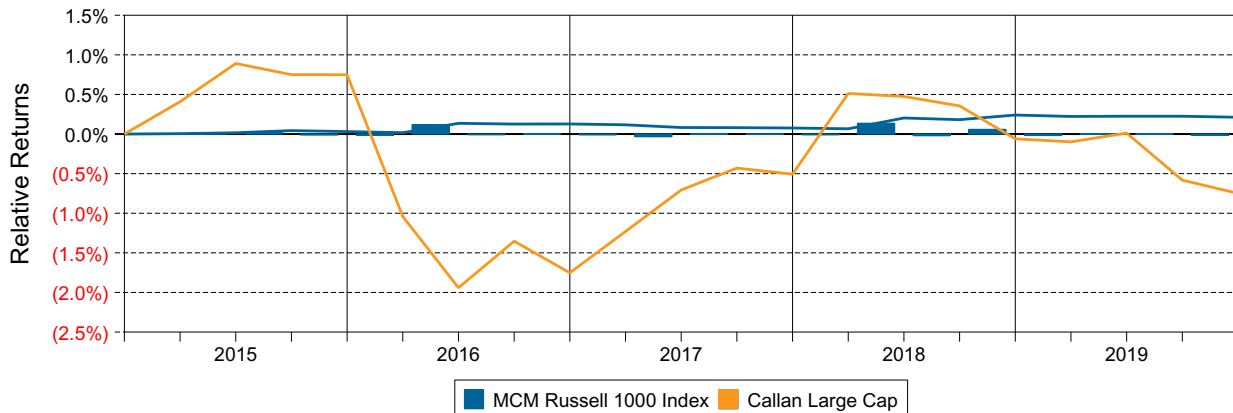
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

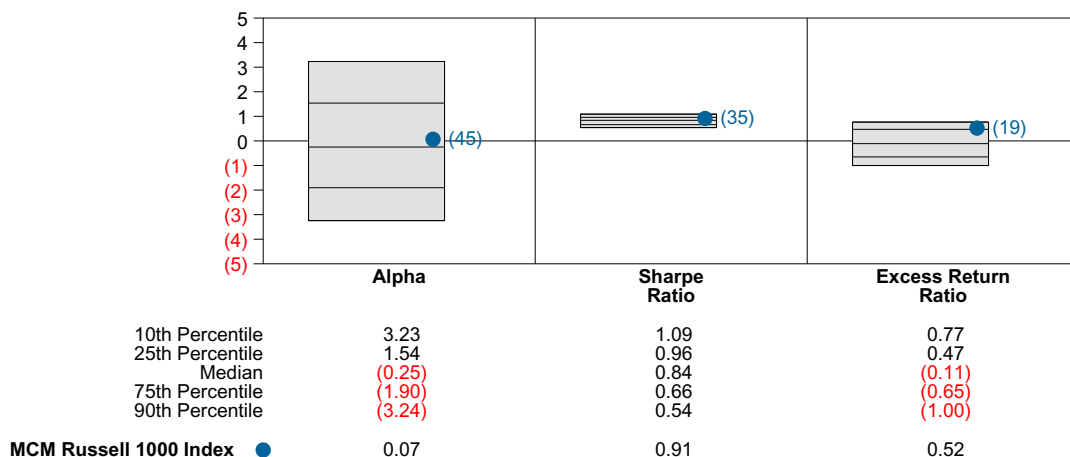
### Performance vs Callan Large Capitalization (Gross)



### Cumulative and Quarterly Relative Return vs Russell 1000 Index



### Risk Adjusted Return Measures vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended December 31, 2019



# MCM Russell 1000 Index Risk Analysis Summary

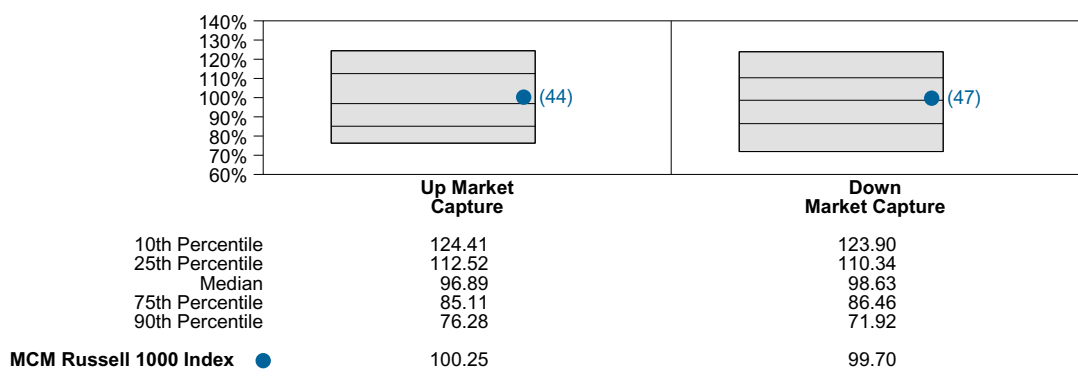
## Risk Analysis

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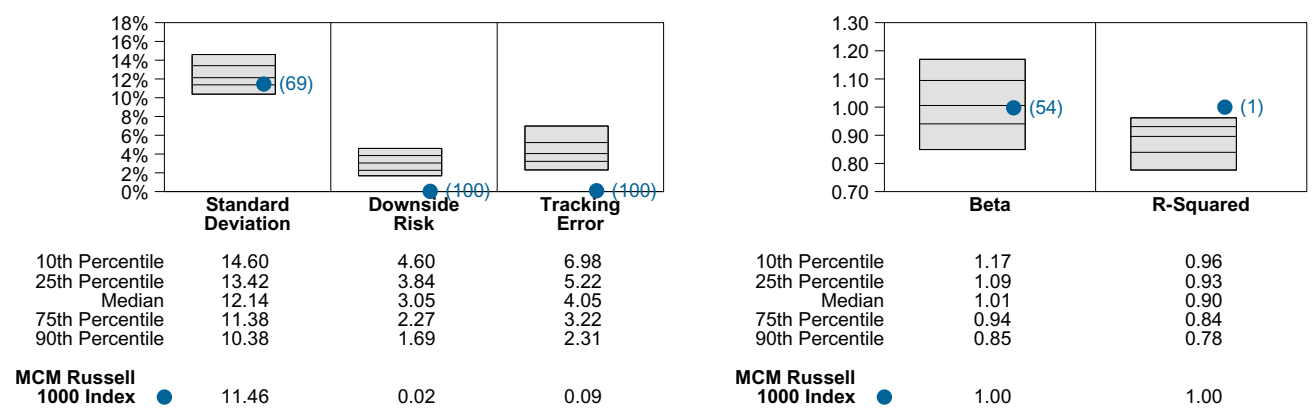
### Risk Analysis vs Callan Large Capitalization (Gross) Five Years Ended December 31, 2019



### Market Capture vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended December 31, 2019



### Risk Statistics Rankings vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended December 31, 2019



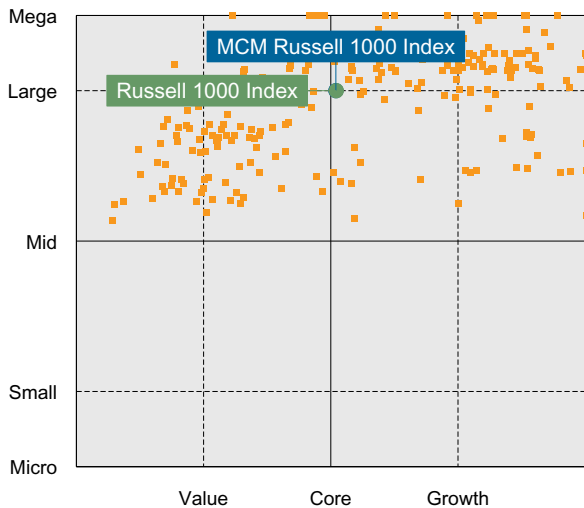
# Current Holdings Based Style Analysis

## MCM Russell 1000 Index

### As of December 31, 2019

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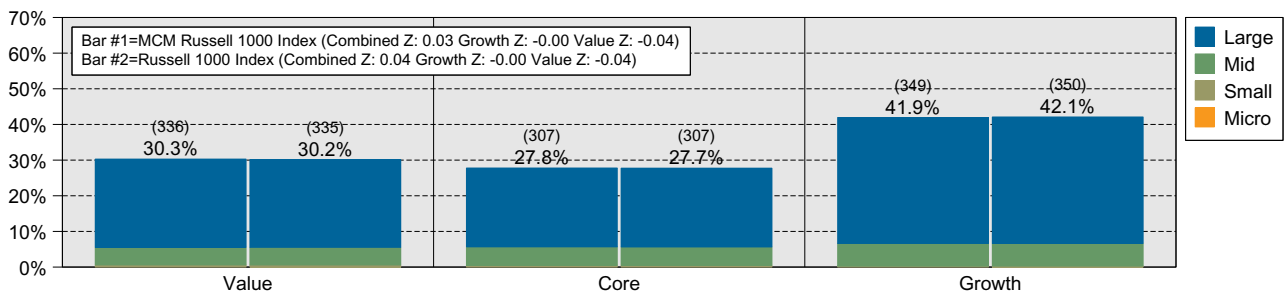
**Style Map vs Callan Large Cap Holdings as of December 31, 2019**



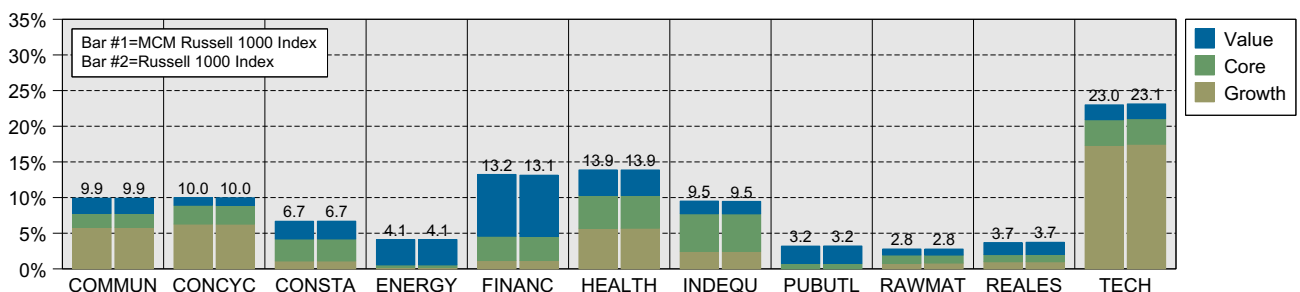
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	24.7% (106)	22.1% (85)	35.3% (106)	82.1% (297)
Mid	5.0% (166)	5.2% (164)	6.3% (211)	16.5% (541)
Small	0.6% (64)	0.5% (58)	0.3% (32)	1.4% (154)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
<b>Total</b>	<b>30.3% (336)</b>	<b>27.8% (307)</b>	<b>41.9% (349)</b>	<b>100.0% (992)</b>
	30.2% (335)	27.7% (307)	42.1% (350)	100.0% (992)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**



# MCM Russell 2000 Core Index Period Ended December 31, 2019

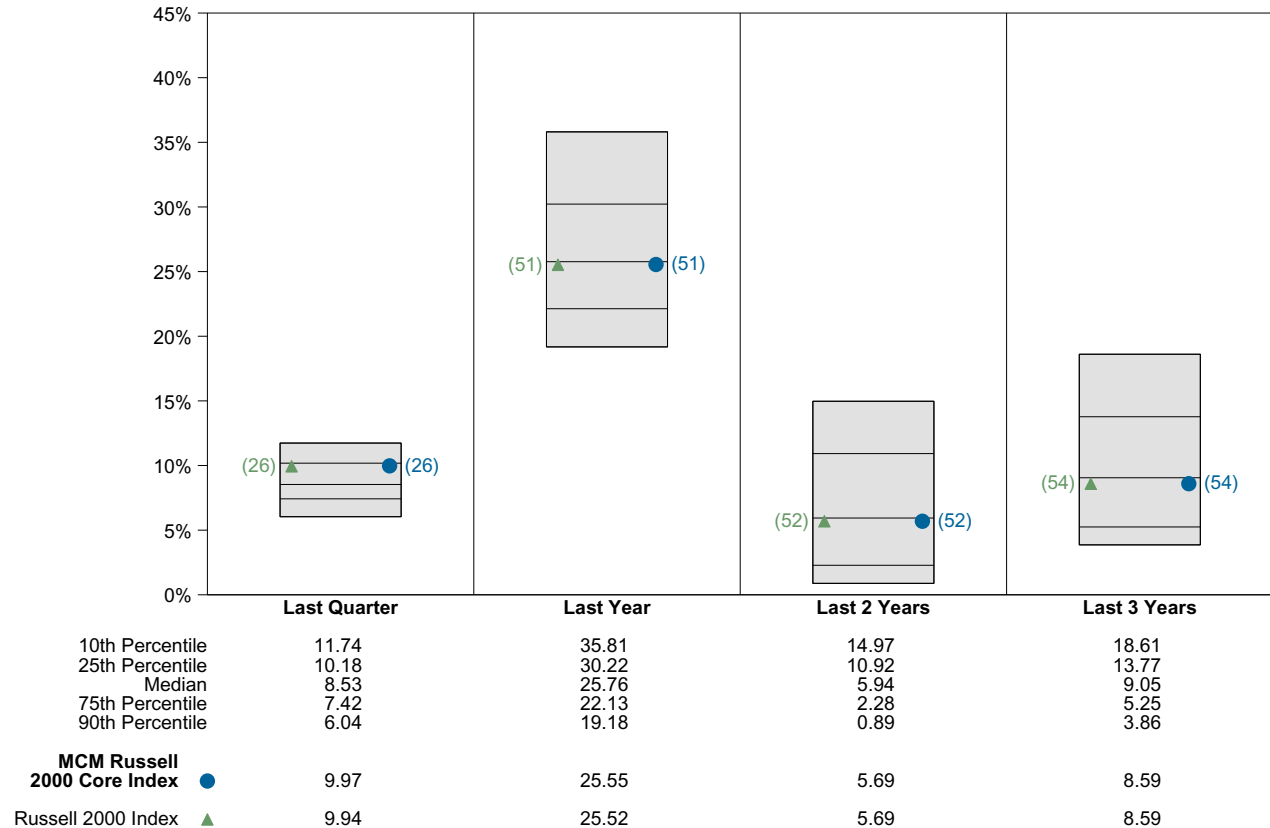
## Quarterly Summary and Highlights

- MCM Russell 2000 Core Index's portfolio posted a 9.97% return for the quarter placing it in the 26 percentile of the Callan Small Capitalization group for the quarter and in the 51 percentile for the last year.
- MCM Russell 2000 Core Index's portfolio outperformed the Russell 2000 Index by 0.03% for the quarter and outperformed the Russell 2000 Index for the year by 0.02%.

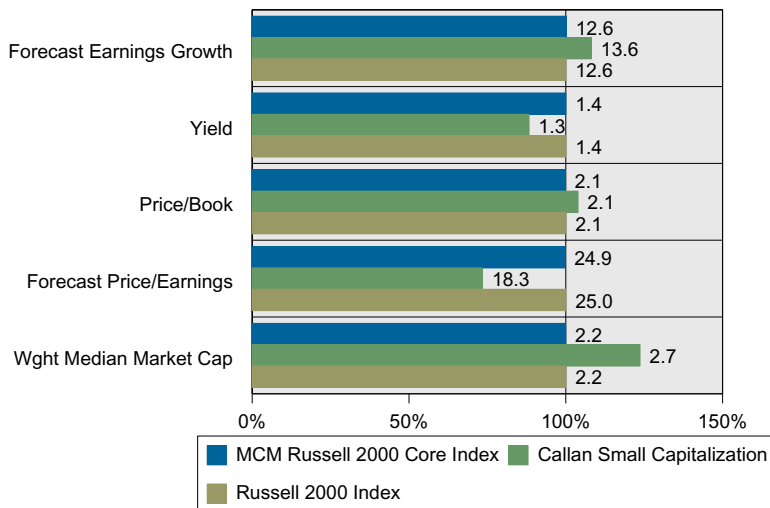
## Quarterly Asset Growth

Beginning Market Value	\$316,642,965
Net New Investment	\$0
Investment Gains/(Losses)	\$31,561,594
Ending Market Value	\$348,204,558

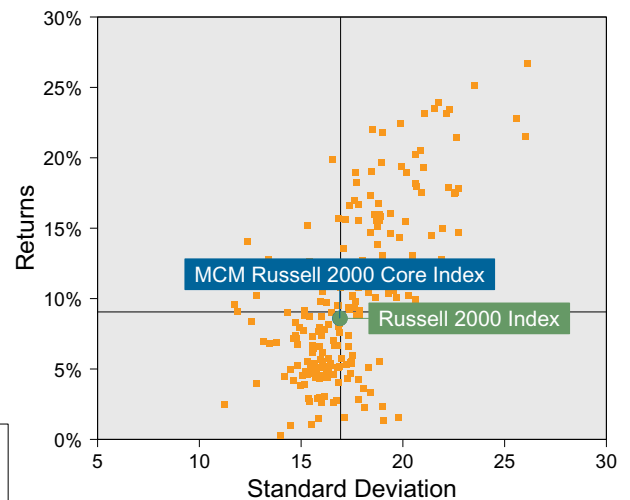
## Performance vs Callan Small Capitalization (Gross)



## Portfolio Characteristics as a Percentage of the Russell 2000 Index



## Callan Small Capitalization (Gross) Annualized Three Year Risk vs Return

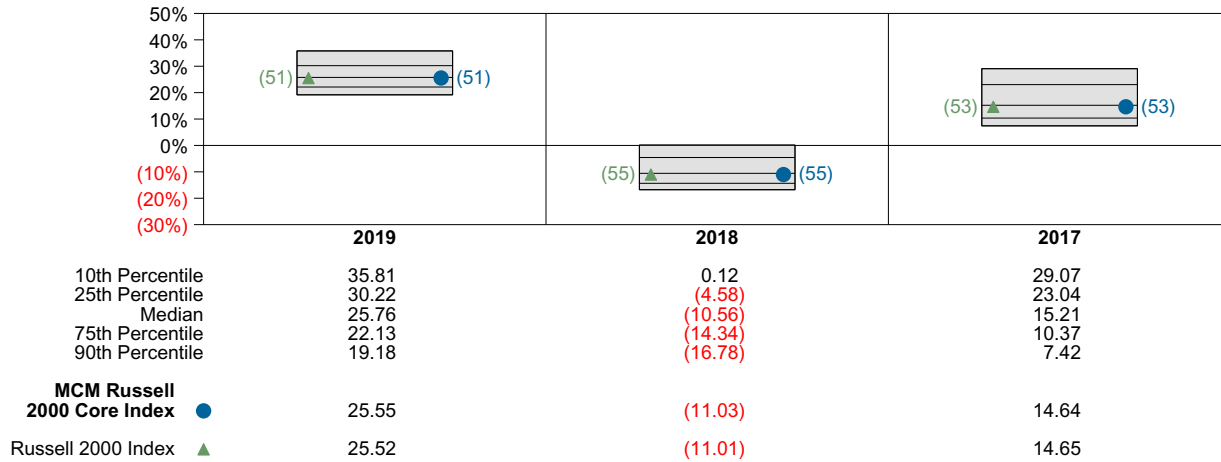


# MCM Russell 2000 Core Index Return Analysis Summary

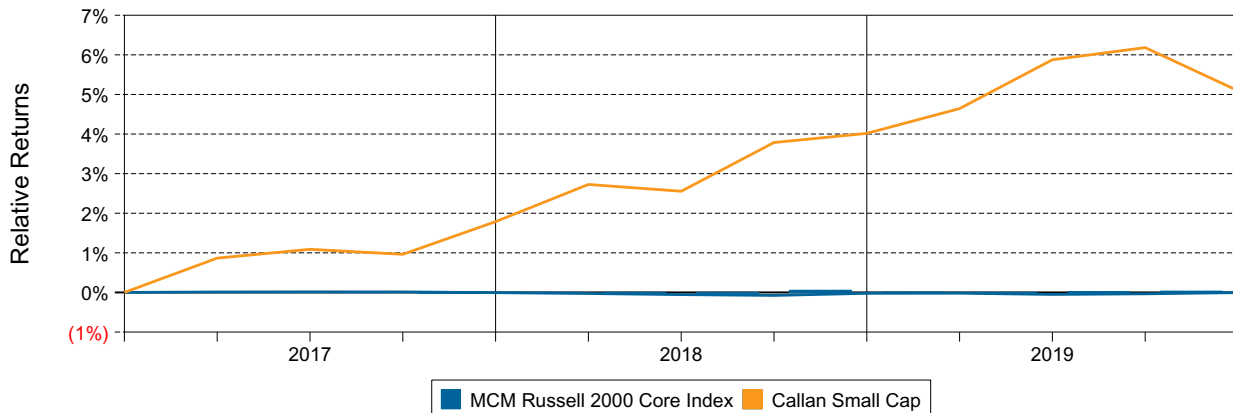
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

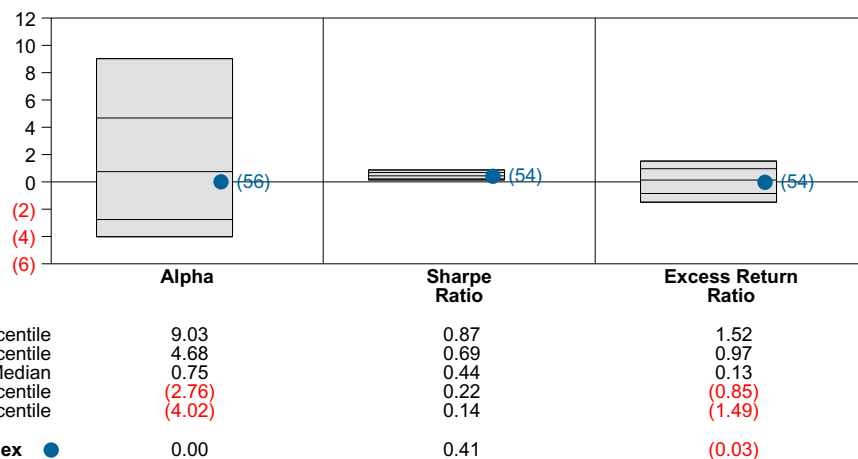
### Performance vs Callan Small Capitalization (Gross)



### Cumulative and Quarterly Relative Return vs Russell 2000 Index



### Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Three Years Ended December 31, 2019



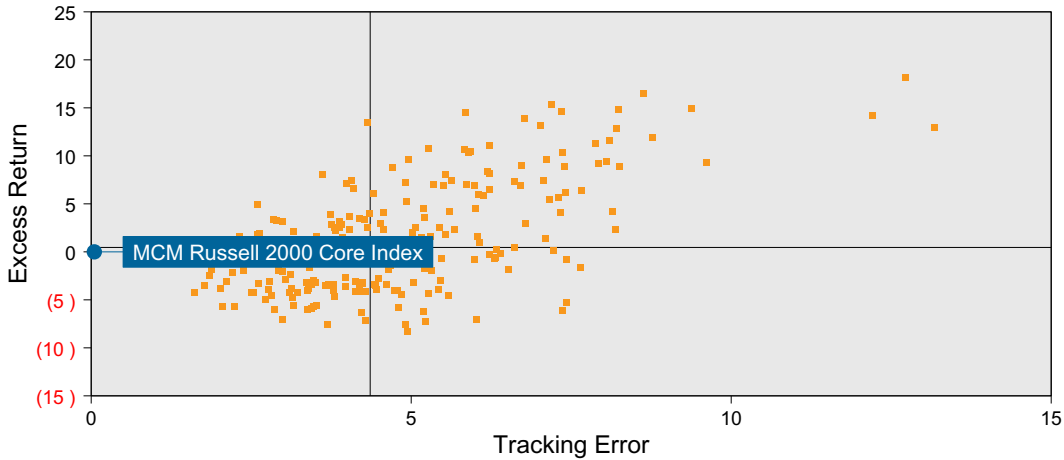


# MCM Russell 2000 Core Index Risk Analysis Summary

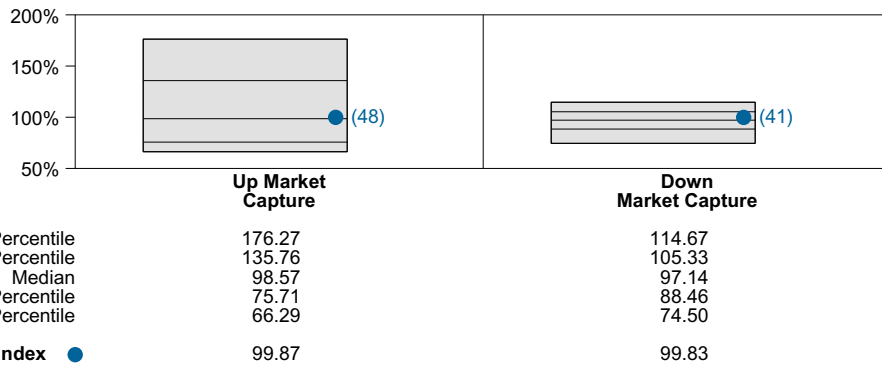
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

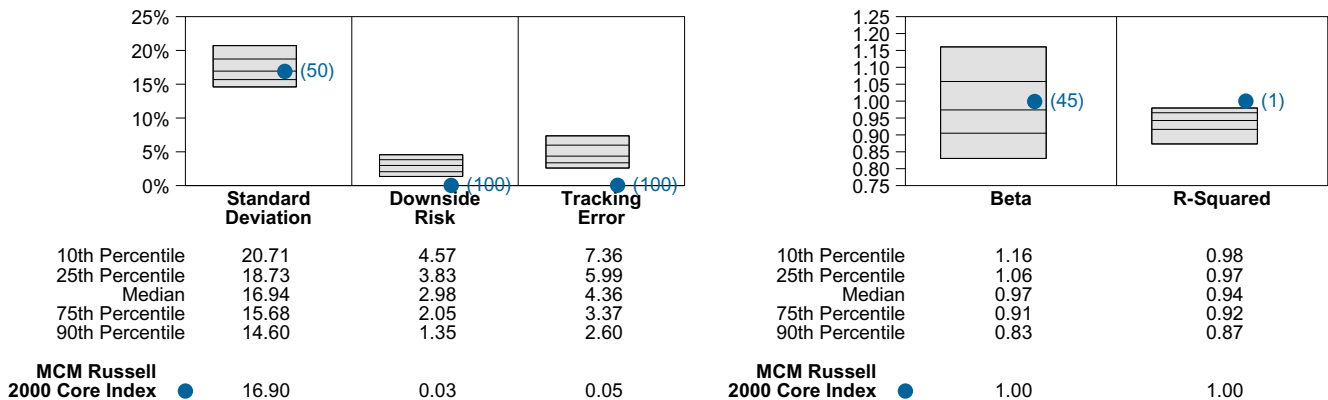
### Risk Analysis vs Callan Small Capitalization (Gross) Three Years Ended December 31, 2019



### Market Capture vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Three Years Ended December 31, 2019



### Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Three Years Ended December 31, 2019



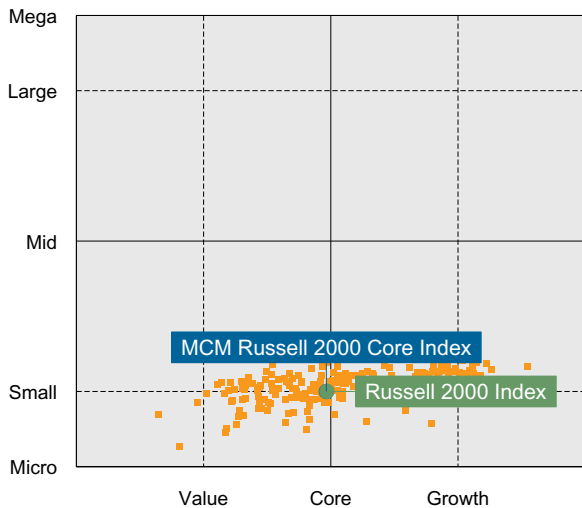
# Current Holdings Based Style Analysis

## MCM Russell 2000 Core Index

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

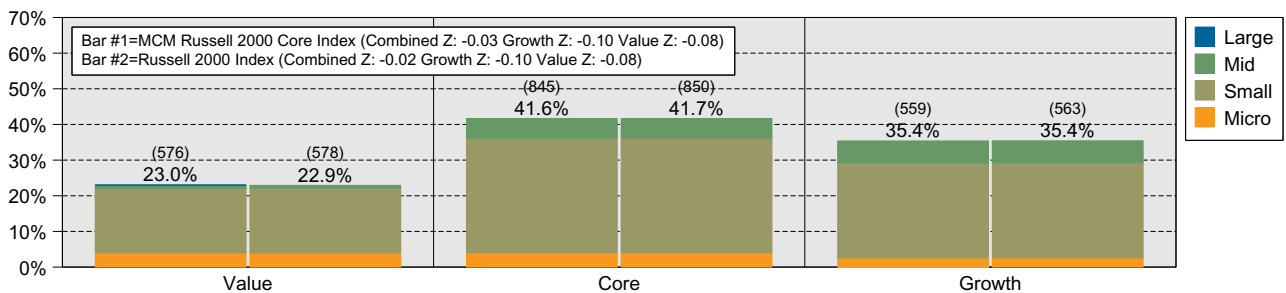
**Style Map vs Callan Small Cap Holdings as of December 31, 2019**



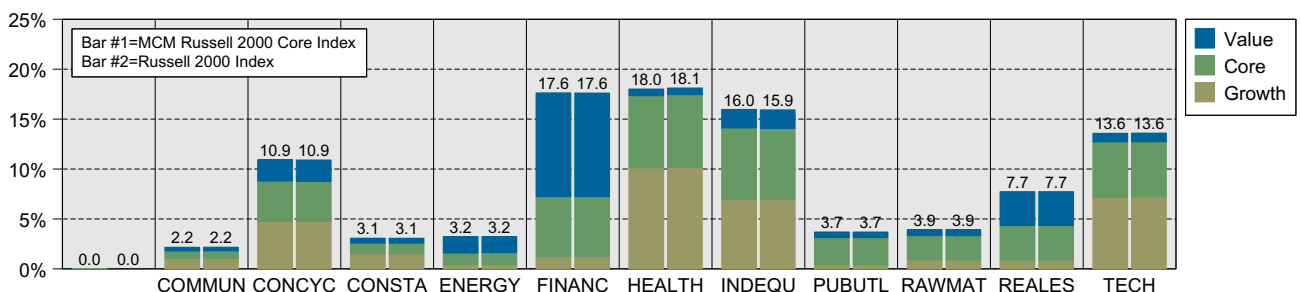
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	0.0% (1)	0.0% (0)	0.0% (0)	0.0% (1)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	0.9% (4)	5.5% (26)	6.2% (26)	12.5% (56)
	0.8% (4)	5.5% (26)	6.2% (26)	12.5% (56)
Small	18.1% (260)	32.0% (440)	26.7% (340)	76.8% (1040)
	18.1% (261)	32.0% (439)	26.7% (340)	76.8% (1040)
Micro	4.0% (311)	4.1% (379)	2.5% (193)	10.6% (883)
	4.0% (313)	4.1% (385)	2.6% (197)	10.7% (895)
<b>Total</b>	<b>23.0% (576)</b>	<b>41.6% (845)</b>	<b>35.4% (559)</b>	<b>100.0% (1980)</b>
	22.9% (578)	41.7% (850)	35.4% (563)	100.0% (1991)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

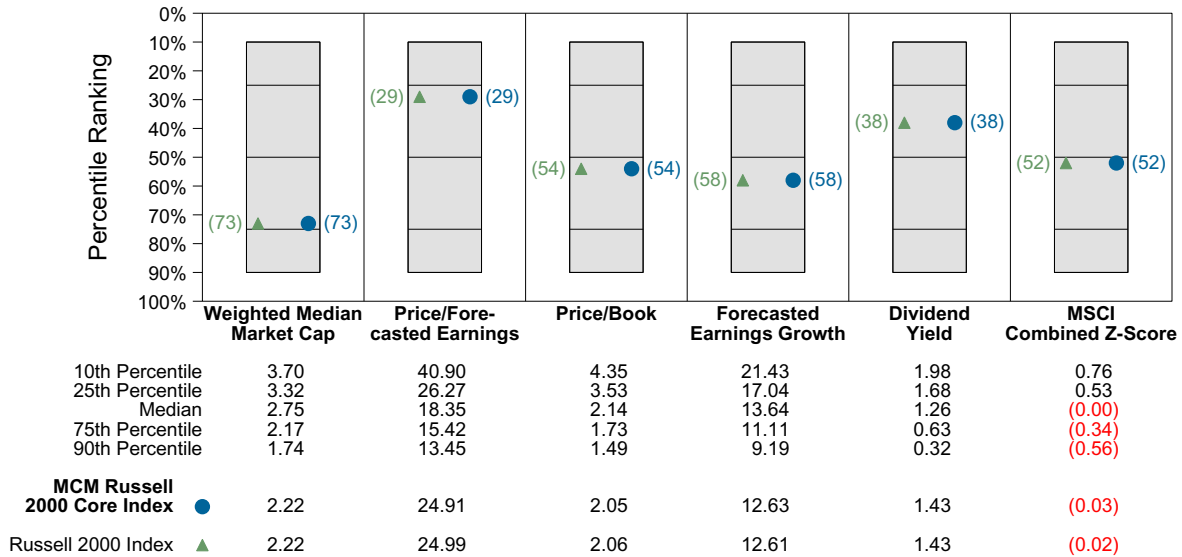


# MCM Russell 2000 Core Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

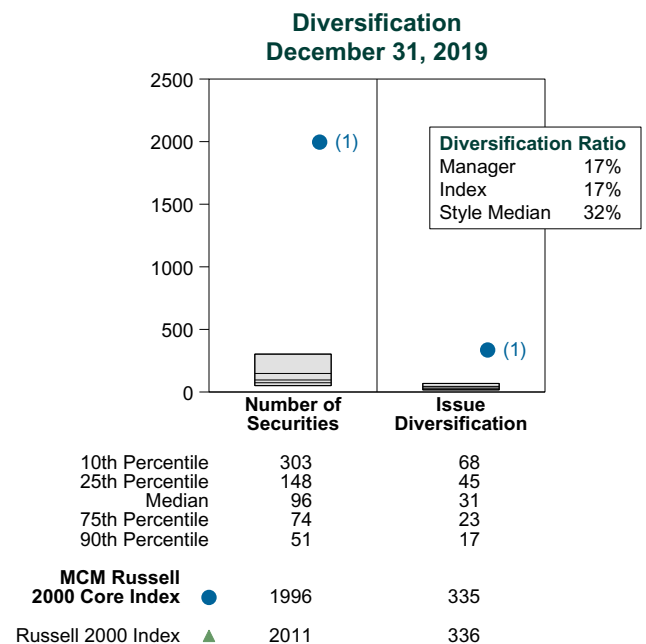
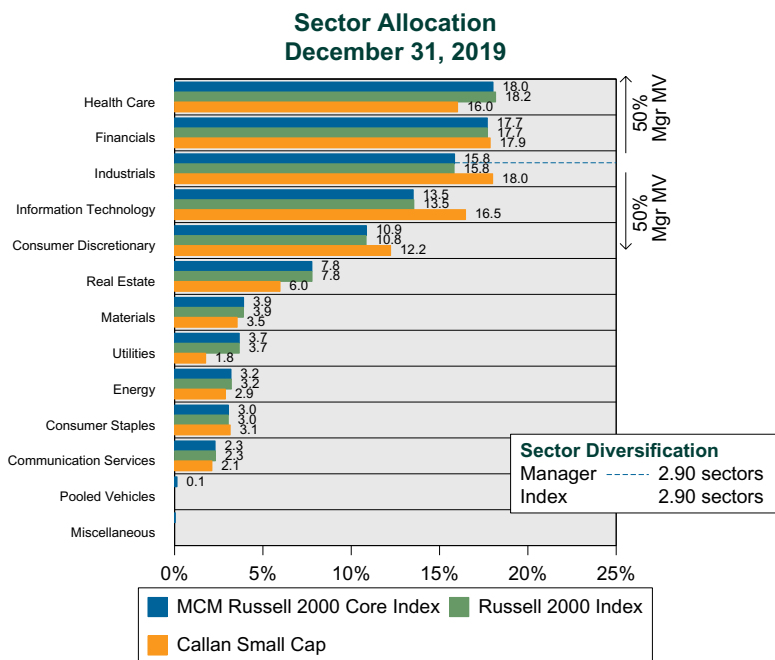
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Capitalization as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



# MCM Russell 2000 Val Index Period Ended December 31, 2019

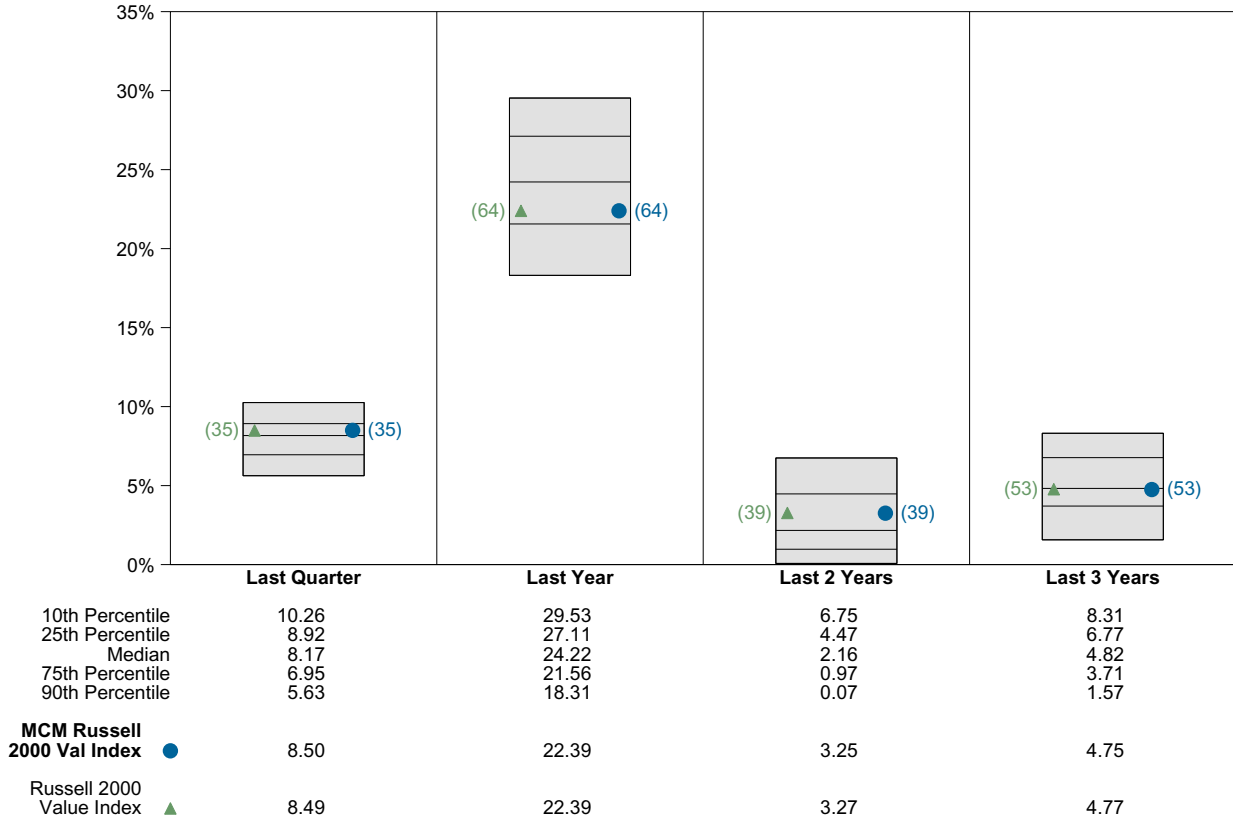
## Quarterly Summary and Highlights

- MCM Russell 2000 Val Index's portfolio posted a 8.50% return for the quarter placing it in the 35 percentile of the Callan Small Cap Value group for the quarter and in the 64 percentile for the last year.
- MCM Russell 2000 Val Index's portfolio outperformed the Russell 2000 Value Index by 0.01% for the quarter and underperformed the Russell 2000 Value Index for the year by 0.00%.

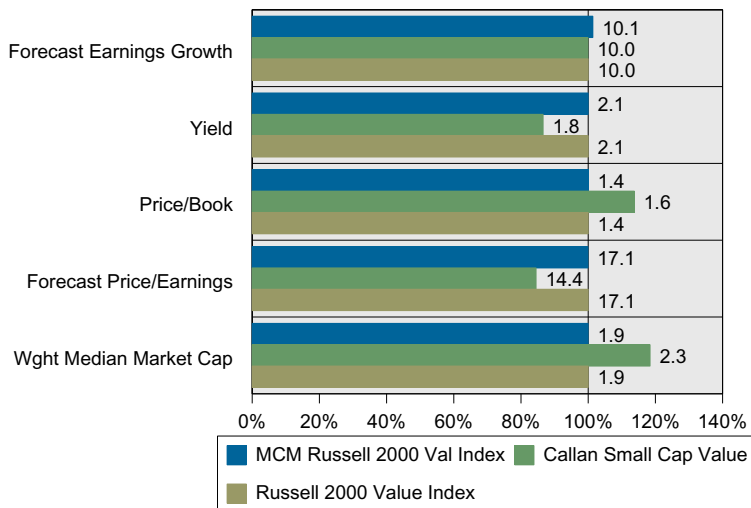
## Quarterly Asset Growth

Beginning Market Value	\$572,979,447
Net New Investment	\$0
Investment Gains/(Losses)	\$48,660,632
Ending Market Value	\$621,640,079

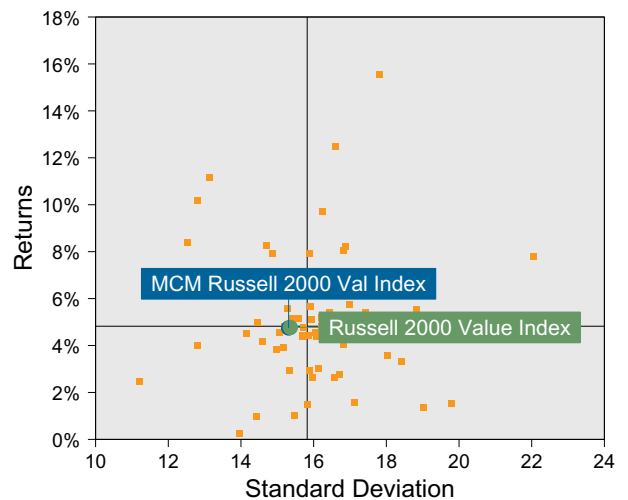
## Performance vs Callan Small Cap Value (Gross)



## Portfolio Characteristics as a Percentage of the Russell 2000 Value Index



## Callan Small Cap Value (Gross) Annualized Three Year Risk vs Return

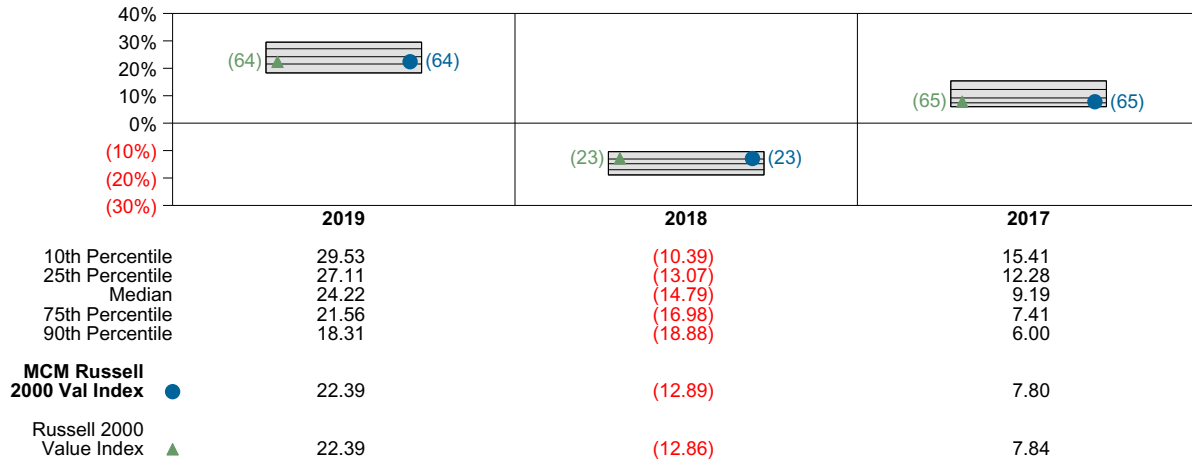


# MCM Russell 2000 Val Index Return Analysis Summary

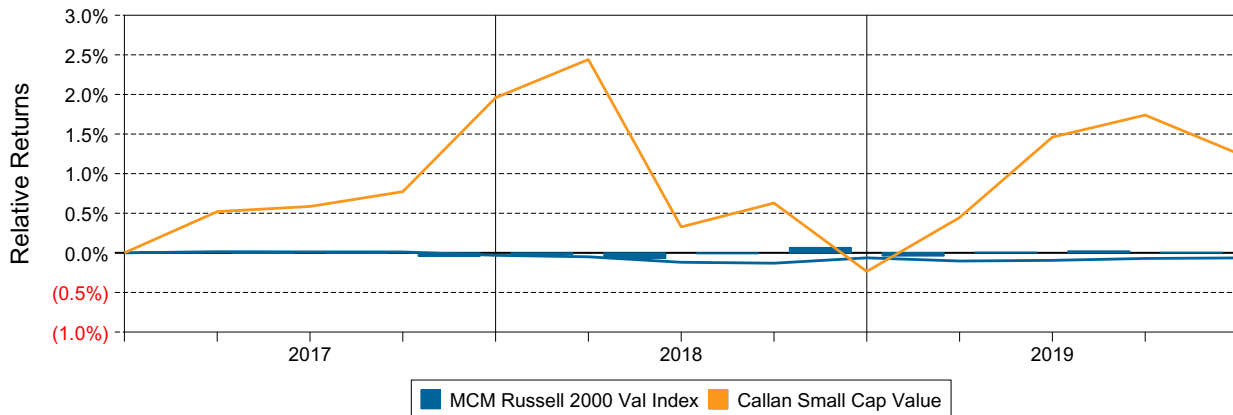
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

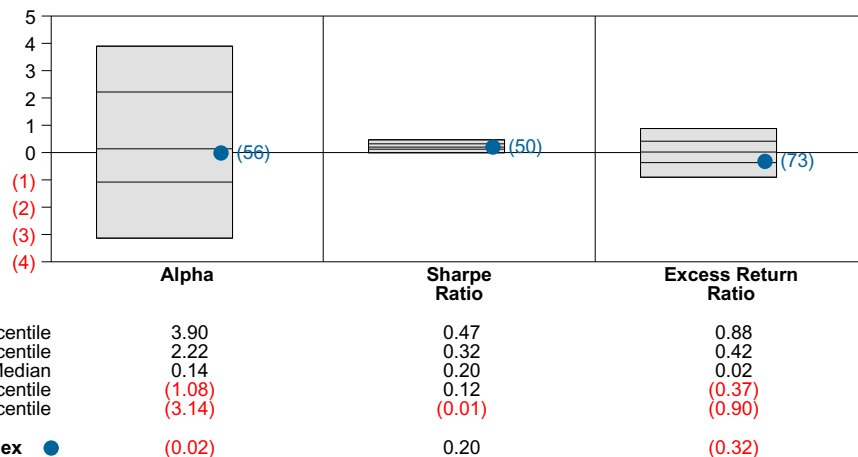
### Performance vs Callan Small Cap Value (Gross)



### Cumulative and Quarterly Relative Return vs Russell 2000 Value Index



### Risk Adjusted Return Measures vs Russell 2000 Value Index Rankings Against Callan Small Cap Value (Gross) Three Years Ended December 31, 2019





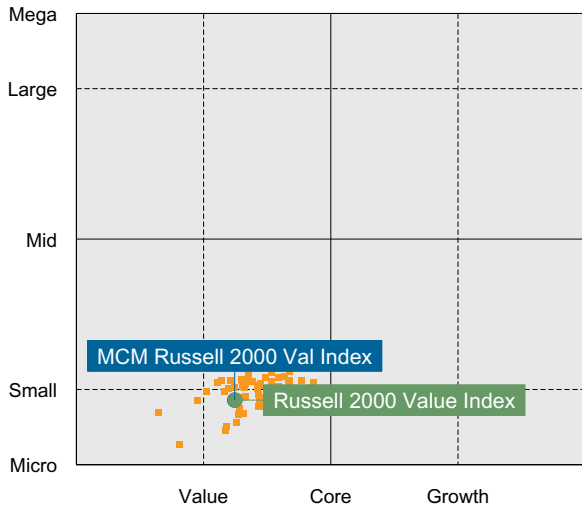
# Current Holdings Based Style Analysis

## MCM Russell 2000 Val Index

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

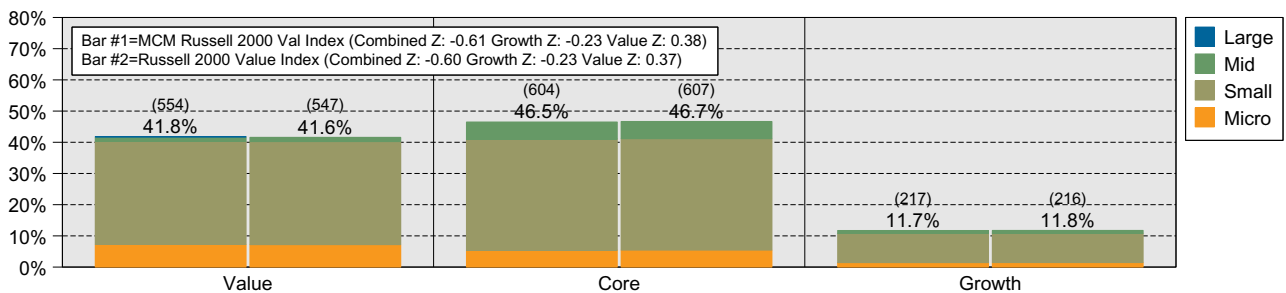
**Style Map vs Callan Small Cap Value Holdings as of December 31, 2019**



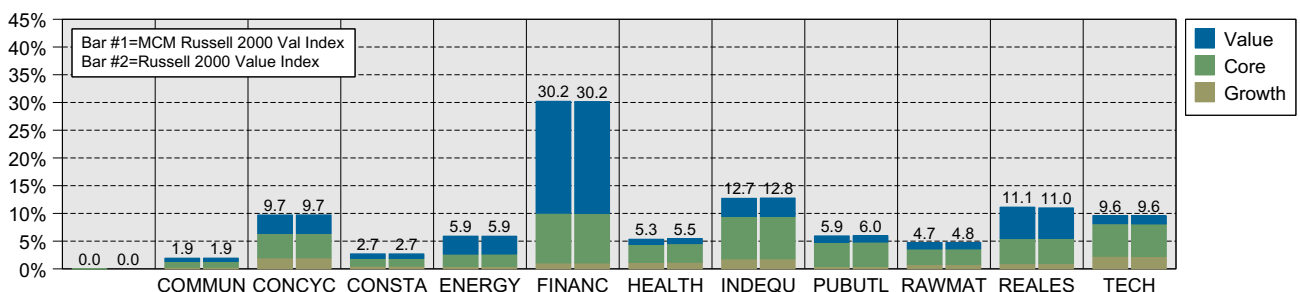
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	0.1% (1) 0.0% (0)	0.0% (0) 0.0% (0)	0.0% (0) 0.0% (0)	0.1% (1) 0.0% (0)
Mid	1.4% (4) 1.4% (4)	5.5% (15) 5.5% (15)	1.0% (2) 1.0% (2)	7.8% (21) 7.8% (21)
Small	33.1% (249) 33.0% (247)	35.6% (318) 35.7% (315)	9.3% (123) 9.3% (122)	78.0% (690) 78.1% (684)
Micro	7.2% (300) 7.2% (296)	5.4% (271) 5.4% (277)	1.4% (92) 1.4% (92)	14.1% (663) 14.1% (665)
<b>Total</b>	<b>41.8% (554)</b> 41.6% (547)	<b>46.5% (604)</b> 46.7% (607)	<b>11.7% (217)</b> 11.8% (216)	<b>100.0% (1375)</b> 100.0% (1370)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

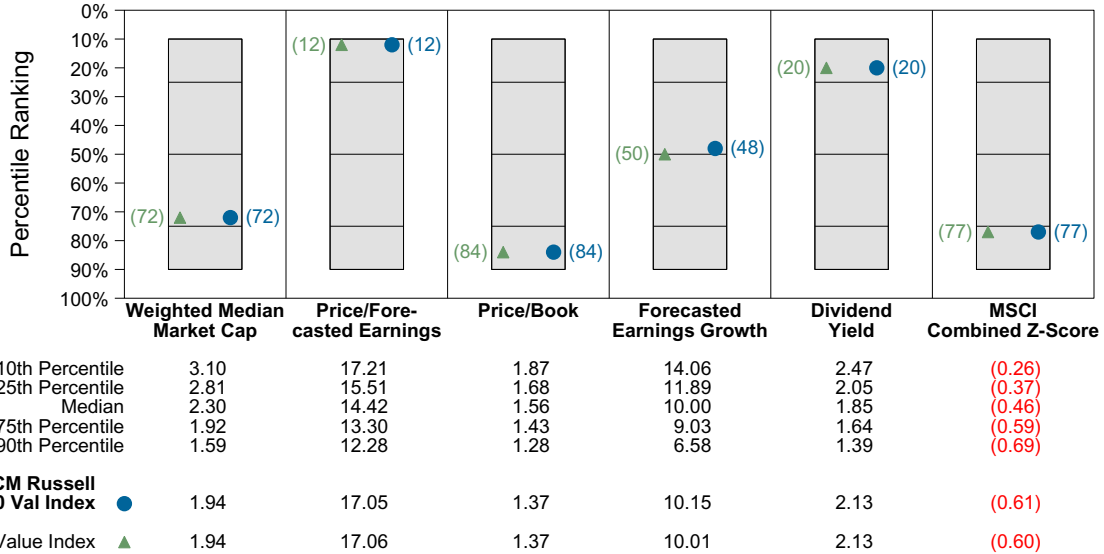


# MCM Russell 2000 Val Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

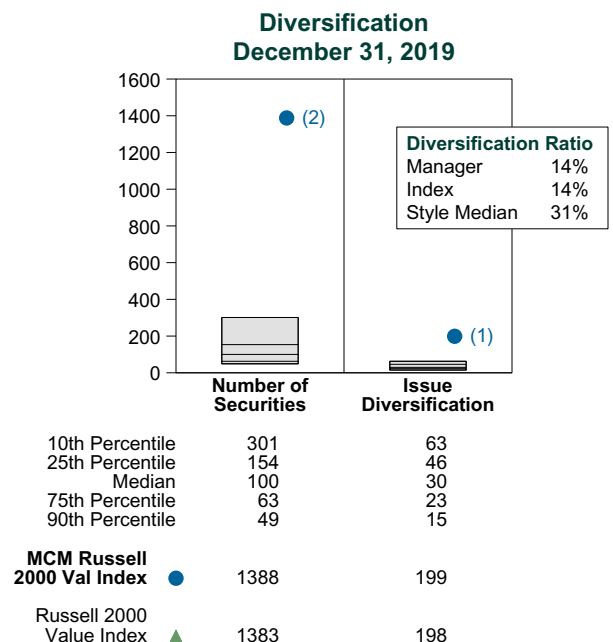
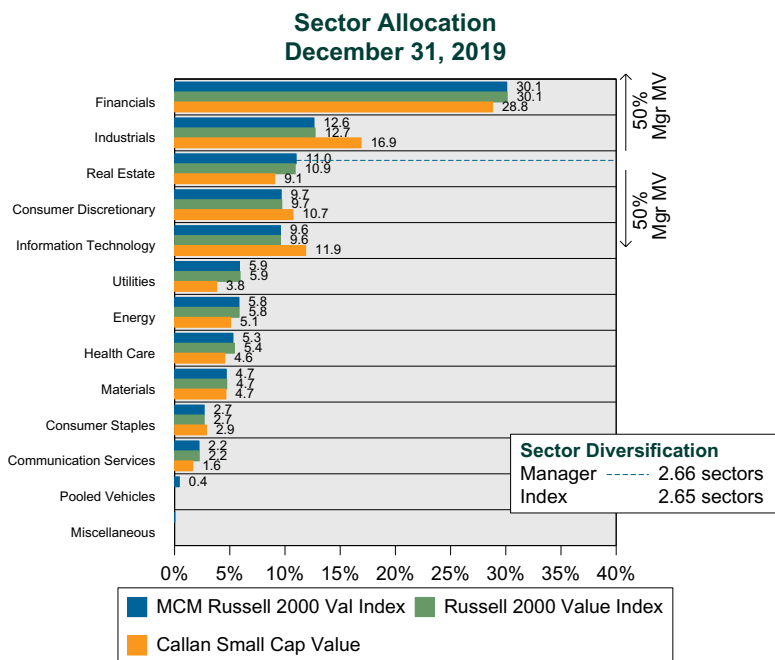
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Value as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.





# Emerald Adv Div Sm Cap Grth Period Ended December 31, 2019

## Investment Philosophy

Emerald is dedicated to fundamental, bottom-up research designed to identify unrecognized, under-researched and undervalued growth companies.

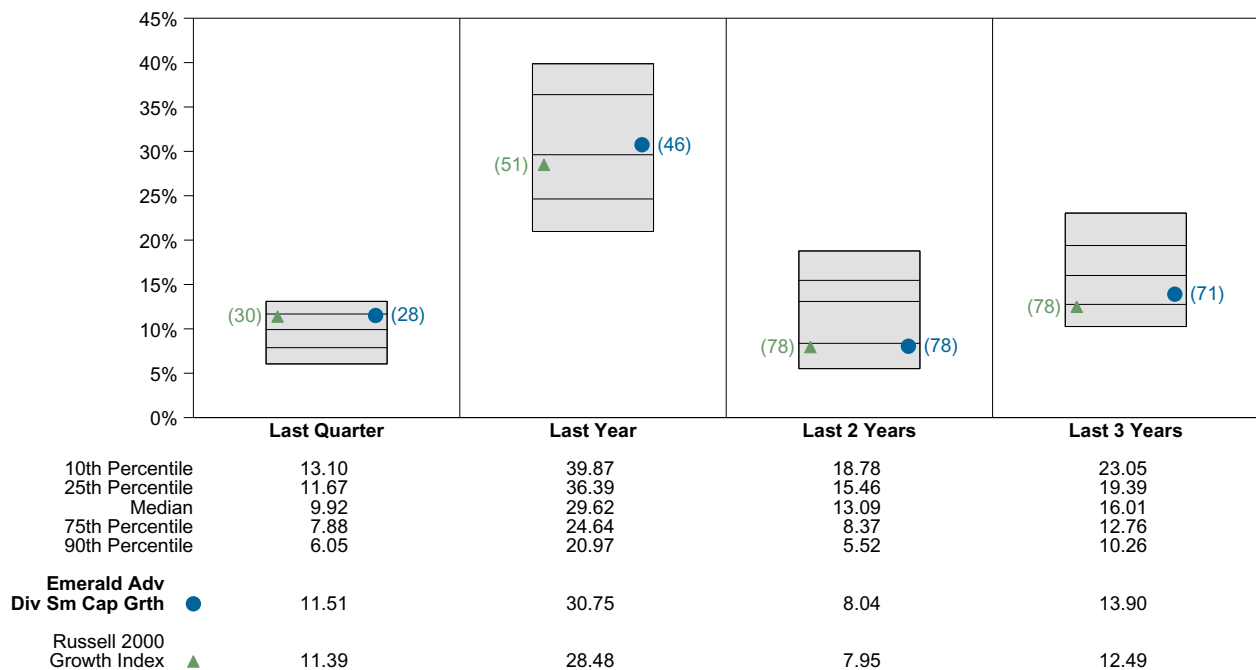
## Quarterly Summary and Highlights

- Emerald Adv Div Sm Cap Grth's portfolio posted a 11.51% return for the quarter placing it in the 28 percentile of the Callan Small Cap Growth group for the quarter and in the 46 percentile for the last year.
- Emerald Adv Div Sm Cap Grth's portfolio outperformed the Russell 2000 Growth Index by 0.11% for the quarter and outperformed the Russell 2000 Growth Index for the year by 2.26%.

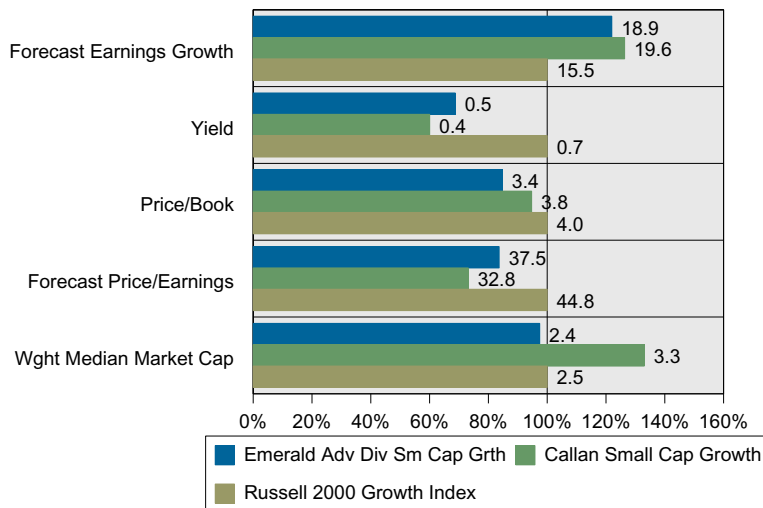
## Quarterly Asset Growth

Beginning Market Value	\$659,602,079
Net New Investment	\$0
Investment Gains/(Losses)	\$75,060,074
Ending Market Value	\$734,662,153

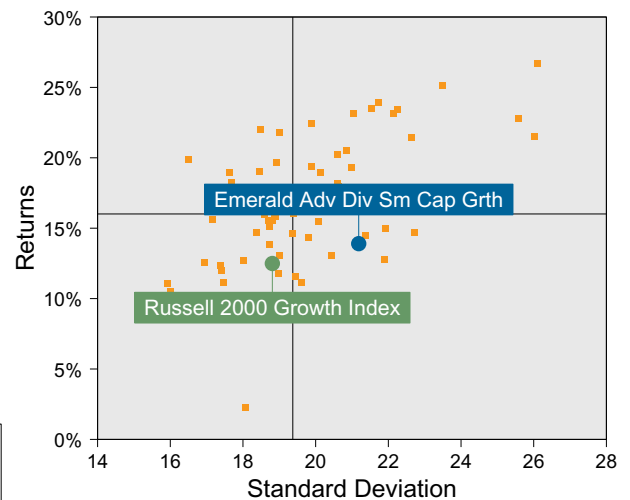
## Performance vs Callan Small Cap Growth (Gross)



## Portfolio Characteristics as a Percentage of the Russell 2000 Growth Index



## Callan Small Cap Growth (Gross) Annualized Three Year Risk vs Return

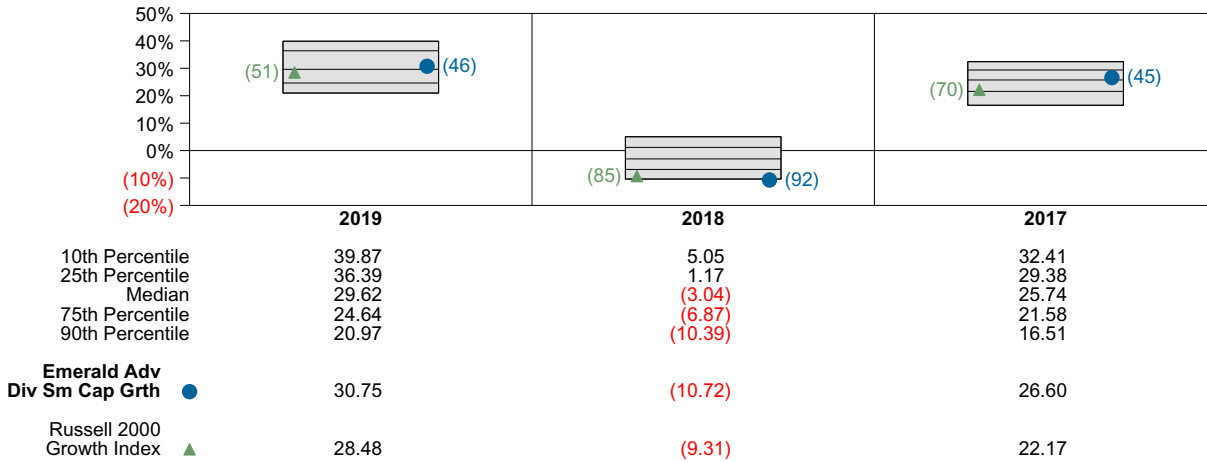


# Emerald Adv Div Sm Cap Grth Return Analysis Summary

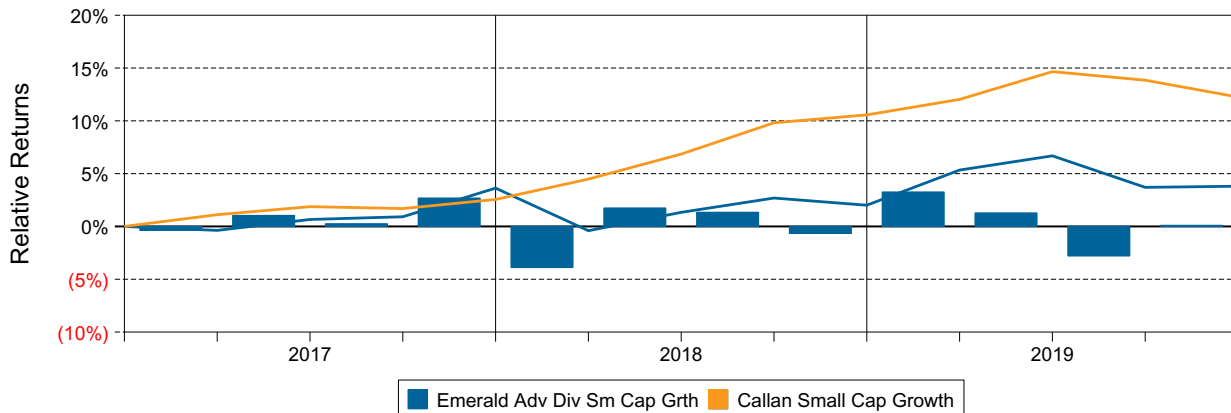
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

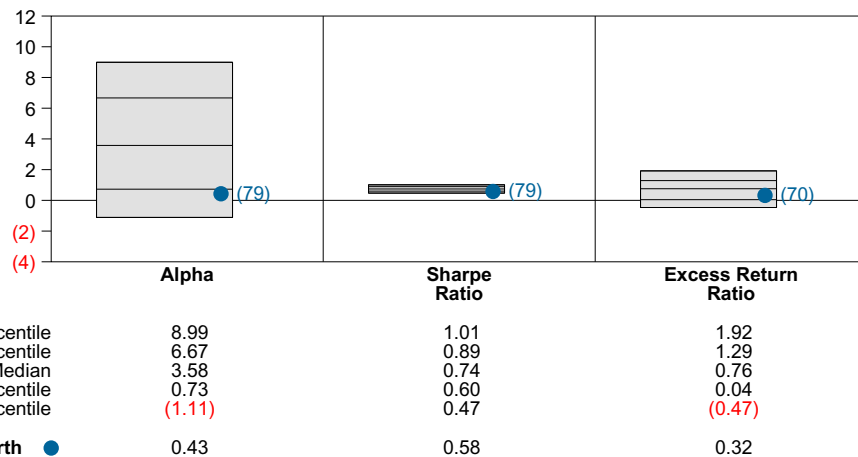
### Performance vs Callan Small Cap Growth (Gross)



### Cumulative and Quarterly Relative Return vs Russell 2000 Growth Index



### Risk Adjusted Return Measures vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Three Years Ended December 31, 2019

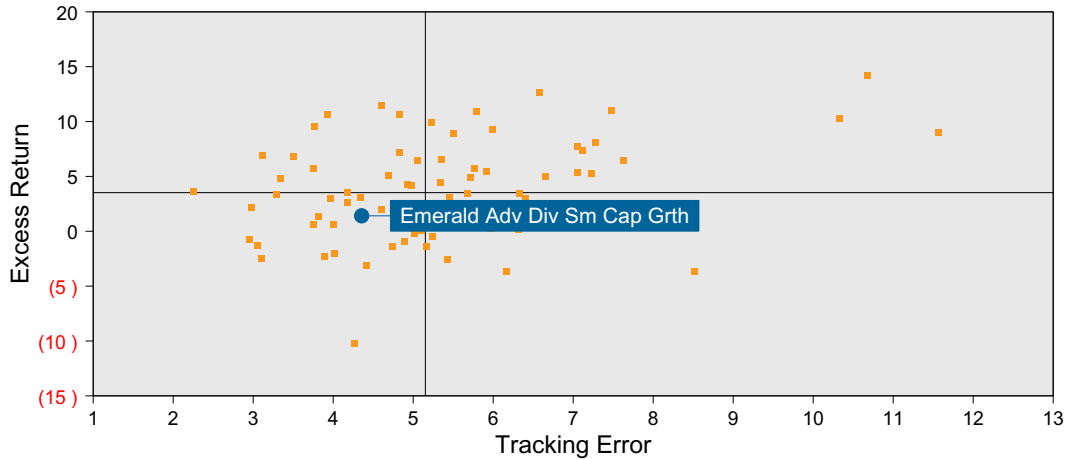


# Emerald Adv Div Sm Cap Grth Risk Analysis Summary

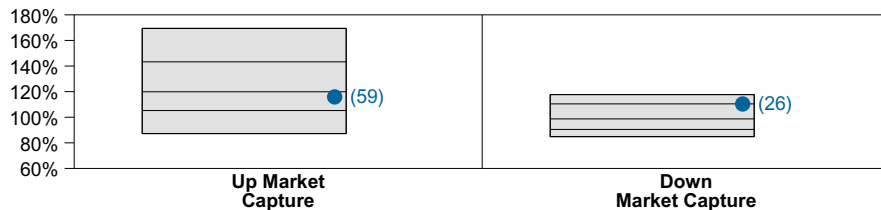
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

### Risk Analysis vs Callan Small Cap Growth (Gross) Three Years Ended December 31, 2019



### Market Capture vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Three Years Ended December 31, 2019



	Up Market Capture	Down Market Capture
10th Percentile	169.41	117.68
25th Percentile	143.30	110.44
Median	119.89	98.70
75th Percentile	105.22	90.47
90th Percentile	87.21	84.82

Emerald Adv Div Sm Cap Grth ● 115.87 110.35

### Risk Statistics Rankings vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Three Years Ended December 31, 2019



	Standard Deviation	Downside Risk	Tracking Error	Beta	R-Squared
10th Percentile	22.60	4.13	7.26	1.17	0.97
25th Percentile	21.01	3.56	6.16	1.10	0.96
Median	19.37	2.69	5.15	1.00	0.94
75th Percentile	18.36	1.82	4.00	0.93	0.91
90th Percentile	17.29	0.85	3.29	0.88	0.88

Emerald Adv Div Sm Cap Grth ● 21.19 2.79 4.36 ● 1.11 0.97

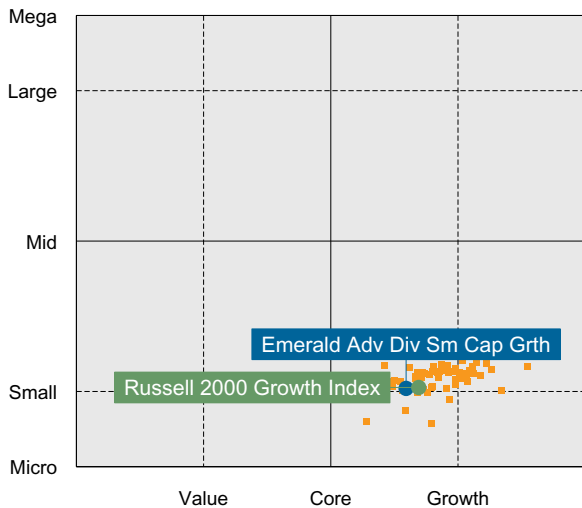
# Current Holdings Based Style Analysis

## Emerald Adv Div Sm Cap Grth

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization segments are dictated by capitalization decile breakpoints. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

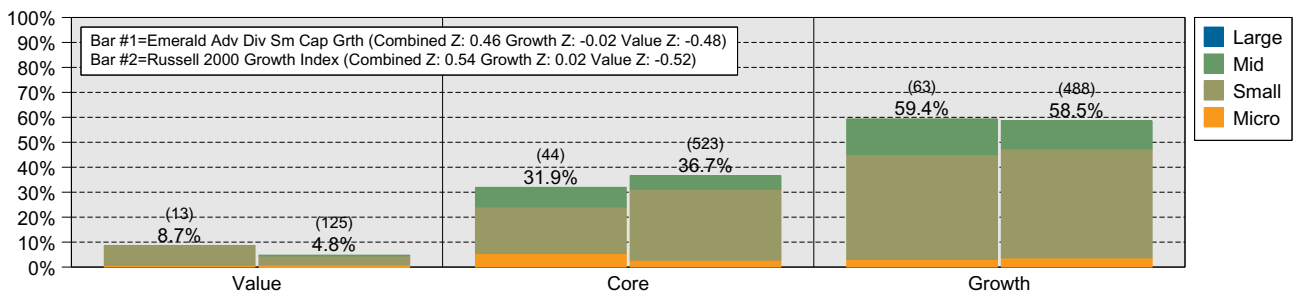
**Style Map vs Callan Small Cap Growth Holdings as of December 31, 2019**



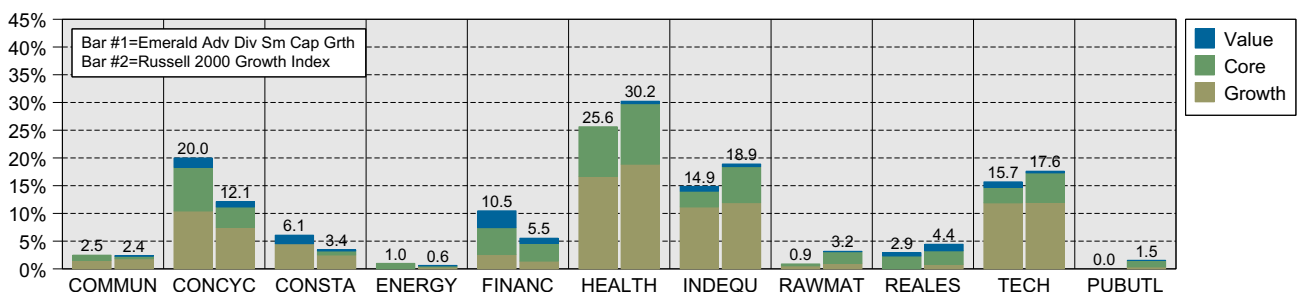
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	0.0% (0)	7.8% (6)	14.3% (9)	22.1% (15)
Small	8.0% (10)	18.5% (28)	42.1% (45)	68.6% (83)
Micro	0.7% (3)	5.6% (10)	3.1% (9)	9.3% (22)
<b>Total</b>	<b>8.7% (13)</b>	<b>31.9% (44)</b>	<b>59.4% (63)</b>	<b>100.0% (120)</b>
	4.8% (125)	36.7% (523)	58.5% (488)	100.0% (1136)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

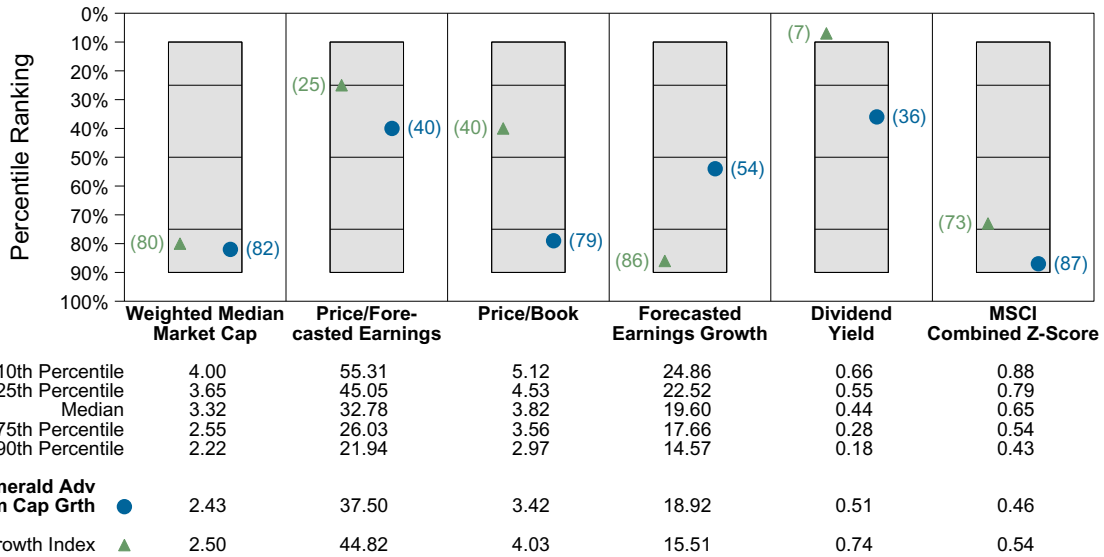


# Emerald Adv Div Sm Cap Grth Equity Characteristics Analysis Summary

## Portfolio Characteristics

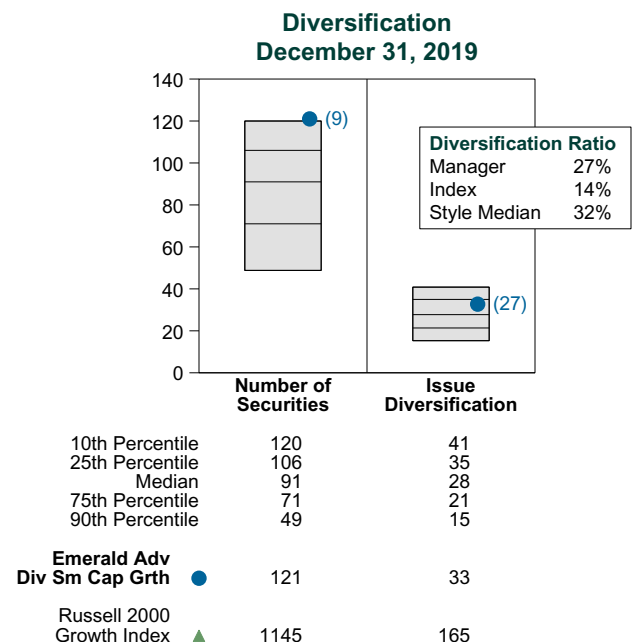
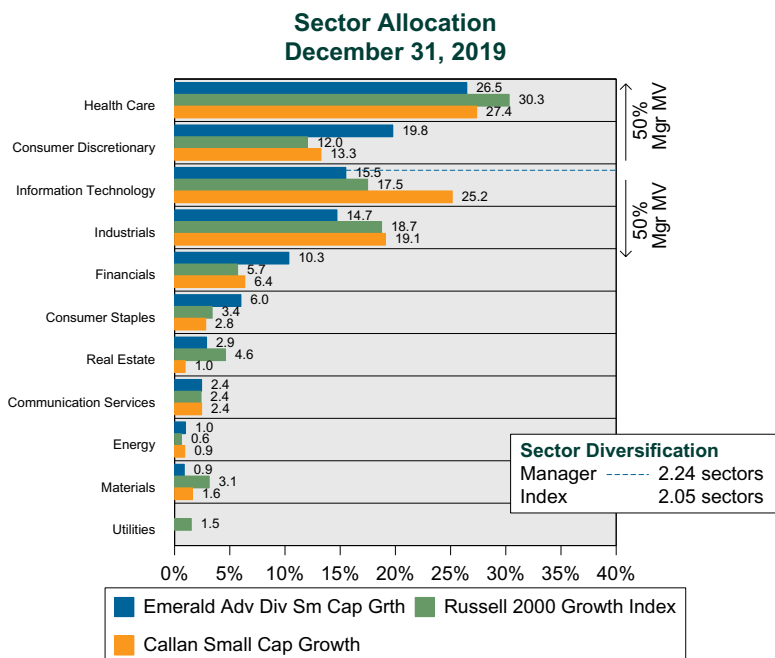
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Growth as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.

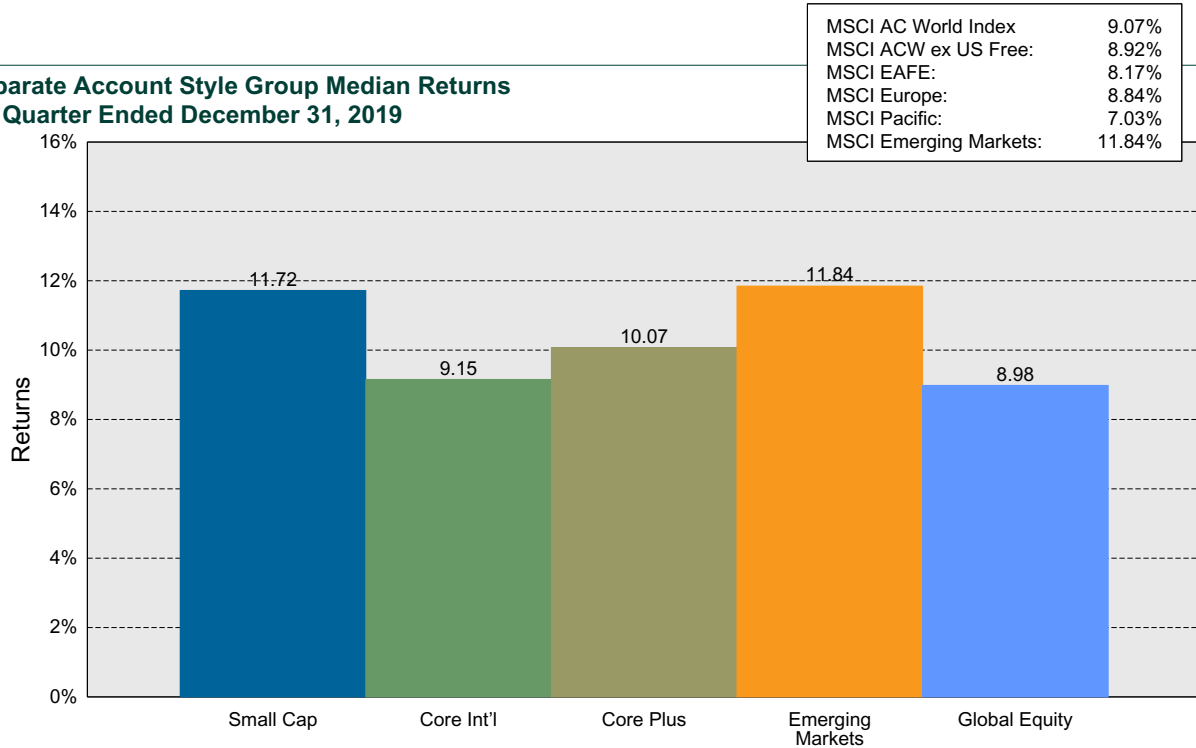




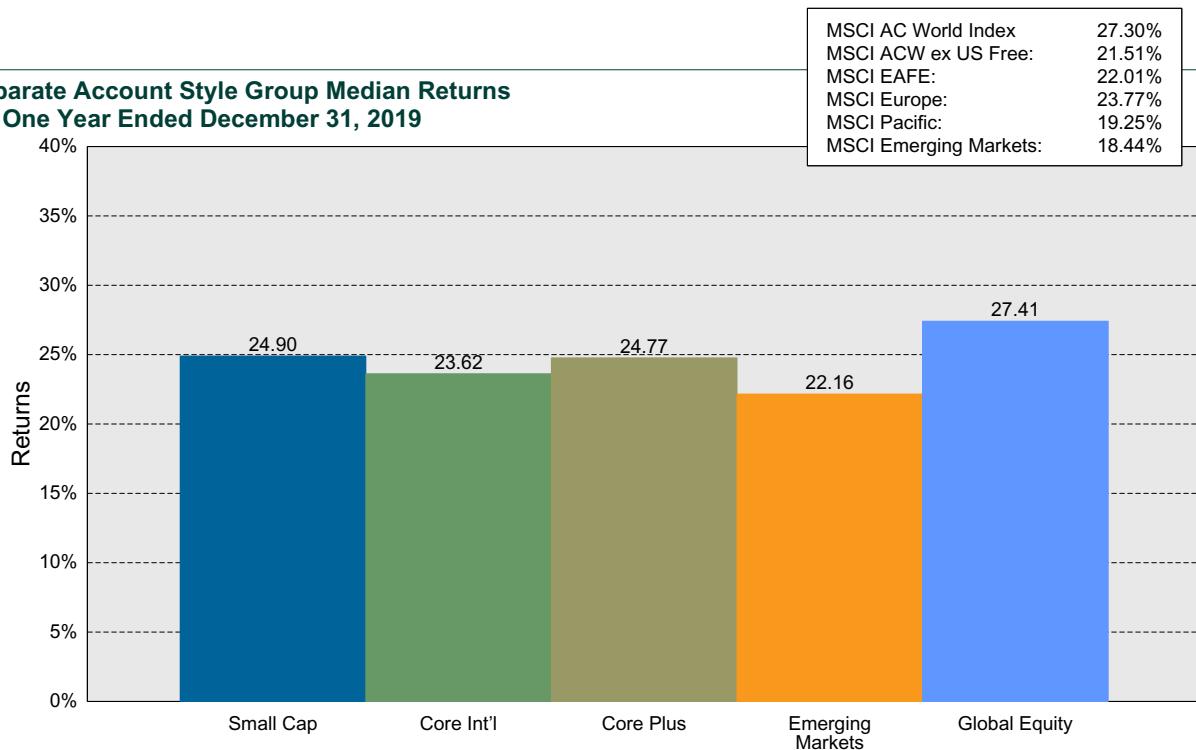
## International Equity Active Management Overview

Non-U.S. developed markets trailed the U.S. but were still up sharply in the fourth quarter and 2019 (MSCI ACWI ex-USA: +8.9%; +21.5%). Virtually all countries posted positive returns for both periods, though results were varied. Emerging markets outperformed developed markets in the fourth quarter but trailed for the full year (MSCI EM Index: +11.8% +18.4%). Chile (-8.8%; -16.9%) was the only country to deliver a negative return for both periods due to a sharp decline in the Chilean peso amid civil unrest. Russia (+16.8%; +50.9%) was the top performer for the year as its central bank aggressively cut rates. Returns for the BRIC countries were mixed. Brazil (+14.2%; +26.3%) and China (+14.7%; +23.5%) also posted strong results while returns from India (+5.3%; +7.6%) were more modest.

**Separate Account Style Group Median Returns  
for Quarter Ended December 31, 2019**



**Separate Account Style Group Median Returns  
for One Year Ended December 31, 2019**







# Non-U.S. Developed Markets Equity Period Ended December 31, 2019

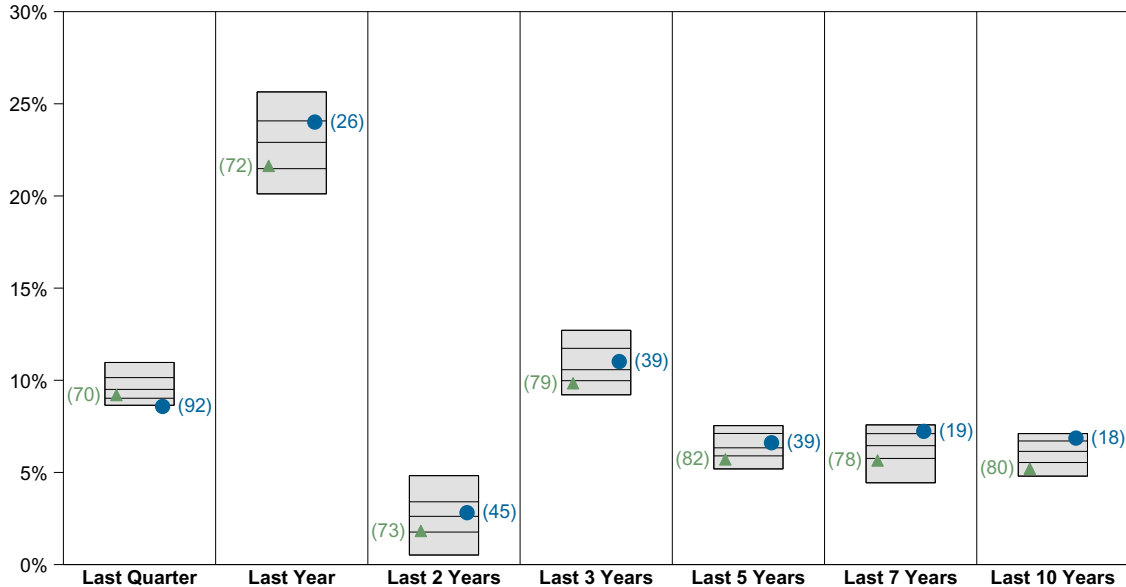
## Quarterly Summary and Highlights

- Non-U.S. Developed Markets Equity's portfolio posted a 8.58% return for the quarter placing it in the 92 percentile of the Public Fund - International Equity group for the quarter and in the 26 percentile for the last year.
- Non-U.S. Developed Markets Equity's portfolio underperformed the MSCI ACWI ex US IMI by 0.62% for the quarter and outperformed the MSCI ACWI ex US IMI for the year by 2.37%.

## Quarterly Asset Growth

Beginning Market Value	\$5,515,280,266
Net New Investment	\$231,960
Investment Gains/(Losses)	\$468,764,981
Ending Market Value	\$5,984,277,208

## Performance vs Public Fund - International Equity (Gross)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	10.97	25.65	4.83	12.71	7.54	7.58	7.11
25th Percentile	10.15	24.07	3.41	11.73	7.11	7.11	6.71
Median	9.51	22.91	2.62	10.57	6.33	6.45	6.14
75th Percentile	9.02	21.48	1.76	9.98	5.90	5.76	5.54
90th Percentile	8.64	20.11	0.52	9.21	5.19	4.44	4.80

**Non-U.S. Developed Markets Equity**



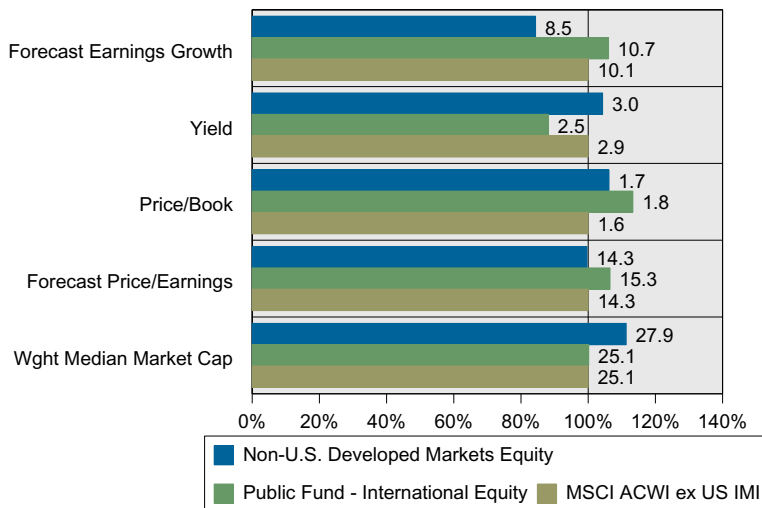
8.58	24.01	2.82	11.02	6.61	7.23	6.86
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**MSCI ACWI ex US IMI**

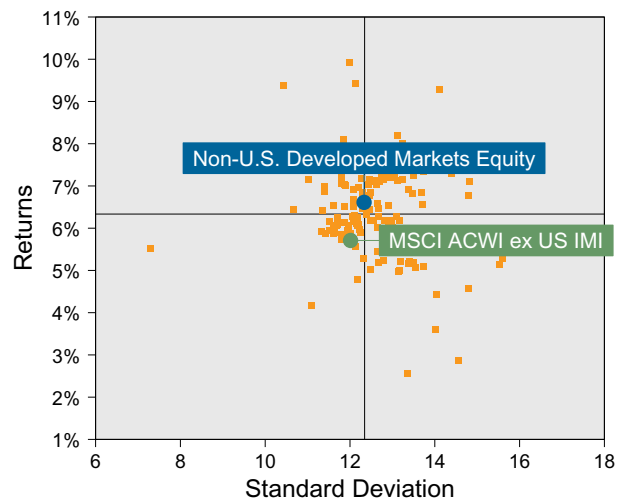


9.20	21.63	1.83	9.84	5.71	5.65	5.21
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## Portfolio Characteristics as a Percentage of the MSCI ACWI ex US IMI



## Public Fund - International Equity (Gross) Annualized Five Year Risk vs Return

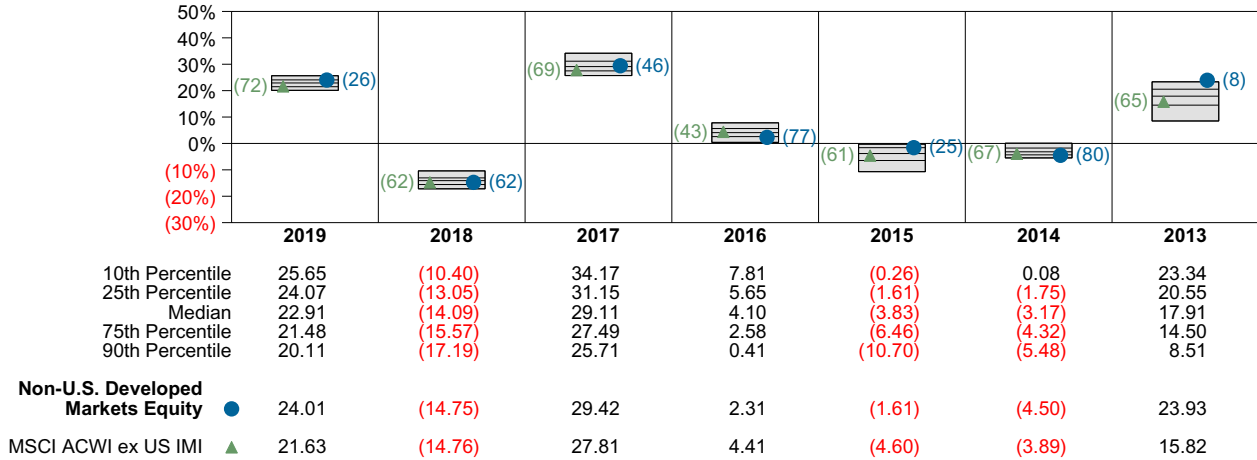


# Non-U.S. Developed Markets Equity Return Analysis Summary

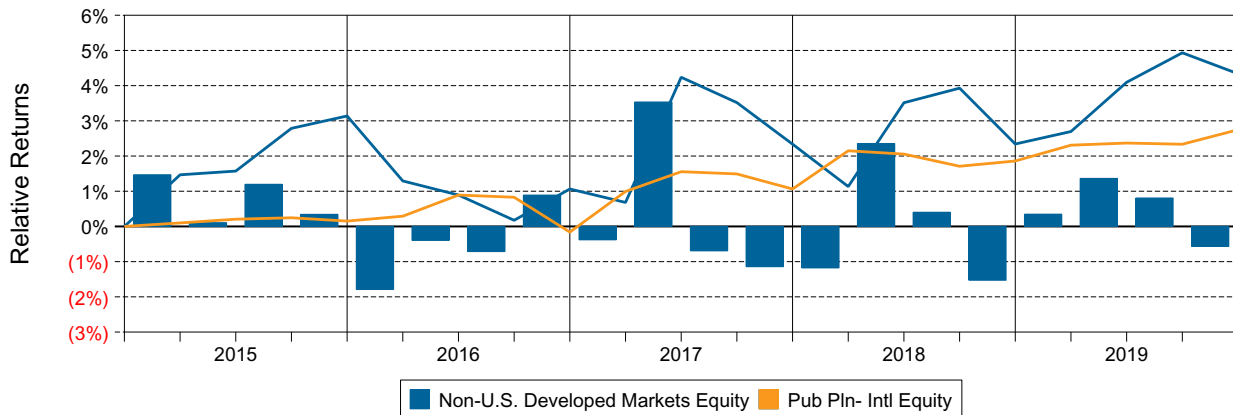
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

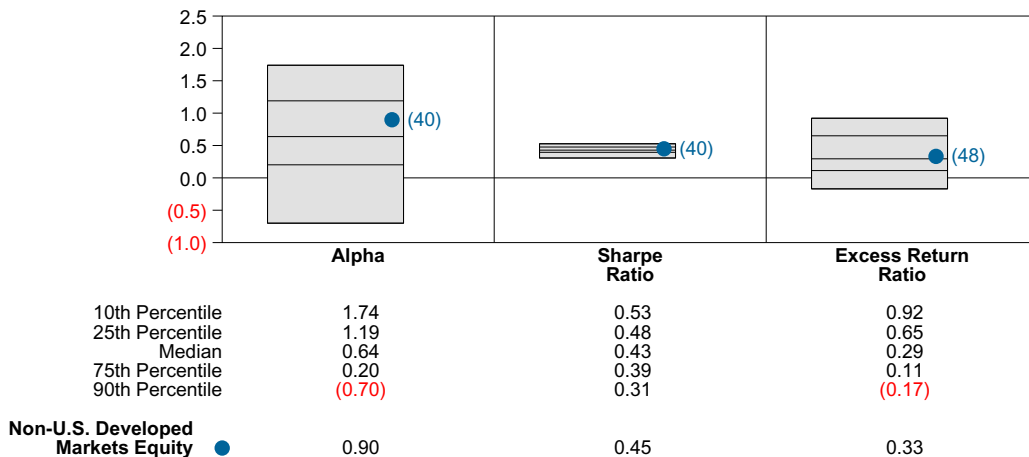
### Performance vs Public Fund - International Equity (Gross)



### Cumulative and Quarterly Relative Return vs MSCI ACWI ex US IMI



### Risk Adjusted Return Measures vs MSCI ACWI ex US IMI Rankings Against Public Fund - International Equity (Gross) Five Years Ended December 31, 2019

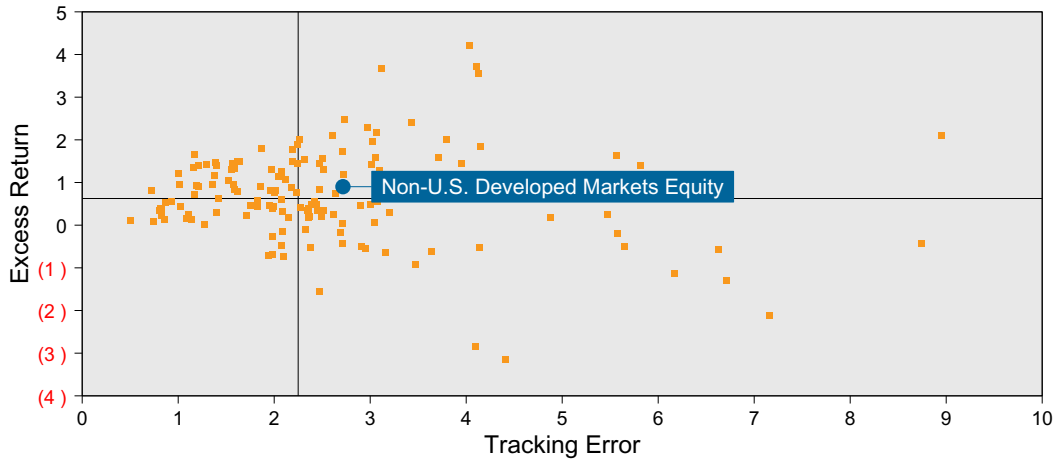


# Non-U.S. Developed Markets Equity Risk Analysis Summary

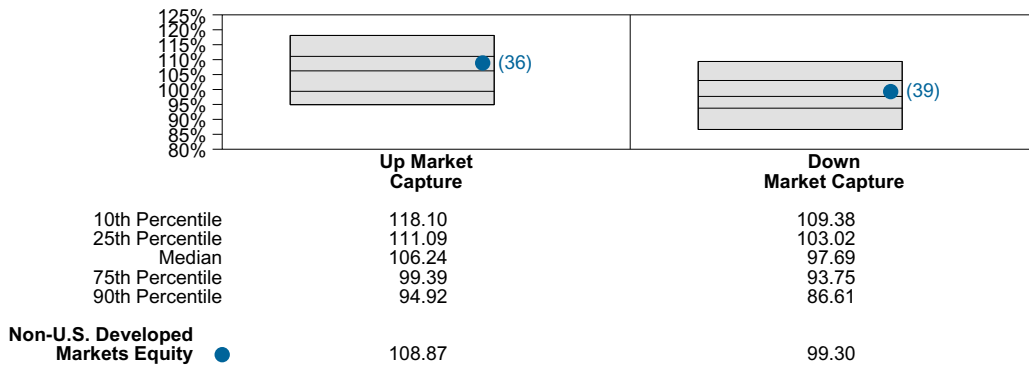
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

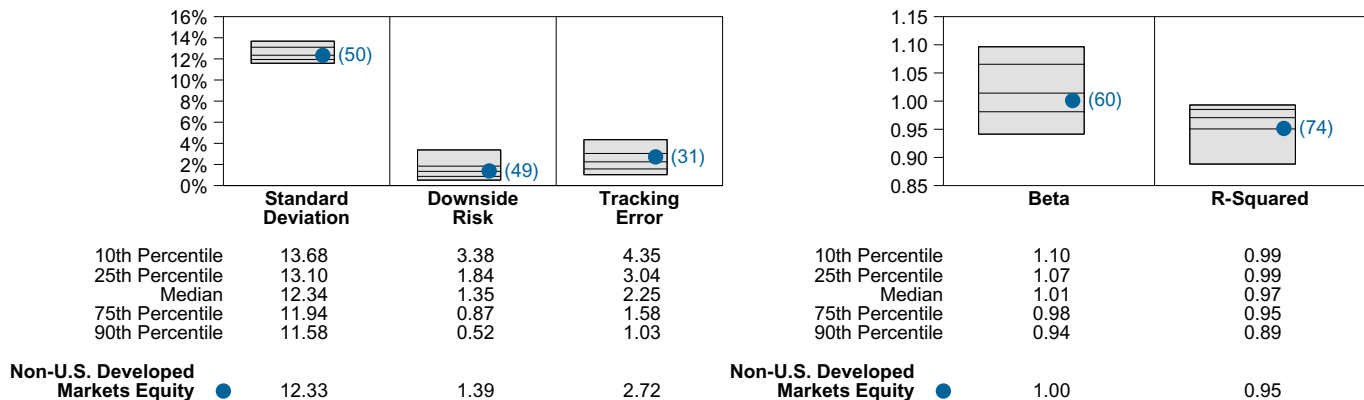
### Risk Analysis vs Public Fund - International Equity (Gross) Five Years Ended December 31, 2019



### Market Capture vs MSCI ACWI ex US IMI Index (USD Net Div) Rankings Against Public Fund - International Equity (Gross) Five Years Ended December 31, 2019



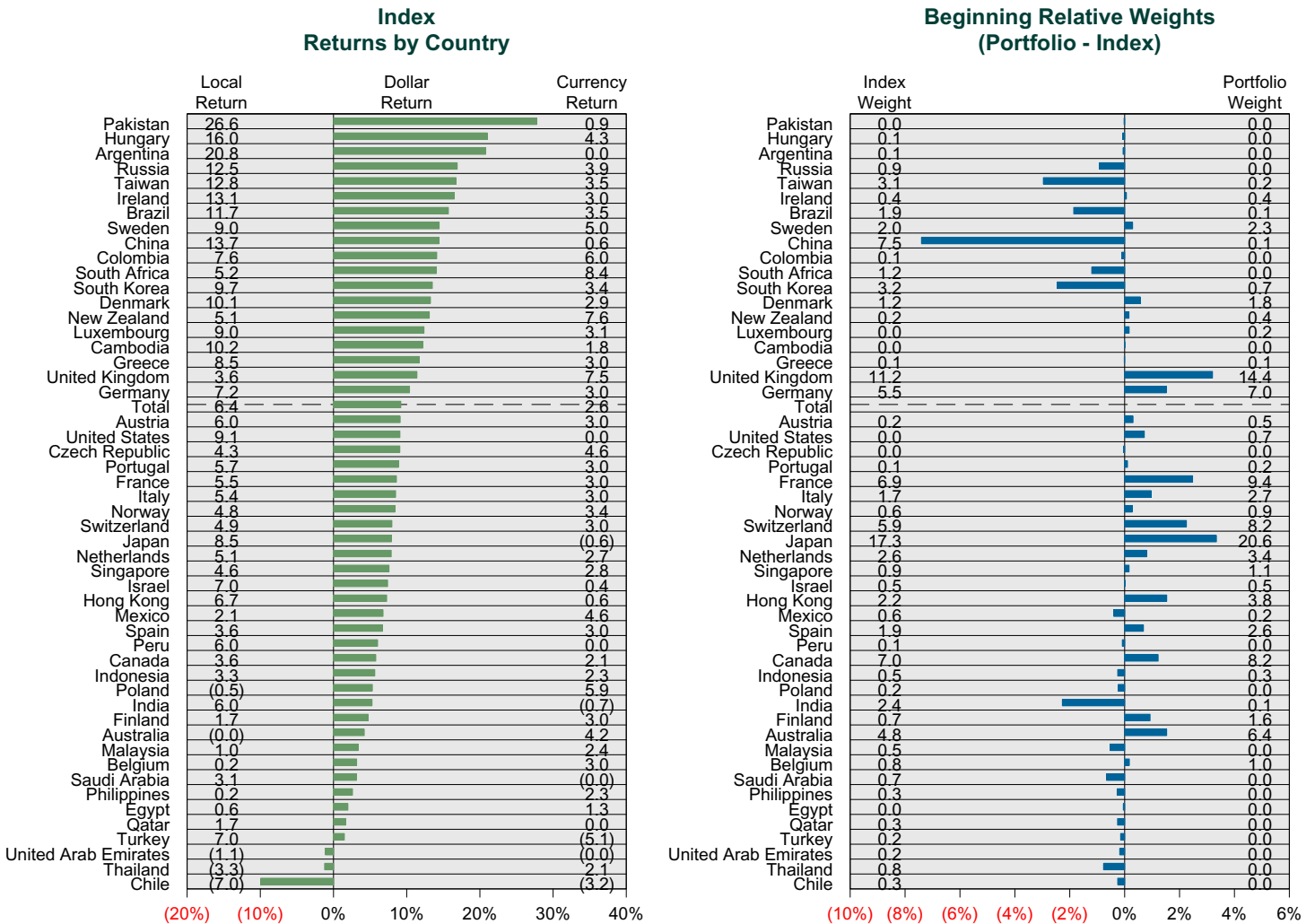
### Risk Statistics Rankings vs MSCI ACWI ex US IMI Index (USD Net Div) Rankings Against Public Fund - International Equity (Gross) Five Years Ended December 31, 2019



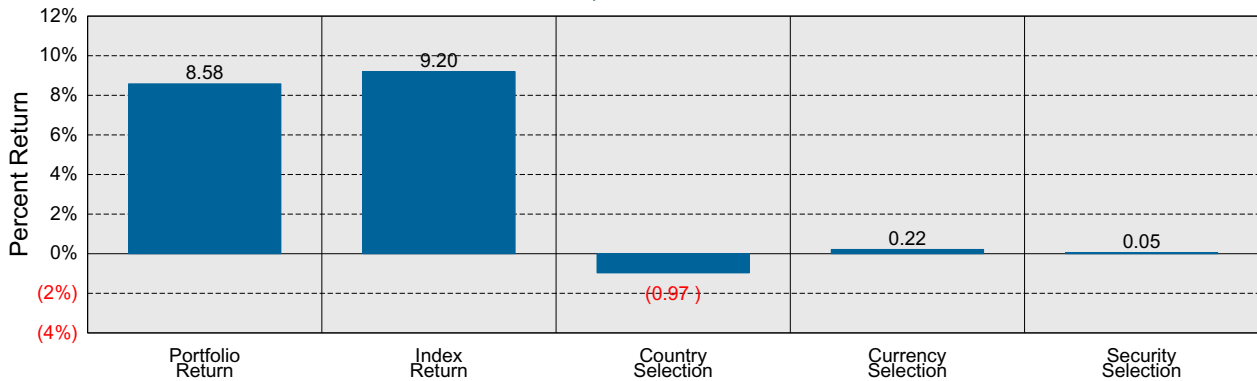
# Non-U.S. Developed Markets Equity vs MSCI ACWI ex US IMI Attribution for Quarter Ended December 31, 2019

## International Attribution

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.



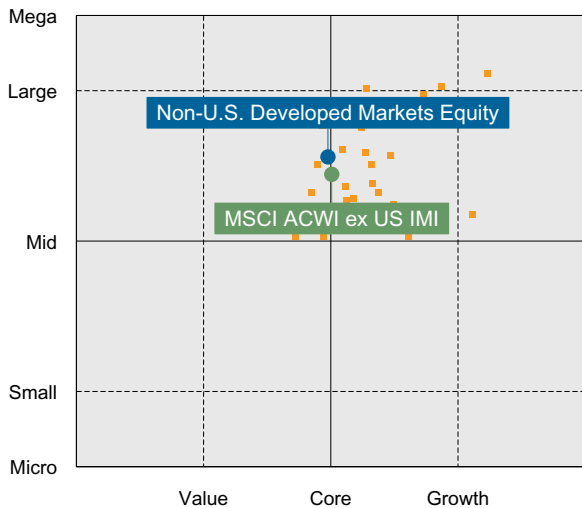
## Attribution Factors for Quarter Ended December 31, 2019



# Current Holdings Based Style Analysis Non-U.S. Developed Markets Equity As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

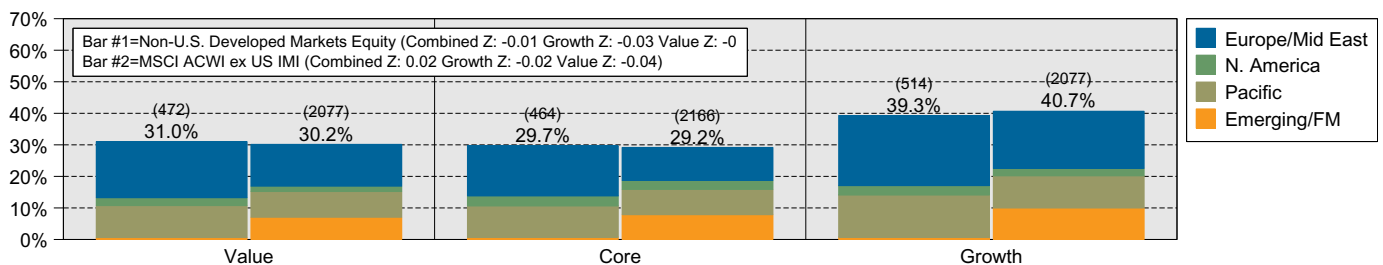
**Style Map vs Pub Pln- Intl Equity Holdings as of December 31, 2019**



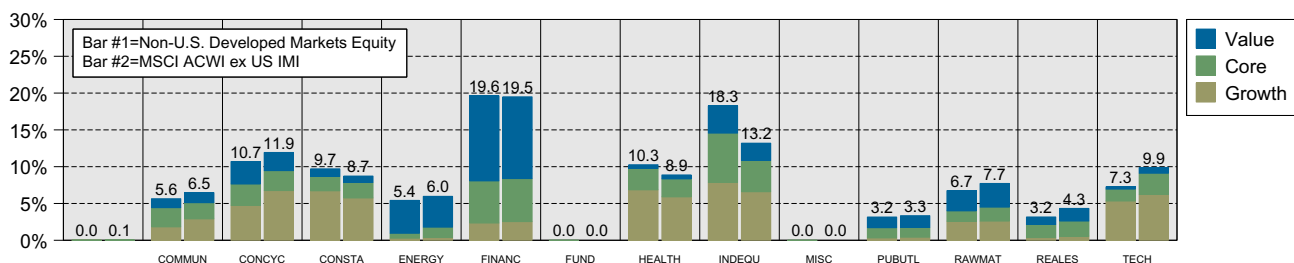
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Europe/ Mid East	17.8% (194)	15.9% (181)	22.2% (200)	55.9% (575)
N. America	13.3% (446)	10.5% (489)	18.1% (474)	41.8% (1409)
Pacific	2.5% (36)	3.2% (34)	3.0% (38)	8.7% (108)
Emerging/ FM	1.7% (96)	2.8% (111)	2.4% (95)	6.9% (302)
<b>Total</b>	<b>31.0% (472)</b>	<b>29.7% (464)</b>	<b>39.3% (514)</b>	<b>100.0% (1450)</b>
	30.2% (2077)	29.2% (2166)	40.7% (2077)	100.0% (6320)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



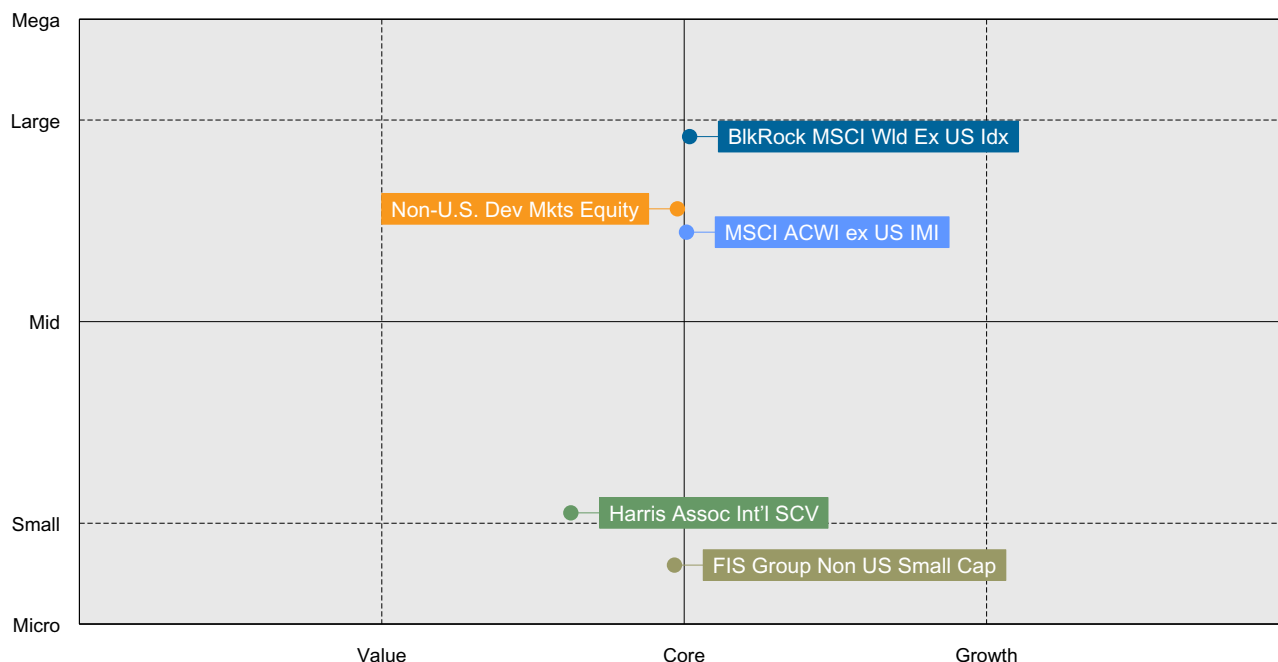
**Sector Weights Distribution Holdings as of December 31, 2019**



## International Holdings Based Style Analysis For One Quarter Ended December 31, 2019

This page analyzes and compares the investment styles of multiple portfolios using a detailed holdings-based style analysis methodology. The size component of style is measured by the weighted median market capitalization of the holdings. The value/core/growth style dimension is captured by the "Combined Z-Score" of the portfolio. This score is based on eight fundamental factors used in the MSCI stock style scoring system. The table below gives a more detailed breakdown of several relevant style metrics on the portfolios.

### Style Map Holdings for One Quarter Ended December 31, 2019



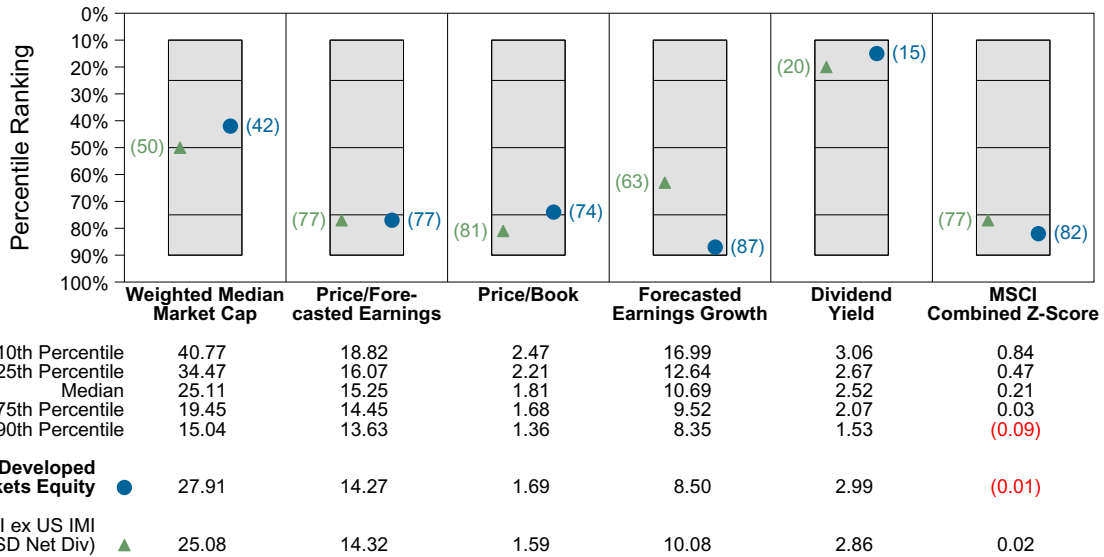
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
BlkRock MSCI Wld Ex US Idx	85.64%	36.70	0.03	(0.02)	(0.05)	1011	122.84
Harris Assoc Int'l SCV	10.63%	2.97	(0.35)	(0.16)	0.18	59	17.83
FIS Group Non US Small Cap	3.58%	1.87	(0.01)	0.09	0.10	499	94.16
Non-U.S. Dev Mkts Equity	100.00%	27.91	(0.01)	(0.03)	(0.02)	1537	148.99
MSCI ACWI ex US IMI	-	25.08	0.02	(0.02)	(0.04)	6616	256.67

# Non-U.S. Developed Markets Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

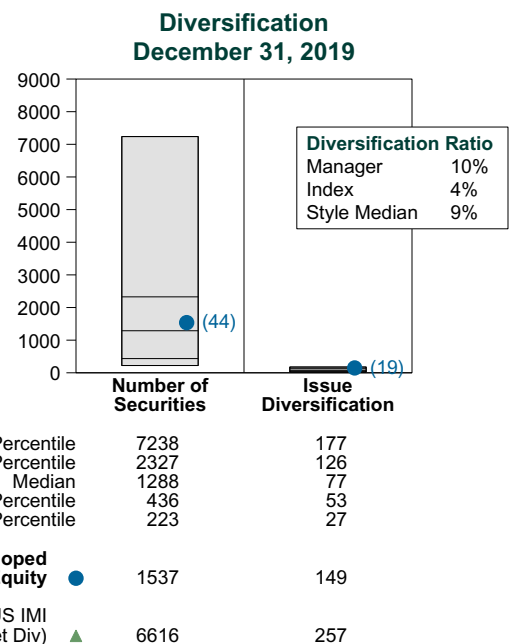
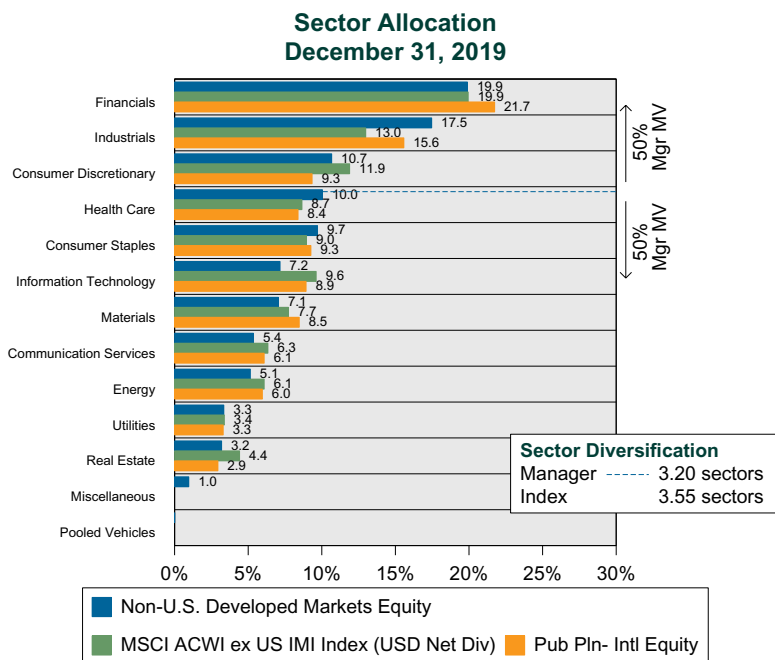
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - International Equity as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



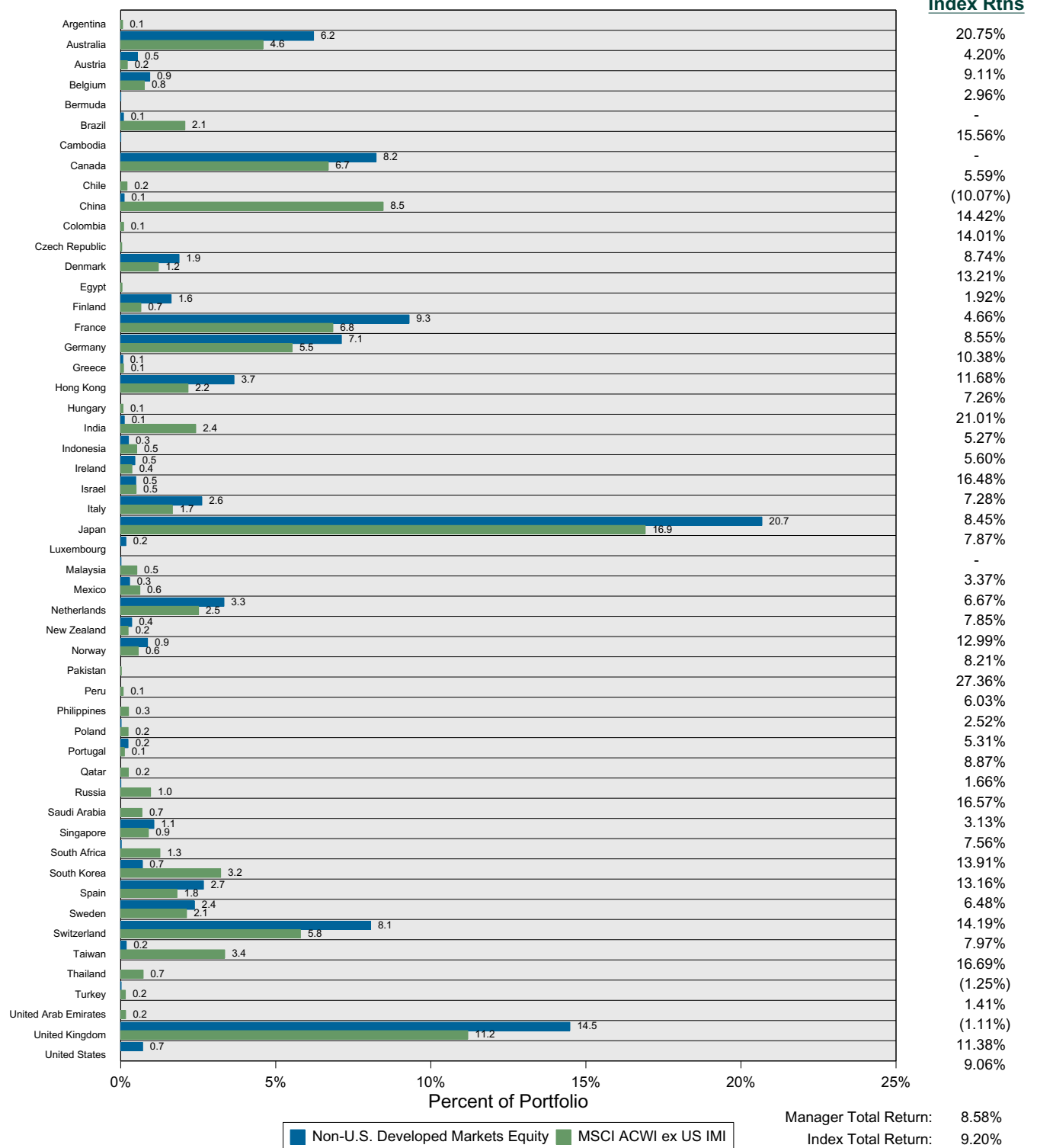
# Country Allocation

## Non-U.S. Developed Markets Equity VS MSCI ACWI ex US IMI Index (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

Country Weights as of December 31, 2019

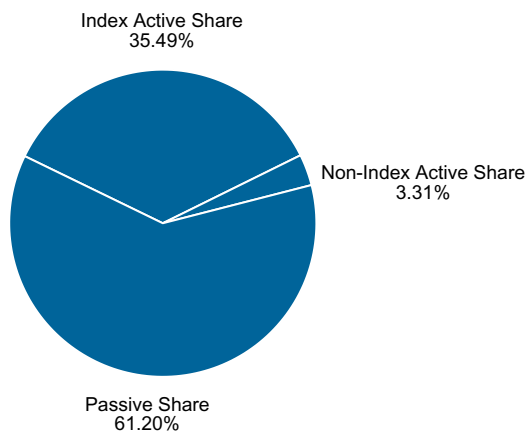




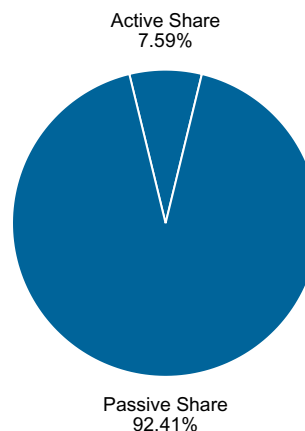
## Non-U.S. Developed Markets Equity Active Share Analysis as of December 31, 2019 vs. MSCI ACWI ex US IMI Index (USD Net Div)

Active Share analysis compares the holdings of a portfolio to an index to measure how aggressively it differs from the index. Active share is measured at the individual stock level ("holdings-level active share") and using sector weights ("sector exposure active share"). Holdings-level active share comes from: 1) Index Active Share - over/under weighting of stocks in the index, and 2) Non-Index Active Share - positions in stocks not in the index. This analysis displays active share by sector and compares the portfolio to a relevant peer group.

### Holdings-Level Active Share



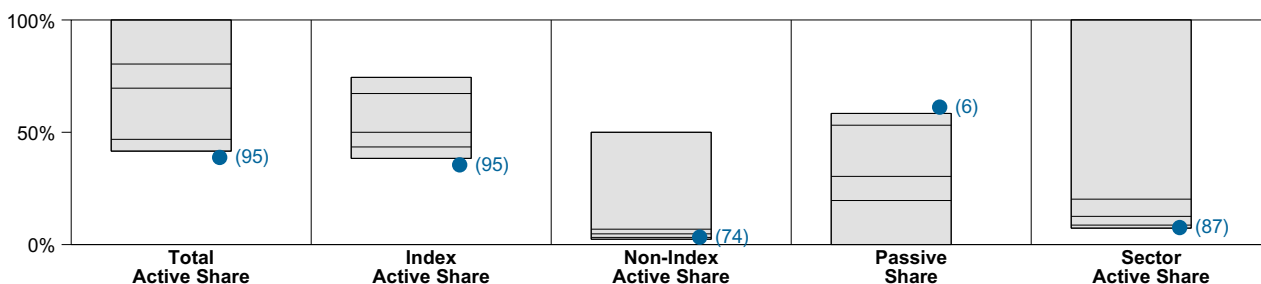
### Sector Exposure Active Share



**Total Active Share: 38.80%**

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	47.48%	2.15%	49.63%	6.34%	5.36%	2.65%
Consumer Discretionary	40.12%	3.18%	43.30%	11.89%	10.67%	4.54%
Consumer Staples	27.50%	4.88%	32.38%	8.96%	9.71%	3.26%
Energy	38.57%	0.12%	38.69%	6.08%	5.15%	1.88%
Financials	34.86%	2.61%	37.48%	19.95%	19.89%	7.42%
Health Care	18.96%	1.51%	20.47%	8.65%	10.04%	2.45%
Industrials	26.61%	2.25%	28.87%	12.98%	17.46%	6.03%
Information Technology	51.03%	1.78%	52.81%	9.62%	7.16%	3.87%
Materials	39.90%	4.96%	44.86%	7.74%	7.05%	3.13%
Miscellaneous	50.00%	50.00%	100.00%	-	0.96%	0.47%
Pooled Vehicles	50.00%	50.00%	100.00%	-	0.00%	0.00%
Real Estate	49.91%	5.12%	55.03%	4.41%	3.19%	1.83%
Utilities	31.40%	5.60%	37.00%	3.38%	3.34%	1.23%
<b>Total</b>	<b>35.49%</b>	<b>3.31%</b>	<b>38.80%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>38.76%</b>

### Active Share vs. Pub Pln- Intl Equity



Non-U.S. Developed Markets Equity ●

## Comparative Manager Matrix

This page allows for detailed comparisons of multiple managers against each other, as well as versus market indices and peer groups. The holding overlap matrices illustrate the degree of individual stock overlap between various portfolios' holdings. The number in parentheses in the lower left corner of each box is the number of stocks that a given portfolio pair hold in common. The number in the upper left corner is the total weight of these overlapping holdings in the y-axis (vertical) portfolio. The number in the lower right corner is the total weight of those same stocks in the x-axis (horizontal) portfolio.

### Holding Overlap for Period Ended December 31, 2019

FIS Group Non US Small Cap	0% (0)	0%	3% (9)	12%	
Harris Assoc Int'l SCV	0% (0)	0%			12% (9)
BlackRock MSCI World Ex US Index			0% (0)	0%	0% (0)
		BlackRock MSCI World Ex US Index		Harris Assoc Int'l SCV	FIS Group Non US Small Cap



# BlackRock MSCI World Ex US Index Period Ended December 31, 2019

## Investment Philosophy

The objective of the World ex-U.S. Index Fund is to track the performance of the MSCI World ex-U.S. Index. The Fund fully replicates the index, holding every stock in the index in its market capitalization weight to ensure close tracking and minimize transaction costs.

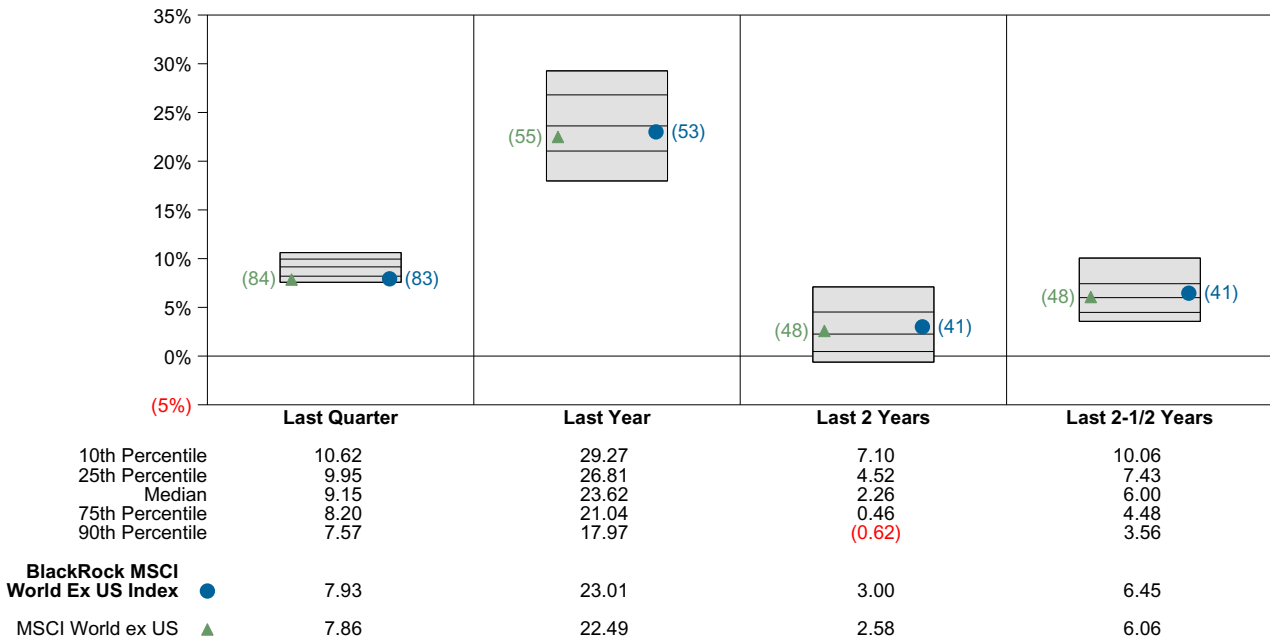
## Quarterly Summary and Highlights

- BlackRock MSCI World Ex US Index's portfolio posted a 7.93% return for the quarter placing it in the 83 percentile of the Callan Non-US Developed Broad Equity group for the quarter and in the 53 percentile for the last year.
- BlackRock MSCI World Ex US Index's portfolio outperformed the MSCI World ex US by 0.07% for the quarter and outperformed the MSCI World ex US for the year by 0.52%.

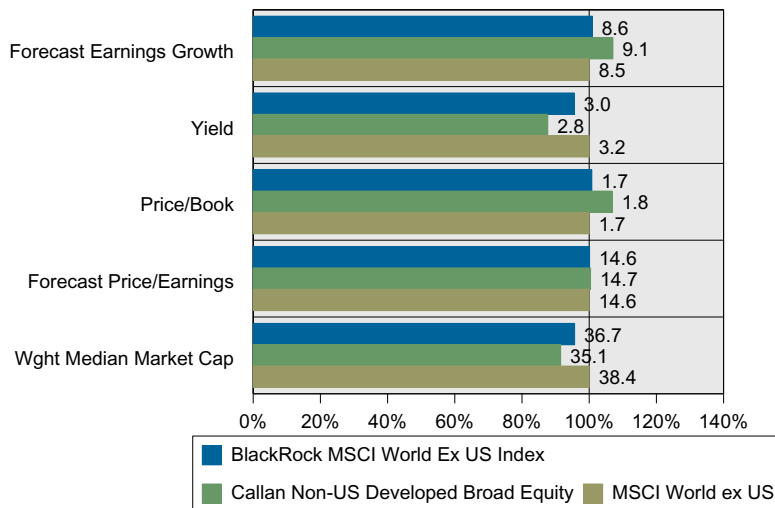
## Quarterly Asset Growth

Beginning Market Value	\$4,748,454,182
Net New Investment	\$230,910
Investment Gains/(Losses)	\$376,295,351
Ending Market Value	\$5,124,980,443

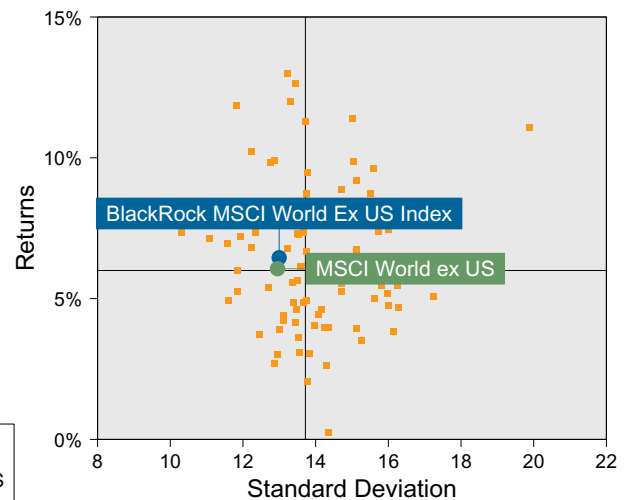
## Performance vs Callan Non-US Developed Broad Equity (Gross)



## Portfolio Characteristics as a Percentage of the MSCI World ex US



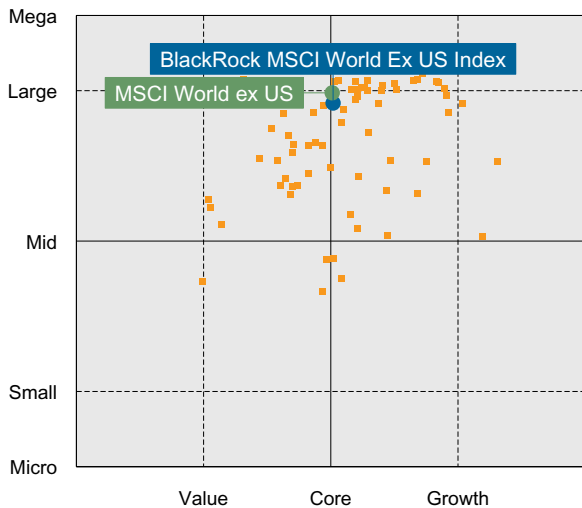
## Callan Non-US Developed Broad Equity (Gross) Annualized Two and One-Half Year Risk vs Return



# Current Holdings Based Style Analysis BlackRock MSCI World Ex US Index As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

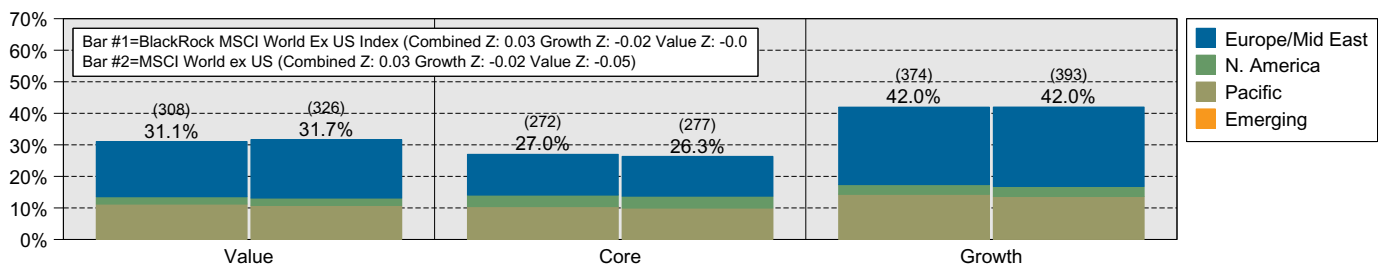
**Style Map vs Callan NonUS Dev Broad Eq Holdings as of December 31, 2019**



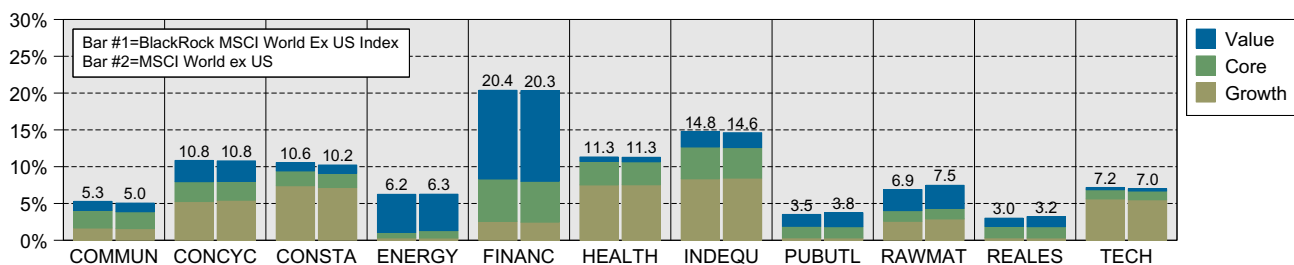
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Europe/ Mid East	17.5% (133)	12.9% (104)	24.6% (166)	55.0% (403)
N. America	18.5% (147)	12.6% (107)	25.1% (182)	56.3% (436)
Pacific	2.3% (22)	3.7% (28)	3.1% (34)	9.1% (84)
Emerging	2.3% (24)	3.8% (29)	3.3% (37)	9.3% (90)
<b>Total</b>	<b>31.1% (308)</b>	<b>27.0% (272)</b>	<b>42.0% (374)</b>	<b>100.0% (954)</b>
	31.7% (326)	26.3% (277)	42.0% (393)	100.0% (996)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**



# BlackRock MSCI World Ex US Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

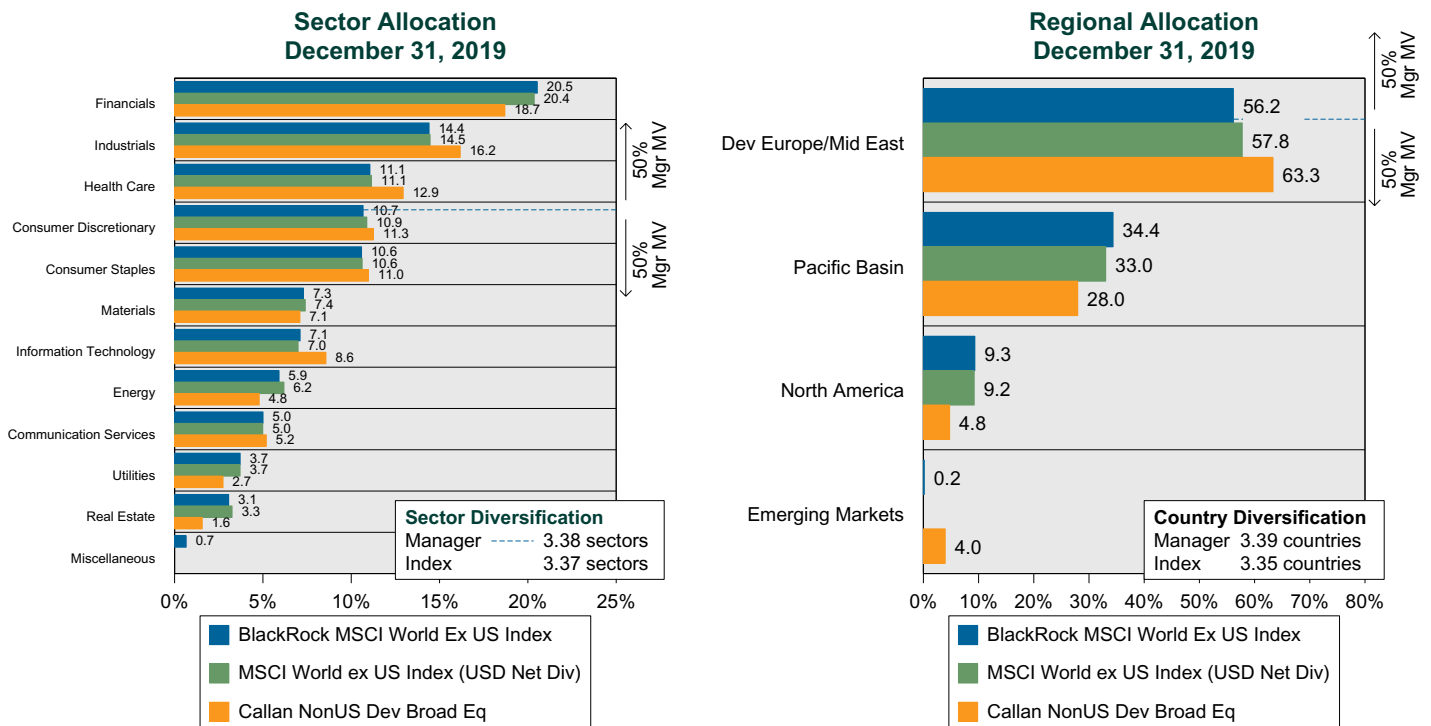
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Developed Broad Equity as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.



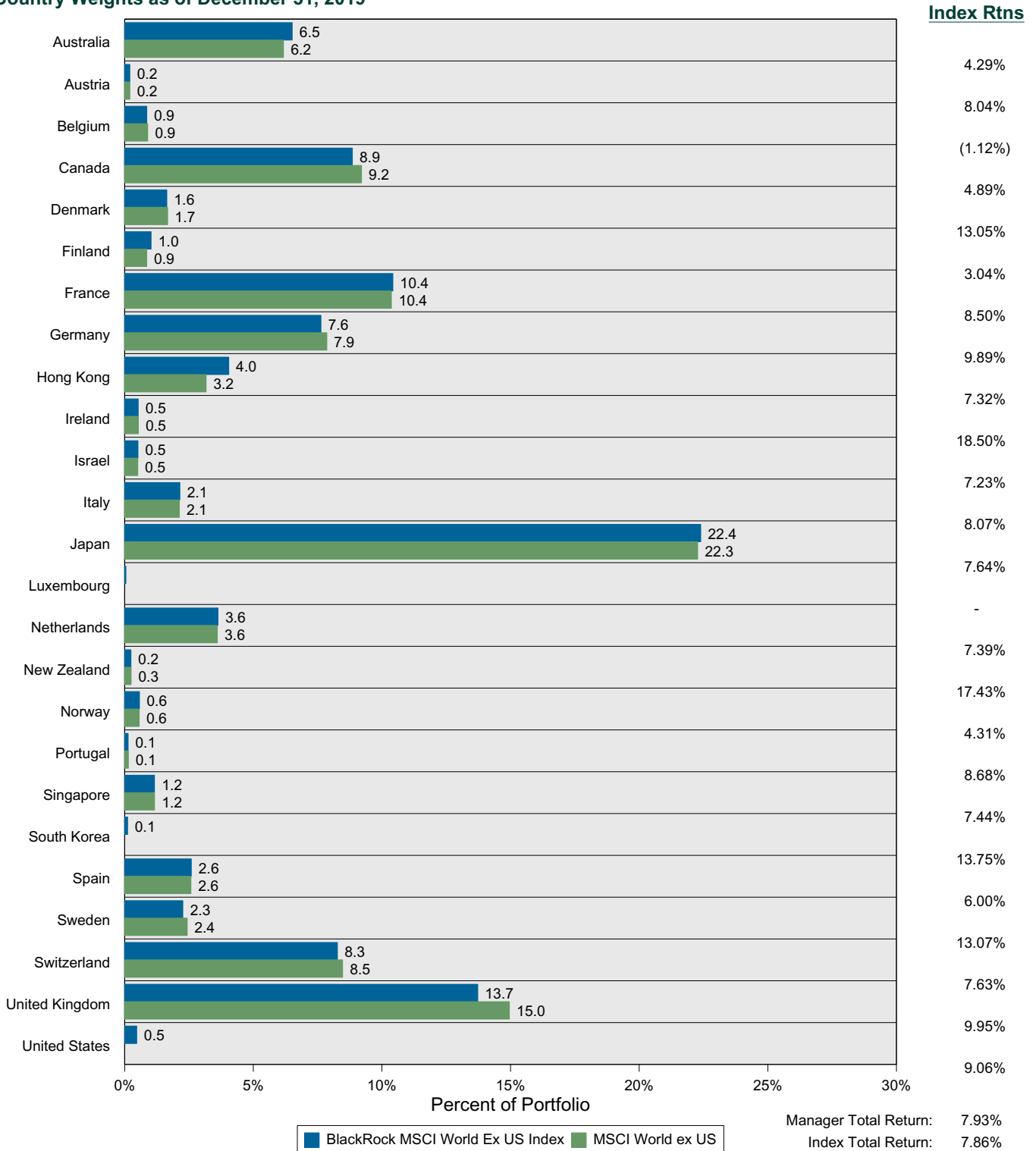
## Country Allocation

### BlackRock MSCI World Ex US Index VS MSCI World ex US Index (USD Net Div)

#### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

#### Country Weights as of December 31, 2019



# FIS Group Non-U.S. Small Cap Period Ended December 31, 2019

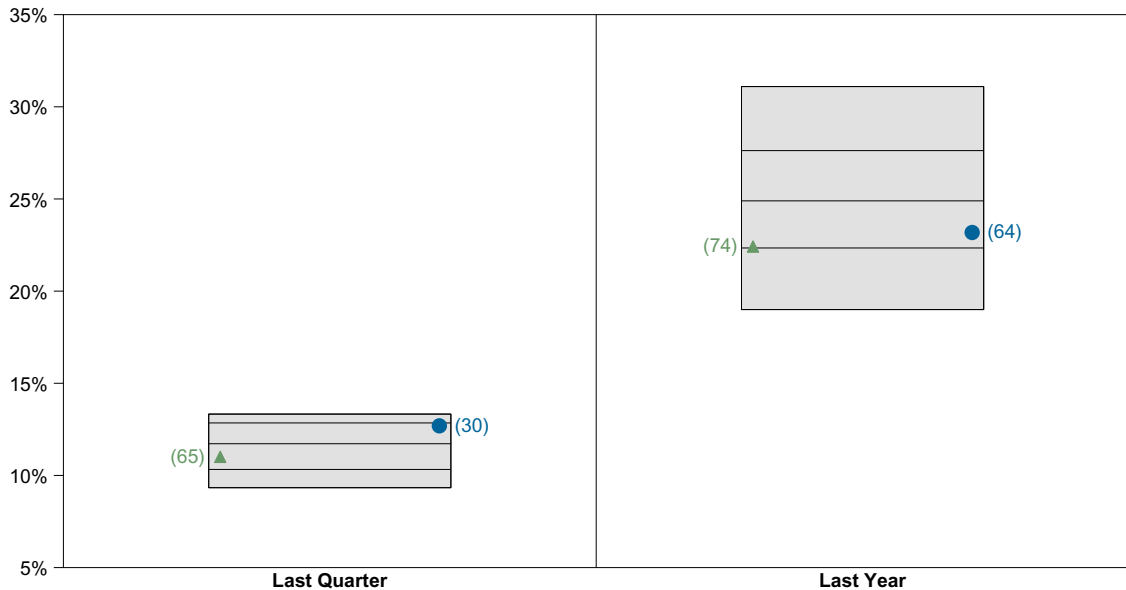
## Quarterly Summary and Highlights

- FIS Group Non-U.S. Small Cap's portfolio posted a 12.69% return for the quarter placing it in the 30 percentile of the Callan International Small Cap group for the quarter and in the 64 percentile for the last year.
- FIS Group Non-U.S. Small Cap's portfolio outperformed the MSCI ACWI ex US Small Cap by 1.68% for the quarter and outperformed the MSCI ACWI ex US Small Cap for the year by 0.76%.

## Quarterly Asset Growth

Beginning Market Value	\$190,428,000
Net New Investment	\$0
Investment Gains/(Losses)	\$23,736,000
Ending Market Value	\$214,164,000

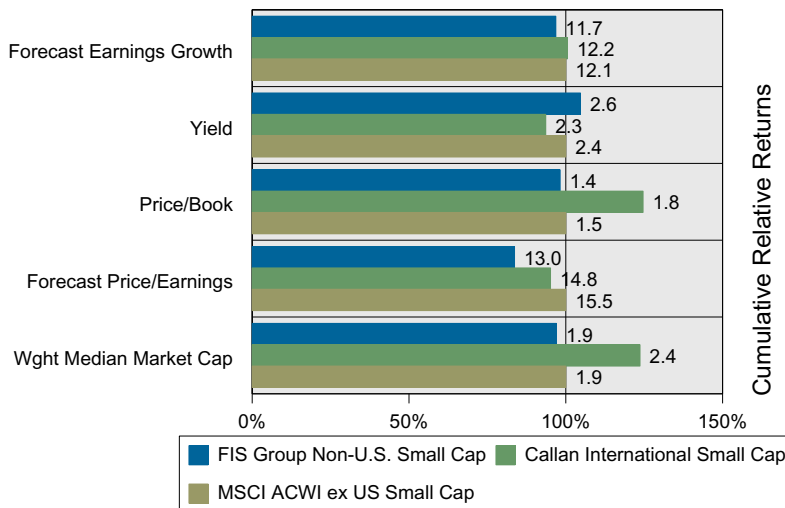
## Performance vs Callan International Small Cap (Gross)



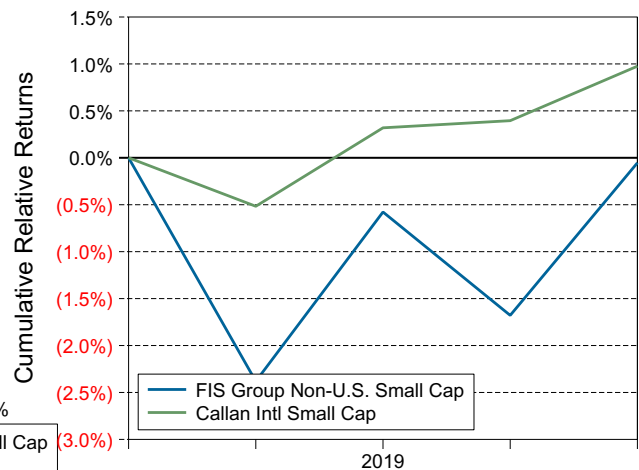
10th Percentile	13.33	31.10
25th Percentile	12.85	27.62
Median	11.72	24.90
75th Percentile	10.33	22.34
90th Percentile	9.33	19.00

<b>FIS Group Non-U.S. Small Cap</b> ●	12.69	23.18
MSCI ACWI ex US Small Cap ▲	11.01	22.42

## Portfolio Characteristics as a Percentage of the MSCI ACWI ex US Small Cap



## Cumulative Returns vs MSCI ACWI ex US Small Cap





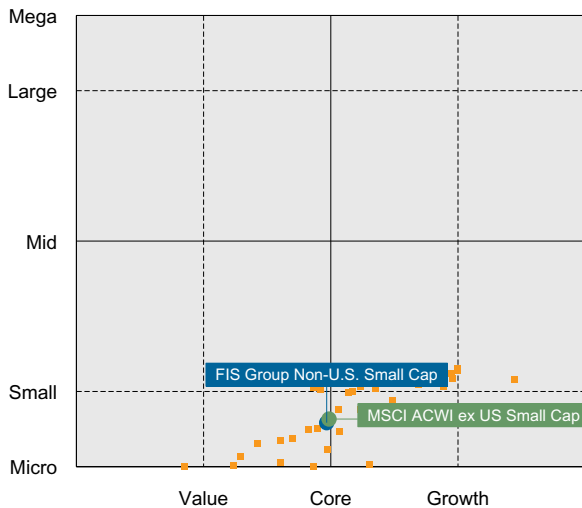
# Current Holdings Based Style Analysis

## FIS Group Non-U.S. Small Cap

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

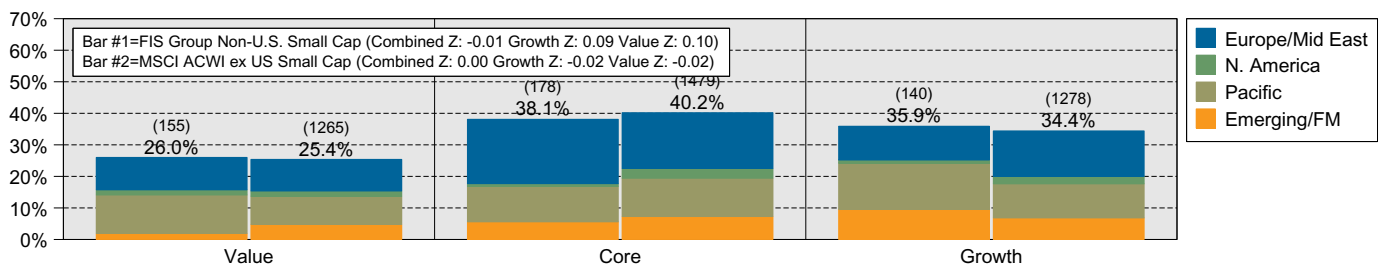
**Style Map vs Callan Intl Small Cap Holdings as of December 31, 2019**



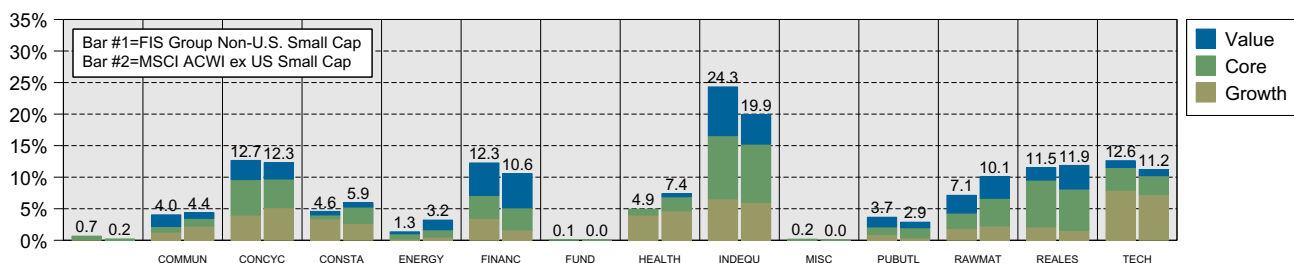
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Europe/ Mid East	10.3% (54)	20.4% (65)	10.7% (34)	41.4% (153)
N. America	1.6% (11)	0.9% (6)	1.0% (4)	3.5% (21)
Pacific	12.2% (70)	11.2% (63)	14.6% (37)	38.1% (170)
Emerging/ FM	1.9% (20)	5.6% (44)	9.5% (65)	17.0% (129)
<b>Total</b>	<b>26.0% (155)</b>	<b>38.1% (178)</b>	<b>35.9% (140)</b>	<b>100.0% (473)</b>
	25.4% (1265)	40.2% (1479)	34.4% (1278)	100.0% (4022)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

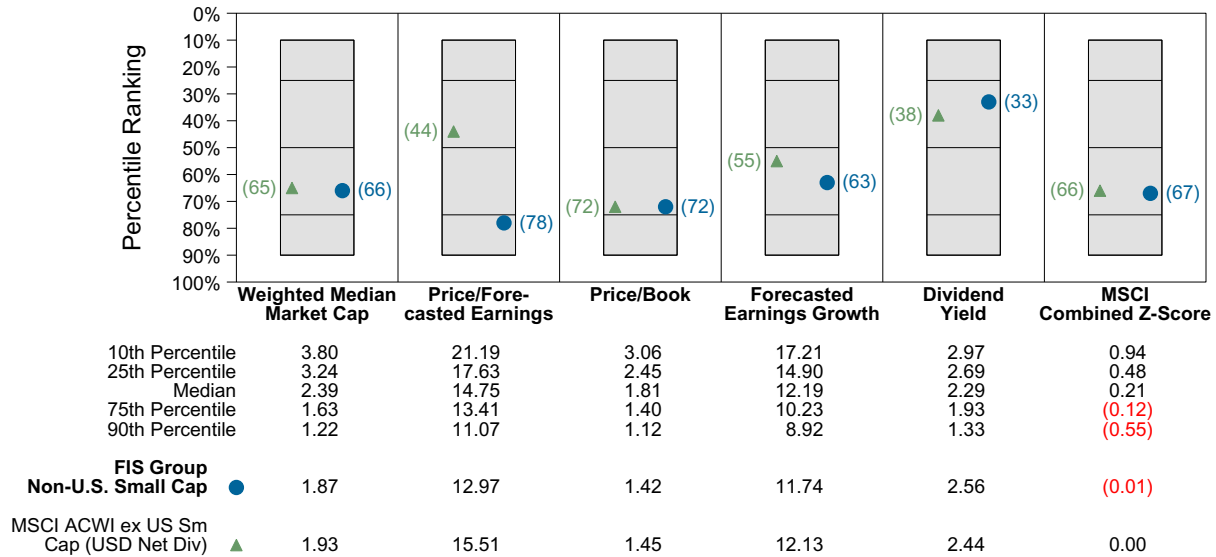


# FIS Group Non-U.S. Small Cap Equity Characteristics Analysis Summary

## Portfolio Characteristics

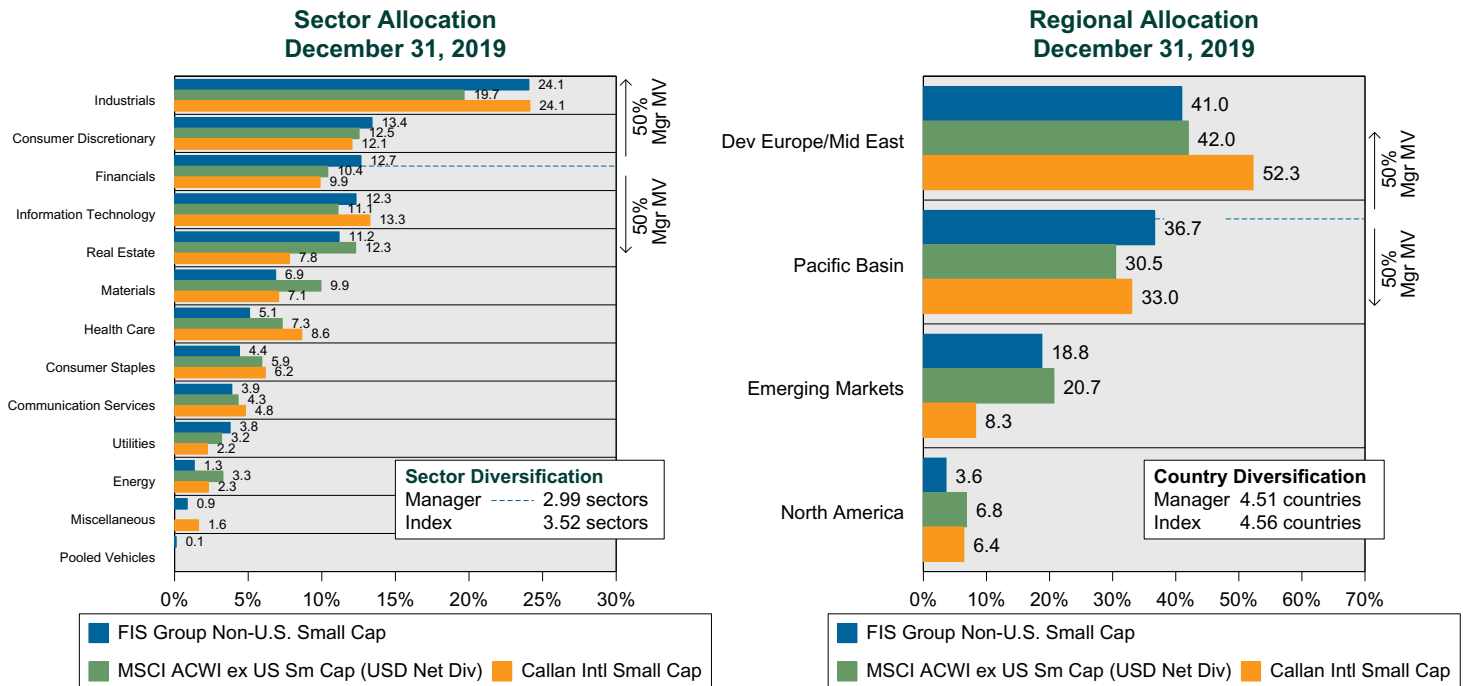
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.



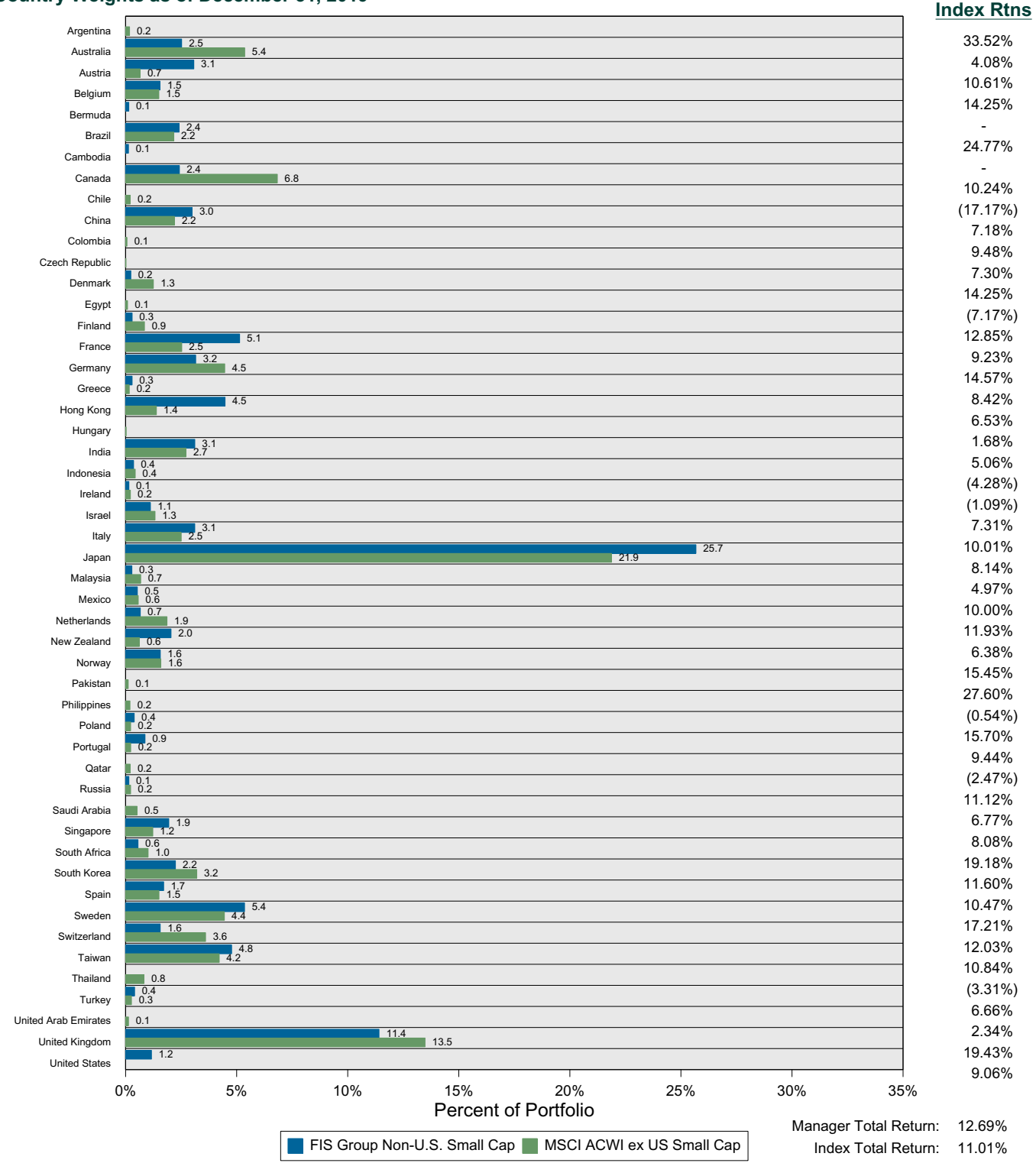
# Country Allocation

## FIS Group Non-U.S. Small Cap VS MSCI ACWI ex US Sm Cap (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

Country Weights as of December 31, 2019



# Harris Assoc Int'l SCV

## Period Ended December 31, 2019

### Investment Philosophy

The team seeks to invest in companies that trade at a substantial discount to their underlying business values and are run by managers who think and act as owners. Portfolio managers believe that purchasing a quality business at a discount to its underlying value minimizes risk while providing substantial profit potential.

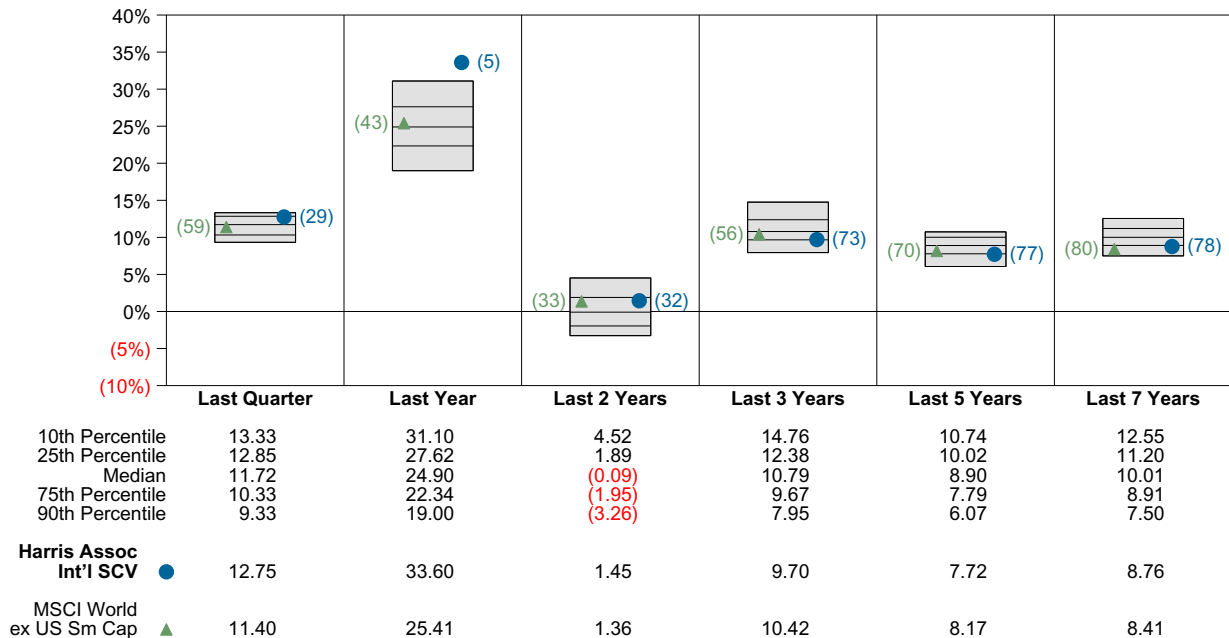
### Quarterly Summary and Highlights

- Harris Assoc Int'l SCV's portfolio posted a 12.75% return for the quarter placing it in the 29 percentile of the Callan International Small Cap group for the quarter and in the 5 percentile for the last year.
- Harris Assoc Int'l SCV's portfolio outperformed the MSCI World ex US Sm Cap by 1.35% for the quarter and outperformed the MSCI World ex US Sm Cap for the year by 8.19%.

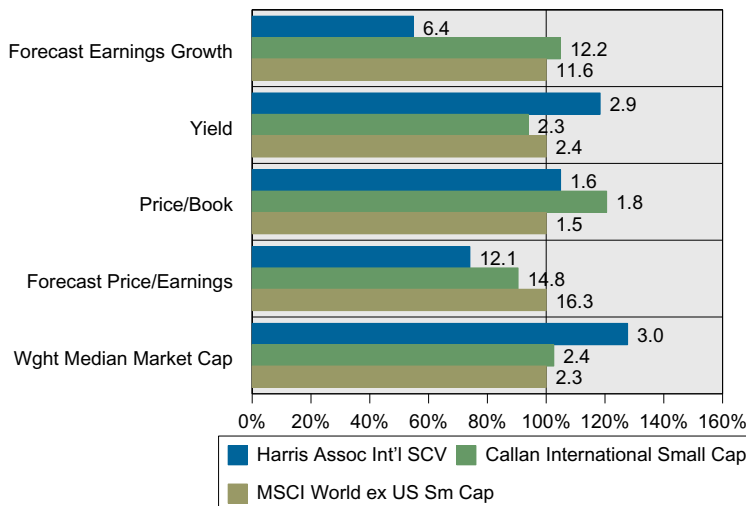
### Quarterly Asset Growth

Beginning Market Value	\$567,698,857
Net New Investment	\$0
Investment Gains/(Losses)	\$68,483,310
Ending Market Value	\$636,182,167

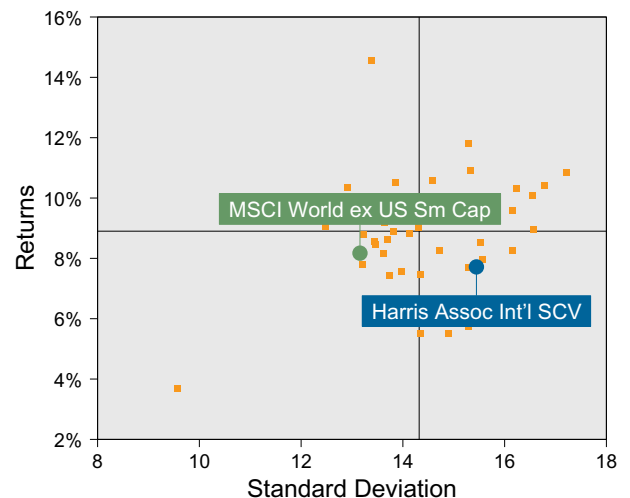
### Performance vs Callan International Small Cap (Gross)



### Portfolio Characteristics as a Percentage of the MSCI World ex US Sm Cap



### Callan International Small Cap (Gross) Annualized Five Year Risk vs Return

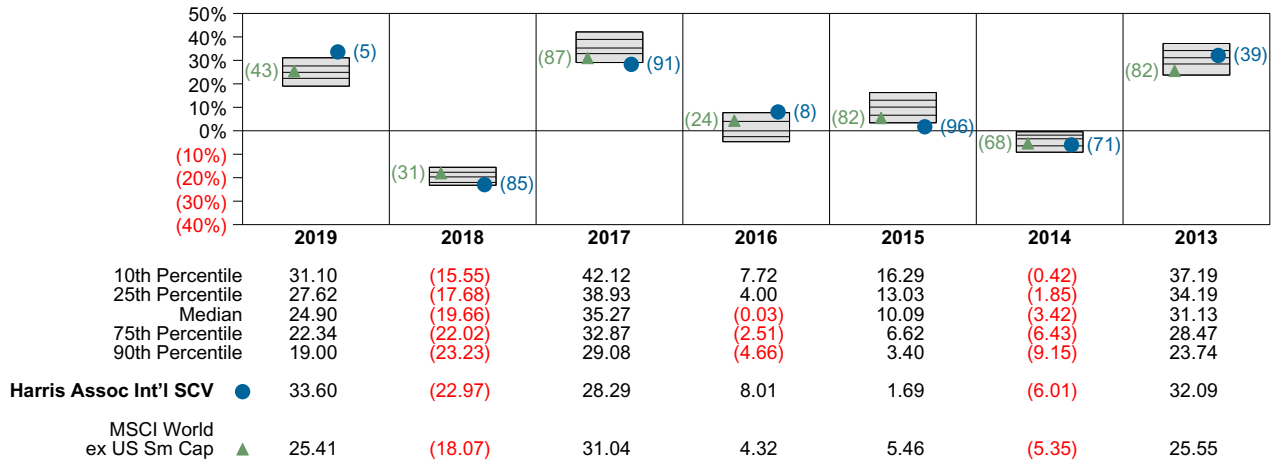


# Harris Assoc Int'l SCV Return Analysis Summary

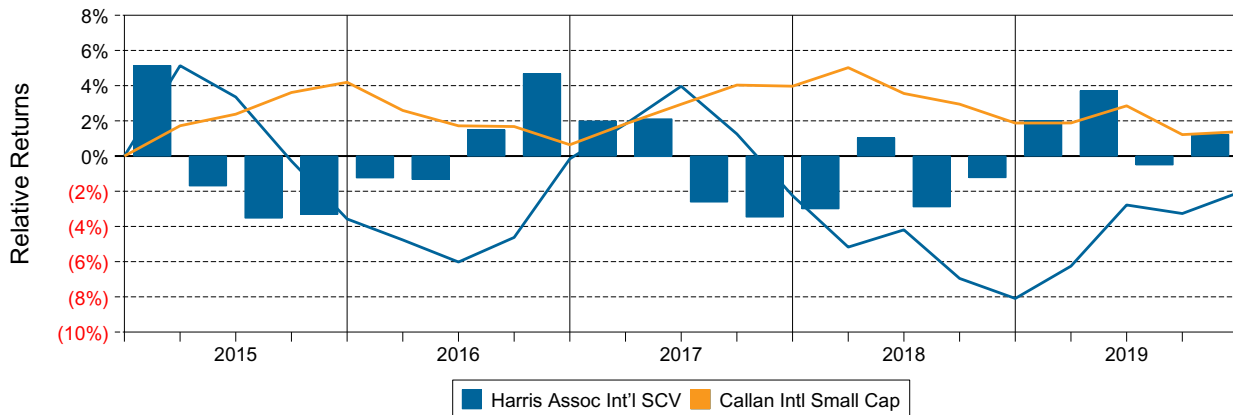
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

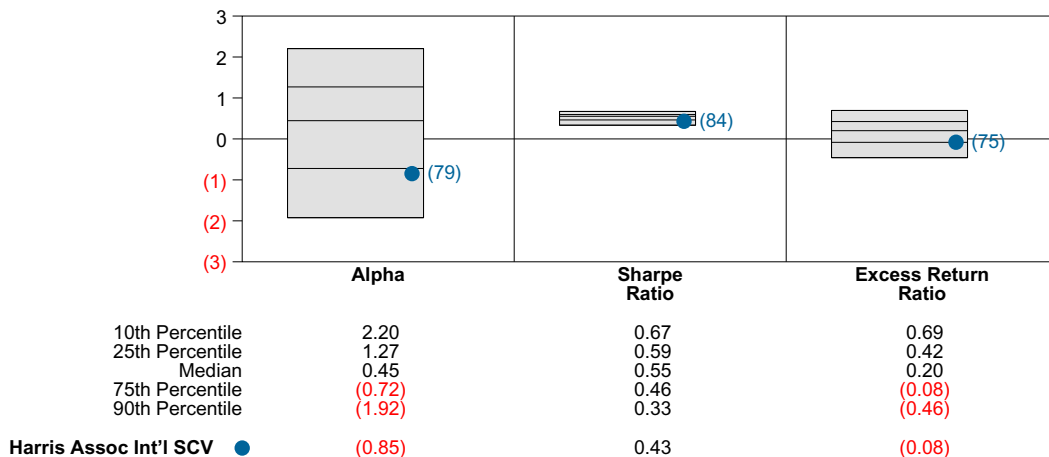
### Performance vs Callan International Small Cap (Gross)



### Cumulative and Quarterly Relative Return vs MSCI World ex US Sm Cap



### Risk Adjusted Return Measures vs MSCI World ex US Sm Cap Rankings Against Callan International Small Cap (Gross) Five Years Ended December 31, 2019

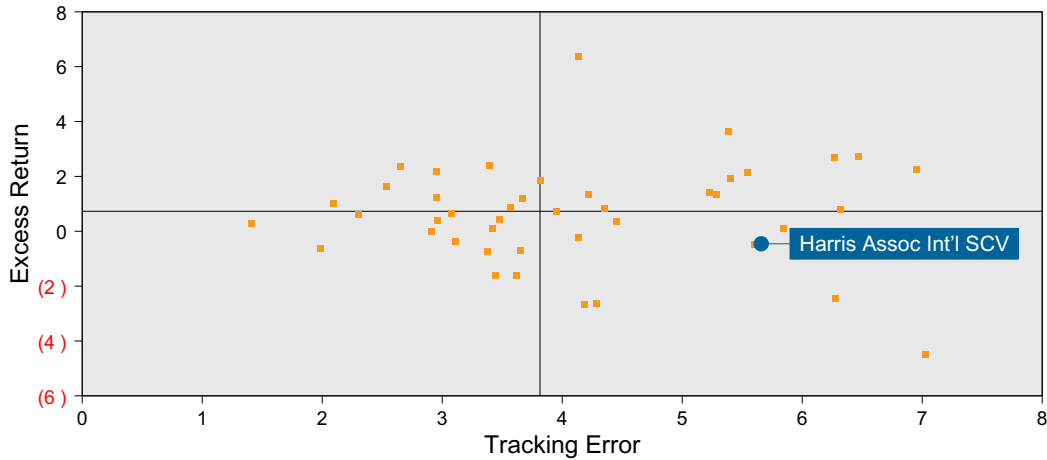


# Harris Assoc Int'l SCV Risk Analysis Summary

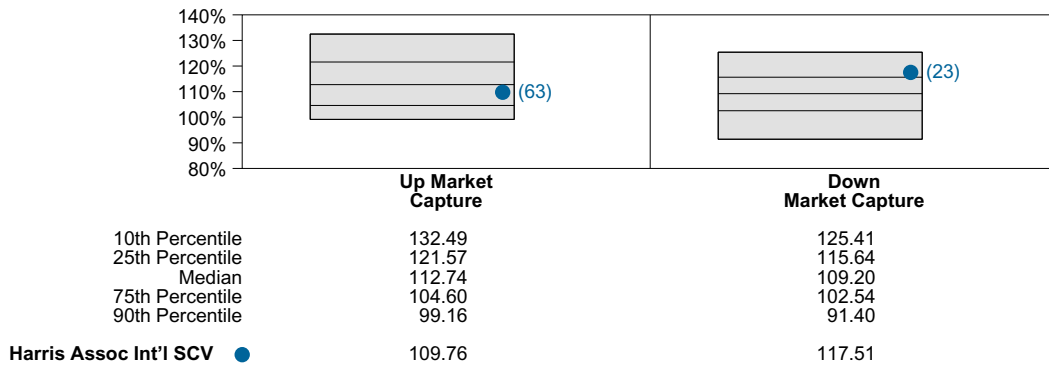
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

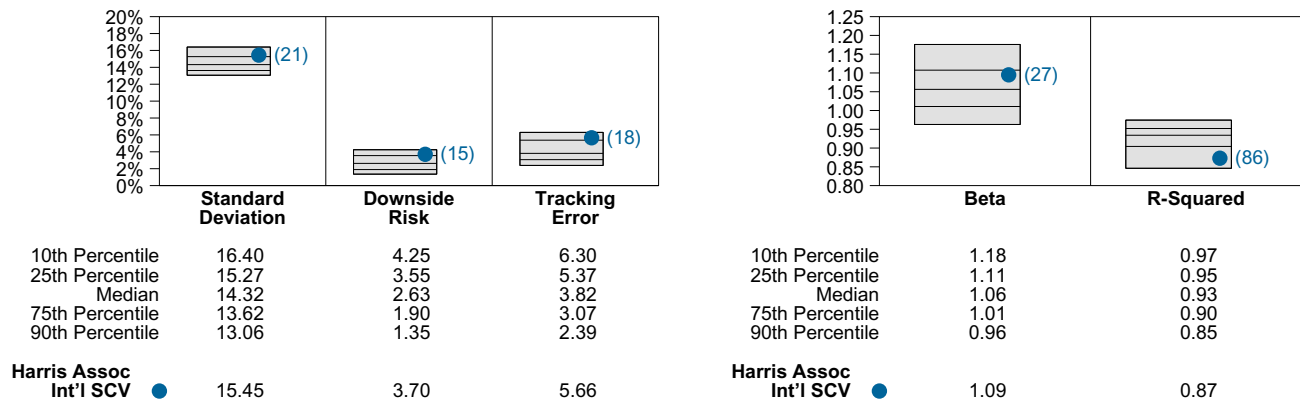
### Risk Analysis vs Callan International Small Cap (Gross) Five Years Ended December 31, 2019



### Market Capture vs MSCI World ex US Small Cap (USD Net Div) Rankings Against Callan International Small Cap (Gross) Five Years Ended December 31, 2019



### Risk Statistics Rankings vs MSCI World ex US Small Cap (USD Net Div) Rankings Against Callan International Small Cap (Gross) Five Years Ended December 31, 2019



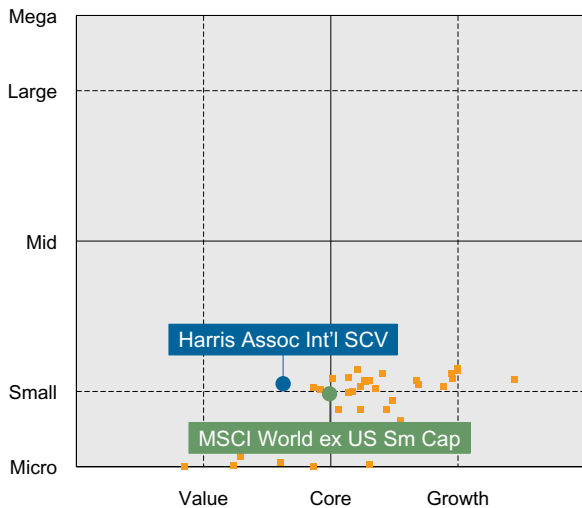
# Current Holdings Based Style Analysis

## Harris Assoc Int'l SCV

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left chart illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each region/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

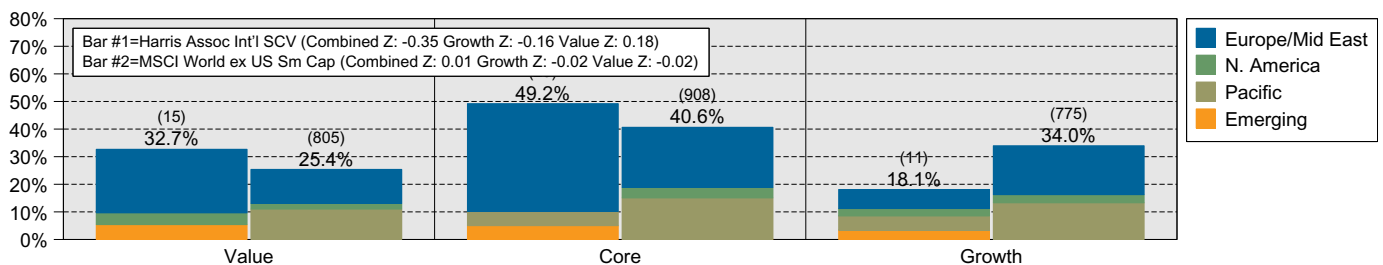
**Style Map vs Callan Intl Small Cap Holdings as of December 31, 2019**



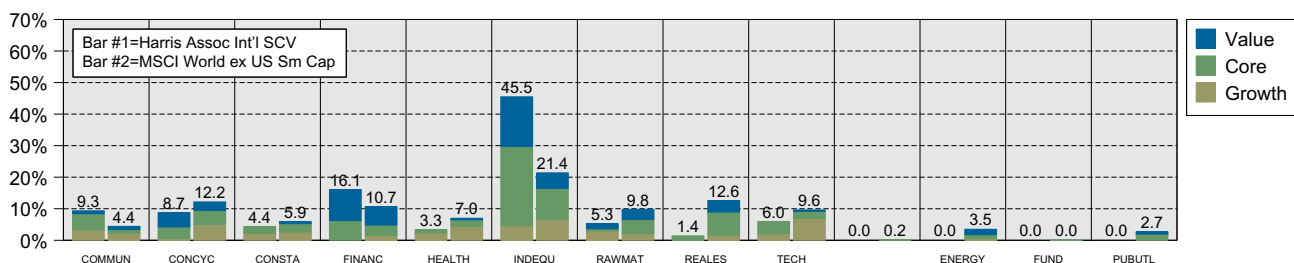
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Europe/ Mid East	23.0% (10)	39.1% (20)	6.9% (5)	69.0% (35)
N. America	12.3% (299)	21.8% (382)	17.7% (292)	51.8% (973)
Pacific	4.3% (3)	0.0% (0)	2.7% (2)	6.9% (5)
Emerging	2.0% (72)	3.8% (81)	3.0% (58)	8.8% (211)
<b>Total</b>	<b>32.7% (15)</b>	<b>49.2% (29)</b>	<b>18.1% (11)</b>	<b>100.0% (55)</b>
	25.4% (805)	40.6% (908)	34.0% (775)	100.0% (2488)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

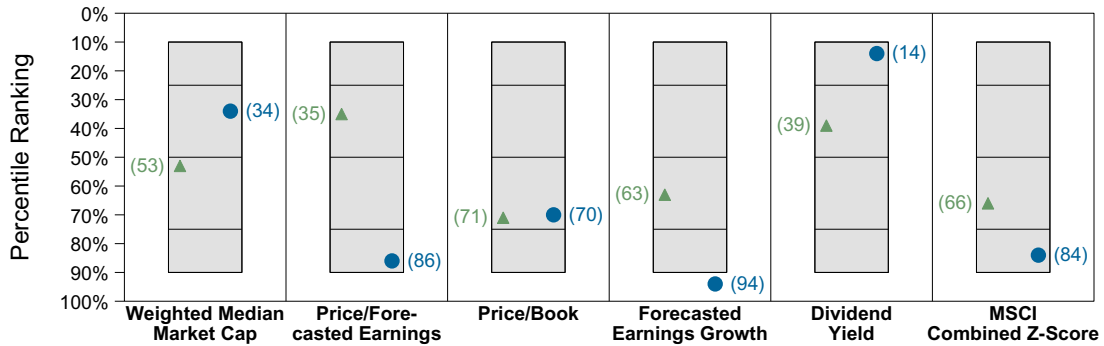


# Harris Assoc Int'l SCV Equity Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of December 31, 2019

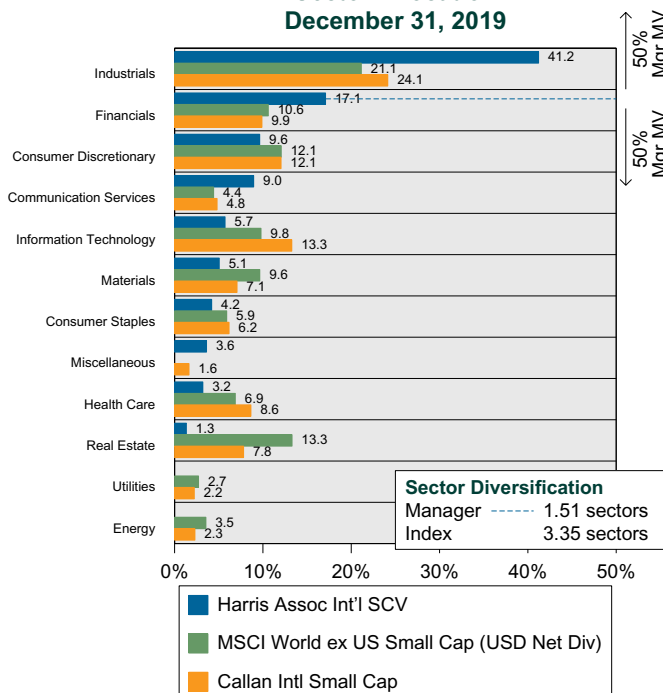


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	3.80	21.19	3.06	17.21	2.97	0.94
25th Percentile	3.24	17.63	2.45	14.90	2.69	0.48
Median	2.39	14.75	1.81	12.19	2.29	0.21
75th Percentile	1.63	13.41	1.40	10.23	1.93	(0.12)
90th Percentile	1.22	11.07	1.12	8.92	1.33	(0.55)
<b>Harris Assoc Int'l SCV</b>	● 2.97	12.08	1.57	6.38	2.88	(0.35)
MSCI World ex US Small Cap (USD Net Div)	▲ 2.33	16.32	1.50	11.63	2.43	0.01

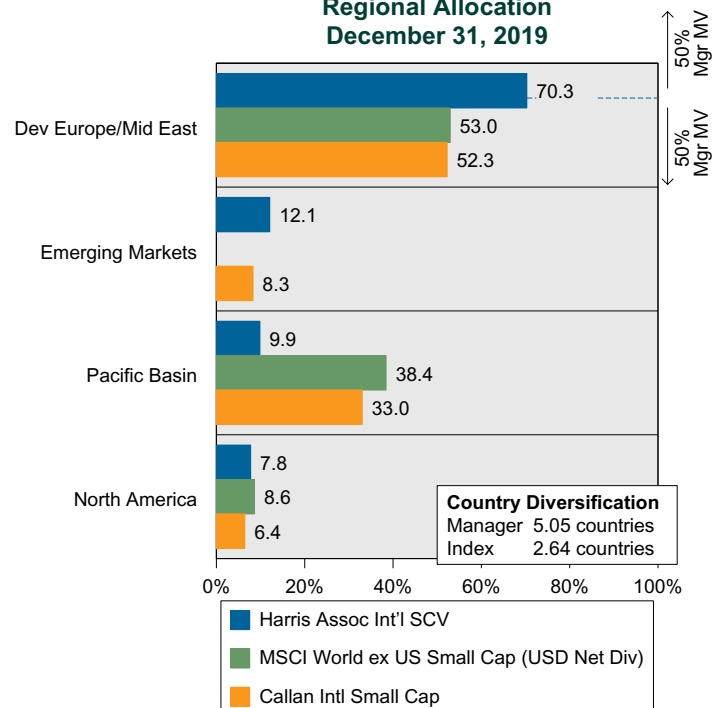
## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

### Sector Allocation December 31, 2019



### Regional Allocation December 31, 2019





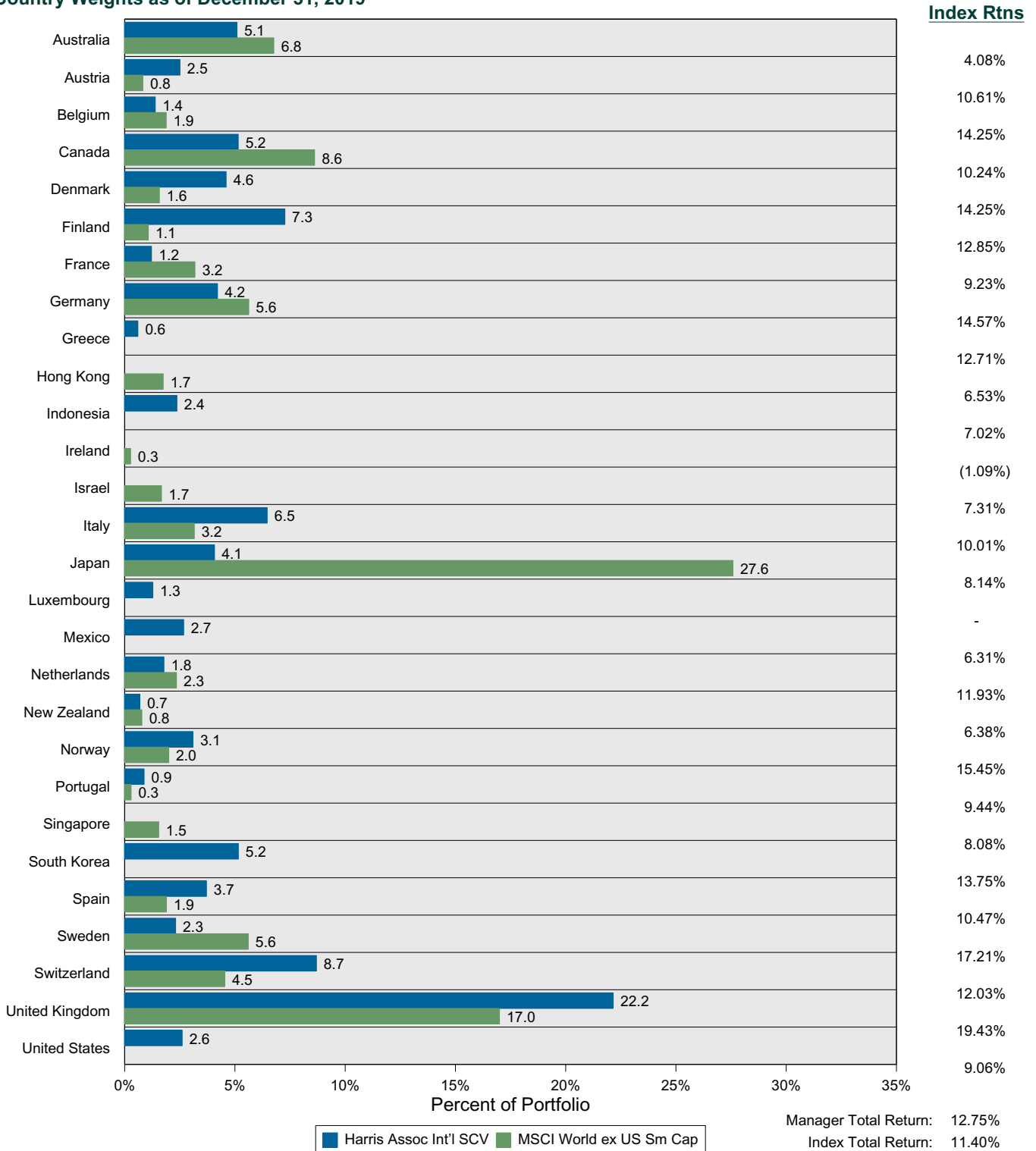
## Country Allocation

### Harris Assoc Int'l SCV VS MSCI World ex US Small Cap (USD Net Div)

#### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

#### Country Weights as of December 31, 2019





# Emerging Mkts Equity Period Ended December 31, 2019

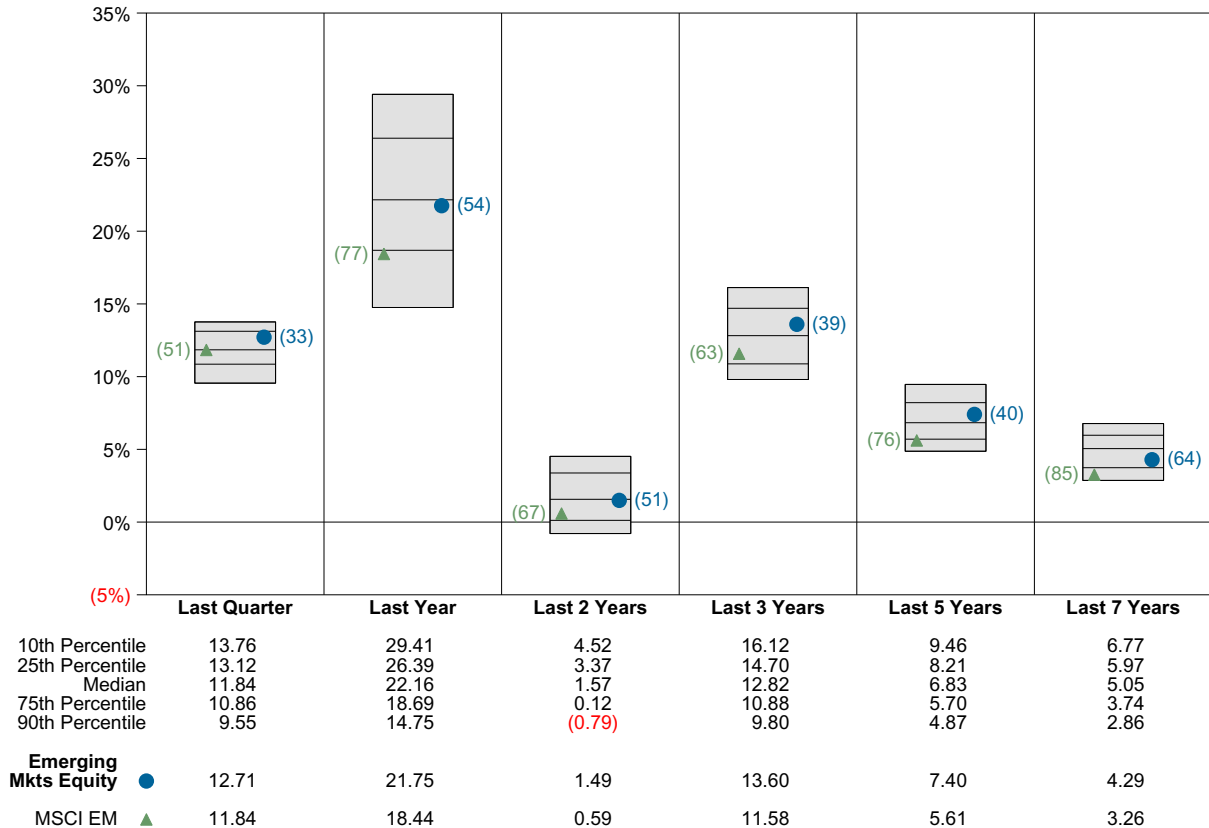
## Quarterly Summary and Highlights

- Emerging Mkts Equity's portfolio posted a 12.71% return for the quarter placing it in the 33 percentile of the Callan Emerging Broad group for the quarter and in the 54 percentile for the last year.
- Emerging Mkts Equity's portfolio outperformed the MSCI EM by 0.87% for the quarter and outperformed the MSCI EM for the year by 3.32%.

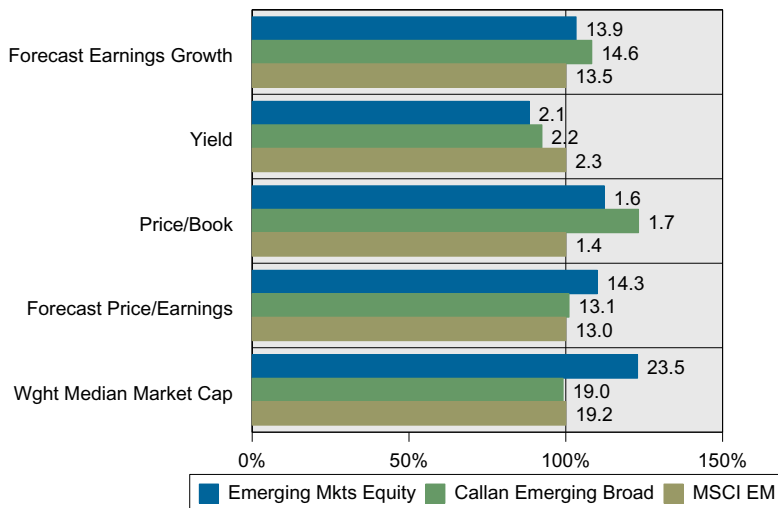
## Quarterly Asset Growth

Beginning Market Value	\$1,799,406,544
Net New Investment	\$917,755
Investment Gains/(Losses)	\$226,579,435
Ending Market Value	\$2,026,903,735

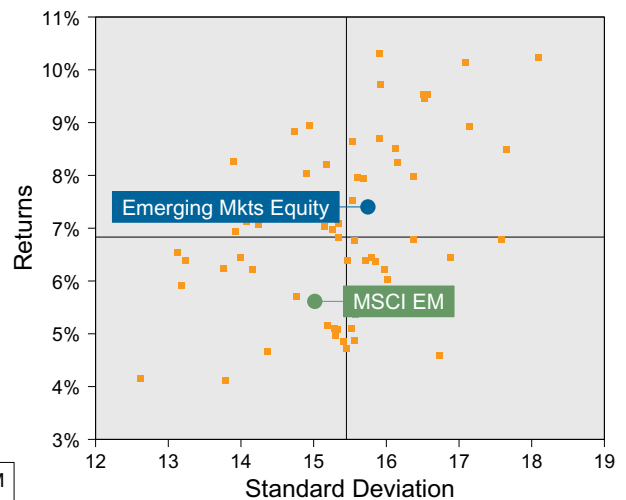
## Performance vs Callan Emerging Broad (Gross)



## Portfolio Characteristics as a Percentage of the MSCI EM



## Callan Emerging Broad (Gross) Annualized Five Year Risk vs Return

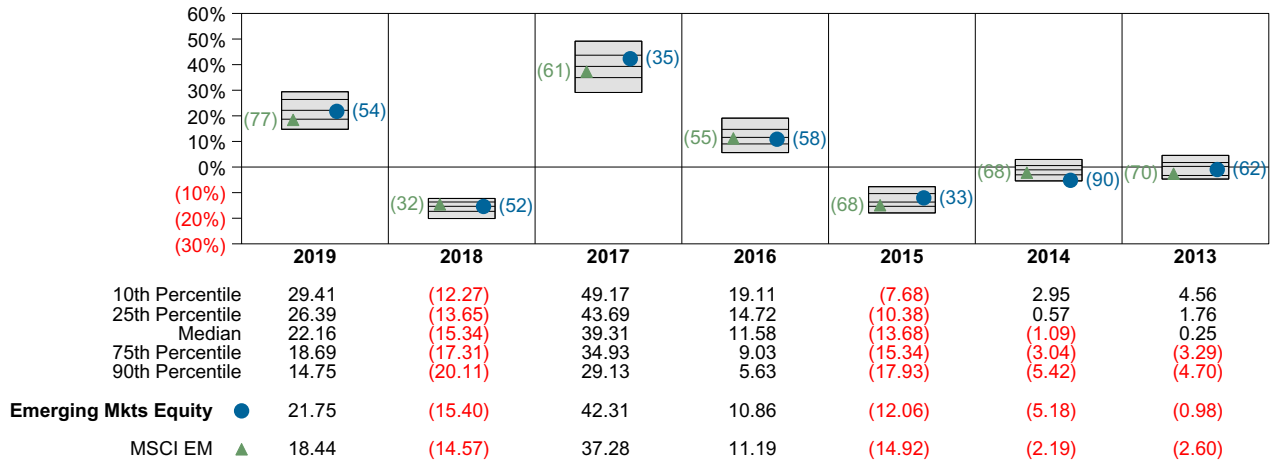


# Emerging Mkts Equity Return Analysis Summary

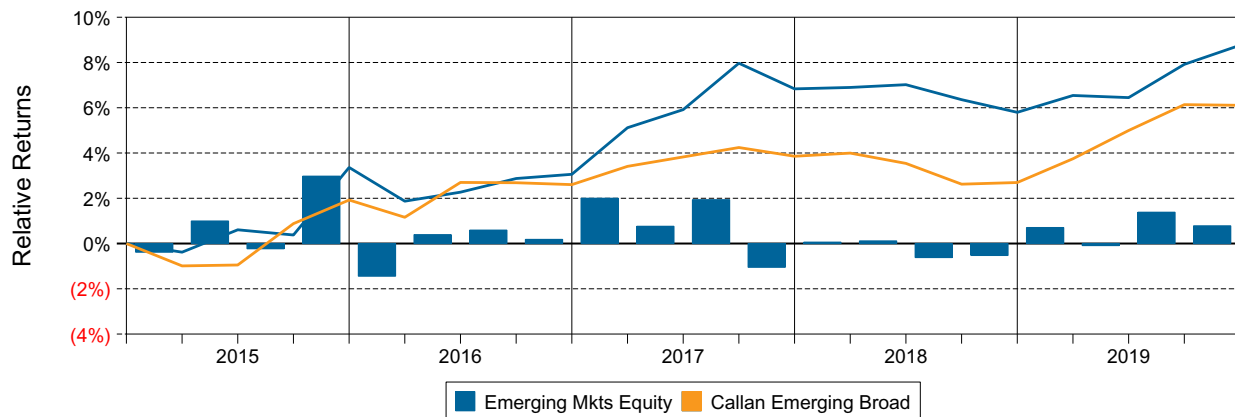
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

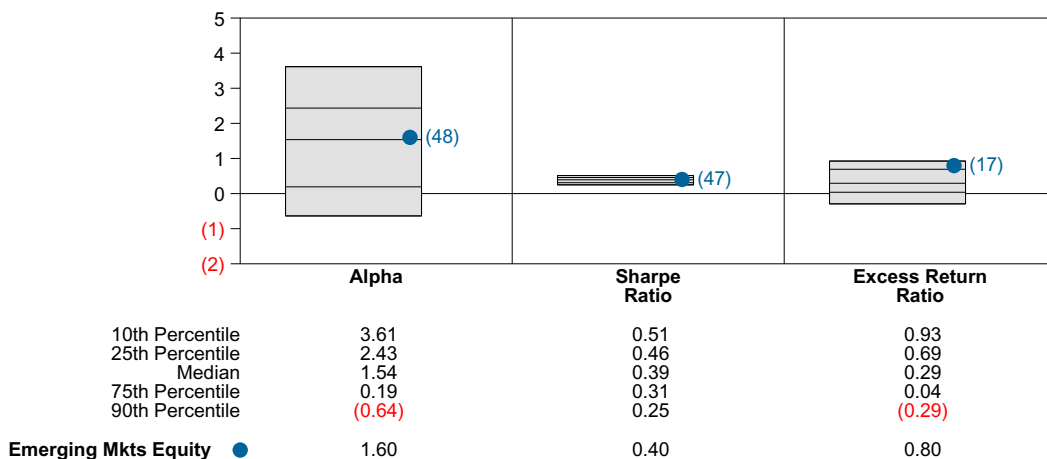
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Return vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019

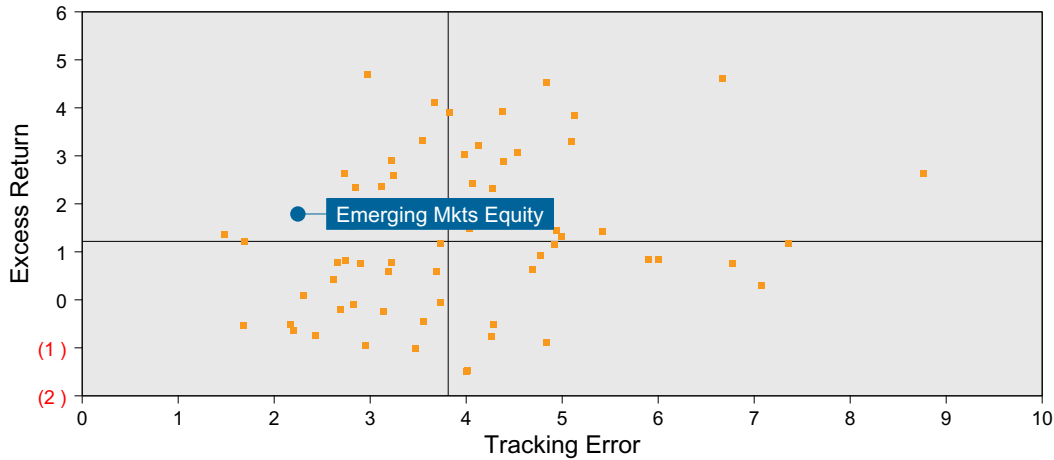


# Emerging Mkts Equity Risk Analysis Summary

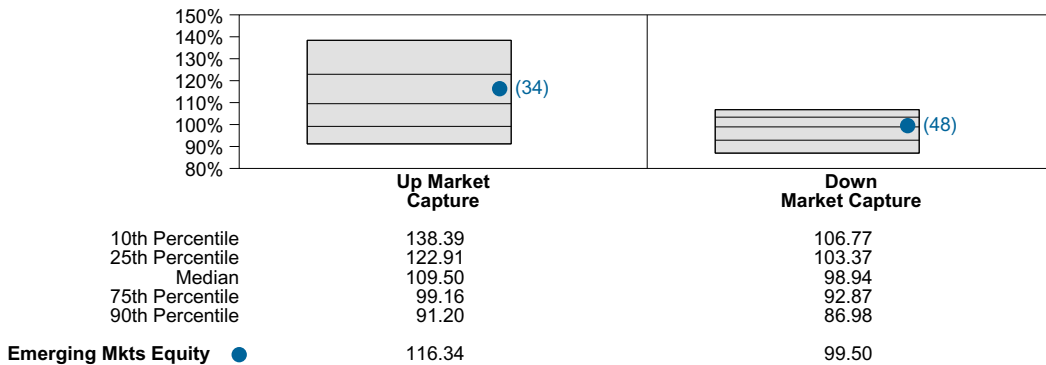
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

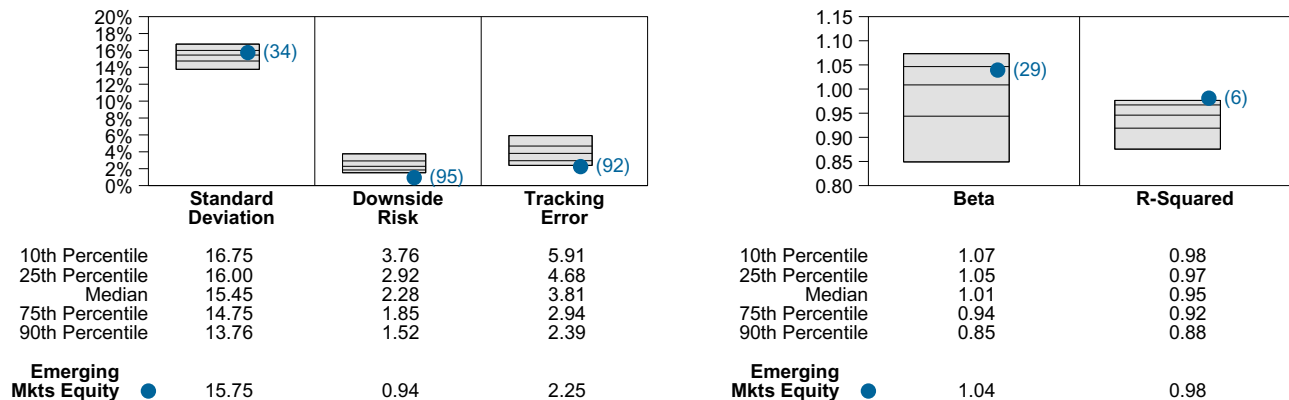
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



### Market Capture vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



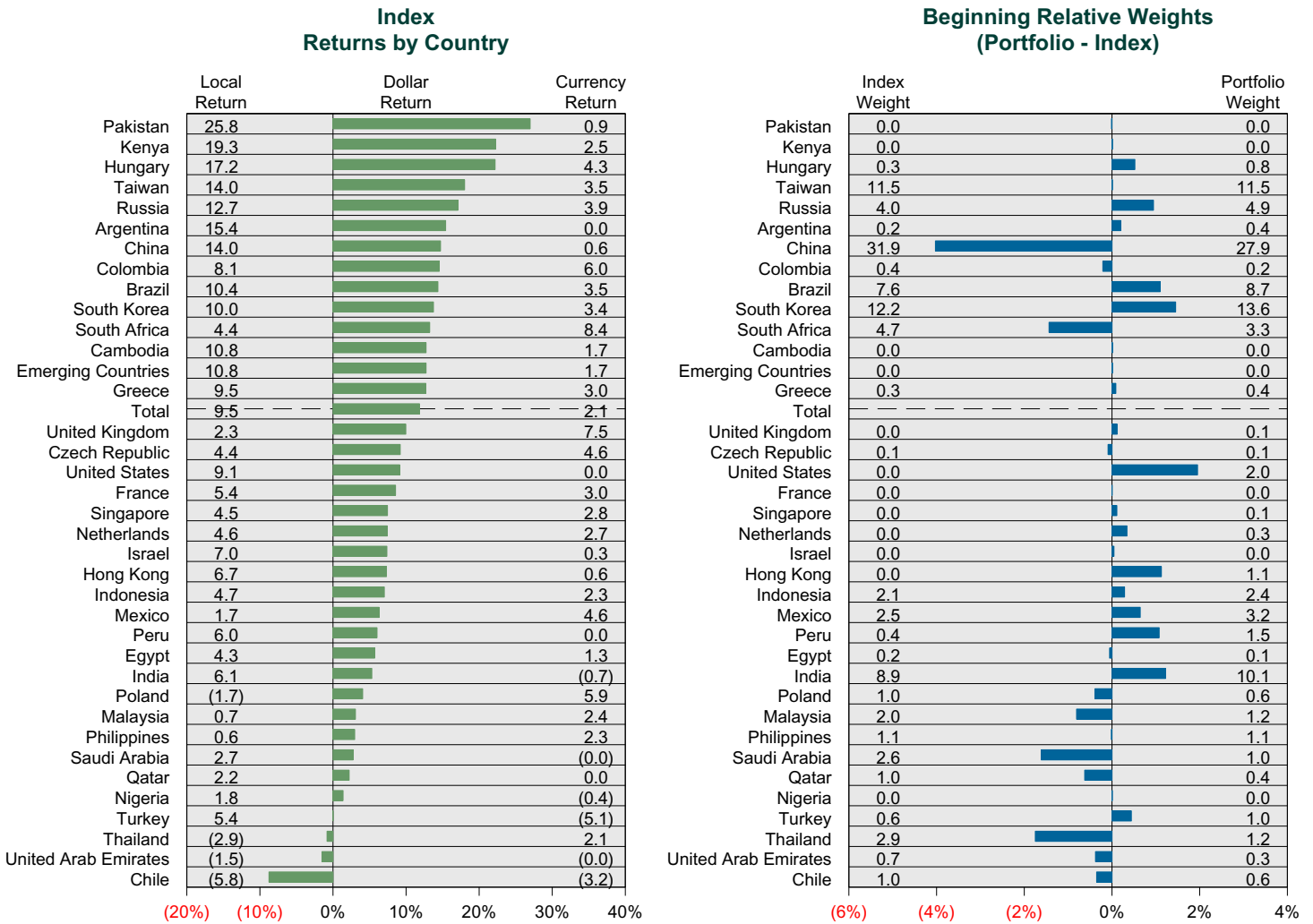
### Risk Statistics Rankings vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



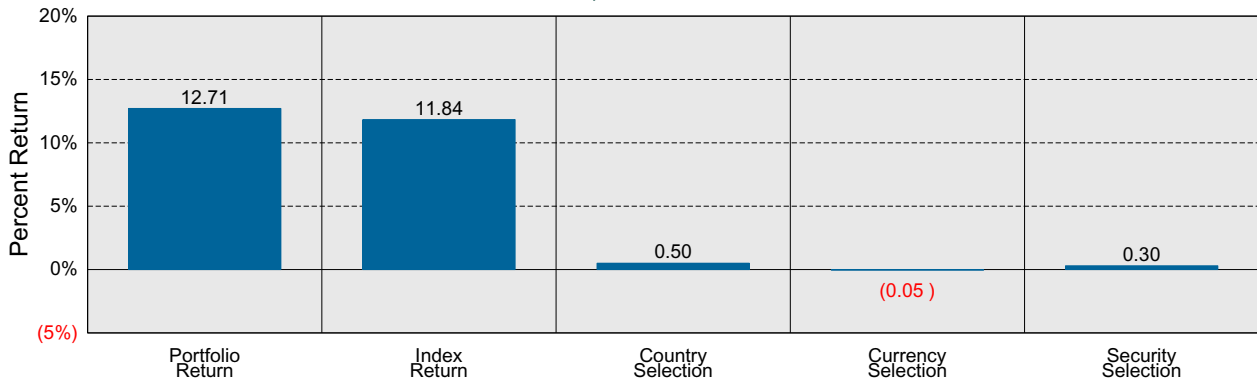
# Emerging Mkts Equity vs MSCI EM Attribution for Quarter Ended December 31, 2019

## International Attribution

The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. To the extent that the manager over-weighted a country that had a higher return than the total return for the index (above the dotted line) it contributes positively to the manager's country (or currency) selection effect. The last chart details the manager return, the index return, and the attribution factors for the quarter.



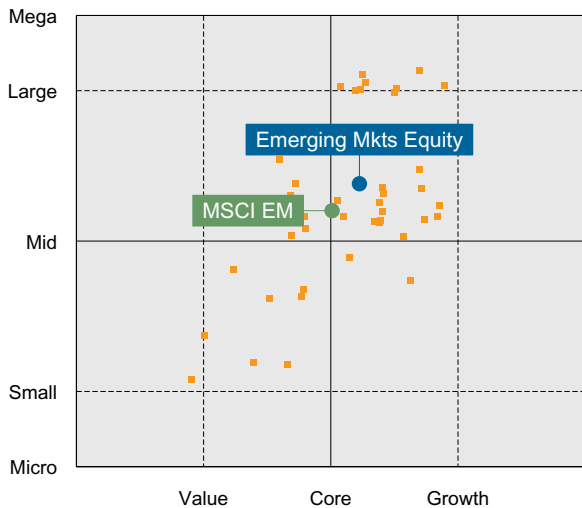
## Attribution Factors for Quarter Ended December 31, 2019



# Current Holdings Based Style Analysis Emerging Mkts Equity As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left chart illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

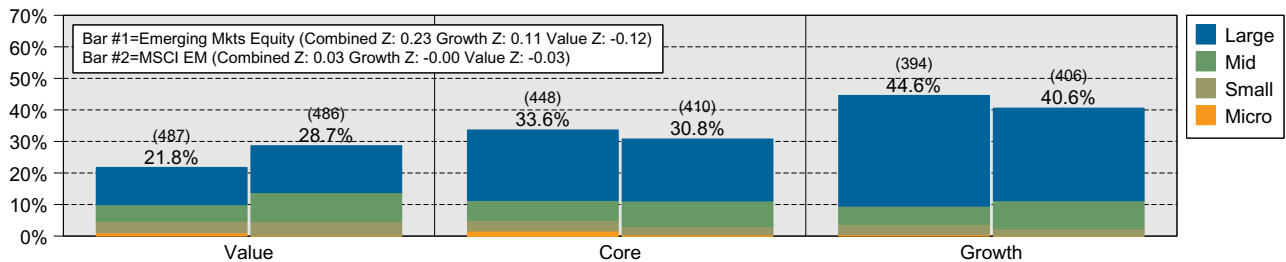
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2019**



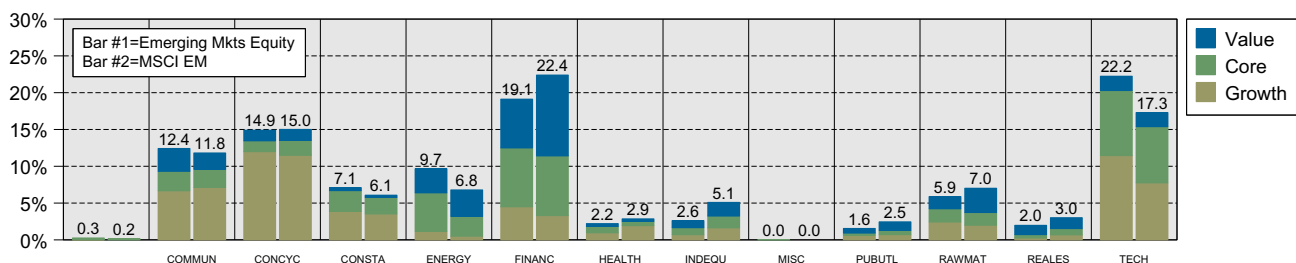
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	11.8% (77)	22.2% (91)	35.1% (80)	69.1% (248)
	14.9% (83)	19.6% (73)	29.3% (77)	63.8% (233)
Mid	5.3% (156)	6.3% (165)	5.7% (173)	17.3% (494)
	9.3% (177)	8.0% (183)	8.9% (216)	26.2% (576)
Small	3.7% (208)	3.4% (157)	3.3% (120)	10.4% (485)
	4.4% (219)	2.8% (151)	2.3% (112)	9.5% (482)
Micro	1.1% (46)	1.6% (35)	0.4% (21)	3.1% (102)
	0.1% (7)	0.3% (3)	0.0% (1)	0.4% (11)
<b>Total</b>	<b>21.8% (487)</b>	<b>33.6% (448)</b>	<b>44.6% (394)</b>	<b>100.0% (1329)</b>
	<b>28.7% (486)</b>	<b>30.8% (410)</b>	<b>40.6% (406)</b>	<b>100.0% (1302)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

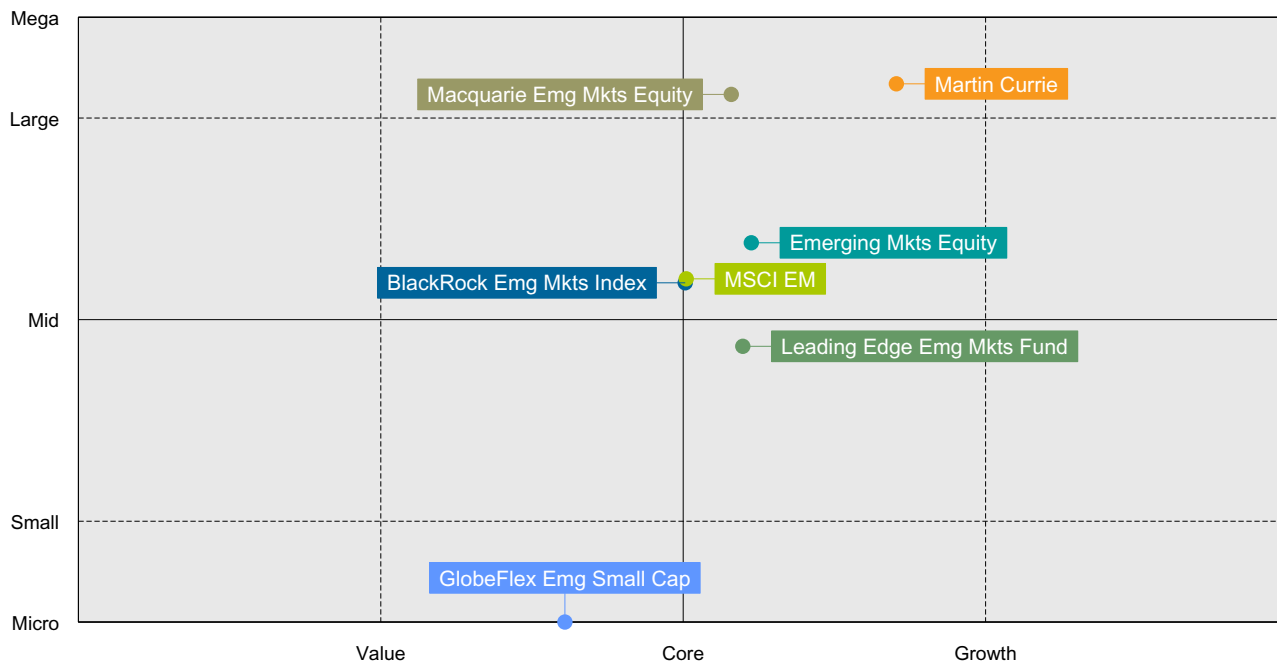


## International Holdings Based Style Analysis For One Quarter Ended December 31, 2019

This page analyzes and compares the investment styles of multiple portfolios using a detailed holdings-based style analysis methodology. The size component of style is measured by the weighted median market capitalization of the holdings. The value/core/growth style dimension is captured by the "Combined Z-Score" of the portfolio. This score is based on eight fundamental factors used in the MSCI stock style scoring system. The table below gives a more detailed breakdown of several relevant style metrics on the portfolios.

### Style Map

#### Holdings for One Quarter Ended December 31, 2019



	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
BlackRock Emg Mkts Index	36.38%	18.67	0.02	0.00	(0.02)	1380	77.59
Leading Edge Emg Mkts Fund	11.66%	12.63	0.21	0.12	(0.08)	235	40.84
Macquarie Emg Mkts Equity	23.07%	59.43	0.17	0.02	(0.15)	121	12.51
Martin Currie	24.12%	68.71	0.70	0.35	(0.35)	46	10.35
GlobeFlex Emg Small Cap	4.77%	0.46	(0.36)	0.06	0.42	145	25.53
Emerging Mkts Equity	100.00%	23.54	0.23	0.11	(0.12)	1676	44.14
MSCI EM	-	19.16	0.03	(0.00)	(0.03)	1403	79.91

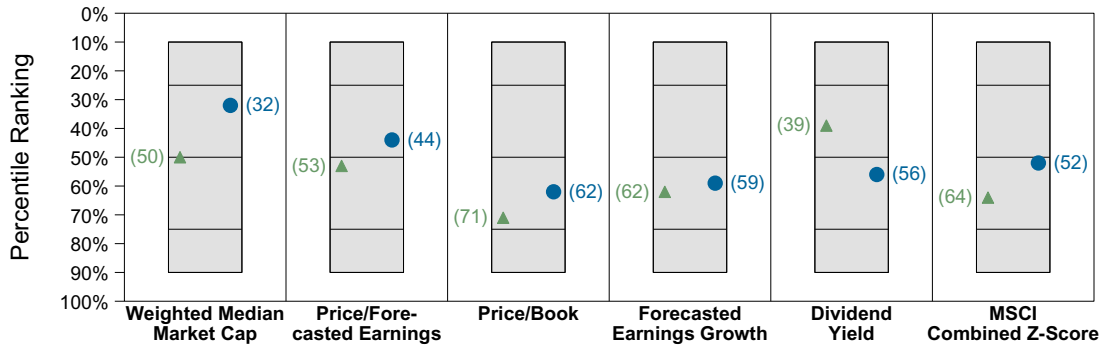


# Emerging Mkts Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2019

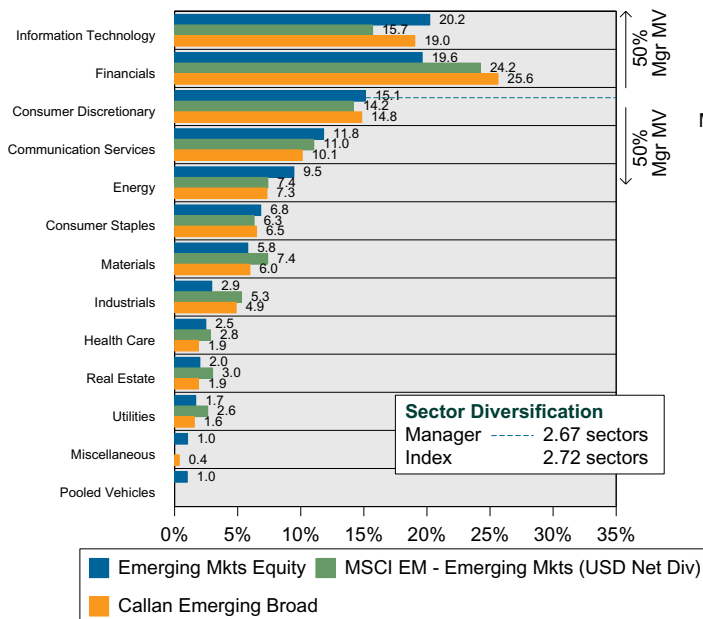


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	44.39	19.13	3.20	17.91	3.29	0.71
25th Percentile	29.98	16.62	2.45	16.33	2.82	0.49
Median	18.99	13.09	1.73	14.60	2.15	0.25
75th Percentile	14.96	10.80	1.22	11.86	1.78	(0.26)
90th Percentile	7.95	9.67	0.94	8.36	1.57	(0.53)
<b>Emerging Mkts Equity</b>	<b>23.54</b>	<b>14.26</b>	<b>1.58</b>	<b>13.92</b>	<b>2.06</b>	<b>0.23</b>
MSCI EM - Emerging Mkts (USD Net Div)	19.16	12.95	1.40	13.48	2.33	0.03

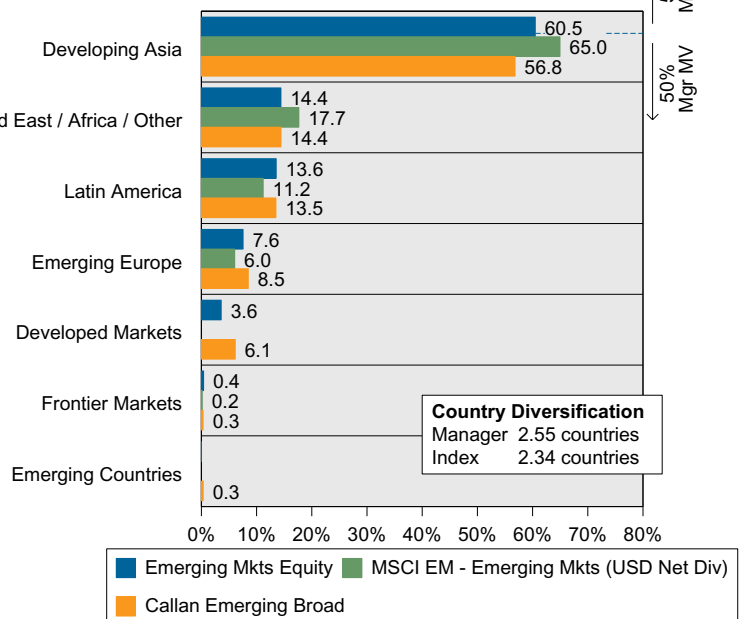
## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

### Sector Allocation December 31, 2019



### Regional Allocation December 31, 2019



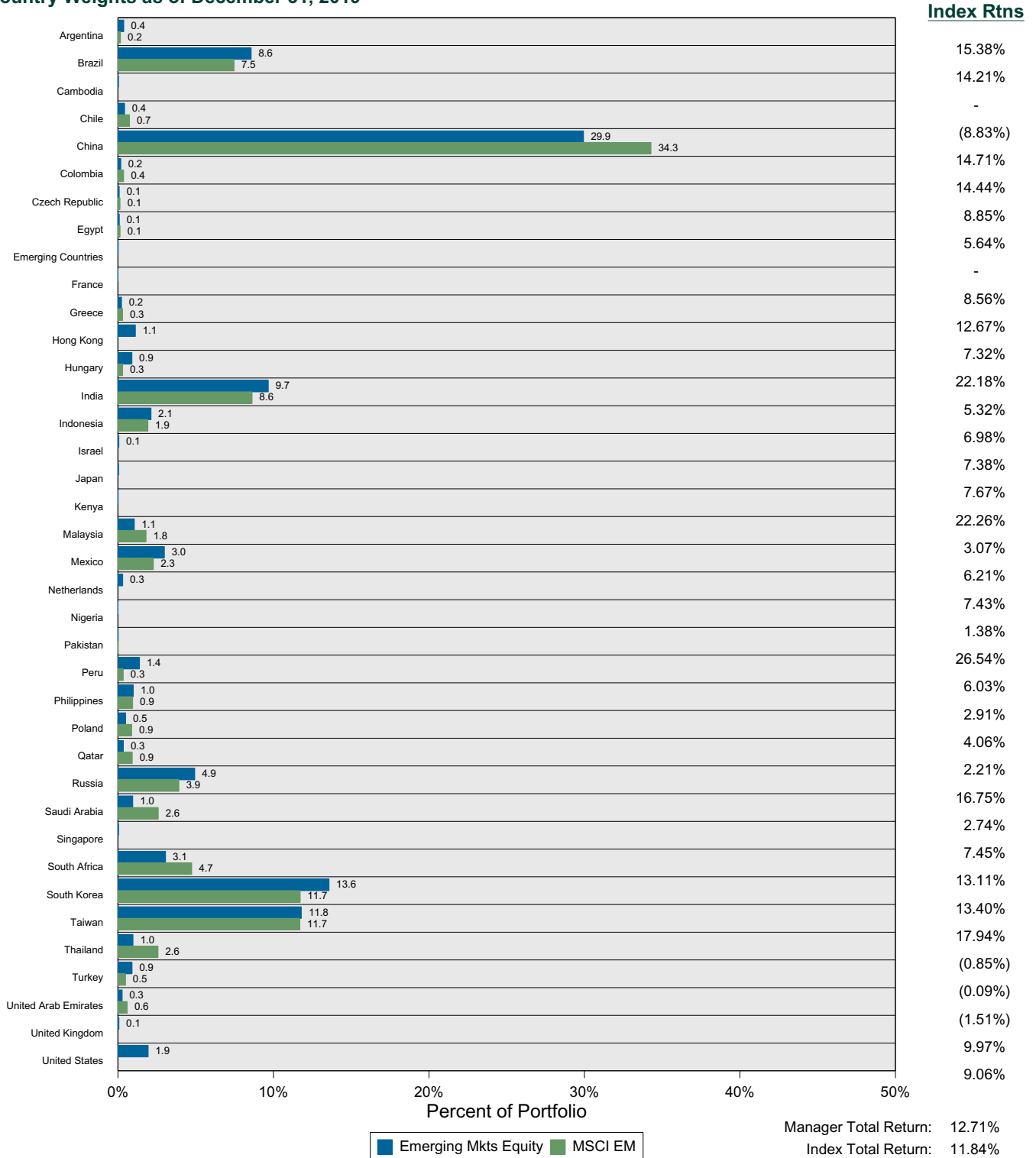
# Country Allocation

## Emerging Mkts Equity VS MSCI EM - Emerging Mkts (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

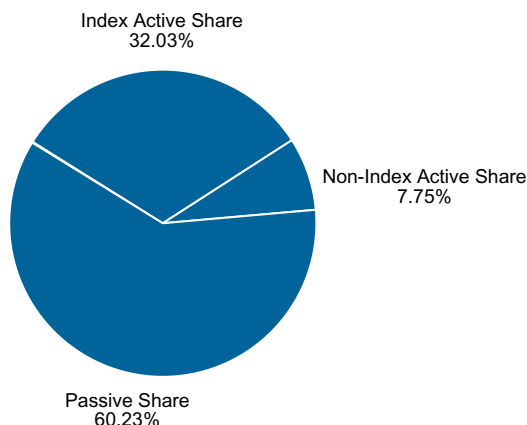
Country Weights as of December 31, 2019



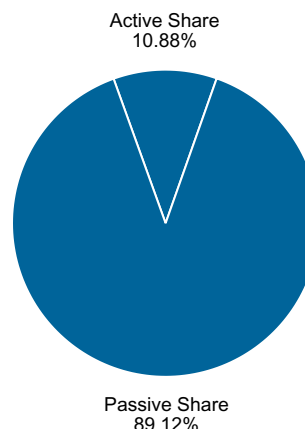
## Emerging Mkts Equity Active Share Analysis as of December 31, 2019 vs. MSCI EM - Emerging Mkts (USD Net Div)

Active Share analysis compares the holdings of a portfolio to an index to measure how aggressively it differs from the index. Active share is measured at the individual stock level ("holdings-level active share") and using sector weights ("sector exposure active share"). Holdings-level active share comes from: 1) Index Active Share - over/under weighting of stocks in the index, and 2) Non-Index Active Share - positions in stocks not in the index. This analysis displays active share by sector and compares the portfolio to a relevant peer group.

### Holdings-Level Active Share



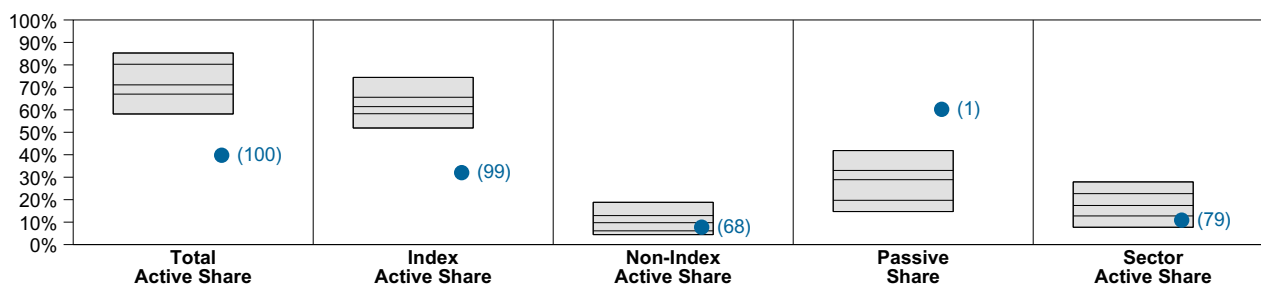
### Sector Exposure Active Share



**Total Active Share: 39.77%**

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	38.47%	3.79%	42.26%	11.03%	11.81%	4.69%
Consumer Discretionary	25.58%	6.18%	31.76%	14.18%	15.12%	4.46%
Consumer Staples	43.53%	5.82%	49.34%	6.30%	6.83%	3.18%
Energy	30.47%	6.55%	37.02%	7.39%	9.45%	2.86%
Financials	31.48%	8.20%	39.68%	24.24%	19.62%	9.42%
Health Care	35.86%	16.98%	52.84%	2.84%	2.48%	1.46%
Industrials	23.81%	11.78%	35.59%	5.30%	2.95%	2.00%
Information Technology	22.27%	5.81%	28.08%	15.69%	20.22%	5.03%
Materials	39.78%	6.64%	46.41%	7.38%	5.80%	3.32%
Miscellaneous	0.00%	100.00%	100.00%	-	1.03%	0.35%
Pooled Vehicles	0.00%	100.00%	100.00%	-	1.01%	0.50%
Real Estate	24.35%	17.17%	41.52%	3.01%	2.00%	1.29%
Utilities	35.77%	4.63%	40.40%	2.63%	1.68%	1.04%
<b>Total</b>	<b>32.03%</b>	<b>7.75%</b>	<b>39.77%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>39.60%</b>

### Active Share vs. Callan Emerging Broad



10th Percentile	85.30	74.43	18.83	41.85	27.91
25th Percentile	80.29	65.59	12.92	33.01	22.68
Median	71.11	61.43	9.76	28.89	17.42
75th Percentile	66.99	58.27	6.12	19.71	12.76
90th Percentile	58.15	51.90	4.43	14.70	7.71
<b>Emerging Mkts Equity</b>	<b>39.77</b>	<b>32.03</b>	<b>7.75</b>	<b>60.23</b>	<b>10.88</b>



# BlackRock Emg Mkts Index Period Ended December 31, 2019

## Investment Philosophy

As with all indexing strategies, the objective of the Emerging Markets Index Funds is to match the performance of the benchmark, the MSCI EM indexes. BlackRock's objective in managing the fund is to deliver a high quality and cost-effective index-based portfolio available to institutional investors. BlackRock's goal in the management of its emerging market country funds is to provide cost-effective and risk controlled exposure with close benchmark tracking. As such, country selection is dictated by the index, and BlackRock's funds approximate the sector and industry breakdowns of the respective country index. The team seeks to construct its country funds using the widest possible range of index constituent stocks to allow for replication of index returns while minimizing transaction costs. Therefore stock selection and weighting is generally dictated by the composition of the index. However, where investment restrictions exist, BlackRock may choose to use alternative investment approaches. In general, BlackRock aims to cover a significant percentage of the security market capitalization of each country index.

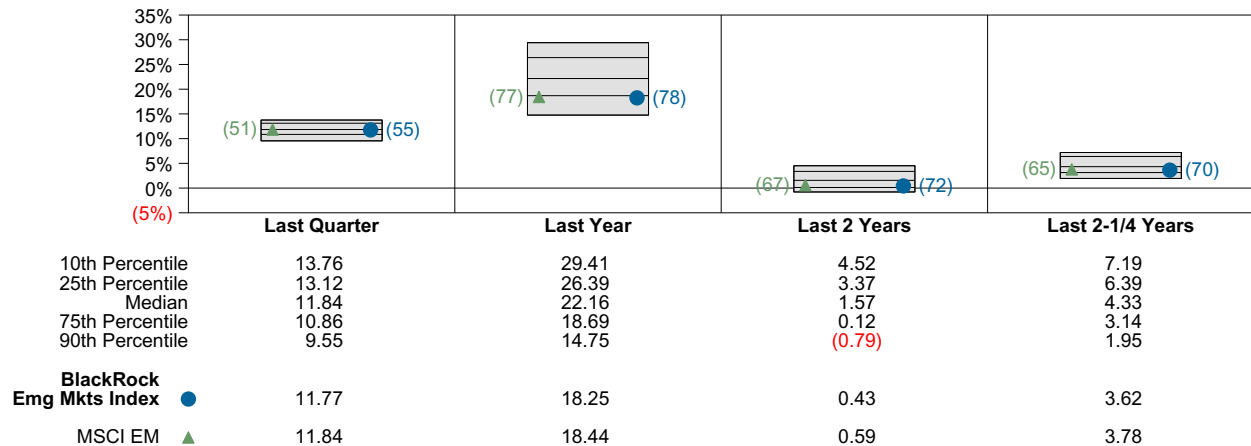
## Quarterly Summary and Highlights

- BlackRock Emg Mkts Index's portfolio posted a 11.77% return for the quarter placing it in the 55 percentile of the Callan Emerging Broad group for the quarter and in the 78 percentile for the last year.
- BlackRock Emg Mkts Index's portfolio underperformed the MSCI EM by 0.07% for the quarter and underperformed the MSCI EM for the year by 0.19%.

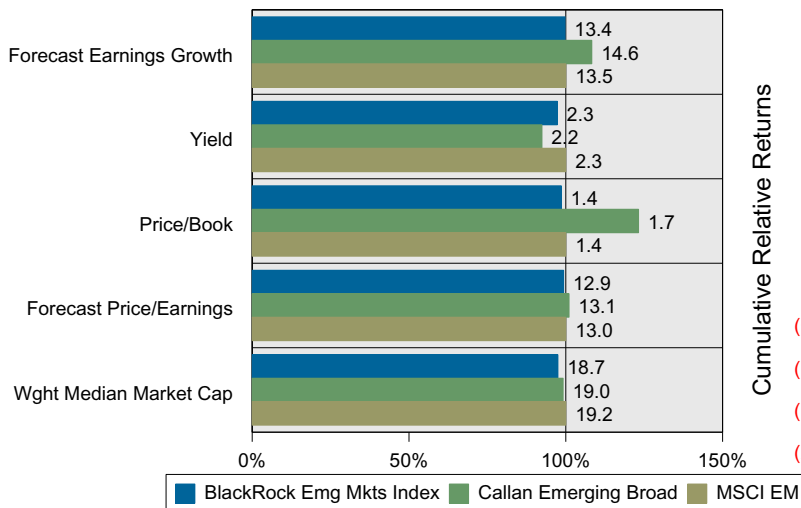
## Quarterly Asset Growth

Beginning Market Value	\$659,679,166
Net New Investment	\$301,829
Investment Gains/(Losses)	\$77,313,881
Ending Market Value	\$737,294,876

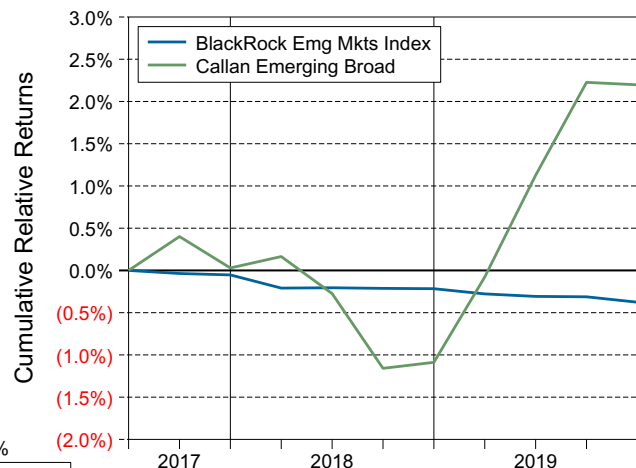
## Performance vs Callan Emerging Broad (Gross)



## Portfolio Characteristics as a Percentage of the MSCI EM



## Cumulative Returns vs MSCI EM



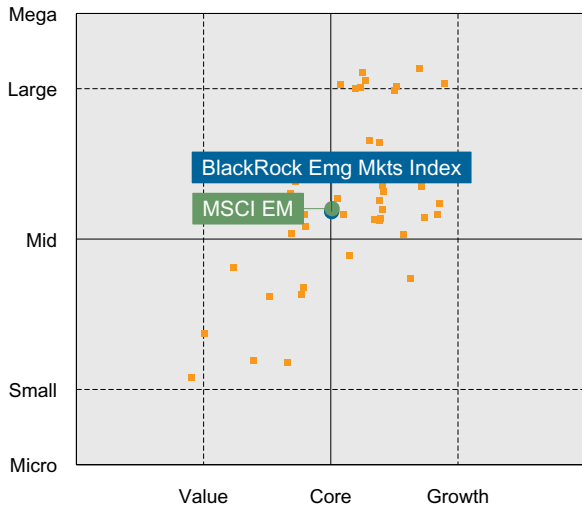
# Current Holdings Based Style Analysis

## BlackRock Emg Mkts Index

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

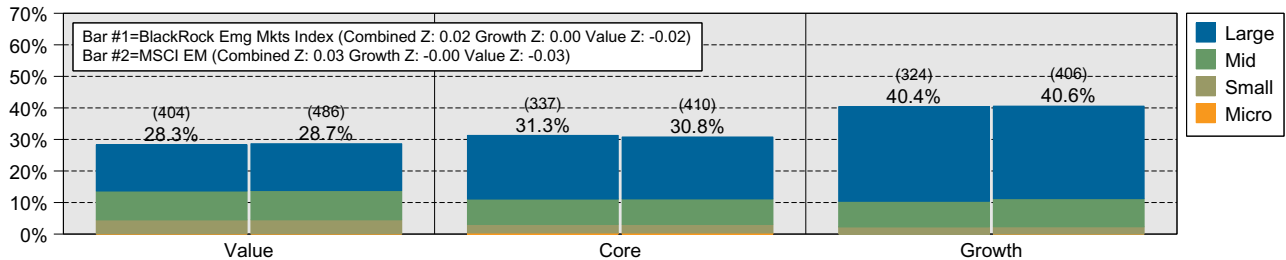
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2019**



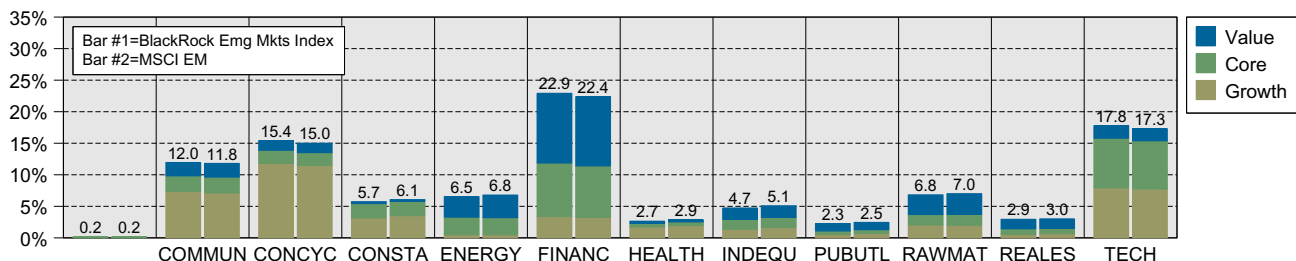
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	14.7% (69)	20.2% (65)	30.0% (69)	64.9% (203)
	14.9% (83)	19.6% (73)	29.3% (77)	63.8% (233)
Mid	9.2% (147)	8.0% (149)	8.1% (162)	25.3% (458)
	9.3% (177)	8.0% (183)	8.9% (216)	26.2% (576)
Small	4.4% (181)	2.8% (121)	2.3% (93)	9.4% (395)
	4.4% (219)	2.8% (151)	2.3% (112)	9.5% (482)
Micro	0.1% (7)	0.3% (2)	0.0% (0)	0.4% (9)
	0.1% (7)	0.3% (3)	0.0% (1)	0.4% (11)
<b>Total</b>	<b>28.3% (404)</b>	<b>31.3% (337)</b>	<b>40.4% (324)</b>	<b>100.0% (1065)</b>
	28.7% (486)	30.8% (410)	40.6% (406)	100.0% (1302)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

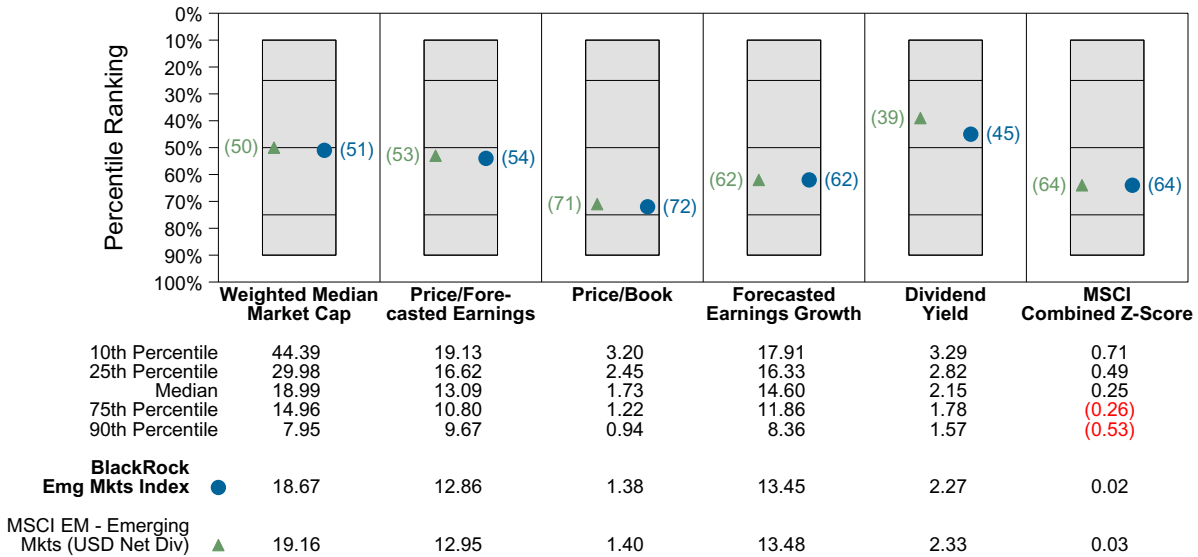


# BlackRock Emg Mkts Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

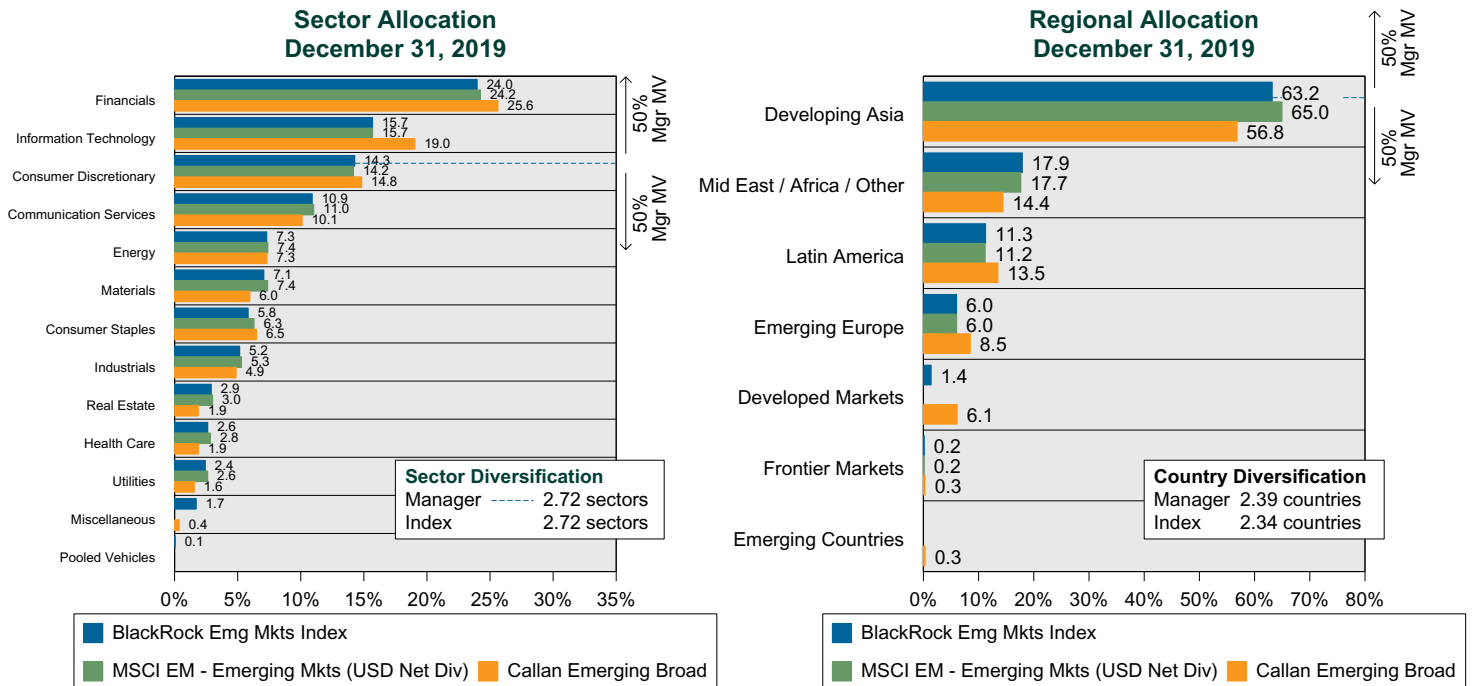
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

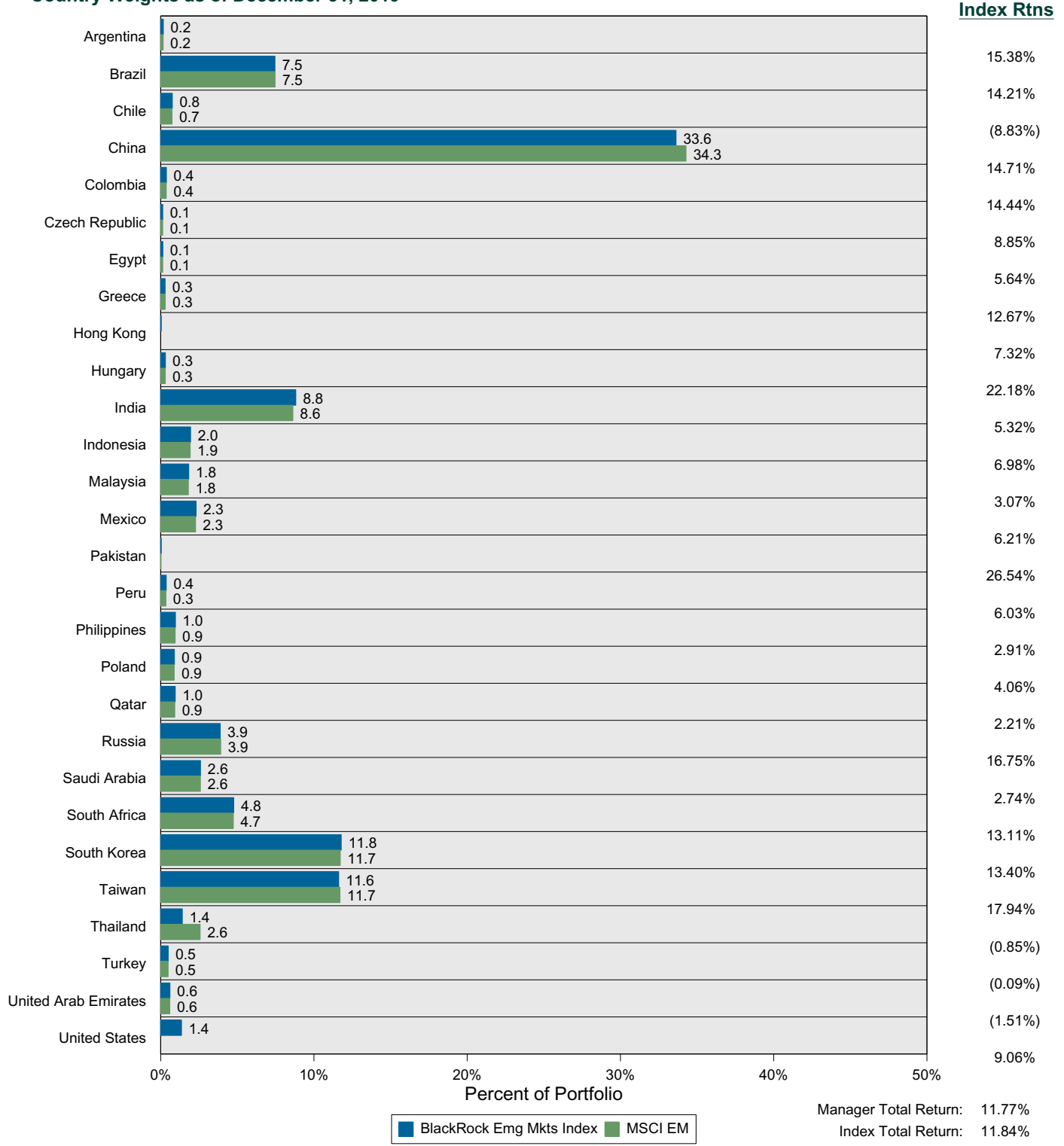


## Country Allocation BlackRock Emg Mkts Index VS MSCI EM - Emerging Mkts (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

Country Weights as of December 31, 2019





# Leading Edge Emg Mkts Fund Period Ended December 31, 2019

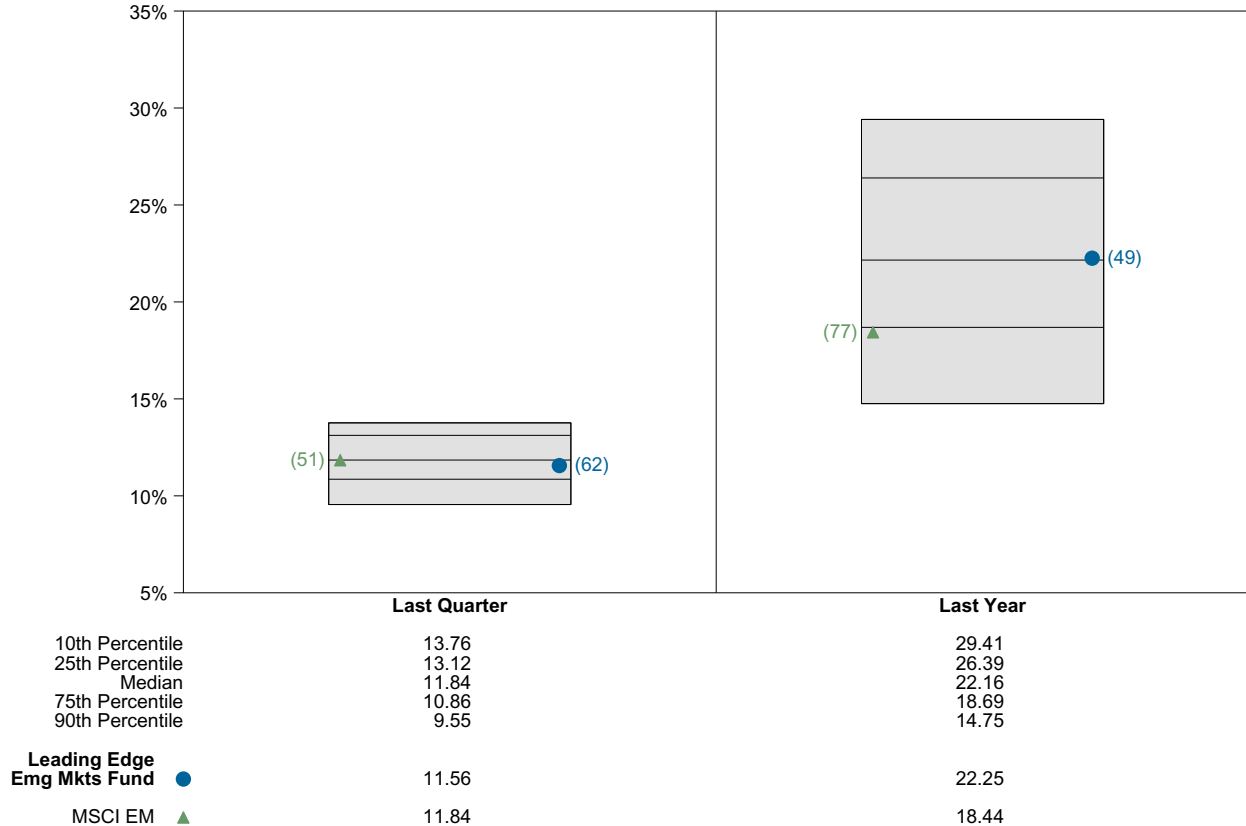
## Quarterly Summary and Highlights

- Leading Edge Emg Mkts Fund's portfolio posted a 11.56% return for the quarter placing it in the 62 percentile of the Callan Emerging Broad group for the quarter and in the 49 percentile for the last year.
- Leading Edge Emg Mkts Fund's portfolio underperformed the MSCI EM by 0.28% for the quarter and outperformed the MSCI EM for the year by 3.82%.

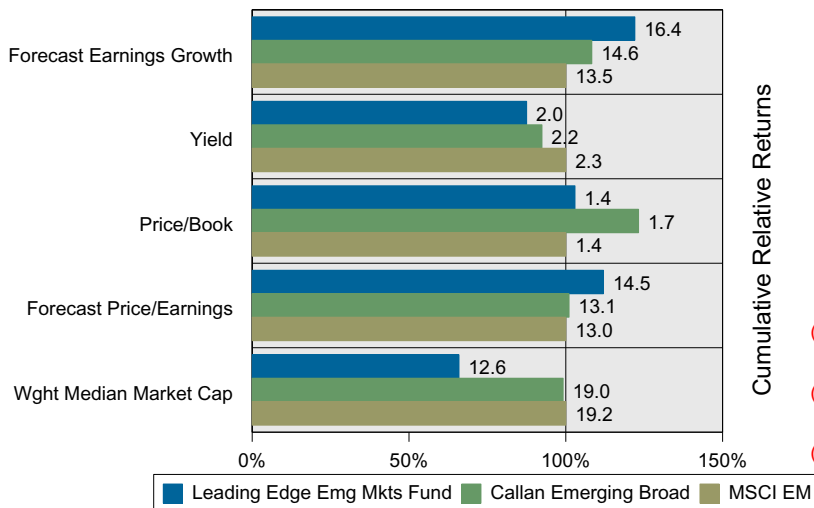
## Quarterly Asset Growth

Beginning Market Value	\$212,359,520
Net New Investment	\$0
Investment Gains/(Losses)	\$24,071,300
Ending Market Value	\$236,430,820

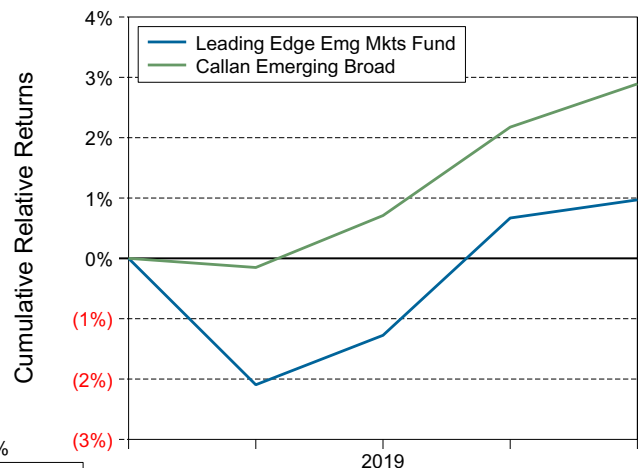
## Performance vs Callan Emerging Broad (Gross)



## Portfolio Characteristics as a Percentage of the MSCI EM



## Cumulative Returns vs MSCI EM



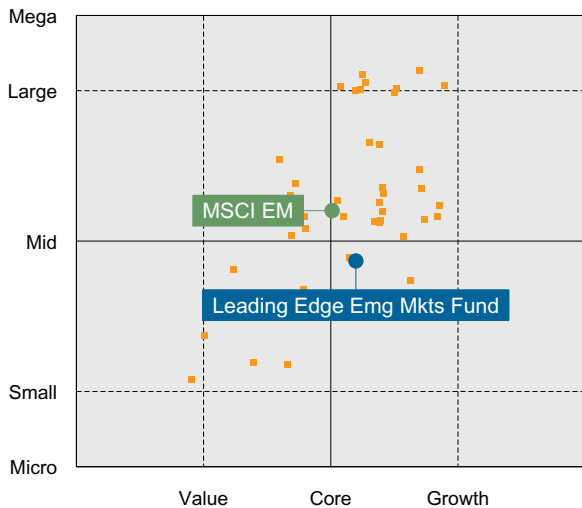
# Current Holdings Based Style Analysis

## Leading Edge Emg Mkts Fund

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left chart illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right chart displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

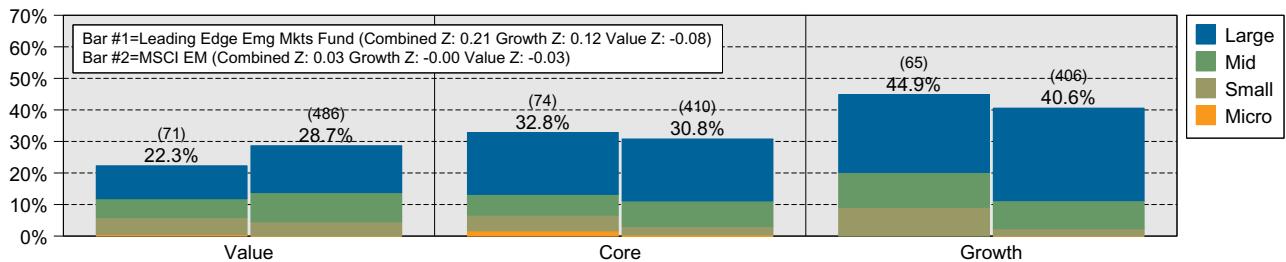
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2019**



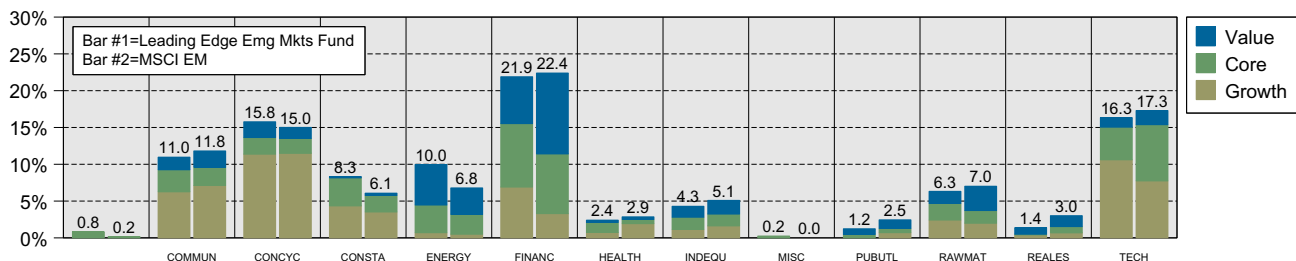
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	10.5% (18)	19.6% (29)	24.7% (21)	54.8% (68)
	14.9% (83)	19.6% (73)	29.3% (77)	63.8% (233)
Mid	6.0% (24)	6.6% (19)	11.1% (22)	23.6% (65)
	9.3% (177)	8.0% (183)	8.9% (216)	26.2% (576)
Small	5.5% (27)	5.0% (20)	9.1% (22)	19.5% (69)
	4.4% (219)	2.8% (151)	2.3% (112)	9.5% (482)
Micro	0.4% (2)	1.7% (6)	0.0% (0)	2.1% (8)
	0.1% (7)	0.3% (3)	0.0% (1)	0.4% (11)
<b>Total</b>	<b>22.3% (71)</b>	<b>32.8% (74)</b>	<b>44.9% (65)</b>	<b>100.0% (210)</b>
	<b>28.7% (486)</b>	<b>30.8% (410)</b>	<b>40.6% (406)</b>	<b>100.0% (1302)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**



# Leading Edge Emg Mkts Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

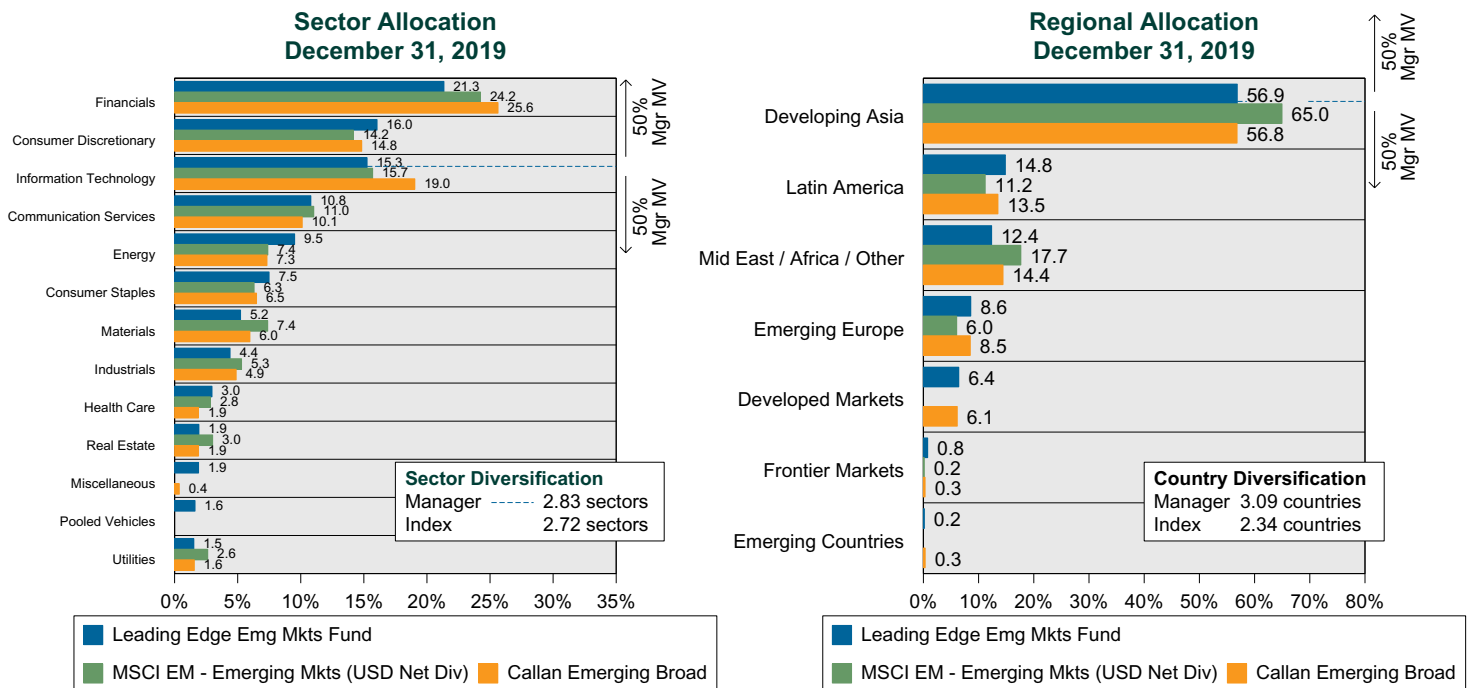
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.



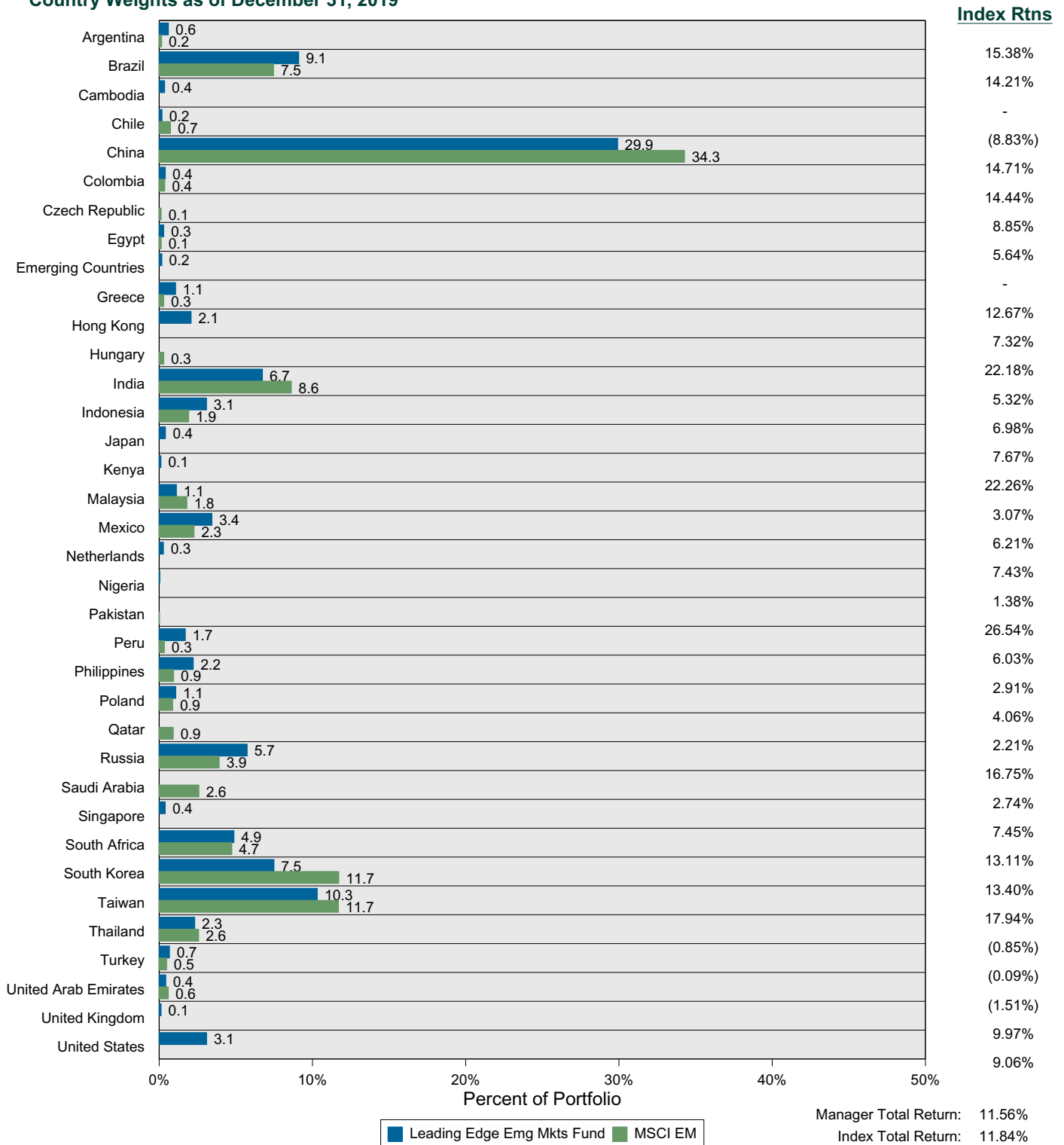
## Country Allocation

### Leading Edge Emg Mkts Fund VS MSCI EM - Emerging Mkts (USD Net Div)

#### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

#### Country Weights as of December 31, 2019



# Macquarie Emerging Markets Equity Period Ended December 31, 2019

## Investment Philosophy

Macquarie believes that market price and intrinsic business value are correlated in the long-run and short-term divergences offer disciplined, bottom-up, fundamental investors, attractive risk-adjusted opportunities. The team defines intrinsic value as the appropriately discounted value of a business' cash flow stream. They buy only when the business trades at a significant discount to their intrinsic value estimate. The team focuses resources on franchises, defined as those companies with high potential to earn excess returns above their cost of capital over the long-run. The team aims to capture market inefficiencies by: 1. Judging a franchise's sustainability and secular growth prospects better than the market 2. Maintaining a long-term, structural bias to capture franchises oversold due to temporary setbacks 3. Exploiting public market and private market valuation discrepancies 4. Buying assets below their replacement costs.

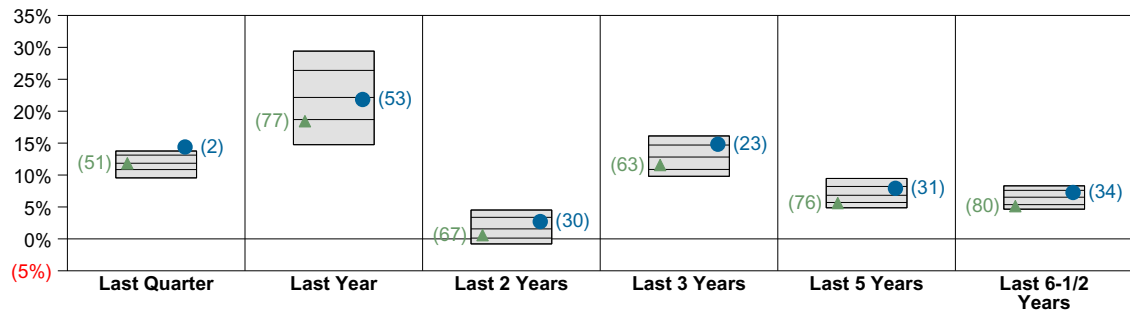
## Quarterly Summary and Highlights

- Macquarie Emerging Markets Equity's portfolio posted a 14.39% return for the quarter placing it in the 2 percentile of the Callan Emerging Broad group for the quarter and in the 53 percentile for the last year.
- Macquarie Emerging Markets Equity's portfolio outperformed the MSCI EM by 2.55% for the quarter and outperformed the MSCI EM for the year by 3.40%.

## Quarterly Asset Growth

Beginning Market Value	\$408,763,166
Net New Investment	\$615,926
Investment Gains/(Losses)	\$58,215,515
Ending Market Value	\$467,594,607

## Performance vs Callan Emerging Broad (Gross)

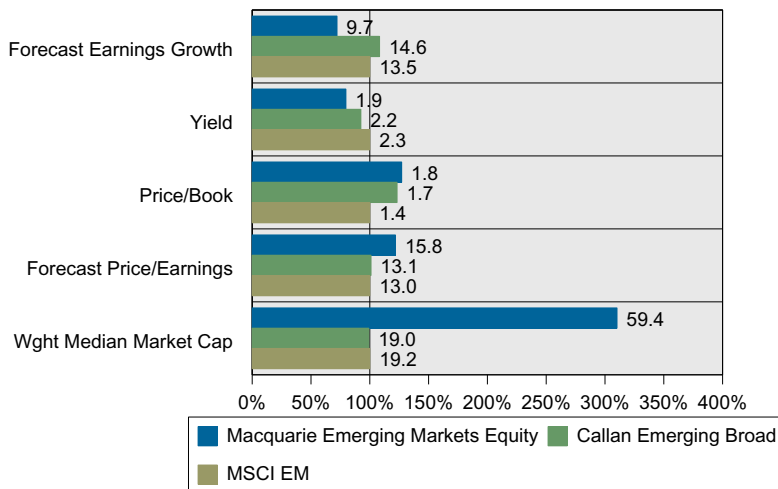


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-1/2 Years
10th Percentile	13.76	29.41	4.52	16.12	9.46	8.31
25th Percentile	13.12	26.39	3.37	14.70	8.21	7.60
Median	11.84	22.16	1.57	12.82	6.83	6.53
75th Percentile	10.86	18.69	0.12	10.88	5.70	5.36
90th Percentile	9.55	14.75	(0.79)	9.80	4.87	4.65

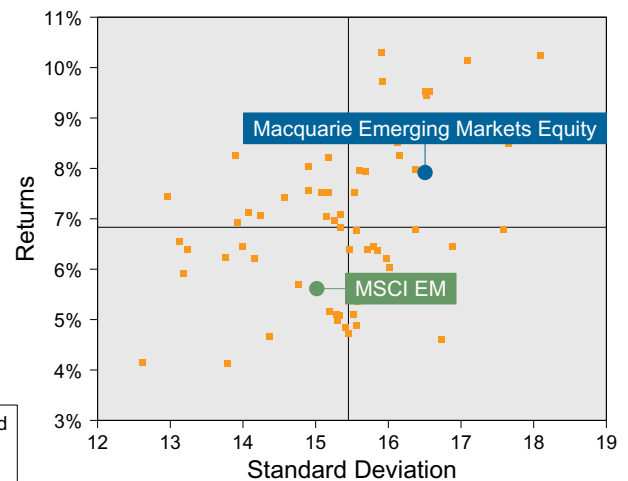
Macquarie Emerging Markets Equity	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-1/2 Years
●	14.39	21.83	2.71	14.83	7.92	7.27

MSCI EM	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-1/2 Years
▲	11.84	18.44	0.59	11.58	5.61	5.13

## Portfolio Characteristics as a Percentage of the MSCI EM



## Callan Emerging Broad (Gross) Annualized Five Year Risk vs Return

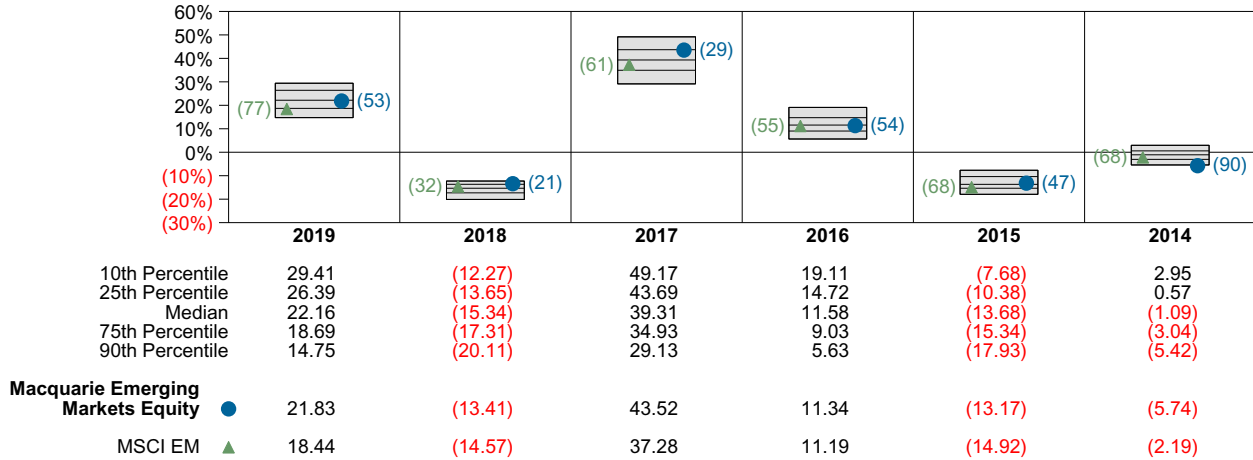


# Macquarie Emerging Markets Equity Return Analysis Summary

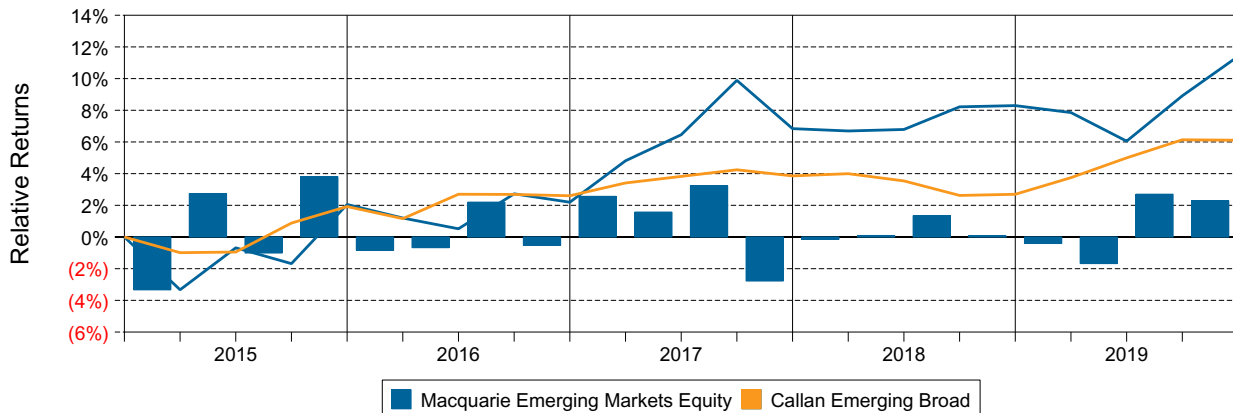
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

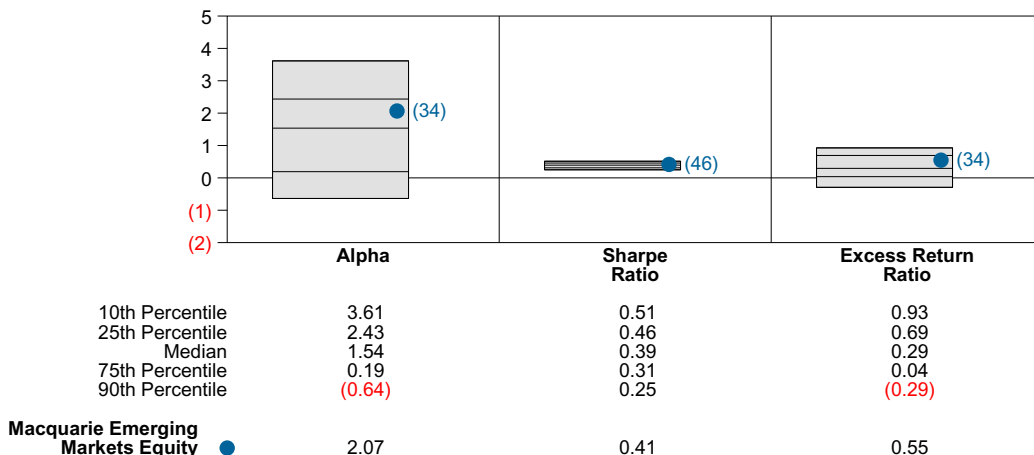
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Return vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019

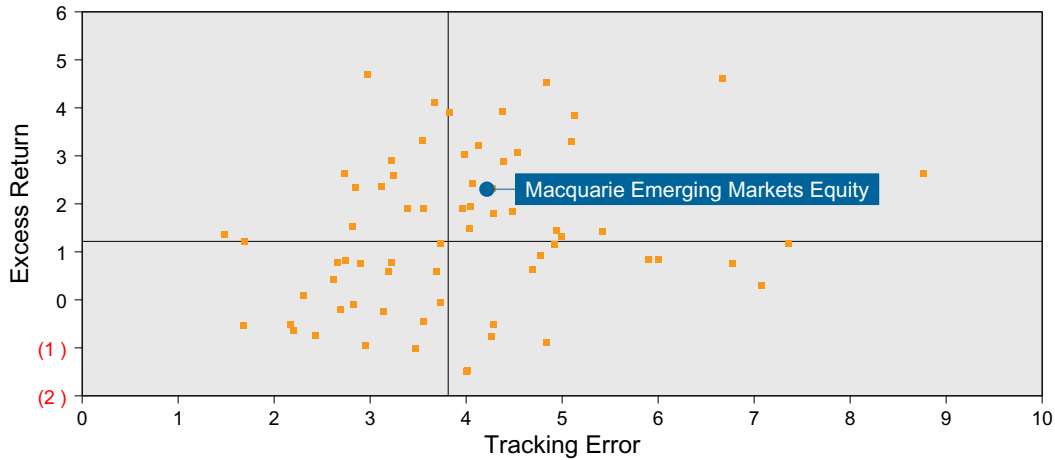


# Macquarie Emerging Markets Equity Risk Analysis Summary

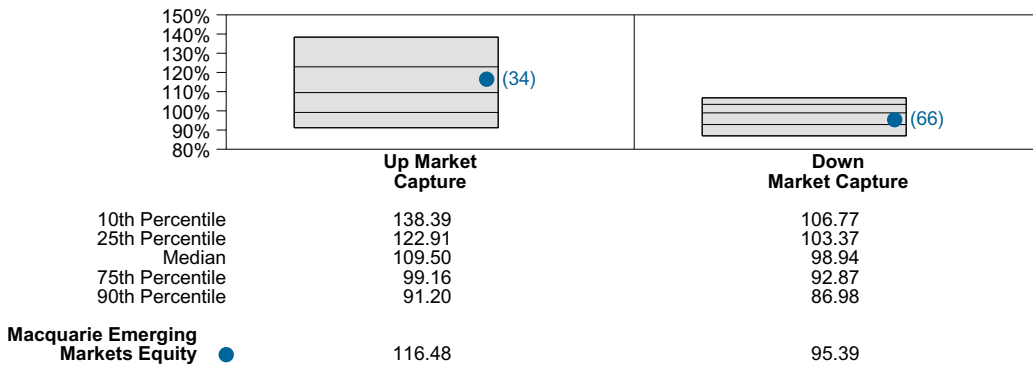
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

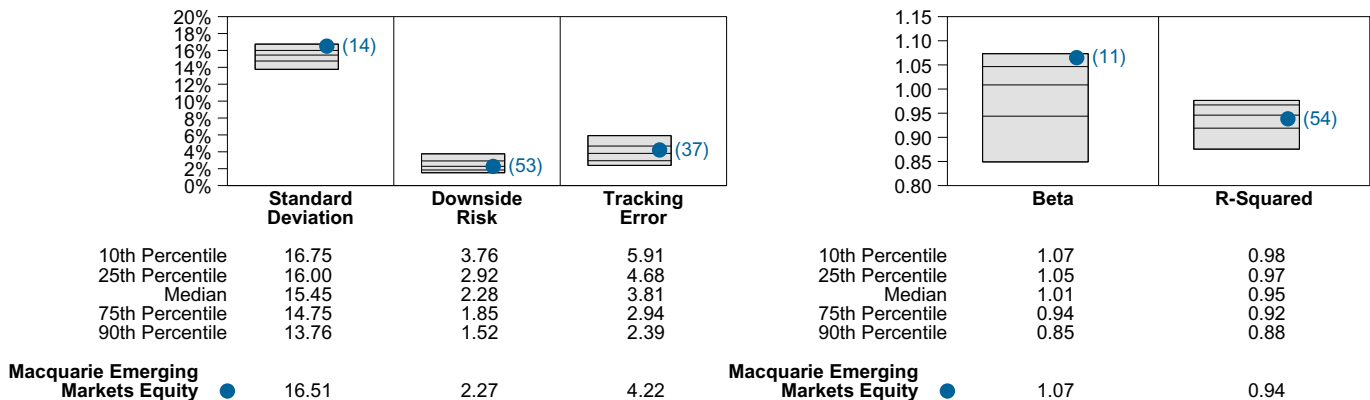
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



### Market Capture vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



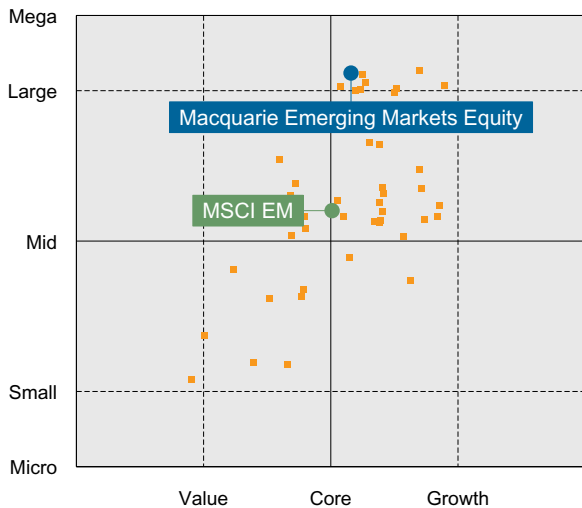
### Risk Statistics Rankings vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



# Current Holdings Based Style Analysis Macquarie Emerging Markets Equity As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

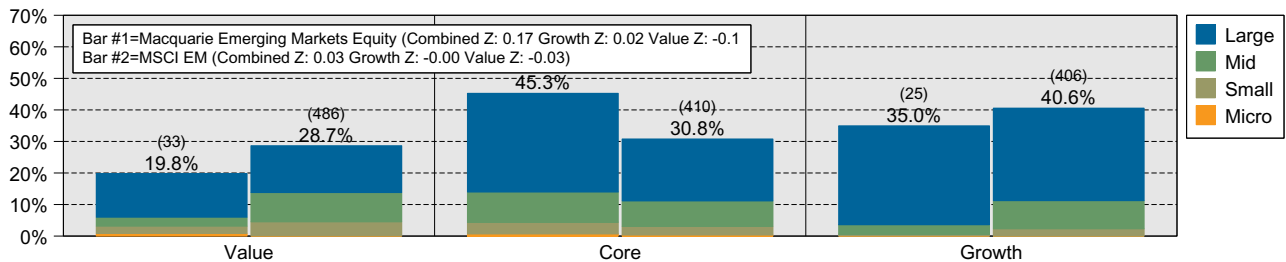
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2019**



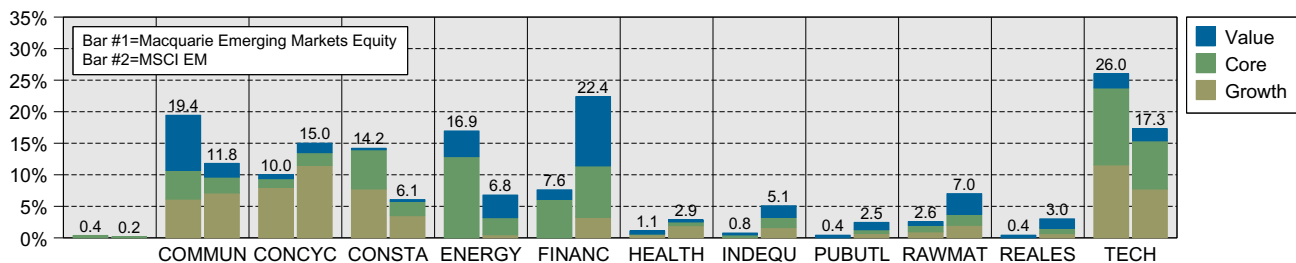
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	13.8% (10)	31.3% (19)	31.4% (12)	<b>76.5% (41)</b>
	14.9% (83)	19.6% (73)	29.3% (77)	<b>63.8% (233)</b>
Mid	2.9% (9)	9.6% (13)	3.0% (8)	<b>15.5% (30)</b>
	9.3% (177)	8.0% (183)	8.9% (216)	<b>26.2% (576)</b>
Small	2.3% (5)	3.7% (14)	0.5% (4)	<b>6.5% (23)</b>
	4.4% (219)	2.8% (151)	2.3% (112)	<b>9.5% (482)</b>
Micro	0.8% (9)	0.7% (5)	0.1% (1)	<b>1.6% (15)</b>
	0.1% (7)	0.3% (3)	0.0% (1)	<b>0.4% (11)</b>
<b>Total</b>	<b>19.8% (33)</b>	<b>45.3% (51)</b>	<b>35.0% (25)</b>	<b>100.0% (109)</b>
	<b>28.7% (486)</b>	<b>30.8% (410)</b>	<b>40.6% (406)</b>	<b>100.0% (1302)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**



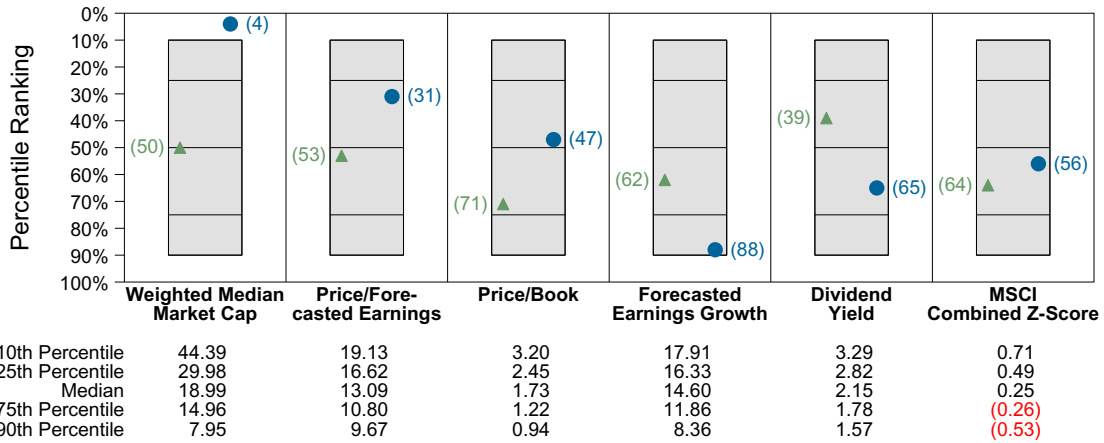


# Macquarie Emerging Markets Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

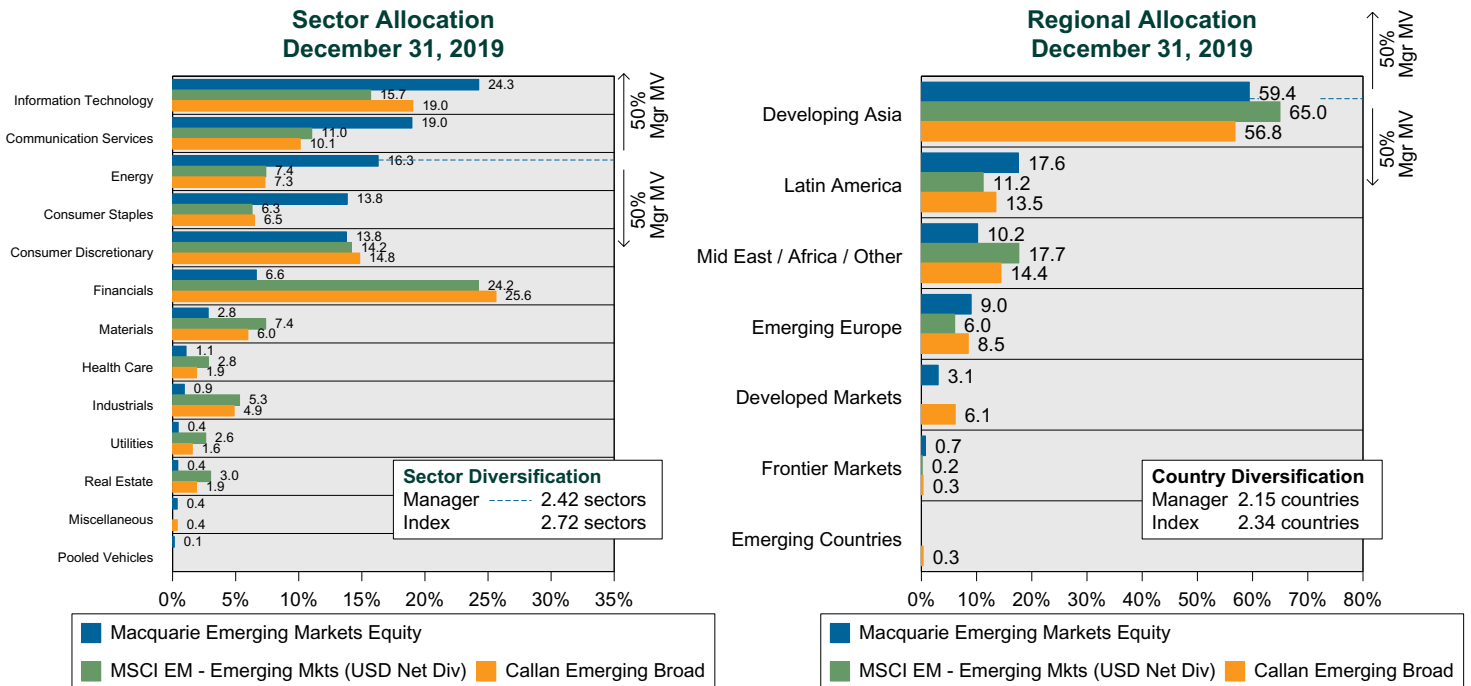
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.



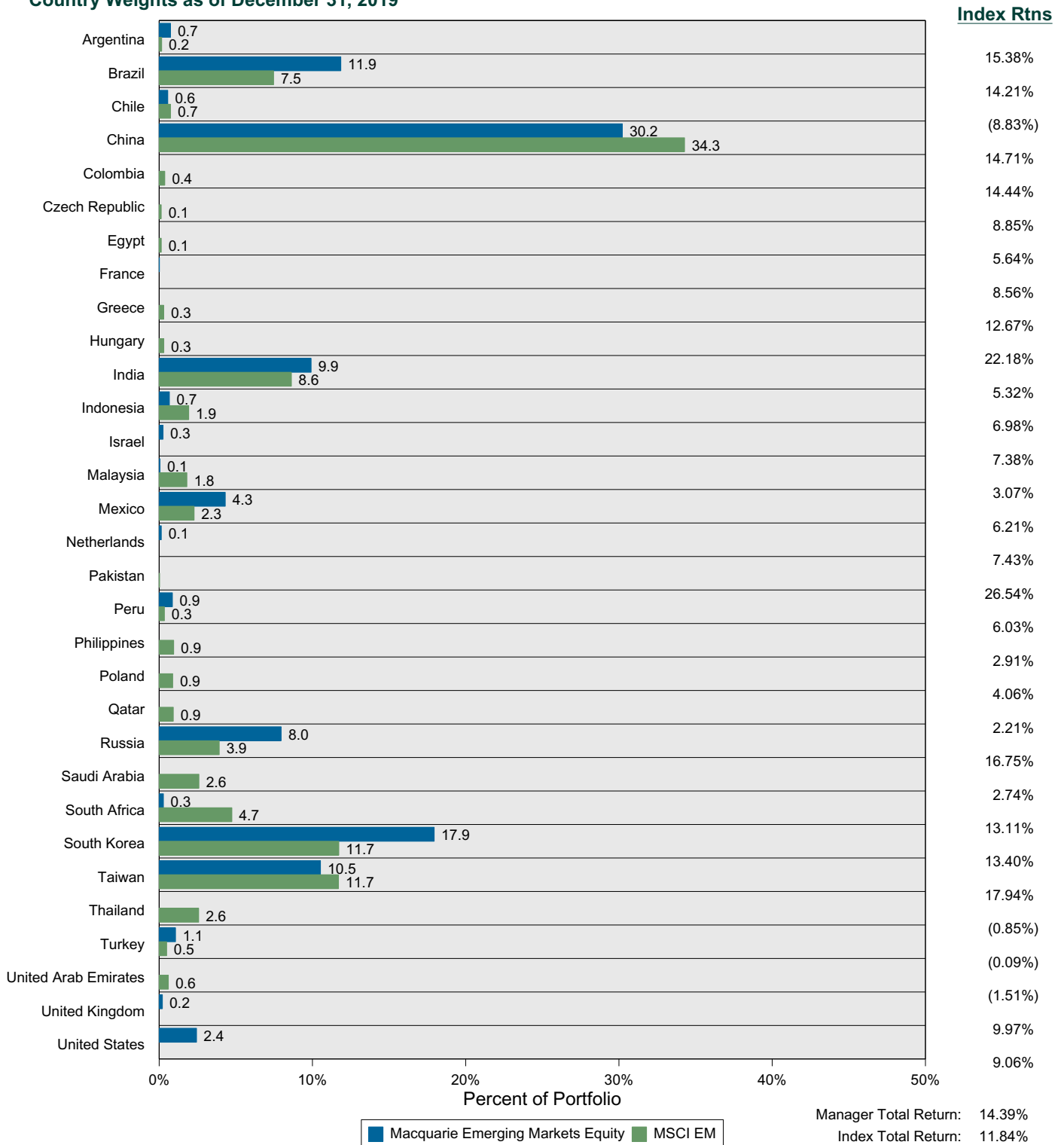
## Country Allocation

### Macquarie Emerging Markets Equity VS MSCI EM - Emerging Mkts (USD Net Div)

#### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

#### Country Weights as of December 31, 2019



# Martin Currie

## Period Ended December 31, 2019

### Investment Philosophy

The Martin Currie GEMs team builds long-term, high conviction stock-focused portfolios, driven by fundamental research within an appropriate risk framework. Their primary belief with regard to GEMs investing is that sustainable cash flows and the effective allocation of capital are the main determinants of share-price movement over the long term. They seek to identify those emerging-market companies that can sustain cash-flow growth and generate returns in excess of their cost of capital. They believe that it takes a long time for the success of a business model to become fully apparent, so they typically invest with a three-to-five-year horizon. The Martin Currie GEMs team believes that an assessment of a company environmental, social and governance (ESG) performance, or sustainability, can help identify those business models that are most likely to sustain high returns and resist competitive pressures.

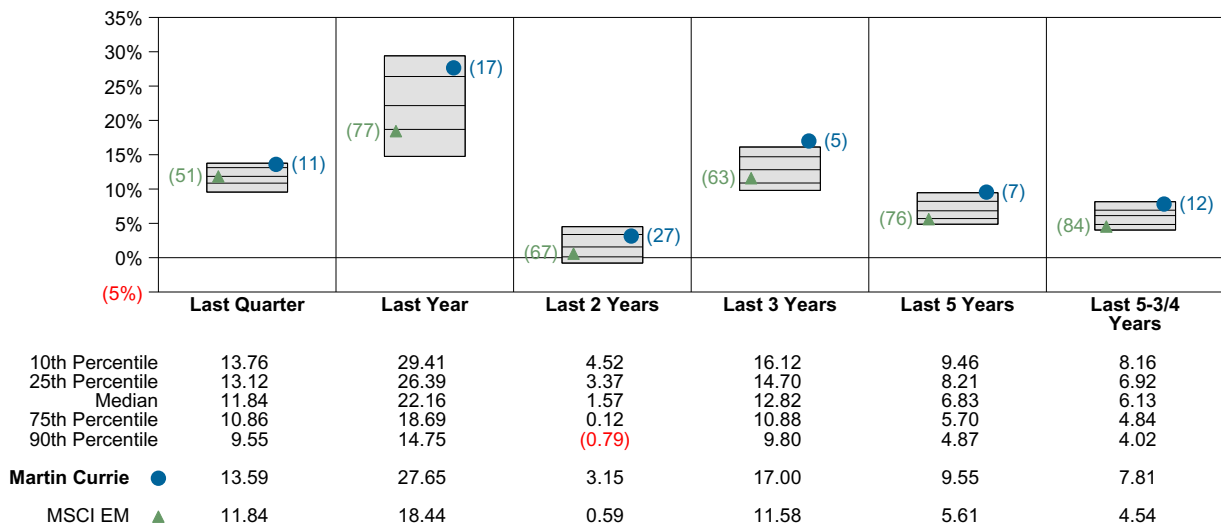
### Quarterly Summary and Highlights

- Martin Currie's portfolio posted a 13.59% return for the quarter placing it in the 11 percentile of the Callan Emerging Broad group for the quarter and in the 17 percentile for the last year.
- Martin Currie's portfolio outperformed the MSCI EM by 1.75% for the quarter and outperformed the MSCI EM for the year by 9.22%.

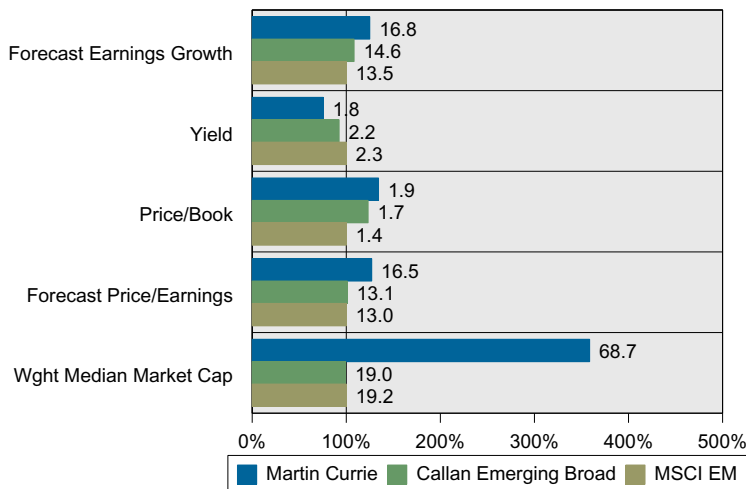
### Quarterly Asset Growth

Beginning Market Value	\$430,971,398
Net New Investment	\$0
Investment Gains/(Losses)	\$57,971,373
Ending Market Value	\$488,942,771

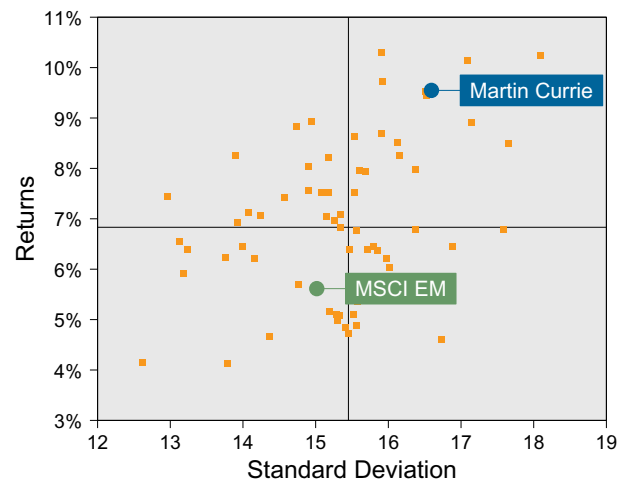
### Performance vs Callan Emerging Broad (Gross)



### Portfolio Characteristics as a Percentage of the MSCI EM



### Callan Emerging Broad (Gross) Annualized Five Year Risk vs Return

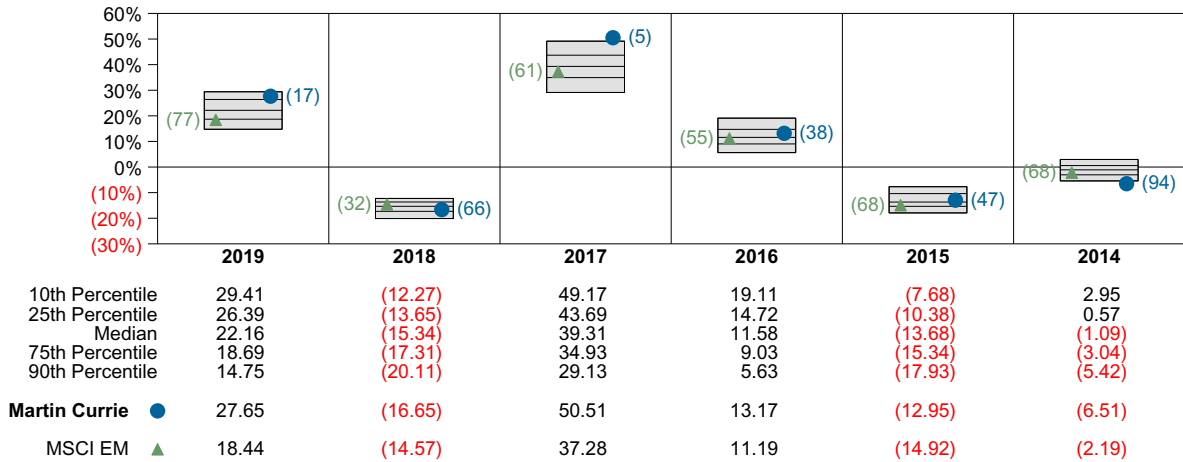


# Martin Currie Return Analysis Summary

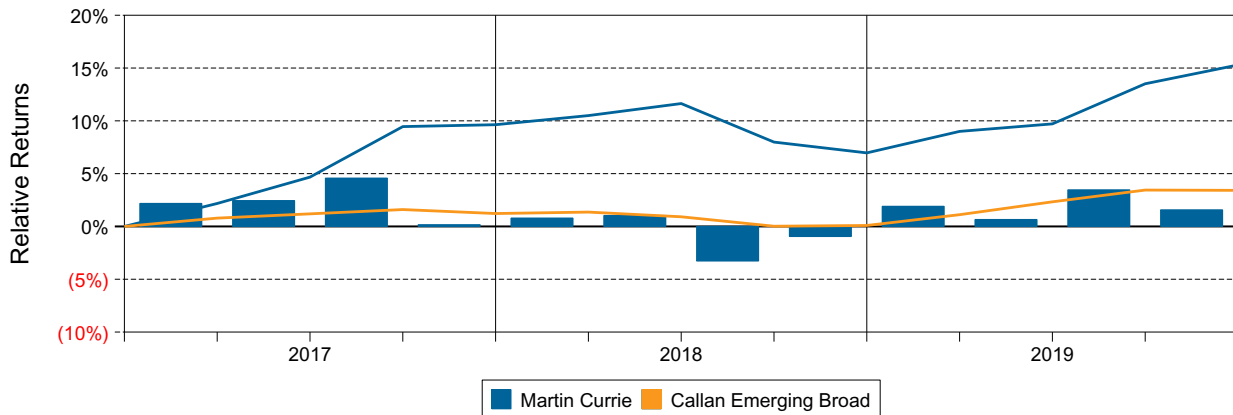
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

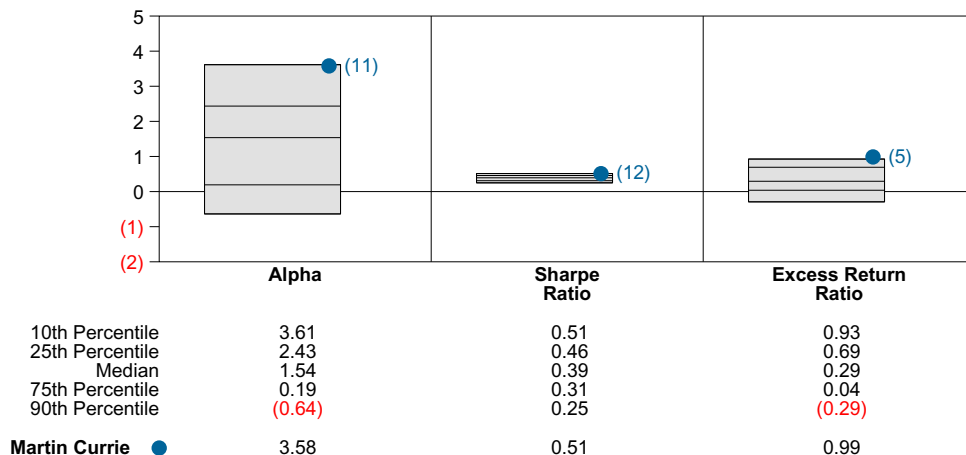
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Return vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



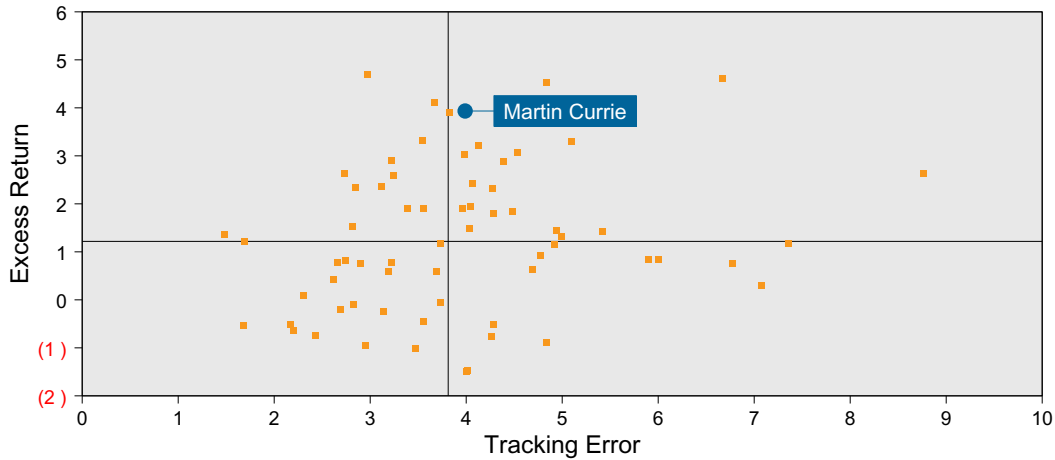
# Martin Currie

## Risk Analysis Summary

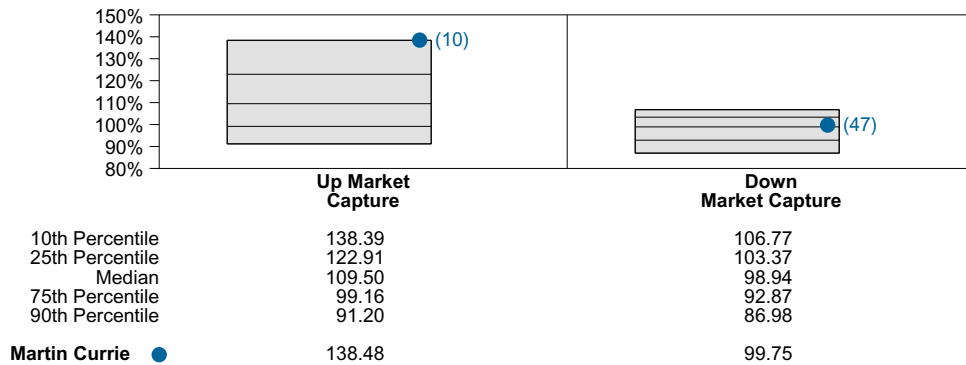
### Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

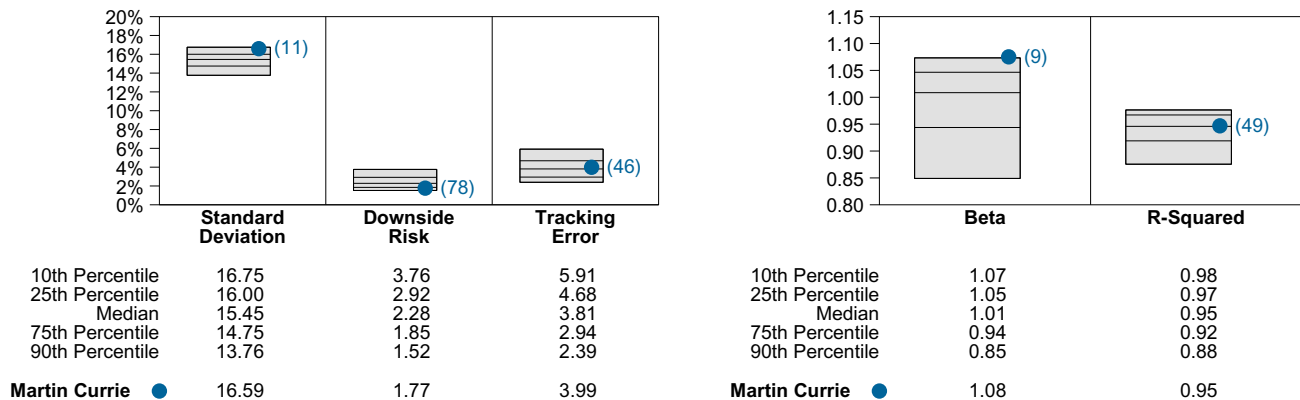
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



### Market Capture vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



### Risk Statistics Rankings vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



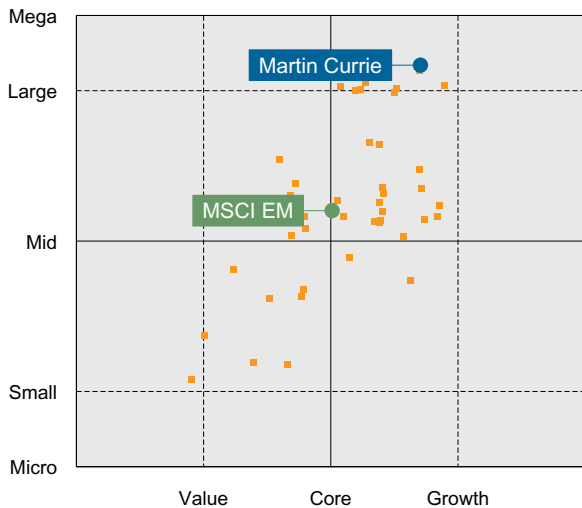
# Current Holdings Based Style Analysis

## Martin Currie

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

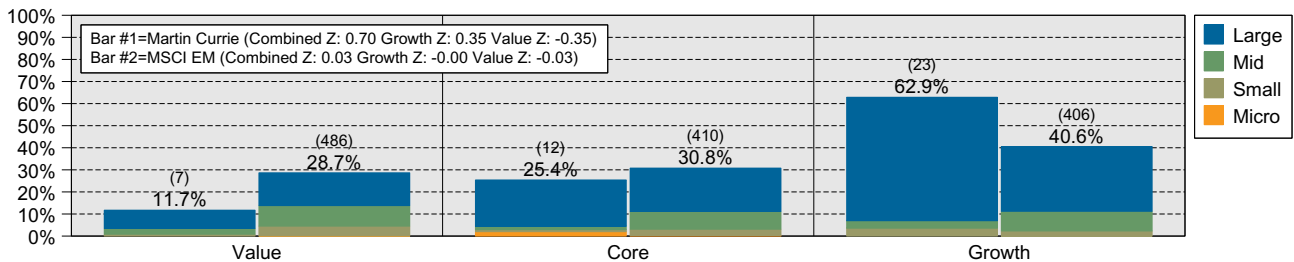
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2019**



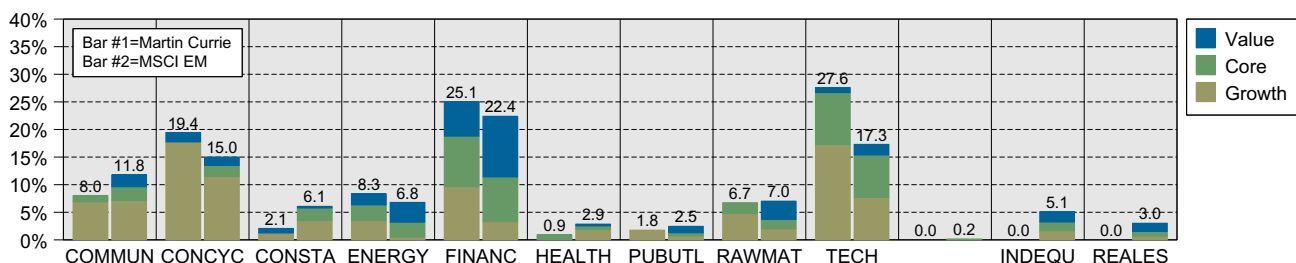
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	8.3% (3)	20.9% (8)	55.9% (20)	85.1% (31)
	14.9% (83)	19.6% (73)	29.3% (77)	63.8% (233)
Mid	2.6% (3)	1.6% (2)	3.4% (2)	7.6% (7)
	9.3% (177)	8.0% (183)	8.9% (216)	26.2% (576)
Small	0.8% (1)	0.9% (1)	3.6% (1)	5.3% (3)
	4.4% (219)	2.8% (151)	2.3% (112)	9.5% (482)
Micro	0.0% (0)	2.0% (1)	0.0% (0)	2.0% (1)
	0.1% (7)	0.3% (3)	0.0% (1)	0.4% (11)
Total	11.7% (7)	25.4% (12)	62.9% (23)	100.0% (42)
	28.7% (486)	30.8% (410)	40.6% (406)	100.0% (1302)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**

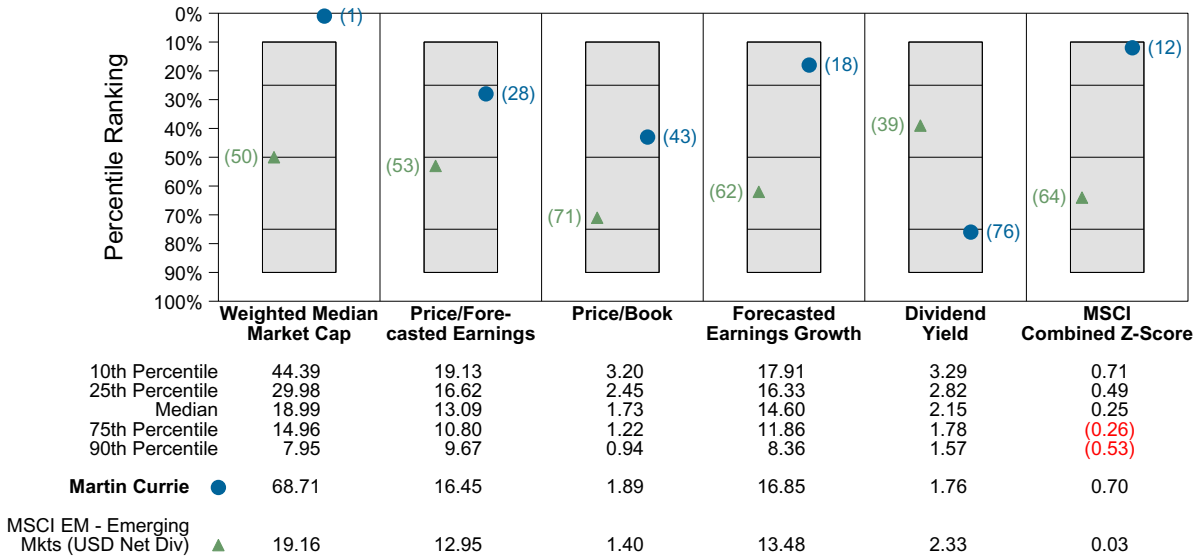


# Martin Currie Equity Characteristics Analysis Summary

## Portfolio Characteristics

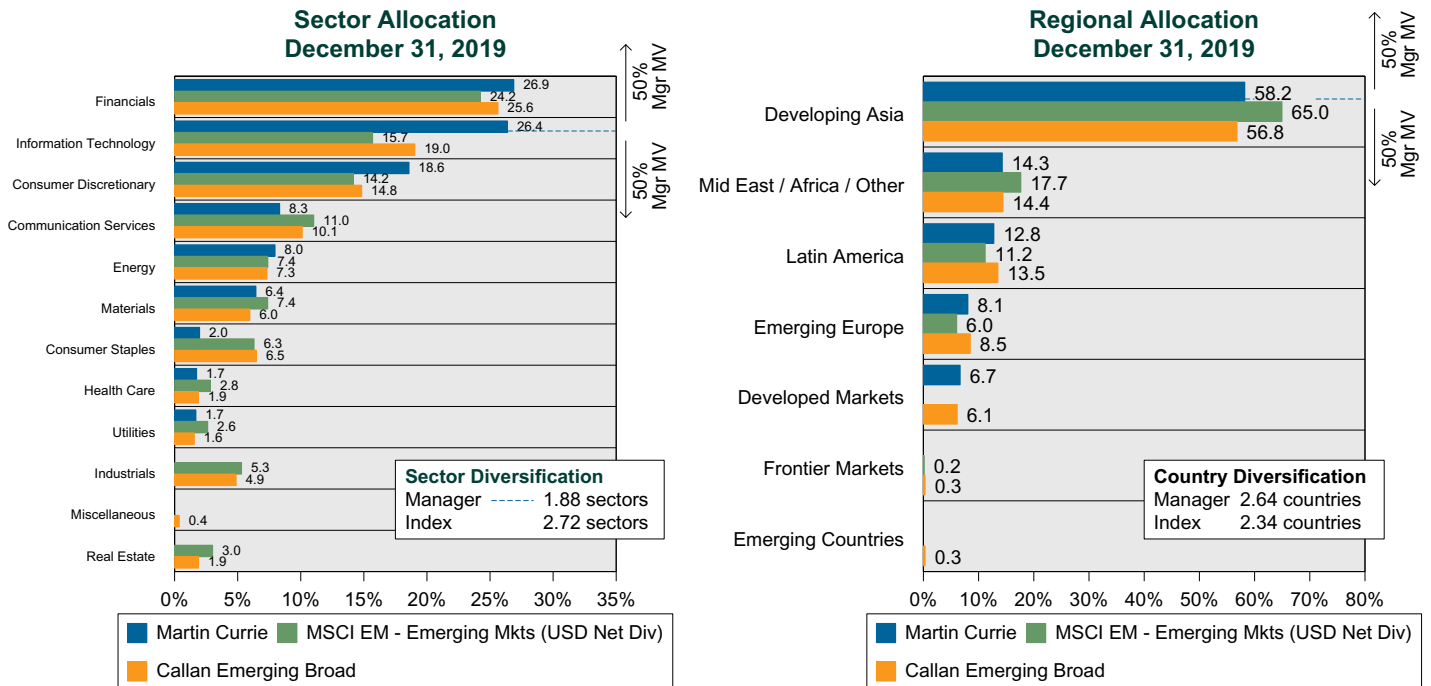
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

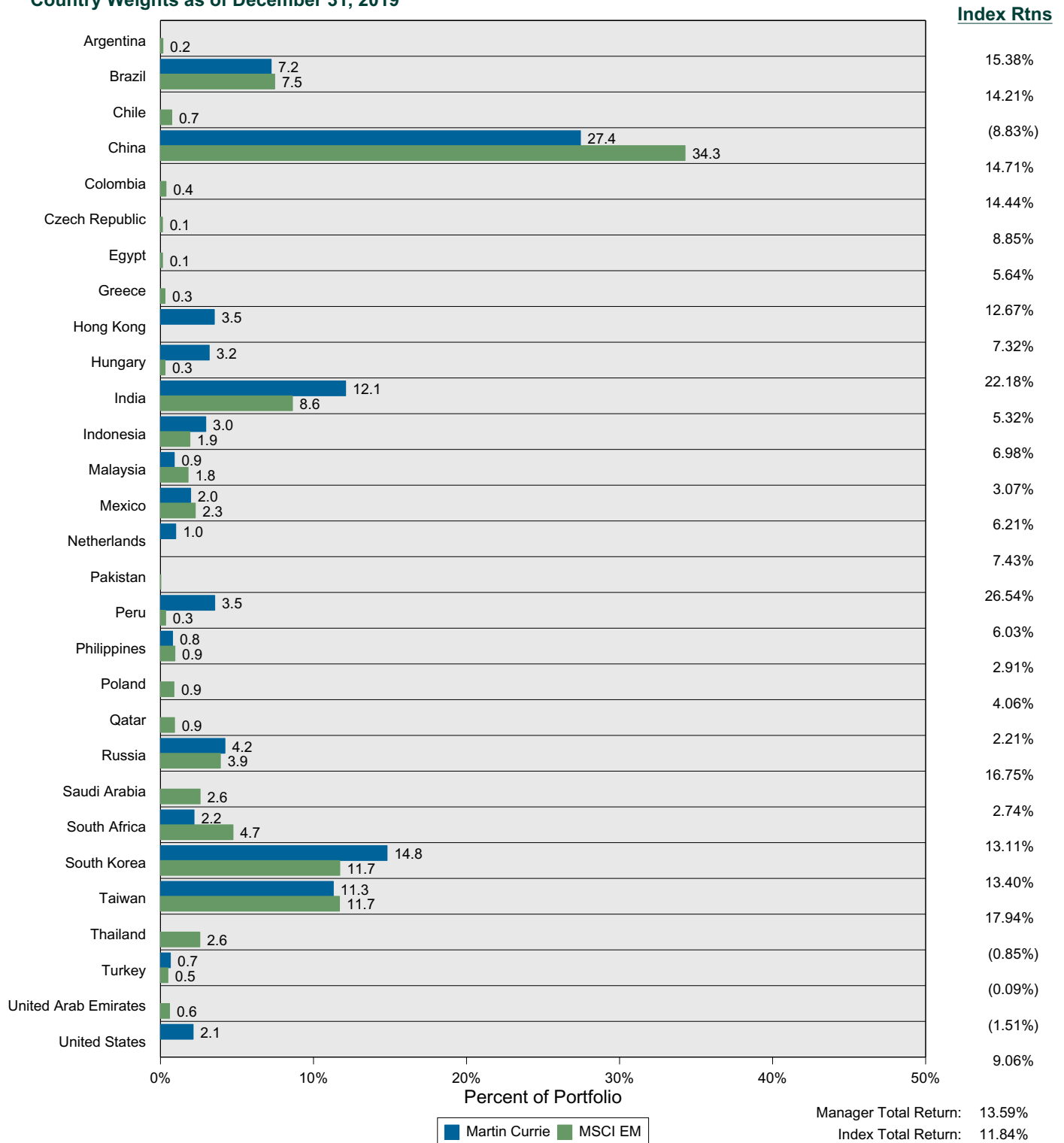


## Country Allocation Martin Currie VS MSCI EM - Emerging Mkts (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

### Country Weights as of December 31, 2019





# GlobeFlex Emerging Small Cap Period Ended December 31, 2019

## Investment Philosophy

GlobeFlex is an active equity manager focused on bottom-up, stock selection. Their philosophy is based on the early identification of fundamental growth before it is recognized by other investors, defined by: Business Improvement: Finding companies with accelerating business conditions to identify early signs of growth; Management Quality: Evaluating the long-term growth sustainability through in-depth analysis of prospective operating performance and management's skill to increase shareholder wealth; and Relative Value: Recognizing accelerating business conditions early, buying and holding companies below fair market value given future growth prospects.

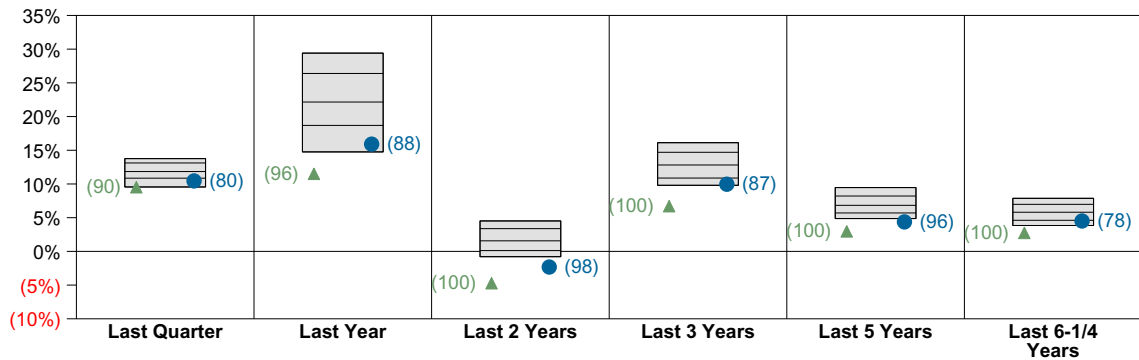
## Quarterly Summary and Highlights

- GlobeFlex Emerging Small Cap's portfolio posted a 10.45% return for the quarter placing it in the 80 percentile of the Callan Emerging Broad group for the quarter and in the 88 percentile for the last year.
- GlobeFlex Emerging Small Cap's portfolio outperformed the MSCI EM Small Cap by 0.93% for the quarter and outperformed the MSCI EM Small Cap for the year by 4.40%.

## Quarterly Asset Growth

Beginning Market Value	\$87,633,294
Net New Investment	\$-0
Investment Gains/(Losses)	\$9,007,367
Ending Market Value	\$96,640,661

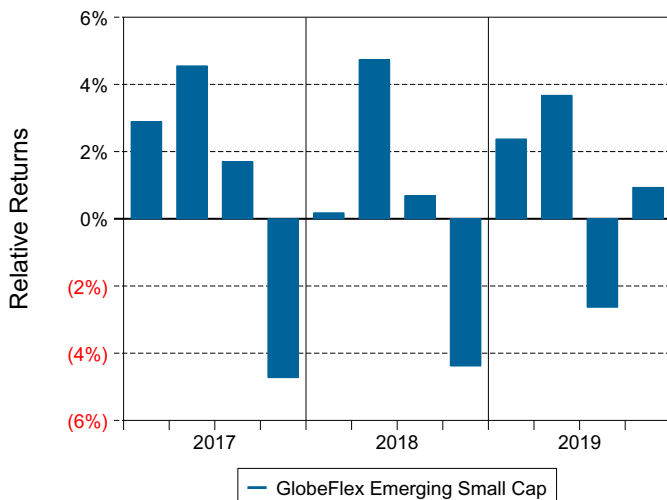
## Performance vs Callan Emerging Broad (Gross)



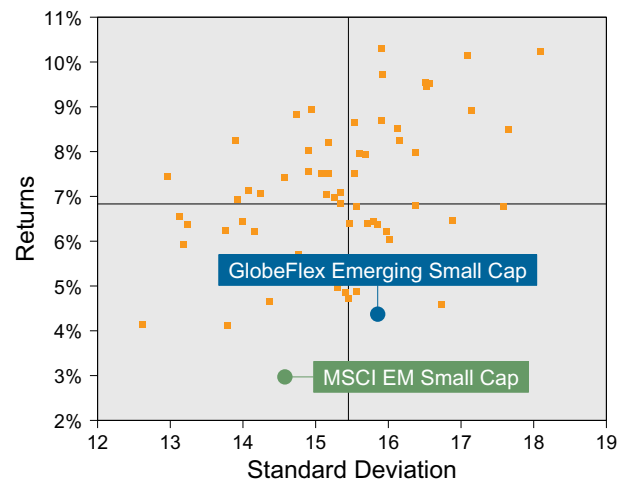
10th Percentile	13.76	29.41	4.52	16.12	9.46	7.87
25th Percentile	13.12	26.39	3.37	14.70	8.21	6.98
Median	11.84	22.16	1.57	12.82	6.83	5.81
75th Percentile	10.86	18.69	0.12	10.88	5.70	4.61
90th Percentile	9.55	14.75	(0.79)	9.80	4.87	3.84

<b>GlobeFlex Emerging Small Cap</b> ●	10.45	15.91	(2.32)	9.96	4.37	4.51
MSCI EM Small Cap ▲	9.52	11.51	(4.72)	6.71	2.97	2.74

## Relative Return vs MSCI EM Small Cap



## Callan Emerging Broad (Gross) Annualized Five Year Risk vs Return

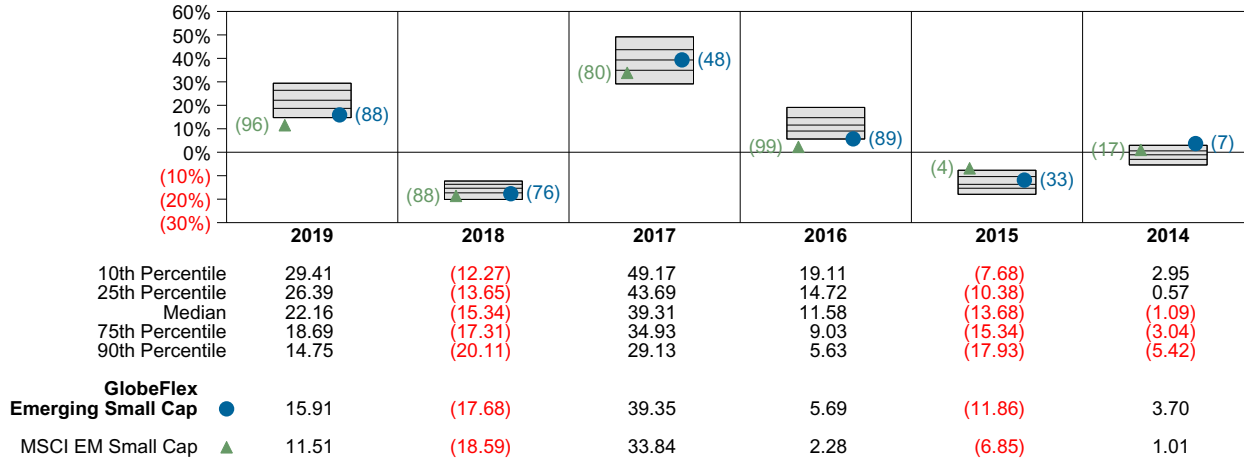


# GlobeFlex Emerging Small Cap Return Analysis Summary

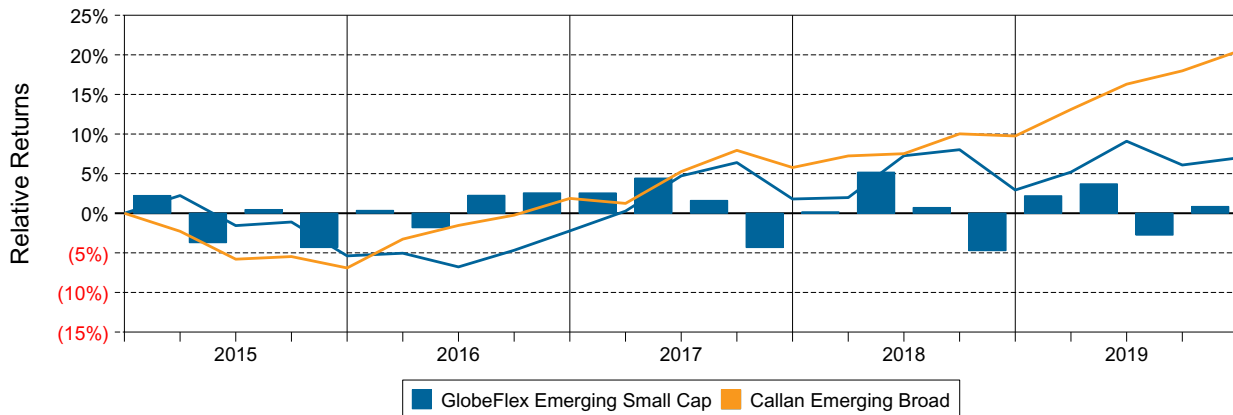
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

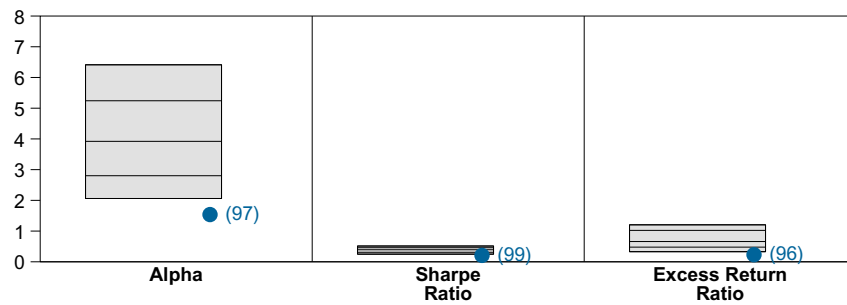
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Return vs MSCI EM Small Cap



### Risk Adjusted Return Measures vs MSCI EM Small Cap Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



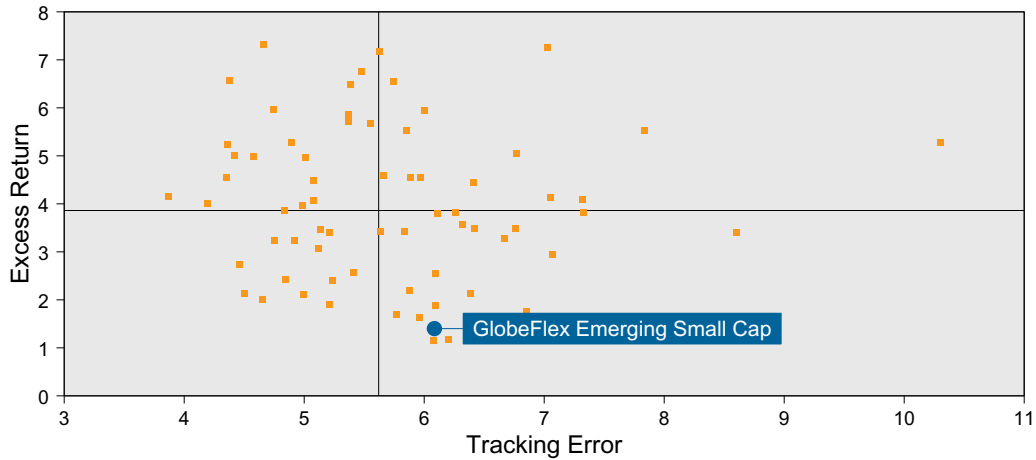
10th Percentile	6.41	0.51	1.20
25th Percentile	5.24	0.46	1.02
Median	3.92	0.39	0.66
75th Percentile	2.80	0.31	0.48
90th Percentile	2.06	0.25	0.33
<b>GlobeFlex Emerging Small Cap</b>	● 1.54	0.21	0.23

# GlobeFlex Emerging Small Cap Risk Analysis Summary

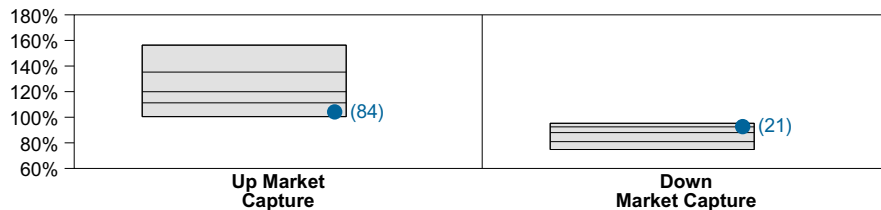
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2019

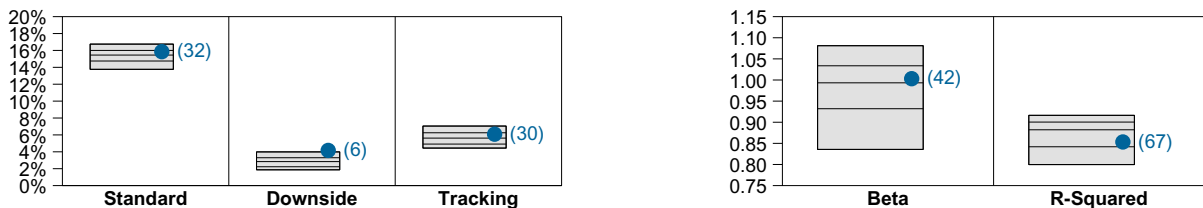


### Market Capture vs MSCI EM Small Cap Index (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



	Up Market Capture	Down Market Capture
10th Percentile	156.33	95.27
25th Percentile	135.27	92.48
Median	119.93	88.00
75th Percentile	111.26	80.95
90th Percentile	100.48	74.79
<b>GlobeFlex Emerging Small Cap</b>	<b>104.16</b>	<b>92.67</b>

### Risk Statistics Rankings vs MSCI EM Small Cap Index (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2019



	Standard Deviation	Downside Risk	Tracking Error	Beta	R-Squared
10th Percentile	16.75	3.99	7.05	1.08	0.92
25th Percentile	16.00	3.30	6.25	1.03	0.90
Median	15.45	2.84	5.62	0.99	0.88
75th Percentile	14.75	2.23	4.91	0.93	0.84
90th Percentile	13.76	1.87	4.44	0.84	0.80
<b>GlobeFlex Emerging Small Cap</b>	<b>15.85</b>	<b>4.17</b>	<b>6.09</b>	<b>1.00</b>	<b>0.85</b>

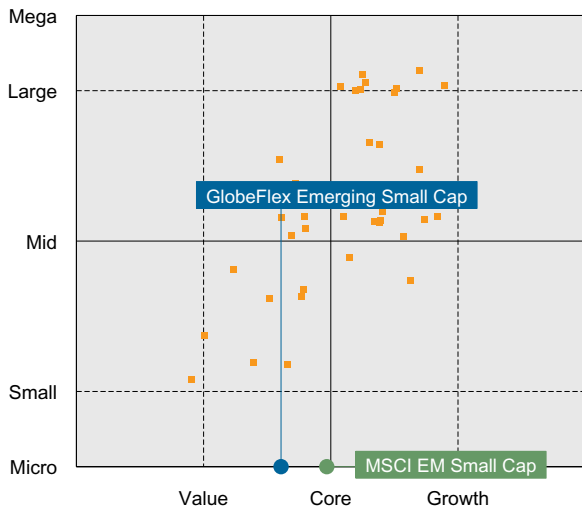
# Current Holdings Based Style Analysis

## GlobeFlex Emerging Small Cap

### As of December 31, 2019

This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are determined using the "Combined Z Score", based on the eight fundamental factors used in the MSCI stock style scoring system. The upper-left style map illustrates the current market capitalization and style score of the portfolio relative to indices and/or peers. The upper-right style exposure matrix displays the current portfolio and index weights and stock counts (in parentheses) in each capitalization/style segment of the market. The middle chart illustrates the total exposures and stock counts in the three style segments, with a legend showing the total growth, value, and "combined Z" (growth - value) scores. The bottom chart exhibits the sector weights as well as the style weights within each sector.

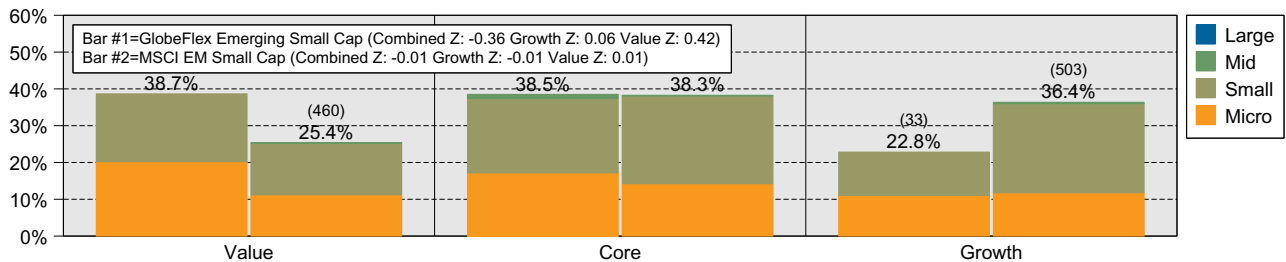
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2019**



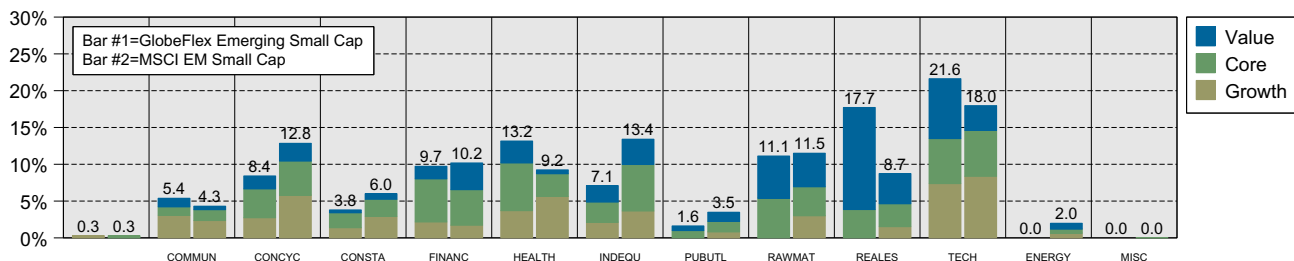
**Style Exposure Matrix Holdings as of December 31, 2019**

	Value	Core	Growth	Total
Large	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	0.0% (0)	1.1% (2)	0.0% (0)	1.1% (2)
Small	18.5% (22)	20.2% (20)	11.8% (13)	50.5% (55)
Micro	14.0% (145)	23.8% (234)	24.2% (223)	62.1% (602)
<b>Total</b>	<b>38.7% (51)</b>	<b>38.5% (45)</b>	<b>22.8% (33)</b>	<b>100.0% (129)</b>
	25.4% (460)	38.3% (571)	36.4% (503)	100.0% (1534)

**Combined Z-Score Style Distribution Holdings as of December 31, 2019**



**Sector Weights Distribution Holdings as of December 31, 2019**



# GlobeFlex Emerging Small Cap Equity Characteristics Analysis Summary

## Portfolio Characteristics

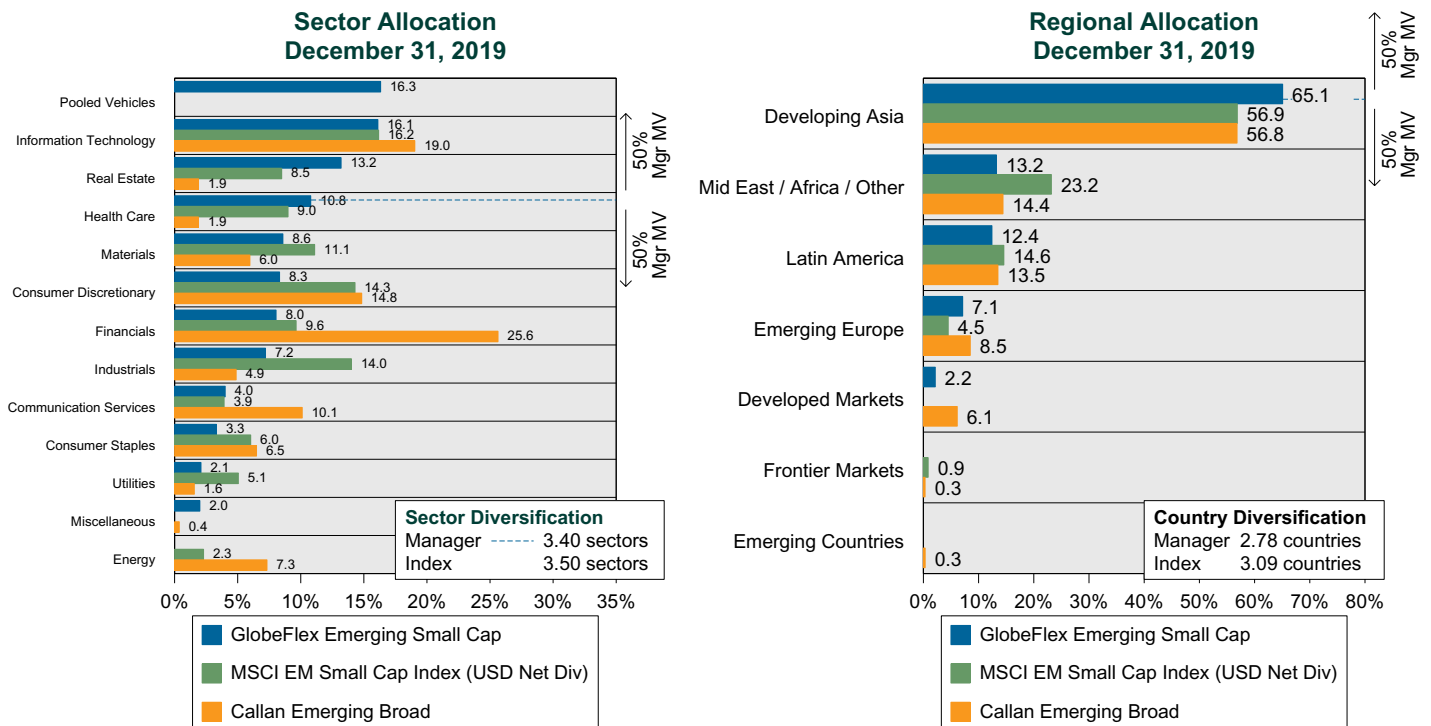
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2019



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.

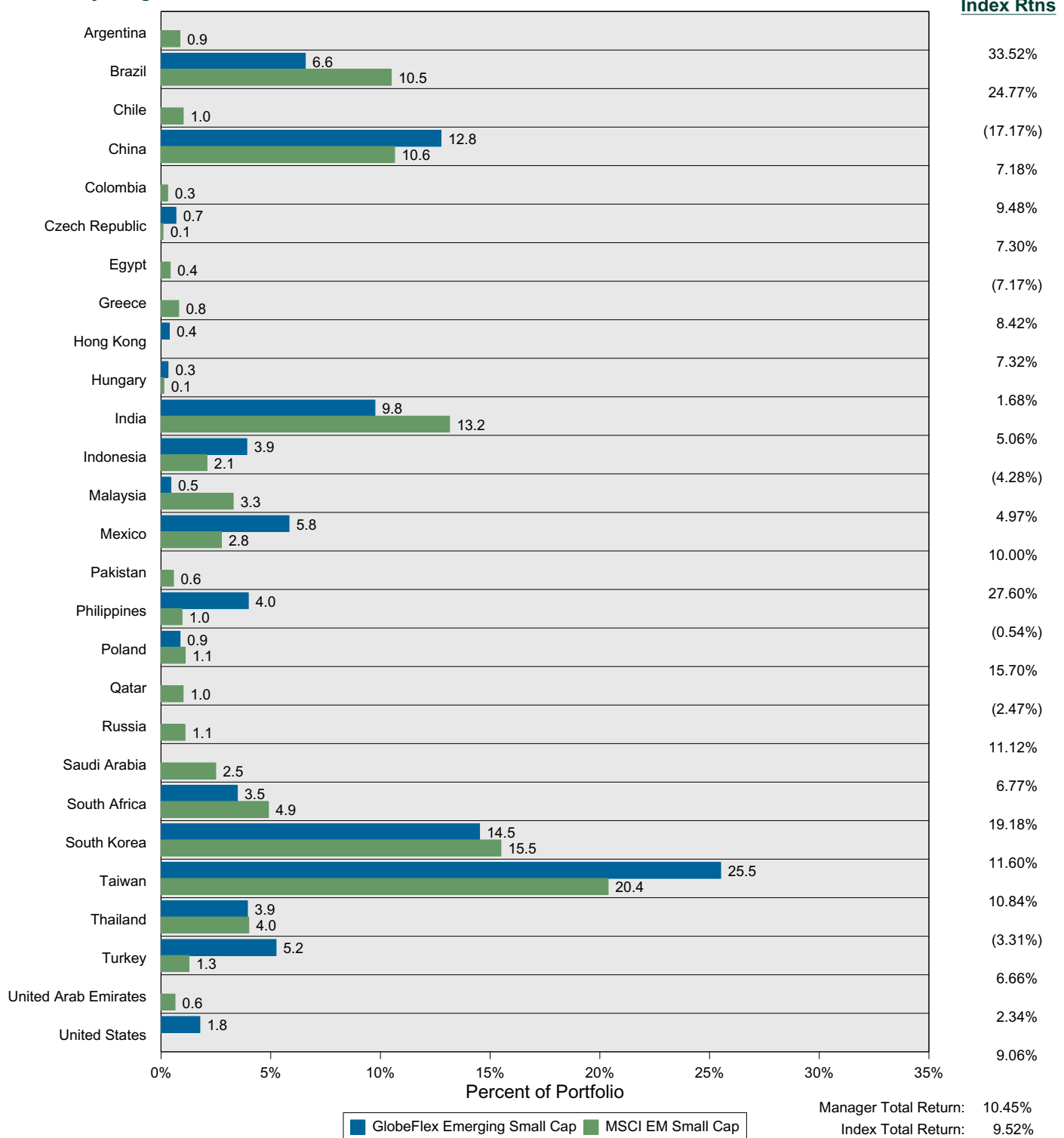


## Country Allocation GlobeFlex Emerging Small Cap VS MSCI EM Small Cap Index (USD Net Div)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2019. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.

### Country Weights as of December 31, 2019

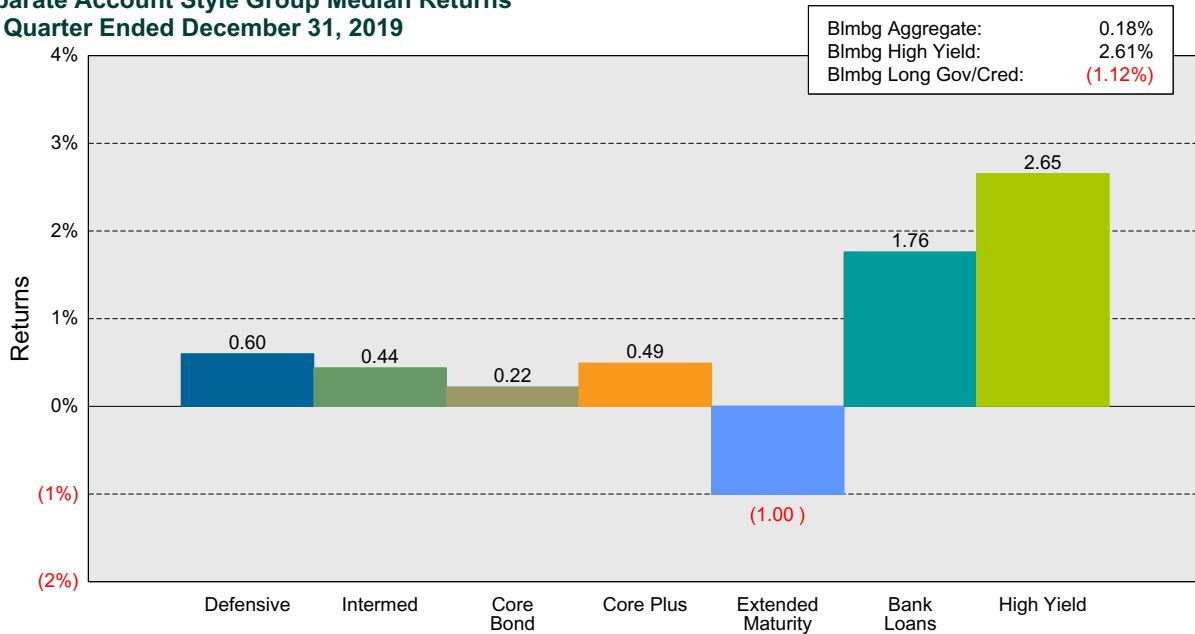




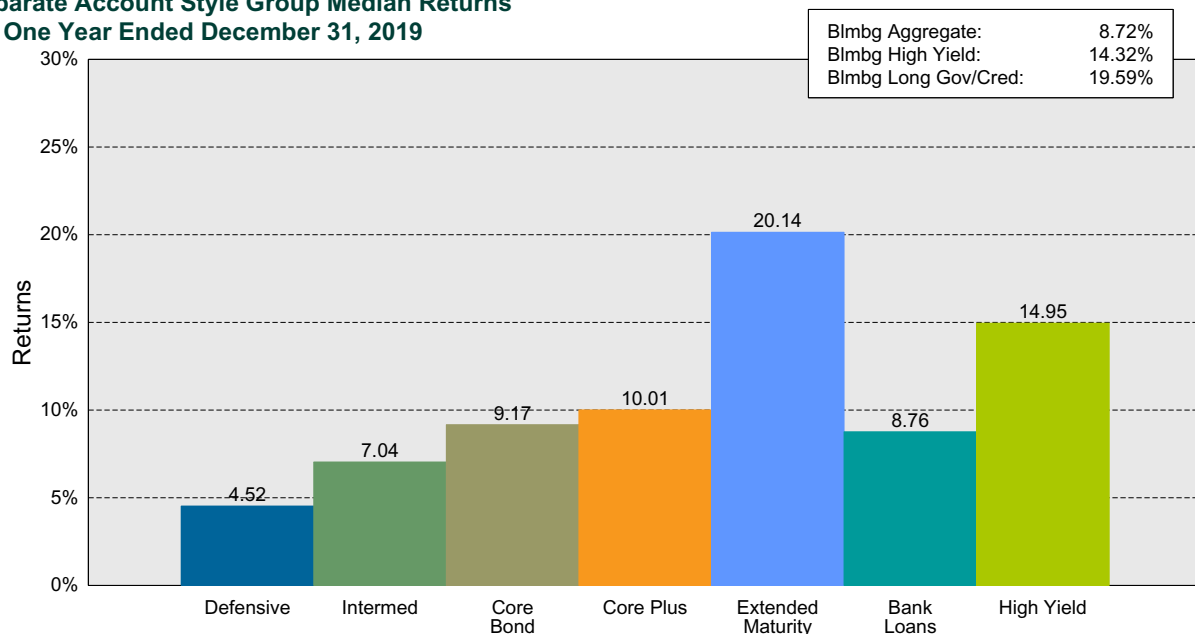
## Domestic Fixed Income Active Management Overview

Fixed income markets posted strong returns in 2019 fueled both by falling interest rates and strong investor demand, especially for higher-yielding sectors. The 10-year U.S. Treasury closed the year at 1.92%, up from 1.68% at the end of the third quarter and down sharply from 2.69% at the close of 2018. The Bloomberg Barclays US Aggregate Bond Index rose 8.7%, the best calendar year return since 2002, with the lowest-quality tier of the Index up 16.4%. Fourth quarter gains were more muted at 0.2% as Treasury yields rose modestly. Corporate bonds were the best-performing sector in the fourth quarter and 2019 (Bloomberg Barclays Corporate Index: +1.2%; +14.5%). High yield corporates also posted sharp gains; the Bloomberg Barclays Corporate High Yield Index rose 2.6% in the fourth quarter and 14.3% in 2019. Leveraged loans suffered outflows throughout the year, but still posted a solid return (CS Leveraged Loan: +1.7%; +9.0%). The Bloomberg Barclays US TIPS Index sharply outperformed the Treasury Index in the fourth quarter as inflation expectations rose.

**Separate Account Style Group Median Returns for Quarter Ended December 31, 2019**



**Separate Account Style Group Median Returns for One Year Ended December 31, 2019**



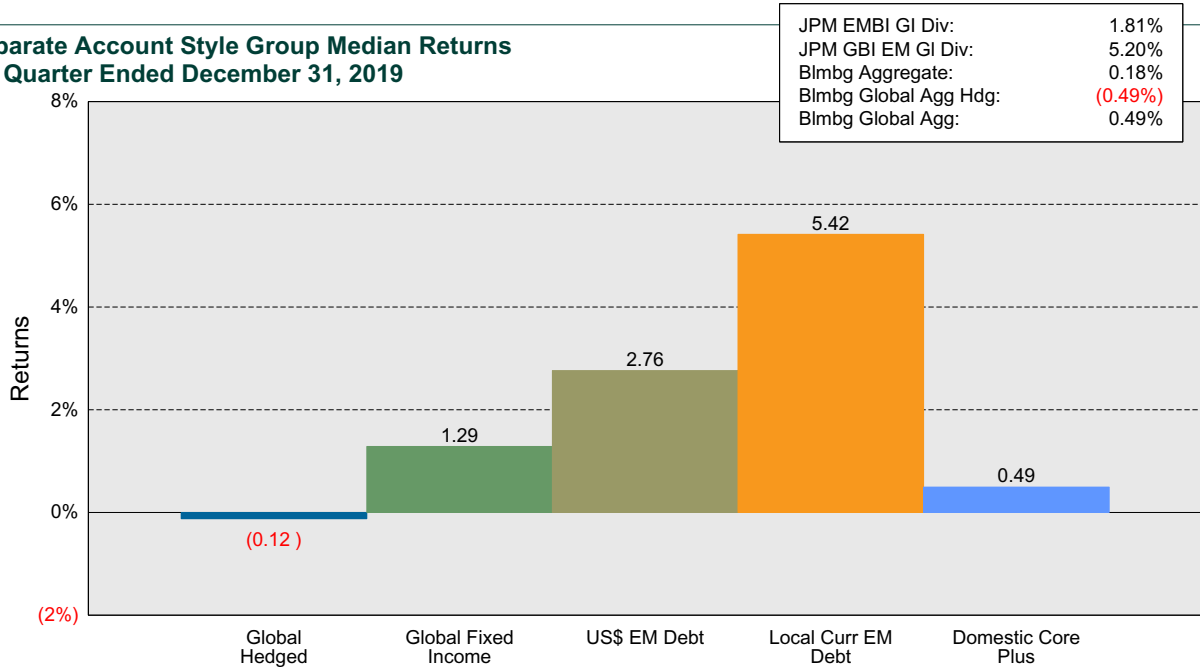


## Global Fixed Income Active Management Overview

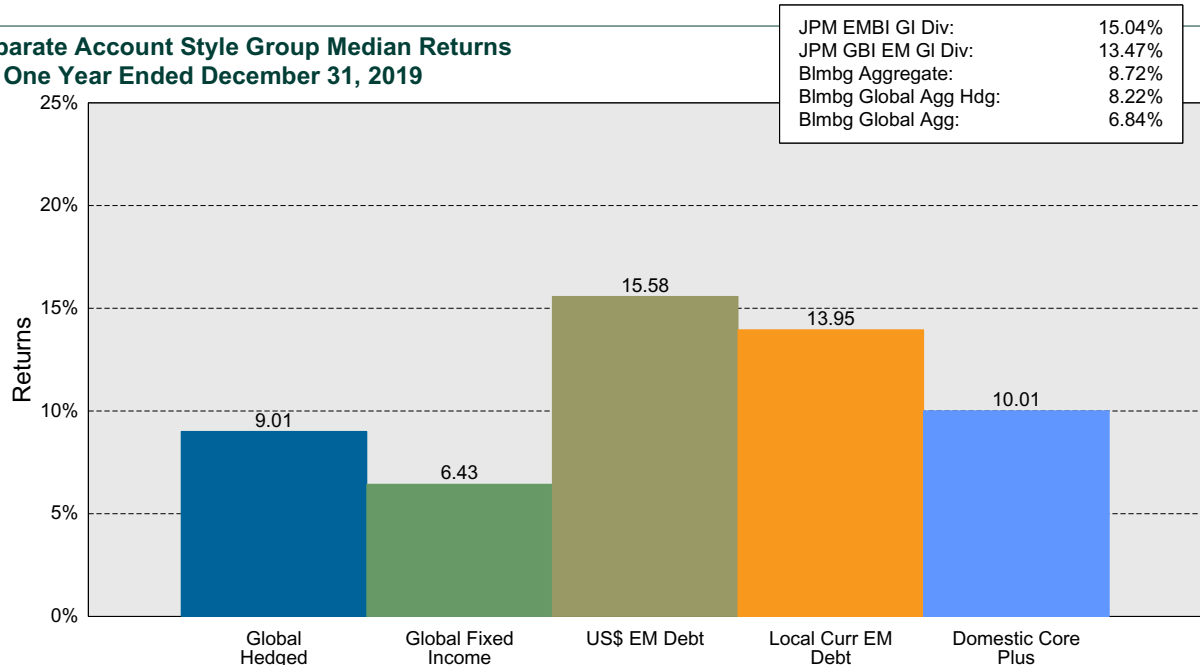
Rates were generally modestly higher in the fourth quarter but lower for the year. The U.S. dollar gave up some gains in the fourth quarter, especially versus the euro (-3%), the Australian dollar (-4%), and the British pound (-8%). It posted a modest gain versus the Japanese yen (+0.6%). The Global Aggregate ex-US Index rose 0.7% in the fourth quarter on an unhedged basis but fell 1.1% on a hedged basis. For the full year, the hedged version outperformed unhedged (7.6% vs 5.1%).

Emerging market debt benefited from both rate cuts and a risk-on environment. Local currency emerging market debt, as measured by the JPM GBI-EM Global Diversified Index, gained 5.2% in the fourth quarter and 13.5% for the year. Russia (+10.0%; +34.0%) was a top performer on the back of rate cuts and a stronger ruble. The U.S. dollar-denominated JPM EMBI Global Diversified Index was up 1.8% in the fourth quarter and 15.0% for the year with mixed results across its 60+ constituents.

### Separate Account Style Group Median Returns for Quarter Ended December 31, 2019



### Separate Account Style Group Median Returns for One Year Ended December 31, 2019

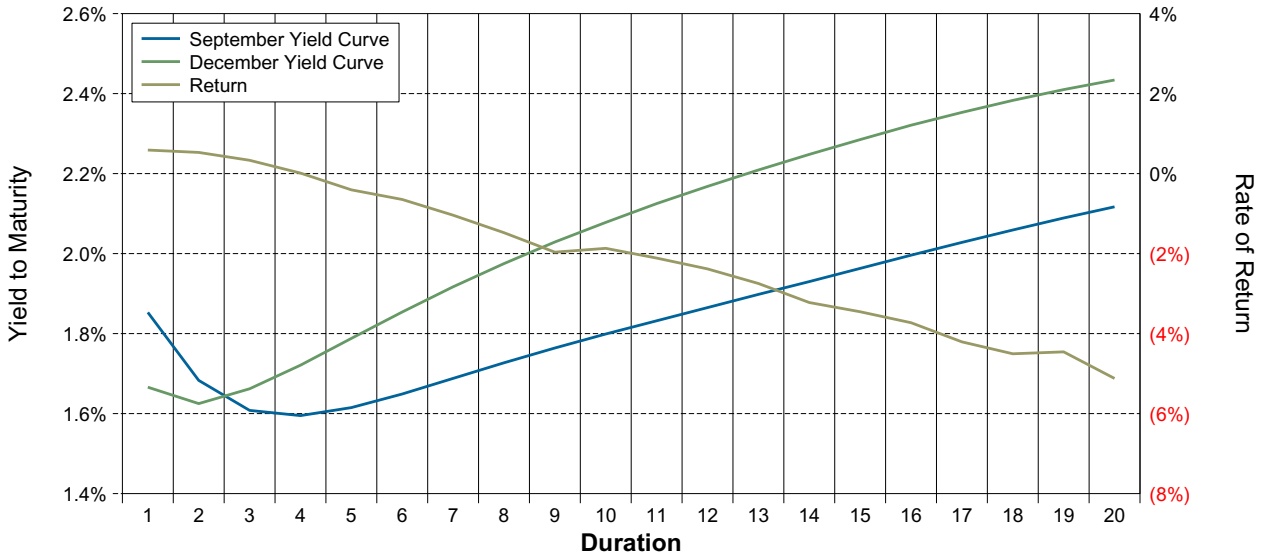


## Bond Market Environment

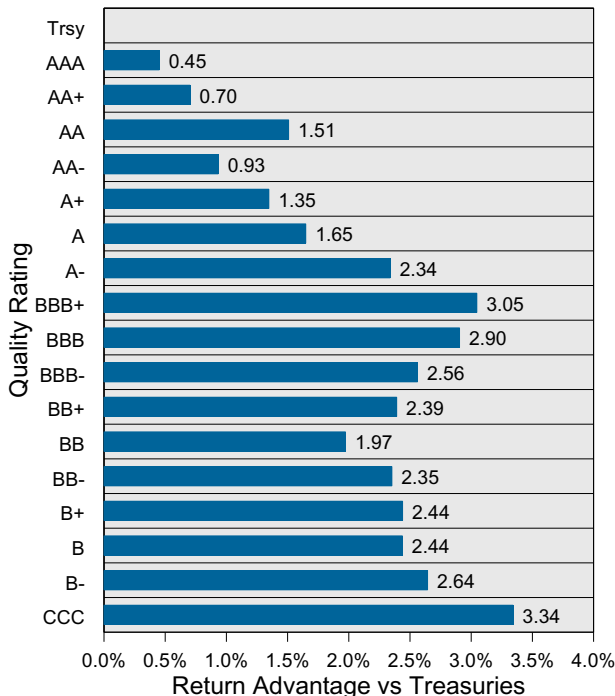
### Factors Influencing Bond Returns

The charts below are designed to give you an overview of the factors that influenced bond market returns for the quarter. The first chart shows the shift in the Treasury yield curve and the resulting returns by duration. The second chart shows the average return premium (relative to Treasuries) for bonds with different quality ratings. The final chart shows the average return premium of the different sectors relative to Treasuries. These sector premiums are calculated after differences in quality and term structure have been accounted for across the sectors. They are typically explained by differences in convexity, sector specific supply and demand considerations, or other factors that influence the perceived risk of the sector.

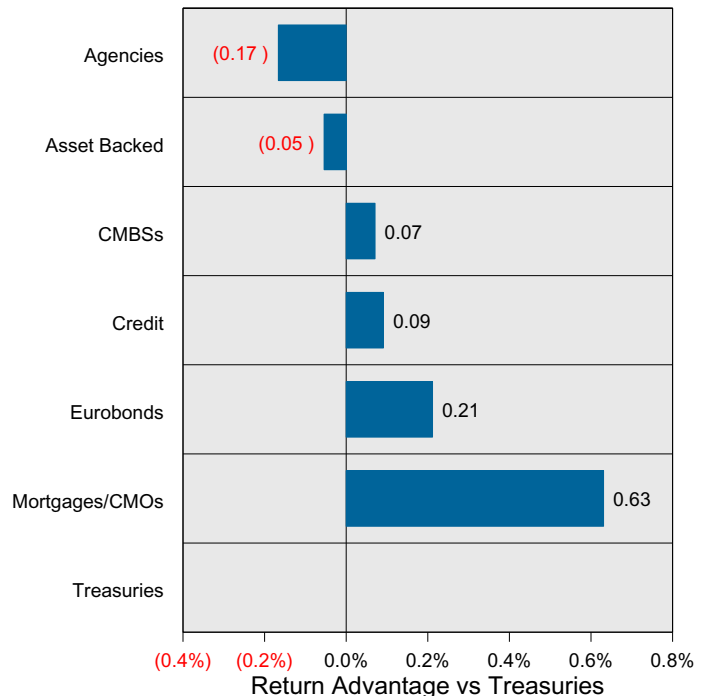
### Yield Curve Change and Rate of Return One Quarter Ended December 31, 2019



### Duration Adjusted Return Premium to Quality One Quarter Ended December 31, 2019



### Quality and Duration Adjusted Return Premium by Sector One Quarter Ended December 31, 2019



# Fixed Income

## Period Ended December 31, 2019

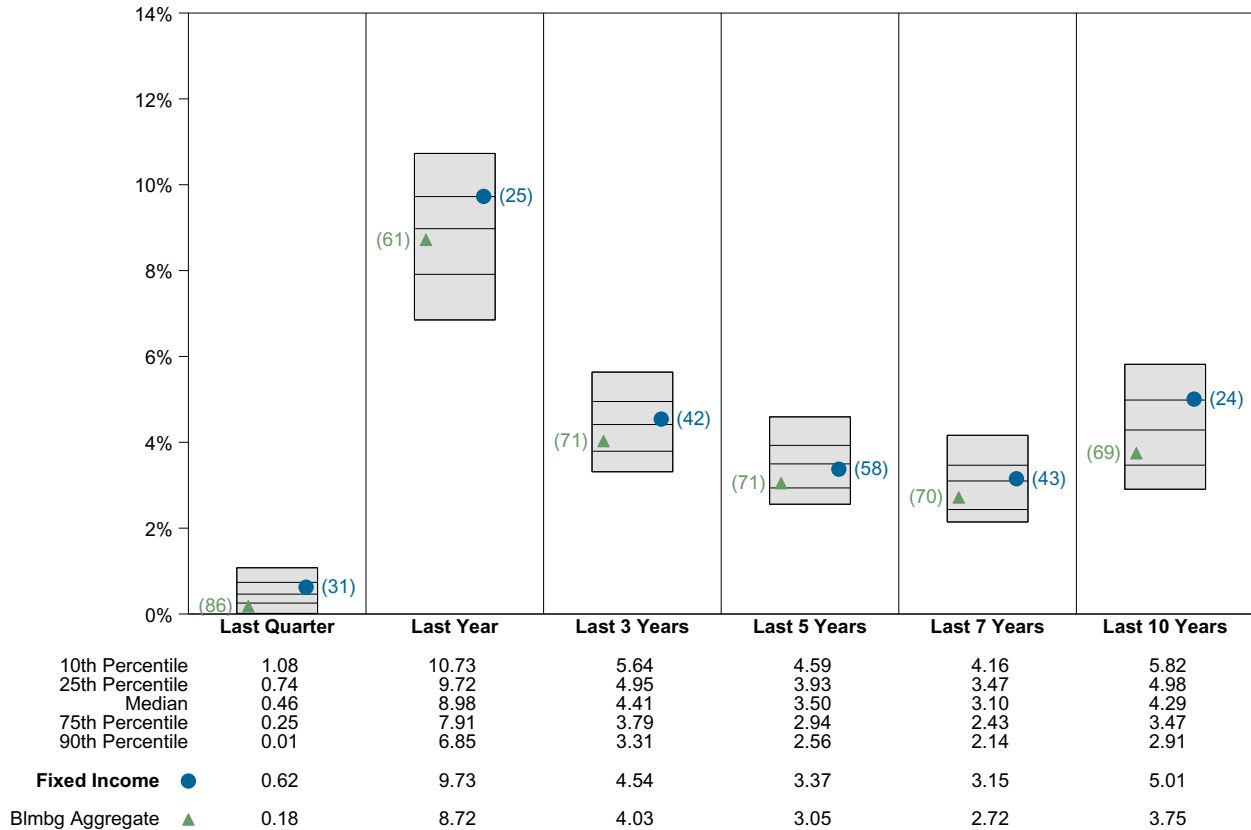
### Quarterly Summary and Highlights

- Fixed Income's portfolio posted a 0.62% return for the quarter placing it in the 31 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 25 percentile for the last year.
- Fixed Income's portfolio outperformed the Blmbg Aggregate by 0.44% for the quarter and outperformed the Blmbg Aggregate for the year by 1.01%.

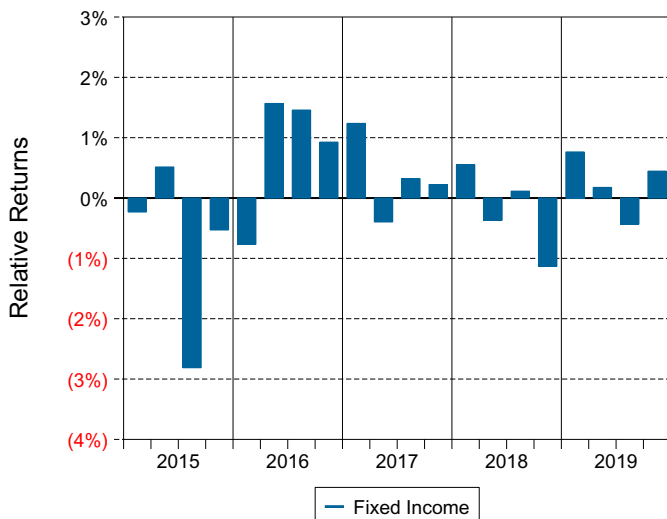
### Quarterly Asset Growth

Beginning Market Value	\$4,350,899,295
Net New Investment	\$183,141
Investment Gains/(Losses)	\$24,464,183
Ending Market Value	\$4,375,546,619

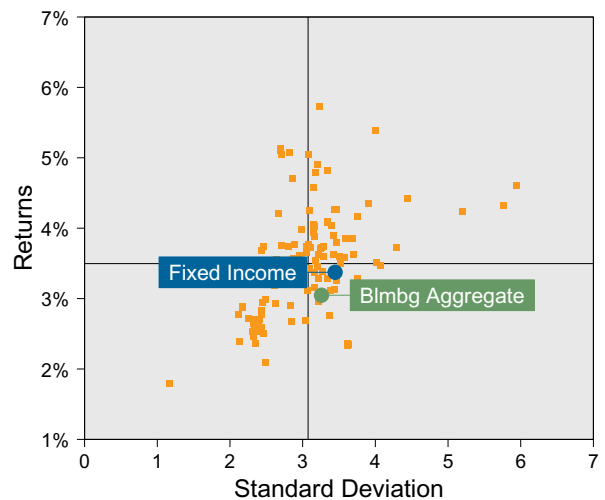
### Performance vs Public Fund - Domestic Fixed (Gross)



### Relative Return vs Blmbg Aggregate



### Public Fund - Domestic Fixed (Gross) Annualized Five Year Risk vs Return

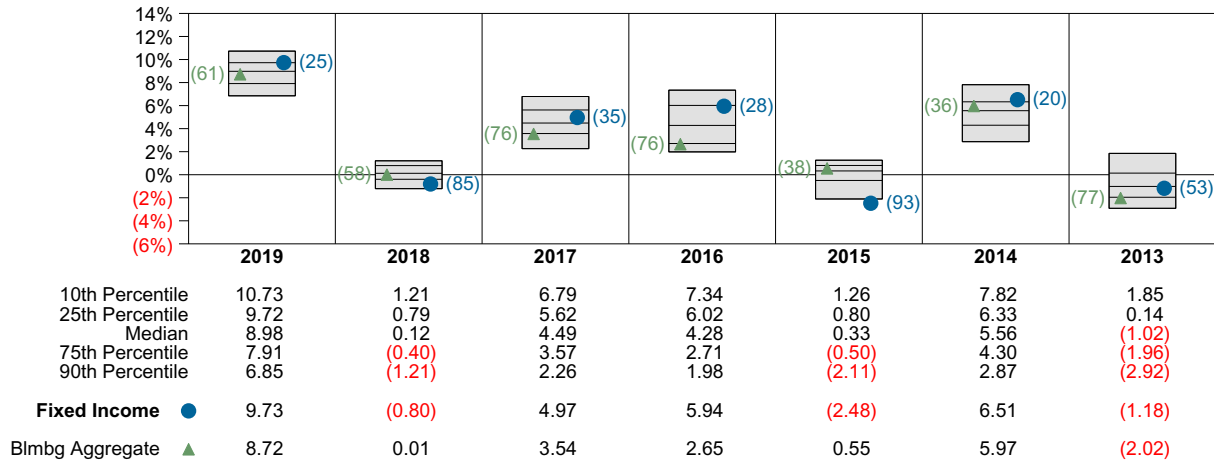


# Fixed Income Return Analysis Summary

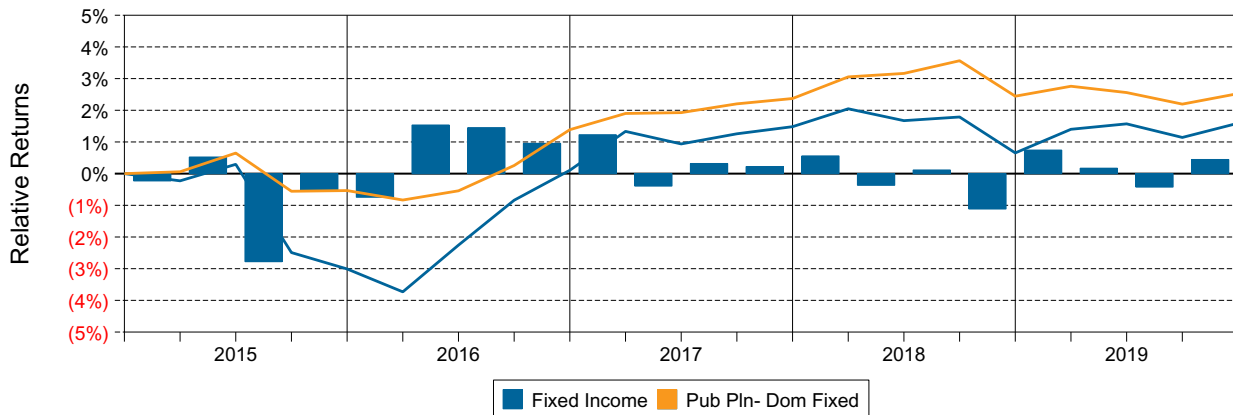
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

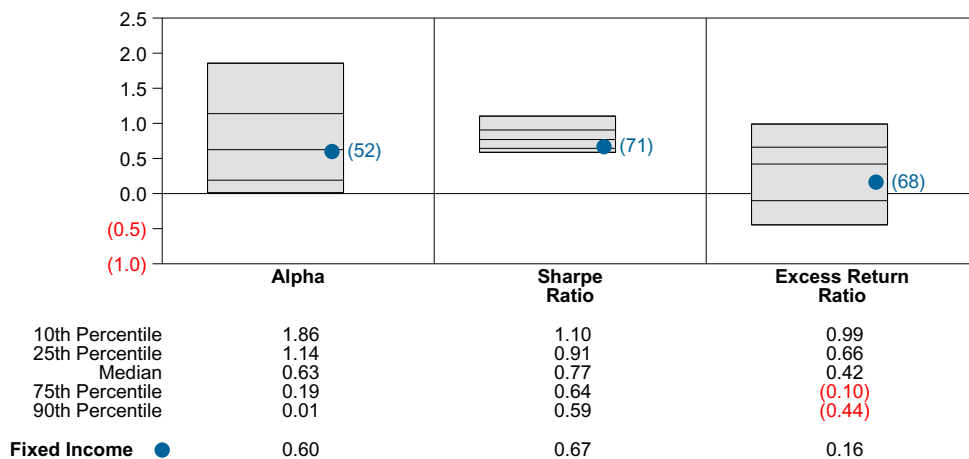
### Performance vs Public Fund - Domestic Fixed (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg Aggregate



### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Public Fund - Domestic Fixed (Gross) Five Years Ended December 31, 2019

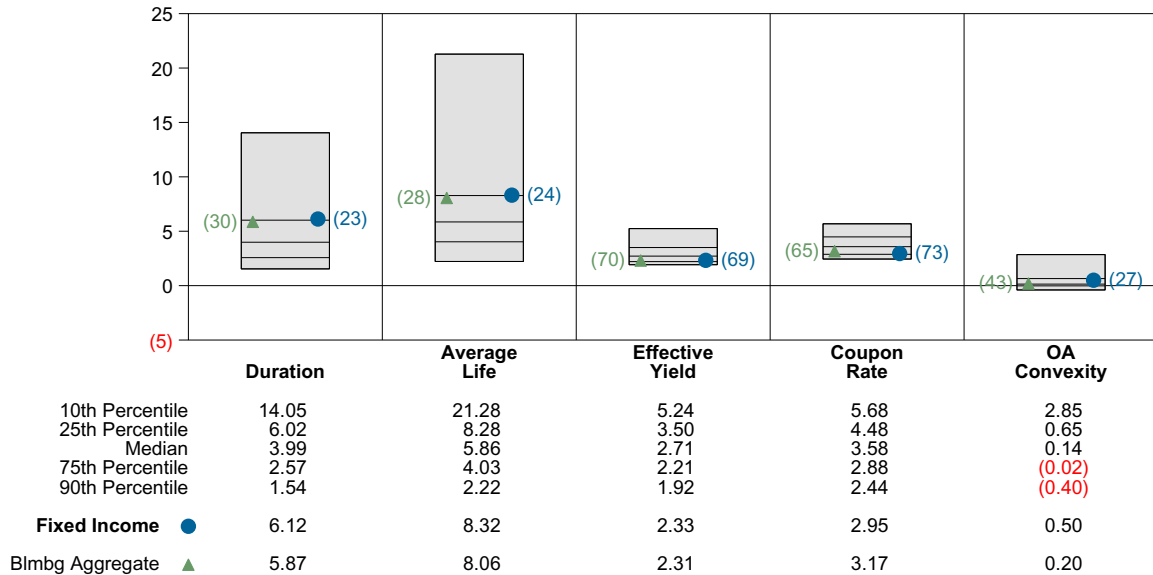


# Fixed Income Bond Characteristics Analysis Summary

## Portfolio Characteristics

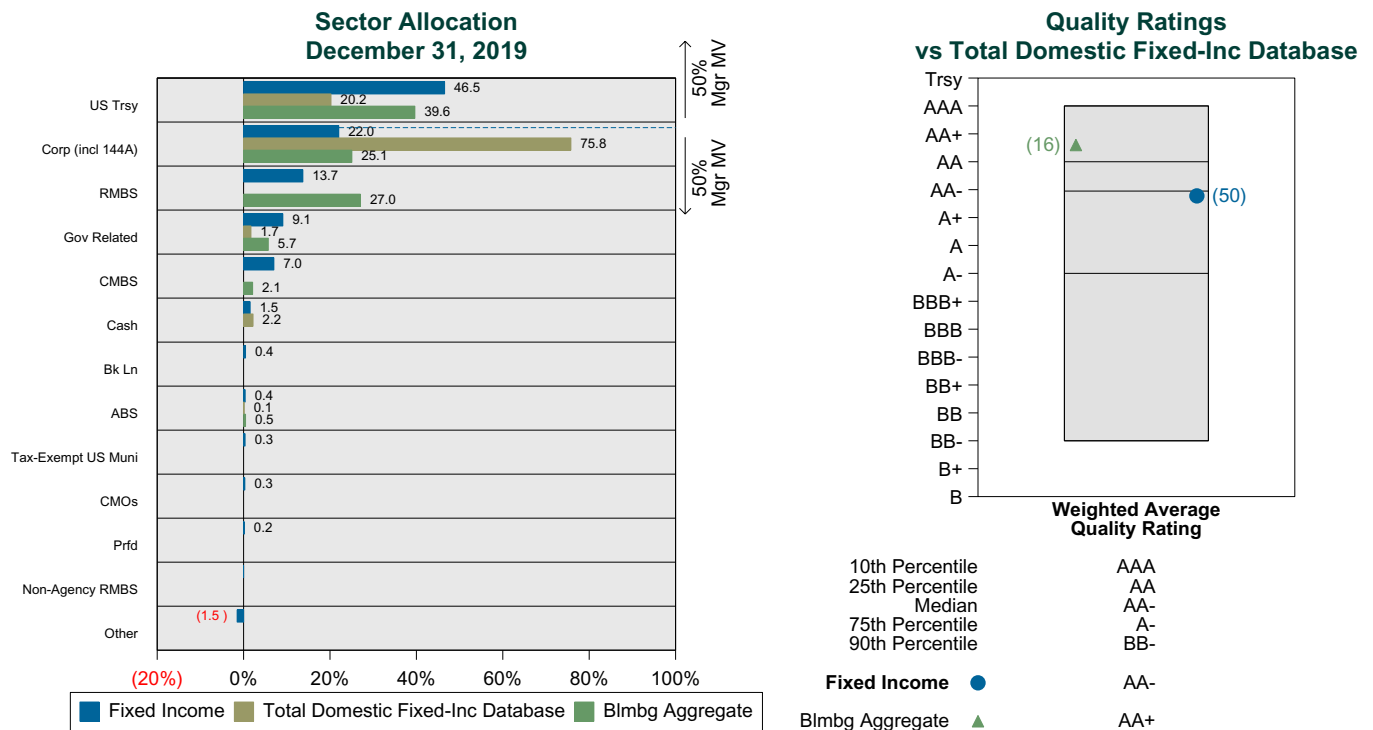
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Total Domestic Fixed-Inc Database as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

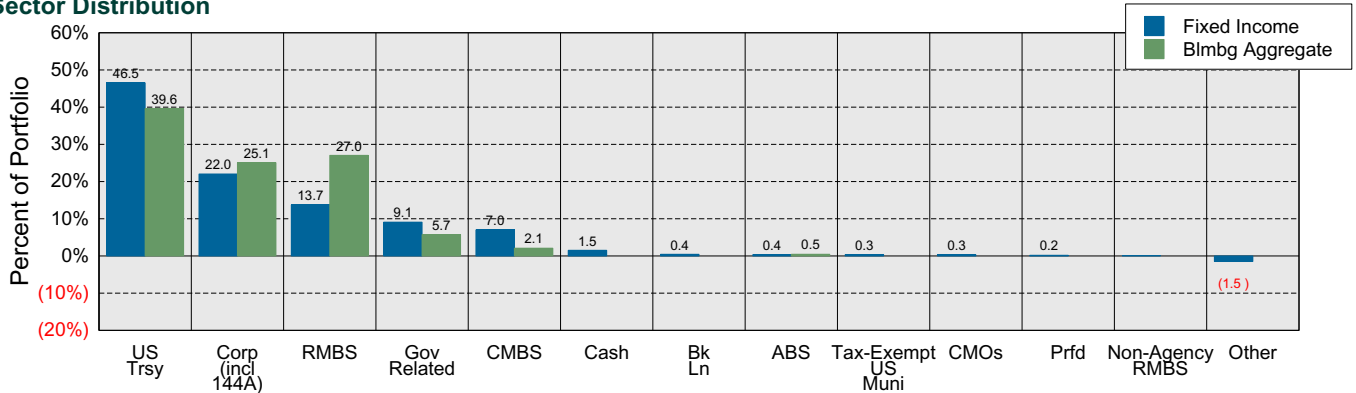


# Fixed Income Portfolio Characteristics Summary As of December 31, 2019

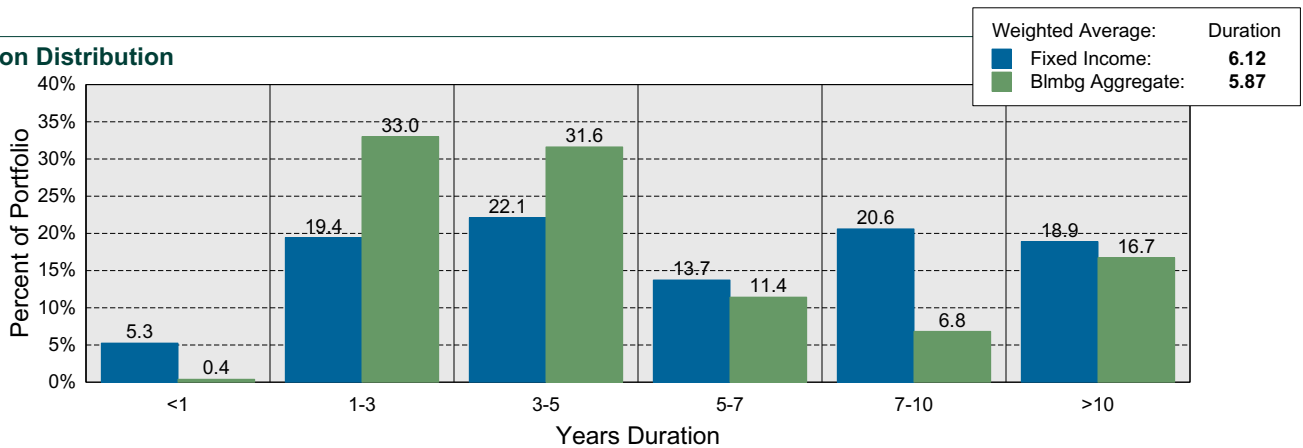
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

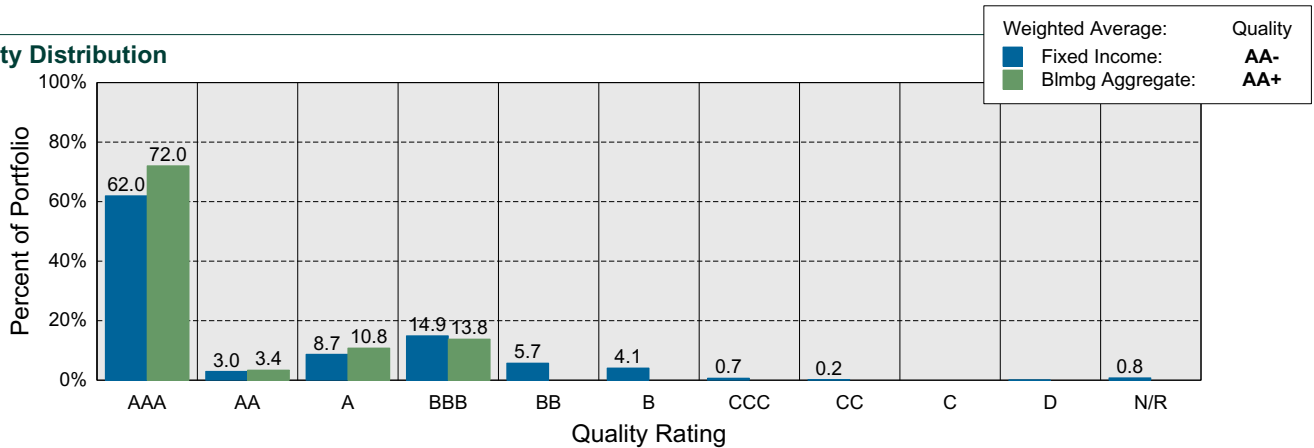
### Sector Distribution



### Duration Distribution



### Quality Distribution



Core Fixed Income  
Managers

# MCM Bond Index

## Period Ended December 31, 2019

### Investment Philosophy

Fixed income indexing offers a cost-effective, sensible investment approach to gaining diversified market exposure and receiving competitive relative returns over the long-term. Mellon Capital's Aggregate Bond Index Strategy employs a stratified sampling approach that has consistently added value with very little tracking error versus the Barclays Capital Aggregate Bond Index. We emphasize low turnover (low transaction costs) and strict risk control in the structuring of our portfolios.

### Quarterly Summary and Highlights

- MCM Bond Index's portfolio posted a 0.16% return for the quarter placing it in the 67 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 84 percentile for the last year.
- MCM Bond Index's portfolio underperformed the Blmbg Aggregate by 0.02% for the quarter and underperformed the Blmbg Aggregate for the year by 0.04%.

### Quarterly Asset Growth

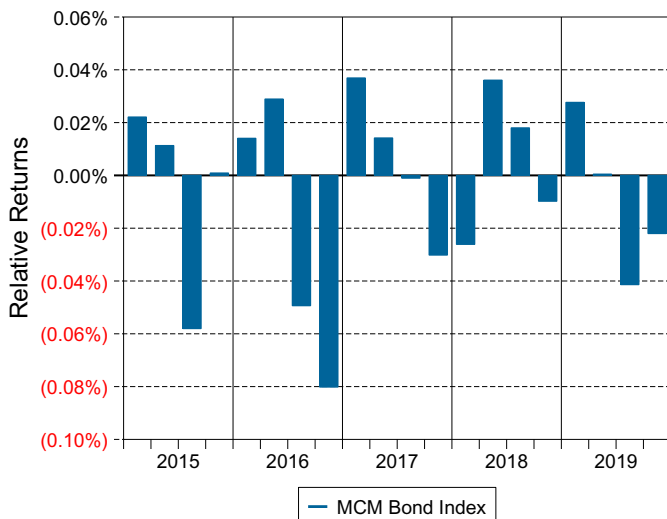
Beginning Market Value	\$1,116,544,160
Net New Investment	\$-5,903
Investment Gains/(Losses)	\$1,696,207
Ending Market Value	\$1,118,234,463

### Performance vs Callan Core Bond Fixed Income (Gross)

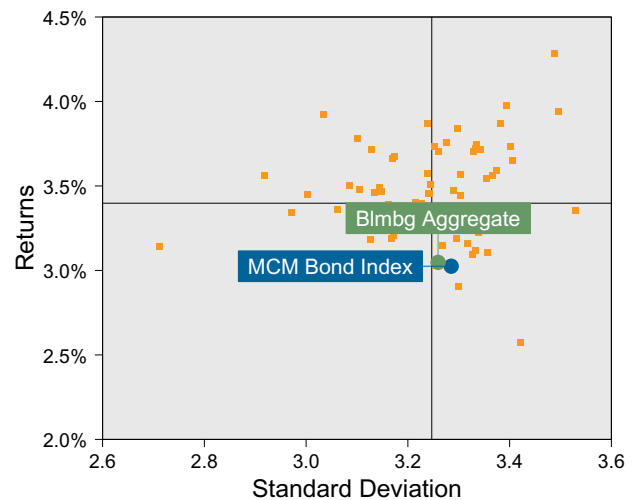


10th Percentile	0.39	9.95	4.86	4.71	3.80	3.52
25th Percentile	0.31	9.58	4.72	4.57	3.66	3.33
Median	0.22	9.17	4.57	4.39	3.40	3.07
75th Percentile	0.10	8.89	4.39	4.21	3.26	2.91
90th Percentile	(0.04)	8.53	4.22	4.00	3.12	2.79
<b>MCM Bond Index</b>	0.16	8.68	4.26	4.03	3.02	2.68
Blmbg Aggregate	0.18	8.72	4.27	4.03	3.05	2.72

### Relative Return vs Blmbg Aggregate



### Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return



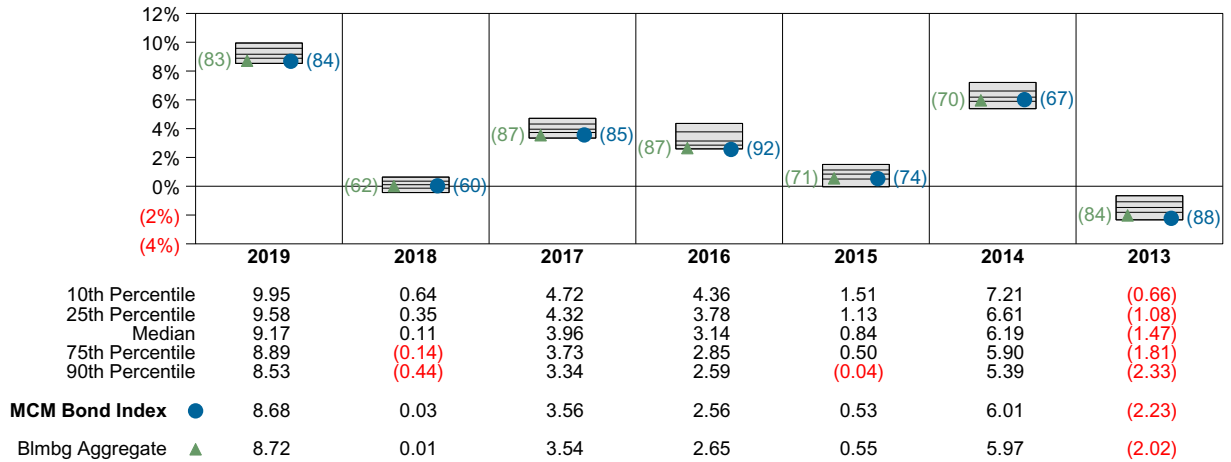


# MCM Bond Index Return Analysis Summary

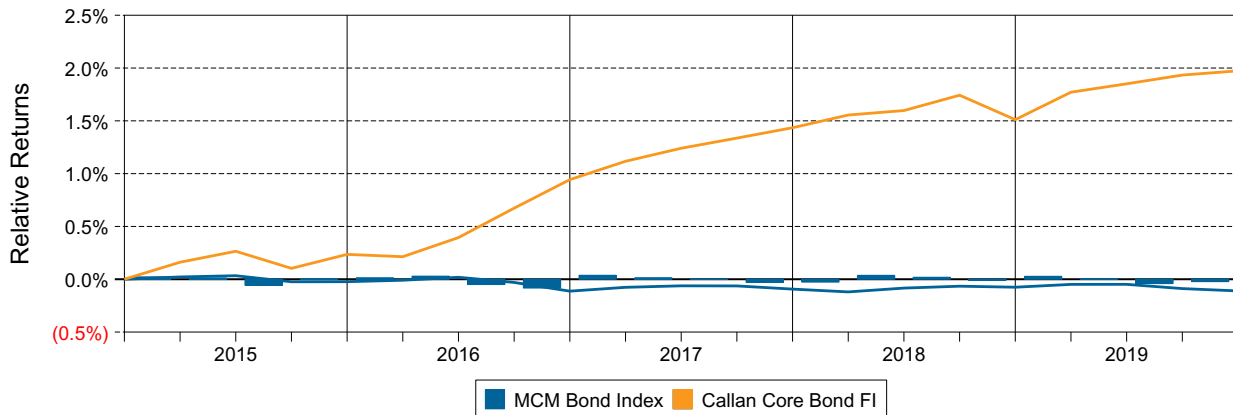
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

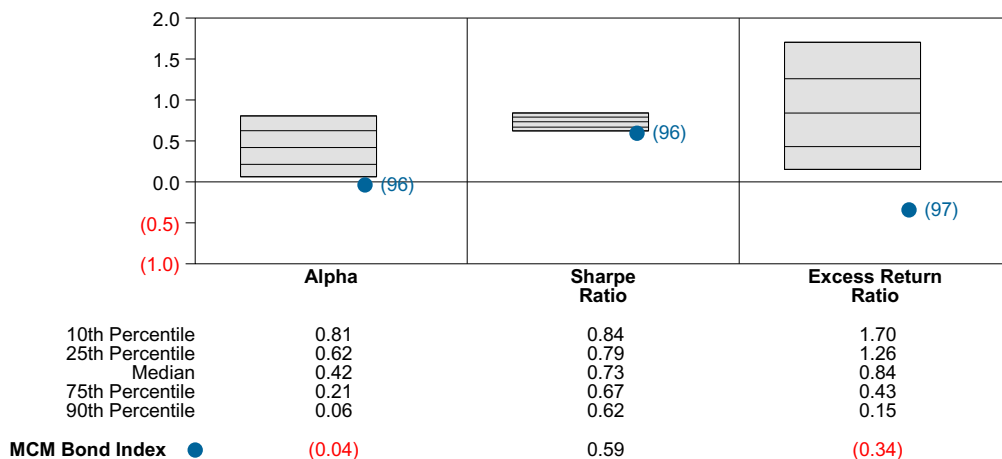
### Performance vs Callan Core Bond Fixed Income (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg Aggregate



### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2019

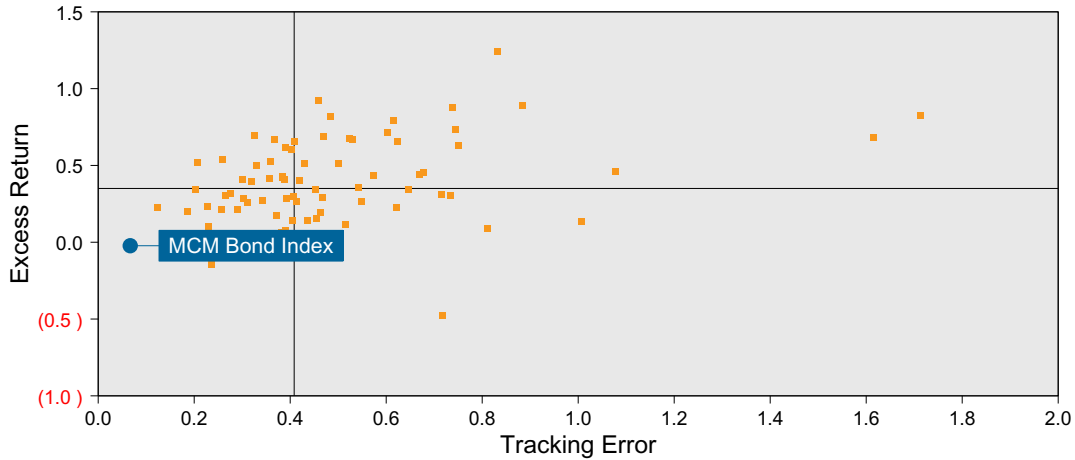


# MCM Bond Index Risk Analysis Summary

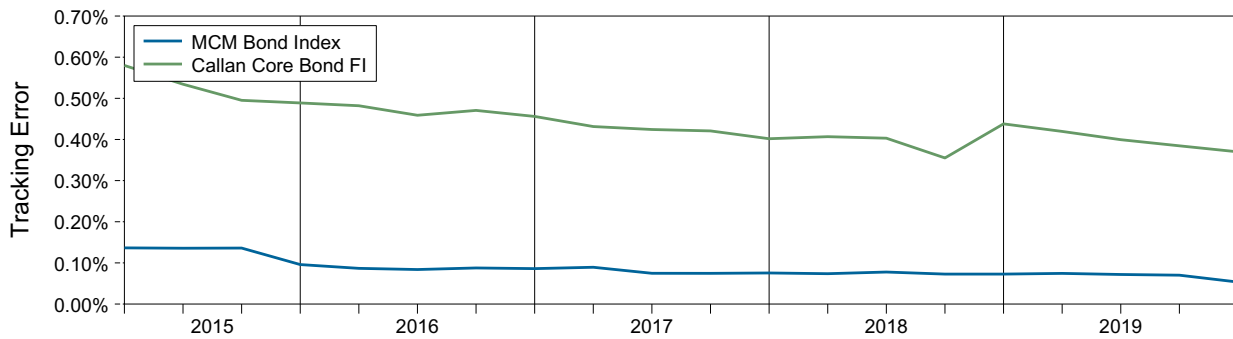
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

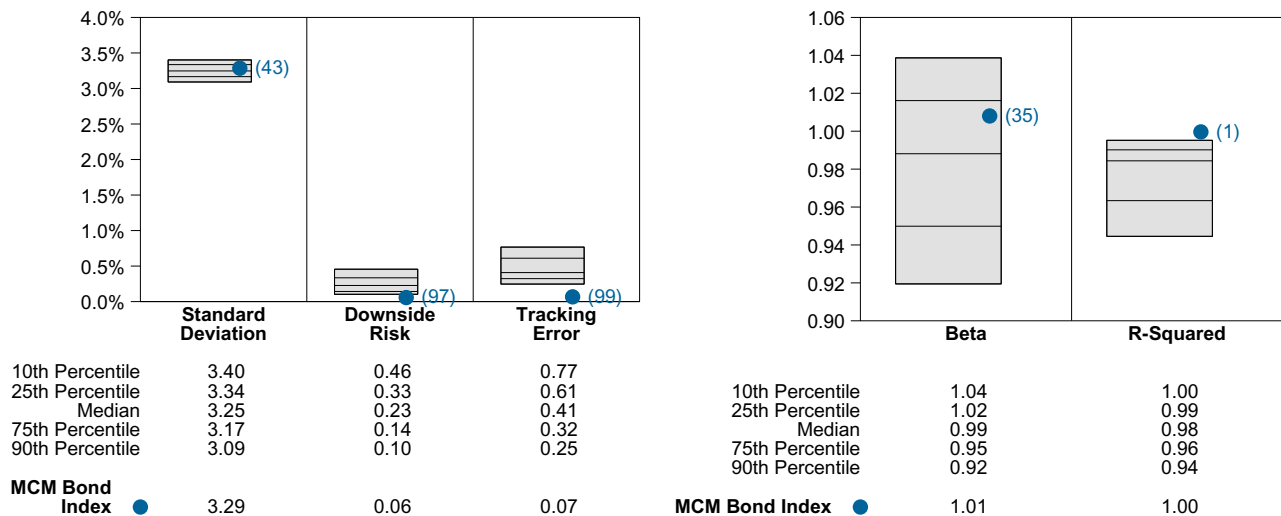
### Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays Aggregate



### Risk Statistics Rankings vs Bloomberg Barclays Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2019

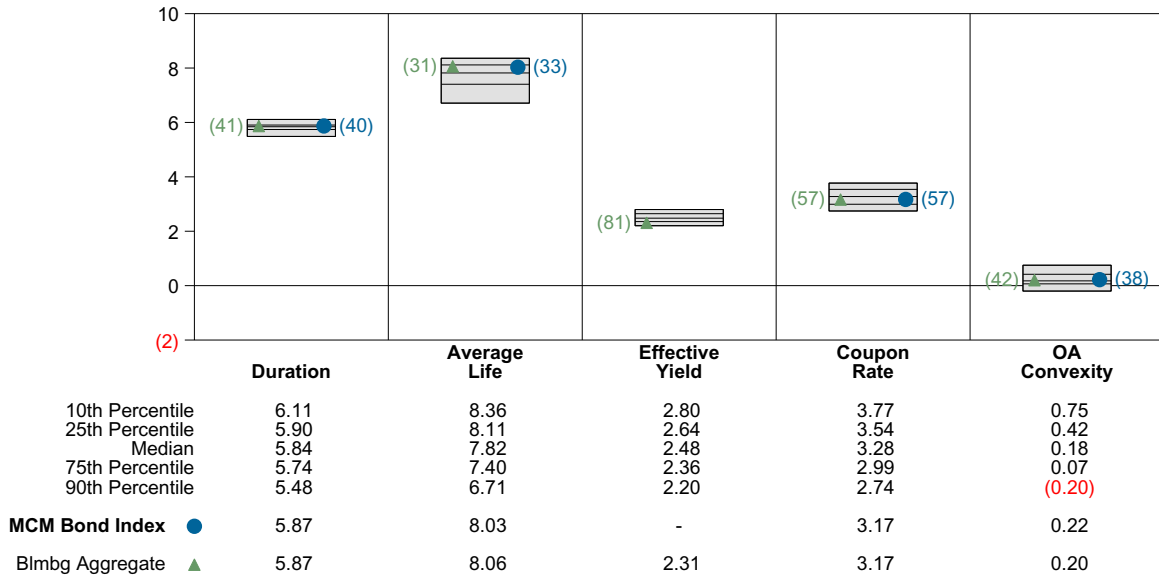


# MCM Bond Index Bond Characteristics Analysis Summary

## Portfolio Characteristics

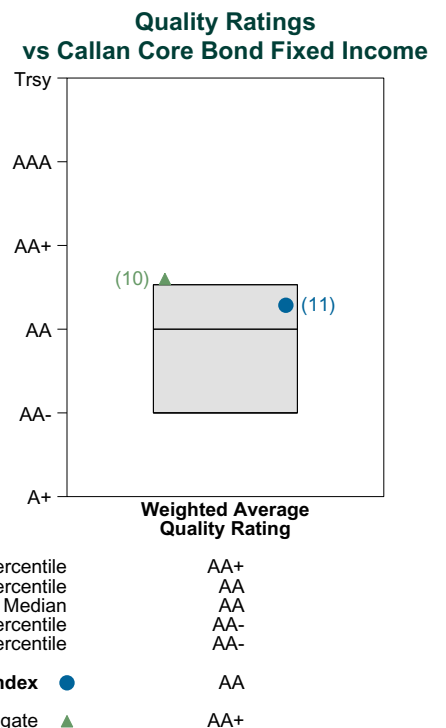
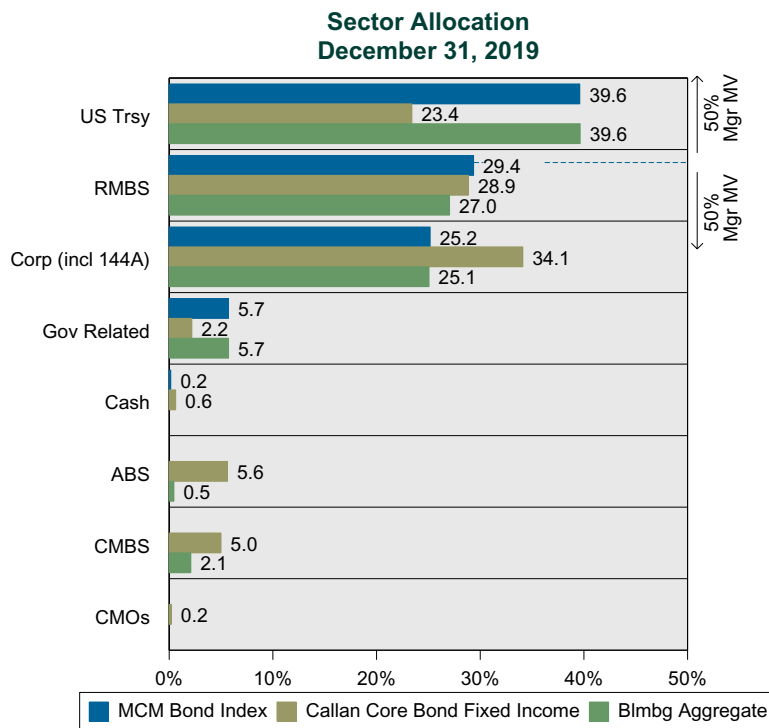
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

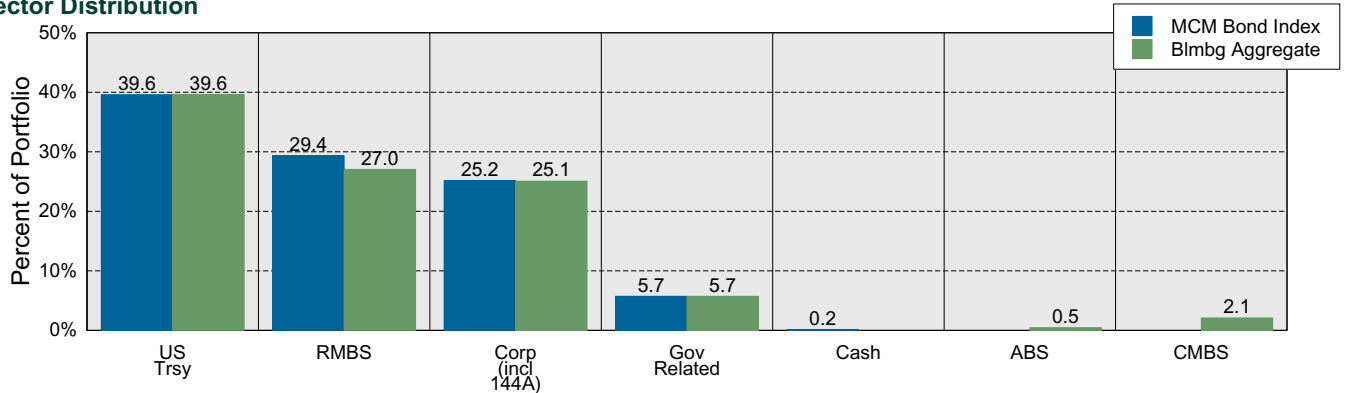


# MCM Bond Index Portfolio Characteristics Summary As of December 31, 2019

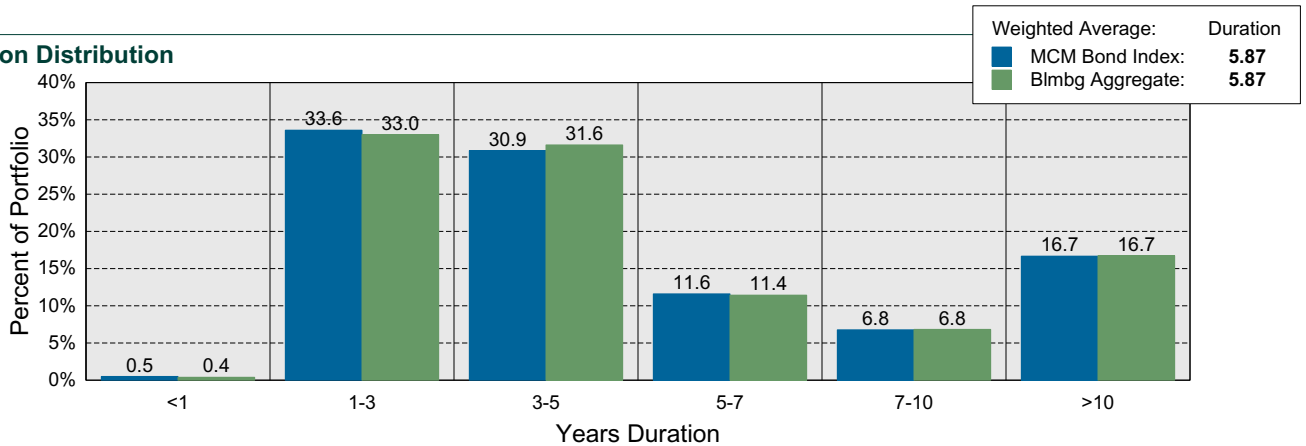
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

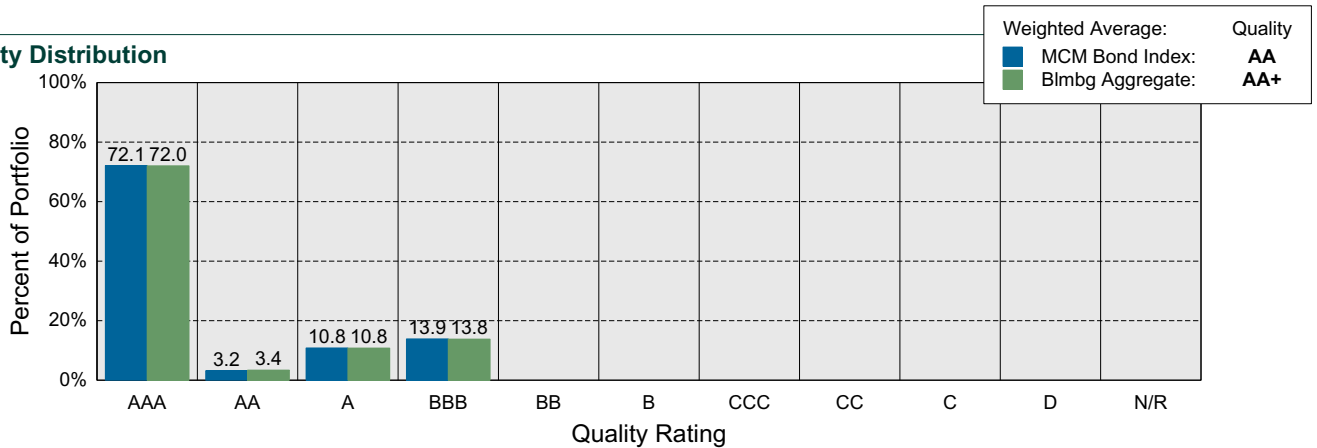
### Sector Distribution



### Duration Distribution



### Quality Distribution



# PIMCO Core Bond Fund

## Period Ended December 31, 2019

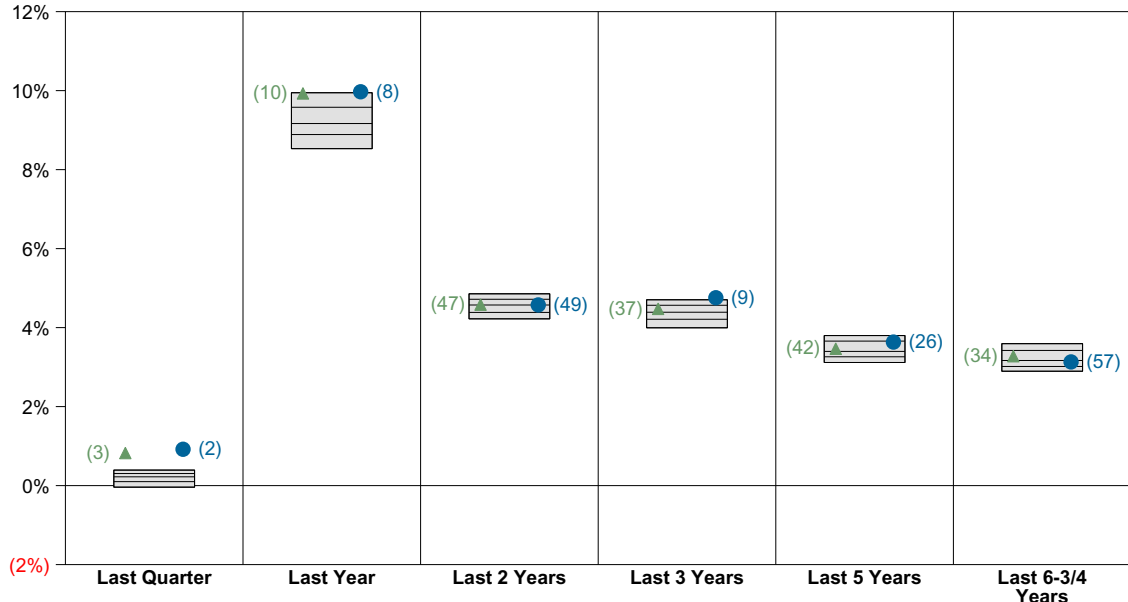
### Quarterly Summary and Highlights

- PIMCO Core Bond Fund's portfolio posted a 0.92% return for the quarter placing it in the 2 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 8 percentile for the last year.
- PIMCO Core Bond Fund's portfolio outperformed the Blmbg:Aggregate xTreas by 0.10% for the quarter and outperformed the Blmbg:Aggregate xTreas for the year by 0.04%.

### Quarterly Asset Growth

Beginning Market Value	\$665,080,441
Net New Investment	\$0
Investment Gains/(Losses)	\$5,852,348
Ending Market Value	\$670,932,789

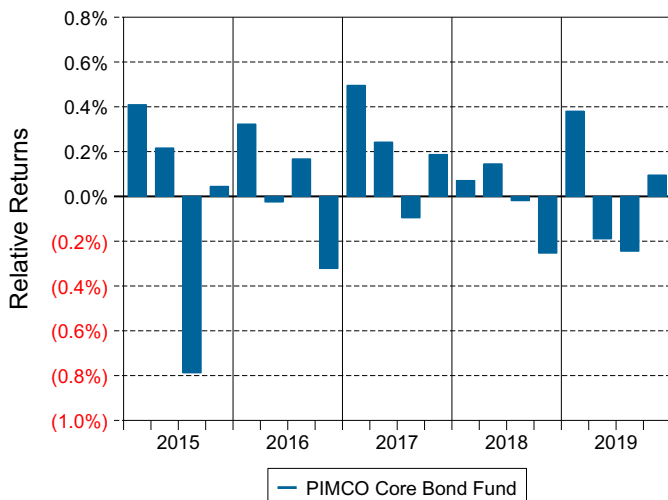
### Performance vs Callan Core Bond Fixed Income (Gross)



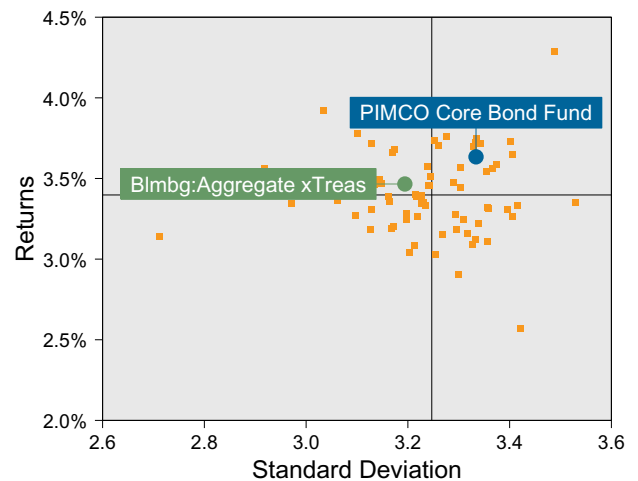
10th Percentile	0.39	9.95	4.86	4.71	3.80	3.59
25th Percentile	0.31	9.58	4.72	4.57	3.66	3.42
Median	0.22	9.17	4.57	4.39	3.40	3.17
75th Percentile	0.10	8.89	4.39	4.21	3.26	3.02
90th Percentile	(0.04)	8.53	4.22	4.00	3.12	2.90

<b>PIMCO Core Bond Fund</b> ●	0.92	9.97	4.57	4.76	3.63	3.13
Blmbg:Aggregate xTreas ▲	0.82	9.93	4.58	4.48	3.47	3.28

### Relative Return vs Blmbg:Aggregate xTreas



### Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return

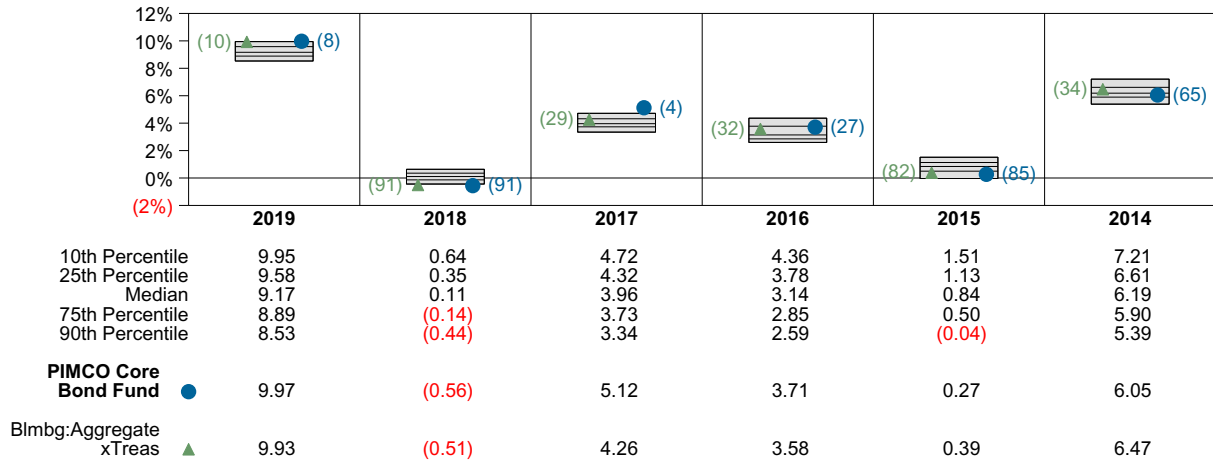


# PIMCO Core Bond Fund Return Analysis Summary

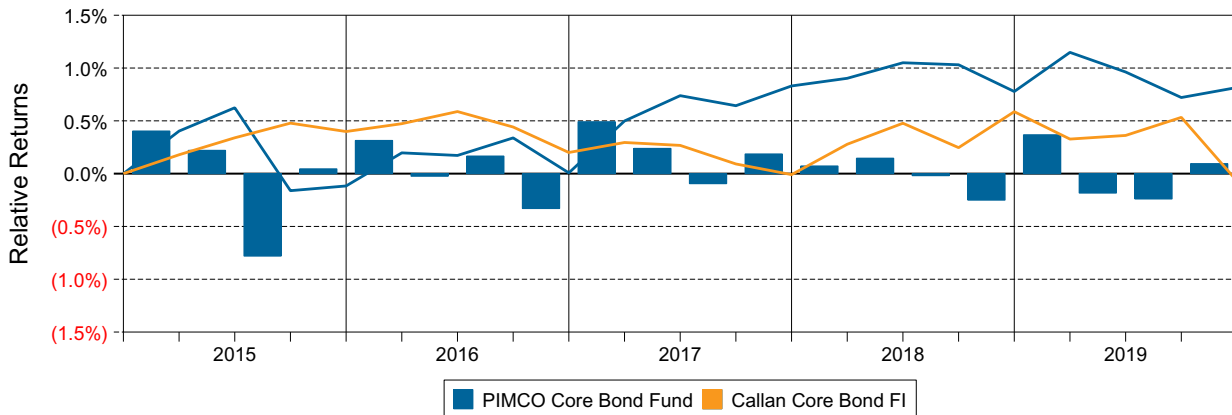
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

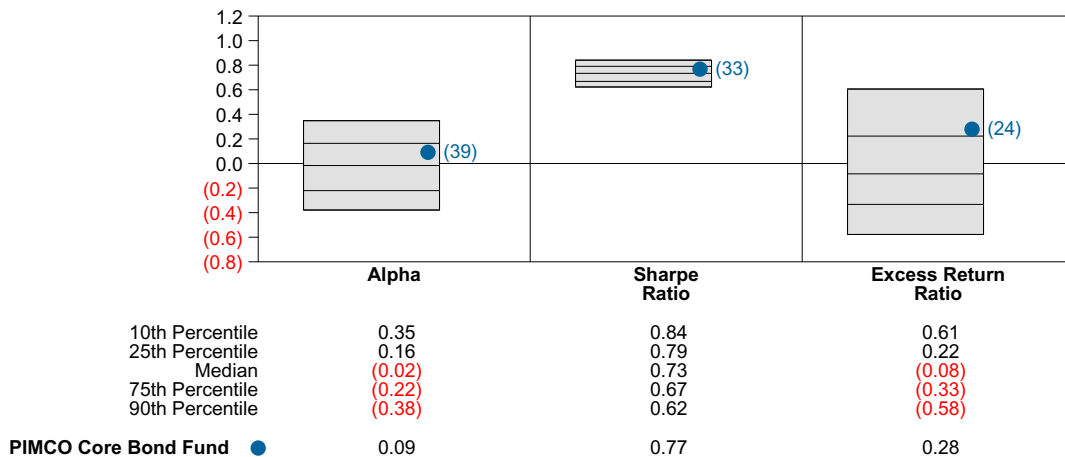
### Performance vs Callan Core Bond Fixed Income (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg:Aggregate xTreas



### Risk Adjusted Return Measures vs Blmbg:Aggregate xTreas Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2019

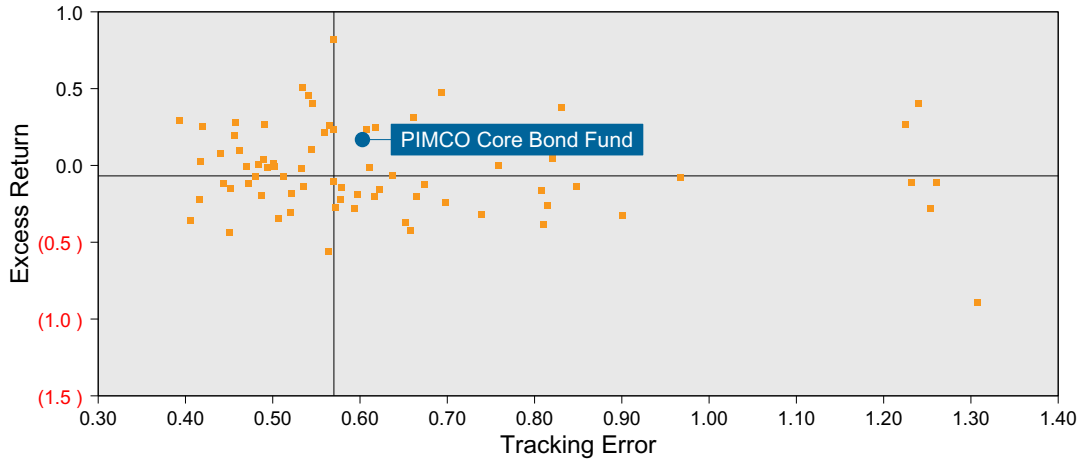


# PIMCO Core Bond Fund Risk Analysis Summary

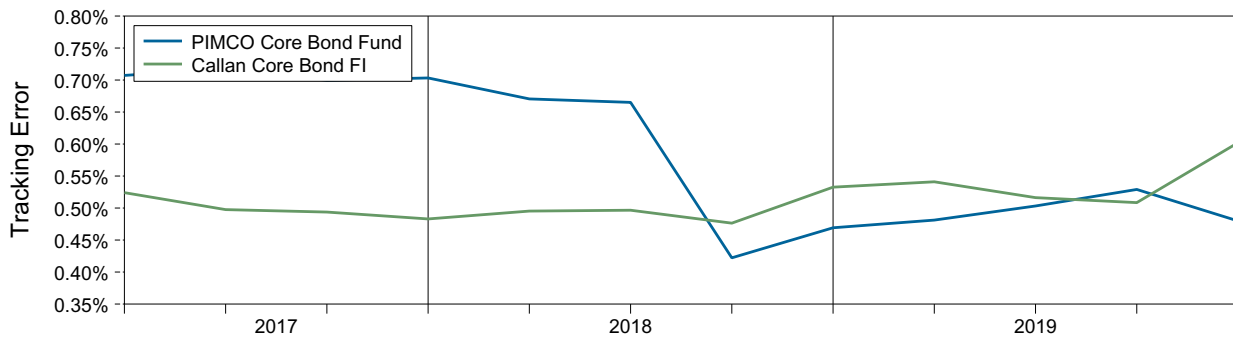
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

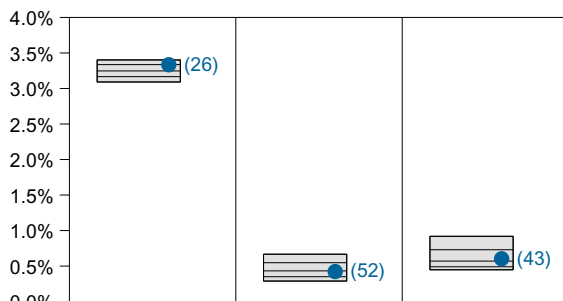
### Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays Aggregate xTreasury

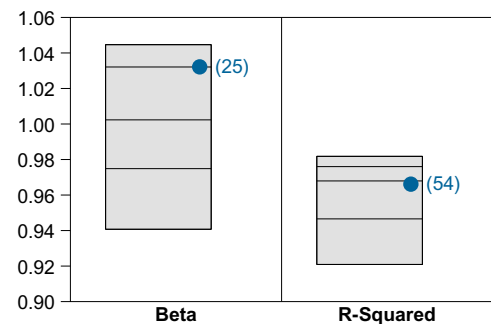


### Risk Statistics Rankings vs Bloomberg Barclays Aggregate xTreasury Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2019



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	3.40	0.67	0.92
25th Percentile	3.34	0.55	0.73
Median	3.25	0.43	0.57
75th Percentile	3.17	0.35	0.49
90th Percentile	3.09	0.29	0.45

**PIMCO Core Bond Fund** ● 3.33      0.42      0.60



	Beta	R-Squared
10th Percentile	1.04	0.98
25th Percentile	1.03	0.98
Median	1.00	0.97
75th Percentile	0.97	0.95
90th Percentile	0.94	0.92

**PIMCO Core Bond Fund** ● 1.03      0.97

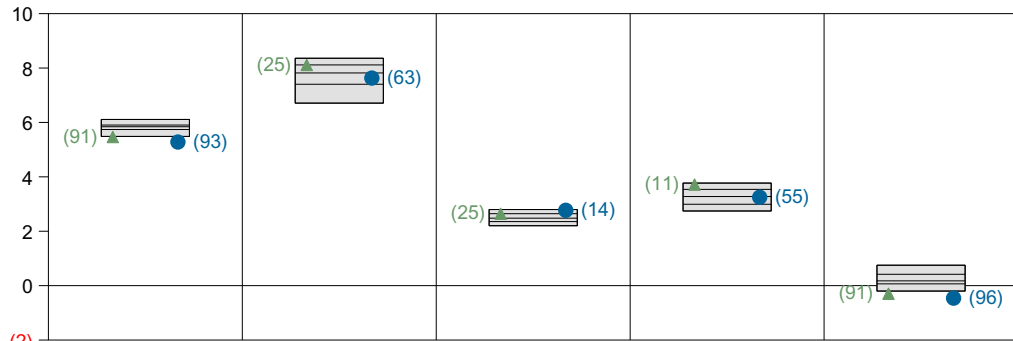
# PIMCO Core Bond Fund

## Bond Characteristics Analysis Summary

### Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

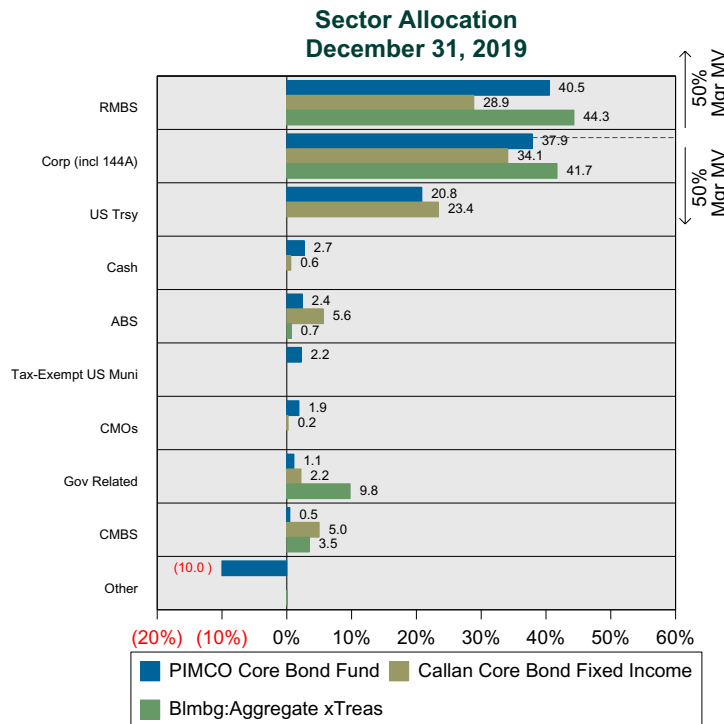
### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2019



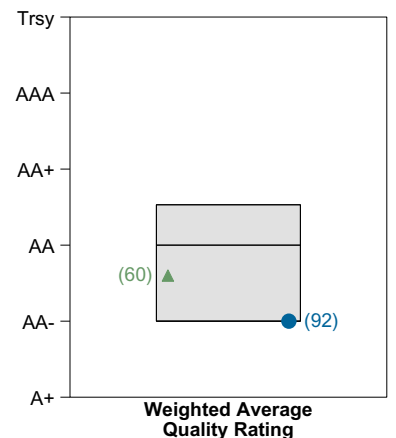
	Duration	Average Life	Effective Yield	Coupon Rate	OA Convexity
10th Percentile	6.11	8.36	2.80	3.77	0.75
25th Percentile	5.90	8.11	2.64	3.54	0.42
Median	5.84	7.82	2.48	3.28	0.18
75th Percentile	5.74	7.40	2.36	2.99	0.07
90th Percentile	5.48	6.71	2.20	2.74	(0.20)
<b>PIMCO Core Bond Fund</b> ●	5.28	7.63	2.77	3.25	(0.46)
Blmbg:Aggregate xTreas ▲	5.47	8.12	2.64	3.72	(0.30)

### Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



#### Quality Ratings vs Callan Core Bond Fixed Income



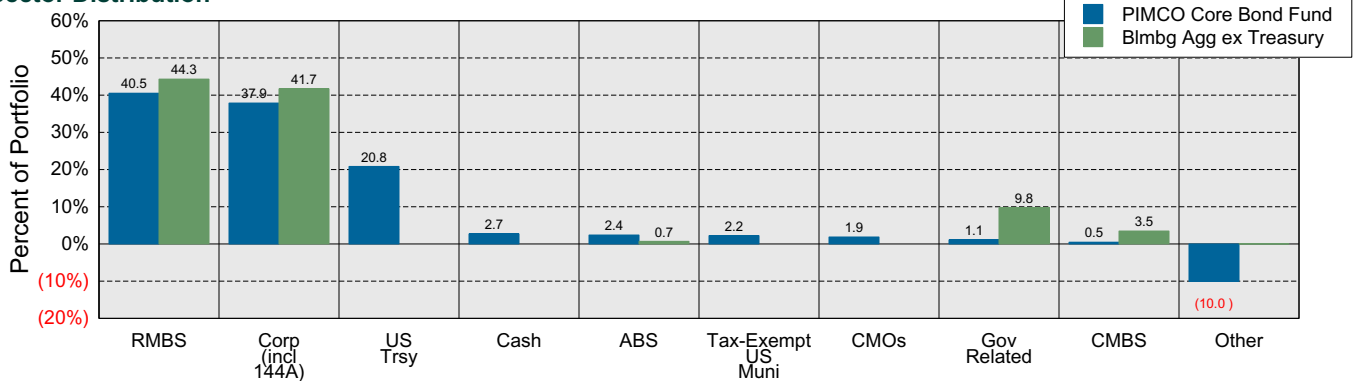


# PIMCO Core Bond Fund Portfolio Characteristics Summary As of December 31, 2019

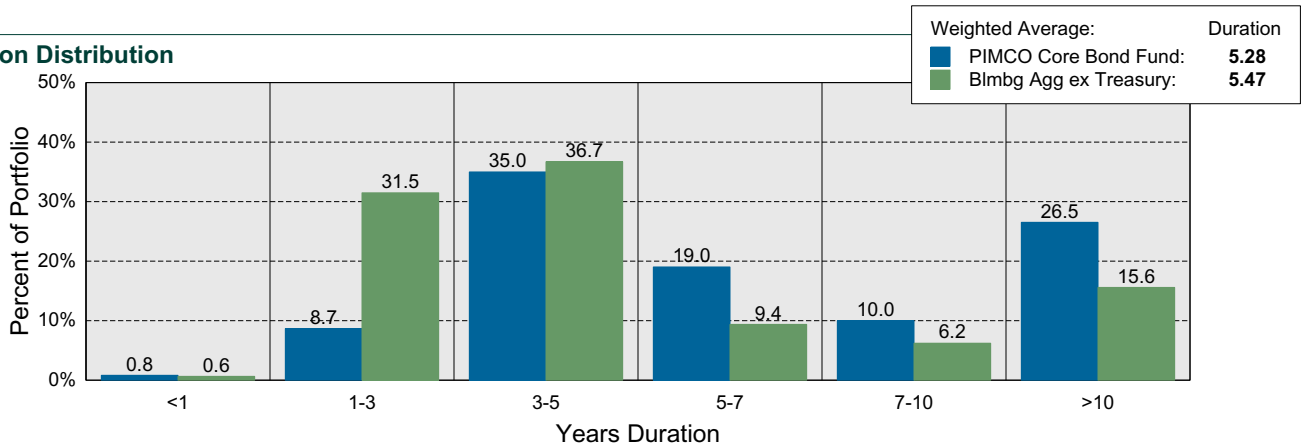
## Portfolio Structure Comparison

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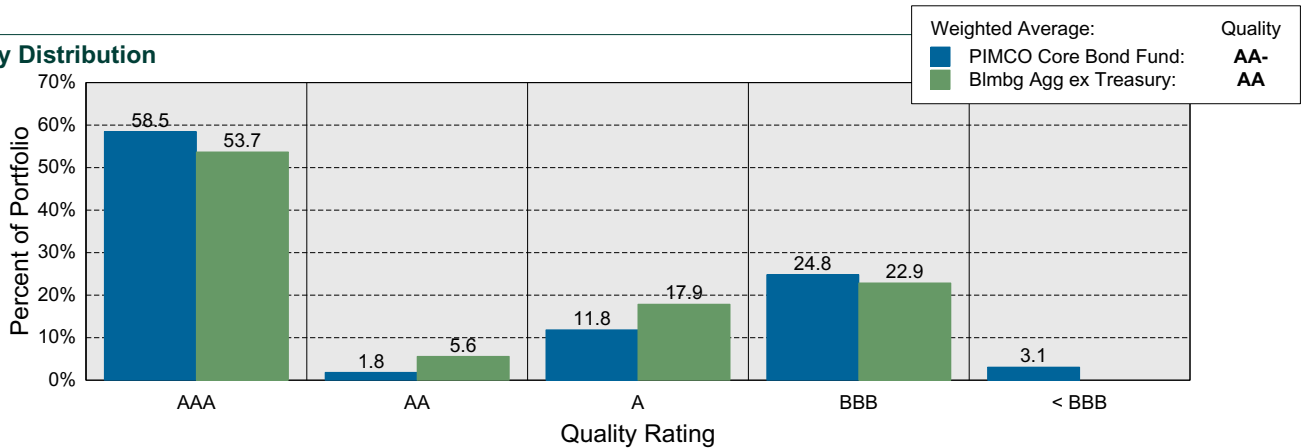
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Taplin, Canida & Habacht Corp FI Period Ended December 31, 2019

## Investment Philosophy

Taplin's philosophy in managing credit accounts is to add value above the benchmark index by following a strict relative value discipline, emphasizing debt securities valued too cheaply relative to the issuers fundamental creditworthiness. Yield curve positioning adds further value by focusing on the most attractive portions of the yield curve. Portfolios are constructed within a narrow duration band relative to their benchmark indices. This approach minimizes market timing and emphasizes attractive sector and issue spread opportunities within the credit universe.

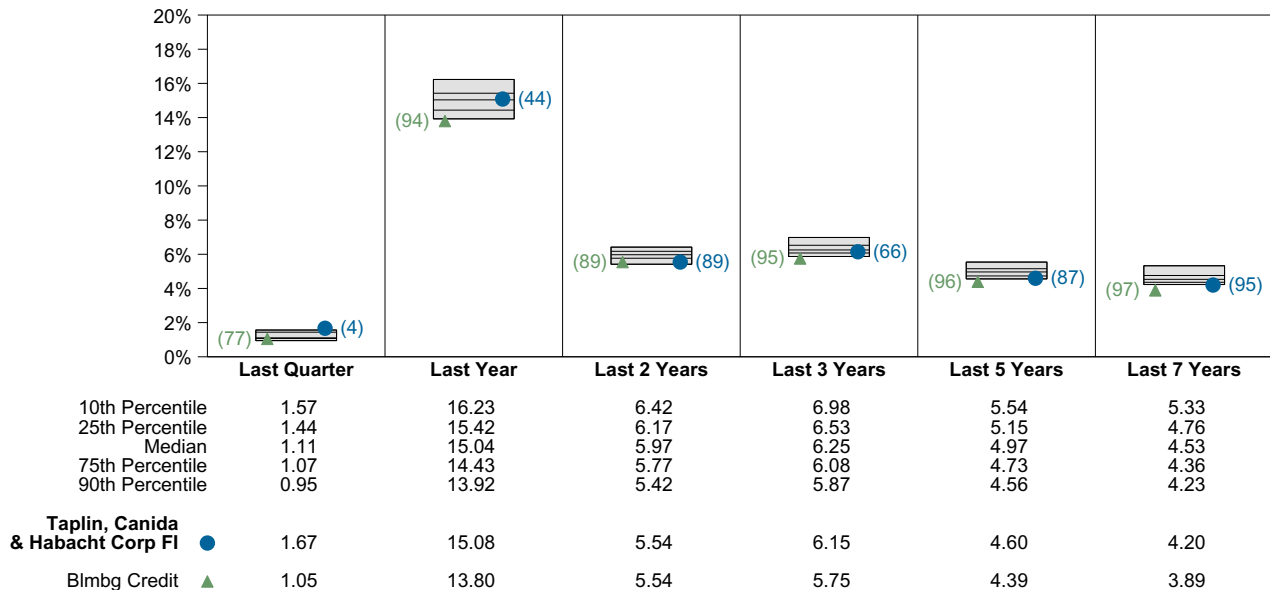
## Quarterly Summary and Highlights

- Taplin, Canida & Habacht Corp FI's portfolio posted a 1.67% return for the quarter placing it in the 4 percentile of the Callan Investment Grade Credit Fixed Inc group for the quarter and in the 44 percentile for the last year.
- Taplin, Canida & Habacht Corp FI's portfolio outperformed the Blmbg Credit by 0.62% for the quarter and outperformed the Blmbg Credit for the year by 1.29%.

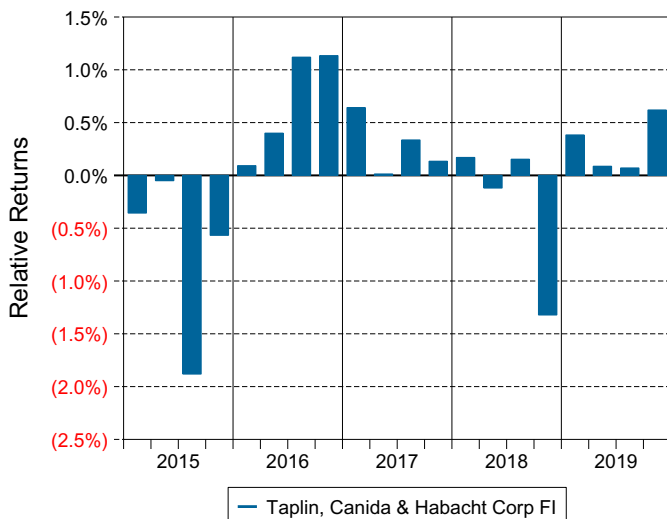
## Quarterly Asset Growth

Beginning Market Value	\$201,726,641
Net New Investment	\$-750
Investment Gains/(Losses)	\$3,251,534
Ending Market Value	\$204,977,425

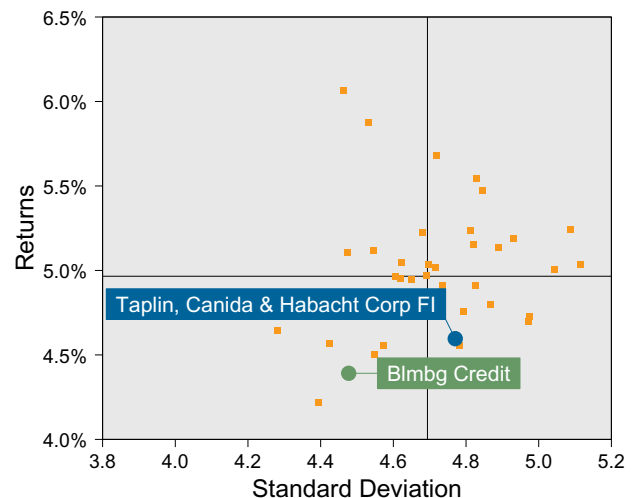
## Performance vs Callan Investment Grade Credit Fixed Inc (Gross)



## Relative Return vs Blmbg Credit



## Callan Investment Grade Credit Fixed Inc (Gross) Annualized Five Year Risk vs Return

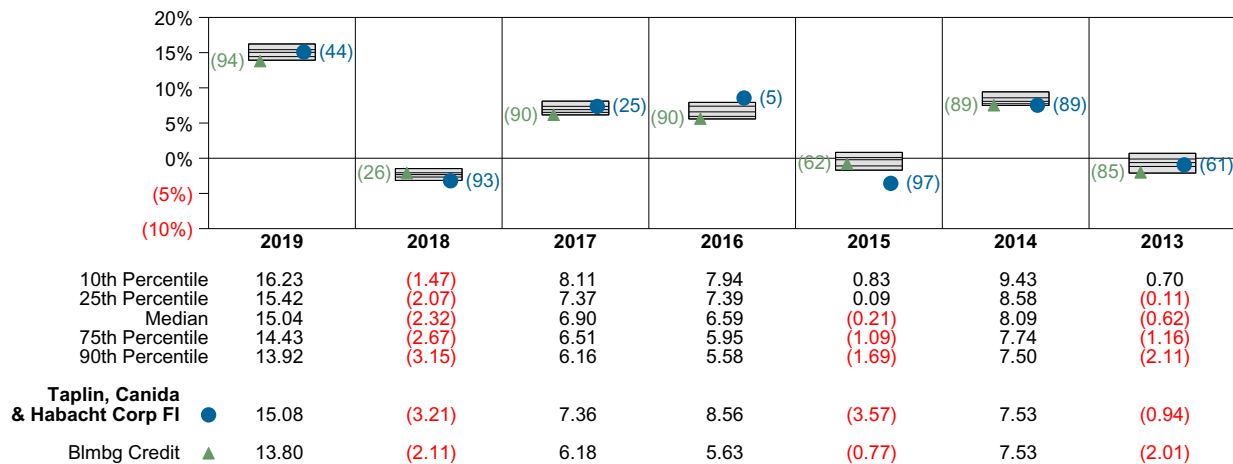


# Taplin, Canida & Habacht Corp FI Return Analysis Summary

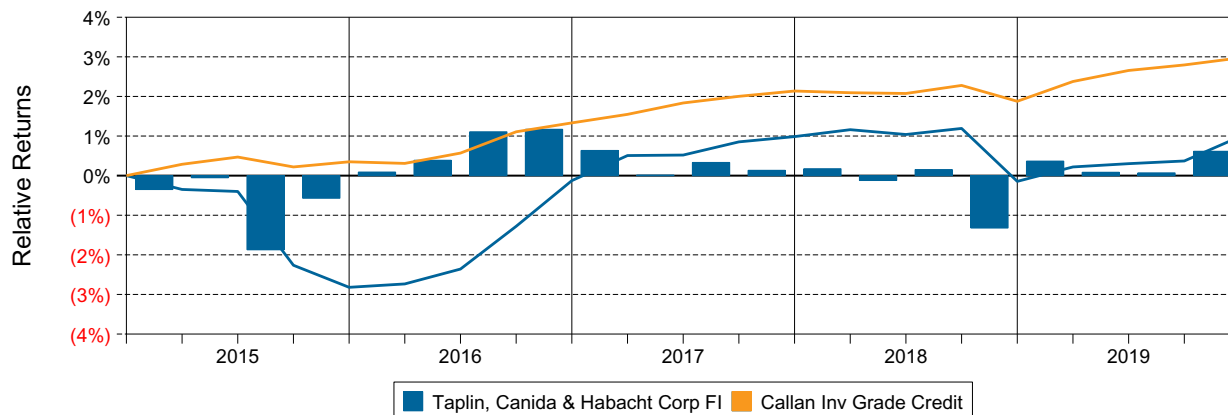
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

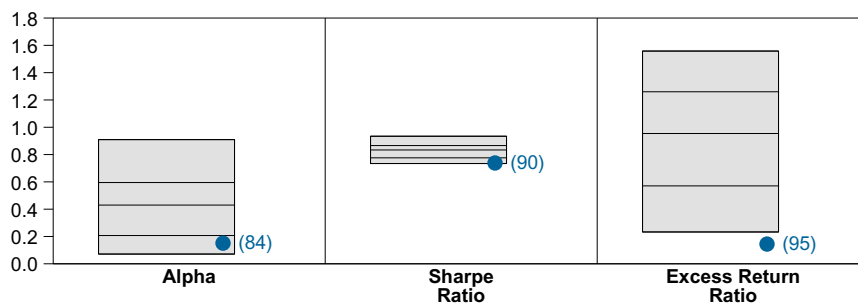
### Performance vs Callan Investment Grade Credit Fixed Inc (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg Credit



### Risk Adjusted Return Measures vs Blmbg Credit Rankings Against Callan Investment Grade Credit Fixed Inc (Gross) Five Years Ended December 31, 2019

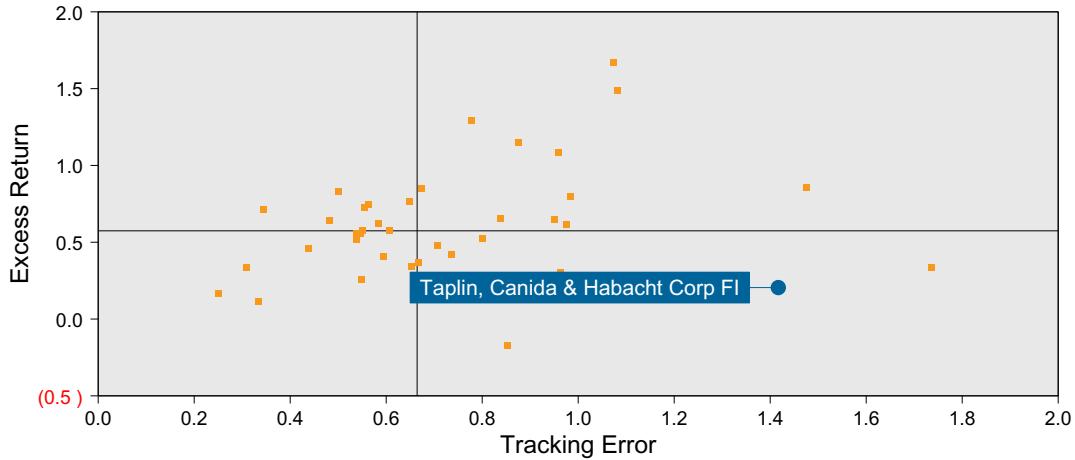


# Taplin, Canida & Habacht Corp FI Risk Analysis Summary

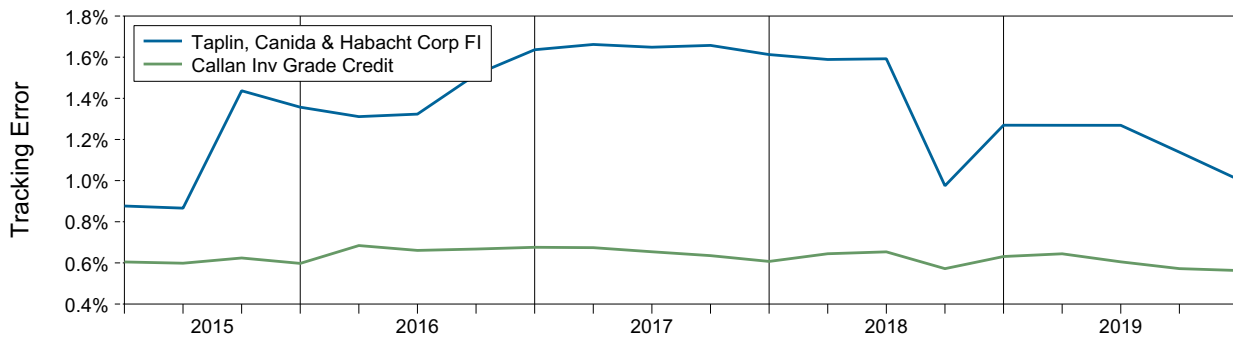
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

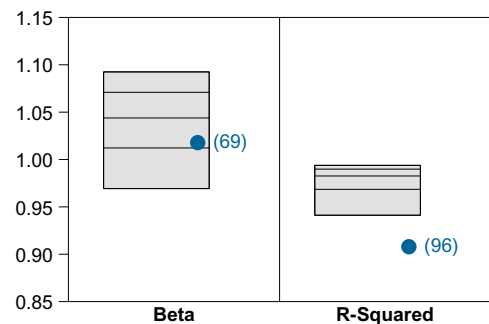
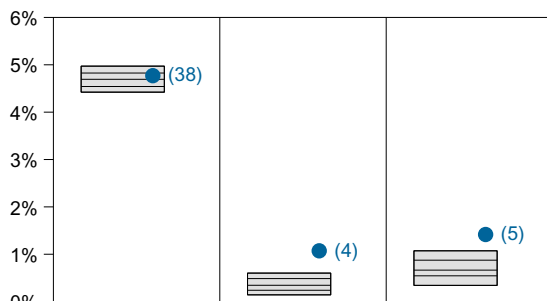
### Risk Analysis vs Callan Investment Grade Credit Fixed Inc (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays Credit



### Risk Statistics Rankings vs Bloomberg Barclays Credit Rankings Against Callan Investment Grade Credit Fixed Inc (Gross) Five Years Ended December 31, 2019



10th Percentile 4.97  
25th Percentile 4.83  
Median 4.69  
75th Percentile 4.54  
90th Percentile 4.42

10th Percentile 0.60  
25th Percentile 0.49  
Median 0.34  
75th Percentile 0.24  
90th Percentile 0.14

10th Percentile 1.07  
25th Percentile 0.87  
Median 0.66  
75th Percentile 0.54  
90th Percentile 0.34

10th Percentile 1.09  
25th Percentile 1.07  
Median 1.04  
75th Percentile 1.01  
90th Percentile 0.97

10th Percentile 0.99  
25th Percentile 0.99  
Median 0.98  
75th Percentile 0.97  
90th Percentile 0.94

Taplin, Canida & Habacht Corp FI ●

4.77

1.07

1.42

Taplin, Canida & Habacht Corp FI ●

1.02

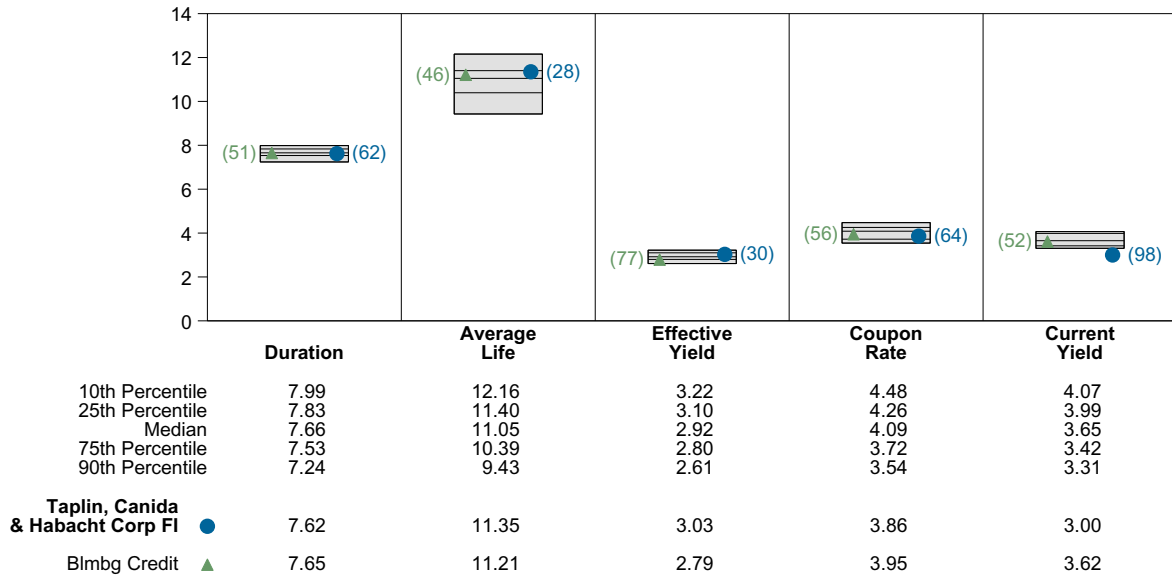
0.91

# Taplin, Canida & Habacht Corp FI Bond Characteristics Analysis Summary

## Portfolio Characteristics

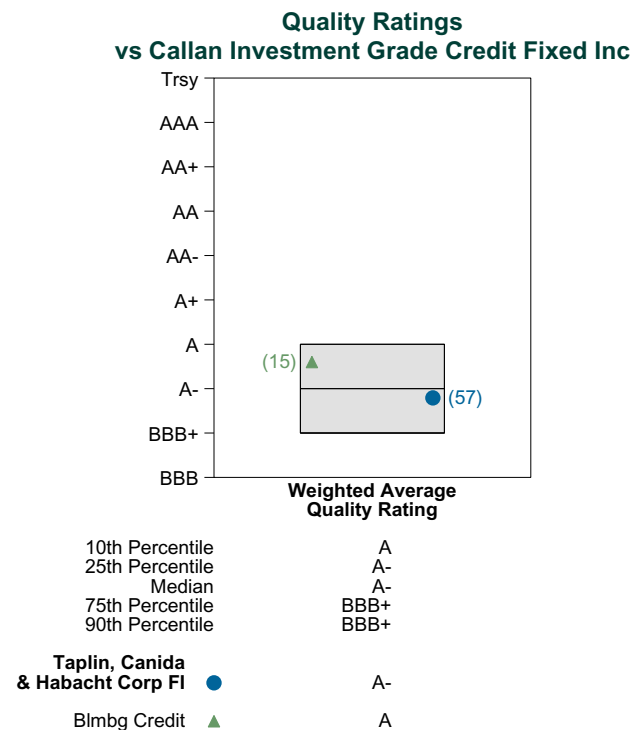
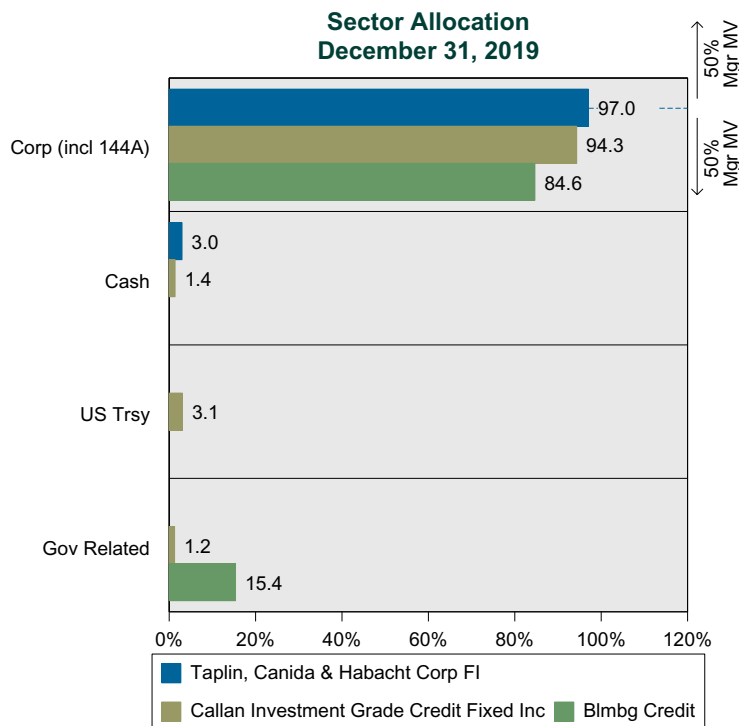
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Investment Grade Credit Fixed Inc as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



# Taplin, Canida & Habacht Corp FI Portfolio Characteristics Summary As of December 31, 2019

## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

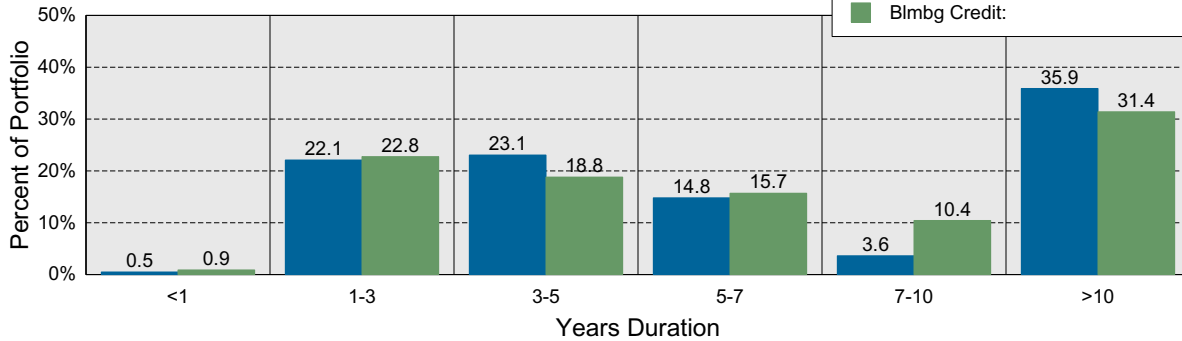
### Sector Allocation



### Taplin, Canida & Habacht Corp FI

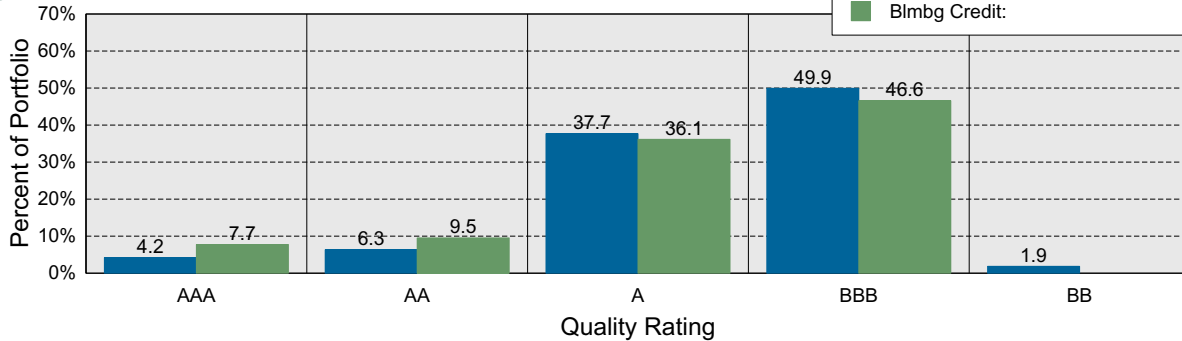
### Blmbg Credit

#### Duration Distribution



Weighted Average:	Duration
Taplin, Canida & Habacht Corp FI:	7.62
Blmbg Credit:	7.65

#### Quality Distribution



Weighted Average:	Quality
Taplin, Canida & Habacht Corp FI:	A-
Blmbg Credit:	A



# Brandywine Global Opp Period Ended December 31, 2019

## Investment Philosophy

Brandywine's Global Opportunistic Fixed Income philosophy is a value-driven, active, strategic approach. This strategy allows for a 0-15% allocation to emerging markets and for a 0-15% allocation to high yield debt. Value is defined as a combination of above-average real interest rates and an under-valued currency. They concentrate investments where existing economic and market conditions can enable that value to be realized in an intermediate time frame. They capture excess returns through strategic investment in countries, sectors, and securities, rather than by maintaining minimum, core commitments.

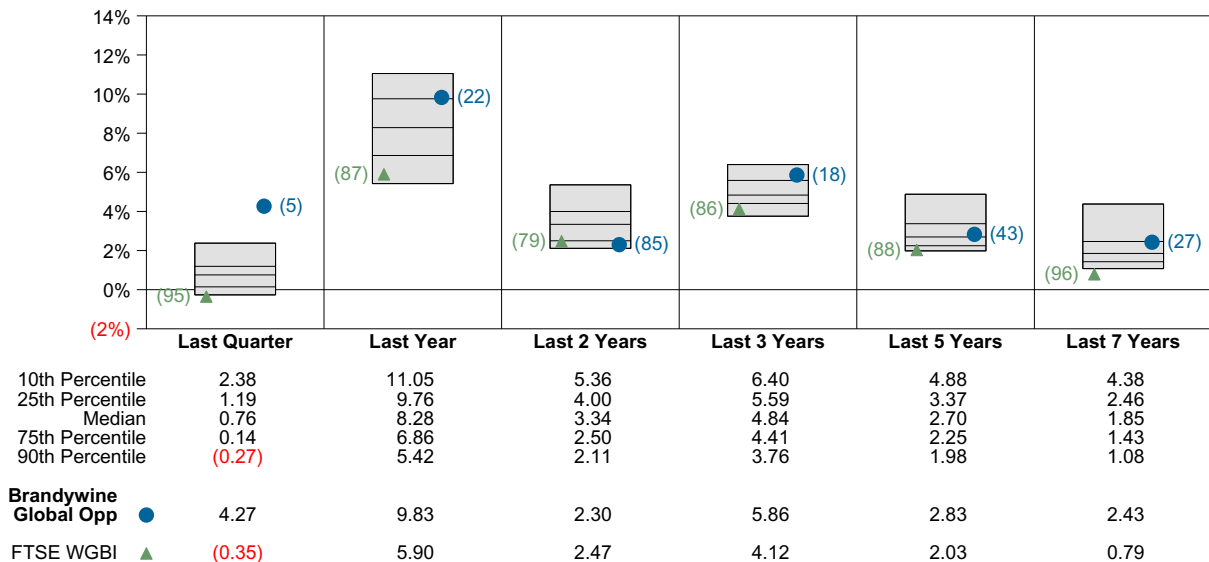
## Quarterly Summary and Highlights

- Brandywine Global Opp's portfolio posted a 4.27% return for the quarter placing it in the 5 percentile of the Callan Global Fixed Income (Unhedged) group for the quarter and in the 22 percentile for the last year.
- Brandywine Global Opp's portfolio outperformed the FTSE WGBI by 4.62% for the quarter and outperformed the FTSE WGBI for the year by 3.93%.

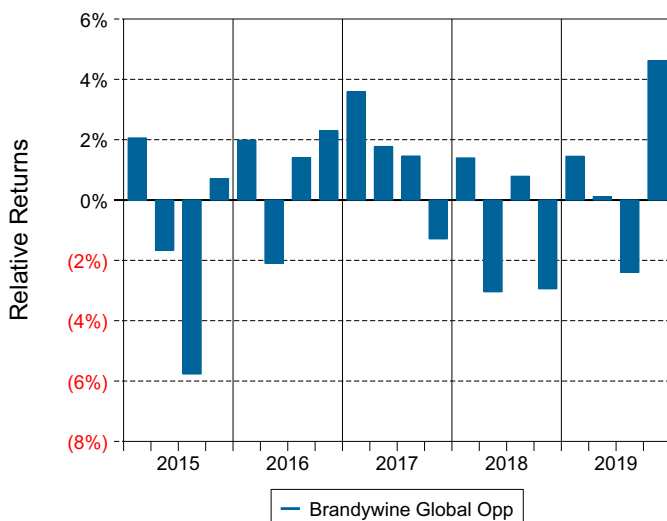
## Quarterly Asset Growth

Beginning Market Value	\$196,054,360
Net New Investment	\$190,582
Investment Gains/(Losses)	\$8,176,339
Ending Market Value	\$204,421,281

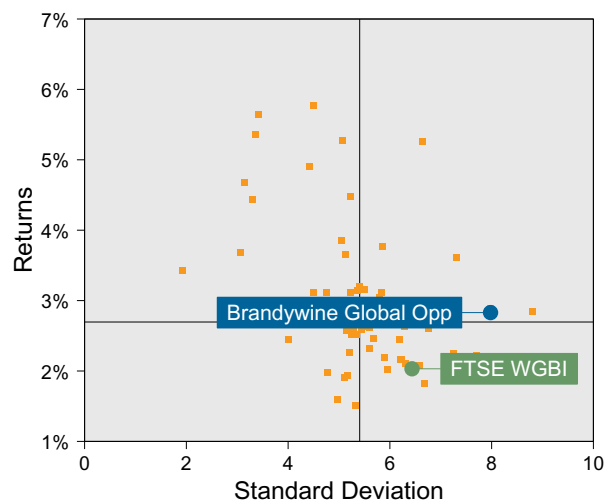
## Performance vs Callan Global Fixed Income (Unhedged) (Gross)



## Relative Return vs FTSE WGBI



## Callan Global Fixed Income (Unhedged) (Gross) Annualized Five Year Risk vs Return



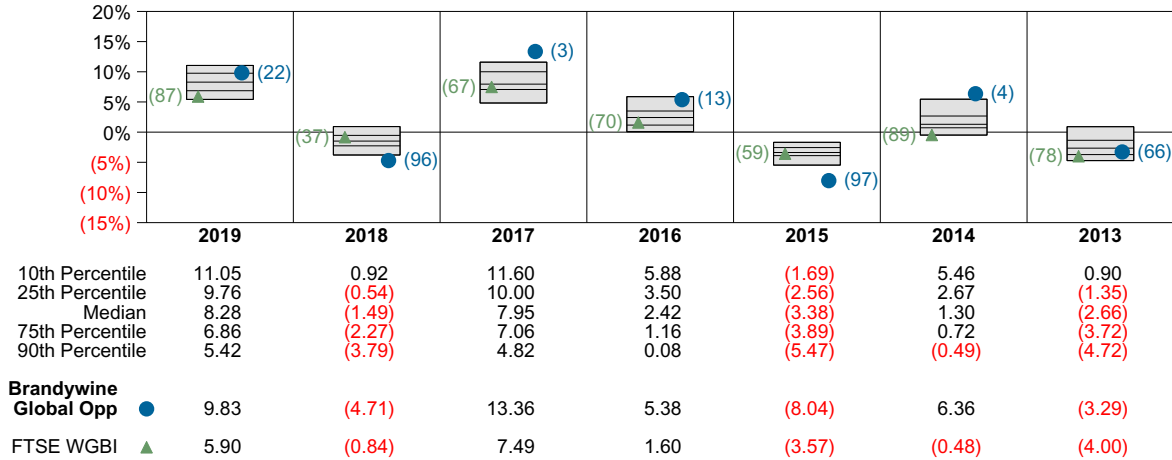


# Brandywine Global Opp Return Analysis Summary

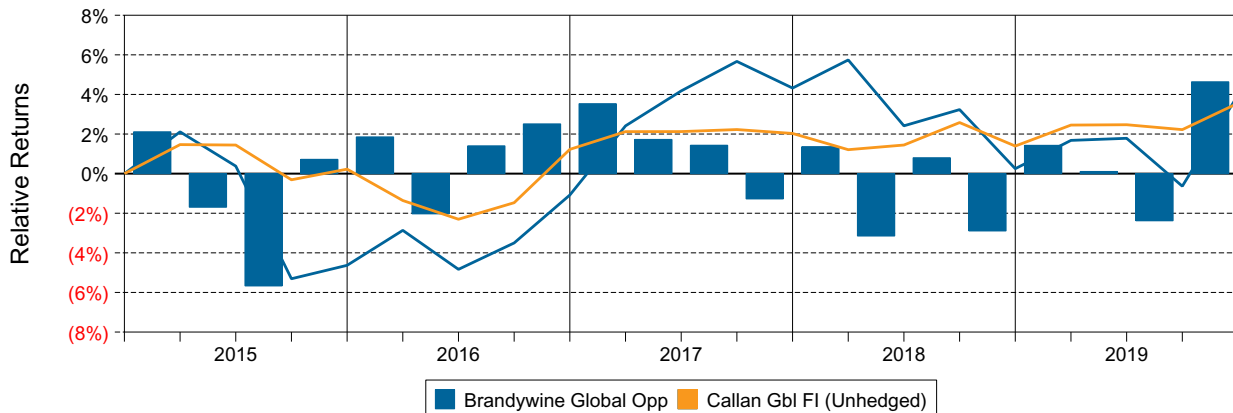
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

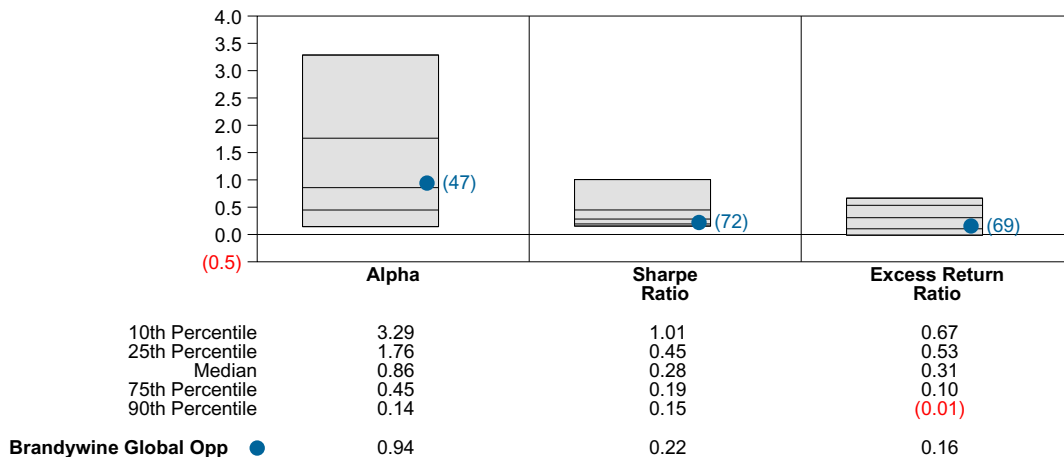
### Performance vs Callan Global Fixed Income (Unhedged) (Gross)



### Cumulative and Quarterly Relative Return vs FTSE WGBI



### Risk Adjusted Return Measures vs FTSE WGBI Rankings Against Callan Global Fixed Income (Unhedged) (Gross) Five Years Ended December 31, 2019

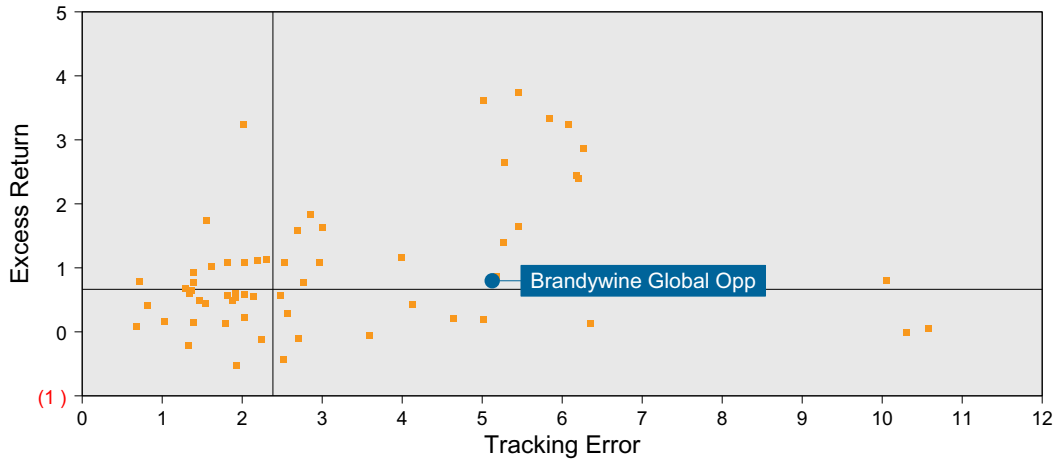


# Brandywine Global Opp Risk Analysis Summary

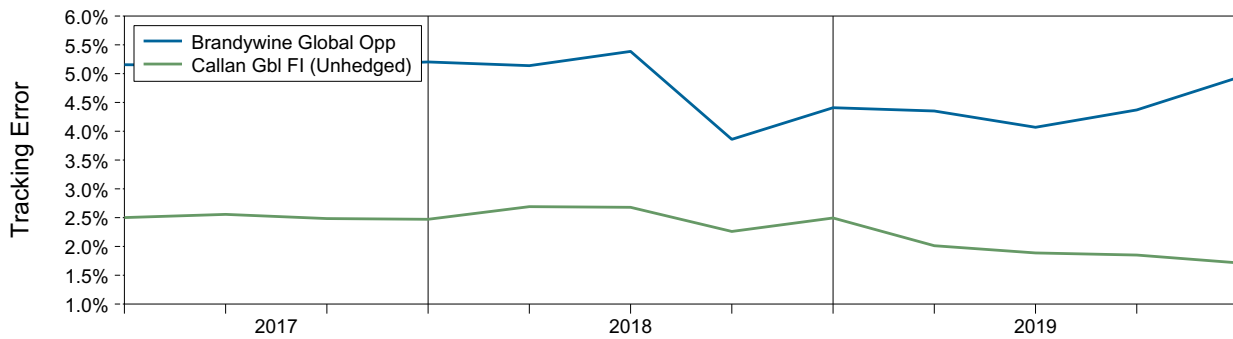
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

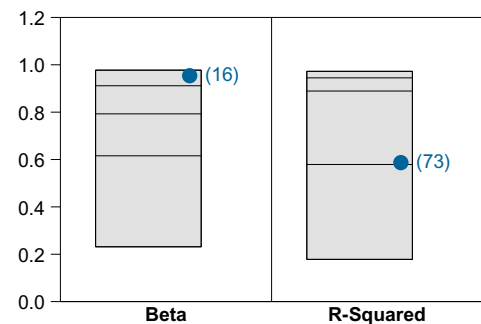
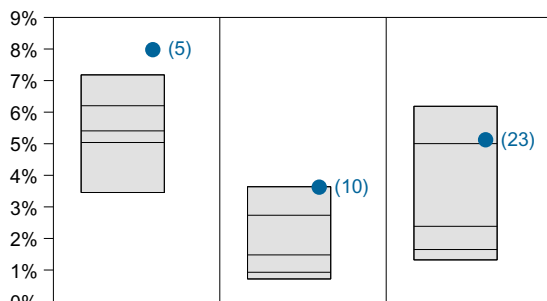
### Risk Analysis vs Callan Global Fixed Income (Unhedged) (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs FTSE World Gov Bond Index (WGBI)



### Risk Statistics Rankings vs FTSE World Gov Bond Index (WGBI) Rankings Against Callan Global Fixed Income (Unhedged) (Gross) Five Years Ended December 31, 2019



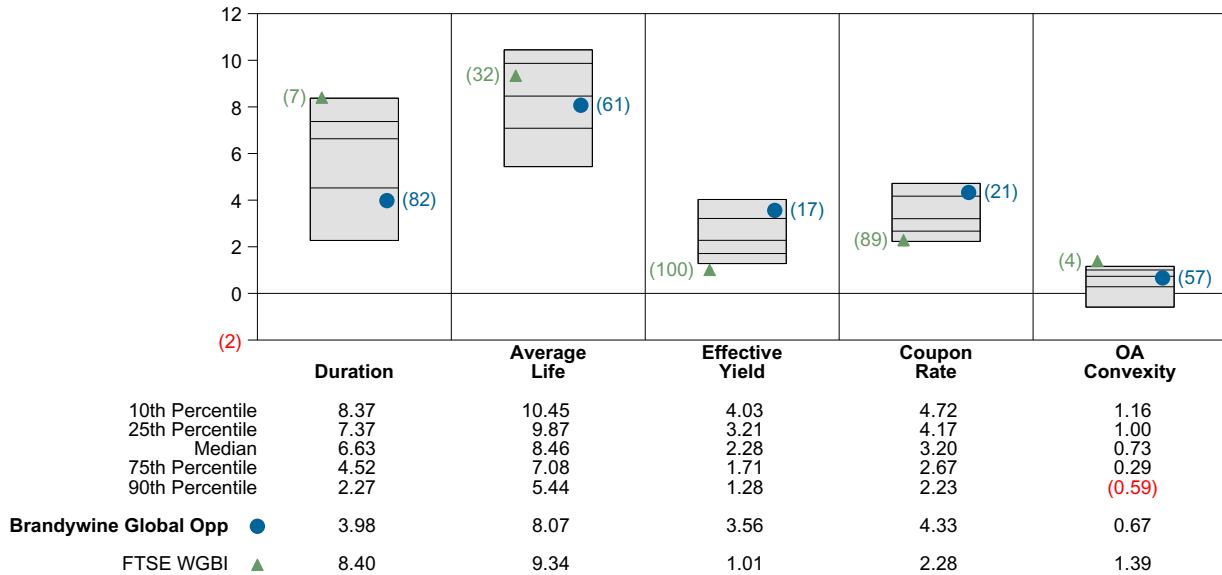
	Standard Deviation	Downside Risk	Tracking Error	Beta	R-Squared
10th Percentile	7.18	3.64	6.19	0.98	0.97
25th Percentile	6.20	2.73	5.00	0.91	0.94
Median	5.41	1.48	2.38	0.79	0.89
75th Percentile	5.04	0.93	1.65	0.62	0.58
90th Percentile	3.46	0.72	1.32	0.23	0.18
<b>Brandywine Global Opp</b>	<b>7.98</b>	<b>3.63</b>	<b>5.13</b>	<b>0.95</b>	<b>0.59</b>

# Brandywine Global Opp Bond Characteristics Analysis Summary

## Portfolio Characteristics

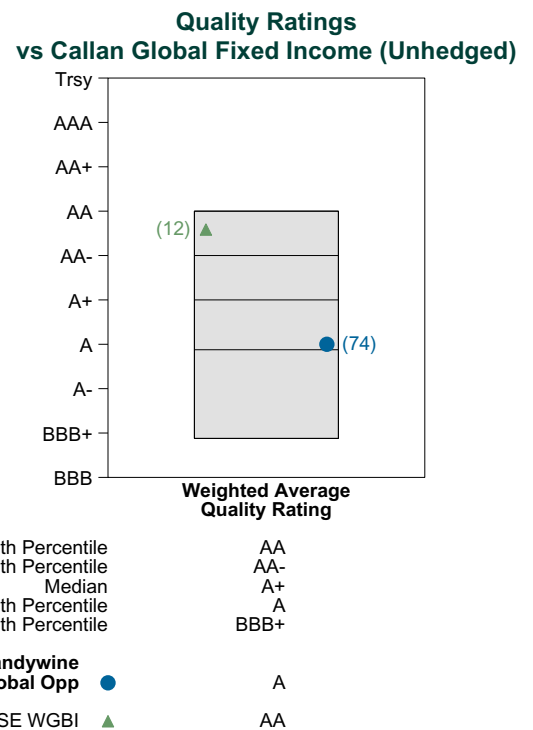
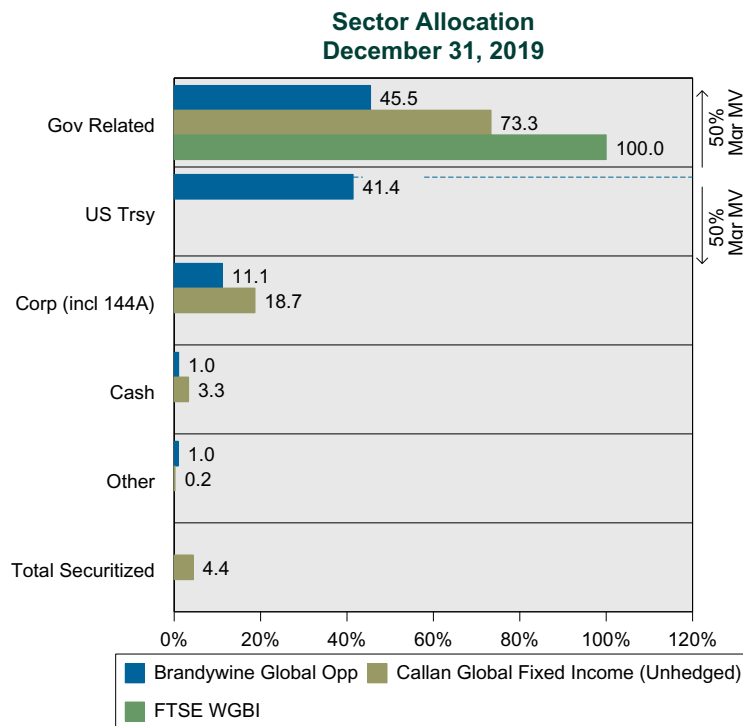
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed Income (Unhedged) as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

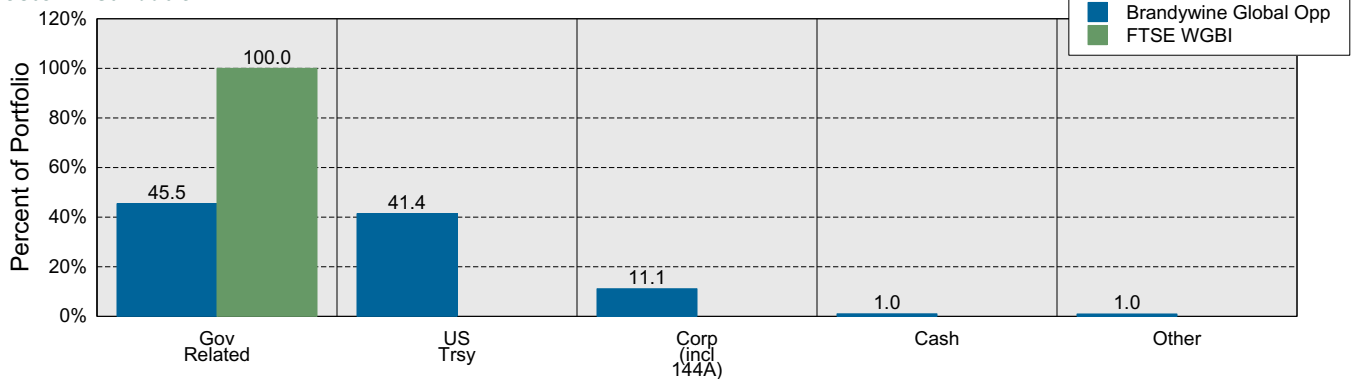


# Brandywine Global Opp Portfolio Characteristics Summary As of December 31, 2019

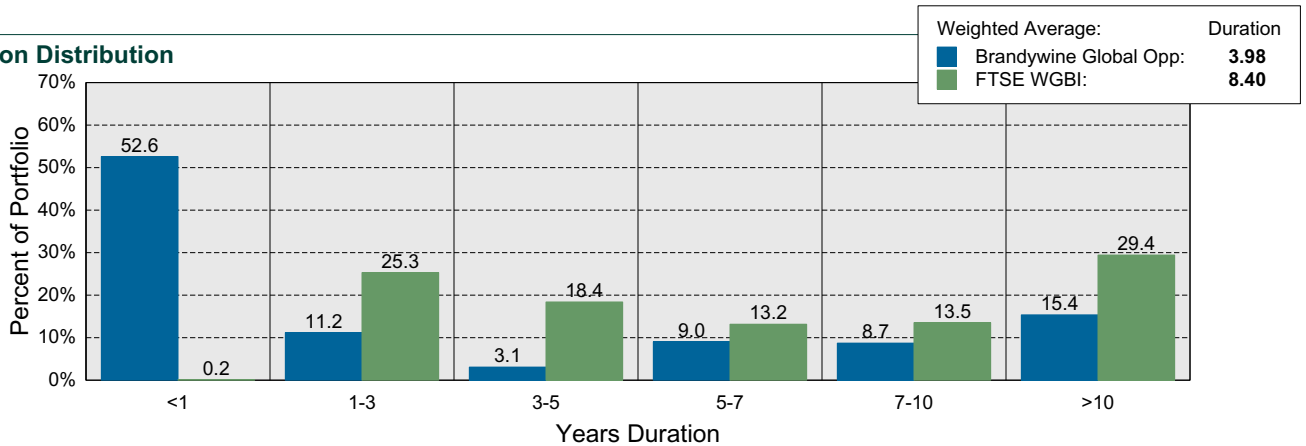
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

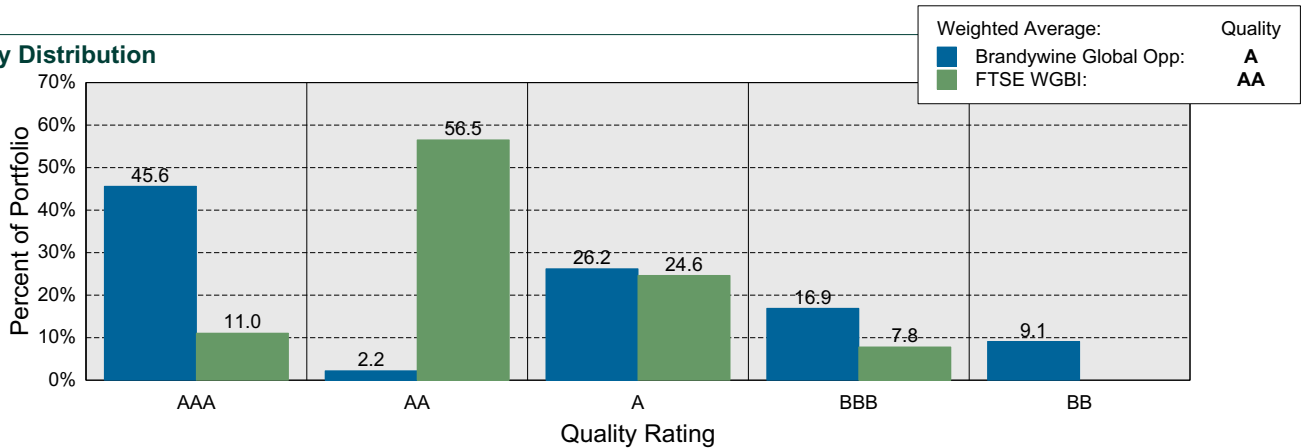
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Pyramis Gbl Adv HY CMBS Period Ended December 31, 2019

## Investment Philosophy

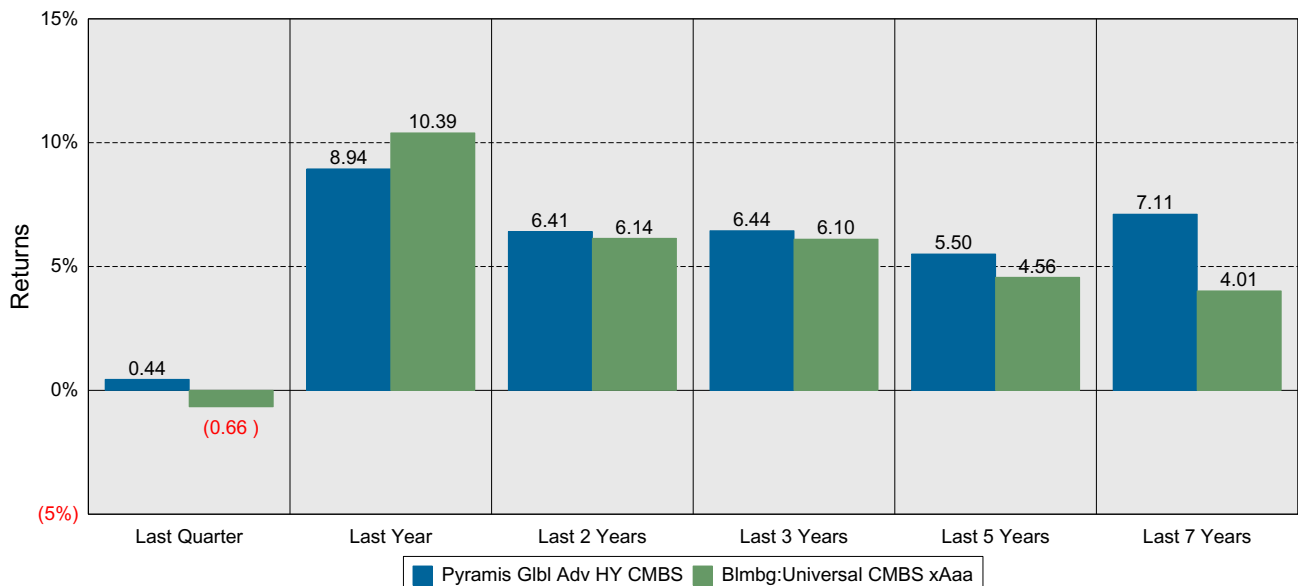
FIAM believes that unsurpassed bottom-up research on more CMBS issues than other investors will yield premiums relative to others.

## Quarterly Summary and Highlights

- Pyramis Gbl Adv HY CMBS's portfolio posted a 0.44% return for the quarter placing it in the 98 percentile of the Callan Global Fixed High Yield group for the quarter and in the 100 percentile for the last year.
- Pyramis Gbl Adv HY CMBS's portfolio outperformed the Blmbg:Universal CMBS xAaa by 1.11% for the quarter and underperformed the Blmbg:Universal CMBS xAaa for the year by 1.45%.

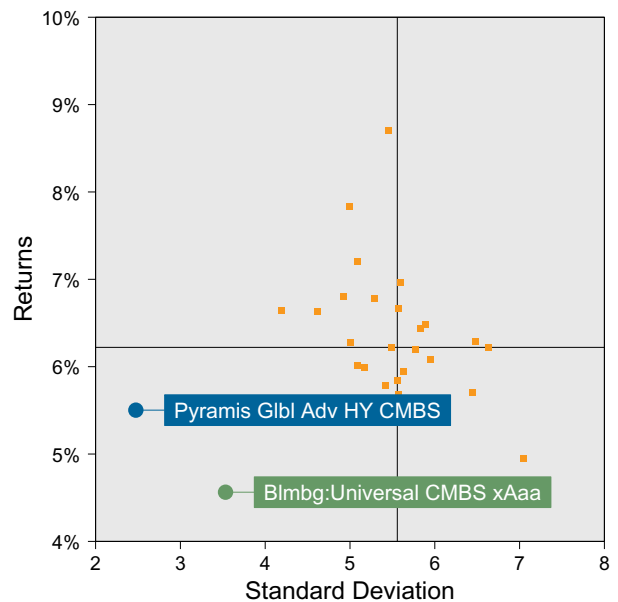
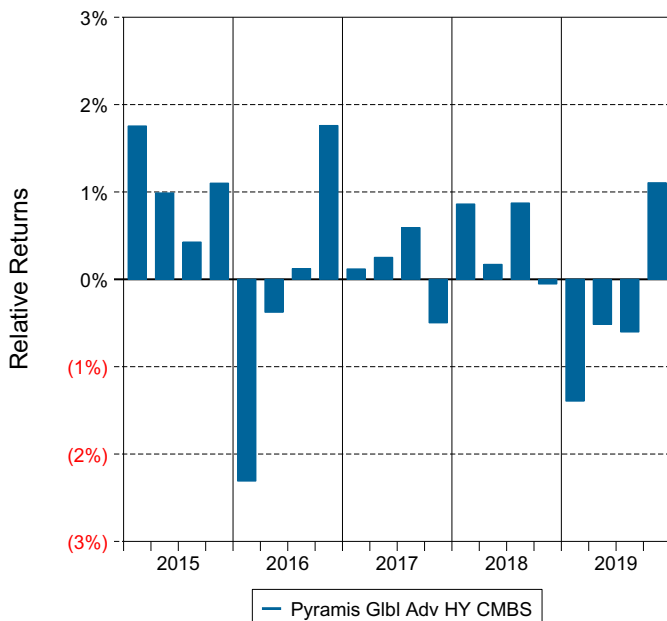
## Quarterly Asset Growth

Beginning Market Value	\$339,892,423
Net New Investment	\$0
Investment Gains/(Losses)	\$982,103
Ending Market Value	\$340,874,526



Relative Returns vs Blmbg:Universal CMBS xAaa

Callan Global Fixed High Yield (Gross) Annualized Five Year Risk vs Return

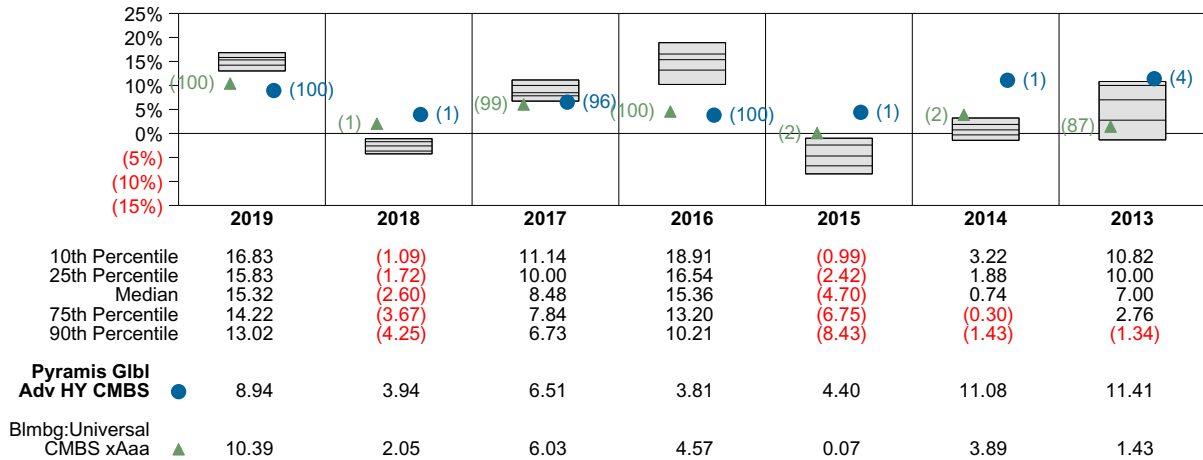


# Pyramis Gbl Adv HY CMBS Return Analysis Summary

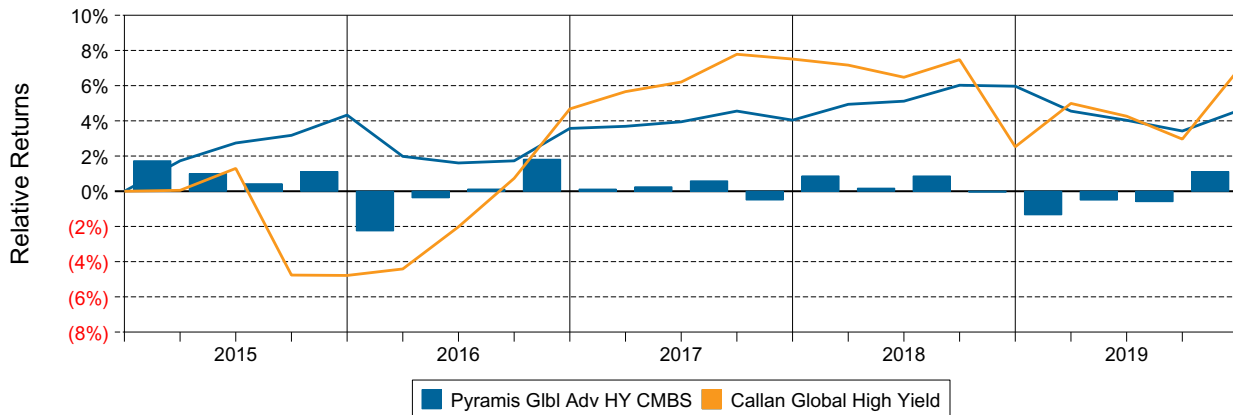
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

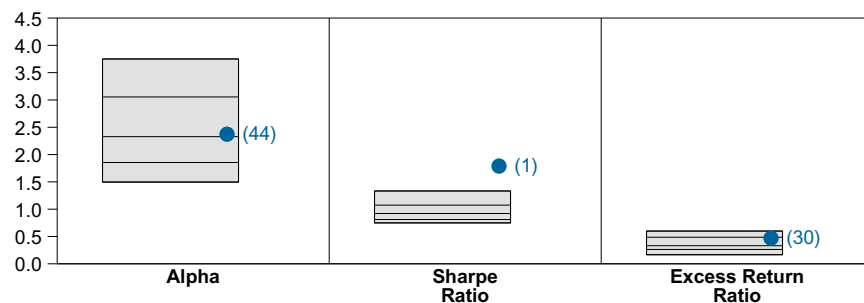
### Performance vs Callan Global Fixed High Yield (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg:Universal CMBS xAaa



### Risk Adjusted Return Measures vs Blmbg:Universal CMBS xAaa Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2019



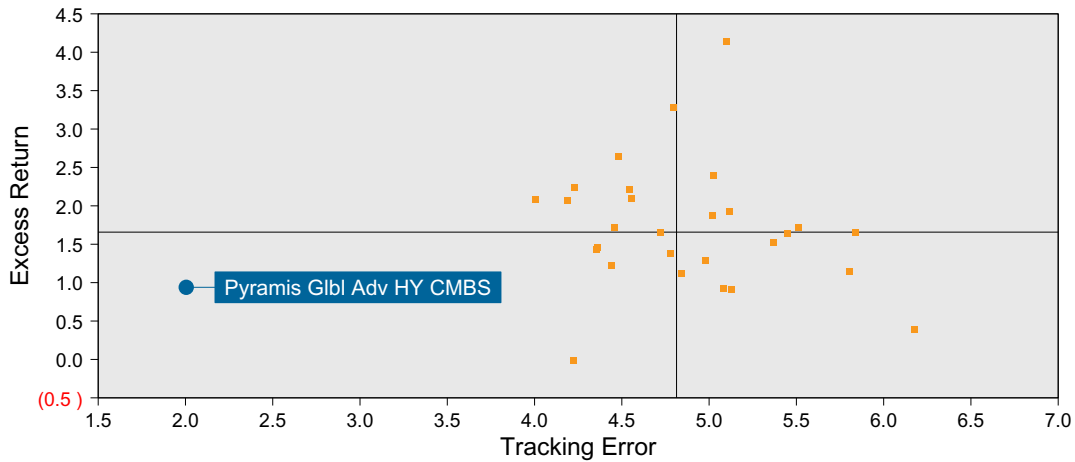
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	3.75	1.33	0.60
25th Percentile	3.06	1.07	0.49
Median	2.33	0.92	0.33
75th Percentile	1.85	0.81	0.26
90th Percentile	1.50	0.75	0.17
<b>Pyramis Gbl Adv HY CMBS</b>	<b>2.37</b>	<b>1.79</b>	<b>0.47</b>

# Pyramis Gbl Adv HY CMBS Risk Analysis Summary

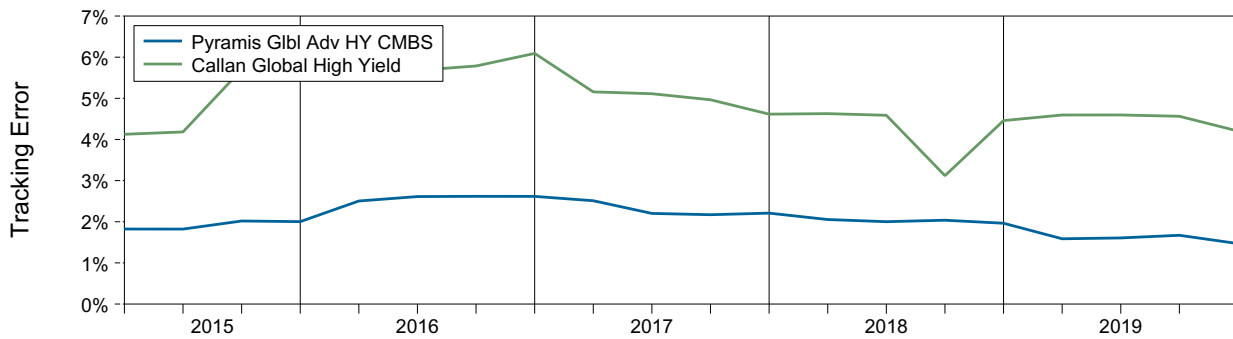
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

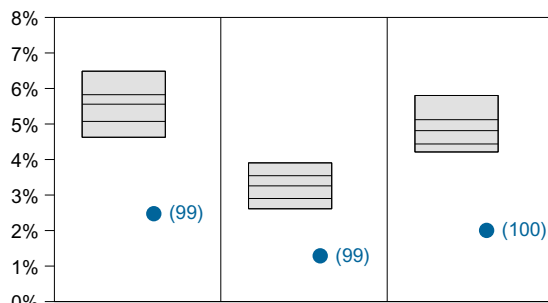
### Risk Analysis vs Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays Universal CMBS xAaa

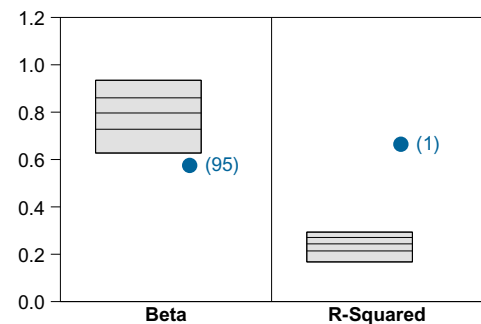


### Risk Statistics Rankings vs Bloomberg Barclays Universal CMBS xAaa Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2019



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	6.49	3.91	5.80
25th Percentile	5.83	3.54	5.12
Median	5.56	3.26	4.81
75th Percentile	5.07	2.90	4.44
90th Percentile	4.63	2.61	4.21

**Pyramis Gbl Adv HY CMBS** ● 2.47 1.29 2.00



	Beta	R-Squared
10th Percentile	0.93	0.29
25th Percentile	0.86	0.27
Median	0.80	0.24
75th Percentile	0.73	0.21
90th Percentile	0.63	0.17

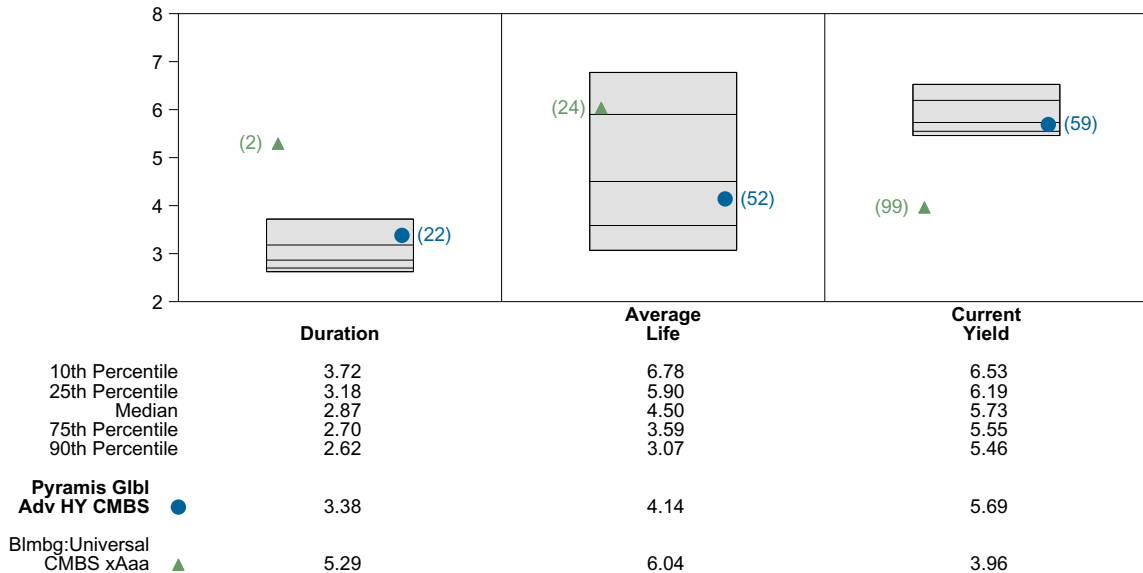
**Pyramis Gbl Adv HY CMBS** ● 0.58 0.66

# Pyramis Gbl Adv HY CMBS Bond Characteristics Analysis Summary

## Portfolio Characteristics

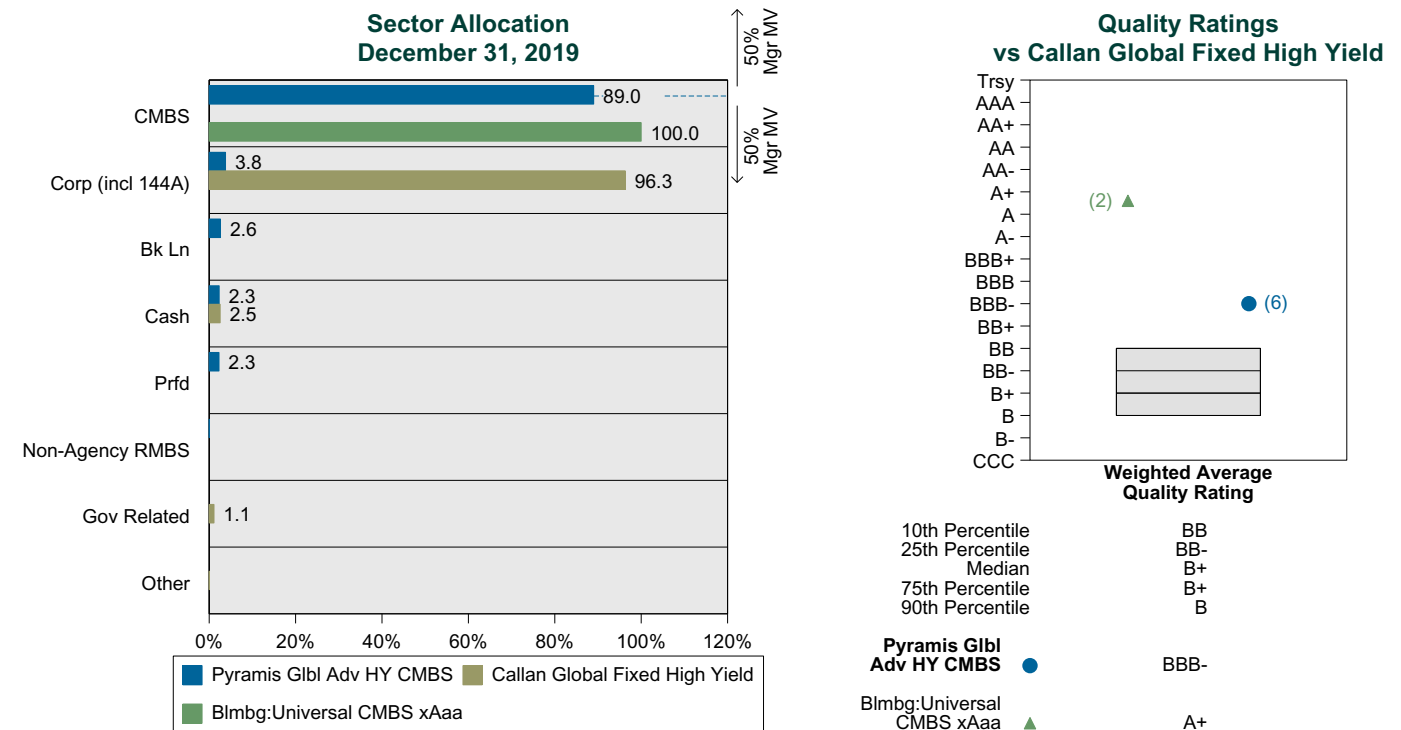
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed High Yield as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



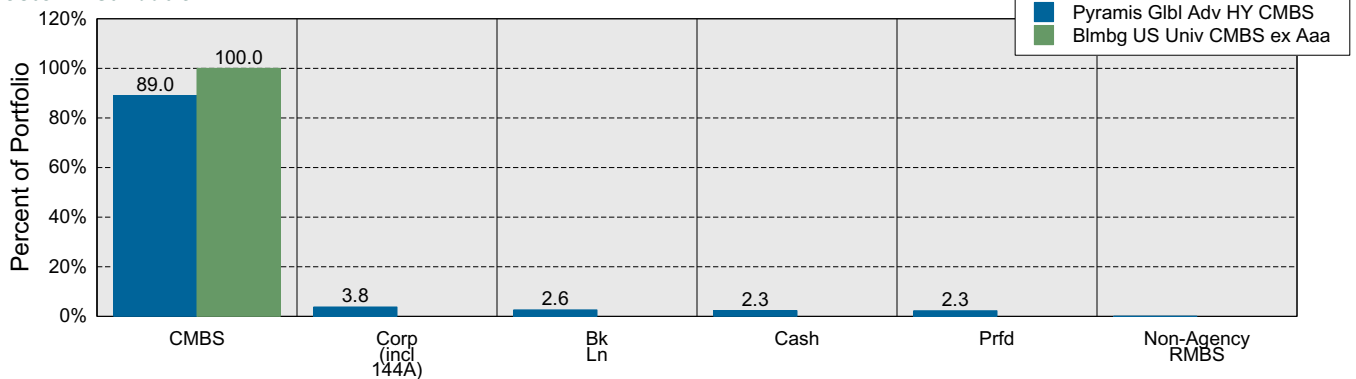


# Pyramis Gbl Adv HY CMBS Portfolio Characteristics Summary As of December 31, 2019

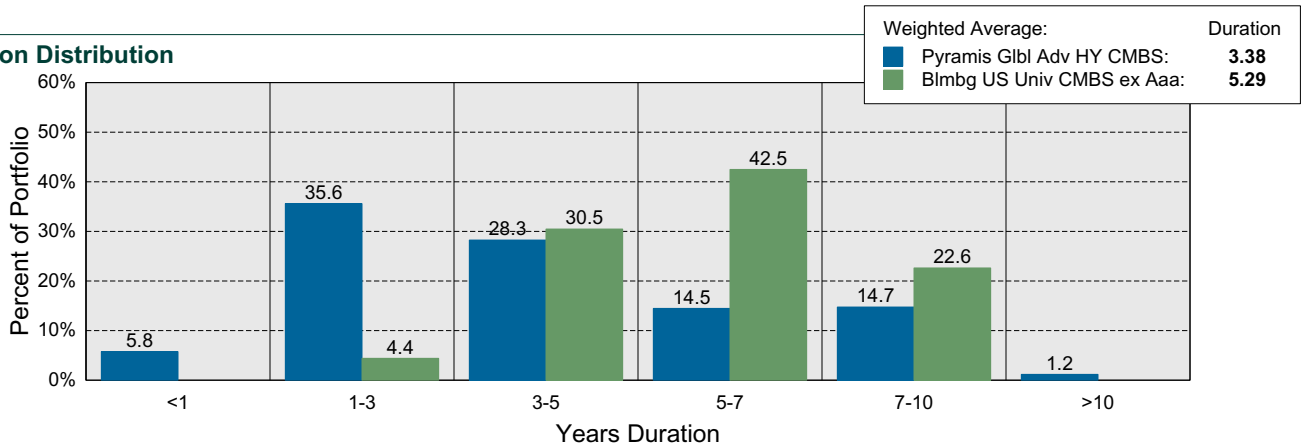
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

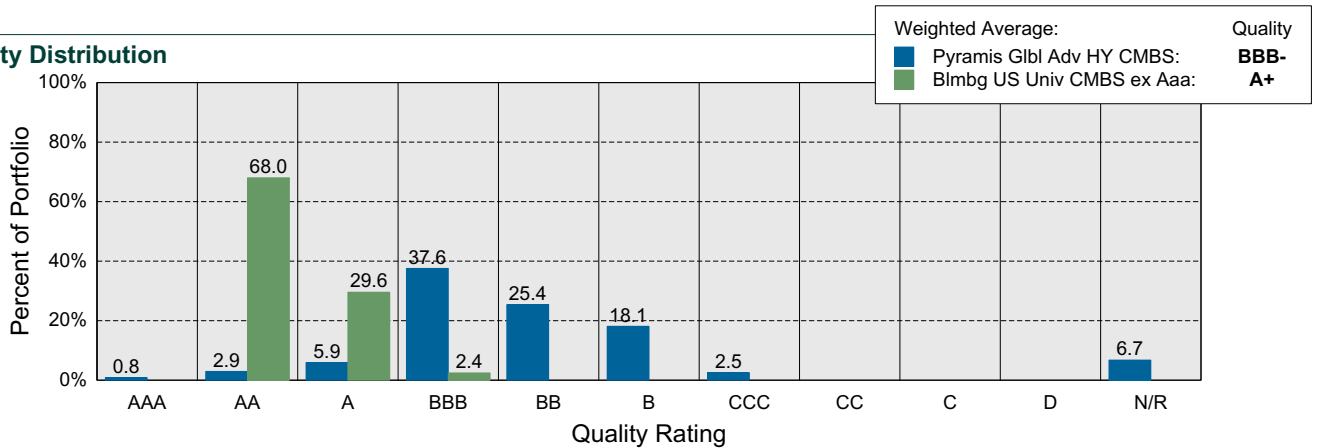
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Stone Harbor EMD Period Ended December 31, 2019

## Investment Philosophy

Stone Harbor believes that a disciplined credit and relative value approach will best capture what the investment team views as a secular trend towards the expansion and development of the emerging debt markets. The team also believes that investing in a diversified portfolio of improving emerging markets debt instruments will result in strong, long-term performance. Also, they believe the key to successfully generating excess returns is through a process of rigorous credit analysis. The team's active style of investment management is characterized by fundamental credit analysis.

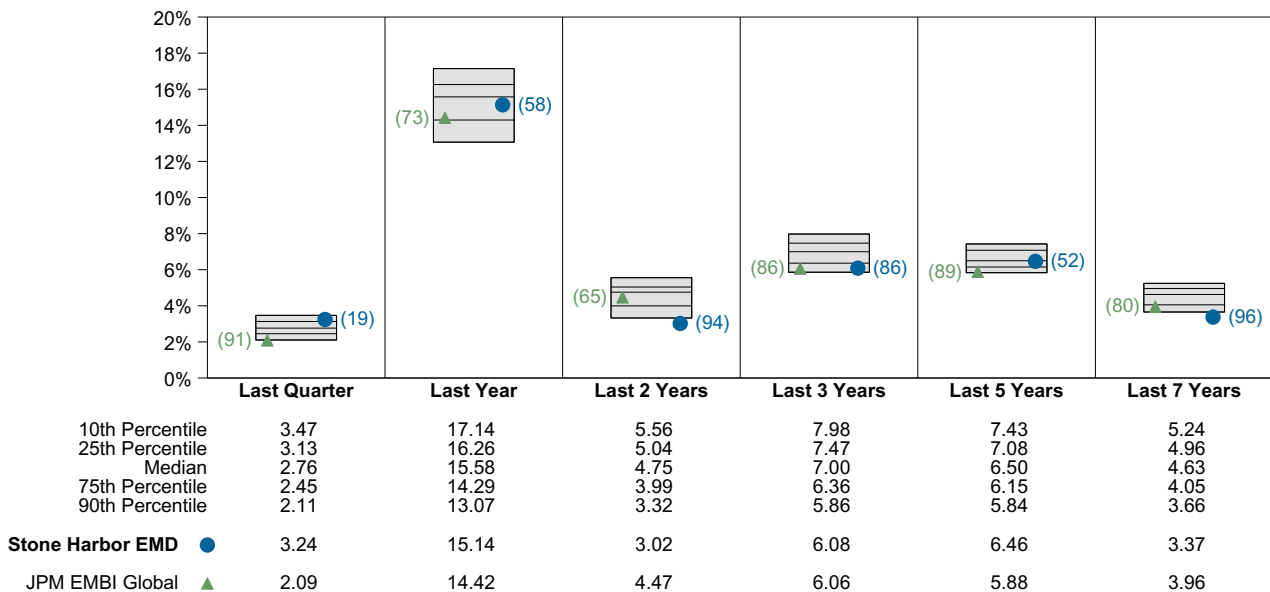
## Quarterly Summary and Highlights

- Stone Harbor EMD's portfolio posted a 3.24% return for the quarter placing it in the 19 percentile of the Callan Emerging Debt USD group for the quarter and in the 58 percentile for the last year.
- Stone Harbor EMD's portfolio outperformed the JPM EMBI Global by 1.15% for the quarter and outperformed the JPM EMBI Global for the year by 0.72%.

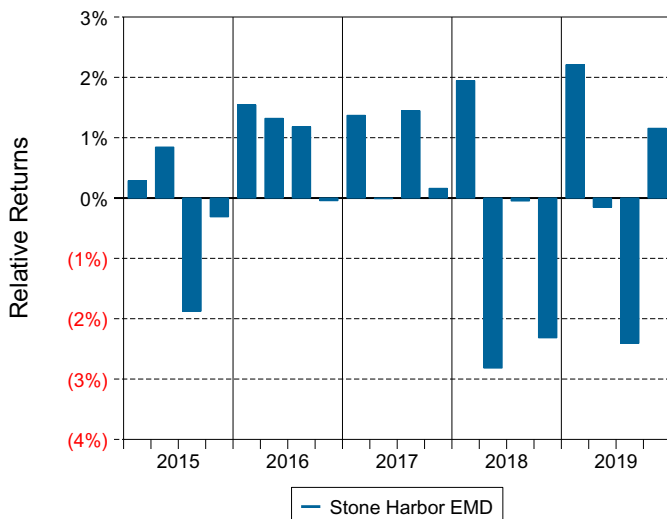
## Quarterly Asset Growth

Beginning Market Value	\$163,961,997
Net New Investment	\$0
Investment Gains/(Losses)	\$4,822,477
Ending Market Value	\$168,784,474

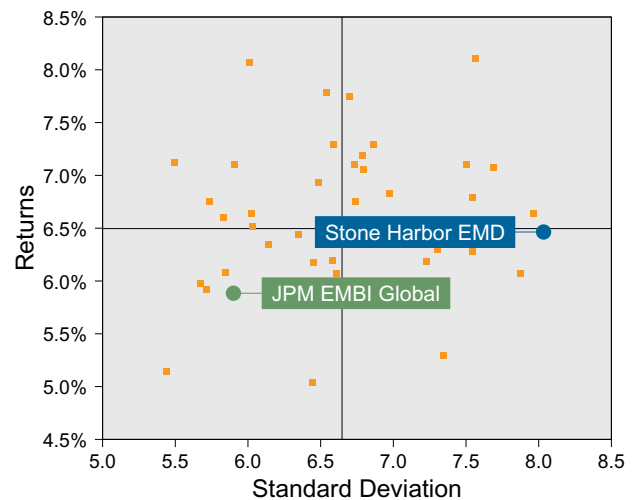
## Performance vs Callan Emerging Debt USD (Gross)



## Relative Return vs JPM EMBI Global



## Callan Emerging Debt USD (Gross) Annualized Five Year Risk vs Return

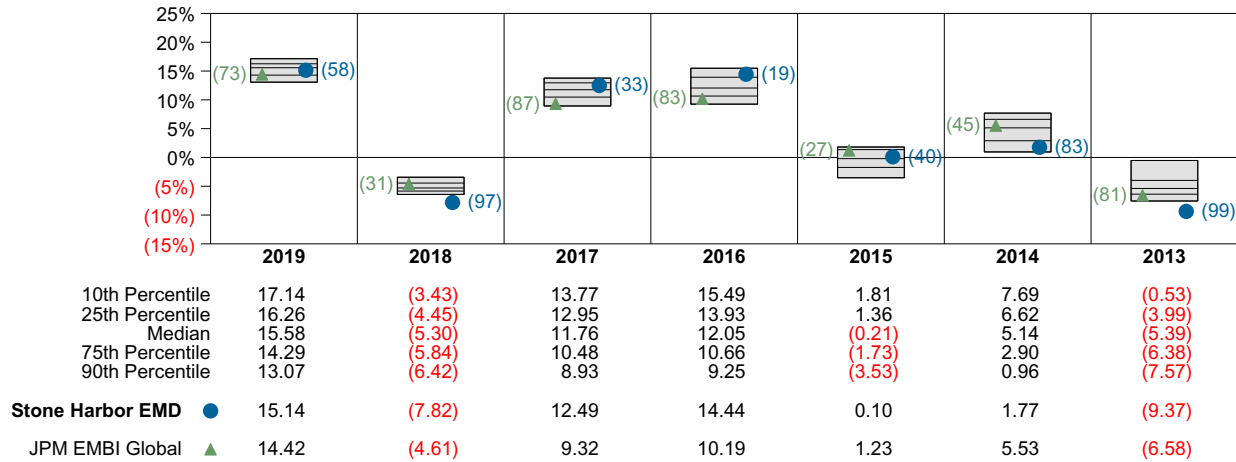


# Stone Harbor EMD Return Analysis Summary

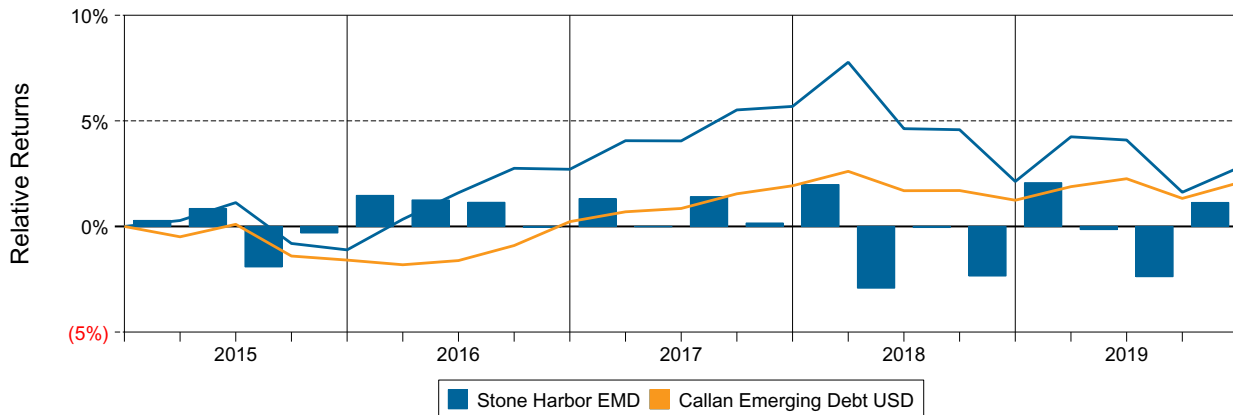
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

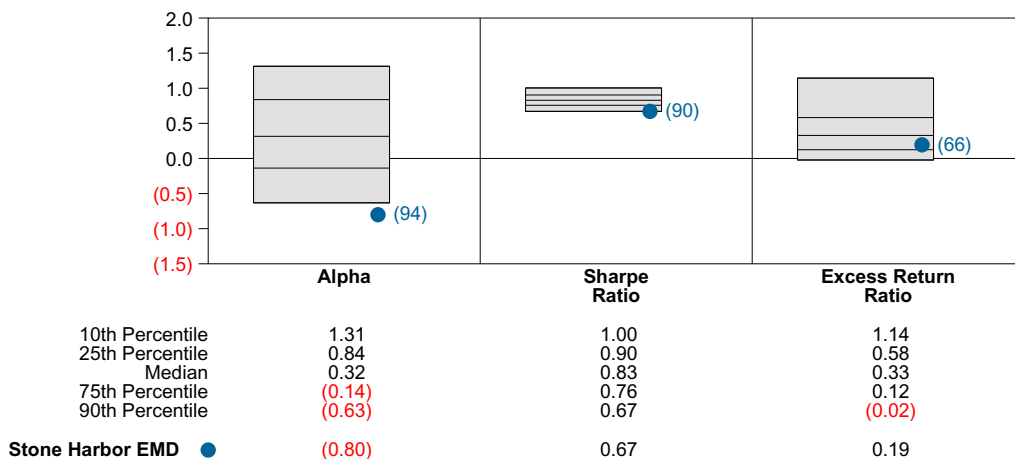
### Performance vs Callan Emerging Debt USD (Gross)



### Cumulative and Quarterly Relative Return vs JPM EMBI Global



### Risk Adjusted Return Measures vs JPM EMBI Global Rankings Against Callan Emerging Debt USD (Gross) Five Years Ended December 31, 2019

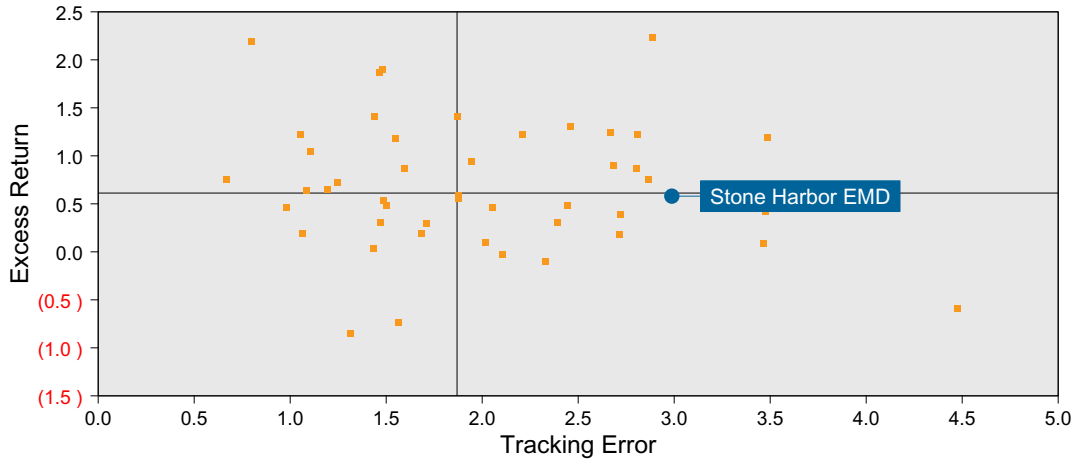


# Stone Harbor EMD Risk Analysis Summary

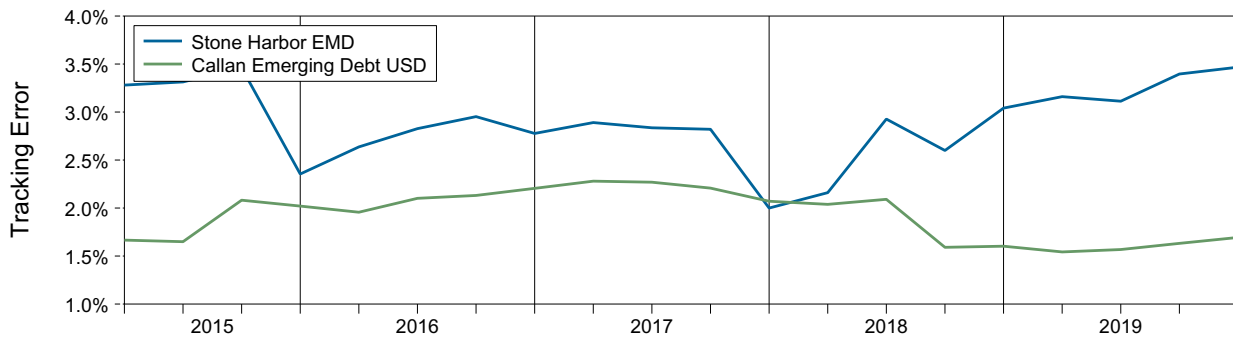
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

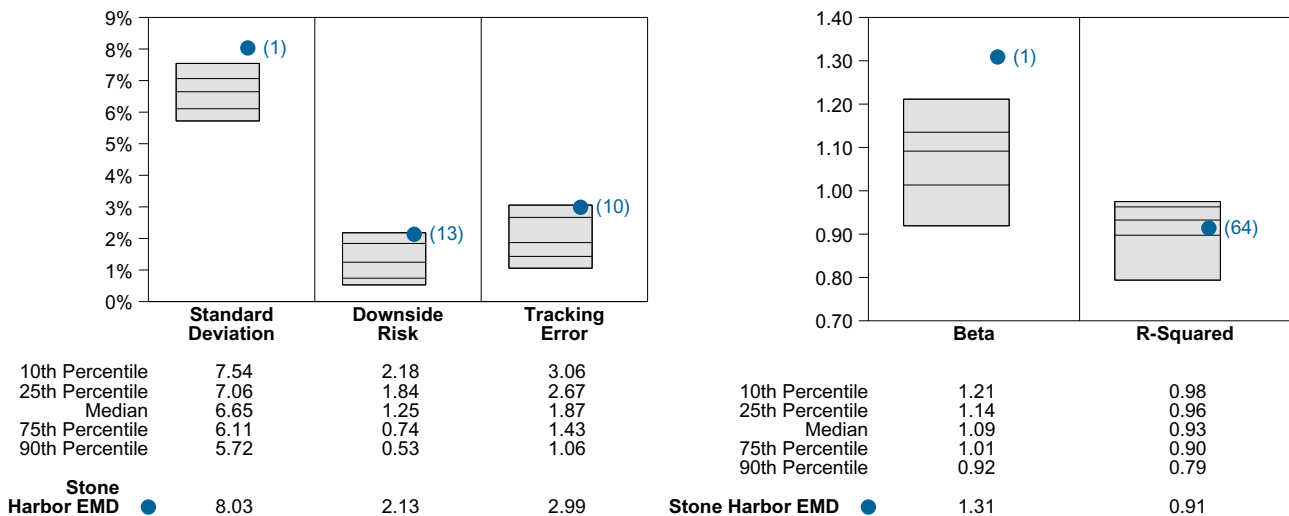
### Risk Analysis vs Callan Emerging Debt USD (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs JPM Emerging Mkts Bond Global



### Risk Statistics Rankings vs JPM Emerging Mkts Bond Global Rankings Against Callan Emerging Debt USD (Gross) Five Years Ended December 31, 2019

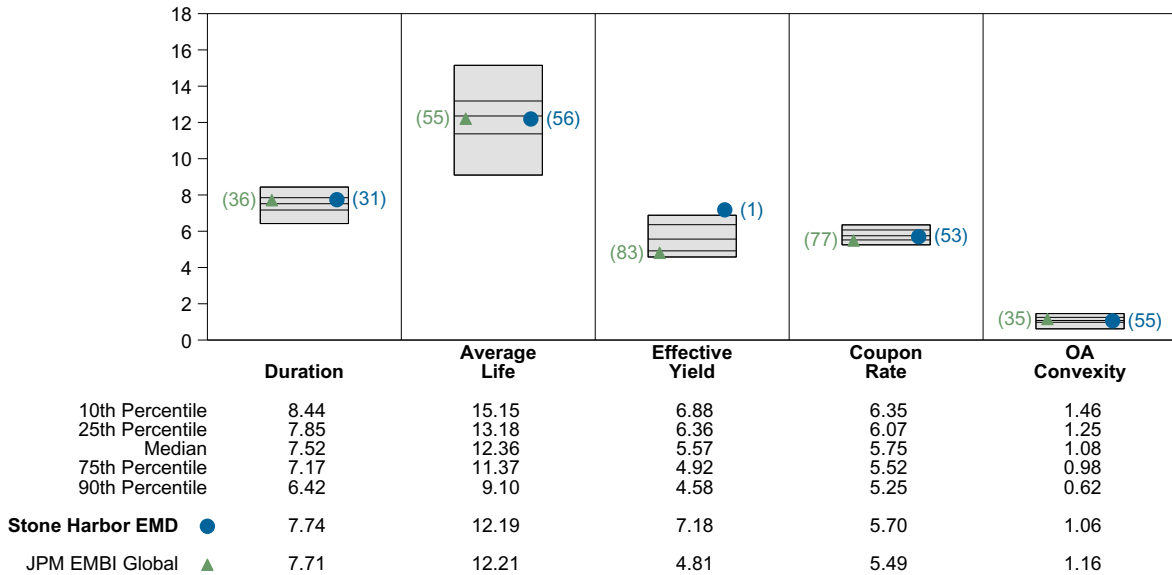


# Stone Harbor EMD Bond Characteristics Analysis Summary

## Portfolio Characteristics

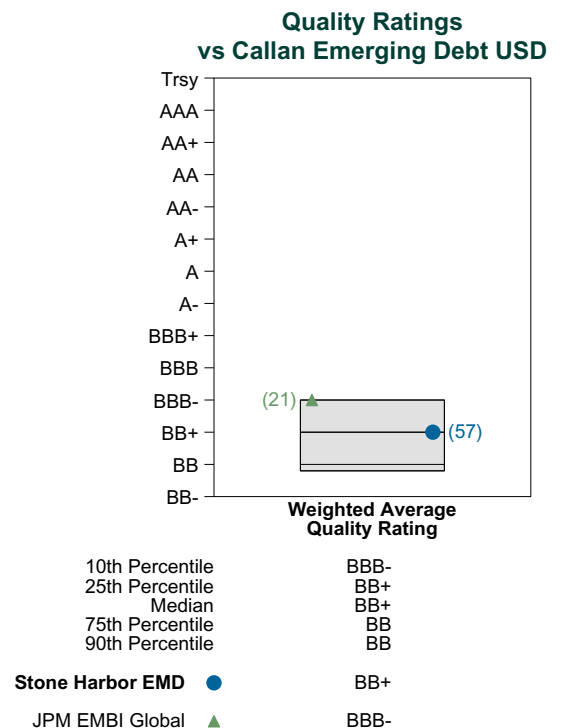
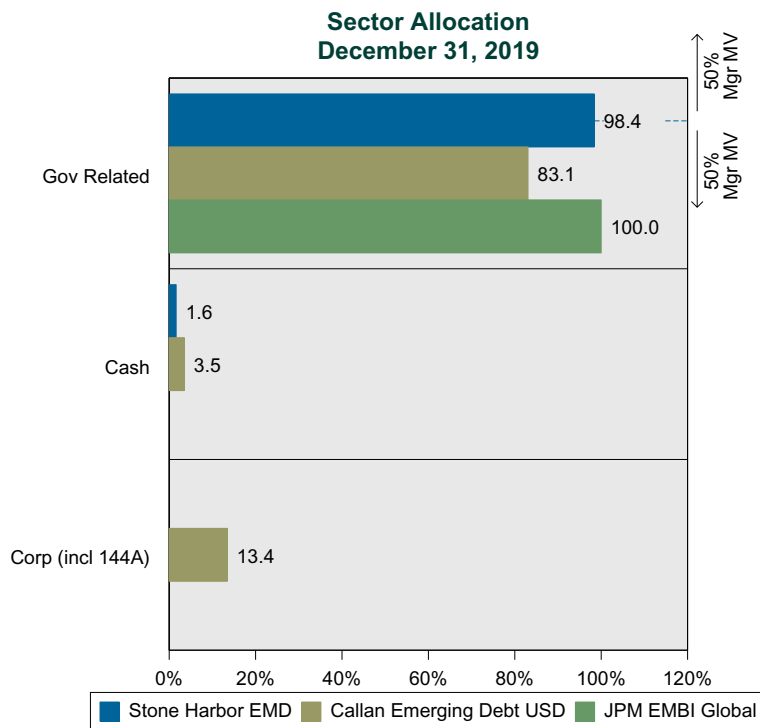
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Emerging Debt USD as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

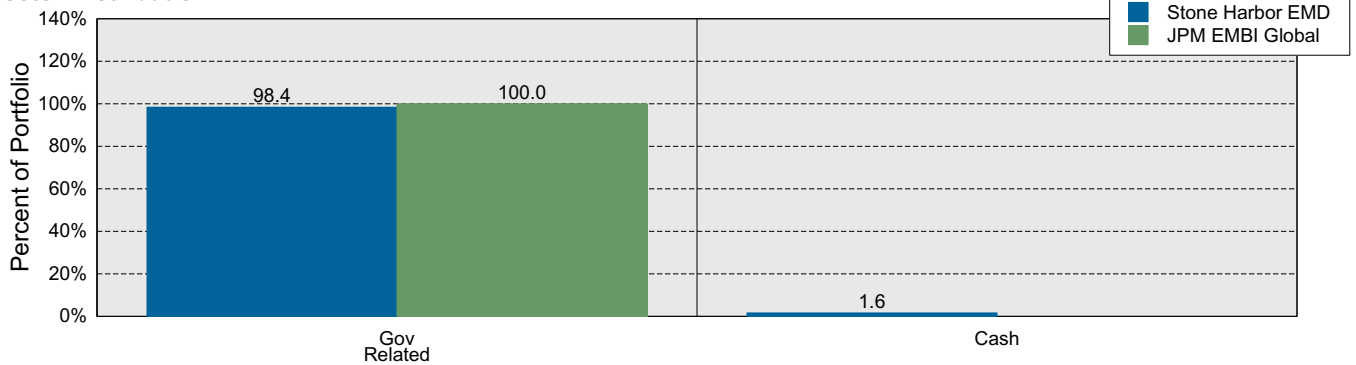


# Stone Harbor EMD Portfolio Characteristics Summary As of December 31, 2019

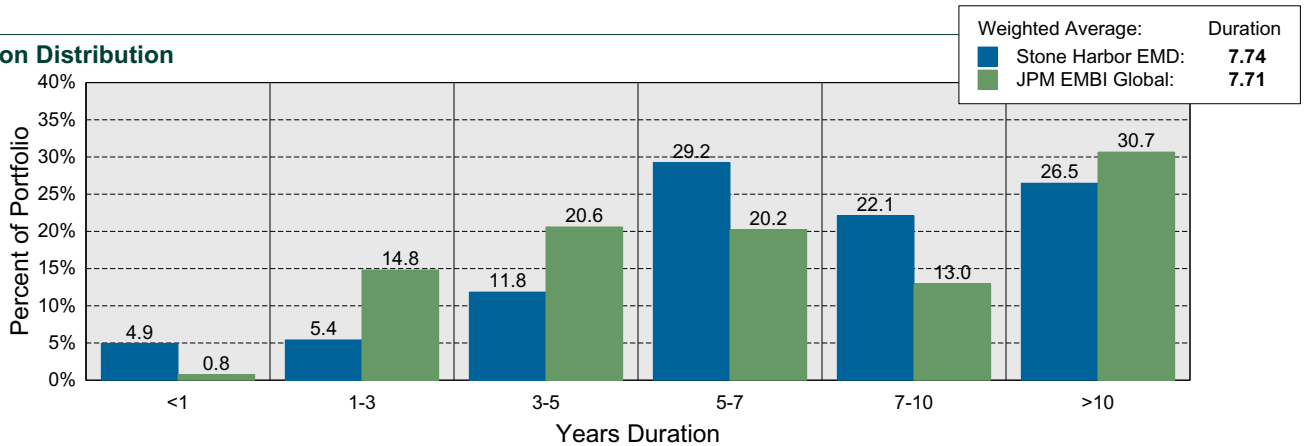
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

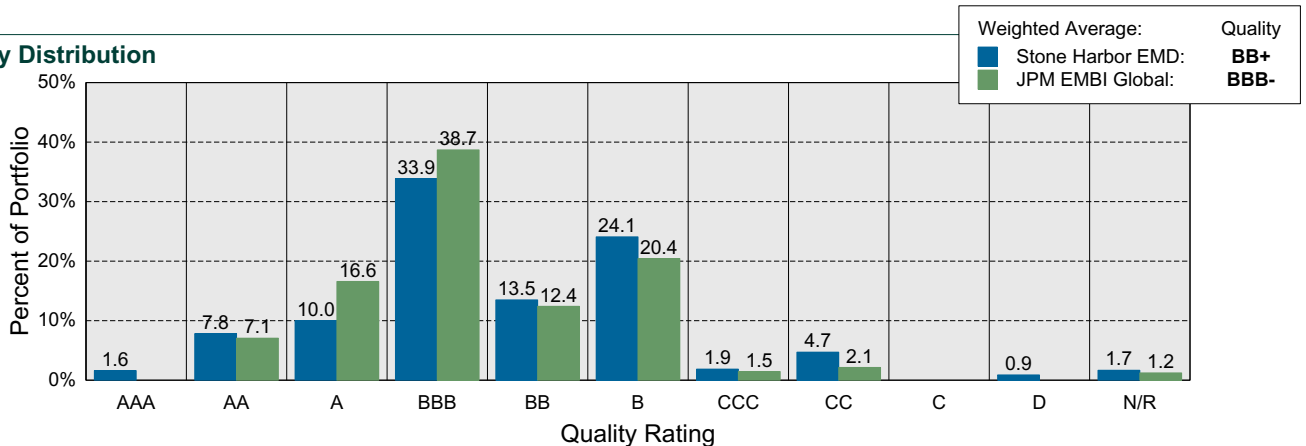
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Stone Harbor Gbl HY

## Period Ended December 31, 2019

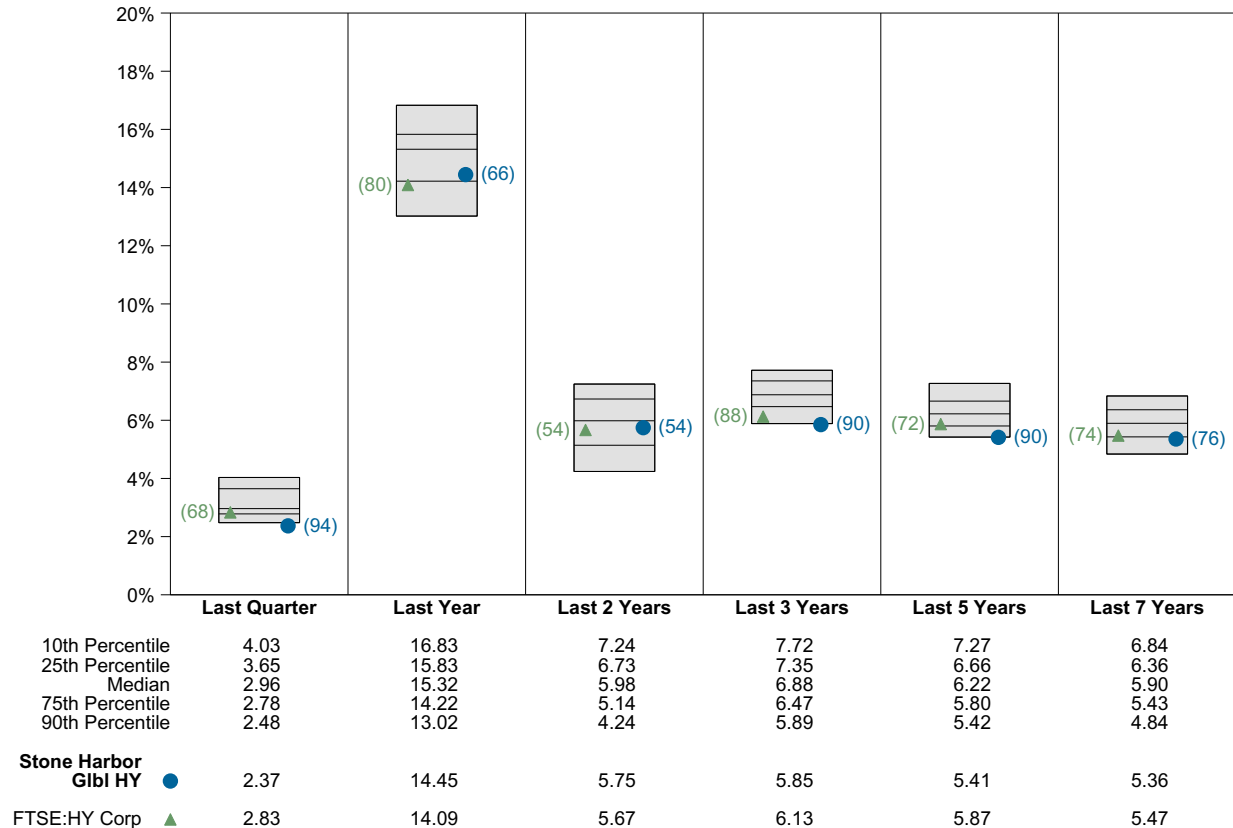
### Quarterly Summary and Highlights

- Stone Harbor Gbl HY's portfolio posted a 2.37% return for the quarter placing it in the 94 percentile of the Callan Global Fixed High Yield group for the quarter and in the 66 percentile for the last year.
- Stone Harbor Gbl HY's portfolio underperformed the FTSE:HY Corp by 0.46% for the quarter and outperformed the FTSE:HY Corp for the year by 0.36%.

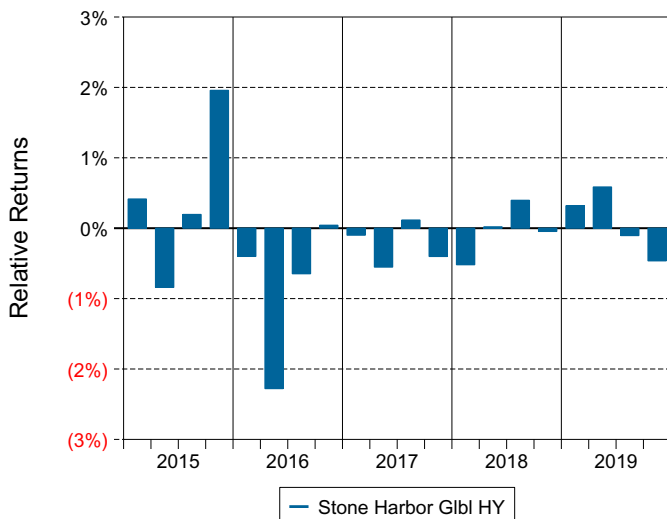
### Quarterly Asset Growth

Beginning Market Value	\$193,215,504
Net New Investment	\$0
Investment Gains/(Losses)	\$3,996,398
Ending Market Value	\$197,211,903

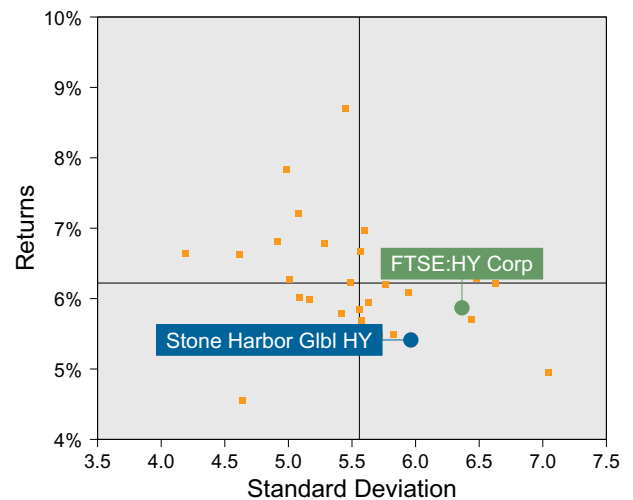
### Performance vs Callan Global Fixed High Yield (Gross)



### Relative Return vs FTSE:HY Corp



### Callan Global Fixed High Yield (Gross) Annualized Five Year Risk vs Return

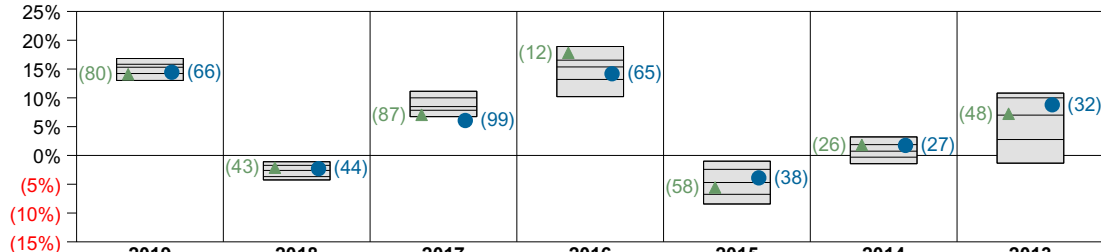


# Stone Harbor Gbl HY Return Analysis Summary

## Return Analysis

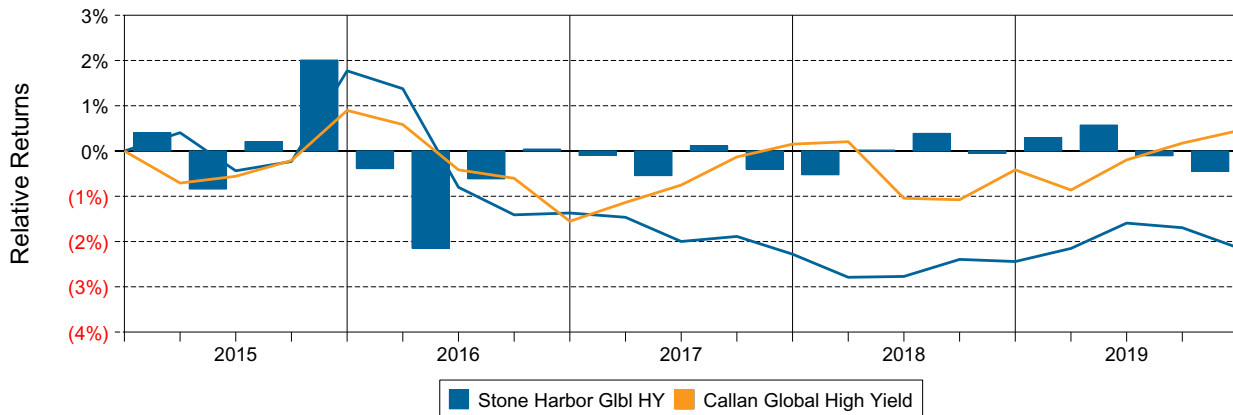
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Global Fixed High Yield (Gross)

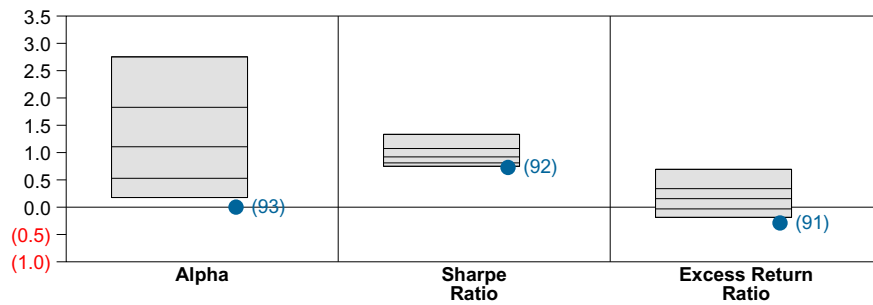


	2019	2018	2017	2016	2015	2014	2013
10th Percentile	16.83	(1.09)	11.14	18.91	(0.99)	3.22	10.82
25th Percentile	15.83	(1.72)	10.00	16.54	(2.42)	1.88	10.00
Median	15.32	(2.60)	8.48	15.36	(4.70)	0.74	7.00
75th Percentile	14.22	(3.67)	7.84	13.20	(6.75)	(0.30)	2.76
90th Percentile	13.02	(4.25)	6.73	10.21	(8.43)	(1.43)	(1.34)
<b>Stone Harbor Gbl HY</b>	<b>14.45</b>	<b>(2.29)</b>	<b>6.06</b>	<b>14.19</b>	<b>(3.89)</b>	<b>1.75</b>	<b>8.80</b>
<b>FTSE:HY Corp</b>	<b>14.09</b>	<b>(2.13)</b>	<b>7.05</b>	<b>17.82</b>	<b>(5.56)</b>	<b>1.83</b>	<b>7.23</b>

### Cumulative and Quarterly Relative Return vs FTSE:HY Corp



### Risk Adjusted Return Measures vs FTSE:HY Corp Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2019



	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	2.75	1.33	0.69
25th Percentile	1.83	1.07	0.34
Median	1.11	0.92	0.16
75th Percentile	0.53	0.81	(0.03)
90th Percentile	0.18	0.75	(0.19)
<b>Stone Harbor Gbl HY</b>	<b>0.00</b>	<b>0.73</b>	<b>(0.29)</b>

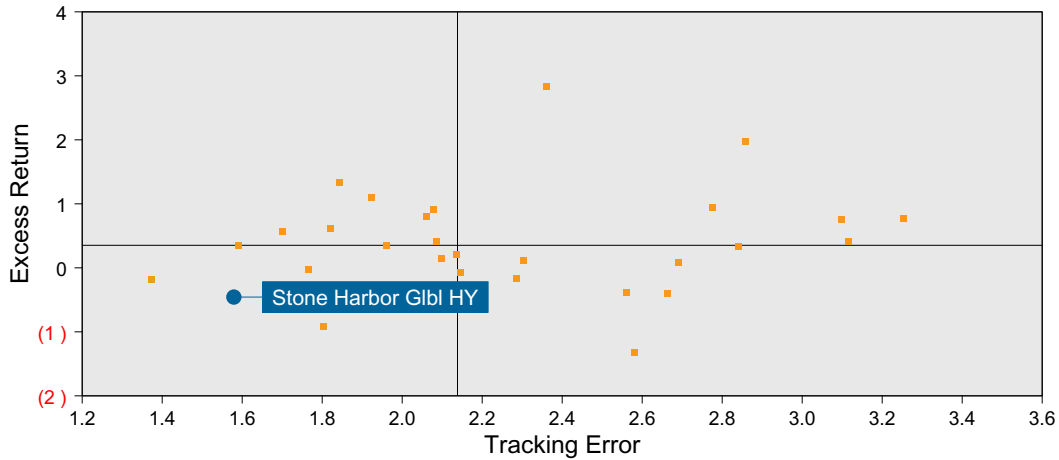


# Stone Harbor Gbl HY Risk Analysis Summary

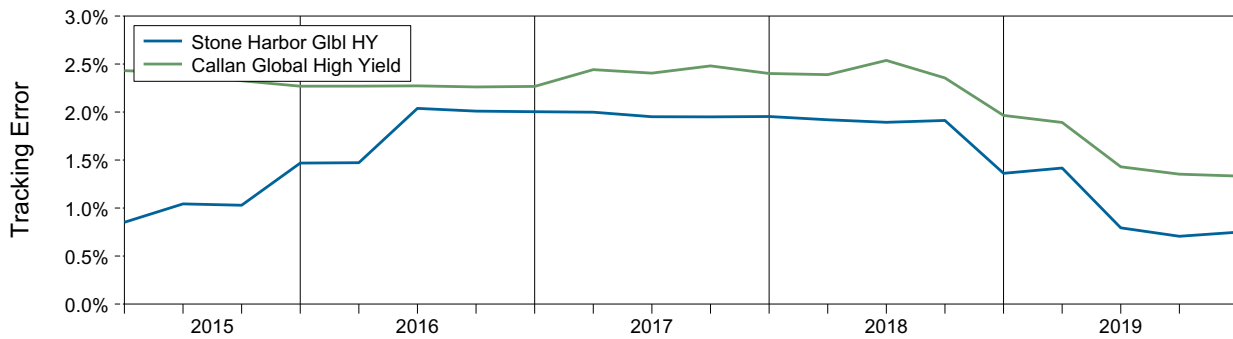
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

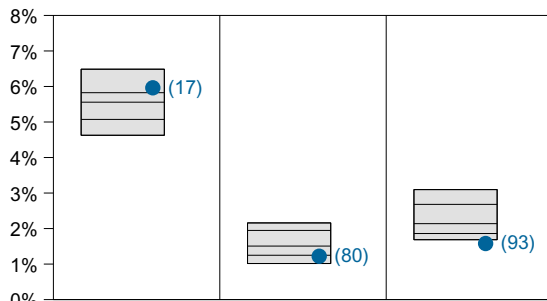
### Risk Analysis vs Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs FTSE HY Corporate



### Risk Statistics Rankings vs FTSE HY Corporate Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2019



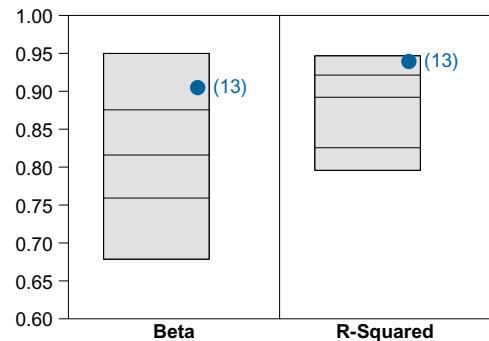
	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	6.49	2.16	3.10
25th Percentile	5.83	1.95	2.68
Median	5.56	1.51	2.14
75th Percentile	5.07	1.25	1.86
90th Percentile	4.63	1.02	1.69

Stone Harbor Gbl HY ●

5.96

1.22

1.58



	Beta	R-Squared
10th Percentile	0.95	0.95
25th Percentile	0.88	0.92
Median	0.82	0.89
75th Percentile	0.76	0.83
90th Percentile	0.68	0.80

Stone Harbor Gbl HY ●

0.90

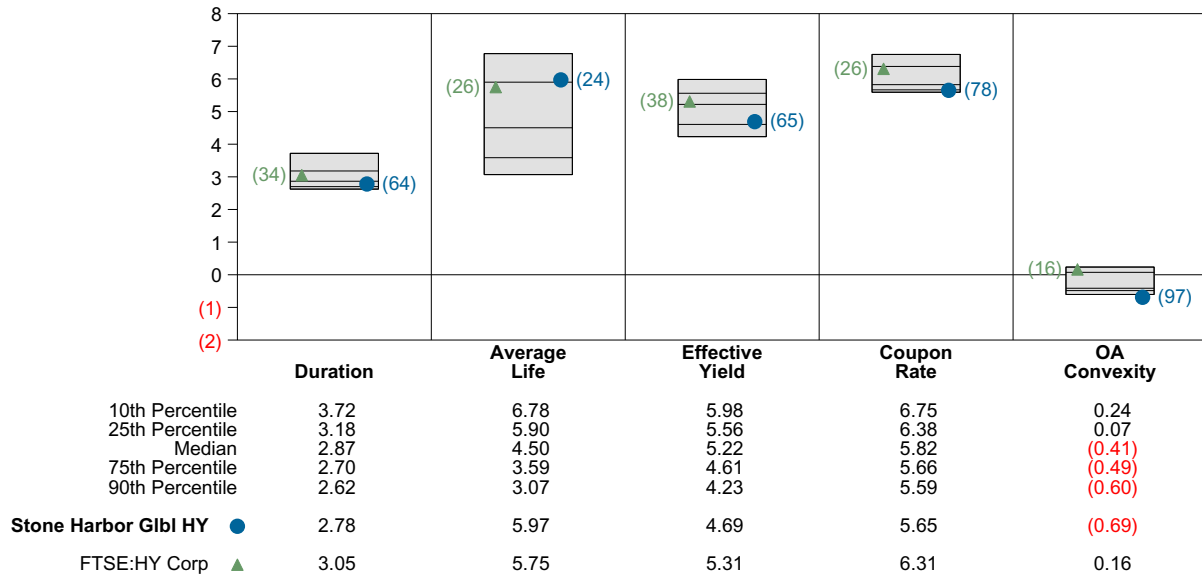
0.94

# Stone Harbor Gbl HY Bond Characteristics Analysis Summary

## Portfolio Characteristics

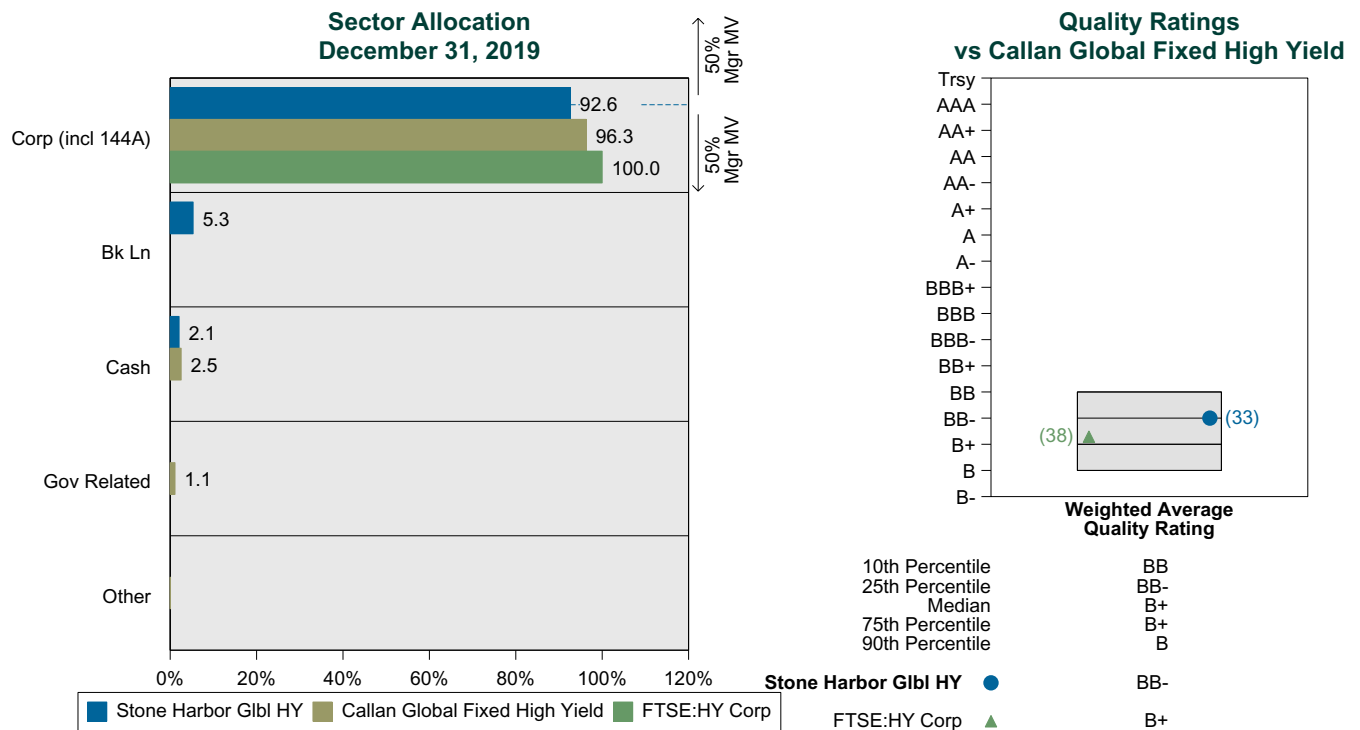
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed High Yield as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



# Stone Harbor Gbl HY Portfolio Characteristics Summary As of December 31, 2019

## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

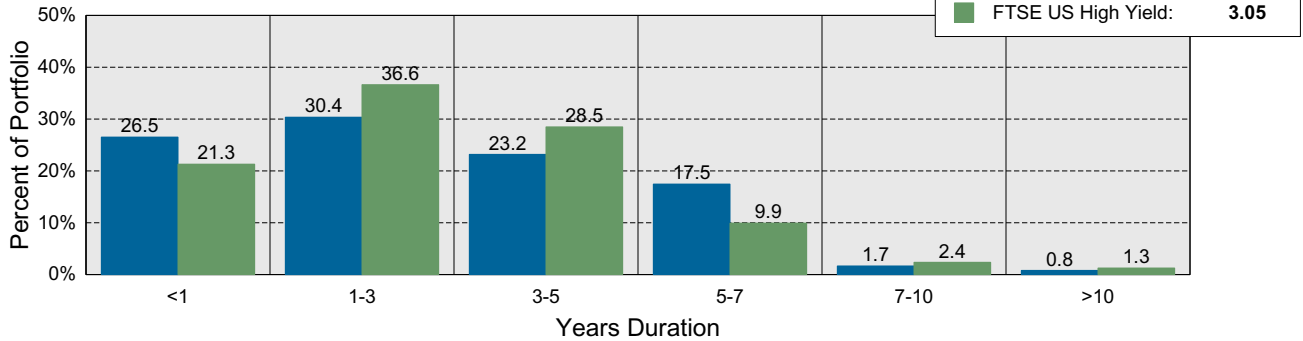
### Sector Allocation



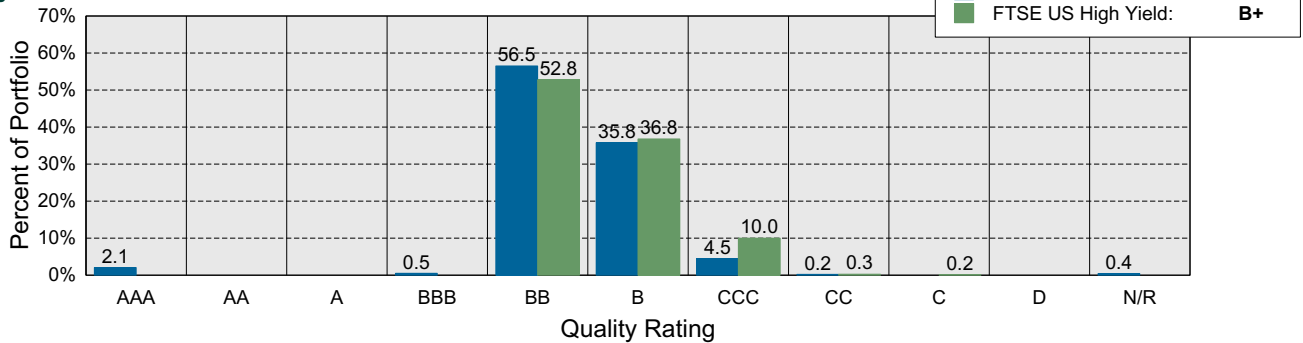
### Stone Harbor Gbl HY

### FTSE US High Yield

#### Duration Distribution



#### Quality Distribution





# Brown Brothers TIPS Period Ended December 31, 2019

## Investment Philosophy

The BBH U.S. TIPS strategy seeks to capture a range of fundamentally-based and technically-based opportunities in the inflation-indexed securities market.

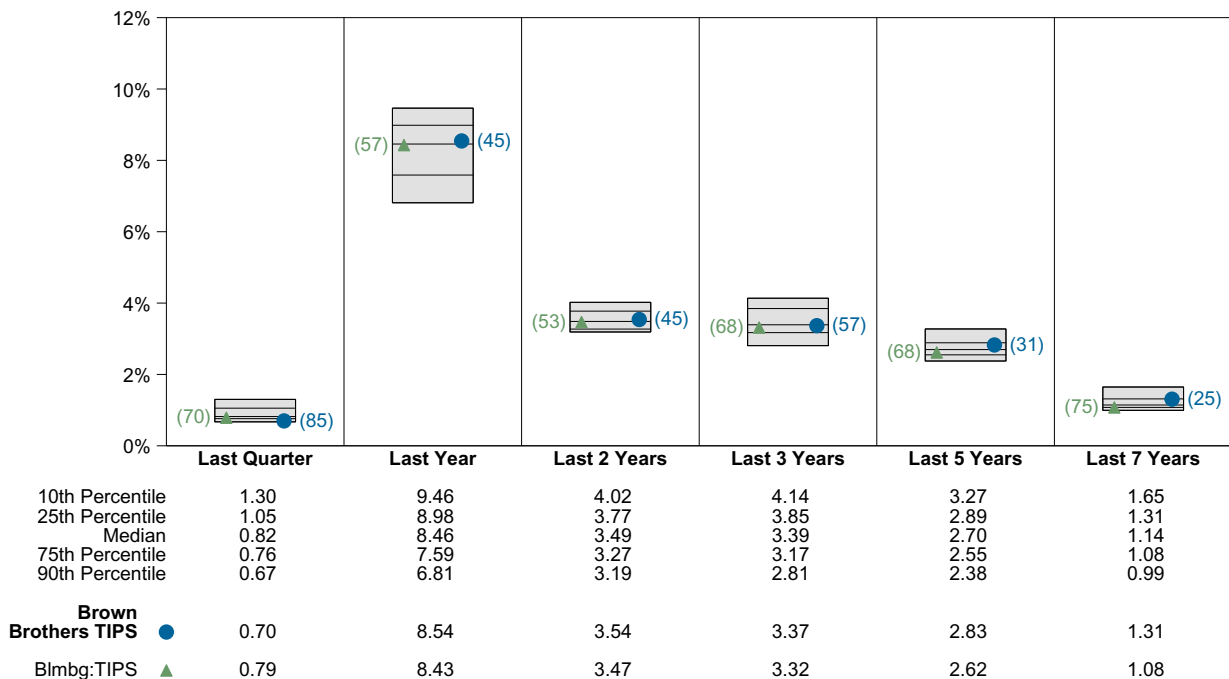
## Quarterly Summary and Highlights

- Brown Brothers TIPS's portfolio posted a 0.70% return for the quarter placing it in the 85 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 45 percentile for the last year.
- Brown Brothers TIPS's portfolio underperformed the Blmbg:TIPS by 0.09% for the quarter and outperformed the Blmbg:TIPS for the year by 0.12%.

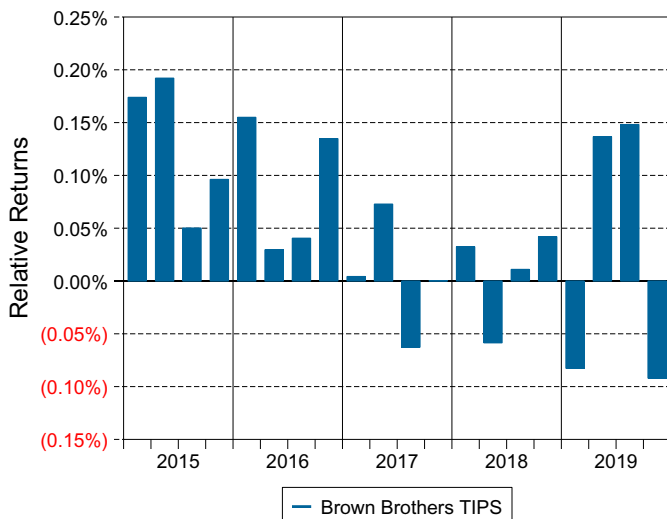
## Quarterly Asset Growth

Beginning Market Value	\$230,205,617
Net New Investment	\$0
Investment Gains/(Losses)	\$1,466,419
Ending Market Value	\$231,672,036

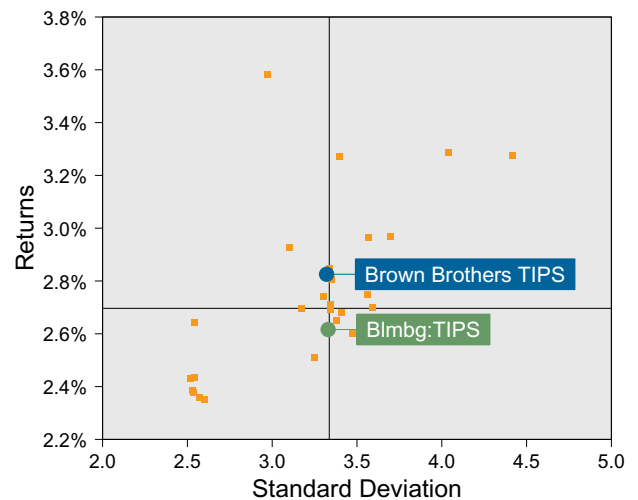
## Performance vs Callan Inflation Linked Bonds (Gross)



## Relative Return vs Blmbg:TIPS



## Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return

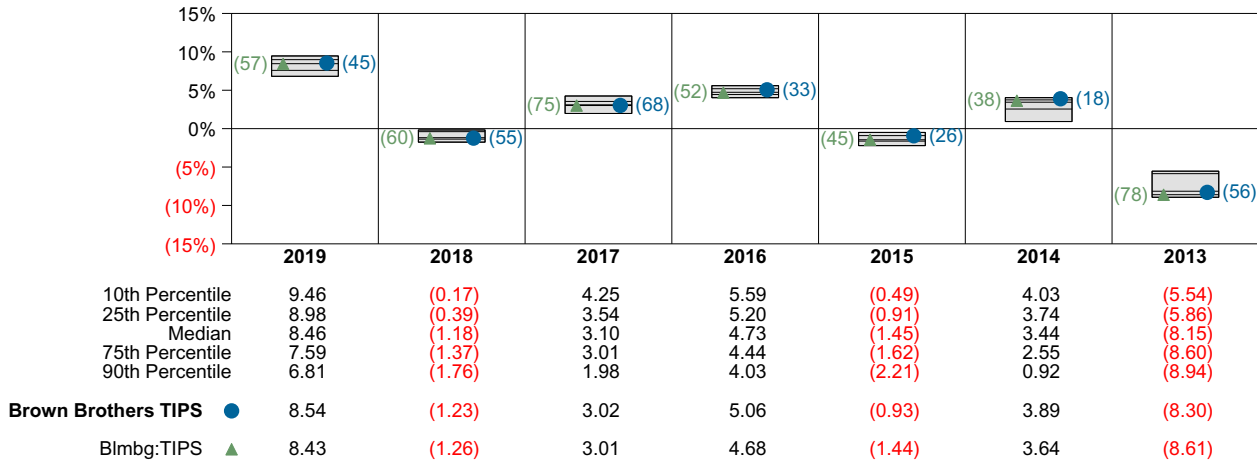


# Brown Brothers TIPS Return Analysis Summary

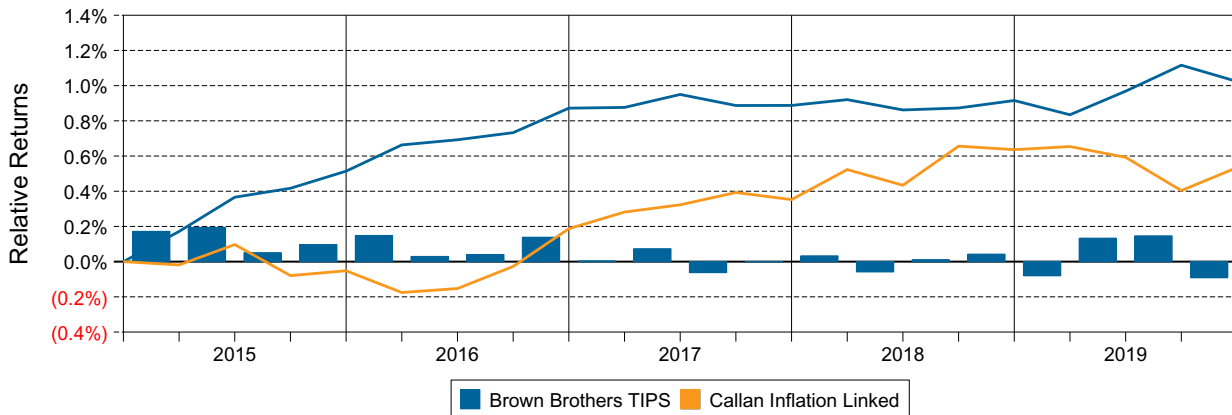
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

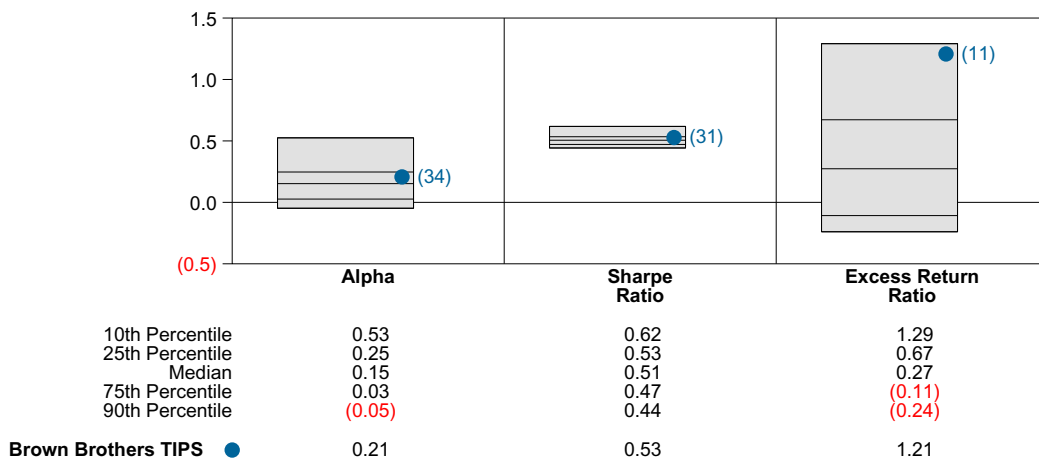
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Return vs BImbg:TIPS



### Risk Adjusted Return Measures vs BImbg:TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019

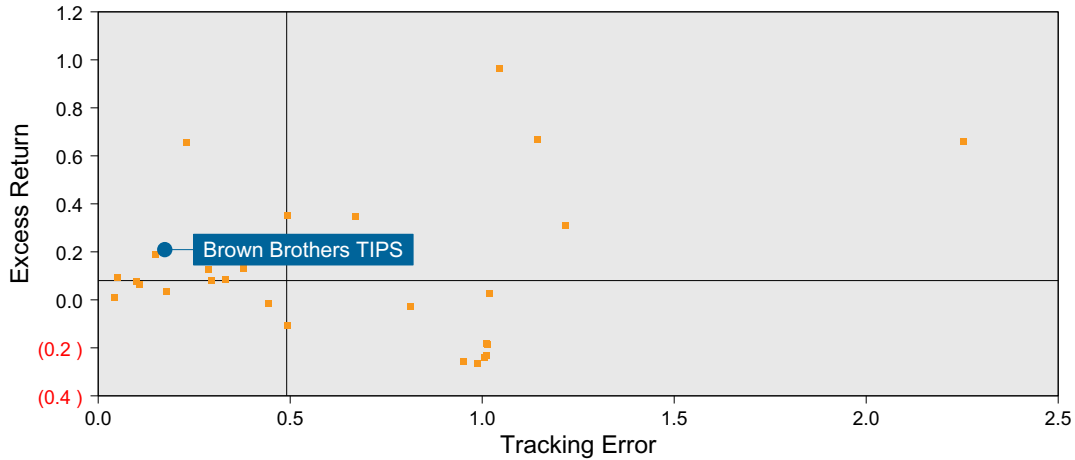


# Brown Brothers TIPS Risk Analysis Summary

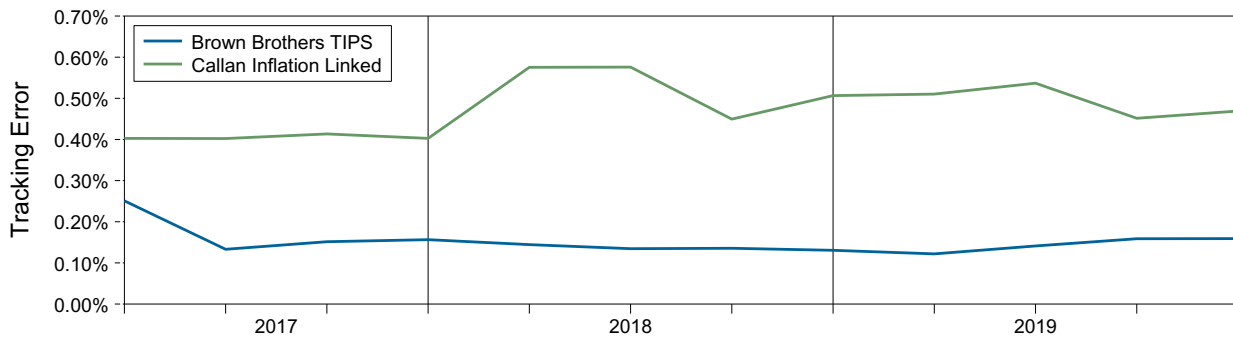
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

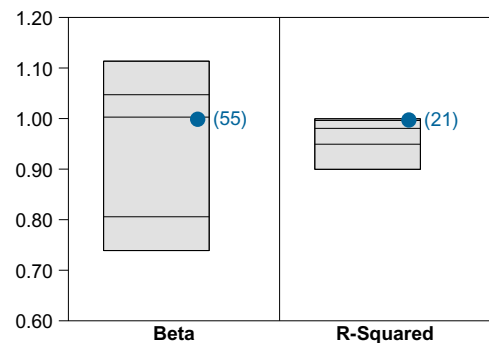
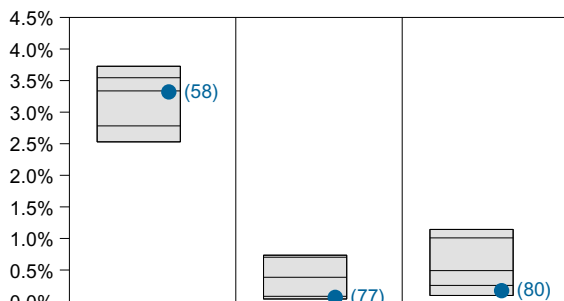
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays TIPS



### Risk Statistics Rankings vs Bloomberg Barclays TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019



10th Percentile 3.73  
25th Percentile 3.55  
Median 3.34  
75th Percentile 2.78  
90th Percentile 2.53

10th Percentile 0.73  
25th Percentile 0.70  
Median 0.39  
75th Percentile 0.08  
90th Percentile 0.04

10th Percentile 1.14  
25th Percentile 1.01  
Median 0.49  
75th Percentile 0.26  
90th Percentile 0.10

10th Percentile 1.11  
25th Percentile 1.05  
Median 1.00  
75th Percentile 0.81  
90th Percentile 0.74

10th Percentile 1.00  
25th Percentile 1.00  
Median 0.98  
75th Percentile 0.95  
90th Percentile 0.90

**Brown Brothers TIPS** ● 3.32 0.07 0.17

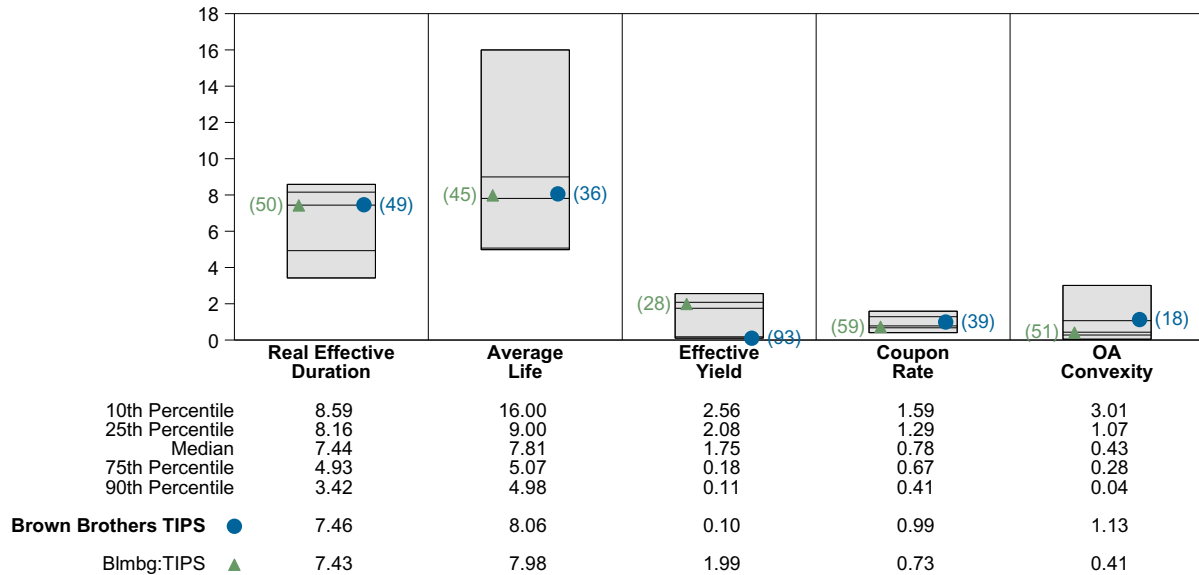
**Brown Brothers TIPS** ● 1.00 1.00

# Brown Brothers TIPS Bond Characteristics Analysis Summary

## Portfolio Characteristics

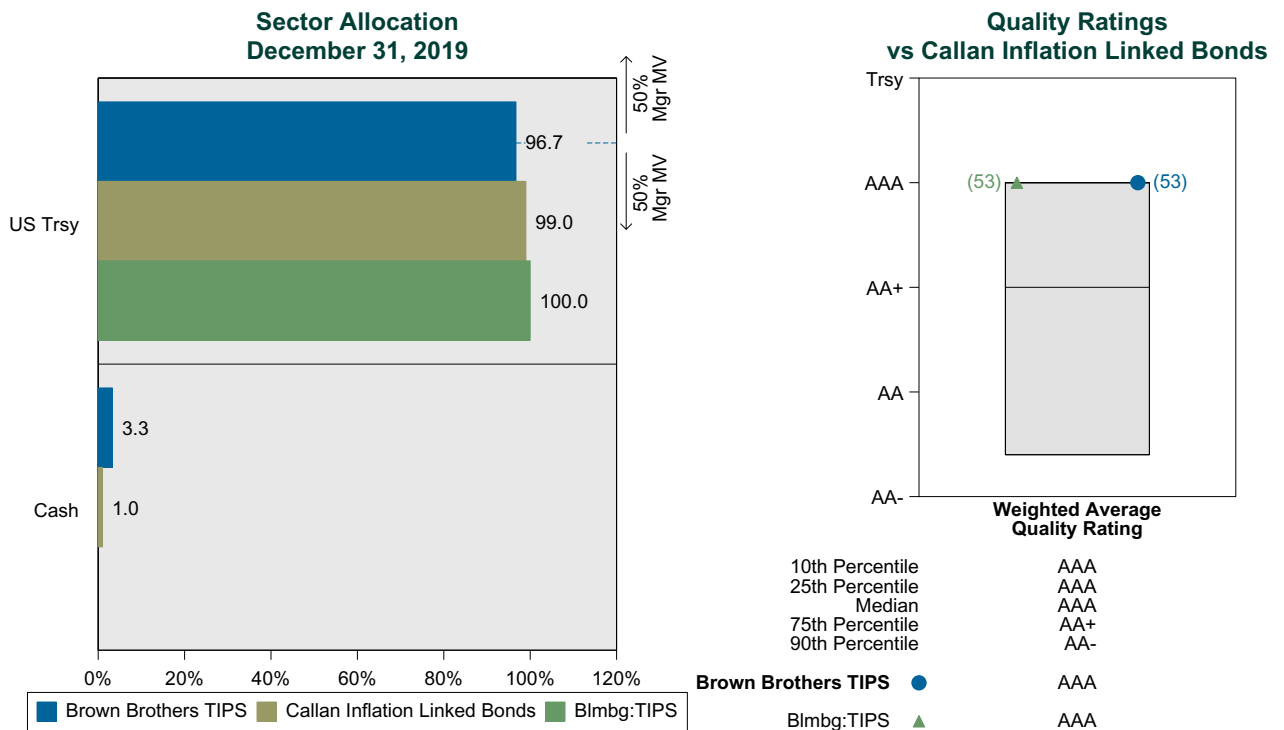
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.





# Brown Brothers TIPS Portfolio Characteristics Summary As of December 31, 2019

## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

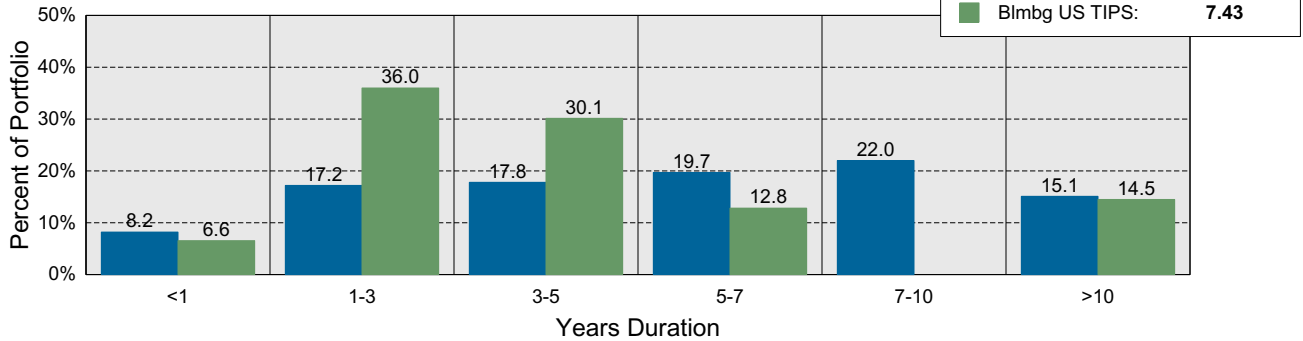
### Sector Allocation



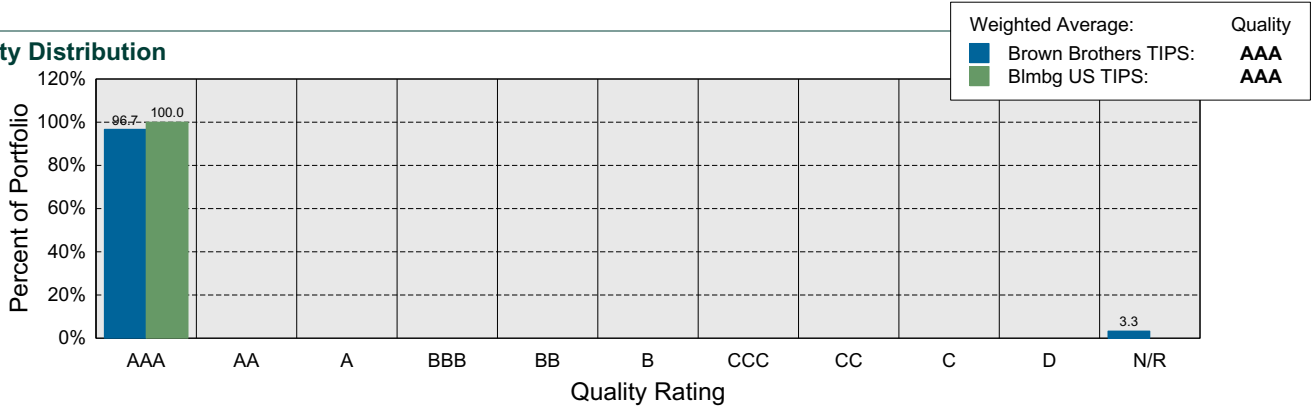
### Brown Brothers TIPS

### Blmbg US TIPS

#### Duration Distribution



#### Quality Distribution



# New Century Global TIPS Period Ended December 31, 2019

## Investment Philosophy

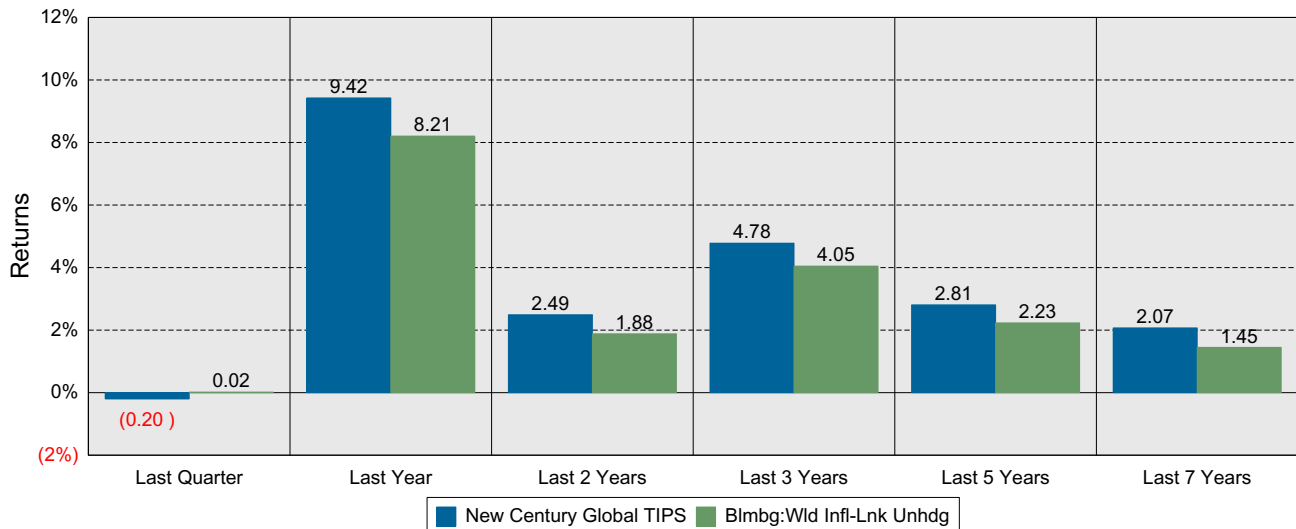
New Century Advisors believes there are five main sources of excess return that an active manager can capture in the Global Inflation Linked Bond Product: duration management, county selection, currency management, yield curve positioning, and nominal/linker relative value. New Century Advisors approach to adding value in each case is the same, a three pronged approach combining fundamental analysis, technical analysis and human judgment.

## Quarterly Summary and Highlights

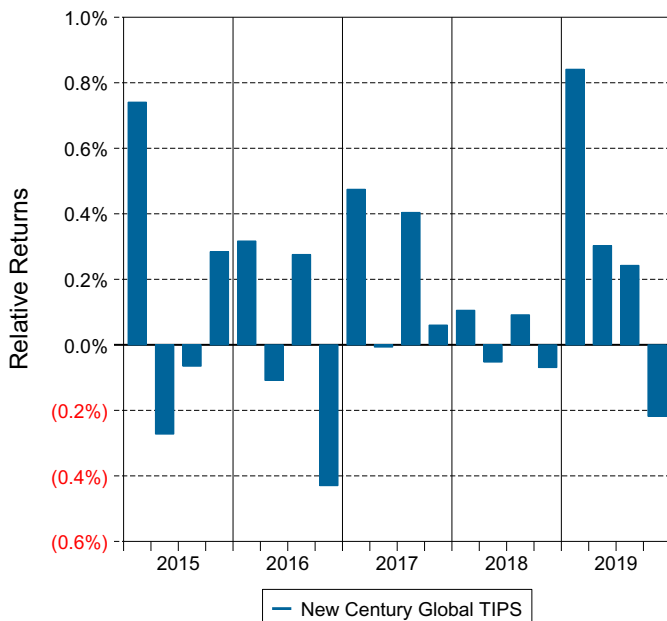
- New Century Global TIPS's portfolio posted a (0.20)% return for the quarter placing it in the 100 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 11 percentile for the last year.
- New Century Global TIPS's portfolio underperformed the Blmbg:Wld Infl-Lnk Unhdg by 0.22% for the quarter and outperformed the Blmbg:Wld Infl-Lnk Unhdg for the year by 1.22%.

## Quarterly Asset Growth

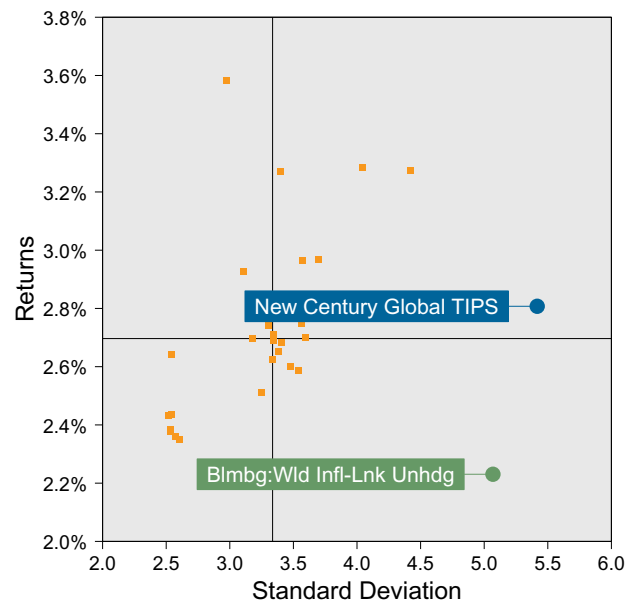
Beginning Market Value	\$120,500,698
Net New Investment	\$0
Investment Gains/(Losses)	\$-311,620
Ending Market Value	\$120,189,078



## Relative Return vs Blmbg:Wld Infl-Lnk Unhdg



## Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return

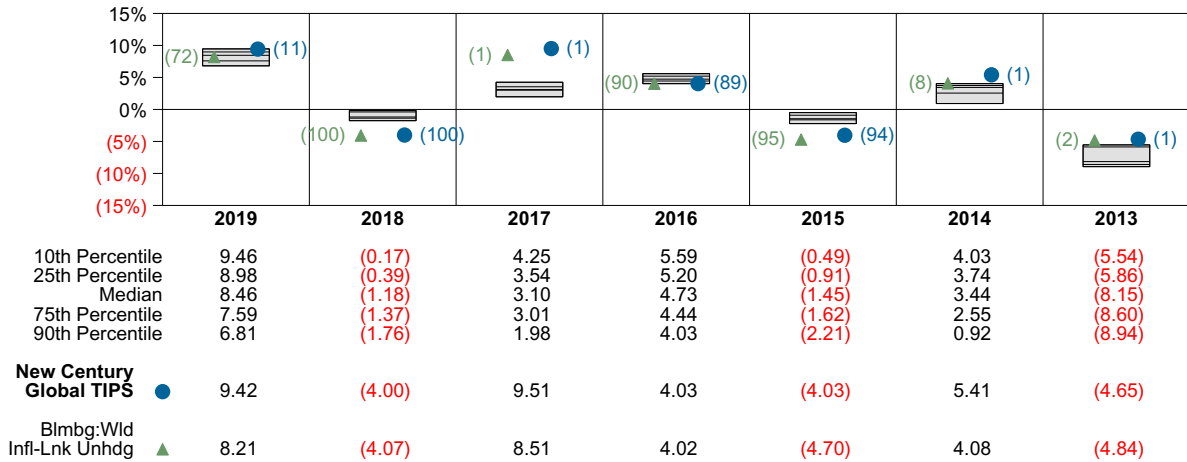


# New Century Global TIPS Return Analysis Summary

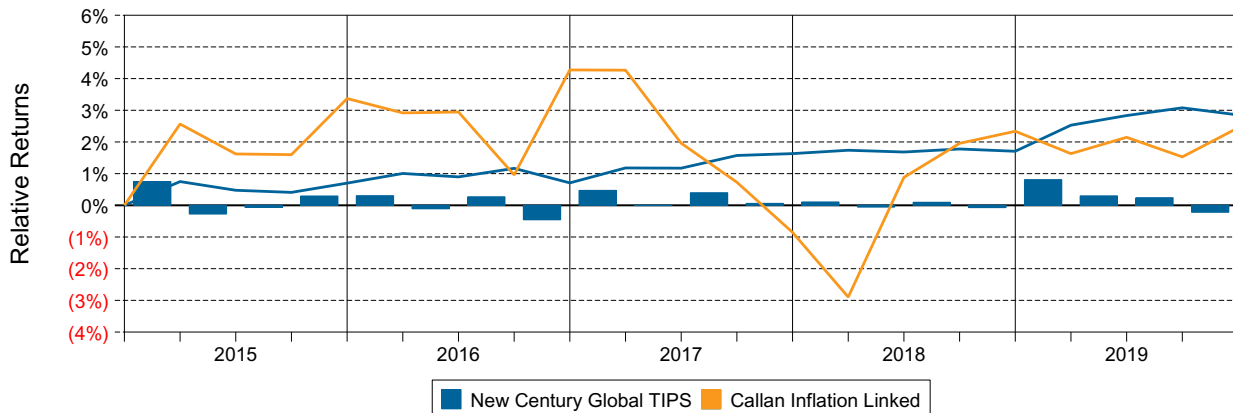
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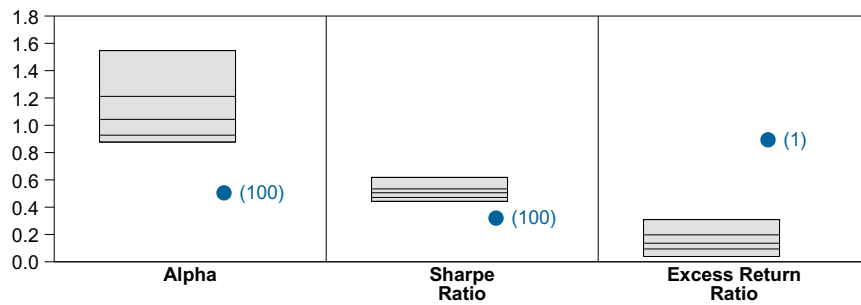
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Return vs Bimbg:Wld Infl-Lnk Unhdg



### Risk Adjusted Return Measures vs Bimbg:Wld Infl-Lnk Unhdg Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019



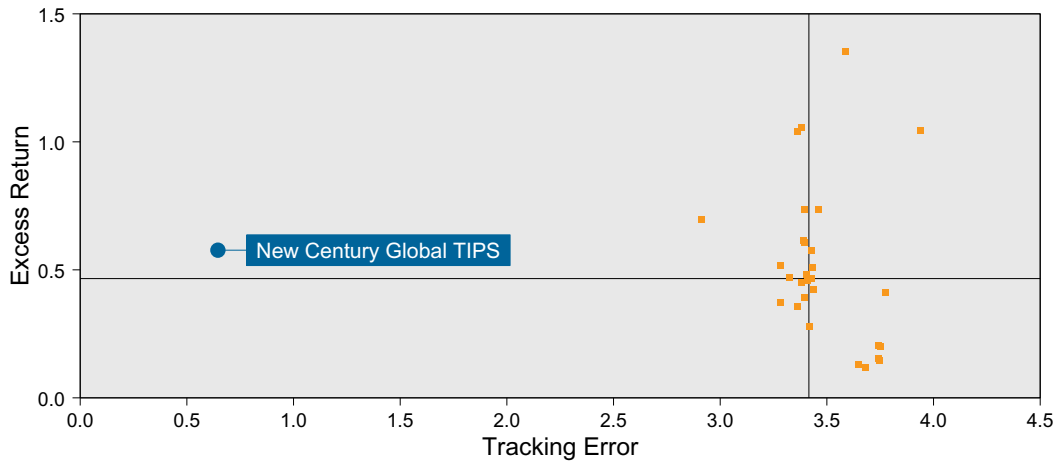
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	1.55	0.62	0.31
25th Percentile	1.21	0.53	0.20
Median	1.04	0.51	0.14
75th Percentile	0.93	0.47	0.09
90th Percentile	0.88	0.44	0.04
<b>New Century Global TIPS</b> ●	0.50	0.32	0.89

# New Century Global TIPS Risk Analysis Summary

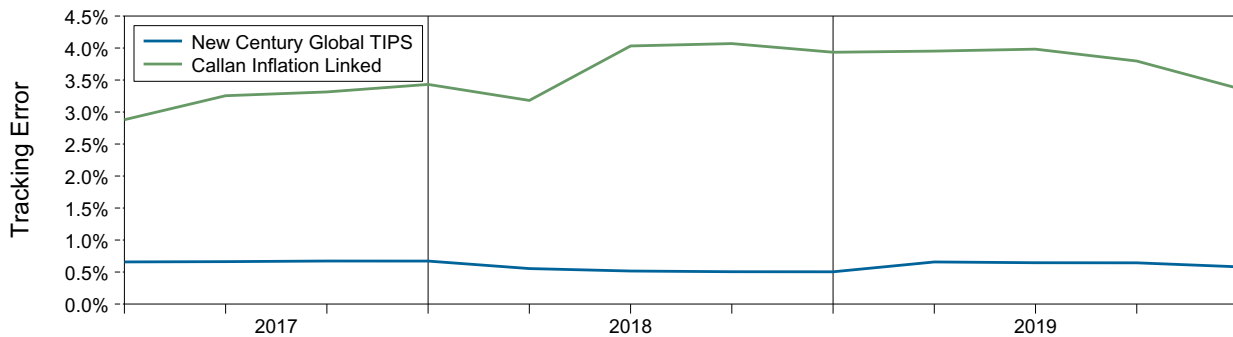
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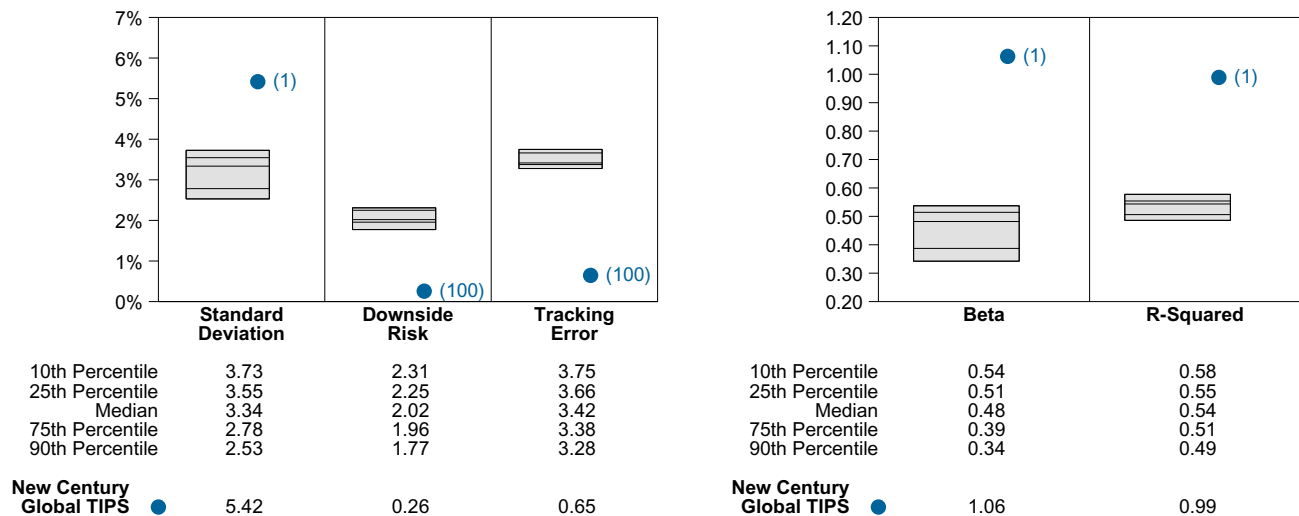
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays World Infi-Lnk Unhdg



### Risk Statistics Rankings vs Bloomberg Barclays World Infi-Lnk Unhdg Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019

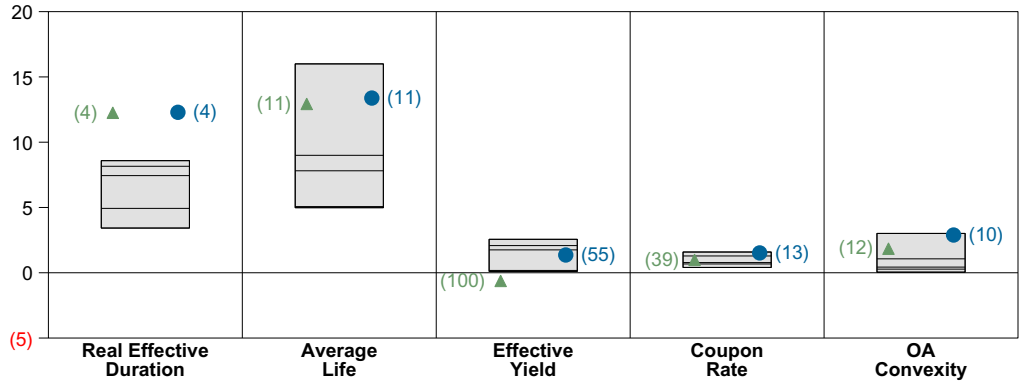


# New Century Global TIPS Bond Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2019

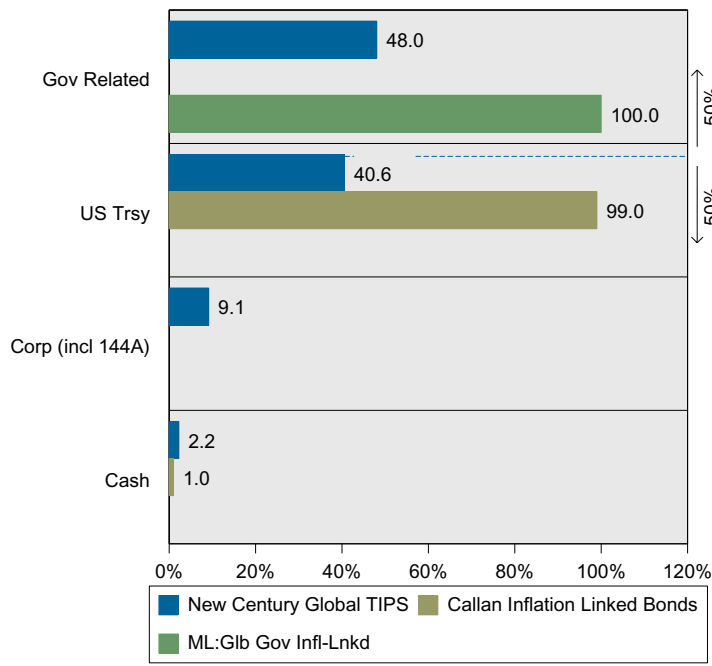


	Real Effective Duration	Average Life	Effective Yield	Coupon Rate	OA Convexity
10th Percentile	8.59	16.00	2.56	1.59	3.01
25th Percentile	8.16	9.00	2.08	1.29	1.07
Median	7.44	7.81	1.75	0.78	0.43
75th Percentile	4.93	5.07	0.18	0.67	0.28
90th Percentile	3.42	4.98	0.11	0.41	0.04
<b>New Century Global TIPS</b> ●	12.29	13.38	1.36	1.52	2.89
ML:Glb Gov Infl-Lnkd ▲	12.26	12.93	(0.62)	0.98	1.84

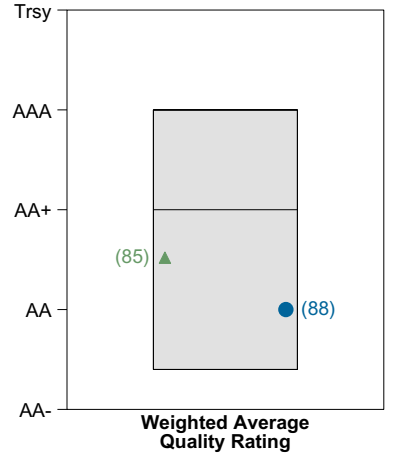
## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

### Sector Allocation December 31, 2019



### Quality Ratings vs Callan Inflation Linked Bonds



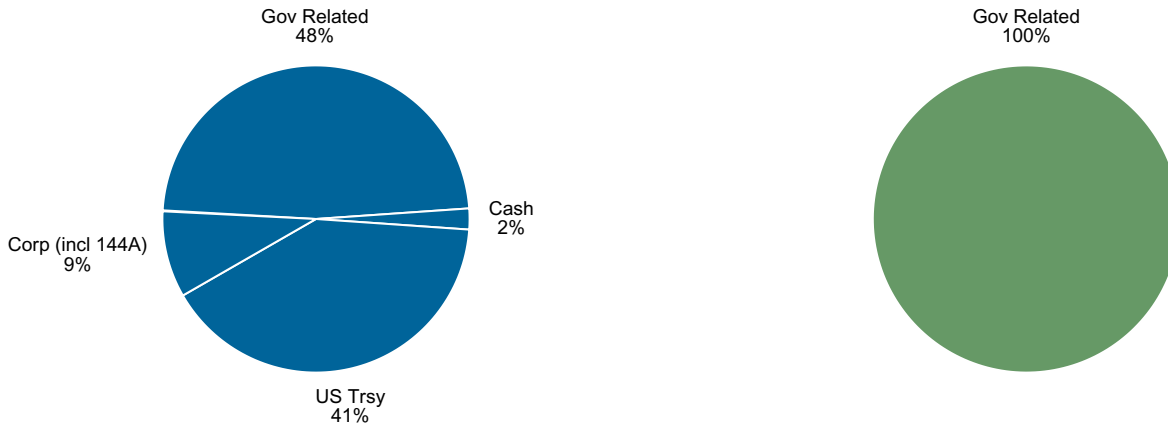
Percentile	Quality Rating
10th Percentile	AAA
25th Percentile	AAA
Median	AAA
75th Percentile	AA+
90th Percentile	AA-
<b>New Century Global TIPS</b> ●	AA
ML:Glb Gov Infl-Lnkd ▲	AA+

# New Century Global TIPS Portfolio Characteristics Summary As of December 31, 2019

## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

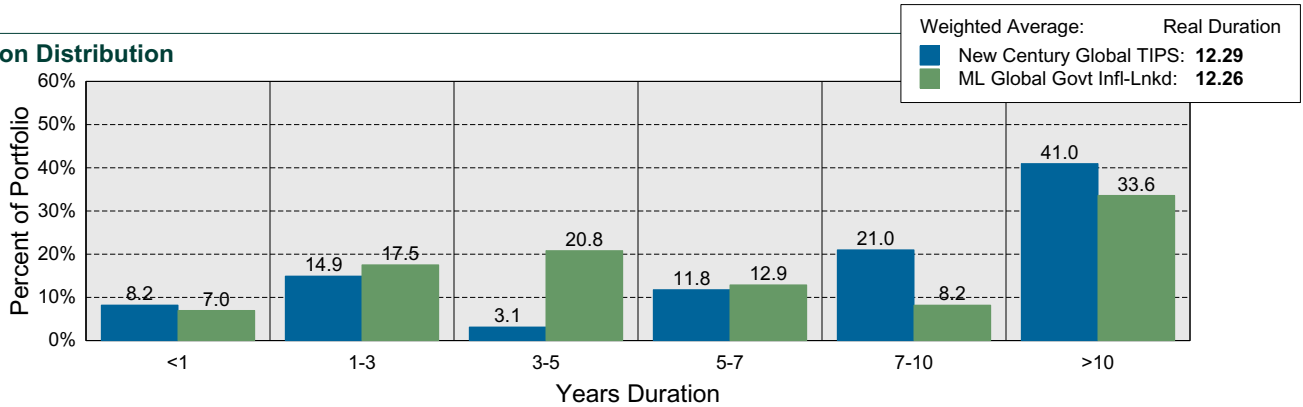
### Sector Allocation



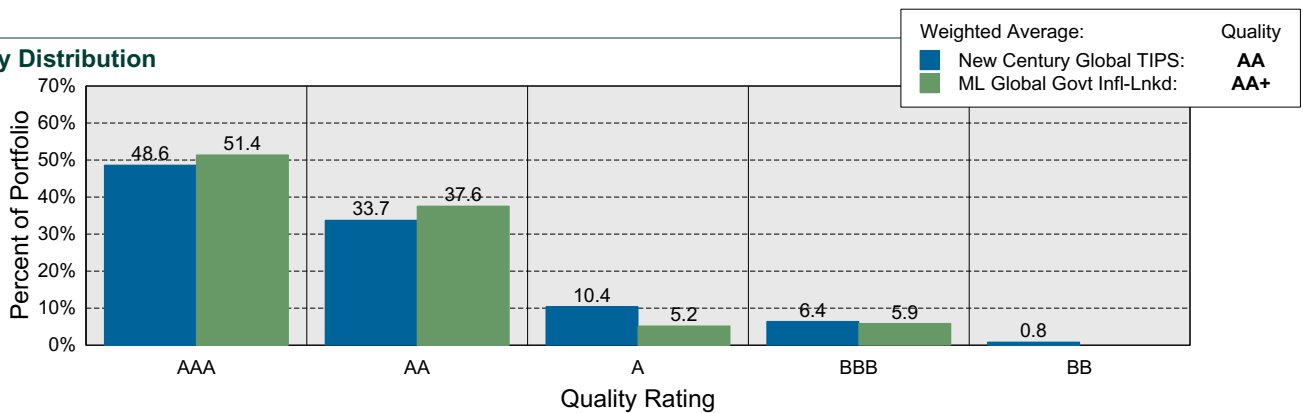
### New Century Global TIPS

### ML Global Govt Infi-Lnkd

#### Duration Distribution



#### Quality Distribution



# NISA Inv Adv TIPS Period Ended December 31, 2019

## Investment Philosophy

NISA believes that markets offer opportunities to capitalize on moderate inefficiencies for predictable gains. The team applies a fundamental approach and strategy to all fixed income portfolios, regardless of benchmark. Central to their investment philosophy is the following: practice active trading, hold high average credit quality, maintain tight duration collars, and avoid large exposure to any one entity.

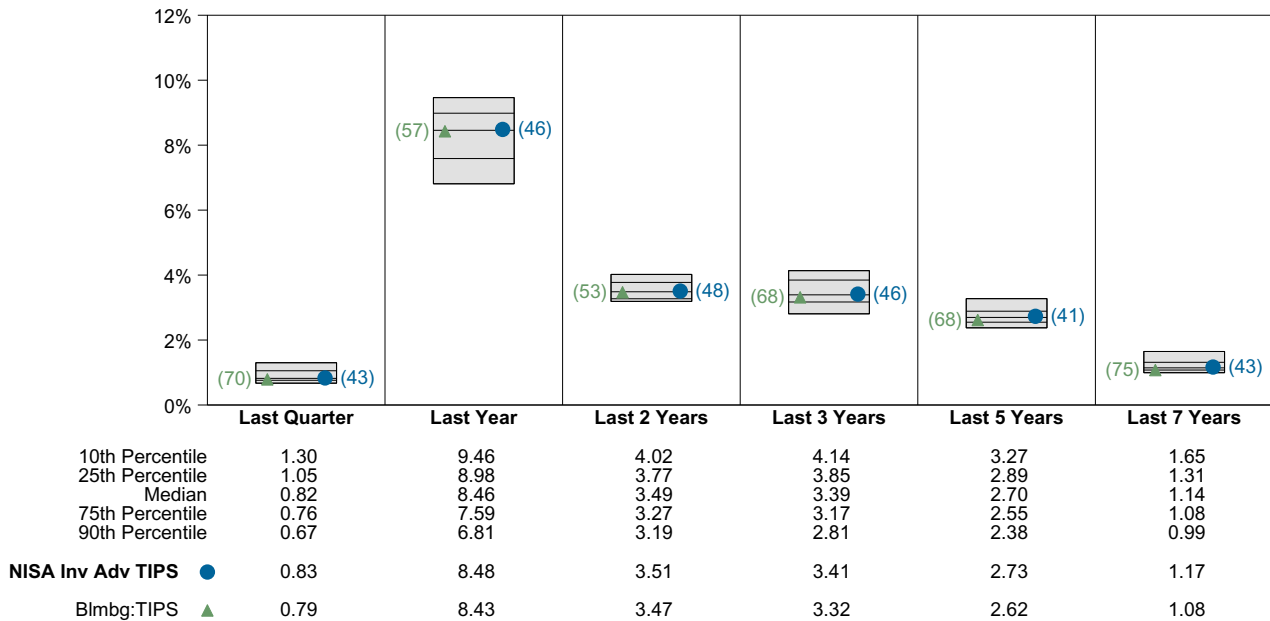
## Quarterly Summary and Highlights

- NISA Inv Adv TIPS's portfolio posted a 0.83% return for the quarter placing it in the 43 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 46 percentile for the last year.
- NISA Inv Adv TIPS's portfolio outperformed the Blmbg:TIPS by 0.04% for the quarter and outperformed the Blmbg:TIPS for the year by 0.06%.

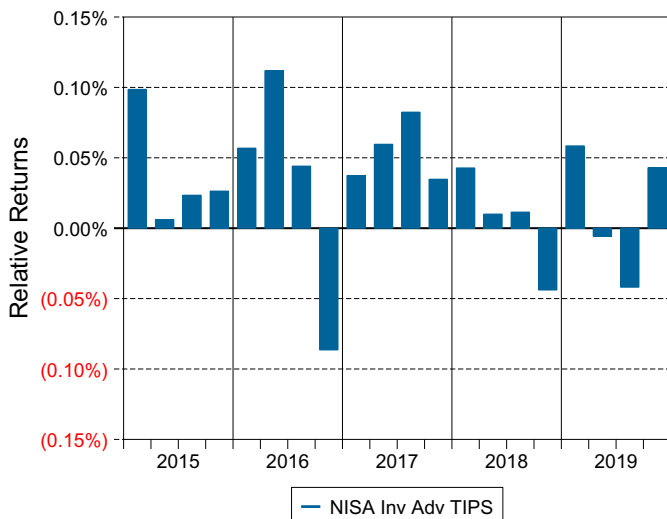
## Quarterly Asset Growth

Beginning Market Value	\$517,095,324
Net New Investment	\$0
Investment Gains/(Losses)	\$4,173,347
Ending Market Value	\$521,268,670

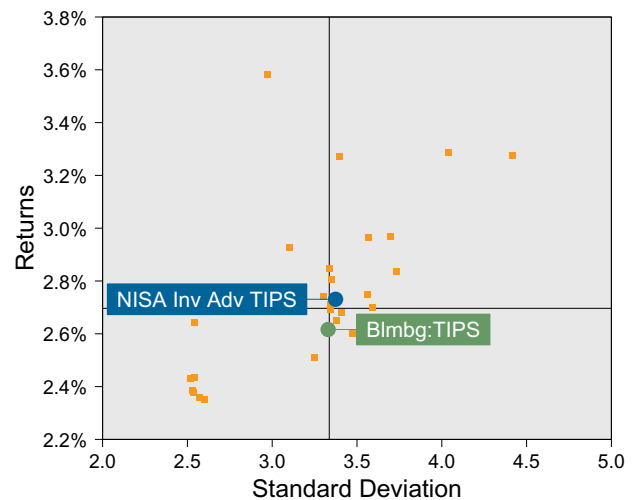
## Performance vs Callan Inflation Linked Bonds (Gross)



## Relative Return vs Blmbg:TIPS



## Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return

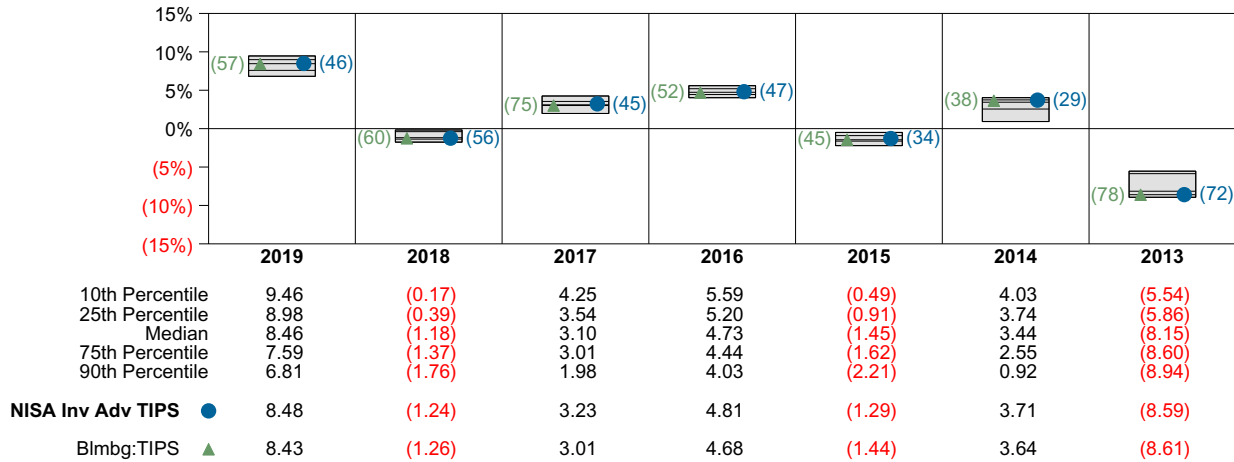


# NISA Inv Adv TIPS Return Analysis Summary

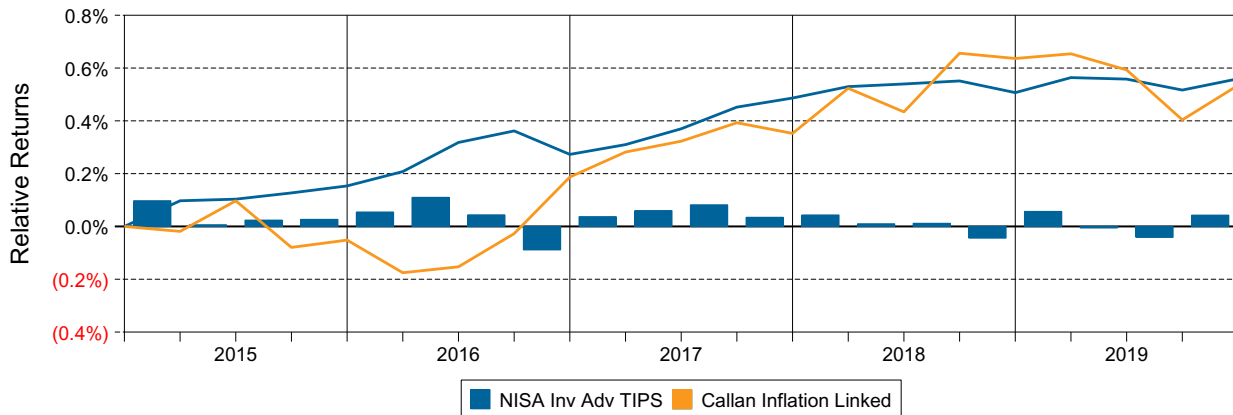
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

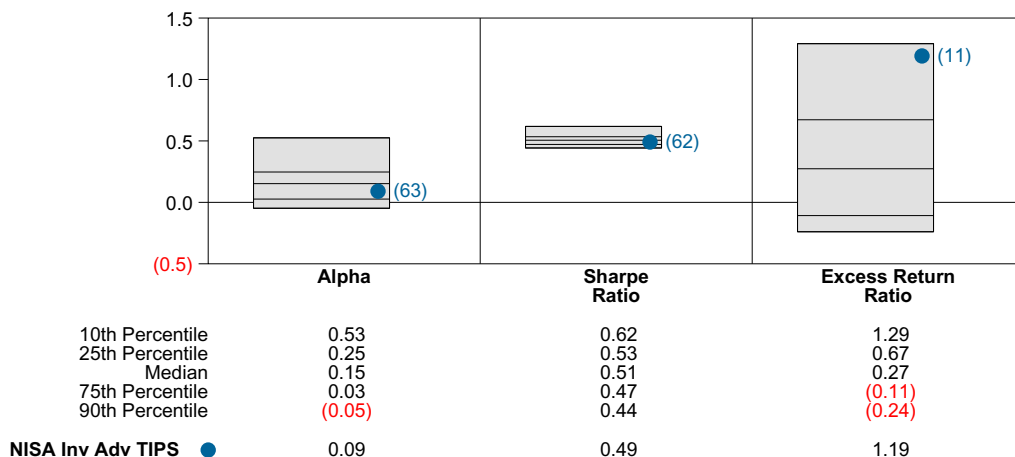
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg:TIPS



### Risk Adjusted Return Measures vs Blmbg:TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019



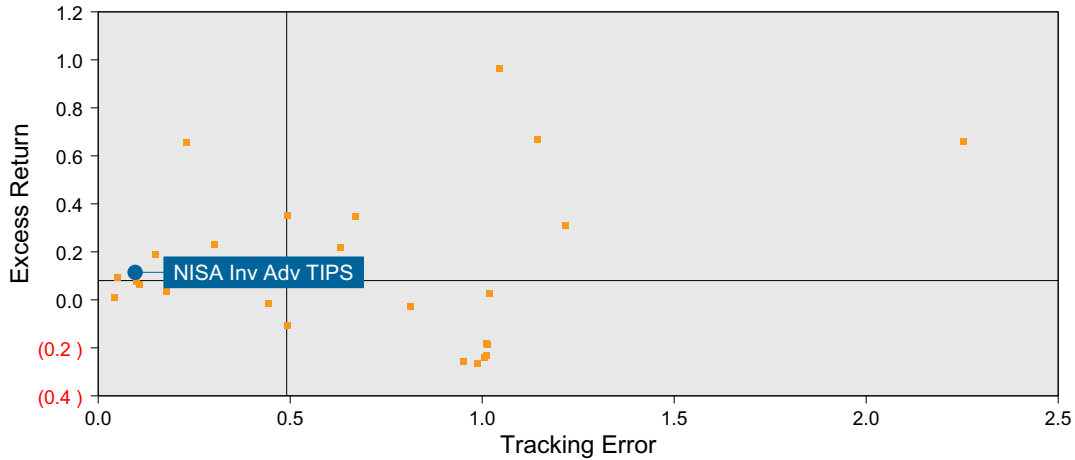


# NISA Inv Adv TIPS Risk Analysis Summary

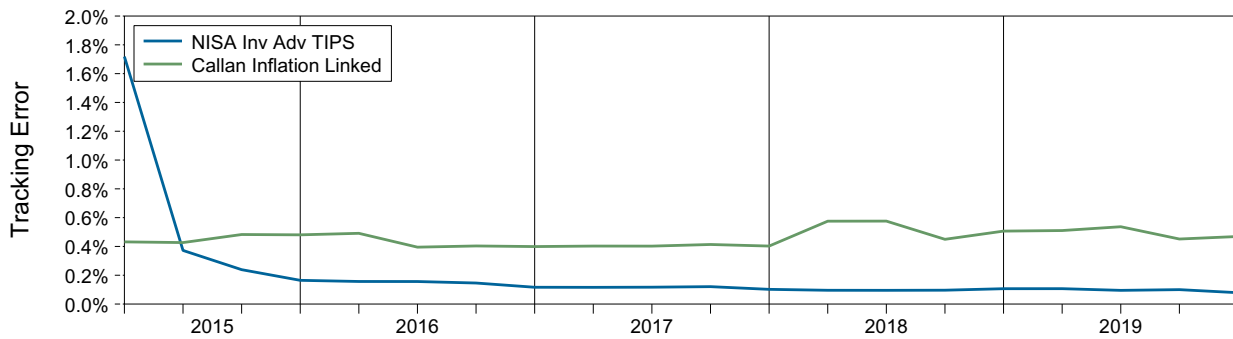
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

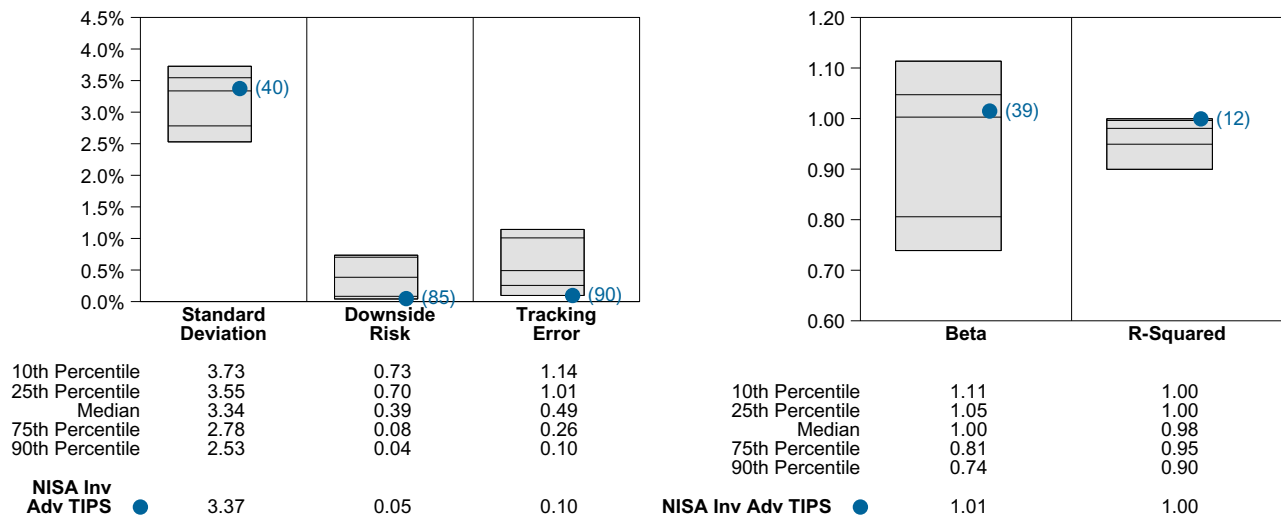
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays TIPS



### Risk Statistics Rankings vs Bloomberg Barclays TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2019

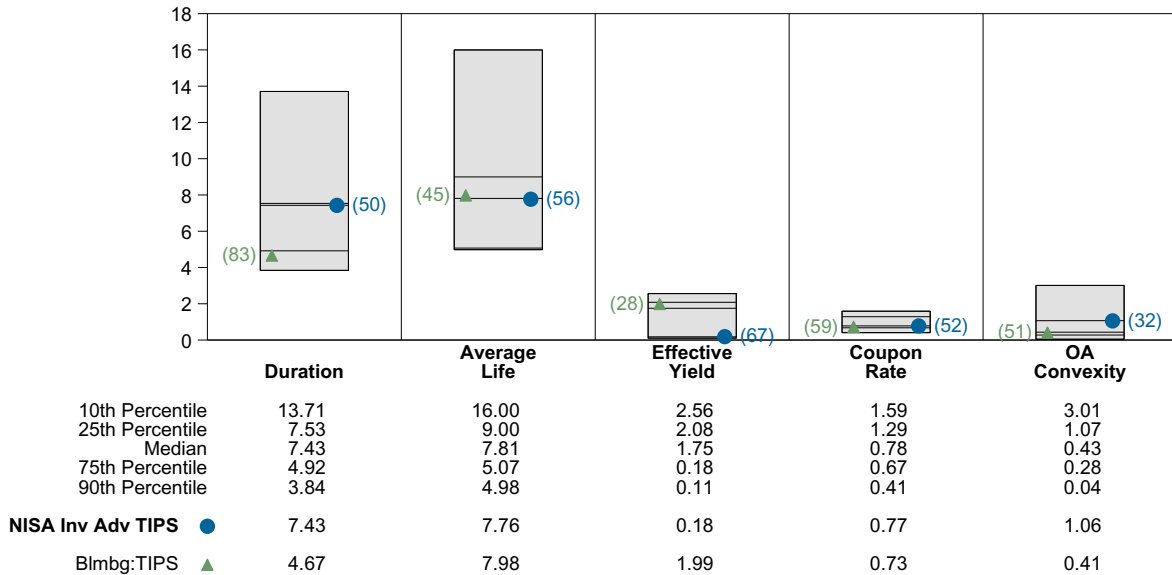


# NISA Inv Adv TIPS Bond Characteristics Analysis Summary

## Portfolio Characteristics

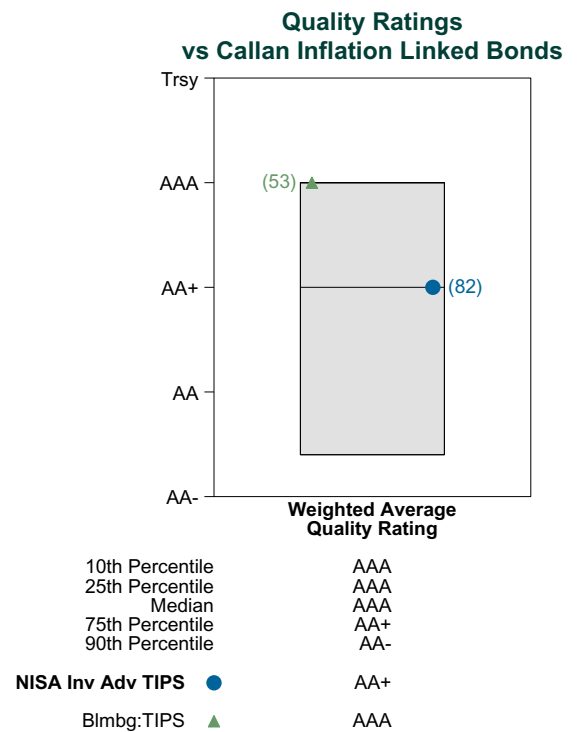
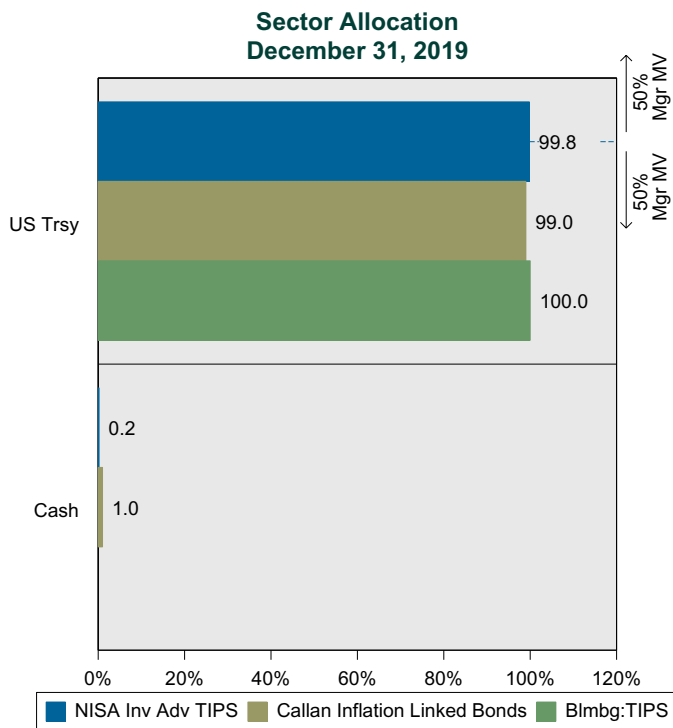
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2019



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



**NISA Inv Adv TIPS  
Portfolio Characteristics Summary  
As of December 31, 2019**

**Portfolio Structure Comparison**

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

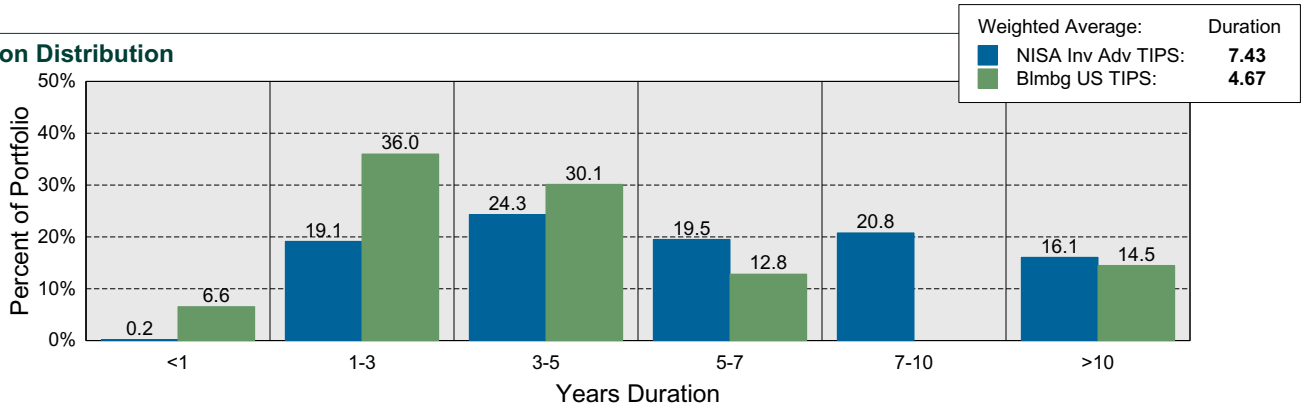
**Sector Allocation**



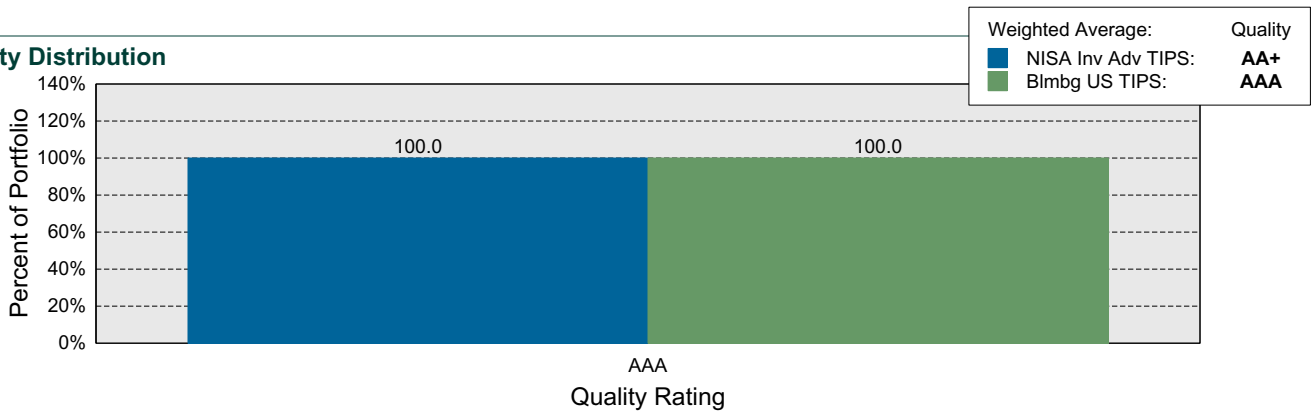
**NISA Inv Adv TIPS**

**Blmbg US TIPS**

**Duration Distribution**



**Quality Distribution**



# PIMCO US Treasuries

## Period Ended December 31, 2019

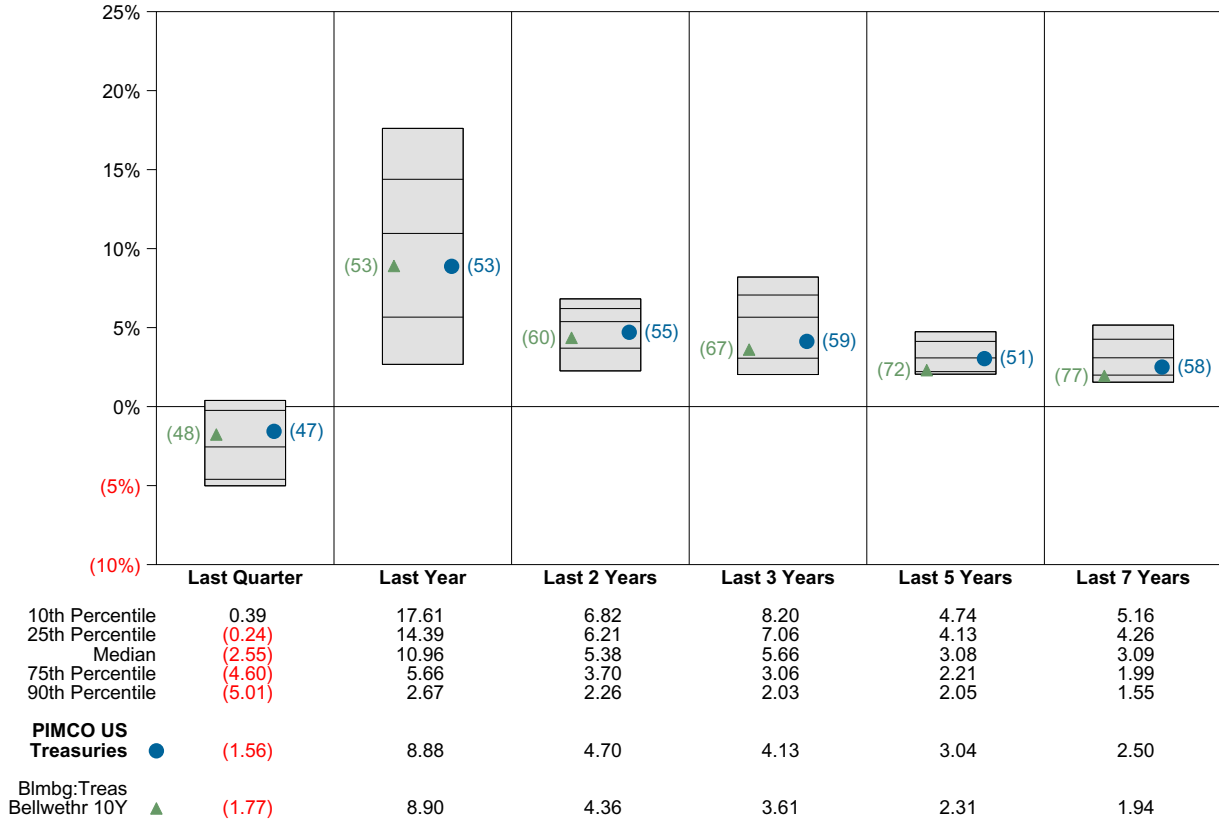
### Quarterly Summary and Highlights

- PIMCO US Treasuries's portfolio posted a (1.56)% return for the quarter placing it in the 47 percentile of the Callan US Treas Bond Funds group for the quarter and in the 53 percentile for the last year.
- PIMCO US Treasuries's portfolio outperformed the Blmbg:Treas Bellwethr 10Y by 0.20% for the quarter and underperformed the Blmbg:Treas Bellwethr 10Y for the year by 0.03%.

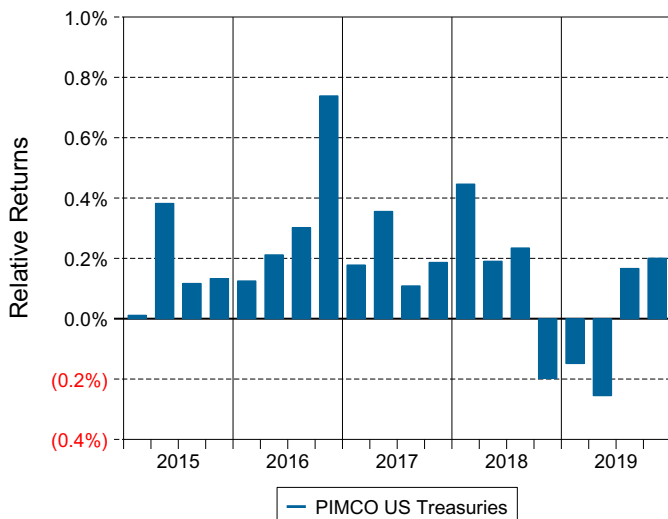
### Quarterly Asset Growth

Beginning Market Value	\$606,576,432
Net New Investment	\$0
Investment Gains/(Losses)	\$-9,632,866
Ending Market Value	\$596,943,566

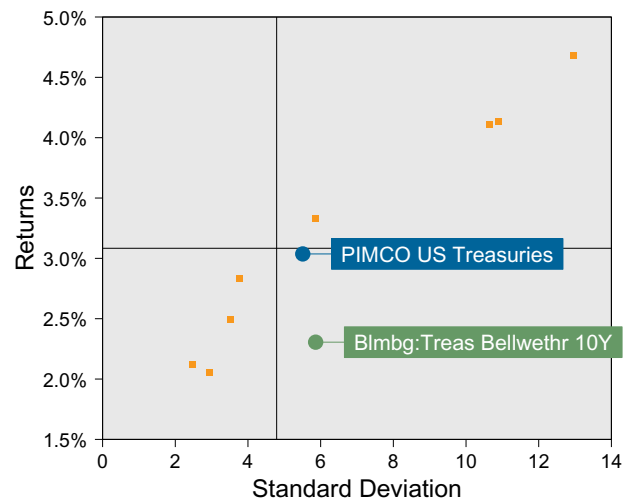
### Performance vs Callan US Treas Bond Funds (Gross)



### Relative Return vs Blmbg:Treas Bellwethr 10Y



### Callan US Treas Bond Funds (Gross) Annualized Five Year Risk vs Return

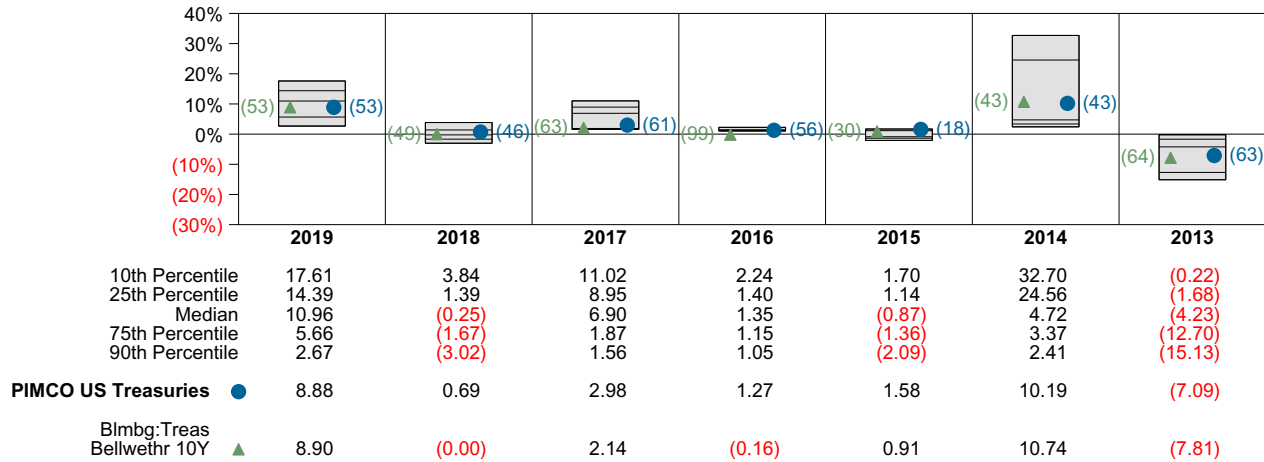


# PIMCO US Treasuries Return Analysis Summary

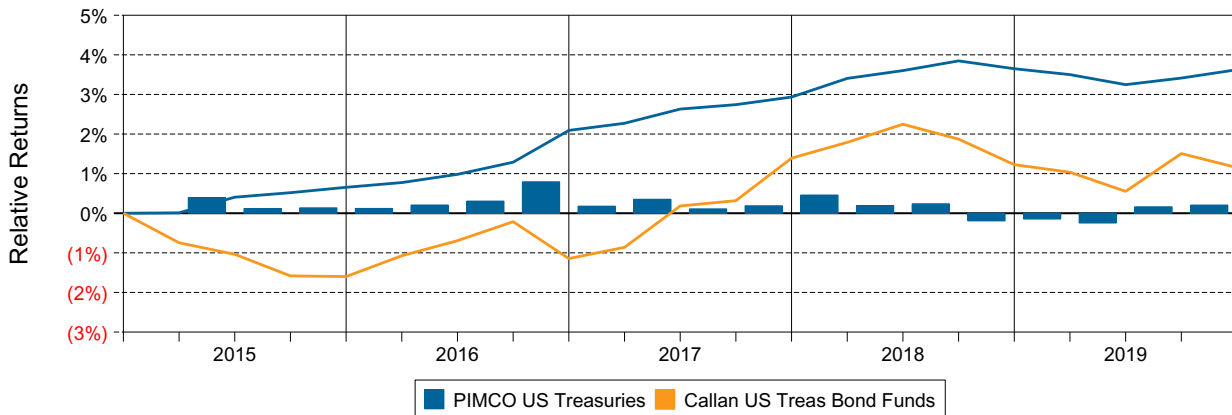
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

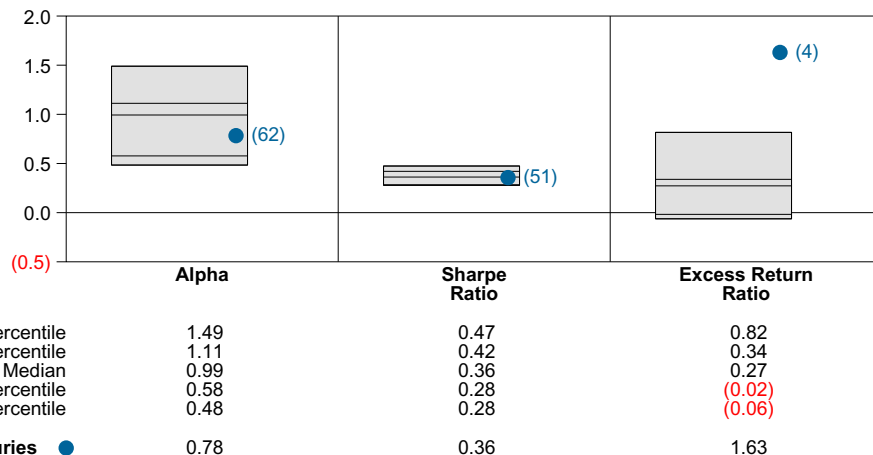
### Performance vs Callan US Treas Bond Funds (Gross)



### Cumulative and Quarterly Relative Return vs Blmbg:Treas Bellwethr 10Y



### Risk Adjusted Return Measures vs Blmbg:Treas Bellwethr 10Y Rankings Against Callan US Treas Bond Funds (Gross) Five Years Ended December 31, 2019

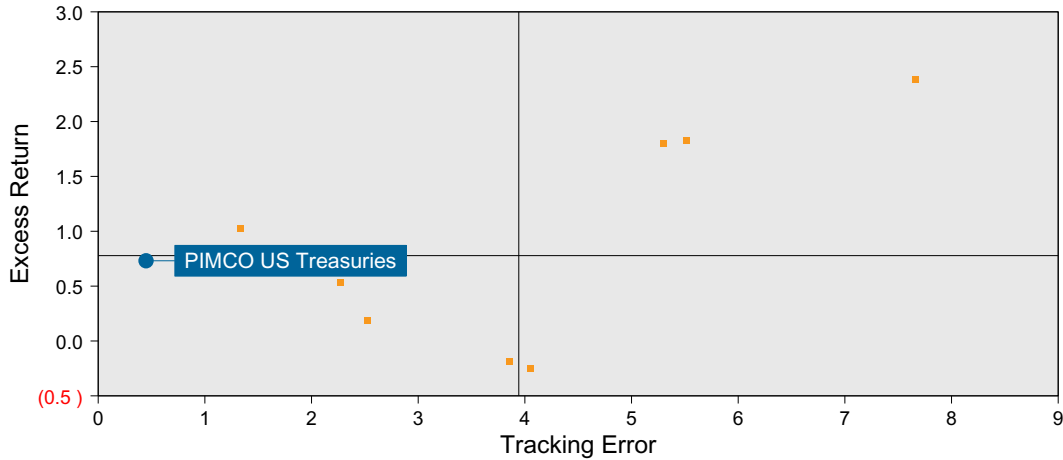


# PIMCO US Treasuries Risk Analysis Summary

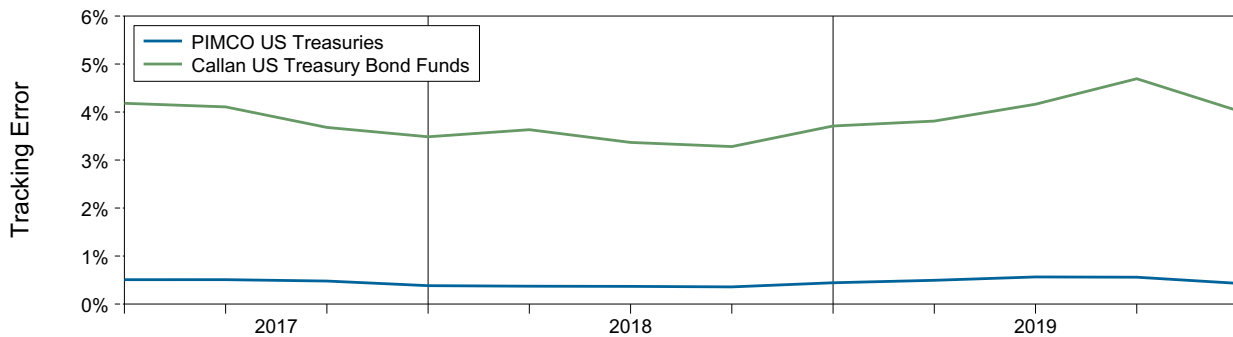
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

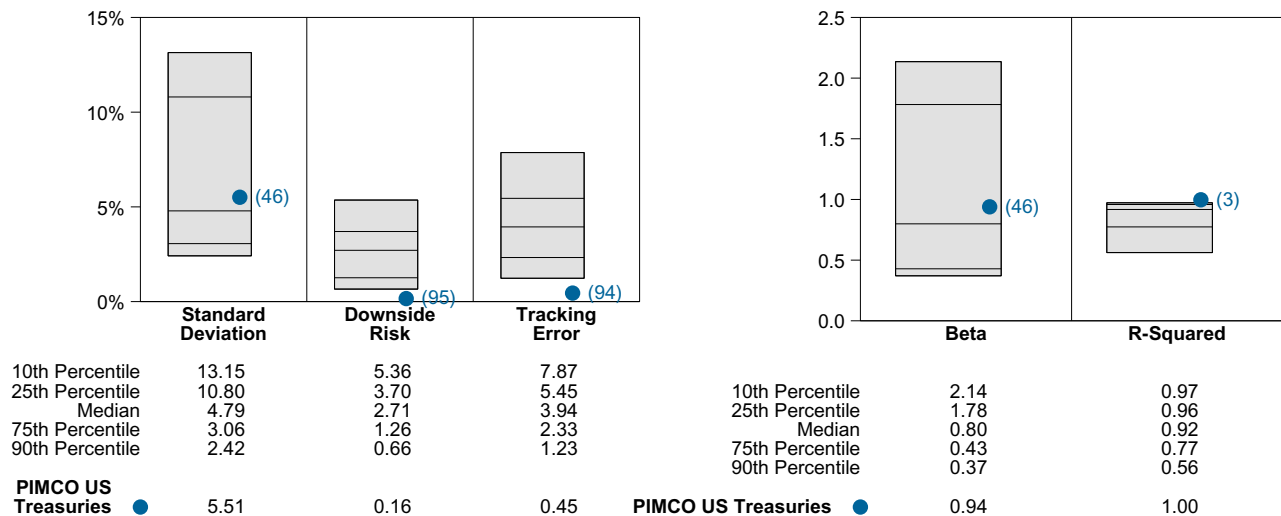
### Risk Analysis vs Callan US Treasury Bond Funds (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs Bloomberg Barclays Treas Bellwethr 10Y



### Risk Statistics Rankings vs Bloomberg Barclays Treas Bellwethr 10Y Rankings Against Callan US Treasury Bond Funds (Gross) Five Years Ended December 31, 2019

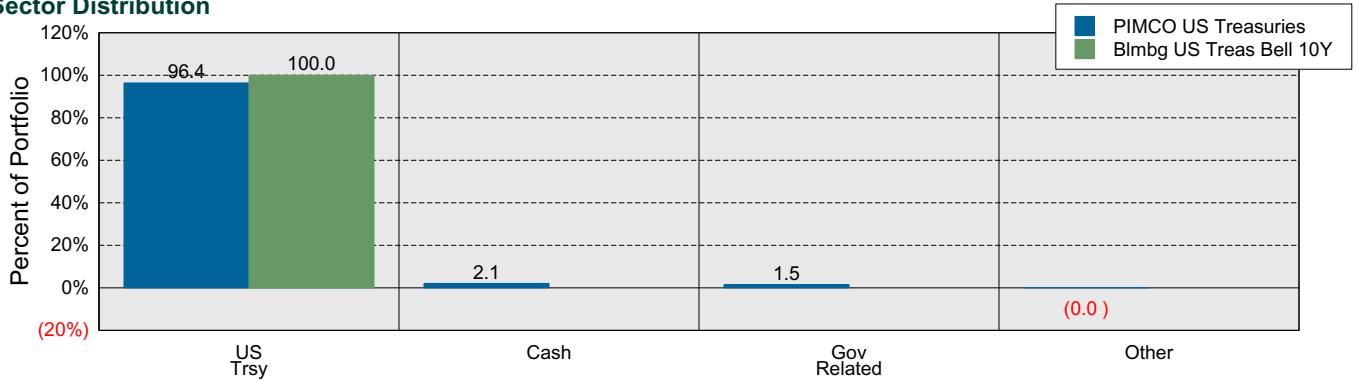


# PIMCO US Treasuries Portfolio Characteristics Summary As of December 31, 2019

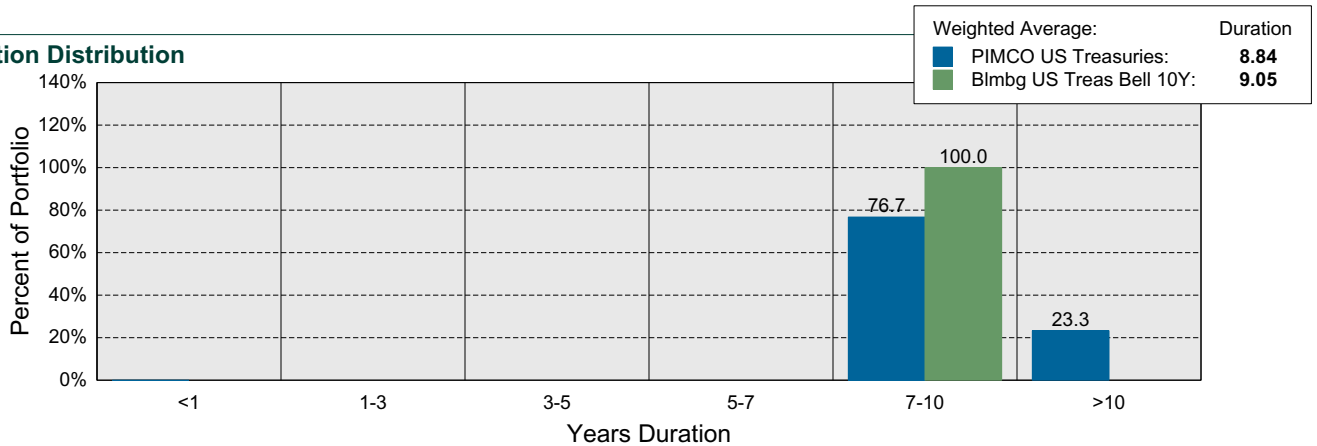
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

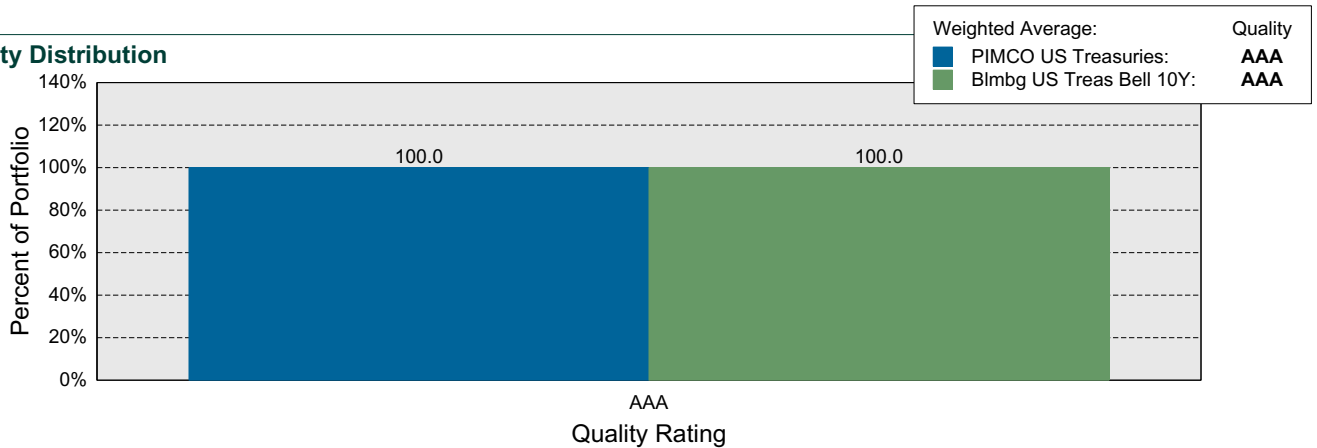
### Sector Distribution



### Duration Distribution



### Quality Distribution







# Multi-Strategy Period Ended December 31, 2019

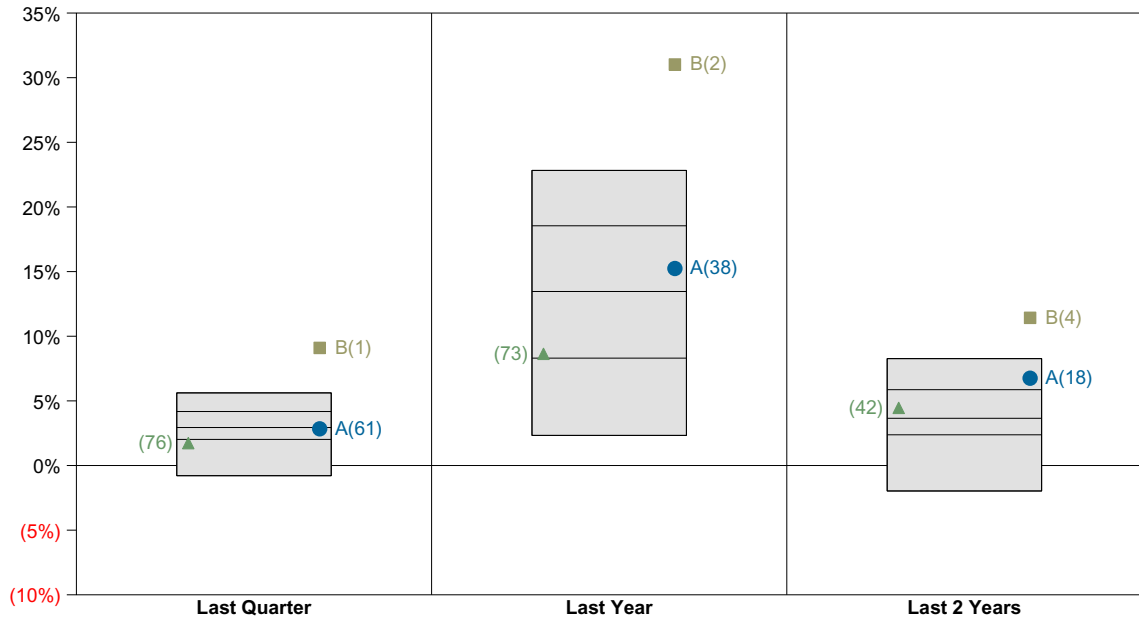
## Quarterly Summary and Highlights

- Multi-Strategy's portfolio posted a 2.84% return for the quarter placing it in the 61 percentile of the Callan Multi-Asset Database group for the quarter and in the 38 percentile for the last year.
- Multi-Strategy's portfolio outperformed the S&P:LSTA Lev Loan by 1.11% for the quarter and outperformed the S&P:LSTA Lev Loan for the year by 6.60%.

## Quarterly Asset Growth

Beginning Market Value	\$1,714,469,751
Net New Investment	\$55,917,406
Investment Gains/(Losses)	\$46,588,647
Ending Market Value	\$1,816,975,803

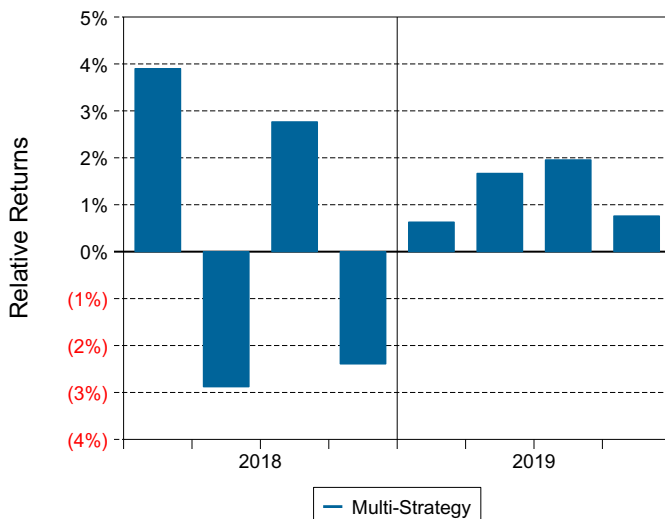
## Performance vs Callan Multi-Asset Database (Gross)



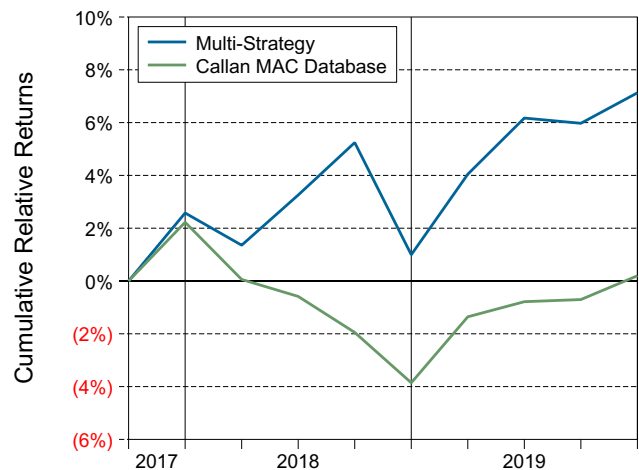
10th Percentile	5.62	22.83	8.27
25th Percentile	4.18	18.54	5.87
Median	2.94	13.46	3.65
75th Percentile	2.02	8.31	2.38
90th Percentile	(0.79)	2.33	(1.97)

Multi-Strategy	● A	2.84
Russell 3000 Index	■ B	9.10
S&P:LSTA Lev Loan	▲	1.73

## Relative Return vs S&P:LSTA Lev Loan



## Cumulative Returns vs S&P:LSTA Lev Loan





# Blackstone Keystone Period Ended December 31, 2019

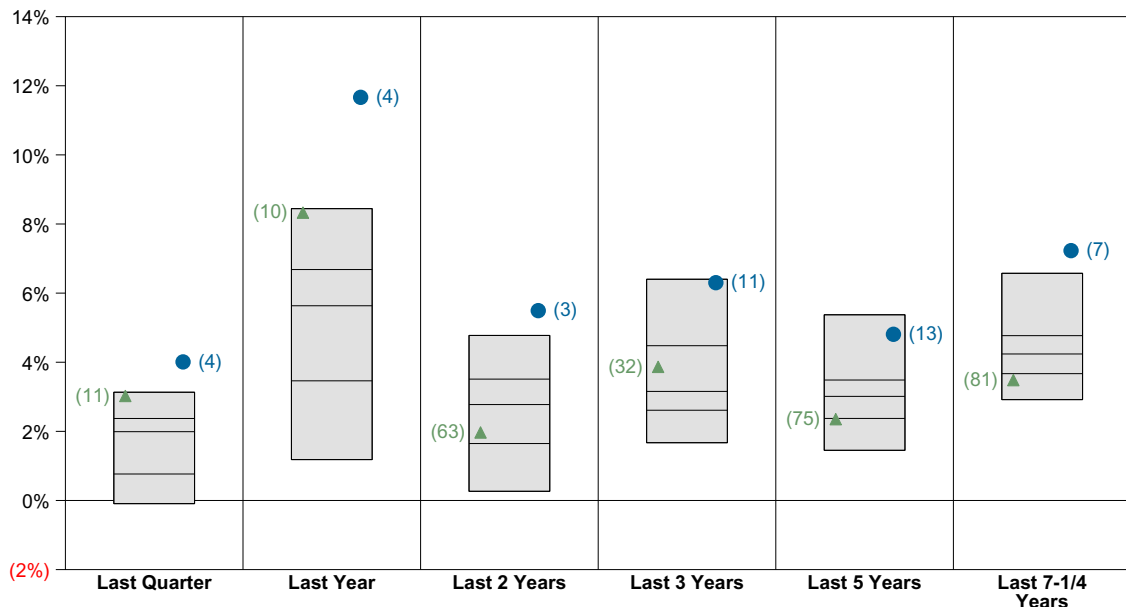
## Quarterly Summary and Highlights

- Blackstone Keystone's portfolio posted a 4.01% return for the quarter placing it in the 4 percentile of the Callan Absolute Rtn Hedge Fund of Funds group for the quarter and in the 4 percentile for the last year.
- Blackstone Keystone's portfolio outperformed the HFRI Fund of Funds Composite Index by 0.98% for the quarter and outperformed the HFRI Fund of Funds Composite Index for the year by 3.34%.

## Quarterly Asset Growth

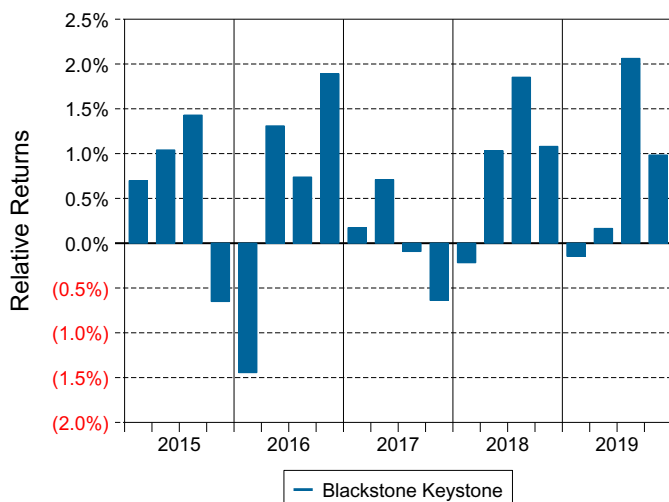
Beginning Market Value	\$933,934,795
Net New Investment	\$0
Investment Gains/(Losses)	\$35,834,787
Ending Market Value	\$969,769,582

## Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)

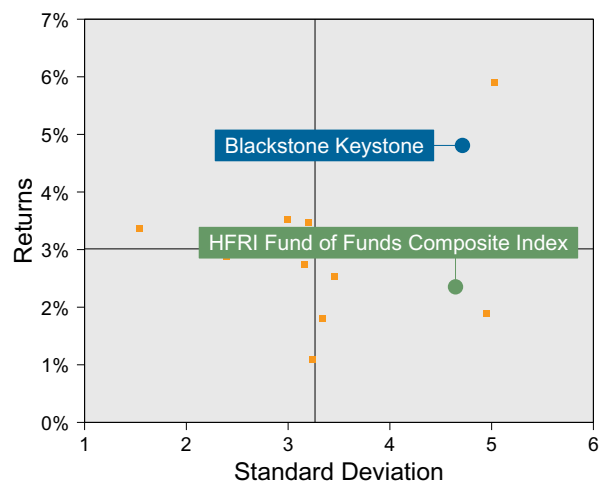


10th Percentile	3.13	8.44	4.78	6.40	5.37	6.57
25th Percentile	2.37	6.68	3.51	4.48	3.49	4.77
Median	1.99	5.63	2.78	3.16	3.01	4.24
75th Percentile	0.77	3.46	1.65	2.61	2.37	3.67
90th Percentile	(0.09)	1.18	0.27	1.67	1.45	2.92
<b>Blackstone Keystone</b>	● 4.01	11.67	5.49	6.30	4.81	7.23
HFRI Fund of Funds Composite Index	▲ 3.03	8.33	1.97	3.87	2.35	3.48

## Relative Returns vs HFRI Fund of Funds Composite Index



## Callan Absolute Rtn Hedge Fund of Funds (Net) Annualized Five Year Risk vs Return

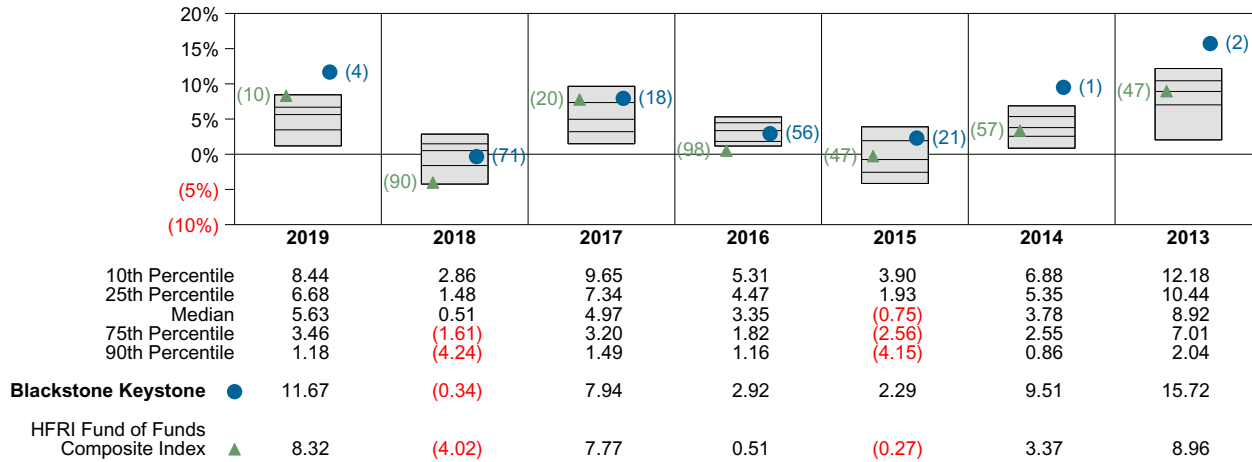


# Blackstone Keystone Return Analysis Summary

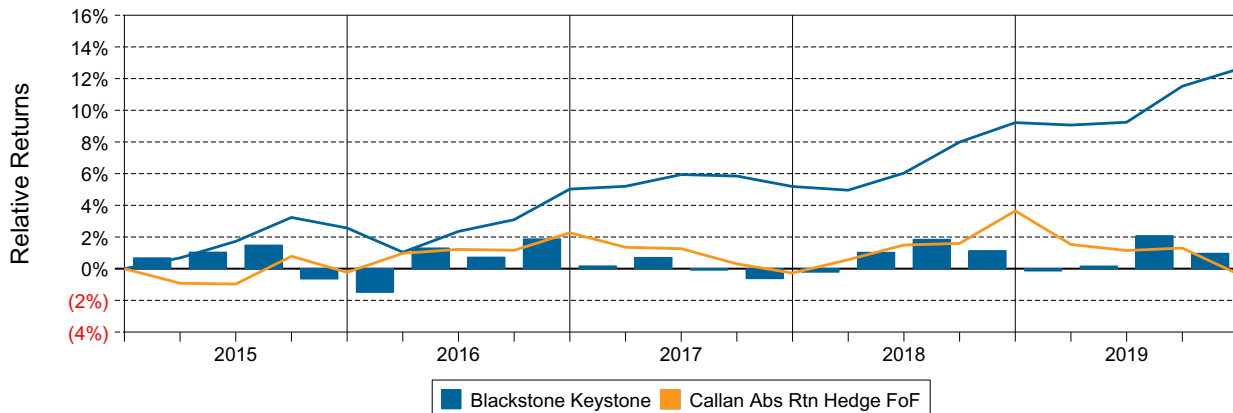
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

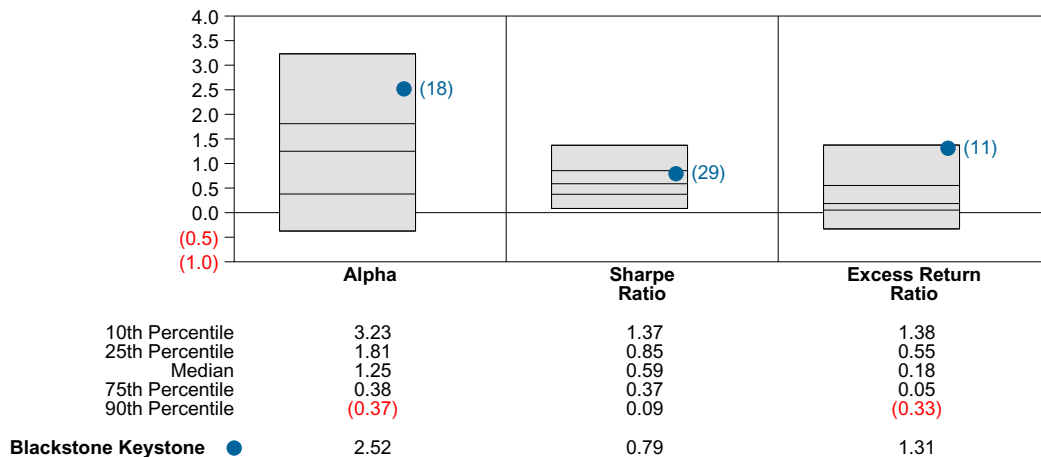
### Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)



### Cumulative and Quarterly Relative Return vs HFRI Fund of Funds Composite Index



### Risk Adjusted Return Measures vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended December 31, 2019

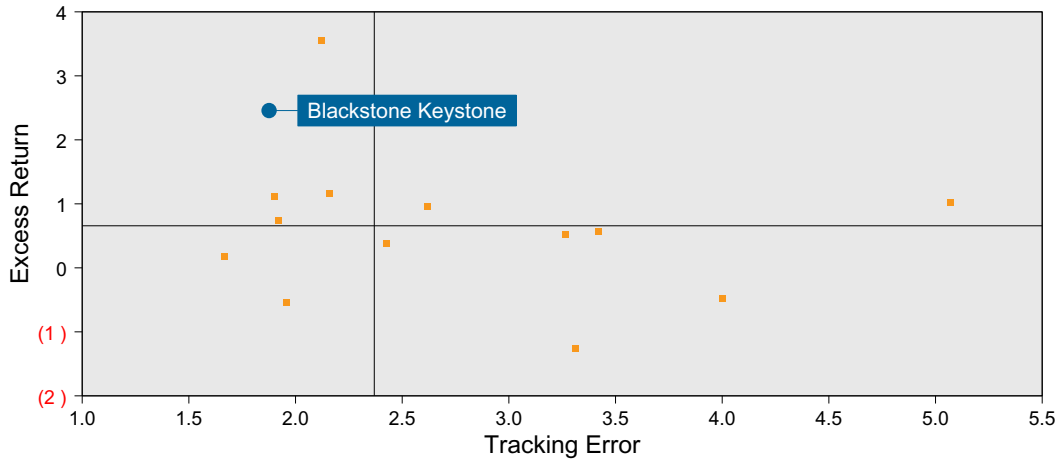


# Blackstone Keystone Risk Analysis Summary

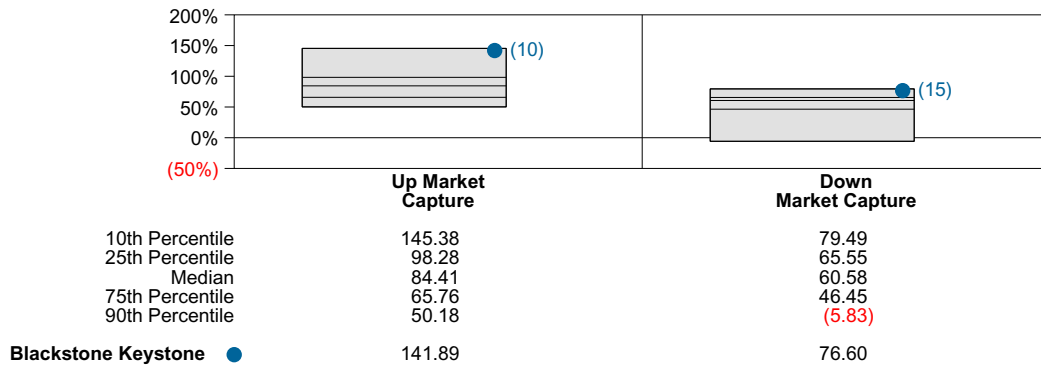
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

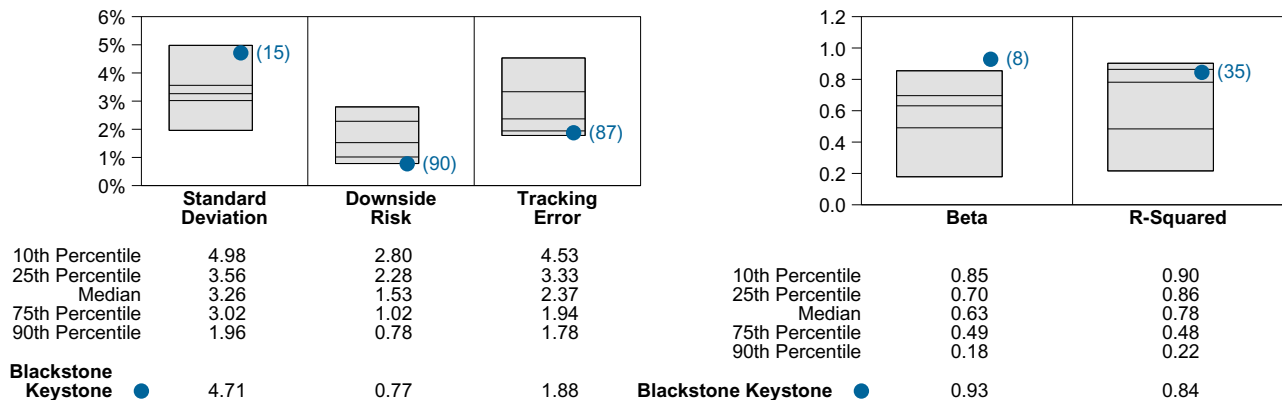
### Risk Analysis vs Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended December 31, 2019



### Market Capture vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended December 31, 2019



### Risk Statistics Rankings vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended December 31, 2019



# Eaton Vance GMARA

## Period Ended December 31, 2019

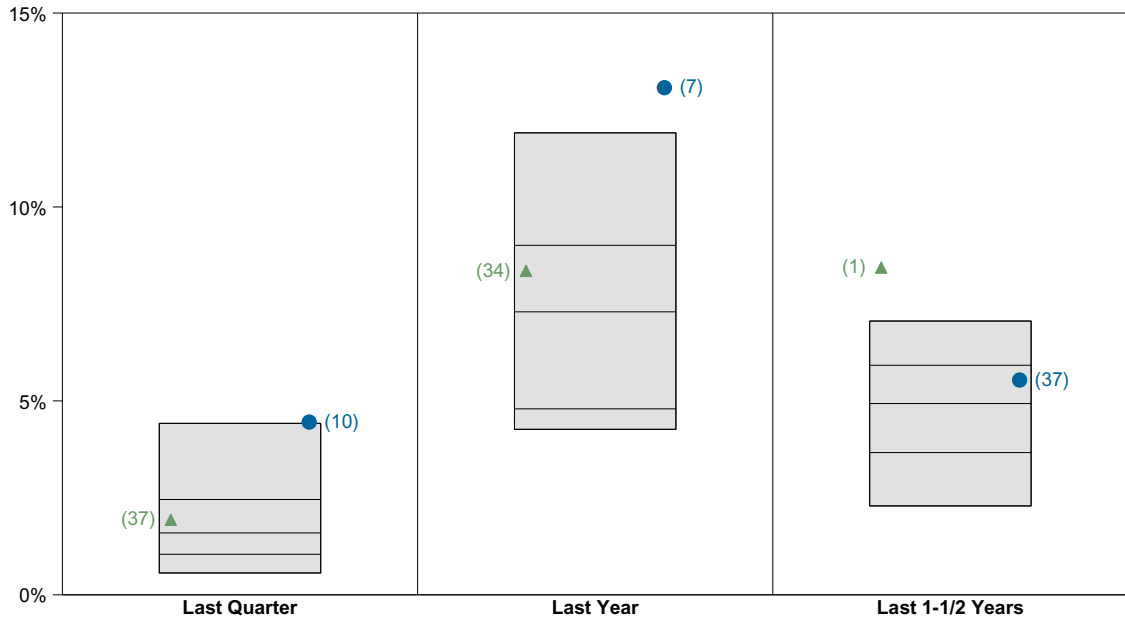
### Quarterly Summary and Highlights

- Eaton Vance GMARA's portfolio posted a 4.45% return for the quarter placing it in the 10 percentile of the Callan Unconstrained Fixed Income group for the quarter and in the 7 percentile for the last year.
- Eaton Vance GMARA's portfolio outperformed the 3 month LIBOR + 6% by 2.52% for the quarter and outperformed the 3 month LIBOR + 6% for the year by 4.72%.

### Quarterly Asset Growth

Beginning Market Value	\$204,299,200
Net New Investment	\$0
Investment Gains/(Losses)	\$8,911,600
Ending Market Value	\$213,210,800

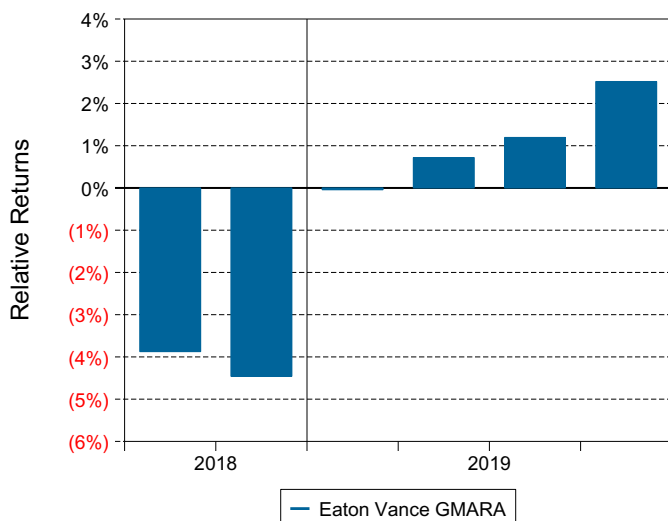
### Performance vs Callan Unconstrained Fixed Income (Gross)



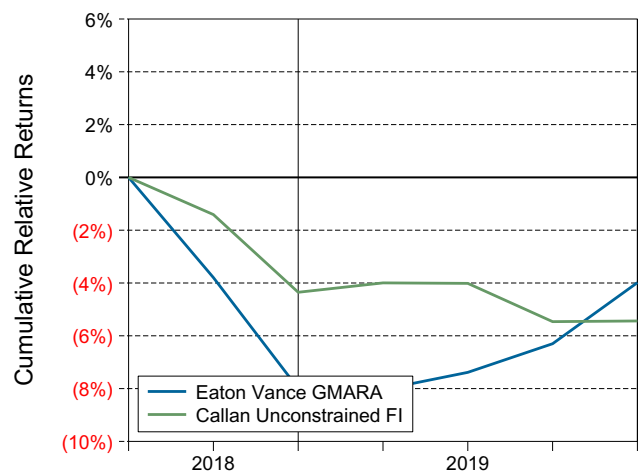
	Last Quarter	Last Year	Last 1-1/2 Years
10th Percentile	4.42	11.91	7.06
25th Percentile	2.46	9.01	5.92
Median	1.60	7.30	4.93
75th Percentile	1.04	4.79	3.67
90th Percentile	0.56	4.27	2.29

	Last Quarter	Last Year	Last 1-1/2 Years
Eaton Vance GMARA (Blue Dot)	4.45	13.07	5.54
3 month LIBOR + 6% (Green Triangle)	1.94	8.35	8.44

### Relative Return vs 3 month LIBOR + 6%



### Cumulative Returns vs 3 month LIBOR + 6%



# Private Credit Period Ended December 31, 2019

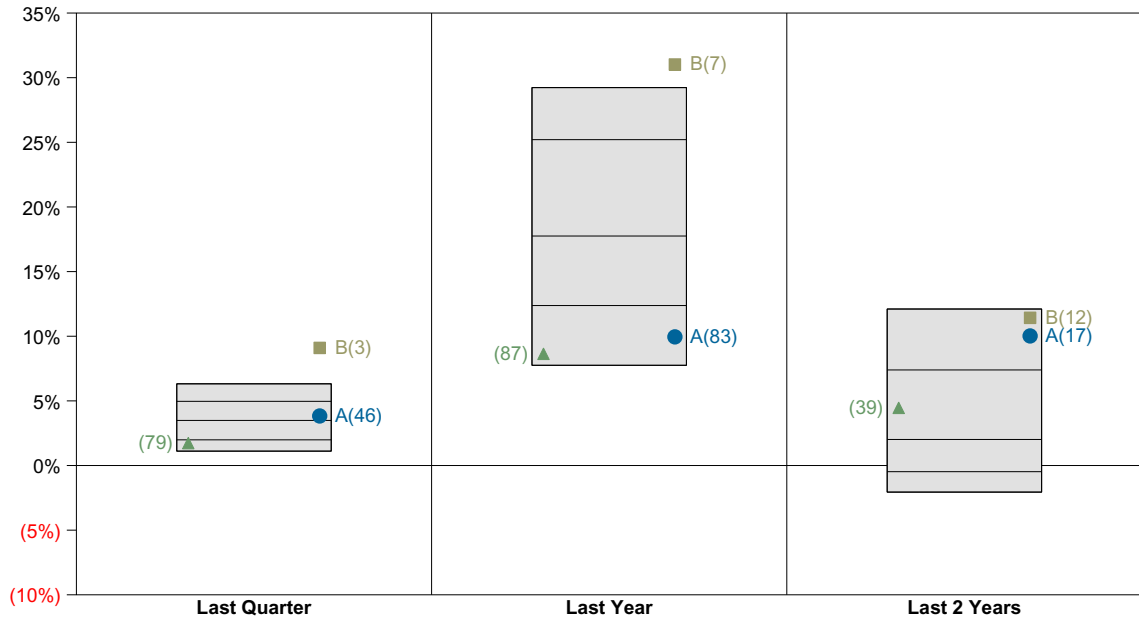
## Quarterly Summary and Highlights

- Private Credit's portfolio posted a 3.83% return for the quarter placing it in the 46 percentile of the Callan Alternative Investments DB group for the quarter and in the 83 percentile for the last year.
- Private Credit's portfolio outperformed the S&P:LSTA Lev Loan by 2.10% for the quarter and outperformed the S&P:LSTA Lev Loan for the year by 1.31%.

## Quarterly Asset Growth

Beginning Market Value	\$233,064,047
Net New Investment	\$55,158,752
Investment Gains/(Losses)	\$10,092,339
Ending Market Value	\$298,315,138

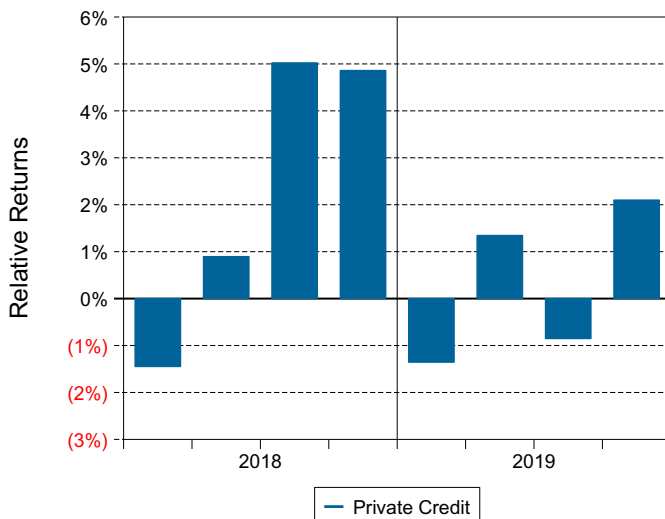
## Performance vs Callan Alternative Investments DB (Net)



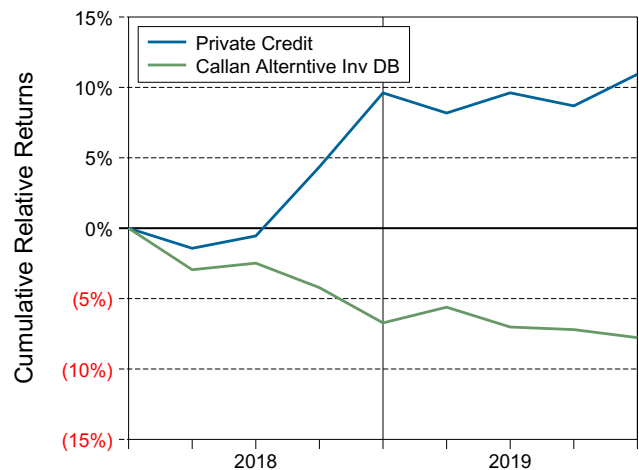
	Last Quarter	Last Year	Last 2 Years
10th Percentile	6.32	29.23	12.11
25th Percentile	4.96	25.21	7.39
Median	3.49	17.75	2.02
75th Percentile	1.99	12.37	(0.48)
90th Percentile	1.11	7.75	(2.06)

	Private Credit (A)	Russell 3000 Index (B)	S&P:LSTA Lev Loan (▲)
Last Quarter	3.83	9.10	1.73
Last Year	9.95	31.02	8.64
Last 2 Years	10.02	11.42	4.46

## Relative Return vs S&P:LSTA Lev Loan



## Cumulative Returns vs S&P:LSTA Lev Loan



# SEI Structured Credit: HY Bank Loans Period Ended December 31, 2019

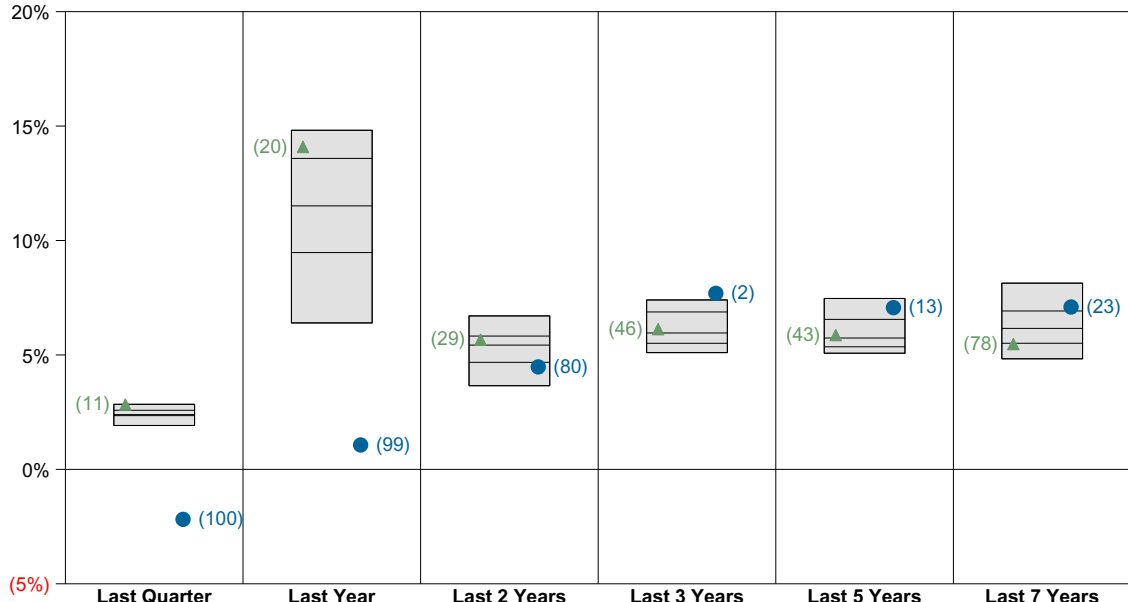
## Quarterly Summary and Highlights

- SEI Structured Credit: HY Bank Loans's portfolio posted a (2.18)% return for the quarter placing it in the 100 percentile of the Callan Multi-Sector Credit group for the quarter and in the 99 percentile for the last year.
- SEI Structured Credit: HY Bank Loans's portfolio underperformed the FTSE:HY Corp by 5.02% for the quarter and underperformed the FTSE:HY Corp for the year by 13.02%.

## Quarterly Asset Growth

Beginning Market Value	\$343,171,709
Net New Investment	\$758,654
Investment Gains/(Losses)	\$-8,252,278
Ending Market Value	\$335,678,085

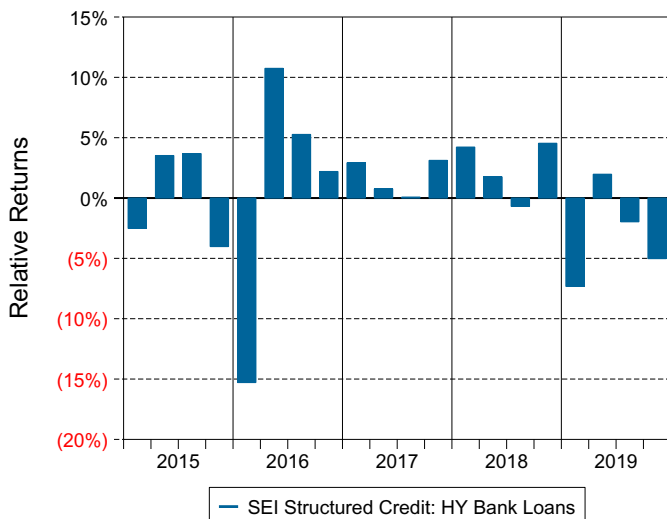
## Performance vs Callan Multi-Sector Credit (Gross)



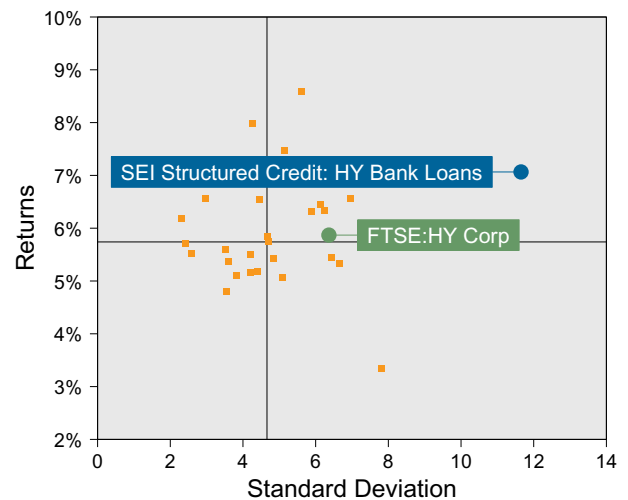
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	2.84	14.82	6.70	7.40	7.47	8.14
25th Percentile	2.58	13.59	5.82	6.88	6.55	6.92
Median	2.39	11.51	5.43	5.96	5.74	6.16
75th Percentile	2.35	9.47	4.68	5.51	5.36	5.51
90th Percentile	1.92	6.40	3.65	5.10	5.07	4.83

	SEI Structured Credit: HY Bank Loans	FTSE:HY Corp
Last Quarter	(2.18)	2.83
Last Year	1.07	14.09
Last 2 Years	4.48	5.67
Last 3 Years	7.69	6.13
Last 5 Years	7.07	5.87
Last 7 Years	7.09	5.47

## Relative Return vs FTSE:HY Corp



## Callan Multi-Sector Credit (Gross) Annualized Five Year Risk vs Return



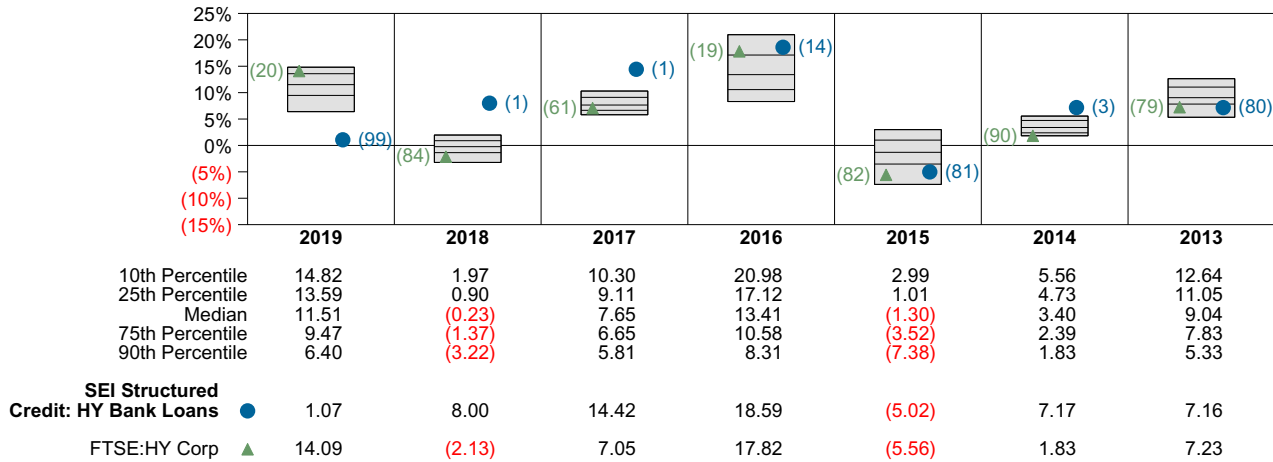


# SEI Structured Credit: HY Bank Loans Return Analysis Summary

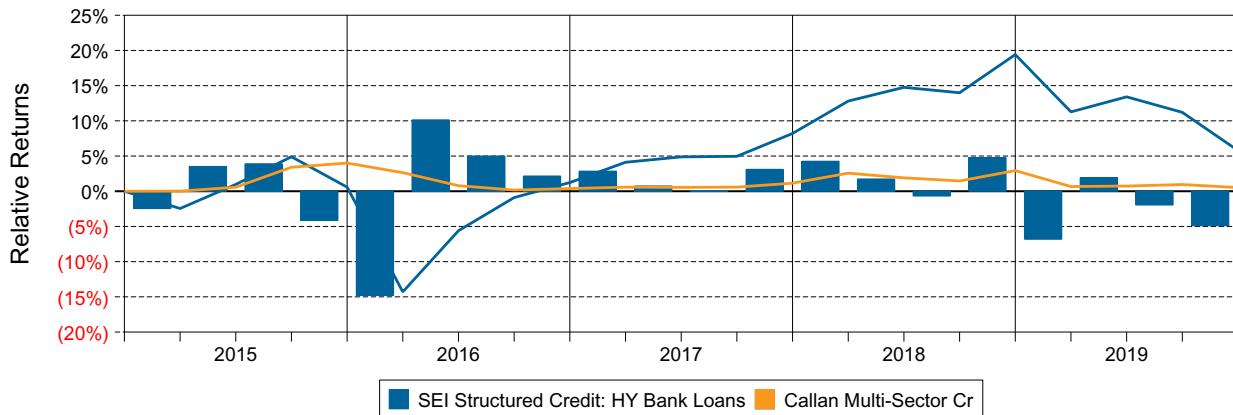
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

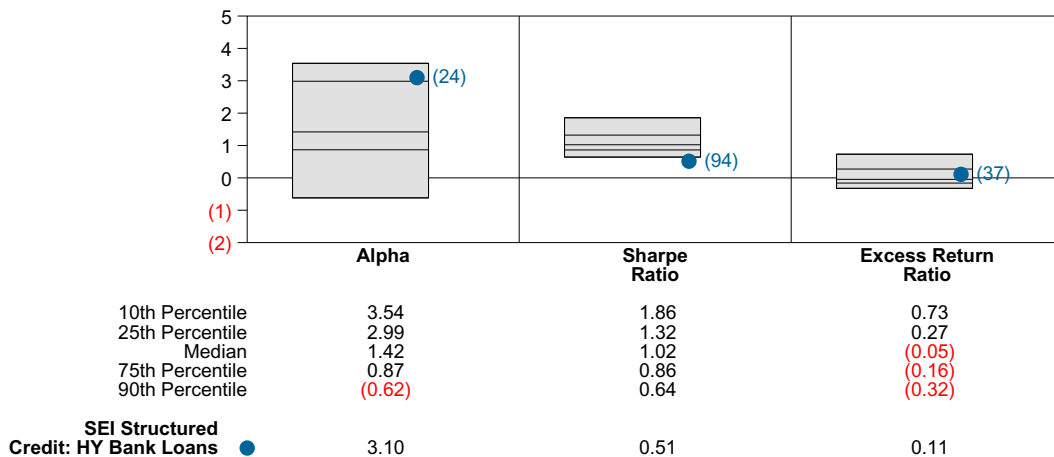
### Performance vs Callan Multi-Sector Credit (Gross)



### Cumulative and Quarterly Relative Return vs FTSE:HY Corp



### Risk Adjusted Return Measures vs FTSE:HY Corp Rankings Against Callan Multi-Sector Credit (Gross) Five Years Ended December 31, 2019

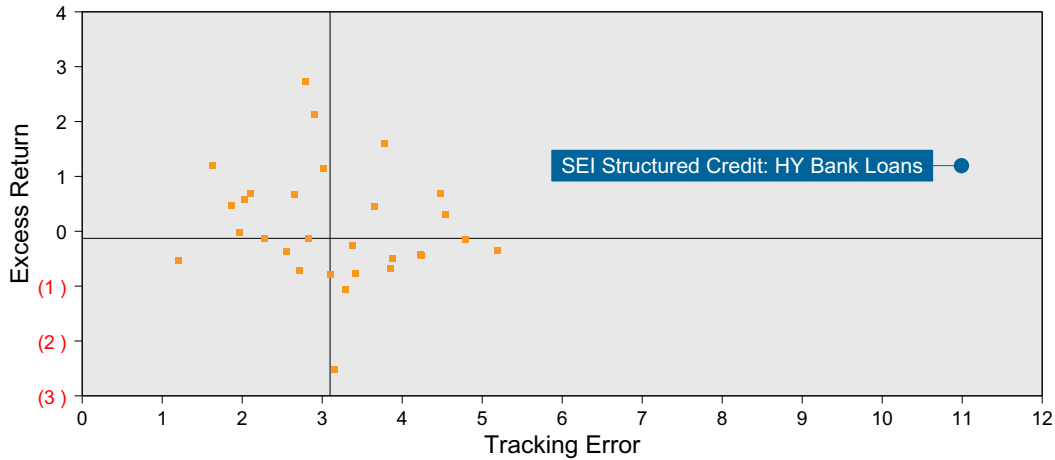


# SEI Structured Credit: HY Bank Loans Risk Analysis Summary

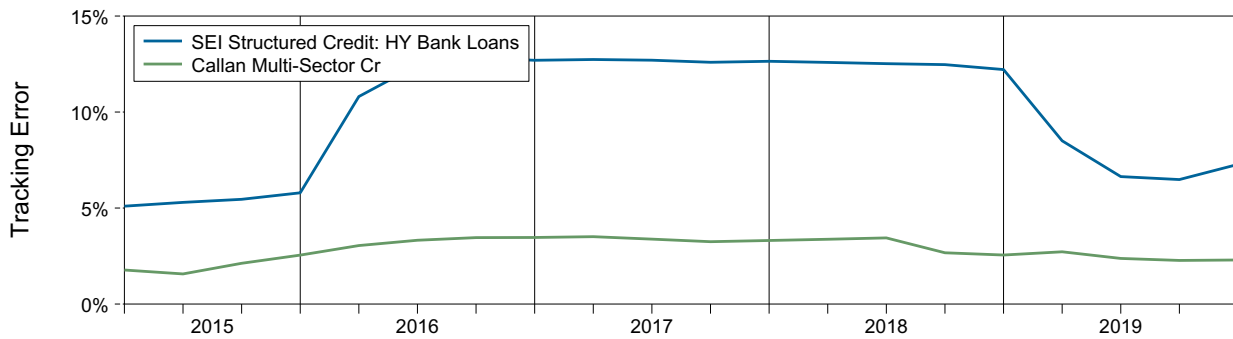
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

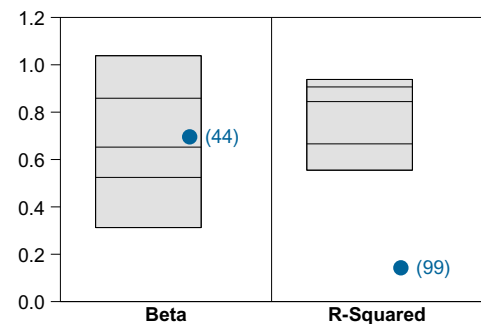
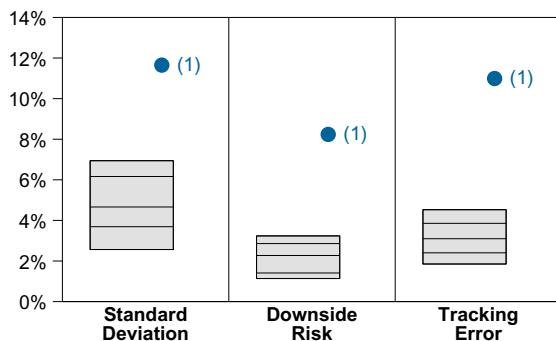
### Risk Analysis vs Callan Multi-Sector Credit (Gross) Five Years Ended December 31, 2019



### Rolling 12 Quarter Tracking Error vs FTSE HY Corporate



### Risk Statistics Rankings vs FTSE HY Corporate Rankings Against Callan Multi-Sector Credit (Gross) Five Years Ended December 31, 2019



10th Percentile 6.94  
25th Percentile 6.16  
Median 4.66  
75th Percentile 3.69  
90th Percentile 2.57

10th Percentile 3.24  
25th Percentile 2.86  
Median 2.27  
75th Percentile 1.41  
90th Percentile 1.14

10th Percentile 4.53  
25th Percentile 3.86  
Median 3.10  
75th Percentile 2.40  
90th Percentile 1.85

10th Percentile 1.04  
25th Percentile 0.86  
Median 0.65  
75th Percentile 0.52  
90th Percentile 0.31

10th Percentile 0.94  
25th Percentile 0.91  
Median 0.84  
75th Percentile 0.67  
90th Percentile 0.55

SEI Structured Credit: HY Bank Loans ● 11.65

8.24

10.99

SEI Structured Credit: HY Bank Loans ● 0.70

0.14



## Research and Educational Programs

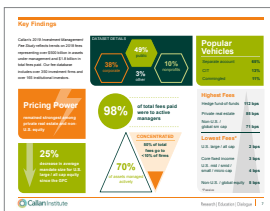
The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit [www.callan.com/library](http://www.callan.com/library) to see all of our publications, and [www.callan.com/blog](http://www.callan.com/blog) to view our blog "Perspectives." For more information contact Barb Gerraty at 415-274-3093 / [institute@callan.com](mailto:institute@callan.com).

## New Research from Callan's Experts

### Long-Dated Private Equity Funds: More Illiquidity Please? |

In this paper, Ashley DeLuce of Callan's Private Equity Consulting Group analyzes long-dated private equity funds, which have terms of 15 years or more (some even have no fixed term), and tend to focus on stable, mature businesses that may not fit a traditional private equity investment profile. Although these companies may not generate the outsized internal rates of return associated with traditional private equity investments, they tend to have stronger downside protection. In evaluating a potential long-dated fund investment, investors need to be wary of the strategy's increased illiquidity and how it can impact annual commitment pacing.

Callan 2019 Investment Management Fee Study | This study using Callan's proprietary database is our eighth examination of



institutional investment management fee trends. The purpose of the study is to provide a detailed analysis on fee levels and trends across multiple asset classes and mandate sizes, for both active and passive management.

Gold: Real Asset, Risk Mitigator, or Pet Rock? | In this *Hedge Fund Monitor*, Jim McKee reviews the history of gold as a form



of money, the reasons behind the recent renaissance in gold, the potential roles of gold for institutional investors, and the alternative approaches to invest in gold-related themes. For some institutional investors, gold can play a useful role in diversifying risk or enhancing returns. For others, particularly those with higher risk tolerances and longer time horizons, a strategic gold allocation has about as much purpose as a Pet Rock.

## Quarterly Periodicals

Private Equity Trends, 3Q19 | This newsletter from Callan's Private Equity Consulting Group provides a high-level summary of private equity activity in the quarter through all the investment stages, from fundraising to exits, as well as long-term performance data.

### Monthly Periodic Table of Investment Returns, November 2019 |

A regular update to Callan's Periodic Table covering the major public equity and fixed income asset classes.

Active vs. Passive Report, 3Q19 | This series of charts compares active managers alongside relevant benchmarks over the long term.

Market Pulse Flipbook, 3Q19 | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data for U.S. and global ex-U.S. equities and fixed income, alternatives, and defined contribution plans.

Capital Market Review, 3Q19 | This newsletter provides analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes.

Hedge Fund Quarterly, 3Q19 | Callan's Jim McKee of our Hedge Fund Research Group provides commentary on developments for hedge funds and multi-asset class (MAC) strategies.

Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle? | Callan's Real Assets Consulting Group identifies seven indicators that, combined with an understanding of prevailing market dynamics, have helped signal when the institutional real estate market is overheated or cooled.

Real Assets Reporter, 3Q19 | This newsletter from our experts offers Callan's data and insights on real estate and other real asset investment topics.

## Events

Miss out on a Callan conference or workshop? Event summaries and speakers' presentations are available on our website: [www.callan.com/library/](http://www.callan.com/library/)

Please mark your calendar and look forward to upcoming invitations:

### 2020 June Regional Workshops

June 23 – San Francisco

June 25 – Chicago

### 2020 October Regional Workshops

October 27 – Atlanta

October 29 – Portland

Please also keep your eye out for upcoming Webinars in 2020! We will be sending invitations to register for these events and will also have registration links on our website at [www.callan.com/webinarsupcoming](http://www.callan.com/webinarsupcoming).

**For more information about events, please contact Barb Gerraty: 415-274-3093 / [gerraty@callan.com](mailto:gerraty@callan.com)**

## Education: By the Numbers

50+

Unique pieces of research the Institute generates each year

525

Attendees (on average) of the Institute's annual National Conference

3,700

Total attendees of the "Callan College" since 1994



**"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."**

Greg Allen, CEO and Chief Research Officer

## Education

Through the "Callan College," the Callan Institute offers educational sessions for industry professionals involved in the investment decision-making process. It was founded in 1994 to provide both clients and non-clients with basic- to intermediate-level instruction.

### Introduction to Investments for Institutional Investors

April 21-22, 2020 – San Francisco

July 21-22, 2020 – Chicago

October 13-14, 2020 – Chicago

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. It lasts one-and-a-half days and is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Learn more at [www.callan.com/callan-college-intro-2/](http://www.callan.com/callan-college-intro-2/)

### Alternative Investments for Institutional Investors

June 16, 2020 – San Francisco

November 3, 2020 – Chicago

Alternative investments like private equity, hedge funds, and real estate can play a key role in any portfolio. In this one-day session, Callan experts will provide instruction about the importance of allocations to alternatives, and how to integrate, evaluate, and monitor them.

Learn from some of Callan's senior consultants and experts, including the head of Alternatives Consulting Pete Keliuotis. The session will cover private equity, private credit, hedge funds, real estate, and real assets; why invest in alternatives; risk/return characteristics and liquidity; designing and implementing an alternatives program; and trends and case studies.

Tuition is \$2,000 per person and includes instruction, all materials, and breakfast and lunch with the instructors.

Learn more at: <https://www.callan.com/callan-college-alternatives-2/>



