

December 31, 2022



**Pennsylvania SERS  
Defined Benefit Plan**

**Investment Measurement Service  
Quarterly Review**

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## Pennsylvania SERS

### December 31, 2022

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## Is a Recession Inevitable in 2023?

### ECONOMY

**2** The bond market is convinced a recession is inevitable in 2023, as shown by an inverted yield curve. Perhaps bond investors do not believe that we will achieve a “soft landing” from the current economic expansion. Robust current economic indicators conflict with this market expectation.

## Rebound in 4Q for U.S., Global Bonds

### FIXED INCOME

**8** Bonds rose in 4Q but 2022 results remained negative. The gain for the Aggregate was driven by coupon income and spread tightening. The Municipal Bond Index 2022 return was the worst since 1981. Global fixed income 4Q gains were driven largely by U.S. dollar weakness.

## Appetite Continues, but Strategies Shift

### PRIVATE CREDIT

**12** Investors took a new look at upper-middle-market direct lending as all-in spreads have widened and lenders are able to get tighter terms. On average, the asset class has generated net IRRs of 8% to 10% for trailing periods ended Sept. 30, 2022.

## First Full-year Drop in Returns Since 2018

### INSTITUTIONAL INVESTORS

**4** All investor types finished 2022 with steep declines. The S&P 500 and Bloomberg Aggregate were down together for three straight quarters (through 3Q22), and for the year, the first time since 1969. But most investors performed better than a 60% stocks/40% bonds benchmark.

## NPI Falls 3.5% and REITs Lag Equities

### REAL ESTATE/REAL ASSETS

**10** The NCREIF Property Index fell 3.5% during 4Q. The NCREIF ODCE Index dropped 5.2%. The FTSE EPRA Nareit Developed REIT Index rose 6.9% compared to a 9.8% gain for MSCI World. The FTSE Nareit Equity REITs Index increased 5.2%, compared to 7.6% for the S&P 500.

## Year Ends on a High Note After Tough Start

### HEDGE FUNDS/MACs

**13** The median Callan Institutional Hedge Fund Peer rose 1.3%. Within the HFRI indices, the best-performing strategy was the emerging market index (+5.1%). Across the Callan Hedge FOF Database, all managers showed gains. The Callan MAC Style Groups also rose.

## 4Q Gains Can't Stem Big Losses in 2022

### EQUITY

**6** Stocks gained in 4Q but saw sharp drops over the full year. The drop for U.S. equities was broad-based, and almost every sector experienced negative returns. Global equities also rose in 4Q, as lower-than-expected U.S. inflation data buoyed market optimism at year-end.

## Deceleration in 2022; 2023 Very Unclear

### PRIVATE EQUITY

**11** After a record-shattering 2021, private equity activity fell throughout 2022. On average, year-over-year transaction activity fell by about 20% and dollar volumes by 30%. However, fundraising and company investment and exit activity remain comparable to pre-pandemic levels.

## DC Index Falls 4.6%, Third Straight Decline

### DEFINED CONTRIBUTION

**15** The Callan DC Index™ fell 4.6% in 3Q22 and 16.7% for the trailing one year. Balances within the Index declined by 4.7% after a 12.3% decrease the previous quarter. TDFs reclaimed the top spot in terms of quarterly net flows, garnering 73.6% of flows.

## Broad Market Quarterly Returns

### U.S. Equity Russell 3000



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



### U.S. Fixed Income Bloomberg Agg



### Global ex-U.S. Fixed Income Bloomberg Global Agg ex US



Sources: Bloomberg, FTSE Russell, MSCI

# Is a Recession Inevitable in 2023?

ECONOMY | Jay Kloepfer

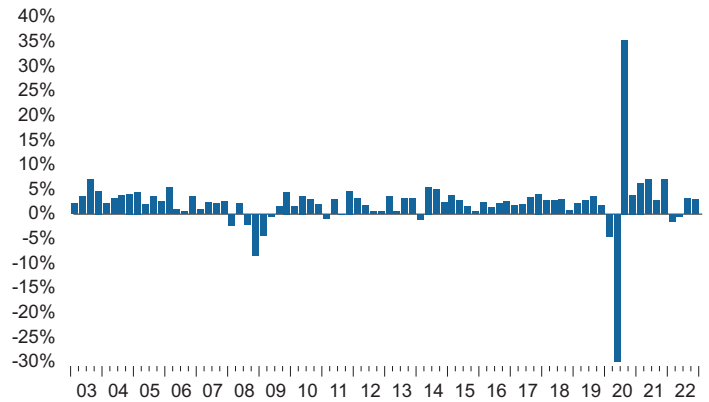
The bond market is convinced a recession is inevitable in 2023. The yield curve is inverted, and this phenomenon has preceded every recession in modern history. This inversion occurs when yields on the short end of the curve are higher than yields on the long end. A normal yield curve is upward sloping, with higher yields offered for taking on debt with greater maturities. An inverted yield curve implies that investors expect interest rates to fall, and that holding longer-dated debt will provide a greater return as rates drop. Why would investors expect interest rates to fall? They believe that a recession is coming, and the Federal Reserve will cut interest rates to stimulate economic growth.

Last year was anything but normal for almost all measures of the capital markets, interest rates, inflation, and the economy. It may be reasonable to be a bit skeptical that the bond market has called this recession correctly. First, the U.S. economy suffered two quarters in a row of GDP loss “way back” in 1Q and 2Q22! A consecutive quarterly decline in GDP is often the rule of thumb used to invoke recession, but last year, such was not the case. The economy resumed robust growth with a solid 3.2% annualized gain in 3Q, and a 2.9% increase in 4Q. As a result, GDP advanced 2.1% for the year, following a strong 5.9% jump in 2021. Where was the growth in 4Q22 and for the year? Consumer spending on services, led by international travel, food services, accommodation, and health care. We also re-built inventories and increased investment in software and equipment. The one large drag was a decline in home construction, as mortgage rates shot up from the low 2% range to over 7% in a matter of months.

Inflation burned out of control by mid-year 2022. Faced with huge increases in the price of daily staples and durable goods like autos, consumers quickly redirected their spending away from goods suffering steep inflation, and spending on such goods within GDP actually declined during the year. This wasn't always captured in the CPI; one of its failings as a measure of inflation is that it assumes a certain basket of goods will continue to be purchased at fixed weights even when prices shoot up. Clearly, higher prices for food staples and rent are impossible to avoid, but consumers substitute budget expenditures with great skill to

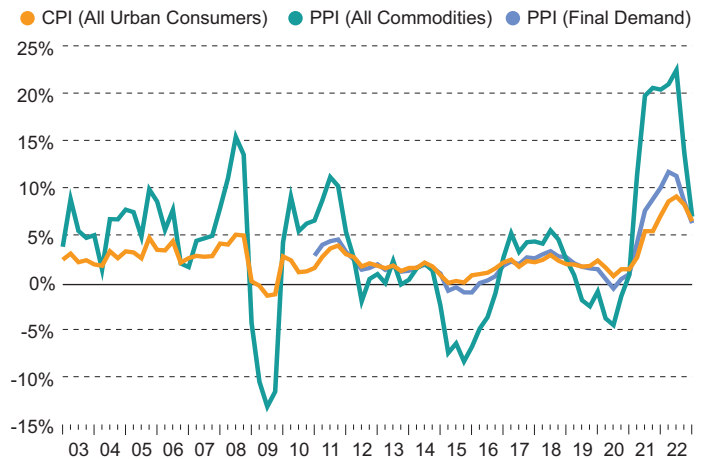
## Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

## Inflation Year-Over-Year



Source: Bureau of Labor Statistics

counter price hikes. Inflation measured by the CPI-U rose sharply year-over-year, cresting at 9% by June, but the rate of increase in prices flattened completely in the second half of the year. So while the year-over-year increase for 4Q CPI hit 6.5%, the quarterly CPI for 4Q came in at 0% (change over 3Q). The problem for consumers and businesses is that even though CPI has stopped rising, prices are now “permanently” higher.

While a disconnect remains in the job market between those looking for work and the jobs offered by employers, the job market notched serious gains in net new jobs throughout the year, adding over 4.5 million. The level of employment finally surpassed the



pre-pandemic peak in August 2022. Additions to the unemployment roll measured by weekly jobless claims continued to stay historically low, while continuing unemployment claims dropped from over 5 million at the start of 2021 to 1.7 million in December. Calendar year 2022 saw the lowest level of continuing claims in more than two decades.

With continued economic strength suggested by the robust job market and solid GDP growth, where is the concern over recession coming from in the bond market? The answer is a logic puzzle that can seem like a circular argument. The Fed raised rates quickly and by a large amount starting last March to battle the surge in inflation. The surge stemmed from supply chain dislocations as we emerged from the pandemic lockdown; from a surge in demand for workers, which drove wage growth; from a surge in demand from consumers; and then layered on top of these trends the disruption from the Russian invasion of Ukraine. The bond market suddenly “believed” in the Fed’s stated plans for interest rates through 2022, and yields moved quickly toward long-term equilibrium by mid-year 2022. The Fed’s primary tool to battle inflation is the Fed Funds rate. The premise is that higher rates cool demand for goods and services from all actors in the economy and wring inflation out of the economy. The reality is that higher rates appear to be working as advertised, as demand has lessened and inflation stopped rising month-to-month in the summer of 2022. The inverted yield curve says the bond market believes the very success of the Fed’s inflation policy is now certain to cause recession, and then a reversal of interest rate policy to fight said recession. Perhaps the bond market does not believe that we will achieve the holy grail of Fed policy, which is to engineer a “soft landing” from the current economic expansion.

### Recent Quarterly Economic Indicators

	4Q22	3Q22	2Q22	1Q22
Employment Cost: Total Compensation Growth	5.1%	5.0%	5.1%	4.5%
Nonfarm Business: Productivity Growth	3.0%	1.4%	-4.1%	-5.9%
GDP Growth	2.9%	3.2%	-0.9%	-1.6%
Manufacturing Capacity Utilization	78.5%	79.2%	79.5%	79.1%
Consumer Sentiment Index (1966=100)	58.8	56.1	57.8	63.1

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

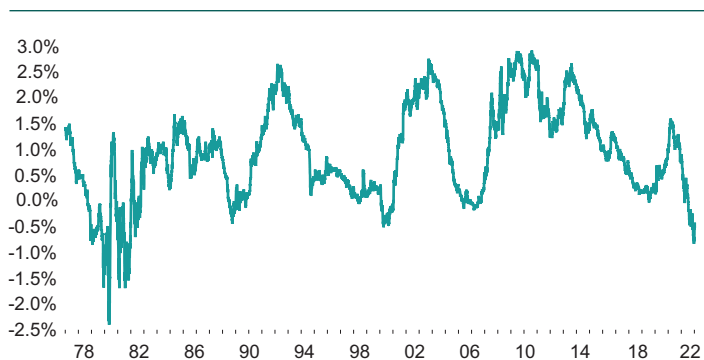
### The Long-Term View

Index	4Q22	Periods Ended 12/31/22			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
<b>U.S. Equity</b>					
Russell 3000	7.2	-19.2	8.8	12.1	7.7
S&P 500	7.6	-18.1	9.4	12.6	7.6
Russell 2000	6.2	-20.4	4.1	9.0	7.1
<b>Global ex-U.S. Equity</b>					
MSCI EAFE	17.3	-14.5	1.5	4.7	4.5
MSCI ACWI ex USA	14.3	-16.0	0.9	3.8	--
MSCI Emerging Markets	9.7	-20.1	-1.4	1.4	--
MSCI ACWI ex USA Small Cap	13.3	-20.0	0.7	5.2	6.9
<b>Fixed Income</b>					
Bloomberg Agg	1.9	-13.0	0.0	1.1	4.0
90-Day T-Bill	0.8	1.5	1.3	0.8	1.9
Bloomberg Long G/C	2.6	-27.1	-1.2	1.6	5.4
Bloomberg GI Agg ex US	6.8	-18.7	-3.1	-1.6	2.7
<b>Real Estate</b>					
NCREIF Property	-3.5	5.5	7.5	8.8	9.0
FTSE Nareit Equity	5.2	-24.4	3.7	6.5	7.9
<b>Alternatives</b>					
CS Hedge Fund	0.9	1.1	4.2	4.2	5.8
Cambridge PE*	-1.8	-3.8	16.8	15.3	14.3
Bloomberg Commodity	2.2	16.1	6.4	-1.3	1.9
Gold Spot Price	9.2	-0.1	6.9	0.9	7.6
<b>Inflation – CPI-U</b>	0.0	6.5	3.8	2.6	2.5

\*Data for most recent period lags. Data as of 9/30/22. Sources: Bloomberg, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

It is true that we have never achieved a soft landing in the past, so the bond market may be justified in expecting that the Fed will overshoot and tip the U.S. into recession. Robust current economic indicators, especially in the labor market outside of technology, conflict with this market expectation.

### 10-Year Treasury vs. 2-Year Treasury Spread



Source: Federal Reserve Bank of St. Louis

# Worst Year Since 2018 as Both Stocks and Bonds Fall

## INSTITUTIONAL INVESTORS

### Double-digit declines mark the end of a tough year

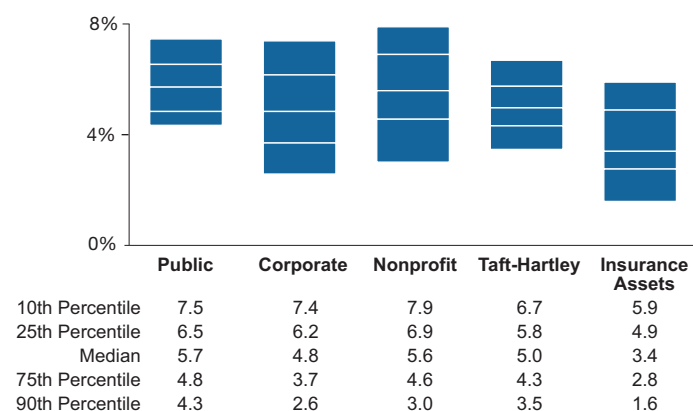
- All investor types finished 2022 with double-digit declines, as both equities and fixed income fell.
- Insurance assets fared the best during the year, while corporate plans saw the lowest returns.
- Most plan types performed better than a benchmark consisting of 60% S&P 500/40% Bloomberg Aggregate, but they had a harder time matching that benchmark over longer time periods.
- The declines in 2022 were far higher than those in 2018, which was the last year that saw drops in the value of portfolios for institutional investors.

### Inflation and interest rates are top client concerns

- CPI-U was up more than 8% year-over-year in each month from March through September.
- The Fed has raised rates 425 bps since March, from 0.0%-0.25% to 4.25%-4.50% in December 2022.
- The S&P 500 and Bloomberg Aggregate were down together for three consecutive quarters (through 3Q22), and for the year, the first time since 1969.
- And there was no place to hide in 2022; every asset class except cash was down. It was the worst year for a 60/40 portfolio in decades.

- However, lower asset values but higher returns expected going forward is a silver lining for investors.
- Institutional investors have a greater chance of hitting return targets and can even reduce risk, after years of risking up to chase return.
- There are rising expectations for a recession; the yield curve is inverted.
- Geopolitical risk surrounding China was another area of focus as institutional investors try to understand how its COVID re-opening and tensions regarding Taiwan could impact markets.

### Quarterly Returns, Callan Database Groups (12/31/22)



Source: Callan

### Callan Database Median and Index Returns\* for Periods Ended 12/31/22

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	5.7	-12.7	4.3	5.3	7.3	7.5
Corporate Database	4.8	-17.4	0.5	3.0	5.8	7.0
Nonprofit Database	5.6	-13.1	3.6	4.8	6.8	7.4
Taft-Hartley Database	5.0	-10.6	4.7	5.7	7.7	7.3
Insurance Assets Database	3.4	-10.0	1.0	2.6	4.0	5.0
All Institutional Investors	5.2	-13.3	3.4	4.7	6.9	7.3
Large (>\$1 billion)	4.9	-12.4	4.1	5.1	7.0	7.6
Medium (\$100mm - \$1bn)	5.2	-13.8	3.3	4.7	7.0	7.2
Small (<\$100 million)	5.5	-13.6	3.2	4.5	6.7	7.0
60% S&P 500/40% Bloomberg Agg	5.3	-15.9	4.0	6.1	8.1	7.4

\*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit (DB) plans, corporate DB plans, nonprofits, insurance assets, 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.

**Return to normal in bonds**

- The role of core bonds in portfolios was restored; cash is viable again as a liquidity tool.
- A 4.5% yield may change the demand for yield substitutes: IG credit, bank loans, high yield, private credit, even real estate and infrastructure?

**Private markets: now over target allocations**

- Downward marks are coming, gradually.
- Interest remains strong in all private assets.

**Public defined benefit (DB) plan priorities**

- Public DB plans are analyzing how the changes to Callan's Capital Markets Assumptions will affect their portfolios.
- Returns in 2022 gave back some of the funded status gains from 2020-21. But downward pressure on actuarial discount rates may now abate as capital markets expectations are higher following the market decline.

**Corporate DB plan priorities**

- Corporate DB plans focused on de-risking.
- The experience of 2022 has these plans questioning what they are doing with LDI, and why. Funded status no longer translates directly to contributions, or expense.

- Higher interest rates may increase discussions about pension risk transfer. Corporate DB plans appear to be inclined to keep the plan on the balance sheet.

**Defined contribution (DC) plan priorities**

- New regulations such as SECURE 2.0 and the U.S. Department of Labor's environmental, social, and governance (ESG) rule were on the minds of many sponsors.
- In investment manager searches, DC-friendly vehicles with competitive pricing are a key criterion.

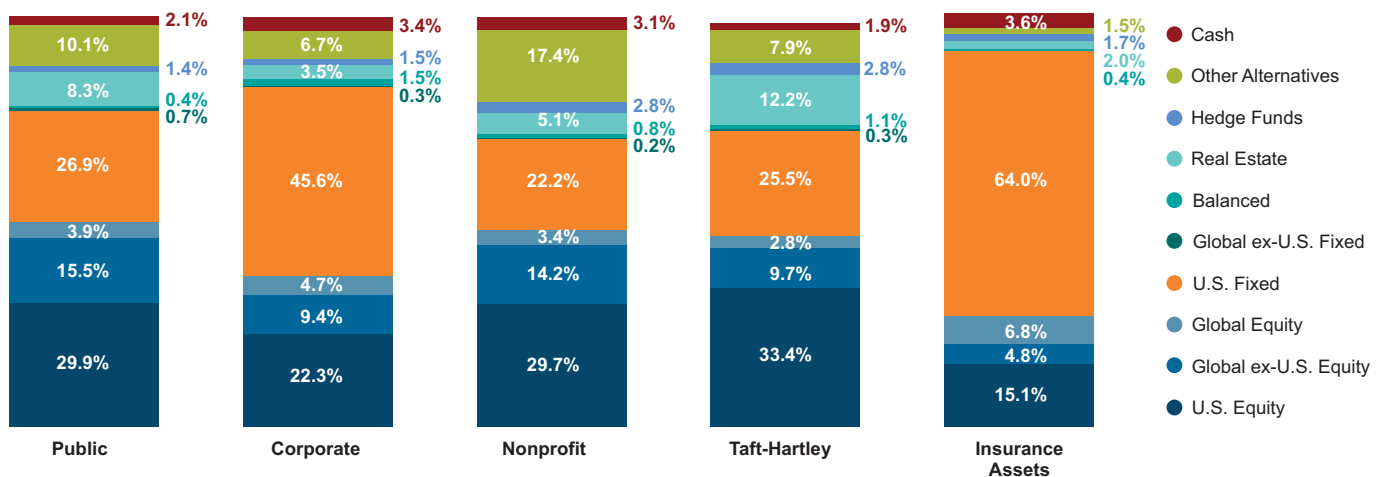
**Nonprofit priorities**

- Reviews of asset-allocation structures were likely in light of the changed market environment.

**Insurance companies' priorities**

- They are one of the few investors that "enjoyed" the spike in yields during 2022. Typically invested to match short-term liabilities, they are focused on investment income and use it to offset operating expenses.
- As interest rates rose, insurers sold bonds with lower book yields and took losses, then re-invested at much higher book yields.

**Average Asset Allocation, Callan Database Groups**



Note: charts may not sum to 100% due to rounding. Other alternatives include but is not limited to: diversified multi-asset, private credit, private equity, and real assets. Source: Callan

# Equity

## U.S. Equities

### Markets fall in final month of quarter after gains

- The S&P 500 Index posted positive returns in both October and November but fell in December. The index was up 7.6% during 4Q22 but ended 2022 down 18.1%.
- Energy was the best-performing sector during the quarter and 2022, returning 23% and 66% respectively. Consumer Discretionary and Communication Services were the only two sectors that posted negative returns in 4Q.
- Value stocks outperformed growth across the market capitalization spectrum, and for both 4Q and the full year.
- Large cap stocks (Russell 1000) outperformed small caps (Russell 2000) last quarter and for the year.
- Continued macroeconomic concerns (e.g., inflation, potential recession, geopolitical issues) led to higher volatility and a down-year for U.S. equities.

### Market valuations have reset with the broad-based sell-off

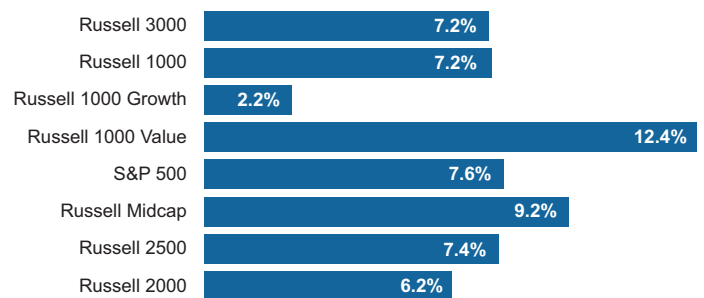
- The drop for equities in 2022 was broad-based, and almost every sector experienced negative returns. Higher interest rates impacted the growth-oriented sectors the most (e.g., Technology, Communication Services).
- Mega-cap technology stocks have underperformed, ending an extended period of market leadership.
- Large cap stocks are now trading around their average P/E ratio, but they are not yet “cheap.”
- Despite the recent outperformance of value stocks, value still looks attractive relative to growth heading into 2023.

### Small cap valuations are attractive relative to large cap

- During 4Q22, the Russell 2000 was trading at a 30% discount to its historical P/E average.
- Relative to large caps, the Russell 2000's forward 12 months P/E is trading at the lowest level versus large cap stocks since the Dot-Com Bubble.
- Relative to large and mid caps, small caps have looked significantly cheaper on various valuation metrics recently.

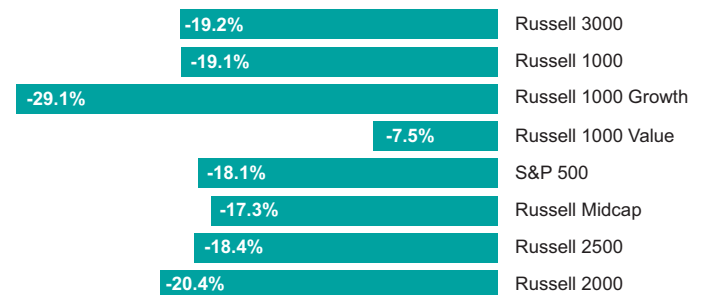
### U.S. Equity: Quarterly Returns

(12/31/22)



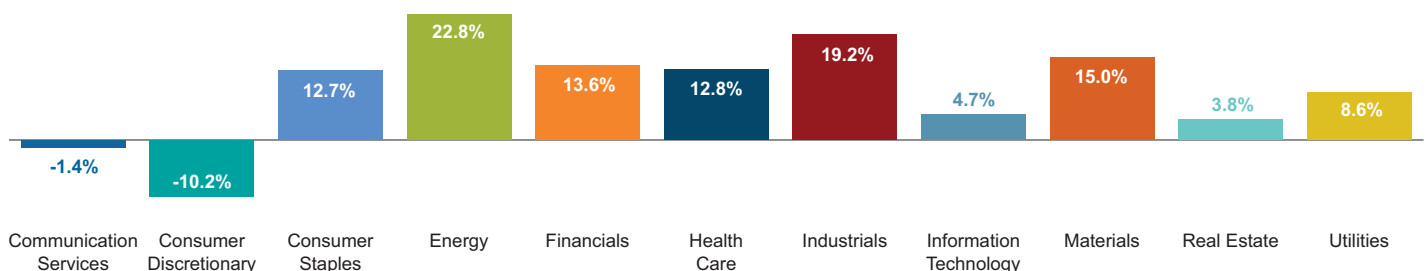
### U.S. Equity: One-Year Returns

(12/31/22)



Sources: FTSE Russell and S&P Dow Jones Indices

### Quarterly Performance of Industry Sectors (12/31/22)



Source: S&P Dow Jones Indices

## Global Equity

### Ending on a high note

4Q22 was a bright spot during a tough calendar year in global and global ex-U.S. equity markets.

### Encouraging signs

- Lower-than-expected U.S. inflation data buoyed market optimism at the end of the year.
- The Fed slowed its pace of tightening, with further slowing expected in 2023.
- China reversed its zero-COVID policies, prompting exuberance from investors.

### Value outpaces growth

- Value outpaced growth in developed and emerging markets.
- Economically sensitive sectors (e.g., Financials and Industrials) benefited from the anticipation of improved growth; Energy was the largest outperformer.

### U.S. dollar vs. other currencies

- After reaching a multi-decade high, the dollar fell against all major currencies with signs of inflation easing.
- Despite the 7.7% decline in 4Q22, the dollar still gained nearly 8% over the full year.
- Global central banks' rate hikes and the U.S. Federal Reserve's slowing pace of tightening could prolong U.S. dollar decline.
- Continued weakening of the U.S. dollar would be a tailwind for non-U.S. equities.

### What about style?

- A sustained shift to value after the recent prolonged growth cycle would likely favor non-U.S. equities over U.S. equities given the higher representation of traditional value sectors in global ex-U.S. equity universes.

### China's reopening spurs hopes for emerging markets

- In addition to pivoting from its zero-COVID policy, Chinese regulators shifted to supportive policies to stabilize the property sector and tech/platform industry.

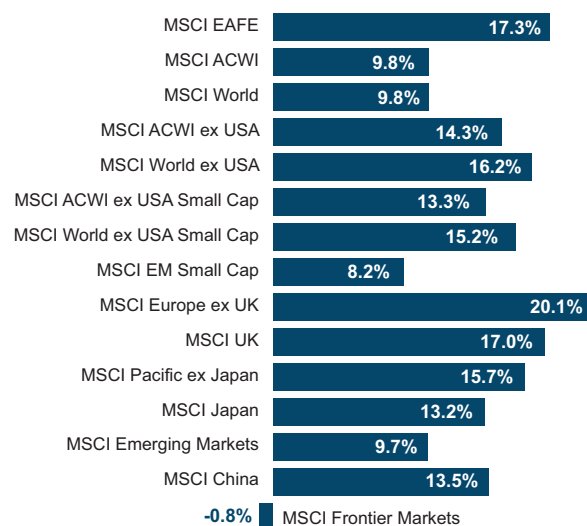
### Reopening is expected to jump-start Chinese economy

- China's real GDP growth is estimated to reach 5.5% in 2023 and nearly 7% on a 4Q/4Q basis.
- Real consumption is projected to grow by 8.5% in 2023 as Chinese households have amassed \$2.6 trillion in savings.

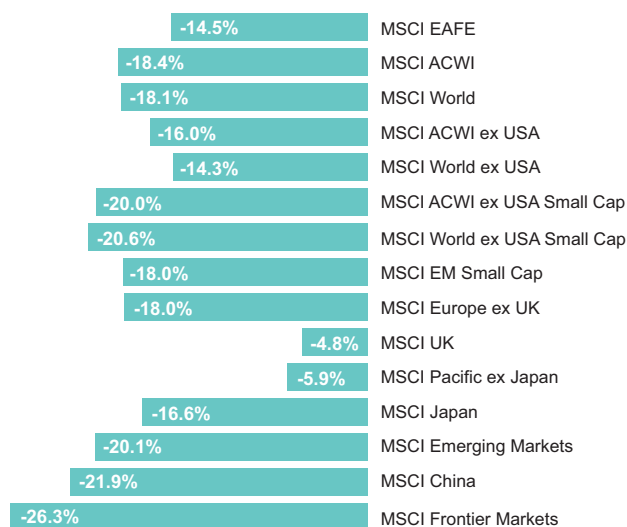
### Recovery in China will spill over to other EM regions

- Growth in Chinese consumption is expected to have positive impact on tourism in Southeast Asia; goods exports in Europe, the Middle East, and Africa; and commodities in Latin America.

### Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 12/31/22)



### Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 12/31/22)



Source: MSCI

# Fixed Income

## U.S. Fixed Income

### Bonds were up in 4Q but 2022 results remain negative

- Gain for the Bloomberg US Aggregate Bond Index driven by coupon income and spread tightening; interest rates rose modestly

### Rates were volatile intra-quarter

- U.S. Treasury 10-year yield: high 4.22% on 11/7; low 3.42% on 12/7
- Curve remained inverted at quarter-end: 10-year yield 3.88% and 2-year yield 4.41%; most since 1981

### Fed raised rates bringing target to 4.25%-4.50%

- Median expectation from Fed is 5.1% for year-end 2023.
- Inflation showed signs of moderating but job market remained tight with solid wage growth.

### Corporates and mortgages outperformed Treasuries in 4Q

- 4Q: Corporates +289 bps excess return; residential mortgage-backed securities (RMBS) +110 bps
- 2022: Corporates -125 bps excess return; RMBS -223 bps
- RMBS had worst month ever (September: -191 bps) and best month ever (November: +135 bps) in excess returns

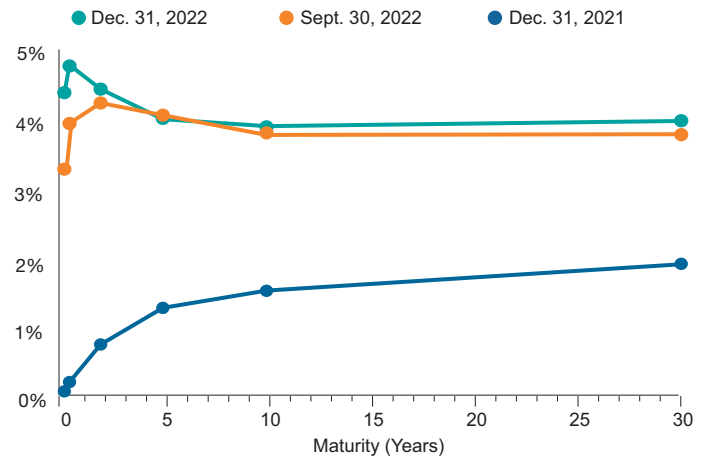
### Valuations fair

- While absolute yields are higher, spreads have not widened materially, and most are close to historical averages.
- An economic slowdown could impact credit spreads.
- Higher yields have boosted forward-looking returns across sectors.

### Economic slowdown clouds the corporate credit picture

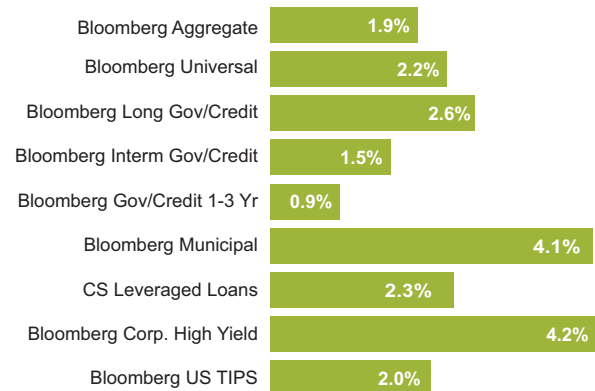
- Despite prospects for an economic slowdown in 2023, fundamental credit metrics for many issuers are strong.
- Default rates are expected to tick up, albeit not to the same extent as in previous recessions.
- Investors may be biased toward higher-quality investment grade issuers as they weigh the threat of a looming recession and potential implications for increased volatility in lower-quality corporate credit markets.

## U.S. Treasury Yield Curves



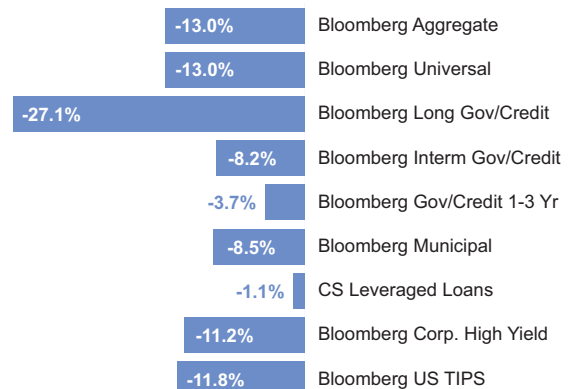
Source: Bloomberg

## U.S. Fixed Income: Quarterly Returns (12/31/22)



Sources: Bloomberg and Credit Suisse

## U.S. Fixed Income: One-Year Returns (12/31/22)



Sources: Bloomberg and Credit Suisse

## FIXED INCOME (Continued)

### TIPS: Beware of duration

- Despite a rise in inflation, TIPS saw marked declines in 2022 amid rising interest rates.
- TIPS, like nominal Treasuries, are sensitive to changes in interest rates, and as a result, shorter-duration TIPS fared better than full spectrum TIPS in 2022.
- Shorter-term TIPS exhibit a higher correlation to realized inflation but also provide a similar risk-adjusted return as that of full spectrum TIPS.

### Municipal Bonds

#### Gains in 4Q but most 2022 results remain negative

- Municipal Bond Index calendar year return worst since 1981
- Higher quality outperformed in 4Q (AAA: +4.3%; AA: +4.1%; A: +4.0%; BBB: +3.9%; High Yield: +3.5%) and in 2022
- Munis outperformed most other fixed income sectors in 4Q and in 2022

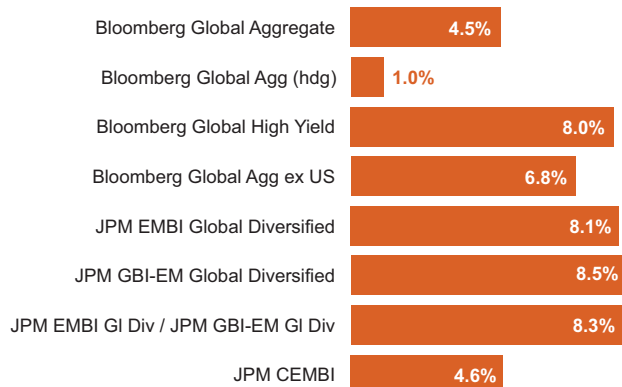
#### Valuations relative to U.S. Treasuries on the rich side

- 10-year AAA Muni/10-year U.S. Treasury yield ratio 68%; below 10-year average of 88%
- After-tax yield of Muni Bond Index = 6.0% (Source: Eaton Vance)

#### Supply/demand

- Mutual fund outflows hit a record \$122 billion in 2022, with tax loss harvesting being a key driver.
- ETFs saw inflows as some investors reinvested in them.
- Supply also down; \$71 billion in 4Q and the lowest in 13 years; 2022 issuance off roughly 20% from 2021

### Global Fixed Income: Quarterly Returns (12/31/22)



Sources: Bloomberg and JPMorgan Chase

### Credit quality remained stable

- State and local tax collections robust and reserves elevated; state revenues up 16% on average vs. 2021

### Global Fixed Income

#### 4Q returns driven largely by U.S. dollar weakness

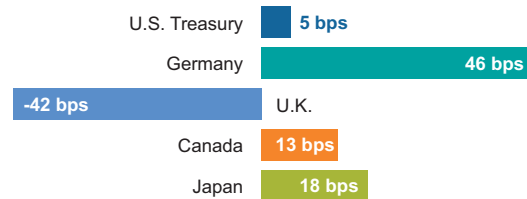
- U.S. dollar down 9% vs. euro, 10% vs. yen, 8% vs. pound
- For the year, dollar up 6% vs. euro, 13% vs. yen, and 11% vs. pound
- Rates up across most of Europe and in Japan
- Rates fell in the U.K.

#### Emerging market debt also did well

- Returns varied across countries but most were positive

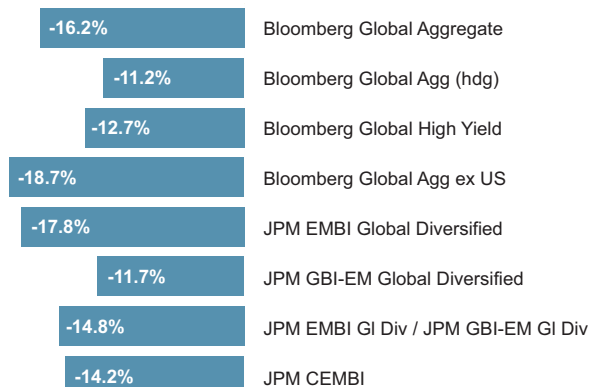
### Change in 10-Year Global Government Bond Yields

3Q22 to 4Q22



Source: Bloomberg

### Global Fixed Income: One-Year Returns (12/31/22)



Sources: Bloomberg and JPMorgan Chase

# NPI Falls 3.5% and REITs Lag Equities

REAL ESTATE/REAL ASSETS | Kristin Bradbury, Munir Iman, and Aaron Quach

## Negative appreciation in four major sectors

- The NCREIF Property Index, a measure of U.S. institutional real estate assets, fell 3.5% during 4Q22. The income return was 1.0% while the appreciation return was -4.5%.
- Hotels, which represent a small portion of the index, led property sector performance with a gain of 3.4%. Office finished last with a loss of 4.8%.
- Regionally, the South led with a loss of 2.5%, while the East was the worst performer with a loss of 3.9%.
- All major property sectors and regions, except for Hotel, experienced negative appreciation.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, fell 5.2% during 4Q, with an income return of 0.59% and an appreciation return of -5.76%.

## REITs lagged equity indices

- The FTSE EPRA Nareit Developed REIT Index, a measure of global real estate securities, rose 6.9% during 4Q22 compared to a 9.8% rise for global equities (MSCI World).
- U.S. REITs, as measured by the FTSE Nareit Equity REITs Index, rose 5.2%, in contrast with the S&P 500 Index, which gained 7.6%.
- Despite strong earnings, forward REIT earnings estimates continued to weaken, reflecting the potential for an economic slowdown as well as financing cost pressures.

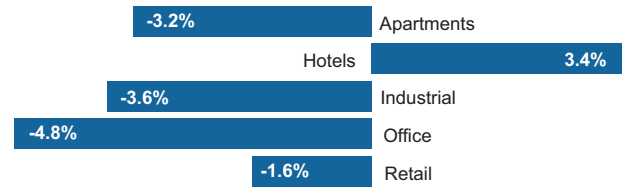
## Callan Database Median and Index Returns\* for Periods Ended 12/31/22

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
<b>Real Estate ODCE Style</b>	<b>1.1</b>	<b>11.3</b>	<b>11.3</b>	<b>10.2</b>	<b>8.3</b>	<b>9.5</b>	<b>5.4</b>
NFI-ODCE (value-weighted, net)	-5.2	6.5	6.5	9.0	7.7	9.1	5.3
NCREIF Property	-3.5	5.5	5.5	8.1	7.5	8.8	6.5
NCREIF Farmland	2.0	9.5	9.5	6.8	6.4	8.8	10.1
NCREIF Timberland	4.9	12.9	12.9	7.5	5.4	5.8	4.7
<b>Public Real Estate</b>							
<b>Global Real Estate Style</b>	<b>7.0</b>	<b>-25.1</b>	<b>-25.1</b>	<b>-2.3</b>	<b>2.3</b>	<b>5.1</b>	<b>4.1</b>
FTSE EPRA Nareit Developed	6.9	-25.1	-25.1	-4.9	-0.2	3.0	2.1
<b>Global ex-U.S. Real Estate Style</b>	<b>11.0</b>	<b>-25.9</b>	<b>-25.9</b>	<b>-6.8</b>	<b>-0.9</b>	<b>3.9</b>	<b>2.1</b>
FTSE EPRA Nareit Dev ex US	10.3	-24.3	-24.3	-8.7	-3.0	0.9	0.1
<b>U.S. REIT Style</b>	<b>4.3</b>	<b>-24.9</b>	<b>-24.9</b>	<b>1.0</b>	<b>5.0</b>	<b>7.4</b>	<b>7.2</b>
FTSE EPRA Nareit Equity REITs	5.2	-24.4	-24.4	-0.1	3.7	6.5	6.2

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

## Sector Quarterly Returns by Property Type

(12/31/22)



Source: NCREIF

- The FTSE EPRA Nareit Asia Index (USD), representing the Asia/Pacific region, rose 9.0%, lifted by a rally in rate-sensitive Australian REITs.
- European REITs, as measured by the FTSE EPRA Nareit Europe Index (USD), rose 13.9%, driven by currency tailwinds in both the euro and the pound.

## Real assets held up in the quarter

- Real assets as a group performed well in 4Q.
- The S&P GSCI Index rose 3.4%; Gold (S&P Gold Spot Price Index: +9.2%), REITs (MSCI US REIT: +5.2%), infrastructure (DJB Global Infrastructure: +9.6%), and TIPS (Bloomberg TIPS: +2.0%) all posted solid returns.
- Full year results remained poor, however, for most real assets outside of those related to energy. The Alerian MLP Index gained 30.9% as it benefited from higher energy prices.



# Deceleration in 2022, with Trends for 2023 Very Unclear

PRIVATE EQUITY | Gary Robertson

Private equity showed a gradual decline in 2022, but fundraising and company investment and exit activity remain comparable to the pre-pandemic levels seen in 2018 and 2019.

**Fundraising** ► In 2022 private equity partnerships holding final closes raised \$870 billion across 2,211 partnerships (unless otherwise noted, all data is from PitchBook and 4Q numbers are very preliminary). The dollar amount is 16% lower than 2021, but partnerships plunged by 47%. 4Q had final closes totaling \$166 billion, down 21% from 3Q. The number of funds totaled 407, down 20%.

**Buyouts** ► New buyout investments for 2022 totaled 12,985, down 14% from 2021. Dollar volume fell 9% to \$837 billion. 4Q saw 2,625 new investments, a 20% decrease from 3Q, but dollar volume rose 27% to \$239 billion.

**VC Investments** ► The year produced 51,020 rounds of new investment in venture capital (VC) companies, down 16% from 2021. Announced volume of \$509 billion was down 31%. 4Q saw 9,280 new rounds, a 20% decline from 3Q, and dollar volume fell 21% to just \$81 billion.

**Exits** ► Last year saw 2,901 buyout-backed private M&A exits, down 23% from 2021, with proceeds of \$590 billion, down 26%. 4Q had 551 private exits, down 22% from 3Q, with proceeds

of \$132 billion, down 2%. The year's 201 buyout-backed IPOs dropped 55% from 2021, with proceeds of \$33 billion, down 75%. 4Q IPOs numbered 50, down 21% from 3Q, and proceeds of \$8 billion declined 27%. Venture-backed M&A exits for the year totaled 2,625, down 24% from 2021. Announced dollar volume of \$110 billion fell 57%. The final quarter had 462 exits, down 20% from 3Q, and value of only \$7 billion, plunging 72%. The year's 317 venture-backed IPOs sank 51% from 2021, with proceeds of \$41 billion, falling 75%. There were 106 in 4Q, up 33% from 3Q, but the \$8 billion of proceeds fell 47%.

**Returns** ► In 3Q, and in the two prior quarters, private equity fell by only about 35% of the public equity market's decline. With the upcoming 4Q valuations being subject to annual audits, continued moderate declines are likely.

## Funds Closed 1/1/22 to 12/31/22

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	1,369	259,199	30%
Growth Equity	156	117,800	14%
Buyouts	477	362,629	42%
Mezzanine Debt	17	26,998	3%
Distressed/Special Credit	40	50,955	6%
Energy	7	2,340	0%
Secondary and Other	116	41,703	5%
Fund-of-funds	29	8,808	1%
<b>Totals</b>	<b>2,211</b>	<b>870,432</b>	<b>100%</b>

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

## Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/22\*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-2.7	-9.1	28.4	23.8	19.4	13.6	12.4	20.6
Growth Equity	-1.8	-9.4	20.8	18.4	15.7	12.8	14.3	14.5
All Buyouts	-1.9	-1.5	18.5	16.1	15.3	10.6	14.7	13.1
Mezzanine	0.2	5.0	11.8	11.1	11.3	10.3	11.1	10.0
Credit Opportunities	0.7	3.9	8.4	7.2	8.3	8.6	9.9	9.5
Control Distressed	-0.2	11.3	19.4	13.8	12.7	10.5	11.9	11.9
<b>All Private Equity</b>	<b>-1.8</b>	<b>-3.7</b>	<b>20.2</b>	<b>17.3</b>	<b>15.5</b>	<b>11.3</b>	<b>13.7</b>	<b>13.8</b>
S&P 500	-4.9	-15.5	8.2	9.2	11.7	8.0	9.8	7.5
Russell 3000	-4.5	-17.6	7.7	8.6	11.4	7.9	9.9	7.5

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 the *Capital Markets Review* and other Callan publications.

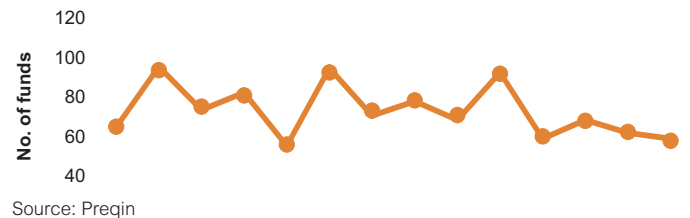
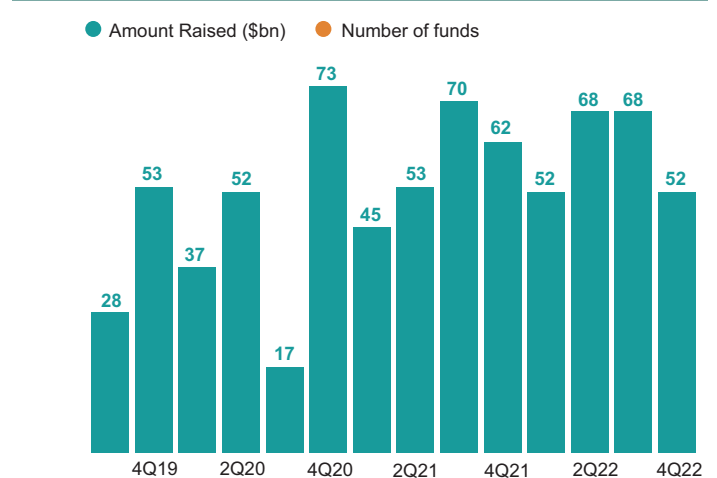
# Investor Appetite Continues, but Strategies of Interest Shift

PRIVATE CREDIT | Catherine Beard

## Upper-middle-market direct lending gets a new look

- During 4Q22, clients took a new look at upper-middle-market direct lending as all-in spreads have widened by over 400 bps and lenders are able to get tighter terms. Strong deal volume was driven partially by a shift from public to private market debt financings in the recent market environment.
- As economic headwinds are expected to create stress on over-levered companies, there is a renewed interest in stressed and distressed investment opportunities.
- Demand continued to be strong for less-competitive areas of private credit with high barriers to entry and attractive risk/reward opportunities such as specialty finance, non-sponsor, lower-middle-market, and opportunistic lending.
- LPs are seeking alternative structures designed to streamline the investment process while improving underlying liquidity. A number of GPs are launching evergreen structures and private, non-tradeable business development companies as a response to LP interest.
- Private credit performance varies across sub-asset class and underlying return drivers. On average, the asset class has generated net IRRs of 8% to 10% for trailing periods ended Sept. 30, 2022. Higher-risk strategies performed better than lower-risk strategies.
- As interest rates declined after the GFC, private credit attracted increased interest from institutional investors.
- Private credit fundraising was robust leading into the COVID dislocation, with a particular focus on direct lending, asset-based lending, and distressed strategies.
- In the current rising rate environment, a renewed focus has been placed on relative value, downside protection, and managers' internal workout resources.

## Private Credit Fundraising (\$bn)



- There is also interest in strategies with strong collateral protection such as asset-based lending as well as capital solutions and distressed strategies.
- Larger sponsor-backed lending is seeing a new focus due to the disintermediation of high yield/broadly syndicated loans by private debt

## Private Credit Performance (%) (Pooled Horizon IRRs through 9/30/22\*)

Strategy	Quarter	1 Year	3 Years	5 Years	8 Years	10 Years	15 Years	20 Years
Senior Debt	-2.4	-3.5	4.6	5.1	5.7	5.9	6.3	6.1
Mezzanine	0.2	5.0	11.8	11.1	10.8	11.3	10.5	11.3
Credit Opportunities	0.7	3.9	8.4	7.2	6.6	8.3	8.6	9.7
Total Private Credit	-0.1	2.6	8.4	7.7	7.4	8.6	8.8	9.7

Source: Refinitiv/Cambridge

\*Most recent data available at time of publication

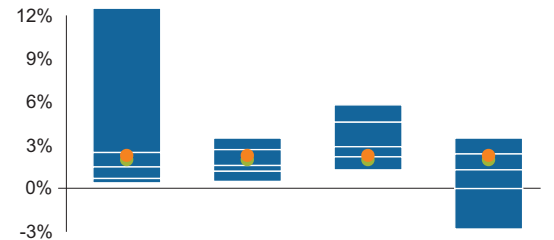
# Managers See Declines but Outpace Benchmarks

HEDGE FUNDS/MACs | Joe McGuane

- Risk assets rallied in 4Q22, as U.S. inflation showed a steady decline from the peak over summer, boosting hopes for fewer rate increases heading into 2023. In addition, corporate earnings were generally better than expected, and China announced the lifting of its zero-COVID policy.
- As the quarter wore on, the Federal Reserve remained committed to tighter monetary conditions, signaling more rate hikes in 2023 in addition to the 50 basis point increase at its December meeting.
- Despite a December sell-off, the S&P 500 gained 8% for the quarter. Value significantly outperformed growth, and stocks across most sectors rebounded, with the energy sector notably higher for the quarter. Global ex-U.S. equities outperformed U.S. equities, as cooling energy prices dragged down inflation. China's reopening and easing of the zero-COVID policy led to Asian equities recovering their initial losses from October.

## Hedge Fund Style Group Returns

(12/31/22)



	Absolute Return FOF	Core Div. FOF	Long/Short Equity FOF	Institutional Hedge Funds
10th Percentile	12.5	3.5	5.8	3.5
25th Percentile	2.5	2.7	4.6	2.4
Median	1.5	1.6	2.9	1.3
75th Percentile	0.7	1.2	2.2	0.0
90th Percentile	0.4	0.5	1.3	-2.8
HFRI Fund Weighted	2.3	2.3	2.3	2.3
90-Day T-Bill + 5%	2.0	2.0	2.0	2.0

Sources: Callan, Credit Suisse, Federal Reserve

## Callan Peer Group Median and Index Returns\* for Periods Ended 12/31/22

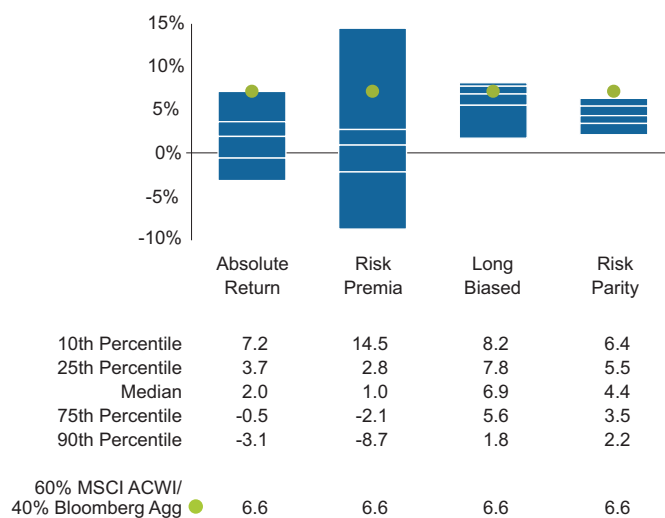
Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	1.3	4.8	6.4	6.0	6.2	6.7
Callan Fund-of-Funds Peer Group	1.9	-1.3	4.9	4.2	4.7	3.5
Callan Absolute Return FOF Style	1.5	4.0	5.6	4.8	5.1	3.9
Callan Core Diversified FOF Style	1.6	-1.2	5.0	4.1	4.4	3.4
Callan Long/Short Equity FOF Style	2.9	-10.4	2.2	3.5	4.8	3.6
HFRI Fund-Weighted Index	2.3	-4.2	5.7	4.4	4.7	3.6
HFRI Fixed Convertible Arbitrage	3.1	-1.2	6.3	5.1	5.1	4.9
HFRI Distressed/Restructuring	2.0	-3.1	7.8	4.9	4.8	4.2
HFRI Emerging Markets	5.1	-12.7	1.7	0.9	2.9	1.4
HFRI Equity Market Neutral	1.1	1.6	2.8	1.9	3.0	1.9
HFRI Event-Driven	3.3	-4.6	5.4	4.3	4.9	4.2
HFRI Relative Value	1.3	-0.8	3.3	3.4	4.0	4.3
HFRI Macro	-1.3	9.0	7.3	4.8	3.1	2.9
HFRI Equity Hedge	4.2	-10.2	5.7	4.5	5.6	3.6
HFRI Multi-Strategy	1.1	-9.8	3.7	1.8	2.9	2.8
HFRI Merger Arbitrage	2.5	2.9	6.2	5.7	4.6	4.0
90-Day T-Bill + 5%	2.0	6.5	5.7	6.3	5.8	5.7

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

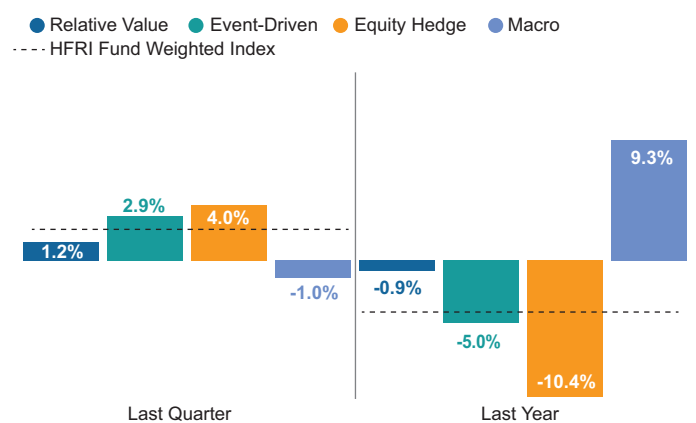
- Hedge funds ended the final quarter on a positive note, as equity hedge managers clawed back some of their negative performance. Those with a focus on real estate, energy, and industrials saw positive gains while growth-focused managers continued to lag.
- Event-driven strategies had a nice quarter, driven primarily by their event equities that moved higher with the broader markets.
- Relative value strategies finished out the year on a strong note, as managers continued to benefit from elevated rate volatility levels, the convergence of key relative value relationships, global quantitative tightening, and uncertainty surrounding central bank actions.
- Macro strategies ended the quarter slightly lower, as losses were taken in short U.S. equities themes, along with short positions in the Chinese renminbi versus the U.S. dollar.
- The median Callan Institutional Hedge Fund Peer Group rose 1.3%.
- Within the HFRI indices, the best-performing strategy last quarter was the emerging market index (+5.1%), as Asian equities rallied in November and December.
- Across the Callan Hedge FOF Database, the median Absolute Return FOF rose 1.5%, as their allocations to multi-strategy managers put up solid returns on the year.

- The median Callan Long-Short Equity FOF increased 2.9%, as managers benefited from an equity rally in October and November.
- The Callan Core Diversified FOF gained 1.6%, as equity hedge exposure drove performance, offsetting some negative performance from macro managers.
- Within Callan’s database of liquid alternative solutions, the median Long Biased MAC manager generated a gain of 6.9%, as long equity exposure drove performance for the peer group.
- The Callan Risk Parity MAC index, which typically targets an equally risk-weighted allocation to the major asset classes with leverage, was up 4.4%.
- The Callan Absolute Return MAC peer returned a positive 2.0%, as a bias toward value equities and credit helped performance on the quarter.
- The Callan Risk Premia MAC peer rose 1.0%, as equity performance was slightly offset by currency exposure.

**MAC Style Group Returns** (12/31/22)



**HFRI Hedge Fund-Weighted Strategy Returns** (12/31/22)



Source: HFRI

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

# Third Straight Drop for DC Index

DEFINED CONTRIBUTION | Patrick Wisdom

## Performance: Index dips for third straight quarter

- The Callan DC Index™ fell 4.6% in 3Q22, its third straight quarterly decline, which brought the Index's trailing one-year loss to 16.7%.
- The Age 45 Target Date Fund fell 6.1% in the quarter.

## Growth Sources: Another decline in balances

- Balances within the DC Index declined by 4.7% after a 12.3% decrease the second quarter.

## Turnover: Net transfers well below average

- Turnover (i.e., net transfer activity levels within DC plans) in the DC Index decreased to 0.14% from the previous quarter's 0.37%. With the decrease, the Index's historical average (0.56%) fell slightly.

## Net Cash Flow Analysis: TDFs reclaim top spot

- After taking a back seat to stable value in 2Q22, TDFs reclaimed the top spot, garnering 73.6% of net flows.
- Investors withdrew assets from U.S. large cap equity (-33.1%); global ex-U.S. equity saw net inflows (+9.2%).

## Equity Allocation: Drop in exposure

- The Index's overall allocation to equity (69.3%) fell slightly from the previous quarter's level (69.8%).

## Asset Allocation: Capital preservation gains

- Stable value (10.0%) and U.S. fixed income (5.9%) were among the asset classes with the largest percentage increases in allocation.

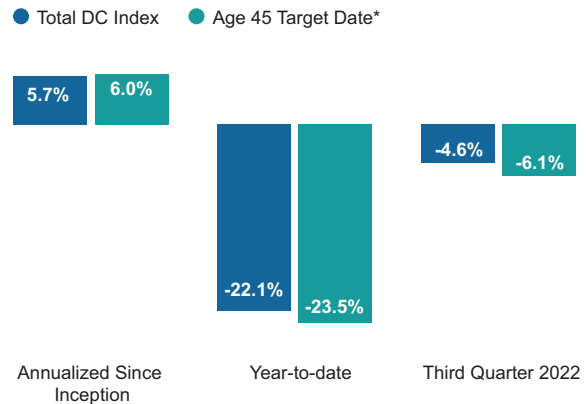
## Prevalence of Asset Class: Balanced funds dip

- The prevalence of a balanced fund (40.9%) decreased again to its lowest level since the inception of the Index in 2006.

*Underlying fund performance, asset allocation, and cash flows of more than 100 large defined contribution plans representing approximately \$400 billion in assets are tracked in the Callan DC Index.*

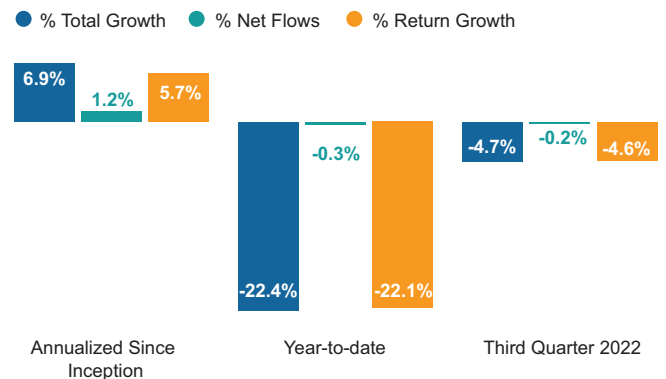
## Investment Performance

(9/30/22)



## Growth Sources

(9/30/22)



## Net Cash Flow Analysis (3Q22)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	73.6%
Brokerage Window	13.8%
U.S. Small/Mid Cap	-25.3%
U.S. Large Cap	-33.1%
<b>Total Turnover**</b>	<b>0.1%</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.

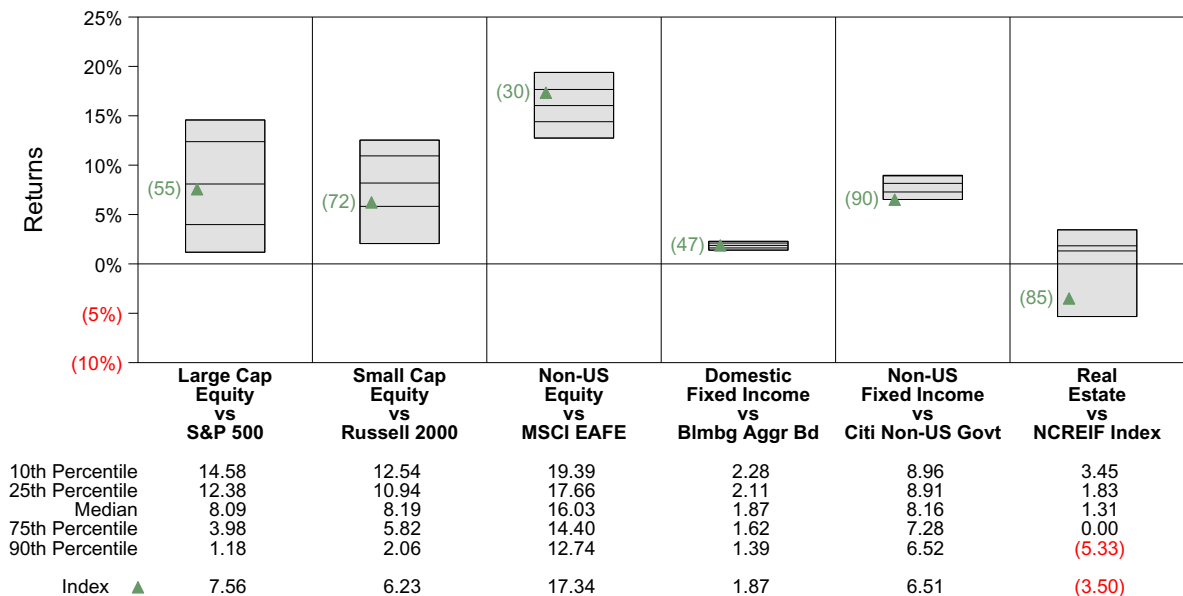
## Market Overview

### Active Management vs Index Returns

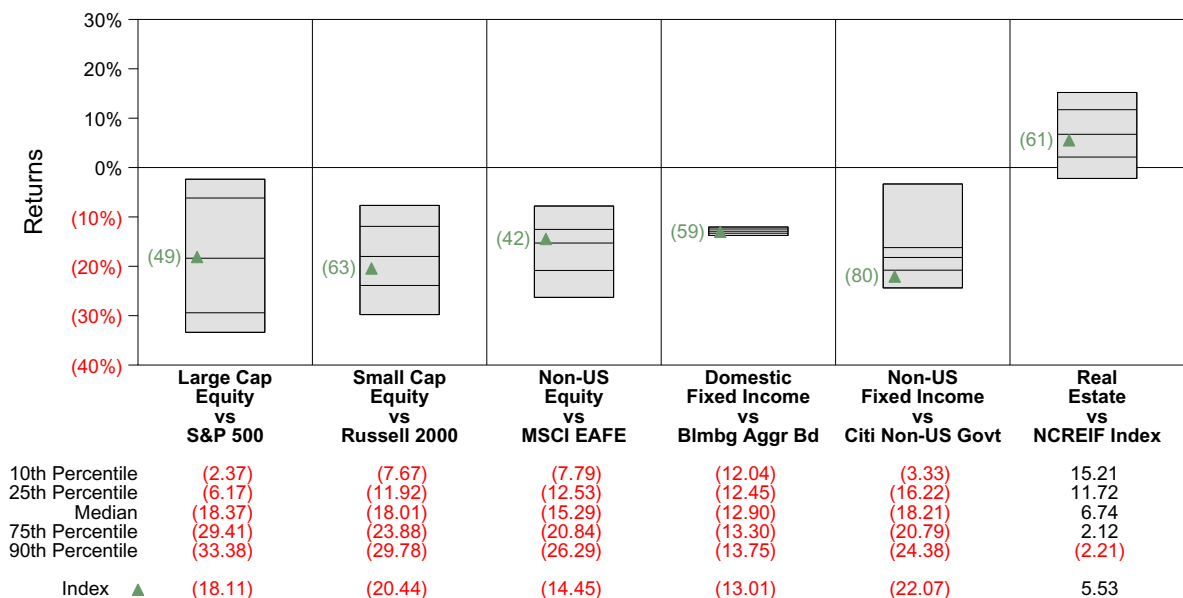
#### Market Overview

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, 2022



#### Range of Separate Account Manager Returns by Asset Class One Year Ended December 31, 2022





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## ASSET ALLOCATION AND PERFORMANCE

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### **Asset Allocation and Performance**

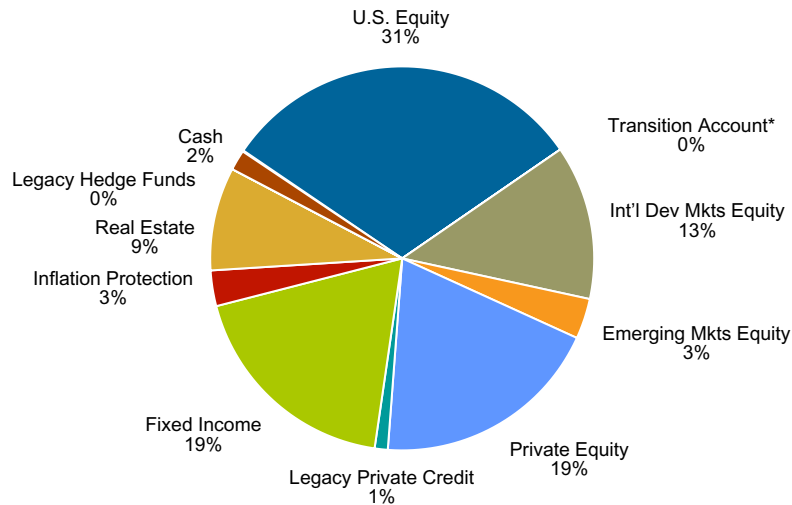
This section begins with an overview of the fund's asset allocation at the broad asset class level. This is followed by a top down performance attribution analysis which analyzes the fund's performance relative to the performance of the fund's policy target asset allocation. The fund's historical performance 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.



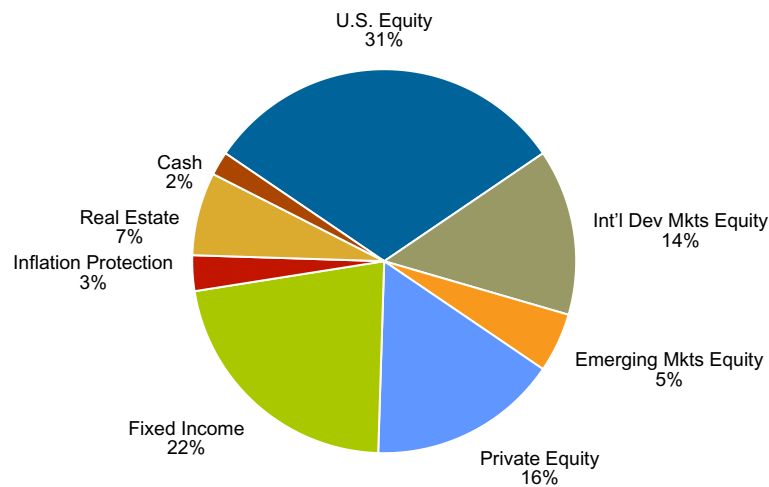
## Actual vs Target Asset Allocation As of December 31, 2022

The first chart below shows the Fund's current asset allocation. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement. Transition account market values are not included in any asset class and are excluded from these charts.

### Actual Asset Allocation



### Target Asset Allocation



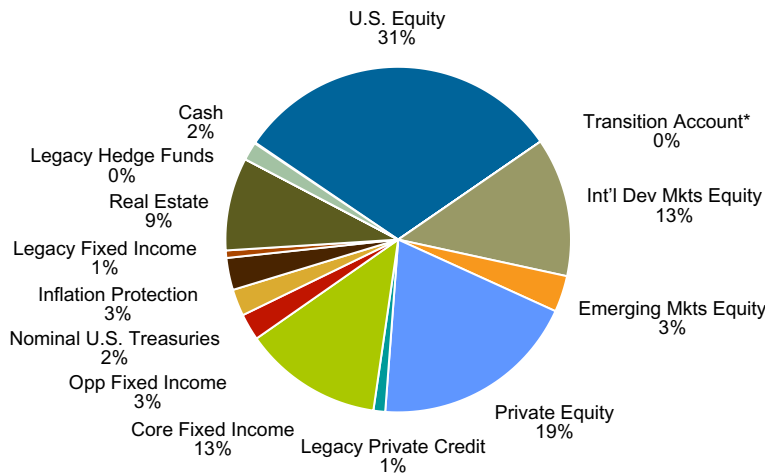
Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
U.S. Equity	10,413,291	30.9%	31.0%	(0.1%)	(33,547)
Transition Account*	1,051	0.0%	0.0%	0.0%	1,051
Int'l Dev Mkts Equity	4,366,514	13.0%	14.0%	(1.0%)	(351,413)
Emerging Mkts Equity	1,148,788	3.4%	5.0%	(1.6%)	(536,185)
Private Equity	6,537,196	19.4%	16.0%	3.4%	1,145,280
Legacy Private Credit	386,392	1.1%	0.0%	1.1%	386,392
Fixed Income	6,304,779	18.7%	22.0%	(3.3%)	(1,109,106)
Inflation Protection	1,005,859	3.0%	3.0%	(0.0%)	(5,125)
Real Estate	2,943,430	8.7%	7.0%	1.7%	584,467
Legacy Hedge Funds	16,698	0.0%	0.0%	0.0%	16,698
Cash	575,478	1.7%	2.0%	(0.3%)	(98,511)
<b>Total</b>	<b>33,699,476</b>	<b>100.0%</b>	<b>100.0%</b>		

\*Market values are shown net of accrued fees.

## Actual Asset Allocation As of December 31, 2022

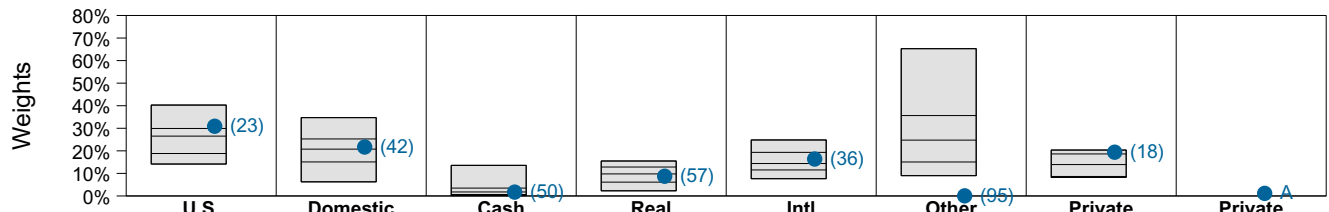
The first chart below shows the Fund's asset allocation as of December 31, 2022. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spons- V Lg DB (>10B).

### Actual Asset Allocation



Asset Class	\$000s Actual	Weight Actual
U.S. Equity	10,413,291	30.9%
Transition Account*	1,051	0.0%
Int'l Dev Mkts Equity	4,366,514	13.0%
Emerging Mkts Equity	1,148,788	3.4%
Private Equity	6,537,196	19.4%
Legacy Private Credit	386,392	1.1%
Core Fixed Income	4,370,065	13.0%
Opp Fixed Income	854,392	2.5%
Nominal U.S. Treasuries	834,187	2.5%
Inflation Protection	1,005,859	3.0%
Legacy Fixed Income	246,134	0.7%
Real Estate	2,943,430	8.7%
Legacy Hedge Funds	16,698	0.0%
Cash	575,478	1.7%
<b>Total</b>	<b>33,699,476</b>	<b>100.0%</b>

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



10th Percentile	40.30	34.72	13.57	15.49	24.83	65.28	20.36	-
25th Percentile	29.92	25.28	3.49	12.83	19.32	35.64	18.63	-
Median	26.53	20.76	1.77	9.78	14.38	24.75	13.91	-
75th Percentile	18.82	15.09	0.65	6.12	11.54	15.05	8.64	-
90th Percentile	14.15	6.25	0.18	2.28	7.64	9.00	8.24	-

**Fund** ● 30.90    21.69    1.71    8.73    16.37    0.05    19.40    1.15

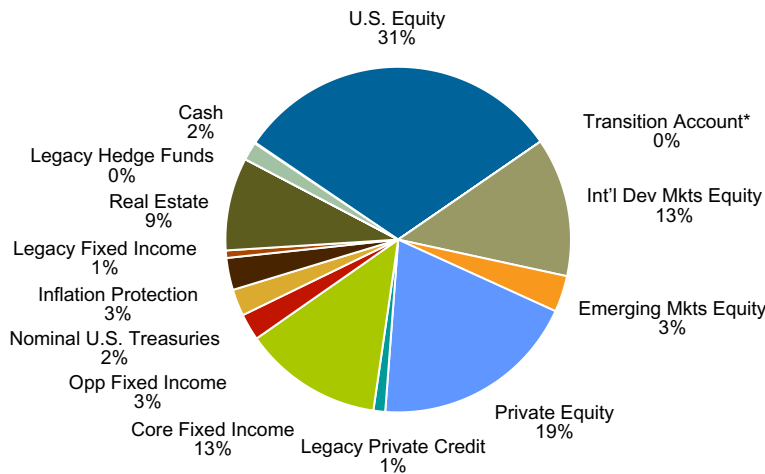
% Group Invested    100.00%    100.00%    83.33%    91.67%    100.00%    79.17%    25.00%    0.00%

\*Market values are shown net of accrued fees.

## Actual Asset Allocation As of December 31, 2022

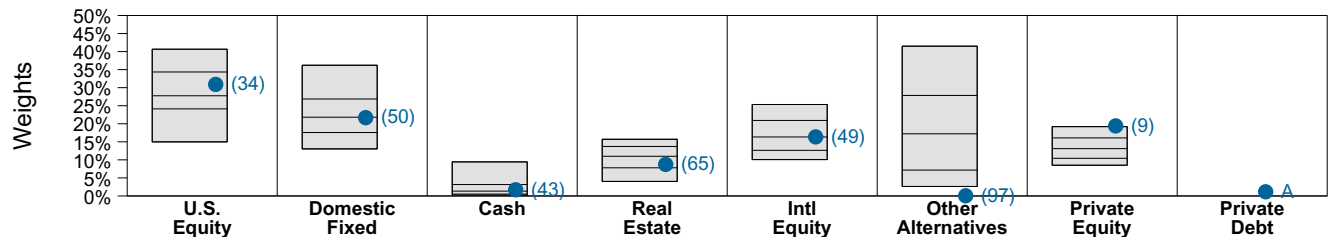
The first chart below shows the Fund's asset allocation as of December 31, 2022. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spns - Large (>1B).

### Actual Asset Allocation



Asset Class	\$000s Actual	Weight Actual
U.S. Equity	10,413,291	30.9%
Transition Account*	1,051	0.0%
Int'l Dev Mkts Equity	4,366,514	13.0%
Emerging Mkts Equity	1,148,788	3.4%
Private Equity	6,537,196	19.4%
Legacy Private Credit	386,392	1.1%
Core Fixed Income	4,370,065	13.0%
Opp Fixed Income	854,392	2.5%
Nominal U.S. Treasuries	834,187	2.5%
Inflation Protection	1,005,859	3.0%
Legacy Fixed Income	246,134	0.7%
Real Estate	2,943,430	8.7%
Legacy Hedge Funds	16,698	0.0%
Cash	575,478	1.7%
Total	33,699,476	100.0%

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



10th Percentile	40.65	36.21	9.44	15.70	25.34	41.50	19.21	-
25th Percentile	34.35	26.86	3.16	13.71	20.92	27.85	16.08	-
Median	27.75	21.81	1.34	10.99	16.34	17.22	13.12	-
75th Percentile	24.13	17.57	0.52	7.81	12.64	7.17	10.43	-
90th Percentile	14.98	13.03	0.21	4.03	10.08	2.63	8.51	-
<b>Fund</b>	<b>30.90</b>	<b>21.69</b>	<b>1.71</b>	<b>8.73</b>	<b>16.37</b>	<b>0.05</b>	<b>19.40</b>	<b>1.15</b>

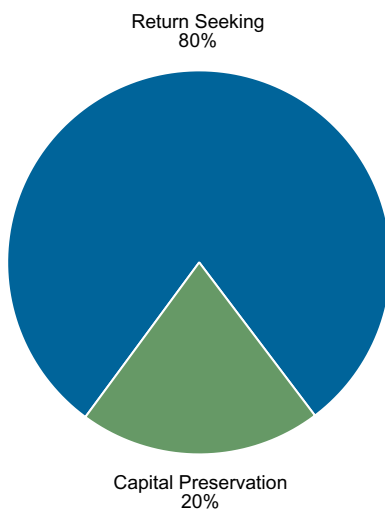
% Group Invested: U.S. Equity 100.00%, Domestic Fixed 97.78%, Cash 82.22%, Real Estate 80.00%, Intl Equity 97.78%, Other Alternatives 64.44%, Private Equity 28.89%, Private Debt 0.00%

\*Market values are shown net of accrued fees.

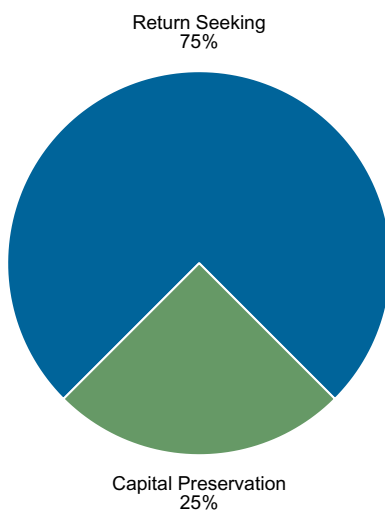
## Actual vs Target Asset Allocation As of December 31, 2022

The first chart below shows the Fund's asset allocation as of December 31, 2022. 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	\$Millions Actual	Weight Actual	Target	Percent Difference	\$Millions Difference
Return Seeking	26,527	79.6%	75.0%	4.6%	1,543
Capital Preservation	6,786	20.4%	25.0%	(4.6%)	(1,543)
Total	33,313	100.0%	100.0%		

\*Return Seeking Assets: U.S. Equity, Int'l Developed Markets Equity, Emerging Markets Equity, Transition Account, Private Equity, Real Estate, Opportunistic Fixed Income, Legacy Hedge Funds and Legacy Fixed Income.

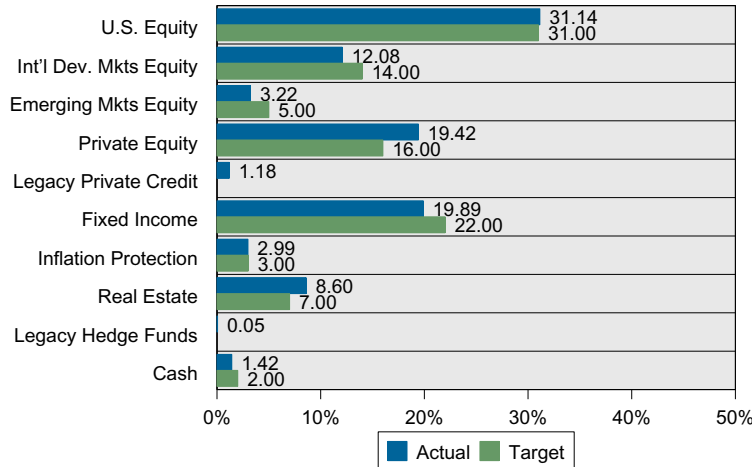
\*Capital Preservation Assets: Core Fixed Income, Nominal U.S. Treasuries, Inflation Protection (TIPS) and Cash.

\*Market values are shown net of accrued fees.

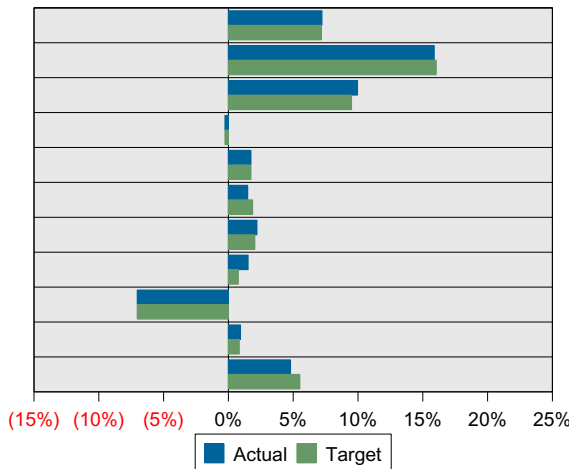
## Quarterly Total Fund Absolute Attribution - December 31, 2022

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.

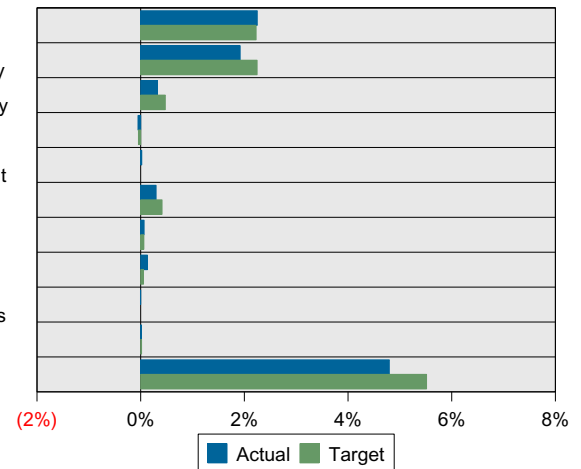
### Actual and Target Weights



### Actual and Target Returns



### Absolute Return Contributions



### Absolute Attribution Effects for Quarter ended December 31, 2022

Asset Class	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
U.S. Equity	31%	7.22%	2.25%	31%	7.18%	2.23%	0.02%
Int'l Dev. Mkts Equity	12%	15.89%	1.92%	14%	16.04%	2.25%	(0.33%)
Emerging Mkts Equity	3%	9.97%	0.32%	5%	9.50%	0.48%	(0.15%)
Private Equity	19%	(0.27%)	(0.05%)	16%	(0.27%)	(0.04%)	(0.01%)
Legacy Private Credit	1%	1.74%	0.02%	0%	1.74%	0.00%	0.02%
Fixed Income	20%	1.49%	0.30%	22%	1.87%	0.41%	(0.11%)
Inflation Protection	3%	2.20%	0.07%	3%	2.04%	0.06%	0.00%
Real Estate	9%	1.52%	0.13%	7%	0.77%	0.05%	0.08%
Legacy Hedge Funds	0%	(7.04%)	(0.00%)	0%	(7.04%)	0.00%	(0.00%)
Cash	1%	0.94%	0.01%	2%	0.84%	0.02%	(0.00%)

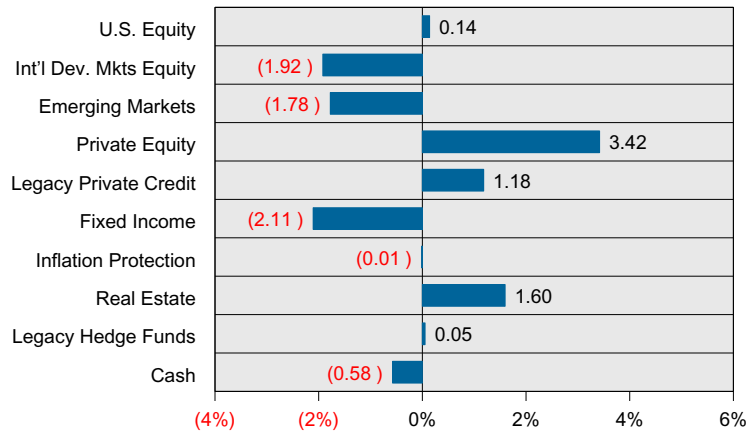
**Total Fund Return 4.80%**      **Target Return 5.51%**      **(0.72%)**

\* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.  
Returns are shown gross of fees.

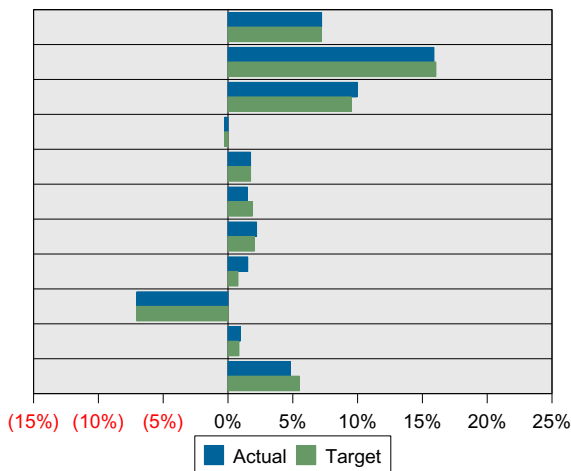
## Quarterly Total Fund Relative Attribution - December 31, 2022

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.

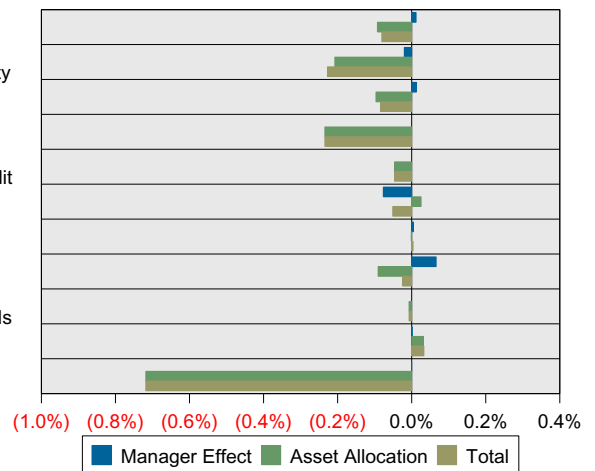
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended December 31, 2022

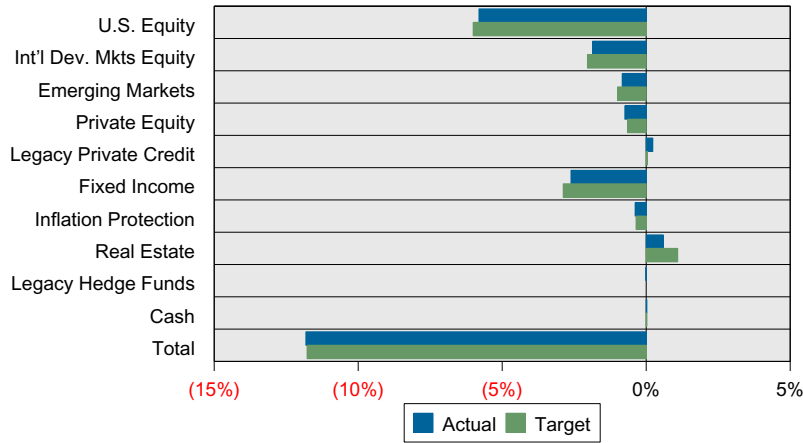
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	31%	31%	7.22%	7.18%	0.01%	(0.09%)	(0.08%)
Int'l Dev. Mkts Equity	12%	14%	15.89%	16.04%	(0.02%)	(0.21%)	(0.23%)
Emerging Markets	3%	5%	9.97%	9.50%	0.01%	(0.10%)	(0.08%)
Private Equity	19%	16%	(0.27%)	(0.27%)	0.00%	(0.23%)	(0.23%)
Legacy Private Credit	1%	0%	1.74%	1.74%	0.00%	(0.05%)	(0.05%)
Fixed Income	20%	22%	1.49%	1.87%	(0.08%)	0.03%	(0.05%)
Inflation Protection	3%	3%	2.20%	2.04%	0.00%	(0.00%)	0.00%
Real Estate	9%	7%	1.52%	0.77%	0.07%	(0.09%)	(0.02%)
Legacy Hedge Funds	0%	0%	(7.04%)	(7.04%)	0.00%	(0.01%)	(0.01%)
Cash	1%	2%	0.94%	0.84%	0.00%	0.03%	0.03%
<b>Total</b>					<b>4.80%</b>	<b>= 5.51% + 0.00% + (0.72%)</b>	<b>(0.72%)</b>

\* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.  
Returns are shown gross of fees.

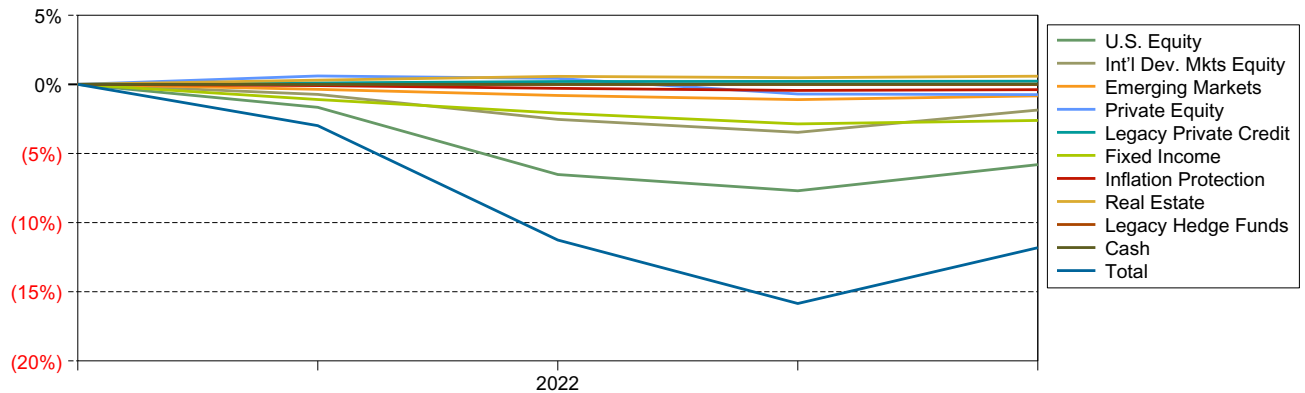
## Cumulative Total Fund Absolute Attribution - December 31, 2022

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

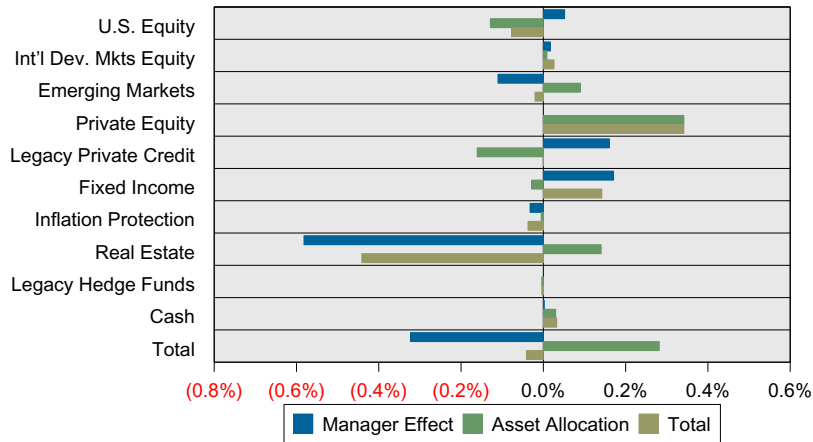
	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
U.S. Equity	31%	(19.04%)	(5.81%)	31%	(19.21%)	(6.01%)	0.20%
Int'l Dev. Mkts Equity	12%	(15.06%)	(1.86%)	14%	(15.26%)	(2.04%)	0.18%
Emerging Markets	3%	(22.43%)	(0.83%)	5%	(19.83%)	(1.00%)	0.16%
Private Equity	18%	(4.38%)	(0.74%)	14%	(4.38%)	(0.64%)	(0.10%)
Legacy Private Credit	2%	9.78%	0.23%	2%	3.28%	0.05%	0.18%
Fixed Income	21%	(12.23%)	(2.61%)	22%	(13.01%)	(2.88%)	0.27%
Inflation Protection	3%	(12.90%)	(0.38%)	3%	(11.85%)	(0.35%)	(0.03%)
Real Estate	8%	8.27%	0.59%	7%	17.38%	1.09%	(0.50%)
Legacy Hedge Funds	0%	(19.43%)	(0.01%)	0%	(19.43%)	0.00%	(0.01%)
Cash	2%	1.65%	0.02%	2%	1.46%	0.03%	(0.00%)
<b>Total</b>			<b>(11.82%)</b>			<b>(11.78%)</b>	<b>(0.04%)</b>

\* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.  
Returns are shown gross of fees.

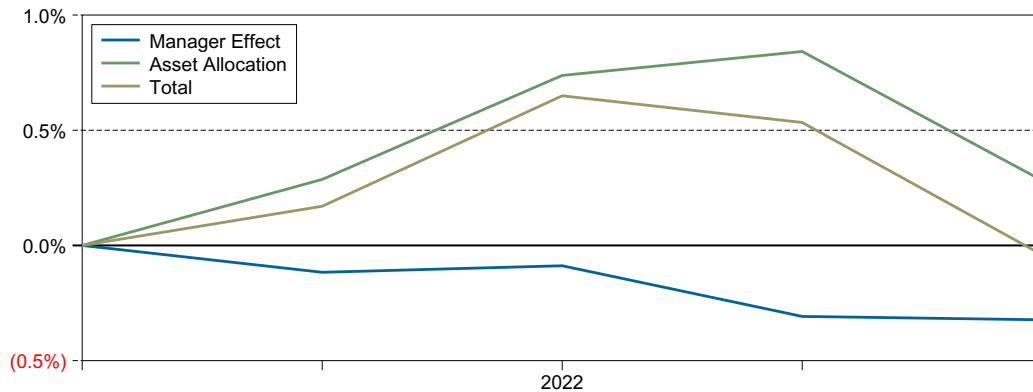
## Cumulative Total Fund Relative Attribution - December 31, 2022

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
U.S. Equity	31%	31%	(19.04%)	(19.21%)	0.05%	(0.13%)	(0.08%)
Int'l Dev. Mkts Equity	12%	14%	(15.06%)	(15.26%)	0.02%	0.01%	0.03%
Emerging Markets	3%	5%	(22.43%)	(19.83%)	(0.11%)	0.09%	(0.02%)
Private Equity	18%	14%	(4.38%)	(4.38%)	0.00%	0.34%	0.34%
Legacy Private Credit	2%	2%	9.78%	3.28%	0.16%	(0.16%)	(0.00%)
Fixed Income	21%	22%	(12.23%)	(13.01%)	0.17%	(0.03%)	0.14%
Inflation Protection	3%	3%	(12.90%)	(11.85%)	(0.03%)	(0.01%)	(0.04%)
Real Estate	8%	7%	8.27%	17.38%	(0.58%)	0.14%	(0.44%)
Legacy Hedge Funds	0%	0%	(19.43%)	(19.43%)	0.00%	(0.00%)	(0.00%)
Cash	2%	2%	1.65%	1.46%	0.00%	0.03%	0.03%
<b>Total</b>			<b>(11.82%)</b>	<b>(11.78%)</b>	<b>(0.32%)</b>	<b>0.28%</b>	<b>(0.04%)</b>

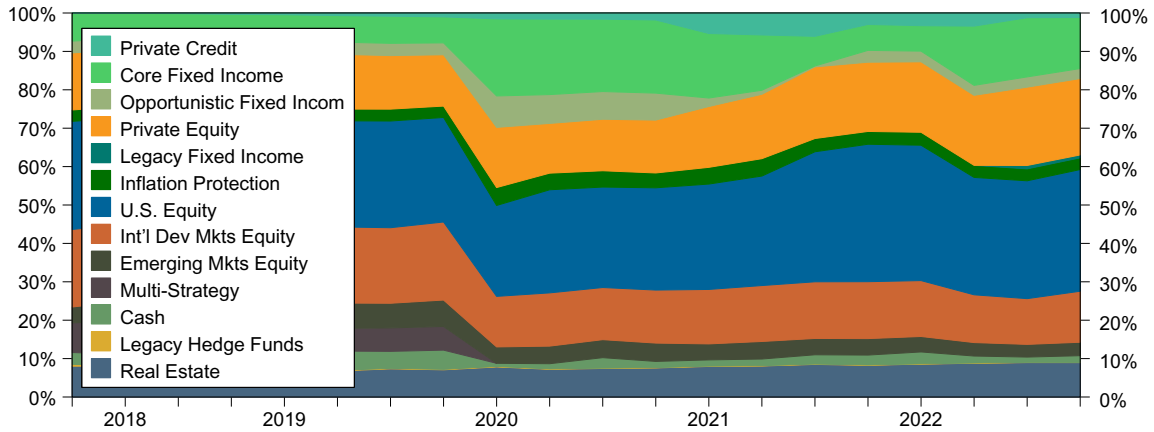
\* Current Quarter Target = 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.  
Returns are shown gross of fees.



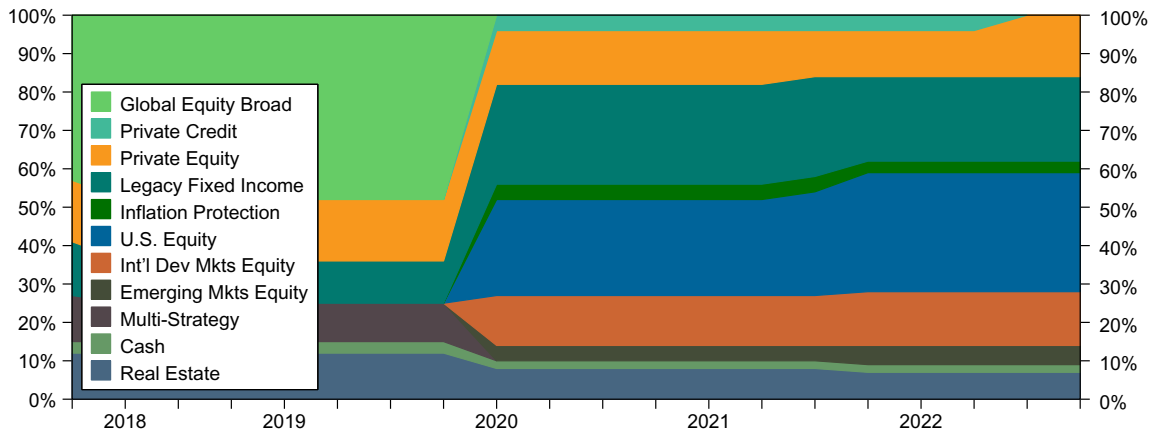
## Actual vs Target Historical Asset Allocation

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).

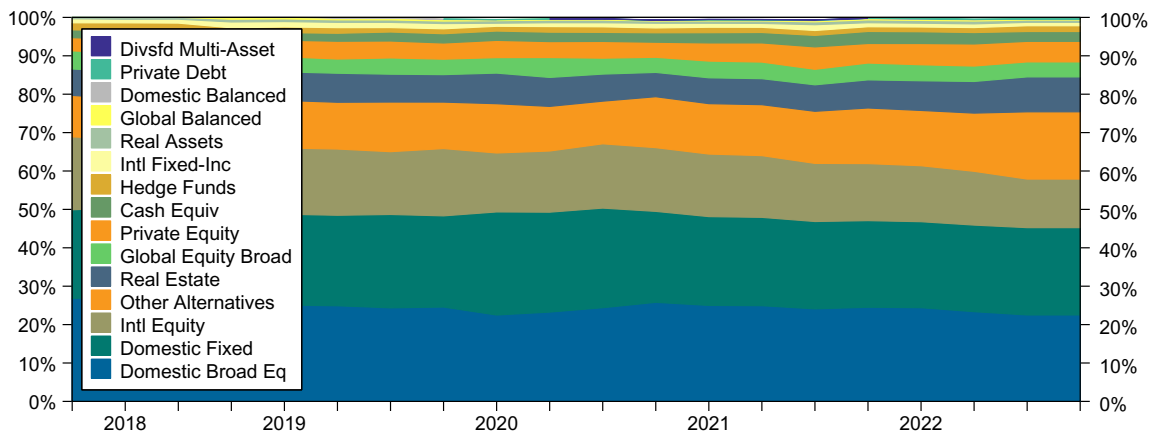
### Actual Historical Asset Allocation



### Target Historical Asset Allocation



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



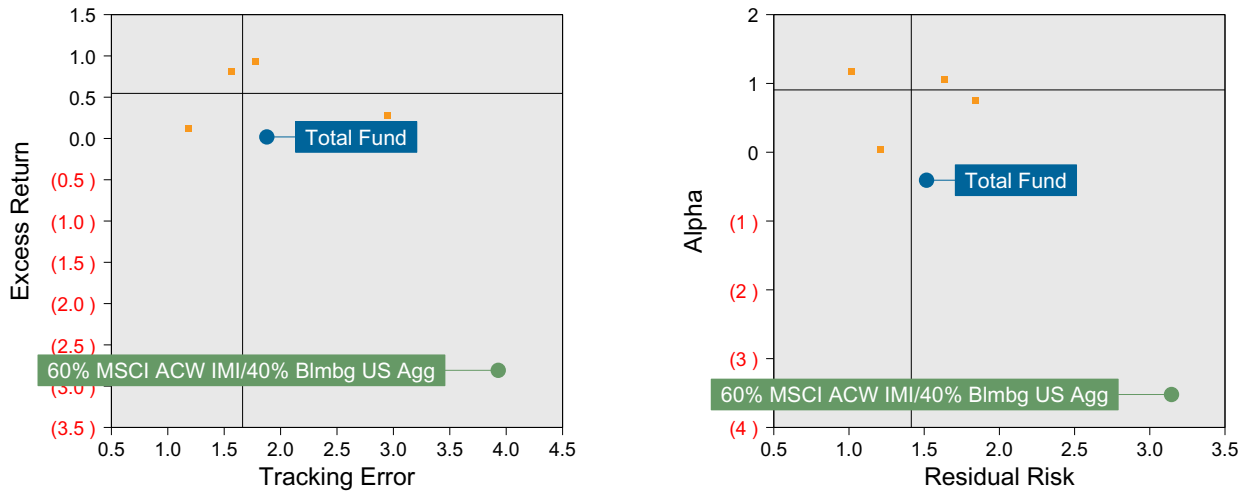
# Total Fund

## Total Fund vs Target Risk Analysis

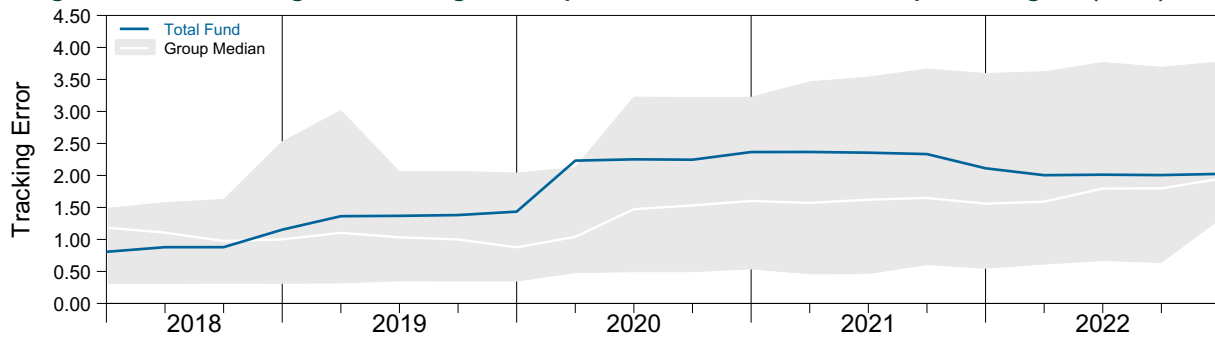
### Risk Analysis

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.

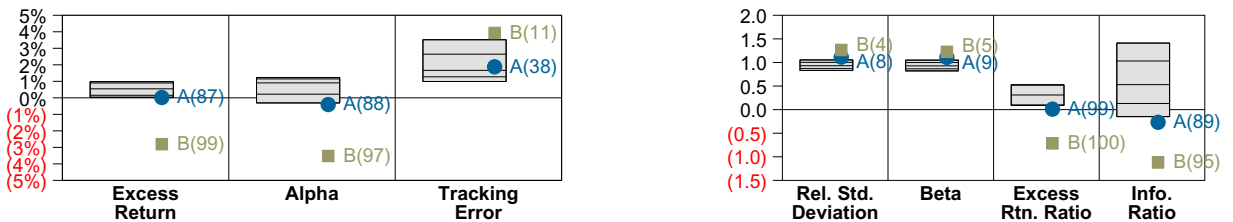
### Risk Analysis vs Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended December 31, 2022



### 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, 2022

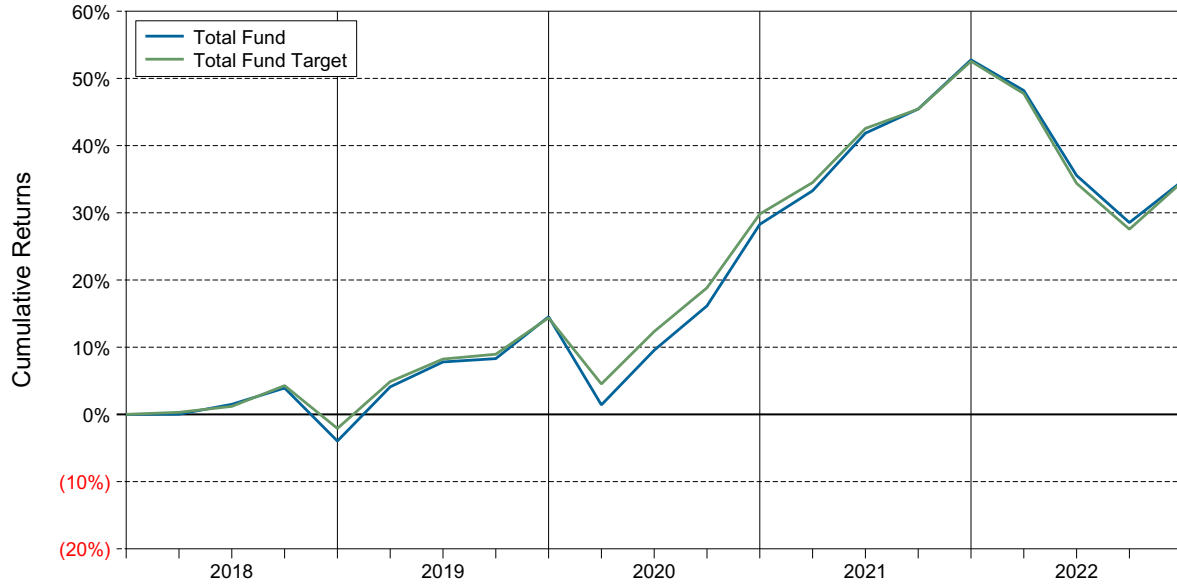


	Excess Return	Alpha	Tracking Error	Rel. Std. Deviation	Beta	Excess Rtn. Ratio	Info. Ratio
10th Percentile	0.98	1.23	3.52	1.05	1.05	0.52	1.41
25th Percentile	0.90	1.14	2.64	1.00	1.00	0.52	1.03
Median	0.55	0.91	1.66	0.93	0.93	0.31	0.53
75th Percentile	0.16	0.22	1.27	0.87	0.86	0.10	0.13
90th Percentile	0.03	(0.31)	0.99	0.83	0.82	0.09	(0.15)
Total Fund	● A 0.02	(0.41)	1.88	● A 1.11	1.11	0.01	(0.27)
60% MSCI ACW	■ B (2.81)	(3.52)	3.93	■ B 1.26	1.23	(0.71)	(1.12)
IMI/40% Blmbg US Agg							

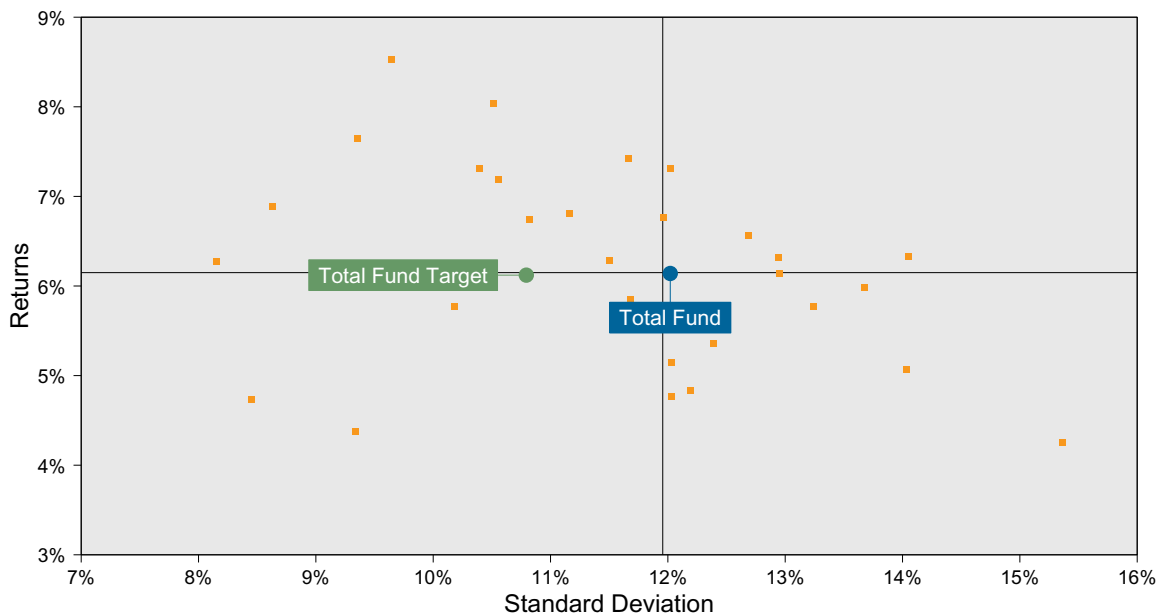
## Cumulative Performance Relative to Target

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

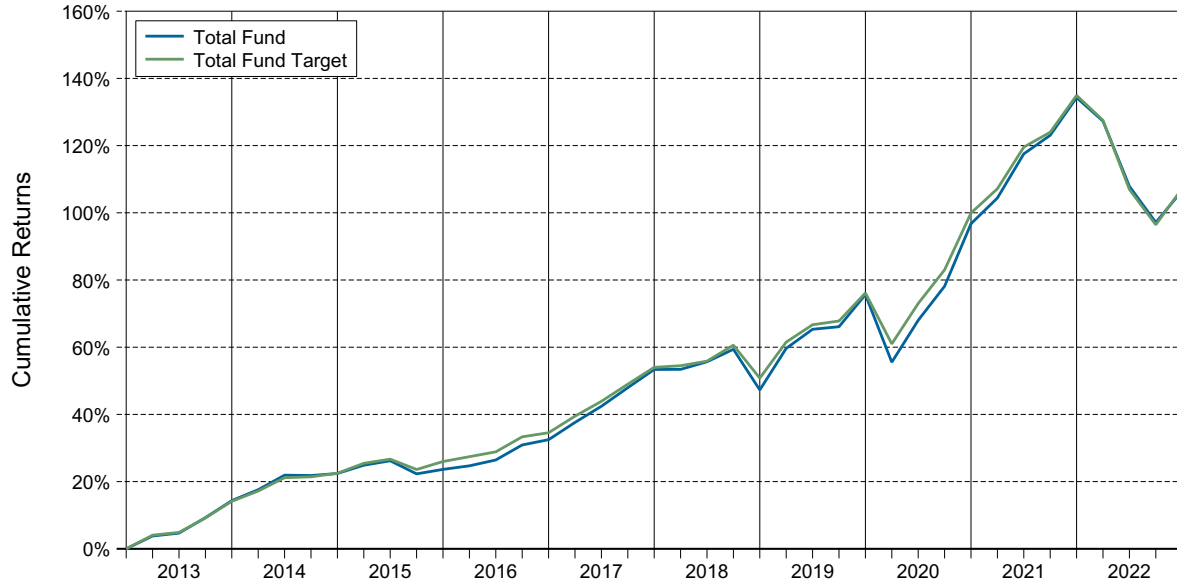


Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)

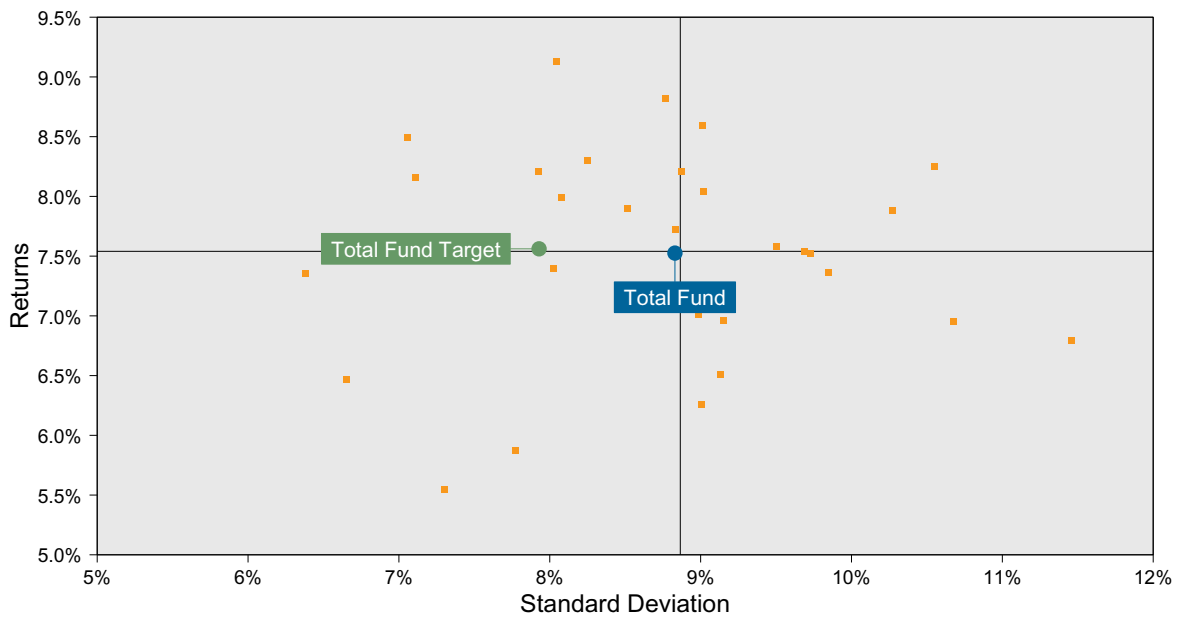
## Cumulative Performance Relative to Target

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



### Ten Year Annualized Risk vs Return

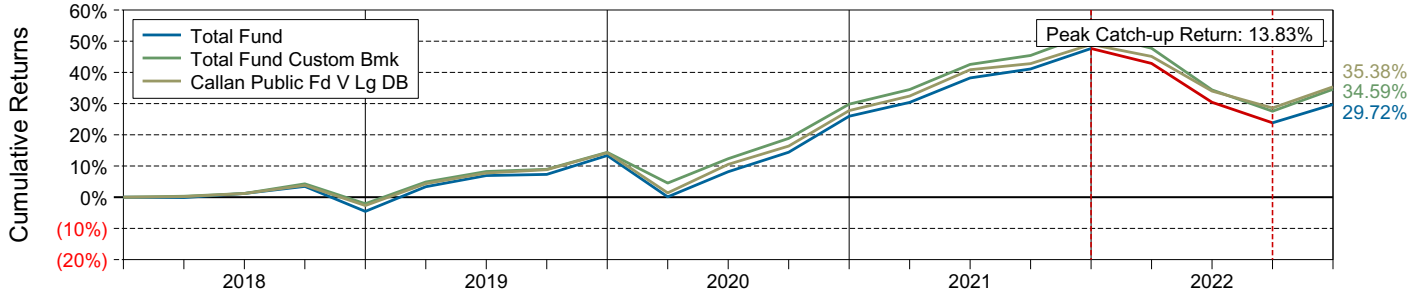


Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)

# Total Fund Drawdown Analysis for Five Years Ended December 31, 2022

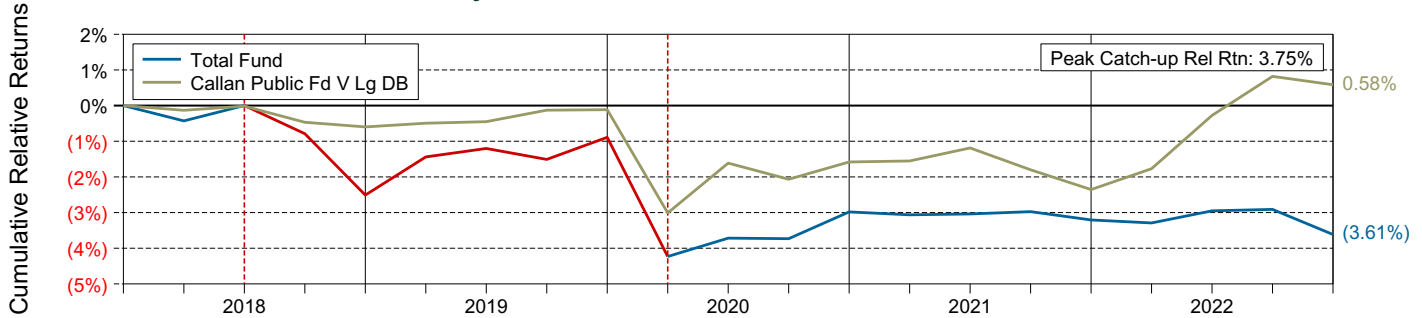
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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



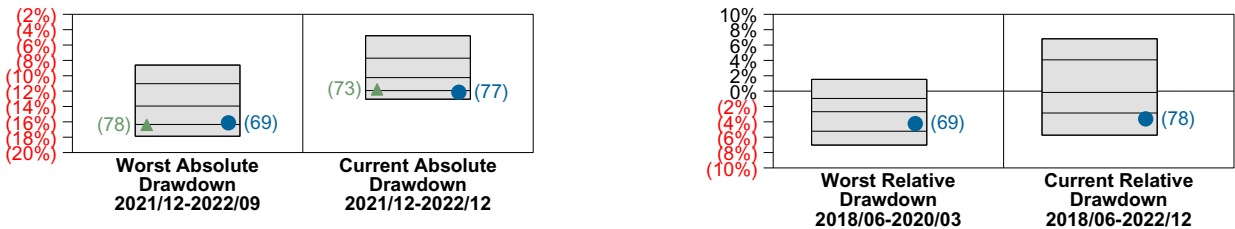
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Total Fund	(16.13)%	0.75	2021/12-2022/09	(16.39)%	(13.67)%	(12.15)%	1.00	2021/12-2022/12	(11.78)%	(9.12)%
Recovery from Trough	4.75%	0.25+	2022/09-2022/12	5.51%	5.27%	4.75%	0.25+	2022/09-2022/12	5.51%	5.27%
Total Fund Custom Bmk	(16.39)%	0.75	2021/12-2022/09			(11.78)%	1.00	2021/12-2022/12		
Callan Public Fd V Lg DB	(13.67)%	0.75	2021/12-2022/09			(9.12)%	1.00	2021/12-2022/12		

## 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	(4.23)%	1.75	2018/06-2020/03	(3.00)%	(3.62)%	4.50	2018/06-2022/12	0.60%
Recovery from Trough	0.65%	2.75+	2020/03-2022/12	3.71%	0.65%	2.75+	2020/03-2022/12	3.71%
Callan Public Fd V Lg DB	(3.01)%	2.25	2017/12-2020/03		(0.23)%	0.25	2022/09-2022/12	

## Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended December 31, 2022

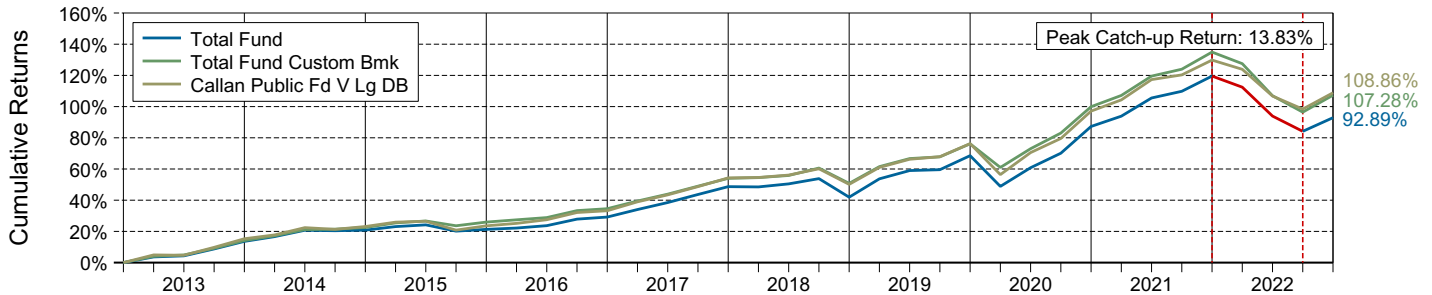


	Worst Absolute Drawdown 2021/12-2022/09	Current Absolute Drawdown 2021/12-2022/12	Worst Relative Drawdown 2018/06-2020/03	Current Relative Drawdown 2018/06-2022/12
10th Percentile	(8.61)	(4.79)	1.53	6.81
25th Percentile	(11.03)	(7.71)	(0.95)	4.07
Median	(13.94)	(10.24)	(2.68)	(0.17)
75th Percentile	(16.34)	(11.93)	(5.22)	(2.85)
90th Percentile	(17.87)	(13.05)	(7.03)	(5.73)
<b>Total Fund</b> ●	(16.13)	(12.15)	(4.23)	(3.62)
Total Fund Custom Bmk ▲	(16.39)	(11.78)		

# Total Fund Drawdown Analysis for Ten Years Ended December 31, 2022

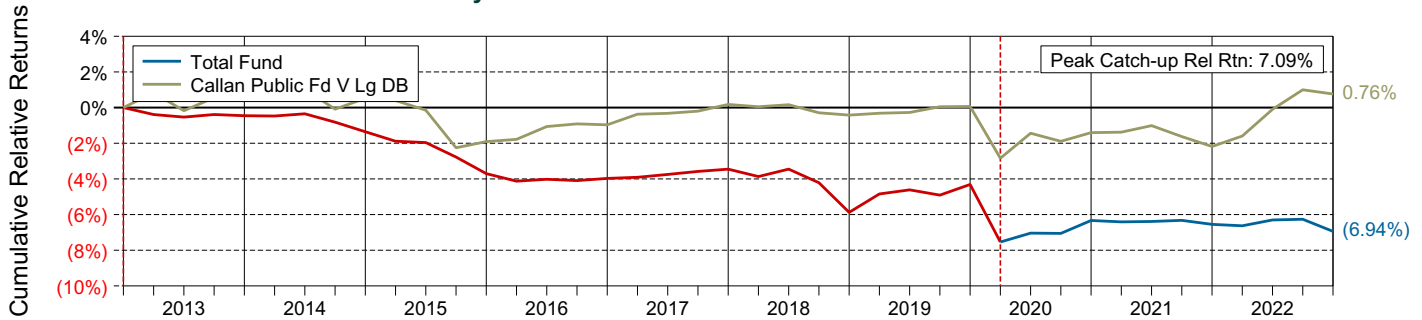
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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



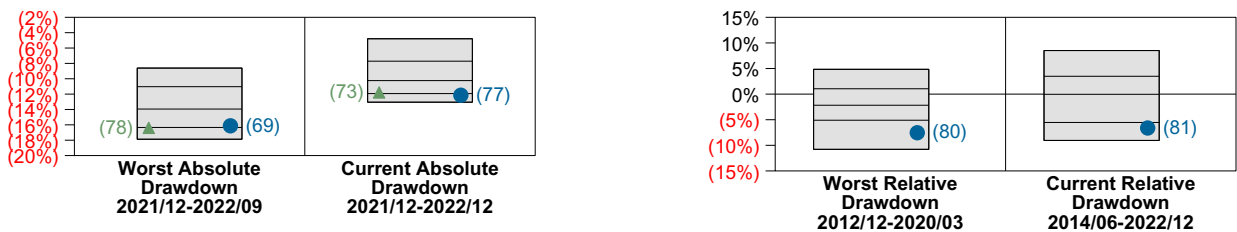
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Total Fund	(16.13)%	0.75	2021/12-2022/09	(16.39)%	(13.67)%	(12.15)%	1.00	2021/12-2022/12	(11.78)%	(9.12)%
Recovery from Trough	4.75%	0.25+	2022/09-2022/12	5.51%	5.27%	4.75%	0.25+	2022/09-2022/12	5.51%	5.27%
Total Fund Custom Bmk	(16.39)%	0.75	2021/12-2022/09			(11.78)%	1.00	2021/12-2022/12		
Callan Public Fd V Lg DB	(13.67)%	0.75	2021/12-2022/09			(9.12)%	1.00	2021/12-2022/12		

## 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	(7.54)%	7.25	2012/12-2020/03	(2.84)%	(6.62)%	8.50	2014/06-2022/12	(0.27)%
Recovery from Trough	0.54%	0.25	2020/03-2020/06	1.44%	0.65%	2.75+	2020/03-2022/12	3.71%
Callan Public Fd V Lg DB	(3.83)%	5.75	2014/06-2020/03		(0.27)%	8.50	2014/06-2022/12	

## Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Ten Years Ended December 31, 2022



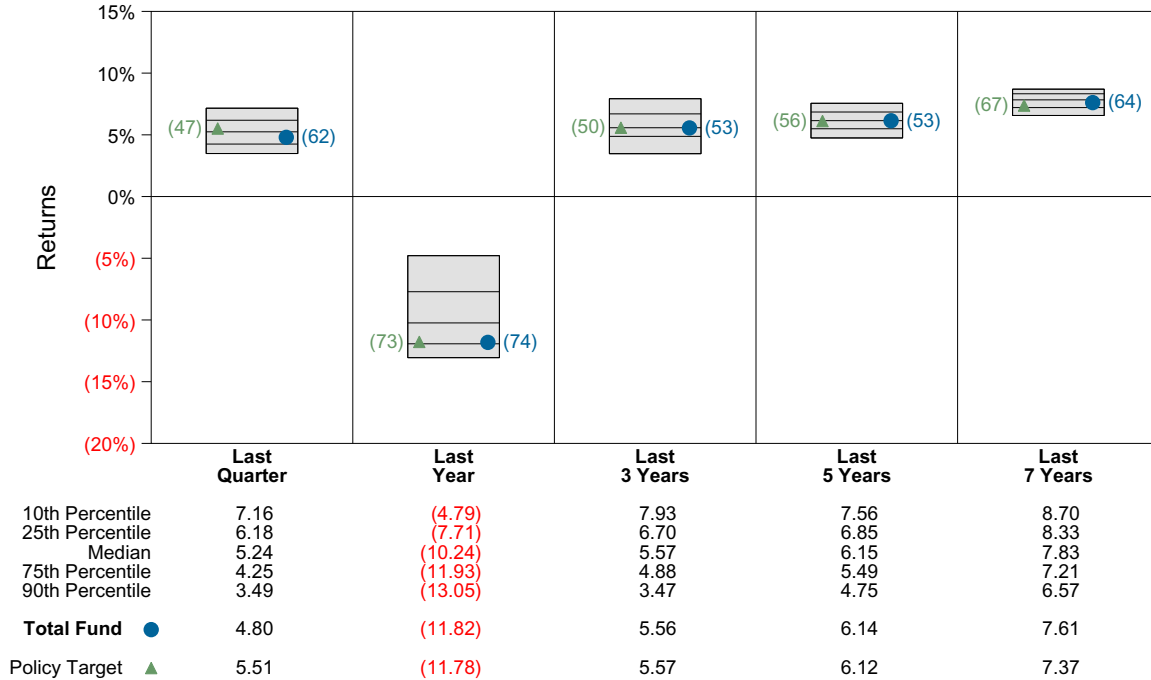
	Worst Absolute Drawdown 2021/12-2022/09	Current Absolute Drawdown 2021/12-2022/12
10th Percentile	(8.61)	(4.79)
25th Percentile	(11.03)	(7.71)
Median	(13.94)	(10.24)
75th Percentile	(16.34)	(11.93)
90th Percentile	(17.87)	(13.05)
<b>Total Fund</b> ●	(16.13)	(12.15)
Total Fund Custom Bmk ▲	(16.39)	(11.78)

	Worst Relative Drawdown 2012/12-2020/03	Current Relative Drawdown 2014/06-2022/12
10th Percentile	4.85	8.51
25th Percentile	1.04	3.49
Median	(2.17)	(0.03)
75th Percentile	(5.10)	(5.54)
90th Percentile	(10.79)	(9.05)
<b>Total Fund</b> ●	(7.54)	(6.62)

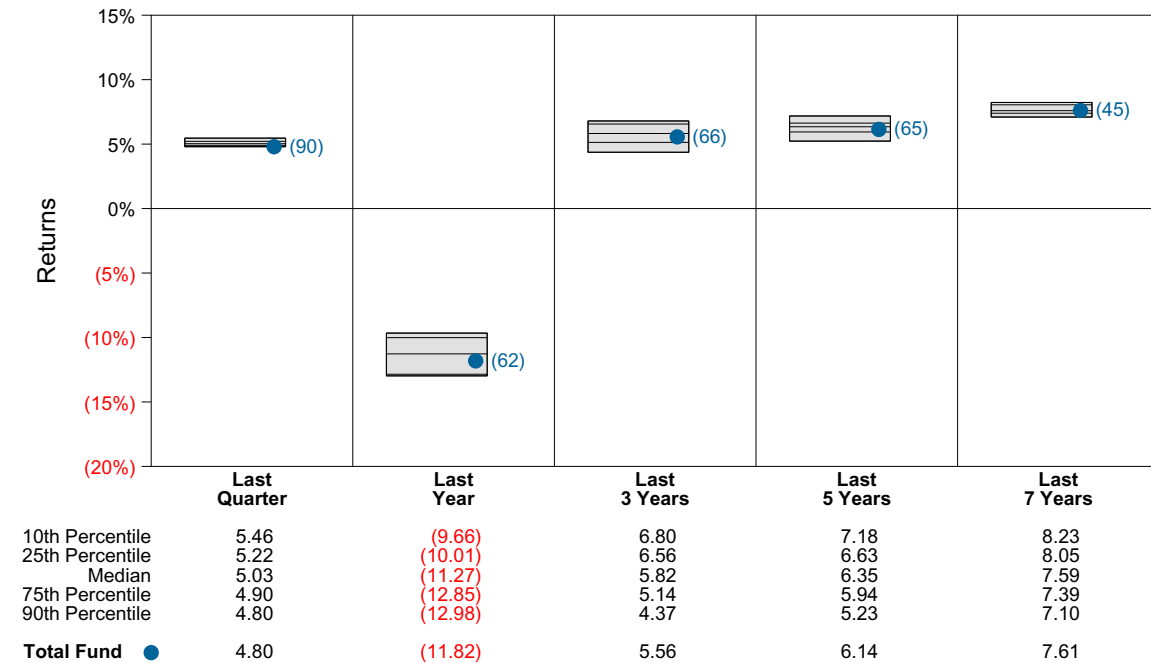
## Total Fund Ranking

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, 2022. 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



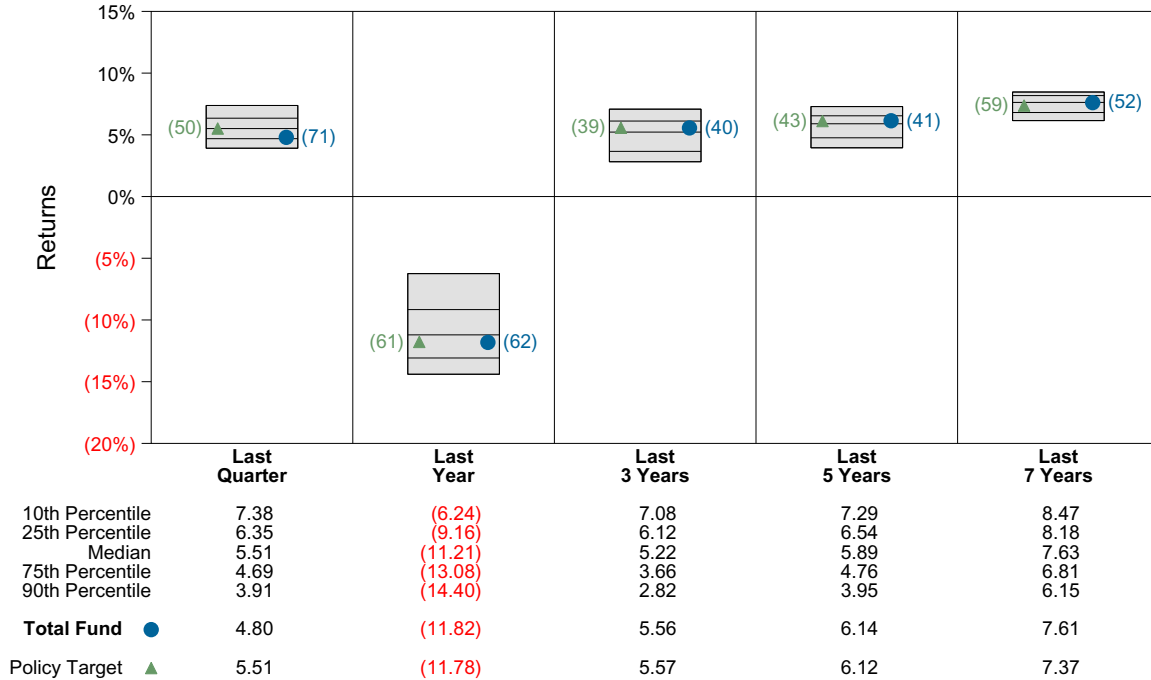
\* Current Quarter Target = 31.0% Russell 3000 Index, 22.0% Blmbg Aggregate, 16.0% Private Equity, 14.0% MSCI World xUS IMI, 7.0% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 5.0% MSCI EM IMI, 3.0% Blmbg TIPS and 2.0% 3-month Treasury Bill.

\*The gross history shown is estimated by BNY Mellon using a gross-up methodology through 12/31/19. Gross performance is calculated for the Total Fund starting 01/01/2020.

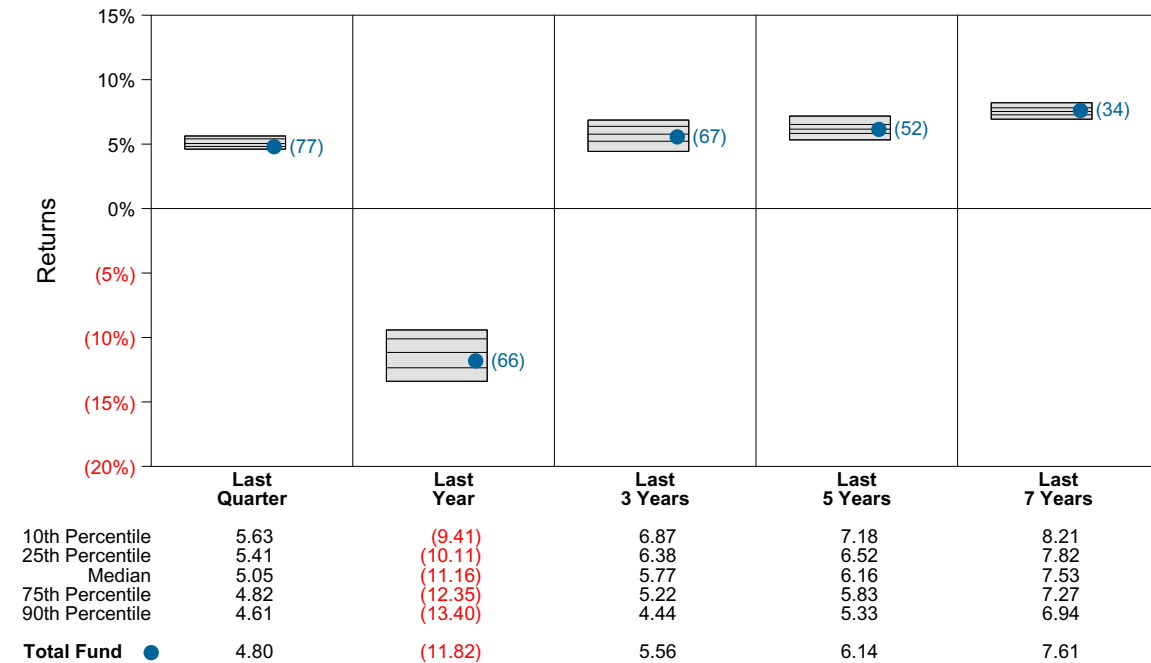
## Total Fund Ranking

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, 2022. 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 = 31.0% Russell 3000 Index, 22.0% Blmbg Aggregate, 16.0% Private Equity, 14.0% MSCI World xUS IMI, 7.0% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 5.0% MSCI EM IMI, 3.0% Blmbg TIPS and 2.0% 3-month Treasury Bill.

\*The gross history shown is estimated by BNY Mellon using a gross-up methodology through 12/31/19. Gross performance is calculated for the Total Fund starting 01/01/2020.



# Total Fund

## Period Ended December 31, 2022

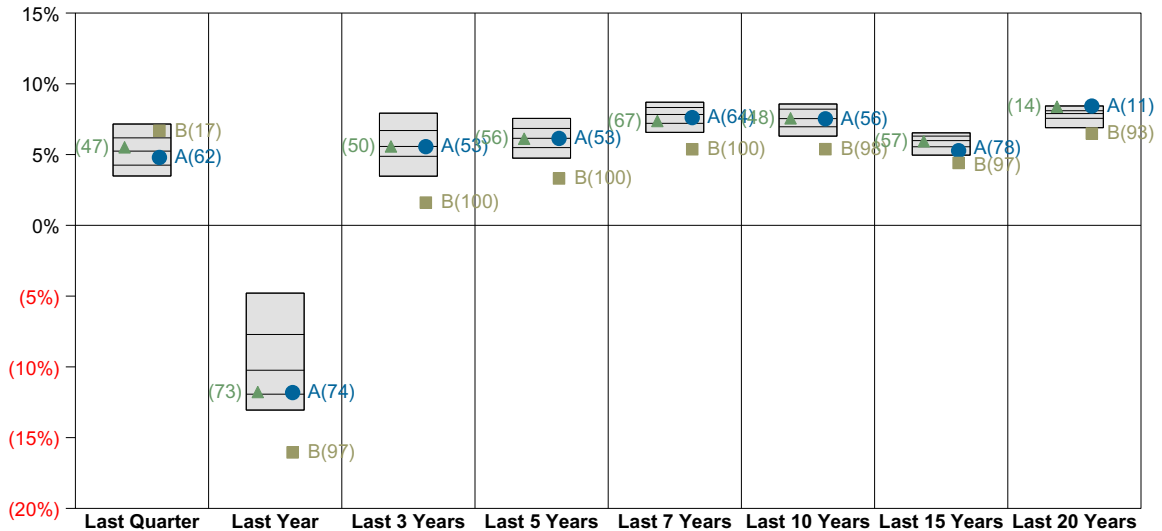
### Gross Performance History

The gross history shown is estimated by BNY Mellon using a gross-up methodology through 12/31/19. Gross performance is calculated for the Total Fund starting 01/01/2020.

### Quarterly Summary and Highlights

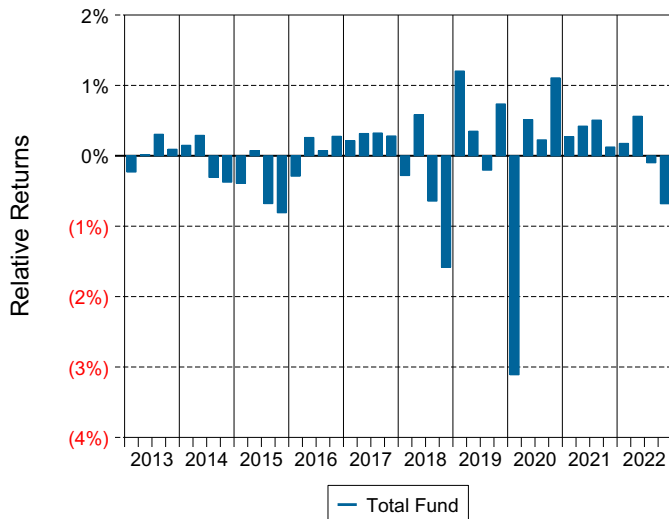
- Total Fund's portfolio posted a 4.80% return for the quarter placing it in the 62 percentile of the Callan Public Fund Spons- V Lg DB (>10B) group for the quarter and in the 74 percentile for the last year.
- Total Fund's portfolio underperformed the Total Fund Custom Benchmark by 0.72% for the quarter and underperformed the Total Fund Custom Benchmark for the year by 0.04%.

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

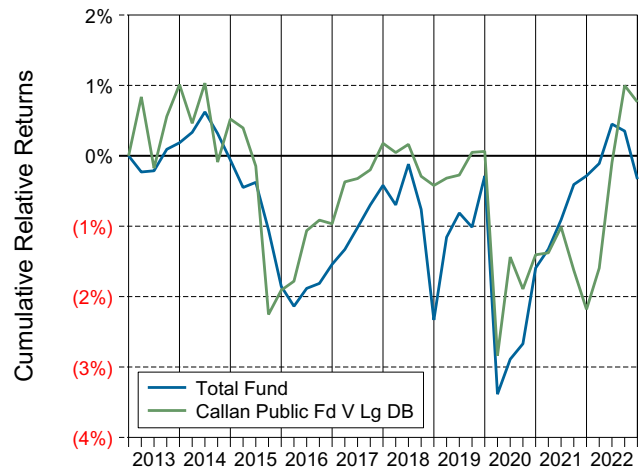


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
10th Percentile	7.16	(4.79)	7.93	7.56	8.70	8.57	6.54	8.43
25th Percentile	6.18	(7.71)	6.70	6.85	8.33	8.21	6.30	8.10
Median	5.24	(10.24)	5.57	6.15	7.83	7.54	5.99	7.90
75th Percentile	4.25	(11.93)	4.88	5.49	7.21	6.96	5.55	7.56
90th Percentile	3.49	(13.05)	3.47	4.75	6.57	6.30	4.96	6.90
Total Fund	● A 4.80	(11.82)	5.56	6.14	7.61	7.53	5.27	8.43
60% MSCI ACW								
IMI/40% Bimbg U.S. Agg	■ B 6.68	(16.04)	1.61	3.31	5.37	5.38	4.41	6.49
Total Fund Custom Benchmark	▲ 5.51	(11.78)	5.57	6.12	7.37	7.56	5.94	8.39

Relative Returns vs Total Fund Custom Benchmark



Cumulative Returns vs Total Fund Custom Benchmark



# Total Fund

## Period Ended December 31, 2022

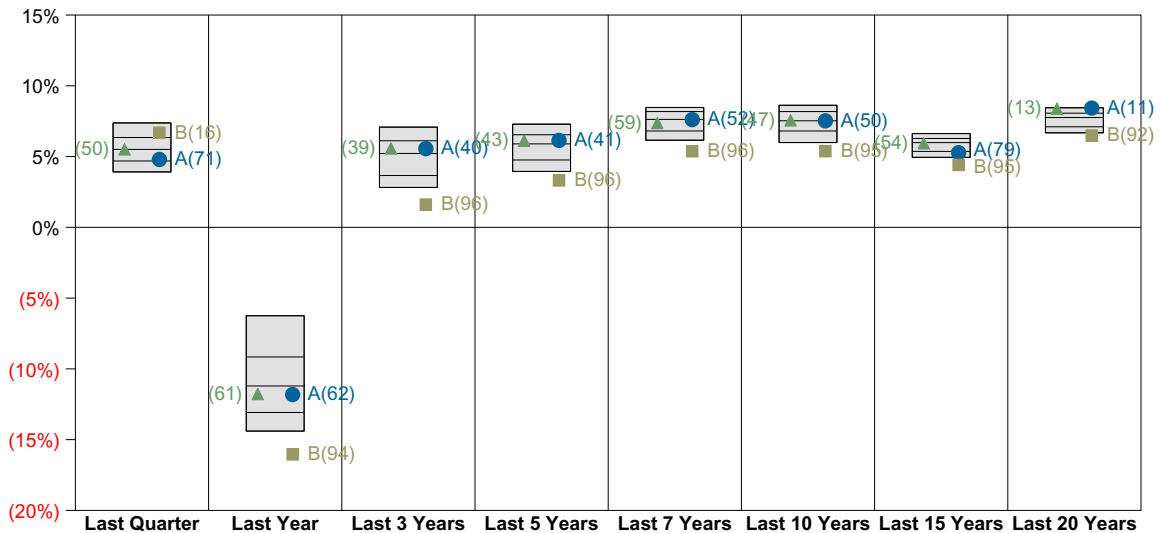
### Gross Performance History

The gross history shown is estimated by BNY Mellon using a gross-up methodology through 12/31/19. Gross performance is calculated for the Total Fund starting 01/01/2020.

### Quarterly Summary and Highlights

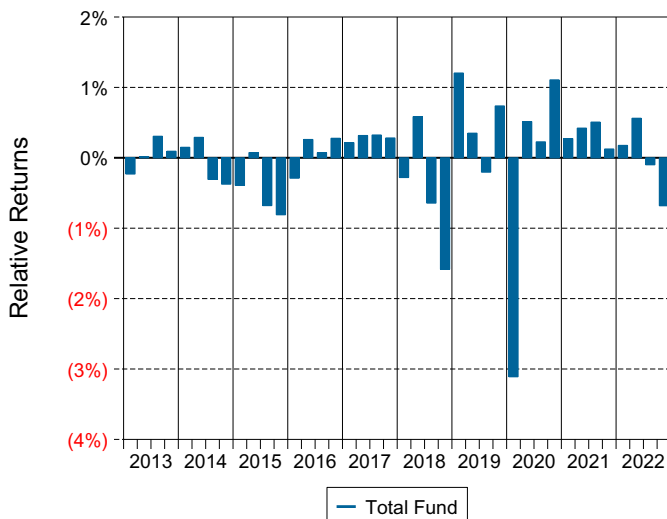
- Total Fund's portfolio posted a 4.80% return for the quarter placing it in the 71 percentile of the Callan Public Fund Spons - Large (>1B) group for the quarter and in the 62 percentile for the last year.
- Total Fund's portfolio underperformed the Total Fund Custom Benchmark by 0.72% for the quarter and underperformed the Total Fund Custom Benchmark for the year by 0.04%.

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

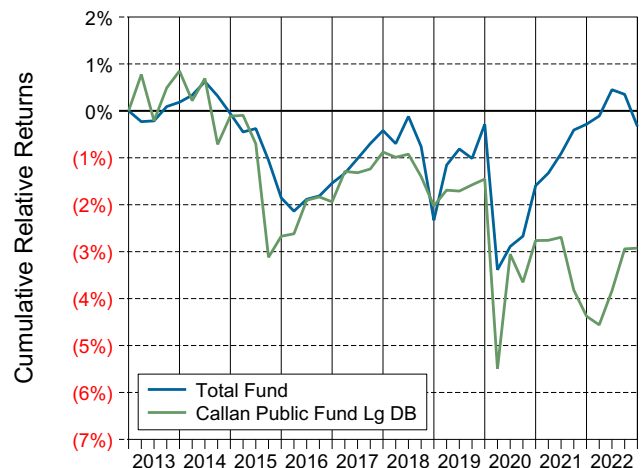


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
10th Percentile	7.38	(6.24)	7.08	7.29	8.47	8.62	6.62	8.45
25th Percentile	6.35	(9.16)	6.12	6.54	8.18	8.18	6.28	8.07
Median	5.51	(11.21)	5.22	5.89	7.63	7.53	5.99	7.76
75th Percentile	4.69	(13.08)	3.66	4.76	6.81	6.81	5.37	7.10
90th Percentile	3.91	(14.40)	2.82	3.95	6.15	5.99	4.94	6.68
Total Fund	● A 4.80	(11.82)	5.56	6.14	7.61	7.53	5.27	8.43
60% MSCI ACW								
IMI/40% Bimbg U.S. Agg	■ B 6.68	(16.04)	1.61	3.31	5.37	5.38	4.41	6.49
Total Fund Custom Benchmark	▲ 5.51	(11.78)	5.57	6.12	7.37	7.56	5.94	8.39

### Relative Returns vs Total Fund Custom Benchmark



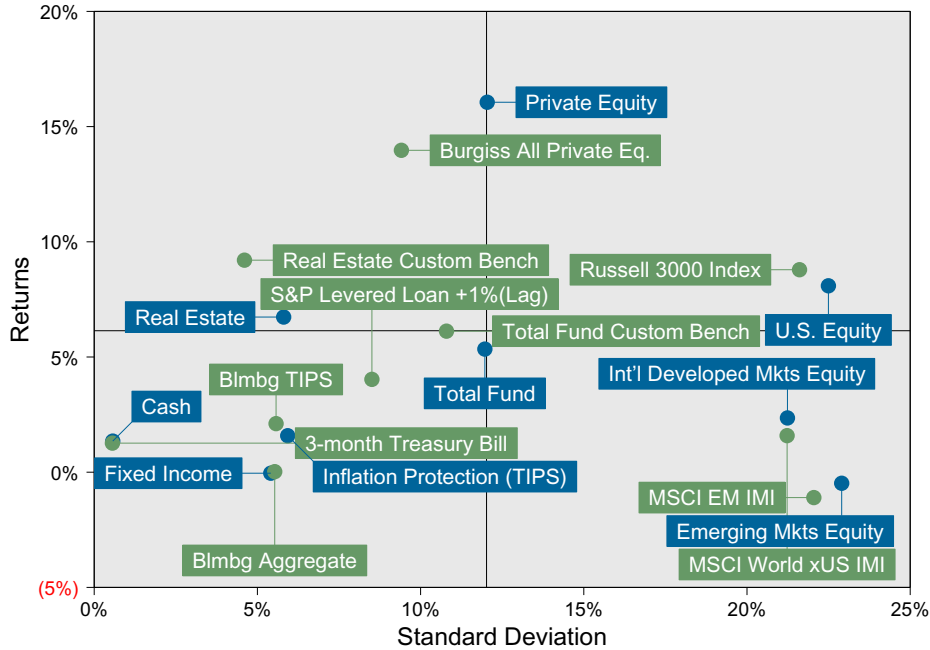
### Cumulative Returns vs Total Fund Custom Benchmark



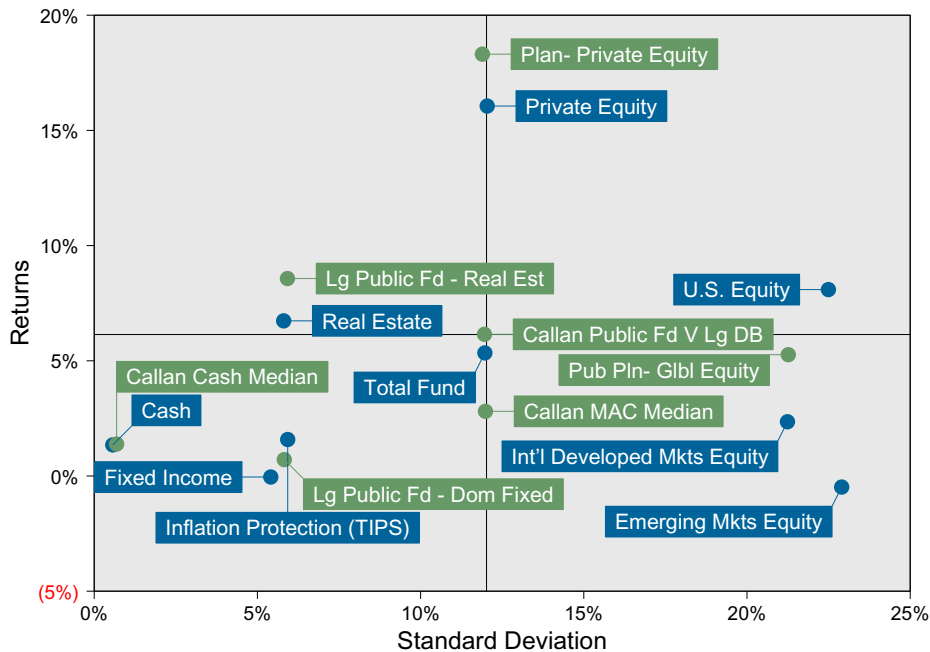
## Asset Class Risk and Return

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



## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2022, with the distribution as of September 30, 2022.

### Asset Distribution Across Investment Managers

	December 31, 2022					September 30, 2022		
	Market Value \$(000)	% of Total Weight	(min) Weight	Target %	(max) Weight	Market Value Weight	% of Total	Target
<b>NET OF FEES*</b>								
<b>U.S. Equity</b>	<b>\$10,413,291</b>	<b>30.90%</b>	<b>26.00%</b>	<b>31.00%</b>	<b>36.00%</b>	<b>\$9,712,428</b>	<b>29.90%</b>	<b>31.00%</b>
<b>Int'l Developed Markets Equity</b>	<b>\$4,366,514</b>	<b>12.96%</b>	<b>9.00%</b>	<b>14.00%</b>	<b>19.00%</b>	<b>\$3,768,863</b>	<b>11.60%</b>	<b>14.00%</b>
<b>Emerging Mkts Equity</b>	<b>\$1,148,788</b>	<b>3.41%</b>	<b>1.00%</b>	<b>5.00%</b>	<b>9.00%</b>	<b>\$1,045,989</b>	<b>3.22%</b>	<b>5.00%</b>
<b>Private Equity (1)</b>	<b>\$6,537,196</b>	<b>19.40%</b>	<b>14.00%</b>	<b>16.00%</b>	<b>18.00%</b>	<b>\$6,454,608</b>	<b>19.87%</b>	<b>16.00%</b>
Buyouts	3,566,160	10.58%				3,478,828	10.71%	
Special Situations	1,558,329	4.62%				1,504,159	4.63%	
Growth Equity	1,194,051	3.54%				1,223,922	3.77%	
Keystone Legacy (2)	218,657	0.65%				247,699	0.76%	
<b>Legacy Private Credit (3)</b>	<b>\$386,392</b>	<b>1.15%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$387,935</b>	<b>1.19%</b>	<b>-</b>
<b>Fixed Income (4)</b>	<b>\$6,304,779</b>	<b>18.71%</b>	<b>17.00%</b>	<b>22.00%</b>	<b>27.00%</b>	<b>\$6,841,866</b>	<b>21.06%</b>	<b>22.00%</b>
Core Fixed Income	4,370,065	12.97%				4,880,116	15.02%	
Opportunistic Fixed Income	854,392	2.54%				844,834	2.60%	
Nominal U.S. Treasuries	834,187	2.48%				838,284	2.58%	
Legacy Fixed Income	246,134	0.73%				278,631	0.86%	
<b>Inflation Protection (TIPS)</b>	<b>\$1,005,859</b>	<b>2.98%</b>	<b>0.00%</b>	<b>3.00%</b>	<b>6.00%</b>	<b>\$984,407</b>	<b>3.03%</b>	<b>3.00%</b>
<b>Real Estate (1)</b>	<b>\$2,943,430</b>	<b>8.73%</b>	<b>N/A</b>	<b>7.00%</b>	<b>N/A</b>	<b>\$2,837,666</b>	<b>8.73%</b>	<b>7.00%</b>
Core/Core Plus Real Estate Funds	1,301,217	3.86%				1,281,887	3.95%	
Value Add/Opportunistic SMA	560,272	1.66%				552,377	1.70%	
Value Add/Opportunistic Funds	790,895	2.35%				725,447	2.23%	
REITS	290,534	0.86%				277,443	0.85%	
Legacy Real Assets	512	0.00%				513	0.00%	
<b>Legacy Hedge Funds</b>	<b>\$16,698</b>	<b>0.05%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$18,040</b>	<b>0.06%</b>	<b>-</b>
<b>Cash</b>	<b>\$575,478</b>	<b>1.71%</b>	<b>0.00%</b>	<b>2.00%</b>	<b>7.00%</b>	<b>\$435,158</b>	<b>1.34%</b>	<b>2.00%</b>
<b>Total Fund</b>	<b>\$33,699,476</b>	<b>100.0%</b>		<b>100.0%</b>		<b>\$32,487,938</b>	<b>100.0%</b>	<b>100.0%</b>

\*Market values shown are net of accrued fees.

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

(2) As of 09/30/2022 Keystone Legacy SPV consists of 53 non-core funds, prior performance reflected in previous sub-asset classes.

(3) The Legacy Private Credit and Legacy Fixed Income composite was incepted on 07/01/2022.

(4) On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income, Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of December 31, 2022, with the distribution as of September 30, 2022.

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<b>GROSS OF FEES*</b>								
<b>U.S. Equity</b>	<b>\$10,413,876</b>	<b>30.90%</b>	<b>26.00%</b>	<b>31.00%</b>	<b>36.00%</b>	<b>\$9,712,992</b>	<b>29.89%</b>	<b>31.00%</b>
<b>Int'l Developed Markets Equity</b>	<b>\$4,367,504</b>	<b>12.96%</b>	<b>9.00%</b>	<b>14.00%</b>	<b>19.00%</b>	<b>\$3,769,821</b>	<b>11.60%</b>	<b>14.00%</b>
<b>Emerging Mkts Equity</b>	<b>\$1,149,004</b>	<b>3.41%</b>	<b>1.00%</b>	<b>5.00%</b>	<b>9.00%</b>	<b>\$1,046,201</b>	<b>3.22%</b>	<b>5.00%</b>
<b>Private Equity (1)</b>	<b>\$6,537,196</b>	<b>19.40%</b>	<b>14.00%</b>	<b>16.00%</b>	<b>18.00%</b>	<b>\$6,454,608</b>	<b>19.87%</b>	<b>16.00%</b>
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<b>Legacy Private Credit (3)</b>	<b>\$386,392</b>	<b>1.15%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$387,935</b>	<b>1.19%</b>	<b>-</b>
<b>Fixed Income (4)</b>	<b>\$6,306,016</b>	<b>18.71%</b>	<b>17.00%</b>	<b>22.00%</b>	<b>27.00%</b>	<b>\$6,842,839</b>	<b>21.06%</b>	<b>22.00%</b>
Core Fixed Income	4,370,862	12.97%				4,880,509	15.02%	
Opportunistic Fixed Income	854,392	2.54%				844,834	2.60%	
Nominal U.S. Treasuries	834,231	2.48%				838,351	2.58%	
Legacy Fixed Income	246,531	0.73%				279,145	0.86%	
<b>Inflation Protection (TIPS)</b>	<b>\$1,006,126</b>	<b>2.99%</b>	<b>0.00%</b>	<b>3.00%</b>	<b>6.00%</b>	<b>\$984,684</b>	<b>3.03%</b>	<b>3.00%</b>
<b>Real Estate (1)</b>	<b>\$2,943,702</b>	<b>8.73%</b>	<b>N/A</b>	<b>7.00%</b>	<b>N/A</b>	<b>\$2,837,950</b>	<b>8.73%</b>	<b>7.00%</b>
Core/Core Plus Real Estate Funds	1,301,217	3.86%				1,281,887	3.95%	
Value Add/Opportunistic SMA	560,272	1.66%				552,377	1.70%	
Value Add/Opportunistic Funds	790,895	2.35%				725,447	2.23%	
REITS	290,805	0.86%				277,726	0.85%	
Legacy Real Assets	512	0.00%				513	0.00%	
<b>Legacy Hedge Funds</b>	<b>\$16,698</b>	<b>0.05%</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$18,040</b>	<b>0.06%</b>	<b>-</b>
<b>Cash</b>	<b>\$575,478</b>	<b>1.71%</b>	<b>0.00%</b>	<b>2.00%</b>	<b>7.00%</b>	<b>\$435,158</b>	<b>1.34%</b>	<b>2.00%</b>
<b>Total Fund</b>	<b>\$33,703,043</b>	<b>100.0%</b>		<b>100.0%</b>		<b>\$32,491,206</b>	<b>100.0%</b>	<b>100.0%</b>

\*Market values shown are gross of accrued fees.

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

(2) As of 09/30/2022 Keystone Legacy SPV consists of 53 non-core funds, prior performance in previous sub-asset classes.

(3) The Legacy Private Credit and Legacy Fixed Income composite was incepted on 07/01/2022.

(4) On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income, Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-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, 2022. 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, 2022					
	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>\$33,699</b>	<b>100.00%</b>	<b>4.75%</b>	<b>(12.15%)</b>	<b>4.60%</b>	<b>5.34%</b>
Total Fund Custom Benchmark(1)	-	-	5.51%	(11.78%)	5.57%	6.12%
Public Market Equiv Benchmark(2)	-	-	4.87%	(13.69%)	3.56%	5.03%
60/40 Index(3)	-	-	6.68%	(16.04%)	1.61%	3.31%
<b>U.S. Equity</b>	<b>\$10,413</b>	<b>30.90%</b>	<b>7.22%</b>	<b>(19.06%)</b>	<b>6.95%</b>	<b>8.09%</b>
Russell 3000 Index (4)	-	-	7.18%	(19.21%)	7.07%	8.79%
S&P 1500 Index	-	-	7.79%	(17.78%)	7.59%	9.15%
<b>Int'l Developed Mkts Equity</b>	<b>\$4,367</b>	<b>12.96%</b>	<b>15.86%</b>	<b>(15.17%)</b>	<b>2.11%</b>	<b>2.35%</b>
MSCI World ex US IMI	-	-	16.04%	(15.26%)	1.05%	1.59%
<b>Emerging Mkts Equity</b>	<b>\$1,149</b>	<b>3.41%</b>	<b>9.83%</b>	<b>(22.84%)</b>	<b>(1.49%)</b>	<b>(0.48%)</b>
MSCI EM IMI	-	-	9.50%	(19.83%)	(1.82%)	(1.10%)
<b>Private Equity</b>	<b>\$6,537</b>	<b>19.40%</b>	<b>(0.33%)</b>	<b>(5.06%)</b>	<b>19.76%</b>	<b>16.06%</b>
Burgiss Private Equity Index (Qtr lag)	-	-	(1.67%)	(1.84%)	15.43%	13.97%
Global Equity + 3% (Qtr lag)(5)	-	-	(4.46%)	(15.48%)	9.35%	10.97%
<b>Legacy Private Credit Funds (6)</b>	<b>\$386</b>	<b>1.15%</b>	<b>1.34%</b>	<b>8.00%</b>	<b>10.58%</b>	<b>-</b>
S&P Levered Loan Index + 1% (Qtr lag)	-	-	1.61%	(1.51%)	3.29%	4.03%
<b>Fixed Income</b>	<b>\$6,305</b>	<b>18.71%</b>	<b>1.46%</b>	<b>(12.34%)</b>	<b>(2.73%)</b>	<b>(0.04%)</b>
Blmbg U.S. Agg Bond Index	-	-	1.87%	(13.01%)	(2.71%)	0.02%
<b>Inflation Protection (TIPS)</b>	<b>\$1,006</b>	<b>2.98%</b>	<b>2.18%</b>	<b>(12.99%)</b>	<b>0.53%</b>	<b>1.58%</b>
Blmbg U.S. TIPS Index	-	-	2.04%	(11.85%)	1.21%	2.11%
<b>Real Estate</b>	<b>\$2,943</b>	<b>8.73%</b>	<b>1.40%</b>	<b>6.02%</b>	<b>8.52%</b>	<b>6.73%</b>
Real Estate Custom Bench (Qtr lag)(7)	-	-	0.77%	17.38%	11.40%	9.20%
CPI + 3% (Qtr lag)	-	-	0.91%	11.21%	7.95%	6.76%
<b>Cash</b>	<b>\$575</b>	<b>1.71%</b>	<b>0.94%</b>	<b>1.65%</b>	<b>0.78%</b>	<b>1.35%</b>
3-month Treasury Bill	-	-	0.84%	1.46%	0.72%	1.26%

\* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

(1) The current total fund benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index. See page 75 for full benchmark history.

(2) The current public equivalent benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 31% Russell 3000, 14% MSCI World ex US IMI Index, 12% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 3% Bloomberg US TIPS Index, 5% MSCI EM IMI Index, 4% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index. See page 75 for full benchmark history.

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

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

(5) As of 01/01/2020 benchmark consists of 25% MSCI World ex US +3% (Qtr lag) and 75% Russell 3000 + 3% (Qtr lag). Benchmark performance represents the historical benchmark (Russell 3000 +3% Qtr lag) linked to the current benchmark.

(6) Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

(7) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022, the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged).

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Net Performance</b>						
<b>Total Fund</b>	<b>6.79%</b>	<b>4.49%</b>	<b>7.60%</b>	<b>6.70%</b>	<b>9.19%</b>	(1/81)
Total Fund Custom Benchmark(1)	7.56%	5.94%	8.39%	7.18%	-	
Public Market Equiv Benchmark(2)	7.24%	5.75%	8.24%	7.06%	-	
60/40 Index(3)	5.38%	4.41%	6.49%	5.62%	-	
<b>U.S. Equity</b>	<b>11.36%</b>	<b>6.94%</b>	<b>9.32%</b>	<b>7.33%</b>	<b>10.46%</b>	(1/81)
Russell 3000 Index (4)	12.13%	8.66%	9.88%	7.65%	10.76%	(1/81)
S&P 1500 Index	12.38%	8.83%	9.92%	7.83%	-	
<b>Int'l Developed Mkts Equity</b>	<b>5.50%</b>	<b>2.00%</b>	<b>6.98%</b>	-	<b>5.78%</b>	(1/02)
MSCI World ex US IMI	4.73%	2.05%	6.85%	4.95%	5.76%	(1/02)
<b>Emerging Mkts Equity</b>	<b>2.19%</b>	<b>(0.36%)</b>	<b>6.58%</b>	-	<b>6.20%</b>	(1/02)
MSCI EM IMI	1.64%	0.86%	8.84%	5.36%	8.06%	(1/02)
<b>Private Equity</b>	<b>13.15%</b>	<b>10.25%</b>	<b>12.56%</b>	<b>12.60%</b>	<b>11.60%</b>	(1/86)
Burgiss Private Equity Index (Qtr lag)	13.51%	10.46%	13.32%	13.18%	16.72%	(1/86)
Global Equity + 3% (Qtr lag)(5)	14.14%	11.09%	13.10%	10.78%	14.08%	(1/86)
<b>Legacy Private Credit Funds (6)</b>	-	-	-	-	<b>10.19%</b>	(4/18)
S&P Levered Loan Index + 1% (Qtr lag)	-	-	-	-	3.95%	(4/18)
<b>Fixed Income</b>	<b>1.18%</b>	<b>3.17%</b>	<b>4.32%</b>	<b>4.59%</b>	<b>7.56%</b>	(1/81)
Blmbg U.S. Agg Bond Index	1.06%	2.66%	3.10%	3.97%	6.86%	(1/81)
<b>Inflation Protection (TIPS)</b>	<b>0.99%</b>	<b>2.40%</b>	-	-	<b>2.84%</b>	(2/03)
Blmbg U.S. TIPS Index	1.12%	3.05%	3.85%	4.79%	3.83%	(2/03)
<b>Real Estate</b>	<b>7.30%</b>	<b>3.11%</b>	<b>6.88%</b>	<b>7.49%</b>	<b>8.40%</b>	(3/84)
Real Estate Custom Bench (Qtr lag)(7)	9.80%	5.78%	8.15%	8.31%	-	
CPI + 3% (Qtr lag)	5.52%	5.39%	5.51%	5.47%	5.81%	(3/84)
<b>Cash</b>	<b>1.02%</b>	<b>1.00%</b>	<b>1.54%</b>	<b>2.23%</b>	<b>3.39%</b>	(1/87)
3-month Treasury Bill	0.76%	0.68%	1.27%	1.91%	3.12%	(1/87)

\* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

(1) The current total fund benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index. See page 75 for full benchmark history.

(2) The current public equivalent benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 31% Russell 3000, 14% MSCI World ex US IMI Index, 12% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 3% Bloomberg US TIPS Index, 5% MSCI EM IMI Index, 4% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index. See page 75 for full benchmark history.

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

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

(5) As of 01/01/2020 benchmark consists of 25% MSCI World ex US +3% (Qtr lag) and 75% Russell 3000 + 3% (Qtr lag). Benchmark performance represents the historical benchmark (Russell 3000 +3% Qtr lag) linked to the current benchmark.

(6) Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

(7) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022 the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged).

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance- Domestic Equity</b>						
<b>U.S. Equity</b>	<b>\$10,413</b>	<b>100.00%</b>	<b>7.22%</b>	<b>(19.06%)</b>	<b>6.95%</b>	<b>8.09%</b>
Russell 3000 Index (1)	-	-	7.18%	(19.21%)	7.07%	8.79%
S&P 1500 Index	-	-	7.79%	(17.78%)	7.59%	9.15%
MCM Russell 1000 Index	9,349	89.78%	7.23%	(18.88%)	7.49%	9.24%
Russell 1000 Index	-	-	7.24%	(19.13%)	7.35%	9.13%
S&P 500 Index	-	-	7.56%	(18.11%)	7.66%	9.42%
MCM Russell 2000 Core Index	407	3.91%	6.26%	(20.33%)	3.58%	4.41%
Russell 2000 Index	-	-	6.23%	(20.44%)	3.10%	4.13%
S&P 600 Index	-	-	9.19%	(16.10%)	5.80%	5.88%
MCM Russell 2000 Val Index	322	3.09%	8.46%	(14.32%)	4.79%	4.17%
Russell 2000 Value Index	-	-	8.42%	(14.48%)	4.70%	4.13%
S&P 600 Value Index	-	-	11.18%	(11.04%)	6.10%	5.38%
Emerald Asset Management	335	3.22%	6.70%	(24.10%)	2.28%	4.36%
Russell 2000 Growth Index	-	-	4.13%	(26.36%)	0.65%	3.51%
S&P 600 Growth Index	-	-	6.98%	(21.08%)	4.99%	6.11%

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\*\*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, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Net Performance- Domestic Equity</b>						
<b>U.S. Equity</b>	<b>11.36%</b>	<b>6.94%</b>	<b>9.32%</b>	<b>7.33%</b>	<b>10.46%</b>	(1/81)
Russell 3000 Index (1)	12.13%	8.66%	9.88%	7.65%	10.76%	(1/81)
S&P 1500 Index	12.38%	8.83%	9.92%	7.83%	-	
MCM Russell 1000 Index	12.43%	-	-	-	12.75%	(1/12)
Russell 1000 Index	12.37%	8.77%	9.92%	7.74%	12.74%	(1/12)
S&P 500 Index	12.56%	8.81%	9.80%	7.64%	12.87%	(1/12)
MCM Russell 2000 Core Index	-	-	-	-	6.44%	(12/16)
Russell 2000 Index	9.01%	7.16%	9.36%	7.13%	6.21%	(12/16)
S&P 600 Index	10.82%	8.89%	10.64%	8.95%	7.55%	(12/16)
MCM Russell 2000 Val Index	-	-	-	-	5.39%	(12/16)
Russell 2000 Value Index	8.48%	6.81%	8.99%	7.70%	5.37%	(12/16)
S&P 600 Value Index	10.33%	8.43%	10.19%	8.66%	6.84%	(12/16)
Emerald Asset Management	-	-	-	-	7.83%	(12/16)
Russell 2000 Growth Index	9.20%	7.26%	9.50%	6.07%	6.55%	(12/16)
S&P 600 Growth Index	11.13%	9.23%	10.97%	8.81%	8.01%	(12/16)

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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, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance- International Equity</b>						
<b>Int'l Developed Mkts Equity</b>	<b>\$4,367</b>	<b>100.00%</b>	<b>15.86%</b>	<b>(15.17%)</b>	<b>2.11%</b>	<b>2.35%</b>
MSCI World ex US IMI	-	-	16.04%	(15.26%)	1.05%	1.59%
Walter Scott & Partners(1)	663	15.18%	12.97%	(19.26%)	5.52%	8.88%
MSCI World	-	-	9.77%	(18.14%)	4.94%	6.14%
BlackRock MSCI World Ex US Index	3,372	77.21%	16.23%	(13.85%)	1.72%	2.22%
MSCI World ex US	-	-	16.18%	(14.29%)	1.27%	1.79%
Xponance Non-U.S. Small Cap	202	4.64%	13.43%	(22.67%)	(1.85%)	-
MSCI ACWI ex US Small Cap	-	-	13.31%	(19.97%)	1.07%	0.67%
Harris Assoc Int'l SCV	126	2.89%	26.44%	(14.34%)	3.05%	2.13%
MSCI World ex US Sm Cap	-	-	15.21%	(20.59%)	(0.15%)	0.45%
MSCI World ex US Sm Value	-	-	16.80%	(14.00%)	(0.02%)	0.04%

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\*\*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) Walter Scott since inception returns were contained in the Global Mandates composite prior to 12/31/2019.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance- International Equity</b>					
<b>Int'l Developed Mkts Equity</b>	<b>5.50%</b>	<b>2.00%</b>	<b>6.98%</b>	-	<b>5.78%</b> (1/02)
MSCI World ex US IMI	4.73%	2.05%	6.85%	4.95%	5.76% (1/02)
Walter Scott & Partners(1)	10.39%	8.31%	-	-	8.78% (10/06)
MSCI World	8.85%	5.40%	8.18%	6.04%	6.06% (10/06)
BlackRock MSCI World Ex US Index	-	-	-	-	3.84% (6/17)
MSCI World ex US	4.59%	1.84%	6.57%	4.65%	3.39% (6/17)
Xponance Non-U.S. Small Cap	-	-	-	-	0.24% (10/18)
MSCI ACWI ex US Small Cap	5.24%	3.33%	9.13%	6.87%	1.86% (10/18)
Harris Assoc Int'l SCV	6.50%	5.69%	-	-	9.74% (7/03)
MSCI World ex US Sm Cap	5.77%	3.57%	8.86%	-	8.01% (7/03)
MSCI World ex US Sm Value	5.32%	3.44%	8.95%	7.67%	8.10% (7/03)

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\*\*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) Walter Scott since inception returns were contained in the Global Mandates composite prior to 12/31/2019.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance- Emerging Mkts Equity</b>						
<b>Emerging Mkts Equity</b>	<b>\$1,149</b>	<b>100.00%</b>	<b>9.83%</b>	<b>(22.84%)</b>	<b>(1.49%)</b>	<b>(0.48%)</b>
MSCI EM IMI	-	-	9.50%	(19.83%)	(1.82%)	(1.10%)
Macquarie Emg Mkts Equity	308	26.84%	8.19%	(25.89%)	(3.74%)	(1.38%)
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
Martin Currie Emg Mkts Equity	336	29.28%	11.24%	(26.34%)	(3.17%)	(1.04%)
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
BlackRock Emg Mkts Index	168	14.62%	9.67%	(20.20%)	(2.94%)	(1.63%)
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
Leading Edge Emg Mkts Fund	215	18.70%	9.95%	(20.01%)	(3.15%)	-
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
GlobeFlex Emerging Small Cap	121	10.57%	10.16%	(11.50%)	8.50%	3.76%
MSCI EM Small Cap	-	-	8.20%	(18.02%)	5.11%	1.06%

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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, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance- Emerging Mkts Equity</b>					
<b>Emerging Mkts Equity</b>	<b>2.19%</b>	<b>(0.36%)</b>	<b>6.58%</b>	-	<b>6.20%</b> <small>(1/02)</small>
MSCI EM IMI	1.64%	0.86%	8.84%	5.36%	8.06% <small>(1/02)</small>
Macquarie Emg Mkts Equity	-	-	-	-	2.32% <small>(5/13)</small>
MSCI EM	1.44%	0.65%	8.72%	-	1.58% <small>(5/13)</small>
Martin Currie Emg Mkts Equity	-	-	-	-	2.93% <small>(1/14)</small>
MSCI EM	1.44%	0.65%	8.72%	-	1.90% <small>(1/14)</small>
BlackRock Emg Mkts Index	-	-	-	-	1.18% <small>(7/17)</small>
MSCI EM	1.44%	0.65%	8.72%	-	1.42% <small>(7/17)</small>
Leading Edge Emg Mkts Fund	-	-	-	-	2.14% <small>(11/18)</small>
MSCI EM	1.44%	0.65%	8.72%	-	2.45% <small>(11/18)</small>
GlobeFlex Emerging Small Cap	-	-	-	-	5.64% <small>(8/13)</small>
MSCI EM Small Cap	3.21%	2.20%	10.12%	6.83%	3.76% <small>(8/13)</small>

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	Returns for Periods Ended December 31, 2022					
	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>\$6,537</b>	<b>100.00%</b>	<b>(0.33%)</b>	<b>(5.06%)</b>	<b>19.76%</b>	<b>16.06%</b>
Burgiss Private Equity Index (Qtr lag)	-	-	(1.67%)	(1.84%)	15.43%	13.97%
Global Equity + 3% (Qtr lag)(1)	-	-	(4.46%)	(15.48%)	9.35%	10.97%
<b>Buyouts</b>	<b>3,566</b>	<b>54.55%</b>	<b>(0.37%)</b>	<b>(0.41%)</b>	<b>19.45%</b>	<b>15.93%</b>
Burgiss Buyout Index (Qtr lag)	-	-	(1.84%)	0.38%	14.32%	12.80%
<b>Special Situations</b>	<b>1,558</b>	<b>23.84%</b>	<b>1.50%</b>	<b>10.74%</b>	<b>21.58%</b>	<b>17.78%</b>
Burgiss Special Situations Idx (Qtr lag)	-	-	0.00%	1.86%	6.01%	5.73%
<b>Growth Equity</b>	<b>1,194</b>	<b>18.27%</b>	<b>(0.84%)</b>	<b>(15.66%)</b>	<b>28.10%</b>	<b>26.03%</b>
Burgiss Venture Capital Index (Qtr lag)	-	-	(2.47%)	(7.58%)	23.49%	21.84%
Keystone Legacy (2)	219	3.34%	(8.65%)	(41.45%)	(4.71%)	-

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(1) As of 01/01/2020 benchmark consists of 25% MSCI World ex US and 75% Russell 3000 + 3% with a 1 quarter lag.

(2) As of 09/30/2022, Keystone Legacy SPV consists of 53 non-core funds, prior performance is reflected in previous sub-asset classes.

## Investment Manager Returns

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### Returns for Periods Ended December 31, 2022

	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>13.15%</b>	<b>10.25%</b>	<b>12.56%</b>	<b>12.60%</b>	<b>11.60%</b> (1/86)
Burgiss Private Equity Index (Qtr lag)	13.51%	10.46%	13.32%	13.18%	16.72% (1/86)
Global Equity + 3% (Qtr lag)(1)	14.14%	11.09%	13.10%	10.78%	14.08% (1/86)
<b>Buyouts</b>	<b>14.23%</b>	<b>11.53%</b>	<b>14.90%</b>	<b>14.59%</b>	<b>13.62%</b> (4/86)
Burgiss Buyout Index (Qtr lag)	13.09%	10.06%	14.32%	12.89%	19.07% (4/86)
<b>Special Situations</b>	<b>13.30%</b>	<b>10.71%</b>	<b>14.36%</b>	<b>13.20%</b>	<b>13.35%</b> (1/95)
Burgiss Special Situations Idx (Qtr lag)	7.39%	6.57%	9.39%	9.56%	9.93% (1/95)
<b>Growth Equity</b>	<b>15.31%</b>	<b>10.95%</b>	<b>8.09%</b>	<b>8.47%</b>	<b>8.67%</b> (1/86)
Burgiss Venture Capital Index (Qtr lag)	18.41%	13.57%	11.46%	13.71%	14.40% (1/86)
Keystone Legacy (2)	-	-	-	-	(4.35%) (7/18)

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(1) As of 01/01/2020 benchmark consists of 25% MSCI World ex US and 75% Russell 3000 + 3% with a 1 quarter lag.

(2) As of 09/30/2022, Keystone Legacy SPV consists of 53 non-core funds, prior performance is reflected 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, 2022. 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, 2022						
	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 (1)</b>	<b>\$6,305</b>	<b>50.00%</b>	<b>1.46%</b>	<b>(12.34%)</b>	<b>(2.73%)</b>	<b>(0.04%)</b>
Blmbg U.S. Agg Bond Index	-	-	1.87%	(13.01%)	(2.71%)	0.02%
<b>Core Fixed Income</b>	<b>\$4,370</b>	<b>34.66%</b>	<b>1.94%</b>	<b>(11.94%)</b>	<b>(2.53%)</b>	<b>0.18%</b>
Blmbg U.S. Agg Bond Index	-	-	1.87%	(13.01%)	(2.71%)	0.02%
PIMCO Core Bond Fund	511	4.05%	2.30%	(13.21%)	(2.52%)	0.18%
Blmbg Agg ex Treasury	-	-	2.67%	(13.35%)	(2.89%)	0.03%
Mellon Bond Index	3,859	30.60%	1.90%	(13.00%)	(2.81%)	(0.05%)
Blmbg U.S. Agg Bond Index (2)	-	-	1.87%	(13.01%)	(2.71%)	0.02%
<b>Opportunistic Fixed Income</b>	<b>\$854</b>	<b>6.78%</b>	<b>1.29%</b>	<b>6.46%</b>	<b>5.76%</b>	<b>5.12%</b>
BAAM Keystone (3)	854	6.78%	1.29%	6.67%	6.68%	6.11%
HFRI FOF Comp Index	-	-	1.79%	(5.25%)	3.71%	3.02%
<b>Nominal U.S. Treasuries</b>	<b>\$834</b>	<b>6.62%</b>	<b>(0.49%)</b>	<b>(17.68%)</b>	<b>(4.81%)</b>	<b>(1.15%)</b>
Blmbg US Treas Bell 10Y	-	-	0.62%	(16.33%)	(3.73%)	(0.57%)
PIMCO US Treasuries	86	0.68%	0.57%	(15.40%)	(3.36%)	(0.25%)
Blmbg US Treas Bell 10Y	-	-	0.62%	(16.33%)	(3.73%)	(0.57%)
Mellon Intermediate Treasury Index	263	2.09%	0.89%	(7.84%)	-	-
Blmbg Intmtd Treasury	-	-	1.02%	(7.77%)	(1.39%)	0.46%
Mellon Long Duration Index	485	3.85%	(1.40%)	(29.53%)	-	-
Blmbg Long Treasury	-	-	(0.59%)	(29.26%)	(7.40%)	(2.20%)
<b>Legacy Fixed Income</b>	<b>\$246</b>	<b>1.95%</b>	<b>(0.49%)</b>	<b>-</b>	<b>-</b>	<b>-</b>
Fidelity HY CMBS (4)	245	1.94%	(0.38%)	(7.37%)	(1.82%)	1.14%
Blmbg US CMBS Ex AAA Index (5)	-	-	(0.88%)	(13.65%)	(2.57%)	0.82%
SEI Str. Credit: HY Bank Loans (6)	0	0.00%	(1.83%)	(3.93%)	8.63%	6.58%
FTSE HY Corp (1 month lag)	-	-	0.32%	(8.66%)	0.80%	2.37%

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(1) Fixed Income included the new fixed income sub-composite from 03/01/2021 to 06/30/2022. On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income, Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

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

(3) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

(4) Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

(5) Fidelity's blended benchmark consists of FTSE High Yield Market Index prior to 12/31/2009 and Blmbg US CMBS Ex AAA Index, thereafter.

(6) SEI HY Bank Loans has a 1 month lag in valuation. On this chart, SEI's market value of \$483K has been rounded to \$0MM.



## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Fixed Income</b>					
<b>Fixed Income (1)</b>	<b>1.18%</b>	<b>3.17%</b>	<b>4.32%</b>	<b>4.59%</b>	<b>7.56%</b> <sup>(1/81)</sup>
Blmbg U.S. Agg Bond Index	1.06%	2.66%	3.10%	3.97%	6.86% <sup>(1/81)</sup>
<b>Core Fixed Income</b>	<b>1.24%</b>	<b>3.09%</b>	<b>3.46%</b>	-	<b>3.77%</b> <sup>(1/02)</sup>
Blmbg U.S. Agg Bond Index	1.06%	2.66%	3.10%	3.97%	3.43% <sup>(1/02)</sup>
PIMCO Core Bond Fund	1.23%	-	-	-	1.23% <sup>(1/13)</sup>
Blmbg Agg ex Treasury	1.30%	2.93%	-	-	1.30% <sup>(1/13)</sup>
Mellon Bond Index	0.98%	2.53%	2.97%	3.92%	6.32% <sup>(4/84)</sup>
Blmbg U.S. Agg Bond Index (2)	1.06%	2.66%	3.10%	4.03%	-
<b>Opportunistic Fixed Income</b>	<b>4.68%</b>	-	-	-	<b>4.92%</b> <sup>(10/12)</sup>
BAAM Keystone (3)	6.84%	-	-	-	7.33% <sup>(7/12)</sup>
HFRI FOF Comp Index	3.50%	1.72%	3.56%	3.92%	3.69% <sup>(7/12)</sup>
<b>Nominal U.S. Treasuries</b>	<b>0.04%</b>	-	-	-	<b>0.58%</b> <sup>(9/11)</sup>
Blmbg US Treas Bell 10Y	0.21%	2.54%	2.86%	3.70%	0.89% <sup>(9/11)</sup>
PIMCO US Treasuries	0.64%	-	-	-	1.13% <sup>(9/11)</sup>
Blmbg US Treas Bell 10Y	0.21%	2.54%	2.86%	3.70%	0.89% <sup>(9/11)</sup>
Mellon Intermediate Treasury Index	-	-	-	-	(4.72%) <sup>(3/21)</sup>
Blmbg Intmtd Treasury	0.69%	1.98%	2.37%	3.34%	(4.66%) <sup>(3/21)</sup>
Mellon Long Duration Index	-	-	-	-	(18.24%) <sup>(1/21)</sup>
Blmbg Long Treasury	0.60%	3.55%	4.07%	4.97%	(17.87%) <sup>(1/21)</sup>
<b>Legacy Fixed Income</b>	-	-	-	-	<b>(1.72%)</b> <sup>(7/22)</sup>
Fidelity HY CMBS (4)	3.89%	5.18%	6.01%	6.87%	7.30% <sup>(4/97)</sup>
Blmbg US CMBS Ex AAA Index (5)	1.99%	0.18%	1.08%	2.94%	3.29% <sup>(4/97)</sup>
SEI Str. Credit: HY Bank Loans (6)	6.87%	-	-	-	11.11% <sup>(5/08)</sup>
FTSE HY Corp (1 month lag)	4.00%	5.82%	7.13%	5.79%	6.15% <sup>(5/08)</sup>

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(1) Fixed Income included the new fixed income sub-composite from 03/01/2021 to 06/30/2022. On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income, Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

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

(3) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

(4) Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

(5) Fidelity's blended benchmark consists of FTSE High Yield Market Index prior to 12/31/2009 and Blmbg US CMBS Ex AAA Index, thereafter.

(6) SEI HY Bank Loans has a 1 month lag in valuation.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance - Inflation Protection</b>						
<b>Inflation Protection (TIPS)</b>	<b>\$1,006</b>	<b>100.00%</b>	<b>2.18%</b>	<b>(12.99%)</b>	<b>0.53%</b>	<b>1.58%</b>
Blmbg U.S. TIPS Index	-	-	2.04%	(11.85%)	1.21%	2.11%
NISA Inv Adv TIPS	438	43.53%	1.93%	(11.90%)	1.15%	2.05%
Blmbg U.S. TIPS Index (1)	-	-	2.04%	(11.85%)	1.21%	2.11%
Brown Brothers TIPS	460	45.72%	1.95%	(11.67%)	1.12%	2.03%
Blmbg U.S. TIPS Index	-	-	2.04%	(11.85%)	1.21%	2.11%
New Century Global TIPS	108	10.75%	4.21%	(21.90%)	(3.28%)	(1.27%)
Blmbg Wrld Inflation Linked Unhdg	-	-	3.83%	(21.86%)	(3.21%)	(1.20%)

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### Returns for Periods Ended December 31, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - Inflation Protection</b>					
<b>Inflation Protection (TIPS)</b>	<b>0.99%</b>	<b>2.40%</b>	-	-	<b>2.84%</b> (2/03)
Blmbg U.S. TIPS Index	1.12%	3.05%	3.85%	4.79%	3.83% (2/03)
NISA Inv Adv TIPS	1.09%	2.38%	-	-	2.77% (4/07)
Blmbg U.S. TIPS Index (1)	1.12%	2.40%	3.31%	4.36%	2.78% (4/07)
Brown Brothers TIPS	1.16%	-	-	-	1.53% (2/12)
Blmbg U.S. TIPS Index	1.12%	3.05%	3.85%	4.79%	1.44% (2/12)
New Century Global TIPS	0.18%	-	-	-	0.65% (2/12)
Blmbg Wrld Inflation Linked Unhdg	0.03%	1.74%	3.63%	4.45%	0.41% (2/12)

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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.

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	Returns for Periods Ended December 31, 2022					
	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>\$2,943</b>	<b>100.00%</b>	<b>1.40%</b>	<b>6.02%</b>	<b>8.52%</b>	<b>6.73%</b>
Real Estate Custom Bench (Qtr lag) (1)	-	-	0.77%	17.38%	11.40%	9.20%
CPI +3% (Qtr lag)	-	-	0.91%	11.21%	7.95%	6.76%
Core/Core Plus Real Estate Funds	1,301	44.21%	2.57%	14.63%	9.74%	8.38%
NCREIF ODCE Index (Qtr lag)	-	-	0.77%	21.68%	12.13%	9.87%
Value Add/Opportunistic SMA	560	19.03%	(1.80%)	0.88%	7.15%	4.56%
NCREIF ODCE Index (Qtr lag)	-	-	0.77%	21.68%	12.13%	9.87%
Value Add/Opportunistic Funds	791	26.87%	0.58%	12.11%	10.74%	9.34%
NCREIF ODCE Index (Qtr lag)	-	-	0.77%	21.68%	12.13%	9.87%
REITS	291	9.87%	4.72%	(23.73%)	1.35%	4.96%
FTSE NAREIT US Index	-	-	5.06%	(24.87%)	(1.01%)	3.21%

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\*\*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) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022, the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged). Prior to 03/31/2019, benchmark history was provided by RVK.

## Investment Manager Returns

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### Returns for Periods Ended December 31, 2022

	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>7.30%</b>	<b>3.11%</b>	<b>6.88%</b>	<b>7.49%</b>	<b>8.40%</b>	(3/84)
Real Estate Custom Bench (Qtr lag) (1)	9.80%	5.78%	8.15%	8.31%	-	
CPI +3% (Qtr lag)	5.52%	5.39%	5.51%	5.47%	5.81%	(3/84)
Core/Core Plus Real Estate Funds	9.37%	6.52%	7.95%	8.45%	7.32%	(9/86)
NCREIF ODCE Index (Qtr lag)	10.26%	5.89%	7.75%	8.17%	6.50%	(9/86)
Value Add/Oppportunistic SMA	5.65%	1.23%	4.85%	5.73%	5.34%	(6/88)
NCREIF ODCE Index (Qtr lag)	10.26%	5.89%	7.75%	8.17%	6.56%	(6/88)
Value Add/Oppportunistic Funds	10.15%	3.72%	7.91%	9.12%	8.07%	(3/84)
NCREIF ODCE Index (Qtr lag)	10.26%	5.89%	7.75%	8.17%	6.71%	(3/84)
<b>REITS</b>	<b>5.80%</b>	<b>4.06%</b>	<b>8.78%</b>	<b>7.60%</b>	<b>8.99%</b>	(4/96)
FTSE NAREIT US Index	6.17%	4.57%	8.71%	7.55%	9.30%	(4/96)

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(1) As of 07/01/2022, the benchmark consists of 100% NCREIF NFI-ODCE (Qtr lag). From 03/31/2019 to 07/01/2022, the benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged). Prior to 03/31/2019, benchmark history was 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, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Net Performance - DWDO Managers</b>						
Xponance Non-U.S. Small Cap	202	0.60%	13.43%	(22.67%)	(1.85%)	-
MSCI ACWI ex US Small Cap	-	-	13.31%	(19.97%)	1.07%	0.67%
Leading Edge Emg Mkts Fund	215	0.64%	9.95%	(20.01%)	(3.15%)	-
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
GlobeFlex Emerging Small Cap	121	0.36%	10.16%	(11.50%)	8.50%	3.76%
MSCI EM Small Cap	-	-	8.20%	(18.02%)	5.11%	1.06%
New Century Global TIPS	108	0.32%	4.21%	(21.90%)	(3.28%)	(1.27%)
Blmbg Wrld Inflation Linked Unhdg	-	-	3.83%	(21.86%)	(3.21%)	(1.20%)

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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, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Net Performance - DWDO Managers</b>					
Xponance Non-U.S. Small Cap	-	-	-	-	0.24% (10/18)
MSCI ACWI ex US Small Cap	5.24%	3.33%	9.13%	6.87%	1.86% (10/18)
Leading Edge Emg Mkts Fund	-	-	-	-	2.14% (11/18)
MSCI EM	1.44%	0.65%	8.72%	-	2.45% (11/18)
GlobeFlex Emerging Small Cap	-	-	-	-	5.64% (8/13)
MSCI EM Small Cap	3.21%	2.20%	10.12%	6.83%	3.76% (8/13)
New Century Global TIPS	0.18%	-	-	-	0.65% (2/12)
Blmbg Wrid Inflation Linked Unhdg	0.03%	1.74%	3.63%	4.45%	0.41% (2/12)

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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, 2022. 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, 2022						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance</b>						
<b>Total Fund (2)</b>	<b>\$33,703</b>	<b>100.00%</b>	<b>4.80%</b>	<b>(11.82%)</b>	<b>5.56%</b>	<b>-</b>
Total Fund Estimated Gross History (2)	33,703	100.00%	4.80%	(11.82%)	5.56%	6.14%
Total Fund Custom Benchmark	-	-	5.51%	(11.78%)	5.57%	6.12%
Public Market Equiv Benchmark	-	-	4.87%	(13.69%)	3.56%	5.03%
60/40 Index	-	-	6.68%	(16.04%)	1.61%	3.31%
<b>U.S. Equity</b>	<b>\$10,414</b>	<b>30.90%</b>	<b>7.22%</b>	<b>(19.04%)</b>	<b>6.99%</b>	<b>8.15%</b>
Russell 3000 Index (1)	-	-	7.18%	(19.21%)	7.07%	8.79%
S&P 1500 Index	-	-	7.79%	(17.78%)	7.59%	9.15%
<b>Int'l Developed Mkts Equity</b>	<b>\$4,368</b>	<b>12.96%</b>	<b>15.89%</b>	<b>(15.06%)</b>	<b>2.26%</b>	<b>2.48%</b>
MSCI World ex US IMI	-	-	16.04%	(15.26%)	1.05%	1.59%
<b>Emerging Mkts Equity</b>	<b>\$1,149</b>	<b>3.41%</b>	<b>9.97%</b>	<b>(22.43%)</b>	<b>(0.96%)</b>	<b>0.01%</b>
MSCI EM IMI	-	-	9.50%	(19.83%)	(1.82%)	(1.10%)
<b>Private Equity (2)</b>	<b>\$6,537</b>	<b>19.40%</b>	<b>(0.27%)</b>	<b>(4.38%)</b>	<b>25.23%</b>	<b>-</b>
Burgiss Private Equity Index (Qtr lag)	-	-	(1.67%)	(1.84%)	15.43%	13.97%
Global Equity +3% (Qtr lag)	-	-	(4.46%)	(15.48%)	9.35%	10.97%
<b>Legacy Private Credit (3)</b>	<b>\$386</b>	<b>1.15%</b>	<b>1.74%</b>	<b>9.76%</b>	<b>13.66%</b>	<b>-</b>
S&P Levered Loan Index +1% (Qtr Lag)	-	-	1.61%	(1.51%)	3.29%	4.03%
<b>Fixed Income</b>	<b>\$6,306</b>	<b>18.71%</b>	<b>1.49%</b>	<b>(12.23%)</b>	<b>(2.56%)</b>	<b>0.14%</b>
Blmbg U.S. Agg Bond Index	-	-	1.87%	(13.01%)	(2.71%)	0.02%
<b>Inflation Protection (TIPS)</b>	<b>\$1,006</b>	<b>2.99%</b>	<b>2.20%</b>	<b>(12.90%)</b>	<b>0.65%</b>	<b>1.71%</b>
Blmbg U.S. TIPS Index	-	-	2.04%	(11.85%)	1.21%	2.11%
<b>Real Estate (2)</b>	<b>\$2,944</b>	<b>8.73%</b>	<b>1.52%</b>	<b>8.27%</b>	<b>10.20%</b>	<b>-</b>
Real Estate Custom Benchmark (Qtr lag)	-	-	0.77%	17.38%	11.40%	9.20%
CPI +3% (Qtr lag)	-	-	0.91%	11.21%	7.95%	6.76%
<b>Cash</b>	<b>\$575</b>	<b>1.71%</b>	<b>0.94%</b>	<b>1.65%</b>	<b>0.78%</b>	<b>1.35%</b>
3-month Treasury Bill	-	-	0.84%	1.46%	0.72%	1.26%

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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.

(2) The Total Fund Estimated Gross History is calculated by BNY Mellon using a gross-up methodology through 12/31/2019. Starting 01/01/2020 gross performance is calculated for all asset classes and the Total Fund, including Private Equity, Legacy Private Credit, and Real Estate, for which gross history was not previously calculated.

(3) Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.



## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance</b>					
<b>Total Fund (2)</b>	-	-	-	-	<b>5.56%</b> (1/20)
Total Fund Estimated Gross History (2)	7.53%	5.27%	8.43%	7.47%	8.17% (1/96)
Total Fund Custom Benchmark	7.56%	5.94%	8.39%	7.18%	7.83% (1/96)
Public Market Equiv Benchmark	7.24%	5.75%	8.24%	7.06%	7.72% (1/96)
60/40 Index	5.38%	4.41%	6.49%	5.62%	5.90% (1/96)
<b>U.S. Equity</b>	<b>11.48%</b>	<b>7.07%</b>	<b>9.46%</b>	<b>7.44%</b>	<b>10.53%</b> (1/81)
Russell 3000 Index (1)	12.13%	8.66%	9.88%	7.65%	10.76% (1/81)
S&P 1500 Index	12.38%	8.83%	9.92%	7.83%	-
<b>Int'l Developed Mkts Equity</b>	<b>5.71%</b>	<b>2.25%</b>	<b>7.27%</b>	-	<b>6.07%</b> (1/02)
MSCI World ex US IMI	4.73%	2.05%	6.85%	4.95%	5.76% (1/02)
<b>Emerging Mkts Equity</b>	<b>2.68%</b>	<b>0.08%</b>	<b>6.98%</b>	-	<b>6.58%</b> (1/02)
MSCI EM IMI	1.64%	0.86%	8.84%	5.36%	8.06% (1/02)
<b>Private Equity (2)</b>	-	-	-	-	<b>25.23%</b> (1/20)
Burgiss Private Equity Index (Qtr lag)	13.51%	10.46%	13.32%	13.18%	15.43% (1/20)
Global Equity +3% (Qtr lag)	14.14%	11.09%	13.10%	10.78%	9.35% (1/20)
<b>Legacy Private Credit (3)</b>	-	-	-	-	<b>13.66%</b> (1/20)
S&P Levered Loan Index +1% (Qtr Lag)	-	-	-	-	3.29% (1/20)
<b>Fixed Income</b>	<b>1.40%</b>	<b>3.40%</b>	<b>4.55%</b>	<b>4.82%</b>	<b>6.84%</b> (1/85)
Blmbg U.S. Agg Bond Index	1.06%	2.66%	3.10%	3.97%	6.02% (1/85)
<b>Inflation Protection (TIPS)</b>	<b>1.11%</b>	<b>2.51%</b>	-	-	<b>2.97%</b> (2/03)
Blmbg U.S. TIPS Index	1.12%	3.05%	3.85%	4.79%	3.83% (2/03)
<b>Real Estate (2)</b>	-	-	-	-	<b>10.20%</b> (1/20)
Real Estate Custom Benchmark (Qtr lag)	9.80%	5.78%	8.15%	8.31%	11.40% (1/20)
CPI +3% (Qtr lag)	5.52%	5.39%	5.51%	5.47%	7.95% (1/20)
<b>Cash</b>	<b>1.02%</b>	<b>1.01%</b>	<b>1.58%</b>	<b>2.22%</b>	<b>3.76%</b> (1/87)
3-month Treasury Bill	0.76%	0.68%	1.27%	1.91%	3.12% (1/87)

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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.

(2) The Total Fund Estimated Gross History is calculated by BNY Mellon using a gross-up methodology through 12/31/2019. Starting 01/01/2020 gross performance is calculated for all asset classes and the Total Fund, including Private Equity, Legacy Private Credit, and Real Estate, for which gross history was not previously calculated.

(3) Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history is calculated and shown for informational purposes.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance- Domestic Equity</b>						
<b>U.S. Equity</b>	<b>\$10,414</b>	<b>100.00%</b>	<b>7.22%</b>	<b>(19.04%)</b>	<b>6.99%</b>	<b>8.15%</b>
Russell 3000 Index(1)	-	-	7.18%	(19.21%)	7.07%	8.79%
S&P 1500 Index	-	-	7.79%	(17.78%)	7.59%	9.15%
MCM Russell 1000 Index	9,350	89.78%	7.24%	(18.87%)	7.49%	9.25%
Russell 1000 Index	-	-	7.24%	(19.13%)	7.35%	9.13%
S&P 500 Index	-	-	7.56%	(18.11%)	7.66%	9.42%
MCM Russell 2000 Core Index	407	3.91%	6.27%	(20.30%)	3.60%	4.43%
Russell 2000 Index	-	-	6.23%	(20.44%)	3.10%	4.13%
S&P 600 Index	-	-	9.19%	(16.10%)	5.80%	5.88%
MCM Russell 2000 Val Index	322	3.09%	8.46%	(14.29%)	4.82%	4.19%
Russell 2000 Value Index	-	-	8.42%	(14.48%)	4.70%	4.13%
S&P 600 Value Index	-	-	11.18%	(11.04%)	6.10%	5.38%
Emerald Asset Management	336	3.22%	6.82%	(23.70%)	2.81%	4.87%
Russell 2000 Growth Index	-	-	4.13%	(26.36%)	0.65%	3.51%
S&P 600 Growth Index	-	-	6.98%	(21.08%)	4.99%	6.11%

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## Investment Manager Returns

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### Returns for Periods Ended December 31, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Gross Performance- Domestic Equity</b>						
<b>U.S. Equity</b>	<b>11.48%</b>	<b>7.07%</b>	<b>9.46%</b>	<b>7.44%</b>	<b>10.53%</b>	(1/81)
Russell 3000 Index(1)	12.13%	8.66%	9.88%	7.65%	10.76%	(1/81)
S&P 1500 Index	12.38%	8.83%	9.92%	7.83%	-	
MCM Russell 1000 Index	12.44%	-	-	-	12.76%	(1/12)
Russell 1000 Index	12.37%	8.77%	9.92%	7.74%	12.74%	(1/12)
S&P 500 Index	12.56%	8.81%	9.80%	7.64%	12.87%	(1/12)
MCM Russell 2000 Core Index	-	-	-	-	6.47%	(12/16)
Russell 2000 Index	9.01%	7.16%	9.36%	7.13%	6.21%	(12/16)
S&P 600 Index	10.82%	8.89%	10.64%	8.95%	7.55%	(12/16)
MCM Russell 2000 Val Index	-	-	-	-	5.41%	(12/16)
Russell 2000 Value Index	8.48%	6.81%	8.99%	7.70%	5.37%	(12/16)
S&P 600 Value Index	10.33%	8.43%	10.19%	8.66%	6.84%	(12/16)
Emerald Asset Management	-	-	-	-	8.34%	(12/16)
Russell 2000 Growth Index	9.20%	7.26%	9.50%	6.07%	6.55%	(12/16)
S&P 600 Growth Index	11.13%	9.23%	10.97%	8.81%	8.01%	(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, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance - International Equity</b>						
<b>Int'l Developed Mkts Equity</b>	<b>\$4,368</b>	<b>100.00%</b>	<b>15.89%</b>	<b>(15.06%)</b>	<b>2.26%</b>	<b>2.48%</b>
MSCI World ex US IMI	-	-	16.04%	(15.26%)	1.05%	1.59%
Walter Scott & Partners (1)	664	15.19%	13.07%	(18.92%)	6.02%	9.36%
MSCI World	-	-	9.77%	(18.14%)	4.94%	6.14%
BlackRock MSCI World Ex US Index	3,372	77.20%	16.24%	(13.84%)	1.73%	2.24%
MSCI World ex US	-	-	16.18%	(14.29%)	1.27%	1.79%
Xponance Non-U.S. Small Cap	202	4.64%	13.63%	(22.14%)	(1.16%)	-
MSCI ACWI ex US Small Cap	-	-	13.31%	(19.97%)	1.07%	0.67%
Harris Assoc Int'l SCV	126	2.89%	26.64%	(13.62%)	4.06%	3.00%
MSCI World ex US Sm Cap	-	-	15.21%	(20.59%)	(0.15%)	0.45%
MSCI World ex US Sm Value	-	-	16.80%	(14.00%)	(0.02%)	0.04%

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(1) Walter Scott since inception returns were contained in the Global Mandates composite prior to 12/31/2019.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception	
<b>Gross Performance - International Equity</b>						
<b>Int'l Developed Mkts Equity</b>	<b>5.71%</b>	<b>2.25%</b>	<b>7.27%</b>	-	<b>6.07%</b>	(1/02)
MSCI World ex US IMI	4.73%	2.05%	6.85%	4.95%	5.76%	(1/02)
Walter Scott & Partners (1)	10.86%	8.77%	-	-	9.24%	(10/06)
MSCI World	8.85%	5.40%	8.18%	6.04%	6.06%	(10/06)
BlackRock MSCI World Ex US Index	-	-	-	-	3.85%	(6/17)
MSCI World ex US	4.59%	1.84%	6.57%	4.65%	3.39%	(6/17)
Xponance Non-U.S. Small Cap	-	-	-	-	0.81%	(10/18)
MSCI ACWI ex US Small Cap	5.24%	3.33%	9.13%	6.87%	1.86%	(10/18)
Harris Assoc Int'l SCV	7.33%	6.50%	-	-	10.55%	(7/03)
MSCI World ex US Sm Cap	5.77%	3.57%	8.86%	-	8.01%	(7/03)
MSCI World ex US Sm Value	5.32%	3.44%	8.95%	7.67%	8.10%	(7/03)

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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, 2022. 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, 2022						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance - Emerging Mkts Equity</b>						
<b>Emerging Mkts Equity</b>	<b>\$1,149</b>	<b>100.00%</b>	<b>9.97%</b>	<b>(22.43%)</b>	<b>(0.96%)</b>	<b>0.01%</b>
MSCI EM IMI	-	-	9.50%	(19.83%)	(1.82%)	(1.10%)
Macquarie Emg Mkts Equity	308	26.83%	8.34%	(25.48%)	(3.20%)	(0.88%)
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
Martin Currie Emg Mkts Equity	336	29.27%	11.38%	(25.96%)	(2.68%)	(0.39%)
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
BlackRock Emg Mkts Index	168	14.62%	9.68%	(20.16%)	(2.86%)	(1.56%)
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
Leading Edge Emg Mkts Fund	215	18.69%	10.17%	(19.37%)	(2.37%)	-
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
GlobeFlex Emerging Small Cap	122	10.59%	10.32%	(10.92%)	9.24%	4.46%
MSCI EM Small Cap	-	-	8.20%	(18.02%)	5.11%	1.06%

\* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

\*\*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, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance - Emerging Mkts Equity</b>					
<b>Emerging Mkts Equity</b>	<b>2.68%</b>	<b>0.08%</b>	<b>6.98%</b>	-	<b>6.58%</b> <sup>(1/02)</sup>
MSCI EM IMI	1.64%	0.86%	8.84%	5.36%	8.06% <sup>(1/02)</sup>
Macquarie Emg Mkts Equity	-	-	-	-	2.97% <sup>(5/13)</sup>
MSCI EM	1.44%	0.65%	8.72%	-	1.58% <sup>(5/13)</sup>
Martin Currie Emg Mkts Equity	-	-	-	-	3.47% <sup>(1/14)</sup>
MSCI EM	1.44%	0.65%	8.72%	-	1.90% <sup>(1/14)</sup>
BlackRock Emg Mkts Index	-	-	-	-	1.26% <sup>(7/17)</sup>
MSCI EM	1.44%	0.65%	8.72%	-	1.42% <sup>(7/17)</sup>
Leading Edge Emg Mkts Fund	-	-	-	-	2.81% <sup>(11/18)</sup>
MSCI EM	1.44%	0.65%	8.72%	-	2.45% <sup>(11/18)</sup>
GlobeFlex Emerging Small Cap	-	-	-	-	6.29% <sup>(8/13)</sup>
MSCI EM Small Cap	3.21%	2.20%	10.12%	6.83%	3.76% <sup>(8/13)</sup>

\* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

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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, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Since Inception
<b>Gross Performance - Private Equity</b>						
<b>Private Equity (1)</b>	<b>\$6,537</b>	<b>100.00%</b>	<b>(0.27%)</b>	<b>(4.38%)</b>	<b>25.23%</b>	<b>25.23%</b> (1/20)
Burgiss All Private Equity (Qtr Lag)	-	-	(1.67%)	(1.84%)	15.43%	15.43% (1/20)
Global Equity +3% (Qtr lag) (2)	-	-	(4.46%)	(15.48%)	9.35%	9.35% (1/20)
Buyouts	3,566	54.55%	(0.47%)	0.84%	25.45%	25.45% (1/20)
Burgiss Buyout Index (Qtr Lag)	-	-	(1.84%)	0.38%	14.32%	14.32% (1/20)
Special Situations	1,558	23.84%	1.77%	13.52%	26.61%	26.61% (1/20)
Burgiss Special Sits Index (Qtr Lag)	-	-	0.00%	1.86%	6.01%	6.01% (1/20)
Growth Equity	1,194	18.27%	(0.57%)	(17.86%)	33.83%	33.83% (1/20)
Burgiss Venture Capital Idx (Qtr Lag)	-	-	(2.47%)	(7.58%)	23.49%	23.49% (1/20)
Keystone Legacy (3)	219	3.34%	(8.54%)	(37.46%)	(0.54%)	(0.54%) (1/20)

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(1) Starting 01/01/2020 gross performance is calculated for all asset classes and the Total Fund, including Private Equity, Private Credit, and Real Estate, for which gross history was not previously calculated.

(2) As of 01/01/2020 benchmark is 25% MSCI World ex US Index and 75% Russell 3000 + 3% with a 1 Qtr lag.

(3) As of 09/30/2022, Keystone Legacy SPV consists of 53 non-core funds, prior performance reflected 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, 2022. 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, 2022					
	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 (1)</b>	<b>\$6,306</b>	<b>50.00%</b>	<b>1.49%</b>	<b>(12.23%)</b>	<b>(2.56%)</b>	<b>0.14%</b>
Blmbg U.S. Agg Bond Index	-	-	1.87%	(13.01%)	(2.71%)	0.02%
<b>Core Fixed Income</b>	<b>\$4,371</b>	<b>34.66%</b>	<b>1.96%</b>	<b>(11.90%)</b>	<b>(2.46%)</b>	<b>0.26%</b>
Blmbg U.S. Agg Bond Index	-	-	1.87%	(13.01%)	(2.71%)	0.02%
PIMCO Core Bond Fund	512	11.71%	2.43%	(12.95%)	(2.21%)	0.45%
Blmbg Agg ex Treasury	-	-	2.67%	(13.35%)	(2.89%)	0.03%
Mellon Bond Index	3,859	88.29%	1.90%	(12.99%)	(2.79%)	(0.03%)
Blmbg U.S. Agg Bond Index (2)	-	-	1.87%	(13.01%)	(2.71%)	0.02%
<b>Opportunistic Fixed Income</b>	<b>\$854</b>	<b>6.77%</b>	<b>1.44%</b>	<b>7.13%</b>	<b>6.56%</b>	<b>5.82%</b>
BAAM Keystone (3)	854	100.00%	1.44%	7.34%	7.48%	6.68%
HFRI FOF Comp Index	-	-	1.79%	(5.25%)	3.71%	3.02%
<b>Nominal U.S. Treasuries</b>	<b>\$834</b>	<b>6.61%</b>	<b>(0.48%)</b>	<b>(17.63%)</b>	<b>(4.65%)</b>	<b>(1.01%)</b>
Blmbg US Treas Bell 10Y	-	-	0.62%	(16.33%)	(3.73%)	(0.57%)
PIMCO US Treasuries	86	10.30%	0.59%	(15.31%)	(3.18%)	(0.10%)
Blmbg US Treas Bell 10Y	-	-	0.62%	(16.33%)	(3.73%)	(0.57%)
Mellon Intermediate Treasury Index	263	31.53%	0.89%	(7.83%)	-	-
Blmbg Intndt Treasury	-	-	1.02%	(7.77%)	(1.39%)	0.46%
Mellon Long Duration Index	485	58.17%	(1.40%)	(29.52%)	-	-
Blmbg Long Treasury	-	-	(0.59%)	(29.26%)	(7.40%)	(2.20%)
<b>Legacy Fixed Income</b>	<b>\$247</b>	<b>1.95%</b>	<b>(0.34%)</b>	<b>-</b>	<b>-</b>	<b>-</b>
Fidelity HY CMBS (4)	246	99.64%	(0.23%)	(6.82%)	(1.19%)	1.78%
Blmbg US CMBS Ex AAA Index (5)	-	-	(0.88%)	(13.65%)	(2.57%)	0.82%
SEI Str. Credit: HY Bank Loans (6)	0	0.20%	(1.43%)	(2.63%)	9.99%	7.75%
FTSE HY Corp (1 month lag)	-	-	0.32%	(8.66%)	0.80%	2.37%

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(1) Fixed Income included the new fixed income sub-composite from 03/01/2021 to 06/30/2022. On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income, Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

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

(3) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

(4) Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

(5) Fidelity's blended benchmark consists of FTSE High Yield Market Index prior to 12/31/2009 and Blmbg US CMBS Ex AAA Index, thereafter.

(6) SEI HY Bank Loans has a 1 month lag in valuation. On this chart, SEI's market value of \$483K has been rounded to \$0MM.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance - Fixed Income</b>					
<b>Fixed Income (1)</b>	<b>1.40%</b>	<b>3.40%</b>	<b>4.55%</b>	<b>4.82%</b>	<b>6.84%</b> (1/85)
Blmbg U.S. Agg Bond Index	1.06%	2.66%	3.10%	3.97%	6.02% (1/85)
<b>Core Fixed Income</b>	<b>1.33%</b>	<b>3.24%</b>	<b>3.61%</b>	-	<b>3.92%</b> (1/02)
Blmbg U.S. Agg Bond Index	1.06%	2.66%	3.10%	3.97%	3.43% (1/02)
PIMCO Core Bond Fund	1.45%	-	-	-	1.45% (1/13)
Blmbg Agg ex Treasury	1.30%	2.93%	-	-	1.30% (1/13)
Mellon Bond Index	1.01%	2.57%	3.01%	3.96%	4.40% (10/93)
Blmbg U.S. Agg Bond Index (2)	1.06%	2.66%	3.10%	4.03%	4.46% (10/93)
<b>Opportunistic Fixed Income</b>	<b>5.34%</b>	-	-	-	<b>5.62%</b> (10/12)
BAAM Keystone (3)	7.12%	-	-	-	7.61% (7/12)
HFRI FOF Comp Index	3.51%	1.73%	3.57%	3.92%	3.71% (7/12)
<b>Nominal U.S. Treasuries</b>	<b>0.16%</b>	-	-	-	<b>0.69%</b> (9/11)
Blmbg US Treas Bell 10Y	0.21%	2.54%	2.86%	3.70%	0.89% (9/11)
PIMCO US Treasuries	0.76%	-	-	-	1.25% (9/11)
Blmbg US Treas Bell 10Y	0.21%	2.54%	2.86%	3.70%	0.89% (9/11)
Mellon Intermediate Treasury Index	-	-	-	-	(4.71%) (3/21)
Blmbg Intmdt Treasury	0.69%	1.98%	2.37%	3.34%	(4.66%) (3/21)
Mellon Long Duration Index	-	-	-	-	(18.23%) (1/21)
Blmbg Long Treasury	0.60%	3.55%	4.07%	4.97%	(17.87%) (1/21)
<b>Legacy Fixed Income</b>	-	-	-	-	<b>(1.42%)</b> (7/22)
Fidelity HY CMBS (4)	4.55%	5.86%	6.71%	7.56%	7.98% (4/97)
Blmbg US CMBS Ex AAA Index (5)	1.99%	0.18%	1.08%	2.94%	3.29% (4/97)
SEI Str. Credit: HY Bank Loans (6)	7.96%	-	-	-	12.21% (5/08)
FTSE HY Corp (1 month lag)	4.00%	5.82%	7.13%	5.79%	6.15% (5/08)

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(1) Fixed Income included the new fixed income sub-composite from 03/01/2021 to 06/30/2022. On 07/01/2022, the sub-composites of the new fixed income structure was liquidated and the managers reorganized under Core Fixed Income, Opportunistic Fixed Income, Nominal US Treasuries and Legacy Fixed Income sub-composites.

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

(3) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

(4) Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

(5) Fidelity's blended benchmark consists of FTSE High Yield Market Index prior to 12/31/2009 and Blmbg US CMBS Ex AAA Index, thereafter.

(6) SEI HY Bank Loans has a 1 month lag in valuation.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended December 31, 2022. 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, 2022						
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance - Inflation Protection</b>						
<b>Inflation Protection (TIPS)</b>	<b>\$1,006</b>	<b>100.00%</b>	<b>2.20%</b>	<b>(12.90%)</b>	<b>0.65%</b>	<b>1.71%</b>
Blmbg U.S. TIPS Index	-	-	2.04%	(11.85%)	1.21%	2.11%
NISA Inv Adv TIPS	438	43.53%	1.95%	(11.81%)	1.27%	2.16%
Blmbg U.S. TIPS Index (1)	-	-	2.04%	(11.85%)	1.21%	2.11%
Brown Brothers TIPS	460	45.72%	1.97%	(11.59%)	1.21%	2.14%
Blmbg U.S. TIPS Index	-	-	2.04%	(11.85%)	1.21%	2.11%
New Century Global TIPS	108	10.75%	4.27%	(21.71%)	(3.04%)	(1.02%)
Blmbg Wrld Inflation Linked Unhdg	-	-	3.83%	(21.86%)	(3.21%)	(1.20%)

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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

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### Returns for Periods Ended December 31, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance - Inflation Protection</b>					
<b>Inflation Protection (TIPS)</b>	<b>1.11%</b>	<b>2.51%</b>	-	-	<b>2.97%</b> (2/03)
Blmbg U.S. TIPS Index	1.12%	3.05%	3.85%	4.79%	3.83% (2/03)
NISA Inv Adv TIPS	1.20%	2.48%	-	-	2.87% (4/07)
Blmbg U.S. TIPS Index (1)	1.12%	2.40%	3.31%	4.36%	2.78% (4/07)
Brown Brothers TIPS	1.28%	-	-	-	1.65% (2/12)
Blmbg U.S. TIPS Index	1.12%	3.05%	3.85%	4.79%	1.44% (2/12)
New Century Global TIPS	0.43%	-	-	-	0.89% (2/12)
Blmbg Wrld Inflation Linked Unhdg	0.03%	1.74%	3.63%	4.45%	0.41% (2/12)

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\*\*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, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Since Inception
<b>Gross Performance - Real Estate</b>						
<b>Real Estate (1)</b>	<b>\$2,944</b>	<b>100.00%</b>	<b>1.52%</b>	<b>8.27%</b>	<b>10.20%</b>	<b>10.20%</b> (1/20)
Real Estate Custom Bench (Qtr lag) (2)	-	-	0.77%	17.38%	11.40%	11.40% (1/20)
CPI + 3% (Qtr lag)	-	-	0.91%	11.21%	7.95%	7.95% (1/20)
Core/Core Plus Real Estate Funds	1,301	44.20%	2.74%	16.30%	10.81%	10.81% (1/20)
NCREIF ODCE Index (Qtr lag)	-	-	0.77%	21.68%	12.13%	12.13% (1/20)
Value Add/Opportunistic SMA	560	19.03%	(1.96%)	2.56%	8.68%	8.68% (1/20)
NCREIF ODCE Index (Qtr lag)	-	-	0.77%	21.68%	12.13%	12.13% (1/20)
Value Add/Opportunistic Funds	791	26.87%	0.84%	17.27%	14.44%	14.44% (1/20)
NCREIF ODCE Index (Qtr lag)	-	-	0.77%	21.68%	12.13%	12.13% (1/20)
REITS	291	9.88%	4.81%	(23.44%)	1.74%	1.74% (1/20)
FTSE NAREIT US Index	-	-	5.06%	(24.87%)	(1.01%)	(1.01%) (1/20)

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\*\*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) Starting 01/01/2020 gross performance is calculated for all asset classes and the Total Fund, including Private Equity, Private Credit, and Real Estate, for which gross history was not previously calculated.

(2) As of 03/31/2019 benchmark consists of 90% NCREIF ODCE Index (Qtr lag) and 10% FTSE NAREIT Index (unlagged). Prior to 03/31/2019, benchmark history was 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, 2022. 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, 2022					
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last 3 Years	Last 5 Years
<b>Gross Performance - DWDO Managers</b>						
Xponance Non-U.S. Small Cap	202	0.60%	13.63%	(22.14%)	(1.16%)	-
MSCI ACWI ex US Small Cap	-	-	13.31%	(19.97%)	1.07%	0.67%
Leading Edge Emg Mkts Fund	215	0.64%	10.17%	(19.37%)	(2.37%)	-
MSCI EM	-	-	9.70%	(20.09%)	(2.69%)	(1.39%)
GlobeFlex Emerging Small Cap	122	0.36%	10.32%	(10.92%)	9.24%	4.46%
MSCI EM Small Cap	-	-	8.20%	(18.02%)	5.11%	1.06%
New Century Global TIPS	108	0.32%	4.27%	(21.71%)	(3.04%)	(1.02%)
Blmbg Wrld Inflation Linked Unhdg	-	-	3.83%	(21.86%)	(3.21%)	(1.20%)

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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, 2022. 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, 2022

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
<b>Gross Performance - DWDO Managers</b>					
Xponance Non-U.S. Small Cap	-	-	-	-	0.81% (10/18)
MSCI ACWI ex US Small Cap	5.24%	3.33%	9.13%	6.87%	1.86% (10/18)
Leading Edge Emg Mkts Fund	-	-	-	-	2.81% (11/18)
MSCI EM	1.44%	0.65%	8.72%	-	2.45% (11/18)
GlobeFlex Emerging Small Cap	-	-	-	-	6.29% (8/13)
MSCI EM Small Cap	3.21%	2.20%	10.12%	6.83%	3.76% (8/13)
New Century Global TIPS	0.43%	-	-	-	0.89% (2/12)
Blmbg Wrld Inflation Linked Unhdg	0.03%	1.74%	3.63%	4.45%	0.41% (2/12)

\* All returns on this report are shown with 2- decimal precision. This may differ from the decimal precision shown in BNY Mellon reports.

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## Benchmark Definitions

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### Total Fund Benchmark Definition:

- The Total Fund Custom Benchmark returns were provided by RVK prior to 12/31/2018.
- Starting 01/01/2020, benchmark consists of: 26% Bloomberg U.S. Agg Bond Index, 14% SERS Private Equity Composite, 25% Russell 3000 Index, 13% MSCI World ex US IMI Index, 8% Real Estate Custom Benchmark, 4% S&P/LSTA Leveraged Loan Index + 1% (Qtr lag), 4% MSCI Emerging Markets IMI Index, 4% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.
- Starting 07/01/2021, benchmark consists of: 26% Bloomberg U.S. Agg Bond Index, 12% SERS Private Equity Composite, 27% Russell 3000 Index, 13% MSCI World ex US IMI Index, 8% Real Estate Custom Benchmark, 4% S&P/LSTA Leveraged Loan Index + 1% (Qtr lag), 4% MSCI Emerging Markets IMI Index, 4% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.
- Starting 10/01/2021, benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 12% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% Real Estate Custom Benchmark, 4% S&P/LSTA Leveraged Loan Index + 1% (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.
- Starting 07/01/2022, benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 16% SERS Private Equity Composite, 31% Russell 3000 Index, 14% MSCI World ex US IMI Index, 7% NCREIF NFI-ODCE (Qtr lag), 5% MSCI Emerging Markets IMI Index, 3% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index.

### Public Market Equivalent Benchmark Definition:

- The Public Market Equivalent Benchmark returns provided by RVK prior to 12/31/2018.
- As of 01/01/2020, benchmark consists of: 26% Bloomberg U.S. Agg Bond Index, 25% Russell 3000, 13% MSCI World ex US Index, 10.5% Russell 3000+ 3% (Qtr lag), 8% CPI+3% (Qtr Lag), 4% S&P/LSTA Levered Loan Index +1% (Qtr lag), 4% Bloomberg US TIPS Index, 4% MSCI Emerging Markets Index, 3.5% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index.
- Starting 07/01/2021, benchmark consists of 26% Bloomberg U.S. Agg Bond Index, 27% Russell 3000, 13% MSCI World IMI ex US, 9% Russell 3000+ 3% (Qtr lag), 8% CPI+3% (Qtr lag), 4% S&P/LSTA Lev. + 1% (Qtr Lag), 4% US TIPS Index, 4% MSCI EM IMI Index, 3% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index.
- Starting 10/01/2021, benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 31% Russell 3000, 14% MSCI World ex US IMI Index, 9% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 4% S&P/LSTA Levered Loan Index +1% (Qtr lag), 3% Bloomberg US TIPS Index, 5% MSCI EM IMI Index, 3% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index.
- Starting 07/01/2021, benchmark consists of: 22% Bloomberg U.S. Agg Bond Index, 31% Russell 3000, 14% MSCI World ex US IMI Index, 12% Russell 3000+ 3% (Qtr lag), 7% CPI+3% (Qtr Lag), 3% Bloomberg US TIPS Index, 5% MSCI EM IMI Index, 4% MSCI World ex US +3% (Qtr lag), 2% ICE BofAML 3 Mo US T-Bill Index.



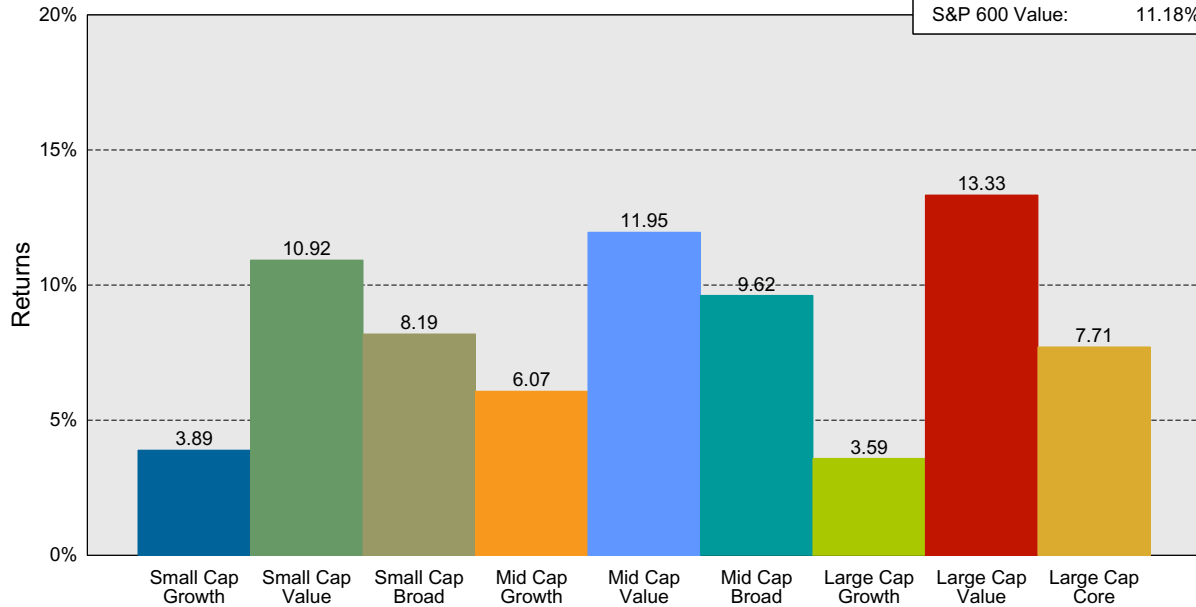


## Domestic Equity Active Management Overview

U.S. stock indices posted positive returns in 4Q as investor sentiment improved, but the YTD results remained dismal with most indices posting double-digit declines. The S&P 500 Index rose 7.6% for the quarter, lowering its YTD loss to 18.1%. Returns were quite mixed across sectors with Energy (+22.8%) being the best and Consumer Discretionary (-10.2%) faring the worst. Value stocks trounced growth for the quarter (Russell 1000 Value: +12.4%; Russell 1000 Growth: +2.2%) and the year (Russell 1000 Value: -7.5%; Russell 1000 Growth: -29.1%). In 4Q, the Growth Index was hurt by relative underweights in Health Care, Financials, and Energy as well as significant underperformance from Tesla (-54%) and Amazon (-26%). Small cap stocks exhibited the same pattern in 4Q (Russell 2000 Value: +8.4%; Russell 2000 Growth: +4.1%) but values full year margin is smaller in the small cap space (Russell 2000 Value: -14.5%; Russell 2000 Growth: -26.4%).

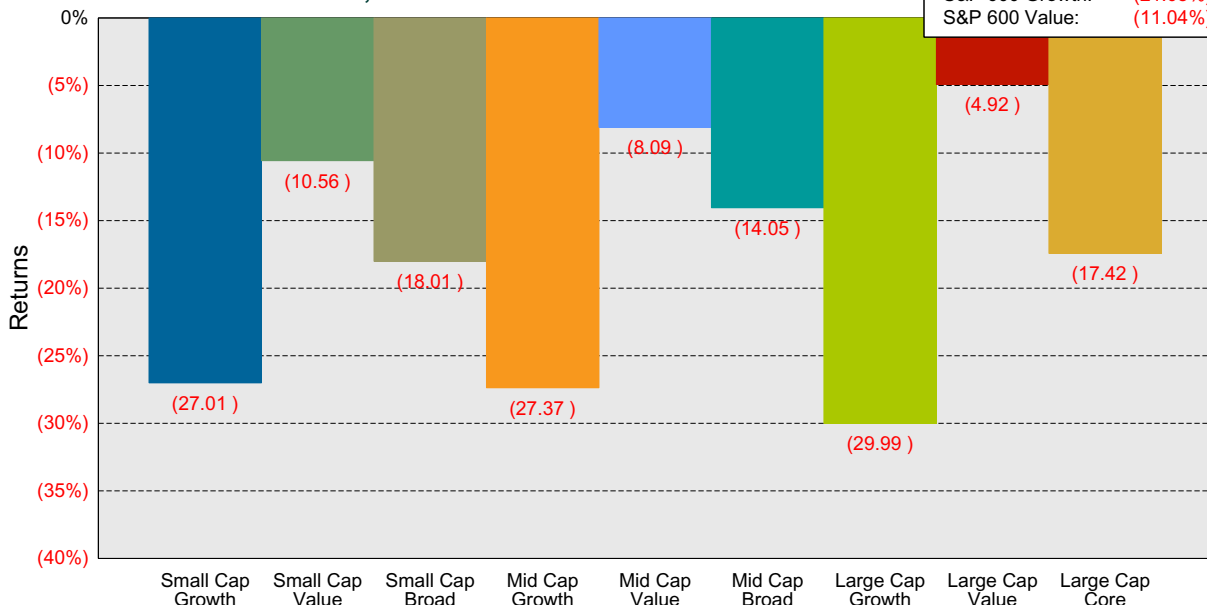
S&P 500:	7.56%
S&P 500 Growth:	1.45%
S&P 500 Value:	13.59%
S&P Mid Cap:	10.78%
S&P 600:	9.19%
S&P 600 Growth:	6.98%
S&P 600 Value:	11.18%

### Separate Account Style Group Median Returns for Quarter Ended December 31, 2022



S&P 500:	(18.11%)
S&P 500 Growth:	(29.41%)
S&P 500 Value:	(5.22%)
S&P Mid Cap:	(13.06%)
S&P 600:	(16.10%)
S&P 600 Growth:	(21.08%)
S&P 600 Value:	(11.04%)

### Separate Account Style Group Median Returns for One Year Ended December 31, 2022

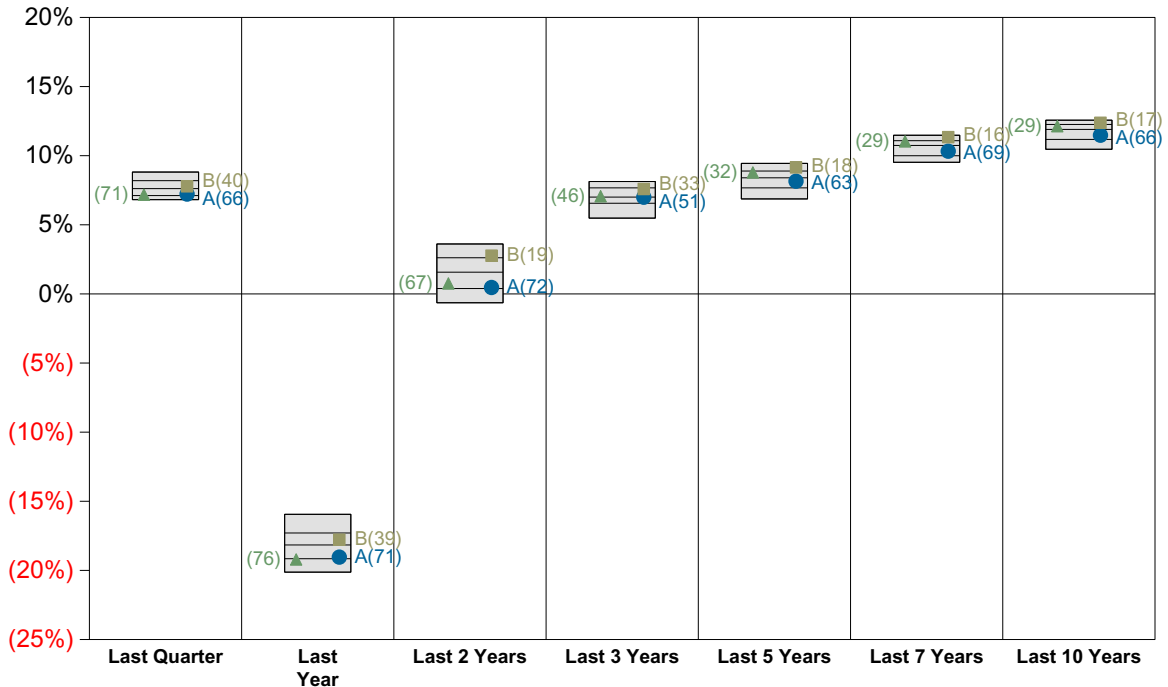


# U.S. Equity Period Ended December 31, 2022

## Quarterly Summary and Highlights

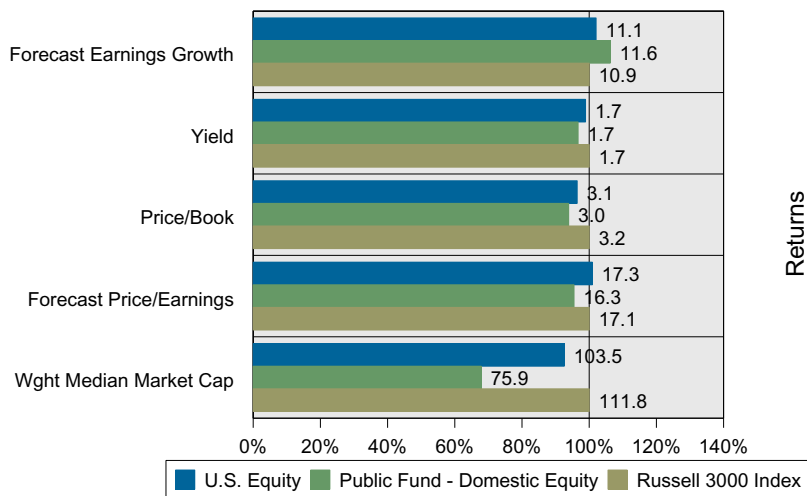
- U.S. Equity's portfolio posted a 7.22% return for the quarter placing it in the 66 percentile of the Public Fund - Domestic Equity group for the quarter and in the 71 percentile for the last year.
- U.S. Equity's portfolio outperformed the Russell 3000 Index by 0.04% for the quarter and outperformed the Russell 3000 Index for the year by 0.17%.

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

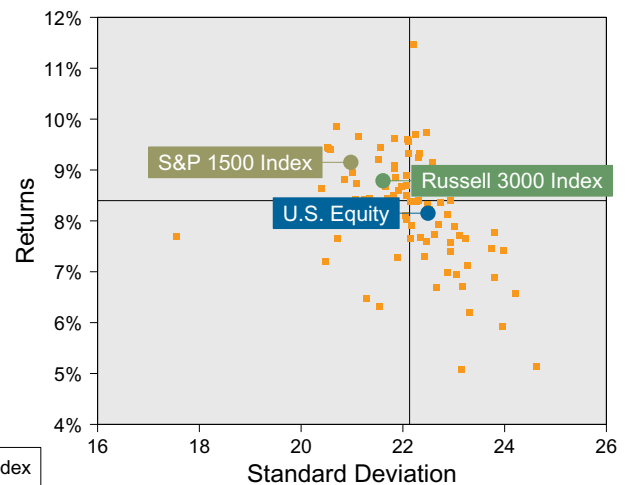


10th Percentile	8.82	(15.94)	3.61	8.13	9.44	11.48	12.57	
25th Percentile	8.19	(17.29)	2.62	7.67	8.89	11.08	12.26	
Median	7.62	(18.16)	1.57	7.00	8.40	10.74	11.90	
75th Percentile	7.11	(19.16)	0.39	6.56	7.67	10.00	11.18	
90th Percentile	6.82	(20.13)	(0.64)	5.48	6.87	9.52	10.46	
U.S. Equity	● A	7.22	(19.04)	0.46	6.99	8.15	10.32	11.48
S&P 1500 Index	■ B	7.79	(17.78)	2.77	7.59	9.15	11.34	12.38
Russell 3000 Index	▲	7.18	(19.21)	0.76	7.07	8.79	11.04	12.13

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



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

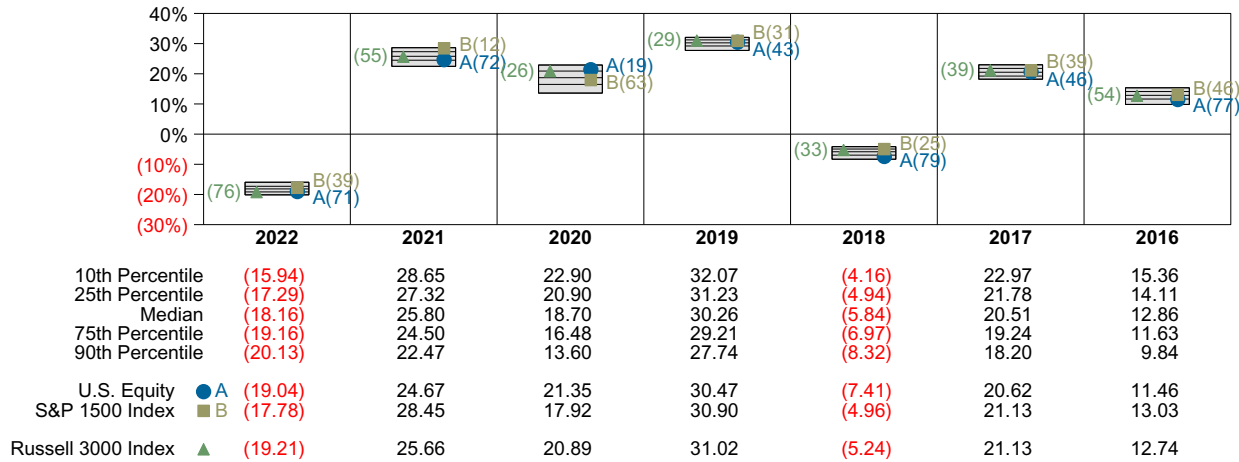


# U.S. Equity Return Analysis Summary

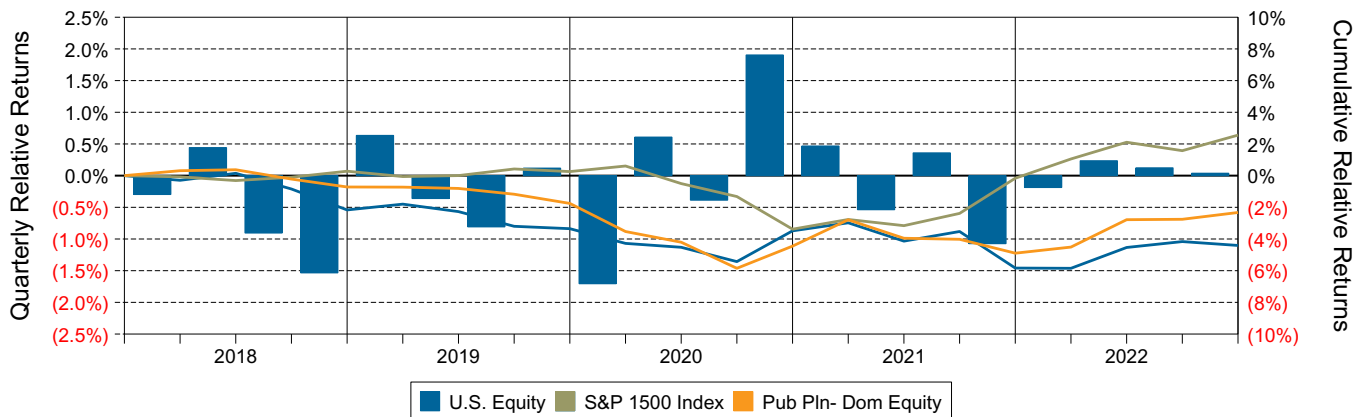
## Return Analysis

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.

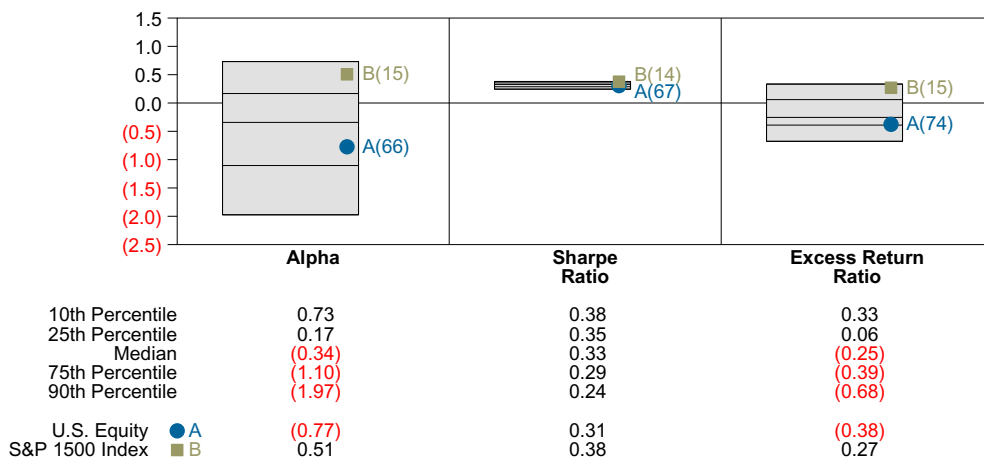
### Performance vs Public Fund - Domestic Equity (Gross)



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



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2022

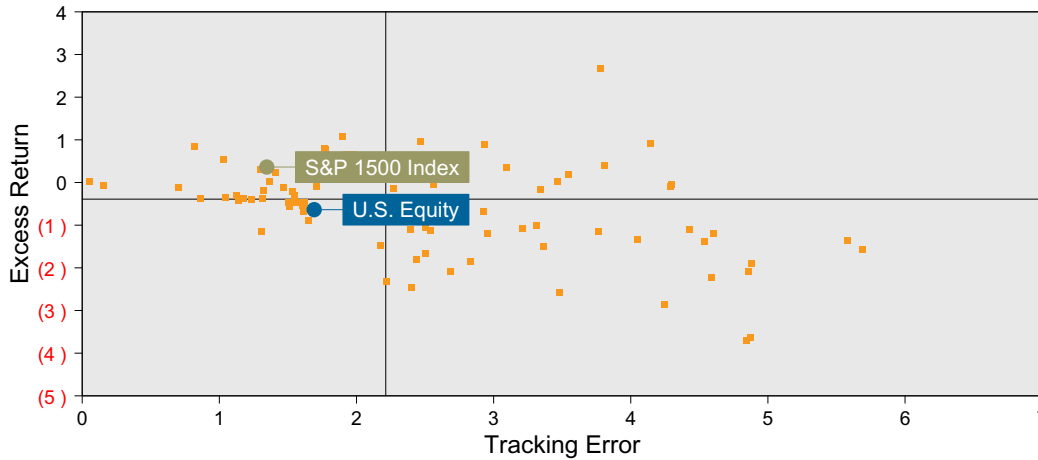


# U.S. Equity Risk Analysis Summary

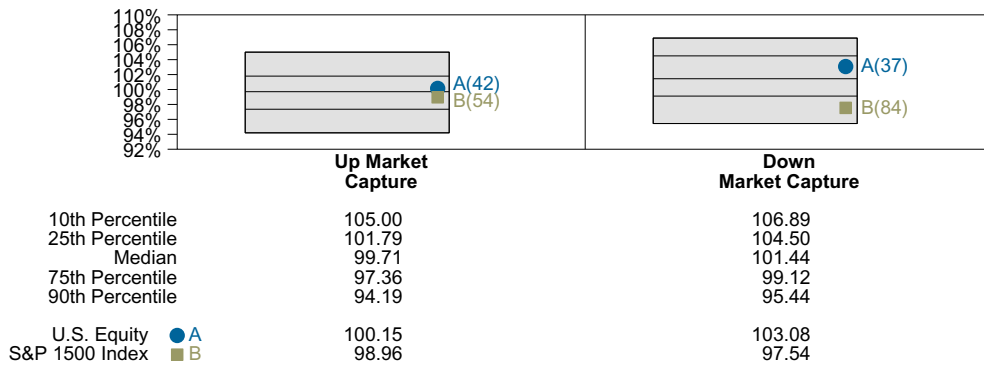
## Risk Analysis

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.

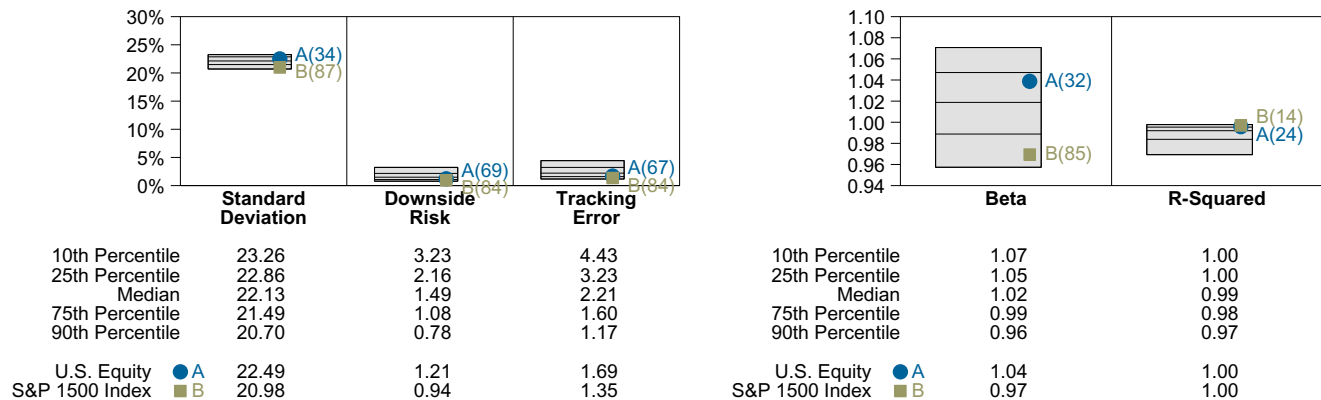
### Risk Analysis vs Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2022



### Market Capture vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2022



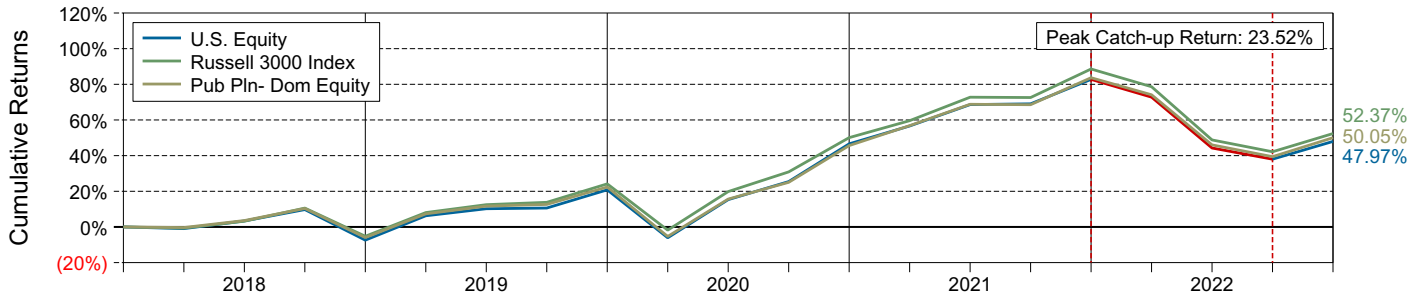
### Risk Statistics Rankings vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended December 31, 2022



# U.S. Equity Drawdown Analysis for Five Years Ended December 31, 2022

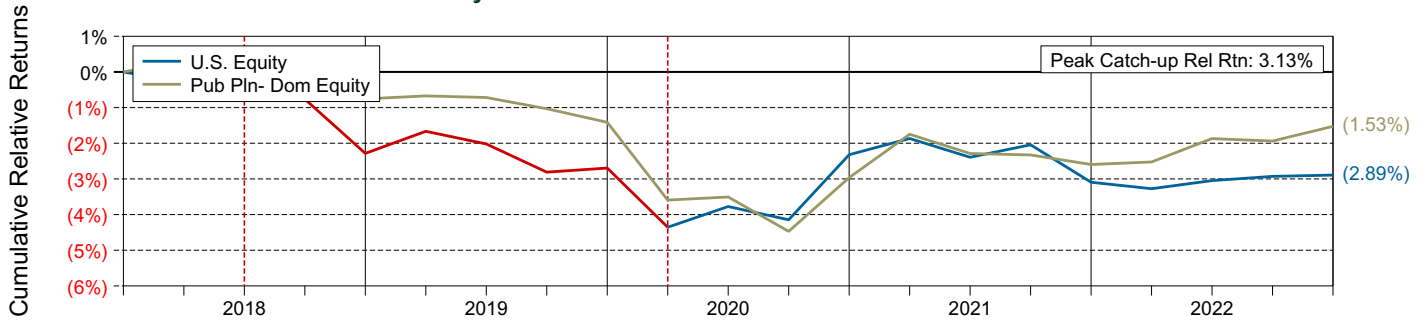
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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



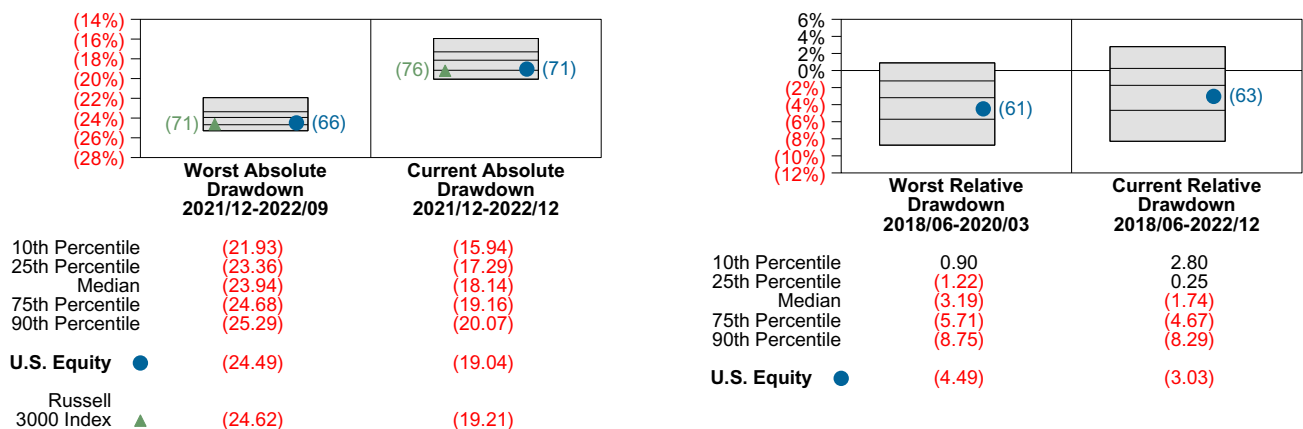
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
U.S. Equity	(24.49)%	0.75	2021/12-2022/09	(24.62)%	(24.11)%	(19.04)%	1.00	2021/12-2022/12	(19.21)%	(18.32)%
Recovery from Trough	7.22%	0.25+	2022/09-2022/12	7.18%	7.63%	7.22%	0.25+	2022/09-2022/12	7.18%	7.63%
Russell 3000 Index	(24.62)%	0.75	2021/12-2022/09			(19.21)%	1.00	2021/12-2022/12		
Pub Pln- Dom Equity	(24.11)%	0.75	2021/12-2022/09			(18.32)%	1.00	2021/12-2022/12		

## Relative Cumulative Drawdown Analysis vs. Russell 3000 Index



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
U.S. Equity	(4.49)%	1.75	2018/06-2020/03	(3.94)%	(3.03)%	4.50	2018/06-2022/12	(1.88)%
Recovery from Trough	1.53%	2.75+	2020/03-2022/12	2.14%	1.53%	2.75+	2020/03-2022/12	2.14%
Pub Pln- Dom Equity	(4.81)%	2.25	2018/06-2020/09		(1.88)%	4.50	2018/06-2022/12	

## Drawdown Rankings vs. Russell 3000 Index Rankings against Public Fund - Domestic Equity Five Years Ended December 31, 2022



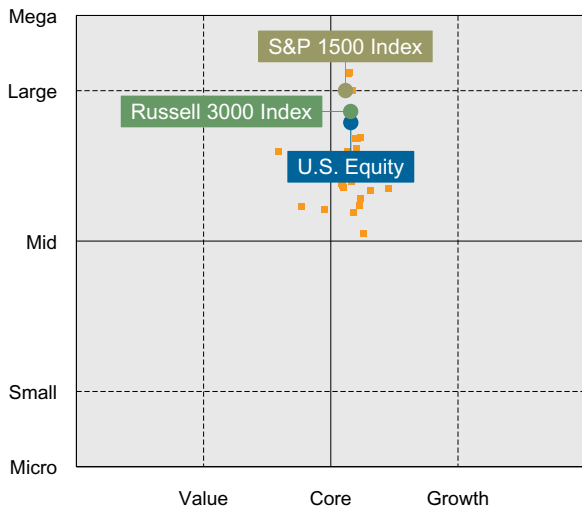
# Current Holdings Based Style Analysis

## U.S. Equity

### As of December 31, 2022

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.

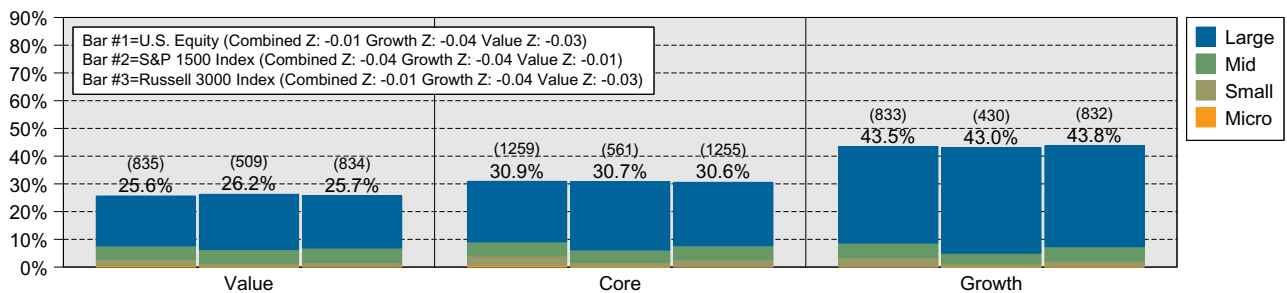
**Style Map vs Pub Pln- Dom Equity Holdings as of December 31, 2022**



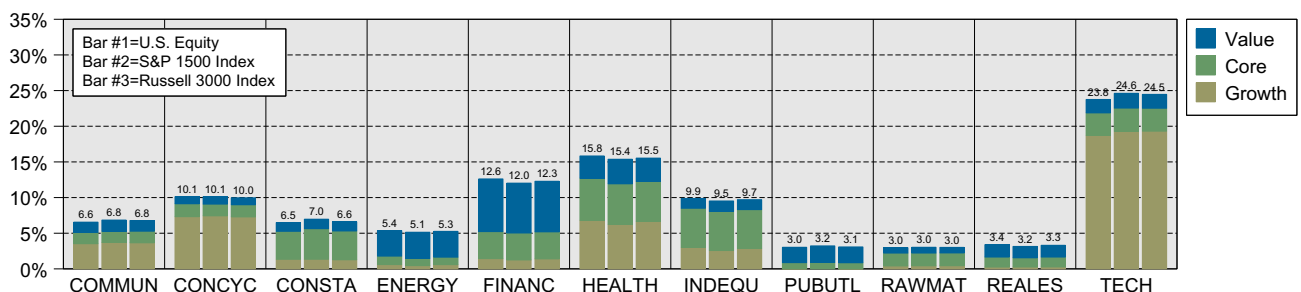
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	18.0% (91)	21.8% (95)	34.8% (106)	<b>74.6% (292)</b>
	19.9% (89)	24.6% (94)	38.0% (95)	<b>82.5% (278)</b>
	18.8% (91)	22.9% (95)	36.4% (106)	<b>78.1% (292)</b>
Mid	4.9% (173)	5.1% (213)	5.1% (198)	<b>15.1% (584)</b>
	5.0% (150)	4.6% (160)	3.8% (136)	<b>13.4% (446)</b>
	5.1% (173)	5.1% (213)	5.2% (198)	<b>15.4% (584)</b>
Small	2.3% (313)	3.4% (490)	3.3% (366)	<b>8.9% (1169)</b>
	1.2% (206)	1.5% (245)	1.1% (172)	<b>3.9% (623)</b>
	1.6% (313)	2.3% (490)	2.0% (366)	<b>5.8% (1169)</b>
Micro	0.4% (258)	0.6% (461)	0.3% (163)	<b>1.3% (882)</b>
	0.1% (64)	0.1% (62)	0.0% (27)	<b>0.2% (153)</b>
	0.2% (257)	0.3% (457)	0.1% (162)	<b>0.7% (876)</b>
<b>Total</b>	<b>25.6% (835)</b>	<b>30.9% (1259)</b>	<b>43.5% (833)</b>	<b>100.0% (2927)</b>
	26.2% (509)	30.7% (561)	43.0% (430)	<b>100.0% (1500)</b>
	25.7% (834)	30.6% (1255)	43.8% (832)	<b>100.0% (2921)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



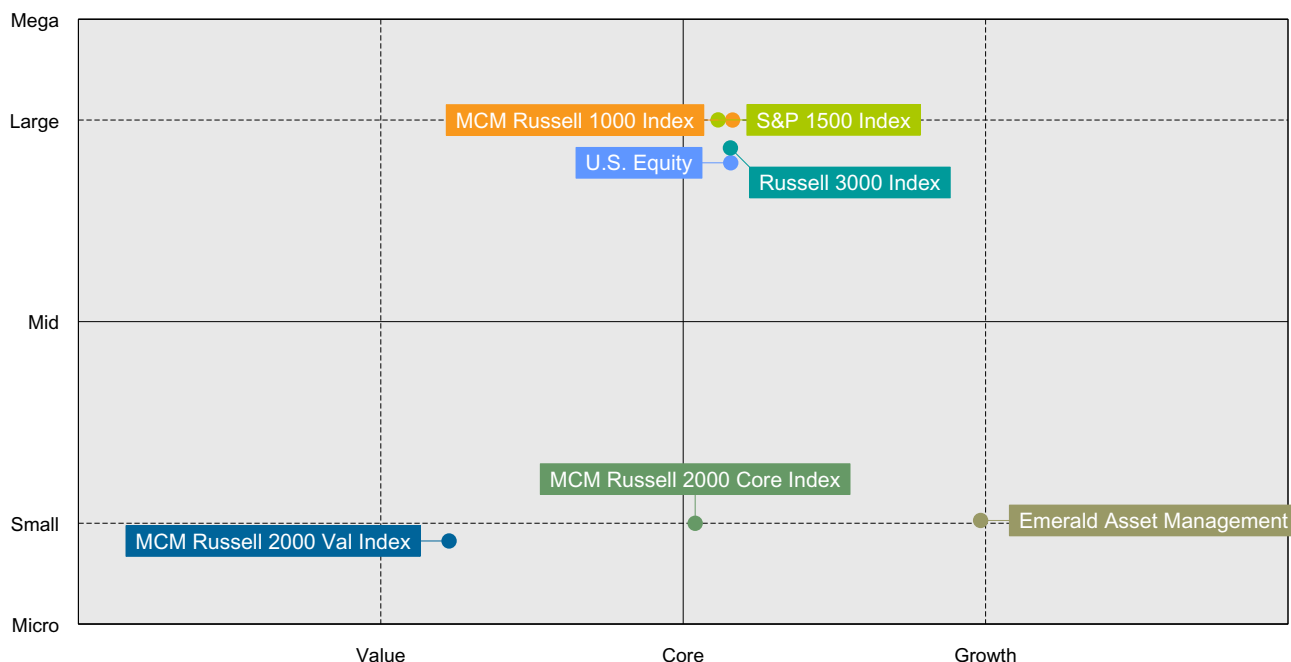
**Sector Weights Distribution Holdings as of December 31, 2022**



## Holdings Based Style Analysis For One Quarter Ended December 31, 2022

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, 2022



	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
MCM Russell 2000 Val Index	3.09%	2.07	(0.67)	(0.33)	0.34	1387	203.11
MCM Russell 2000 Core Index	3.91%	2.40	(0.09)	(0.14)	(0.04)	1961	328.31
Emerald Asset Management	3.22%	2.57	0.60	0.12	(0.48)	111	33.54
MCM Russell 1000 Index	89.78%	127.31	(0.00)	(0.03)	(0.03)	1016	59.26
U.S. Equity	100.00%	103.47	(0.01)	(0.04)	(0.03)	2971	77.59
Russell 3000 Index	-	111.77	(0.01)	(0.04)	(0.03)	2959	69.17
S&P 1500 Index	-	127.43	(0.04)	(0.04)	(0.01)	1505	57.99

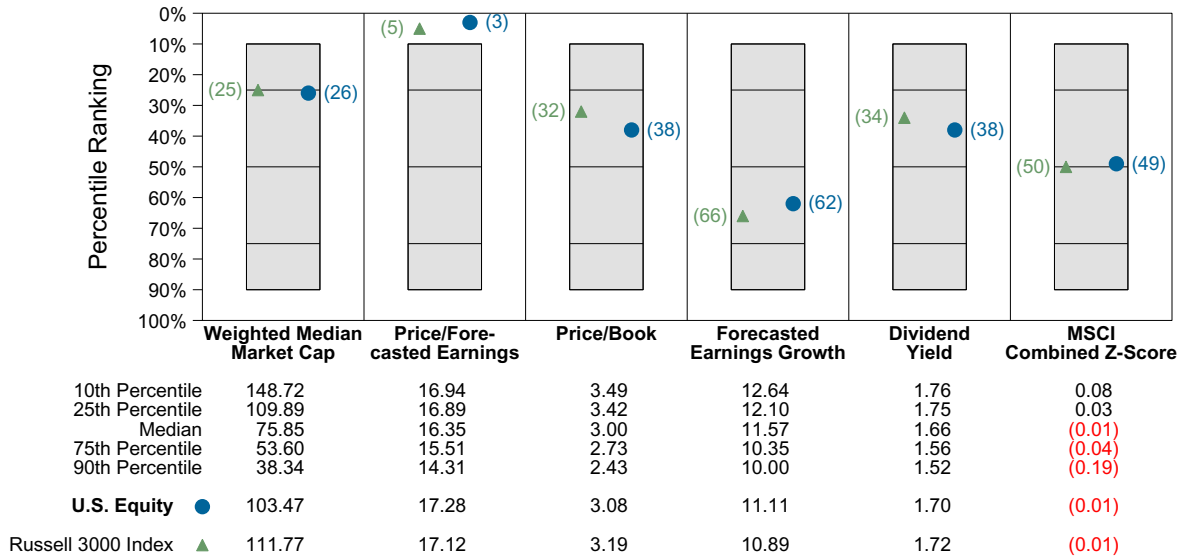


# U.S. Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

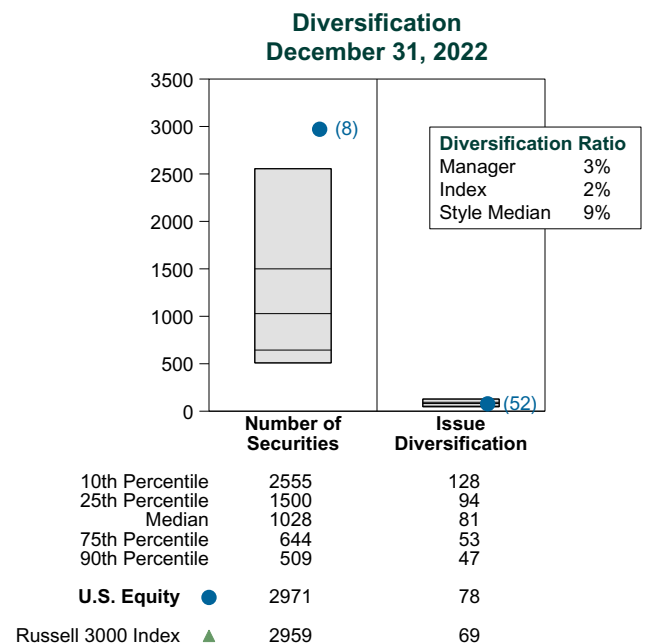
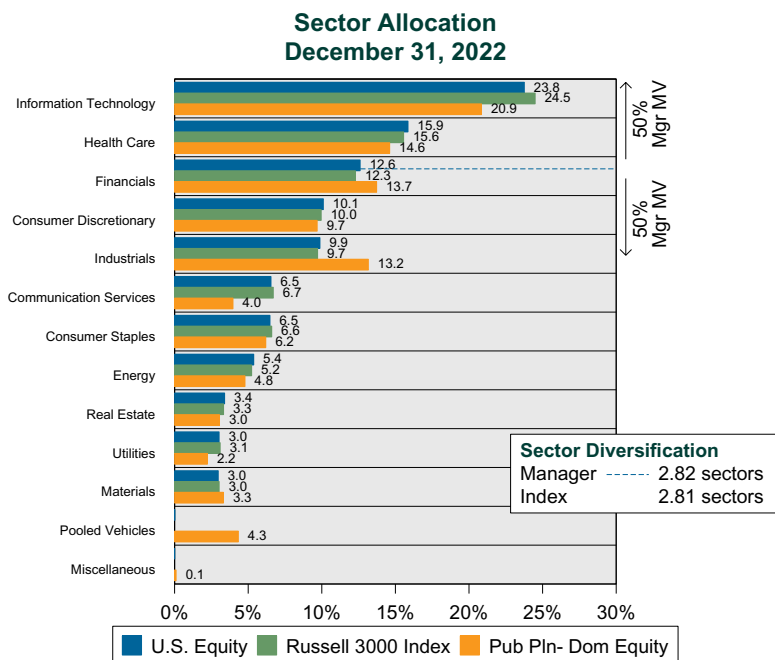
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of December 31, 2022



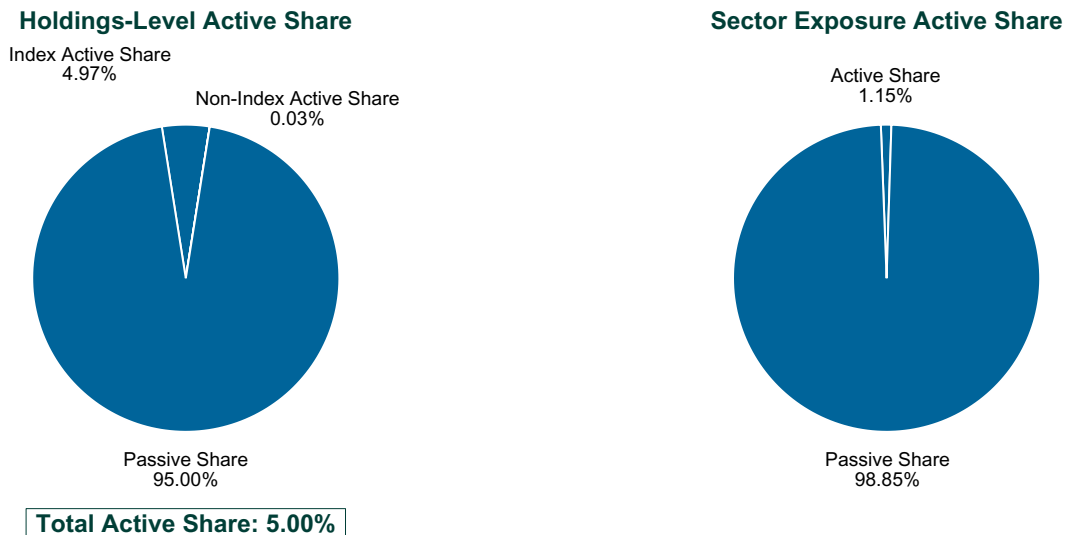
## Sector Weights

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.



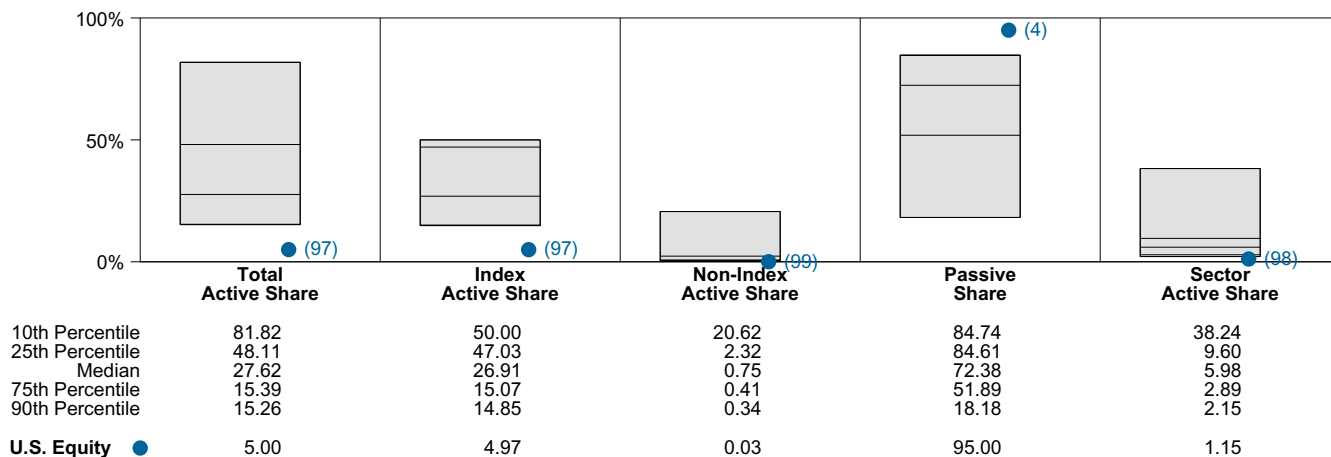
## U.S. Equity Active Share Analysis as of December 31, 2022 vs. Russell 3000 Index

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.



	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	1.41%	0.00%	1.41%	6.70%	6.55%	0.20%
Consumer Discretionary	6.17%	0.09%	6.26%	9.96%	10.10%	0.57%
Consumer Staples	3.26%	0.06%	3.32%	6.60%	6.48%	0.26%
Energy	6.54%	0.00%	6.54%	5.23%	5.37%	0.31%
Financials	6.58%	0.03%	6.61%	12.29%	12.61%	0.70%
Health Care	7.11%	0.00%	7.12%	15.56%	15.86%	0.99%
Industrials	7.09%	0.00%	7.09%	9.71%	9.87%	0.63%
Information Technology	2.24%	0.00%	2.24%	24.50%	23.76%	0.87%
Materials	4.13%	0.00%	4.13%	3.03%	2.97%	0.14%
Miscellaneous	0.00%	100.00%	100.00%	-	0.00%	0.00%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.01%	0.01%
Real Estate	7.10%	0.00%	7.10%	3.33%	3.40%	0.21%
Utilities	3.42%	0.00%	3.42%	3.10%	3.02%	0.12%
<b>Total</b>	<b>4.97%</b>	<b>0.03%</b>	<b>5.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>5.00%</b>

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





# MCM Russell 1000 Index Period Ended December 31, 2022

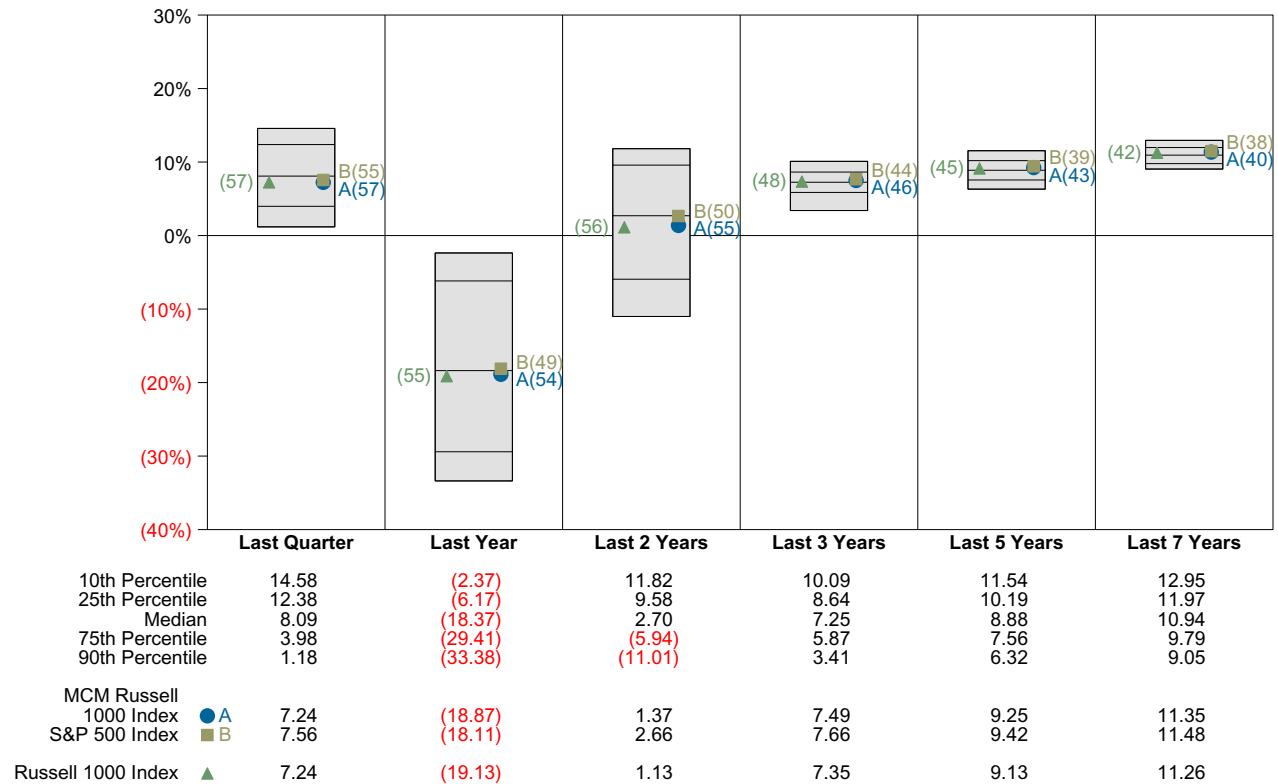
## Investment Philosophy

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

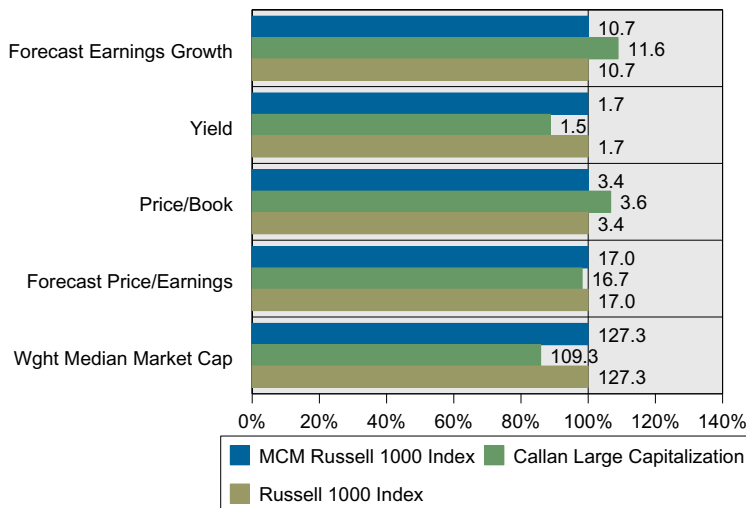
## Quarterly Summary and Highlights

- MCM Russell 1000 Index's portfolio posted a 7.24% return for the quarter placing it in the 57 percentile of the Callan Large Capitalization group for the quarter and in the 54 percentile for the last year.
- MCM Russell 1000 Index's portfolio underperformed the Russell 1000 Index by 0.01% for the quarter and outperformed the Russell 1000 Index for the year by 0.26%.

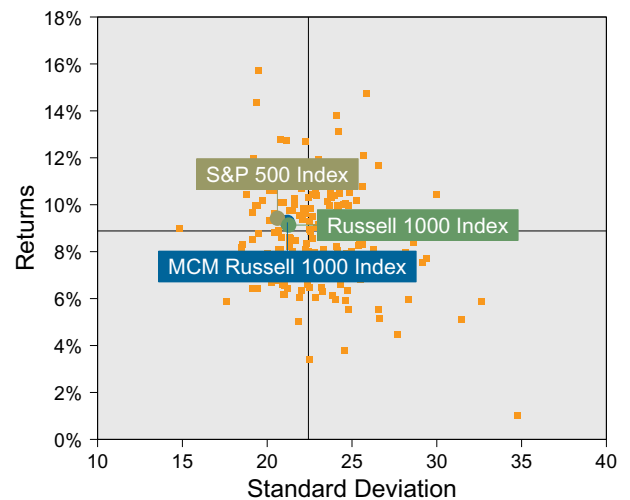
## Performance vs Callan Large Capitalization (Gross)



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



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

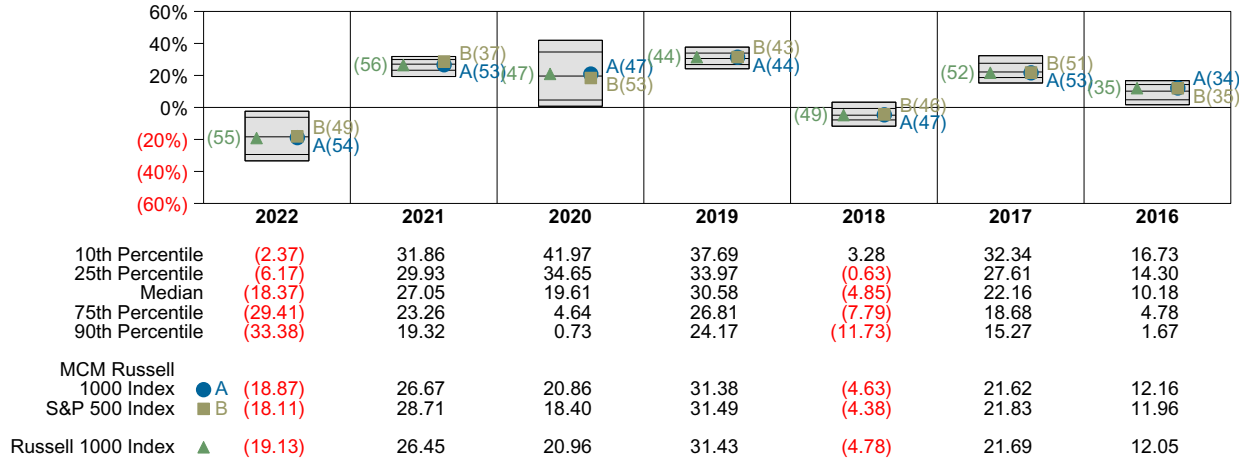


# MCM Russell 1000 Index Return Analysis Summary

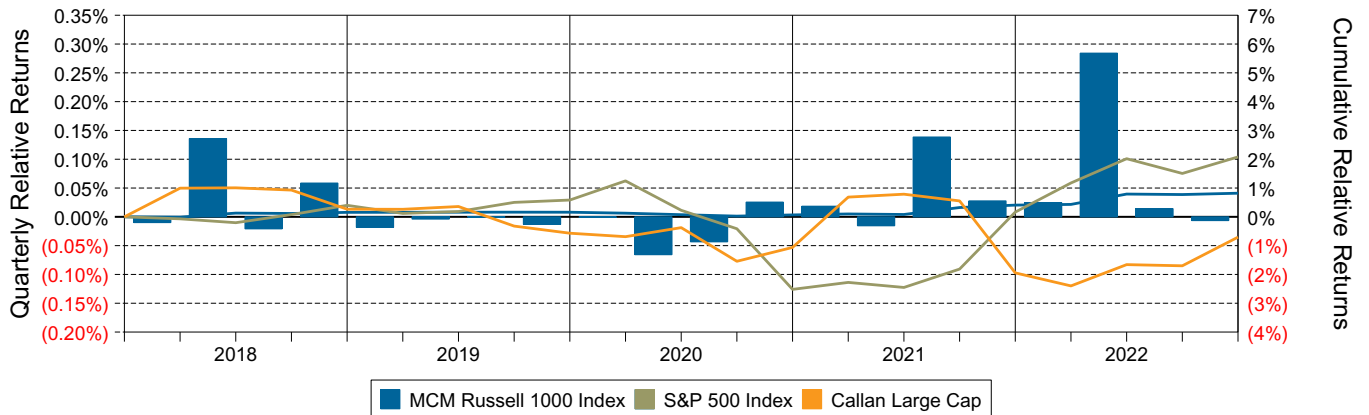
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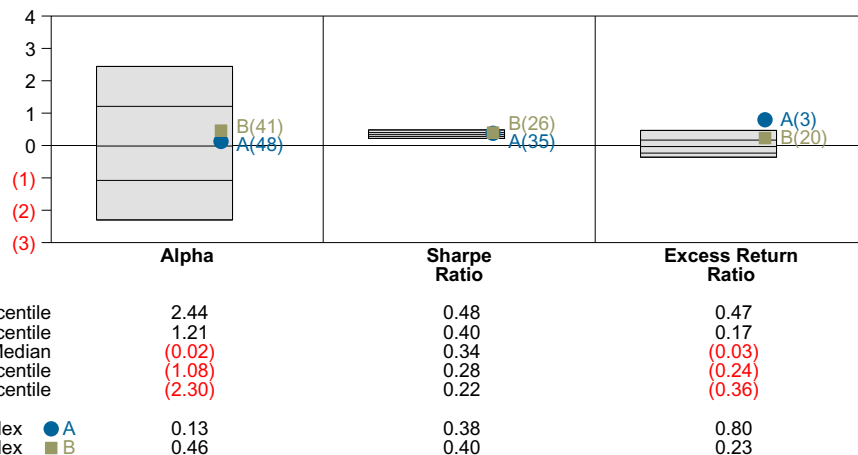
### Performance vs Callan Large Capitalization (Gross)



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



### Risk Adjusted Return Measures vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended December 31, 2022

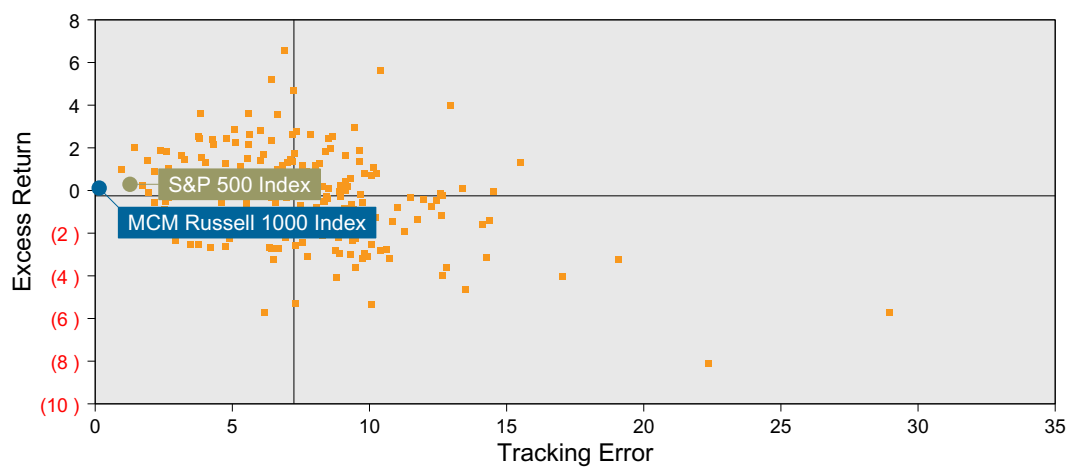


# MCM Russell 1000 Index Risk Analysis Summary

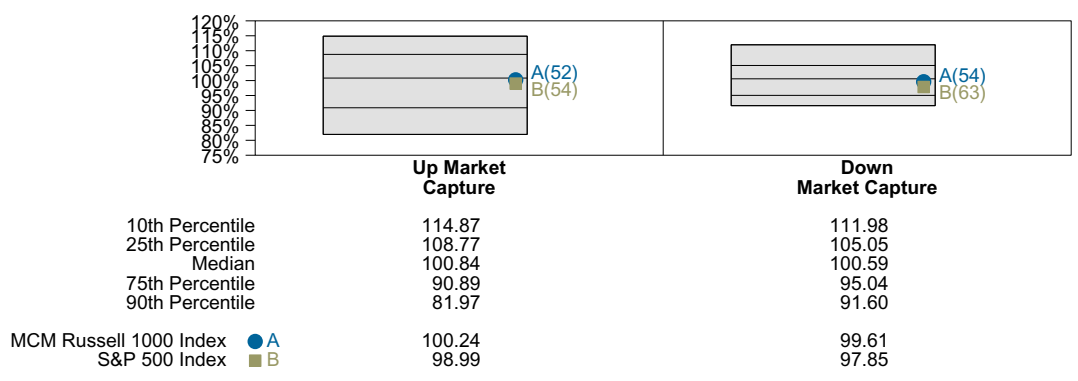
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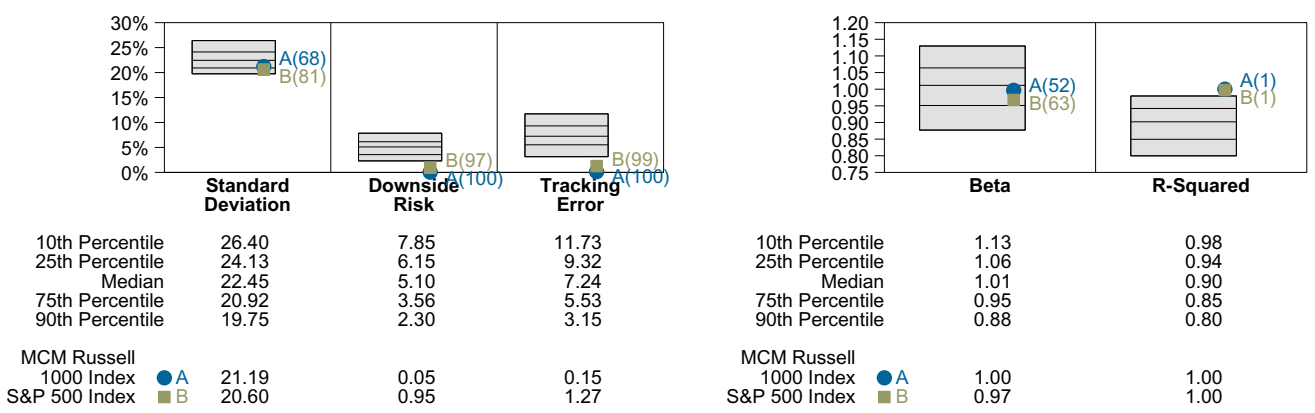
### Risk Analysis vs Callan Large Capitalization (Gross) Five Years Ended December 31, 2022



### Market Capture vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended December 31, 2022



### Risk Statistics Rankings vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended December 31, 2022



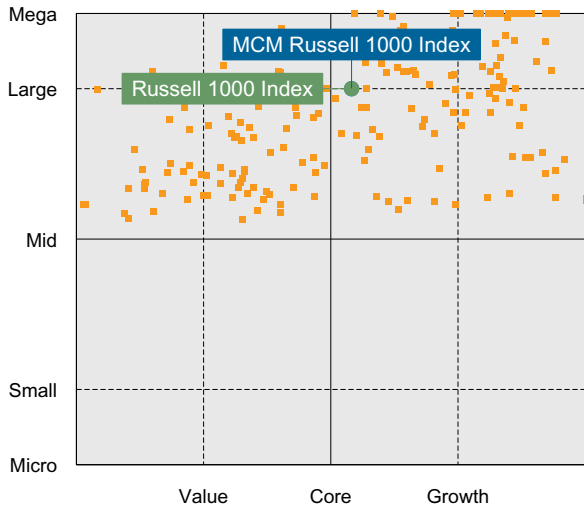
# Current Holdings Based Style Analysis

## MCM Russell 1000 Index

### As of December 31, 2022

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.

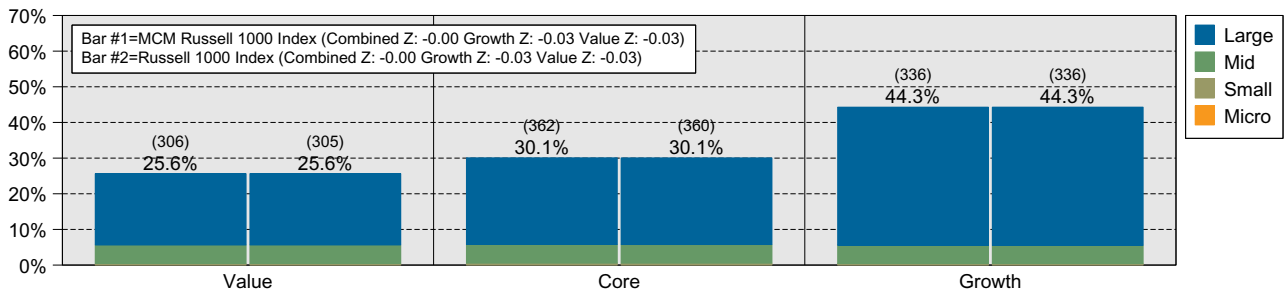
**Style Map vs Callan Large Cap Holdings as of December 31, 2022**



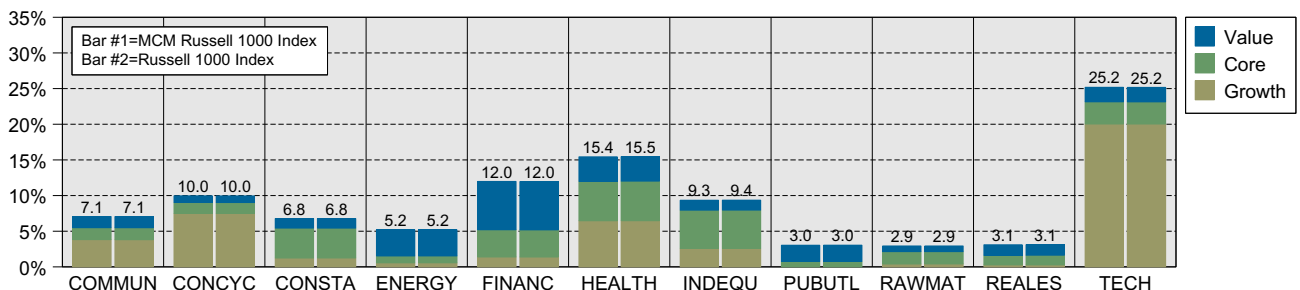
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	20.0% (91)	24.3% (95)	38.7% (106)	83.0% (292)
	20.0% (91)	24.3% (95)	38.7% (106)	83.0% (292)
Mid	5.2% (162)	5.2% (197)	5.1% (173)	15.6% (532)
	5.2% (162)	5.2% (197)	5.1% (173)	15.6% (532)
Small	0.4% (53)	0.5% (70)	0.4% (57)	1.4% (180)
	0.4% (52)	0.5% (68)	0.4% (57)	1.4% (177)
Micro	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
<b>Total</b>	<b>25.6% (306)</b>	<b>30.1% (362)</b>	<b>44.3% (336)</b>	<b>100.0% (1004)</b>
	25.6% (305)	30.1% (360)	44.3% (336)	100.0% (1001)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

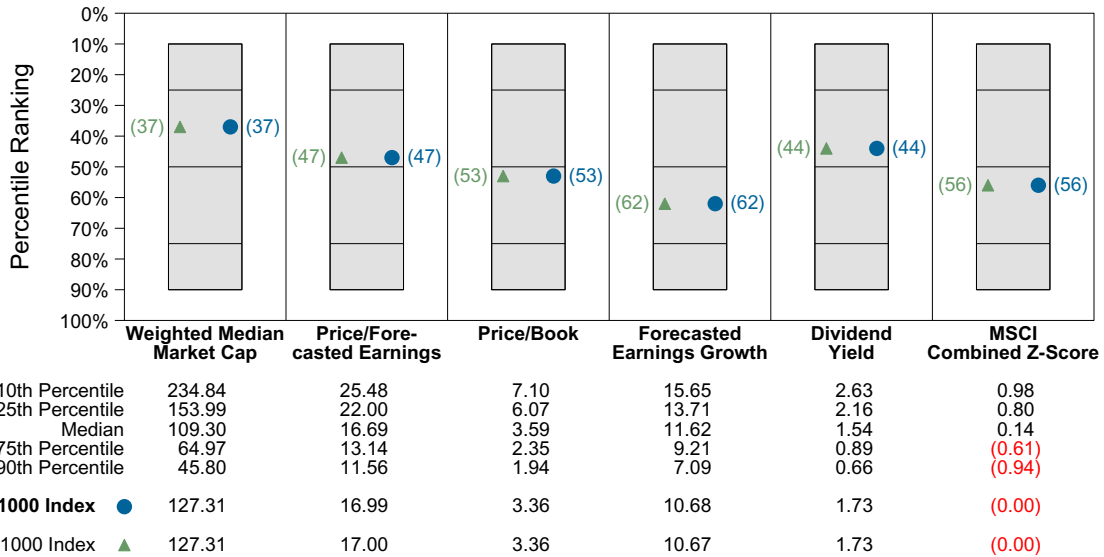


# MCM Russell 1000 Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

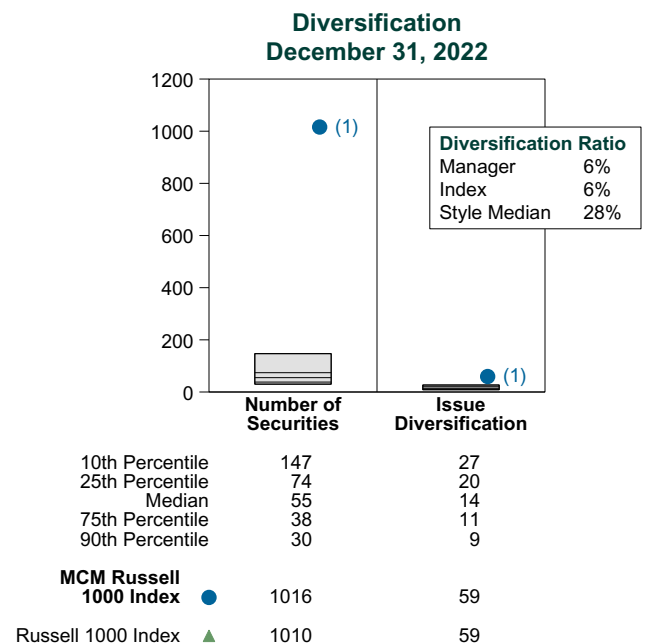
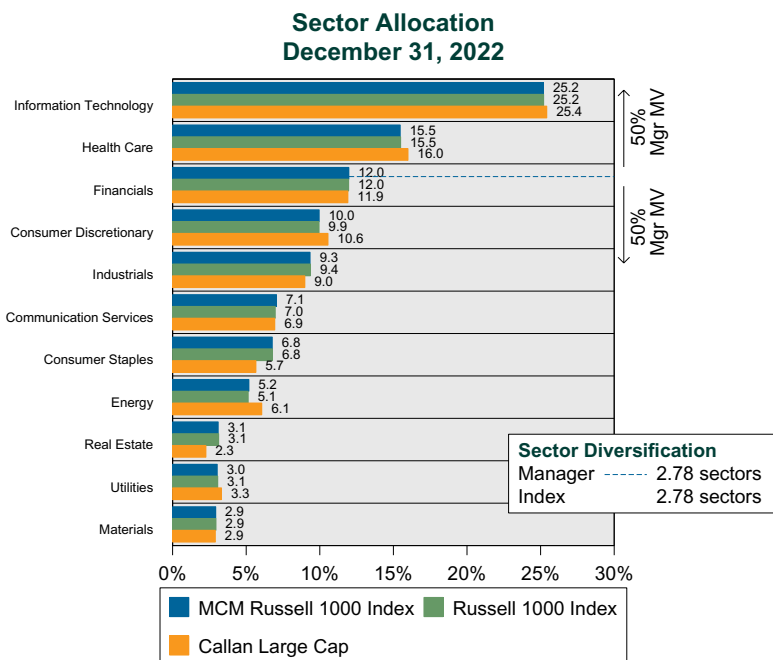
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Capitalization as of December 31, 2022



## 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.



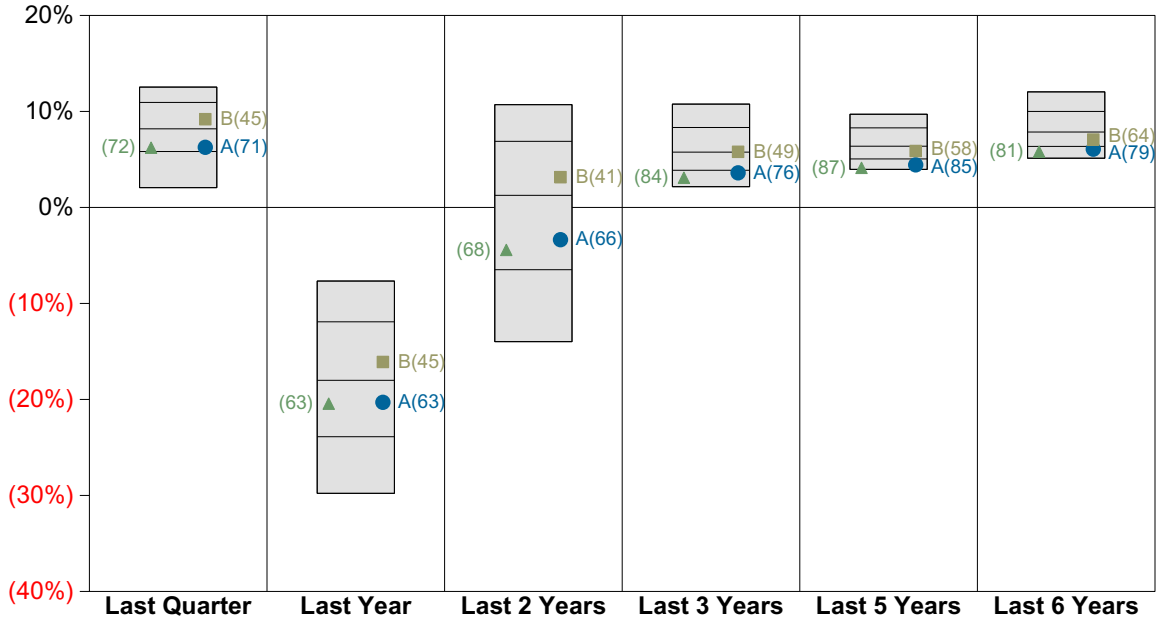


# MCM Russell 2000 Core Index Period Ended December 31, 2022

## Quarterly Summary and Highlights

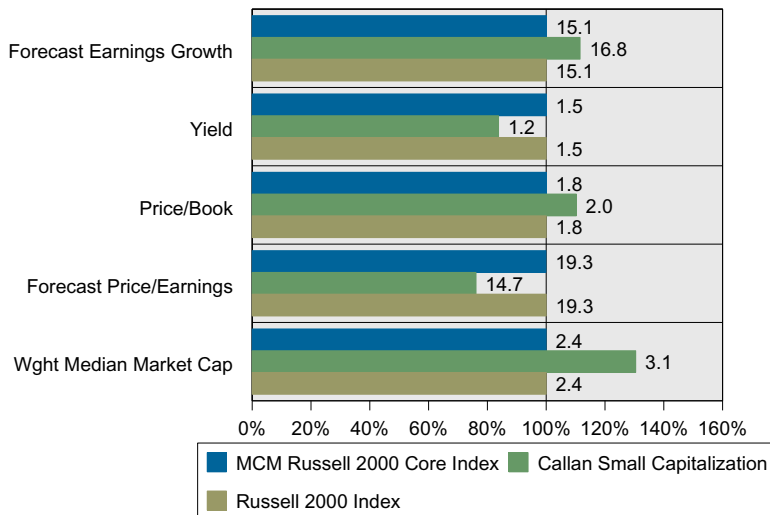
- MCM Russell 2000 Core Index's portfolio posted a 6.27% return for the quarter placing it in the 71 percentile of the Callan Small Capitalization group for the quarter and in the 63 percentile for the last year.
- MCM Russell 2000 Core Index's portfolio outperformed the Russell 2000 Index by 0.04% for the quarter and outperformed the Russell 2000 Index for the year by 0.14%.

## Performance vs Callan Small Capitalization (Gross)

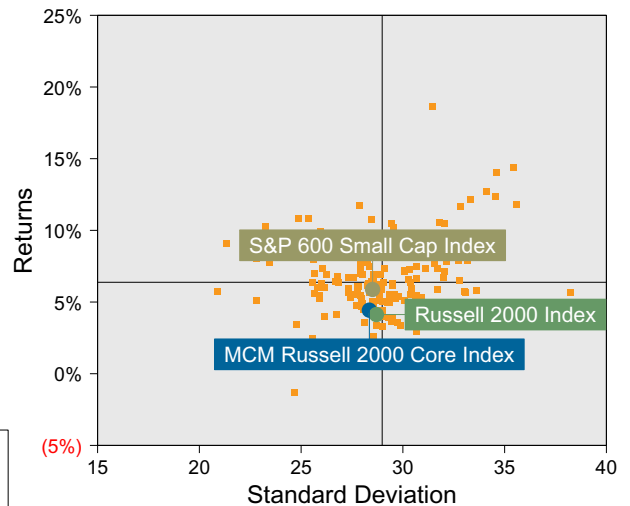


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	12.54	(7.67)	10.71	10.76	9.71	12.04
25th Percentile	10.94	(11.92)	6.89	8.33	8.29	10.00
Median	8.19	(18.01)	1.26	5.76	6.38	7.85
75th Percentile	5.82	(23.88)	(6.48)	3.87	5.05	6.36
90th Percentile	2.06	(29.78)	(13.98)	2.16	3.96	5.13
MCM Russell 2000 Core Index (A)	6.27	(20.30)	(3.36)	3.60	4.43	6.07
S&P 600 Small Cap Index (B)	9.19	(16.10)	3.15	5.80	5.88	7.07
Russell 2000 Index (A)	6.23	(20.44)	(4.42)	3.10	4.13	5.81

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



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

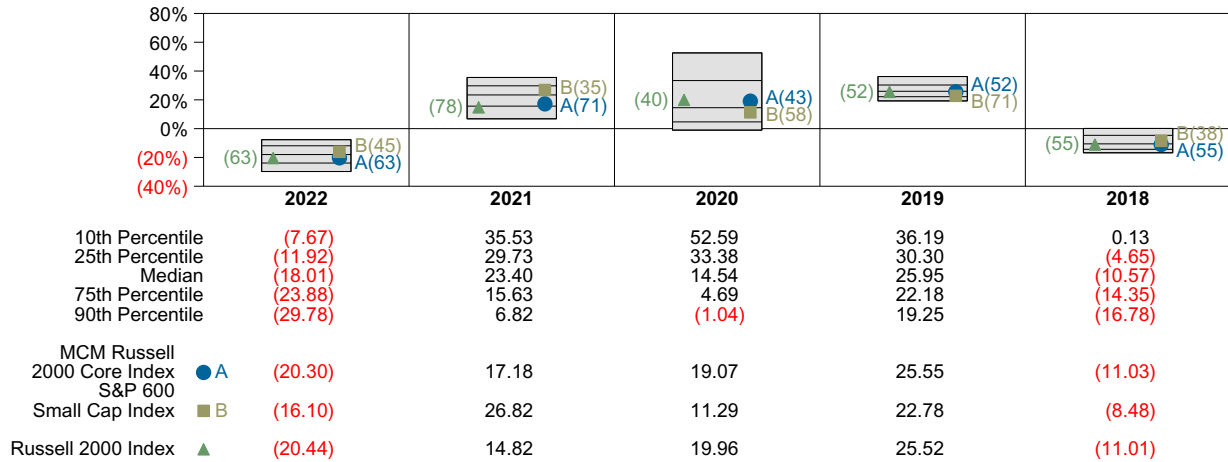


# MCM Russell 2000 Core Index Return Analysis Summary

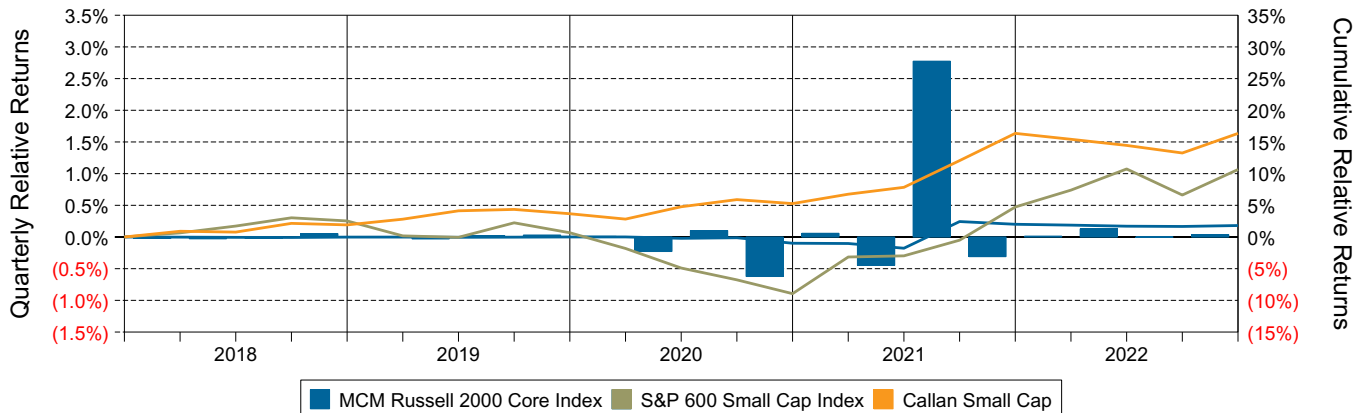
## Return Analysis

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.

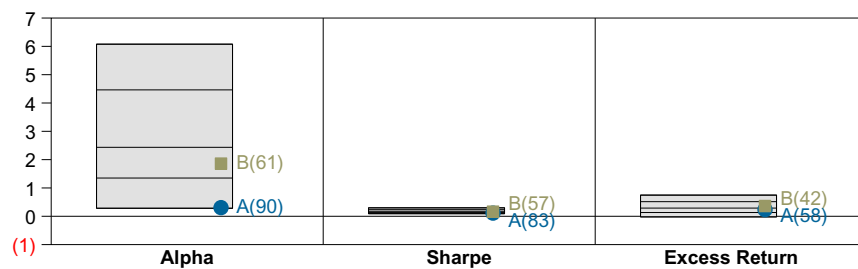
### Performance vs Callan Small Capitalization (Gross)



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



### Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended December 31, 2022



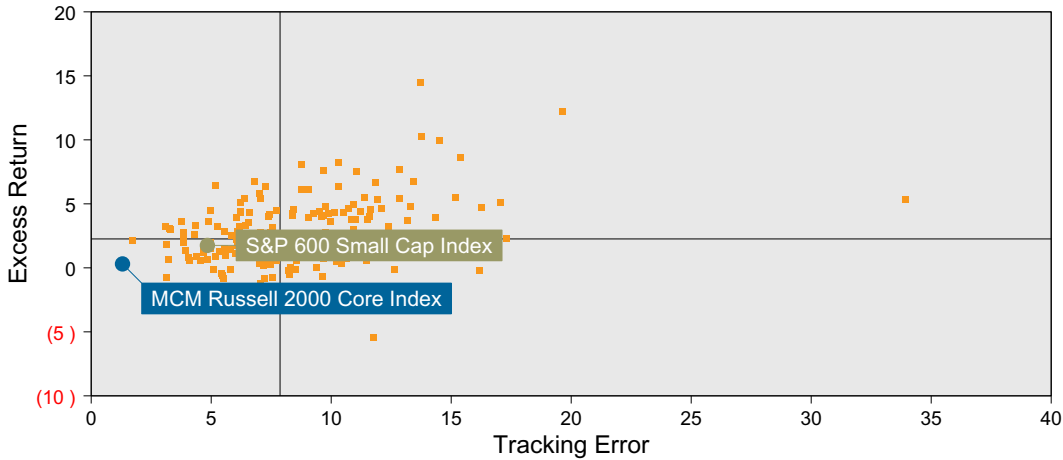
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	6.08	0.30	0.75
25th Percentile	4.46	0.23	0.52
Median	2.43	0.18	0.29
75th Percentile	1.35	0.13	0.13
90th Percentile	0.28	0.09	(0.02)
MCM Russell 2000 Core Index	● A (90)	0.11	0.23
S&P 600 Small Cap Index	■ B (61)	0.16	0.36

# MCM Russell 2000 Core Index Risk Analysis Summary

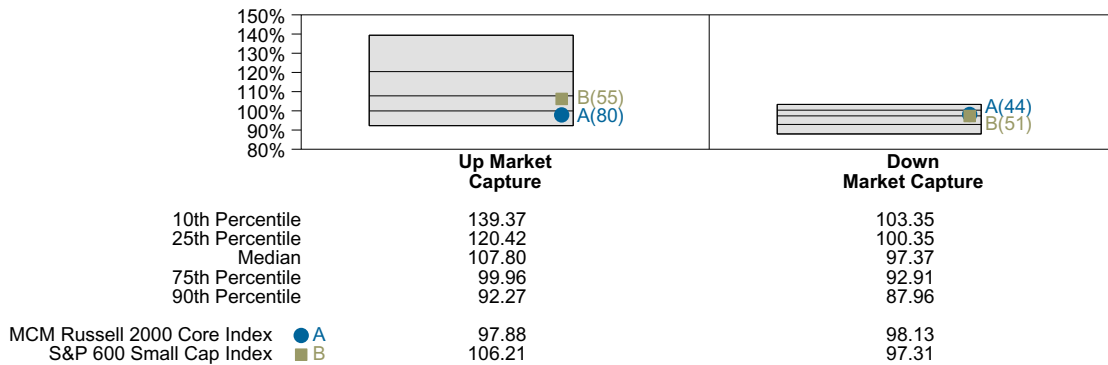
## Risk Analysis

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.

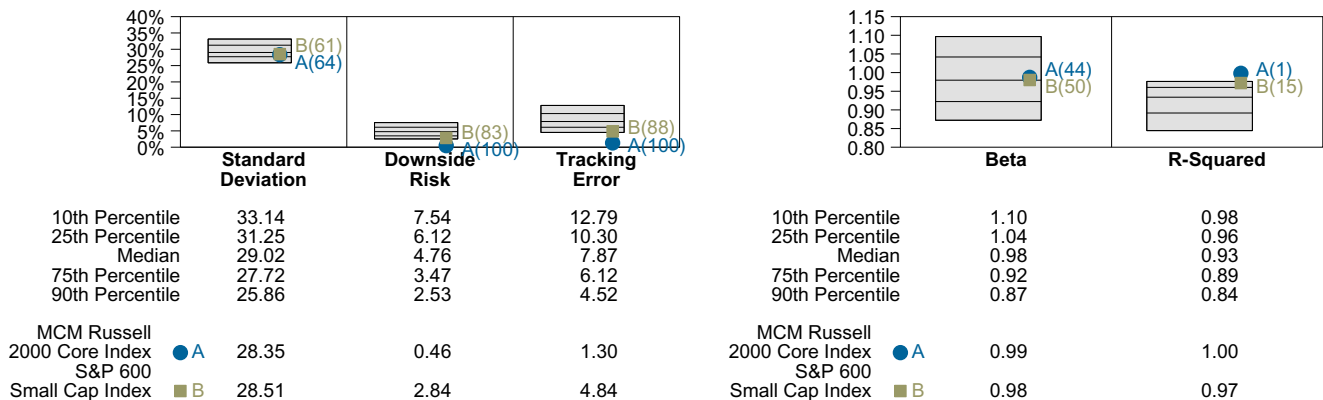
### Risk Analysis vs Callan Small Capitalization (Gross) Five Years Ended December 31, 2022



### Market Capture vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended December 31, 2022



### Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended December 31, 2022



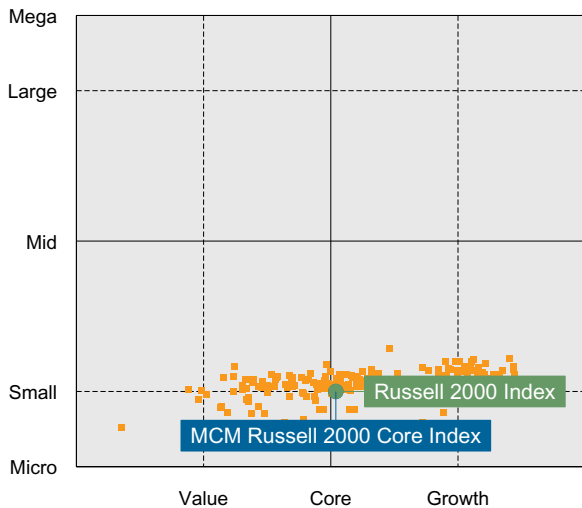
# Current Holdings Based Style Analysis

## MCM Russell 2000 Core Index

### As of December 31, 2022

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.

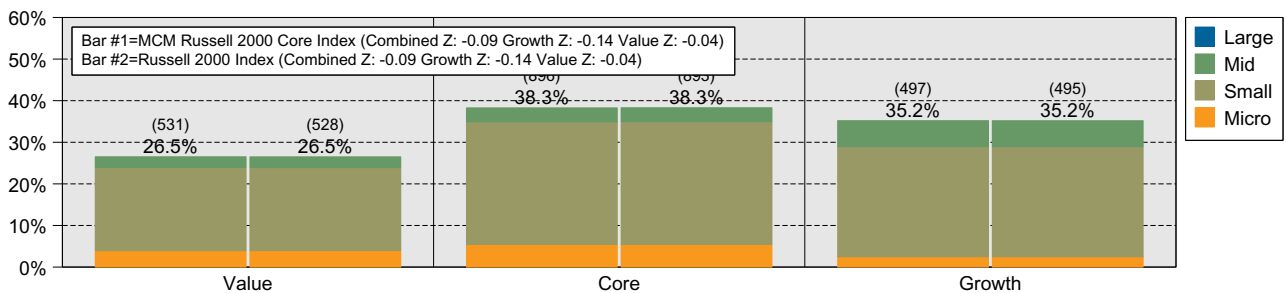
**Style Map vs Callan Small Cap Holdings as of December 31, 2022**



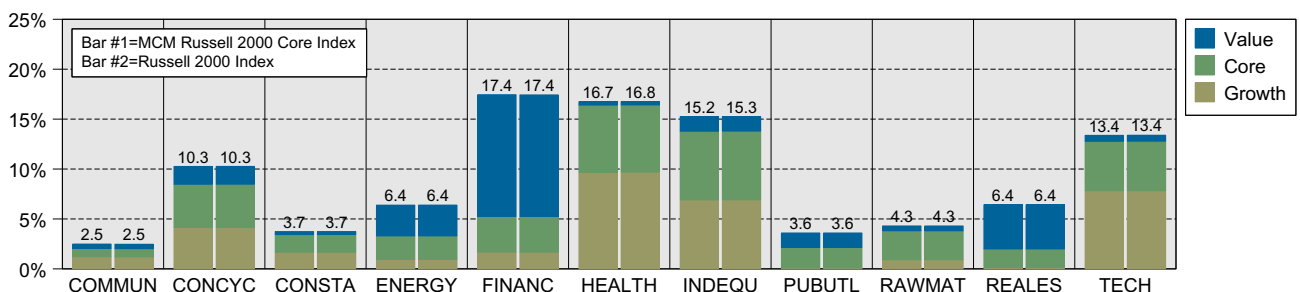
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	2.6% (12)	3.4% (19)	6.2% (27)	12.2% (58)
	2.6% (11)	3.4% (16)	6.2% (25)	12.2% (52)
Small	20.0% (262)	29.5% (422)	26.5% (309)	75.9% (993)
	19.9% (261)	29.5% (422)	26.5% (309)	75.9% (992)
Micro	4.0% (257)	5.4% (455)	2.5% (161)	11.9% (873)
	4.0% (256)	5.5% (455)	2.5% (161)	11.9% (872)
Total	26.5% (531)	38.3% (896)	35.2% (497)	100.0% (1924)
	26.5% (528)	38.3% (893)	35.2% (495)	100.0% (1916)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

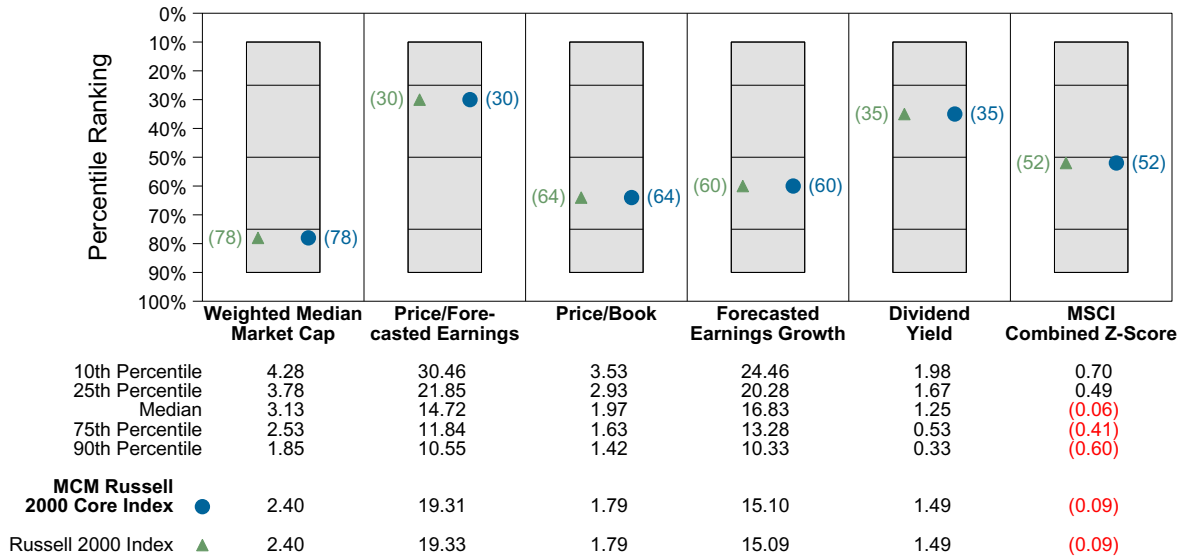


# MCM Russell 2000 Core Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

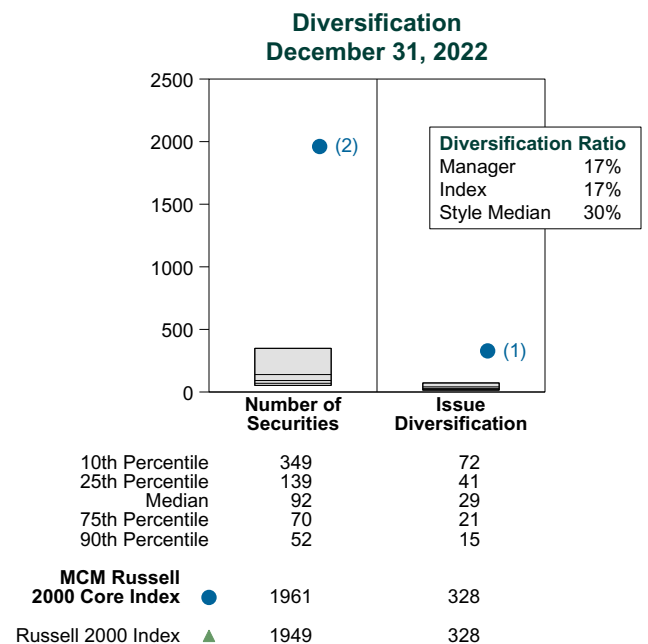
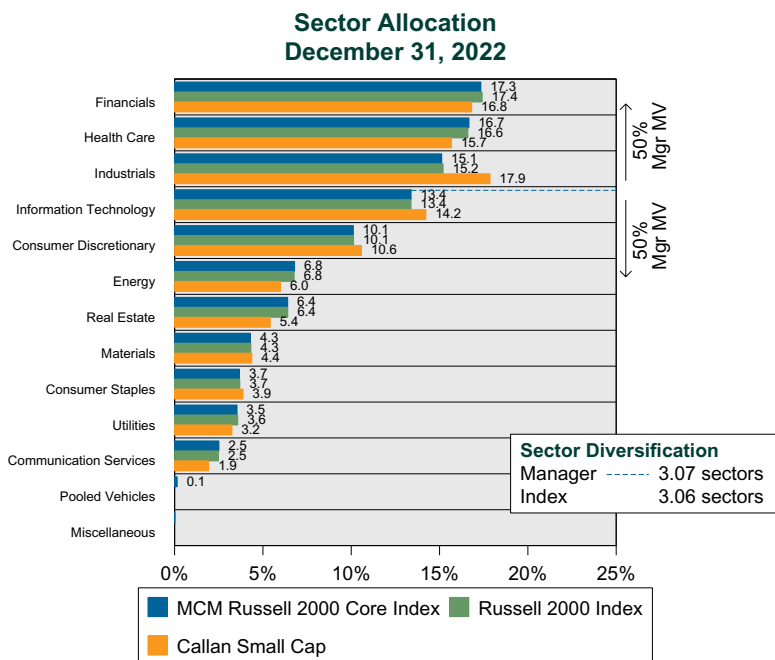
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Capitalization as of December 31, 2022



## 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.

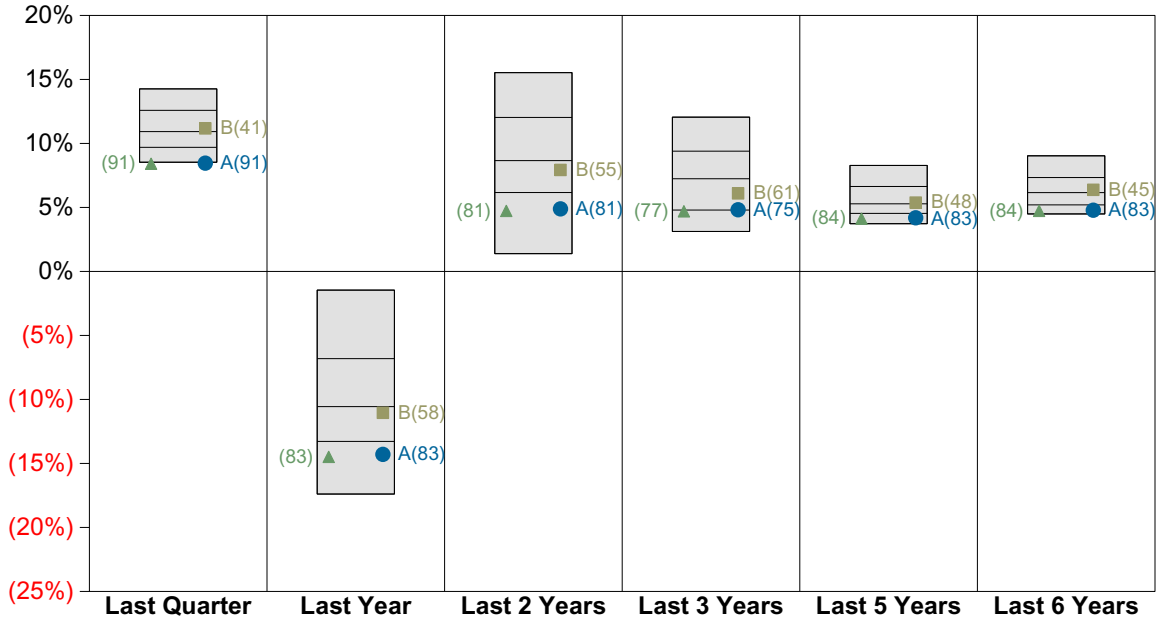


# MCM Russell 2000 Val Index Period Ended December 31, 2022

## Quarterly Summary and Highlights

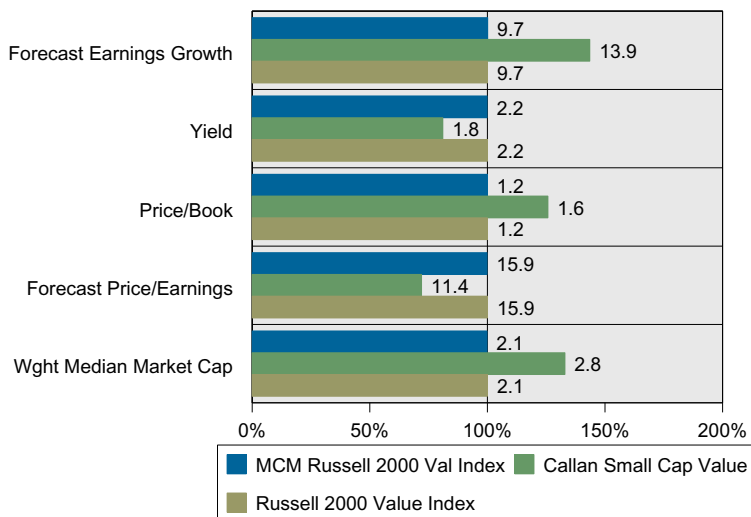
- MCM Russell 2000 Val Index's portfolio posted a 8.46% return for the quarter placing it in the 91 percentile of the Callan Small Cap Value group for the quarter and in the 83 percentile for the last year.
- MCM Russell 2000 Val Index's portfolio outperformed the Russell 2000 Value Index by 0.04% for the quarter and outperformed the Russell 2000 Value Index for the year by 0.19%.

## Performance vs Callan Small Cap Value (Gross)

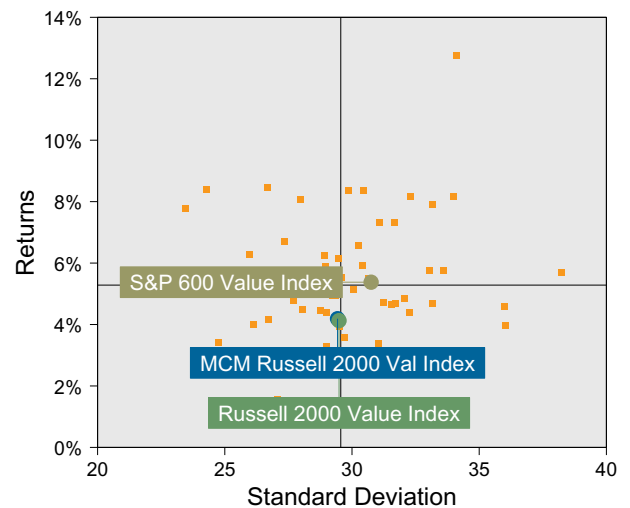


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years
10th Percentile	14.26	(1.46)	15.53	12.05	8.28	9.03
25th Percentile	12.59	(6.81)	12.03	9.39	6.64	7.34
Median	10.92	(10.56)	8.66	7.24	5.28	6.16
75th Percentile	9.70	(13.28)	6.16	4.80	4.54	5.20
90th Percentile	8.53	(17.39)	1.39	3.12	3.73	4.49
MCM Russell 2000 Val Index	● A 8.46	(14.29)	4.89	4.82	4.19	4.78
S&P 600 Value Index	■ B 11.18	(11.04)	7.93	6.10	5.38	6.38
Russell 2000 Value Index	▲ 8.42	(14.48)	4.73	4.70	4.13	4.74

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



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

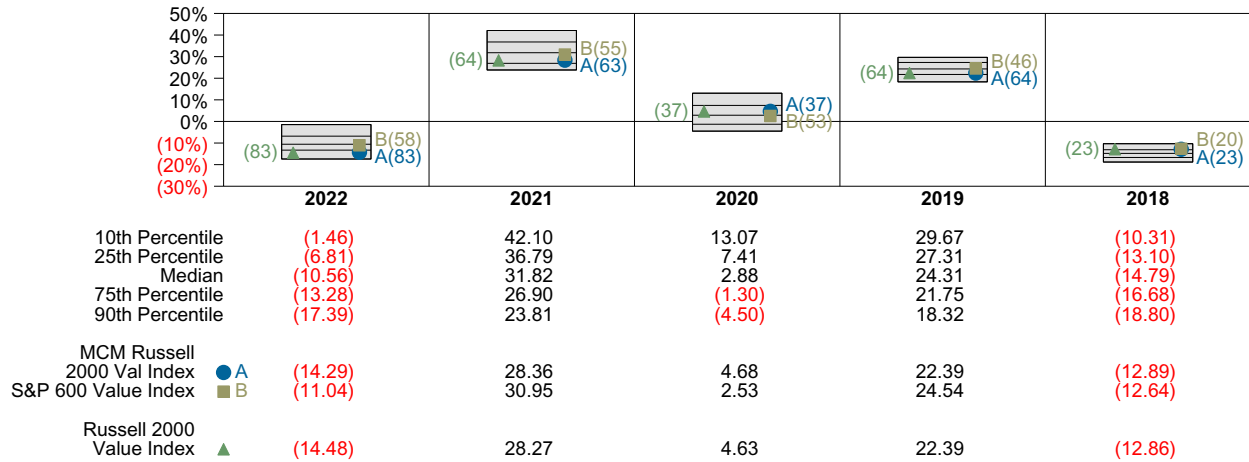


# MCM Russell 2000 Val Index Return Analysis Summary

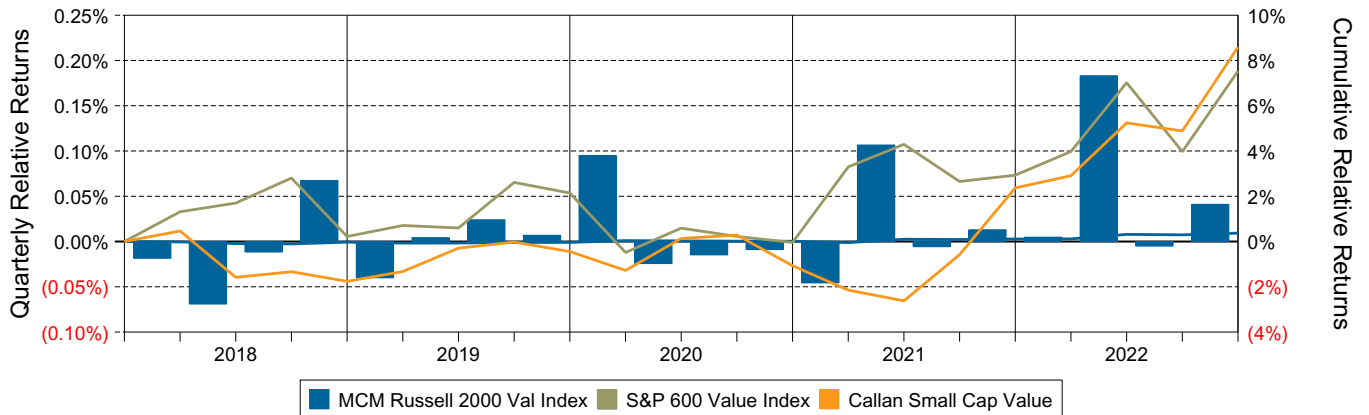
## Return Analysis

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.

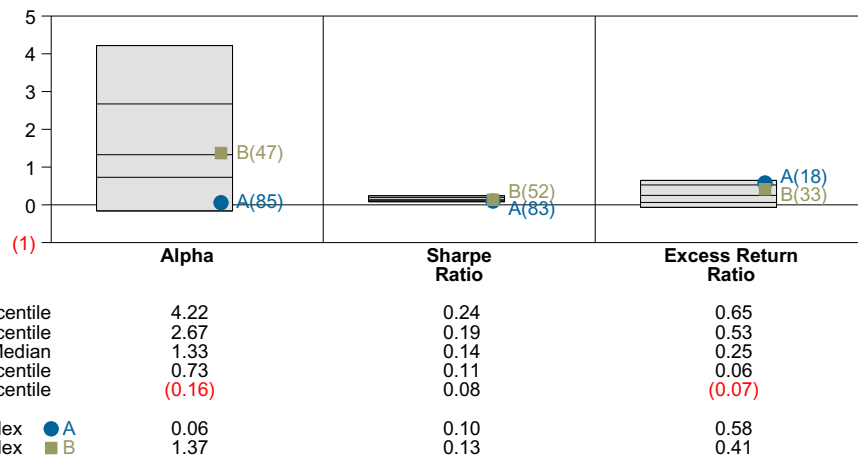
### Performance vs Callan Small Cap Value (Gross)



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



### Risk Adjusted Return Measures vs Russell 2000 Value Index Rankings Against Callan Small Cap Value (Gross) Five Years Ended December 31, 2022

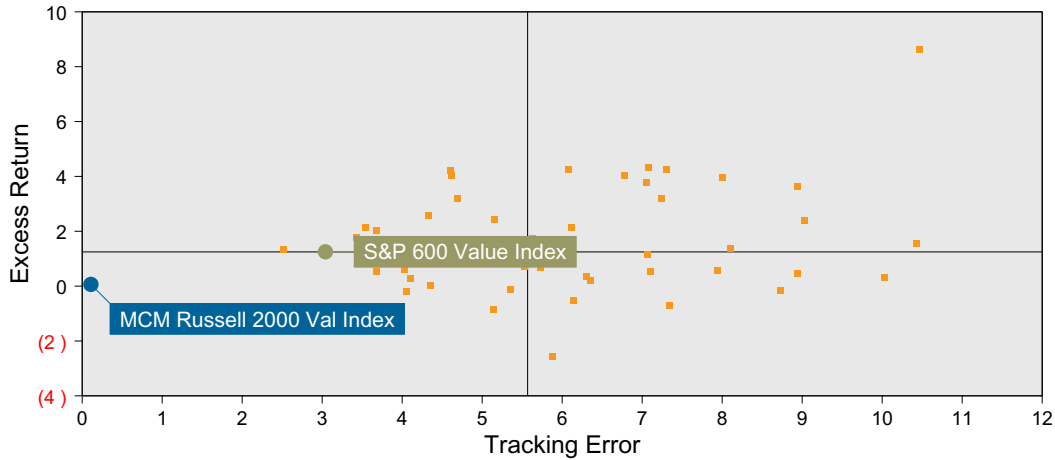


# MCM Russell 2000 Val Index Risk Analysis Summary

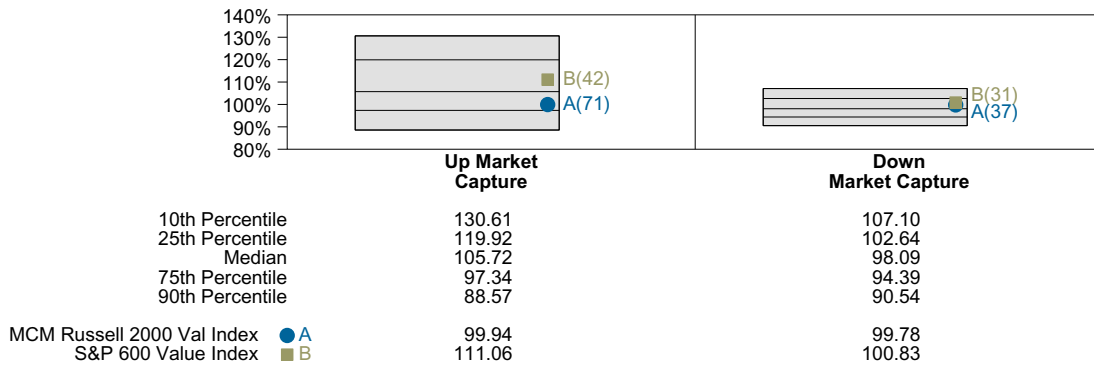
## Risk Analysis

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.

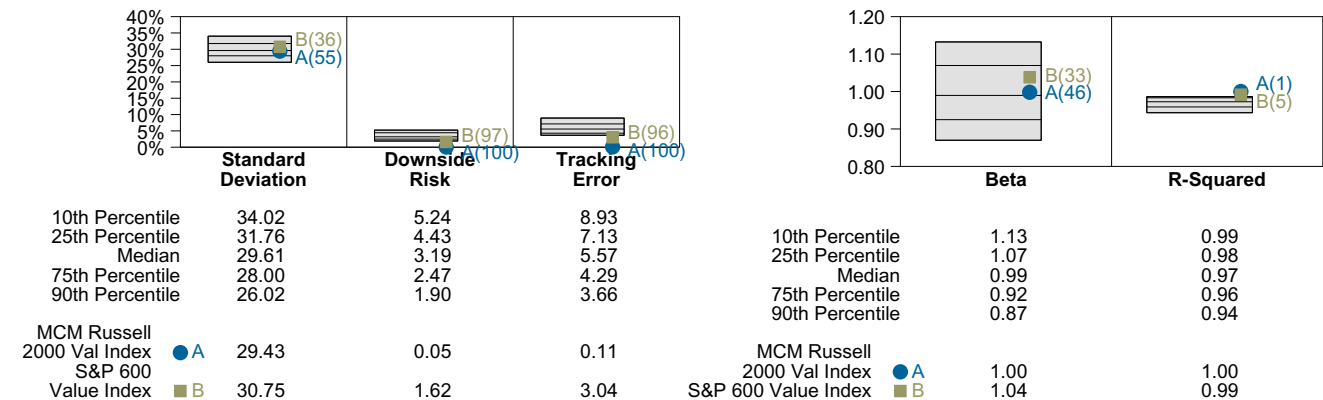
### Risk Analysis vs Callan Small Cap Value (Gross) Five Years Ended December 31, 2022



### Market Capture vs Russell 2000 Value Index Rankings Against Callan Small Cap Value (Gross) Five Years Ended December 31, 2022



### Risk Statistics Rankings vs Russell 2000 Value Index Rankings Against Callan Small Cap Value (Gross) Five Years Ended December 31, 2022





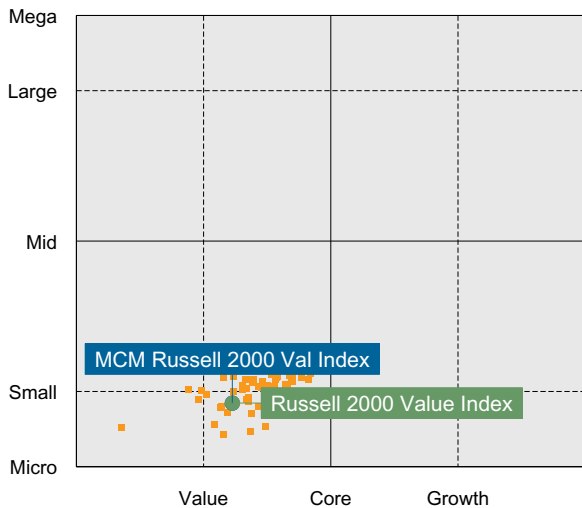
# Current Holdings Based Style Analysis

## MCM Russell 2000 Val Index

### As of December 31, 2022

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.

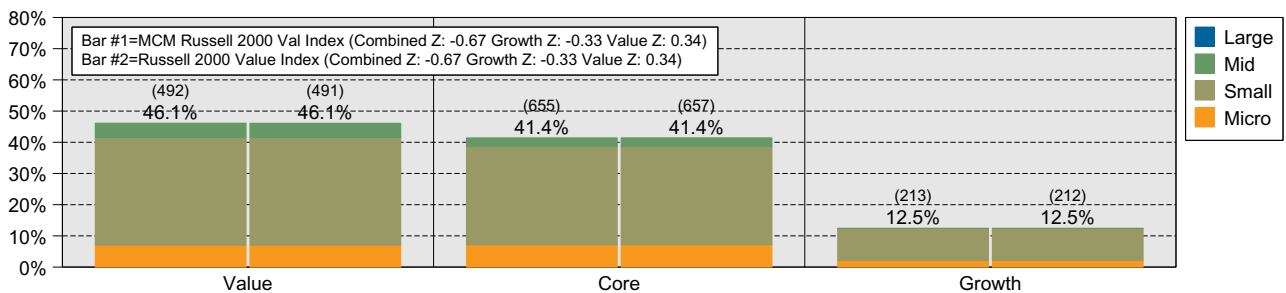
**Style Map vs Callan Small Cap Value Holdings as of December 31, 2022**



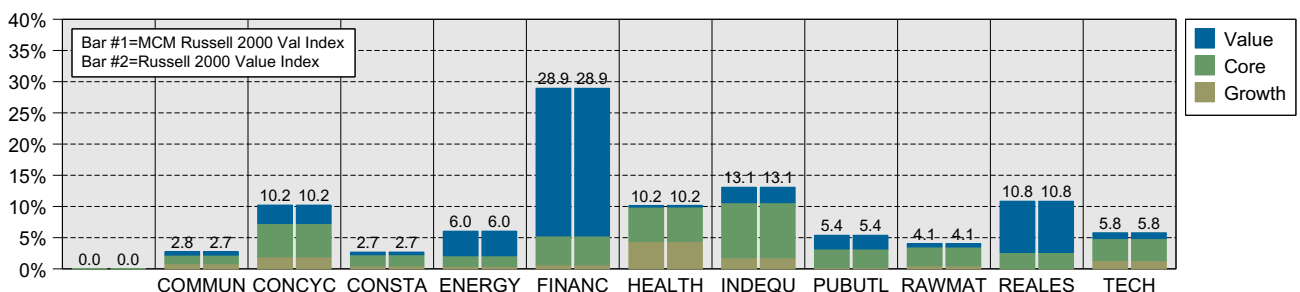
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	4.5% (11)	2.7% (10)	0.1% (3)	7.4% (24)
Small	34.6% (242)	31.6% (295)	10.2% (122)	76.4% (659)
Micro	7.0% (239)	7.1% (350)	2.1% (88)	16.2% (677)
<b>Total</b>	<b>46.1% (492)</b>	<b>41.4% (655)</b>	<b>12.5% (213)</b>	<b>100.0% (1360)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

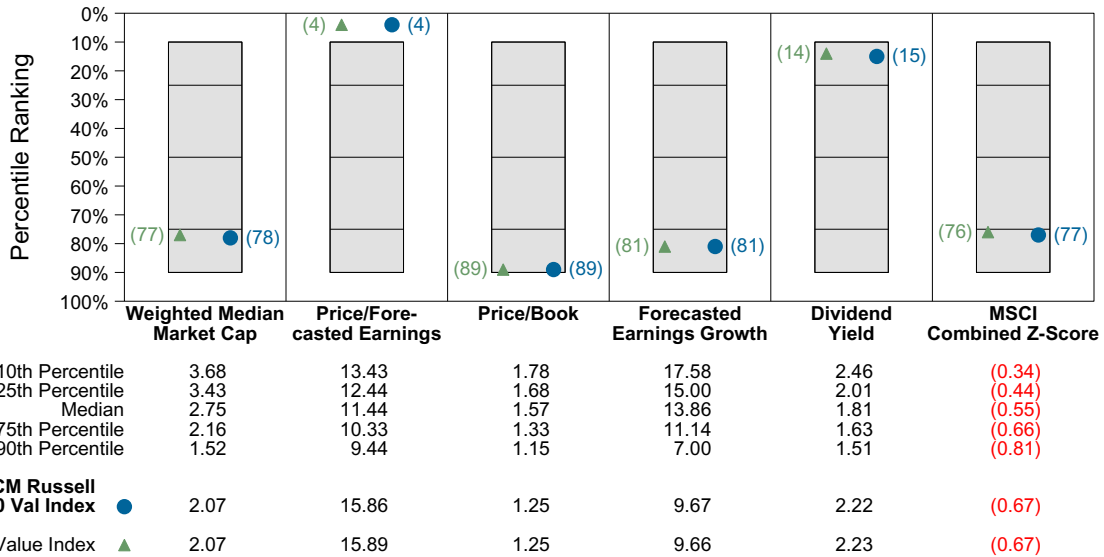


# MCM Russell 2000 Val Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

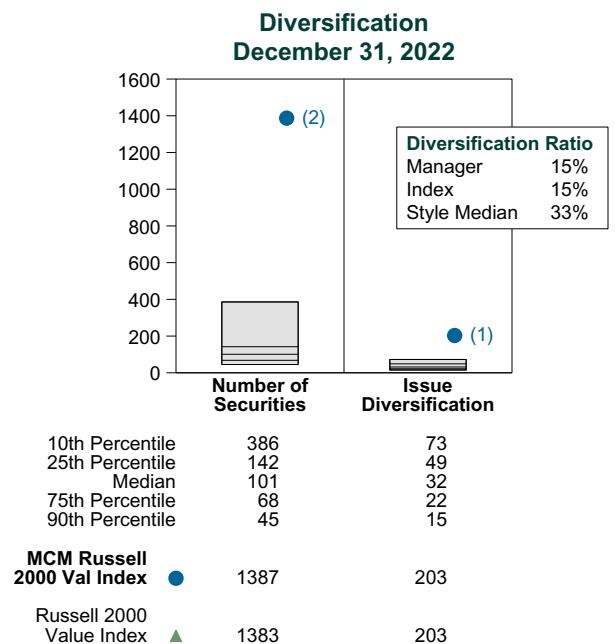
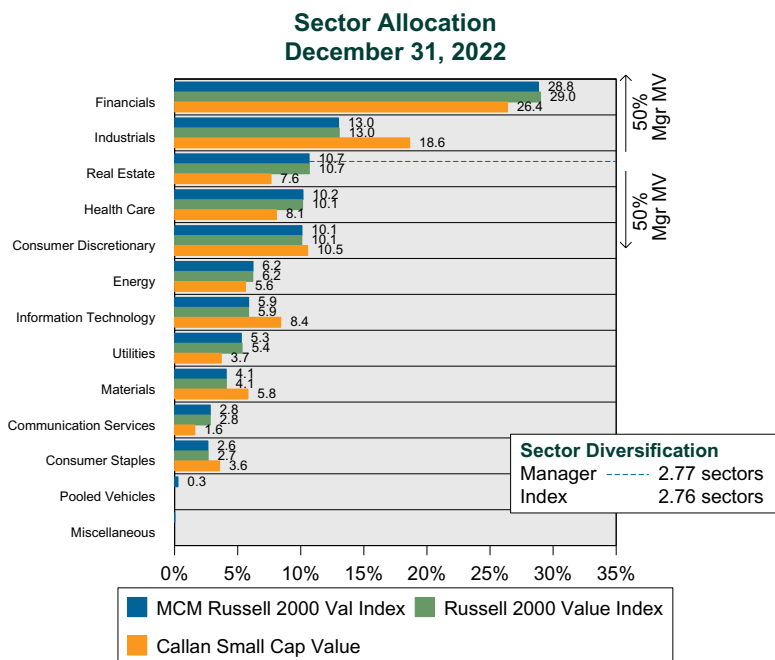
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Value as of December 31, 2022



## 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 Asset Management Period Ended December 31, 2022

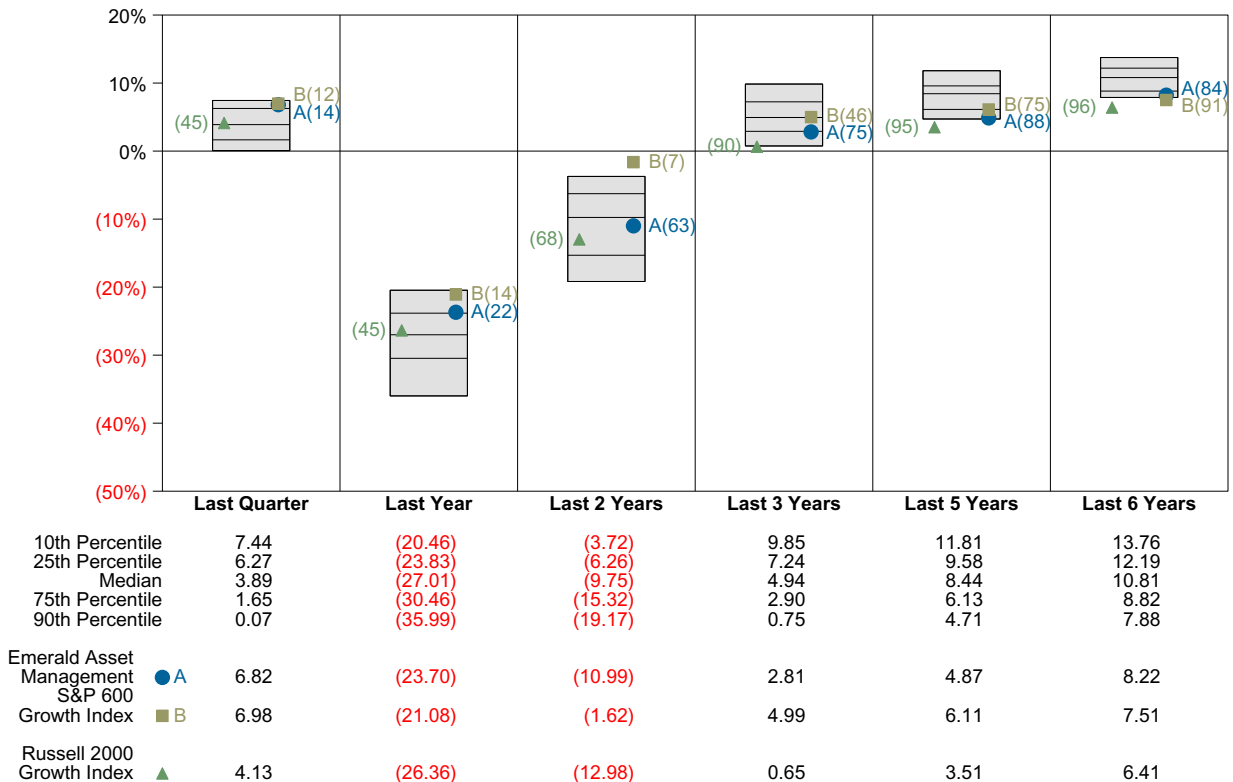
## Investment Philosophy

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

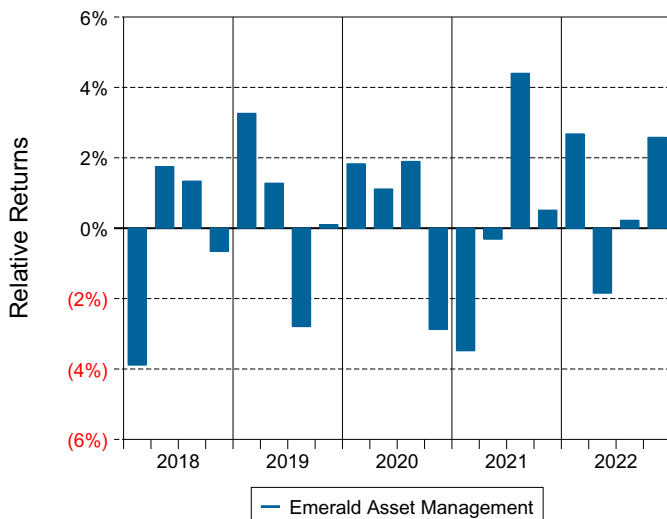
## Quarterly Summary and Highlights

- Emerald Asset Management's portfolio posted a 6.82% return for the quarter placing it in the 14 percentile of the Callan Small Cap Growth group for the quarter and in the 22 percentile for the last year.
- Emerald Asset Management's portfolio outperformed the Russell 2000 Growth Index by 2.69% for the quarter and outperformed the Russell 2000 Growth Index for the year by 2.66%.

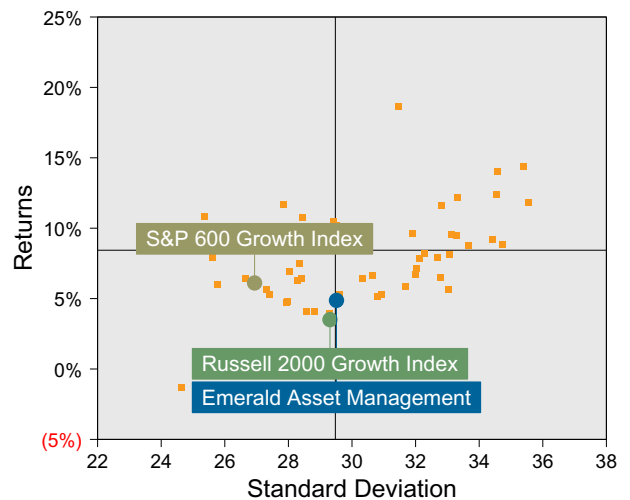
## Performance vs Callan Small Cap Growth (Gross)



## Relative Return vs Russell 2000 Growth Index



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

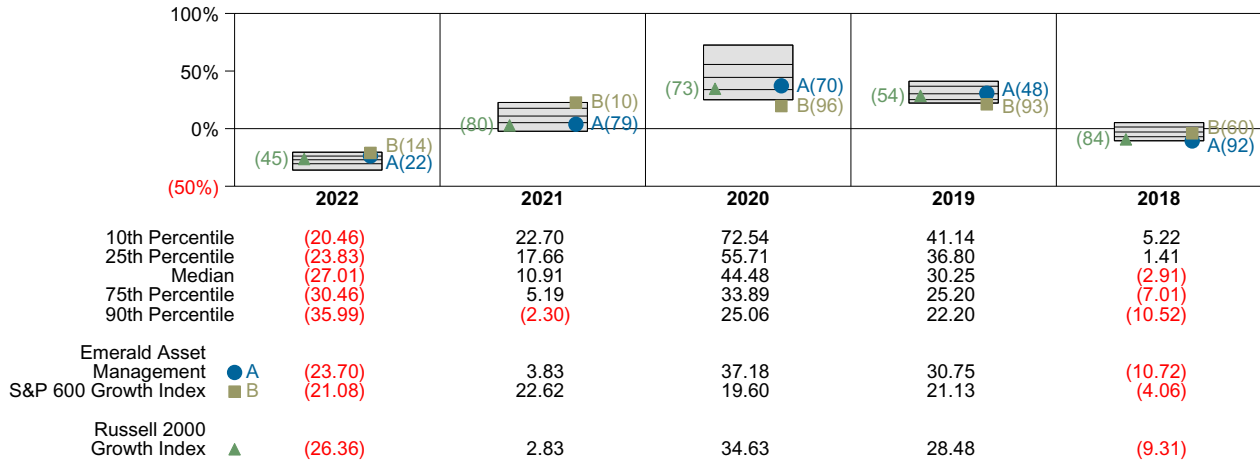


# Emerald Asset Management Return Analysis Summary

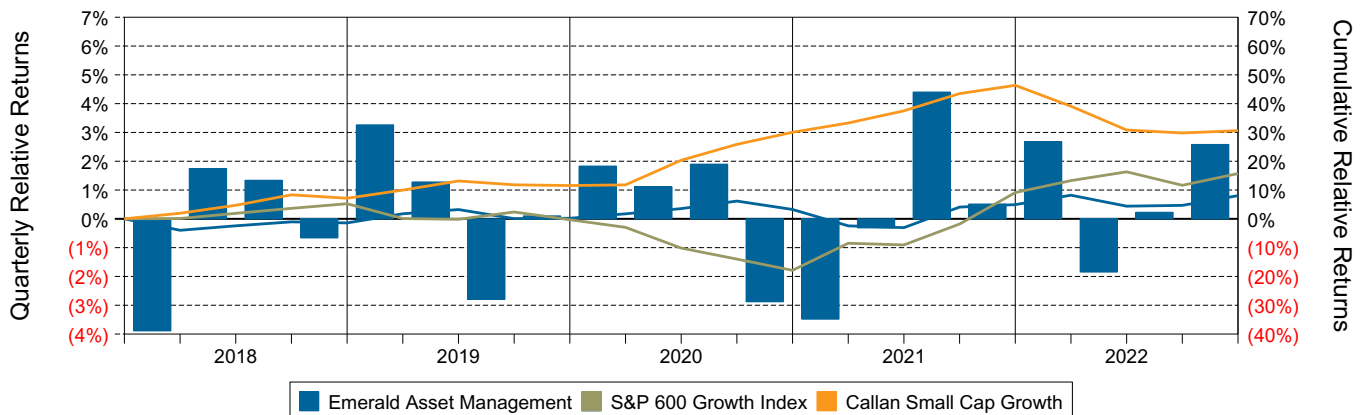
## Return Analysis

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.

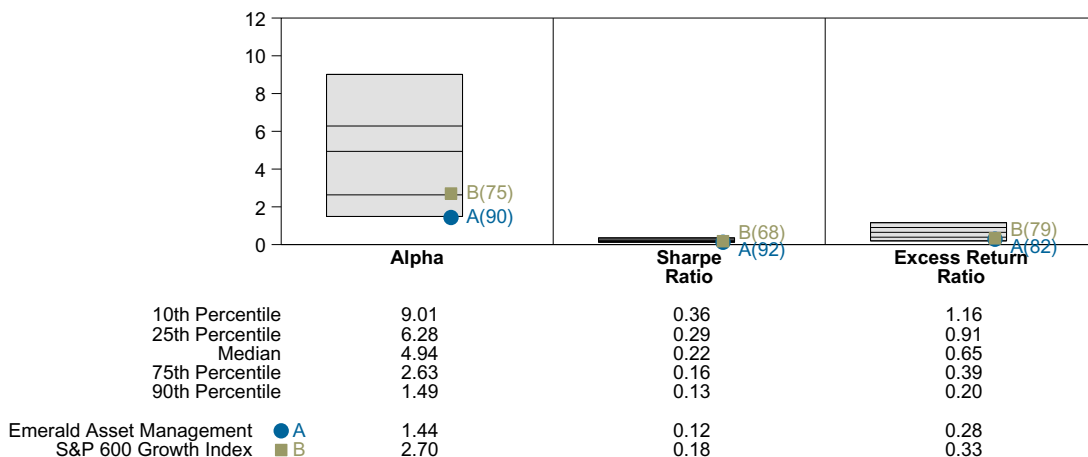
### Performance vs Callan Small Cap Growth (Gross)



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



### Risk Adjusted Return Measures vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Five Years Ended December 31, 2022

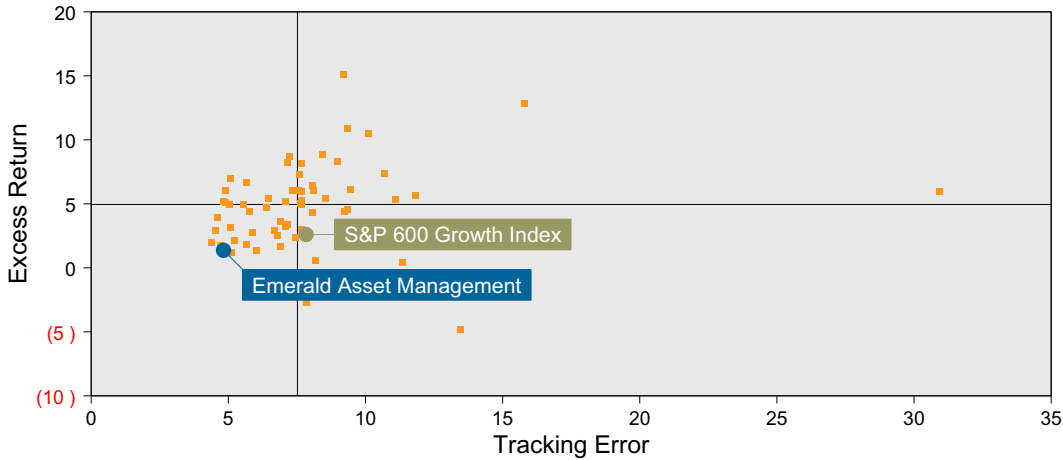


# Emerald Asset Management Risk Analysis Summary

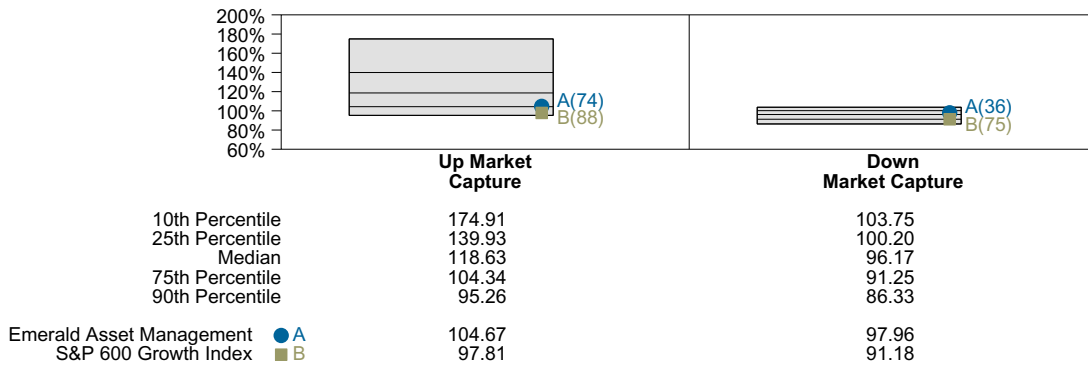
## Risk Analysis

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.

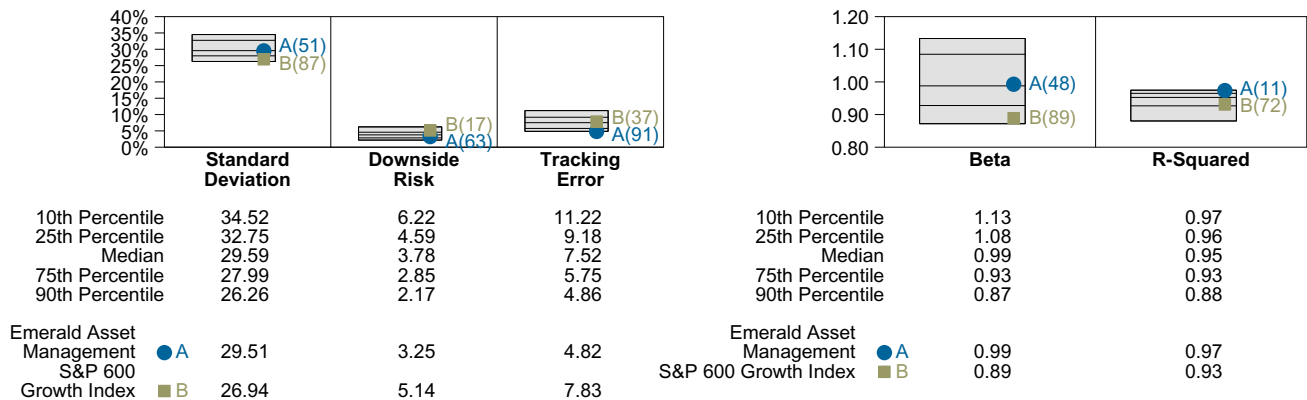
### Risk Analysis vs Callan Small Cap Growth (Gross) Five Years Ended December 31, 2022



### Market Capture vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Five Years Ended December 31, 2022



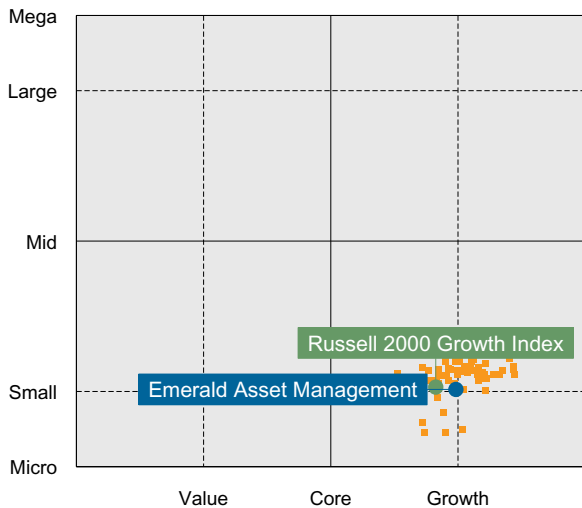
### Risk Statistics Rankings vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Five Years Ended December 31, 2022



# Current Holdings Based Style Analysis Emerald Asset Management As of December 31, 2022

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.

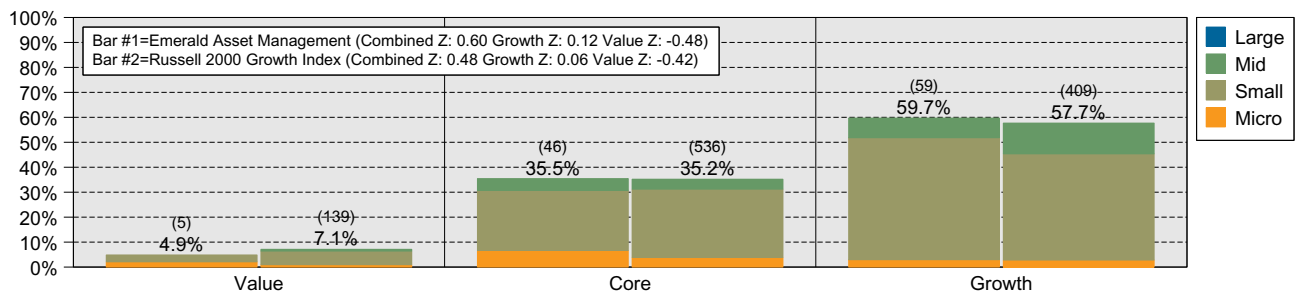
**Style Map vs Callan Small Cap Growth Holdings as of December 31, 2022**



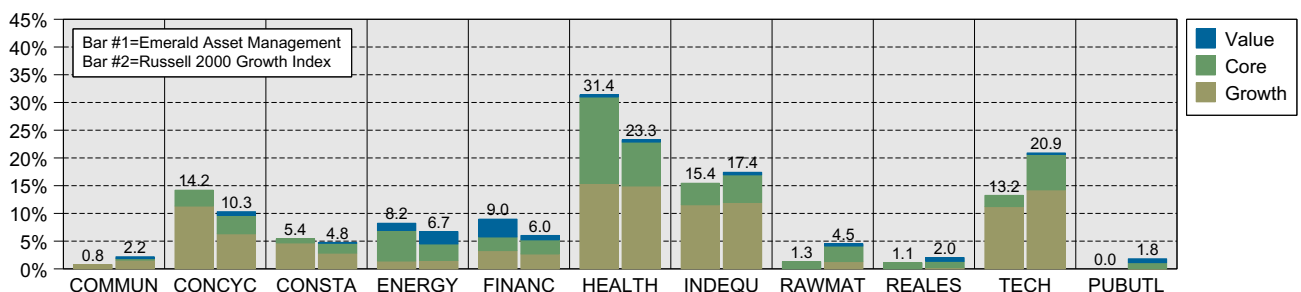
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	0.0% (0)	4.7% (6)	7.9% (7)	12.6% (13)
Small	2.7% (3)	24.1% (26)	48.9% (47)	75.7% (76)
Micro	2.1% (2)	6.6% (14)	3.0% (5)	11.7% (21)
<b>Total</b>	<b>4.9% (5)</b>	<b>35.5% (46)</b>	<b>59.7% (59)</b>	<b>100.0% (110)</b>
	7.1% (139)	35.2% (536)	57.7% (409)	100.0% (1084)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**



# Emerald Asset Management 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, 2022

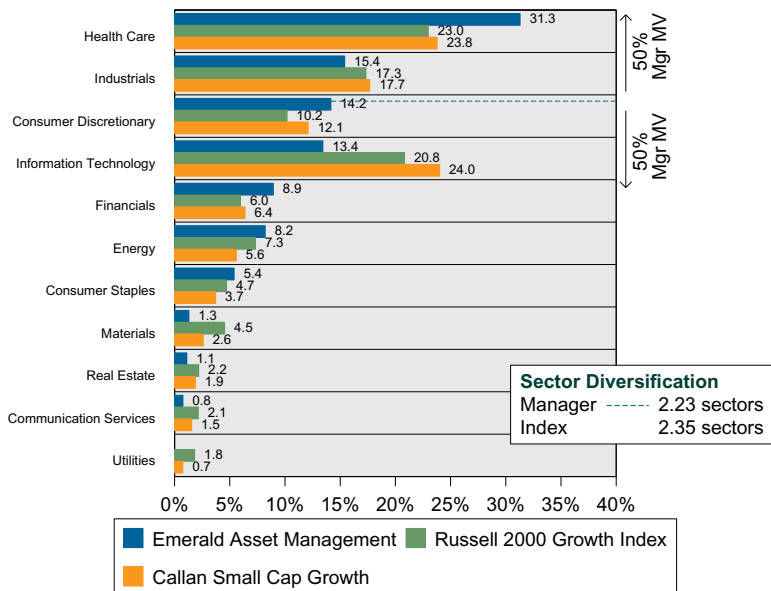


10th Percentile	4.87	46.45	3.90	0.63	0.85
25th Percentile	4.28	31.44	3.59	0.53	0.73
Median	3.85	25.10	3.13	0.43	0.60
75th Percentile	3.06	21.27	2.85	0.32	0.49
90th Percentile	2.20	15.92	2.38	0.19	0.40
<b>Emerald Asset Management</b>	● 2.57	30.60	3.00	0.55	0.60
Russell 2000 Growth Index	▲ 2.76	24.57	3.28	0.76	0.48

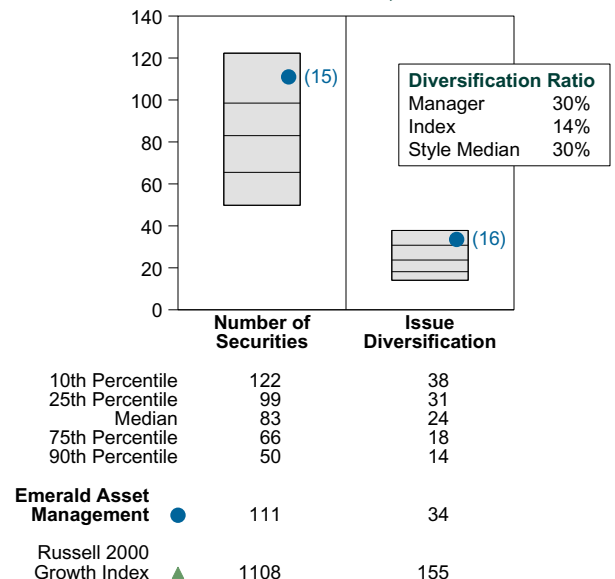
## Sector Weights

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.

### Sector Allocation December 31, 2022



### Diversification December 31, 2022



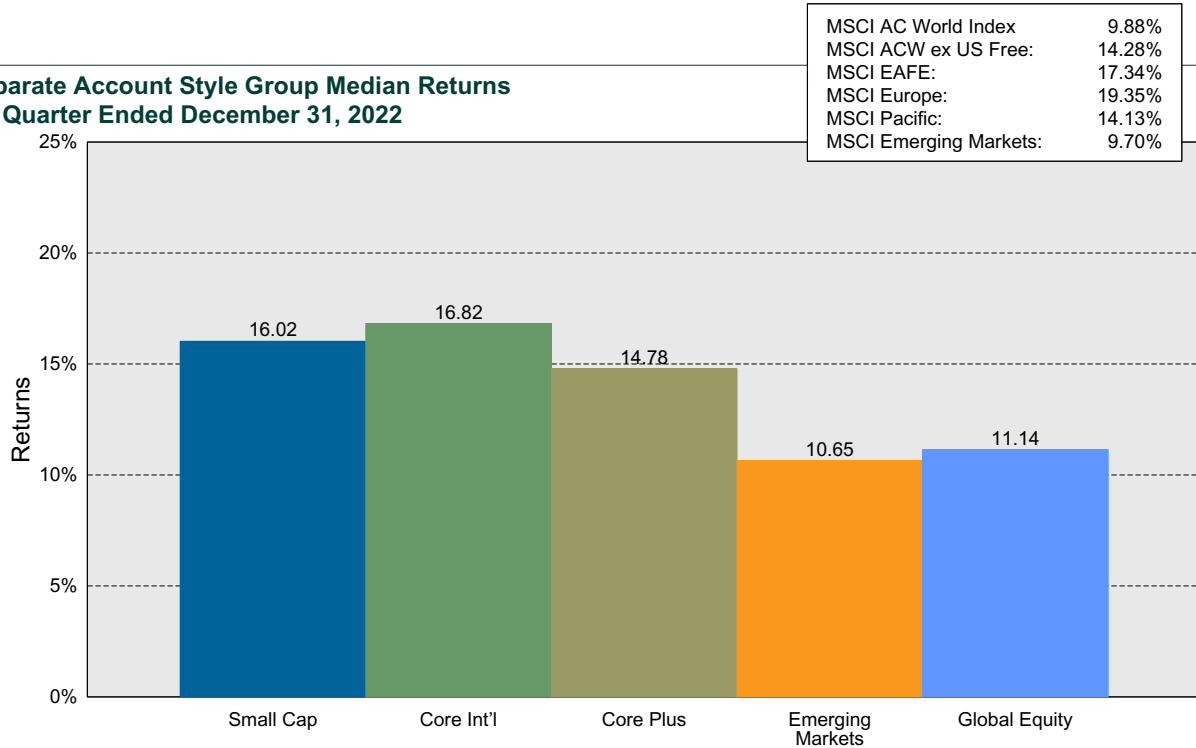




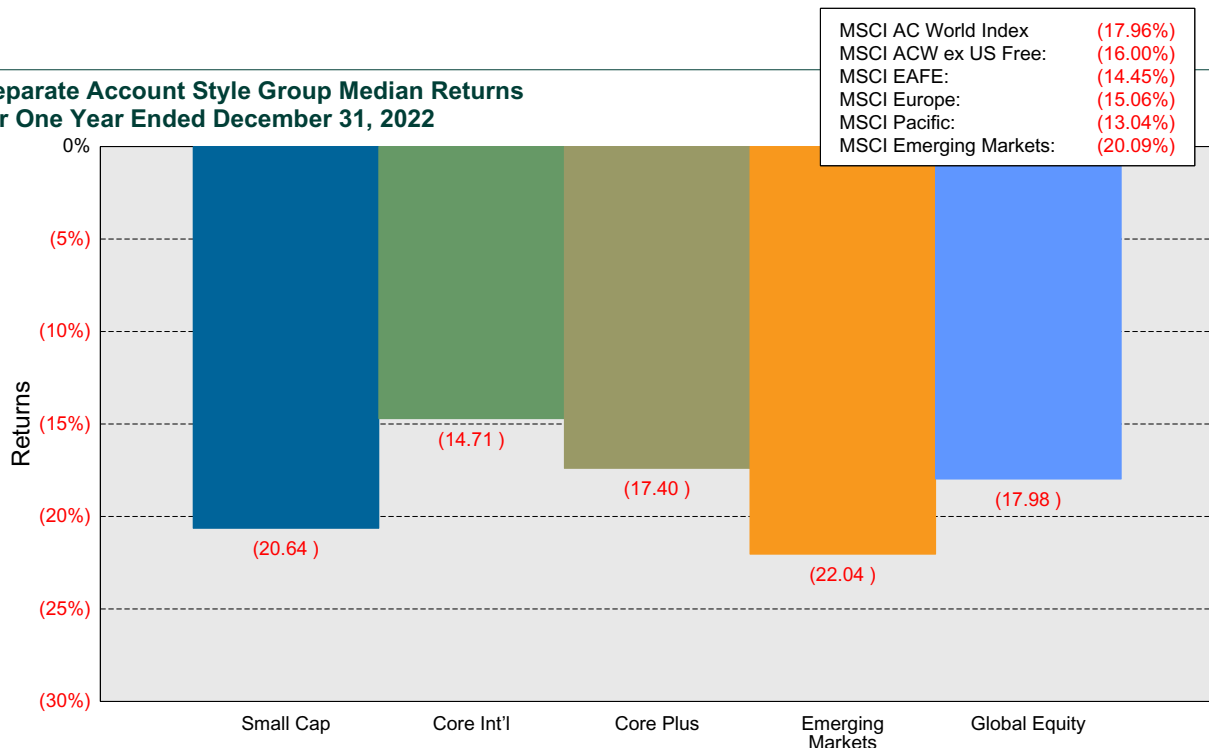
## International Equity Active Management Overview

Global ex-U.S. markets posted strong results, and currency appreciation vs. the U.S. dollar further bolstered returns. The MSCI ACWI ex USA Index gained 14.3% (Local: +7.8%), reducing its YTD loss to 16.0% (Local: -9.6%). Across developed market countries, gains were broad-based and value outpaced growth, but by a smaller margin than in the U.S. (MSCI ACWI ex USA Value: +15.7%; MSCI ACWI ex USA Growth: +12.9%). Unlike in the U.S., all sectors of the ACWI ex USA Index delivered a positive return in 4Q. Emerging markets (MSCI Emerging Markets: +9.7%; Local: +6.6%) also rebounded in 4Q, but returns were mixed across countries. While many countries were up double-digits, India (+2.0%) and Brazil (+2.4%) weighed on broad market returns. China (MSCI China: +13.5%) outperformed.

### Separate Account Style Group Median Returns for Quarter Ended December 31, 2022



### Separate Account Style Group Median Returns for One Year Ended December 31, 2022



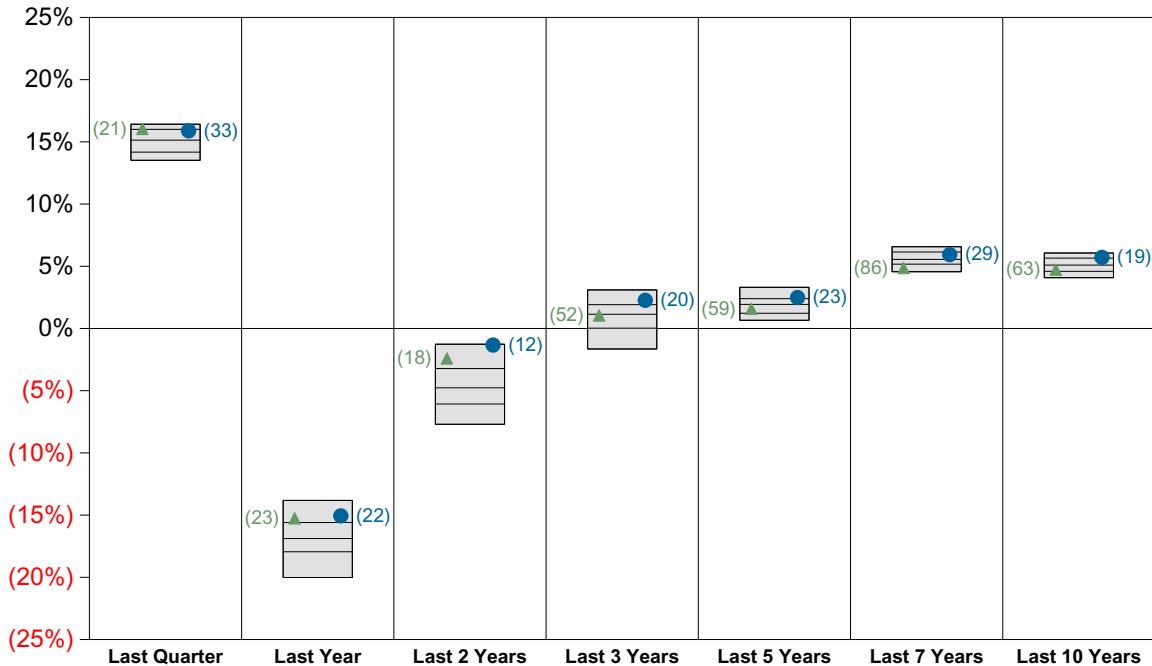


# Int'l Developed Markets Equity Period Ended December 31, 2022

## Quarterly Summary and Highlights

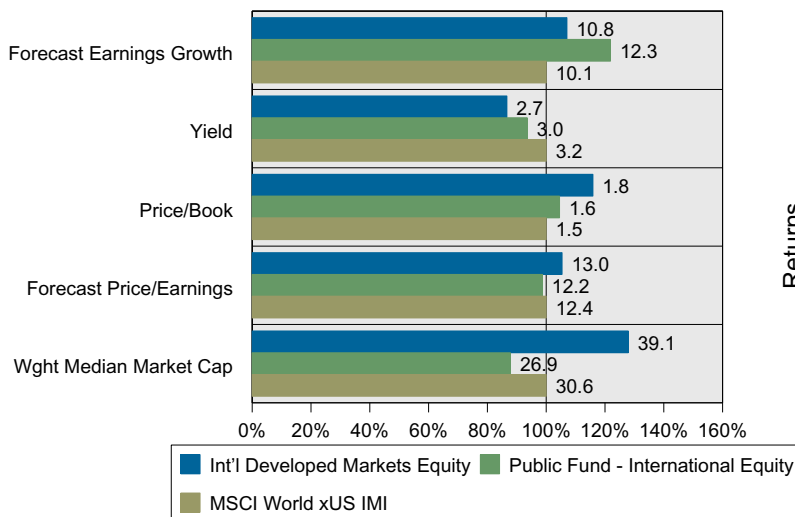
- Int'l Developed Markets Equity's portfolio posted a 15.89% return for the quarter placing it in the 33 percentile of the Public Fund - International Equity group for the quarter and in the 22 percentile for the last year.
- Int'l Developed Markets Equity's portfolio underperformed the MSCI World xUS IMI by 0.15% for the quarter and outperformed the MSCI World xUS IMI for the year by 0.19%.

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

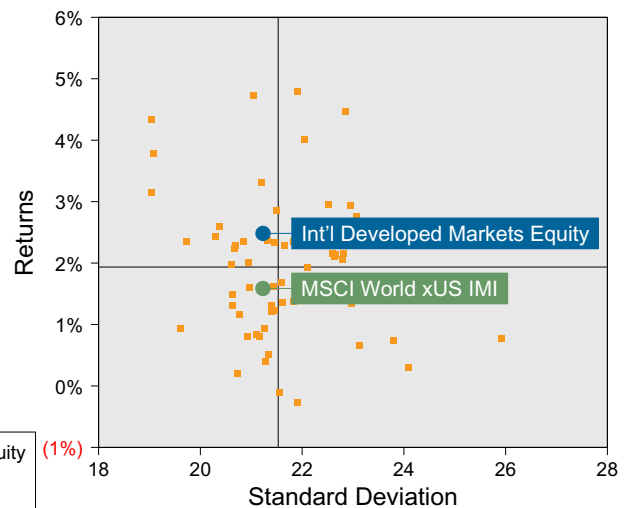


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	16.42	(13.82)	(1.26)	3.10	3.31	6.57	6.07
25th Percentile	16.00	(15.59)	(3.22)	1.92	2.40	6.15	5.65
Median	15.14	(16.88)	(4.77)	1.14	1.94	5.55	5.10
75th Percentile	14.17	(17.95)	(6.07)	0.02	1.22	5.17	4.59
90th Percentile	13.52	(20.02)	(7.70)	(1.65)	0.66	4.56	4.08
<b>Int'l Developed Markets Equity</b>	<b>15.89</b>	<b>(15.06)</b>	<b>(1.33)</b>	<b>2.26</b>	<b>2.48</b>	<b>5.93</b>	<b>5.71</b>
MSCI World xUS IMI	16.04	(15.26)	(2.41)	1.05	1.59	4.86	4.73

## Portfolio Characteristics as a Percentage of the MSCI World xUS IMI



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

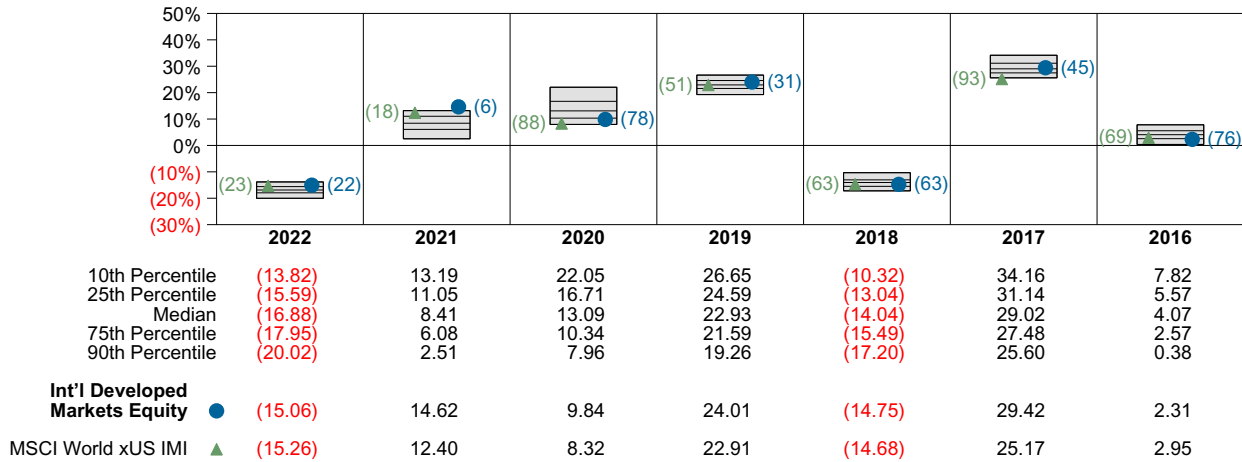


# Int'l Developed Markets Equity Return Analysis Summary

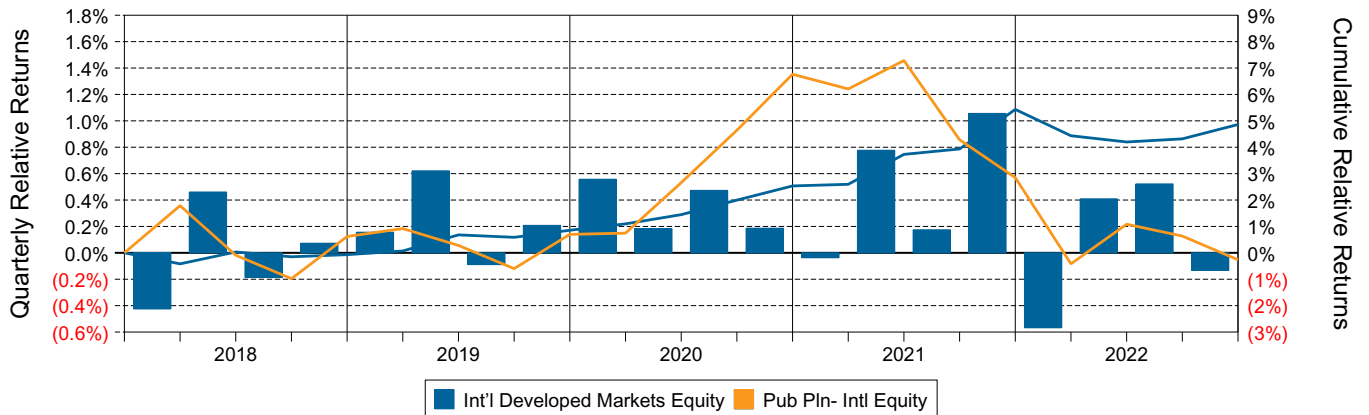
## Return Analysis

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.

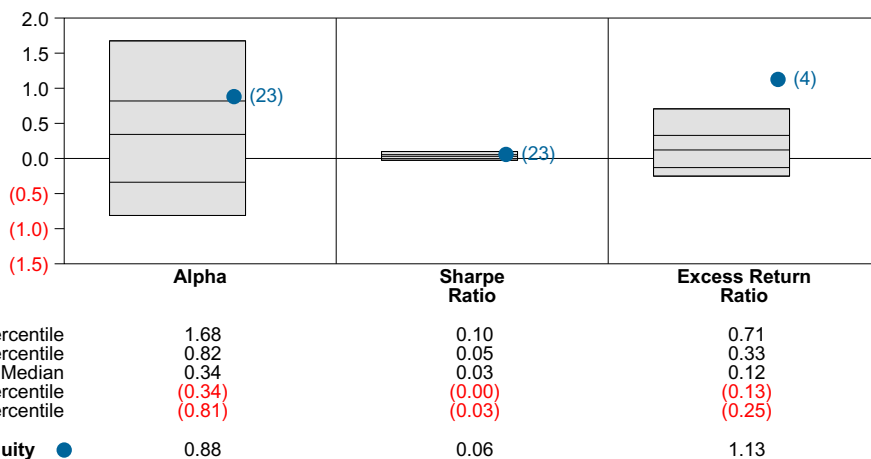
### Performance vs Public Fund - International Equity (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI World xUS IMI



### Risk Adjusted Return Measures vs MSCI World xUS IMI Rankings Against Public Fund - International Equity (Gross) Five Years Ended December 31, 2022

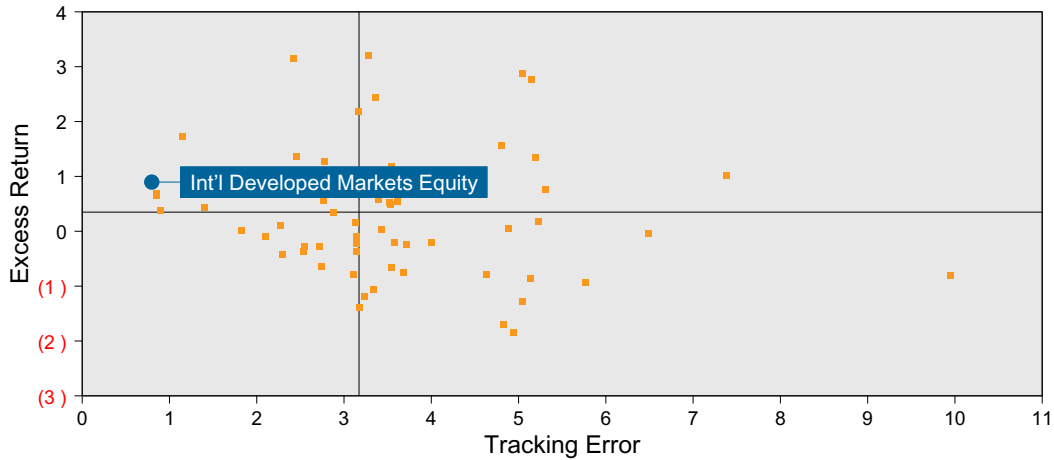


# Int'l Developed Markets Equity Risk Analysis Summary

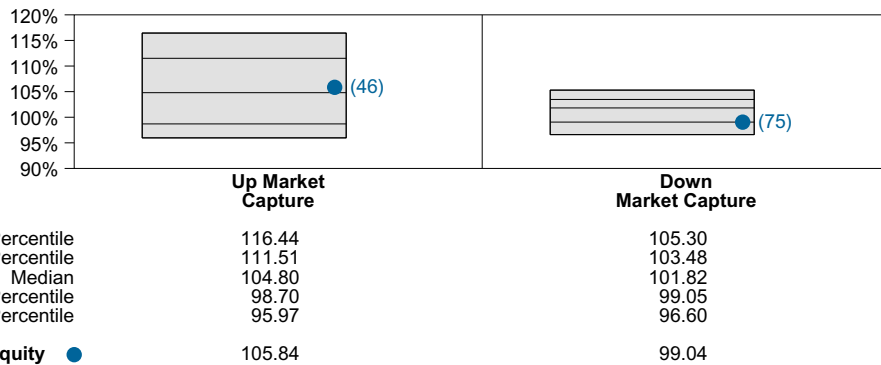
## Risk Analysis

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.

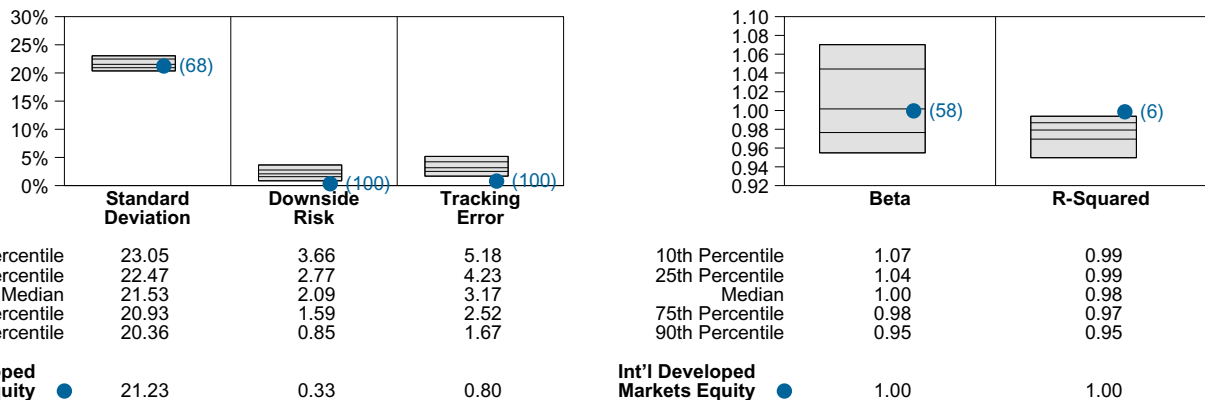
### Risk Analysis vs Public Fund - International Equity (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI World xUS IMI (Net) Rankings Against Public Fund - International Equity (Gross) Five Years Ended December 31, 2022



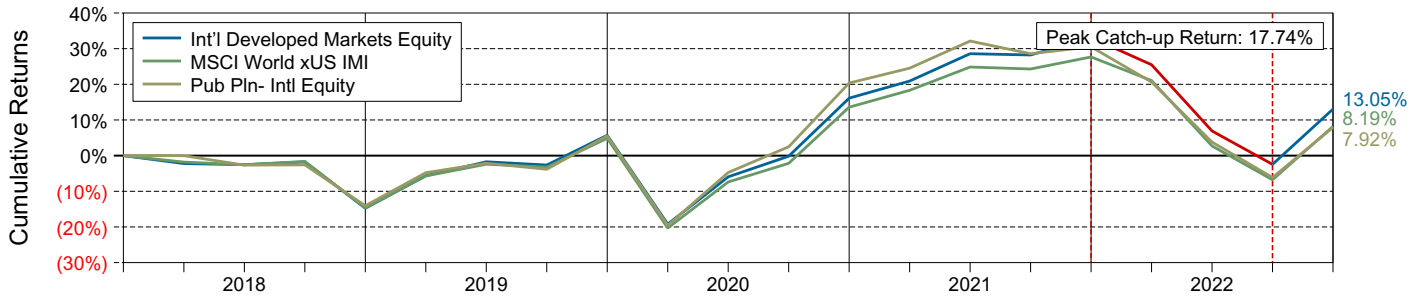
### Risk Statistics Rankings vs MSCI World xUS IMI (Net) Rankings Against Public Fund - International Equity (Gross) Five Years Ended December 31, 2022



## Int'l Developed Markets Equity Drawdown Analysis for Five Years Ended December 31, 2022

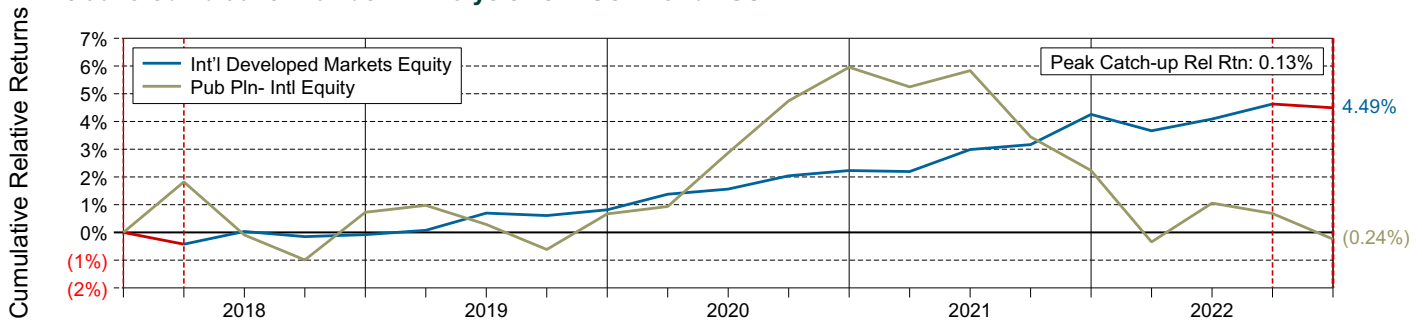
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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



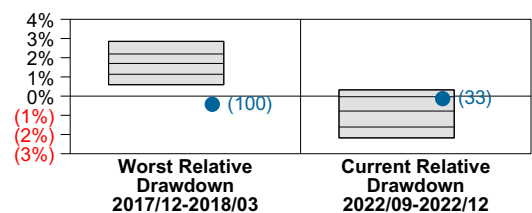
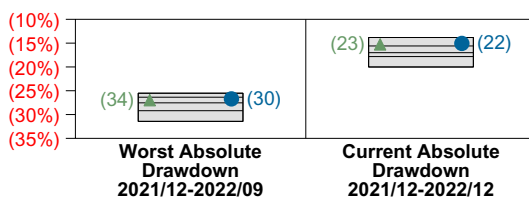
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Int'l Developed Markets Equity	(26.71)%	0.75	2021/12-2022/09	(26.97)%	(28.08)%	(15.06)%	1.00	2021/12-2022/12	(15.26)%	(17.31)%
Recovery from Trough	15.89%	0.25+	2022/09-2022/12	16.04%	14.98%	15.89%	0.25+	2022/09-2022/12	16.04%	14.98%
MSCI World xUS IMI	(26.97)%	0.75	2021/12-2022/09			(15.26)%	1.00	2021/12-2022/12		
Pub Pln- Intl Equity	(28.96)%	1.25	2021/06-2022/09			(18.32)%	1.50	2021/06-2022/12		

### Relative Cumulative Drawdown Analysis vs. MSCI World xUS IMI



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
Int'l Developed Markets Equity	(0.42)%	0.25	2017/12-2018/03	1.82%	(0.13)%	0.25	2022/09-2022/12	(0.92)%
Recovery from Trough	0.46%	0.25	2018/03-2018/06	(1.88)%	-	-	-	-
Pub Pln- Intl Equity	(5.95)%	1.25	2020/12-2022/03		(5.85)%	2.00	2020/12-2022/12	

### Drawdown Rankings vs. MSCI World xUS IMI Rankings against Public Fund - International Equity Five Years Ended December 31, 2022



10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

(25.52)  
(26.36)  
(27.54)  
(29.19)  
(31.43)

(13.82)  
(15.59)  
(17.01)  
(17.82)  
(20.02)

10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

2.85  
2.19  
1.70  
1.14  
0.59

0.33  
(0.03)  
(0.78)  
(1.61)  
(2.18)

**Int'l Developed Markets Equity** ● (26.71) (15.06)

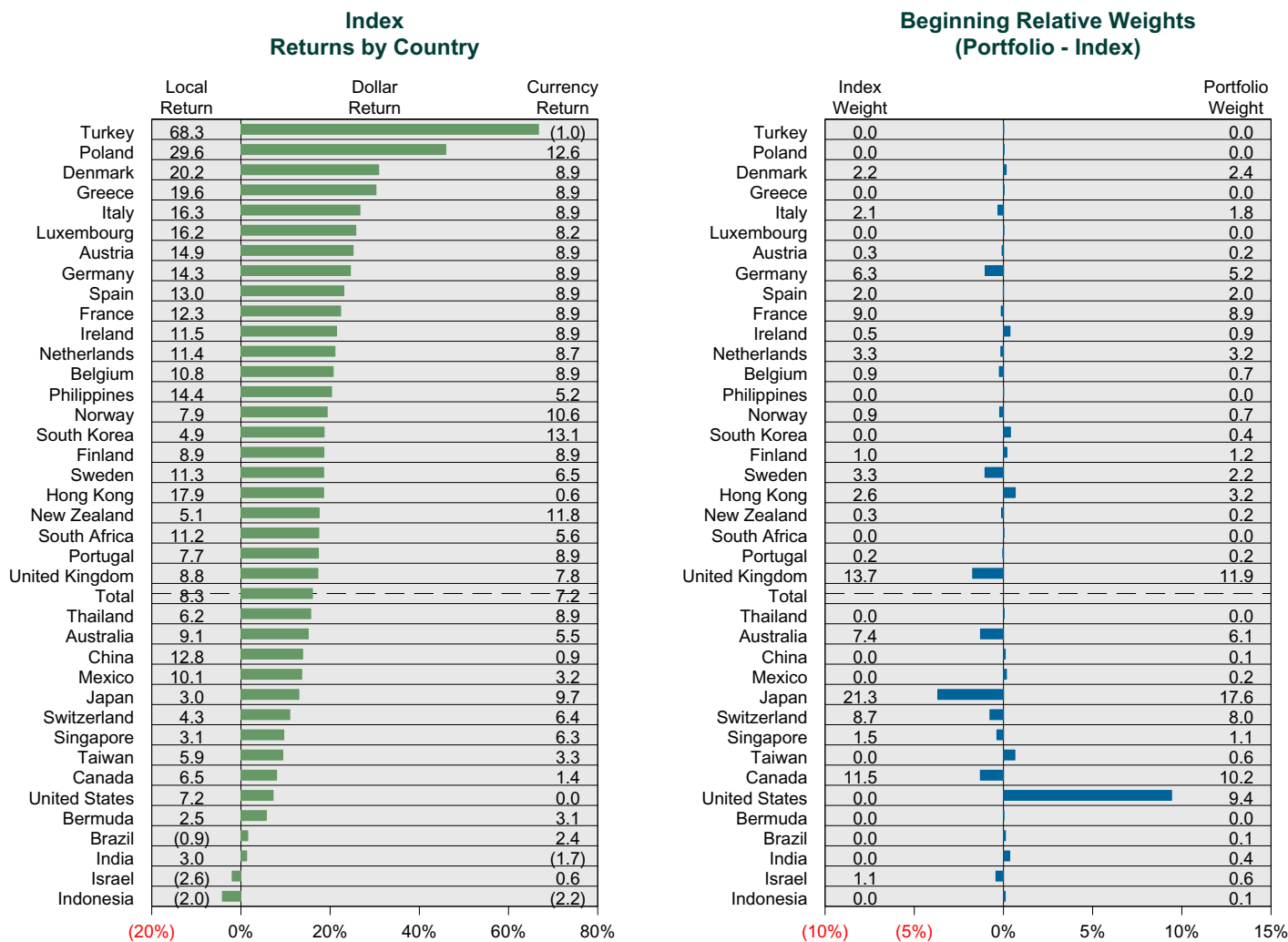
MSCI World xUS IMI ▲ (26.97) (15.26)

**Int'l Developed Markets Equity** ● (0.42) (0.13)

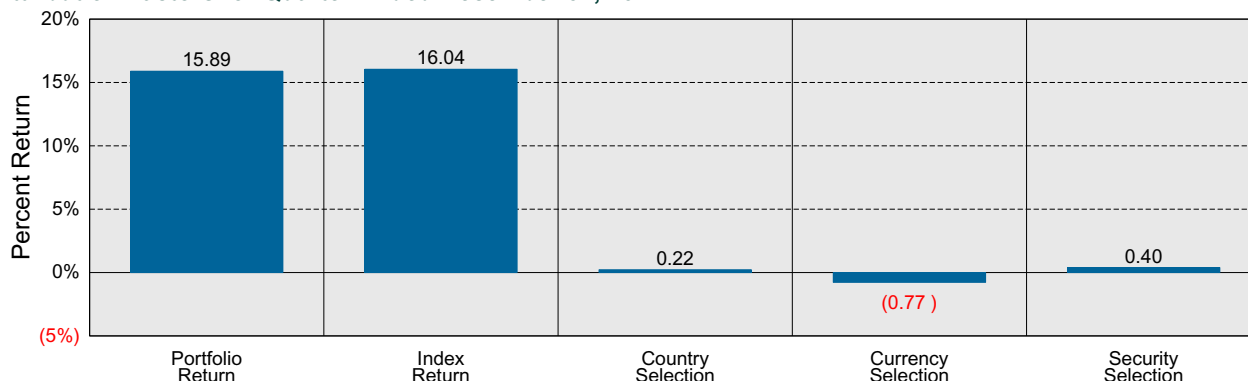
# Int'l Developed Markets Equity vs MSCI World xUS IMI Attribution for Quarter Ended December 31, 2022

## 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, 2022



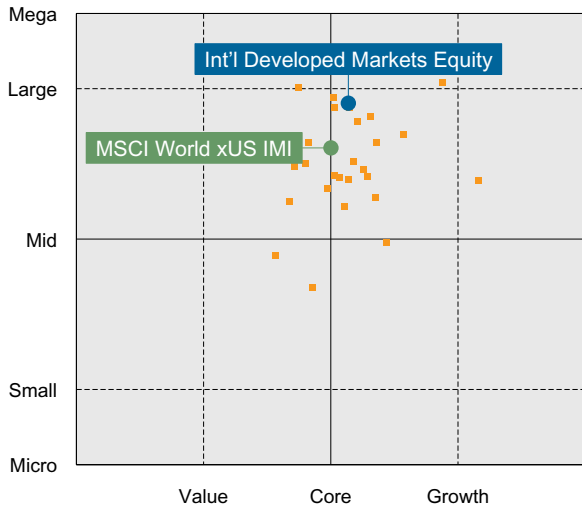
# Current Holdings Based Style Analysis

## Int'l Developed Markets Equity

### As of December 31, 2022

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.

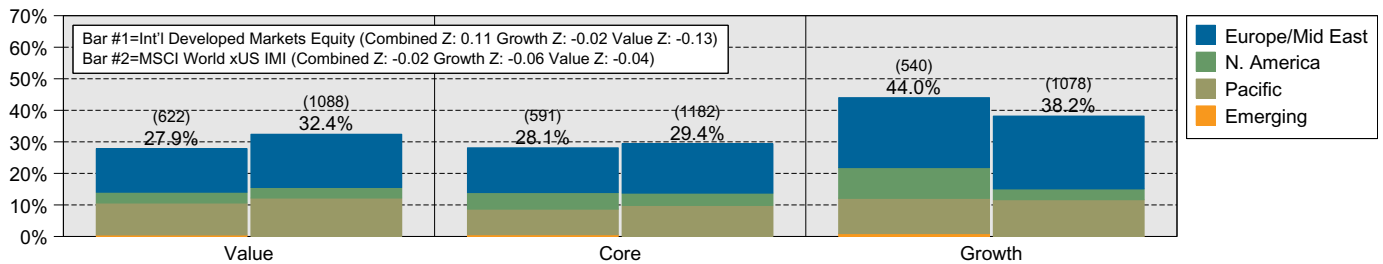
**Style Map vs Pub Pln- Intl Equity Holdings as of December 31, 2022**



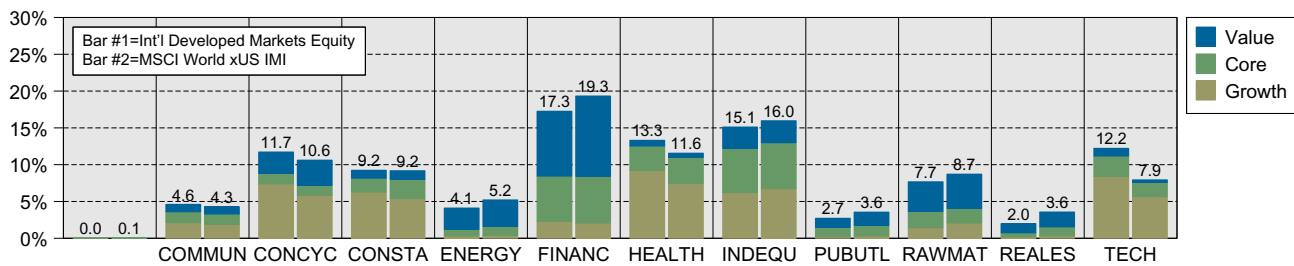
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Europe/ Mid East	13.8% (230)	14.2% (226)	22.2% (208)	50.2% (664)
N. America	16.9% (489)	15.7% (525)	23.1% (482)	55.6% (1496)
Pacific	3.4% (73)	5.3% (74)	9.8% (70)	18.4% (217)
Emerging	3.4% (94)	3.9% (125)	3.4% (103)	10.6% (322)
<b>Total</b>	<b>27.9% (622)</b>	<b>28.1% (591)</b>	<b>44.0% (540)</b>	<b>100.0% (1753)</b>
	32.4% (1088)	29.4% (1182)	38.2% (1078)	100.0% (3348)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**



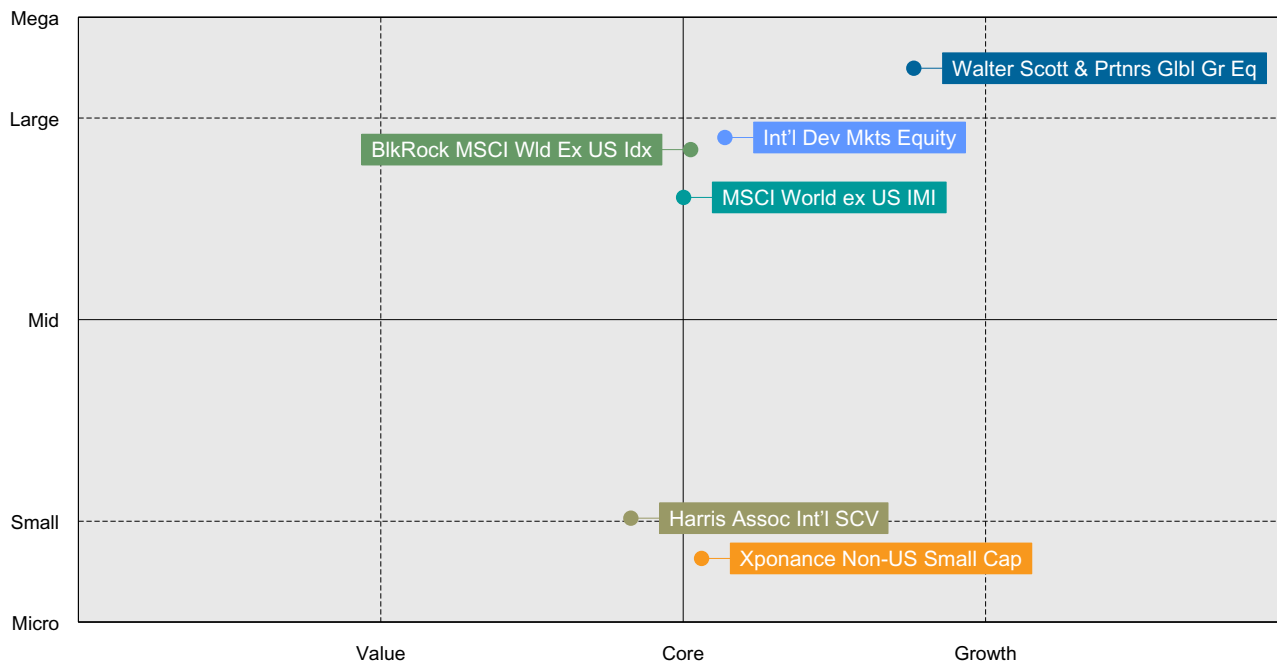


## International Holdings Based Style Analysis For One Quarter Ended December 31, 2022

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, 2022



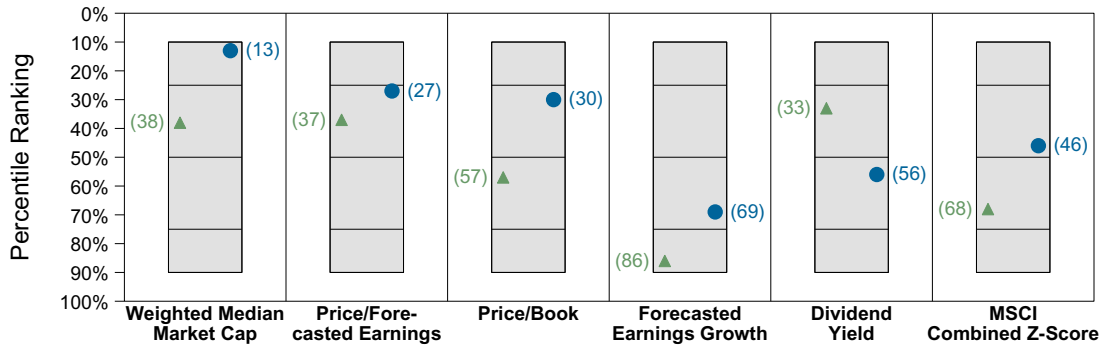
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
Walter Scott & Prtnrs Gbl Gr Eq	5.19%	94.73	0.69	0.12	(0.57)	47	16.30
BlkRock MSCI Wld Ex US Idx	77.20%	37.22	0.00	(0.05)	(0.06)	881	104.41
Harris Assoc Int'l SCV	2.89%	2.43	(0.18)	(0.10)	0.08	59	19.19
Xponance Non-US Small Cap	4.64%	1.84	0.04	0.08	0.04	913	109.81
Int'l Dev Mkts Equity	100.00%	38.90	0.11	(0.02)	(0.13)	1834	113.91
MSCI World ex US IMI	-	30.57	(0.02)	(0.06)	(0.04)	3388	146.79

# Int'l 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.

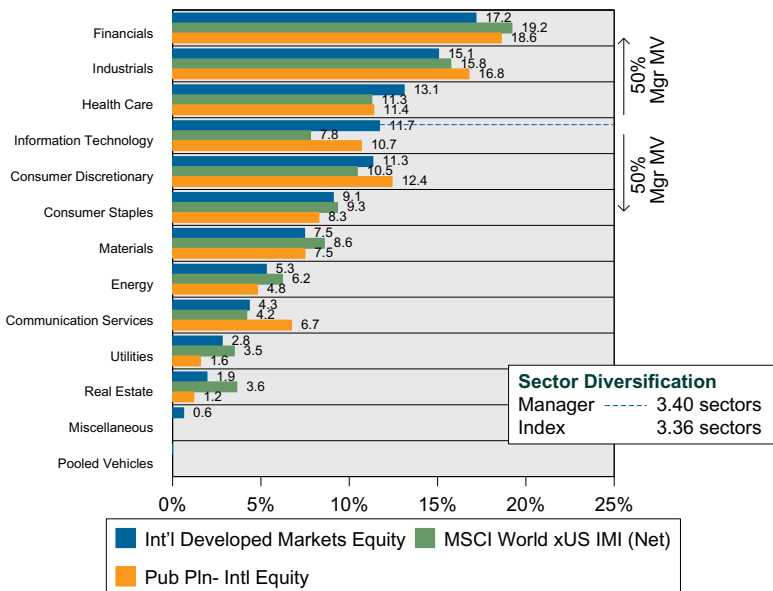
## Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - International Equity as of December 31, 2022



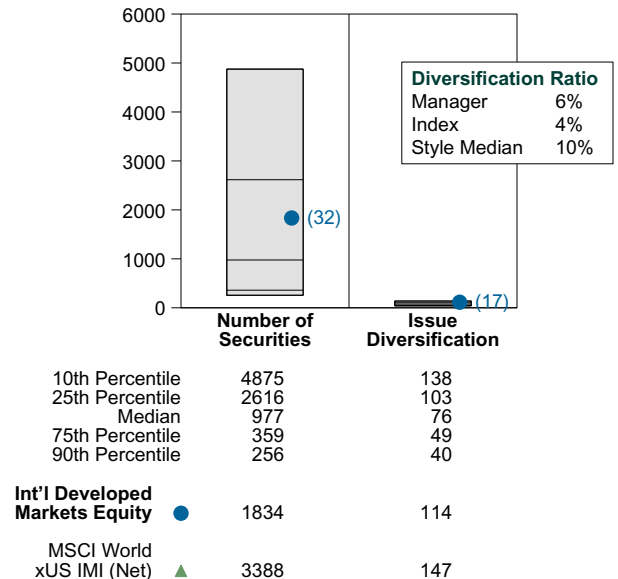
## Sector Weights

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.

### Sector Allocation December 31, 2022



### Diversification December 31, 2022



# Country Allocation

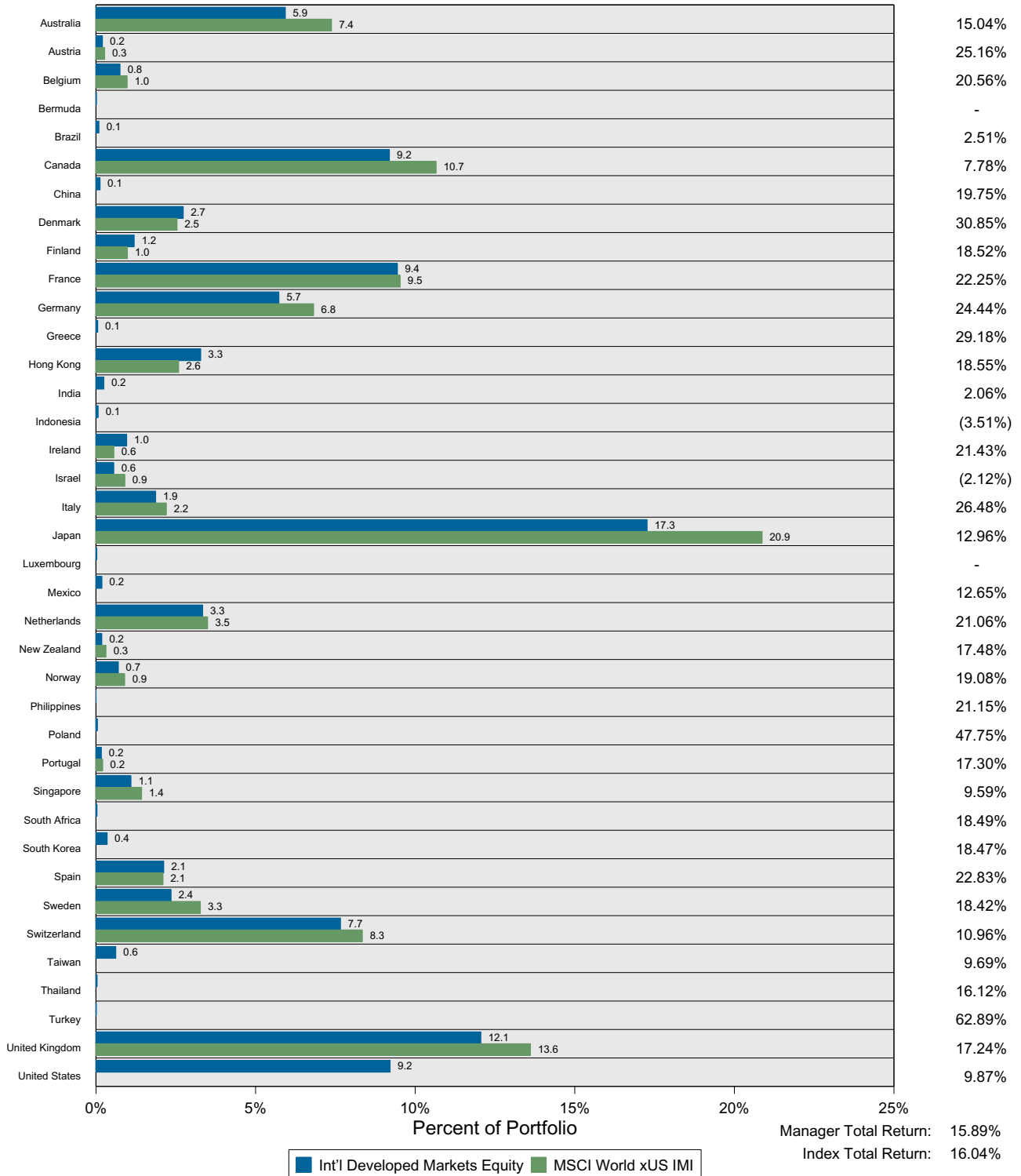
## Int'l Developed Markets Equity VS MSCI World xUS IMI (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

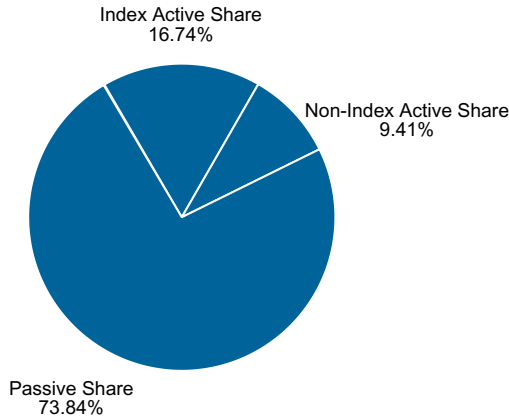
### Index Rtns



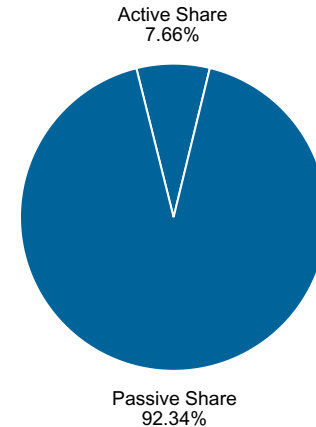
## Int'l Developed Markets Equity Active Share Analysis as of December 31, 2022 vs. MSCI World xUS IMI (Net)

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



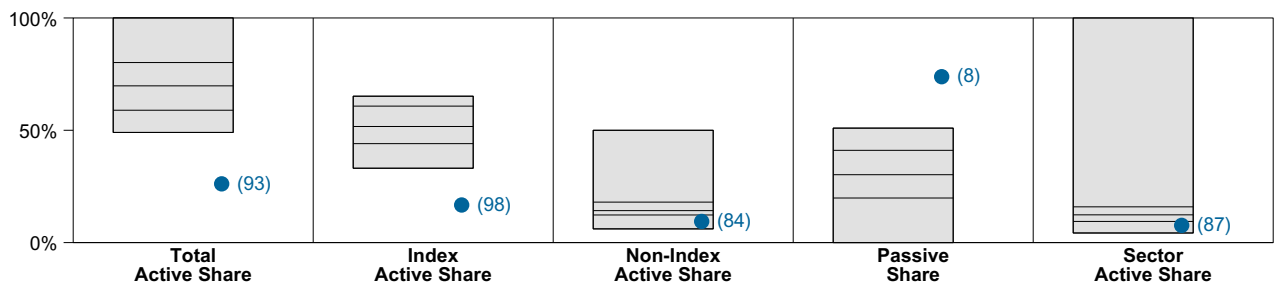
### Sector Exposure Active Share



**Total Active Share: 26.16%**

	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	12.81%	8.04%	20.86%	4.20%	4.35%	0.84%
Consumer Discretionary	20.85%	9.93%	30.78%	10.46%	11.34%	3.19%
Consumer Staples	13.24%	7.59%	20.82%	9.34%	9.10%	1.93%
Energy	20.30%	14.46%	34.76%	6.22%	5.31%	2.05%
Financials	11.80%	3.63%	15.43%	19.21%	17.18%	3.31%
Health Care	15.99%	11.04%	27.03%	11.28%	13.11%	3.10%
Industrials	18.06%	5.64%	23.70%	15.75%	15.06%	3.85%
Information Technology	26.20%	21.12%	47.32%	7.81%	11.71%	3.88%
Materials	14.57%	5.71%	20.28%	8.59%	7.47%	1.81%
Miscellaneous	50.00%	50.00%	100.00%	-	0.63%	0.44%
Pooled Vehicles	50.00%	50.00%	100.00%	-	0.00%	0.00%
Real Estate	42.45%	4.91%	47.36%	3.63%	1.95%	1.07%
Utilities	16.82%	5.17%	21.99%	3.50%	2.81%	0.67%
<b>Total</b>	<b>16.74%</b>	<b>9.41%</b>	<b>26.16%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>26.14%</b>

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



	Total Active Share	Index Active Share	Non-Index Active Share	Passive Share	Sector Active Share
10th Percentile	100.00	65.17	50.00	50.97	100.00
25th Percentile	80.16	60.76	18.02	41.08	15.91
Median	69.78	51.68	14.23	30.22	12.35
75th Percentile	58.92	44.05	12.29	19.84	9.43
90th Percentile	49.03	33.11	6.10	0.00	4.27

Int'l Developed Markets Equity ●

26.16

16.74

9.41

73.84

7.66



# Walter Scott & Prtnrs Gbl Gr Eq Period Ended December 31, 2022

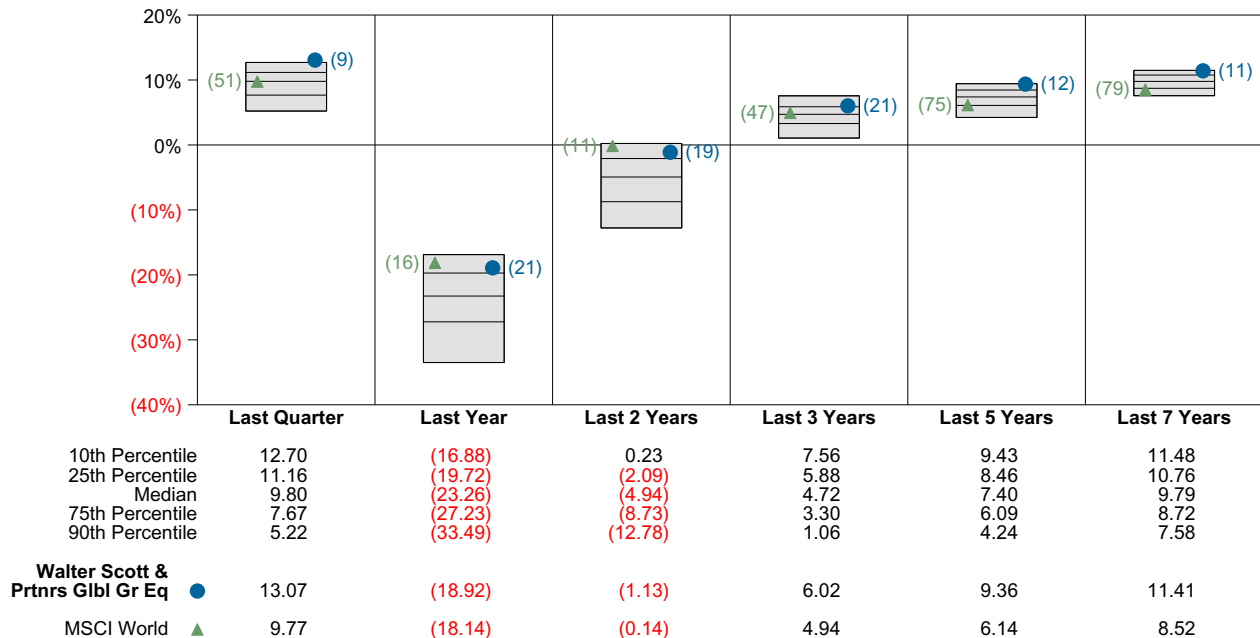
## Investment Philosophy

Walter Scott was founded in 1983 and is based in Edinburgh, Scotland. The firm-wide philosophy is centered on the belief that companies with sustainable wealth generation, as defined by 1) cash return on capital employed, 2) return on equity, and 3) growth in earnings per share, will outperform over the long-term. The 22-person investment team of regional experts identifies these opportunities through in-house, bottom-up research. Walter Scott seeks high-quality and competitively-positioned companies that generate strong cash flows and are led by prudent management teams. The Global Equity portfolio holds 40 to 60 stocks with opportunistic exposure to emerging markets. The consistently-applied process is reflected in the strategy's compelling longer-term investment performance.

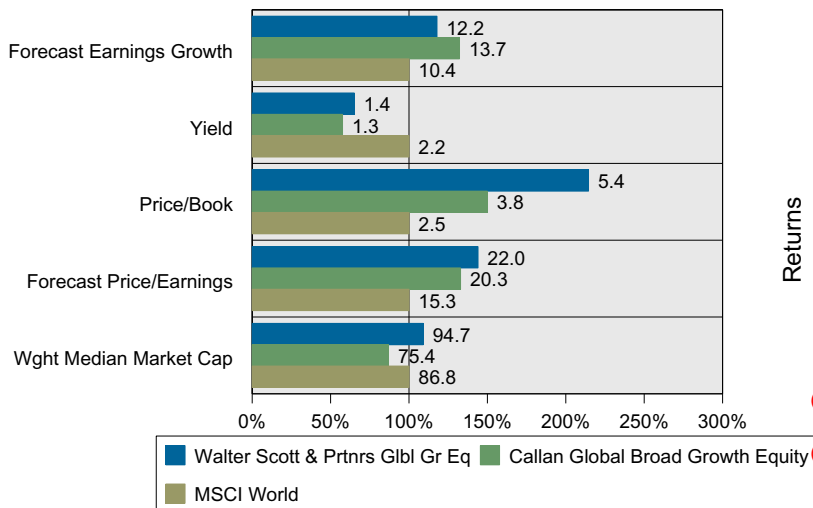
## Quarterly Summary and Highlights

- Walter Scott & Prtnrs Gbl Gr Eq's portfolio posted a 13.07% return for the quarter placing it in the 9 percentile of the Callan Global Broad Growth Equity group for the quarter and in the 21 percentile for the last year.
- Walter Scott & Prtnrs Gbl Gr Eq's portfolio outperformed the MSCI World by 3.30% for the quarter and underperformed the MSCI World for the year by 0.78%.

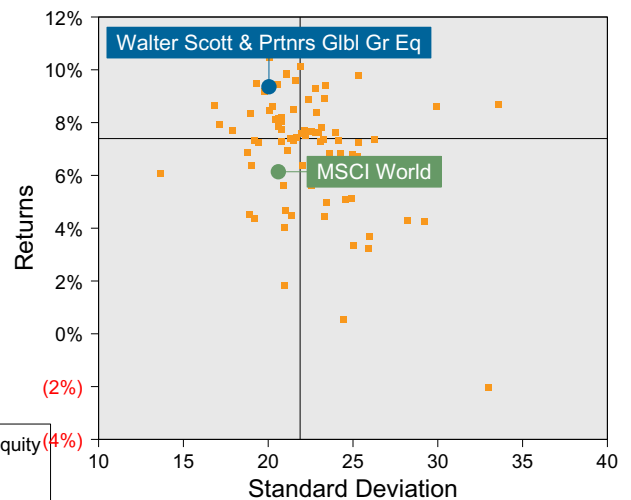
## Performance vs Callan Global Broad Growth Equity (Gross)



## Portfolio Characteristics as a Percentage of the MSCI World



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

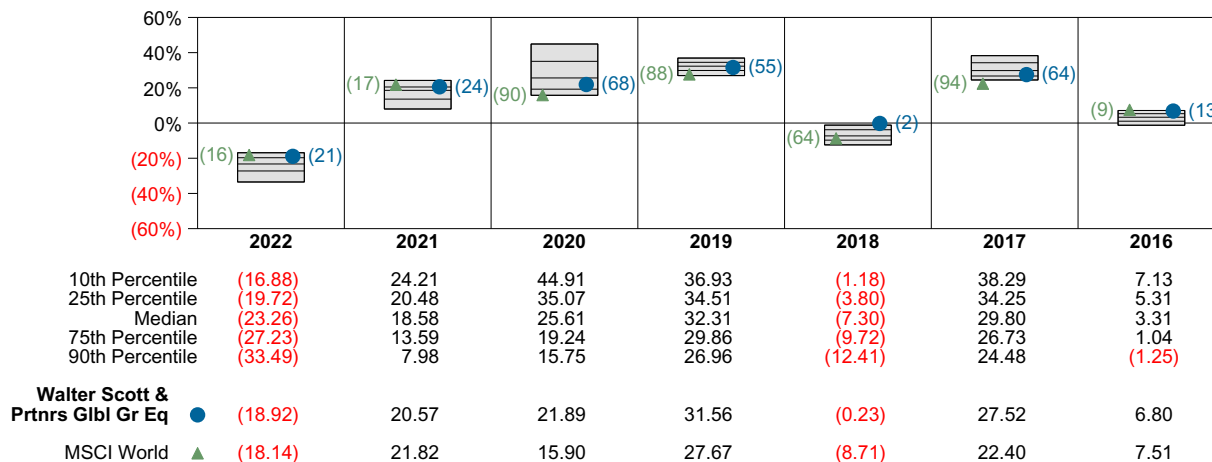


# Walter Scott & Prtnrs Gbl Gr Eq Return Analysis Summary

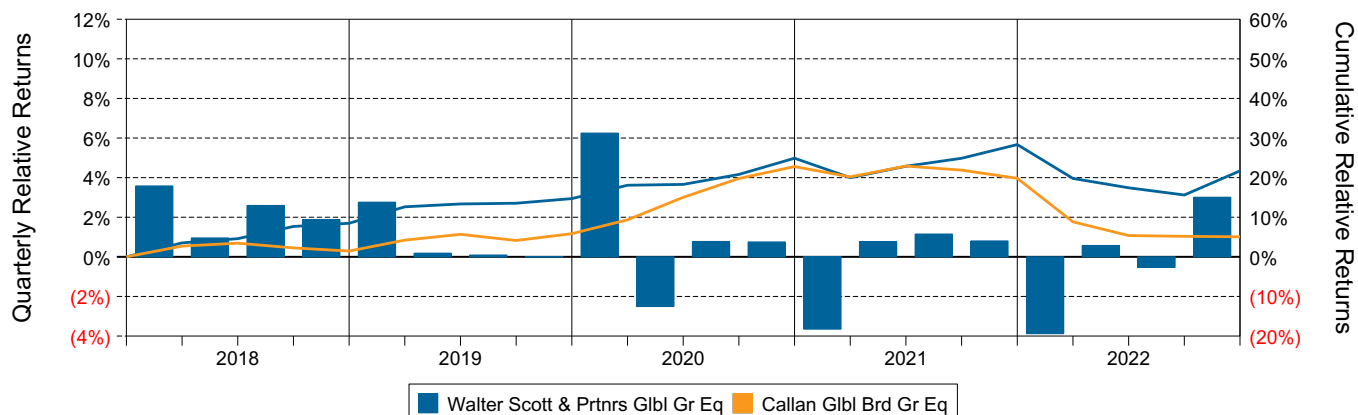
## Return Analysis

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.

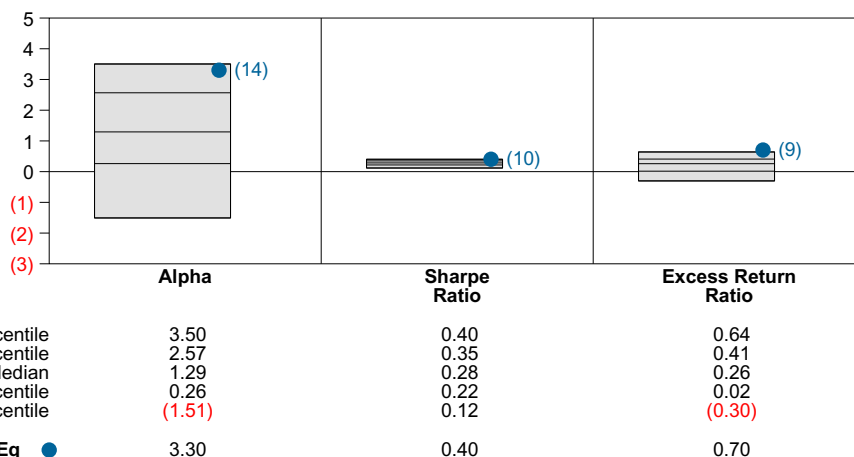
### Performance vs Callan Global Broad Growth Equity (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI World



### Risk Adjusted Return Measures vs MSCI World Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2022

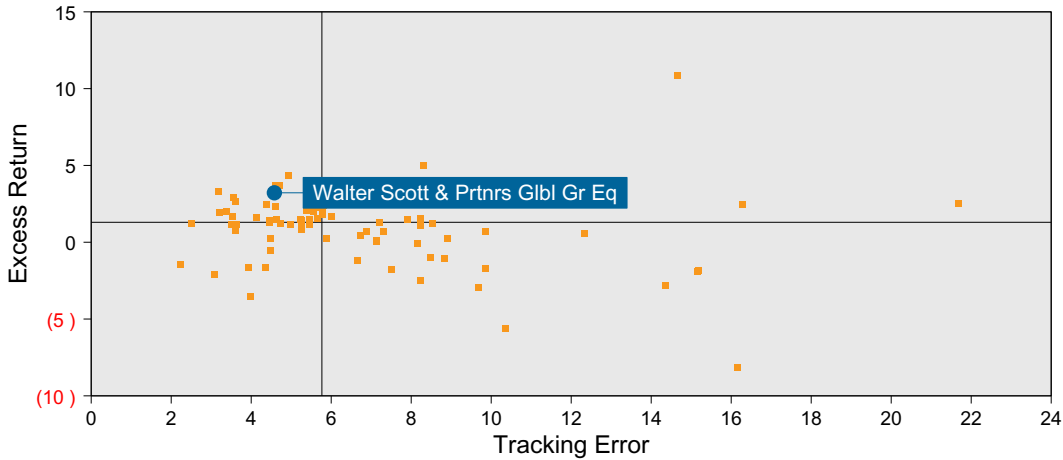


# Walter Scott & Prtnrs Gbl Gr Eq Risk Analysis Summary

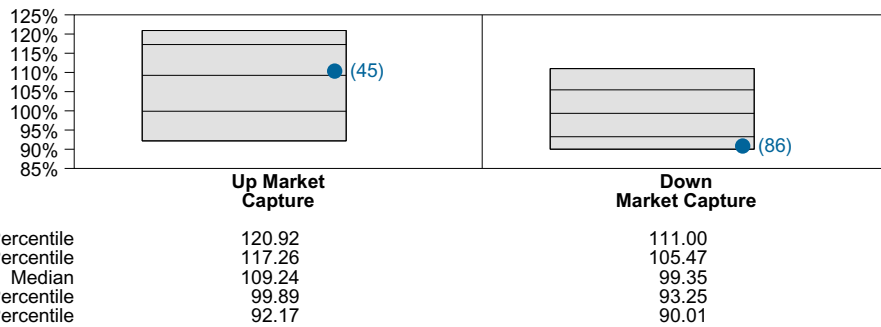
## Risk Analysis

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.

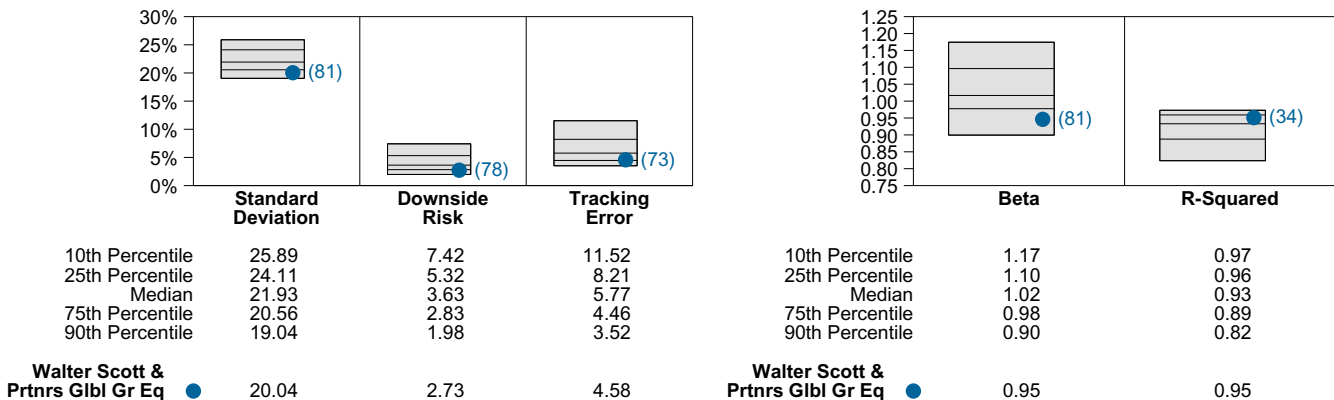
### Risk Analysis vs Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI World (Net) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2022



### Risk Statistics Rankings vs MSCI World (Net) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended December 31, 2022





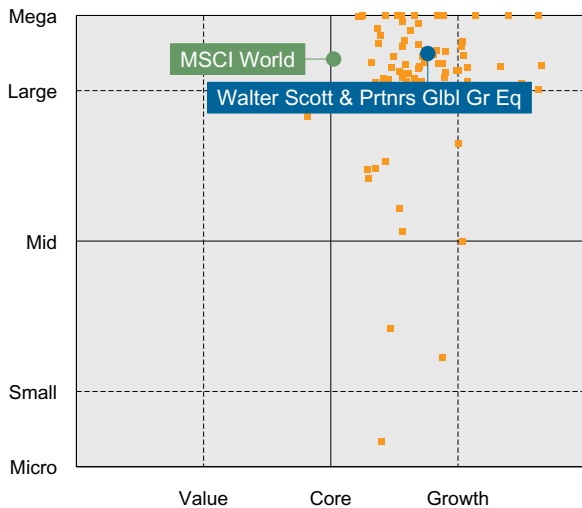
# Current Holdings Based Style Analysis

## Walter Scott & Prtnrs Gbl Gr Eq

### As of December 31, 2022

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.

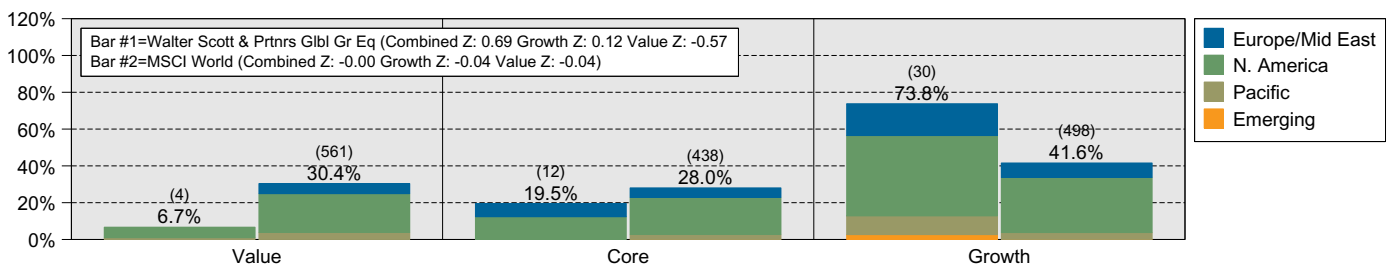
**Style Map vs Callan Gbl Brd Gr Eq Holdings as of December 31, 2022**



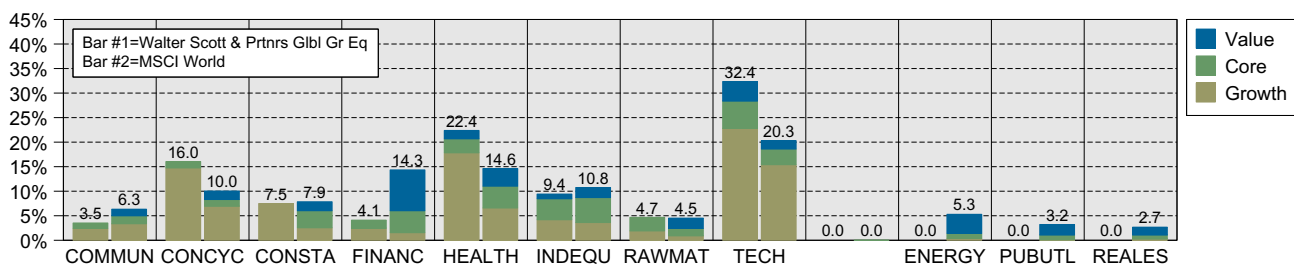
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Europe/Mid East	0.0% (0)	7.2% (5)	17.3% (7)	24.5% (12)
N. America	5.5% (156)	5.2% (128)	7.8% (157)	18.5% (441)
Pacific	1.0% (1)	0.0% (0)	10.2% (5)	11.1% (6)
Emerging	0.0% (0)	0.0% (0)	2.6% (1)	2.6% (1)
<b>Total</b>	<b>6.7% (4)</b>	<b>19.5% (12)</b>	<b>73.8% (30)</b>	<b>100.0% (46)</b>
	30.4% (561)	28.0% (438)	41.6% (498)	100.0% (1497)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

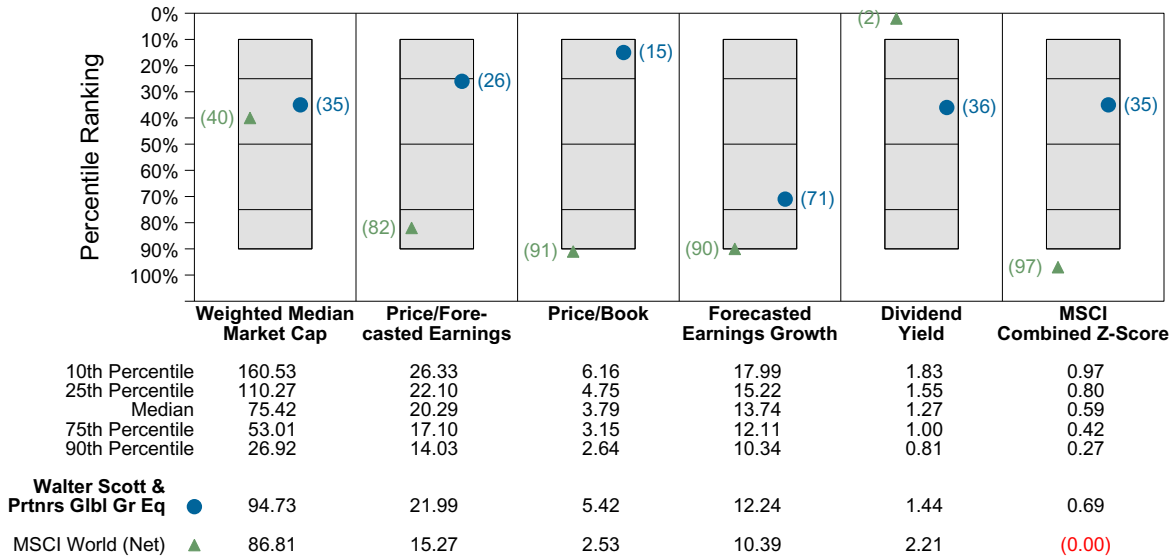


# Walter Scott & Prtnrs Gbl Gr Eq Equity Characteristics Analysis Summary

## Portfolio Characteristics

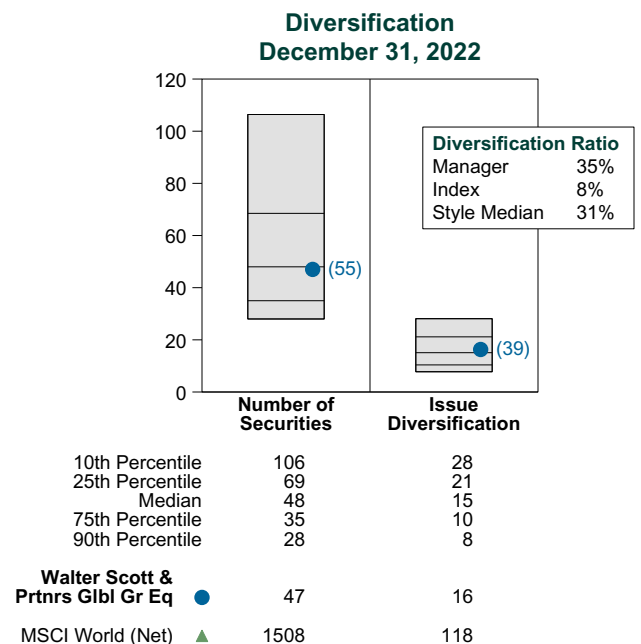
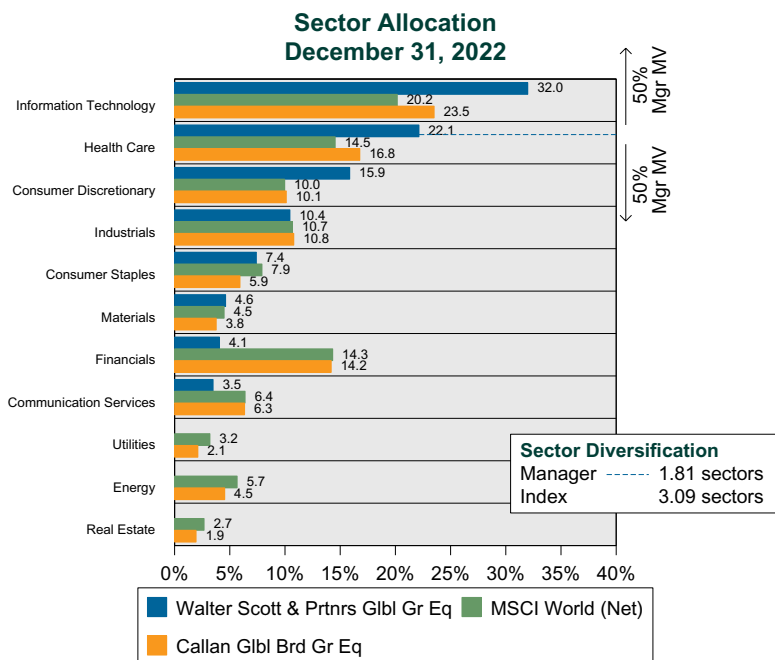
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Global Broad Growth Equity as of December 31, 2022



## 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.



# BlackRock MSCI World Ex US Index Period Ended December 31, 2022

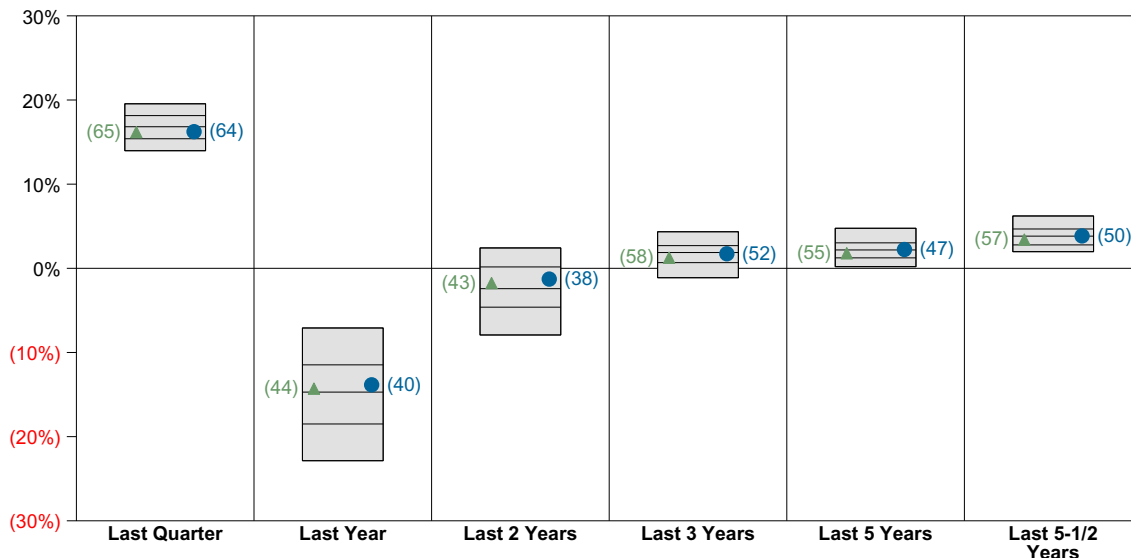
## Investment Philosophy

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

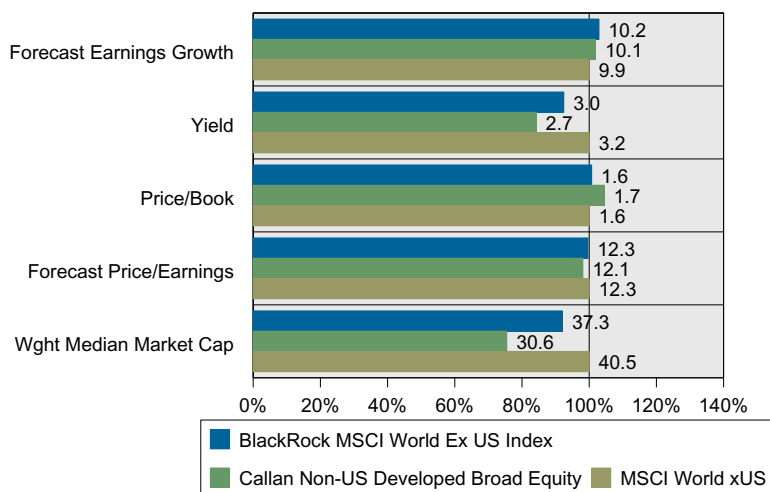
- BlackRock MSCI World Ex US Index's portfolio posted a 16.24% return for the quarter placing it in the 64 percentile of the Callan Non-US Developed Broad Equity group for the quarter and in the 40 percentile for the last year.
- BlackRock MSCI World Ex US Index's portfolio outperformed the MSCI World xUS by 0.05% for the quarter and outperformed the MSCI World xUS for the year by 0.45%.

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

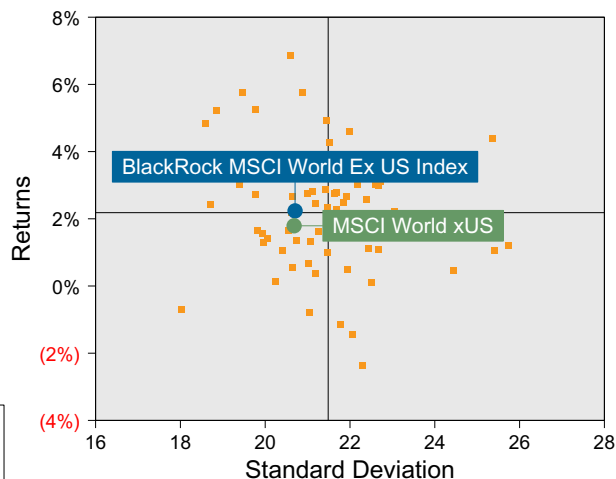


10th Percentile	19.55	(7.09)	2.42	4.34	4.76	6.22	
25th Percentile	18.14	(11.47)	0.17	2.70	3.02	4.67	
Median	16.82	(14.71)	(2.42)	1.88	2.18	3.82	
75th Percentile	15.40	(18.49)	(4.62)	0.68	1.24	2.78	
90th Percentile	13.97	(22.86)	(7.92)	(1.12)	0.20	1.98	
<b>BlackRock MSCI World Ex US Index</b>	●	16.24	(13.84)	(1.28)	1.73	2.24	3.85
MSCI World xUS	▲	16.18	(14.29)	(1.75)	1.27	1.79	3.42

## Portfolio Characteristics as a Percentage of the MSCI World xUS



## Callan Non-US Developed Broad Equity (Gross) Annualized Five Year Risk vs Return

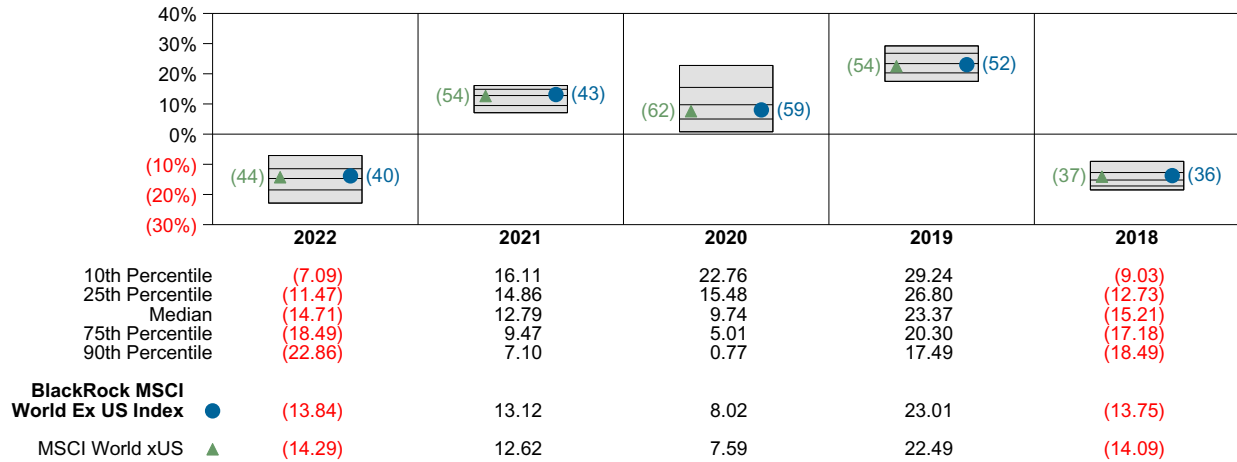


# BlackRock MSCI World Ex US Index Return Analysis Summary

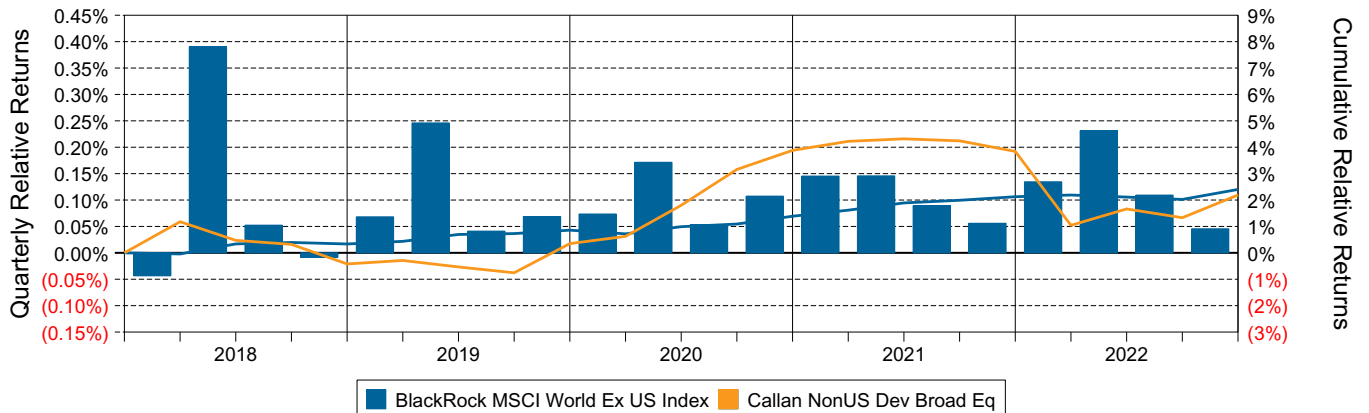
## Return Analysis

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.

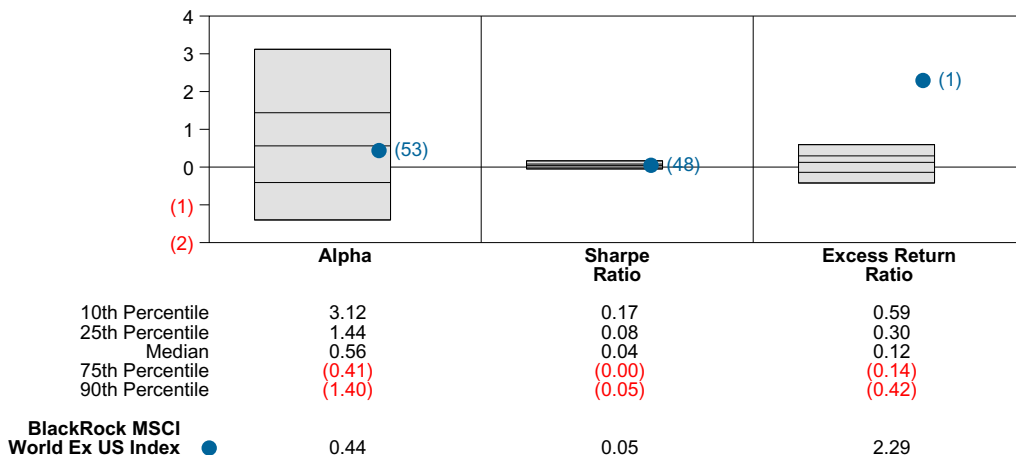
### Performance vs Callan Non-US Developed Broad Equity (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI World xUS



### Risk Adjusted Return Measures vs MSCI World xUS Rankings Against Callan Non-US Developed Broad Equity (Gross) Five Years Ended December 31, 2022

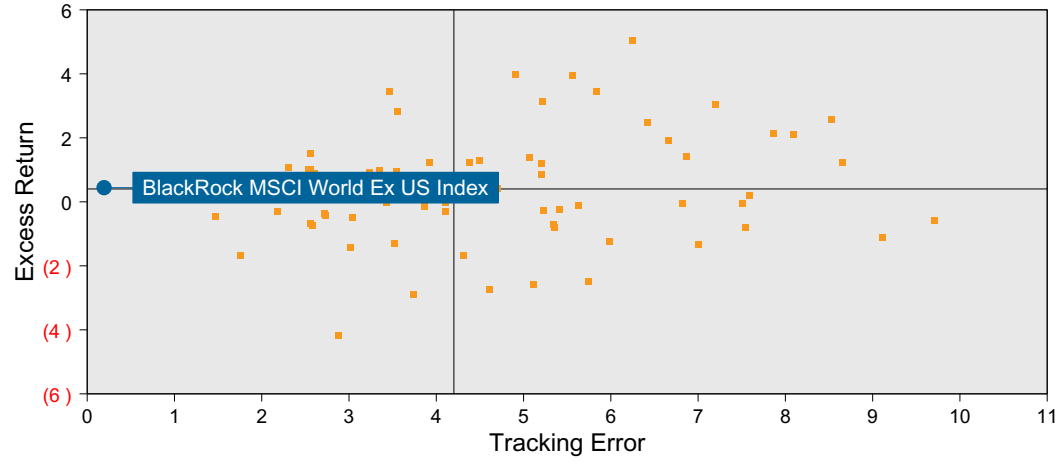


# BlackRock MSCI World Ex US Index Risk Analysis Summary

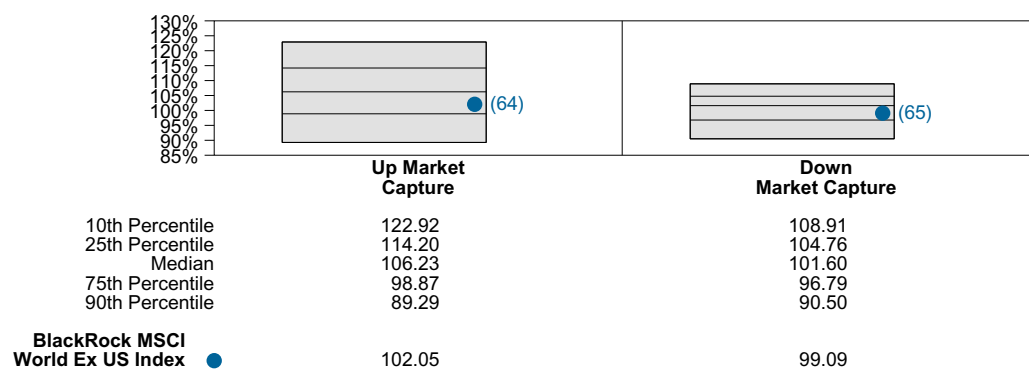
## Risk Analysis

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.

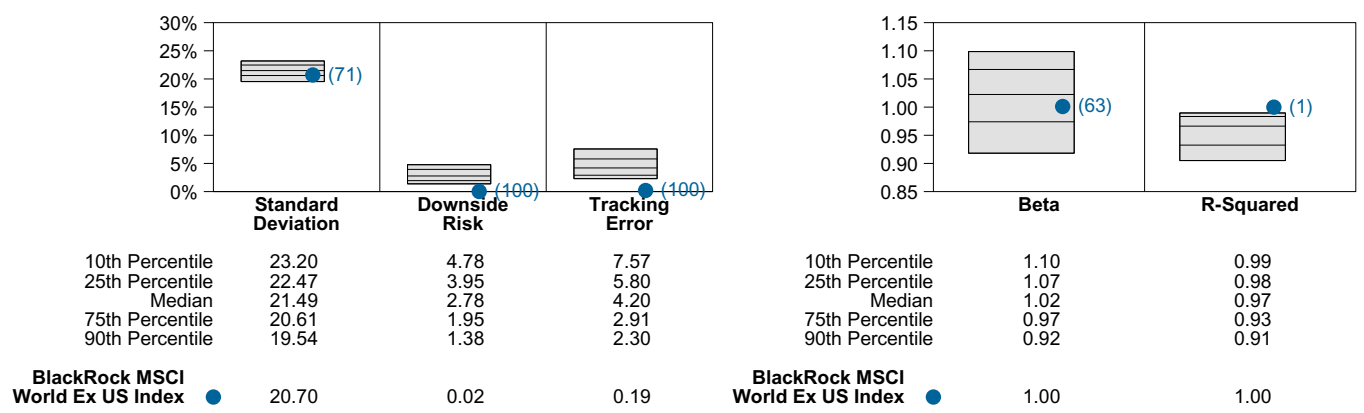
**Risk Analysis vs Callan Non-US Developed Broad Equity (Gross)**  
Five Years Ended December 31, 2022



**Market Capture vs MSCI World xUS (Net)**  
Rankings Against Callan Non-US Developed Broad Equity (Gross)  
Five Years Ended December 31, 2022



**Risk Statistics Rankings vs MSCI World xUS (Net)**  
Rankings Against Callan Non-US Developed Broad Equity (Gross)  
Five Years Ended December 31, 2022



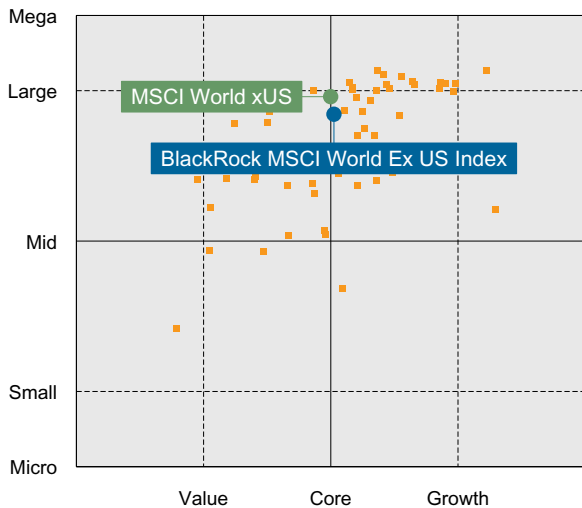
# Current Holdings Based Style Analysis

## BlackRock MSCI World Ex US Index

### As of December 31, 2022

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.

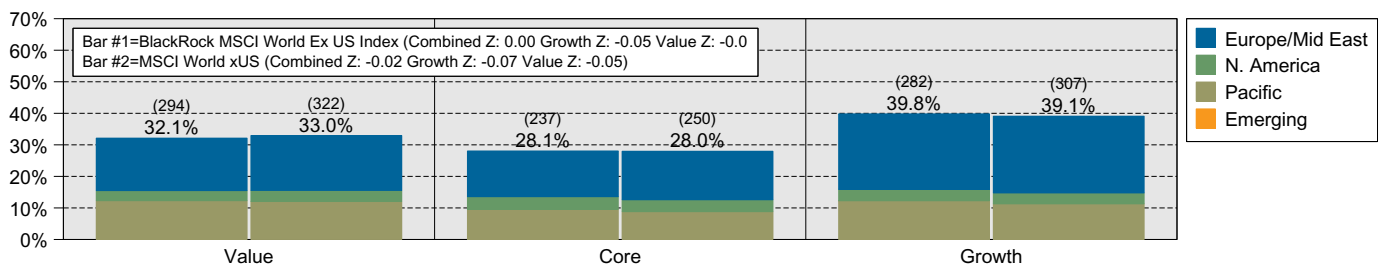
**Style Map vs Callan NonUS Dev Broad Eq Holdings as of December 31, 2022**



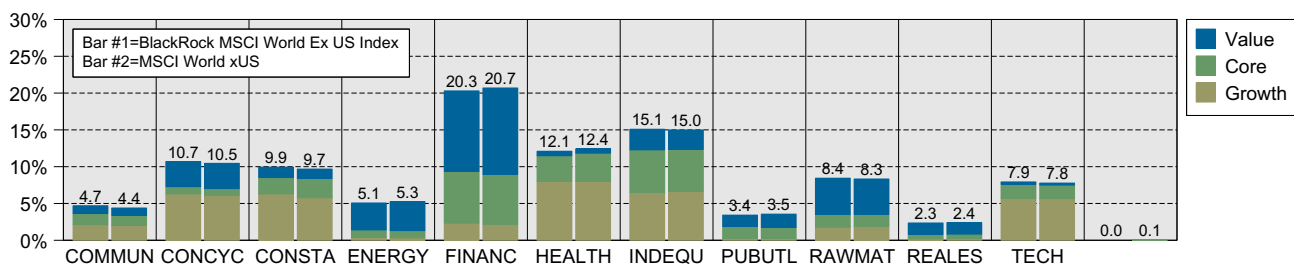
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Europe/ Mid East	16.6% (137)	14.5% (117)	24.0% (131)	55.1% (385)
N. America	17.4% (157)	15.4% (127)	24.3% (153)	57.1% (437)
Pacific	3.2% (25)	4.0% (22)	3.6% (32)	10.8% (79)
Emerging	3.5% (28)	3.8% (24)	3.5% (35)	10.7% (87)
<b>Total</b>	<b>32.1% (294)</b>	<b>28.1% (237)</b>	<b>39.8% (282)</b>	<b>100.0% (813)</b>
	33.0% (322)	28.0% (250)	39.1% (307)	100.0% (879)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

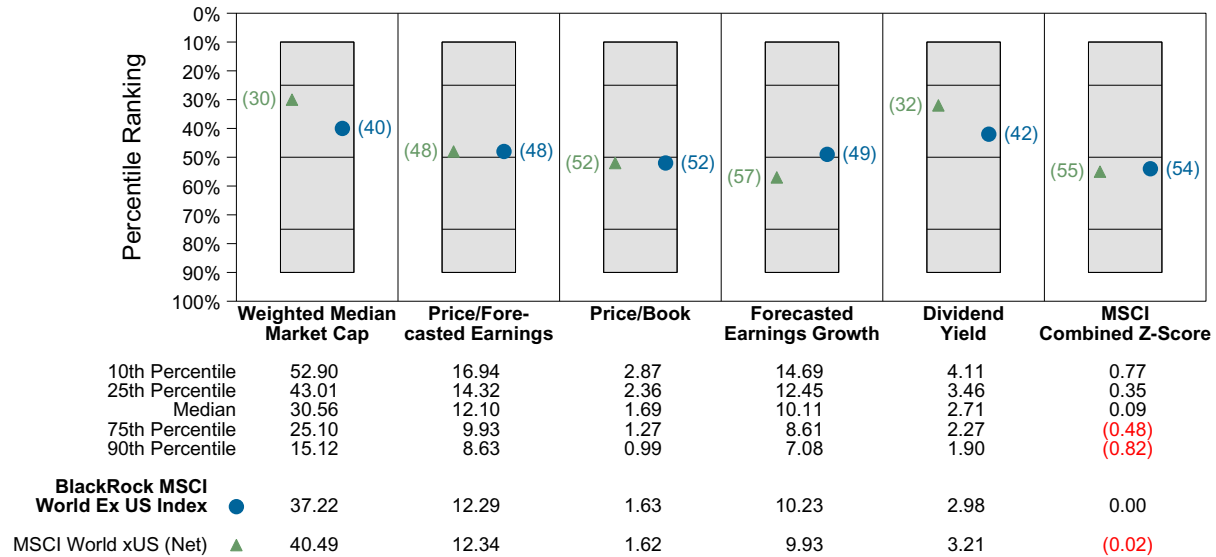


# BlackRock MSCI World Ex US Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

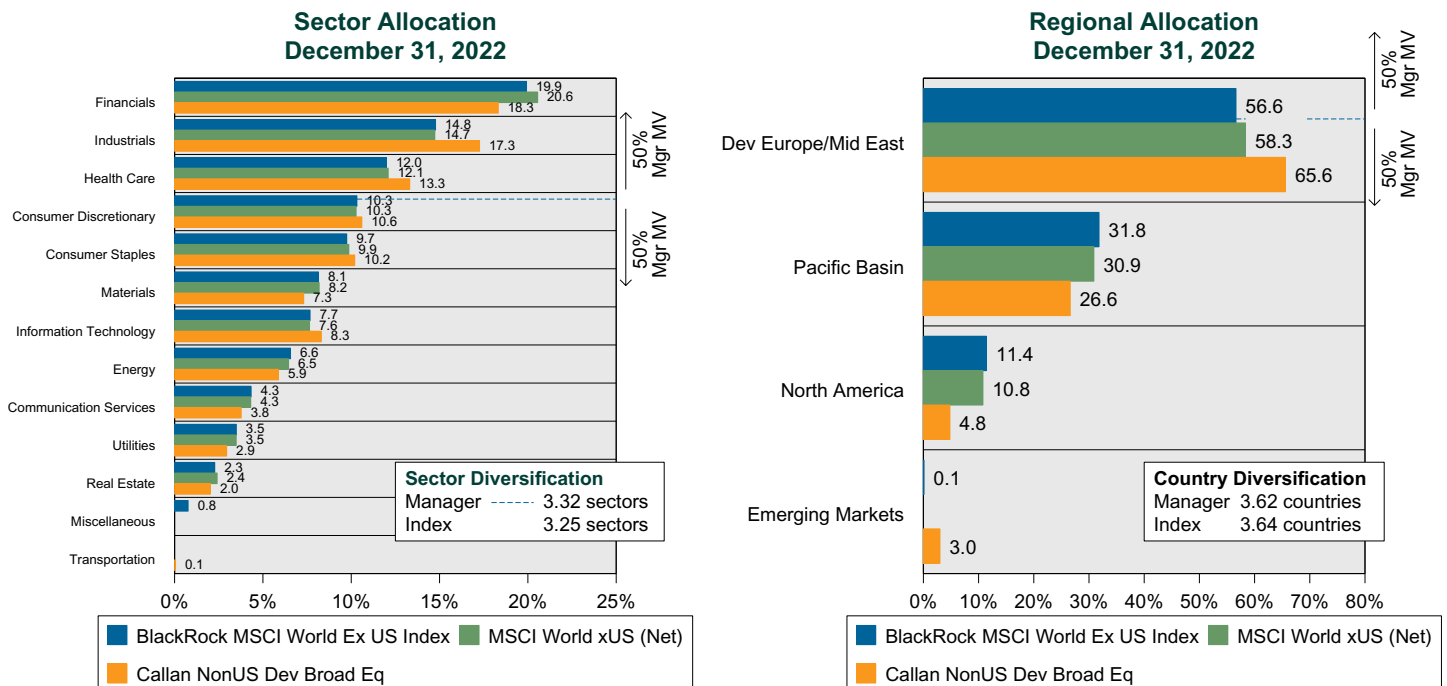
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Developed Broad Equity as of December 31, 2022



## 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.



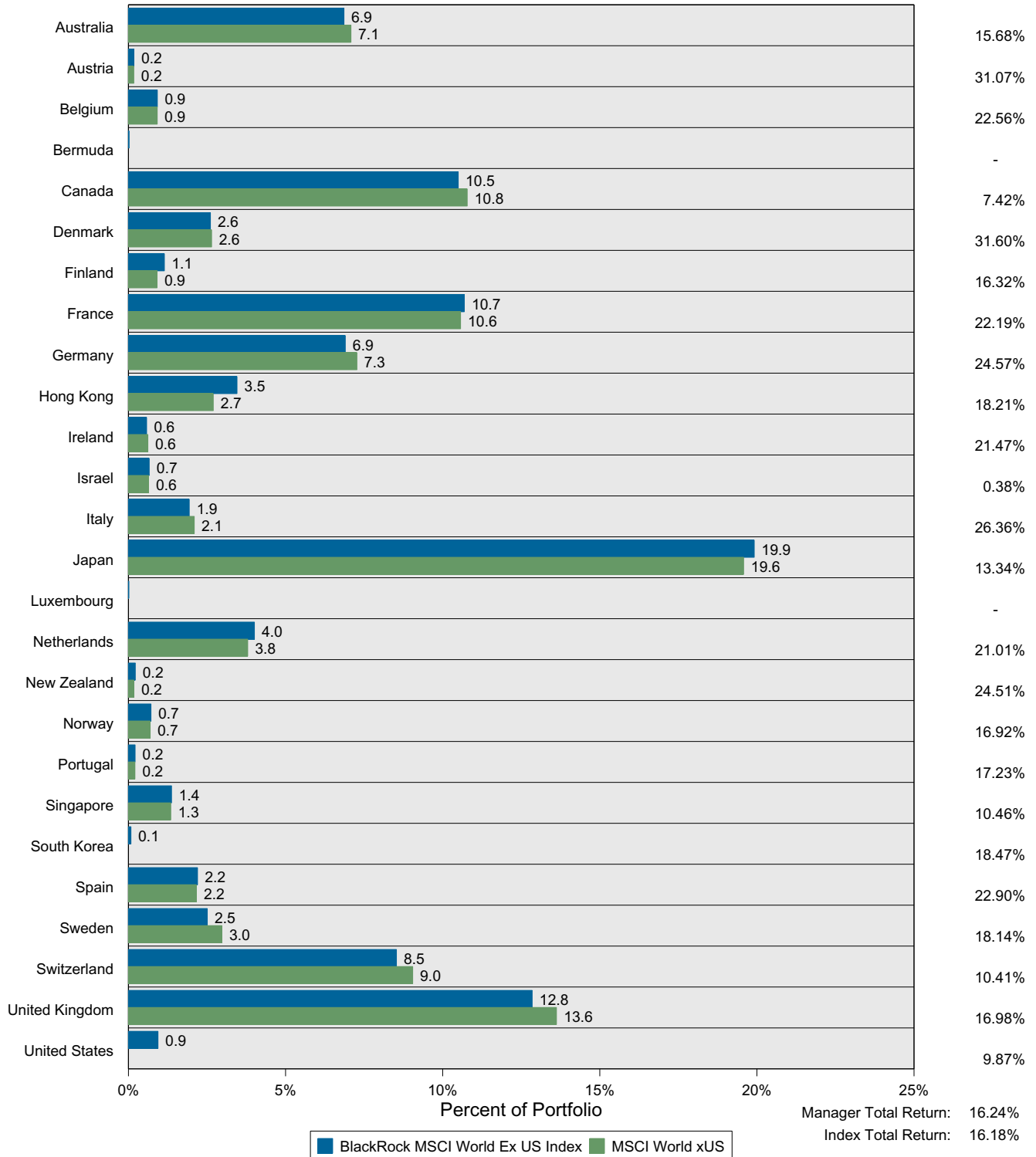
## Country Allocation BlackRock MSCI World Ex US Index VS MSCI World xUS (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

### Index Rtns





# Xponance Non-U.S. Small Cap Period Ended December 31, 2022

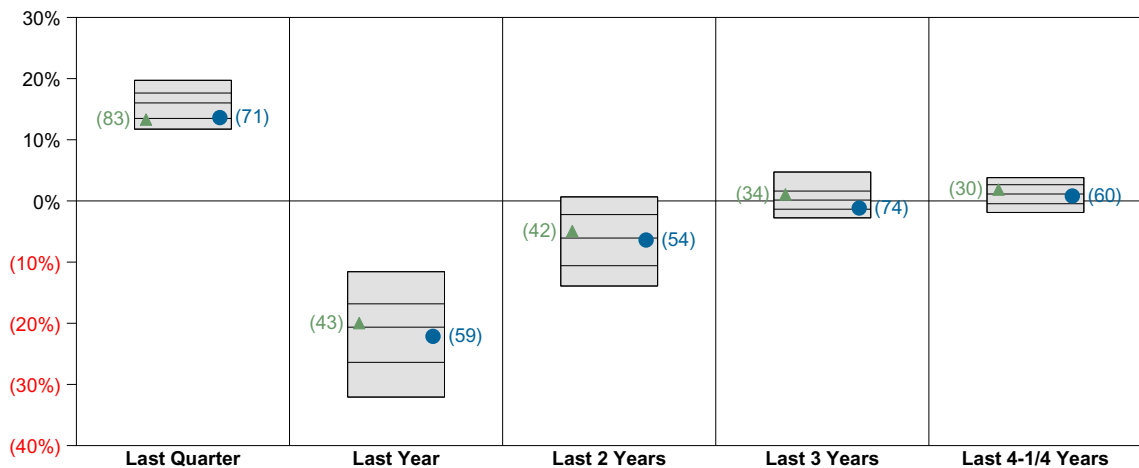
## Investment Philosophy

Xponance utilizes an integrated investment process to actively generate investment alpha across its offerings. 25%-50% of outperformance is driven by top-down investment strategy implementation that informs risk management and portfolio construction and provides context to the market environment. Bottom up analysis through manager selection drives 50-75% of outperformance. Xponance uses a forward-looking proprietary factor scoring system in their manager due diligence process to help identify which managers are most likely to produce positive long-term outperformance.

## Quarterly Summary and Highlights

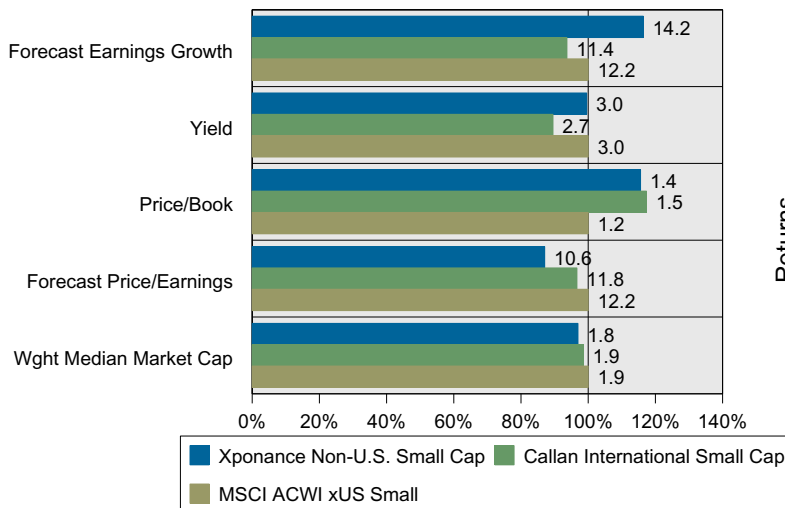
- Xponance Non-U.S. Small Cap's portfolio posted a 13.63% return for the quarter placing it in the 71 percentile of the Callan International Small Cap group for the quarter and in the 59 percentile for the last year.
- Xponance Non-U.S. Small Cap's portfolio outperformed the MSCI ACWI xUS Small by 0.32% for the quarter and underperformed the MSCI ACWI xUS Small for the year by 2.16%.

## Performance vs Callan International Small Cap (Gross)

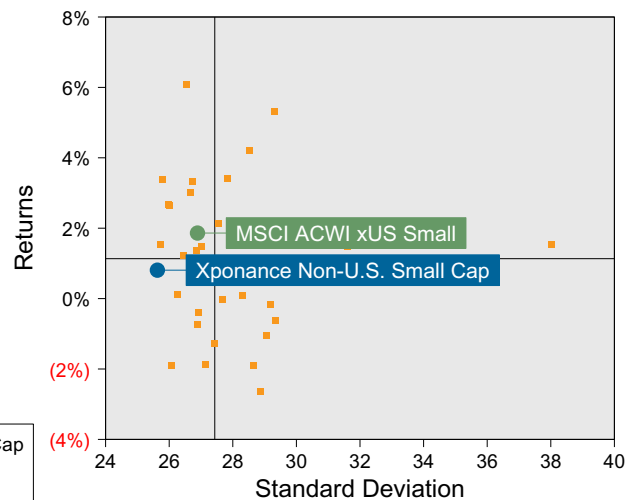


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 4-1/4 Years
10th Percentile	19.72	(11.57)	0.66	4.73	3.81
25th Percentile	17.64	(16.83)	(2.23)	1.62	2.65
Median	16.02	(20.64)	(6.07)	0.14	1.13
75th Percentile	13.49	(26.39)	(10.59)	(1.35)	(0.46)
90th Percentile	11.74	(32.07)	(13.91)	(2.77)	(1.89)
<b>Xponance Non-U.S. Small Cap</b>	<b>13.63</b>	<b>(22.14)</b>	<b>(6.39)</b>	<b>(1.16)</b>	<b>0.81</b>
<b>MSCI ACWI xUS Small</b>	<b>13.31</b>	<b>(19.97)</b>	<b>(4.94)</b>	<b>1.07</b>	<b>1.86</b>

## Portfolio Characteristics as a Percentage of the MSCI ACWI xUS Small



## Callan International Small Cap (Gross) Annualized Four and One-Quarter Year Risk vs Return



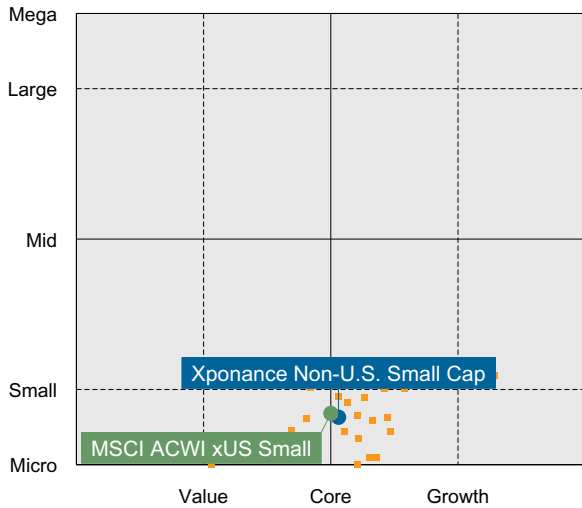
# Current Holdings Based Style Analysis

## Xpance Non-U.S. Small Cap

### As of December 31, 2022

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.

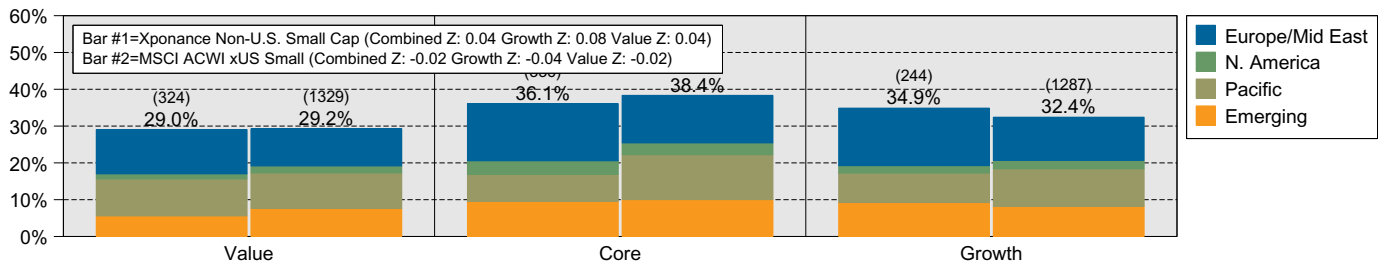
**Style Map vs Callan Intl Small Cap Holdings as of December 31, 2022**



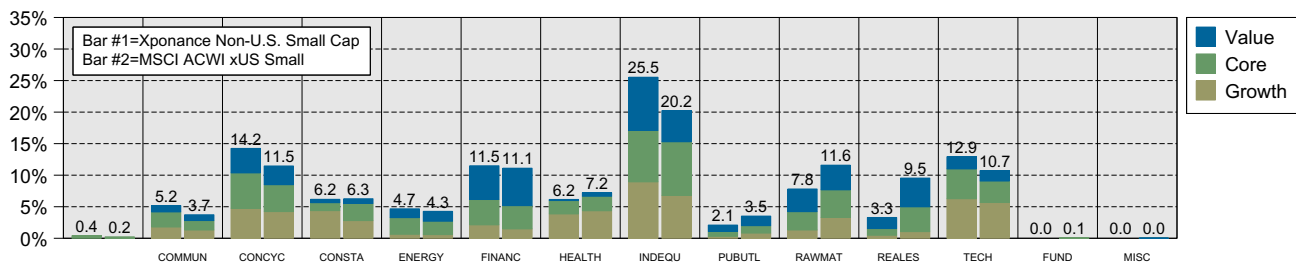
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Europe/ Mid East	12.0% (93)	15.5% (101)	15.6% (79)	43.2% (273)
N. America	10.1% (332)	12.9% (398)	11.7% (329)	34.7% (1059)
Pacific	1.4% (45)	3.7% (44)	2.0% (25)	7.1% (114)
Emerging	1.9% (66)	3.2% (103)	2.4% (68)	7.5% (237)
<b>Total</b>	<b>29.0% (324)</b>	<b>36.1% (336)</b>	<b>34.9% (244)</b>	<b>100.0% (904)</b>
	29.2% (1329)	38.4% (1660)	32.4% (1287)	100.0% (4276)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**



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

## Portfolio Characteristics

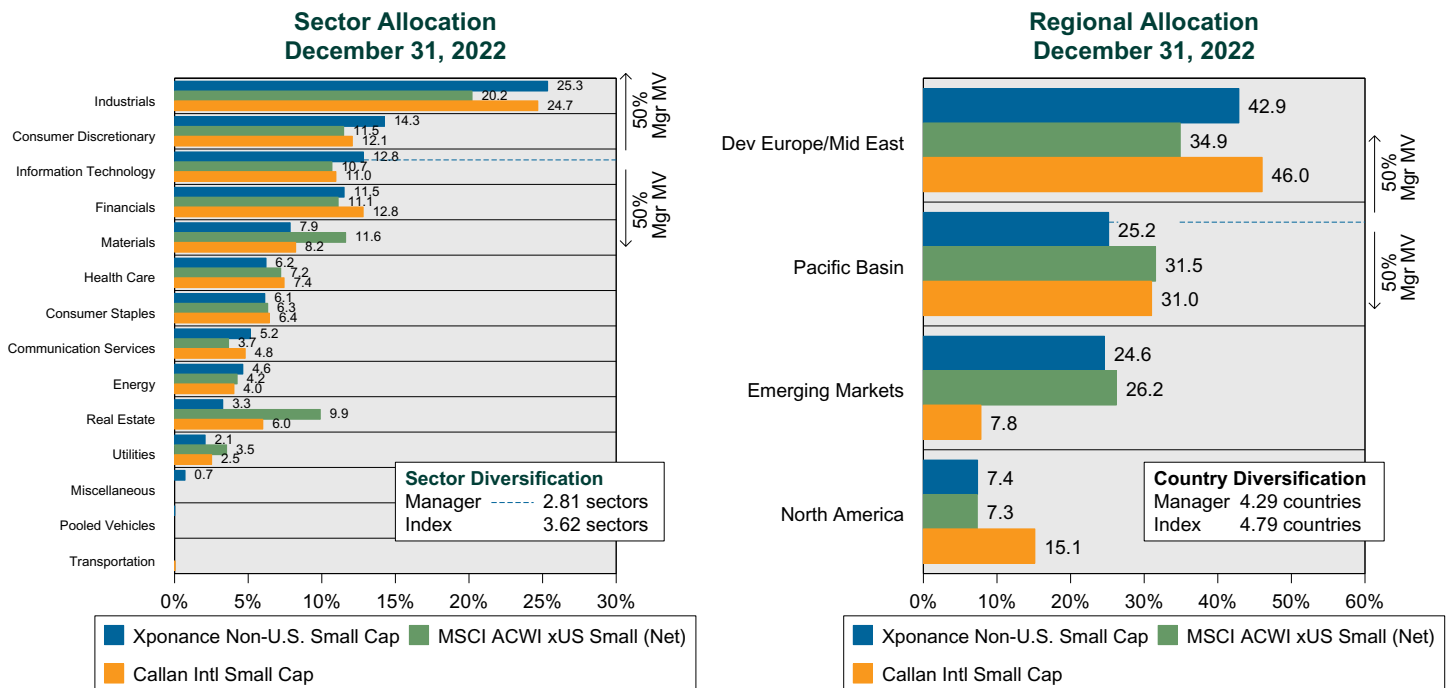
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of December 31, 2022



## 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

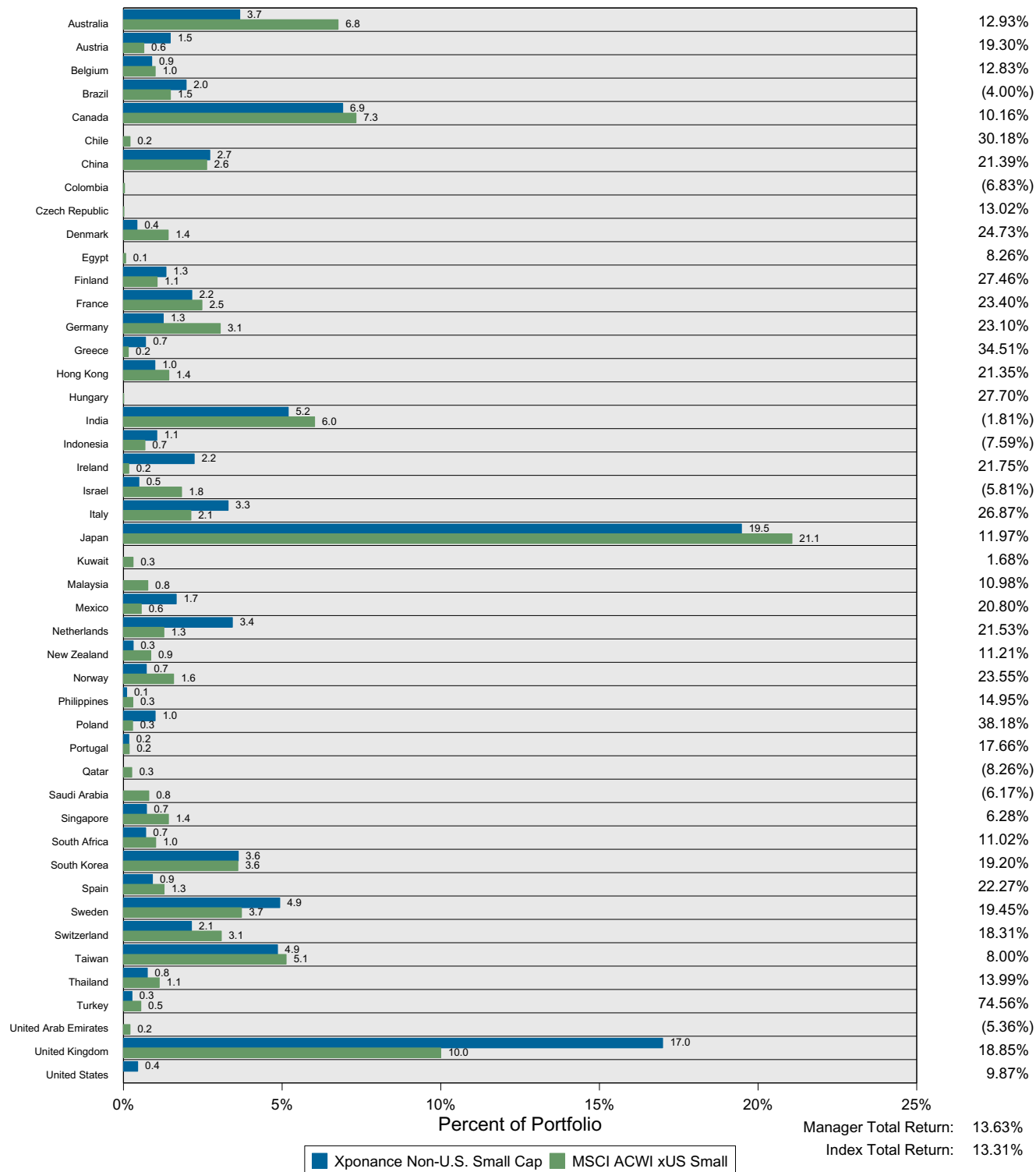
### Xponance Non-U.S. Small Cap VS MSCI ACWI xUS Small (Net)

#### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

#### Index Rtns



# Harris Assoc Int'l SCV Period Ended December 31, 2022

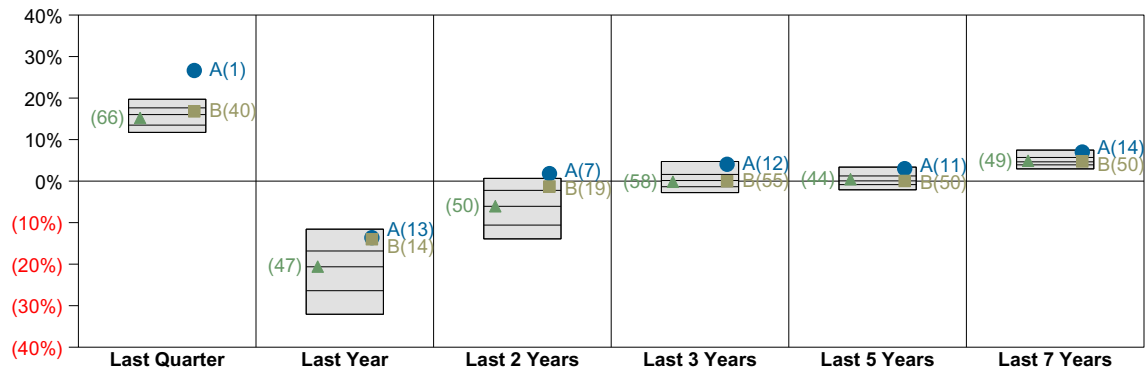
## Investment Philosophy

The Oakmark International Small Cap Fund is sub-advised by Harris Associates. Harris employs a value approach to investing and relies on its in-house research capabilities to build focused portfolios. The investment team purchases international stocks in both established and emerging markets that are selling at a substantial discount to intrinsic value. A company must be selling at a 30% or greater discount to its value to be a candidate for purchase. Unlike some value managers, Harris places particular emphasis on a company's ability to generate free cash flow as well as the strength of company management. Stocks are also analyzed in terms of financial strength, the position of the company in its industry, and the attractiveness of the industry.

## Quarterly Summary and Highlights

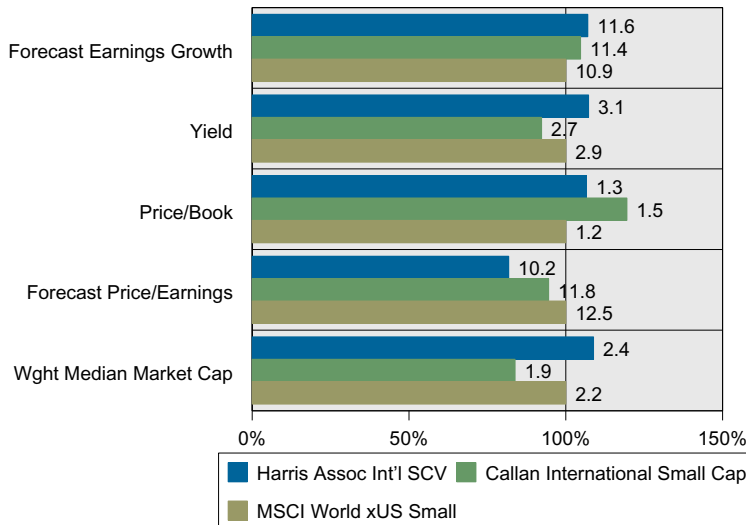
- Harris Assoc Int'l SCV's portfolio posted a 26.64% return for the quarter placing it in the 1 percentile of the Callan International Small Cap group for the quarter and in the 13 percentile for the last year.
- Harris Assoc Int'l SCV's portfolio outperformed the MSCI World xUS Small by 11.43% for the quarter and outperformed the MSCI World xUS Small for the year by 6.97%.

## Performance vs Callan International Small Cap (Gross)

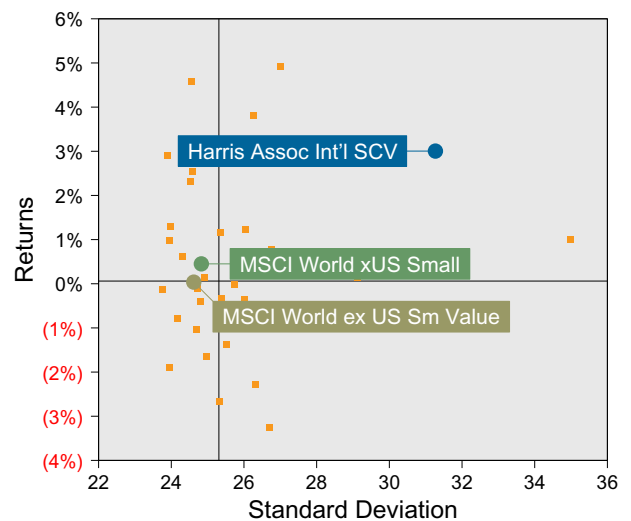


10th Percentile	19.72	(11.57)	0.66	4.73	3.37	7.47
25th Percentile	17.64	(16.83)	(2.23)	1.62	1.25	5.70
Median	16.02	(20.64)	(6.07)	0.14	0.06	4.64
75th Percentile	13.49	(26.39)	(10.59)	(1.35)	(0.84)	3.92
90th Percentile	11.74	(32.07)	(13.91)	(2.77)	(2.10)	2.95
Harris Assoc Int'l SCV	● A 26.64	(13.62)	1.81	4.06	3.00	7.01
MSCI World ex US Sm Value	■ B 16.80	(14.00)	(1.30)	(0.02)	0.04	4.74
MSCI World xUS Small	▲ 15.21	(20.59)	(6.05)	(0.15)	0.45	4.90

## Portfolio Characteristics as a Percentage of the MSCI World xUS Small



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

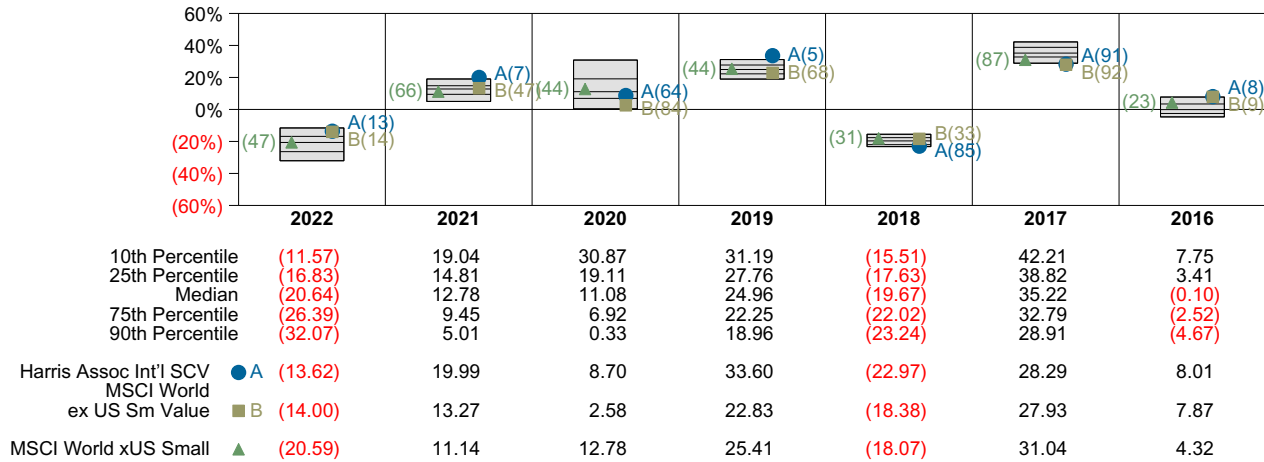


# Harris Assoc Int'l SCV Return Analysis Summary

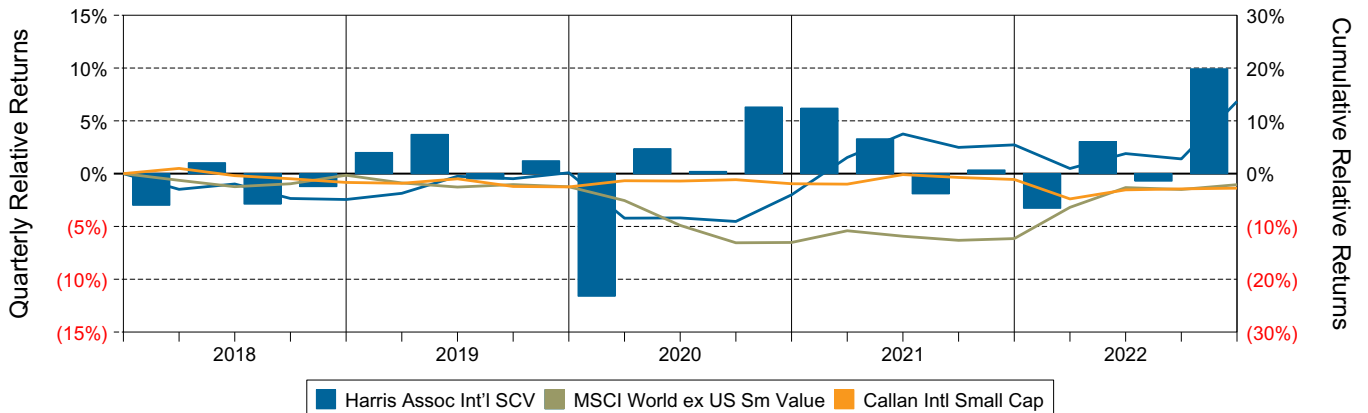
## Return Analysis

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.

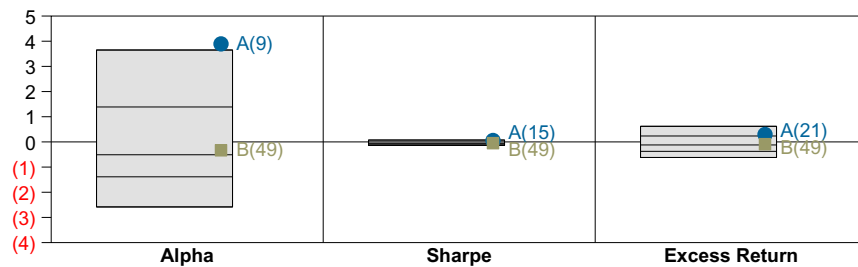
### Performance vs Callan International Small Cap (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI World xUS Small



### Risk Adjusted Return Measures vs MSCI World xUS Small Rankings Against Callan International Small Cap (Gross) Five Years Ended December 31, 2022



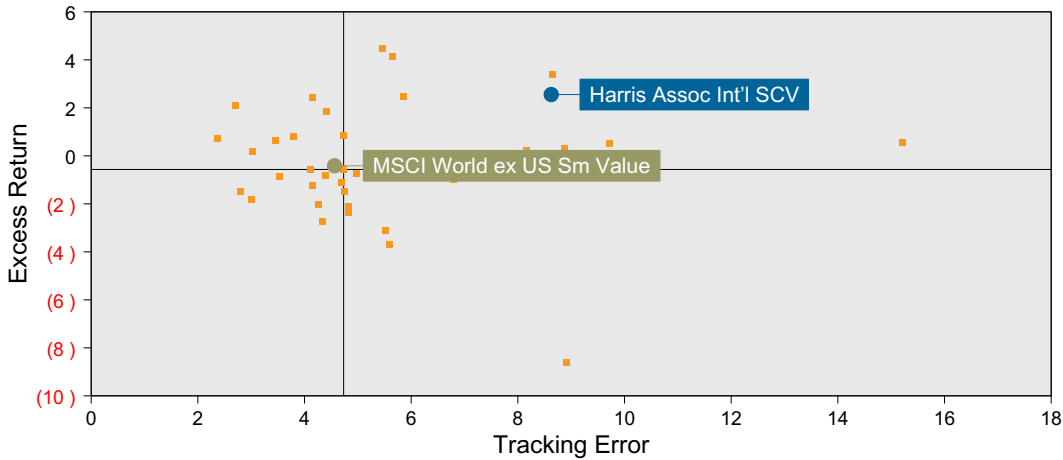
	Alpha	Sharpe Ratio	Excess Return Ratio
10th Percentile	3.65	0.07	0.62
25th Percentile	1.39	0.00	0.23
Median	(0.51)	(0.06)	(0.12)
75th Percentile	(1.39)	(0.09)	(0.37)
90th Percentile	(2.58)	(0.14)	(0.62)
Harris Assoc Int'l SCV	● A 3.89	0.06	0.30
MSCI World ex US Sm Value	■ B (0.33)	(0.05)	(0.09)

# Harris Assoc Int'l SCV Risk Analysis Summary

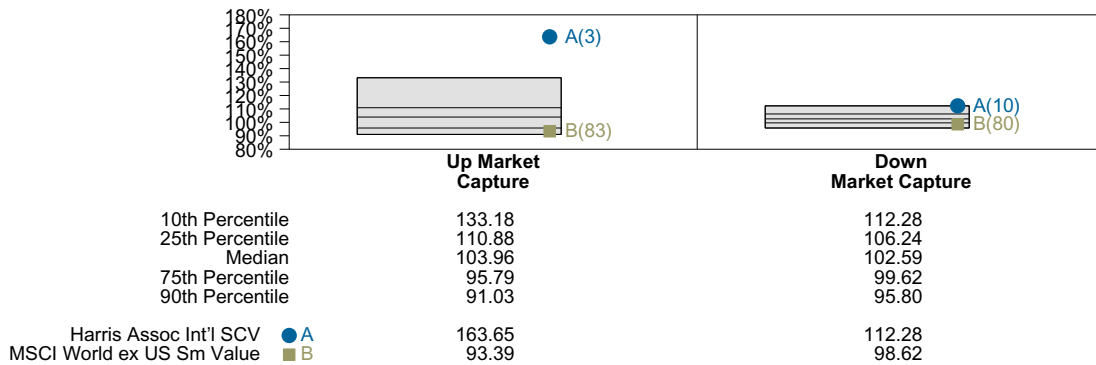
## Risk Analysis

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.

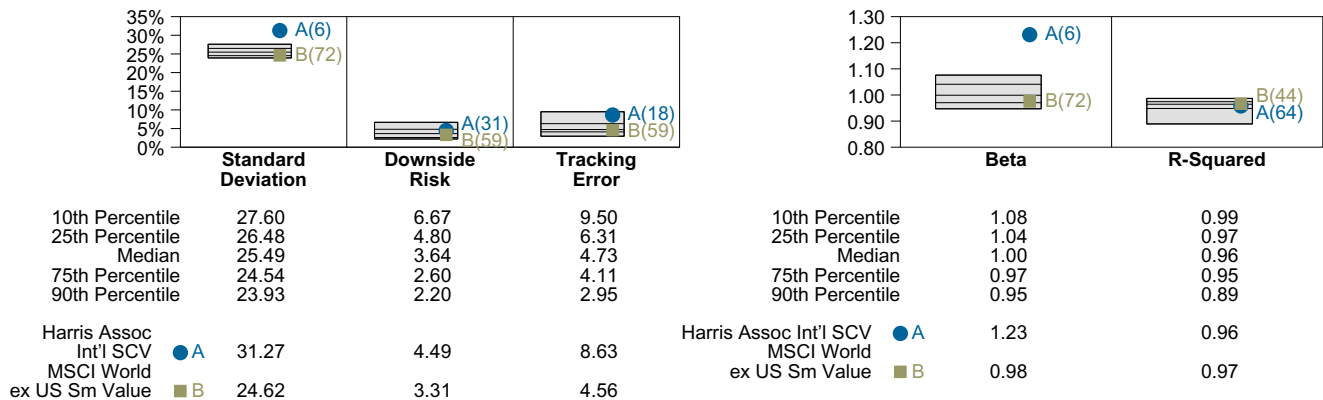
### Risk Analysis vs Callan International Small Cap (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI World xUS Small (Net) Rankings Against Callan International Small Cap (Gross) Five Years Ended December 31, 2022



### Risk Statistics Rankings vs MSCI World xUS Small (Net) Rankings Against Callan International Small Cap (Gross) Five Years Ended December 31, 2022



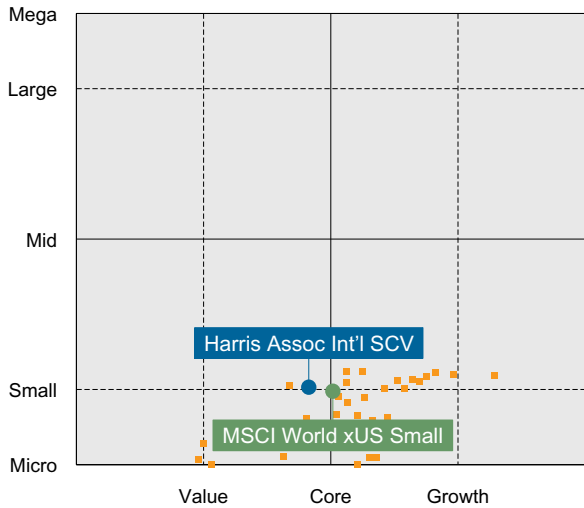
# Current Holdings Based Style Analysis

## Harris Assoc Int'l SCV

### As of December 31, 2022

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.

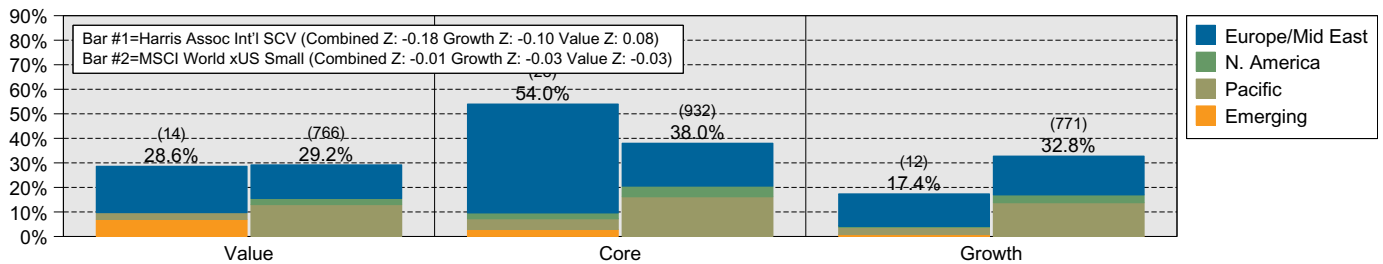
**Style Map vs Callan Intl Small Cap Holdings as of December 31, 2022**



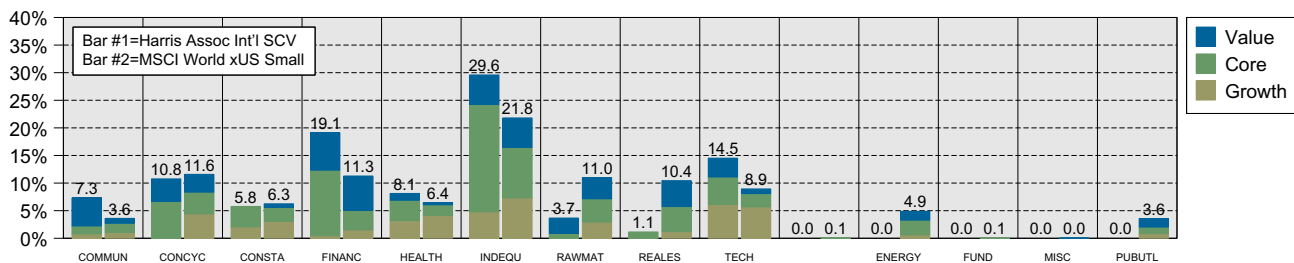
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Europe/ Mid East	18.9% (9) 13.6% (332)	44.4% (21) 17.5% (398)	13.2% (8) 15.8% (329)	76.5% (38) 47.0% (1059)
N. America	0.0% (0) 2.6% (66)	2.4% (2) 4.3% (101)	0.5% (1) 3.2% (68)	2.8% (3) 10.1% (235)
Pacific	2.7% (2) 13.0% (367)	4.4% (3) 16.2% (433)	2.9% (2) 13.7% (372)	10.0% (7) 42.8% (1172)
Emerging	7.0% (3) 0.0% (1)	2.8% (2) 0.0% (0)	0.8% (1) 0.1% (2)	10.6% (6) 0.1% (3)
<b>Total</b>	<b>28.6% (14)</b> 29.2% (766)	<b>54.0% (28)</b> 38.0% (932)	<b>17.4% (12)</b> 32.8% (771)	<b>100.0% (54)</b> 100.0% (2469)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**





# Harris Assoc Int'l SCV Equity Characteristics Analysis Summary

## Portfolio Characteristics

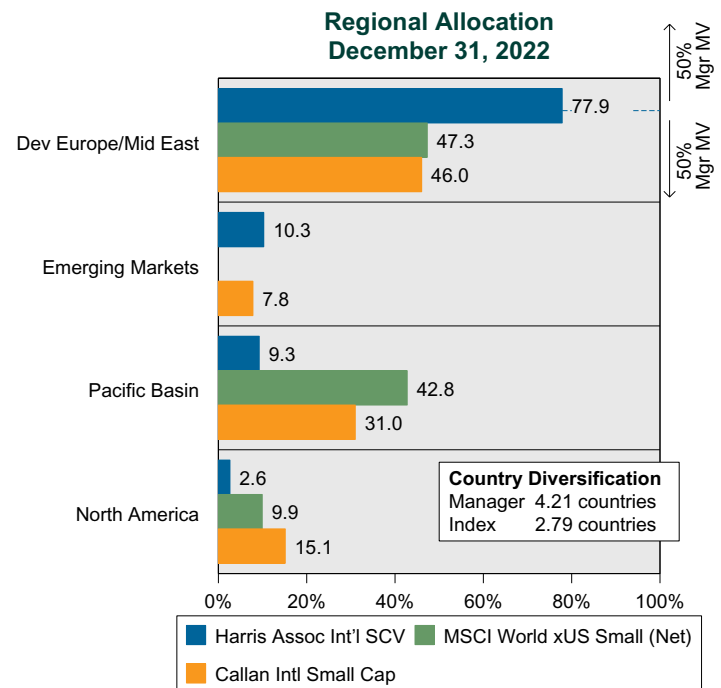
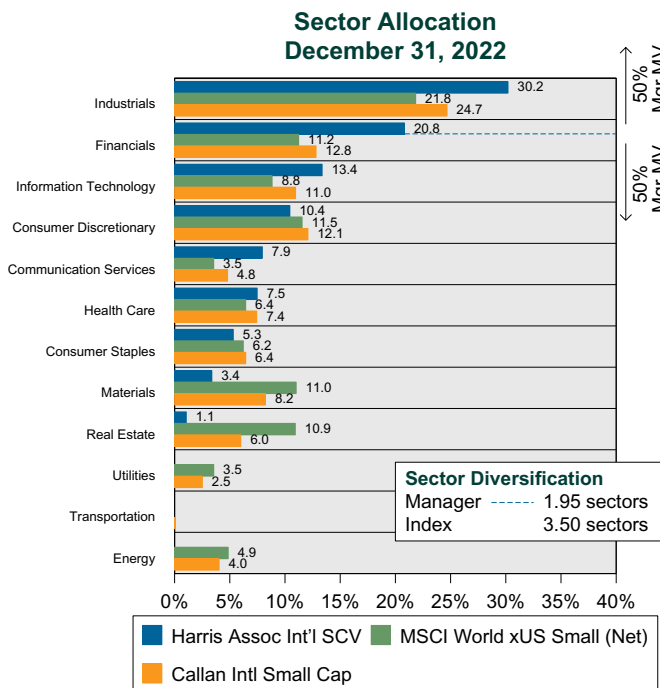
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of December 31, 2022



## 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.

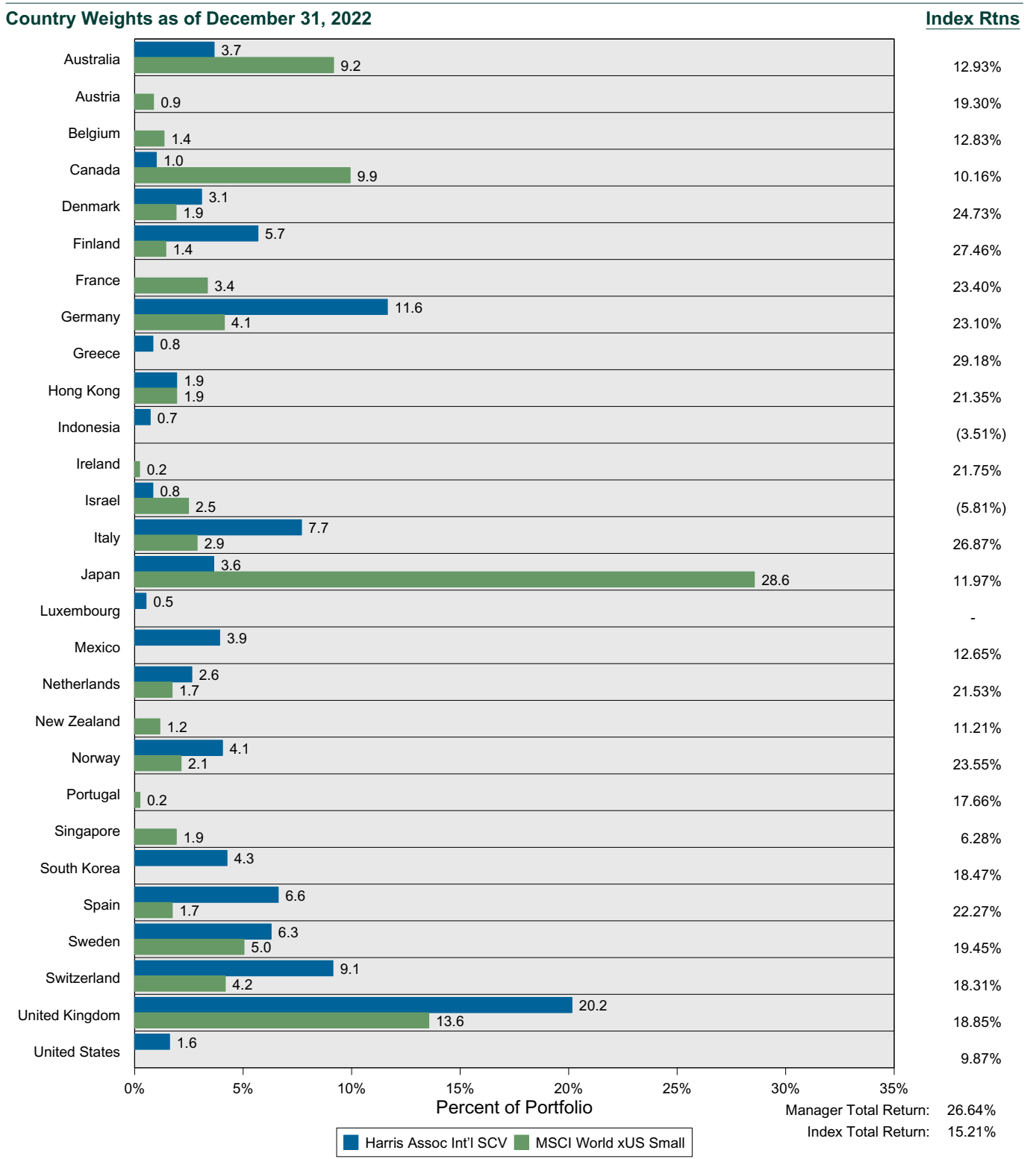


## Country Allocation

### Harris Assoc Int'l SCV VS MSCI World xUS Small (Net)

#### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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.



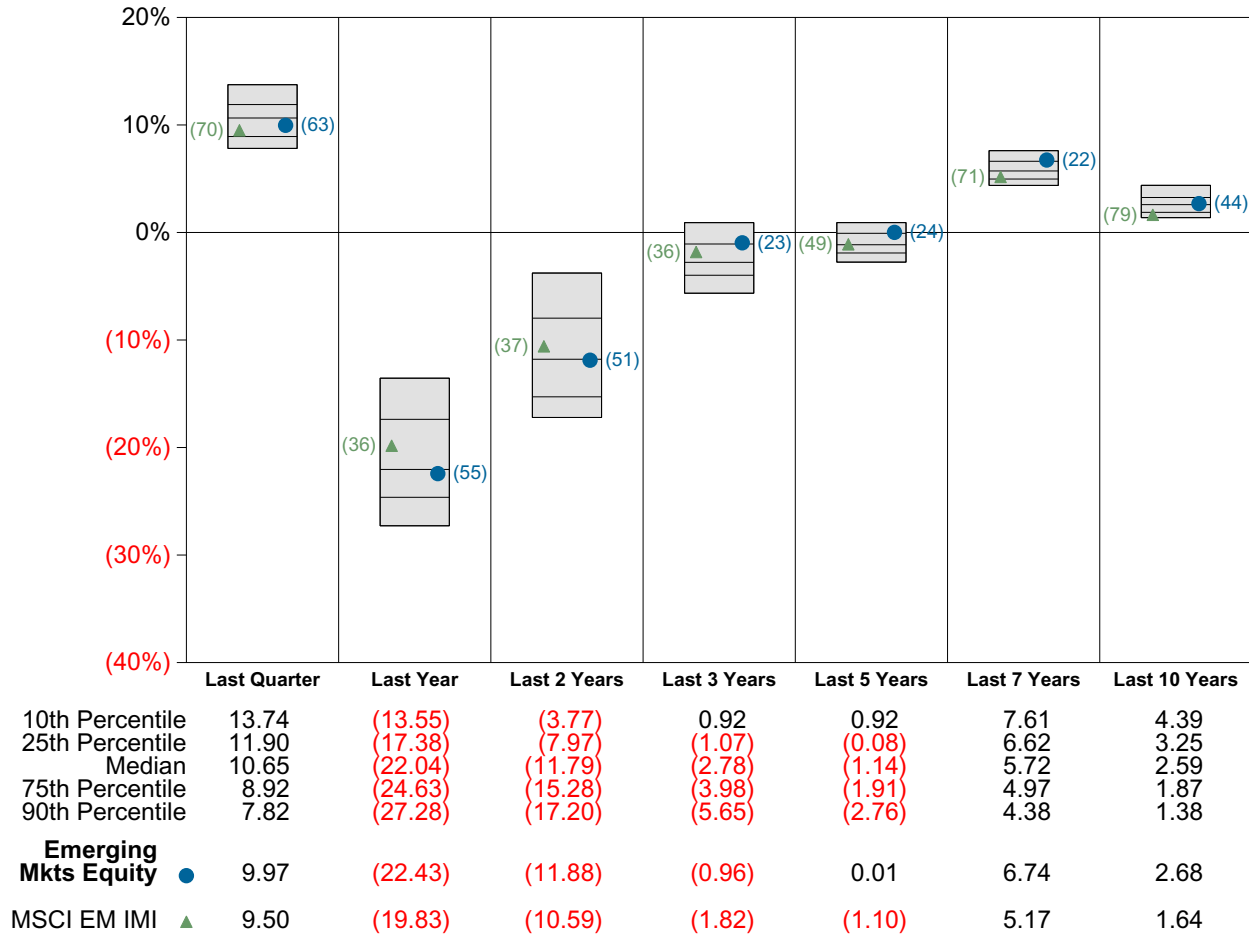


# Emerging Mkts Equity Period Ended December 31, 2022

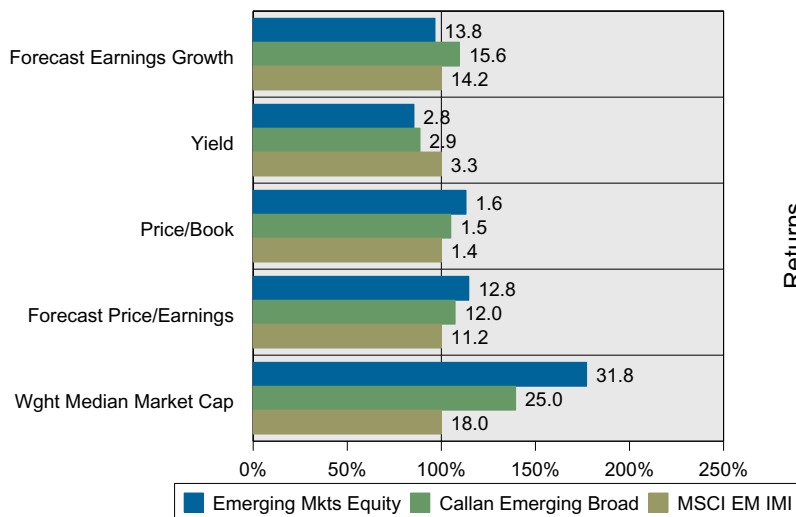
## Quarterly Summary and Highlights

- Emerging Mkts Equity's portfolio posted a 9.97% return for the quarter placing it in the 63 percentile of the Callan Emerging Broad group for the quarter and in the 55 percentile for the last year.
- Emerging Mkts Equity's portfolio outperformed the MSCI EM IMI by 0.46% for the quarter and underperformed the MSCI EM IMI for the year by 2.60%.

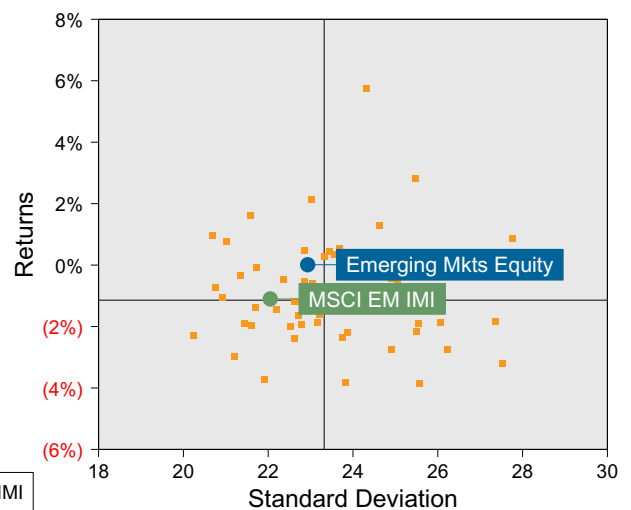
## Performance vs Callan Emerging Broad (Gross)



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



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

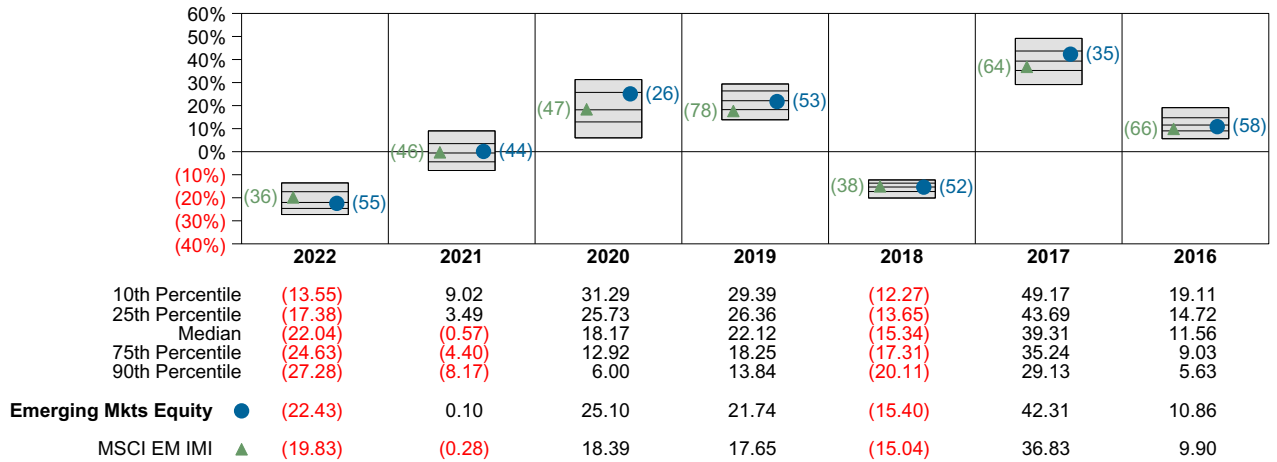


# Emerging Mkts Equity Return Analysis Summary

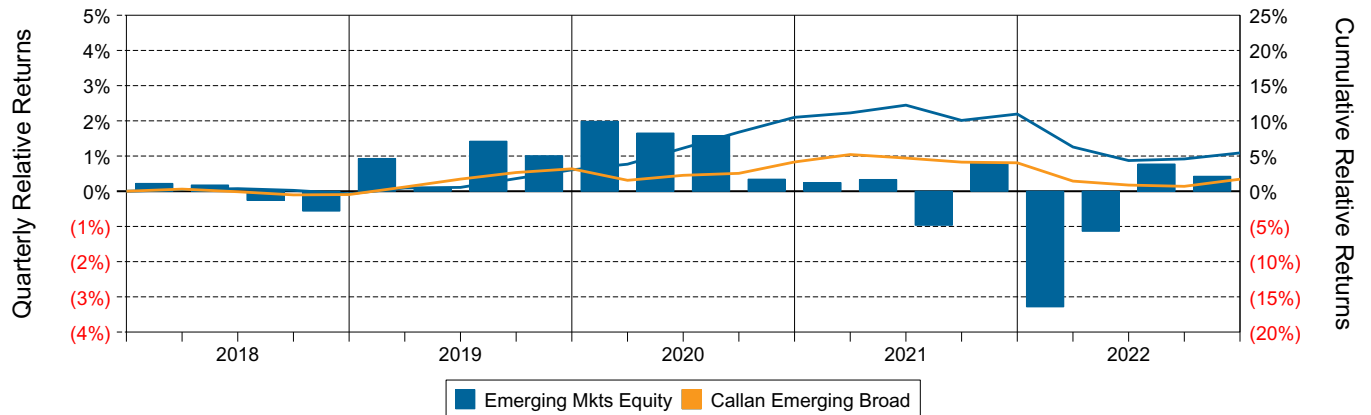
## Return Analysis

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.

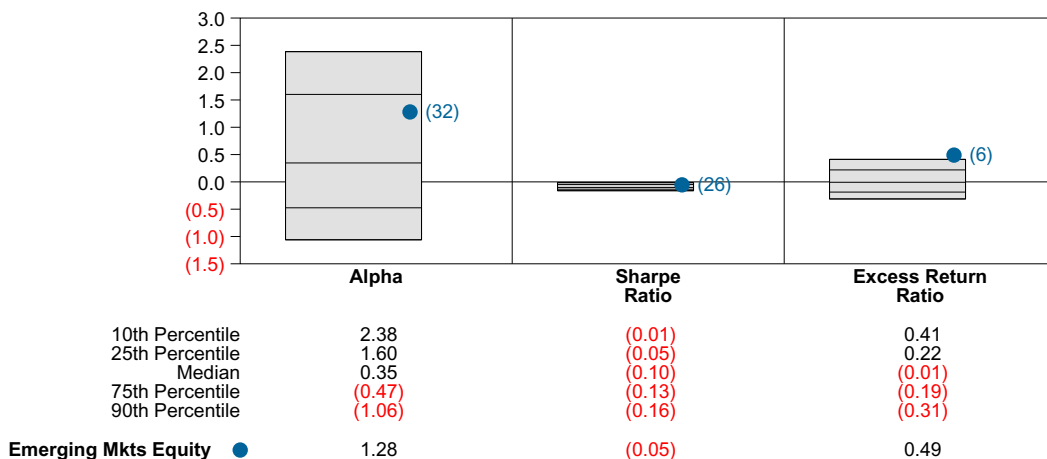
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EM IMI



### Risk Adjusted Return Measures vs MSCI EM IMI Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022

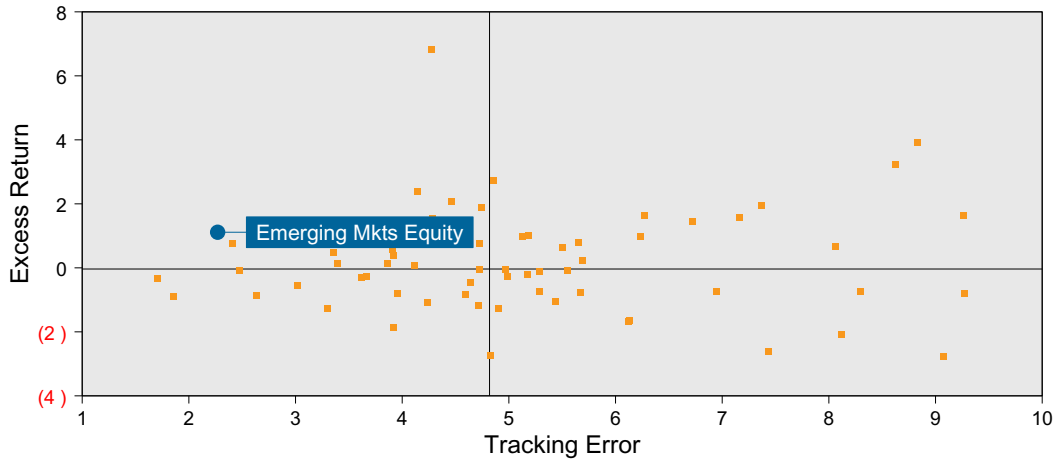


# Emerging Mkts Equity Risk Analysis Summary

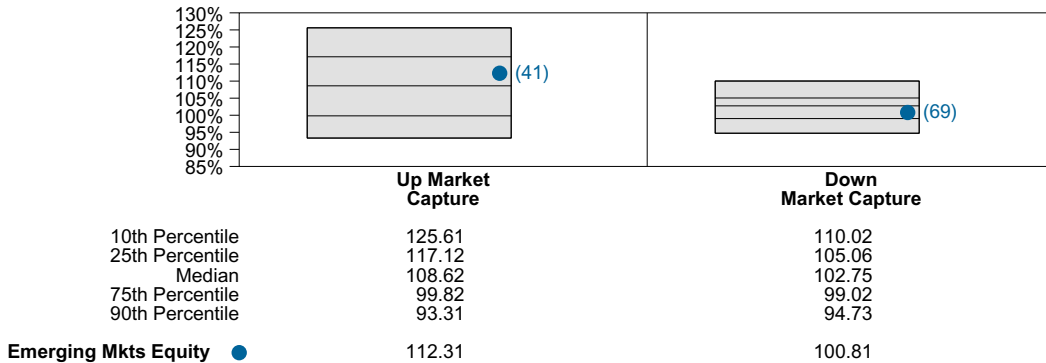
## Risk Analysis

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.

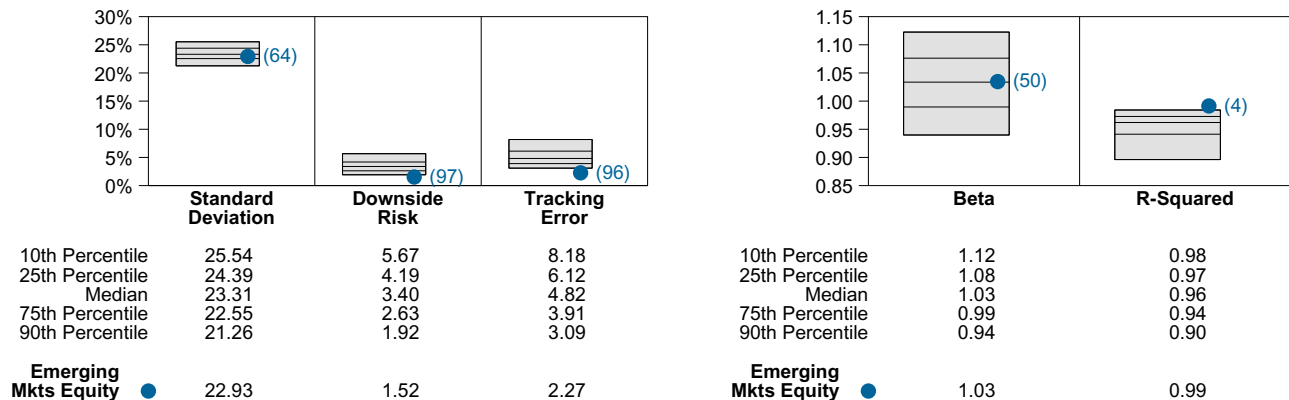
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI EM IMI (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



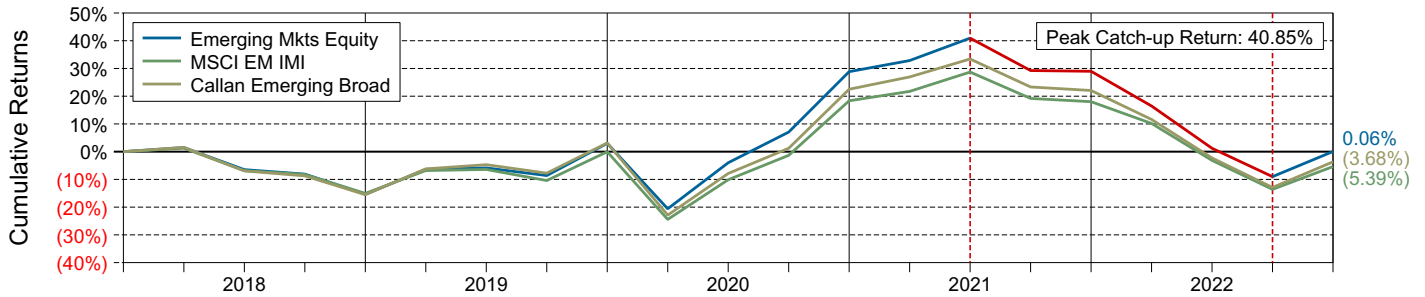
### Risk Statistics Rankings vs MSCI EM IMI (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



# Emerging Mkts Equity Drawdown Analysis for Five Years Ended December 31, 2022

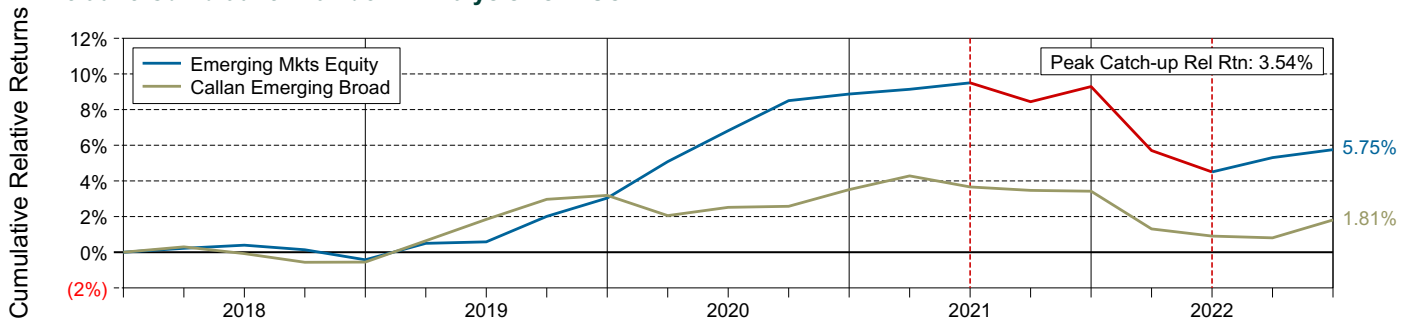
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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



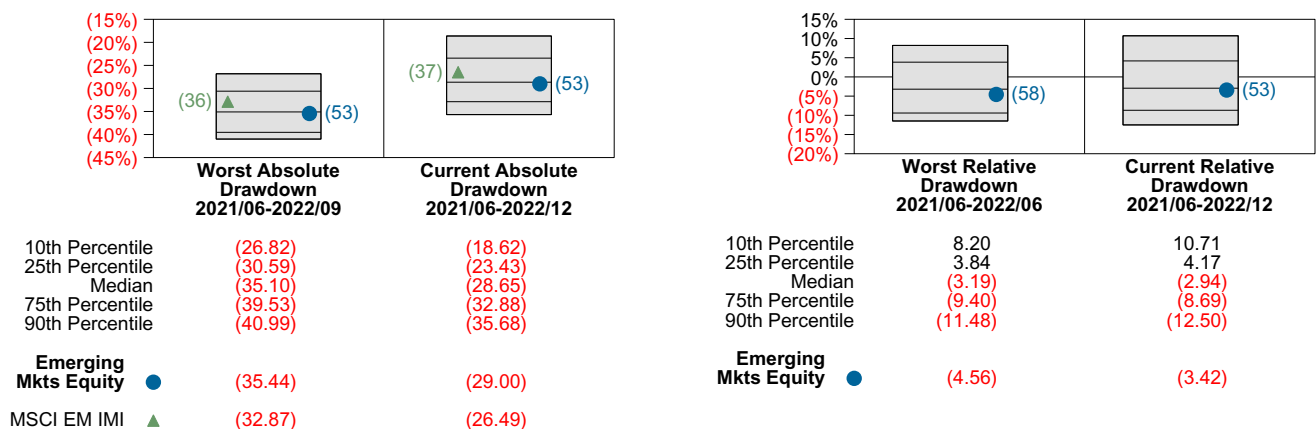
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Emerging Mkts Equity	(35.44)%	1.25	2021/06-2022/09	(32.87)%	(34.72)%	(29.00)%	1.50	2021/06-2022/12	(26.49)%	(27.80)%
Recovery from Trough	9.97%	0.25+	2022/09-2022/12	9.50%	10.59%	9.97%	0.25+	2022/09-2022/12	9.50%	10.59%
MSCI EM IMI	(32.87)%	1.25	2021/06-2022/09			(26.49)%	1.50	2021/06-2022/12		
Callan Emerging Broad	(34.72)%	1.25	2021/06-2022/09			(27.80)%	1.50	2021/06-2022/12		

## Relative Cumulative Drawdown Analysis vs. MSCI EM IMI



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
Emerging Mkts Equity	(4.56)%	1.00	2021/06-2022/06	(2.66)%	(3.42)%	1.50	2021/06-2022/12	(1.79)%
Recovery from Trough	1.20%	0.50+	2022/06-2022/12	0.90%	1.20%	0.50+	2022/06-2022/12	0.90%
Callan Emerging Broad	(3.33)%	1.50	2021/03-2022/09		(2.37)%	1.75	2021/03-2022/12	

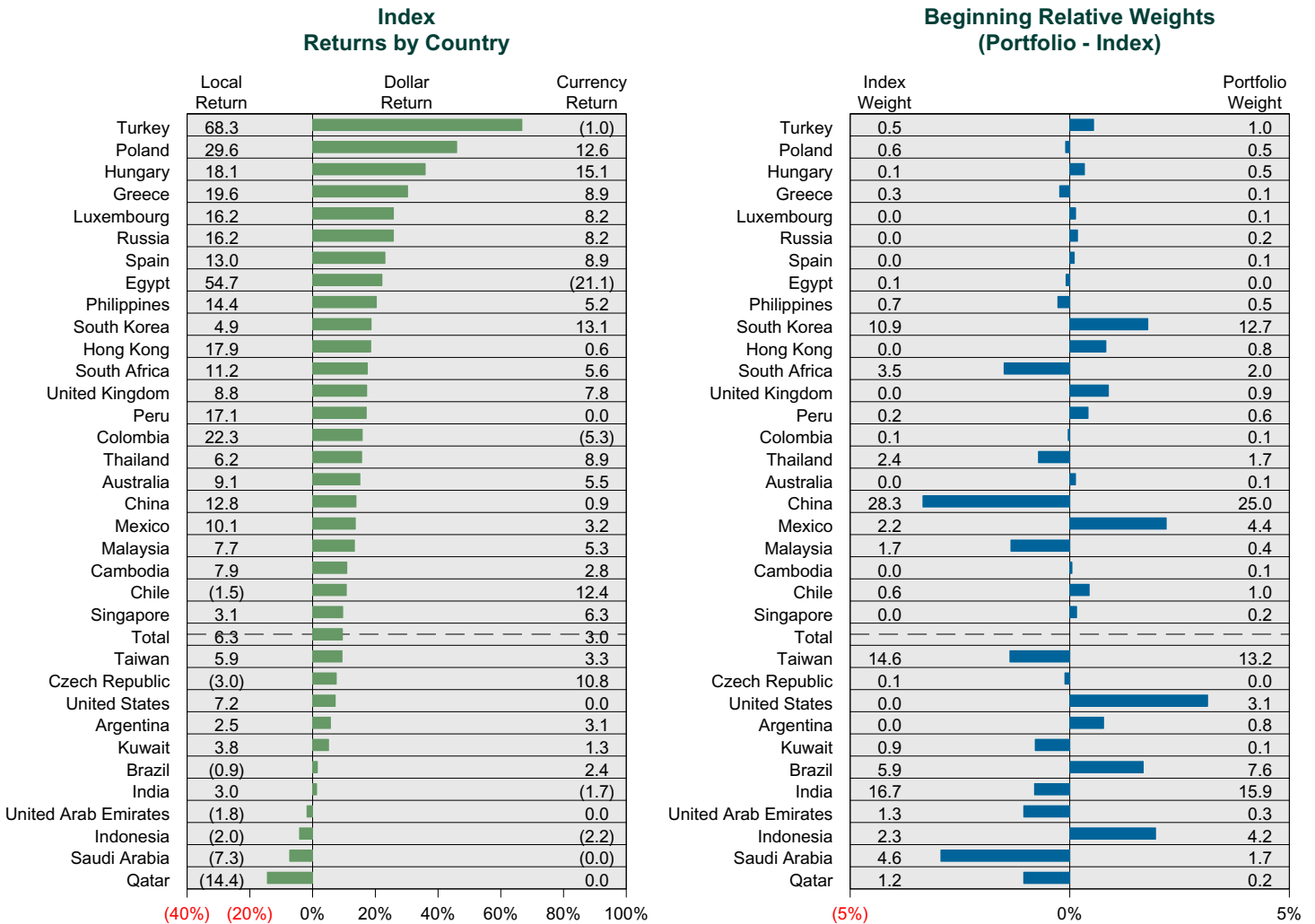
## Drawdown Rankings vs. MSCI EM IMI Rankings against Callan Emerging Broad Five Years Ended December 31, 2022



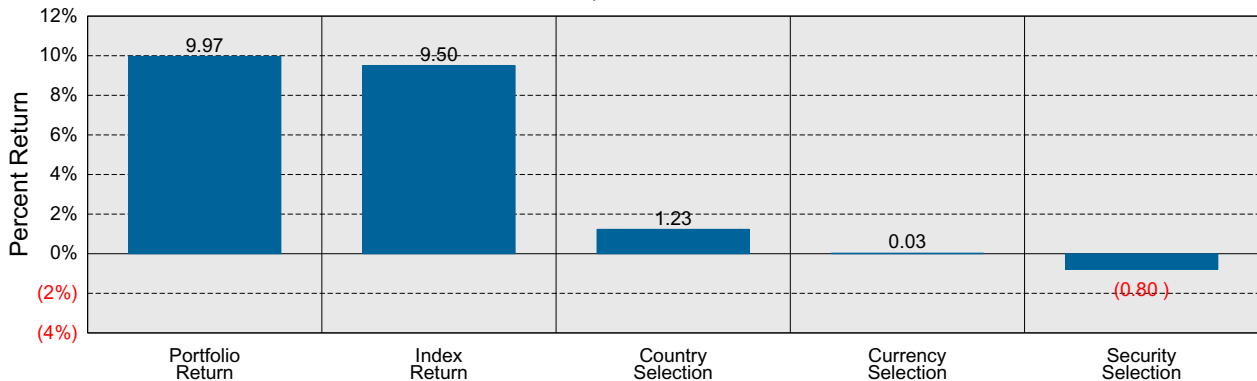
# Emerging Mkts Equity vs MSCI EM IMI Attribution for Quarter Ended December 31, 2022

## 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, 2022

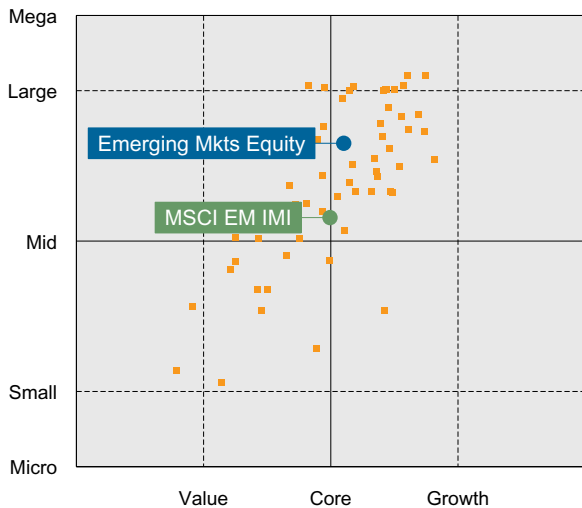




# Current Holdings Based Style Analysis Emerging Mkts Equity As of December 31, 2022

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.

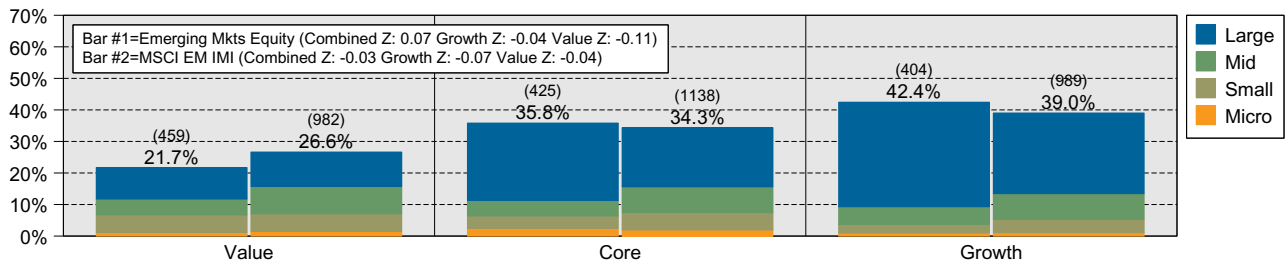
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2022**



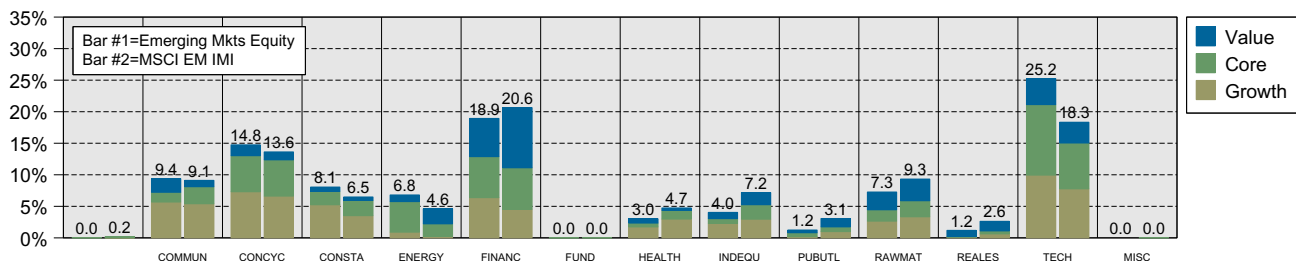
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	10.0% (85)	24.5% (83)	33.1% (103)	67.7% (271)
	10.9% (87)	18.7% (77)	25.6% (105)	55.2% (269)
Mid	5.1% (176)	4.9% (183)	5.6% (192)	15.6% (551)
	8.7% (187)	8.2% (226)	8.2% (283)	25.0% (696)
Small	5.5% (171)	4.0% (127)	2.6% (94)	12.1% (392)
	5.6% (373)	5.5% (442)	4.2% (347)	15.2% (1162)
Micro	1.2% (27)	2.4% (32)	1.0% (15)	4.6% (74)
	1.5% (335)	1.9% (393)	1.1% (254)	4.5% (982)
<b>Total</b>	<b>21.7% (459)</b>	<b>35.8% (425)</b>	<b>42.4% (404)</b>	<b>100.0% (1288)</b>
	26.6% (982)	34.3% (1138)	39.0% (989)	100.0% (3109)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



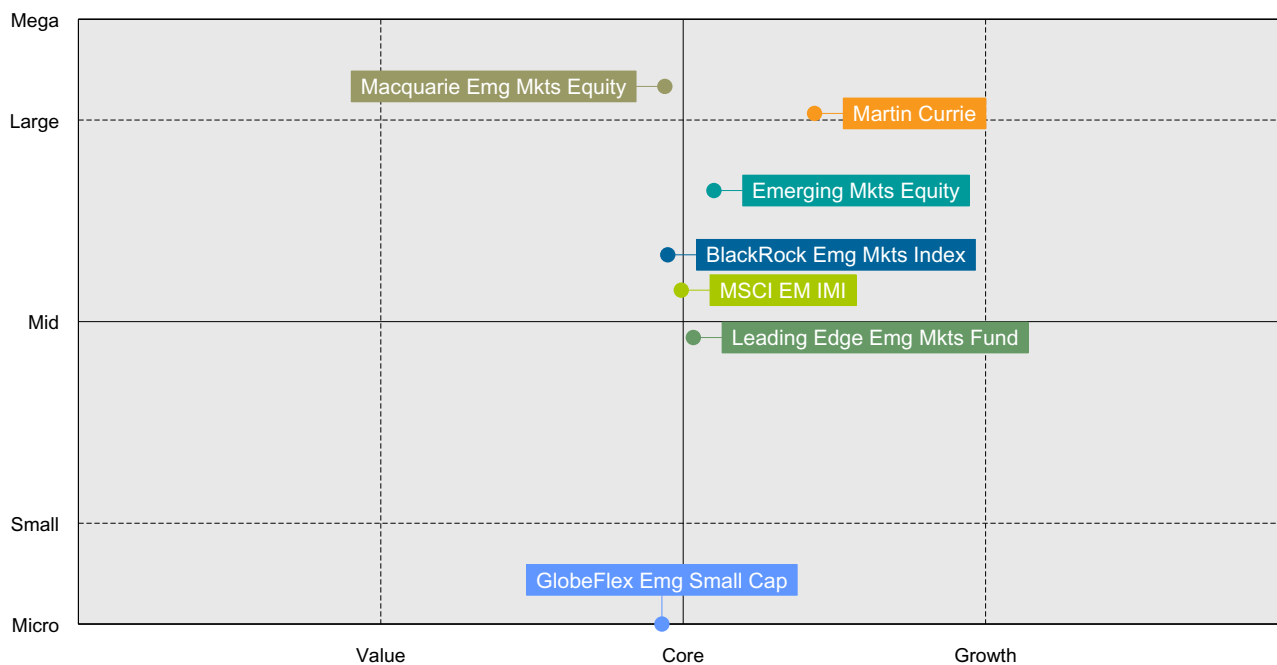
**Sector Weights Distribution Holdings as of December 31, 2022**



## International Holdings Based Style Analysis For One Quarter Ended December 31, 2022

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, 2022



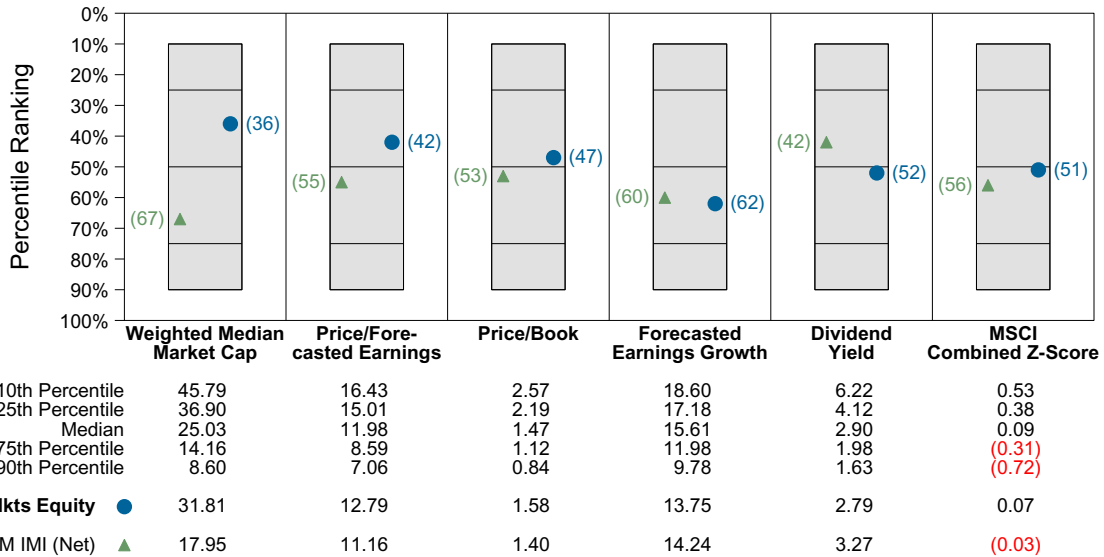
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
BlackRock Emg Mkts Index	14.62%	22.87	(0.07)	(0.09)	(0.03)	1381	87.36
Leading Edge Emg Mkts Fund	18.69%	12.68	0.01	(0.03)	(0.04)	259	48.67
Macquarie Emg Mkts Equity	26.83%	77.46	(0.08)	(0.13)	(0.06)	79	9.81
Martin Currie	29.27%	48.67	0.38	0.05	(0.33)	54	12.90
GlobeFlex Emg Small Cap	10.59%	0.68	(0.09)	0.08	0.16	129	13.47
Emerging Mkts Equity	100.00%	31.81	0.07	(0.04)	(0.11)	1649	35.73
MSCI EM IMI	-	17.95	(0.03)	(0.07)	(0.04)	3198	130.34

# Emerging Mkts Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

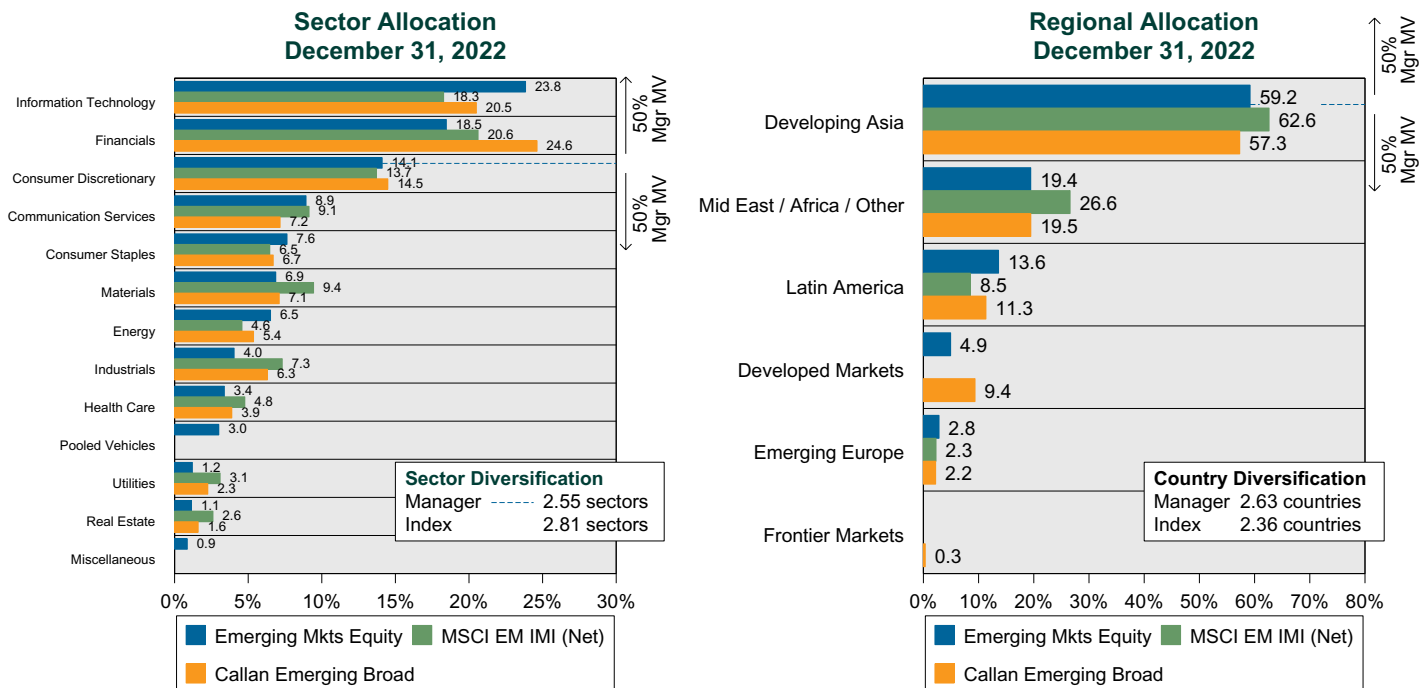
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2022



## 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.

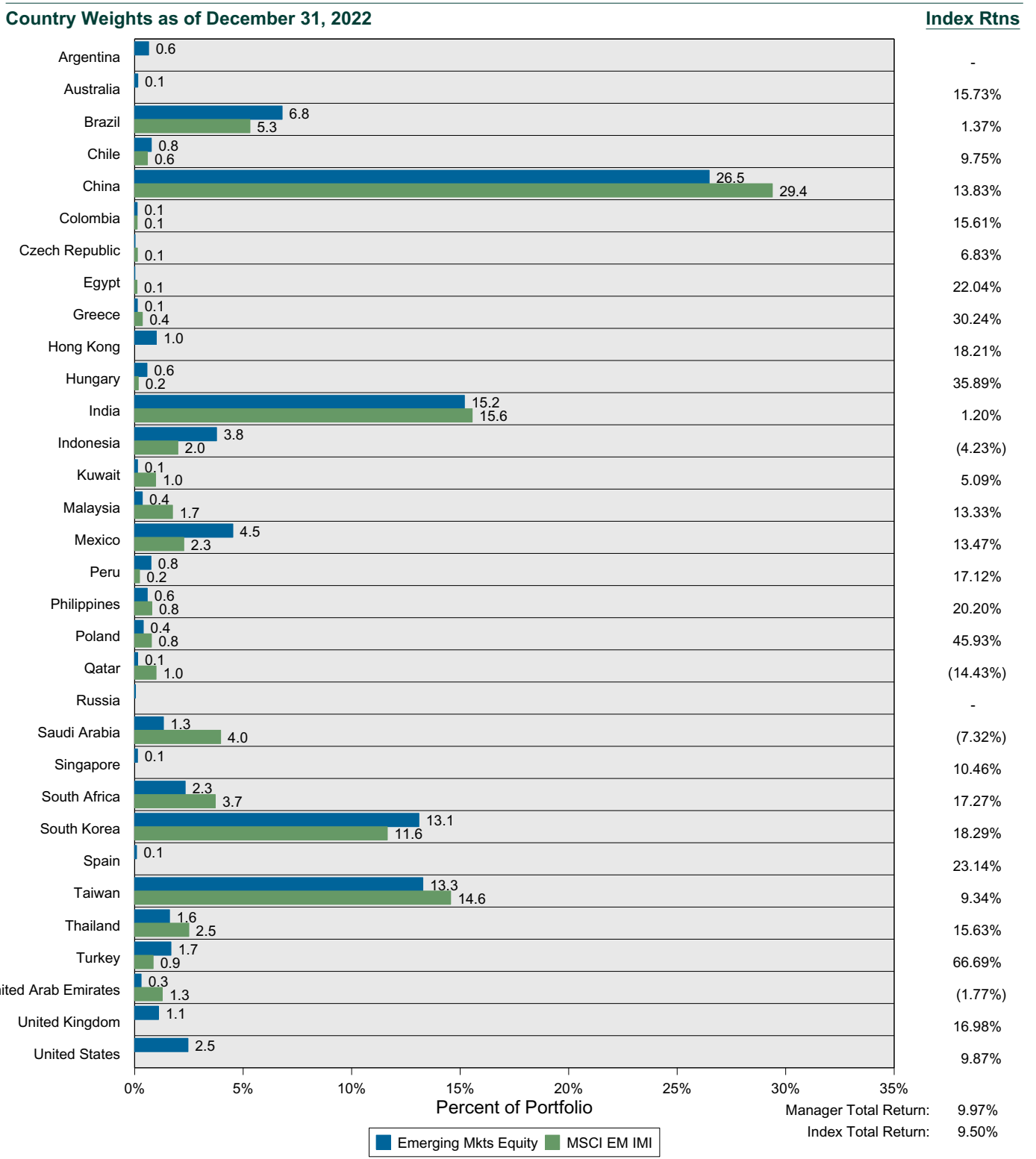


# Country Allocation

## Emerging Mkts Equity VS MSCI EM IMI (Net)

### Country Allocation

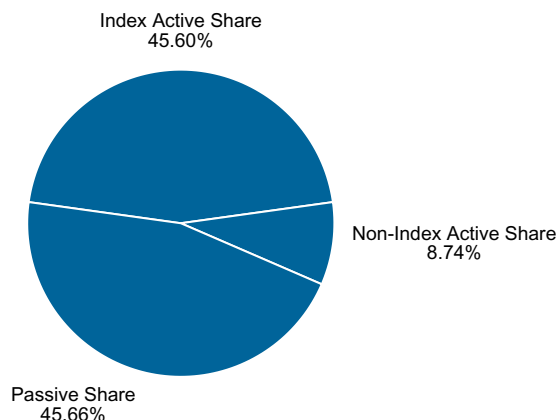
The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio 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.



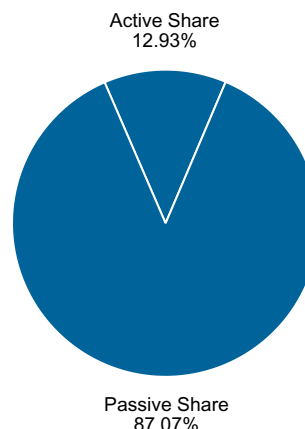
## Emerging Mkts Equity Active Share Analysis as of December 31, 2022 vs. MSCI EM IMI (Net)

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



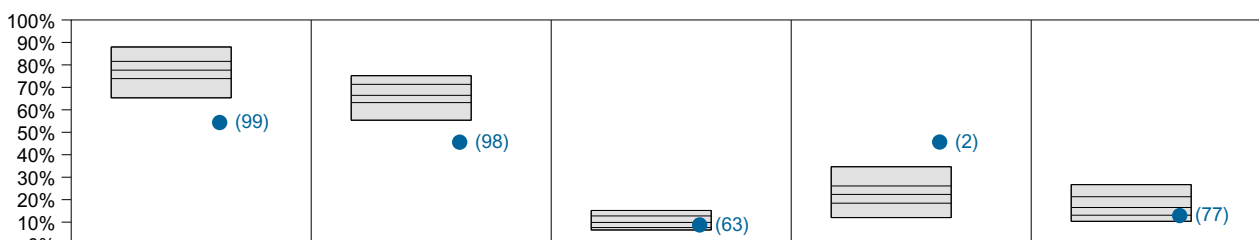
### Sector Exposure Active Share



**Total Active Share: 54.34%**

	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	46.21%	6.89%	53.10%	9.13%	8.93%	4.81%
Consumer Discretionary	38.79%	10.09%	48.88%	13.71%	14.10%	6.73%
Consumer Staples	61.79%	2.18%	63.97%	6.46%	7.64%	4.53%
Energy	39.90%	3.68%	43.57%	4.58%	6.52%	2.03%
Financials	46.29%	9.90%	56.19%	20.62%	18.46%	11.19%
Health Care	62.58%	11.27%	73.86%	4.77%	3.38%	3.10%
Industrials	61.92%	3.88%	65.80%	7.31%	4.04%	3.83%
Information Technology	35.54%	4.22%	39.76%	18.28%	23.84%	8.34%
Materials	44.91%	12.95%	57.86%	9.44%	6.87%	4.98%
Miscellaneous	50.00%	50.73%	100.73%	-	0.86%	0.43%
Pooled Vehicles	50.00%	50.00%	100.00%	-	3.00%	1.51%
Real Estate	58.84%	6.32%	65.17%	2.61%	1.15%	1.33%
Utilities	58.59%	2.35%	60.93%	3.09%	1.21%	1.49%
<b>Total</b>	<b>45.60%</b>	<b>8.74%</b>	<b>54.34%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>54.29%</b>

### Active Share vs. Callan Emerging Broad



	Total Active Share	Index Active Share	Non-Index Active Share	Passive Share	Sector Active Share
10th Percentile	87.98	75.19	15.19	34.67	26.70
25th Percentile	81.56	71.35	12.76	26.11	21.30
Median	77.66	66.44	9.86	22.34	16.51
75th Percentile	73.89	63.21	7.58	18.44	13.09
90th Percentile	65.33	55.37	6.50	12.02	10.36
<b>Emerging Mkts Equity</b>	<b>54.34</b>	<b>45.60</b>	<b>8.74</b>	<b>45.66</b>	<b>12.93</b>



# BlackRock Emg Mkts Index Period Ended December 31, 2022

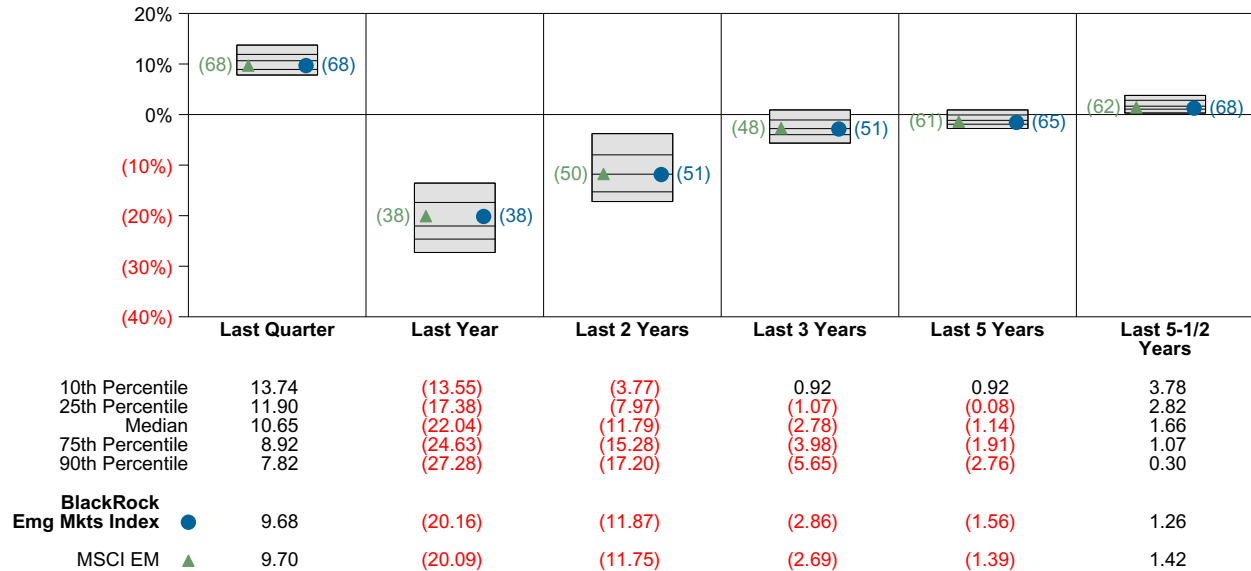
## Investment Philosophy

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.

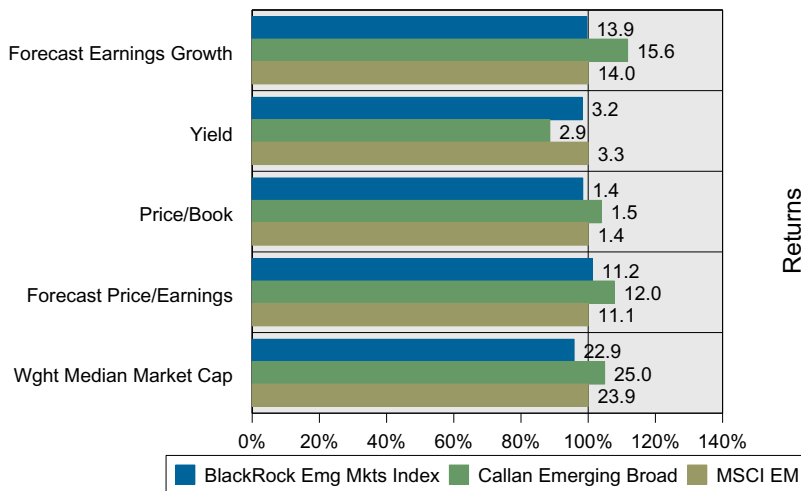
## Quarterly Summary and Highlights

- BlackRock Emg Mkts Index's portfolio posted a 9.68% return for the quarter placing it in the 68 percentile of the Callan Emerging Broad group for the quarter and in the 38 percentile for the last year.
- BlackRock Emg Mkts Index's portfolio underperformed the MSCI EM by 0.02% for the quarter and underperformed the MSCI EM for the year by 0.07%.

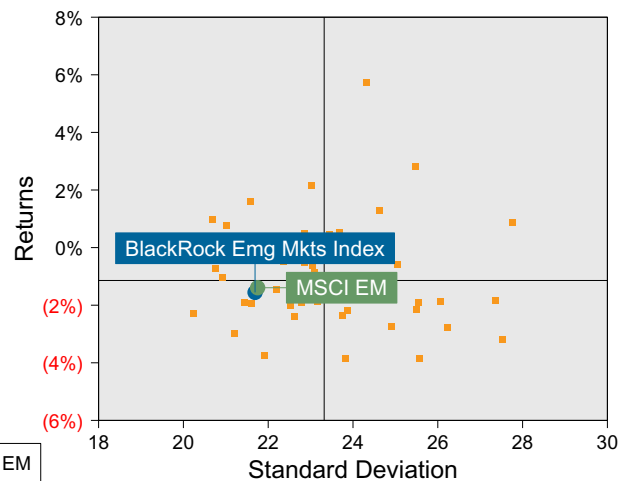
## Performance vs Callan Emerging Broad (Gross)



## Portfolio Characteristics as a Percentage of the MSCI EM



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

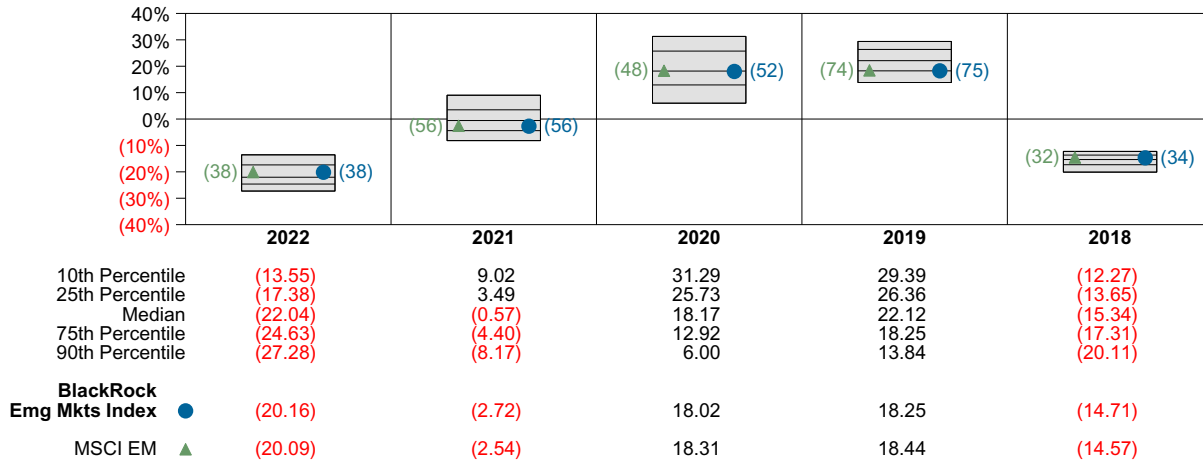


# BlackRock Emg Mkts Index Return Analysis Summary

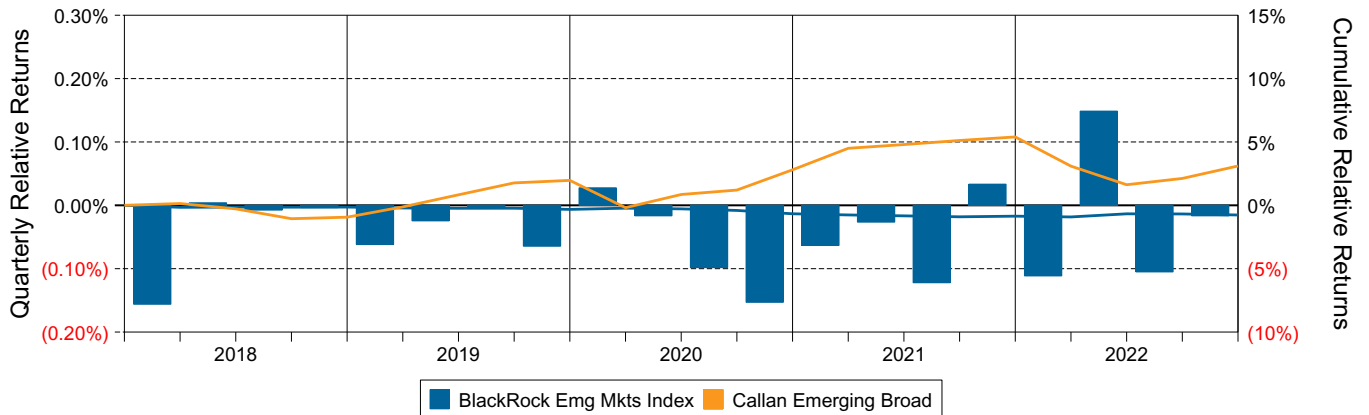
## Return Analysis

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.

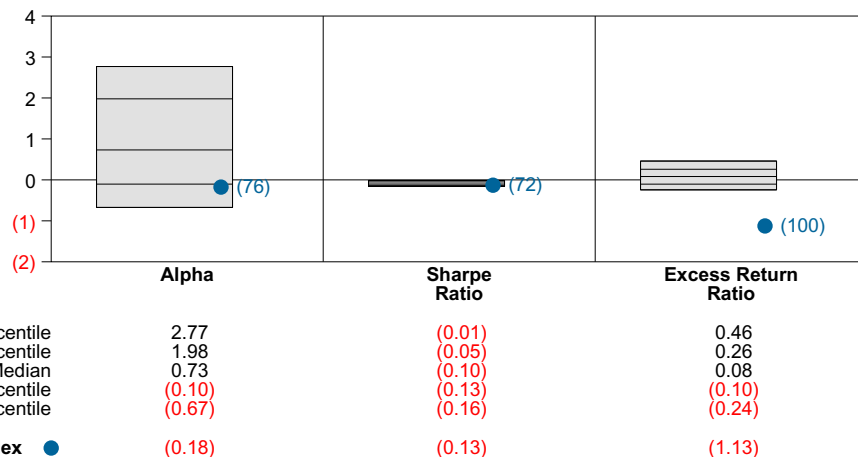
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



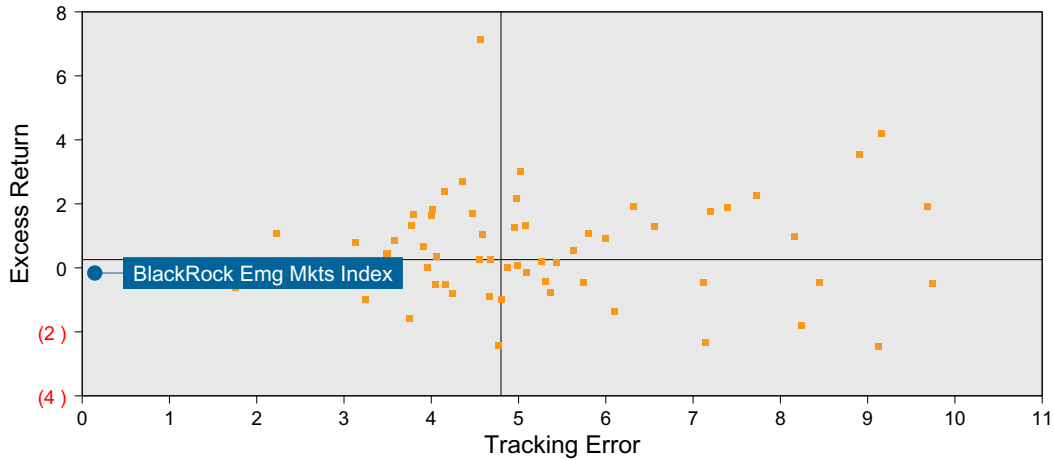


# BlackRock Emg Mkts Index Risk Analysis Summary

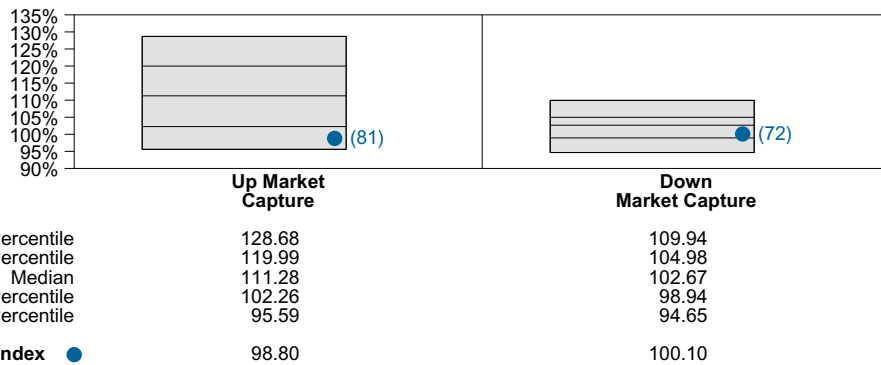
## Risk Analysis

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.

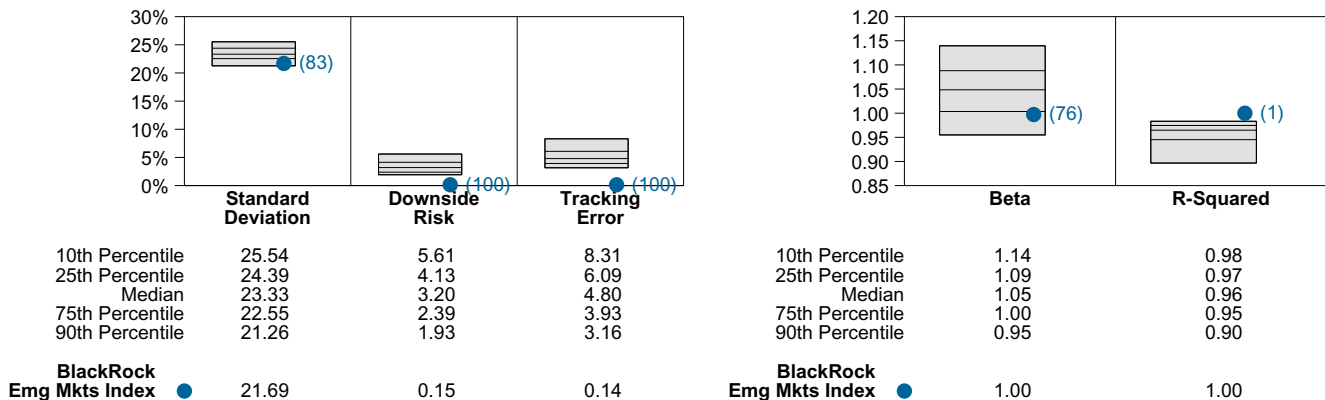
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



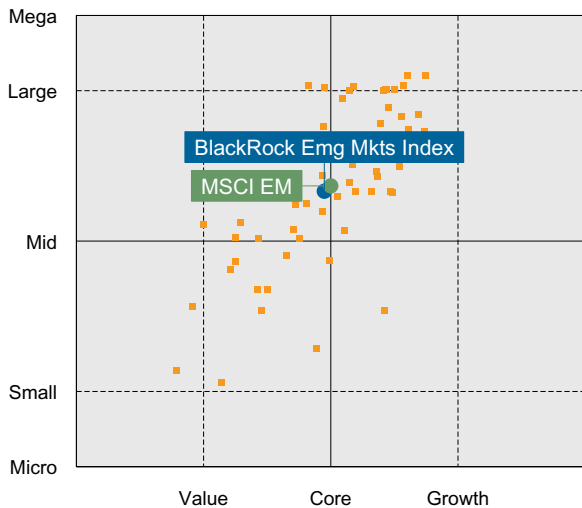
### Risk Statistics Rankings vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



# Current Holdings Based Style Analysis BlackRock Emg Mkts Index As of December 31, 2022

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.

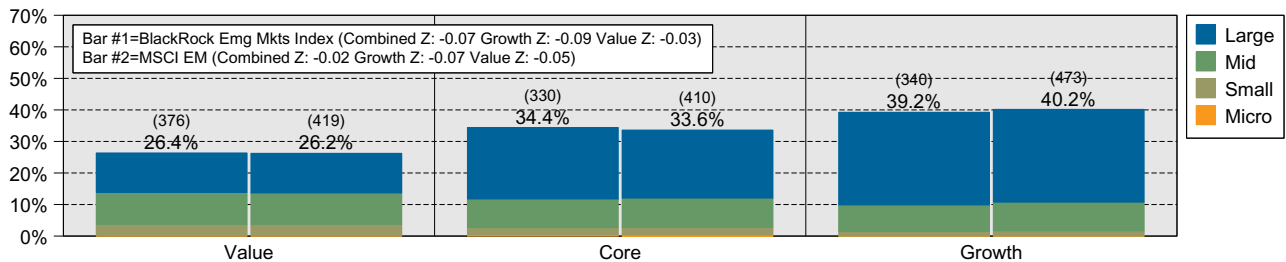
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2022**



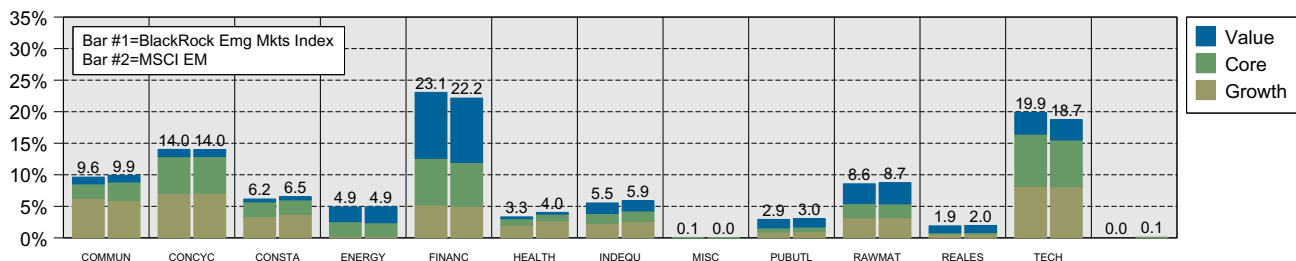
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	12.5% (74)	22.6% (66)	29.4% (87)	64.5% (227)
	12.6% (87)	21.6% (77)	29.4% (105)	63.5% (269)
Mid	10.2% (165)	9.1% (176)	8.3% (184)	27.6% (525)
	10.0% (186)	9.3% (221)	9.1% (272)	28.3% (679)
Small	3.6% (133)	2.3% (86)	1.5% (68)	7.4% (287)
	3.6% (142)	2.4% (111)	1.6% (95)	7.7% (348)
Micro	0.1% (4)	0.4% (2)	0.0% (1)	0.5% (7)
	0.1% (4)	0.3% (1)	0.0% (1)	0.5% (6)
<b>Total</b>	<b>26.4% (376)</b>	<b>34.4% (330)</b>	<b>39.2% (340)</b>	<b>100.0% (1046)</b>
	26.2% (419)	33.6% (410)	40.2% (473)	100.0% (1302)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

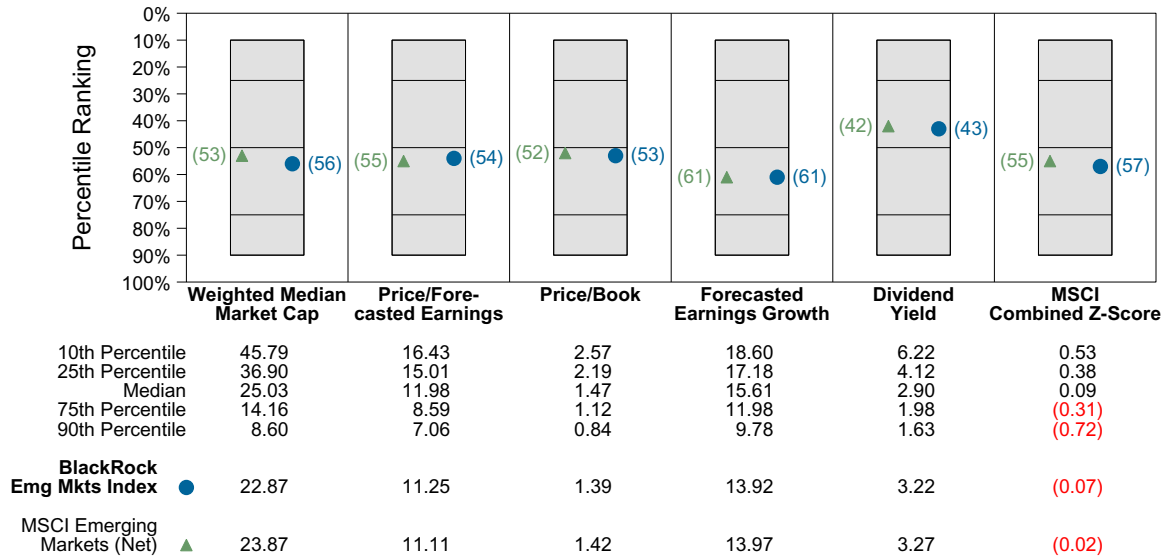


# BlackRock Emg Mkts Index Equity Characteristics Analysis Summary

## Portfolio Characteristics

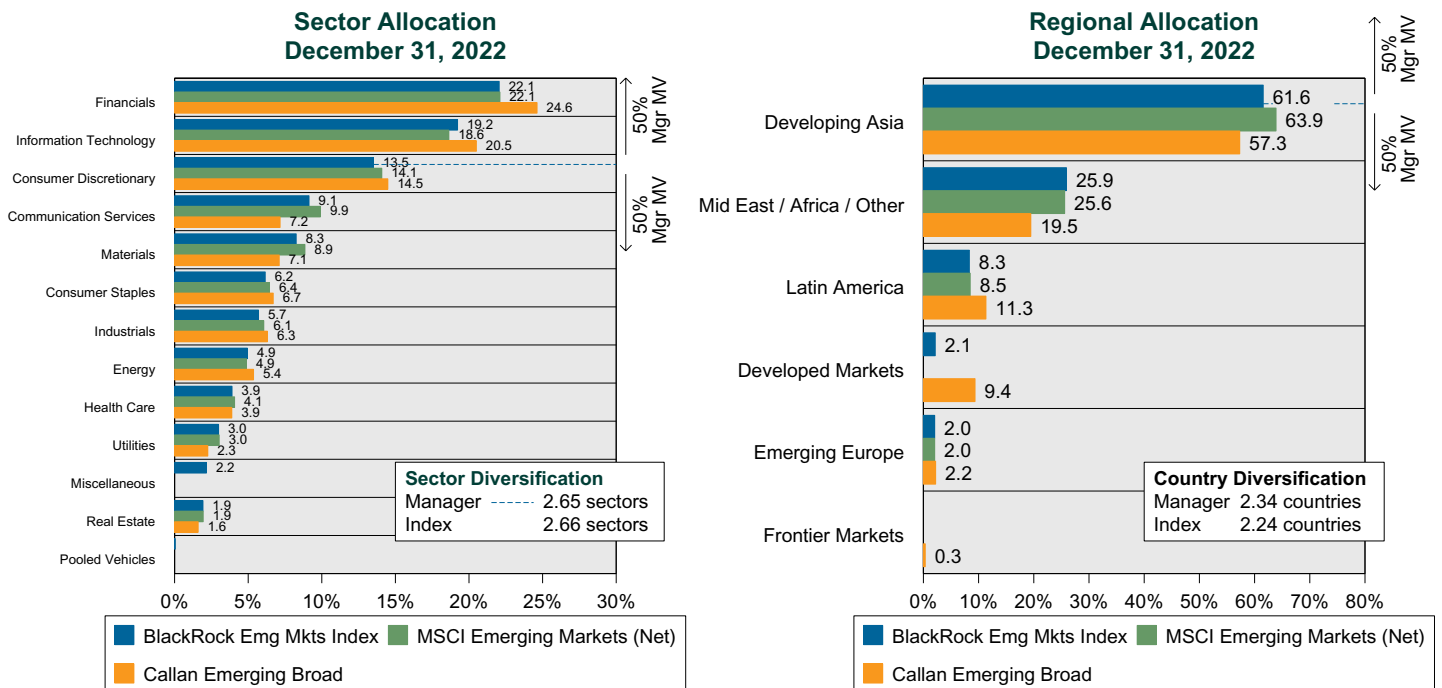
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2022



## 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

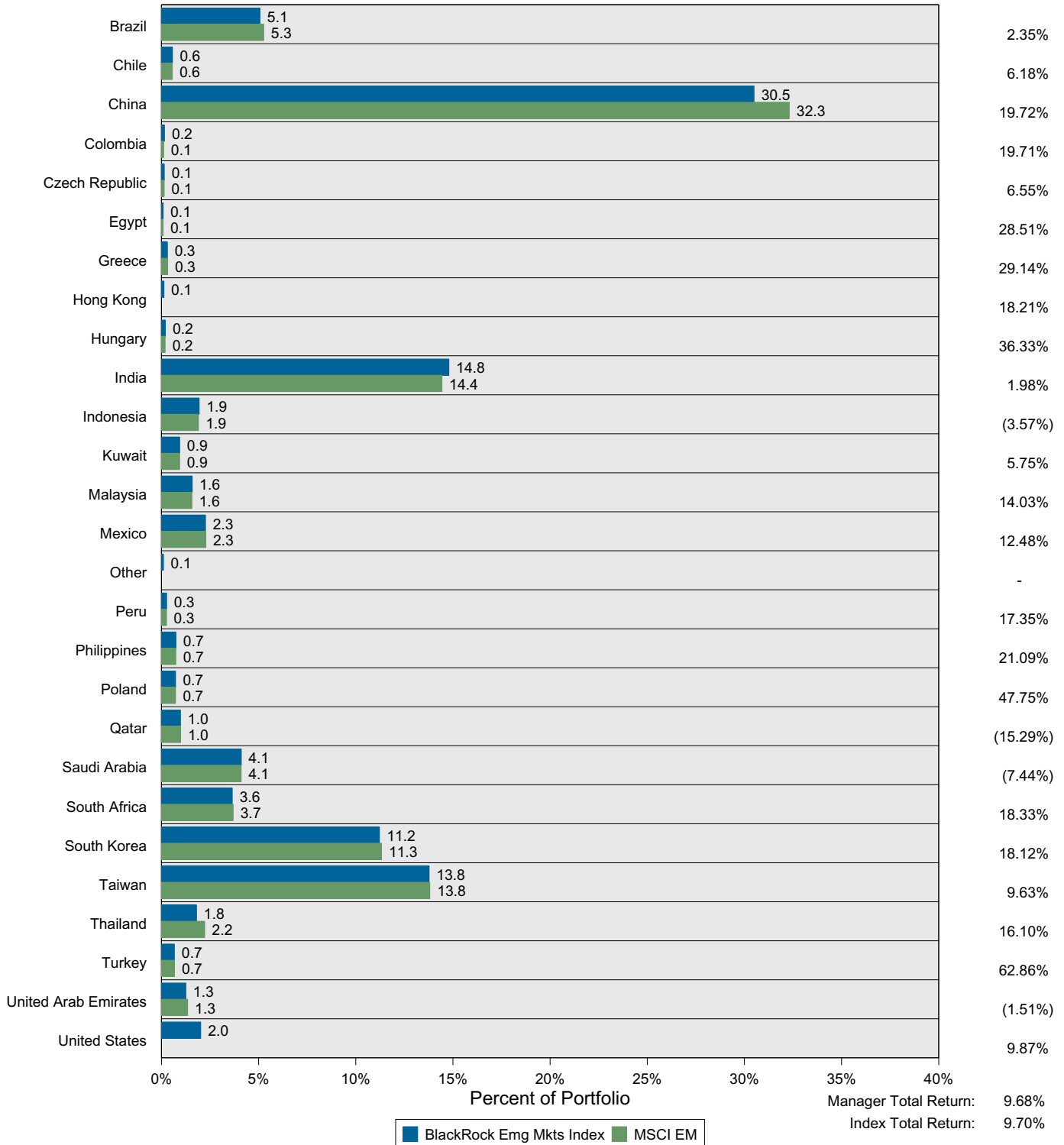
## BlackRock Emg Mkts Index VS MSCI Emerging Markets (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

Index Rtns



# Leading Edge Emg Mkts Fund Period Ended December 31, 2022

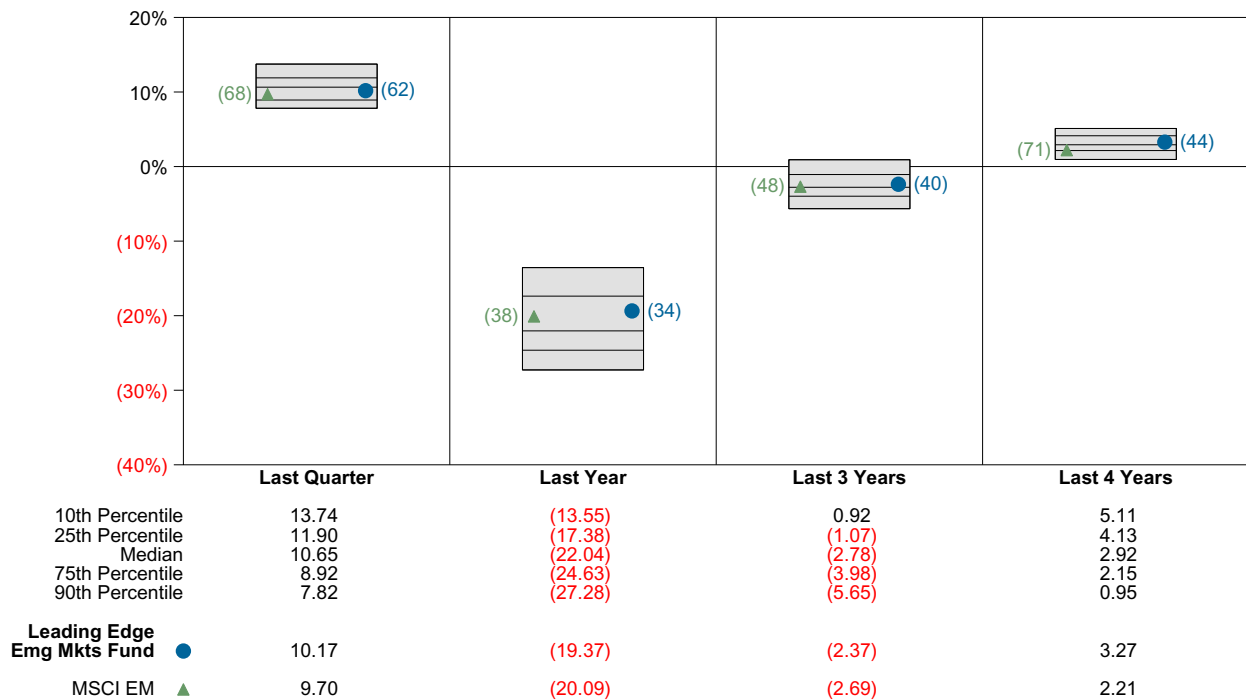
## Investment Philosophy

Leading Edge Investment Advisors pursues innovation in research and investment technology to define how managers are discovered, evaluated and selected. They believe smaller, specialized managers are more innovative than their larger peers, thus producing better risk-adjusted performance. They utilize long-term, ongoing proprietary research to quantify and qualify characteristics that make managers competitive and structure these managers into an optimized, risk-managed Emerging Markets portfolio.

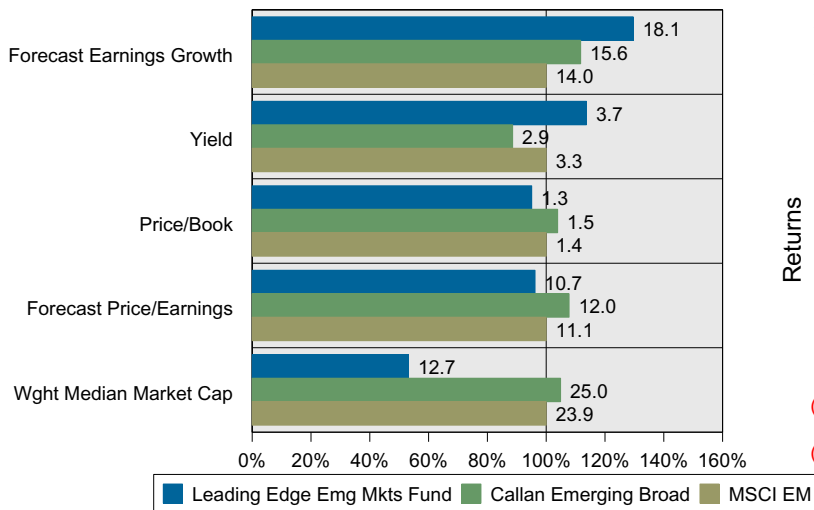
## Quarterly Summary and Highlights

- Leading Edge Emg Mkts Fund's portfolio posted a 10.17% return for the quarter placing it in the 62 percentile of the Callan Emerging Broad group for the quarter and in the 34 percentile for the last year.
- Leading Edge Emg Mkts Fund's portfolio outperformed the MSCI EM by 0.47% for the quarter and outperformed the MSCI EM for the year by 0.73%.

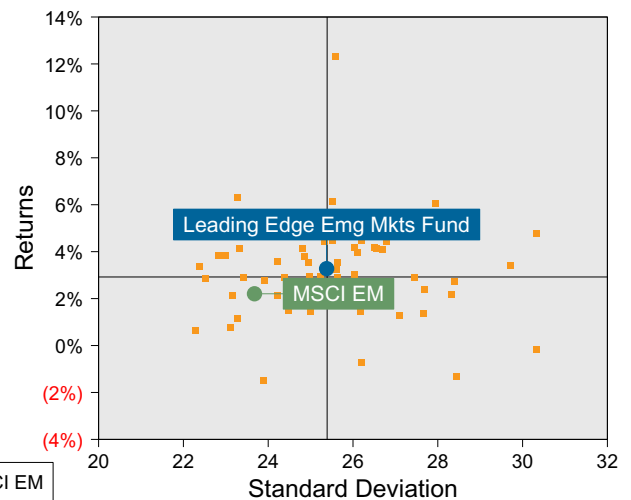
## Performance vs Callan Emerging Broad (Gross)



## Portfolio Characteristics as a Percentage of the MSCI EM



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

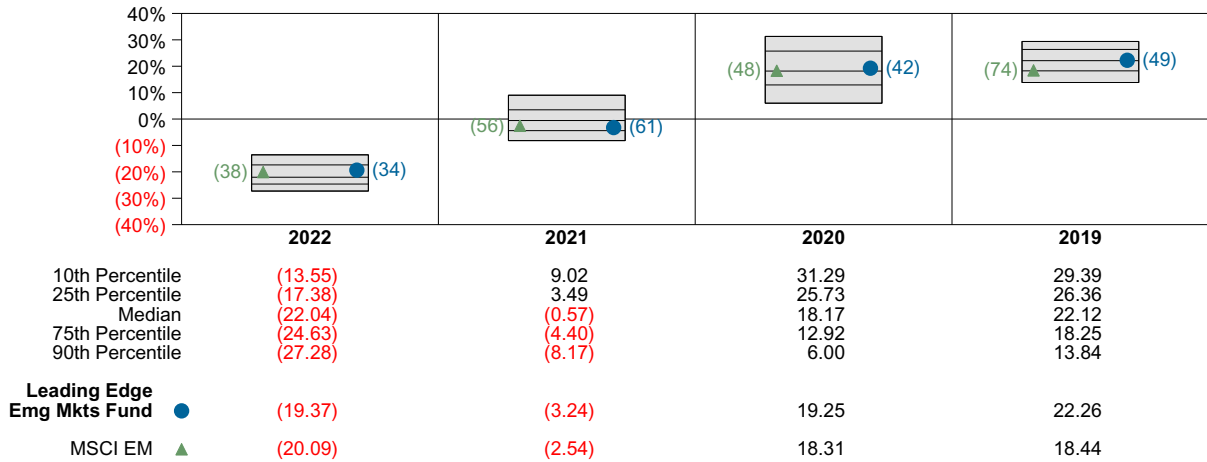


# Leading Edge Emg Mkts Fund Return Analysis Summary

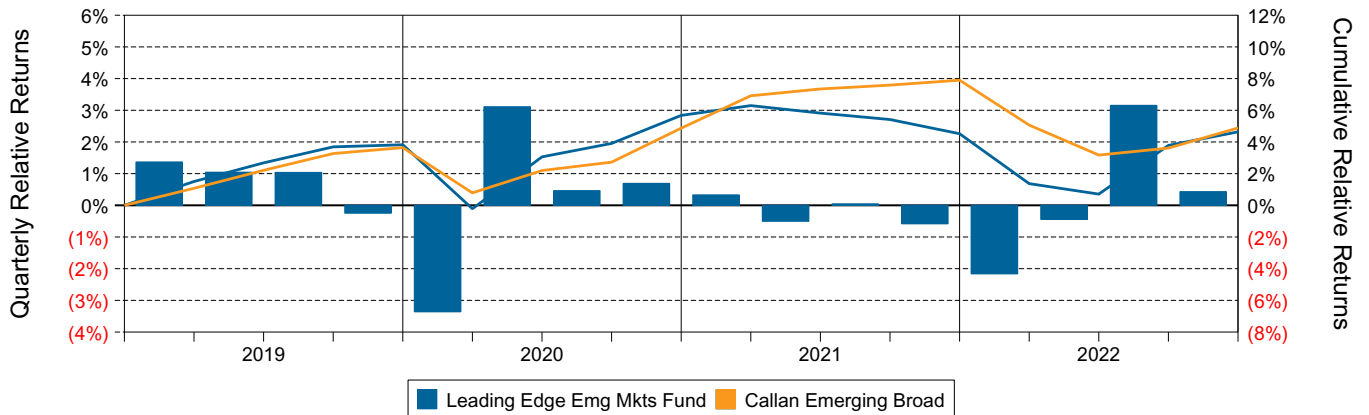
## Return Analysis

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.

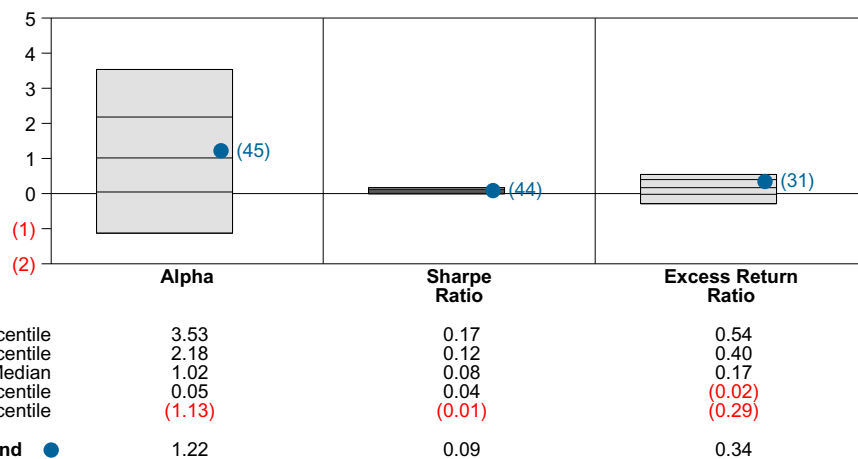
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Four Years Ended December 31, 2022

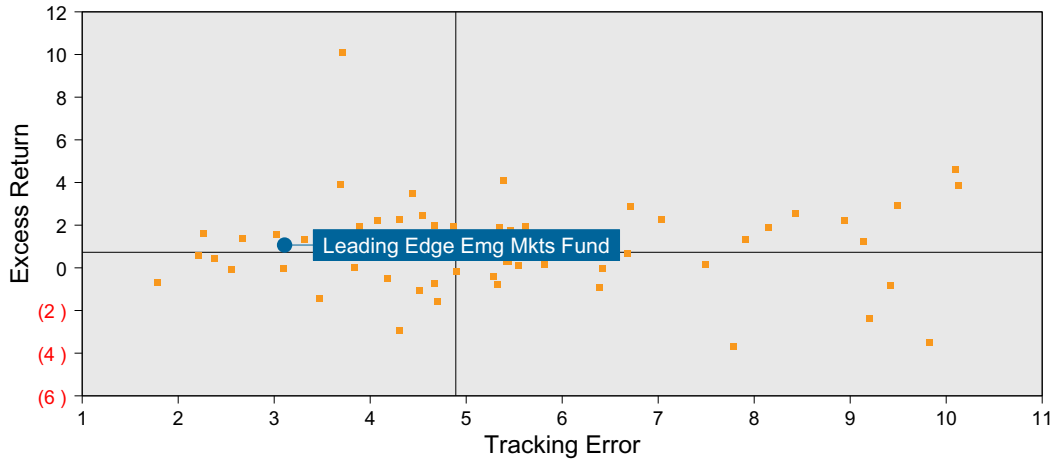


# Leading Edge Emg Mkts Fund Risk Analysis Summary

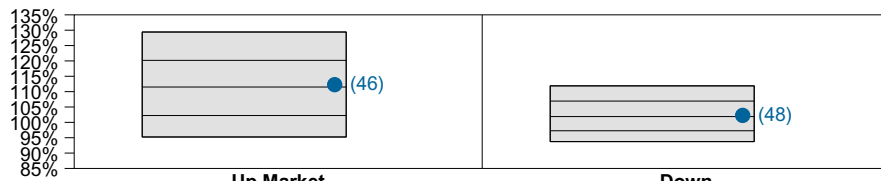
## Risk Analysis

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 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) Four Years Ended December 31, 2022

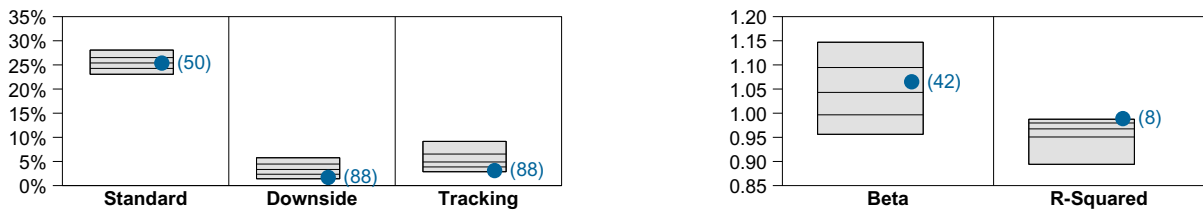


### Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Four Years Ended December 31, 2022



	Up Market Capture	Down Market Capture
10th Percentile	129.41	111.88
25th Percentile	120.19	106.93
Median	111.50	101.89
75th Percentile	102.22	97.26
90th Percentile	95.24	93.73
<b>Leading Edge Emg Mkts Fund</b>	<b>112.27</b>	<b>102.26</b>

### Risk Statistics Rankings vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Four Years Ended December 31, 2022



	Standard Deviation	Downside Risk	Tracking Error	Beta	R-Squared
10th Percentile	28.08	5.77	9.16	1.15	0.99
25th Percentile	26.51	4.47	6.54	1.09	0.98
Median	25.41	3.34	4.89	1.04	0.97
75th Percentile	24.28	2.35	3.87	1.00	0.95
90th Percentile	23.06	1.41	2.87	0.96	0.89
<b>Leading Edge Emg Mkts Fund</b>	<b>25.38</b>	<b>1.69</b>	<b>3.11</b>	<b>1.07</b>	<b>0.99</b>

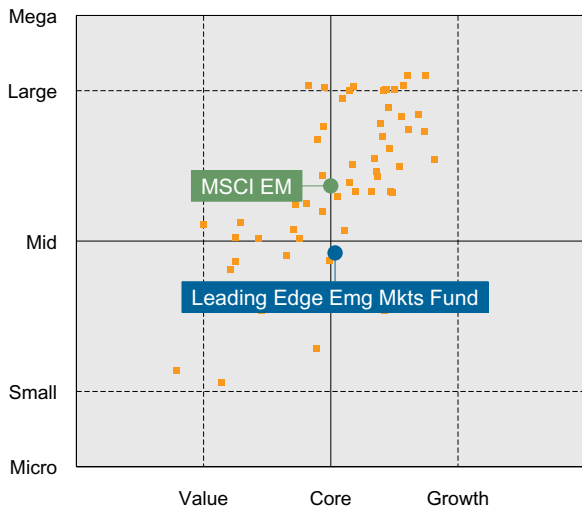
# Current Holdings Based Style Analysis

## Leading Edge Emg Mkts Fund

### As of December 31, 2022

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.

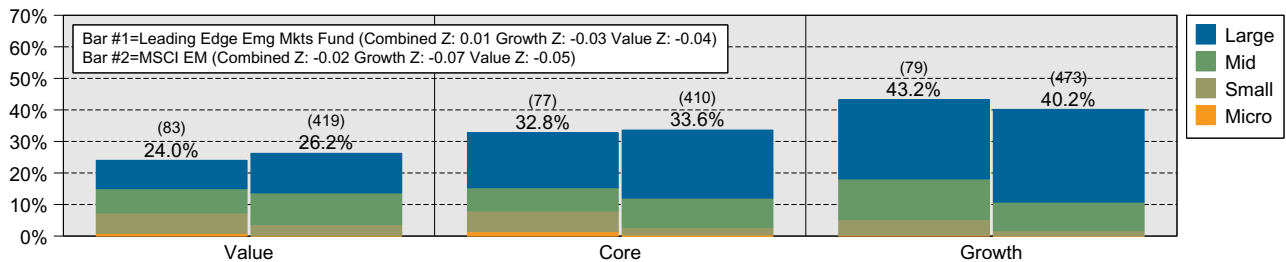
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2022**



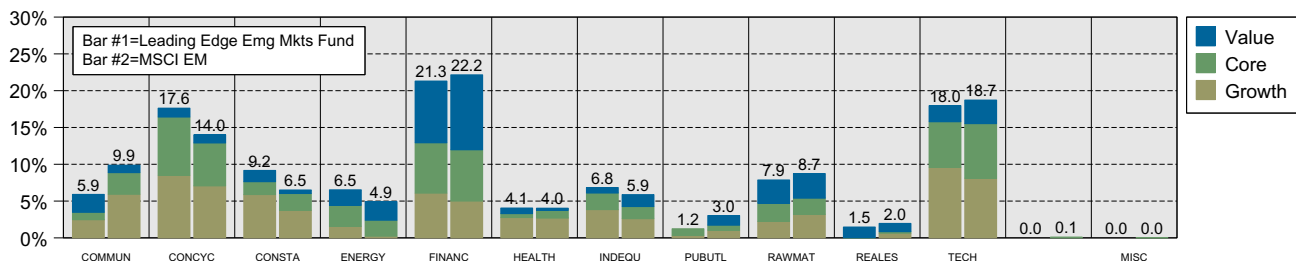
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	9.0% (21)	17.5% (26)	25.1% (33)	51.5% (80)
	12.6% (87)	21.6% (77)	29.4% (105)	63.5% (269)
Mid	7.7% (30)	7.4% (20)	12.9% (30)	27.9% (80)
	10.0% (186)	9.3% (221)	9.1% (272)	28.3% (679)
Small	6.5% (27)	6.6% (27)	5.0% (15)	18.0% (69)
	3.6% (142)	2.4% (111)	1.6% (95)	7.7% (348)
Micro	0.9% (5)	1.4% (4)	0.2% (1)	2.5% (10)
	0.1% (4)	0.3% (1)	0.0% (1)	0.5% (6)
<b>Total</b>	<b>24.0% (83)</b>	<b>32.8% (77)</b>	<b>43.2% (79)</b>	<b>100.0% (239)</b>
	<b>26.2% (419)</b>	<b>33.6% (410)</b>	<b>40.2% (473)</b>	<b>100.0% (1302)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**



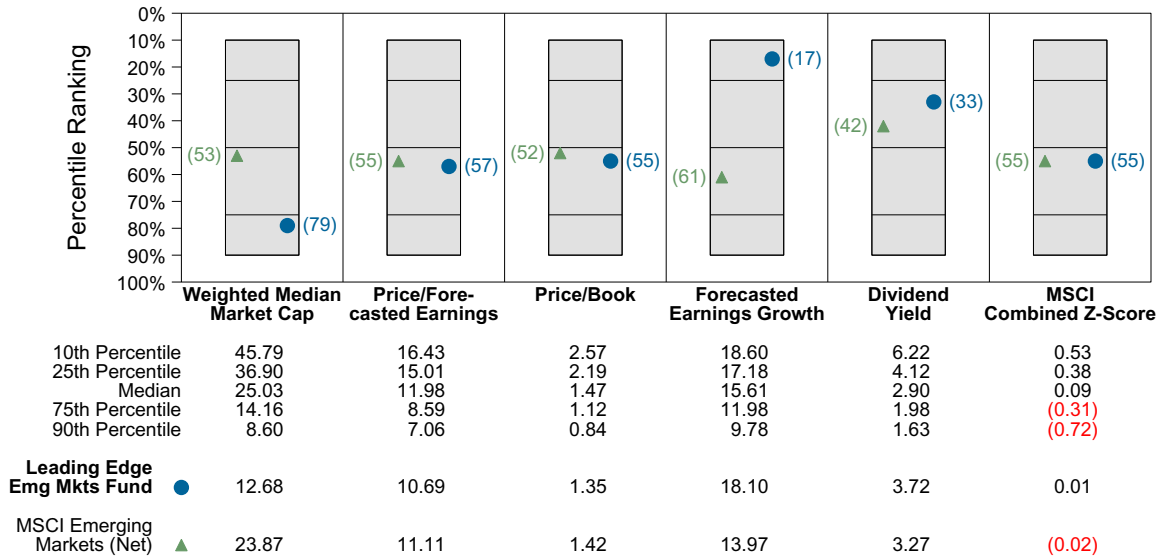


# Leading Edge Emg Mkts Fund Equity Characteristics Analysis Summary

## Portfolio Characteristics

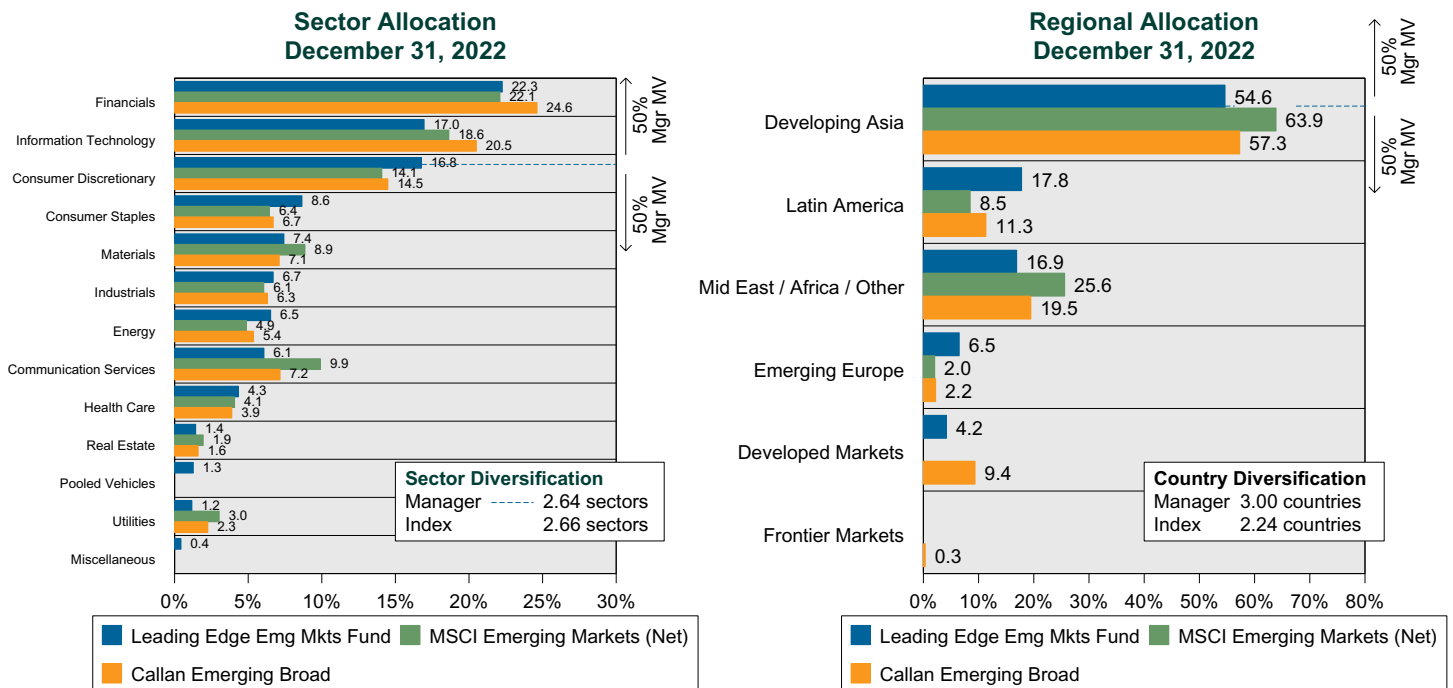
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2022



## 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.

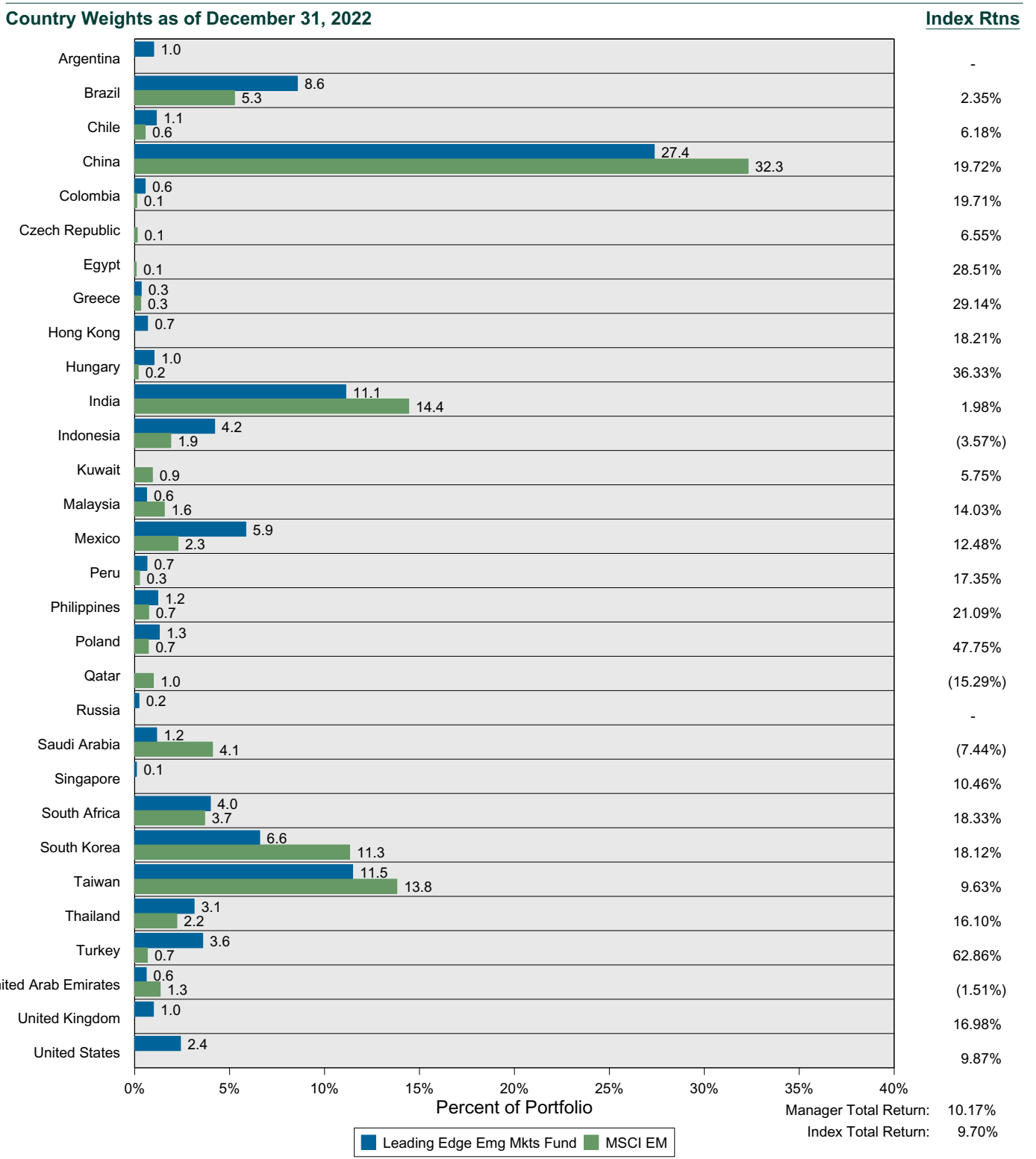


# Country Allocation

## Leading Edge Emg Mkts Fund VS MSCI Emerging Markets (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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.



# Macquarie Emerging Markets Equity Period Ended December 31, 2022

## Investment Philosophy

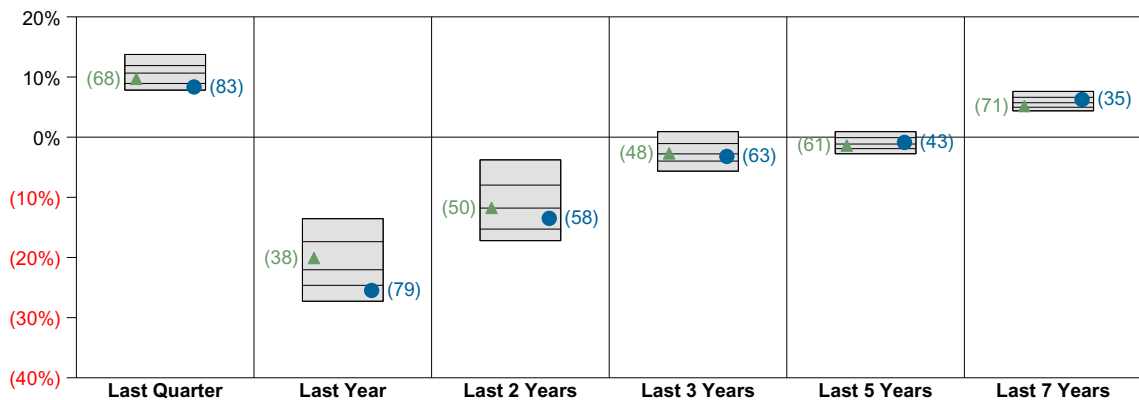
Macquarie believes that market price and intrinsic business value are correlated in the long-run and short-term divergences offer disciplined, bottom-up, fundamental investors, attractive risk-adjusted opportunities. The team defines intrinsic value as the appropriately discounted value of a business' 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

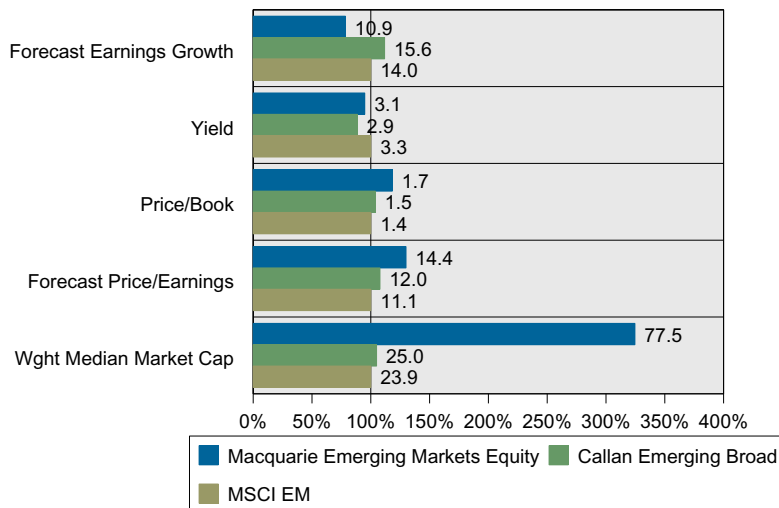
- Macquarie Emerging Markets Equity's portfolio posted a 8.34% return for the quarter placing it in the 83 percentile of the Callan Emerging Broad group for the quarter and in the 79 percentile for the last year.
- Macquarie Emerging Markets Equity's portfolio underperformed the MSCI EM by 1.36% for the quarter and underperformed the MSCI EM for the year by 5.39%.

## Performance vs Callan Emerging Broad (Gross)

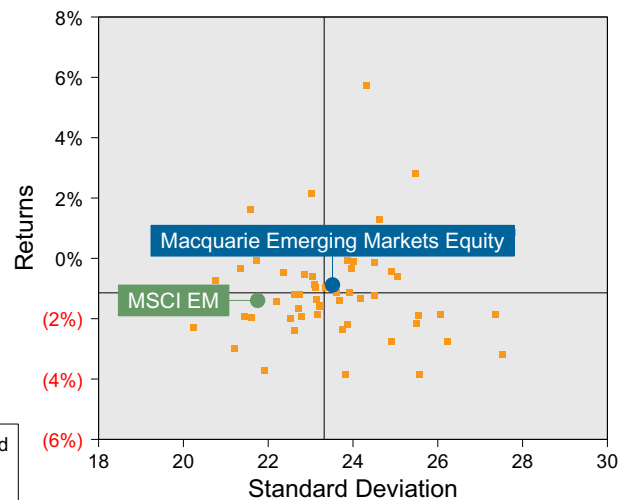


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	13.74	(13.55)	(3.77)	0.92	0.92	7.61
25th Percentile	11.90	(17.38)	(7.97)	(1.07)	(0.08)	6.62
Median	10.65	(22.04)	(11.79)	(2.78)	(1.14)	5.72
75th Percentile	8.92	(24.63)	(15.28)	(3.98)	(1.91)	4.97
90th Percentile	7.82	(27.28)	(17.20)	(5.65)	(2.76)	4.38
<b>Macquarie Emerging Markets Equity</b>	<b>8.34</b>	<b>(25.48)</b>	<b>(13.50)</b>	<b>(3.20)</b>	<b>(0.88)</b>	<b>6.25</b>
<b>MSCI EM</b>	<b>9.70</b>	<b>(20.09)</b>	<b>(11.75)</b>	<b>(2.69)</b>	<b>(1.39)</b>	<b>5.17</b>

## Portfolio Characteristics as a Percentage of the MSCI EM



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

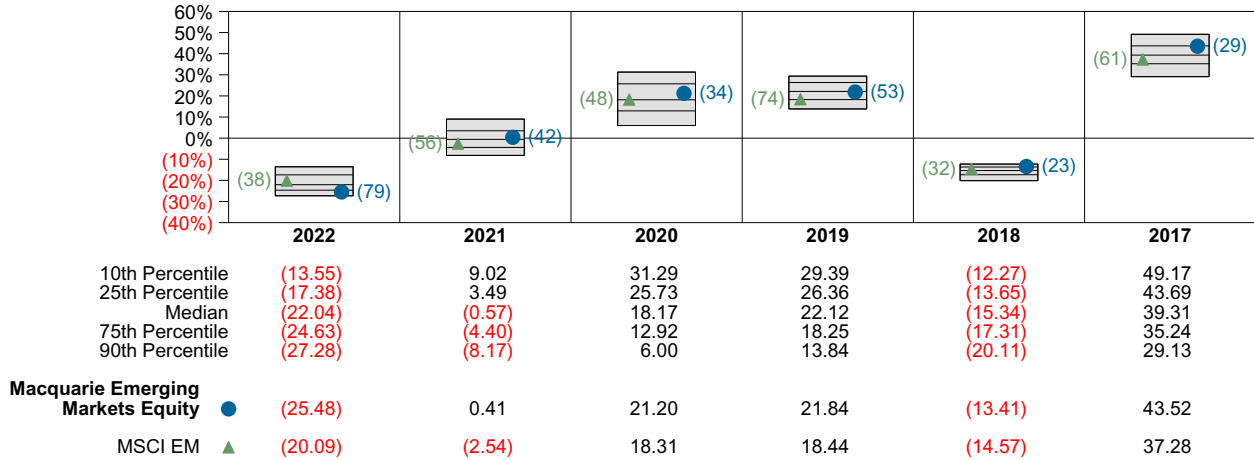


# Macquarie Emerging Markets Equity Return Analysis Summary

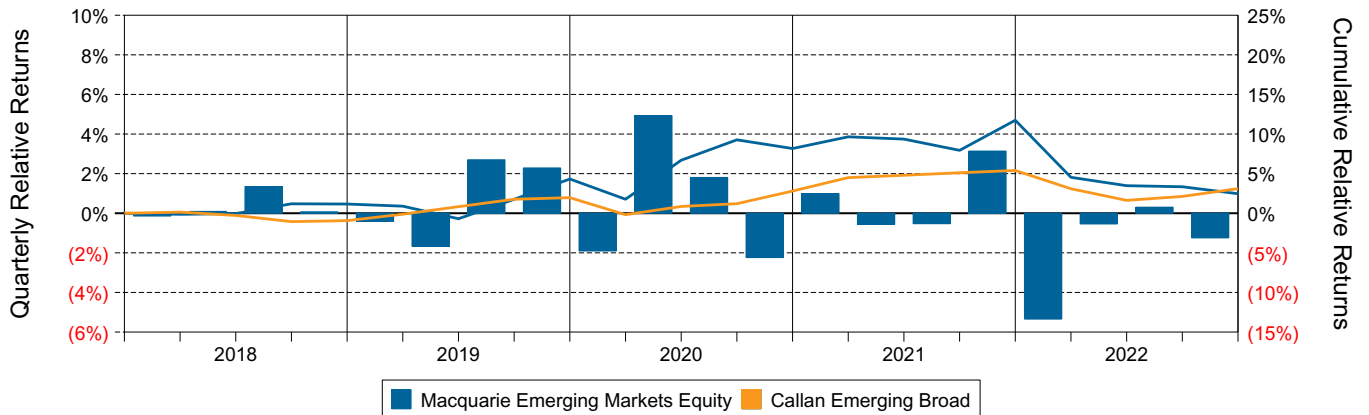
## Return Analysis

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.

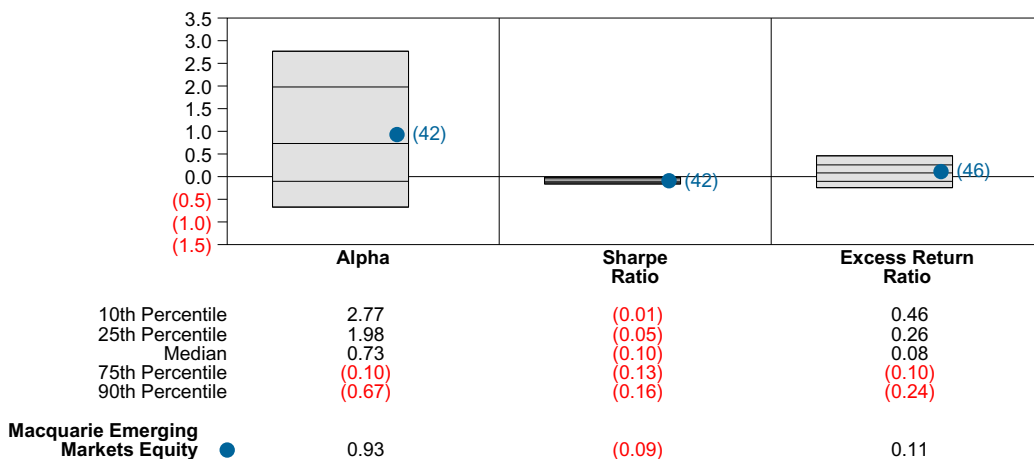
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022

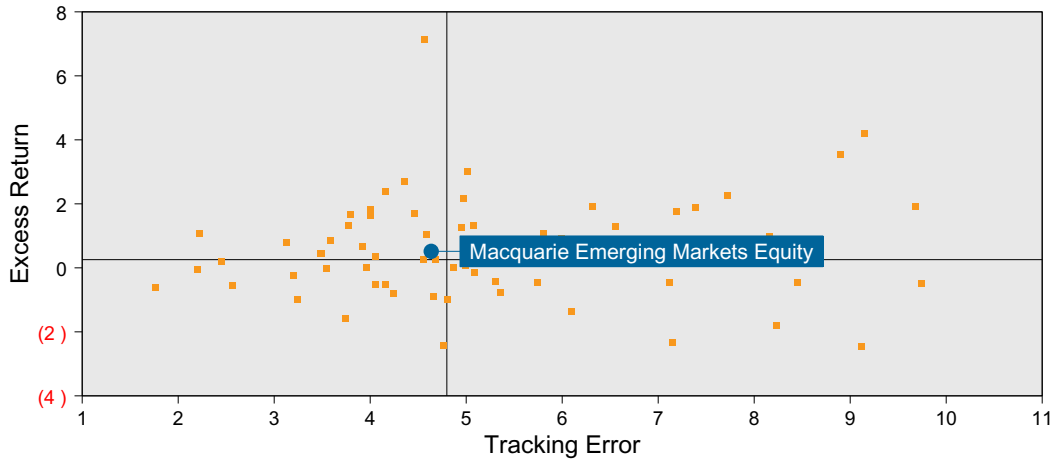


# Macquarie Emerging Markets Equity Risk Analysis Summary

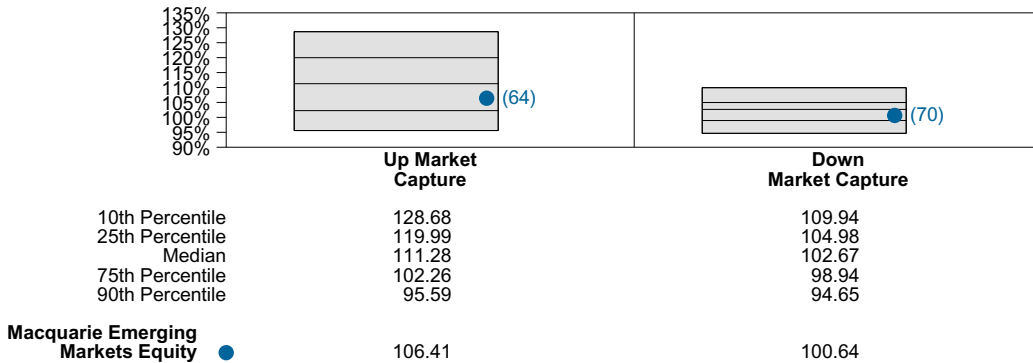
## Risk Analysis

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.

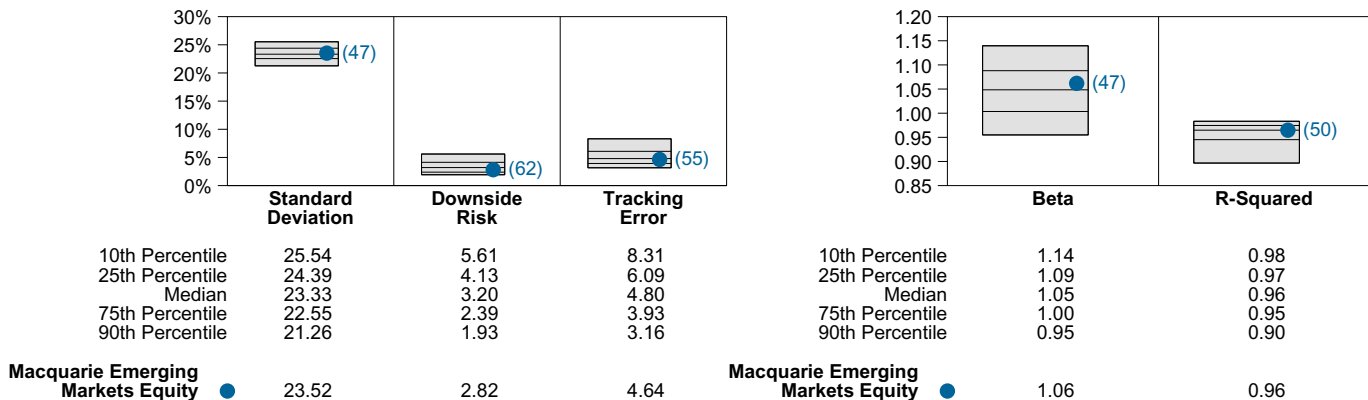
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



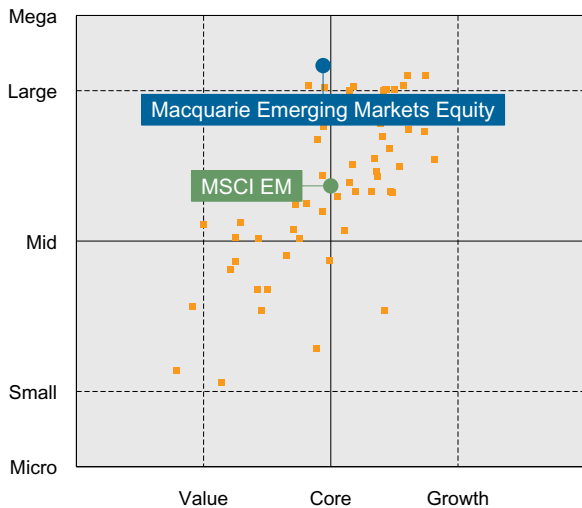
### Risk Statistics Rankings vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



# Current Holdings Based Style Analysis Macquarie Emerging Markets Equity As of December 31, 2022

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.

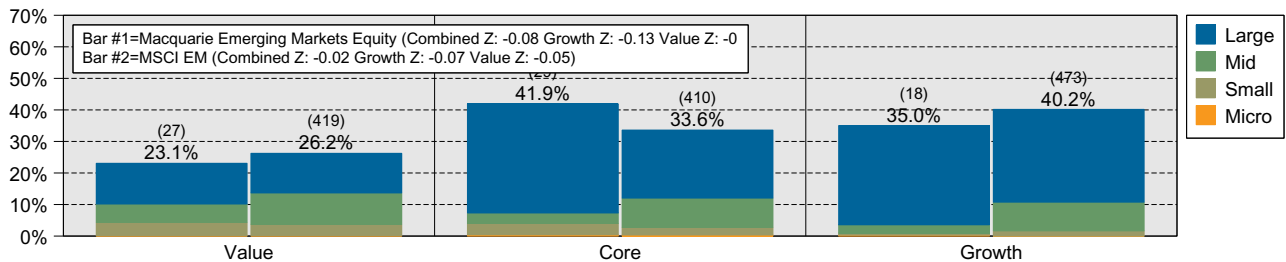
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2022**



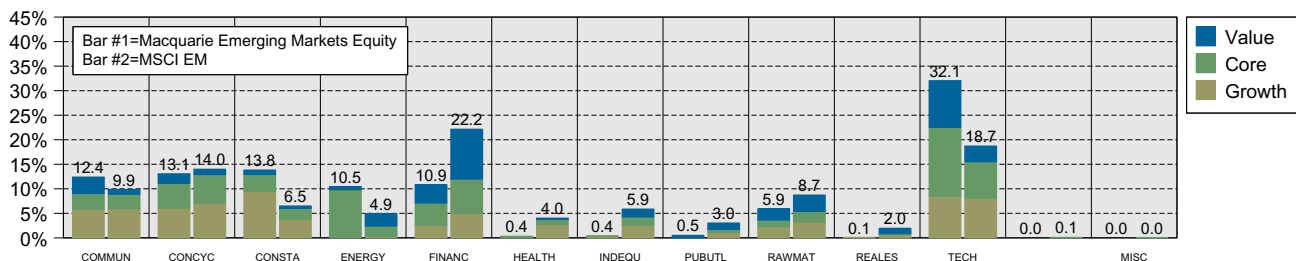
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	12.9% (10)	34.6% (16)	31.5% (11)	78.9% (37)
	12.6% (87)	21.6% (77)	29.4% (105)	63.5% (269)
Mid	5.8% (9)	3.3% (7)	2.7% (3)	11.9% (19)
	10.0% (186)	9.3% (221)	9.1% (272)	28.3% (679)
Small	4.3% (7)	3.6% (5)	0.6% (2)	8.4% (14)
	3.6% (142)	2.4% (111)	1.6% (95)	7.7% (348)
Micro	0.1% (1)	0.4% (1)	0.3% (2)	0.8% (4)
	0.1% (4)	0.3% (1)	0.0% (1)	0.5% (6)
<b>Total</b>	<b>23.1% (27)</b>	<b>41.9% (29)</b>	<b>35.0% (18)</b>	<b>100.0% (74)</b>
	26.2% (419)	33.6% (410)	40.2% (473)	100.0% (1302)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

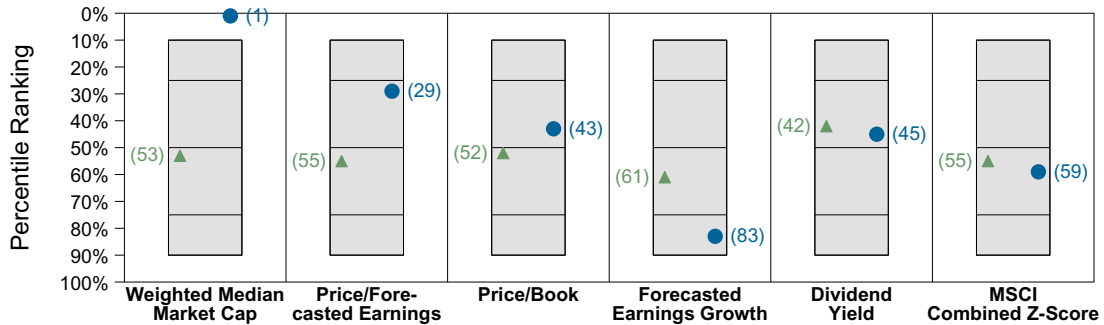


# Macquarie Emerging Markets Equity Equity Characteristics Analysis Summary

## 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, 2022

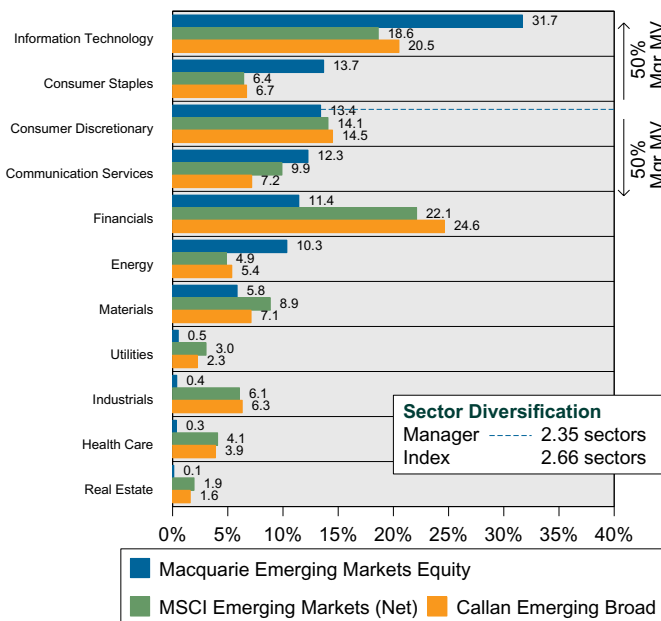


	Weighted Median Market Cap	Price/Forecasted Earnings	Price/Book	Forecasted Earnings Growth	Dividend Yield	MSCI Combined Z-Score
10th Percentile	45.79	16.43	2.57	18.60	6.22	0.53
25th Percentile	36.90	15.01	2.19	17.18	4.12	0.38
Median	25.03	11.98	1.47	15.61	2.90	0.09
75th Percentile	14.16	8.59	1.12	11.98	1.98	(0.31)
90th Percentile	8.60	7.06	0.84	9.78	1.63	(0.72)
<b>Macquarie Emerging Markets Equity</b>	<b>77.46</b>	<b>14.44</b>	<b>1.67</b>	<b>10.95</b>	<b>3.11</b>	<b>(0.08)</b>
MSCI Emerging Markets (Net)	23.87	11.11	1.42	13.97	3.27	(0.02)

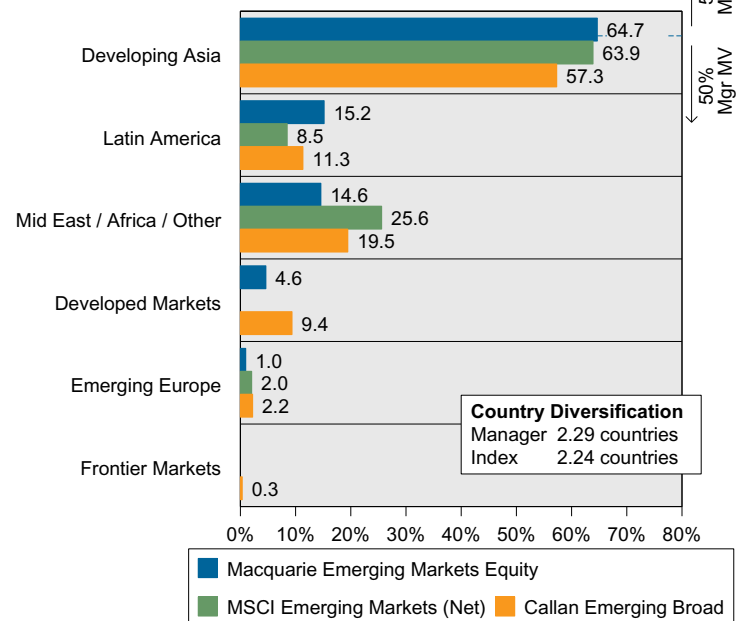
## Sector Weights

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, 2022



### Regional Allocation December 31, 2022



# Country Allocation

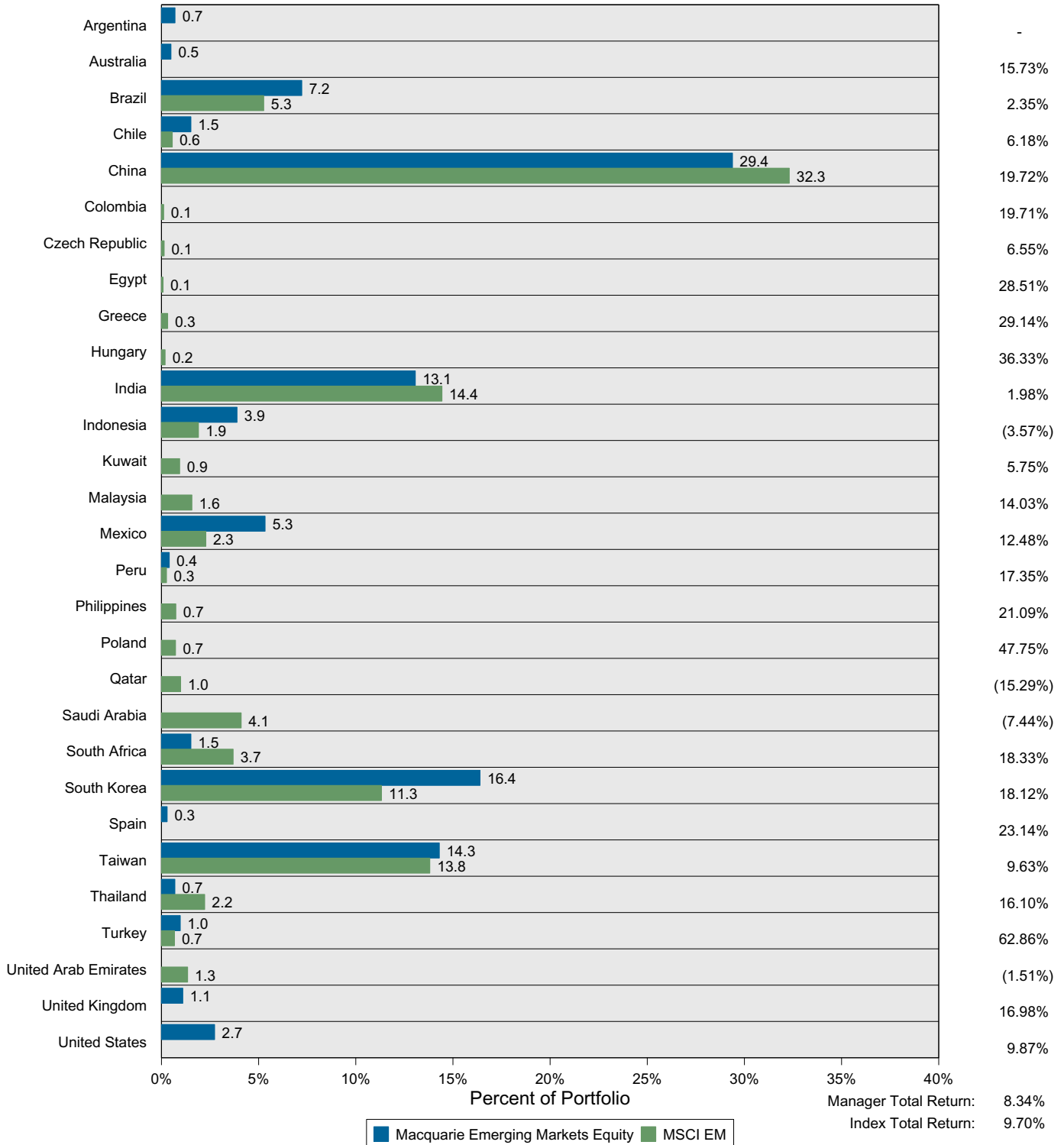
## Macquarie Emerging Markets Equity VS MSCI Emerging Markets (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

Index Rtns





# Martin Currie

## Period Ended December 31, 2022

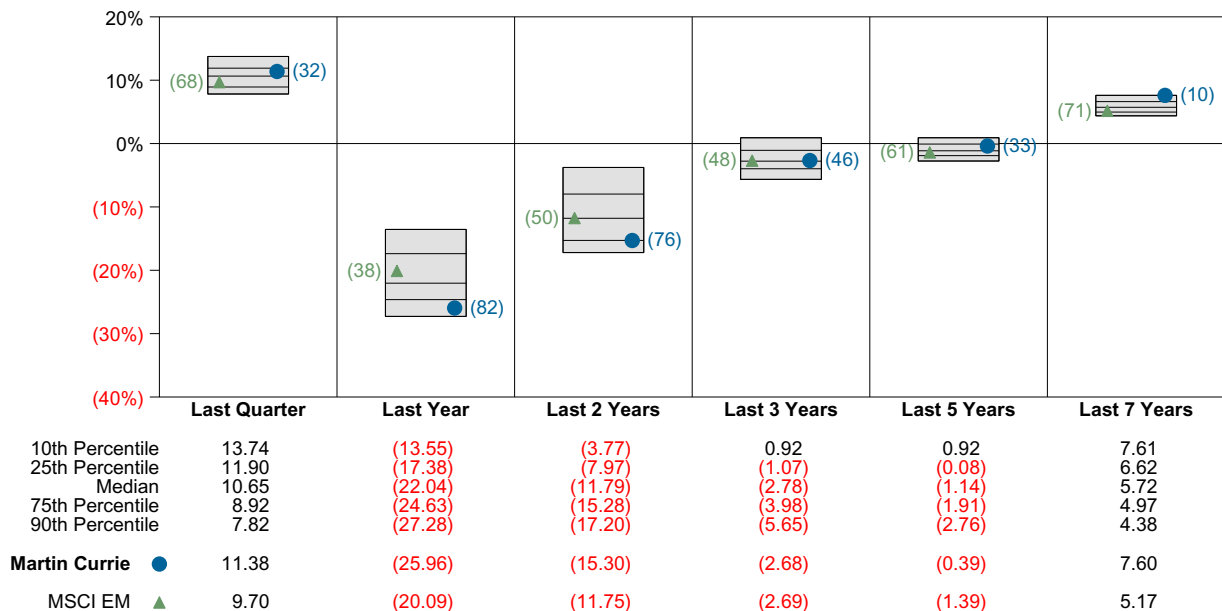
### Investment Philosophy

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.

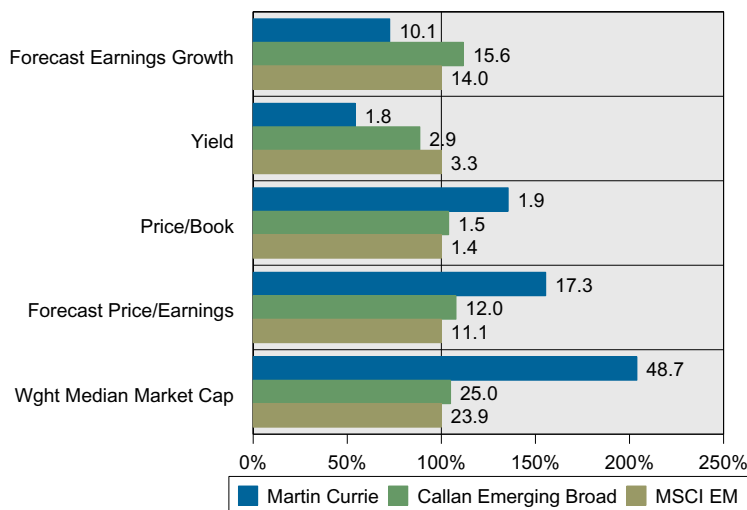
### Quarterly Summary and Highlights

- Martin Currie's portfolio posted a 11.38% return for the quarter placing it in the 32 percentile of the Callan Emerging Broad group for the quarter and in the 82 percentile for the last year.
- Martin Currie's portfolio outperformed the MSCI EM by 1.68% for the quarter and underperformed the MSCI EM for the year by 5.87%.

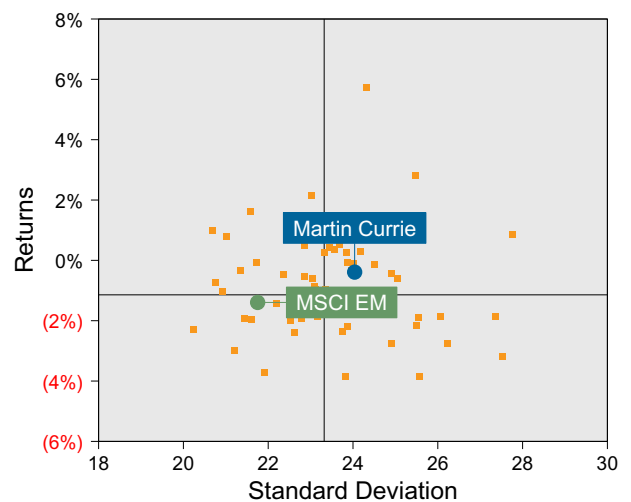
### Performance vs Callan Emerging Broad (Gross)



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



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

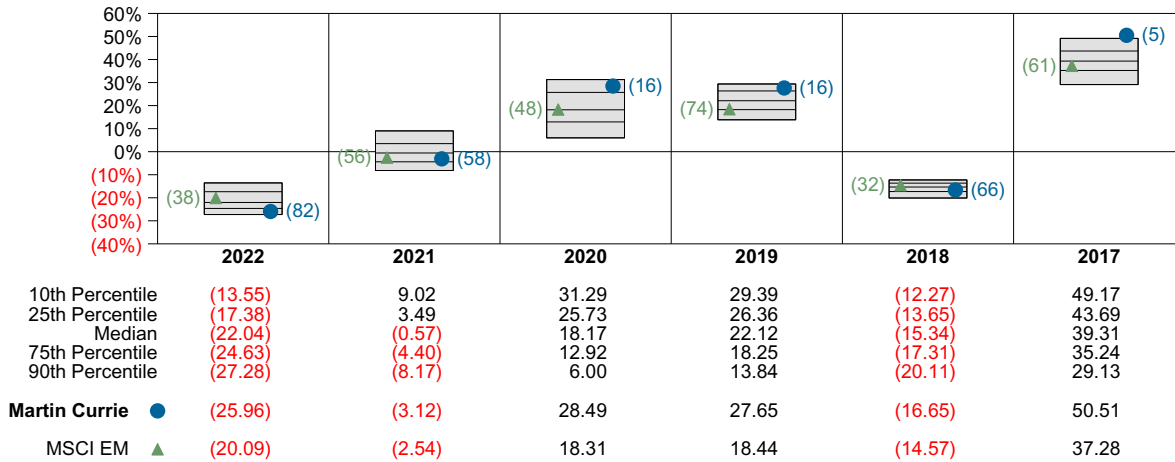


# Martin Currie Return Analysis Summary

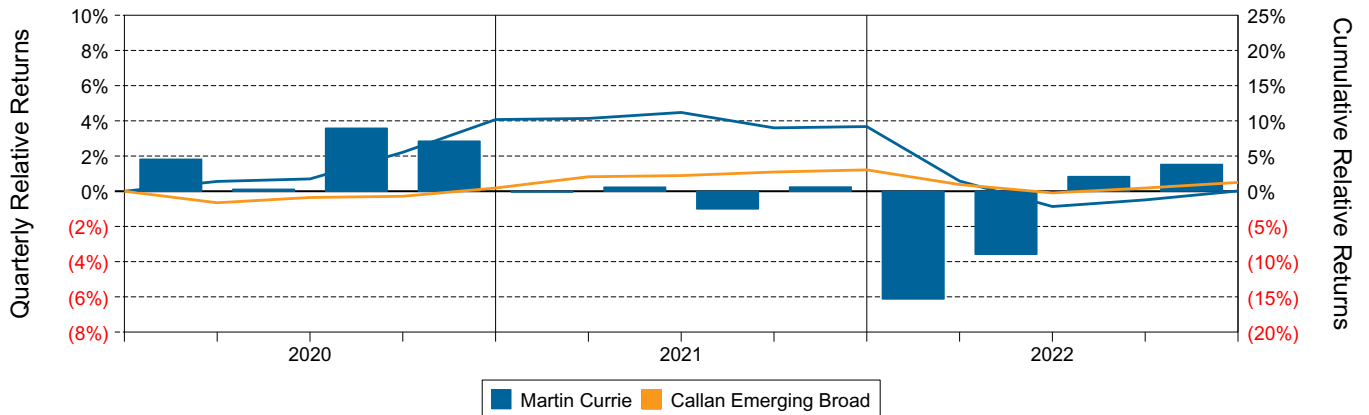
## Return Analysis

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.

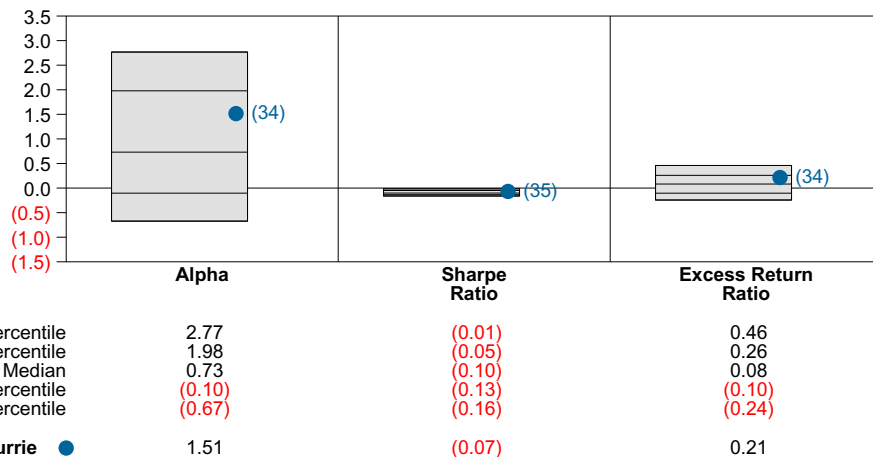
### Performance vs Callan Emerging Broad (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EM



### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



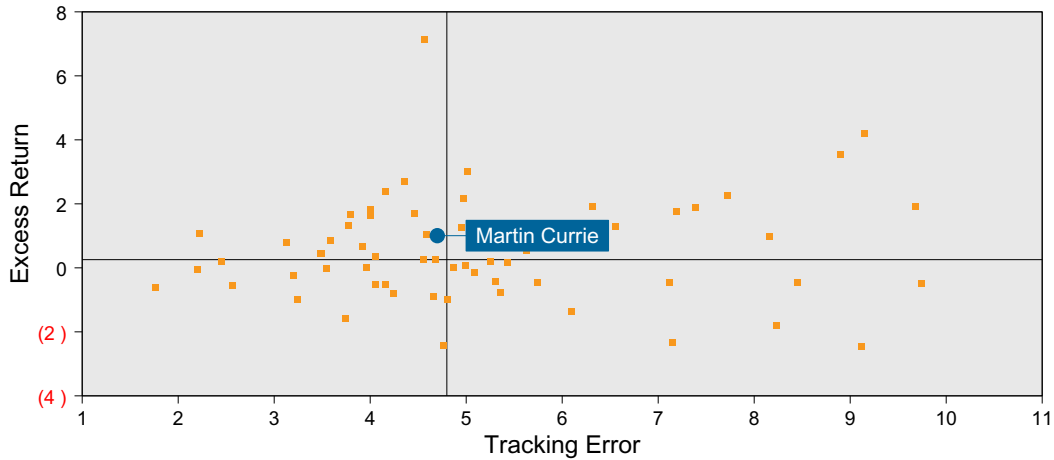
# Martin Currie

## Risk Analysis Summary

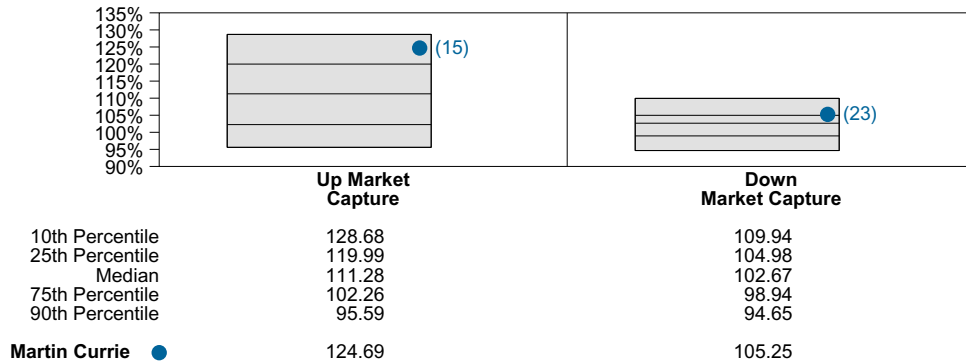
### Risk Analysis

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.

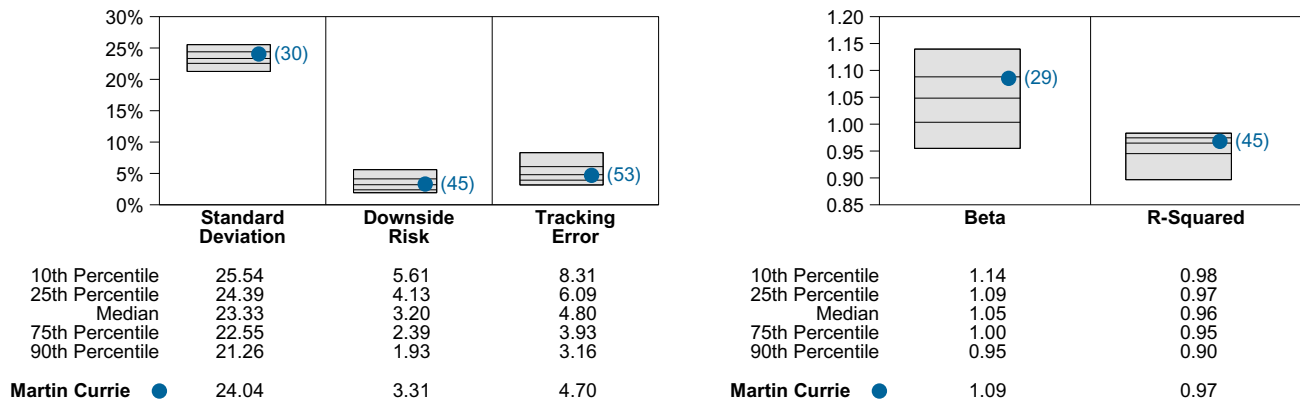
### Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



### Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



### Risk Statistics Rankings vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended December 31, 2022



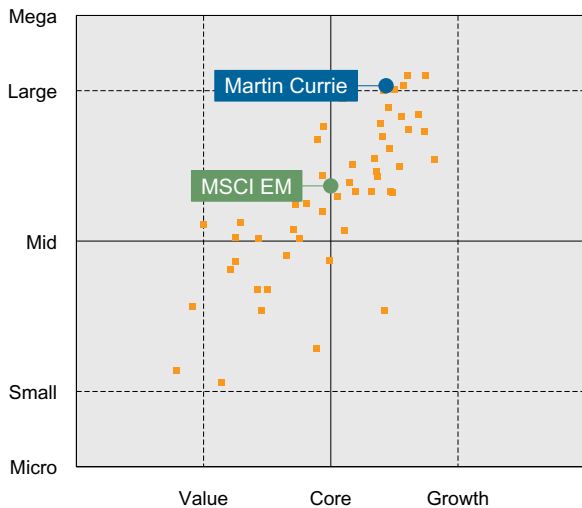
# Current Holdings Based Style Analysis

## Martin Currie

### As of December 31, 2022

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 table 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.

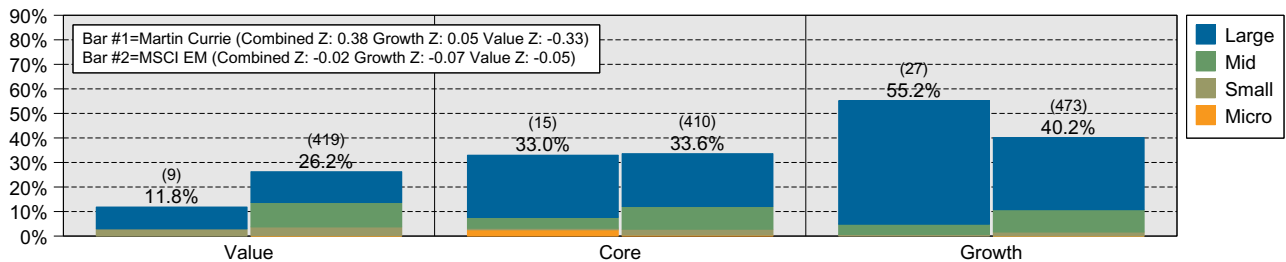
**Style Map vs Callan Emerging Broad Holdings as of December 31, 2022**



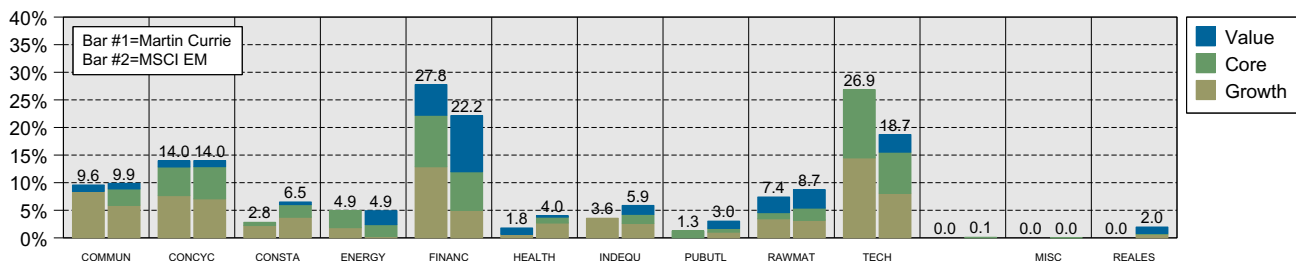
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	8.9% (5)	25.3% (10)	50.4% (22)	84.6% (37)
	12.6% (87)	21.6% (77)	29.4% (105)	63.5% (269)
Mid	0.0% (0)	4.5% (3)	4.2% (4)	8.6% (7)
	10.0% (186)	9.3% (221)	9.1% (272)	28.3% (679)
Small	2.9% (4)	0.6% (1)	0.7% (1)	4.2% (6)
	3.6% (142)	2.4% (111)	1.6% (95)	7.7% (348)
Micro	0.0% (0)	2.6% (1)	0.0% (0)	2.6% (1)
	0.1% (4)	0.3% (1)	0.0% (1)	0.5% (6)
<b>Total</b>	<b>11.8% (9)</b>	<b>33.0% (15)</b>	<b>55.2% (27)</b>	<b>100.0% (51)</b>
	<b>26.2% (419)</b>	<b>33.6% (410)</b>	<b>40.2% (473)</b>	<b>100.0% (1302)</b>

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

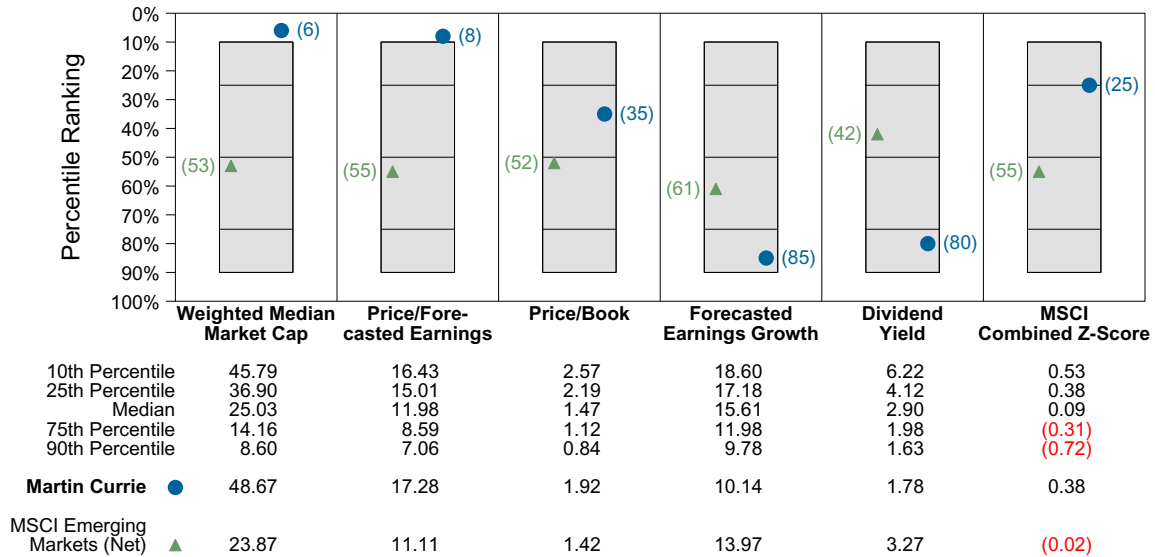


# Martin Currie Equity Characteristics Analysis Summary

## Portfolio Characteristics

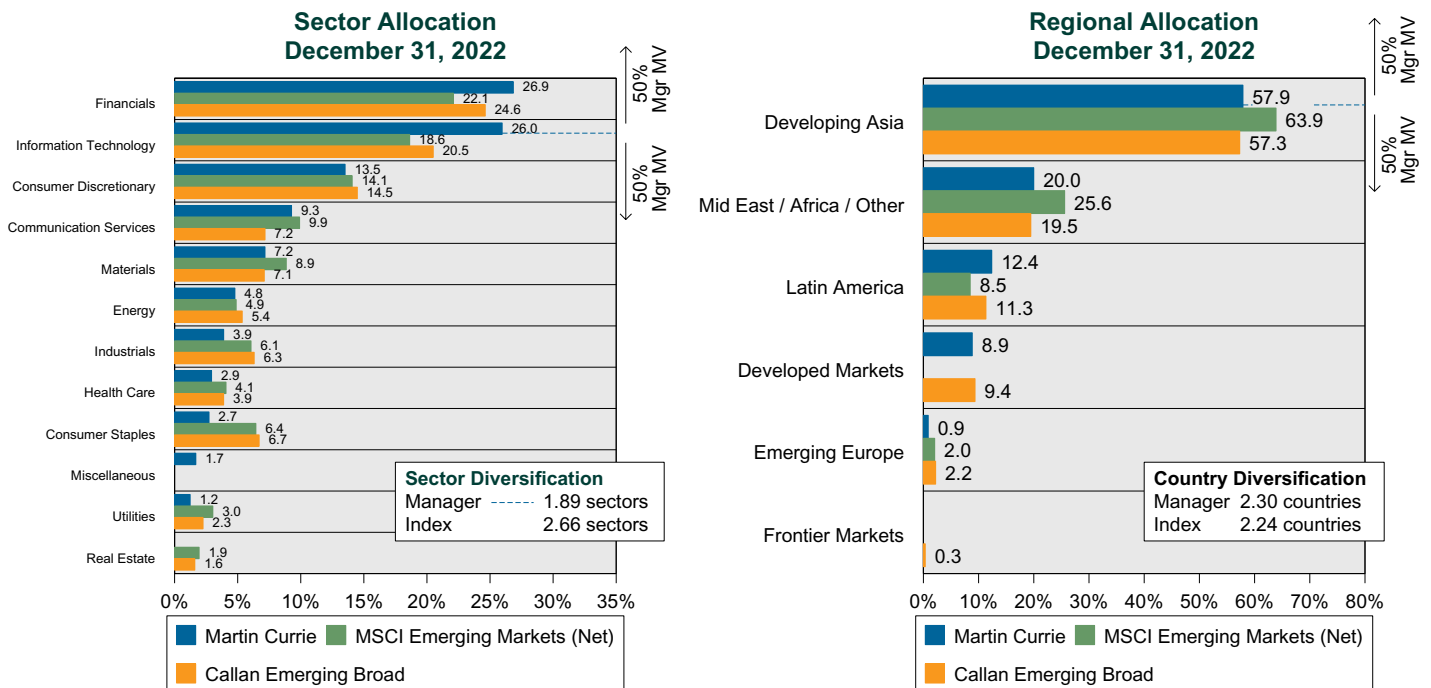
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of December 31, 2022



## 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.



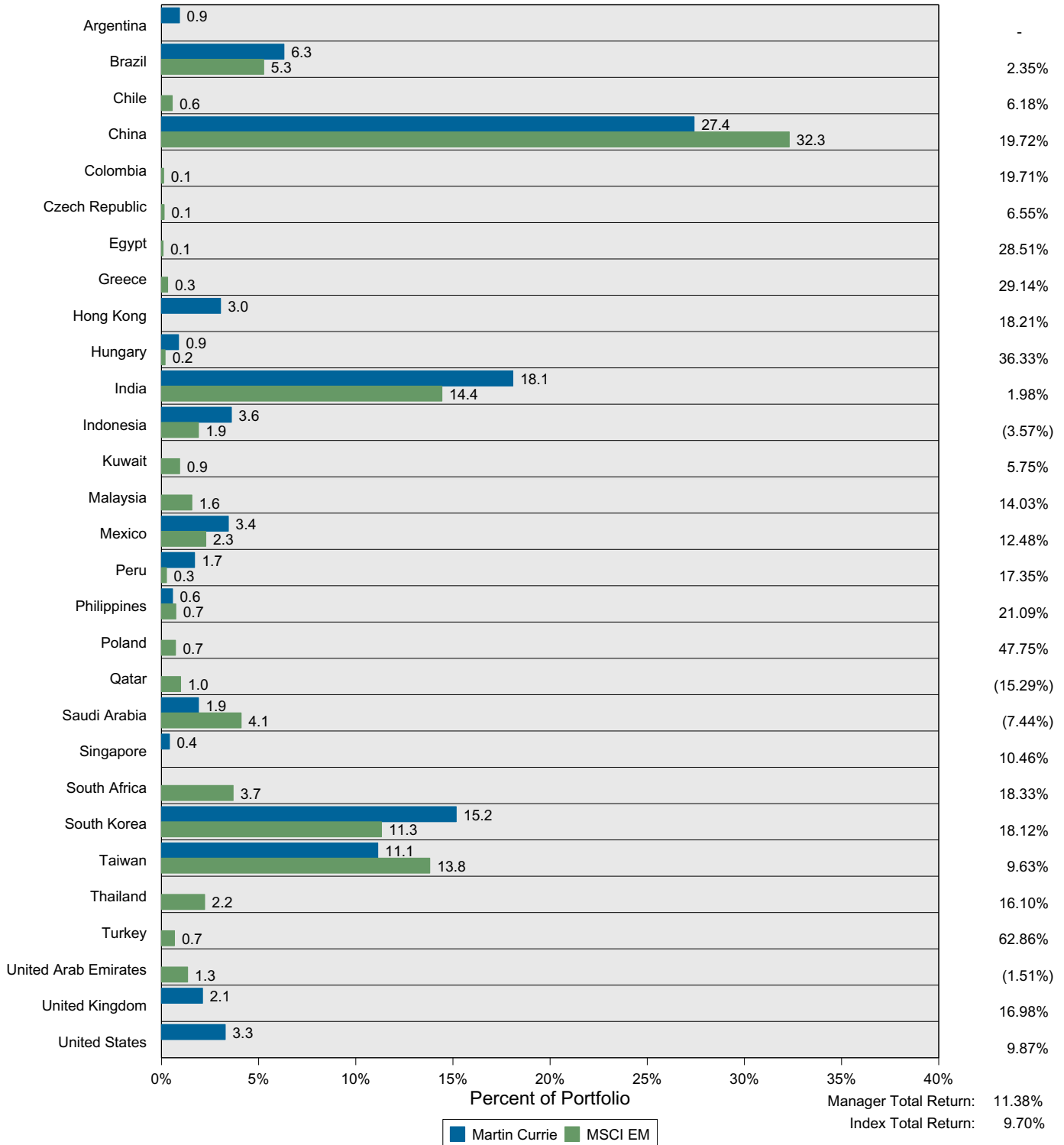
## Country Allocation Martin Currie VS MSCI Emerging Markets (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

### Index Rtns



# GlobeFlex Emerging Small Cap Period Ended December 31, 2022

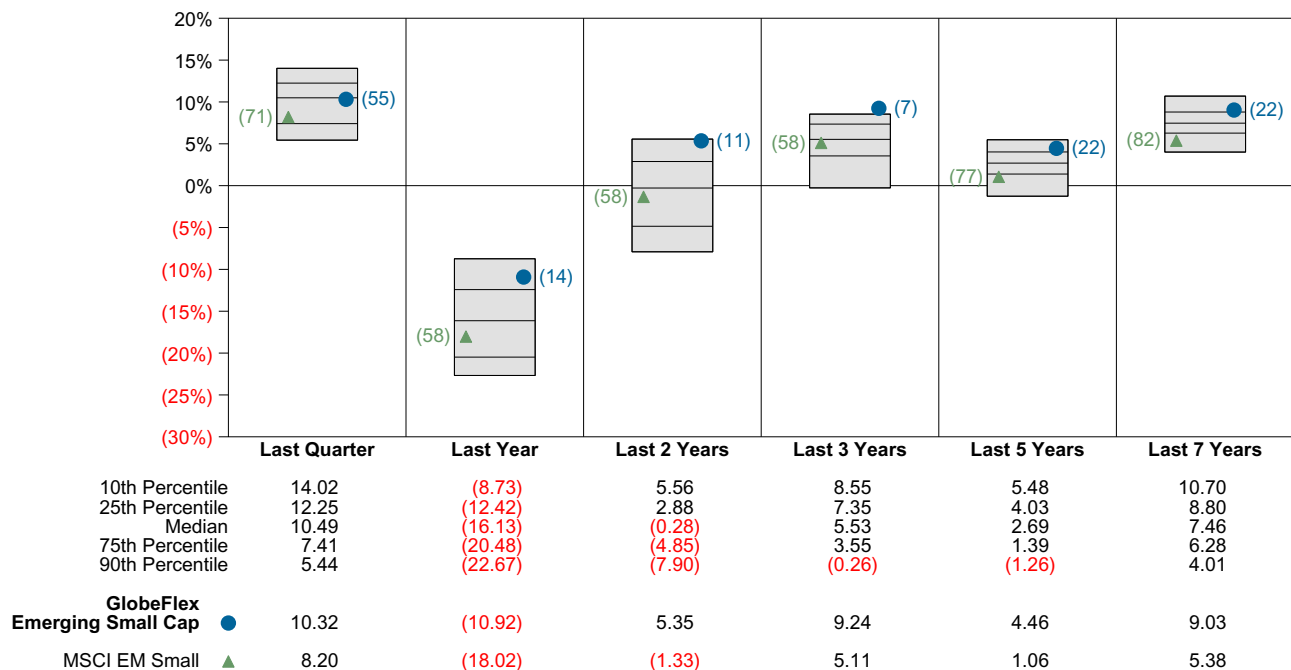
## Investment Philosophy

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.

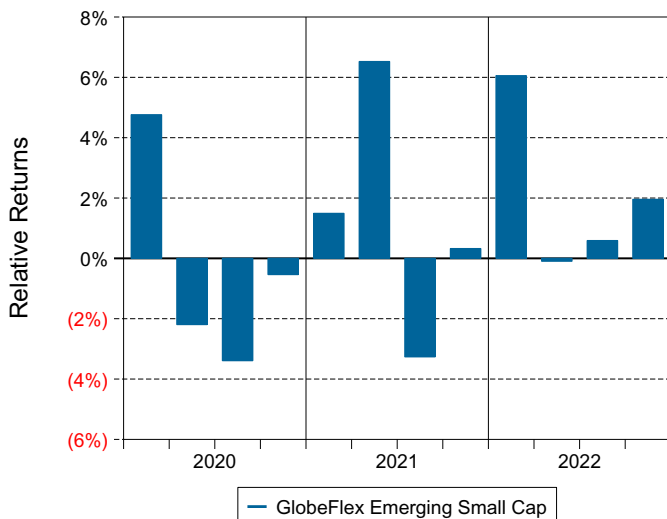
## Quarterly Summary and Highlights

- GlobeFlex Emerging Small Cap's portfolio posted a 10.32% return for the quarter placing it in the 55 percentile of the Callan Emerging Small group for the quarter and in the 14 percentile for the last year.
- GlobeFlex Emerging Small Cap's portfolio outperformed the MSCI EM Small by 2.12% for the quarter and outperformed the MSCI EM Small for the year by 7.10%.

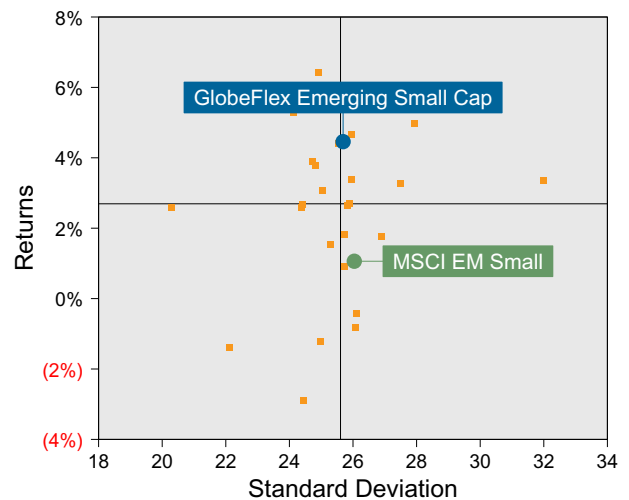
## Performance vs Callan Emerging Small (Gross)



## Relative Return vs MSCI EM Small



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

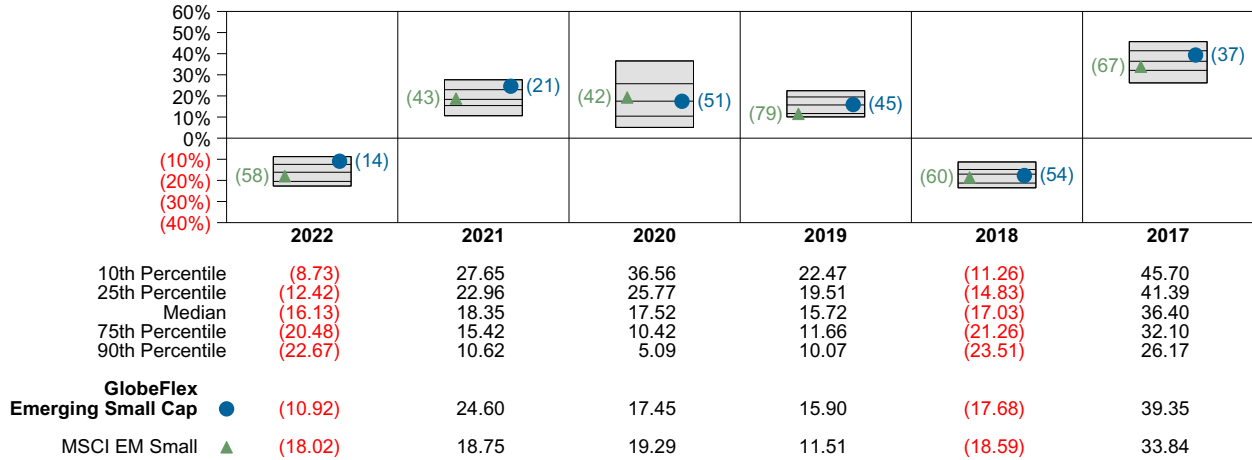


# GlobeFlex Emerging Small Cap Return Analysis Summary

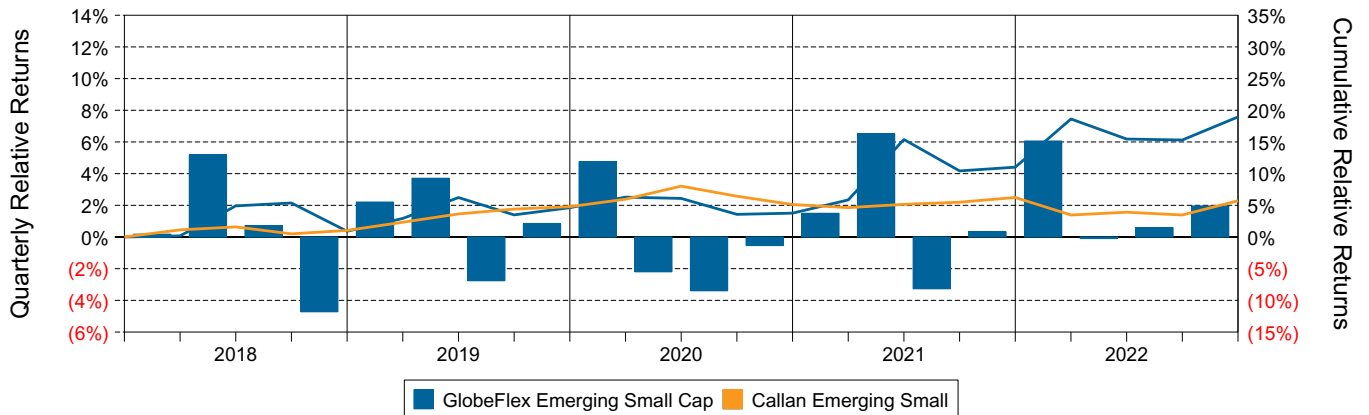
## Return Analysis

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.

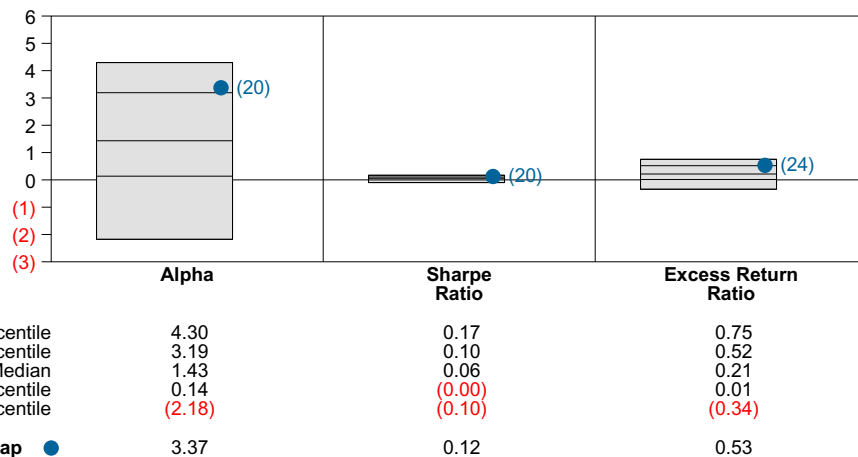
### Performance vs Callan Emerging Small (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EM Small



### Risk Adjusted Return Measures vs MSCI EM Small Rankings Against Callan Emerging Small (Gross) Five Years Ended December 31, 2022



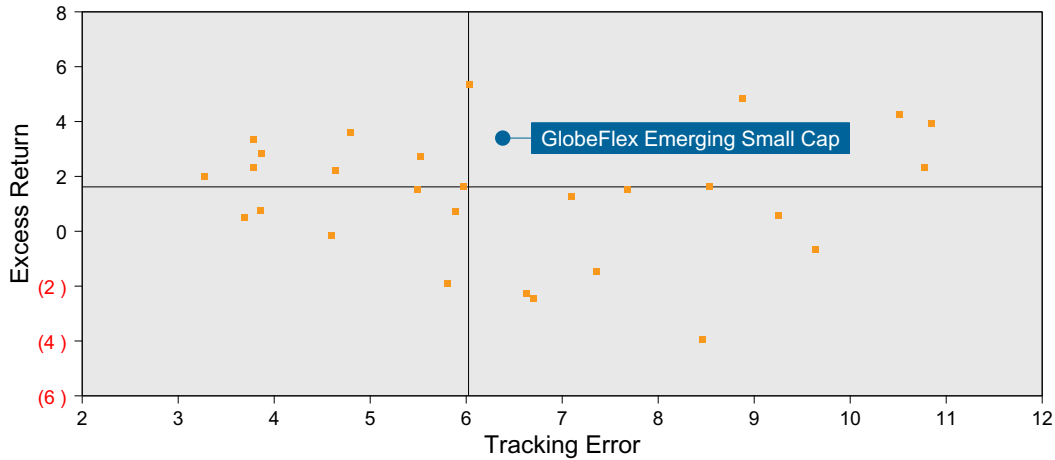


# GlobeFlex Emerging Small Cap Risk Analysis Summary

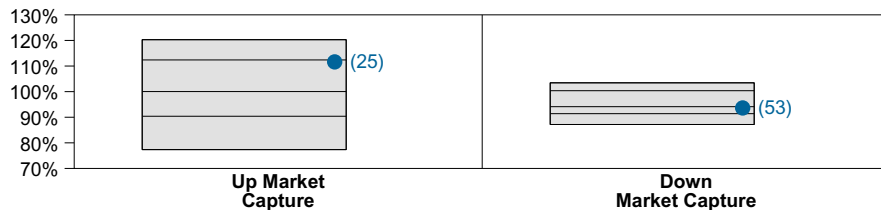
## Risk Analysis

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 Small (Gross) Five Years Ended December 31, 2022

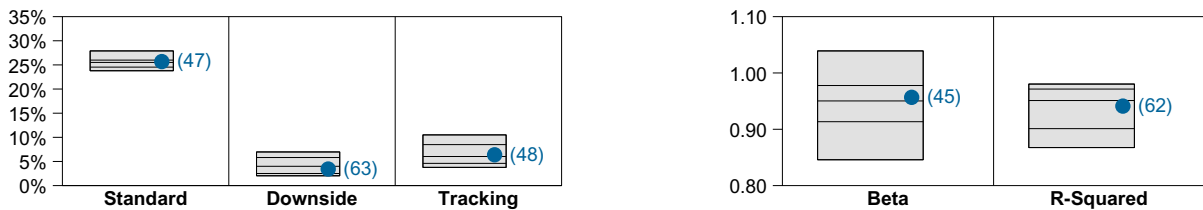


### Market Capture vs MSCI EM Small (Net) Rankings Against Callan Emerging Small (Gross) Five Years Ended December 31, 2022



	Up Market Capture	Down Market Capture
10th Percentile	120.30	103.44
25th Percentile	112.38	100.36
Median	100.04	94.13
75th Percentile	90.39	91.39
90th Percentile	77.36	87.16
<b>GlobeFlex Emerging Small Cap</b>	<b>111.61</b>	<b>93.63</b>

### Risk Statistics Rankings vs MSCI EM Small (Net) Rankings Against Callan Emerging Small (Gross) Five Years Ended December 31, 2022



	Standard Deviation	Downside Risk	Tracking Error	Beta	R-Squared
10th Percentile	27.90	6.97	10.51	1.04	0.98
25th Percentile	26.00	5.82	8.49	0.98	0.97
Median	25.51	4.00	6.02	0.95	0.95
75th Percentile	24.54	2.51	4.61	0.91	0.90
90th Percentile	23.79	2.03	3.77	0.85	0.87
<b>GlobeFlex Emerging Small Cap</b>	<b>25.69</b>	<b>3.43</b>	<b>6.38</b>	<b>0.96</b>	<b>0.94</b>

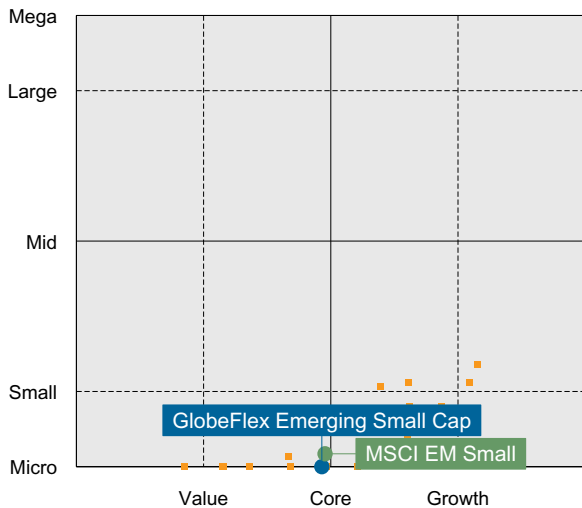
# Current Holdings Based Style Analysis

## GlobeFlex Emerging Small Cap

### As of December 31, 2022

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.

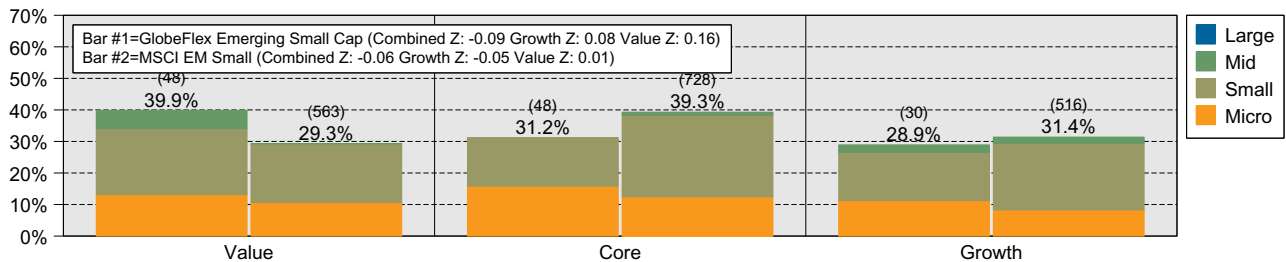
**Style Map vs Callan Emerging Small Holdings as of December 31, 2022**



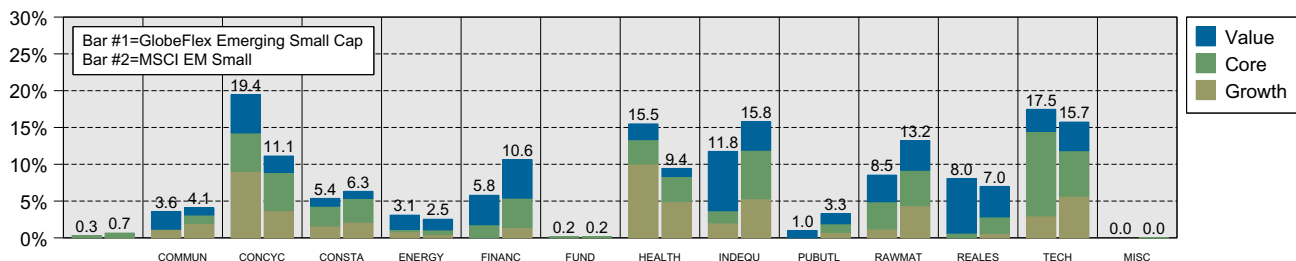
**Style Exposure Matrix Holdings as of December 31, 2022**

	Value	Core	Growth	Total
Large	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)
Mid	5.8% (2)	0.0% (0)	2.4% (2)	8.2% (4)
Small	20.9% (28)	15.4% (22)	15.3% (17)	51.7% (67)
Micro	13.1% (18)	15.8% (26)	11.2% (11)	40.1% (55)
<b>Total</b>	<b>39.9% (48)</b>	<b>31.2% (48)</b>	<b>28.9% (30)</b>	<b>100.0% (126)</b>
	29.3% (563)	39.3% (728)	31.4% (516)	100.0% (1807)

**Combined Z-Score Style Distribution Holdings as of December 31, 2022**



**Sector Weights Distribution Holdings as of December 31, 2022**

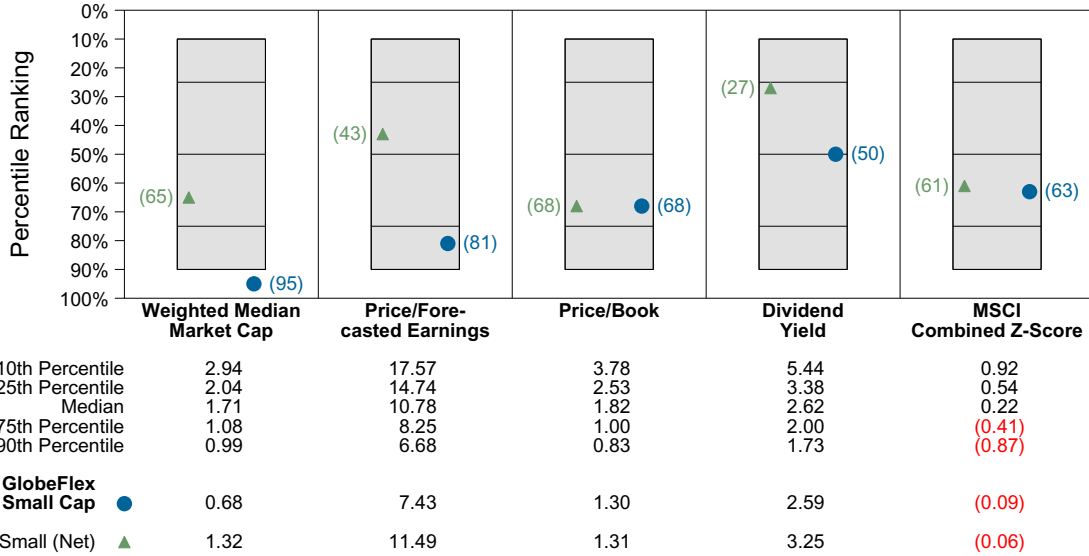


# GlobeFlex Emerging Small Cap Equity Characteristics Analysis Summary

## Portfolio Characteristics

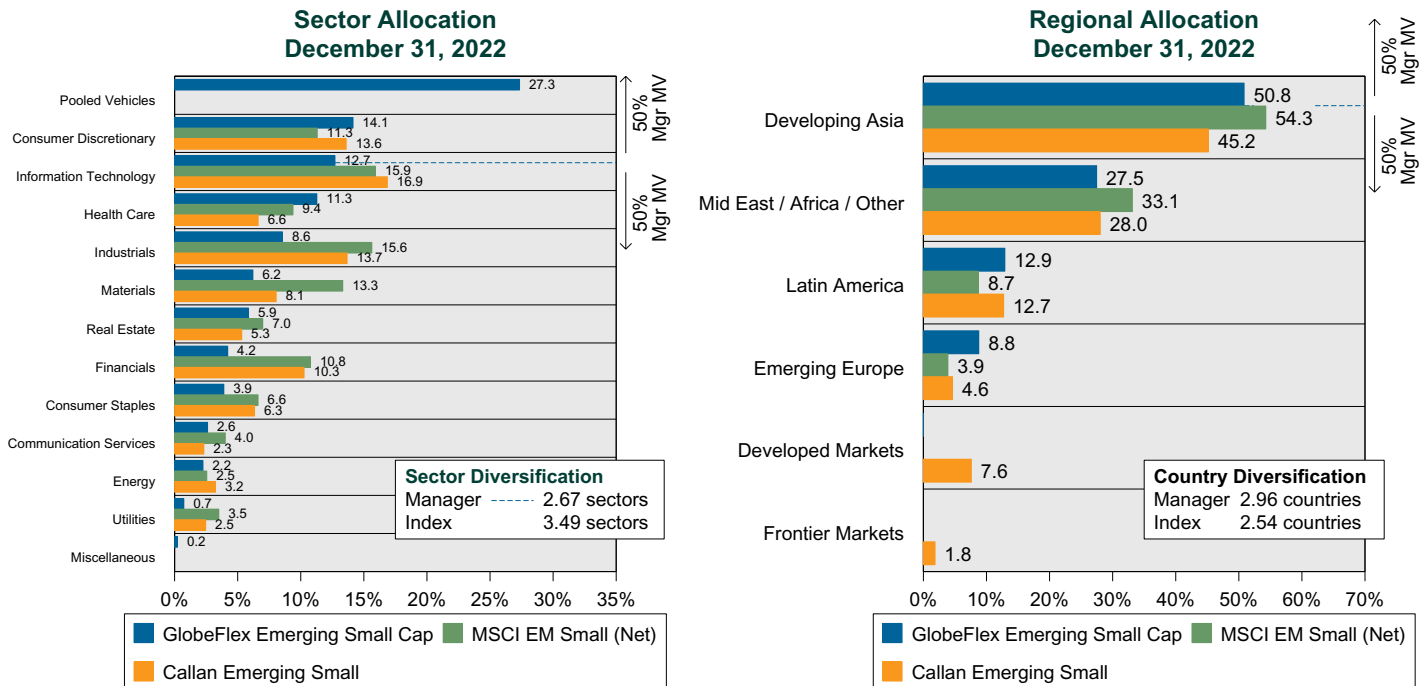
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Small as of December 31, 2022



## 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.



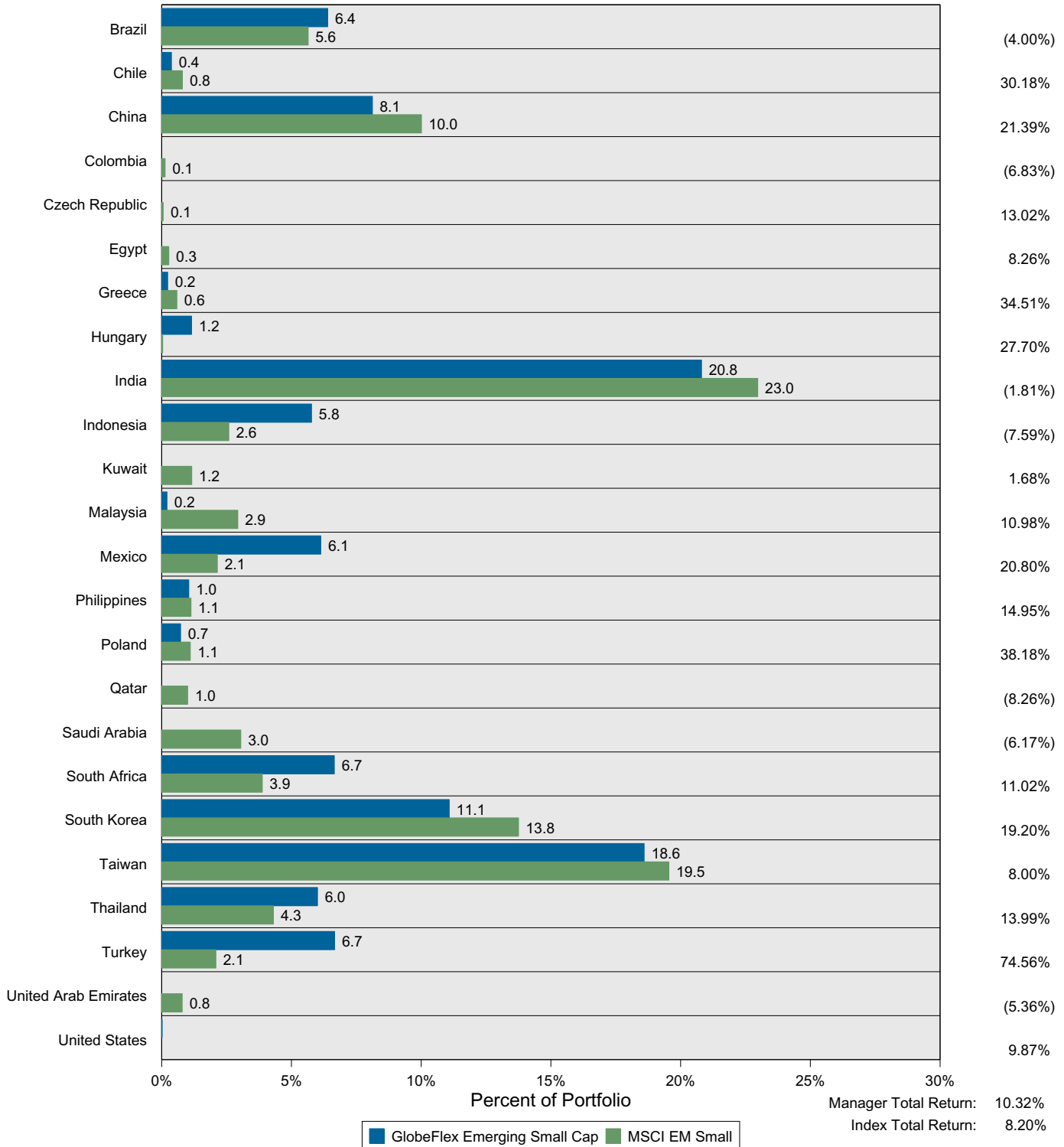
## Country Allocation GlobeFlex Emerging Small Cap VS MSCI EM Small (Net)

### Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of December 31, 2022. 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, 2022

### Index Rtns





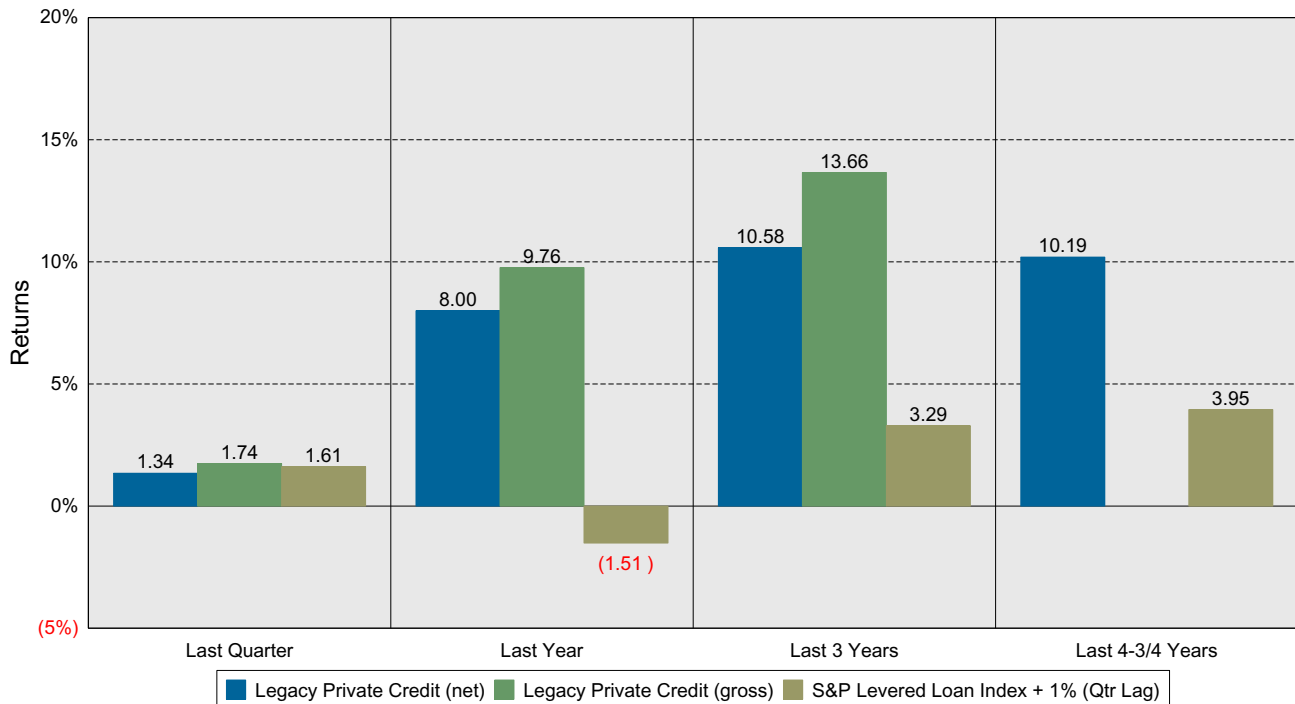
# Legacy Private Credit Period Ended December 31, 2022

## Asset Class Membership Changes

Legacy Private Credit performance is included in the total fund starting at the composite's true inception date, 07/01/2022. The history of this composite is calculated and shown for informational purposes.

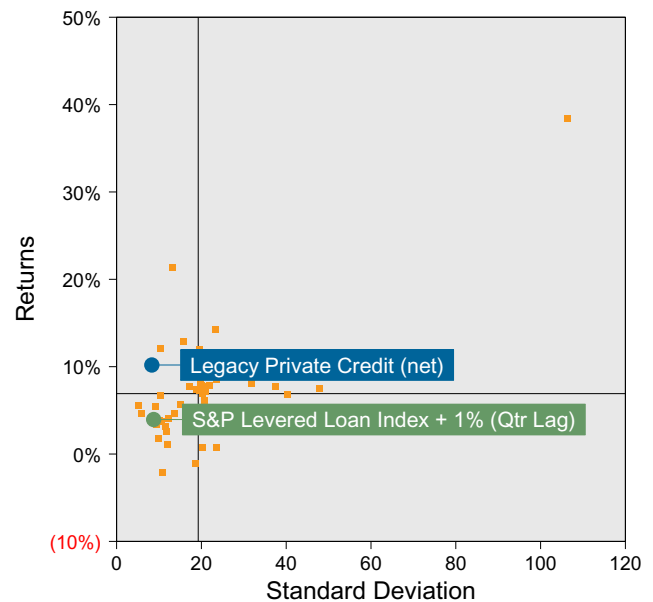
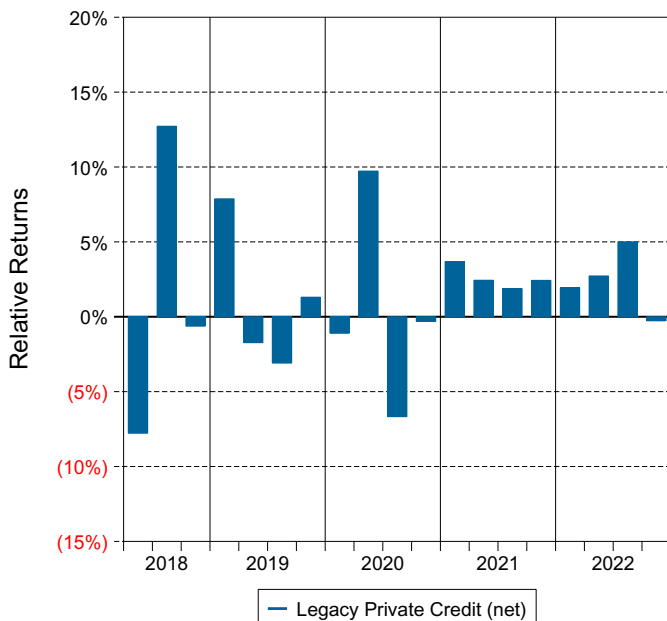
## Quarterly Summary and Highlights

- Legacy Private Credit (net)'s portfolio posted a 1.34% return for the quarter placing it in the 63 percentile of the Callan Alternative Inv DB group for the quarter and in the 64 percentile for the last year.
- Legacy Private Credit (net)'s portfolio underperformed the S&P Levered Loan Index + 1% (Qtr Lag) by 0.27% for the quarter and outperformed the S&P Levered Loan Index + 1% (Qtr Lag) for the year by 9.51%.



**Relative Returns vs S&P Levered Loan Index + 1% (Qtr Lag)**

**Callan Alternative Inv DB (Gross) Annualized Four and Three-Quarter Year Risk vs Return**

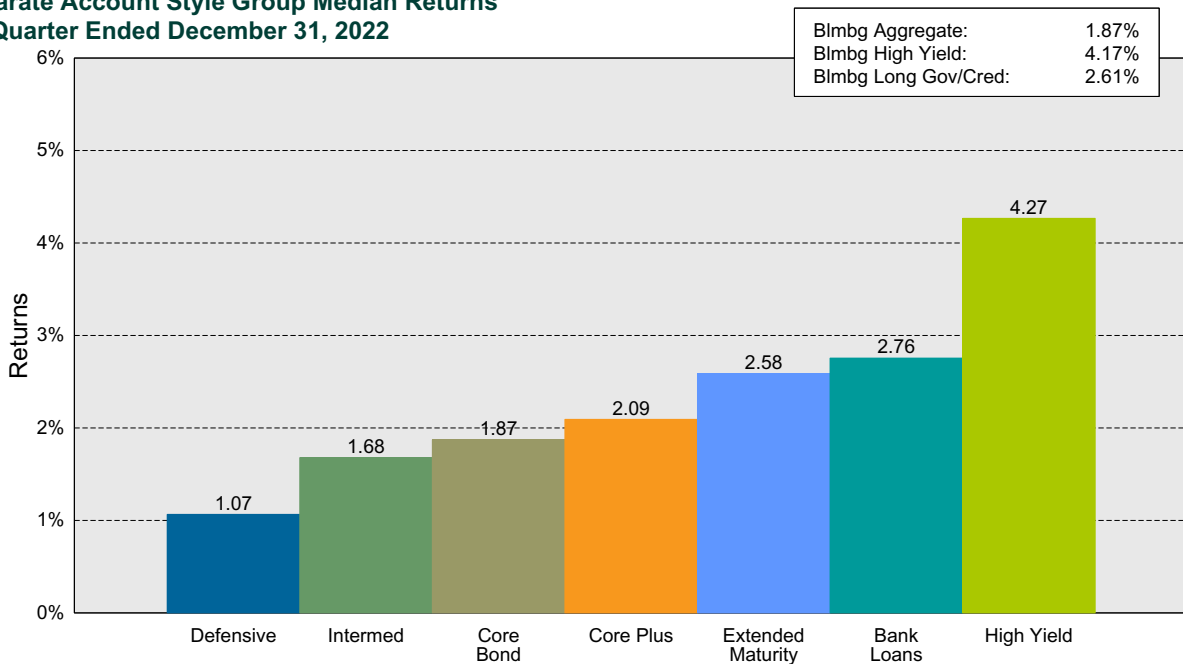




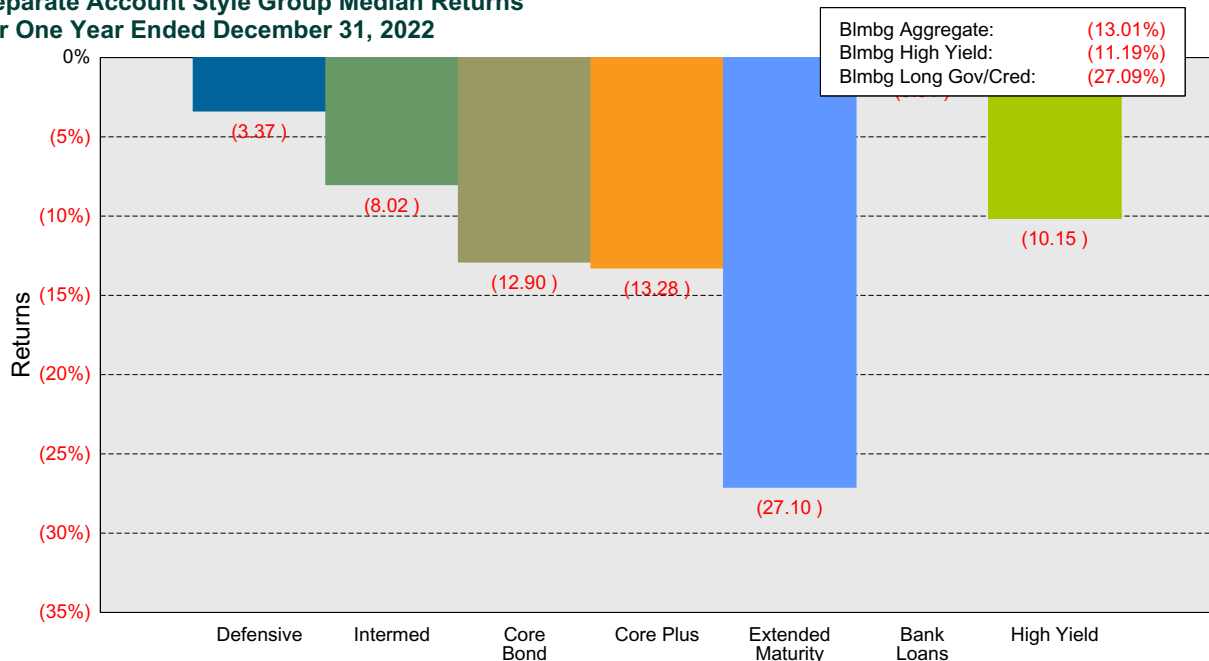
## Domestic Fixed Income Active Management Overview

U.S. fixed income experienced its worst year ever in 2022, by a wide margin. The Bloomberg US Aggregate Bond Index sank 13.0%; the next worst calendar year was 1994 when the Aggregate fell 2.9%. The silver lining lies in the 4.68% yield-to-worst for the Index, up from 1.75% at the beginning of the year. The yield curve remained inverted at year-end; the 10-year Treasury yield was 3.88% and the 2-year yield was 4.41%. The inversion reflects investor expectations for the economy to slow and an eventual need for the Fed to lower rates. The fourth quarter brought some relief to bond investors as longer rates fell modestly and most spread sectors outperformed Treasuries. The Aggregate gained 1.9%. High yield corporates (Bloomberg High Yield Index: +4.2%) were star performers, but this Index was down 11.2% for the year.

### Separate Account Style Group Median Returns for Quarter Ended December 31, 2022



### Separate Account Style Group Median Returns for One Year Ended December 31, 2022

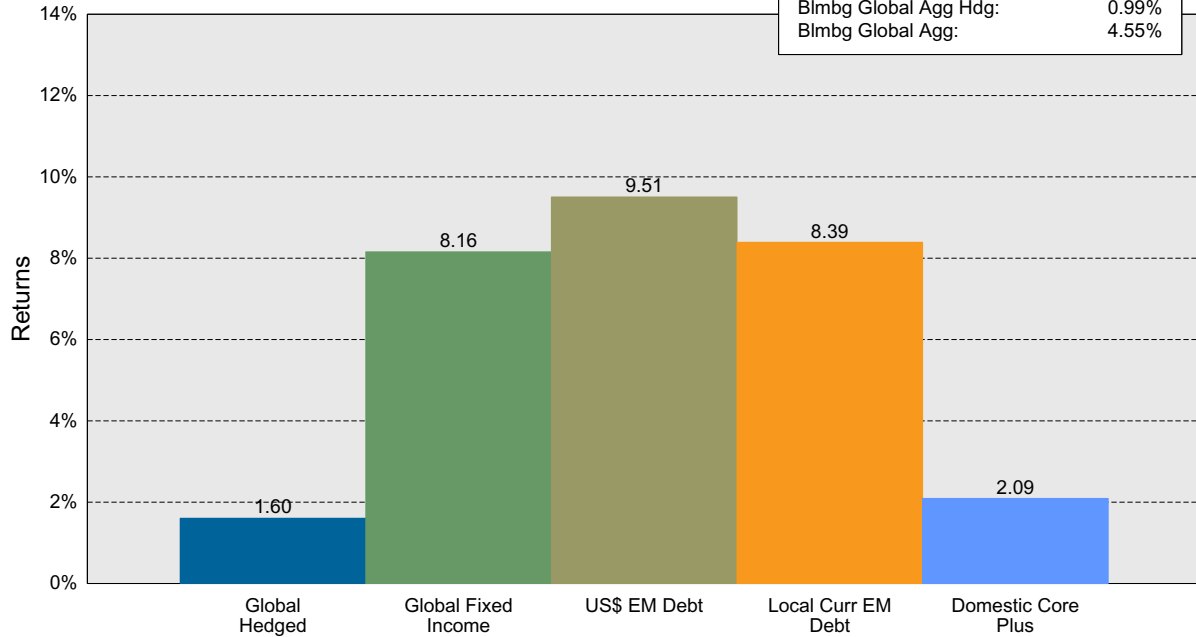




## Global Fixed Income Active Management Overview

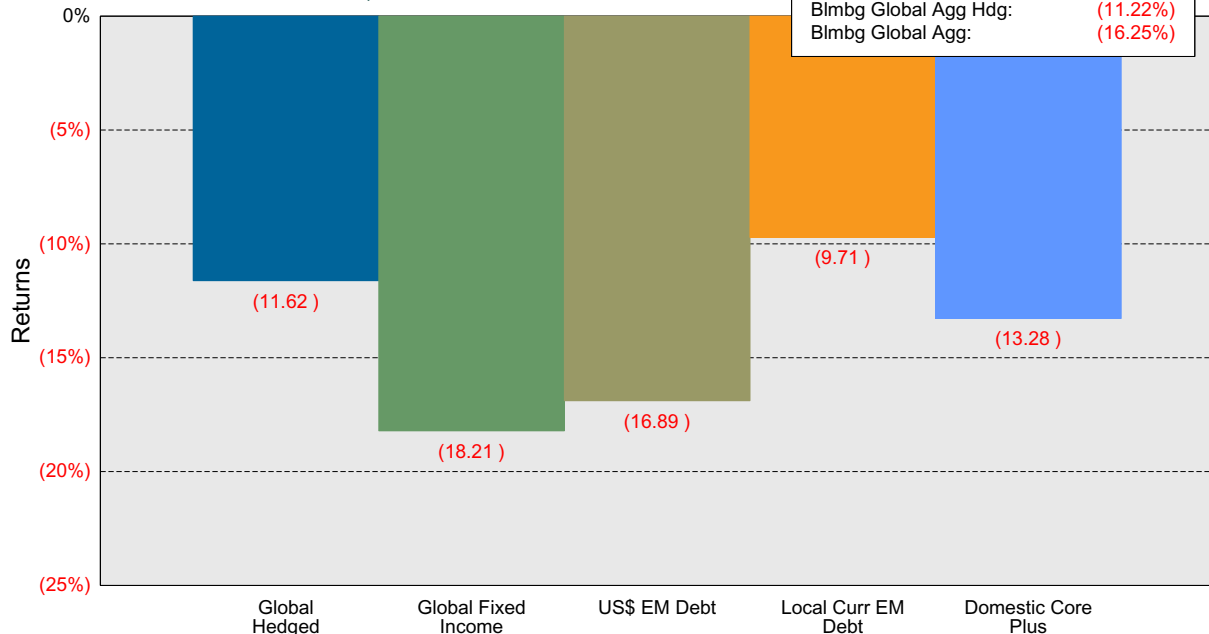
While rates across developed markets rose broadly in 2022, changes were mixed in 4Q. Rates fell in the U.K., were mostly flat in the U.S., and rose across most of Europe and in Japan. The Bloomberg Global Aggregate ex USD soared 6.8% (hedged: +0.2%) due largely to weakness in the U.S. dollar. Emerging markets also had a good quarter with the JPM EMBI Global Diversified up 8.1% and the local currency JPM GBI-EM Global Diversified up 8.5%. For the year, the indices were down 17.8% and 11.7%, respectively. As is typical for emerging markets, country returns varied widely but most were positive across both indices in 4Q.

### Separate Account Style Group Median Returns for Quarter Ended December 31, 2022



JPM EMBI GI Div:	8.11%
JPM GBI EM GI Div:	8.45%
Blmbg Aggregate:	1.87%
Blmbg Global Agg Hdg:	0.99%
Blmbg Global Agg:	4.55%

### Separate Account Style Group Median Returns for One Year Ended December 31, 2022



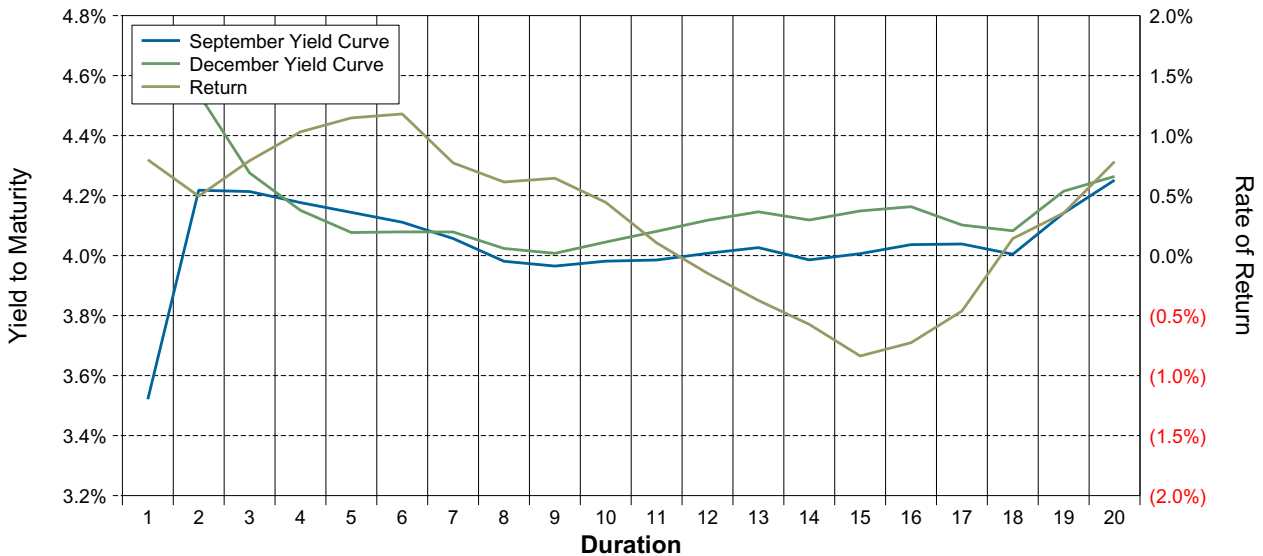
JPM EMBI GI Div:	(17.78%)
JPM GBI EM GI Div:	(11.69%)
Blmbg Aggregate:	(13.01%)
Blmbg Global Agg Hdg:	(11.22%)
Blmbg Global Agg:	(16.25%)

## Bond Market Environment

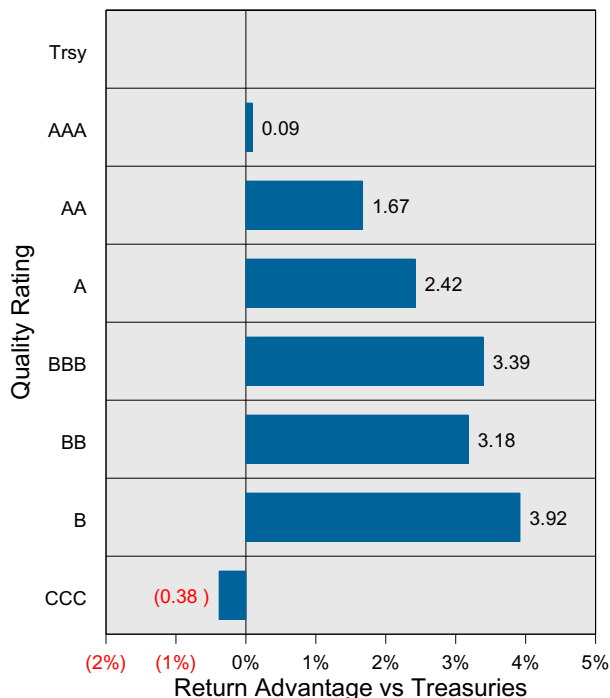
### Factors Influencing Bond Returns

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.

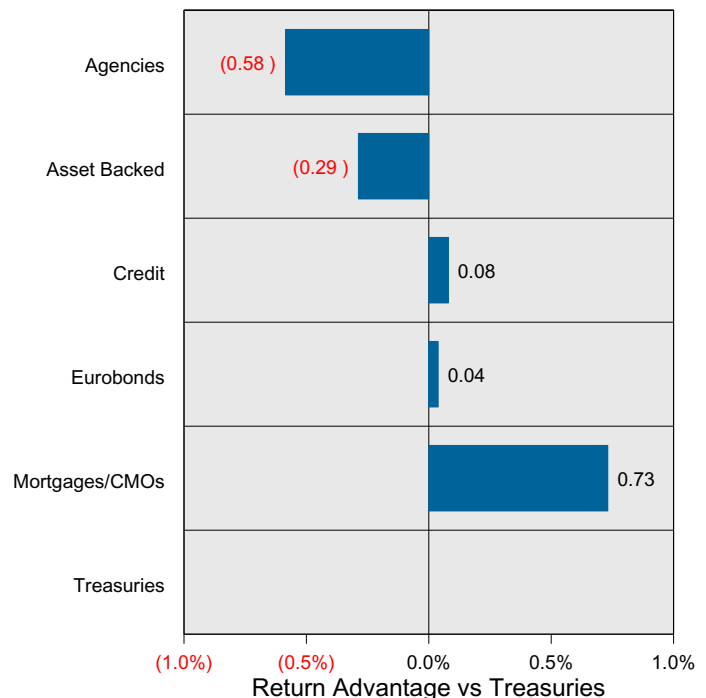
### Yield Curve Change and Rate of Return One Quarter Ended December 31, 2022



**Duration Adjusted  
Return Premium to Quality  
One Quarter Ended December 31, 2022**



**Quality and Duration Adjusted  
Return Premium by Sector  
One Quarter Ended December 31, 2022**



# Fixed Income Period Ended December 31, 2022

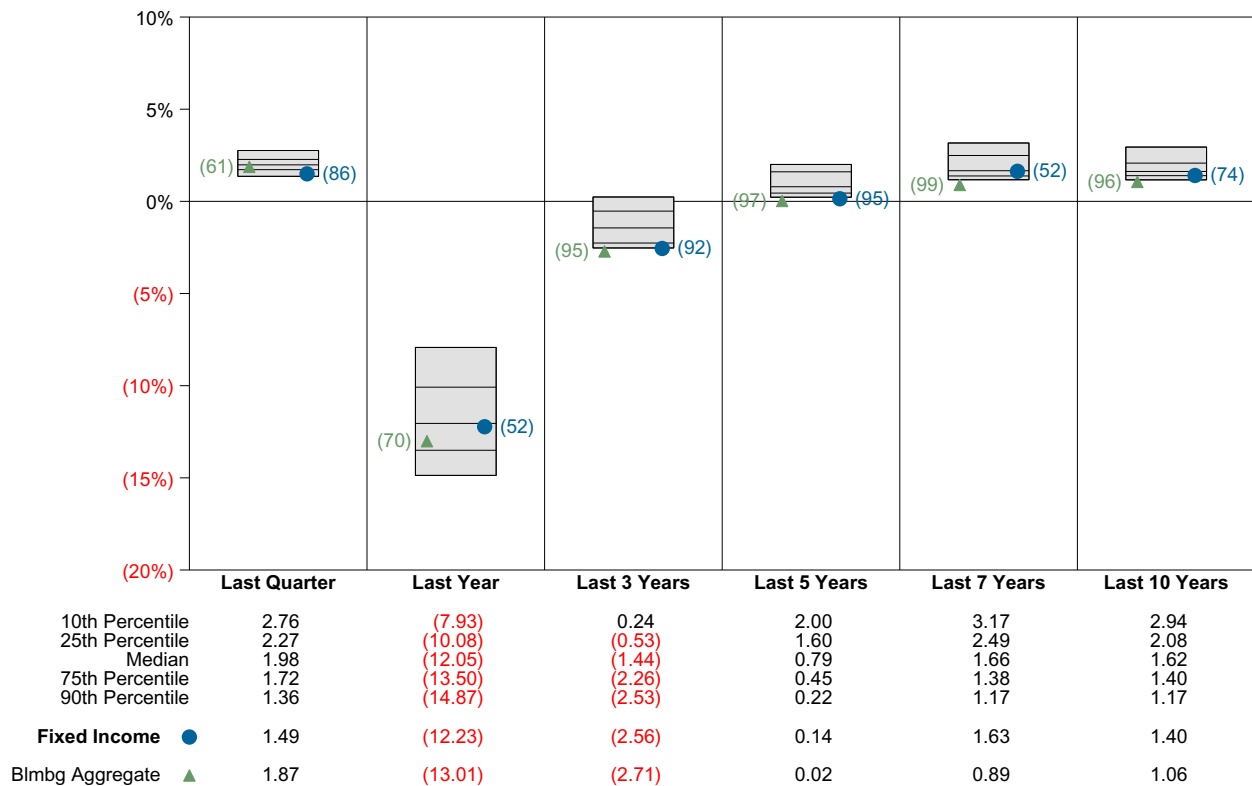
## Asset Class Membership Changes

Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021 and ended in 06/30/2022.

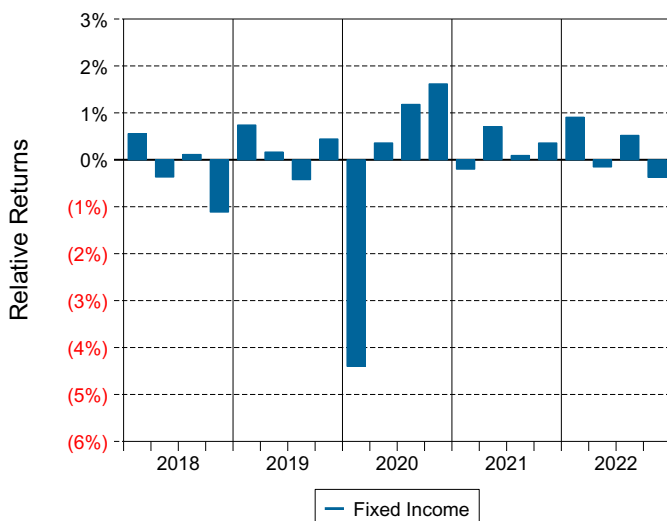
## Quarterly Summary and Highlights

- Fixed Income's portfolio posted a 1.49% return for the quarter placing it in the 86 percentile of the Public Fund - Domestic Fixed group for the quarter and in the 52 percentile for the last year.
- Fixed Income's portfolio underperformed the Blmbg Aggregate by 0.38% for the quarter and outperformed the Blmbg Aggregate for the year by 0.78%.

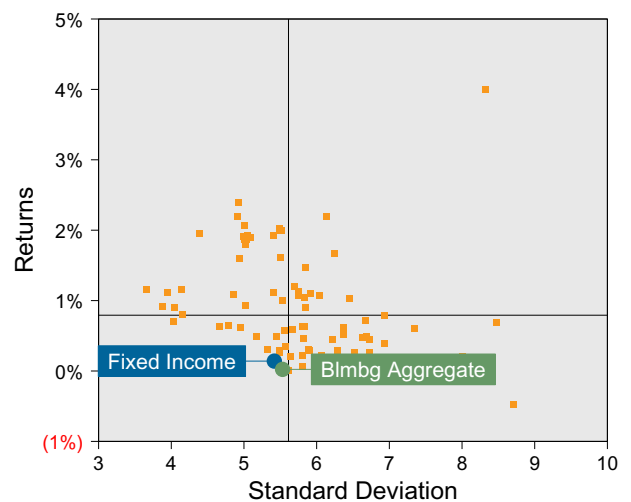
## Performance vs Public Fund - Domestic Fixed (Gross)



## Relative Return vs Blmbg Aggregate



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

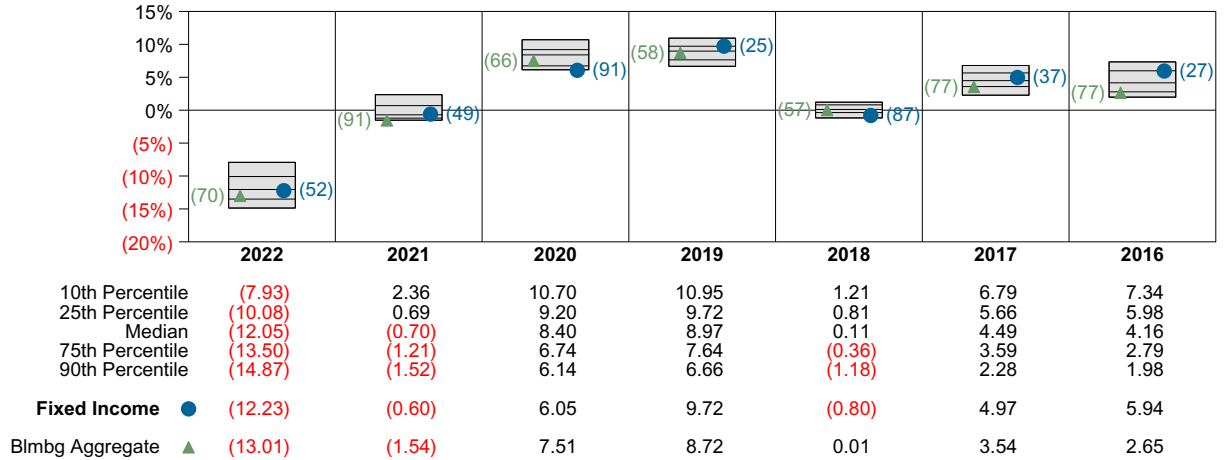


# Fixed Income Return Analysis Summary

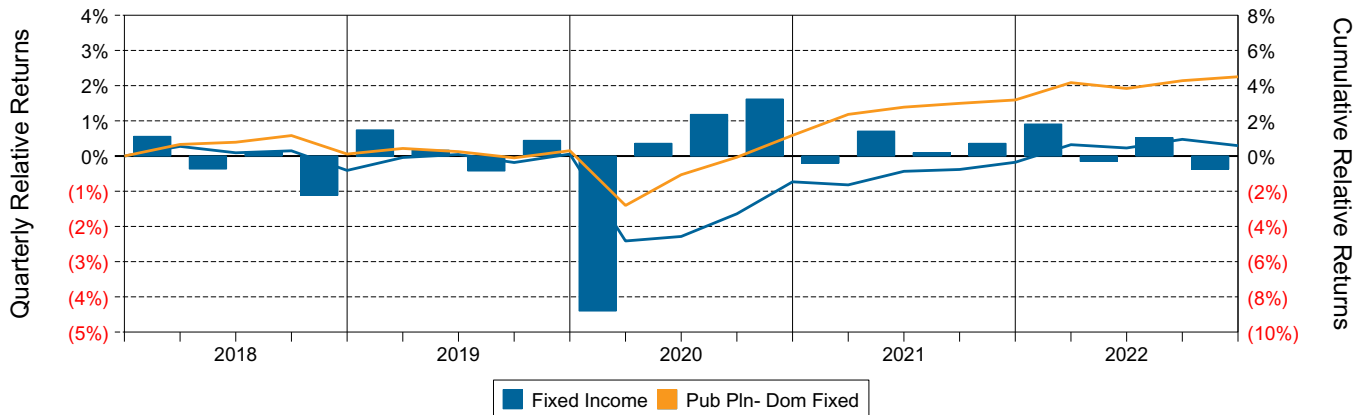
## Return Analysis

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.

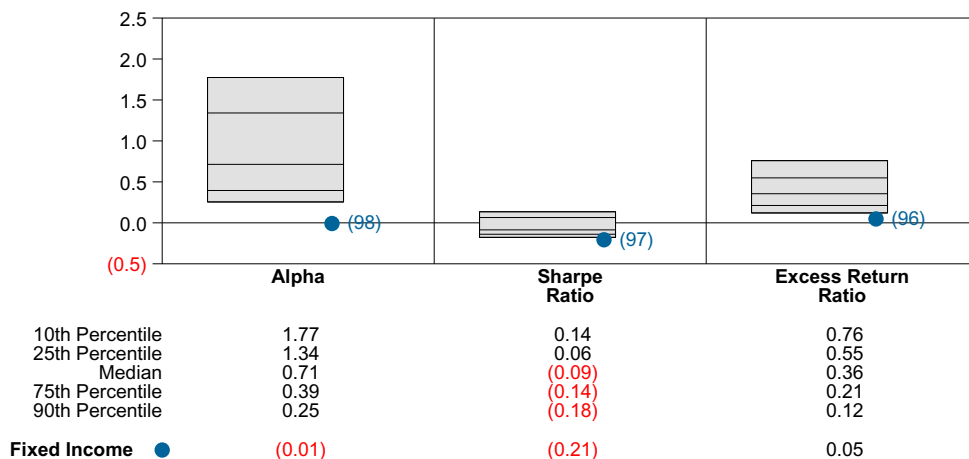
### Performance vs Public Fund - Domestic Fixed (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg Aggregate



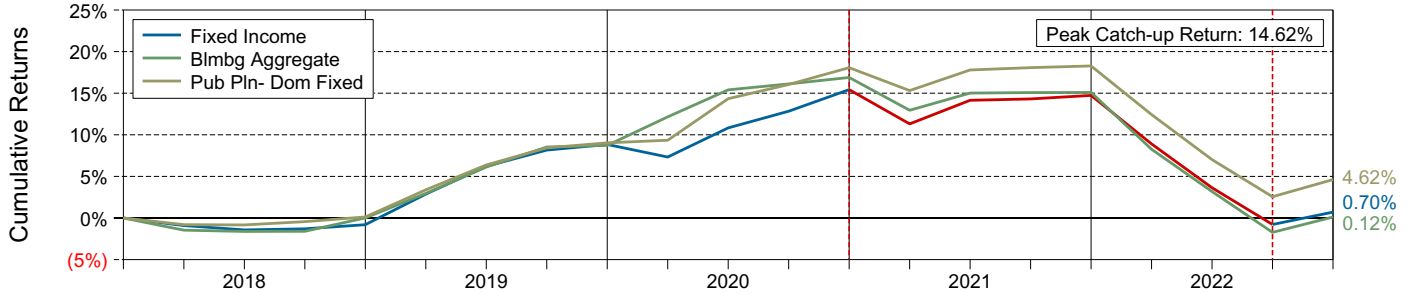
### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Public Fund - Domestic Fixed (Gross) Five Years Ended December 31, 2022



# Fixed Income Drawdown Analysis for Five Years Ended December 31, 2022

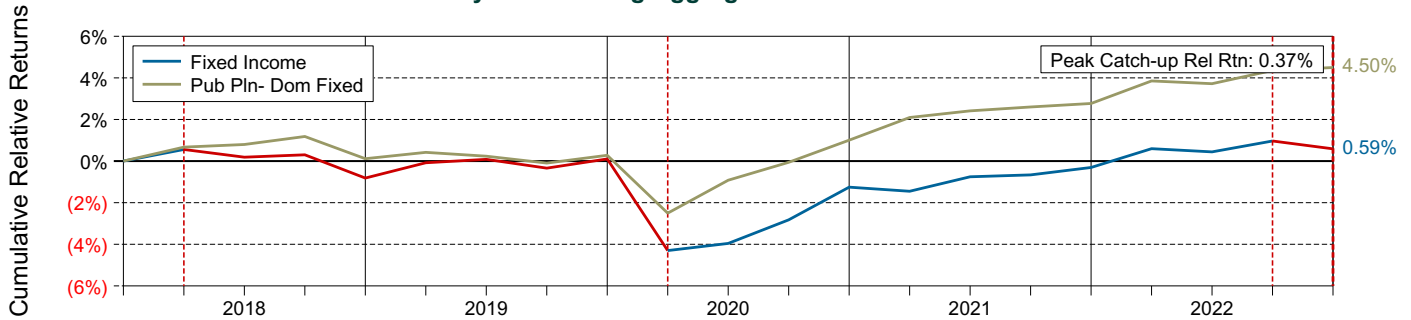
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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



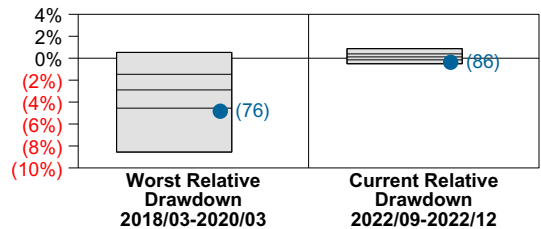
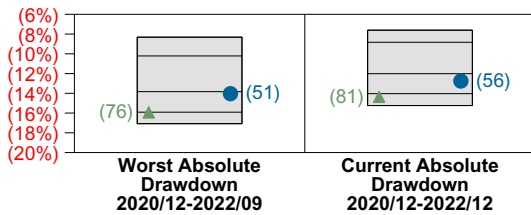
	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Fixed Income	(14.04)%	1.75	2020/12-2022/09	(15.93)%	(13.14)%	(12.75)%	2.00	2020/12-2022/12	(14.35)%	(11.39)%
Recovery from Trough	1.49%	0.25+	2022/09-2022/12	1.87%	2.01%	1.49%	0.25+	2022/09-2022/12	1.87%	2.01%
Blmbg Aggregate	(15.93)%	1.75	2020/12-2022/09			(14.35)%	2.00	2020/12-2022/12		
Pub Pln- Dom Fixed	(13.29)%	0.75	2021/12-2022/09			(11.55)%	1.00	2021/12-2022/12		

## Relative Cumulative Drawdown Analysis vs. Blmbg Aggregate



	Worst Relative Drawdown				Current Relative Drawdown			
	Rel Rtn	Years	Period	Peers	Rel Rtn	Years	Period	Peers
Fixed Income	(4.83)%	2.00	2018/03-2020/03	(3.15)%	(0.37)%	0.25	2022/09-2022/12	0.14%
Recovery from Trough	5.12%	2.00	2020/03-2022/03	6.52%	-	-	-	-
Pub Pln- Dom Fixed	(3.64)%	1.50	2018/09-2020/03		-	-	-	-

## Drawdown Rankings vs. Blmbg Aggregate Rankings against Public Fund - Domestic Fixed Five Years Ended December 31, 2022



	Worst Absolute Drawdown 2020/12-2022/09	Current Absolute Drawdown 2020/12-2022/12
10th Percentile	(8.31)	(7.61)
25th Percentile	(10.22)	(8.83)
Median	(13.83)	(12.01)
75th Percentile	(15.91)	(14.04)
90th Percentile	(17.07)	(15.24)
<b>Fixed Income</b> ●	<b>(14.04)</b>	<b>(12.75)</b>
Blmbg Aggregate ▲	(15.93)	(14.35)

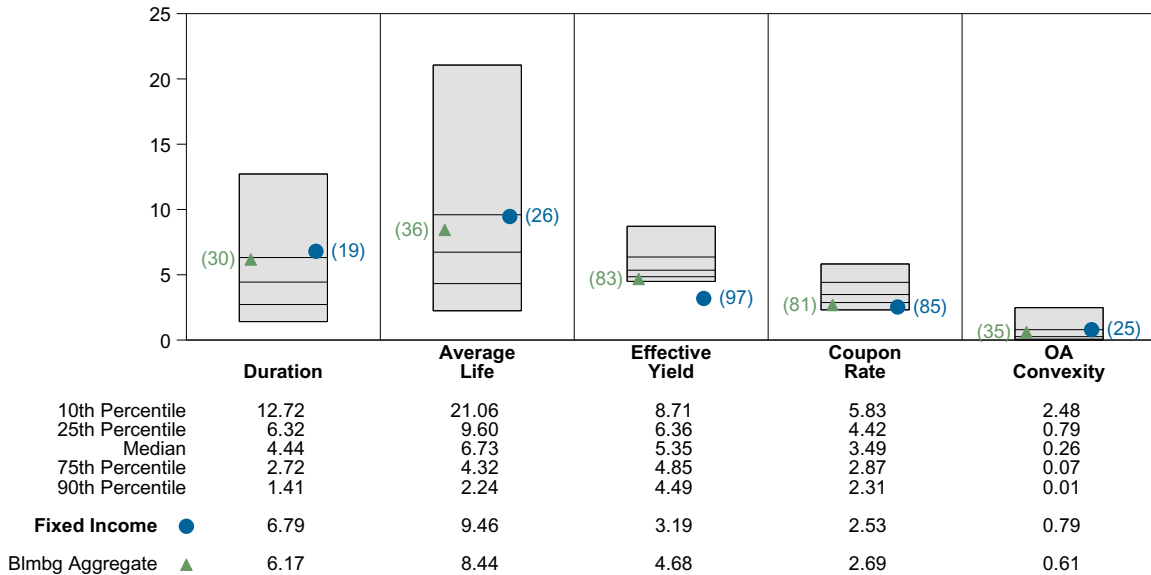
	Worst Relative Drawdown 2018/03-2020/03	Current Relative Drawdown 2022/09-2022/12
10th Percentile	0.53	0.87
25th Percentile	(1.47)	0.39
Median	(2.89)	0.12
75th Percentile	(4.55)	(0.15)
90th Percentile	(8.56)	(0.51)
<b>Fixed Income</b> ●	<b>(4.83)</b>	<b>(0.37)</b>

# Fixed Income Bond Characteristics Analysis Summary

## Portfolio Characteristics

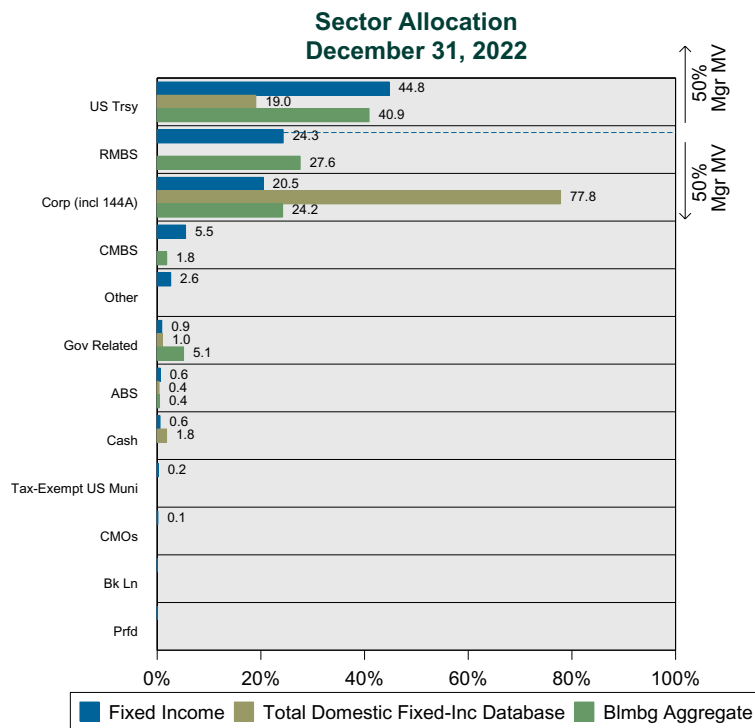
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Total Domestic Fixed-Inc Database as of December 31, 2022

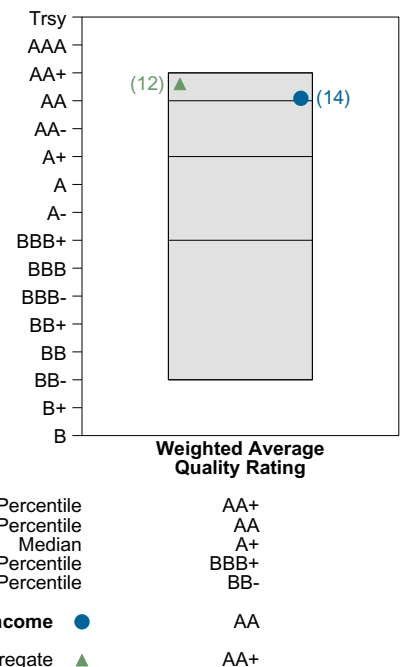


## Sector Allocation and Quality Ratings

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 Total Domestic Fixed-Inc Database

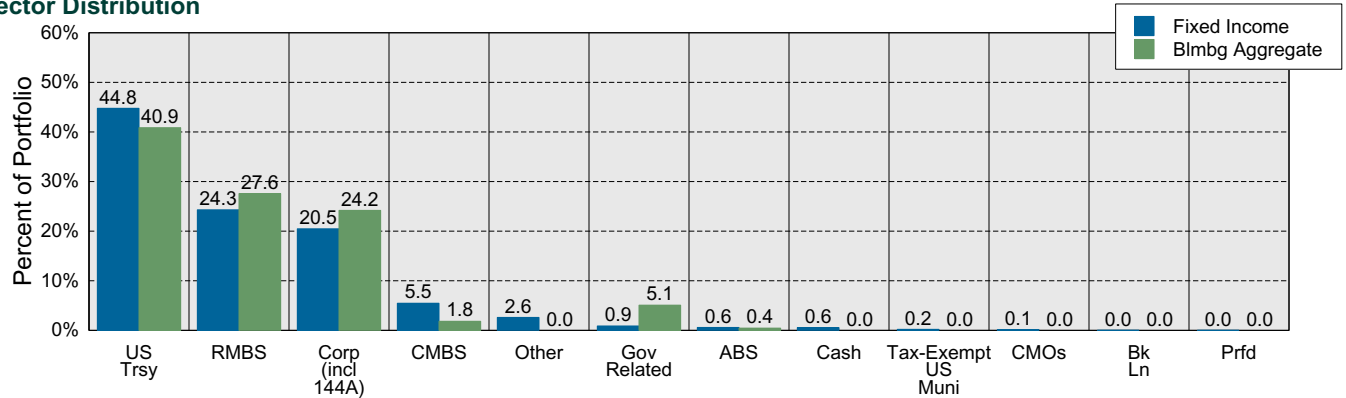


# Fixed Income Portfolio Characteristics Summary As of December 31, 2022

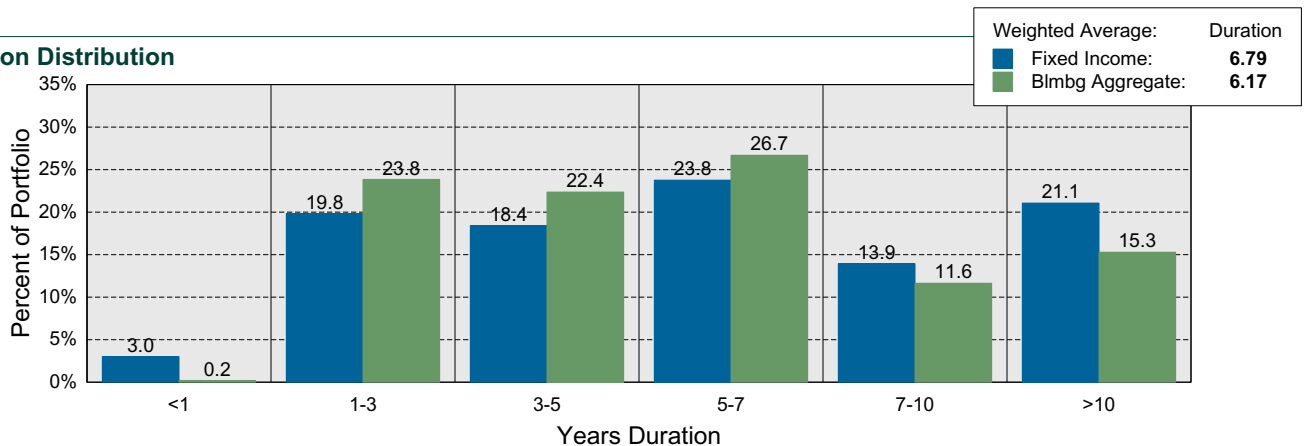
## Portfolio Structure Comparison

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.

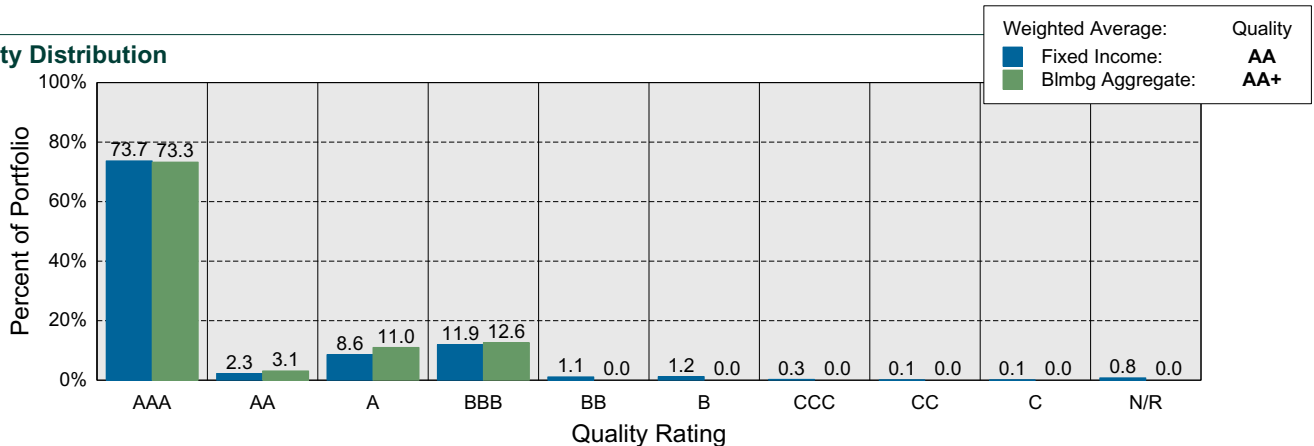
### Sector Distribution



### Duration Distribution



### Quality Distribution







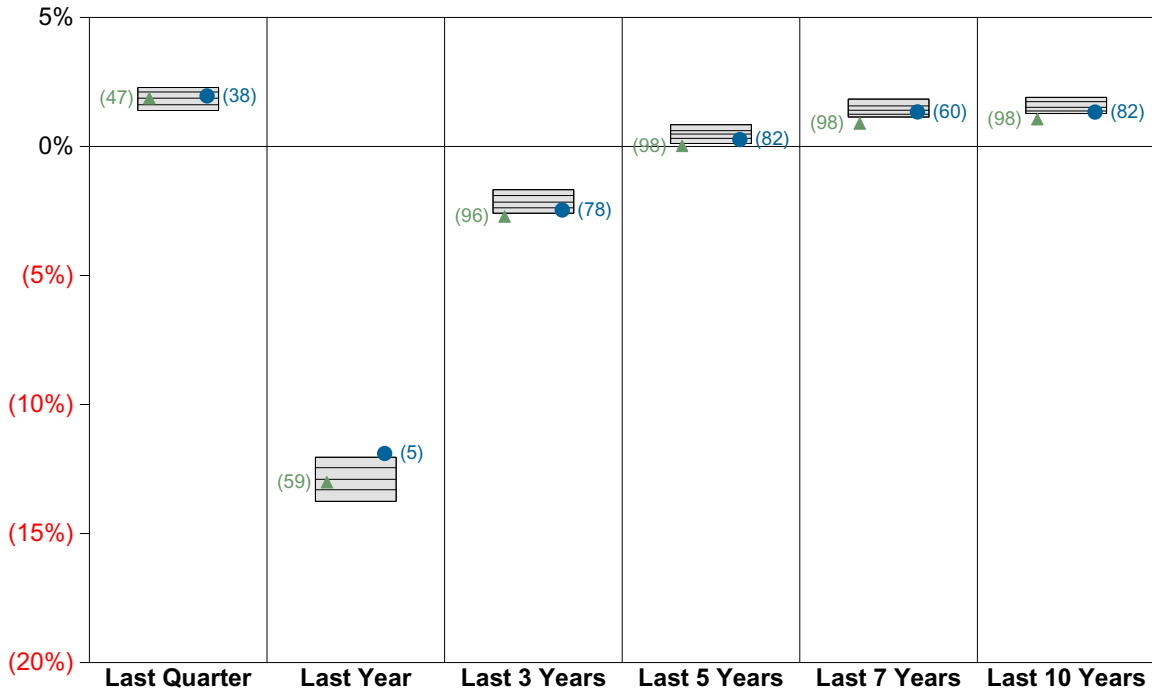
# Core Fixed Income

## Period Ended December 31, 2022

### Quarterly Summary and Highlights

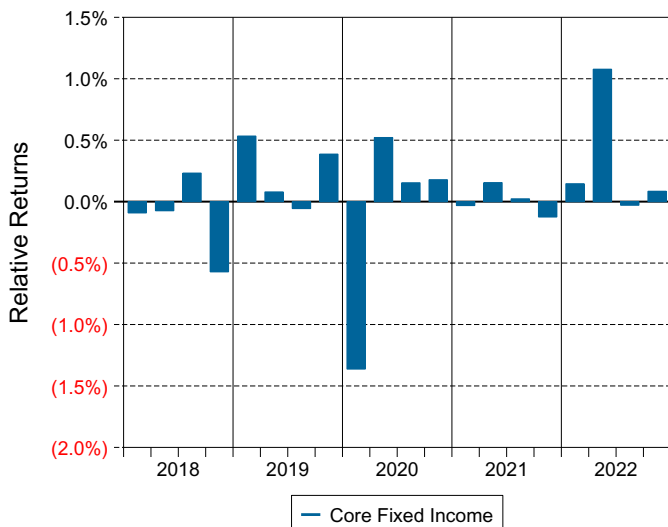
- Core Fixed Income's portfolio posted a 1.96% return for the quarter placing it in the 38 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 5 percentile for the last year.
- Core Fixed Income's portfolio outperformed the Blmbg Aggregate by 0.09% for the quarter and outperformed the Blmbg Aggregate for the year by 1.11%.

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

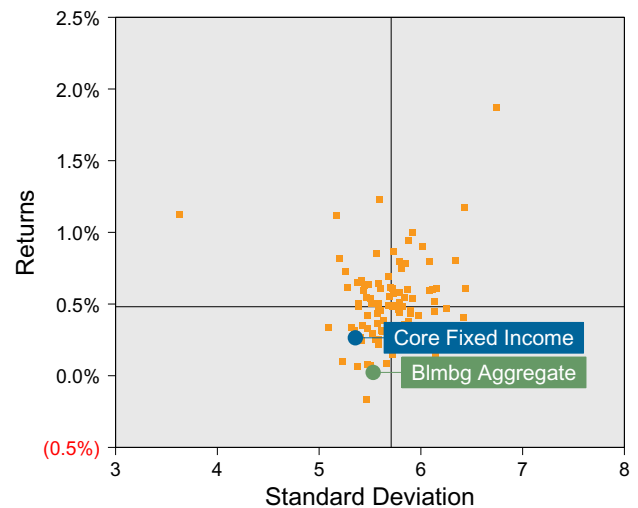


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	2.28	(12.04)	(1.68)	0.84	1.84	1.90
25th Percentile	2.11	(12.45)	(1.90)	0.61	1.57	1.74
Median	1.87	(12.90)	(2.16)	0.48	1.40	1.52
75th Percentile	1.62	(13.30)	(2.38)	0.31	1.25	1.37
90th Percentile	1.39	(13.75)	(2.59)	0.12	1.14	1.28
<b>Core Fixed Income</b>	<b>1.96</b>	<b>(11.90)</b>	<b>(2.46)</b>	<b>0.26</b>	<b>1.34</b>	<b>1.33</b>
<b>Blmbg Aggregate</b>	<b>1.87</b>	<b>(13.01)</b>	<b>(2.71)</b>	<b>0.02</b>	<b>0.89</b>	<b>1.06</b>

Relative Return vs Blmbg Aggregate



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

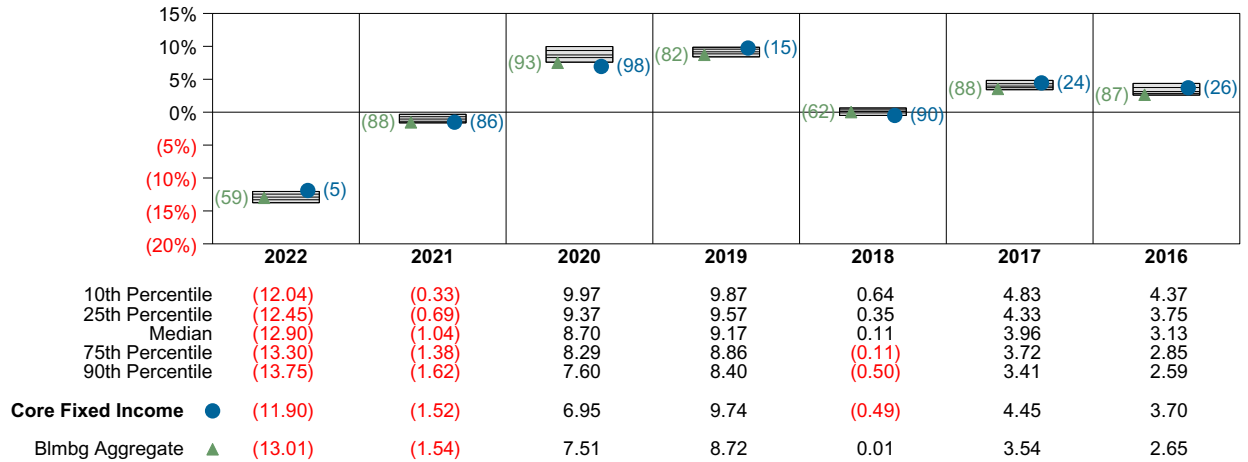


# Core Fixed Income Return Analysis Summary

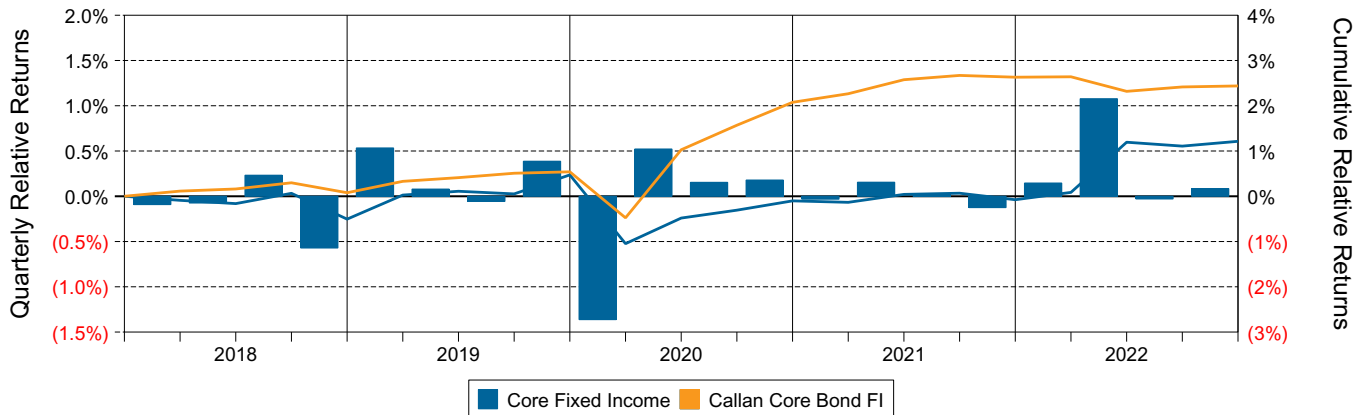
## Return Analysis

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.

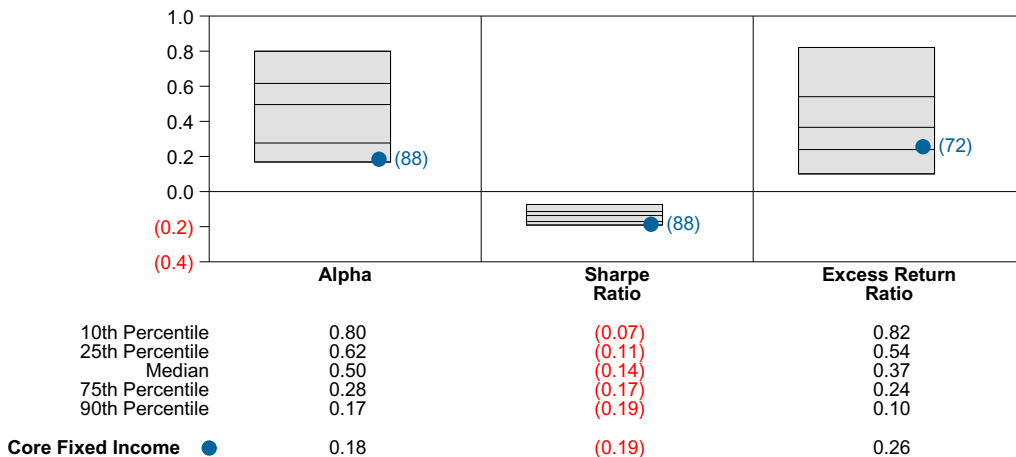
### Performance vs Callan Core Bond Fixed Income (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg Aggregate



### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2022

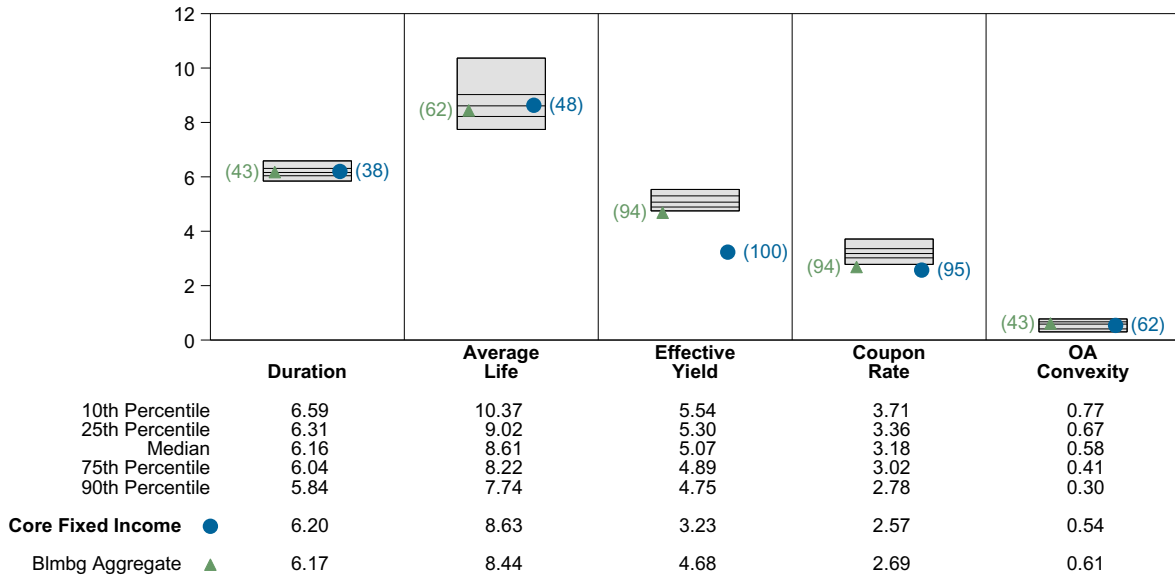


# Core Fixed Income Bond Characteristics Analysis Summary

## Portfolio Characteristics

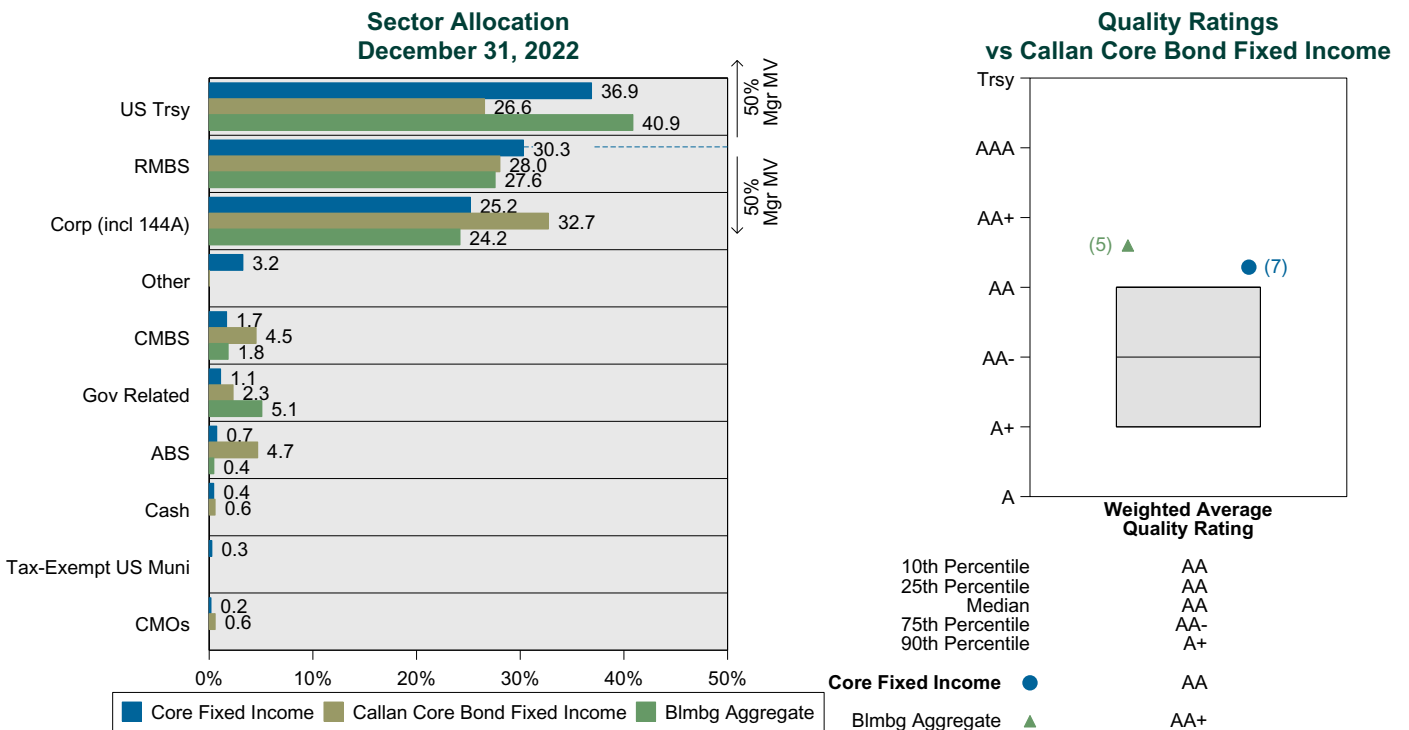
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2022



## 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.

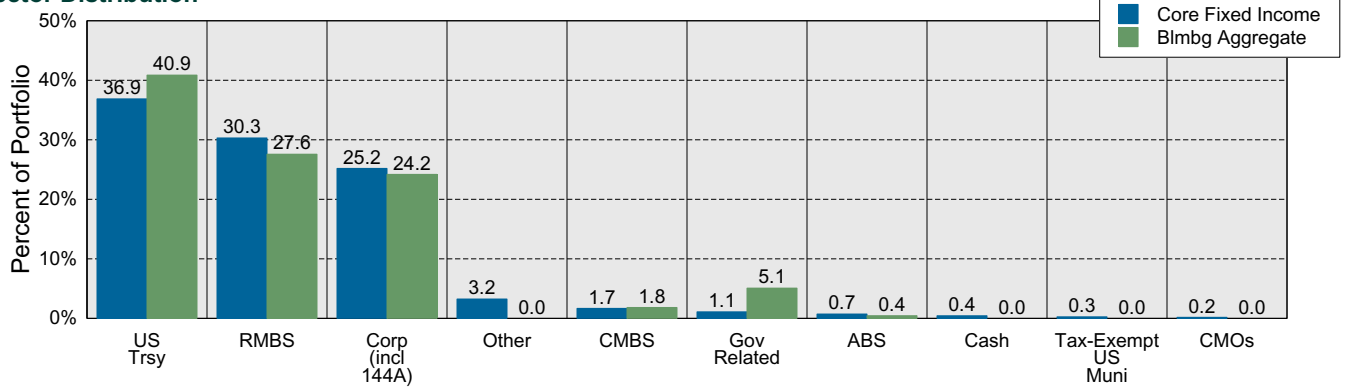


# Core Fixed Income Portfolio Characteristics Summary As of December 31, 2022

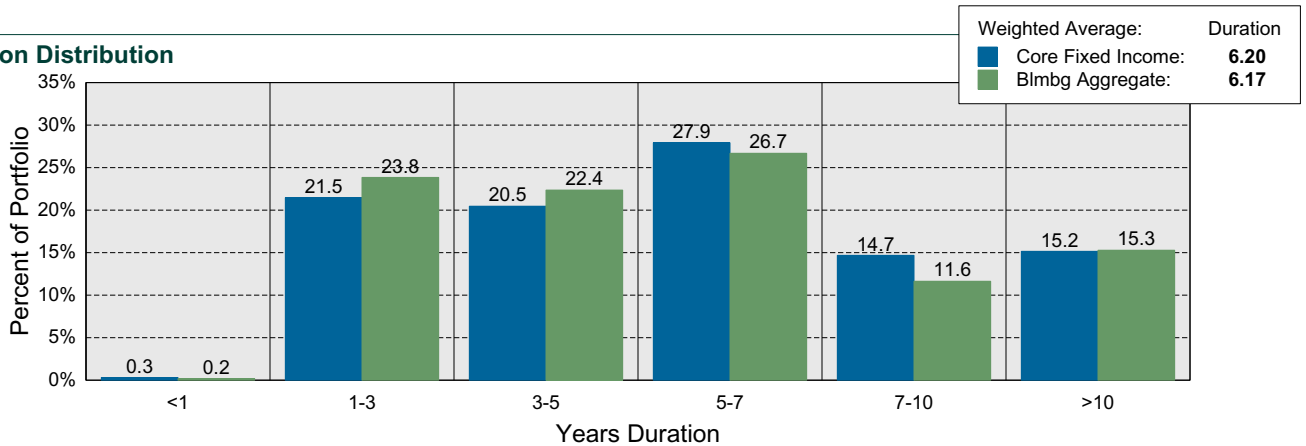
## Portfolio Structure Comparison

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.

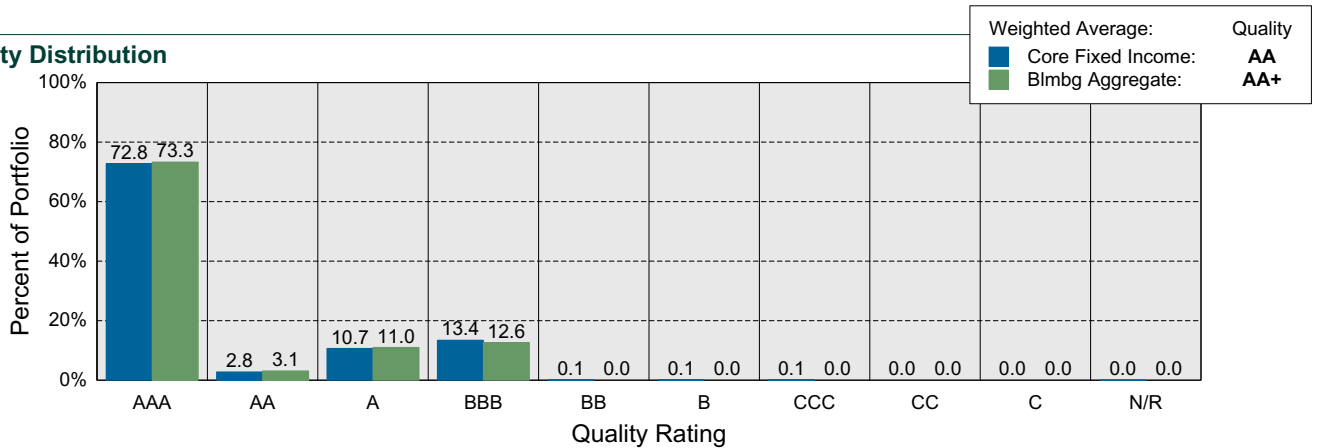
### Sector Distribution



### Duration Distribution



### Quality Distribution





# MCM Bond Index

## Period Ended December 31, 2022

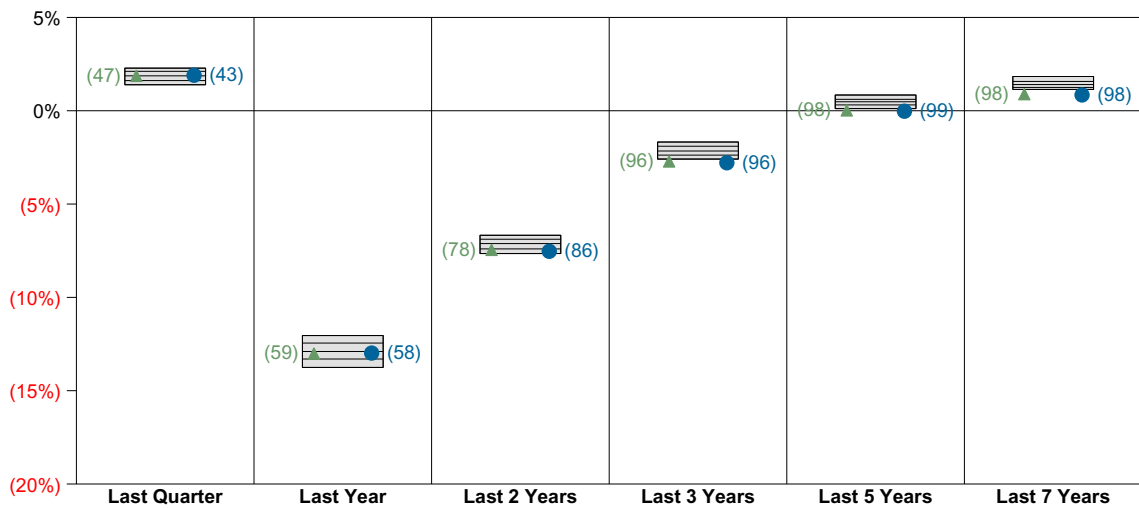
### Investment Philosophy

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

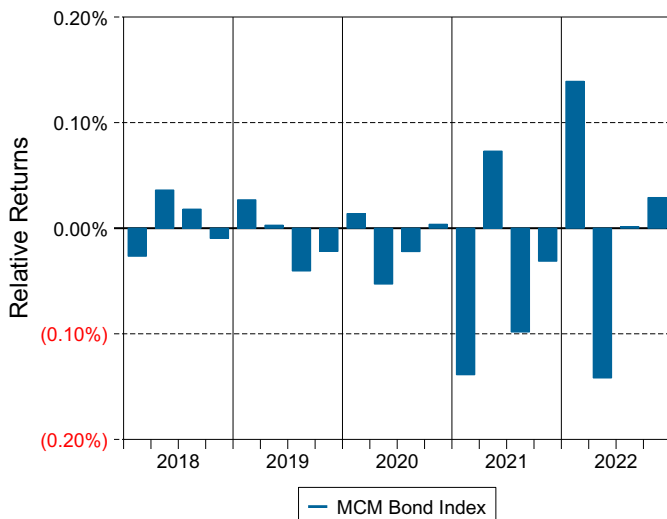
- MCM Bond Index's portfolio posted a 1.90% return for the quarter placing it in the 43 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 58 percentile for the last year.
- MCM Bond Index's portfolio outperformed the Blmbg Aggregate by 0.03% for the quarter and outperformed the Blmbg Aggregate for the year by 0.02%.

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

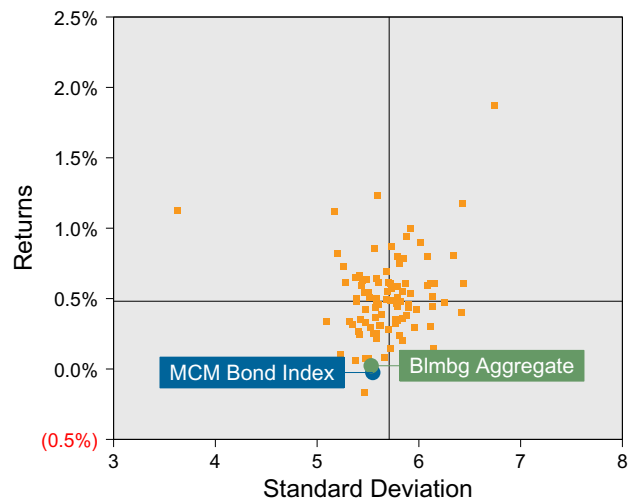


10th Percentile	2.28	(12.04)	(6.67)	(1.68)	0.84	1.84
25th Percentile	2.11	(12.45)	(6.88)	(1.90)	0.61	1.57
Median	1.87	(12.90)	(7.12)	(2.16)	0.48	1.40
75th Percentile	1.62	(13.30)	(7.40)	(2.38)	0.31	1.25
90th Percentile	1.39	(13.75)	(7.65)	(2.59)	0.12	1.14
<b>MCM Bond Index</b> ●	1.90	(12.99)	(7.53)	(2.79)	(0.03)	0.85
Blmbg Aggregate ▲	1.87	(13.01)	(7.45)	(2.71)	0.02	0.89

### Relative Return vs Blmbg Aggregate



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

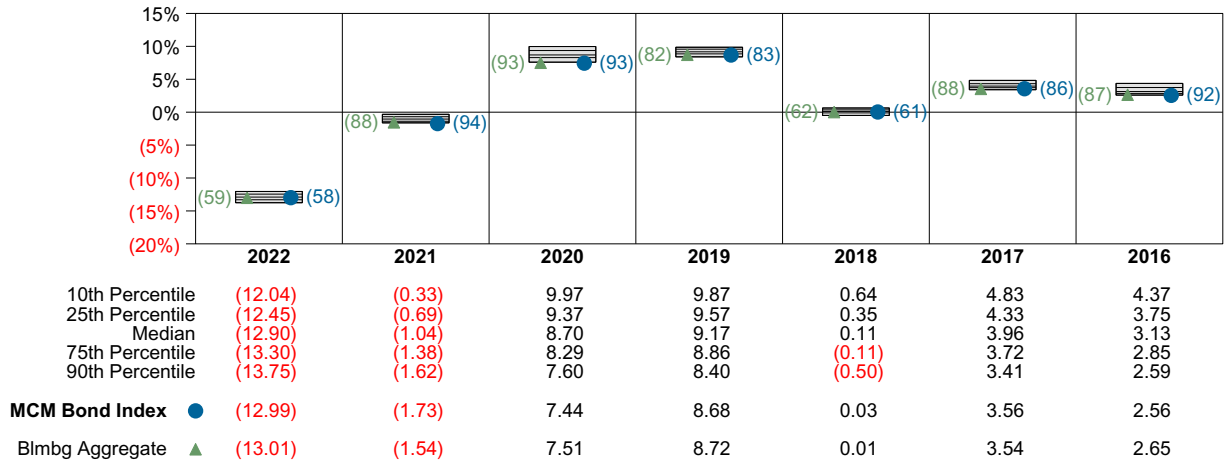


# MCM Bond Index Return Analysis Summary

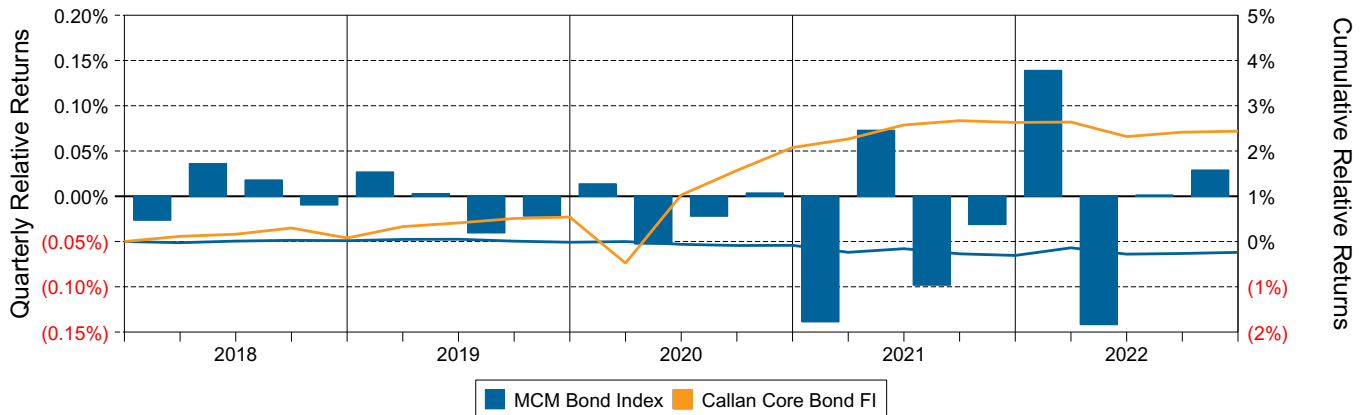
## Return Analysis

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.

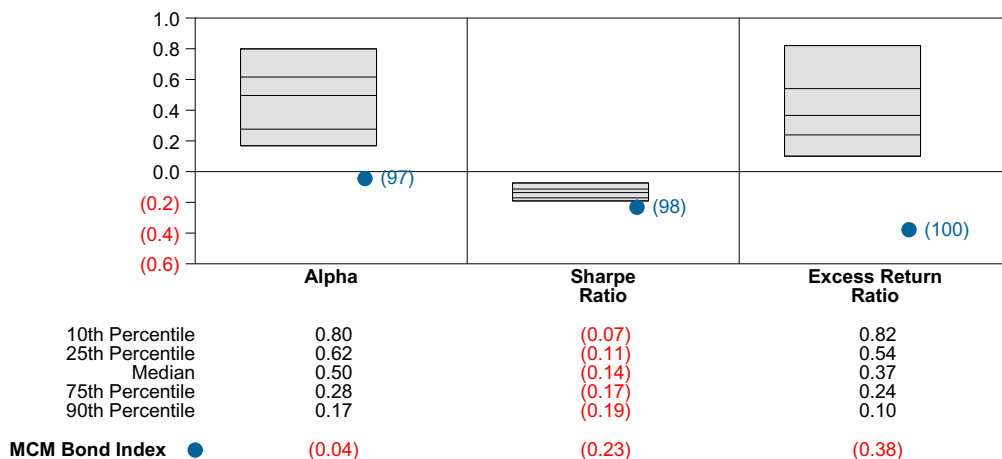
### Performance vs Callan Core Bond Fixed Income (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg Aggregate



### Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2022

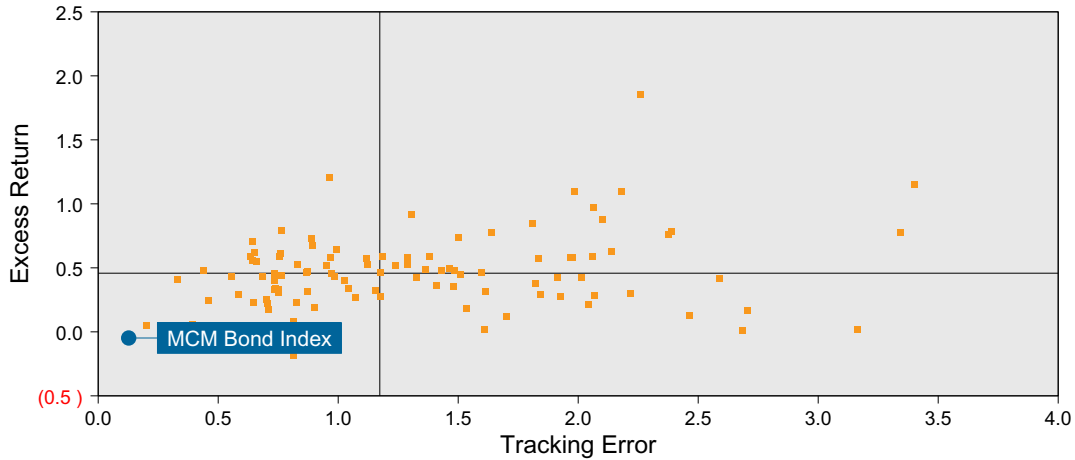


# MCM Bond Index Risk Analysis Summary

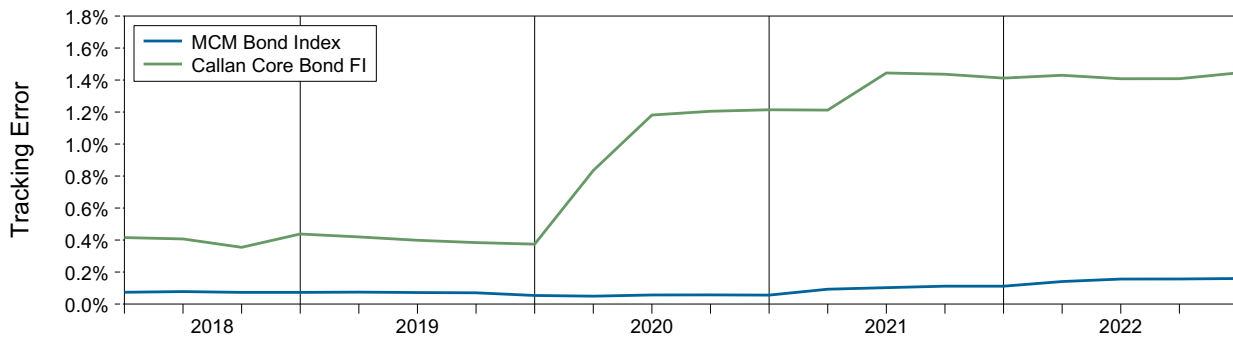
## Risk Analysis

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.

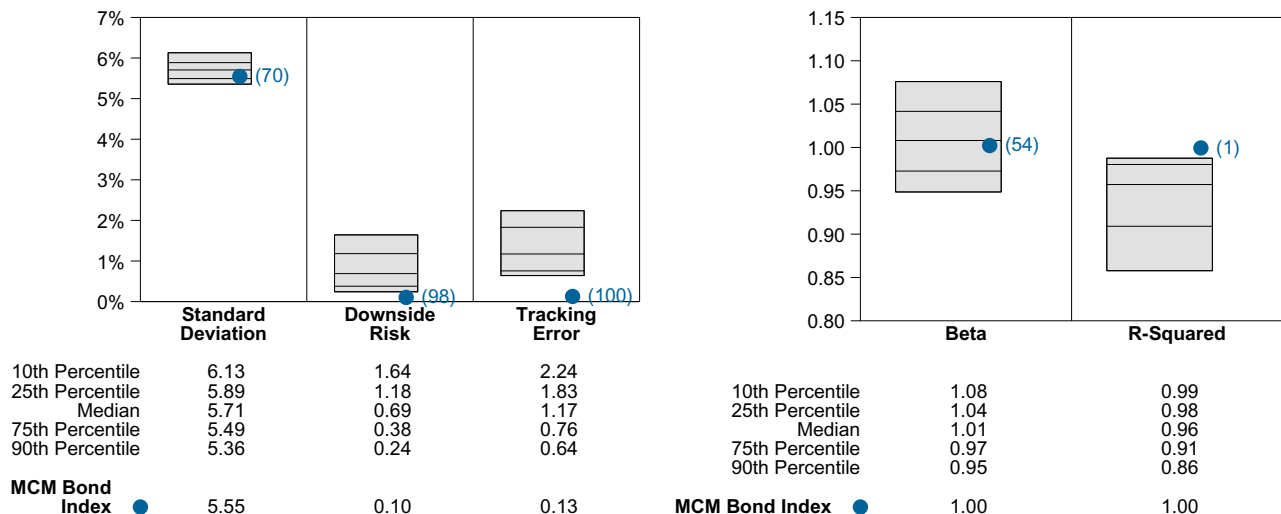
### Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Bloomberg Aggregate



### Risk Statistics Rankings vs Bloomberg Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2022



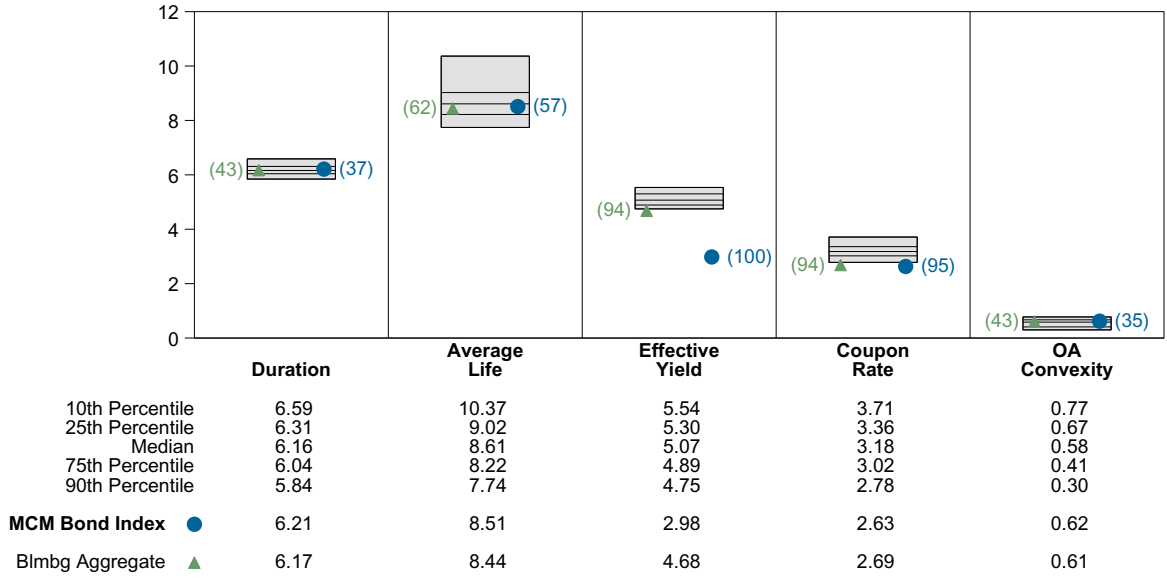


# MCM Bond Index Bond Characteristics Analysis Summary

## Portfolio Characteristics

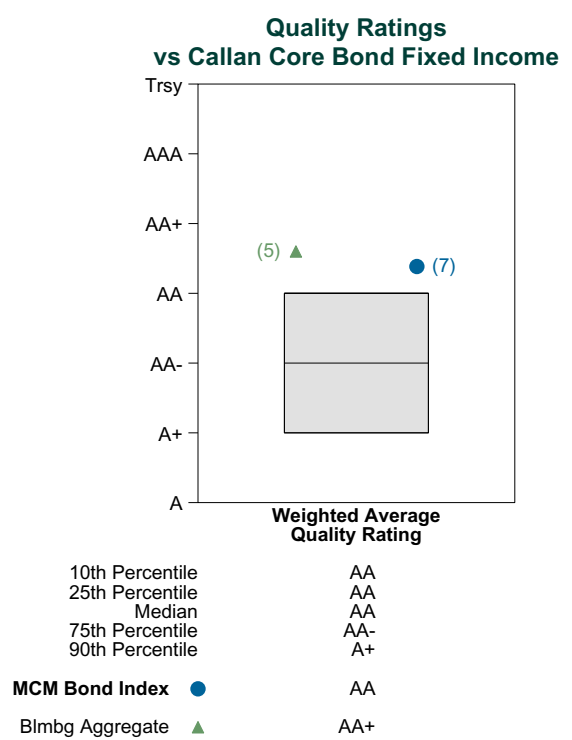
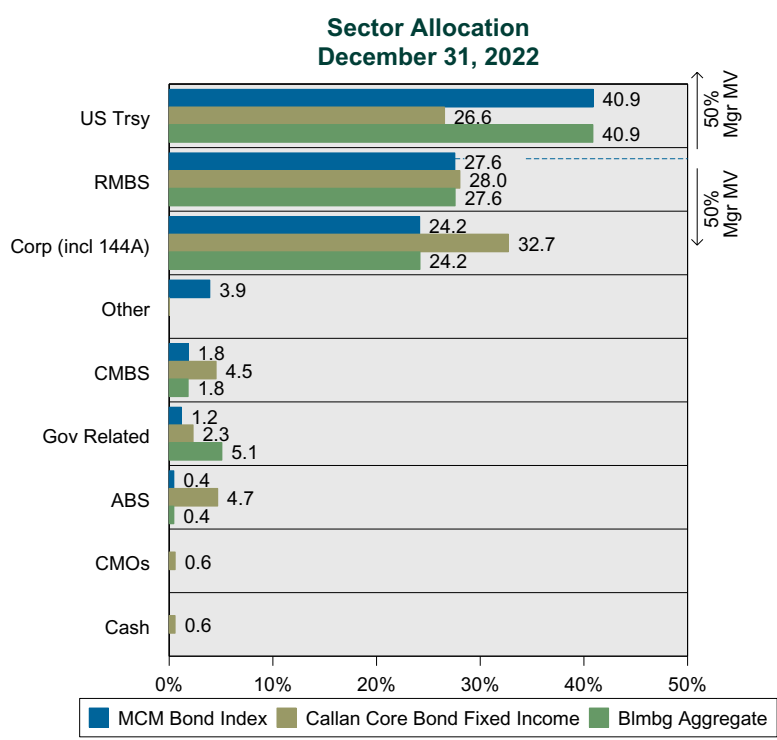
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2022



## 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.

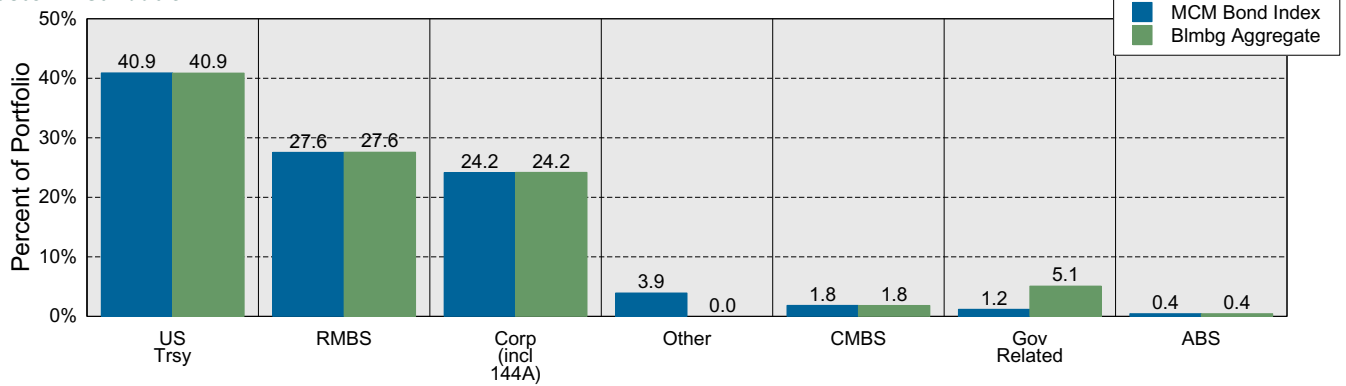


# MCM Bond Index Portfolio Characteristics Summary As of December 31, 2022

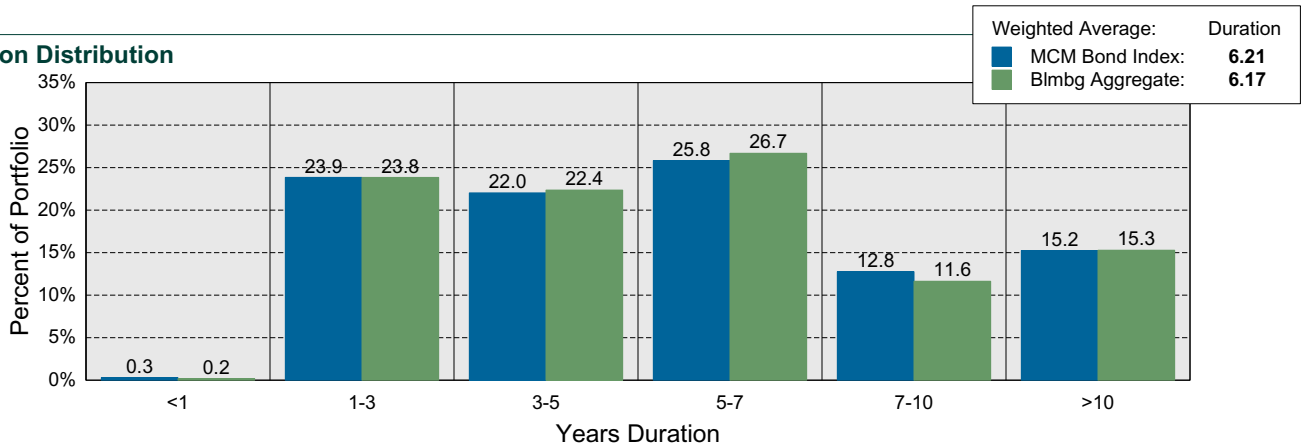
## Portfolio Structure Comparison

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.

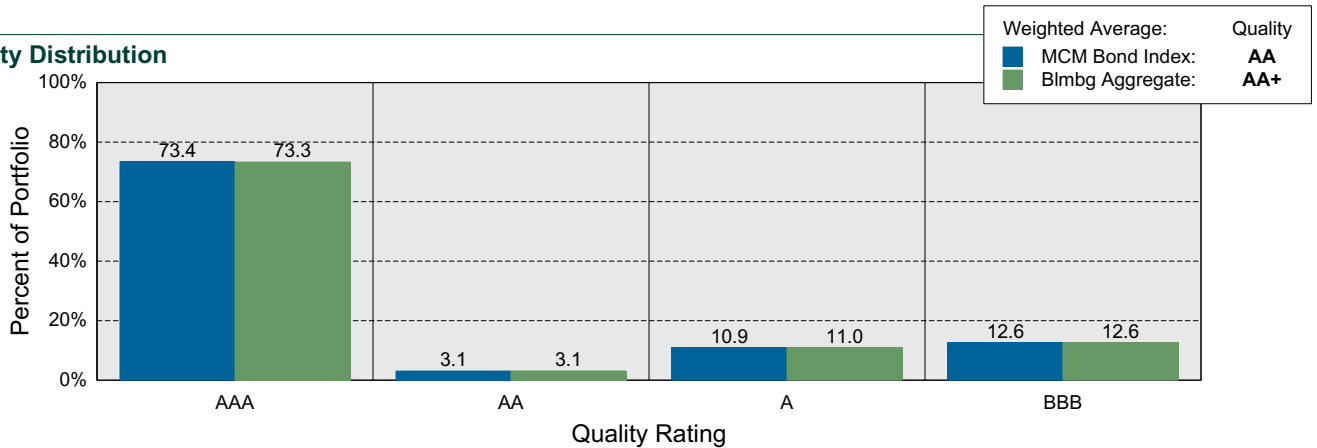
### Sector Distribution



### Duration Distribution



### Quality Distribution



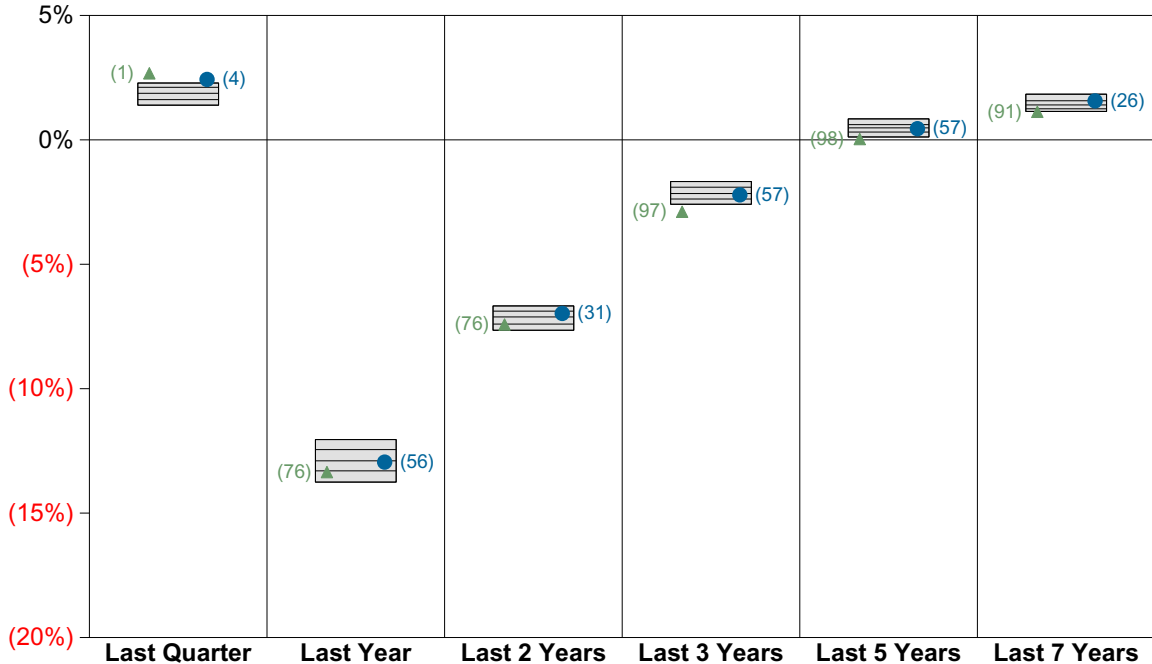
# PIMCO Core Bond Fund

## Period Ended December 31, 2022

### Quarterly Summary and Highlights

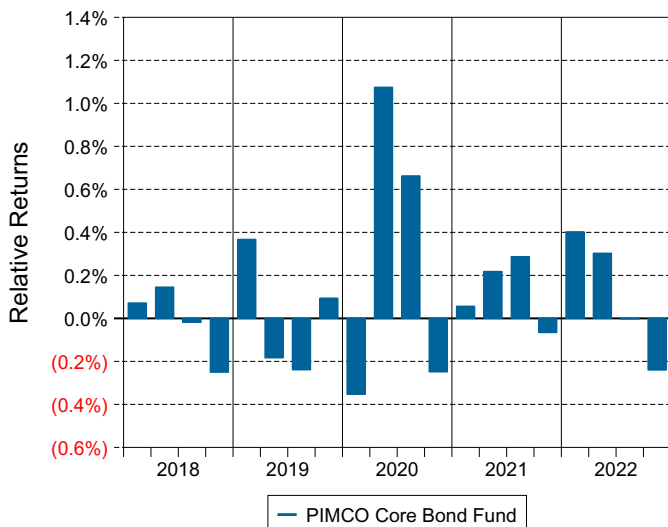
- PIMCO Core Bond Fund's portfolio posted a 2.43% return for the quarter placing it in the 4 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 56 percentile for the last year.
- PIMCO Core Bond Fund's portfolio underperformed the Blmbg Aggregate xTreas by 0.25% for the quarter and outperformed the Blmbg Aggregate xTreas for the year by 0.40%.

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

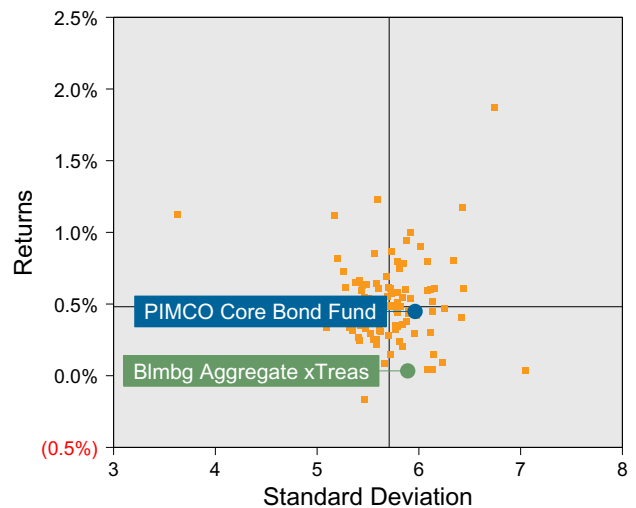


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	2.28	(12.04)	(6.67)	(1.68)	0.84	1.84
25th Percentile	2.11	(12.45)	(6.88)	(1.90)	0.61	1.57
Median	1.87	(12.90)	(7.12)	(2.16)	0.48	1.40
75th Percentile	1.62	(13.30)	(7.40)	(2.38)	0.31	1.25
90th Percentile	1.39	(13.75)	(7.65)	(2.59)	0.12	1.14
<b>PIMCO Core Bond Fund</b> ●	2.43	(12.95)	(6.98)	(2.21)	0.45	1.57
Blmbg Aggregate xTreas ▲	2.67	(13.35)	(7.42)	(2.89)	0.03	1.13

### Relative Return vs Blmbg Aggregate xTreas



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

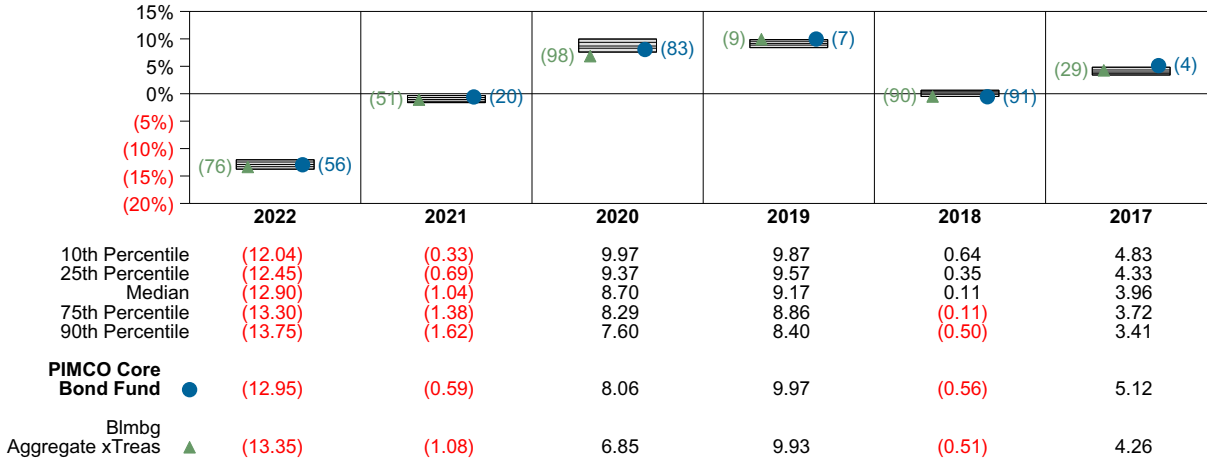


# PIMCO Core Bond Fund Return Analysis Summary

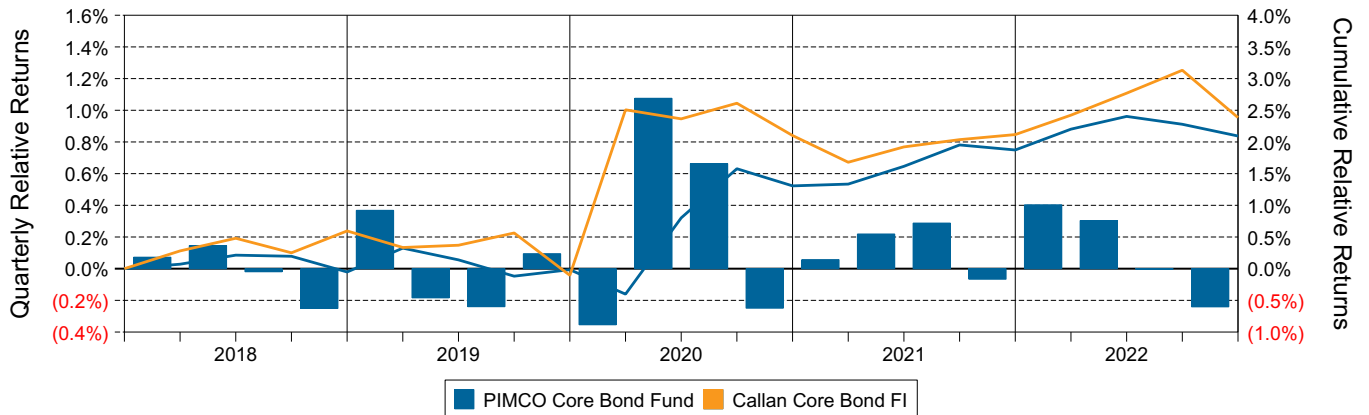
## Return Analysis

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.

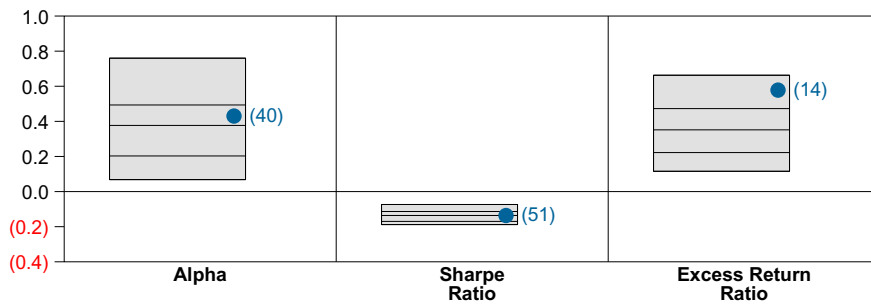
### Performance vs Callan Core Bond Fixed Income (Gross)



### Cumulative and Quarterly Relative Returns 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, 2022

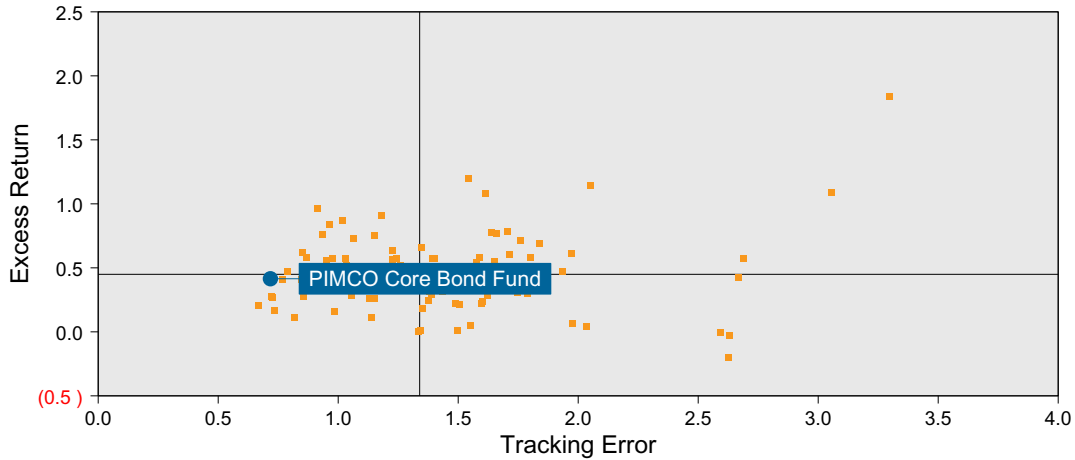


# PIMCO Core Bond Fund Risk Analysis Summary

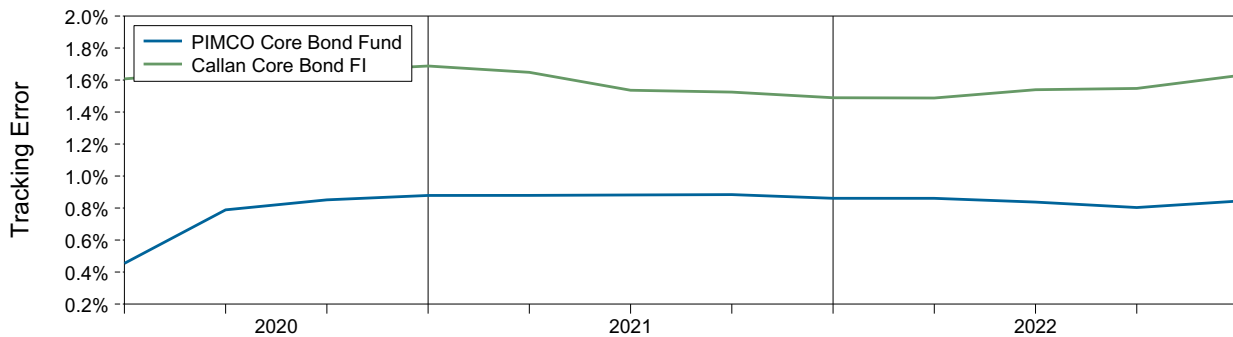
## Risk Analysis

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.

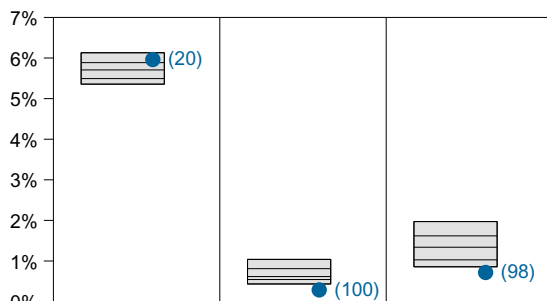
### Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2022



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

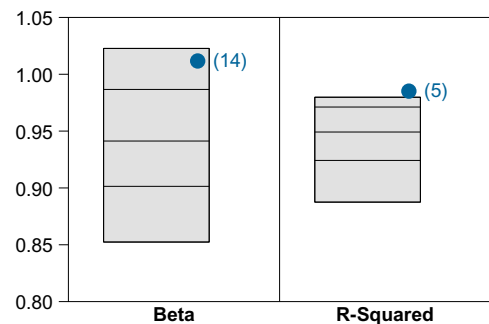


### Risk Statistics Rankings vs Bloomberg Aggregate xTreasury Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended December 31, 2022



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	6.13	1.04	1.97
25th Percentile	5.89	0.81	1.62
Median	5.71	0.62	1.34
75th Percentile	5.49	0.54	1.03
90th Percentile	5.36	0.43	0.86

**PIMCO Core Bond Fund** ● 5.96      0.29      0.72



	Beta	R-Squared
10th Percentile	1.02	0.98
25th Percentile	0.99	0.97
Median	0.94	0.95
75th Percentile	0.90	0.92
90th Percentile	0.85	0.89

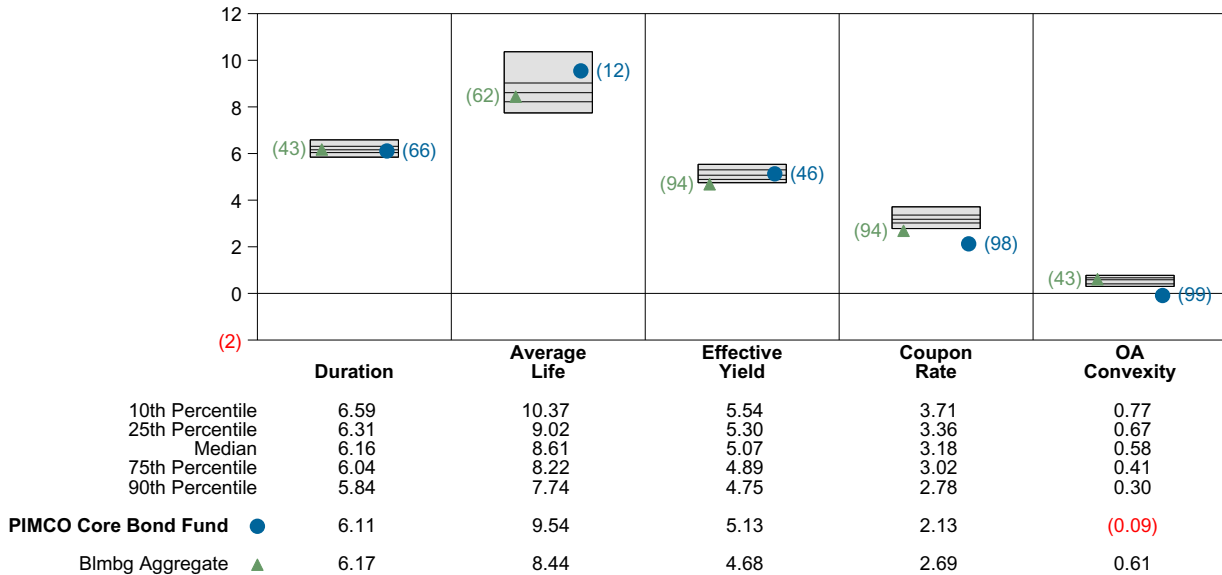
**PIMCO Core Bond Fund** ● 1.01      0.99

# PIMCO Core Bond Fund Bond Characteristics Analysis Summary

## Portfolio Characteristics

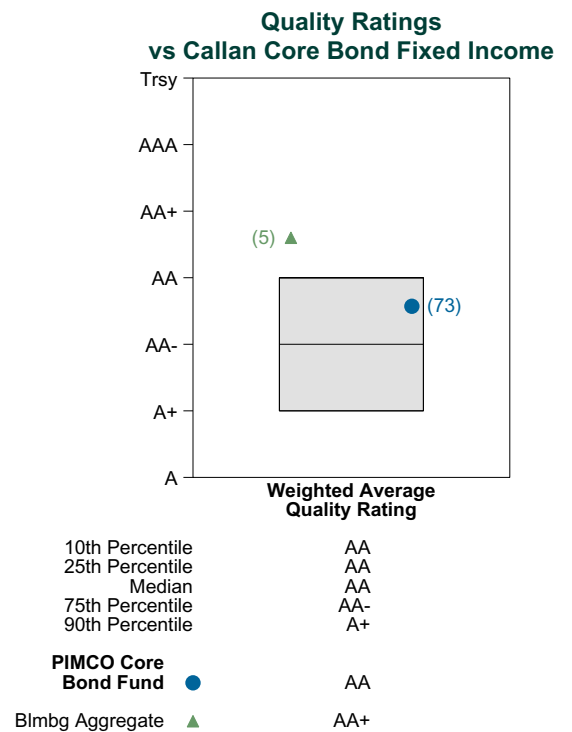
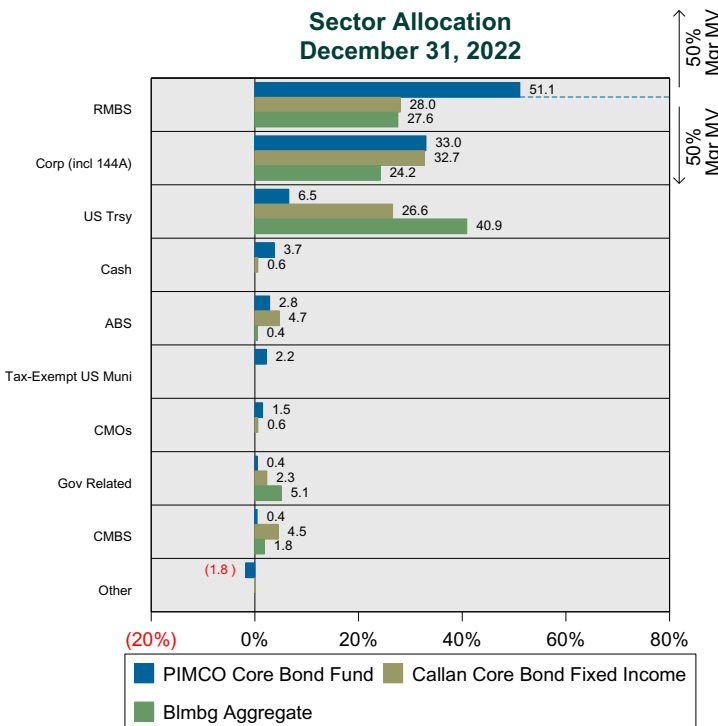
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of December 31, 2022



## 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.

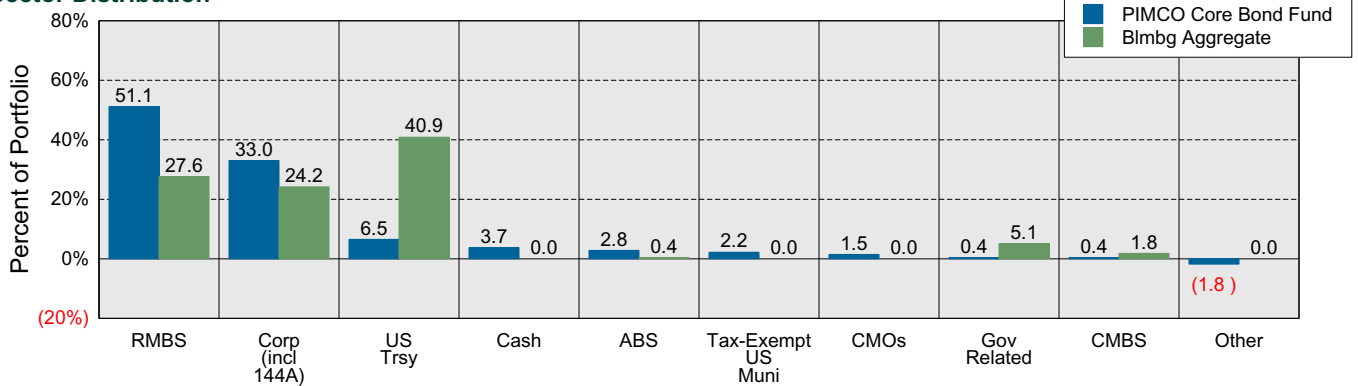


# PIMCO Core Bond Fund Portfolio Characteristics Summary As of December 31, 2022

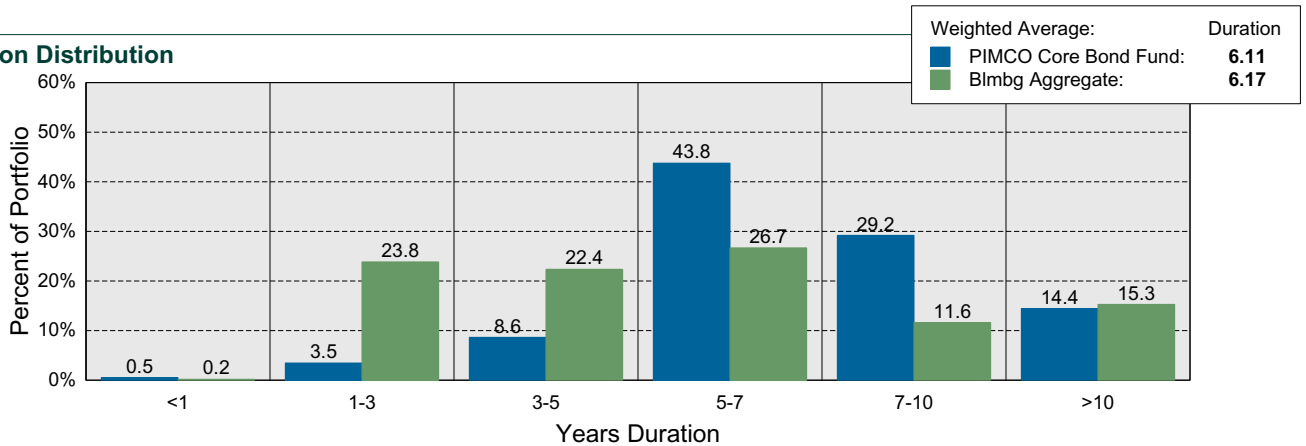
## Portfolio Structure Comparison

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.

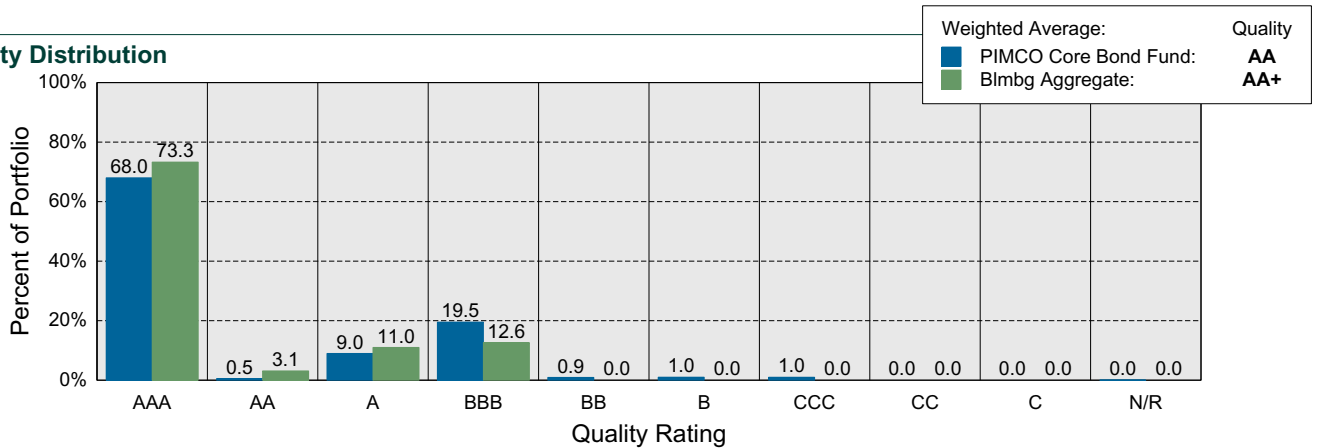
### Sector Distribution



### Duration Distribution



### Quality Distribution







# Blackstone Keystone

## Period Ended December 31, 2022

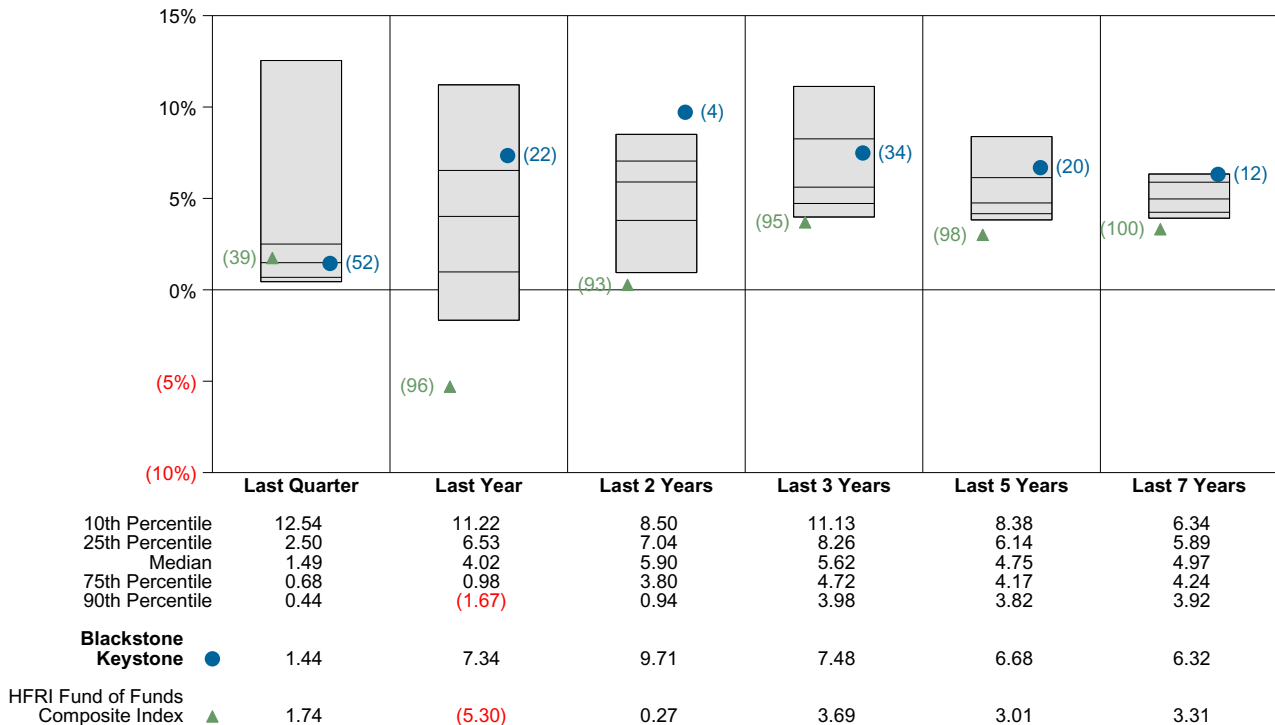
### Asset Class Membership Changes

Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit from 01/01/2021 through 09/30/2021 and Opportunistic Fixed composite, thereafter.

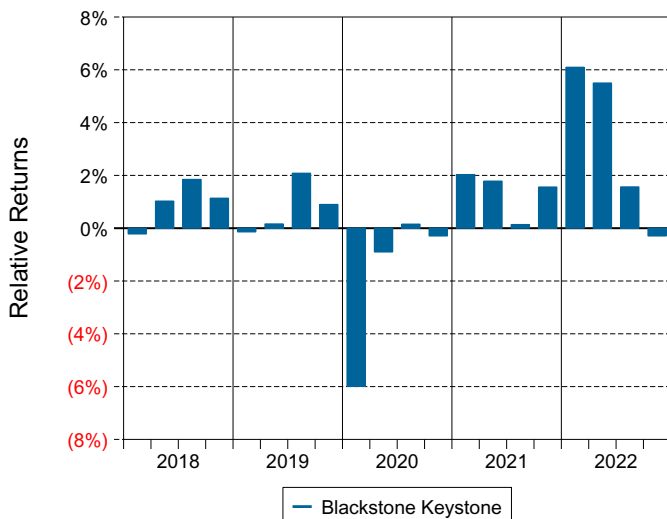
### Quarterly Summary and Highlights

- Blackstone Keystone's portfolio posted a 1.44% return for the quarter placing it in the 52 percentile of the Callan Absolute Rtn Hedge Fund of Funds group for the quarter and in the 22 percentile for the last year.
- Blackstone Keystone's portfolio underperformed the HFRI Fund of Funds Composite Index by 0.30% for the quarter and outperformed the HFRI Fund of Funds Composite Index for the year by 12.64%.

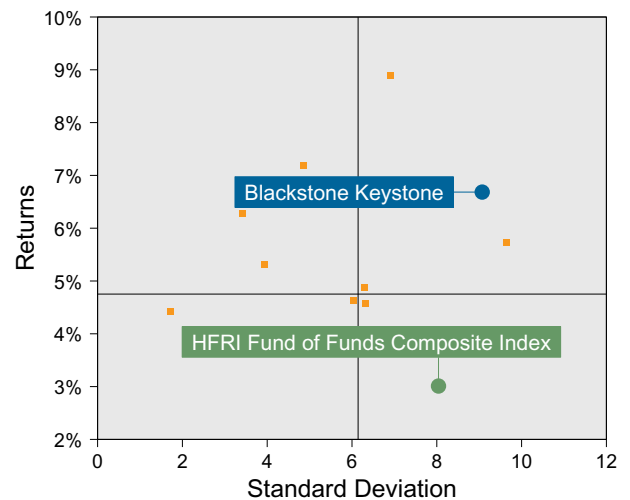
### Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)



### Relative Returns vs HFRI Fund of Funds Composite Index



### Callan Absolute Rtn Hedge Fund of Funds (Net) Annualized Five Year Risk vs Return

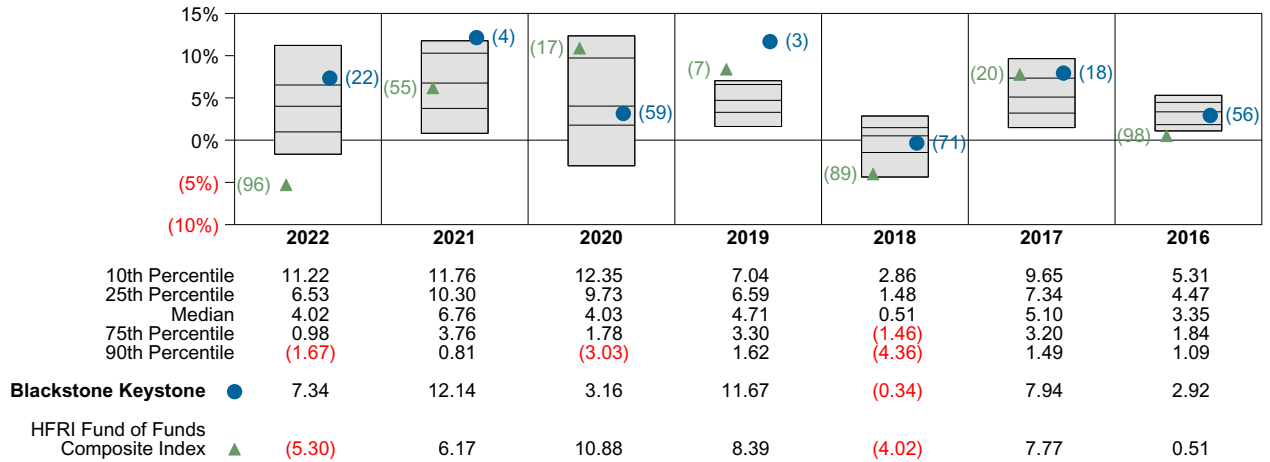


# Blackstone Keystone Return Analysis Summary

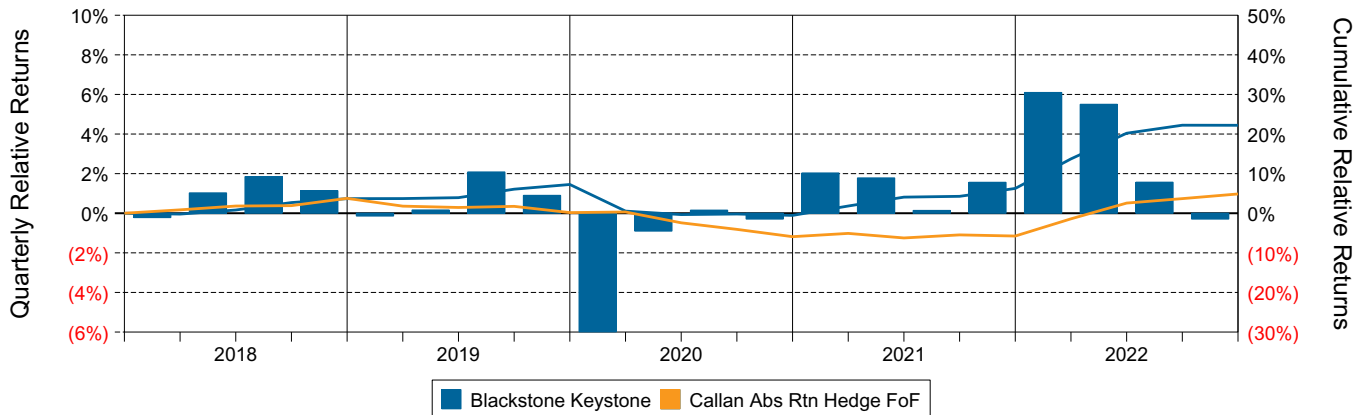
## Return Analysis

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.

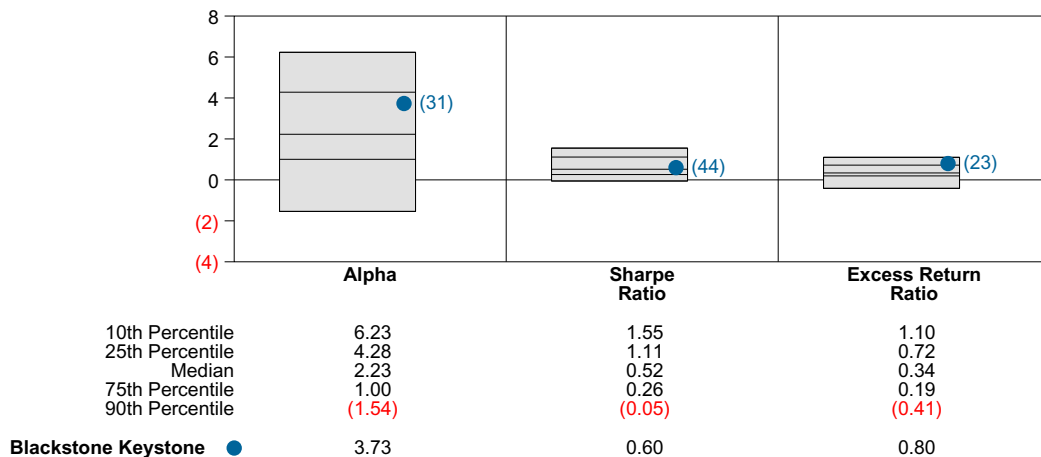
### Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)



### Cumulative and Quarterly Relative Returns 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, 2022

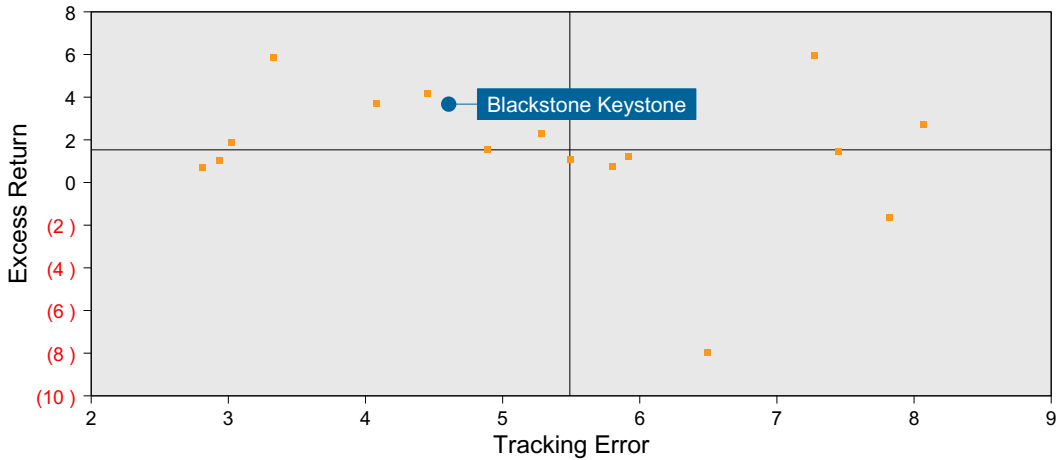


# Blackstone Keystone Risk Analysis Summary

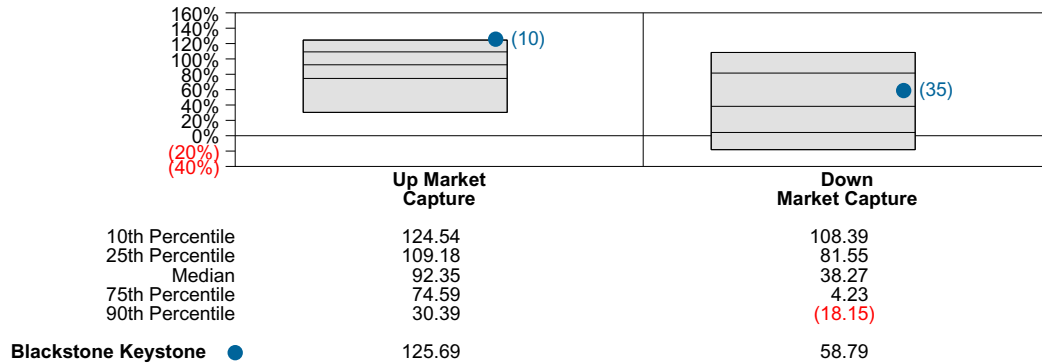
## Risk Analysis

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.

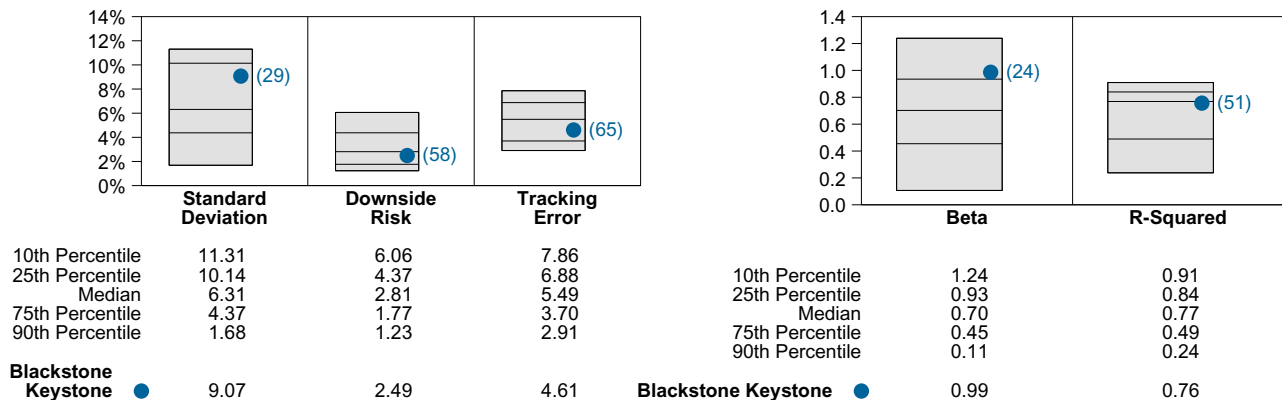
### Risk Analysis vs Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended December 31, 2022



### Market Capture vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended December 31, 2022



### 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, 2022





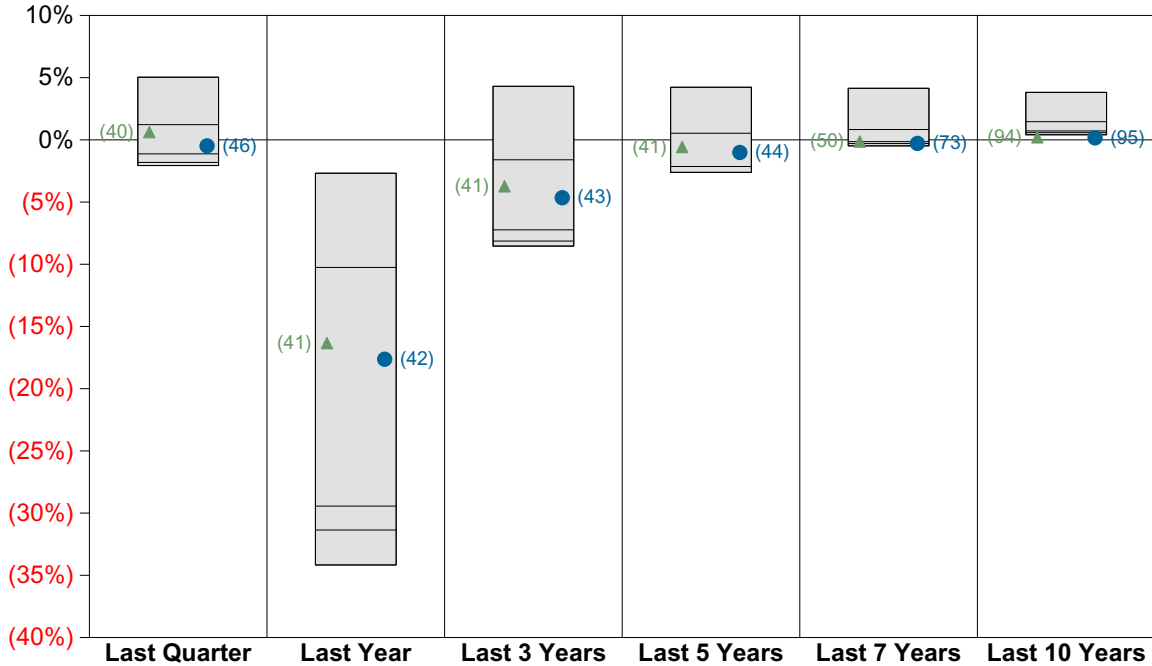
# Nominal U.S. Treasuries

## Period Ended December 31, 2022

### Quarterly Summary and Highlights

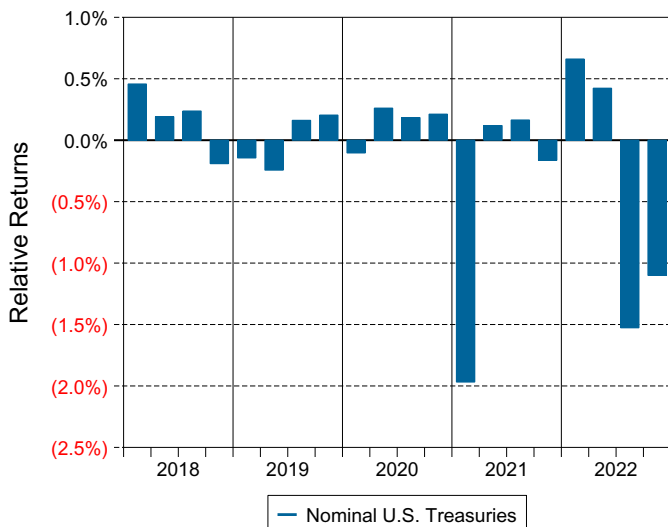
- Nominal U.S. Treasuries's portfolio posted a (0.48)% return for the quarter placing it in the 46 percentile of the Callan US Treas Bond Funds group for the quarter and in the 42 percentile for the last year.
- Nominal U.S. Treasuries's portfolio underperformed the Blmbg Treas Bellwethr 10Y by 1.11% for the quarter and underperformed the Blmbg Treas Bellwethr 10Y for the year by 1.30%.

### Performance vs Callan US Treas Bond Funds (Gross)

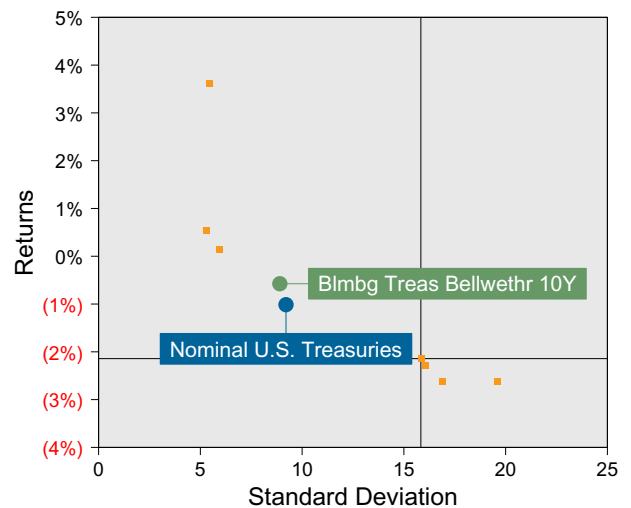


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	5.04	(2.68)	4.30	4.23	4.15	3.82
25th Percentile	1.22	(10.25)	(1.60)	0.53	0.83	1.46
Median	(1.13)	(29.44)	(7.23)	(2.14)	(0.14)	0.72
75th Percentile	(1.81)	(31.36)	(8.13)	(2.61)	(0.30)	0.58
90th Percentile	(2.06)	(34.17)	(8.54)	(2.62)	(0.48)	0.41
<b>Nominal U.S. Treasuries</b>	● (0.48)	(17.63)	(4.65)	(1.01)	(0.29)	0.16
Blmbg Treas Bellwethr 10Y	▲ 0.62	(16.33)	(3.73)	(0.57)	(0.13)	0.21

### Relative Return vs Blmbg Treas Bellwethr 10Y



### Callan US Treas Bond Funds (Gross) Annualized Five Year Risk vs Return

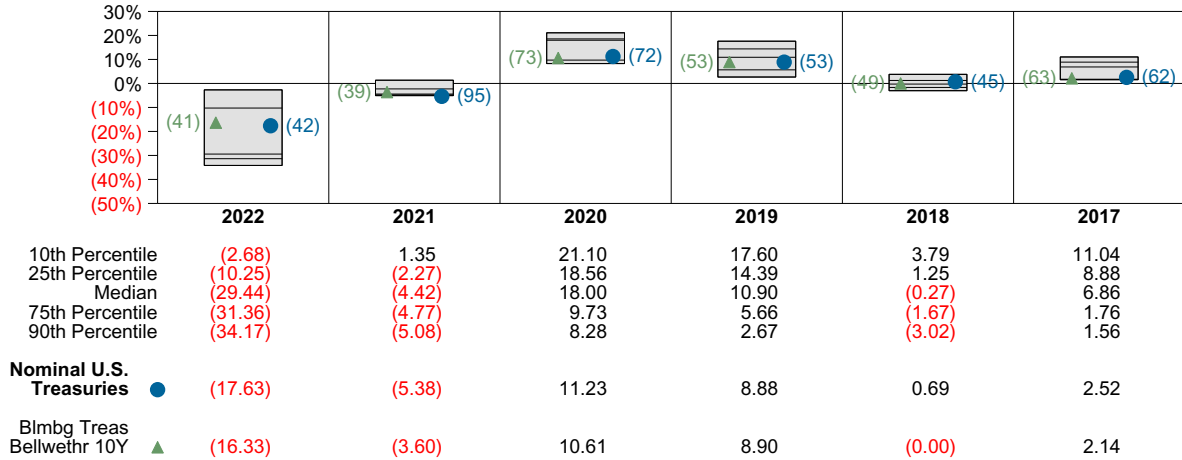


# Nominal U.S. Treasuries Return Analysis Summary

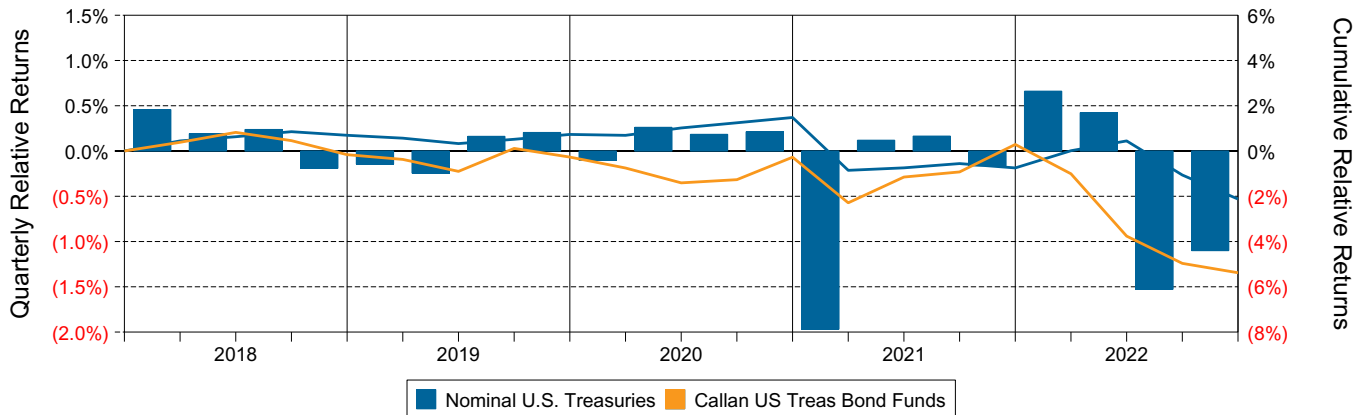
## Return Analysis

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.

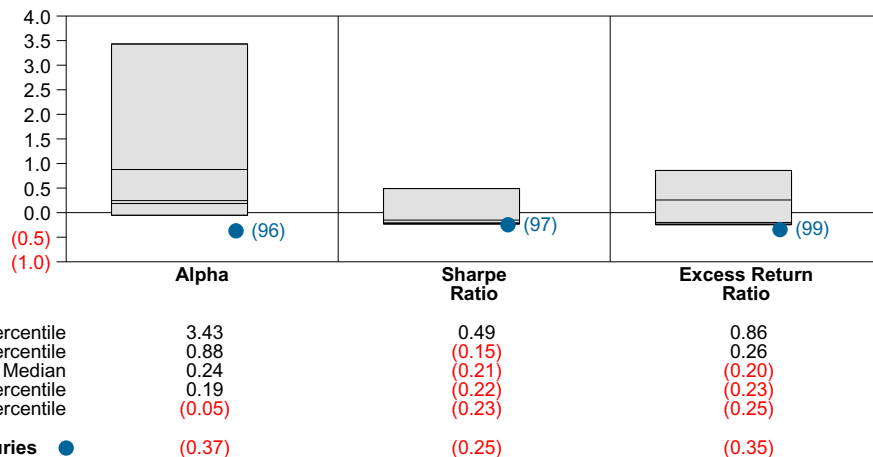
### Performance vs Callan US Treas Bond Funds (Gross)



### Cumulative and Quarterly Relative Returns 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, 2022

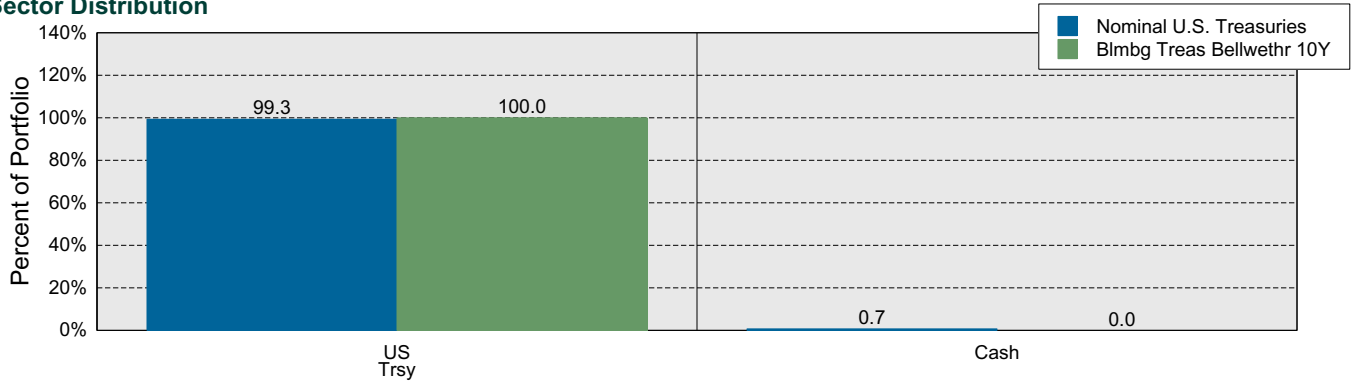


# Nominal U.S. Treasuries Portfolio Characteristics Summary As of December 31, 2022

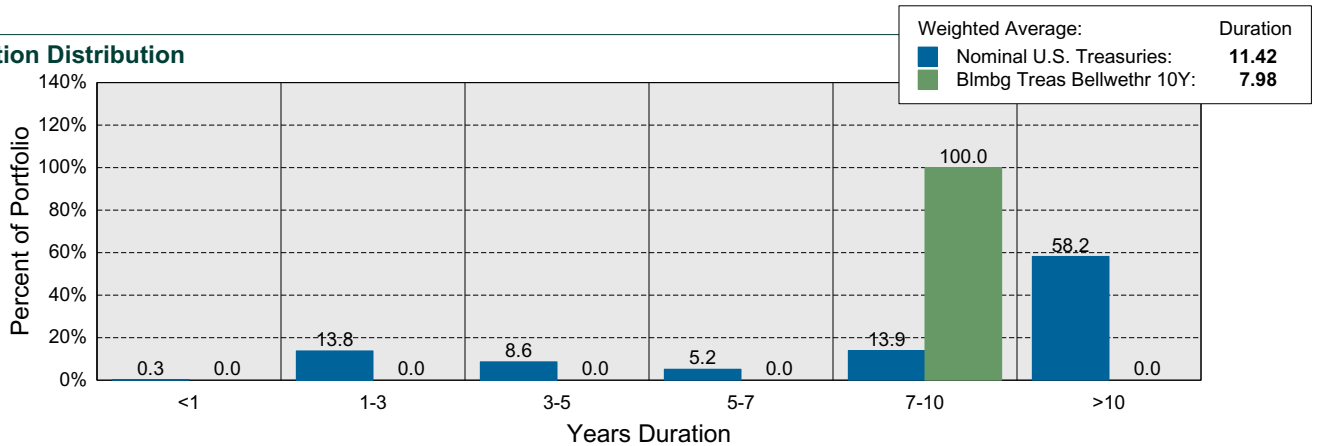
## Portfolio Structure Comparison

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.

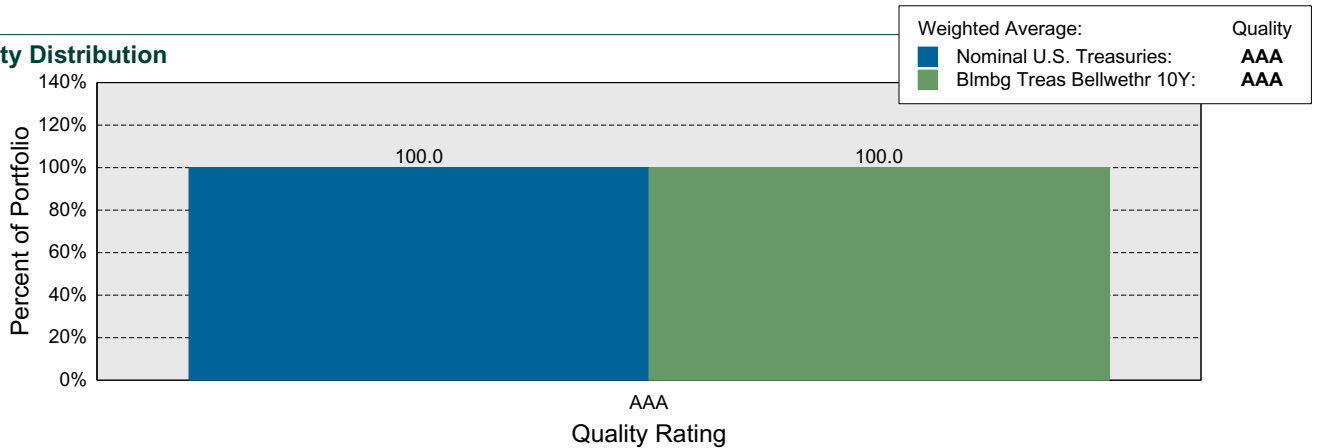
### Sector Distribution



### Duration Distribution



### Quality Distribution







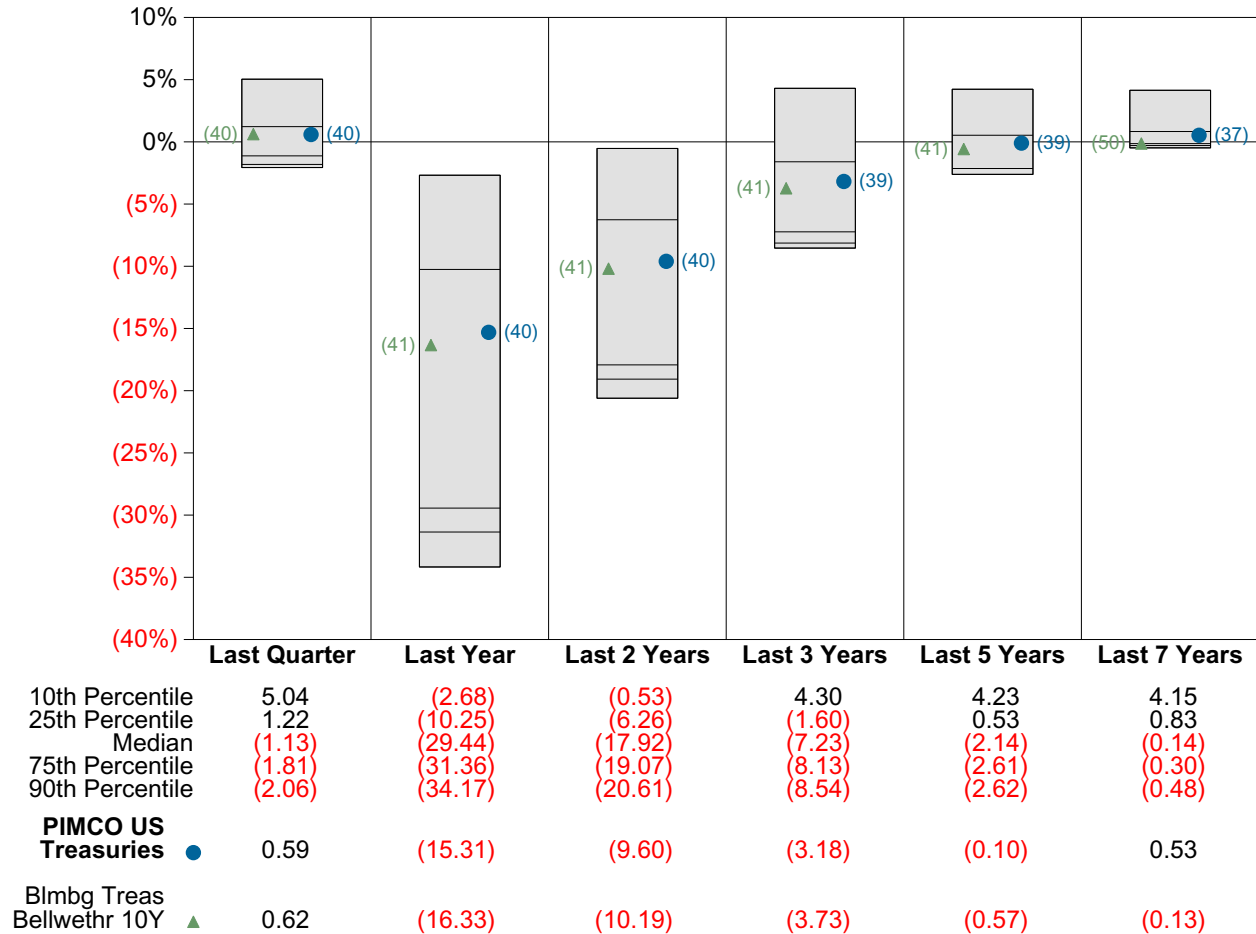
# PIMCO US Treasuries

## Period Ended December 31, 2022

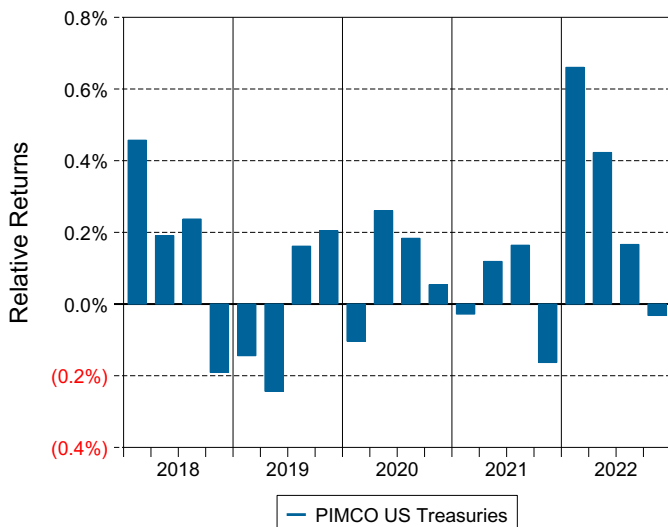
### Quarterly Summary and Highlights

- PIMCO US Treasuries's portfolio posted a 0.59% return for the quarter placing it in the 40 percentile of the Callan US Treas Bond Funds group for the quarter and in the 40 percentile for the last year.
- PIMCO US Treasuries's portfolio underperformed the Blmbg Treas Bellwethr 10Y by 0.03% for the quarter and outperformed the Blmbg Treas Bellwethr 10Y for the year by 1.02%.

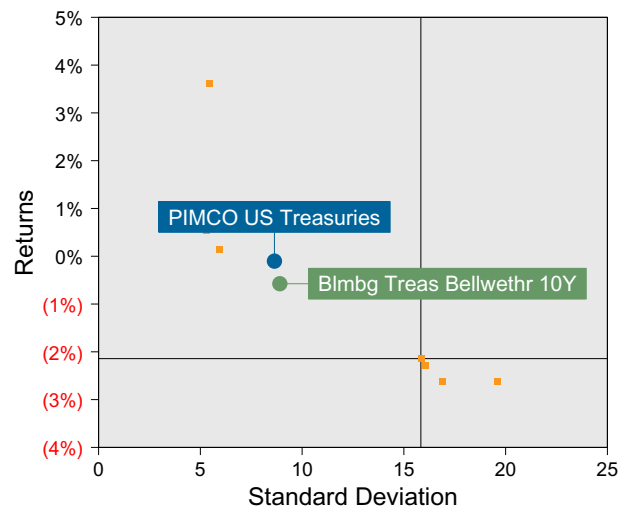
### Performance vs Callan US Treas Bond Funds (Gross)



### Relative Return vs Blmbg Treas Bellwethr 10Y



### Callan US Treas Bond Funds (Gross) Annualized Five Year Risk vs Return

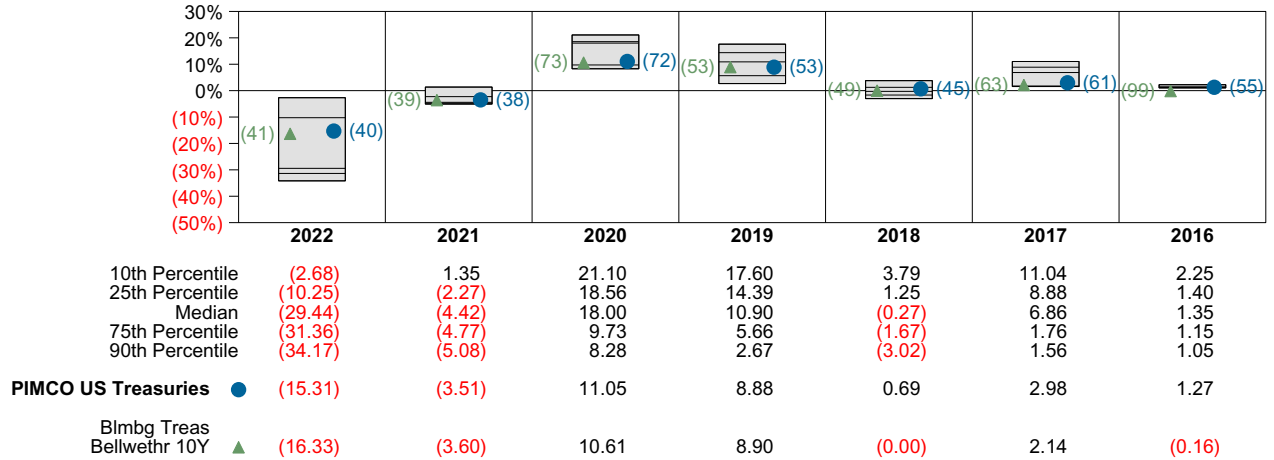


# PIMCO US Treasuries Return Analysis Summary

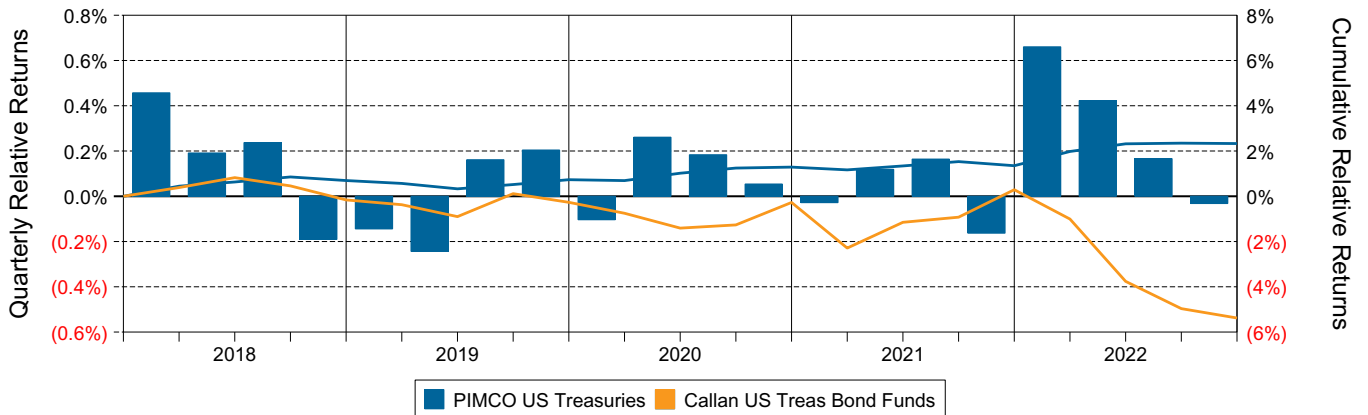
## Return Analysis

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.

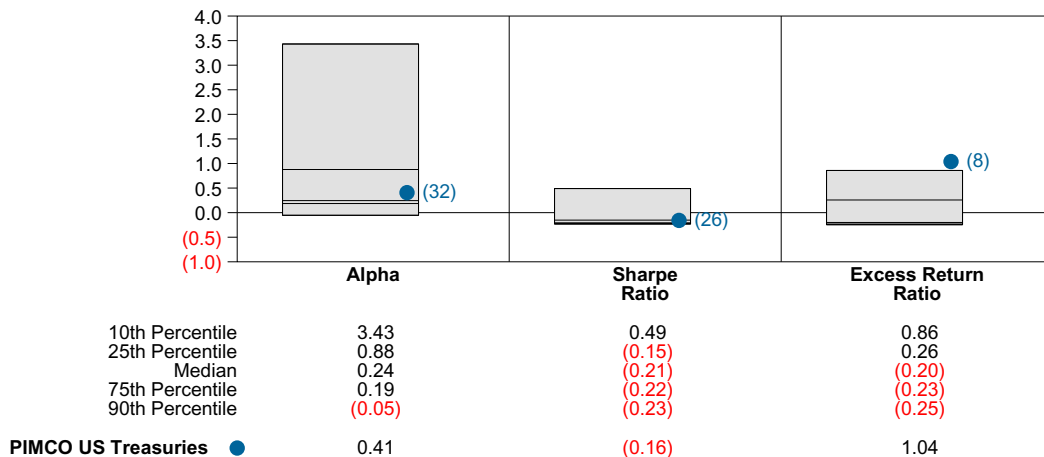
### Performance vs Callan US Treas Bond Funds (Gross)



### Cumulative and Quarterly Relative Returns 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, 2022

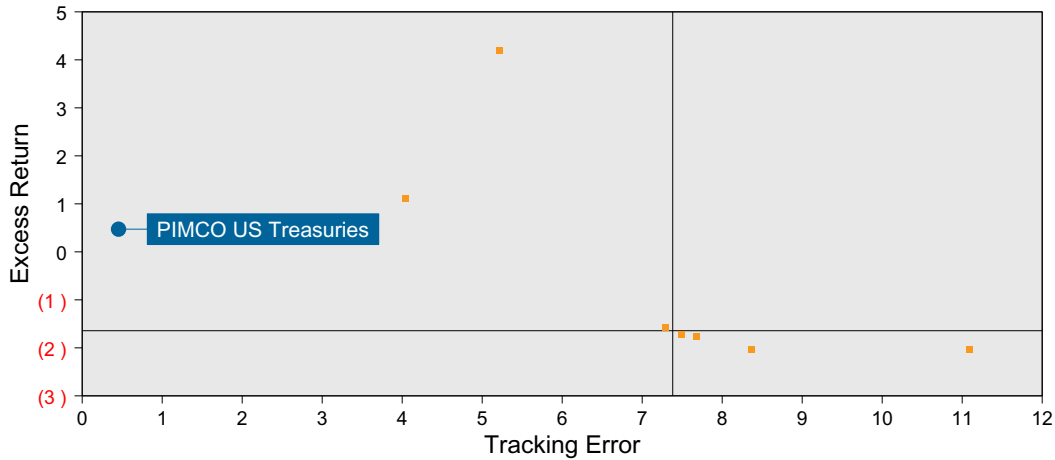


# PIMCO US Treasuries Risk Analysis Summary

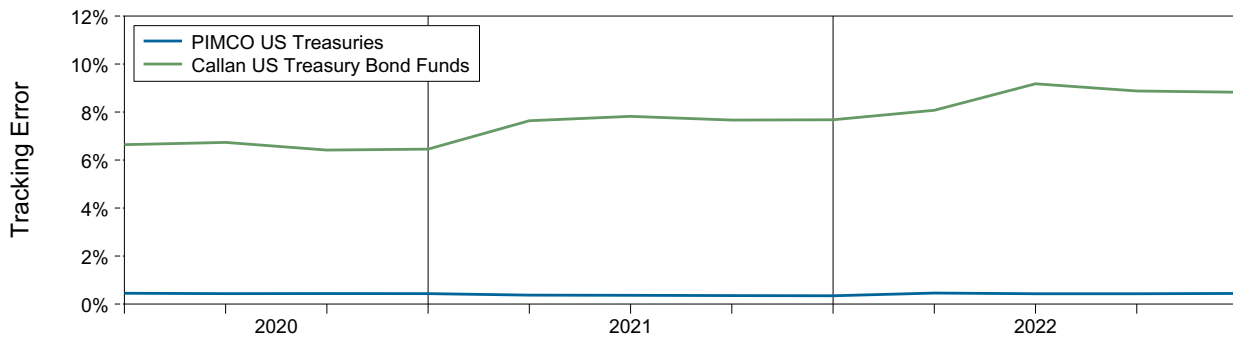
## Risk Analysis

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.

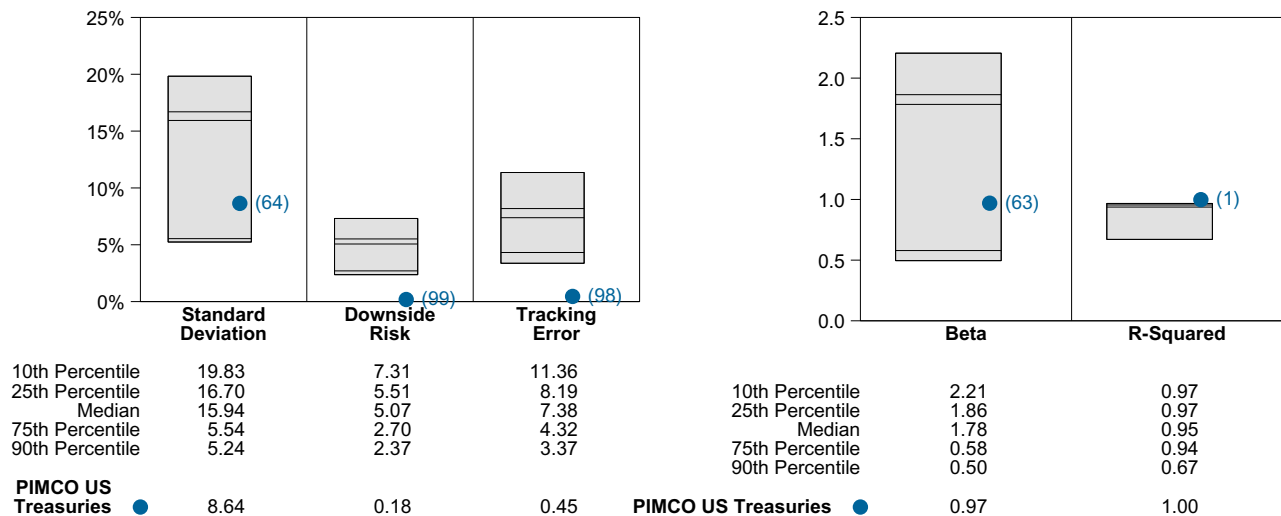
### Risk Analysis vs Callan US Treasury Bond Funds (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Bloomberg Treas Bellwethr 10Y



### Risk Statistics Rankings vs Bloomberg Treas Bellwethr 10Y Rankings Against Callan US Treasury Bond Funds (Gross) Five Years Ended December 31, 2022

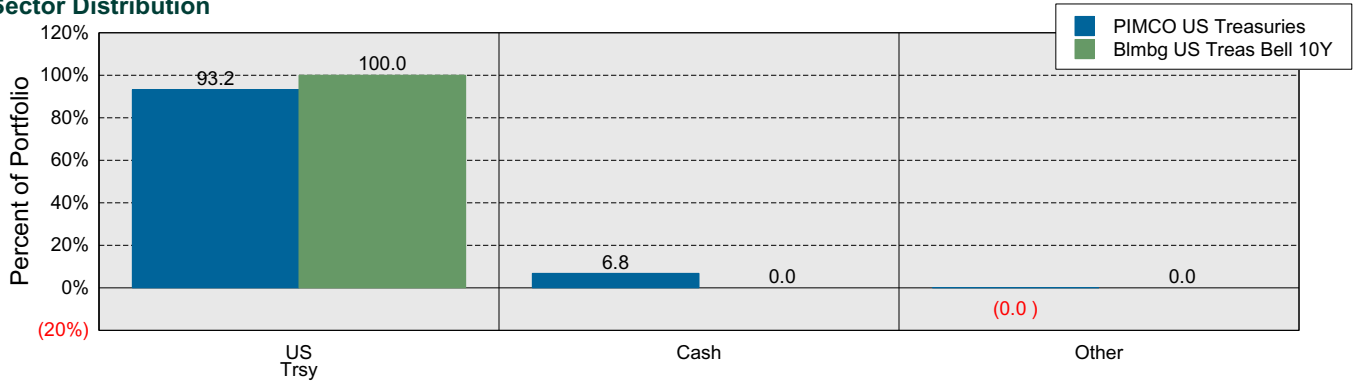


# PIMCO US Treasuries Portfolio Characteristics Summary As of December 31, 2022

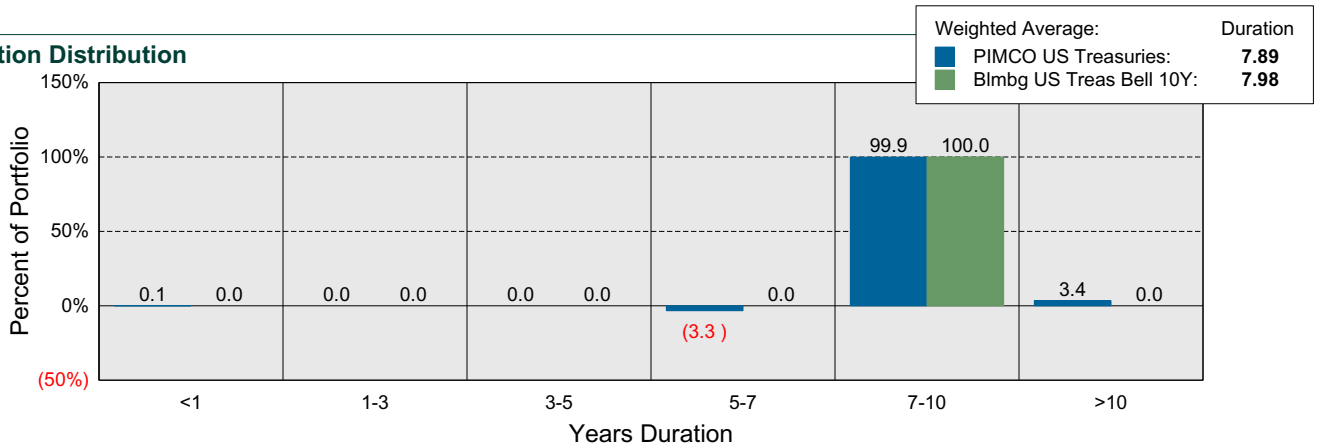
## Portfolio Structure Comparison

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.

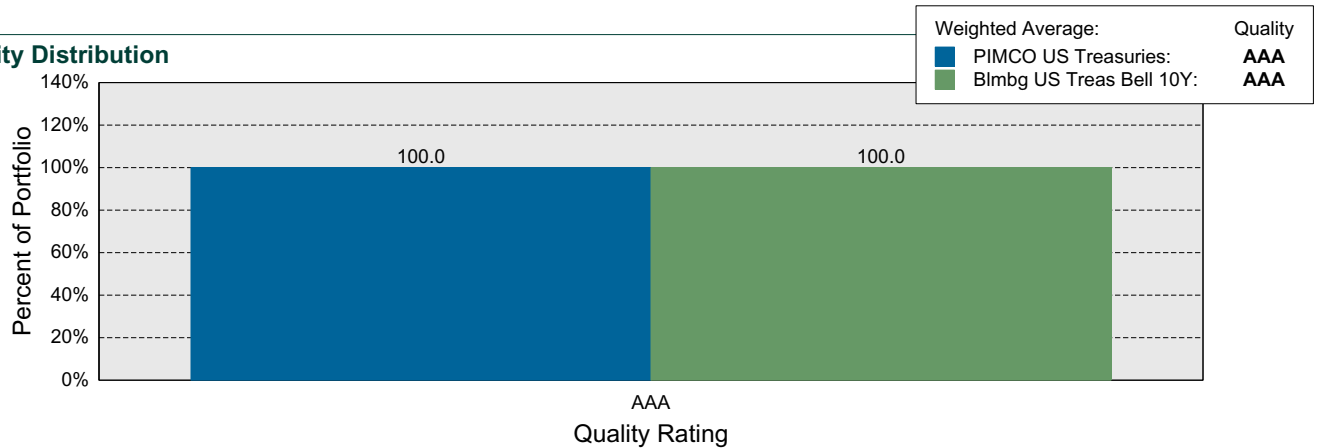
### Sector Distribution



### Duration Distribution



### Quality Distribution



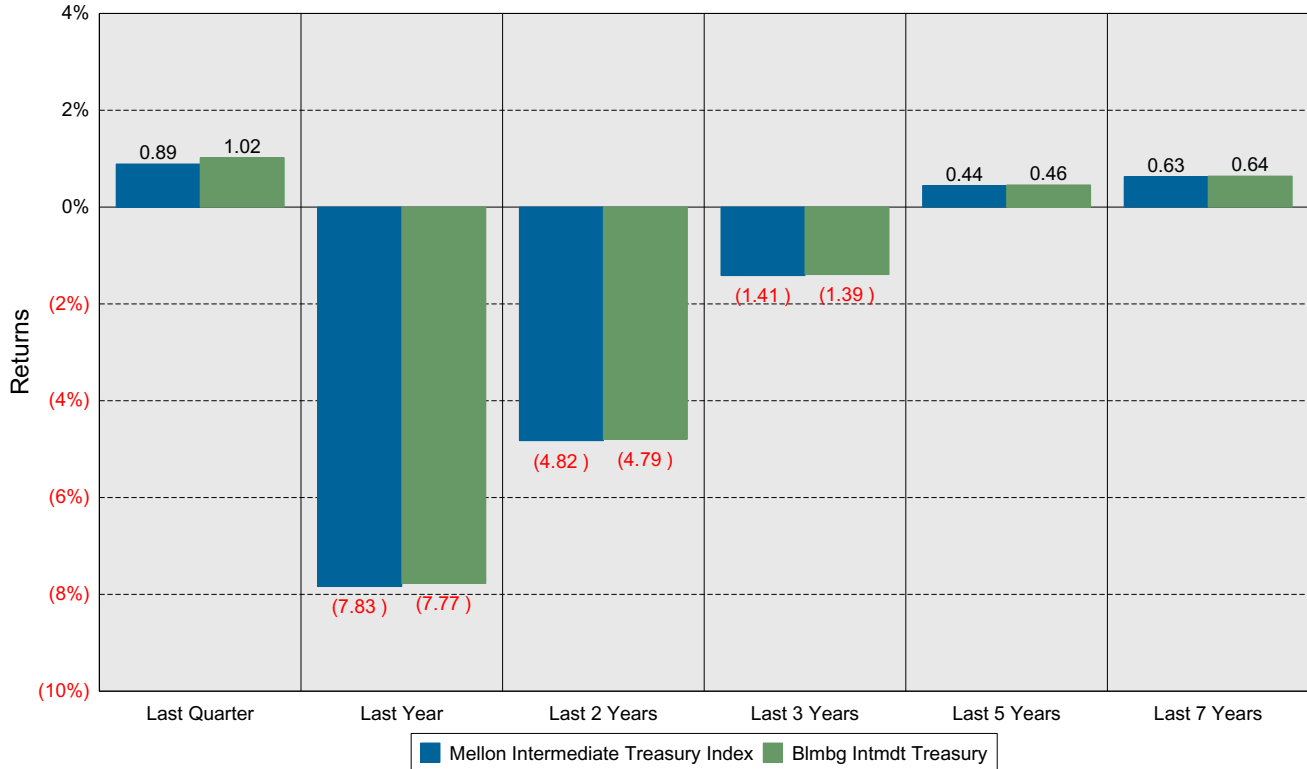
# Mellon Intermediate Treasury Index Period Ended December 31, 2022

## Return History

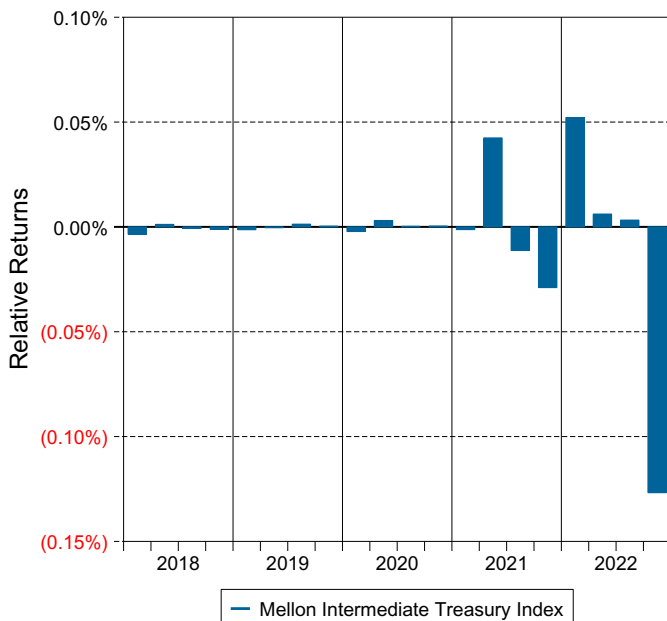
The Mellon Intermediate Treasury Index account was funded in March of 2021. Previous history reflects the manager's composite returns.

## Quarterly Summary and Highlights

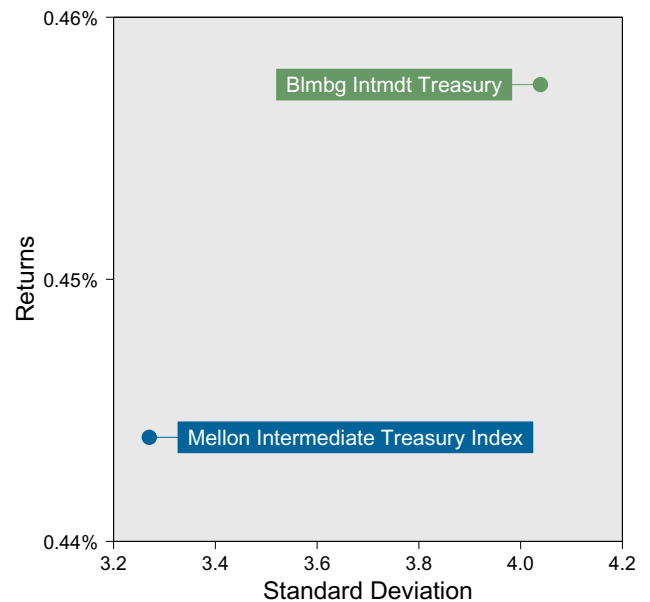
- Mellon Intermediate Treasury Index's portfolio underperformed the Blmbg Intmtd Treasury by 0.13% for the quarter and underperformed the Blmbg Intmtd Treasury for the year by 0.06%.



Relative Return vs Blmbg Intmtd Treasury



Annualized Five Year Risk vs Return

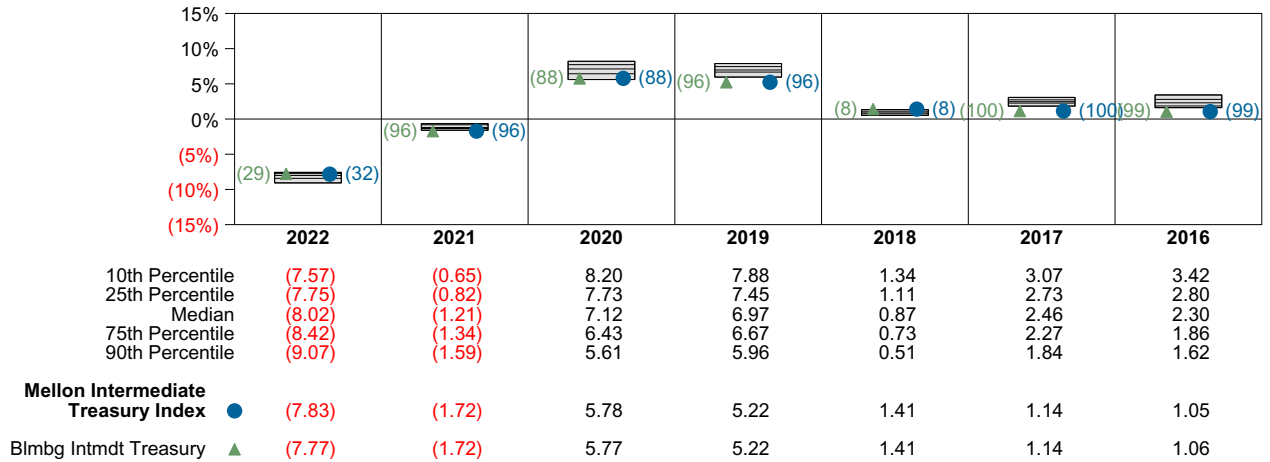


# Mellon Intermediate Treasury Index Return Analysis Summary

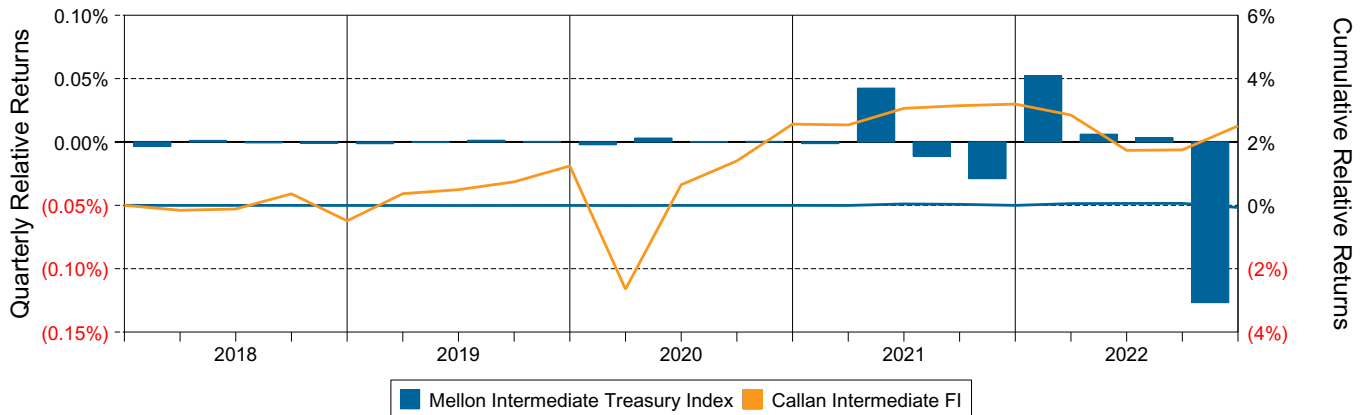
## Return Analysis

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.

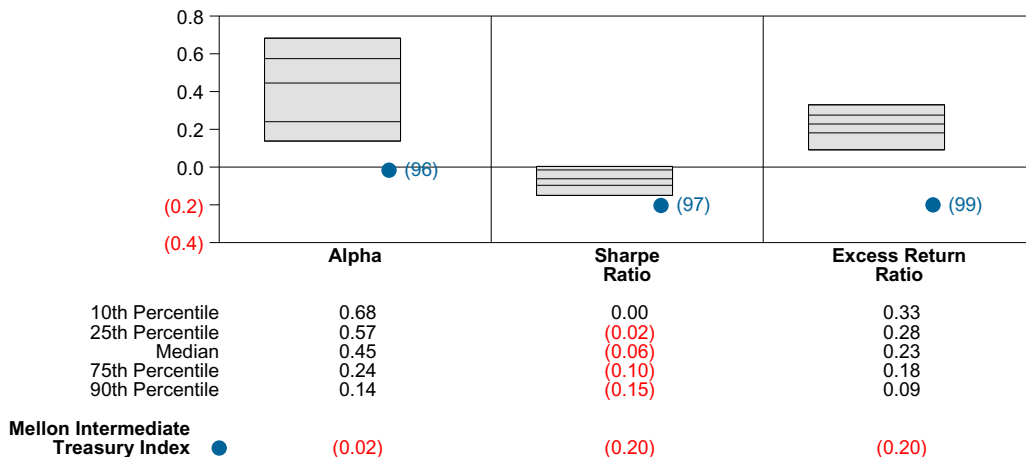
### Performance vs Callan Intermediate Fixed Income (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg Intmtd Treasury



### Risk Adjusted Return Measures vs Blmbg Intmtd Treasury Rankings Against Callan Intermediate Fixed Income (Gross) Five Years Ended December 31, 2022

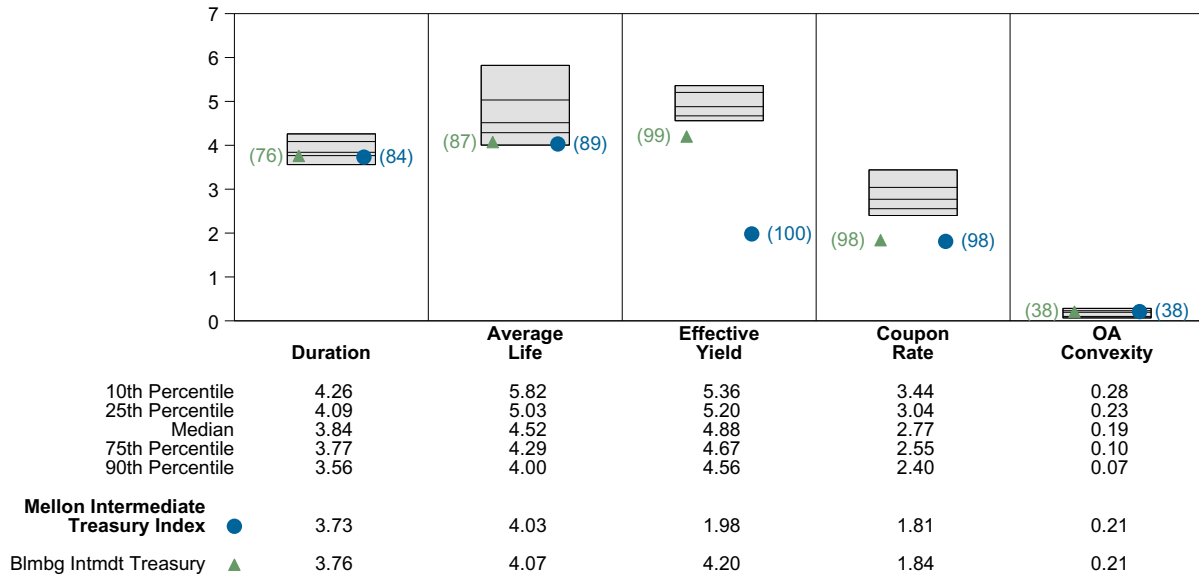


# Mellon Intermediate Treasury Index Bond Characteristics Analysis Summary

## Portfolio Characteristics

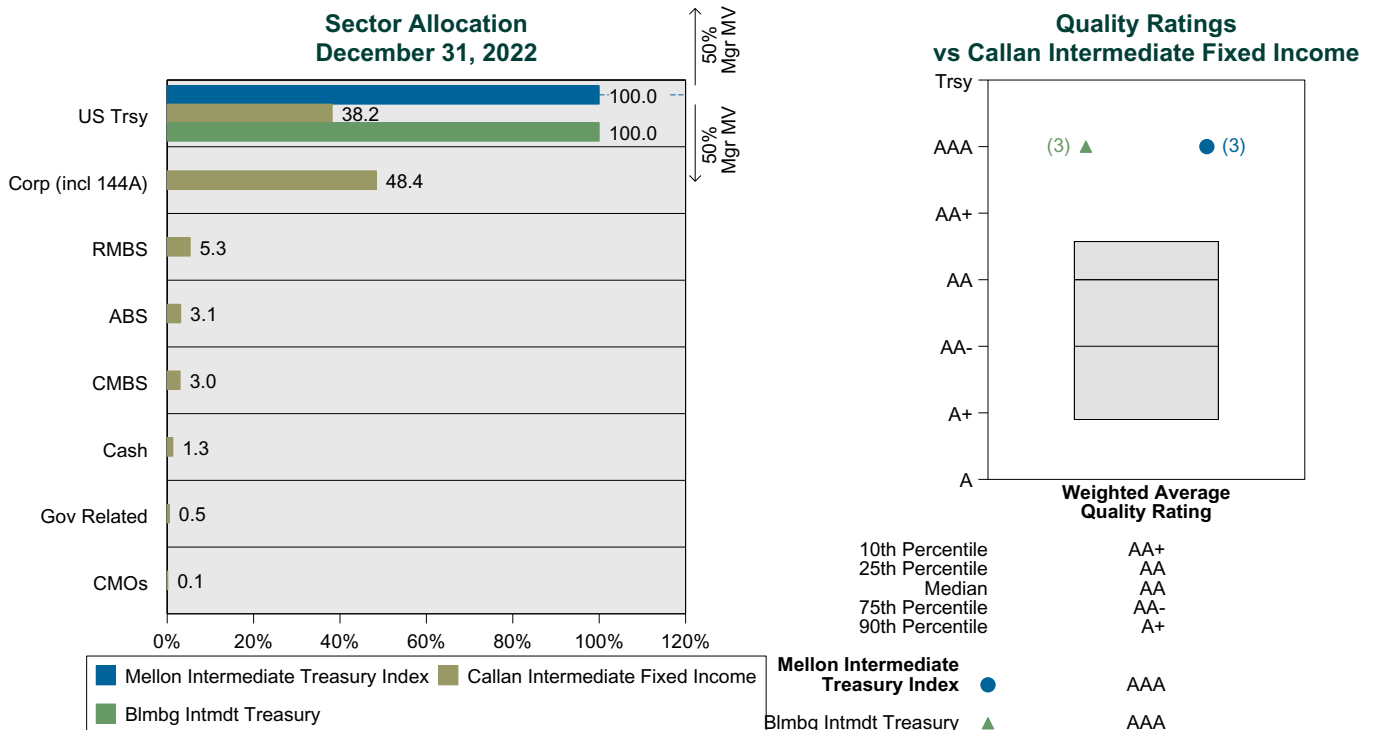
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Intermediate Fixed Income as of December 31, 2022



## 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.

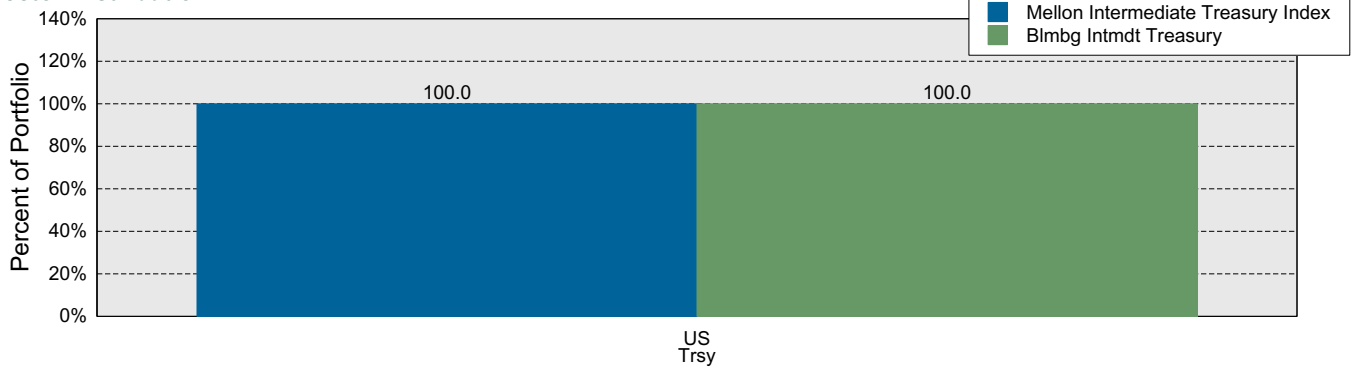


# Mellon Intermediate Treasury Index Portfolio Characteristics Summary As of December 31, 2022

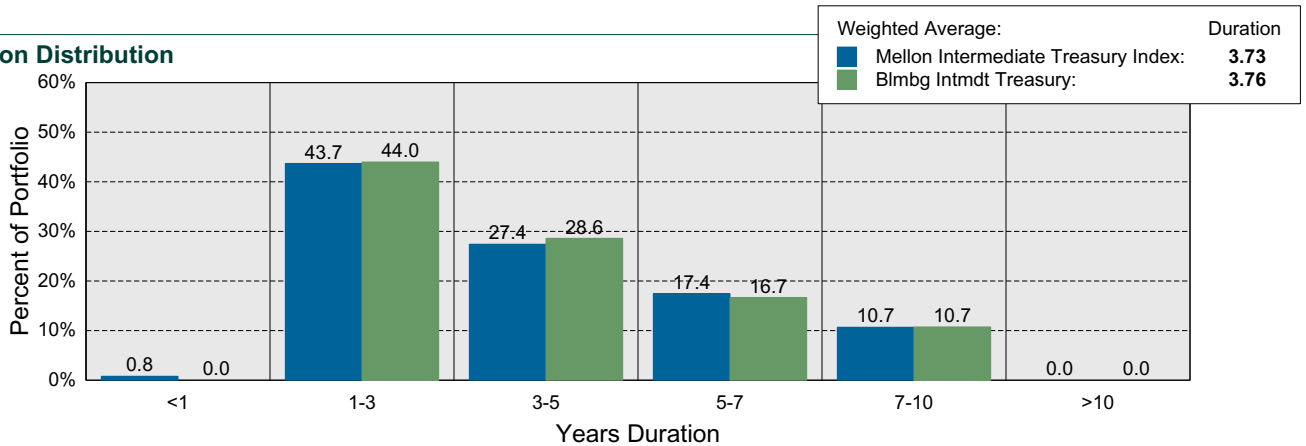
## Portfolio Structure Comparison

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.

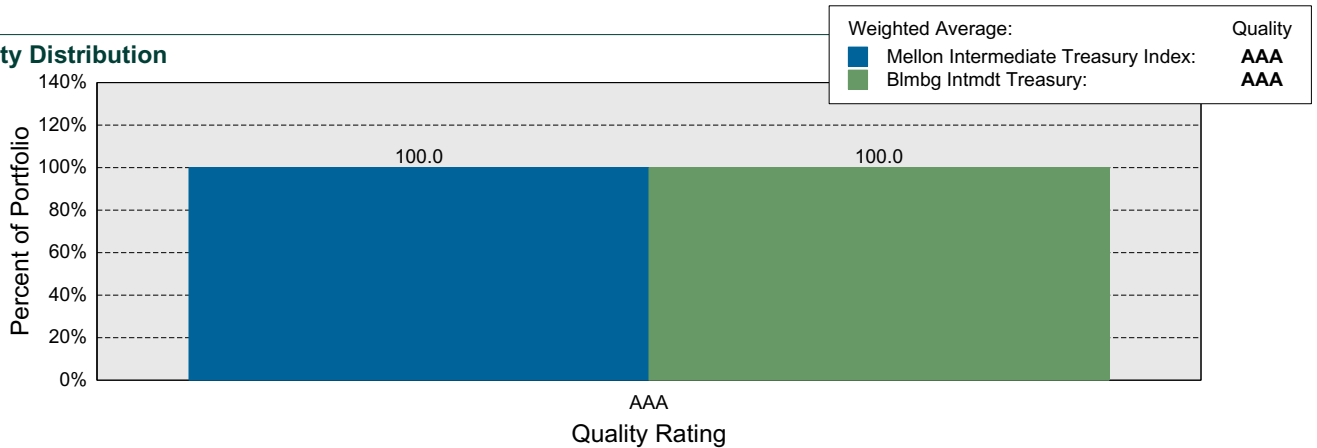
### Sector Distribution



### Duration Distribution



### Quality Distribution





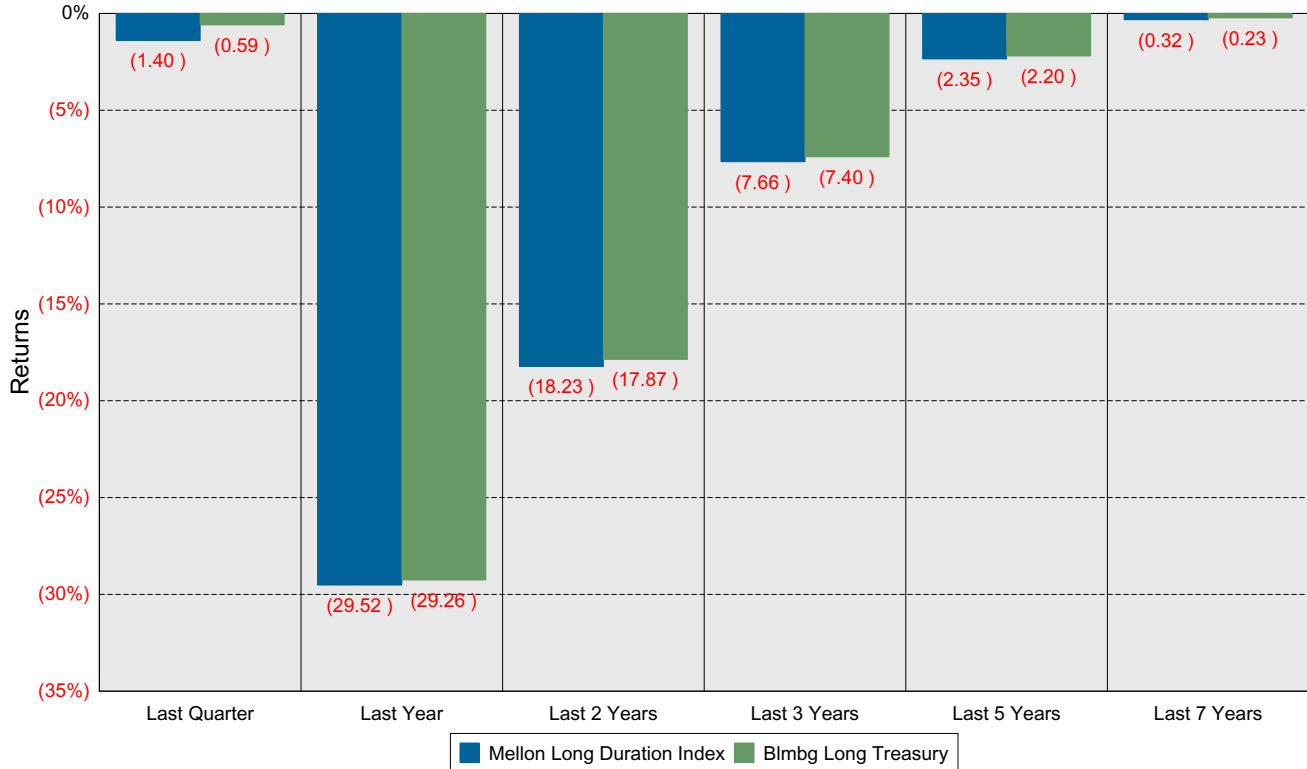
# Mellon Long Duration Index Period Ended December 31, 2022

## Return History

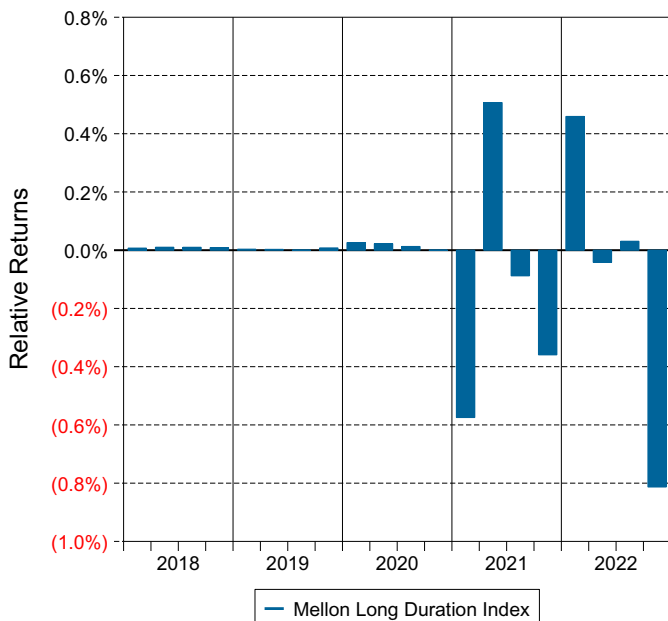
The Mellon Long Duration Index account was funded in March of 2021. Previous history reflects the manager's composite returns.

## Quarterly Summary and Highlights

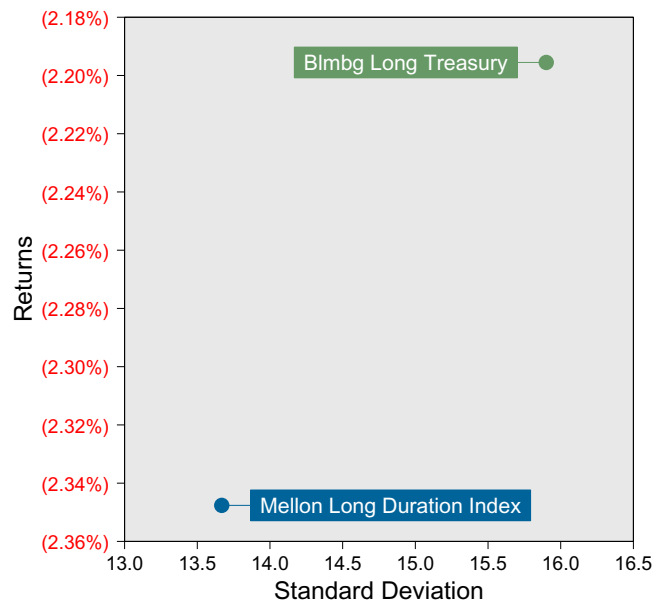
- Mellon Long Duration Index's portfolio underperformed the Blmbg Long Treasury by 0.81% for the quarter and underperformed the Blmbg Long Treasury for the year by 0.26%.



Relative Return vs Blmbg Long Treasury



Annualized Five Year Risk vs Return

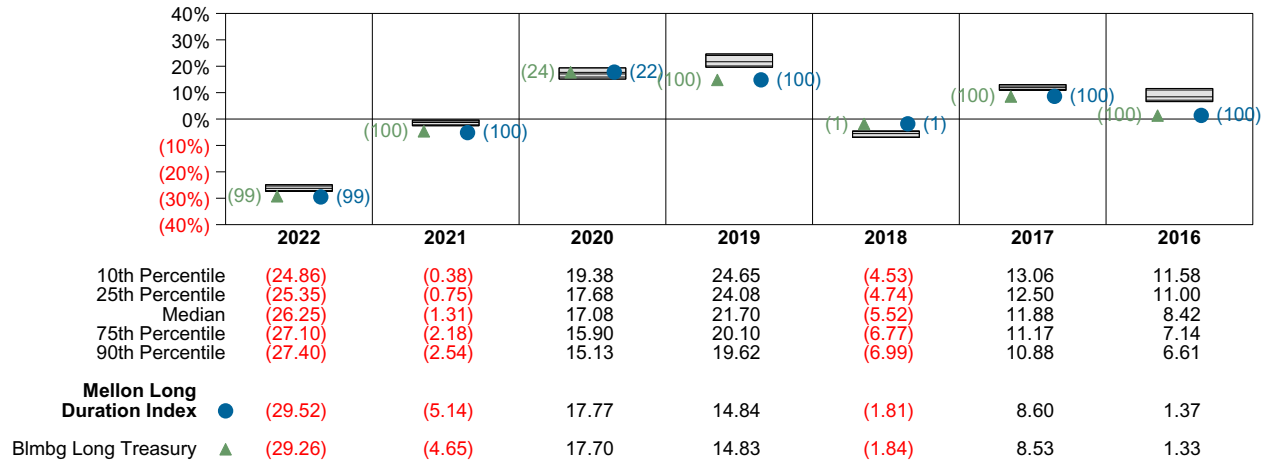


# Mellon Long Duration Index Return Analysis Summary

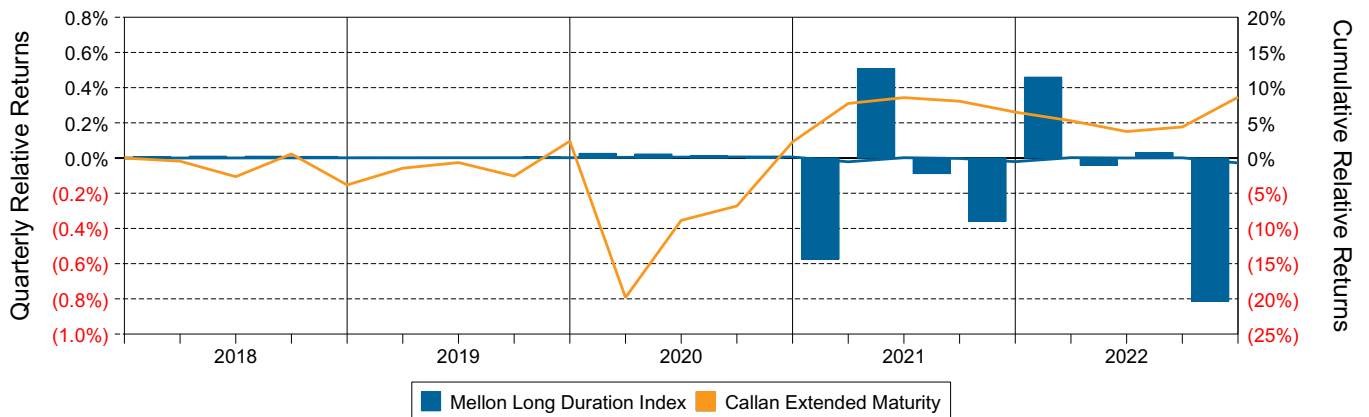
## Return Analysis

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.

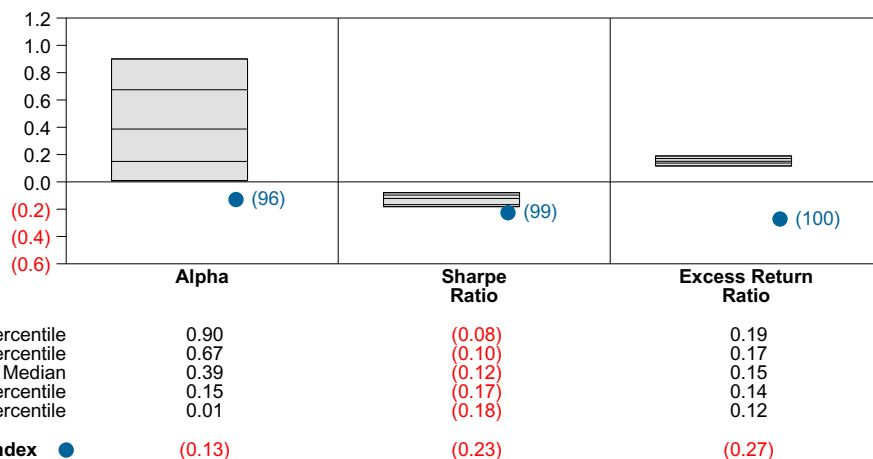
### Performance vs Callan Extended Maturity Fixed Income (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg Long Treasury



### Risk Adjusted Return Measures vs Blmbg Long Treasury Rankings Against Callan Extended Maturity Fixed Income (Gross) Five Years Ended December 31, 2022

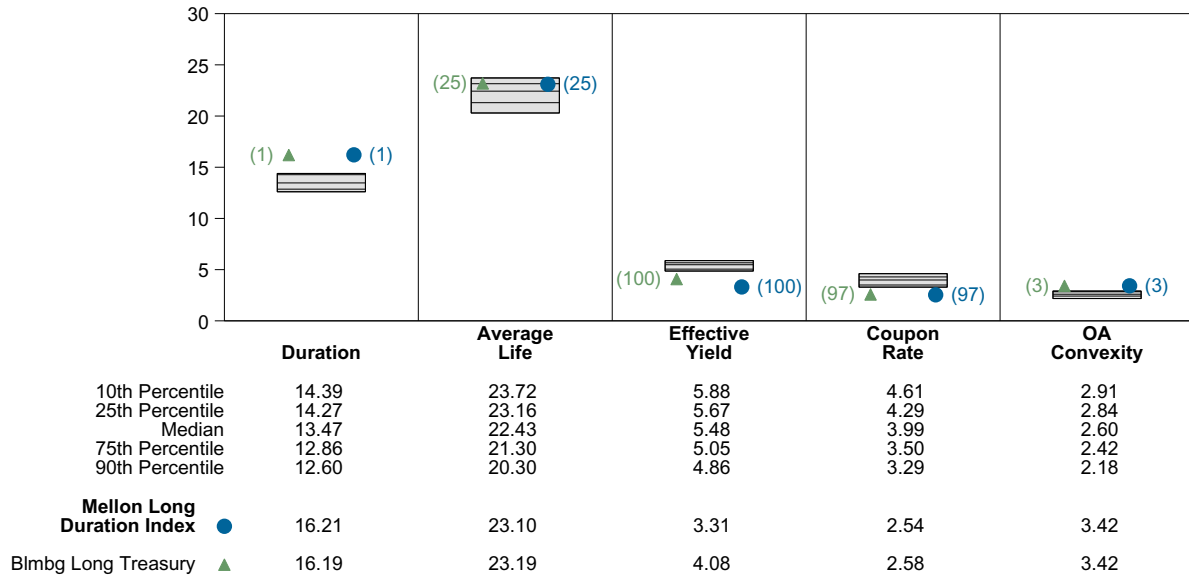


# Mellon Long Duration Index Bond Characteristics Analysis Summary

## Portfolio Characteristics

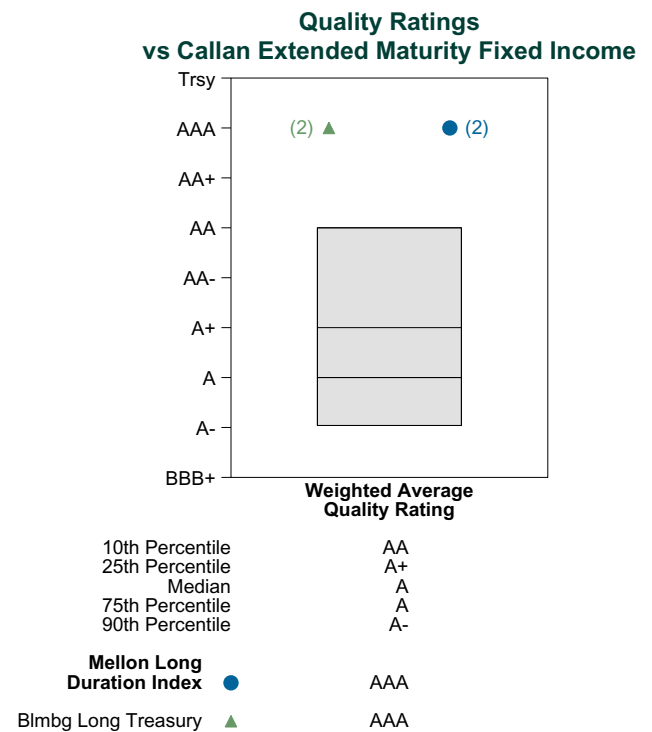
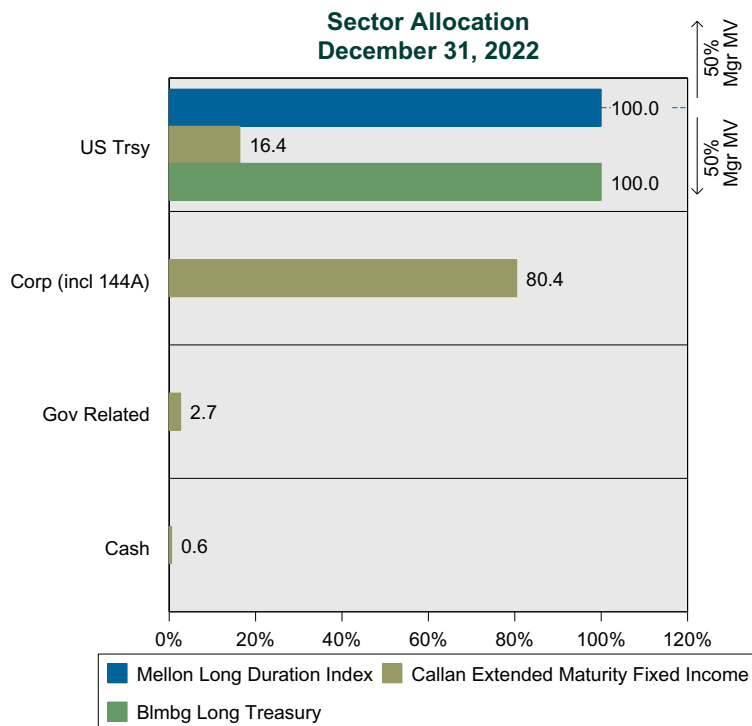
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Extended Maturity Fixed Income as of December 31, 2022



## 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.

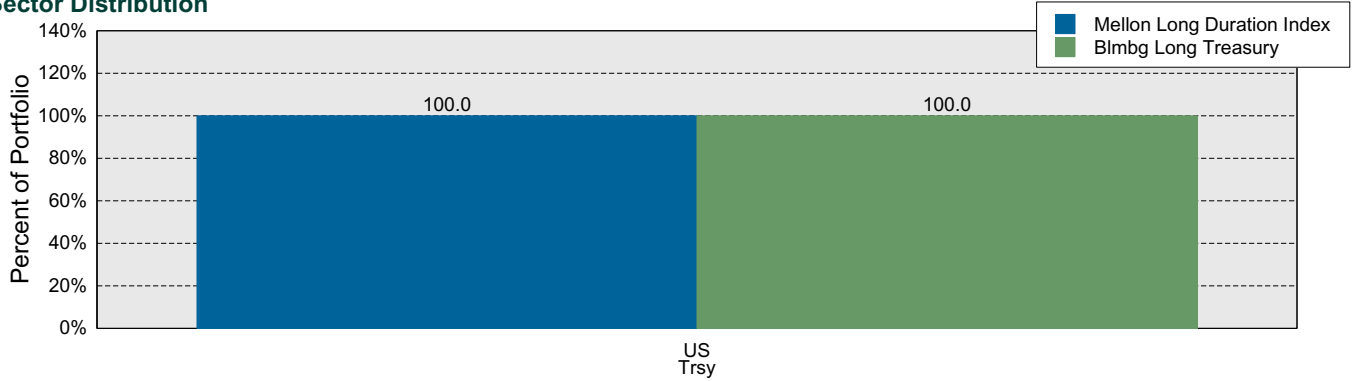


# Mellon Long Duration Index Portfolio Characteristics Summary As of December 31, 2022

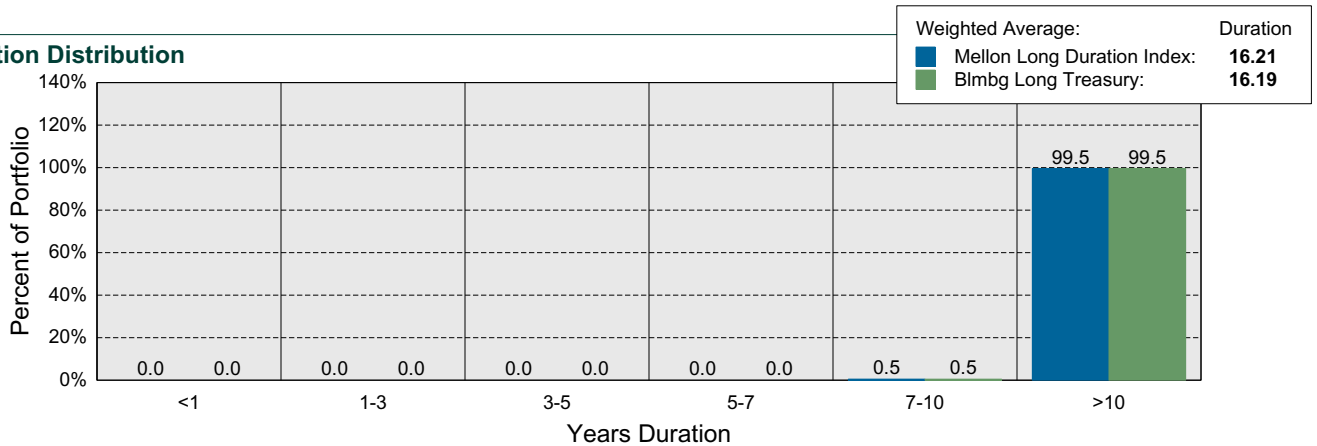
## Portfolio Structure Comparison

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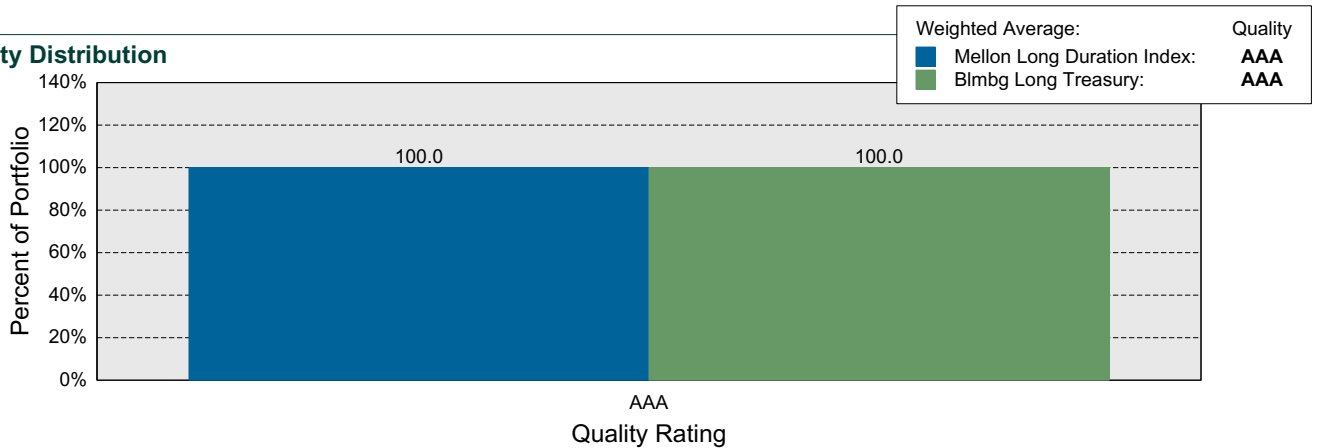
### Sector Distribution



### Duration Distribution



### Quality Distribution





# Fidelity HY CMBS

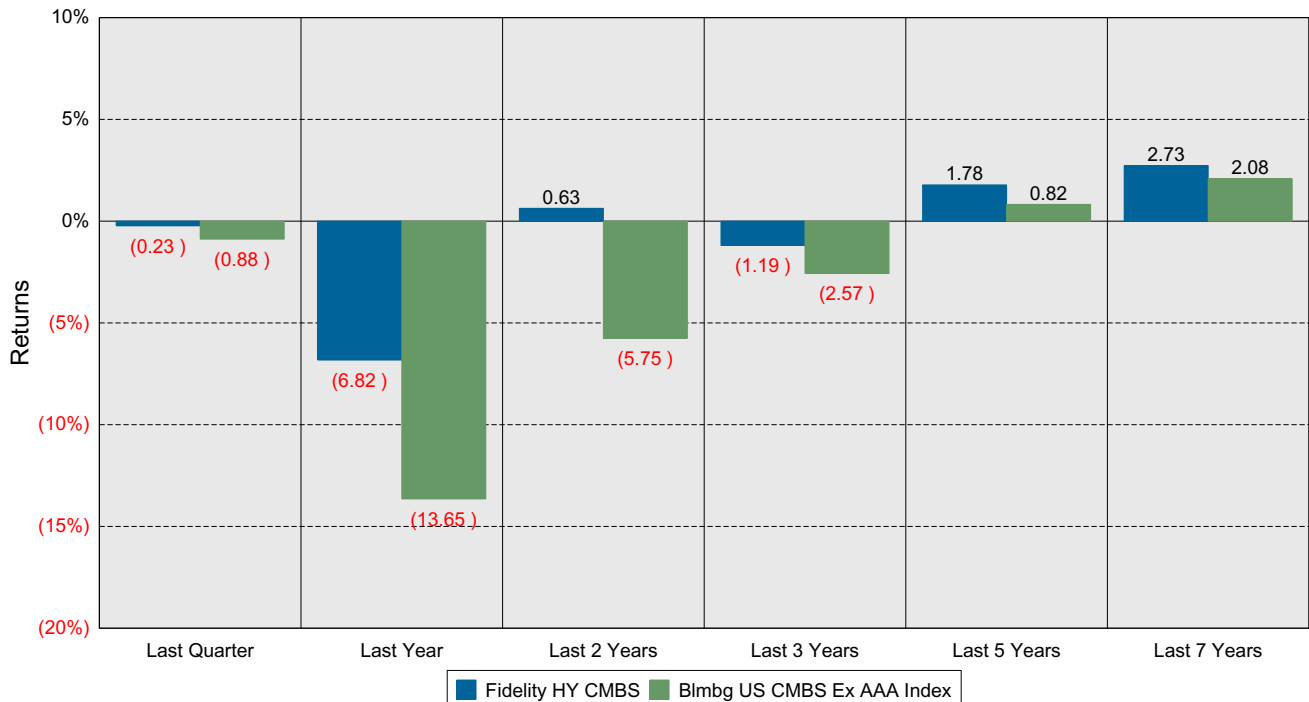
## Period Ended December 31, 2022

### Asset Class Membership Changes

Fidelity was included in the Opportunistic Fixed composite prior to 03/01/2021, included in the High Yield under the new fixed income structure from 03/01/2021 through 06/30/2022, and Legacy Fixed Income Structure, thereafter.

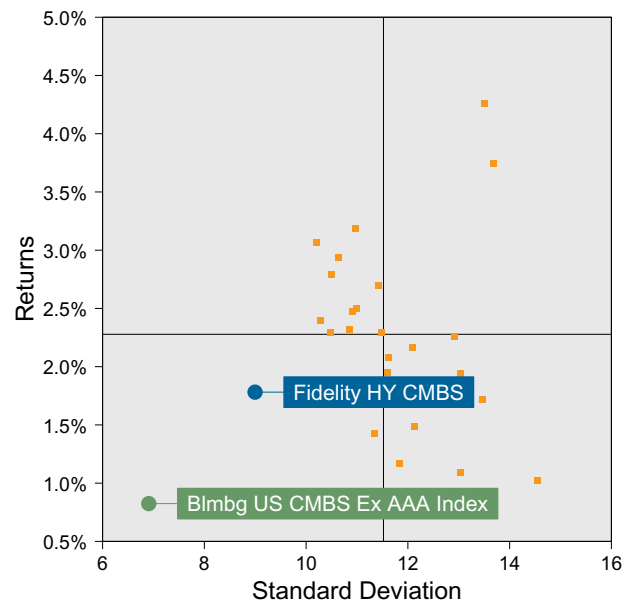
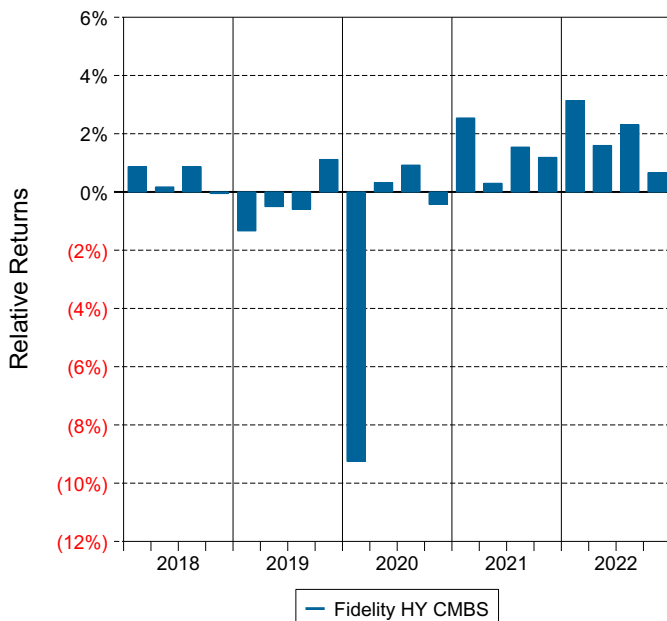
### Quarterly Summary and Highlights

- Fidelity HY CMBS's portfolio posted a (0.23)% return for the quarter placing it in the 100 percentile of the Callan Global Fixed High Yield group for the quarter and in the 3 percentile for the last year.
- Fidelity HY CMBS's portfolio outperformed the Blmbg US CMBS Ex AAA Index by 0.65% for the quarter and outperformed the Blmbg US CMBS Ex AAA Index for the year by 6.82%.



Relative Returns vs Blmbg US CMBS Ex AAA Index

Callan Global Fixed High Yield (Gross) Annualized Five Year Risk vs Return

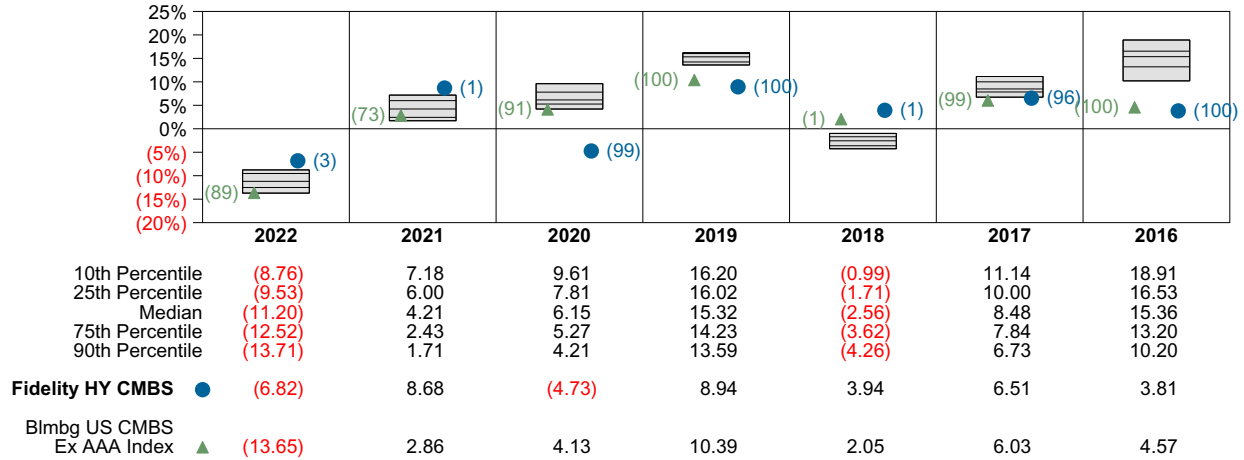


# Fidelity HY CMBS Return Analysis Summary

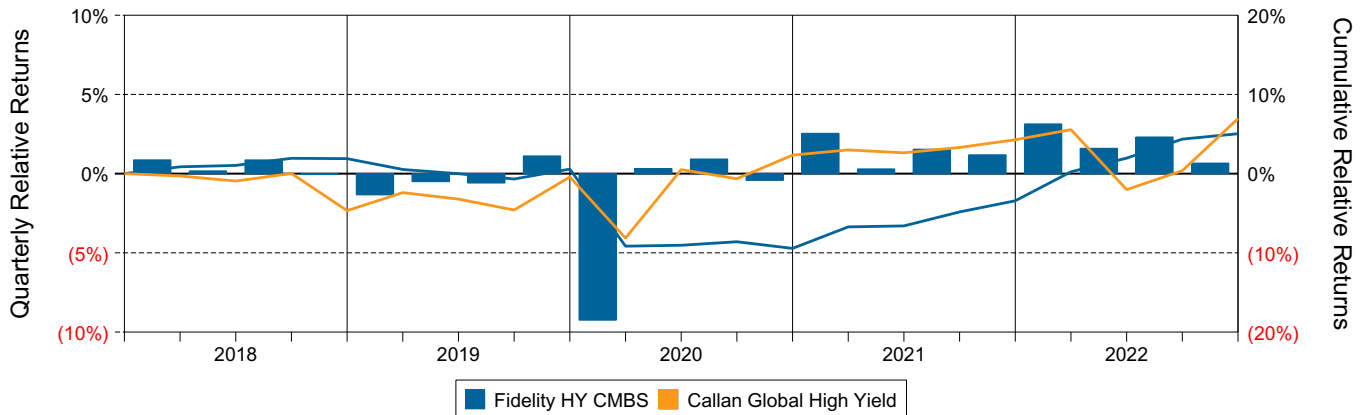
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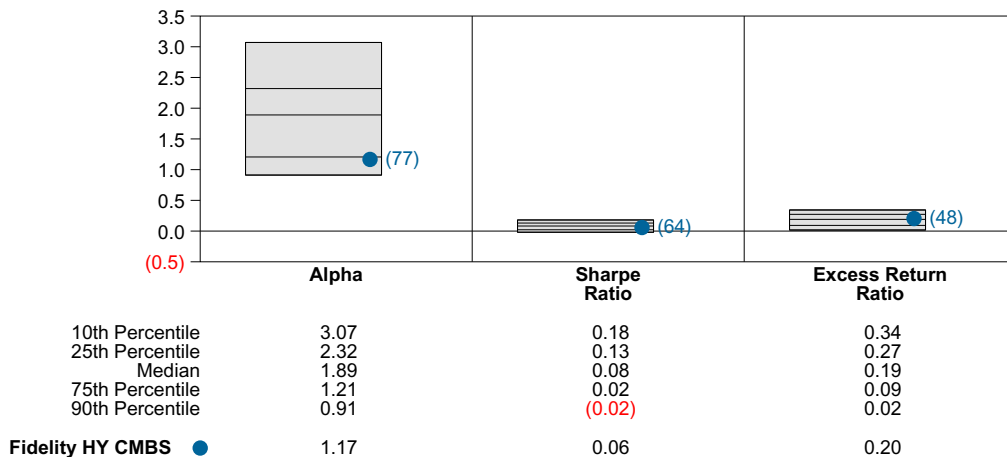
### Performance vs Callan Global Fixed High Yield (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg US CMBS Ex AAA Index



### Risk Adjusted Return Measures vs Blmbg US CMBS Ex AAA Index Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2022

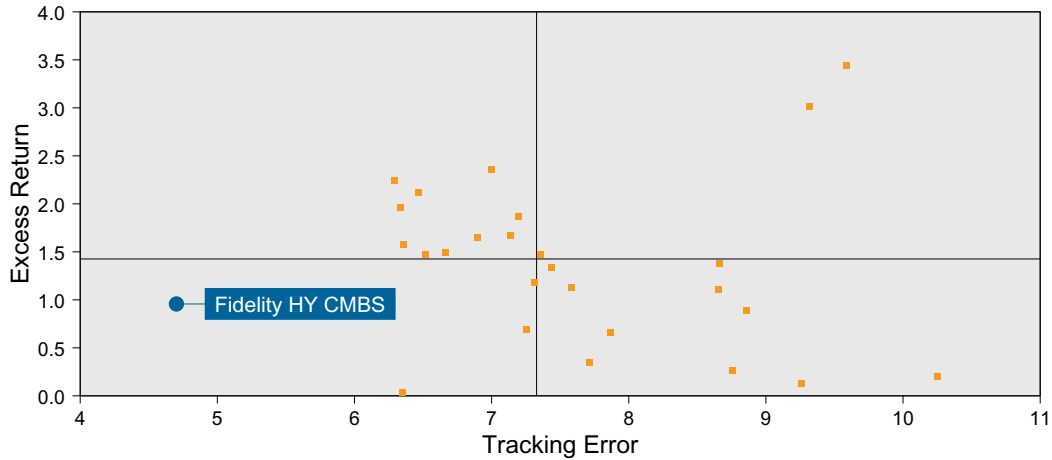


# Fidelity HY CMBS Risk Analysis Summary

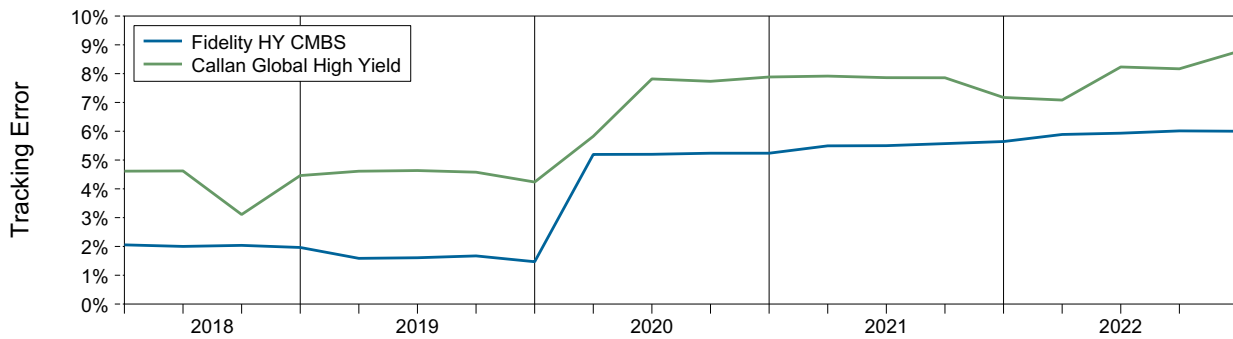
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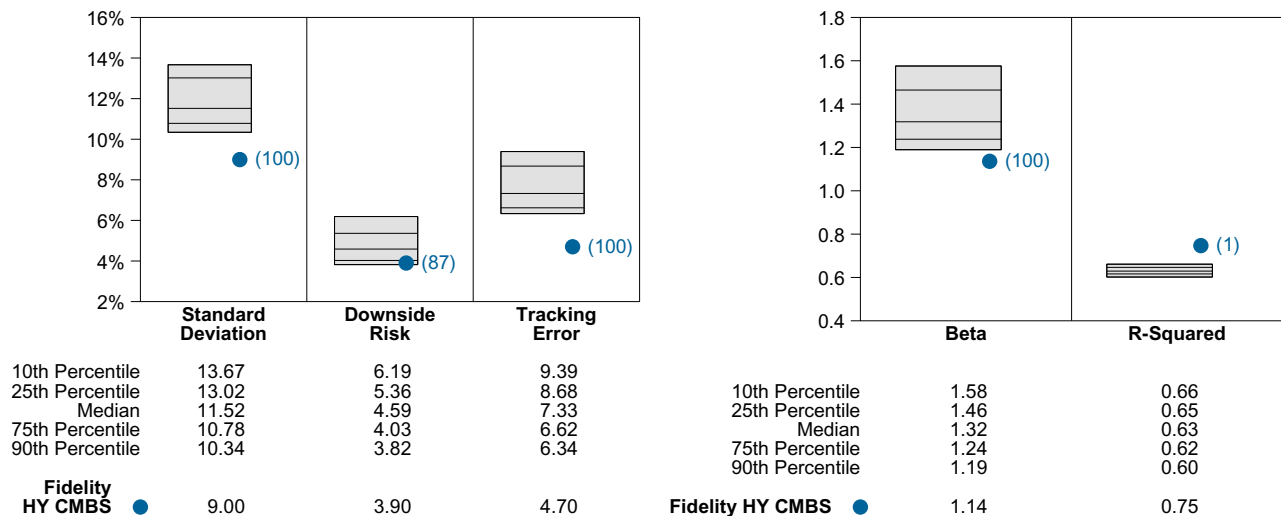
### Risk Analysis vs Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Blmbg US CMBS Ex AAA Index



### Risk Statistics Rankings vs Blmbg US CMBS Ex AAA Index Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended December 31, 2022



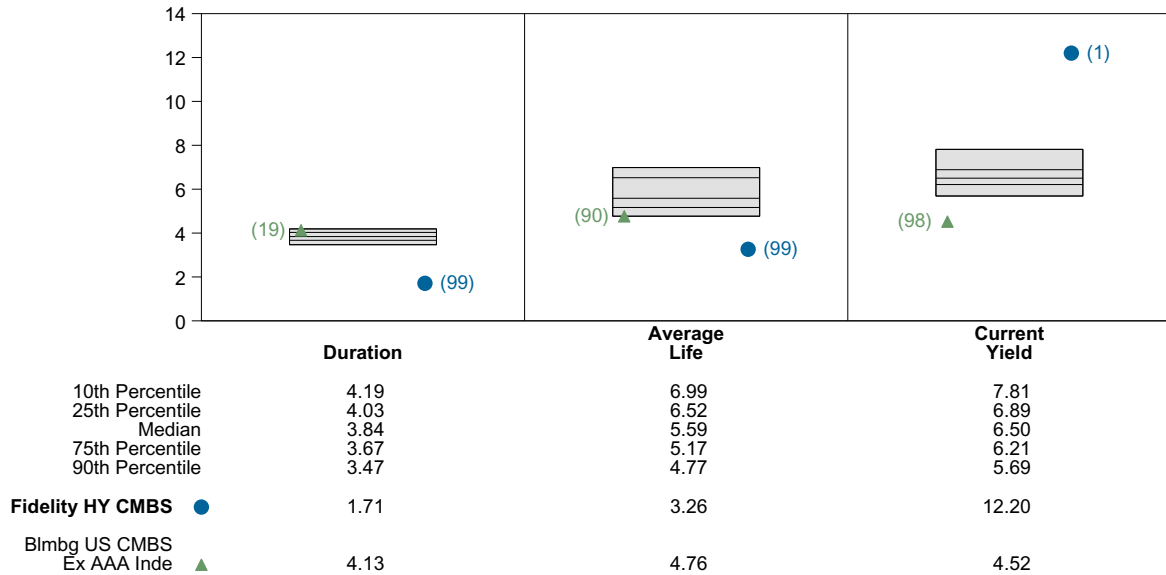


# Fidelity HY CMBS Bond Characteristics Analysis Summary

## Portfolio Characteristics

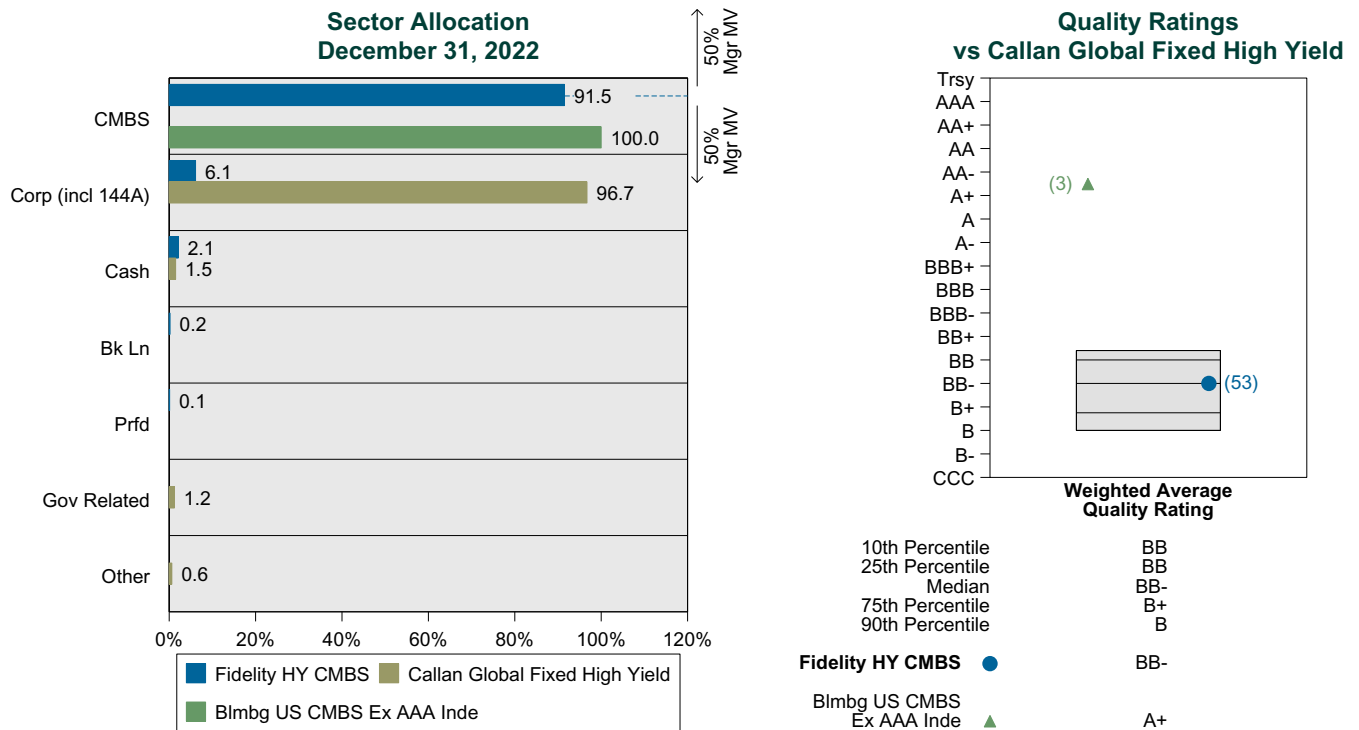
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed High Yield as of December 31, 2022



## 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.

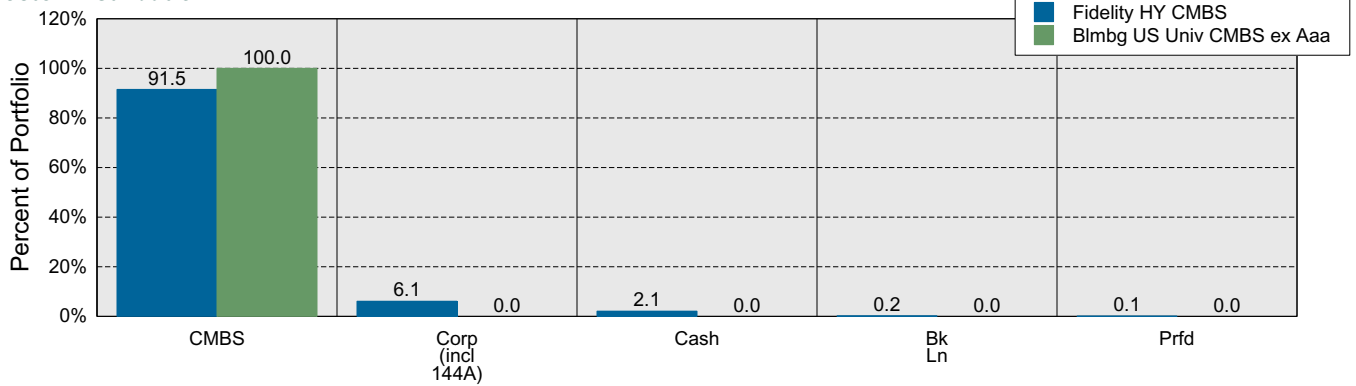


# Fidelity HY CMBS Portfolio Characteristics Summary As of December 31, 2022

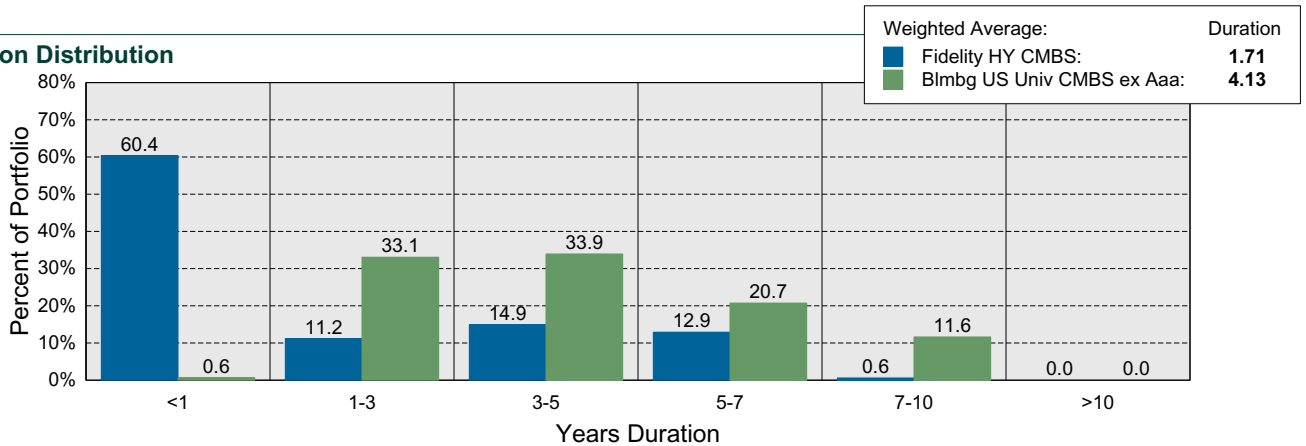
## Portfolio Structure Comparison

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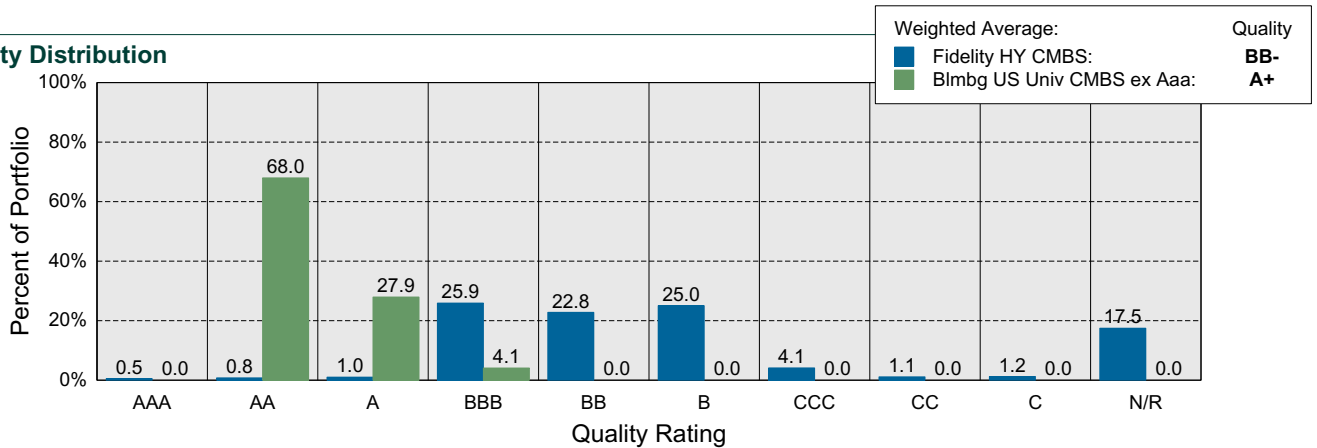
### Sector Distribution



### Duration Distribution



### Quality Distribution

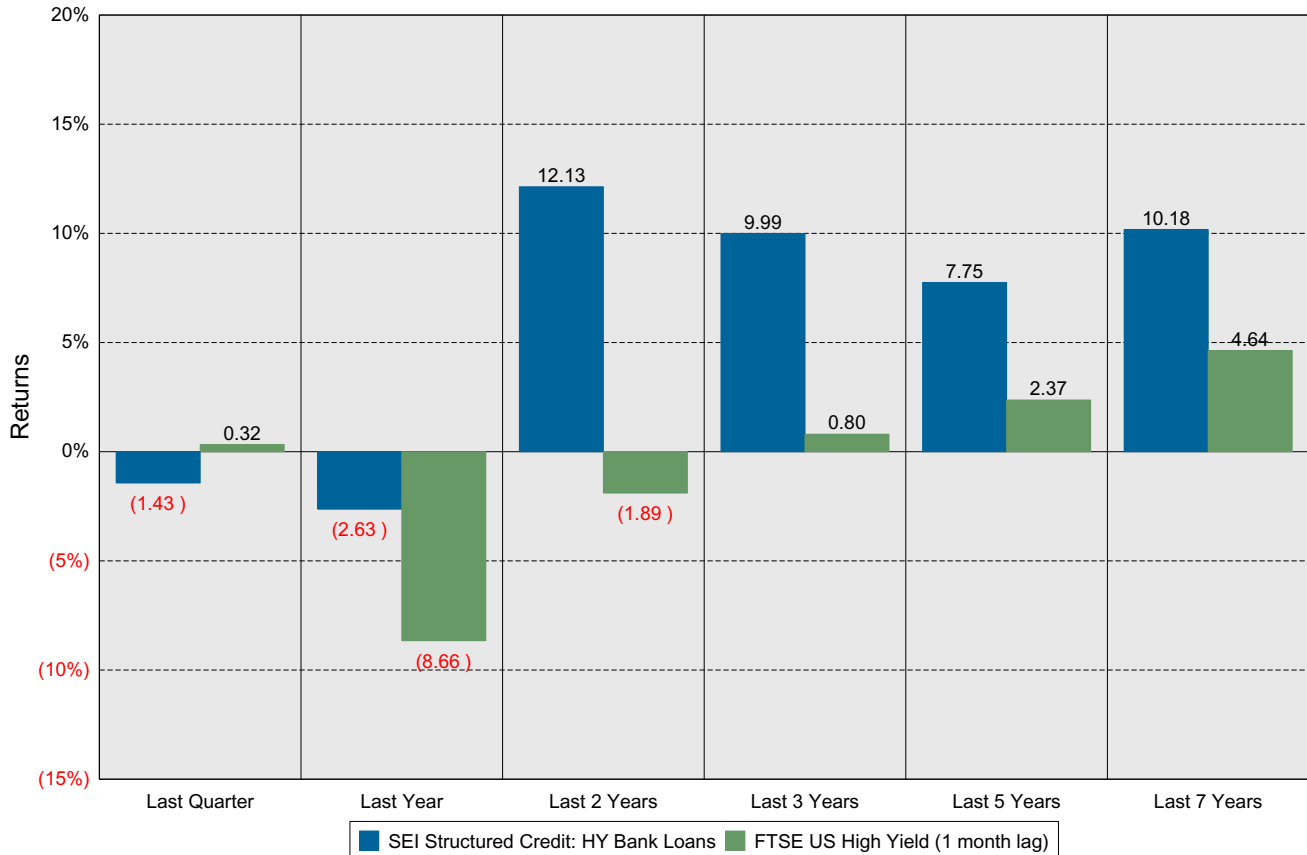


# SEI Structured Credit: HY Bank Loans

## Period Ended December 31, 2022

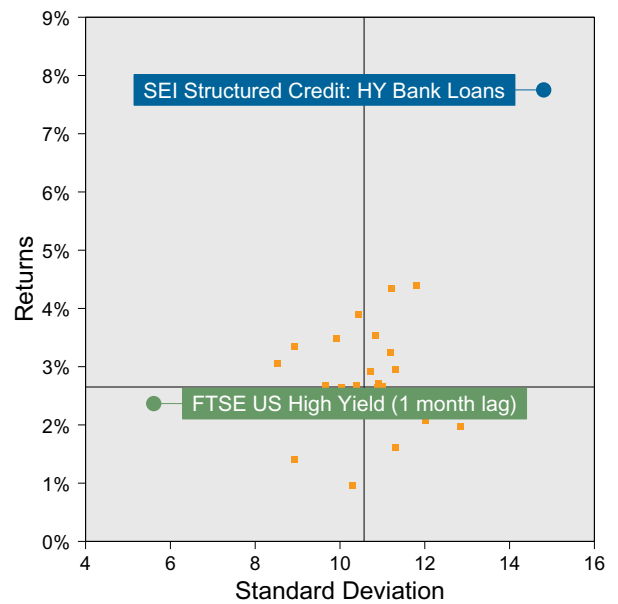
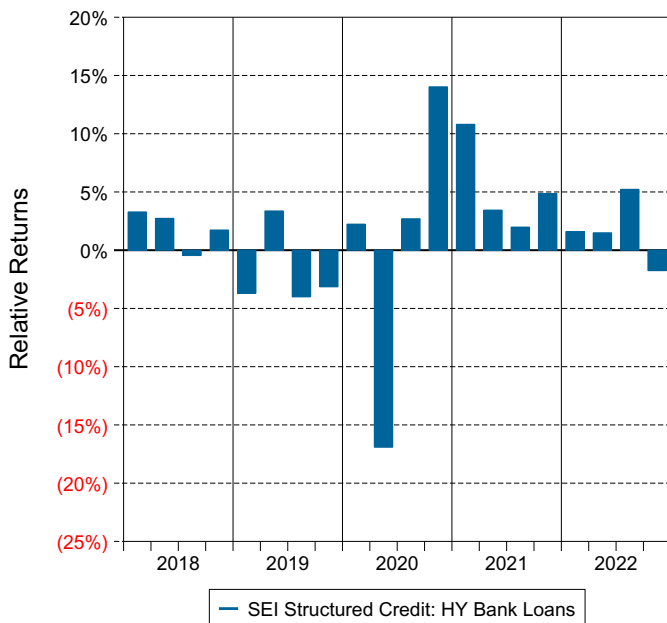
### Quarterly Summary and Highlights

- SEI Structured Credit: HY Bank Loans's portfolio posted a (1.43)% return for the quarter placing it in the 100 percentile of the Callan Multi-Sector Credit group for the quarter and in the 1 percentile for the last year.
- SEI Structured Credit: HY Bank Loans's portfolio underperformed the FTSE US High Yield (1 month lag) by 1.76% for the quarter and outperformed the FTSE US High Yield (1 month lag) for the year by 6.02%.



**Relative Returns vs FTSE US High Yield (1 month lag)**

**Callan Multi-Sector Credit (Gross) Annualized Five Year Risk vs Return**

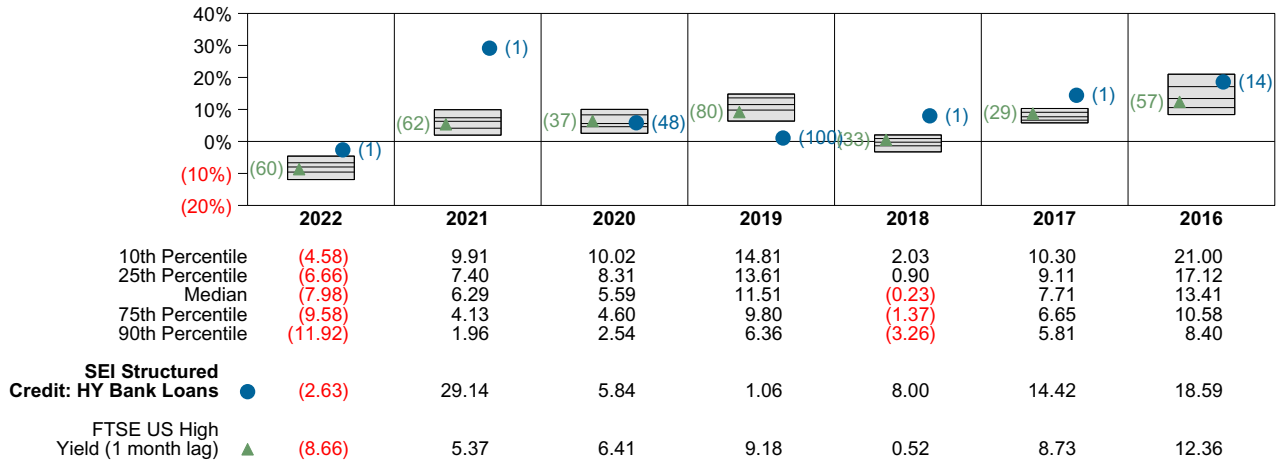


# SEI Structured Credit: HY Bank Loans Return Analysis Summary

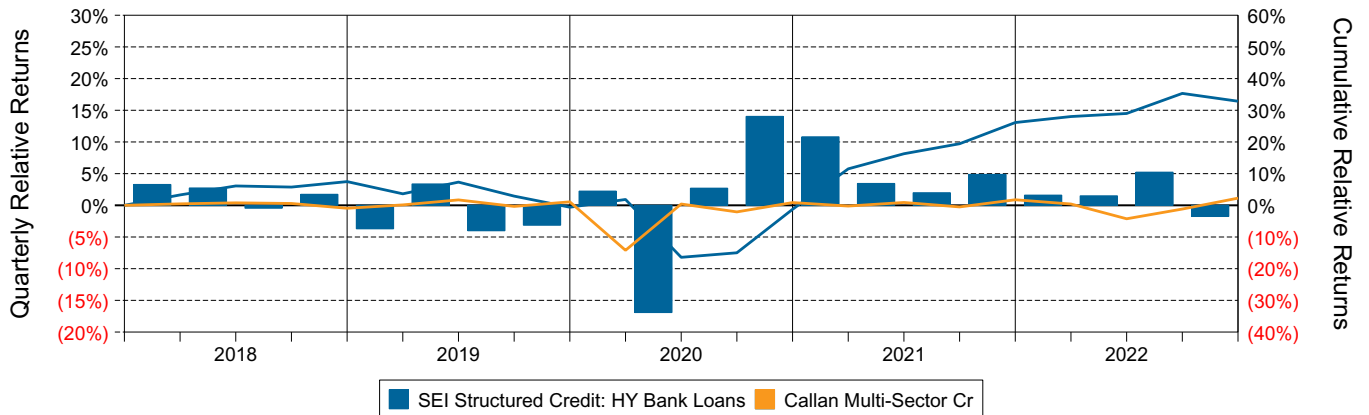
## Return Analysis

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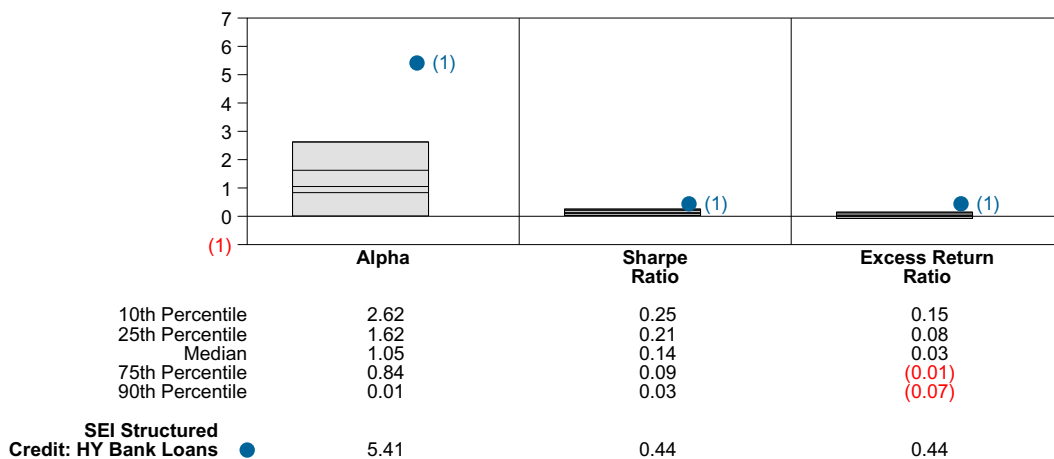
### Performance vs Callan Multi-Sector Credit (Gross)



### Cumulative and Quarterly Relative Returns vs FTSE US High Yield (1 month lag)



### Risk Adjusted Return Measures vs FTSE US High Yield (1 month lag) Rankings Against Callan Multi-Sector Credit (Gross) Five Years Ended December 31, 2022

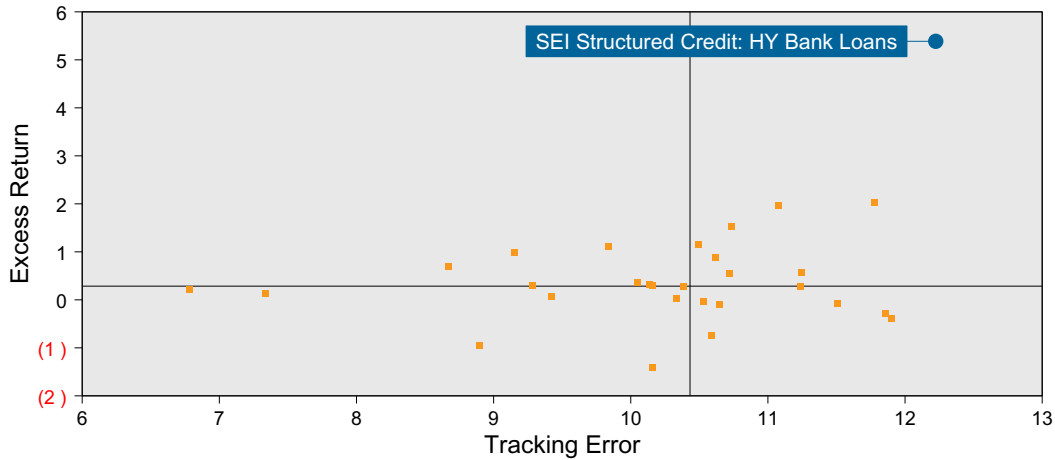


# SEI Structured Credit: HY Bank Loans Risk Analysis Summary

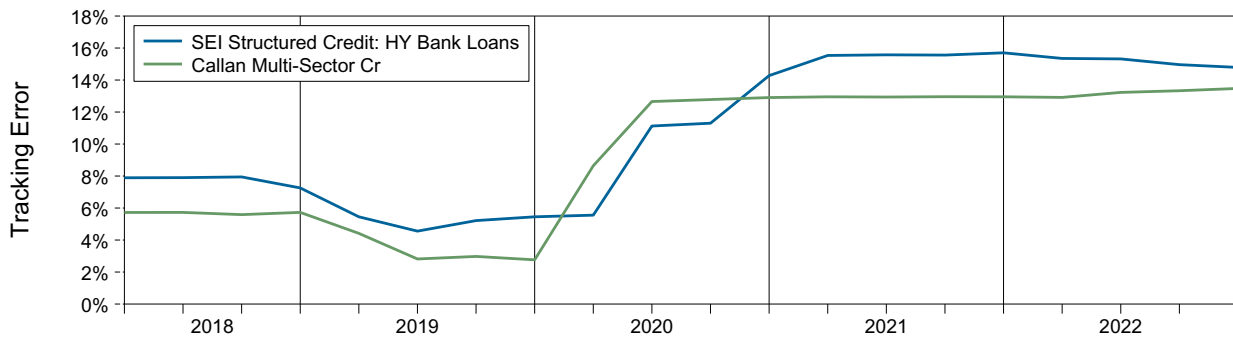
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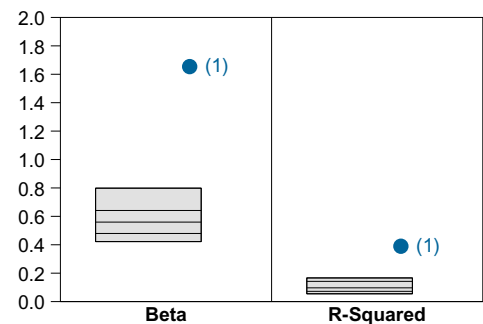
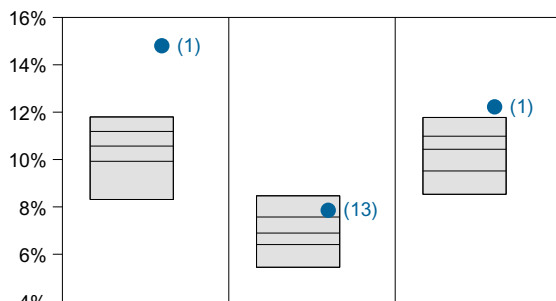
### Risk Analysis vs Callan Multi-Sector Credit (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs FTSE US High Yield (1 month lag)



### Risk Statistics Rankings vs FTSE US High Yield (1 month lag) Rankings Against Callan Multi-Sector Credit (Gross) Five Years Ended December 31, 2022



10th Percentile 11.80  
25th Percentile 11.19  
Median 10.57  
75th Percentile 9.92  
90th Percentile 8.31

10th Percentile 8.47  
25th Percentile 7.57  
Median 6.89  
75th Percentile 6.41  
90th Percentile 5.45

10th Percentile 11.78  
25th Percentile 10.98  
Median 10.43  
75th Percentile 9.52  
90th Percentile 8.53

10th Percentile 0.80  
25th Percentile 0.64  
Median 0.56  
75th Percentile 0.48  
90th Percentile 0.42

10th Percentile 0.17  
25th Percentile 0.14  
Median 0.10  
75th Percentile 0.07  
90th Percentile 0.05

SEI Structured Credit: HY Bank Loans ● 14.80

7.86

12.22

SEI Structured Credit: HY Bank Loans ● 1.65

0.39

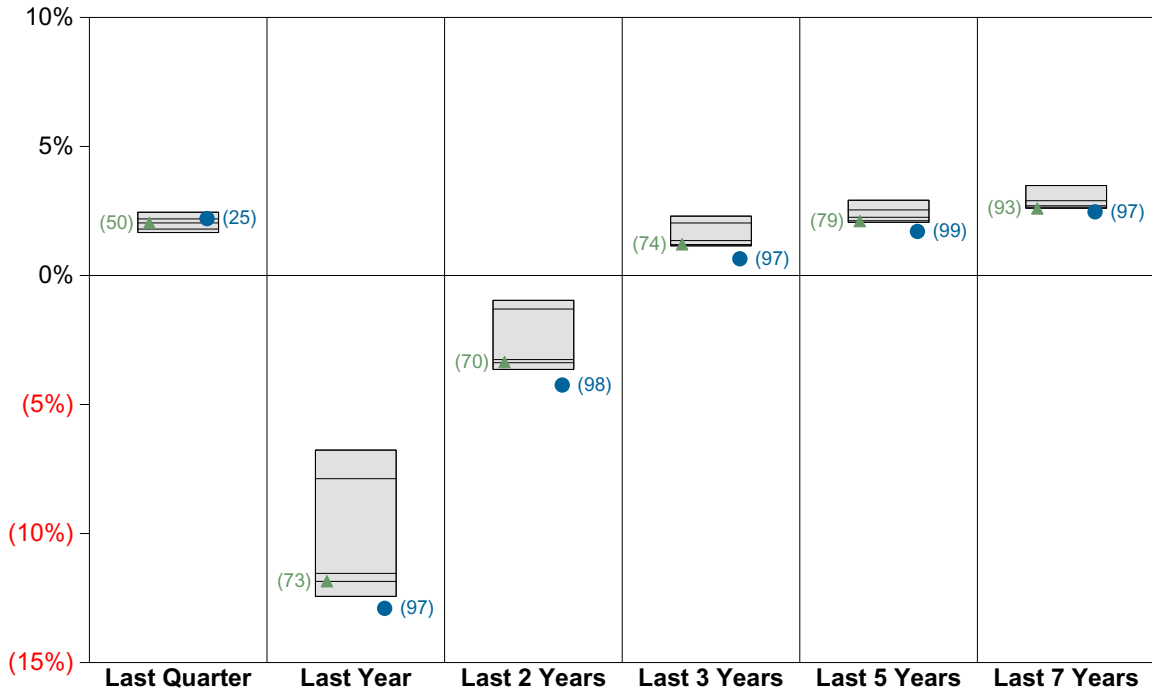


# Inflation Protection (TIPS) Period Ended December 31, 2022

## Quarterly Summary and Highlights

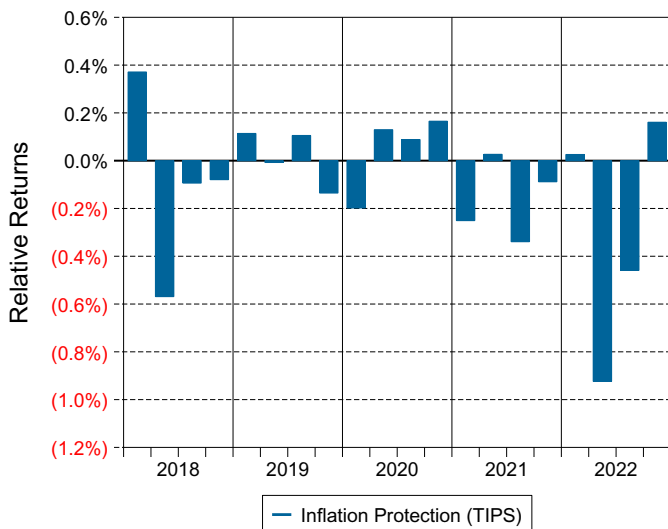
- Inflation Protection (TIPS)'s portfolio posted a 2.20% return for the quarter placing it in the 25 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 97 percentile for the last year.
- Inflation Protection (TIPS)'s portfolio outperformed the Blmbg TIPS by 0.16% for the quarter and underperformed the Blmbg TIPS for the year by 1.05%.

## Performance vs Callan Inflation Linked Bonds (Gross)

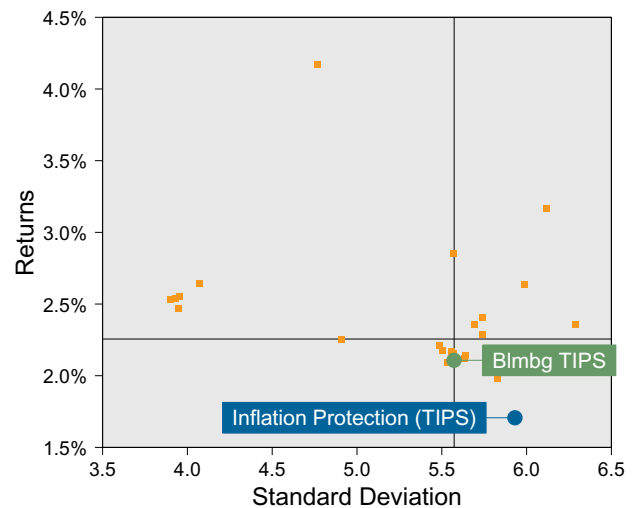


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	2.45	(6.77)	(0.96)	2.30	2.92	3.49
25th Percentile	2.19	(7.87)	(1.30)	2.03	2.54	2.90
Median	2.04	(11.54)	(3.26)	1.35	2.26	2.70
75th Percentile	1.80	(11.86)	(3.38)	1.20	2.12	2.65
90th Percentile	1.66	(12.44)	(3.64)	1.15	2.06	2.61
<b>Inflation Protection (TIPS)</b> ●	2.20	(12.90)	(4.25)	0.65	1.71	2.47
Blmbg TIPS ▲	2.04	(11.85)	(3.35)	1.21	2.11	2.60

Relative Return vs Blmbg TIPS



Callan Inflation Linked Bonds (Gross)  
Annualized Five Year Risk vs Return

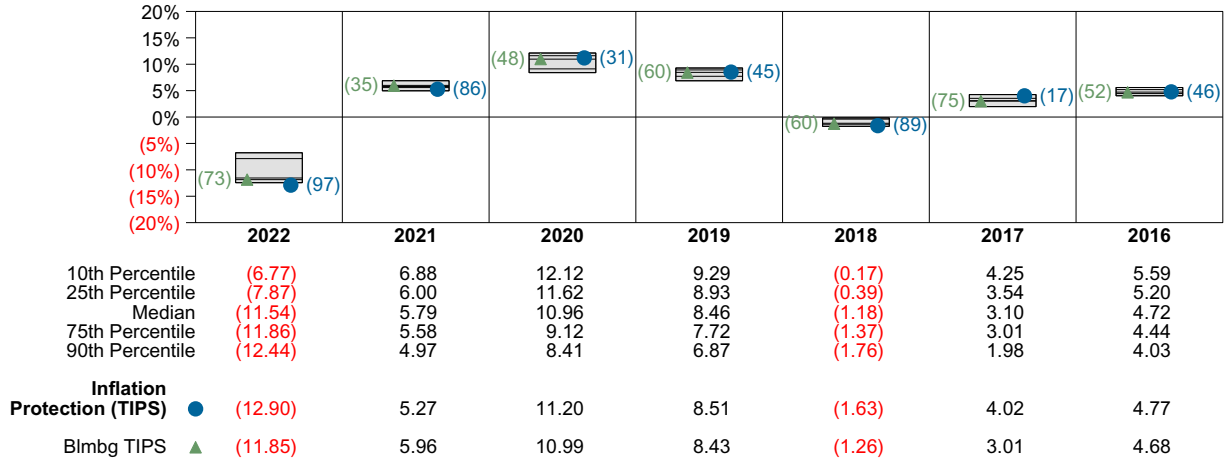


# Inflation Protection (TIPS) Return Analysis Summary

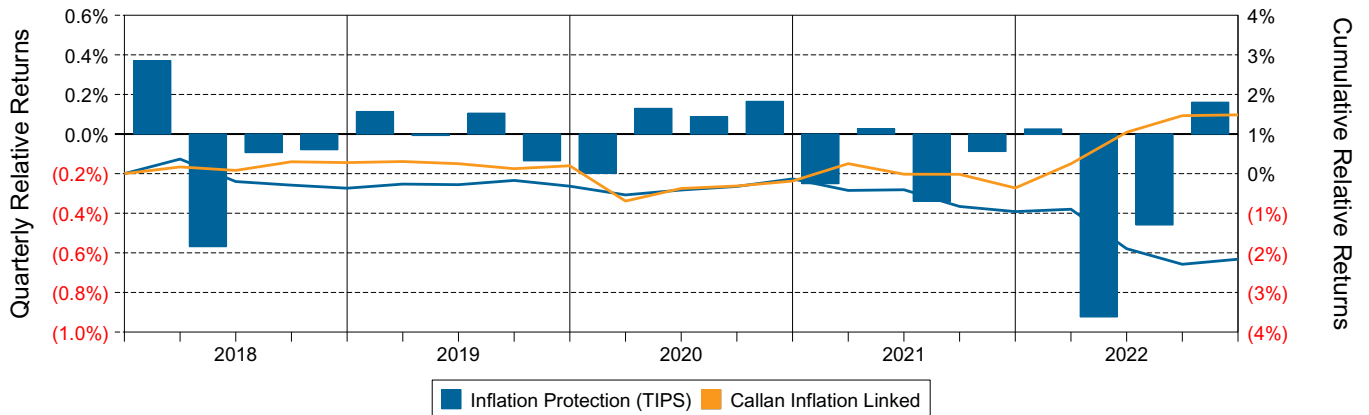
## Return Analysis

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.

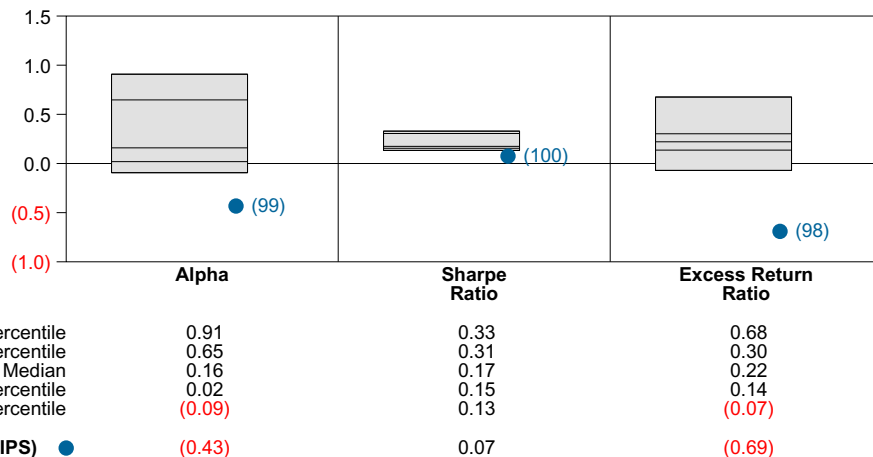
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg TIPS



### Risk Adjusted Return Measures vs Blmbg TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



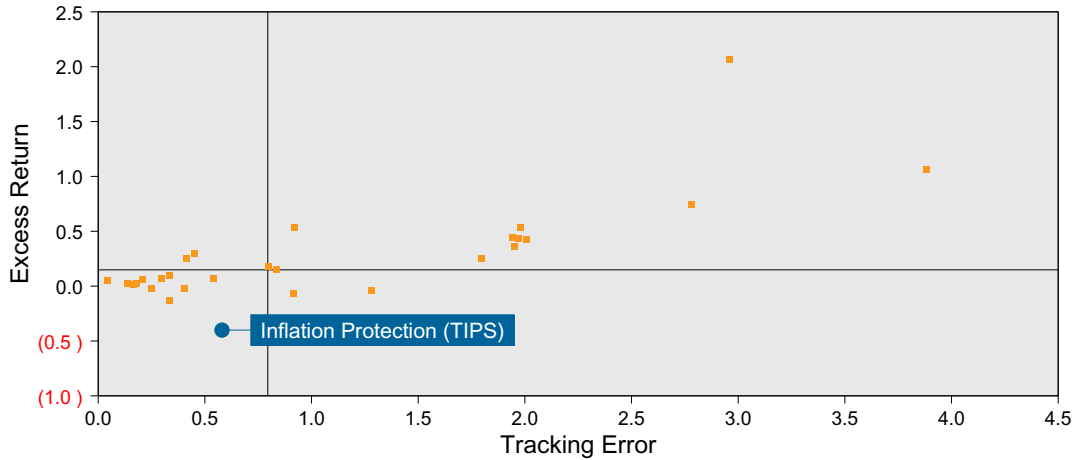


# Inflation Protection (TIPS) Risk Analysis Summary

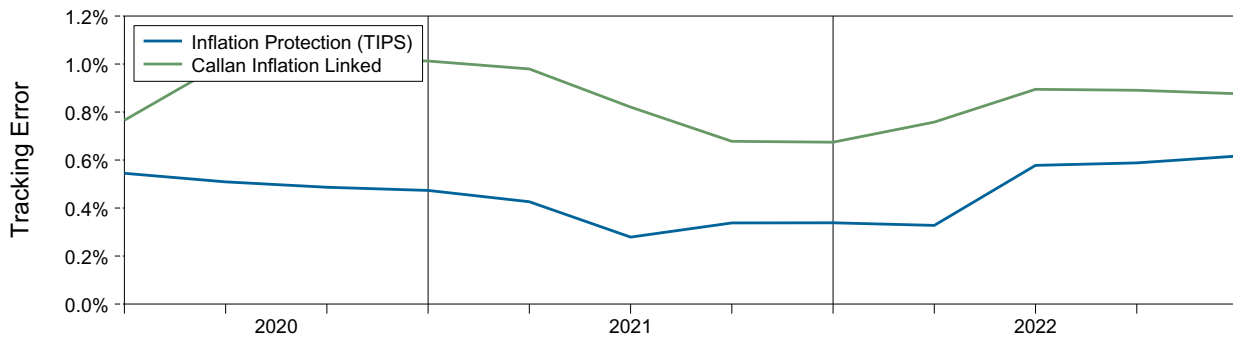
## Risk Analysis

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.

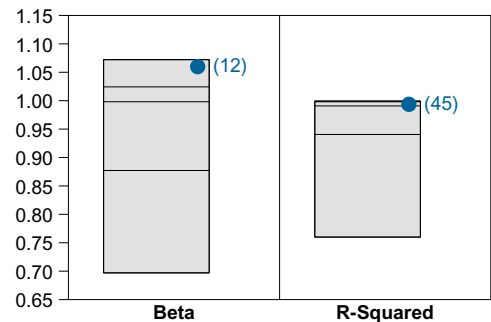
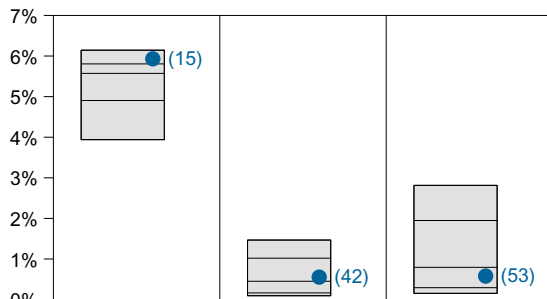
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Bloomberg TIPS



### Risk Statistics Rankings vs Bloomberg TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



	Standard Deviation	Downside Risk	Tracking Error
10th Percentile	6.14	1.47	2.81
25th Percentile	5.81	1.02	1.95
Median	5.57	0.45	0.80
75th Percentile	4.90	0.16	0.29
90th Percentile	3.94	0.10	0.15

	Beta	R-Squared
10th Percentile	1.07	1.00
25th Percentile	1.02	1.00
Median	1.00	0.99
75th Percentile	0.88	0.94
90th Percentile	0.70	0.76

**Inflation Protection (TIPS)** ● 5.93      0.55      0.58

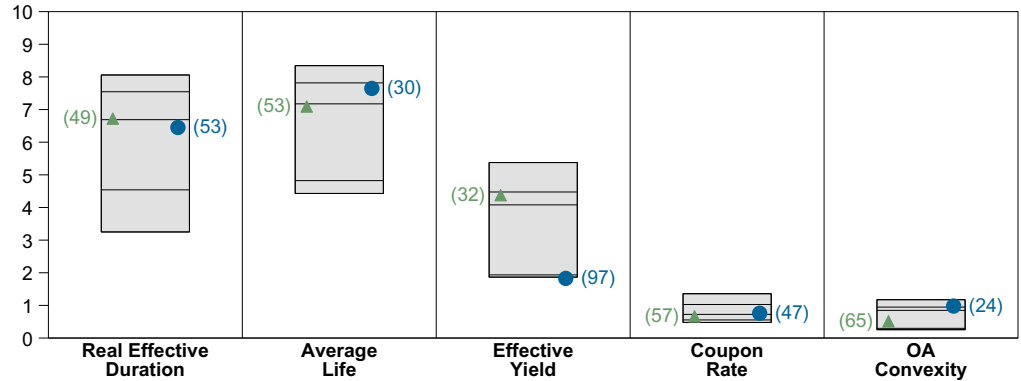
**Inflation Protection (TIPS)** ● 1.06      0.99

# Inflation Protection (TIPS) Bond Characteristics Analysis Summary

## Portfolio Characteristics

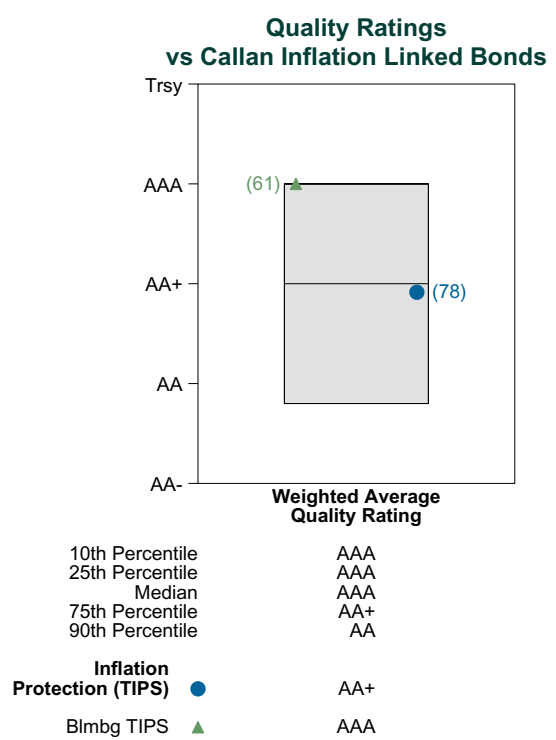
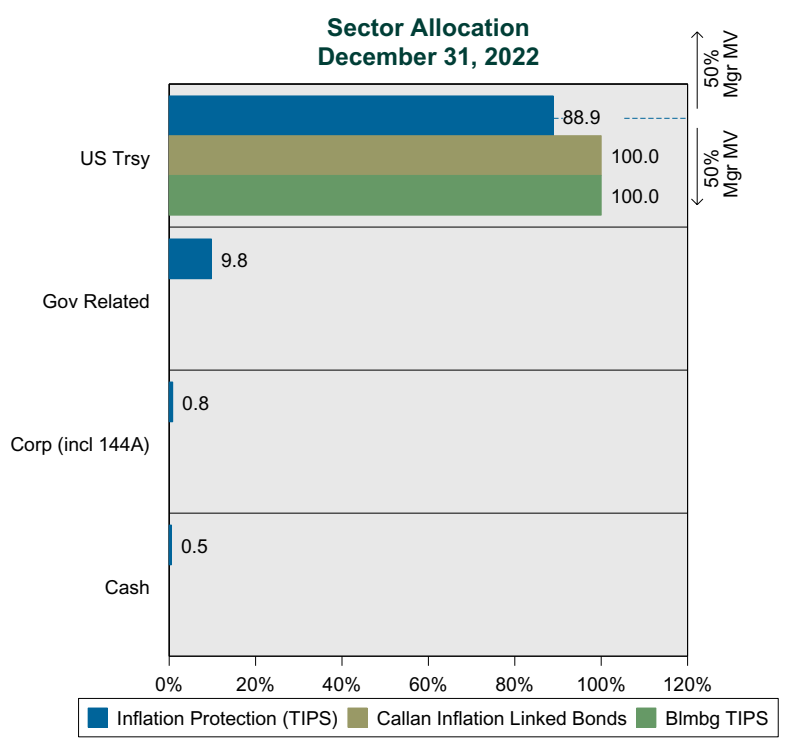
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2022



## 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.

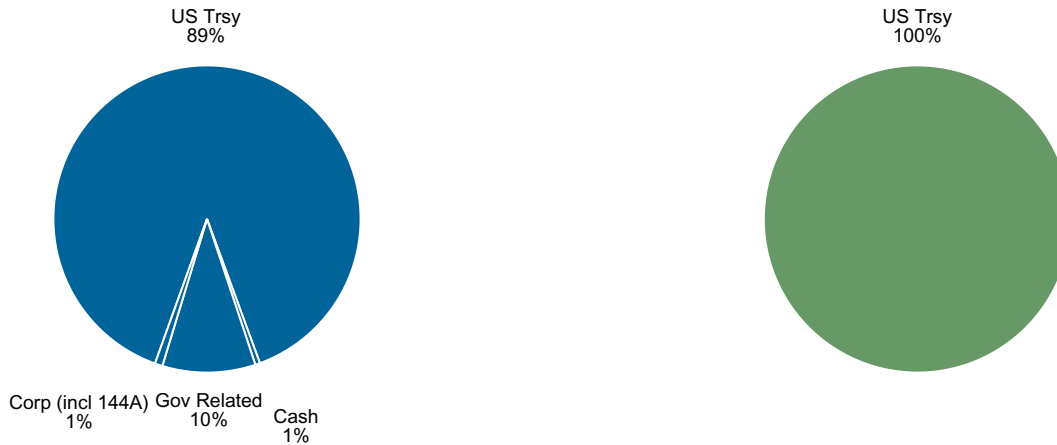


# Inflation Protection (TIPS) Portfolio Characteristics Summary As of December 31, 2022

## 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.

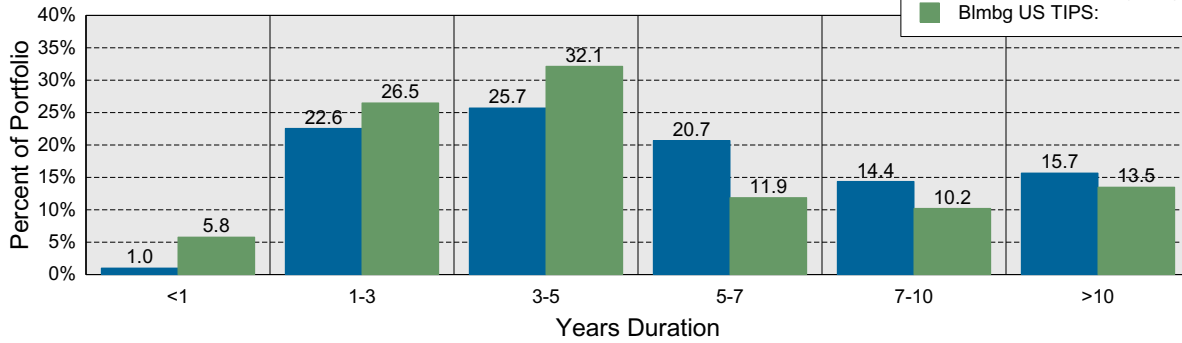
### Sector Allocation



### Inflation Protection (TIPS)

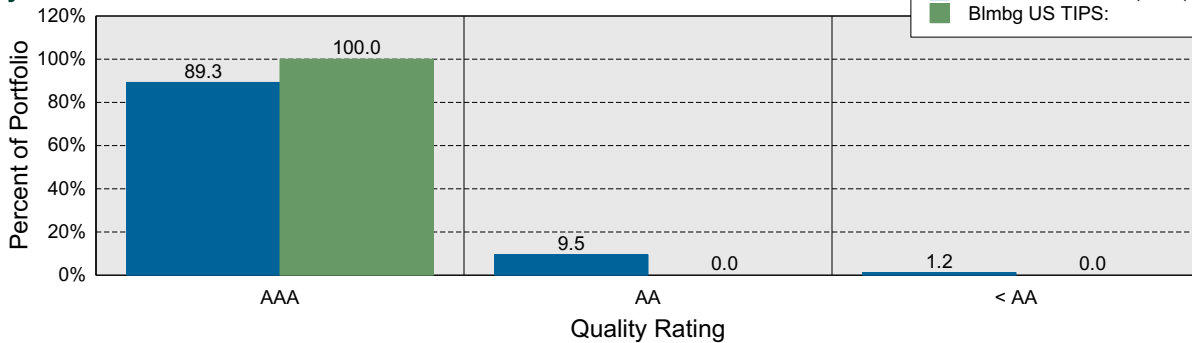
### Blmbg US TIPS

#### Duration Distribution



Weighted Average:	Real Duration
Inflation Protection (TIPS):	6.45
Blmbg US TIPS:	6.72

#### Quality Distribution



Weighted Average:	Quality
Inflation Protection (TIPS):	AA+
Blmbg US TIPS:	AAA



# Brown Brothers TIPS Period Ended December 31, 2022

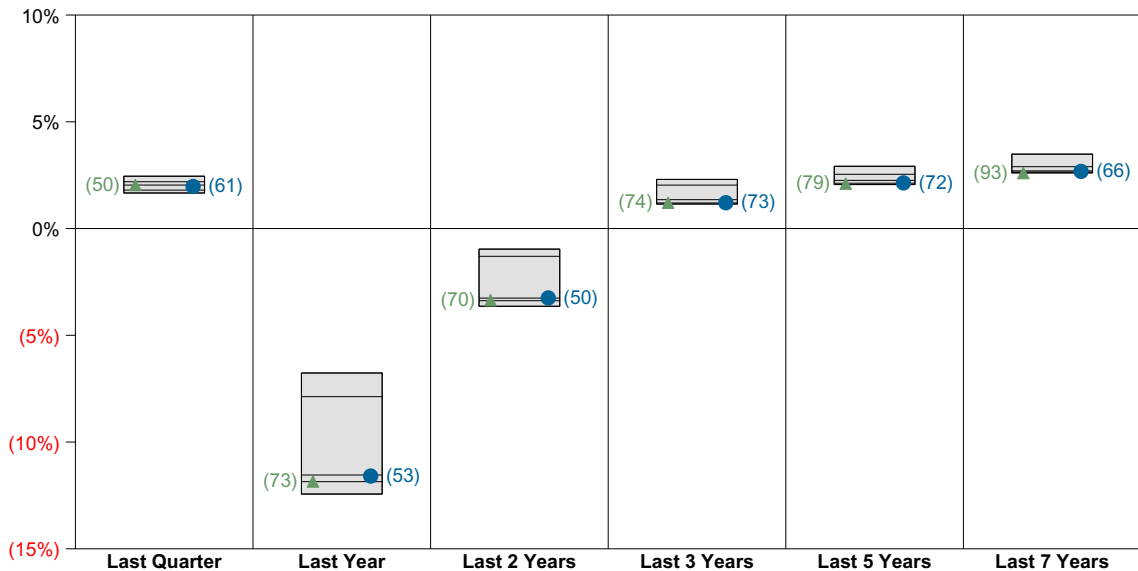
## Investment Philosophy

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

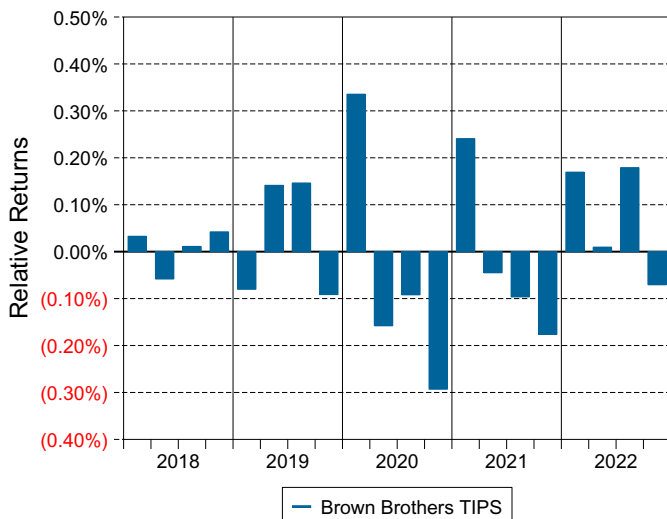
- Brown Brothers TIPS's portfolio posted a 1.97% return for the quarter placing it in the 61 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 53 percentile for the last year.
- Brown Brothers TIPS's portfolio underperformed the Blmbg TIPS by 0.07% for the quarter and outperformed the Blmbg TIPS for the year by 0.25%.

## Performance vs Callan Inflation Linked Bonds (Gross)

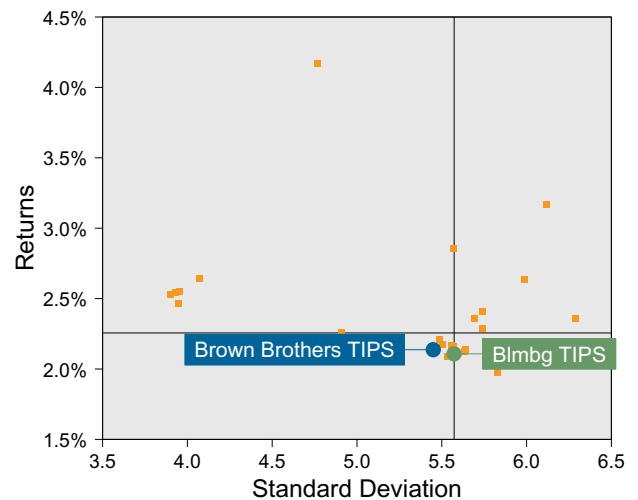


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years
10th Percentile	2.45	(6.77)	(0.96)	2.30	2.92	3.49
25th Percentile	2.19	(7.87)	(1.30)	2.03	2.54	2.90
Median	2.04	(11.54)	(3.26)	1.35	2.26	2.70
75th Percentile	1.80	(11.86)	(3.38)	1.20	2.12	2.65
90th Percentile	1.66	(12.44)	(3.64)	1.15	2.06	2.61
<b>Brown Brothers TIPS</b>	● 1.97	(11.59)	(3.25)	1.21	2.14	2.68
<b>Blmbg TIPS</b>	▲ 2.04	(11.85)	(3.35)	1.21	2.11	2.60

## Relative Return vs Blmbg TIPS



## Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return

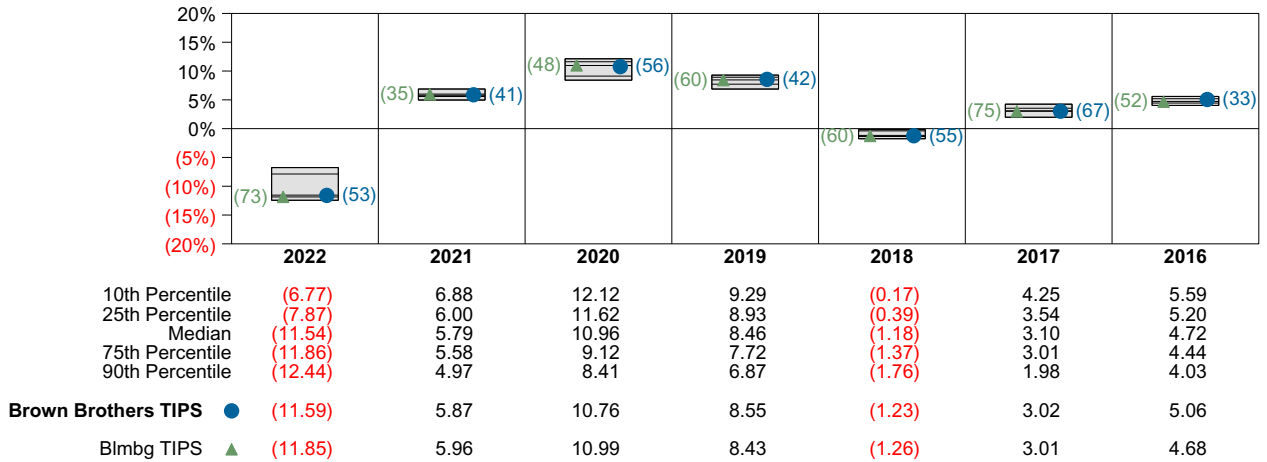


# Brown Brothers TIPS Return Analysis Summary

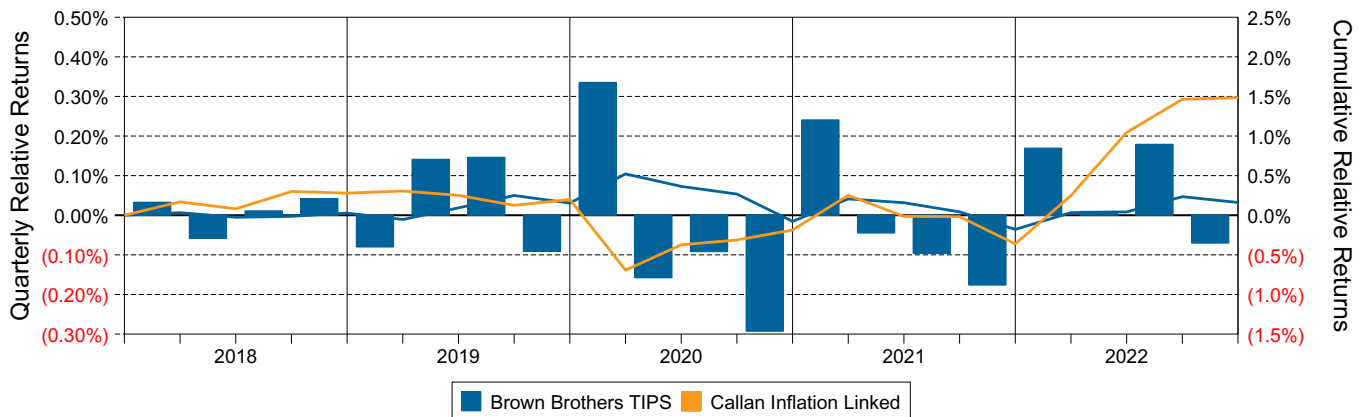
## Return Analysis

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.

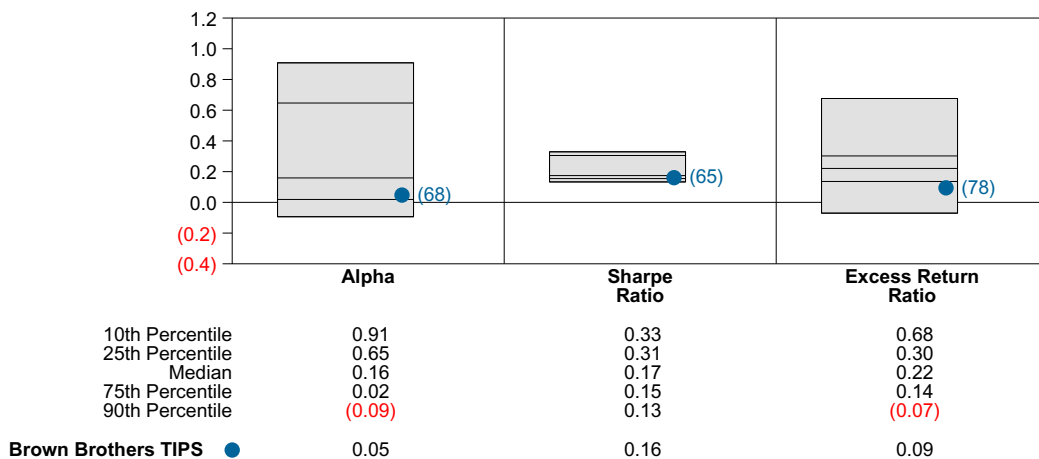
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg TIPS



### Risk Adjusted Return Measures vs Blmbg TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022

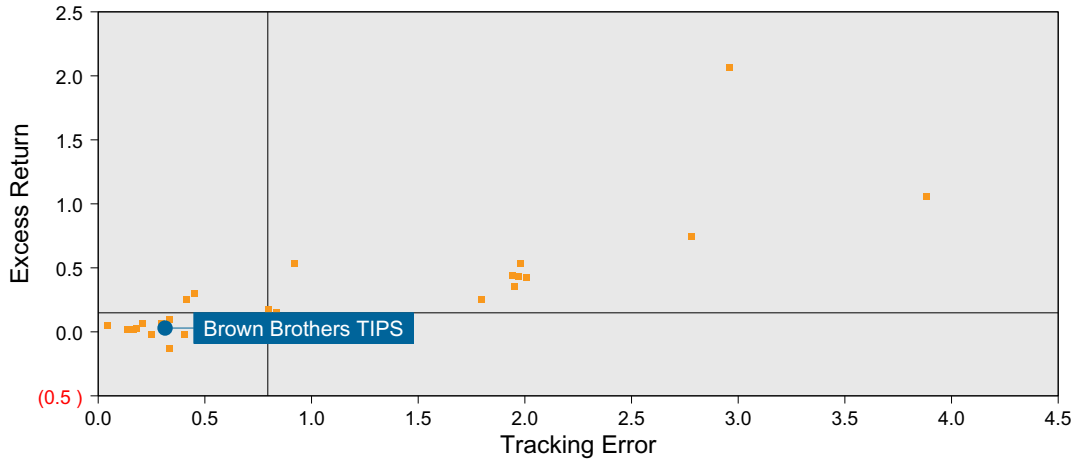


# Brown Brothers TIPS Risk Analysis Summary

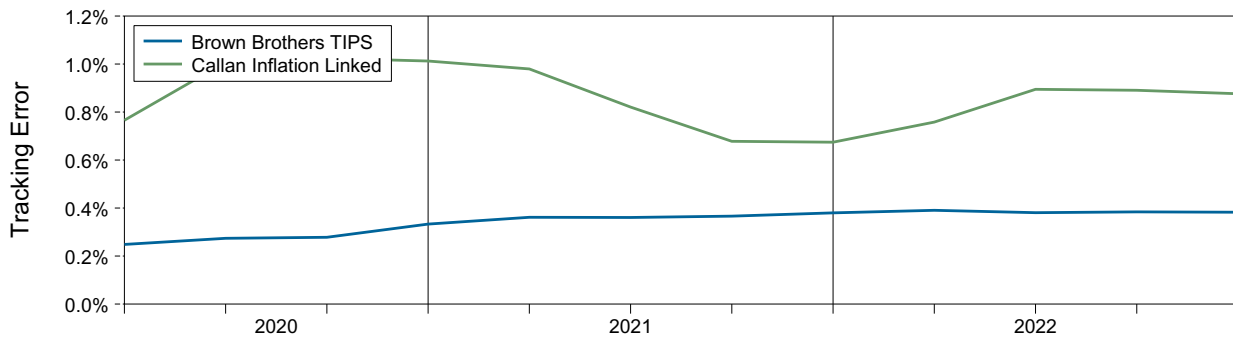
## Risk Analysis

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.

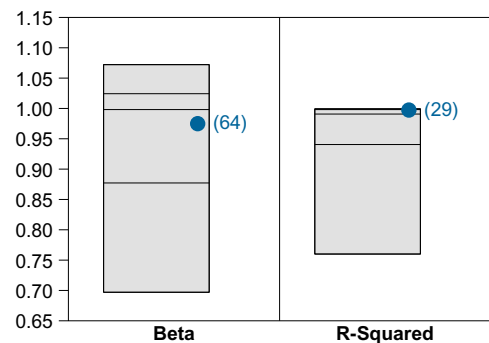
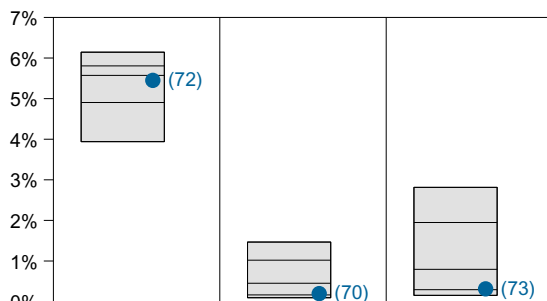
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Bloomberg TIPS



### Risk Statistics Rankings vs Bloomberg TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



10th Percentile 6.14  
25th Percentile 5.81  
Median 5.57  
75th Percentile 4.90  
90th Percentile 3.94

10th Percentile 1.47  
25th Percentile 1.02  
Median 0.45  
75th Percentile 0.16  
90th Percentile 0.10

10th Percentile 2.81  
25th Percentile 1.95  
Median 0.80  
75th Percentile 0.29  
90th Percentile 0.15

10th Percentile 1.07  
25th Percentile 1.02  
Median 1.00  
75th Percentile 0.88  
90th Percentile 0.70

10th Percentile 1.00  
25th Percentile 1.00  
Median 0.99  
75th Percentile 0.94  
90th Percentile 0.76

**Brown Brothers TIPS** ● 5.45

0.20

0.31

**Brown Brothers TIPS** ● 0.97

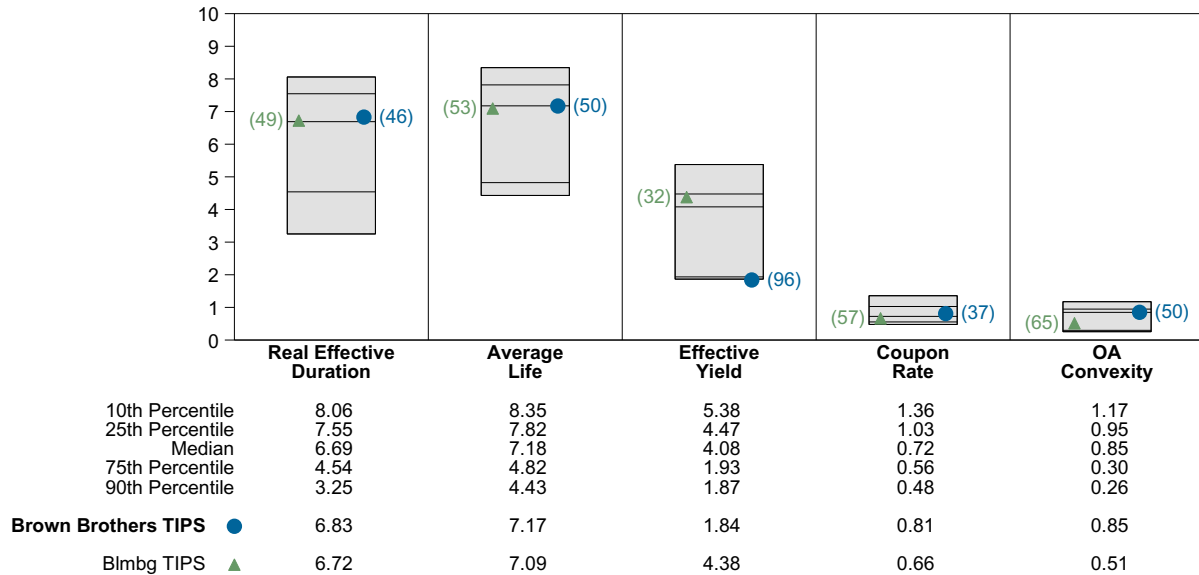
1.00

# Brown Brothers TIPS Bond Characteristics Analysis Summary

## Portfolio Characteristics

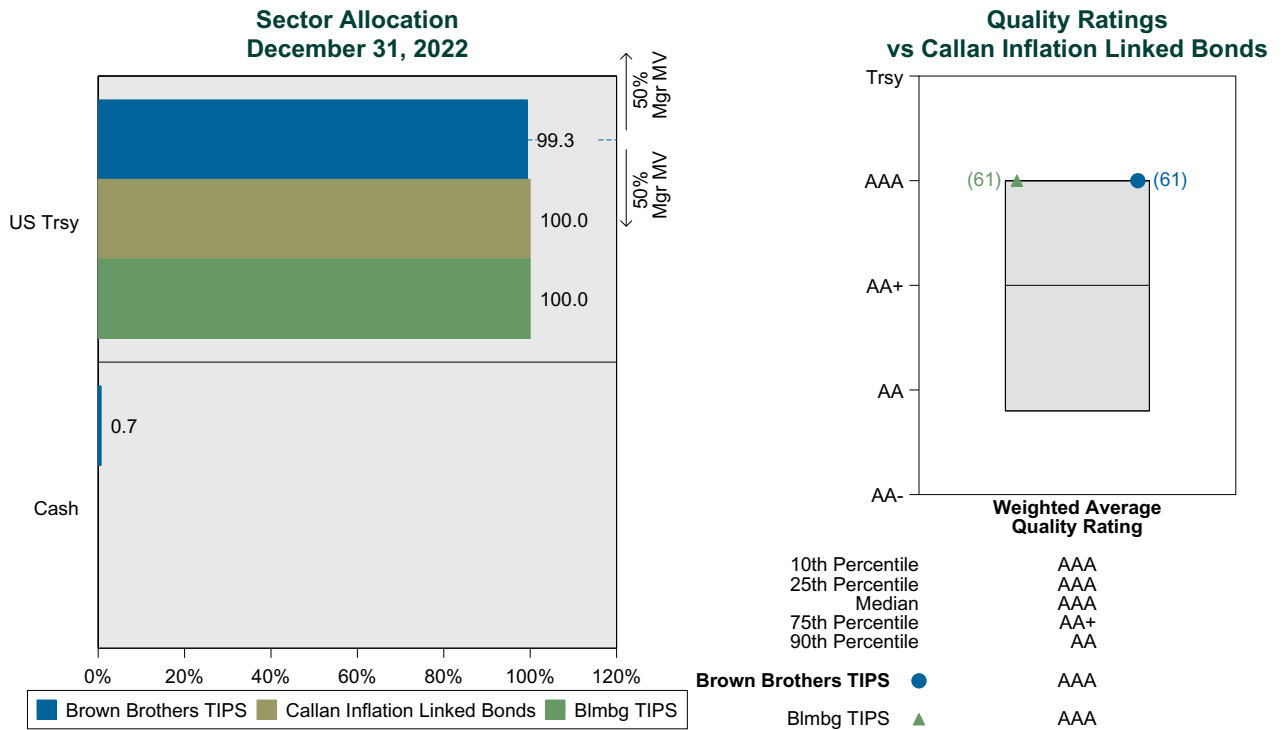
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2022



## 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, 2022

## 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.

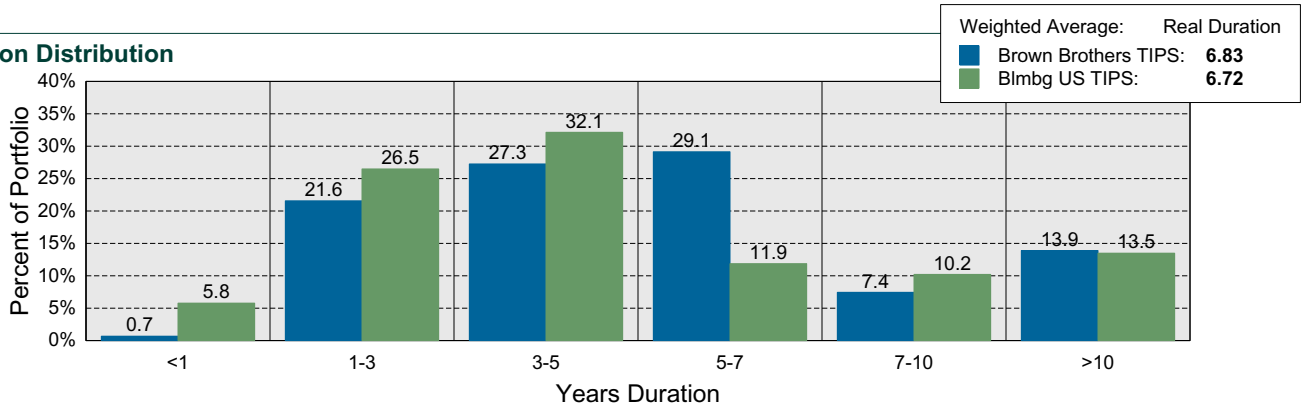
### Sector Allocation



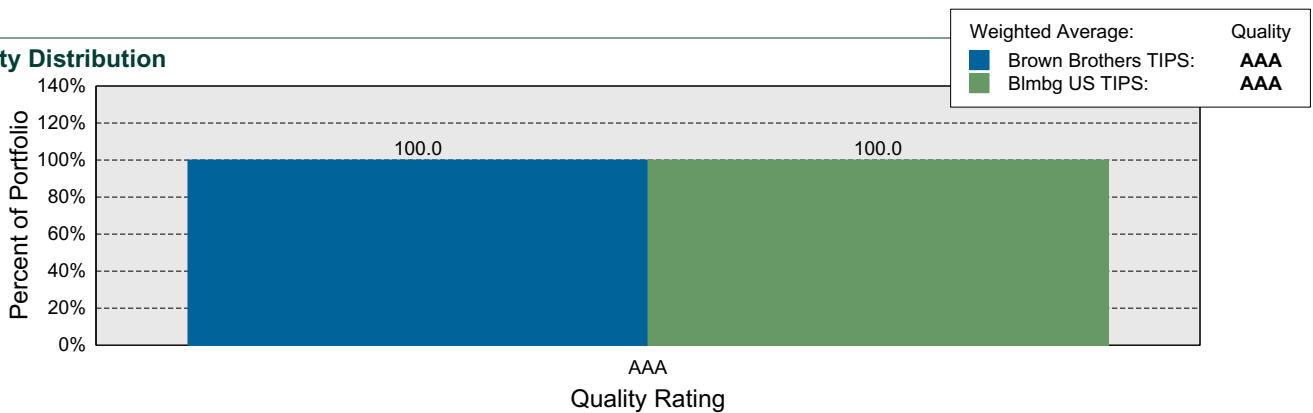
### Brown Brothers TIPS

### Blmbg US TIPS

#### Duration Distribution



#### Quality Distribution



# NISA Inv Adv TIPS Period Ended December 31, 2022

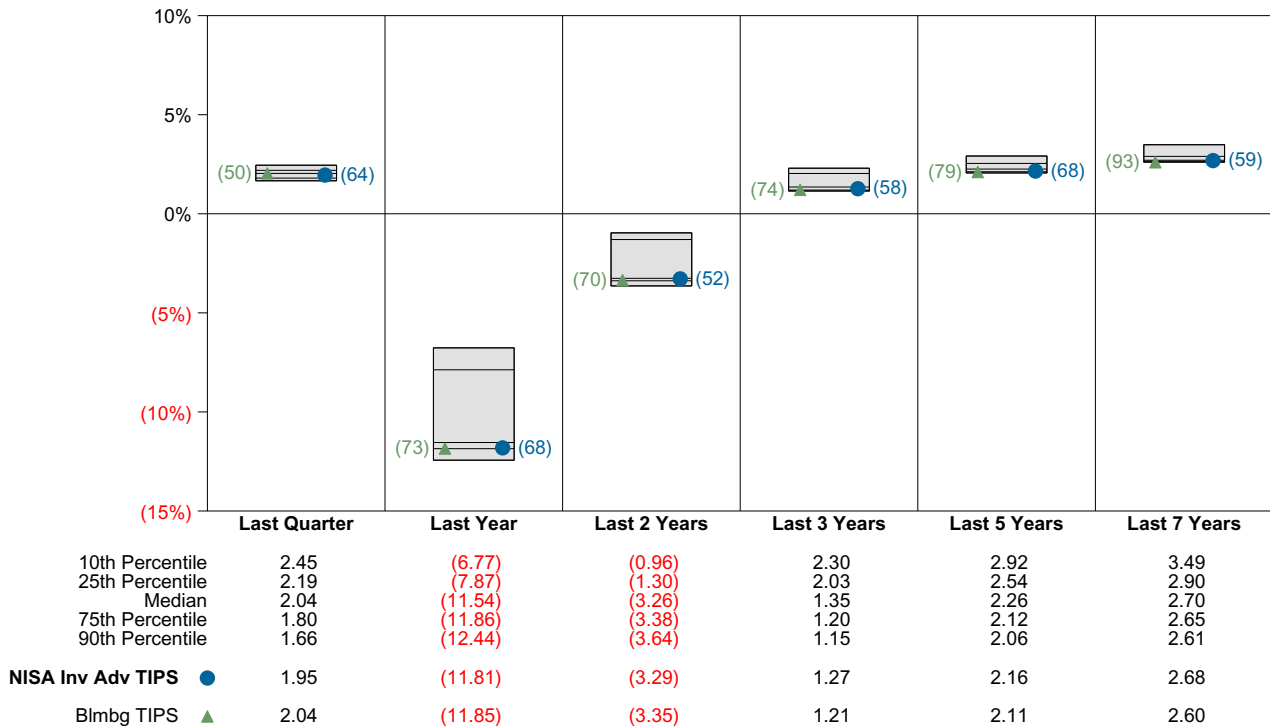
## Investment Philosophy

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.

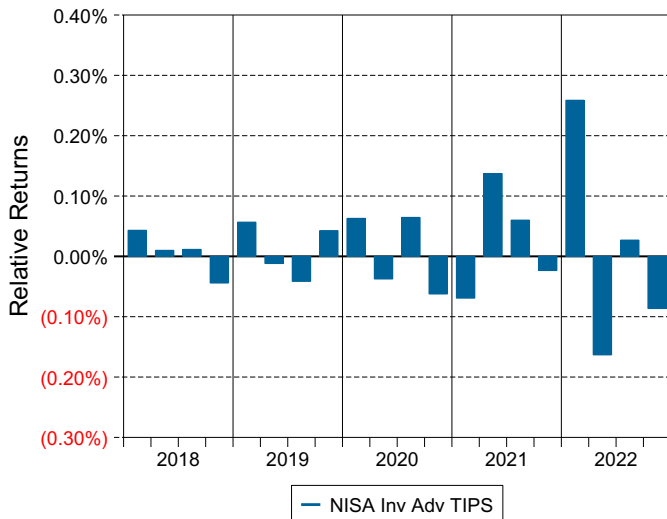
## Quarterly Summary and Highlights

- NISA Inv Adv TIPS's portfolio posted a 1.95% return for the quarter placing it in the 64 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 68 percentile for the last year.
- NISA Inv Adv TIPS's portfolio underperformed the Blmbg TIPS by 0.09% for the quarter and outperformed the Blmbg TIPS for the year by 0.03%.

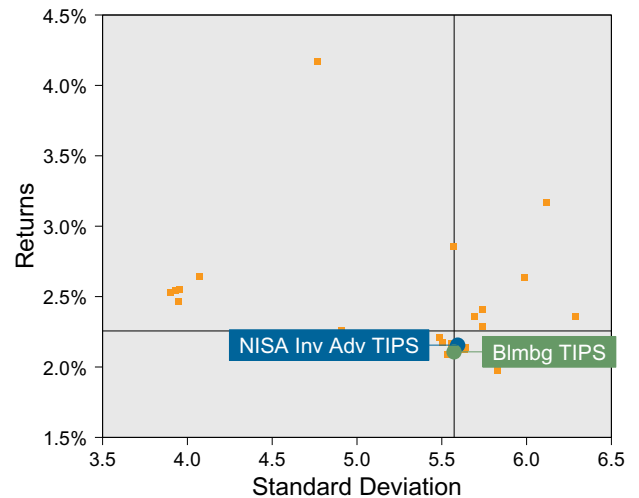
## Performance vs Callan Inflation Linked Bonds (Gross)



## Relative Return vs Blmbg TIPS



## Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return

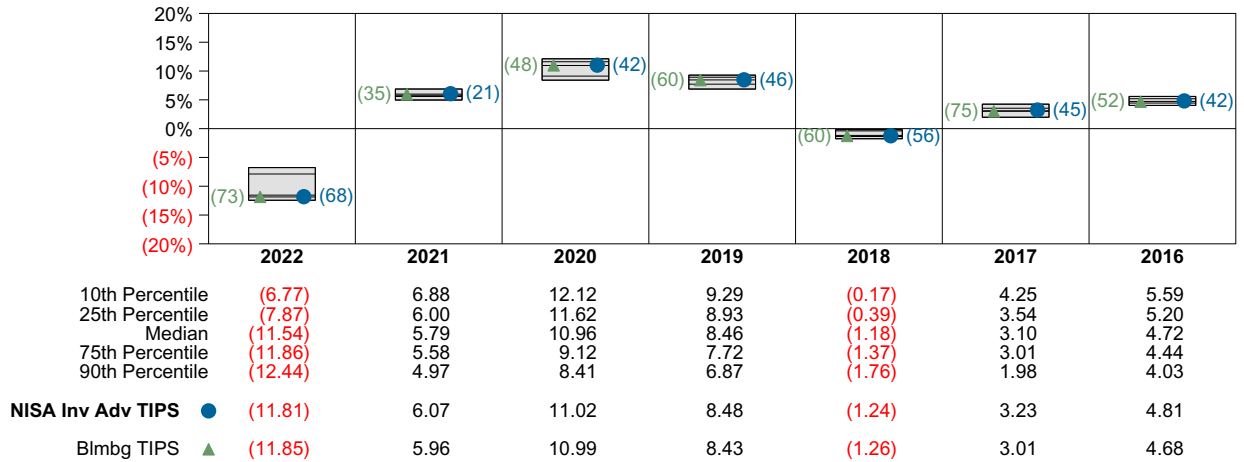


# NISA Inv Adv TIPS Return Analysis Summary

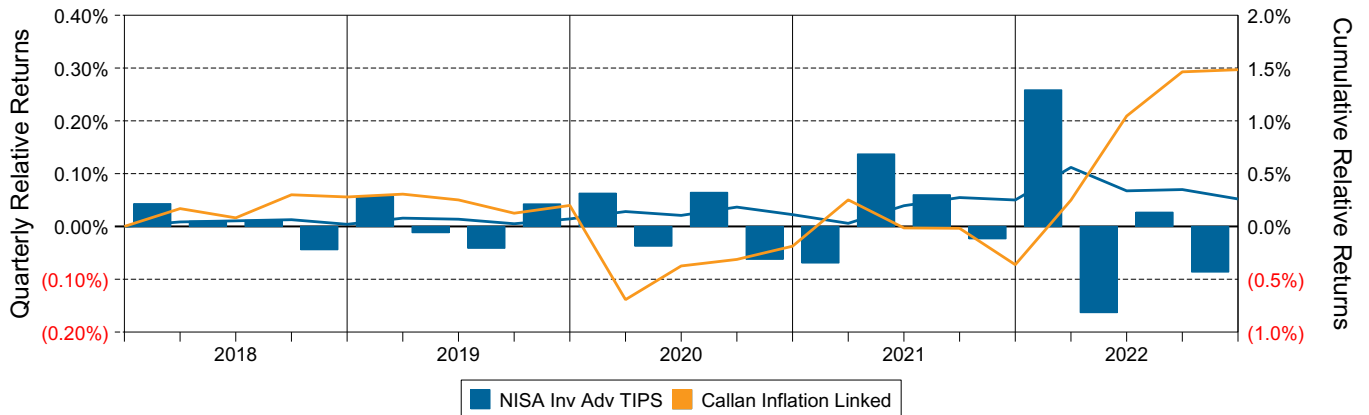
## Return Analysis

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.

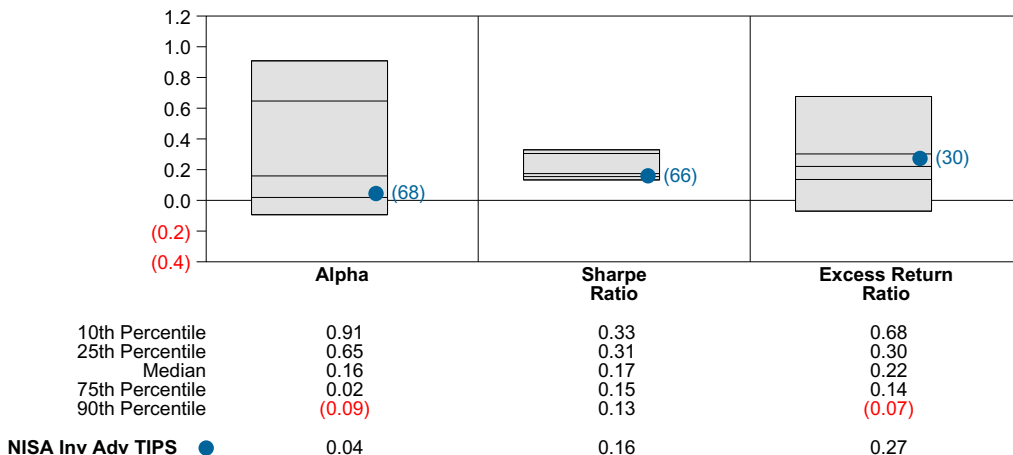
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg TIPS



### Risk Adjusted Return Measures vs Blmbg TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022

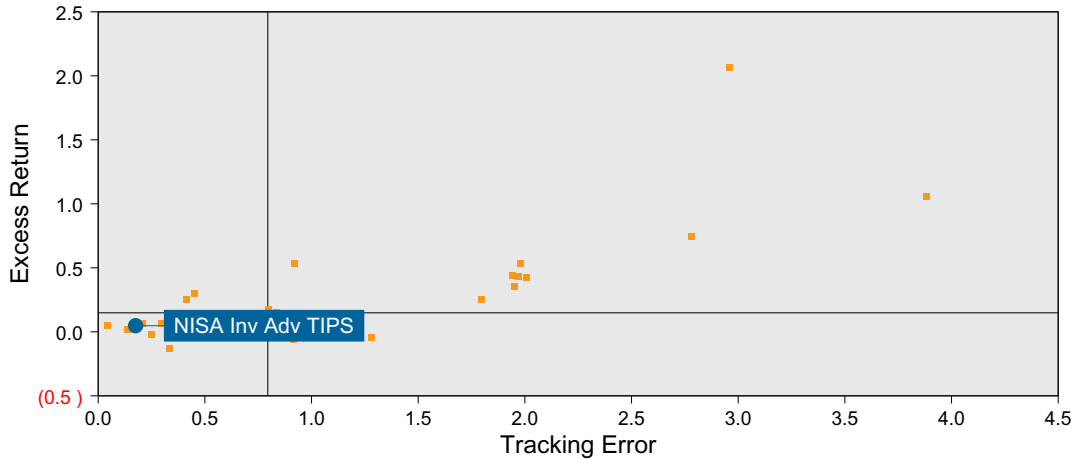


# NISA Inv Adv TIPS Risk Analysis Summary

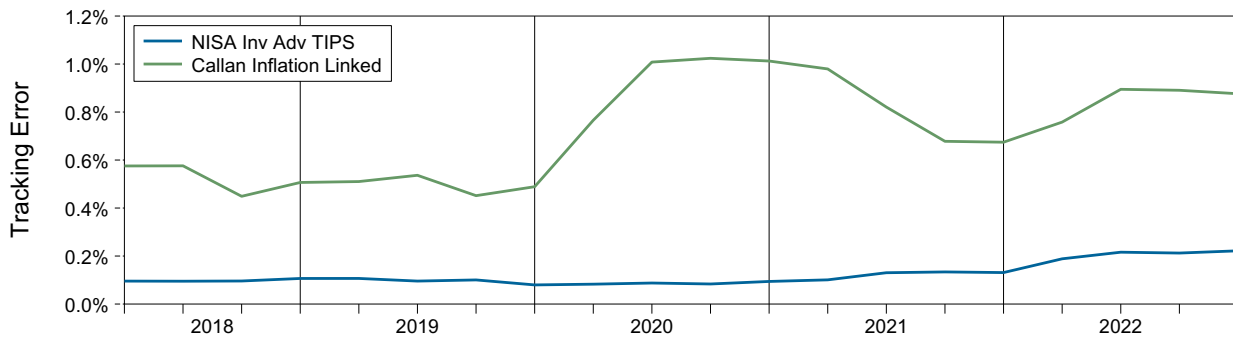
## Risk Analysis

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.

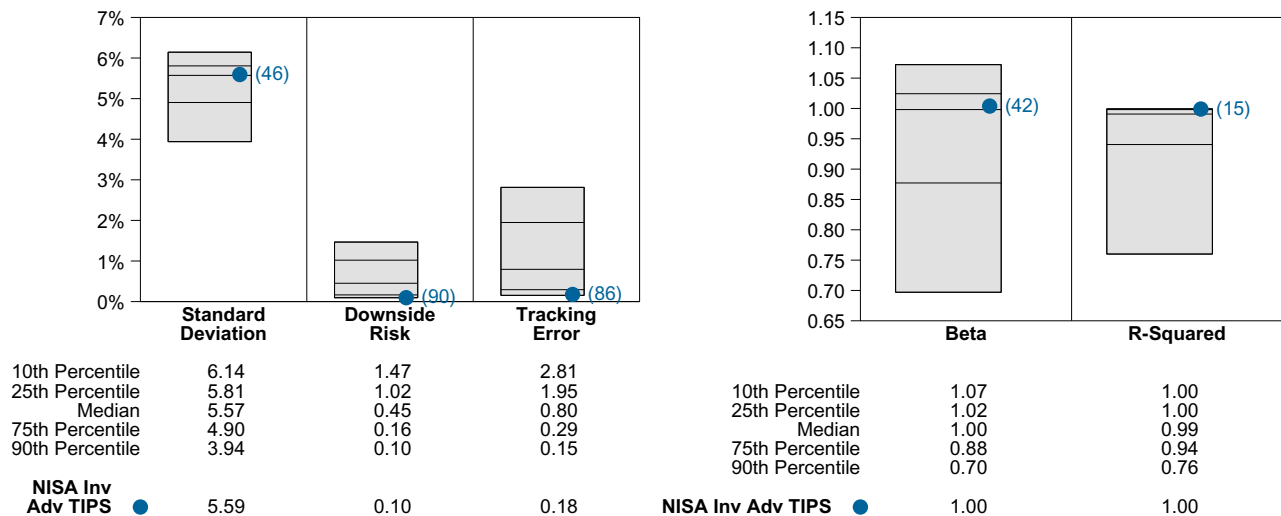
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Bloomberg TIPS



### Risk Statistics Rankings vs Bloomberg TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022

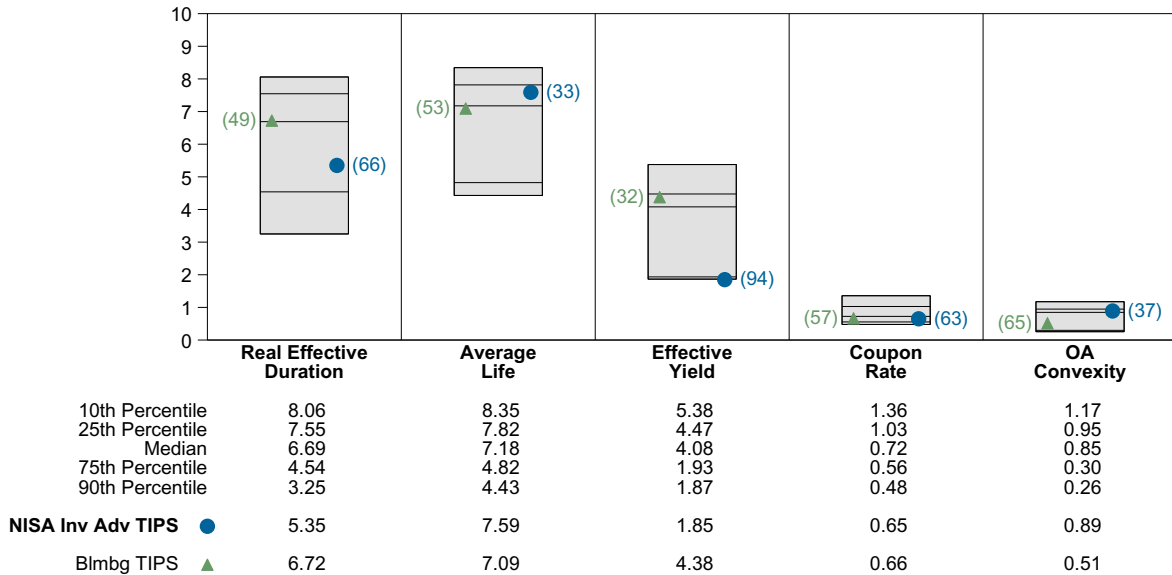


# NISA Inv Adv TIPS Bond Characteristics Analysis Summary

## Portfolio Characteristics

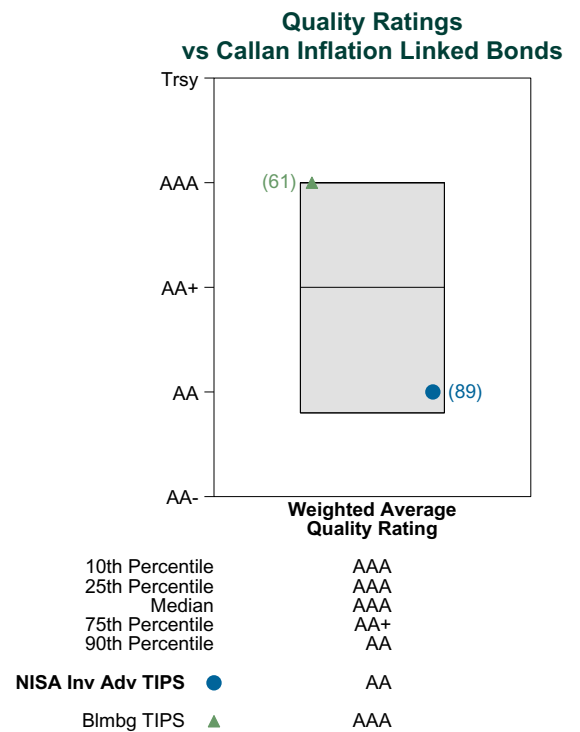
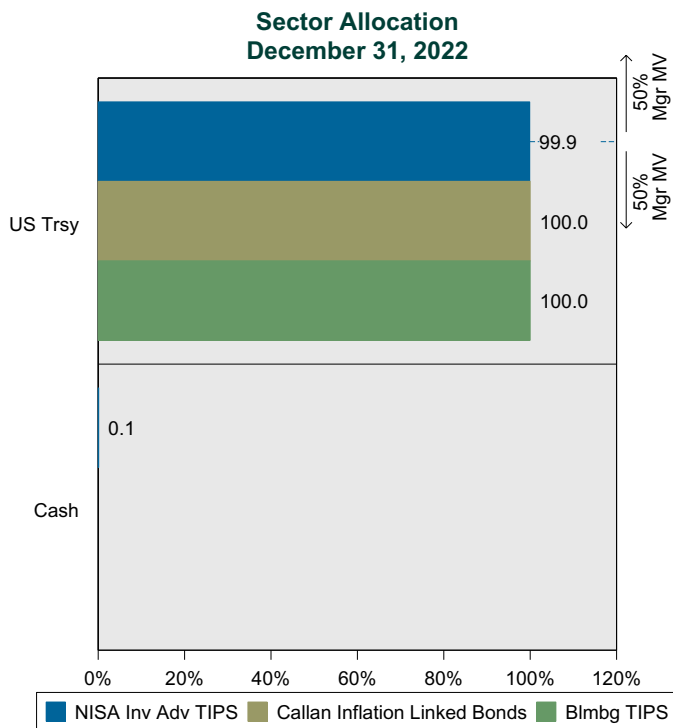
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2022



## 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, 2022**

**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.

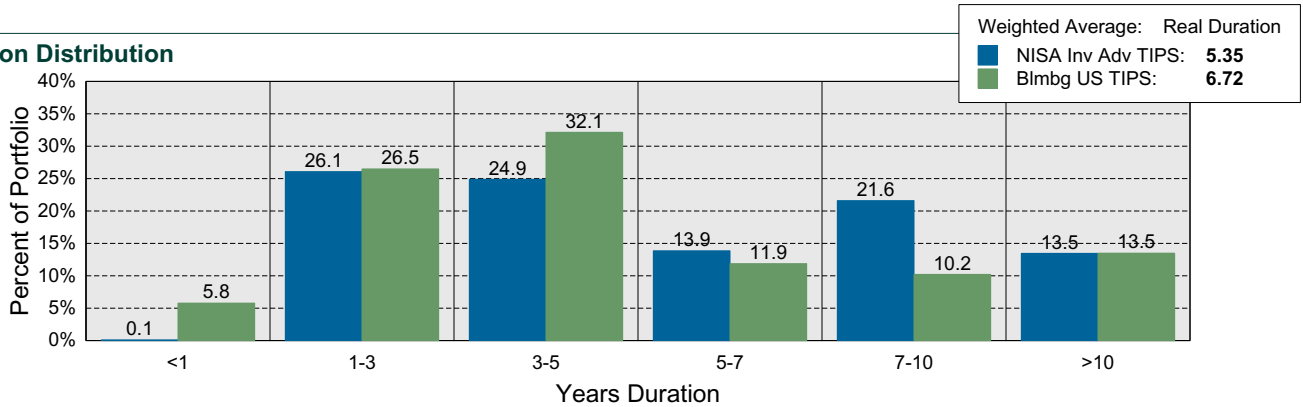
**Sector Allocation**



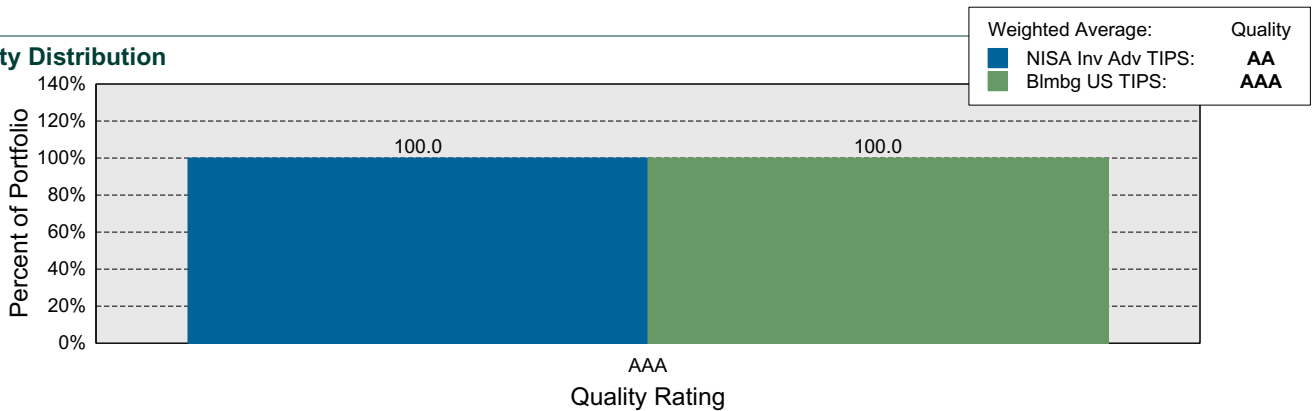
**NISA Inv Adv TIPS**

**Blmbg US TIPS**

**Duration Distribution**



**Quality Distribution**



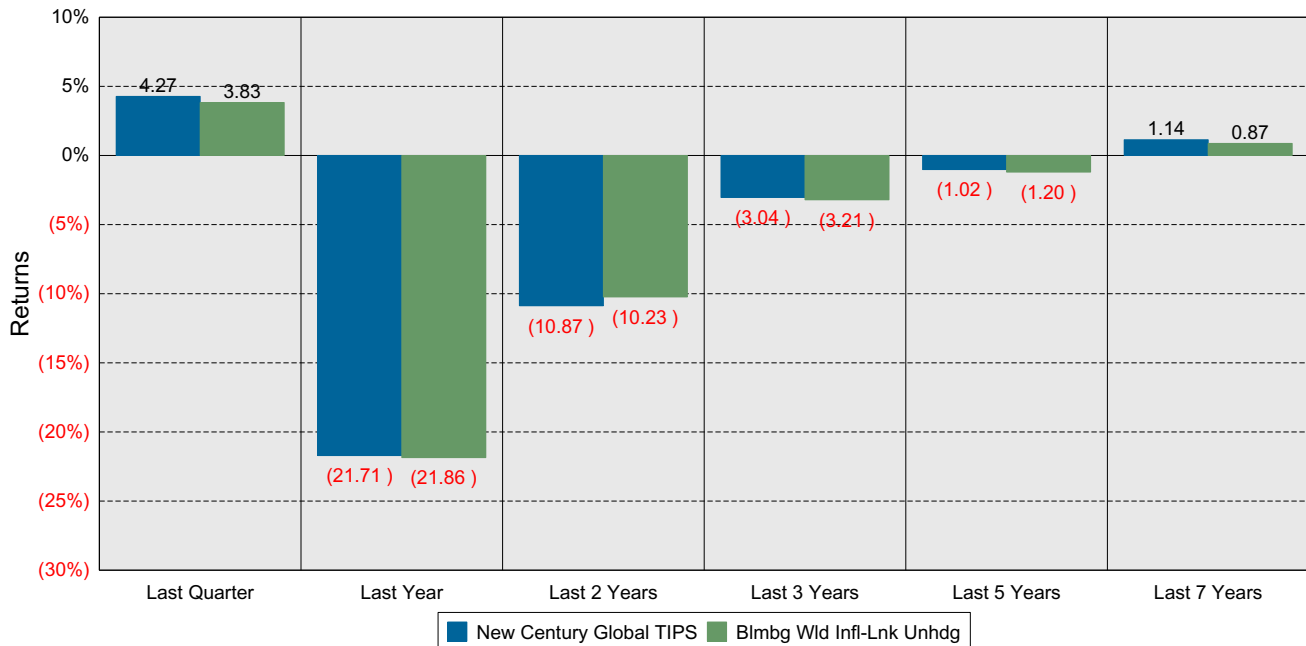
# New Century Global TIPS Period Ended December 31, 2022

## Investment Philosophy

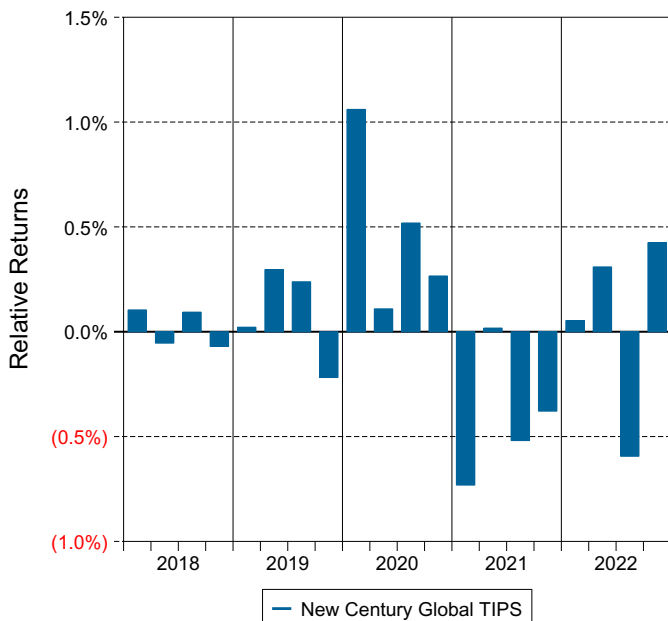
New Century Advisors believes there are five main sources of excess return that an active manager can capture in the Global Inflation Linked Bond Product: duration management, county selection, currency management, yield curve positioning, and nominal/linker relative value. New Century Advisors approach 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

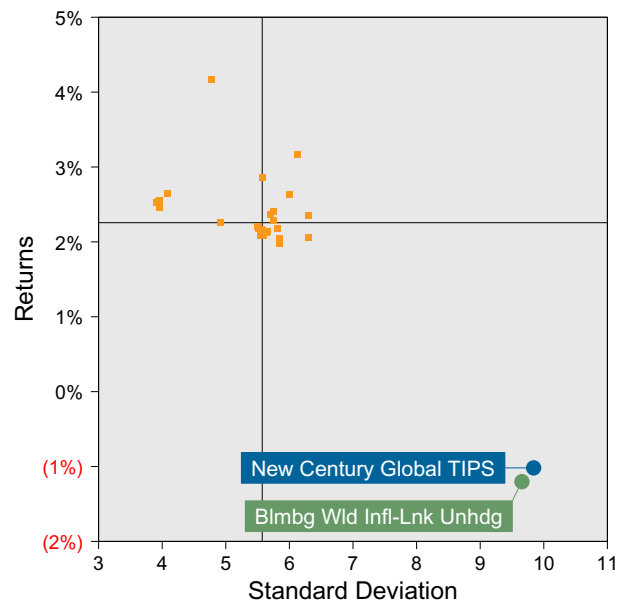
- New Century Global TIPS's portfolio posted a 4.27% return for the quarter placing it in the 1 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 100 percentile for the last year.
- New Century Global TIPS's portfolio outperformed the Blmbg Wld Infl-Lnk Unhdg by 0.44% for the quarter and outperformed the Blmbg Wld Infl-Lnk Unhdg for the year by 0.15%.



Relative Return vs Blmbg Wld Infl-Lnk Unhdg



Callan Inflation Linked Bonds (Gross)  
Annualized Five Year Risk vs Return

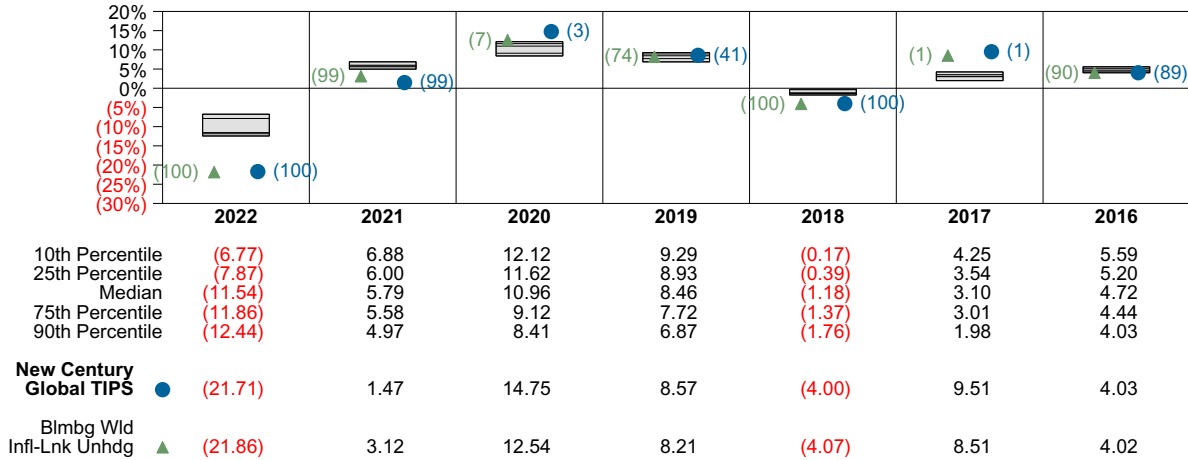


# New Century Global TIPS Return Analysis Summary

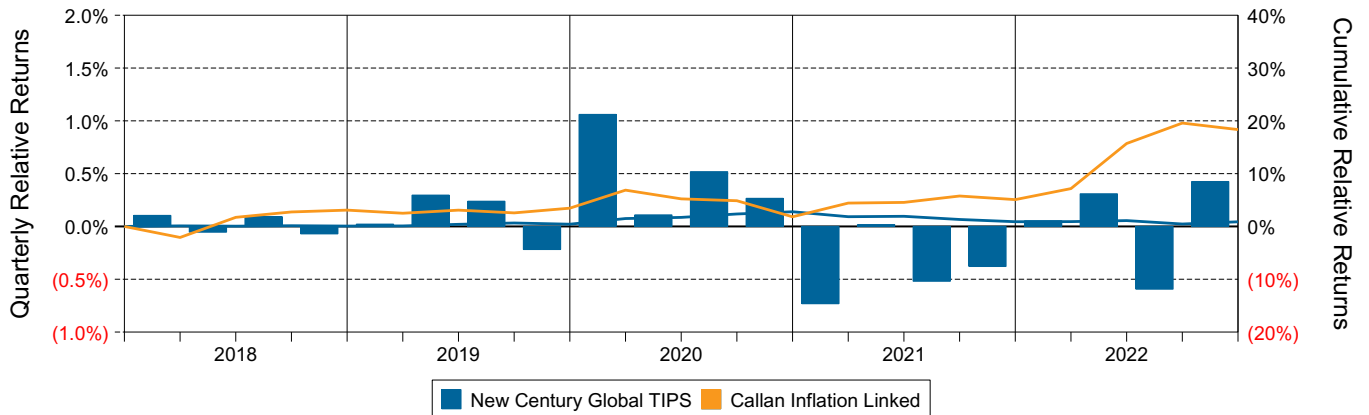
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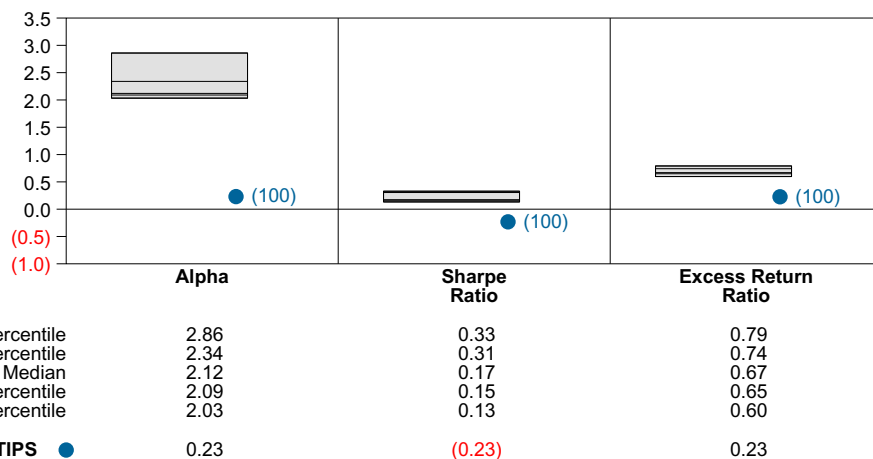
### Performance vs Callan Inflation Linked Bonds (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg Wld Infl-Lnk Unhdg



### Risk Adjusted Return Measures vs Blmbg Wld Infl-Lnk Unhdg Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



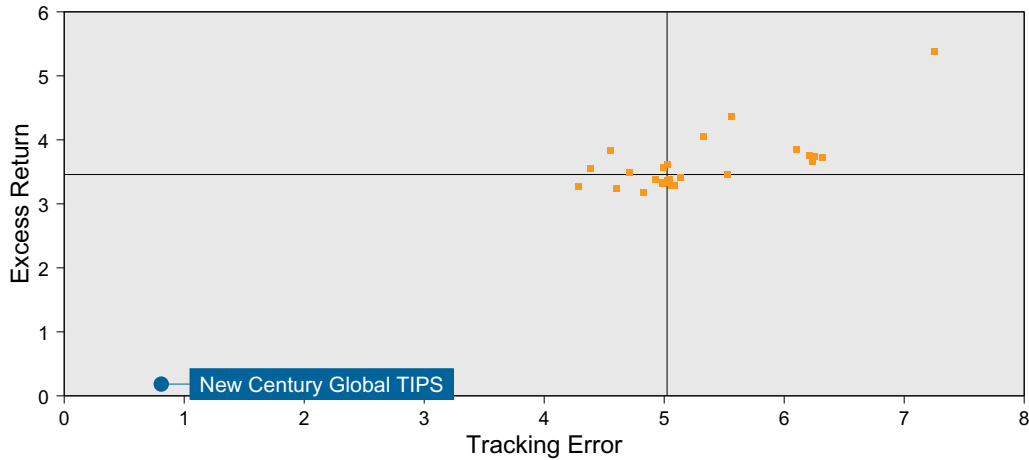


# New Century Global TIPS Risk Analysis Summary

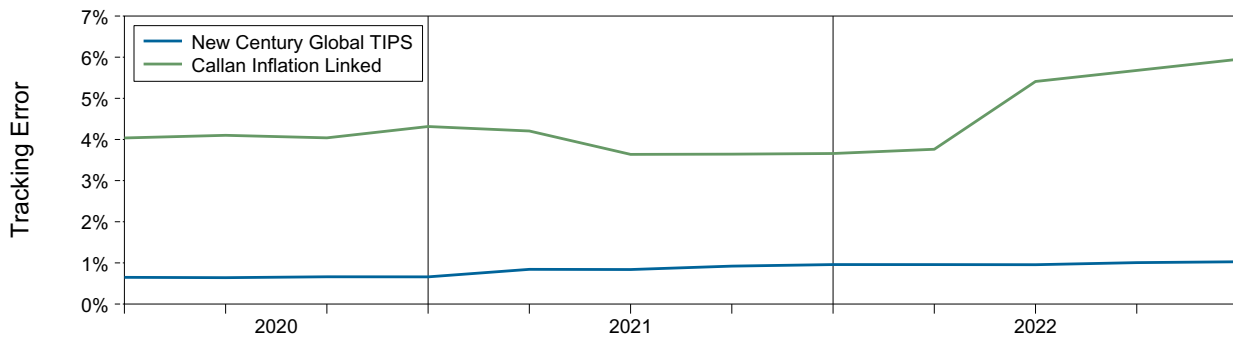
## Risk Analysis

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.

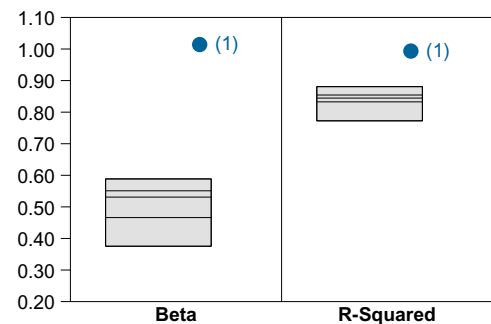
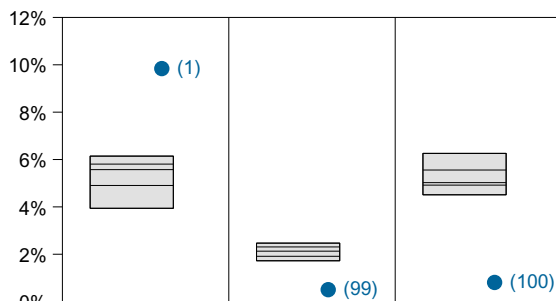
### Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



### Rolling 12 Quarter Tracking Error vs Bloomberg World Infi-Linked Unhdg



### Risk Statistics Rankings vs Bloomberg World Infi-Linked Unhdg Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended December 31, 2022



10th Percentile 6.14  
25th Percentile 5.81  
Median 5.57  
75th Percentile 4.90  
90th Percentile 3.94

10th Percentile 2.47  
25th Percentile 2.31  
Median 2.13  
75th Percentile 1.91  
90th Percentile 1.72

10th Percentile 6.26  
25th Percentile 5.56  
Median 5.02  
75th Percentile 4.92  
90th Percentile 4.51

10th Percentile 0.59  
25th Percentile 0.55  
Median 0.53  
75th Percentile 0.47  
90th Percentile 0.38

10th Percentile 0.88  
25th Percentile 0.85  
Median 0.84  
75th Percentile 0.83  
90th Percentile 0.77

**New Century Global TIPS** ● 9.84 0.50 0.81

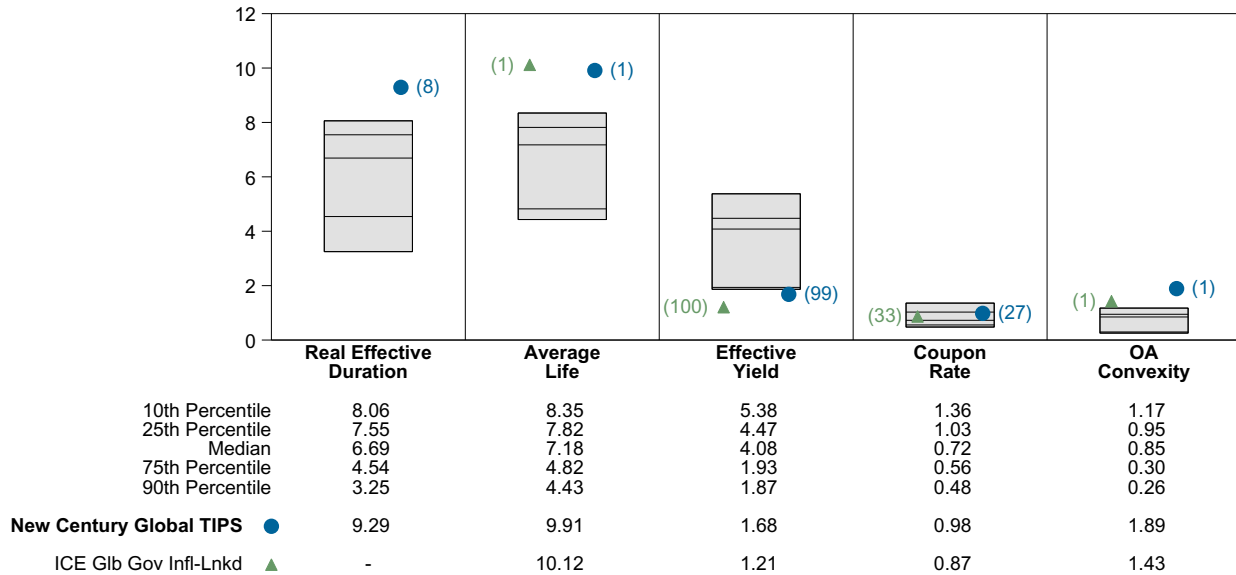
**New Century Global TIPS** ● 1.01 0.99

# New Century Global TIPS Bond Characteristics Analysis Summary

## Portfolio Characteristics

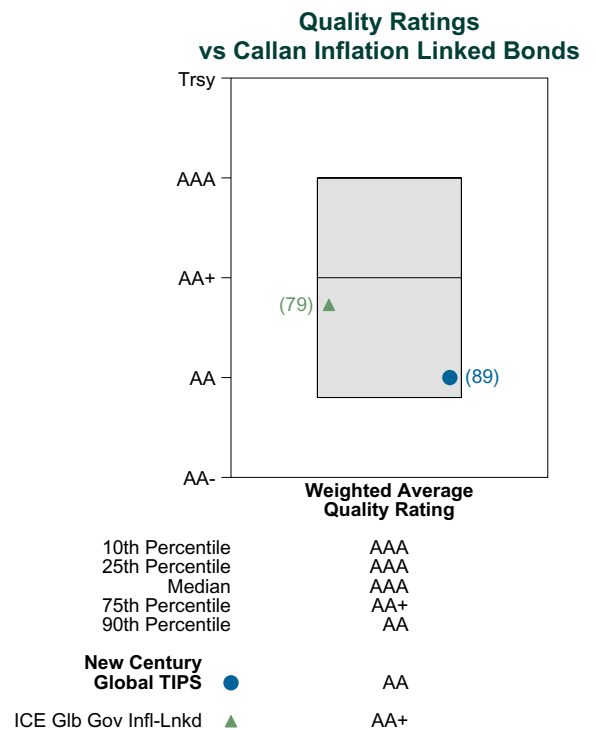
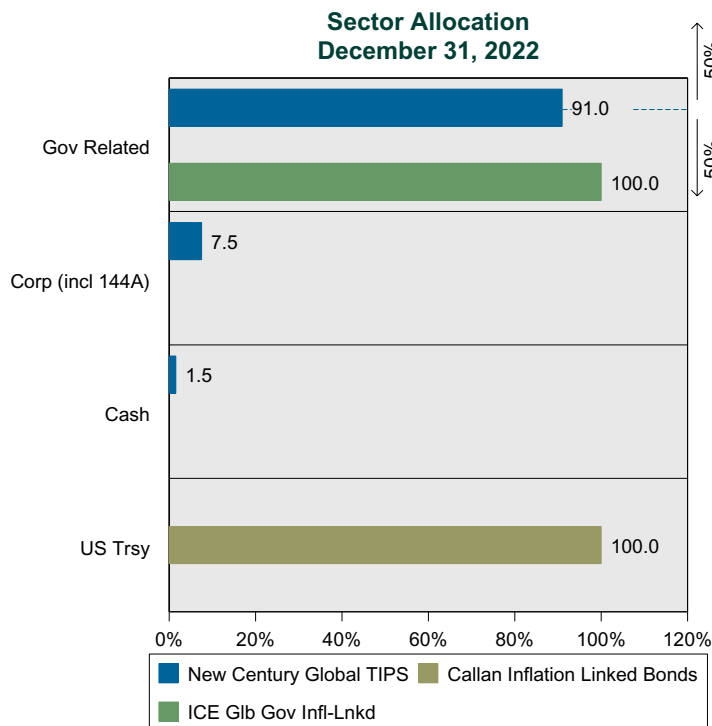
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of December 31, 2022



## 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.



# New Century Global TIPS Portfolio Characteristics Summary As of December 31, 2022

## 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.

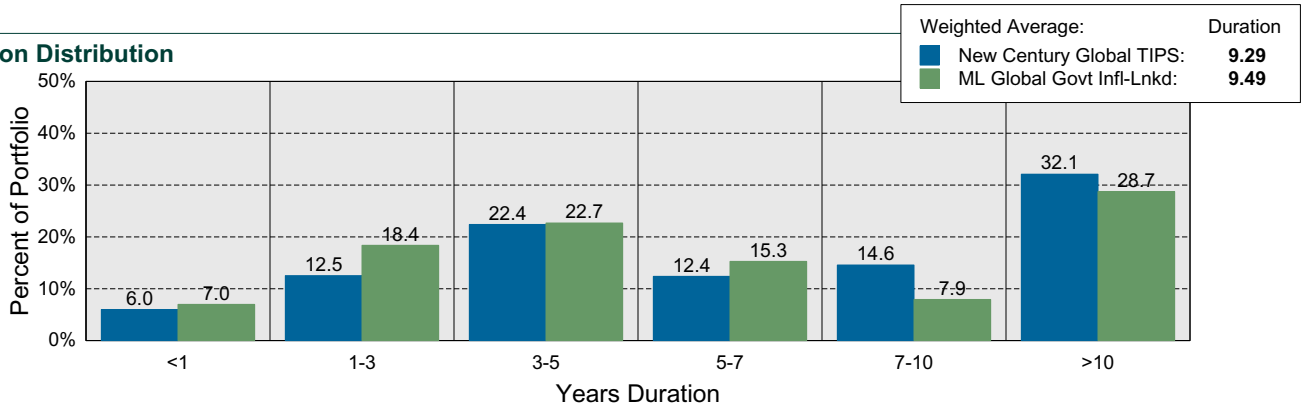
### Sector Allocation



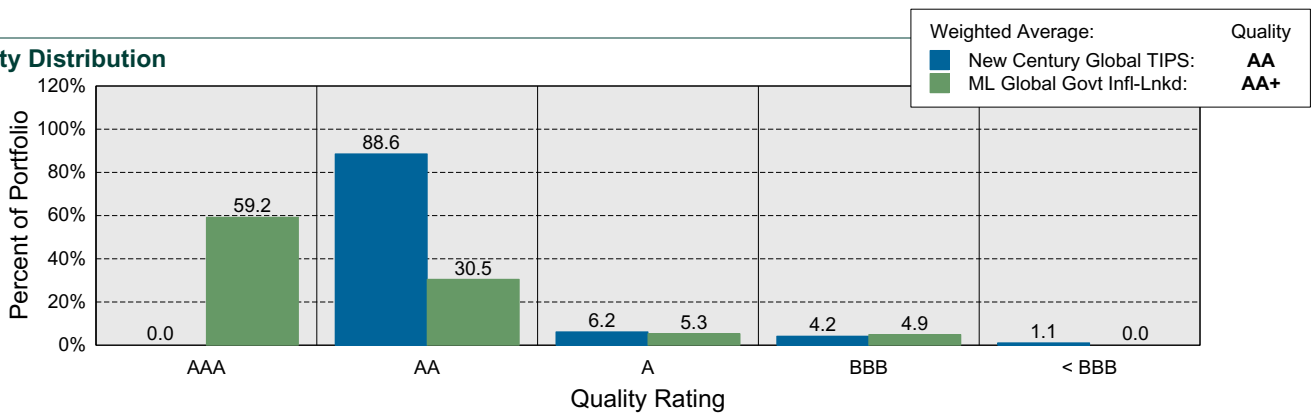
### New Century Global TIPS

### ML Global Govt Infi-Lnkd

#### Duration Distribution



#### Quality Distribution





## Quarterly Highlights

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/research-library](http://www.callan.com/research-library) to see all of our publications, and [www.callan.com/blog](http://www.callan.com/blog) to view our blog. For more information contact Barb Gerraty at 415-274-3093 / [institute@callan.com](mailto:institute@callan.com).

## New Research from Callan's Experts

**2022 ESG Survey** | Callan's 10th annual survey assesses the status of environmental, social, and governance (ESG) investing in the U.S. institutional investment market.

**Considering Currency: A Guide for Institutional Investors** | This guide to currency trends over time provides institutional investors with multiple ways to benchmark and analyze their portfolios.

**2022 Nuclear Decommissioning Funding Study** | Julia Moriarty offers key insights into the status of nuclear decommissioning funding to make peer comparisons more accurate and relevant.

### Blog Highlights

**What DC Plan Sponsors Should Know About Recent Litigation Trends** | Callan reviewed lawsuits filed against DC plans between January 2019 and August 2022, to provide an analysis of trends in litigation centered on the fiduciary duties outlined in ERISA.

**How Does Your Public DB Plan Measure Up?** | Most public DB plans saw sharp losses for the fiscal year ended 6/30/22. However, plan returns for fiscal year 2021 were the strongest in three decades.

**Index Selection Within TDF Benchmarks Can Make a Big Difference** | Most TDF providers build a custom benchmark for performance comparisons. While this approach is useful, it does not capture differences in glidepath design and asset allocation that are the major drivers of relative performance.

### Webinar Replays

**Callan's 2023-2032 Capital Markets Assumptions** | During this webinar, Jay Kloepfer, Kevin Machiz, and Adam Lozinski described our 2023-2032 Capital Markets Assumptions, discussed the process

and rationale behind these long-term assumptions, and explained the potential implications for strategic recommendations.

**Corporate Pension Hibernation** | Callan specialists explore why closed and frozen plans might wish to hibernate in the current market, thereby deferring the decision to fully terminate until the future.

**Research Cafe: ESG Interview Series** | During this interview, Tom Shingler of Callan discusses with Sara Rosner, director of environment research and engagement for AllianceBernstein's responsible investing team, carbon emissions and why they matter to investors.

### Quarterly Periodicals

**Private Equity Update, 3Q22** | A high-level summary of private equity activity in the quarter through all the investment stages

**Active vs. Passive Charts, 3Q22** | A comparison of active managers alongside relevant benchmarks over the long term

**Market Pulse, 3Q22** | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data on the capital markets

**Capital Markets Review, 3Q22** | Analysis and a broad overview of the economy and public and private markets activity each quarter across a wide range of asset classes

**Hedge Fund Update, 3Q22** | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**Real Assets Update, 3Q22** | A summary of market activity for real assets and private real estate during the quarter

**Private Credit Update, 3Q22** | A review of performance and fundraising activity for private credit during the quarter

## Events

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A complete list of all upcoming events can be found on our website: [callan.com/events-education](https://callan.com/events-education).

*Please mark your calendar and look forward to upcoming invitations:*

### 2023 National Conference

April 2-4, 2023 – Scottsdale, AZ

### 2023 June Workshops

June 27, 2023 – New York

June 29, 2023 – Chicago

For more information about events, please contact Barb Gerraty: 415-274-3093 / [gerraty@callan.com](mailto:gerraty@callan.com)

## Education: By the Numbers

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**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

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## Education

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Founded in 1994, the "Callan College" offers educational sessions for industry professionals involved in the investment decision-making process.

### Introduction to Investments

March 1-2 – Chicago

May 23-25 – Virtual

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. Our virtual session is held over three days with virtual modules of 2.5-3 hours, while the in-person session lasts one-and-a-half days. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Virtual tuition is \$950 per person and includes instruction and digital materials. In-person 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.

Additional information including registration can be found at: [callan.com/events-education](https://callan.com/events-education)



"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









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