# Callan

June 30, 2022

Pennsylvania SERS Defined Benefit Plan

Investment Measurement Service Quarterly Review

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# Capital **Markets** Review

# Recession Call Waits For NBER Committee

#### ECONOMY

Despite two consecutive quarters of a decline in PAGE GDP, the United States is not officially in a recession-until a committee of the National Bureau of Economic Research determines that we are. The stock market. however, is not waiting and has already priced one in.

# **Pain Is Widespread** For Bond Investors

FIXED INCOME

The Bloomberg US 8 Aggregate Bond Index PAGE posted its worst sixmonth return in its history. Market pricing reflects a Fed Funds rate of 3.4% at year-end. Double-digit negative returns were widespread across developed markets, and all EM indices saw losses as well.

# **Illiquidity Premium** Slowly Adjusting

### PRIVATE CREDIT

The illiquidity premium between public and PAGE private credit had been whittled down close to zero, but we are seeing a slow adjustment. Fundraising slowed in the first half of 2022 as interest rate hikes and market volatility led to investor uncertainty.

# Challenges Galore As Stocks, Bonds Fall

# INSTITUTIONAL INVESTORS

All investor types saw Δ returns fall over the last PAGE year ending 2Q22, given the drops in both stocks and bonds. Uncertainty in 2022 creates challenges for planning. Investors have to factor in the invasion of Ukraine. inflation, market declines, higher rates, and recession concerns.

# Private RE Delivers: **REITs Underperform**

**REAL ESTATE/REAL ASSETS** 

Core real estate delivered another robust quar-PAGE ter, although returns are expected to moderate for the rest of this year and into next. REITs both globally and in the United States lagged equities. Real assets saw widespread losses, with the notable exception of energy.

# **Tough Environment** Leads to Losses

# HEDGE FUNDS/MACs

Hedge funds mostly fell in 2Q22 amid a confluence PAGE of major macroeconomic forces. Macro managers remained the best-performing strategy for the first half of 2022. Most of the managers in the Callan Multi-Asset Class (MAC) Style Groups generated negative returns, gross of fees.

# **Most Major Indices** Fall by Double Digits

#### EQUITY

The S&P 500 plunged 6 16.1% in 2Q22: all major PAGE U.S. indices across styles and market cap ranges also fell. Global indices followed suit; slowing global growth became clearer toward guarter-end, leading investors toward higher-quality and lower-volatility areas of the market.

# **Persistence Amid** Volatile Environment

PRIVATE EQUITY First-half private equity fundraising and PAGE activity declined from last

year's frenzied levels but volumes remained strong. With the public equity sell-off in 2Q, distributions have been the largest casualty as the strong seller's market has receded.

deal

# **DC Index Falls in** 1Q22. After 4Q21 Gain

# DEFINED CONTRIBUTION

The Callan DC Index™ fell 5.3% in 1Q22; the PAGE Age 45 Target Date Fund dropped 5.9%. Target date funds (TDFs) received the largest net inflows during the quarter. U.S. large cap had the largest percentage decrease in allocation; TDFs saw the largest increase.

# **Broad Market Quarterly Returns**



# 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

# **Recession—Are We There Yet?**

### ECONOMY | Jay Kloepfer

GDP in 2Q22 fell 0.9%, after declining 1.6% in 1Q—so are we already in a recession? If so, that was fast; growth in 4Q21 was a rockin' 6.9%. The stock market already thinks so; investors fully priced in a recession during the first half of 2022, with particularly large declines in April and June and a bear market by midyear. Over history, the stock market moves to price in a recession well before the economic data begin to show a decline.

It turns out two consecutive quarters of falling GDP is a nice rule of thumb, but it is not the official definition of recession. So what is, and who gets to decide? First, the decider: the rather grandly named National Bureau of Economic Research Business Cycle Dating Committee. Second, the definition: "a significant decline in economic activity that is spread across the country and lasts more than a few months." The committee uses a number of measures of economic activity, and leans particularly hard on real personal income and nonfarm payroll employment. Interestingly, GDP is used sparingly; the focus of recession dating is typically on a monthly determination of peaks and troughs, while GDP is reported only quarterly.

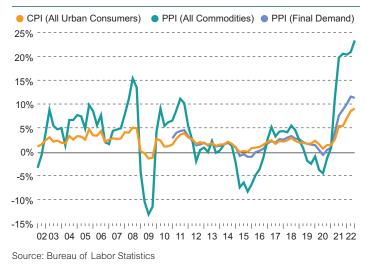
Data preferences from this arcane Dating Committee aside, two consecutive quarters of GDP decline is still news, even if it does not necessarily indicate recession. The sources of the decline in 2Q GDP included a large decrease in private inventory investment, which subtracted 2 percentage points from GDP. The inventory drop was led by a decrease in retail trade, mainly general merchandise stores, along with motor vehicle dealers. Other detractors to growth were both residential and non-residential fixed investment; and federal, state, and local government spending.

Offsetting the declines were increases in exports and personal consumption expenditures (PCE). The rise in PCE reflected an increase in services (food services, accommodations, and health care) that was partly offset by a decrease in spending on goods (led by food and beverages). So ... more spending



Source: Bureau of Economic Analysis

#### Inflation Year-Over-Year



on restaurants and hotels and Airbnbs, and less food at home, even with the sharp rise in prices at the grocery store.

What is especially interesting is that the rise in the dollar helped imports and didn't seem to hurt exports, which is very weird, since that rise makes our exports more expensive and our imports cheaper. Exports fell sharply in 1Q as Russia invaded Ukraine, yet as the war intensified, exports shot back up in 2Q, growing by 18% and contributing almost 2 percentage points to GDP growth. Returning to the premise of the Dating Committee, that much more than GDP growth should define a recession, somewhat anomalous components of GDP accounted for the declines in 1Q and 2Q. Both quarters were driven by huge changes in exports and inventories, neither of which are usually so important to a given quarter's GDP growth, and do not often reverse the course of growth coming from the rest of the economy. Other data on the broad economy during the first half of 2022 do not necessarily point to a recession, at least not yet. The job market was very robust through both 1Q and 2Q, as the U.S. economy added more than 2.7 million new jobs; since the invasion of Ukraine in February, the job market averaged almost 400,000 new jobs per month, substantially above the 200,000-250,000 rate that indicates an expanding economy. We still have room to recover from the pandemic, however, as we are half a million jobs short of the level set in February 2020.

Disposable personal income increased 6.6% in 2Q, in contrast to a decline of 1.3% in 1Q. Despite this robust growth, incomes could not keep up with inflation, which began ramping up in April 2021. After kicking off the year at 7.5% in January, inflation as measured by the CPI-U index has only gone up each month, reaching 9.1% in the June report. As a result, real disposable personal income (take-home pay, adjusted for inflation) decreased 0.5% in 2Q; while disappointing, this report was substantially better than in 1Q, when real disposable income fell an alarming 7.8%.

The mayhem in the capital markets continued during 2Q, as both stocks and bonds responded to the Fed and the ECB aggressively raising interest rates, Russia's war in Ukraine, concerns about an incipient recession, another COVID surge, and global economic weakness. However, the U.S. economy is still growing robustly. There may be something to this Dating

#### U.S. ECONOMY (Continued)

#### The Long-Term View

L. J.		Periods Ended 6/30/22 1 Yr 5 Yrs 10 Yrs 25 Yrs			
Index	2Q22	<u>1 Yr</u>	5 Yrs	10 Yrs	25 Y rs
U.S. Equity					
Russell 3000	-16.7	-13.9	10.6	12.6	8.1
S&P 500	-16.1	-10.6	11.3	13.0	8.0
Russell 2000	-17.2	-25.2	5.2	9.4	7.4
Global ex-U.S. Equity					
MSCI EAFE	-14.5	-17.8	2.2	5.4	3.9
MSCI ACWI ex USA	-13.7	-19.4	2.5	4.8	
MSCI Emerging Markets	-11.4	-25.3	2.2	3.1	
MSCI ACWI ex USA Small Cap	-17.5	-22.4	2.6	6.2	5.7
Fixed Income					
Bloomberg Agg	-4.7	-10.3	0.9	1.5	4.4
90-Day T-Bill	0.1	0.2	1.1	0.6	2.0
Bloomberg Long G/C	-12.3	-20.1	1.0	2.6	6.1
Bloomberg GI Agg ex US	-11.0	-18.8	-1.8	-1.1	2.8
Real Estate					
NCREIF Property	3.2	21.5	8.9	9.7	9.5
FTSE Nareit Equity	-17.0	-6.3	5.3	7.4	8.7
Alternatives					
CS Hedge Fund	-2.3	1.9	4.8	4.7	6.3
Cambridge PE*	-1.5	22.0	20.7	16.5	15.4
Bloomberg Commodity	-5.7	24.3	8.4	-0.8	1.8
Gold Spot Price	-7.5	2.0	7.8	1.2	7.0
Inflation – CPI-U	3.1	9.1	3.9	2.6	2.5

\*Data for most recent period lags. Data as of 3/31/22.

Sources: Bloomberg, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

Committee's methodical approach. The caveat to its work is that calling turning points relies on government data reported with lags, so the Committee can only designate a recession after it starts. We may be "there," but we will not know until the Committee decides.

#### Recent Quarterly Economic Indicators

	2Q22	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20
Employment Cost–Total Compensation Growth	5.1%	4.5%	4.0%	3.7%	2.9%	2.6%	2.5%	2.4%
Nonfarm Business–Productivity Growth	-6.2%*	-7.3%	6.3%	-3.9%	3.2%	2.2%	-2.8%	6.2%
GDP Growth	-0.9%	-1.6%	6.9%	2.3%	6.7%	6.3%	4.5%	33.8%
Manufacturing Capacity Utilization	79.8%	79.2%	78.6%	77.5%	76.8%	75.7%	75.0%	73.3%
Consumer Sentiment Index (1966=100)	57.8	63.1	69.9	74.8	85.6	80.2	79.8	75.6

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

# **Returns Fall Amid Challenging Environment**

# INSTITUTIONAL INVESTORS

# Investors' performance holds up relatively well

- All investor types saw returns decline over the last year ending 2Q22, given the drops in both stocks and bonds over the same period.
- Relatively, their returns held up well, with all investor types outperforming broad U.S. equities and most topping the Bloomberg US Aggregate Bond Index. The sole exception was corporate defined benefit (DB) plans, not surprising given their typically heavy allocations to fixed income.
- Over much longer periods, all institutional investor types have seen returns roughly in line with a 60% S&P 500/40% Aggregate mix.

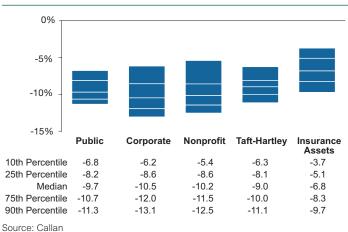
- What should they do about alternatives, which are now over target allocations?
- Uncertainty in the first half of 2022 creates new challenges for planning. Investors are trying to factor in the invasion of Ukraine, inflation, market declines, higher rates, and recession concerns into their decision-making.
- Geopolitical uncertainty has lessened the enthusiasm for emerging market overweights, and raised questions with a number of investors about the value of global ex-U.S. equity broadly to a U.S.-based investor.



## (6/30/22)



- Drops in both stocks and bonds YTD have changed discussions about asset allocation.
- The questions that investors are focused on now include:
  - How does a yield of 4% change the demand for yield substitutes: investment grade credit, bank loans, high yield, private credit—maybe even real estate and infrastructure?
  - How should investors handle rebalancing, which is a natural outcome of a market downturn, except when everything goes down?



# Callan Database Median and Index Returns\* for Periods Ended 6/30/22

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	-9.7	-9.4	5.9	6.4	7.8	7.1
Corporate Database	-10.5	-13.1	3.6	5.0	6.8	6.6
Nonprofit Database	-10.2	-10.6	5.2	5.9	7.3	6.9
Taft-Hartley Database	-9.0	-7.7	6.1	6.8	8.1	6.8
Insurance Assets Database	-6.8	-8.6	2.2	3.3	3.9	4.9
All Institutional Investors	-9.9	-10.1	5.2	6.0	7.5	6.9
Large (>\$1 billion)	-8.8	-7.9	6.1	6.7	7.8	7.2
Medium (\$100mm - \$1bn)	-10.1	-10.4	5.2	6.0	7.5	6.8
Small (<\$100 million)	-10.1	-10.7	4.8	5.6	7.1	6.6
60% S&P 500/40% Bloomberg Agg	-11.5	-10.2	6.5	7.5	8.6	7.2

\*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.

# **INSTITUTIONAL INVESTORS** (Continued)

- Real assets are under review with growing inflation concerns.
  - Renewed interest in inflation-sensitive investments that many investors had grown weary of such as energy, commodities, and other natural resources
  - Steadily growing interest in infrastructure among public plans

## **Corporate DB plan priorities**

- In general, strong interest in de-risking continues despite rise in yields. Higher yields make for a better entry point into long duration, but how much higher can long-term yields go?
   Plans on a glidepath tied to funded status are adhering to de-risking their portfolio as funded status improves.
- Total return-oriented plans enjoyed a strong 1Q22 as rates rose, but most of these plans gave back some funded status improvement as equities continued their decline in June.
- We are having some discussions about pension risk transfer.

### **Public DB plan priorities**

- 2020-21 gains drove improvements in funded status.
- Low projected returns mean downward pressure on actuarial discount rates. Moving to lower discount rates has not typically led to substantial changes in asset allocation, but perhaps greater comfort that the current risk posture has a better chance of achieving the plan discount rate.

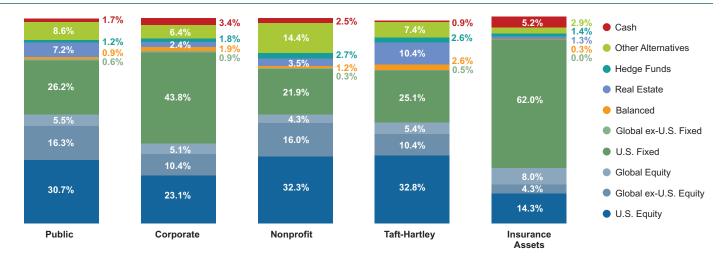
- How will inflation impact large public plans?
- U.S. equity studies in 2Q22 saw large public plans examining fewer active managers and increasing the allocation to passive in an effort to increase net-of-fee returns. Global ex-U.S. equity studies recognize that foreign markets continue to lag but active managers, especially style-focused managers, are beating the indices net of fees.

## Defined contribution (DC) plan priorities

- House passed SECURE 2.0 Act; Senate has two versions moving through committees.
- Final version uncertain, but may include allowing CITs in 403(b) plans and pushing RMDs back to age 75
- Target date funds have been adding allocations to growth assets across the spectrum of retirement cohorts to increase income replacement ratios in light of low expected returns across asset classes. Fee sensitivity has led to more passive in large cap U.S. equity.

## **Nonprofit priorities**

They continue to expand the depth and breadth of their private markets investments in light of both high valuations in public markets growth assets and the potential for high inflation to erode the real values of their assets and distributions.



#### 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**

# All major indices fall

- The S&P 500 plunged 16.1% in 2Q22; all major U.S. indices across styles and market cap ranges fell in the quarter.
- All sectors posted negative returns in the quarter. Energy continued to be the best-performing sector, and the only sector that has posted a gain year-to-date (YTD).
- Large cap stocks nominally outpaced smaller cap stocks.
   The performance spread between the Russell 1000 and the Russell 2000 Index was around 50 basis points.
- Value stocks have outperformed growth stocks across the market capitalization spectrum.
- Consumer Discretionary (-26%), Communication Services (-21%), and Information Technology (-20%) were the worstperforming sectors.

# Volatile environment hits equity markets

- Rising interest rates and inflation along with geopolitical headlines all contributed to a volatile and risk-averse environment.
- Macroeconomic headlines and data releases will continue to impact equity markets.
- Inflation, rising interest rates, and supply-chain disruptions are all headwinds for equity markets.
- Active large cap growth managers have underperformed the Russell 1000 Growth Index meaningfully recently.
- Large tech firms that have sold-off (e.g., Meta) have become an increasingly large proportion of the value index.

- Federal Reserve interest rate hikes may derail the economy, resulting in lower corporate earnings in the near- to intermediate-term.
- With a potential economic slowdown, sell-side analysts have been cutting corporate earnings estimates.
- Longer-duration growth assets, such as growth stocks, are vulnerable during periods of high inflation because of higher interest rates discounting way-out future earnings.

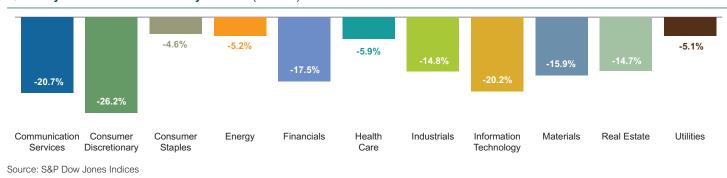


### **U.S. Equity: One-Year Returns**

Russell 3000 -13.9% -13.0% Russell 1000 -18.8% Russell 1000 Growth Russell 1000 Value -6.8% -10.6% S&P 500 -17.3% Russell Midcap -21.0% Russell 2500 Russell 2000 -25.2%

(6/30/22)

#### Sources: FTSE Russell and S&P Dow Jones Indices



# Quarterly Performance of Industry Sectors (6/30/22)

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# EQUITY (Continued)

# **Global Equity**

- The war in Ukraine tested an already fragile supply chain, led to energy demand/supply imbalances, and created an inflationary environment that sparked fears of a recession.
- Slowing global growth and recession risk became clearer toward quarter-end, leading investors toward higher-quality and lower-volatility areas of the market to offer protection.

#### Wide divergence in country returns

- Optimism that the worst is behind China's COVID-19 lockdown buoyed the country to the only gain in 2Q22.
- Japan suffered from a weak yen, slowing growth, and continued supply chain disruptions.

# Growth vs. value

- Value continued to outperform growth as most monetary policies focus on tightening.
- Energy was the only sector with positive YTD results.
- Information Technology had the worst sector return as interest rate increases dampened long duration growth attractiveness.

## U.S. dollar vs. other currencies

 The U.S. dollar strengthened further against other major currencies given its global dominance and perceived safety.

## The rise of the dollar

- The dollar hit a 20-year high after rising roughly 10% YTD.
- The dollar hit parity with the euro; first time since 2002.
- The yen dipped to a 24-year low against the dollar.
- Strong dollar may burden global ex-U.S. markets.

### Strong currency yields purchasing power

- Dollar-denominated debt compounded by depreciating local currencies weighed on the economy.
- The dollar and global ex-U.S. equity have exhibited negative correlation over the past four decades.

## EM has fared better relative to prior downturns

- EM historically declined 26% during prior S&P 500 drawdowns greater than 10%.
- As of 2Q22, EM has corrected by 18% YTD.

## Global ex-U.S. Equity: Quarterly Returns (U.S. Dollar, 6/30/22)



# Global ex-U.S. Equity: One-Year Returns (U.S. Dollar, 6/30/22)



Source: MSCI

## China presents upside opportunity

- Although divergence of China and EM ex-China is notable, China may support EM should fears of a U.S. recession fuel further drawdown.
- China offers favorable growth and valuation relative to other emerging markets.

# **Fixed Income**

# **U.S. Fixed Income**

# Bonds hit hard as rates rise sharply (again)

- Bloomberg US Aggregate Bond Index posted its worst sixmonth return in its history.
- Yield curve flirted with inversion, but 2-year/10-year yield spread was slightly positive at quarter-end.
- TIPS underperformed nominal Treasuries, and 10-year breakeven spreads fell to 2.33% from 2.84% at 3/31/22.
- Fed raised rates by 75 bps, the largest increase since 1994, with further hikes expected.
- Market pricing reflects Fed Funds rate of 3.4% at year-end.

## Spread sectors underperformed

- Investment grade corporates underperformed like-duration
   U.S. Treasuries by 205 bps; RMBS by 98 bps.
- High yield underperformed as spreads widened; excess return vs. U.S. Treasuries was -792 bps, hurt by equity market performance and worries over the impact of higher rates on the economy.
- Leveraged loans held up relatively well with lower-quality credits generally underperforming.

## Securitized sectors continue to hang in

- Agency RMBS spreads widened in response to increased rate volatility.
- ABS spreads tightened, led by credit cards.

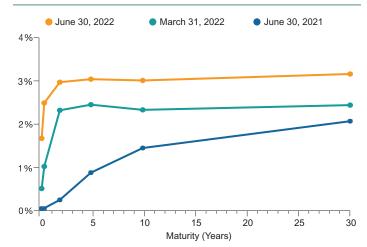
### **Municipal Bonds**

#### Returns hurt by rising rates

- Lower quality continued to underperform
- BBB: -4.5%; AAA: -2.5% (YTD BBB: -11.3%; AAA: -8.5%)
- Munis outperformed U.S. Treasuries (Bloomberg US Treasury: -3.8%)

## Valuations relative to U.S. Treasuries at fair value

- 10-year AAA Muni/10-year U.S. Treasury yield ratio roughly 90%; in line with 10-year average
- Municipal Bond Index after-tax yield = 5.4% (source: Eaton Vance)





**U.S. Treasury Yield Curves** 

### **U.S. Fixed Income: Quarterly Returns**

#### (6/30/22)

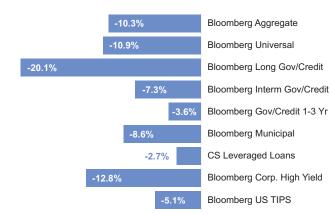
# -4.7% Bloor -5.1% Bloor -12.3% Bloor -2.4% Bloor -0.6% Bloor -2.9% Bloor -4.4% CS L -9.8% Bloor

Bloomberg Aggregate Bloomberg Universal Bloomberg Long Gov/Credit Bloomberg Interm Gov/Credit Bloomberg Gov/Credit 1-3 Yr Bloomberg Municipal CS Leveraged Loans Bloomberg Corp. High Yield Bloomberg US TIPS

Sources: Bloomberg and Credit Suisse

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





Sources: Bloomberg and Credit Suisse

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# FIXED INCOME (Continued)

# Supply/demand

- Outflows of \$76 billion YTD; highest cycle outflow since data series began in 1992
- YTD supply down 14% vs. last year

# **Global Fixed Income**

## Negative returns driven by broad interest rate increases

- U.S. dollar continued to appreciate vs. yen, euro, and pound.
- Double-digit negative returns were widespread across developed markets.

# Inflation and global recession fears drag on EMD

- All countries in the USD-denominated JPM EMBI Global Diversified Index posted negative returns, hurt by rising rates in the U.S.
- Local currency markets across the JPM GBI-EM Global Diversified were down only slightly, but USD strength eroded returns for U.S. investors.

## Interest rates significantly increased

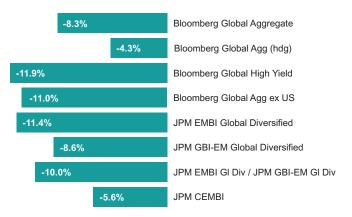
- First-half returns worst since inflation of 1970s
- Global phenomenon driven by recent inflationary pressure
- All fixed income asset classes negatively impacted
- Developed market duration becoming more compelling after broad repricing

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



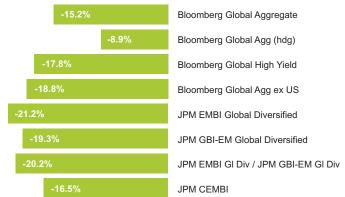
#### **Global Fixed Income: Quarterly Returns**

(6/30/22)



Sources: Bloomberg and JPMorgan Chase

# Global Fixed Income: One-Year Returns (6/30/22)



Sources: Bloomberg and JPMorgan Chase

# Private RE Delivers; REITs Underperform

# REAL ESTATE/REAL ASSETS | Munir Iman

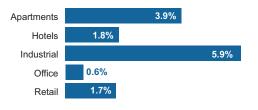
# Robust quarter for private real estate

Core real estate delivered another robust quarter, with strong fundamentals in the Industrial and Multifamily sectors; the NFI-ODCE Index (value-weighted, net of fees) gained 4.5% in 2Q22 and 12.0% year-to-date (YTD). Real estate returns are expected to moderate to 10% in 2022 and 8% in 2023.

- Income returns were positive across all sectors.
- Transaction volumes are slowing as interest rates rise and economic uncertainty increases.
- Industrial and Multifamily sectors are expected to see continued rent growth.
- Office vacancy is expected to stay above long-term averages for the near term.
- Property types with steady cash flows are experiencing cap rate compression due to the demand for logistics facilities coupled with the housing shortage.

Callan Database Median and Index Returns\* for Periods Ended 6/30/22

## Sector Quarterly Returns by Property Type



Source: NCREIF

# Public real estate lags

REITs, both in the United States and globally, underperformed in 2Q22.

- The FTSE EPRA Nareit Developed Index, a measure of global REITs, fell 17.4% in 2Q22 compared to a 15.8% drop for global equities (MSCI World).
- The FTSE Nareit Equity REITs index, measuring U.S. REITs, dropped 17.0%, in contrast with the S&P 500 Index, which lost 16.1%.
- REITs are now trading at a discount to NAV and offer relative value given the strength of underlying fundamentals

## Real assets see widespread drops

Following very strong 1Q results, real assets as a group posted negative returns in 2Q as concerns over slowing global growth mounted.

- A lone exception was the energy-heavy S&P GSCI Index, which eked out a 2.0% gain during the quarter while the Bloomberg Commodity TR Index fell 5.7%.
- WTI Crude closed the quarter at \$106/barrel, up from \$100 on 3/31/22 and \$76 at year-end. Gold (S&P Gold Spot Price Index: -7.5%), listed infrastructure (DJB Global Infrastructure: -7.1%), REITs (MSCI US REIT: -16.9%), and TIPS (Bloomberg TIPS: -6.1%) declined.

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	5.0	12.2	27.9	12.3	10.2	10.6	6.2
NFI-ODCE (value-weighted, net)	4.5	12.0	28.3	11.7	9.6	10.2	6.0
NCREIF Property	3.2	8.7	21.5	10.2	8.9	9.7	7.2
NCREIF Farmland	2.6	5.3	11.0	6.6	6.4	9.6	10.6
NCREIF Timberland	1.9	5.1	12.0	5.0	4.3	5.7	5.1
Public Real Estate							
Global Real Estate Style	-17.2	-20.6	-12.2	1.9	5.0	6.9	3.9
FTSE EPRA Nareit Developed	-17.4	-20.7	-13.5	-1.1	1.9	4.7	2.0
Global ex-U.S. Real Estate Style	-18.5	-21.5	-20.6	-1.2	3.7	6.2	1.4
FTSE EPRA Nareit Dev ex US	-17.7	-20.4	-21.1	-5.0	-0.2	3.3	0.1
U.S. REIT Style	-16.7	-20.0	-6.3	6.0	7.0	8.4	6.8
FTSE EPRA Nareit Equity REITs	-17.0	-20.2	-6.3	4.0	5.3	7.4	5.8
*Returns less than one year are not annualized	4						

(6/30/22)

\*Returns less than one year are not annualized.

Sources: Callan, FTSE Russell, NCREIF

# 10 Callan Institute

# **Persistence Amid Volatility**

# **PRIVATE EQUITY** | Gary Robertson

Fundraising ► Based on preliminary data, final closes for private equity partnerships in 2Q22 totaled \$233 billion of commitments in 486 partnerships. (Unless otherwise noted, all data in this commentary come from PitchBook.) The dollar volume was up 3% from 1Q22, but the number of funds fell 11%. For the first half, 2022 commitments are running 13% behind those of a year ago, with the number of funds down by 39%. While the figures point to a decline from 2021, the first-half results are in fact tracking to match last year's total because the second half of 2021 weakened as public equity markets grew volatile.

**Buyouts** ► New buyout transactions by count fell 12% from 1Q22 to 2,668, and disclosed deal value dropped 42% to \$125 billion. YTD numbers also saw declines of 16% in number of investments and 7% in disclosed value. Average buyout prices remained comparable to 2021, with a similar pattern in average leverage multiples.

VC Investments ► New rounds of financing in venture capital companies totaled 10,244, with \$125 billion of announced value. The number of investments preliminarily fell 24% from 1Q22, and announced value fell 25%. YTD numbers held up stronger, down only 15% for rounds and 13% for disclosed value.

Exits ► There were 522 private M&A exits of private equitybacked companies, with disclosed values totaling \$122 billion. The preliminary private sale count fell 18% and the announced dollar volume dropped 26%. There were 42 private equity-backed IPOs in 2Q22 raising an aggregate \$7 billion, down 7% by count, with issuance being unchanged from 1Q22.

Venture-backed M&A exits totaled 680 transactions with disclosed value of \$23 billion. The number of sales declined 12% from 1Q22, and announced value plunged 56%. There were 67 VC-backed IPOs in 2Q22 with a combined float of \$10 billion; the count was down 9% and the issuance grew 25%.

**Returns** With the strong downturn in public equity markets, private equity outperformance has widened given private equity's more gradual quarterly mark-to-market valuation methodology.

#### Funds Closed 1/1/22 to 6/30/22

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	650	156,559	34%
Growth Equity	79	61,601	13%
Buyouts	205	185,235	40%
Mezzanine Debt	7	11,021	2%
Distressed	18	26,353	6%
Energy	5	1,930	0%
Secondary and Other	58	11,743	3%
Fund-of-Funds	12	4,325	1%
Totals	1,034	458,767	100%

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

1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
22.2	35.0	27.5	20.3	14.9	12.1	24.6
17.9	26.5	22.5	16.8	14.3	14.5	15.9
24.6	22.9	20.1	15.7	11.7	14.7	13.6
17.2	13.3	12.7	11.9	10.5	11.0	10.3
12.4	8.4	8.0	8.9	8.8	9.8	9.8
33.5	20.8	15.6	13.3	11.1	12.3	12.3
22.6	24.9	21.0	16.1	12.4	13.6	14.6
15.7	18.9	16.0	14.6	10.3	9.3	9.4
11.9	18.2	15.4	14.3	10.1	9.4	9.5
	11.9	11.9 18.2	11.9 18.2 15.4	11.9 18.2 15.4 14.3	11.9 18.2 15.4 14.3 10.1	11.9 18.2 15.4 14.3 10.1 9.4

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.

# Appealing to Investors in Low-Yield Climate

# **PRIVATE CREDIT** | Catherine Beard

# Illiquidity premium close to zero

- U.S. corporate yields rose dramatically at the end of 2021 and the first six months of 2022, due to higher interest rates from tighter Fed policy and a widening of high yield spreads. Spreads widened because of weaker credit conditions as the U.S. economic outlook worsened.
- The illiquidity premium between public and private credit had been whittled down close to zero, but we are seeing a slow adjustment with SOFR widening out 200 bps and new private loan pricing at a 75-100 bps wider spread. A full adjustment between the public and private markets may take several quarters.
- Private credit fundraising was robust leading into the COVID dislocation, with a particular focus on direct lending and distressed strategies.
- Fundraising slowed in the first half of 2022 as rate hikes and market volatility led to investor uncertainty.
- For mature private credit programs, demand for diversifying strategies is increasing to capture opportunities outside of traditional sponsor-backed direct lending.

# A permanent part of portfolios

- Core yield and income-generating characteristics remain attractive in private credit portfolios, in spite of the shrinking illiquidity premium.
- Despite the shift from a low-yield environment, private credit has become a permanent asset class in many portfolios.

# Attractive inflation-resistant characteristics

Many direct lending assets are floating rate, which can add protection against rising rates.

# Distressed cycle on horizon a growing opportunity

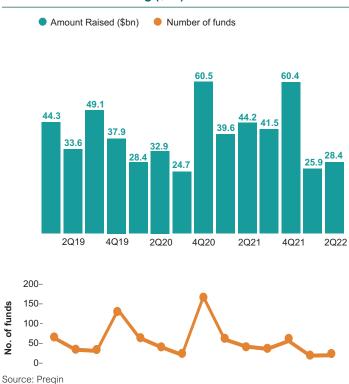
- Distressed opportunities in U.S. and Europe are expected to increase across both corporate and non-corporate assets.
  - Enhances importance of seasoned workout talent across sub-strategy types
  - Brings the need for increased underwriting discipline

# Continued evolution of pockets of opportunity

Opportunities include those that offer diversification through differentiated collateral and/or low correlation to public markets, including specialty finance, asset-backed lending, and niche areas.

# Private Credit Fundraising (\$bn)

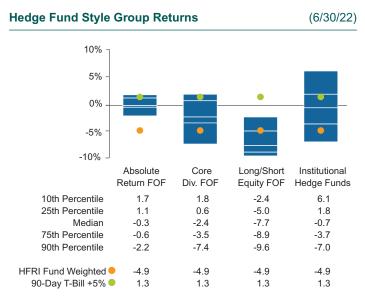
No. of funds



# **Tough Environment Leads to Losses**

# HEDGE FUNDS/MACs | Joe McGuane

Global markets sold off significantly in 2Q22 amid pressure from high inflation, rising interest rates, and Russia's invasion of Ukraine. In this challenging environment, hedge funds as a whole declined during 2Q, as equity hedge managers had a second quarter of disappointing returns. Event-driven strategies continued to struggle, as their deep value equity positions were the main detractor during the first half of the year while their credit positions held up fairly well. Relative value strategies remained in positive territory, as some managers continued to profit off a rising rate environment while others have been successful in capital structure arbitrage given the volatility in credit and equity markets. Macro managers remained the best-performing strategy for the first half of 2022, as commodity trading was the biggest driver of performance. Strong contributions also came from quantitative strategies.



Sources: Callan, Credit Suisse, Federal Reserve

# Callan Peer Group Median and Index Returns\* for Periods Ended 6/30/22

Hedge Fund Universe	Quarter	Year to Date	1 Years	3 Years	5 Years	10 Years
Callan Institutional Hedge Fund Peer Group	-0.7	0.7	3.7	5.6	5.5	6.3
Callan Fund-of-Funds Peer Group	-2.8	-4.5	-4.5	4.8	4.4	5.0
Callan Absolute Return FOF Style	-0.3	1.1	3.4	5.4	4.9	5.0
Callan Core Diversified FOF Style	-2.4	-4.1	-3.9	4.8	4.0	4.7
Callan Long/Short Equity FOF Style	-7.7	-11.5	-12.3	3.2	3.9	5.2
BB GS Cross Asset Risk Premia 6% Vol Idx	4.4	5.0	3.4	-0.1	2.6	4.2
HFRI Fund Weighted Index	-4.9	-5.8	-5.7	6.1	5.1	5.0
HFRI Fixed Convertible Arbitrage	-4.4	-5.0	-2.1	6.1	4.9	5.1
HFRI Distressed/Restructuring	-3.7	-2.5	-1.6	7.4	5.6	5.7
HFRI Emerging Markets	-6.7	-13.0	-15.3	2.6	2.6	3.8
HFRI Equity Market Neutral	0.7	0.2	2.1	2.6	2.5	3.1
HFRI Event-Driven	-6.4	-7.6	-7.1	5.0	4.3	5.2
HFRI Relative Value	-2.6	-1.9	-1.0	3.6	3.6	4.5
HFRI Macro	1.8	8.6	8.0	7.8	5.3	3.1
HFRI Equity Hedge	-8.0	-12.0	-12.2	6.5	5.5	5.9
HFRI Multi-Strategy	-7.0	-8.8	-12.1	4.3	2.0	3.5
HFRI Merger Arbitrage	-2.9	-1.6	0.5	5.8	5.0	4.3
90-Day T-Bill + 5%	1.3	2.6	5.2	5.6	6.1	5.6

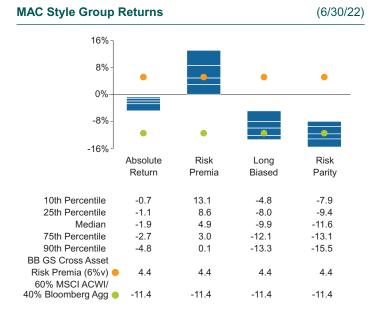
\*Net of fees. Sources: Bloomberg GSAM, Callan, Credit Suisse, Hedge Fund Research

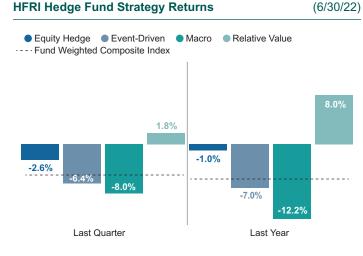
The median manager in the Callan Institutional Hedge Fund Peer Group fell 0.7%. Within this style group of 50 peers, the average rates manager gained 1.5%, driven by interest rate volatility. Meanwhile, hedged credit managers lost 4.6% from both performing and distressed credit.

Within the HFRI indices, the best-performing strategy last quarter was again macro (+1.8%), aided by its exposure to commodities and rates trading. Equity hedge strategies had another difficult quarter (-8.0%), as growth-heavy managers experienced a sell-off.

Across the Callan Hedge FOF Database, the median Absolute Return FOF fell 0.3%, as a focus on lower beta strategies held up during the quarter. Meanwhile, the median Callan Long-Short Equity FOF dropped 7.7%, as a growth bias among managers continued to be a drag on performance. The median Callan Core Diversified FOF declined 2.4%, as macro strategies were able to offset some of the negative performance from equity hedge and event-driven managers.

Measuring the quarter's performance of alternative risk premia, the Bloomberg GSAM Risk Premia Index increased 4.4% based upon a 6% volatility target. The median manager of the Callan Multi-Asset Class (MAC) Style Groups generated negative returns, gross of fees, consistent with their underlying risk exposures. For example, the median Callan Long Biased MAC manager fell 9.9%, as exposure to equity and fixed income continued to be a drag on performance. The Callan Risk Parity MAC index, which typically targets an equal risk-weighted allocation to the major asset classes with leverage, was down 11.6%. The Callan Risk Premia MAC held up the best during the quarter, up 4.9%.





Source: HFRI

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

# DC Index Falls in 1Q22, Reversing 4Q21 Gain

# DEFINED CONTRIBUTION | Patrick Wisdom

# Performance: Index falls to begin year

- The Callan DC Index<sup>™</sup> fell 5.3% in 1Q22, a reversal from its 4Q21 gain (5.0%).
- The Age 45 Target Date Fund dropped 5.9%.

#### Growth Sources: Losses drive decline in balances

- Balances within the DC Index declined by 5.4% after a 4.4% increase the previous quarter.
- Investment returns (-5.3%) primarily drove the decline.

## **Turnover: Net transfers rise**

- Turnover (i.e., net transfer activity levels within DC plans) increased to 0.42% from the previous quarter's 0.19%.
- The Index's historical average (0.57%) remained unchanged and signaled that most participants have not drastically altered their allocations.

#### Net Cash Flow Analysis: TDFs stay atop leaderboard

- Target date funds (TDFs) received the largest net inflows in the Index, followed closely by stable value.
- Investors transferred assets out of U.S. large-cap equity (-47.4%), U.S. small/mid-cap equity (-16.5%), and global ex-U.S. equity (-3.1%).

# Equity Allocation: Exposure falls slightly

 The Index's overall allocation to equity (72.0%) fell from the previous quarter's level (72.8%), driven by both investor outflows and declines in equity markets.

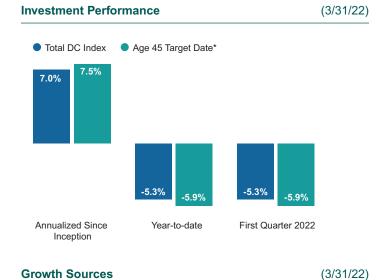
# Asset Allocation: U.S. equity falls; target date funds gain

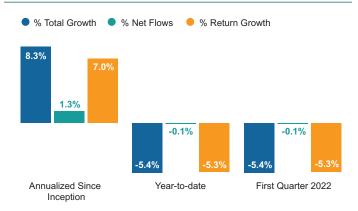
- U.S. large cap (26.9%) and U.S. small/mid cap (8.3%) had the largest percentage decreases in allocation.
- Target date funds (32.6%) and stable value (8.6%) had the largest percentage increases.

## Prevalance of Asset Class: Balanced funds dip again

 The prevalence of a balanced fund (43.2%) 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.





# Net Cash Flow Analysis (1Q22)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	48.4%
Stable Value	42.2%
U.S. Fixed Income	-17.1%
U.S. Large Cap	-47.4%
Total Turnover**	0.42%

Data provided here is the most recent available at time of publication. Source: Callan DC Index

Note: DC Index inception date is January 2006.

- $^{\ast}$  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.

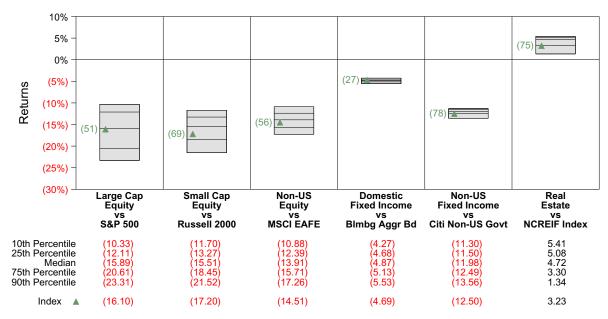
Active Management Overview

# Market Overview Active Management vs Index Returns

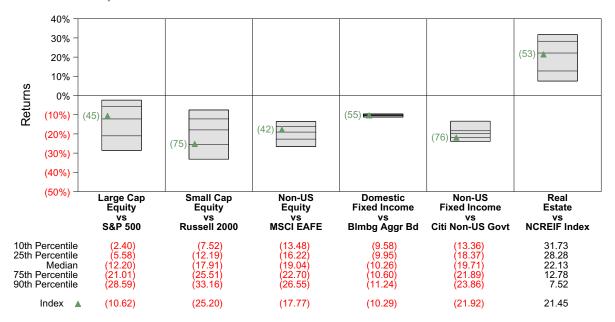
## **Market Overview**

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 June 30, 2022



## Range of Separate Account Manager Returns by Asset Class One Year Ended June 30, 2022





Asset Allocation and Performance

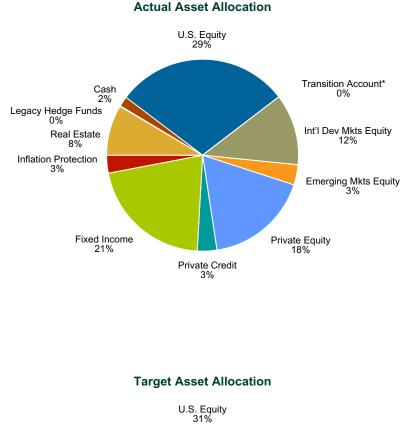
# ASSET ALLOCATION AND PERFORMANCE

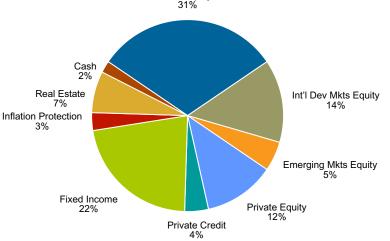
# Asset Allocation and Performance

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 June 30, 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.





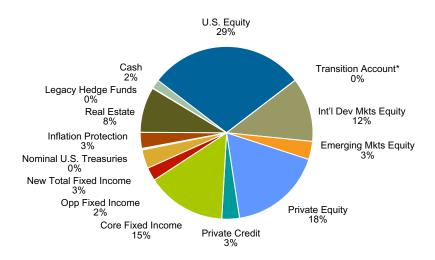
Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
U.S. Equity	10,154,430	29.4%	31.0%	(1.6%)	(540,699)
Transition Account*	1,042	0.0%	0.0%	0.0%	1,042
Int'l Dev Mkts Equity	4,131,937	12.0%	14.0%	(2.0%)	(698,121)
Emerging Mkts Equity	1,165,024	3.4%	5.0%	(1.6%)	(559,997)
Private Equity	6,058,510	17.6%	12.0%	5.6%	1,918,461
Private Credit	1,136,040	3.3%	4.0%	(0.7%)	(243,977)
Fixed Income	7,267,495	21.1%	22.0%	(0.9%)	(322,597)
Inflation Protection	1,042,834	3.0%	3.0%	0.0%	7,822
Real Estate	2,920,427	8.5%	7.0%	1.5%	505,398
Legacy Hedge Funds	19,412	0.1%	0.0%	0.1%	19,412
Cash	603,265	1.7%	2.0%	(0.3%)	(86,743)
Total	34,500,415	100.0%	100.0%		

\*Market values are shown net of accrued fees.



# Actual Asset Allocation As of June 30, 2022

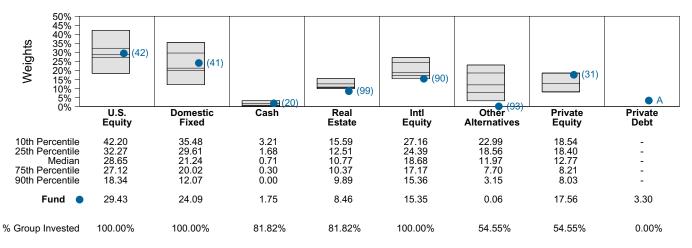
The first chart below shows the Fund's asset allocation as of June 30, 2022. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spons- V Lg DB (>10B).



#### **Actual Asset Allocation**

Asset Class	\$000s Actual	Weight Actual
U.S. Equity	10,154,430	29.4%
Transition Account*	1,042	0.0%
Int'l Dev Mkts Equity	4,131,937	12.0%
Emerging Mkts Equity	1,165,024	3.4%
Private Equity	6,058,510	17.6%
Private Credit	1,136,040	3.3%
Core Fixed Income	5,125,319	14.9%
Opp Fixed Income	859,976	2.5%
New Total Fixed Income	1,191,597	3.5%
Nominal U.S. Treasuries	90,603	0.3%
Inflation Protection	1,042,834	3.0%
Real Estate	2,920,427	8.5%
Legacy Hedge Funds	19,412	0.1%
Cash	603,265	1.7%
Total	34,500,415	100.0%

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

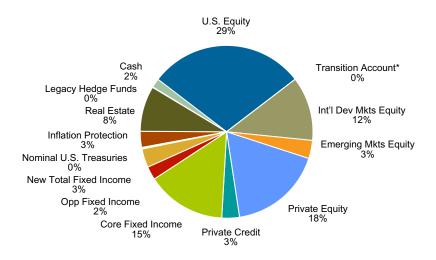


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# Actual Asset Allocation As of June 30, 2022

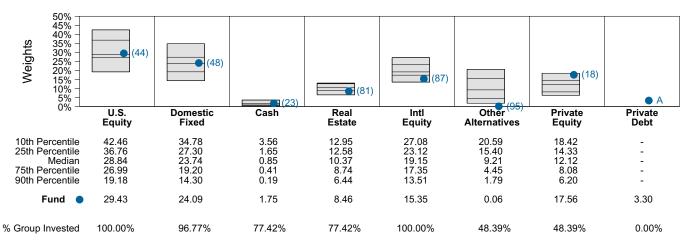
The first chart below shows the Fund's asset allocation as of June 30, 2022. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spons - Large (>1B).



#### **Actual Asset Allocation**

Asset Class	\$000s Actual	Weight Actual
U.S. Equity	10,154,430	29.4%
Transition Account*	1,042	0.0%
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#### Asset Class Weights vs Callan Public Fund Spons - Large (>1B)



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# Actual vs Target Asset Allocation As of June 30, 2022

The first chart below shows the Fund's asset allocation as of June 30, 2022. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.



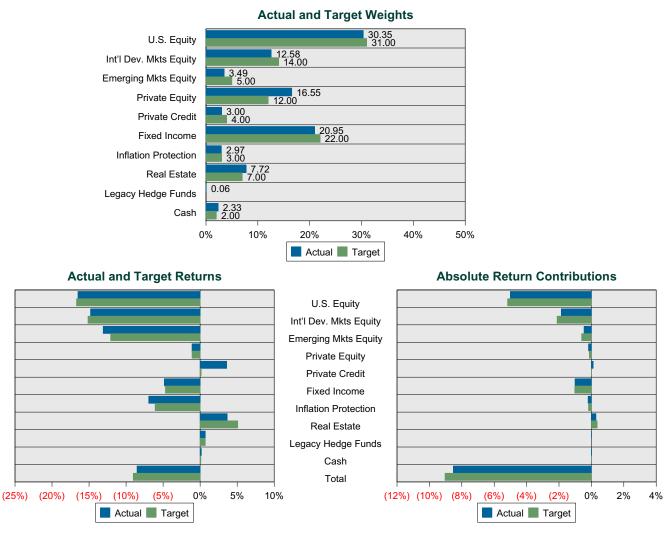
#### \$Millions Percent \$Millions Weight Asset Class Difference Difference Actual Actual Target 79.0% 21.0% 77.8% 22.2% (1.2%) 1.2% <mark>(430)</mark> 430 **Return Seeking** 26,825 7,675 Capital Preservation 34,500 100.0% 100.0% Total

\*Return Seeking Assets: U.S. Equity, Int'I Developed Markets Equity, Emerging Markets Equity, Transition Account, Opportunistic Fixed Income, Long Duration Credit, High Yield, Private Equity, Private Credit, Real Estate and Legacy Hedge Funds. \*Capital Preservation Assets: Inflation Protection (TIPS), Interm Treas, Long Duration Treas, Securitized, Intermediate Credit and Cash. \*Market values are shown net of accrued fees.



# **Quarterly Total Fund Absolute Attribution - June 30, 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.



# Absolute Attribution Effects for Quarter ended June 30, 2022

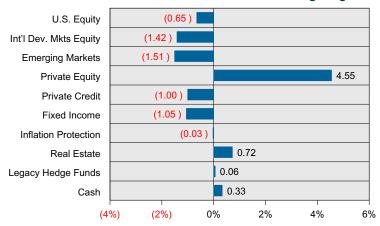
	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
U.S. Equity	30%	(16.51%)	(5.01%)	31%	(16,70%)	(5.18%)	0.17%
Int'l Dev. Mkts Equity	13%	(14.80%)	(1.86%)	14%	(15.15%)	(2.12%)	0.26%
Emerging Mkts Equity	3%	(13.10%)	(0.46%)	5%	(12.10%)	(0.60%)	0.15%
Private Equity	17%	(1.10%)	(0.18%)	12%	(1.10%)	(0.13%)	(0.05%)
Private Credit	3%	3.59%	0.11%	4%	0.15%	0.01%	0.10%
Fixed Income	21%	(4.84%)	(1.01%)	22%	(4.69%)	(1.03%)	0.02%
Inflation Protection	3%	(6.95%)	(0.21%)	3%	(6.08%)	(0.18%)	(0.02%)
Real Estate	8%	3.66%	0.28%	7%	5.09%	0.36%	(0.07%)
Legacy Hedge Funds	0%	0.70%	0.00%	0%	0.70%	0.00%	0.00%
Cash	2%	0.17%	0.00%	2%	0.10%	0.00%	0.00%
	Total Eur	nd Return	(9 5 2 0 / )		Target Deturn	(9.04%)	0.51%
	Total Ful	ia Return	(8.53%)		Target Return	(9.04%)	0.51%

\* Current Quarter Target = 22.0% Blmbg U.S. Agg Bond Index, 31.0% Russell 3000 Index, 12.0% Private Equity, 14.0% MSCI World ex US IMI, 6.3% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 4.0% S&P Levered Loan Index +1% (Qtr lag), 5.0% MSCI EM IMI, 3.0% U.S. TIPS Index, 2.0% 3-month Treasury Bill, 0.7% FTSE EP/NA US Index. Returns are shown gross of fees.



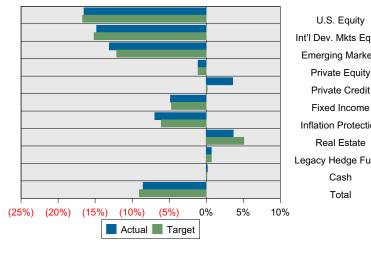
# **Quarterly Total Fund Relative Attribution - June 30, 2022**

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.

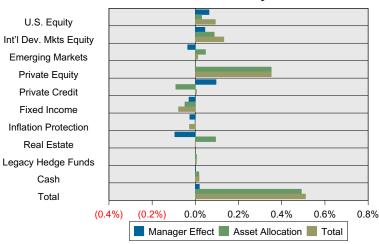


Asset Class Under or Overweighting

# **Actual vs Target Returns**



**Relative Attribution by Asset Class** 



#### Relative Attribution Effects for Quarter ended June 30, 2022

Cash Total

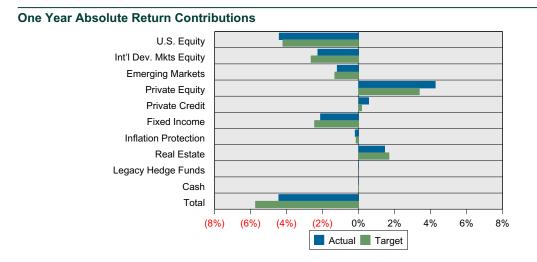
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
	0						
U.S. Equity	30%	31%	(16.51%)	(16.70%)	0.06%	0.03%	0.09%
Int'l Dev. Mkts Equity	13%	14%	(14.80%)	(15.15%)	0.04%	0.09%	0.13%
Emerging Markets	3%	5%	(13.10%)	(12.10%)	(0.04%)	0.05%	0.01%
Private Equity	17%	12%	<b>`(1.10%</b> )	<b>`(1.10%</b> )	0.00%	0.35%	0.35%
Private Credit	3%	4%	3.59%	0.15%	0.10%	(0.09%)	0.01%
Fixed Income	21%	22%	(4.84%)	(4.69%)	(0.03%)	(0.05%)	(0.08%)
Inflation Protection	3%	3%	(6.95%)	(6.08%)	(0.03%)	(0.00%)	(0.03%)
Real Estate	8%	7%	3.66%	5.09%	(0.10%)	0.09%	(0.00%)
Legacy Hedge Funds	0%	0%	0.70%	0.70%	0.00%	0.01%	0.01%
Cash	2%	2%	0.17%	0.10%	0.00%	0.02%	0.02%
Total			(8.53%) =	(9.04%) +	0.02% +	0.49%	0.51%

\* Current Quarter Target = 22.0% Blmbg U.S. Agg Bond Index, 31.0% Russell 3000 Index, 12.0% Private Equity, 14.0% MSCI World ex US IMI, 6.3% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 4.0% S&P Levered Loan Index +1% (Qtr lag), 5.0% MSCI EM IMI, 3.0% U.S. TIPS Index, 2.0% 3-month Treasury Bill, 0.7% FTSE EP/NA US Index. Returns are shown gross of fees.

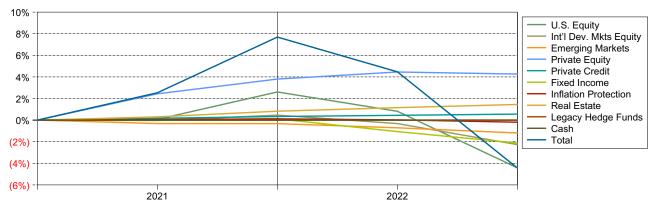


# Cumulative Total Fund Absolute Attribution - June 30, 2022

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.



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	30%	(14.44%)	(4.42%)	30%	(13.87%)	(4.21%)	(0.21%)
Int'l Dev. Mkts Equity	13%	(16.85%)	(2.27%)	14%	(17.73%)	(2.64%)	0.38%
Emerging Markets	4%	(28.19%)	(1.19%)	5%	(24.75%)	(1.33%)	0.14%
Private Equity	16%	29.83%	4.26%	12%	29.83%	3.38%	0.89%
Private Credit	3%	17.18%	0.56%	4%	4.25%	0.17%	0.39%
Fixed Income	22%	(9.21%)	(2.12%)	23%	(10.29%)	(2.45%)	0.33%
Inflation Protection	3%	(6.39%)	(0.19%)	3%	<b>`(5.14%</b> )	(0.14%)	(0.05%)
Real Estate	7%	20.54%	1.45%	7%	24.86%	1.69%	(0.24%)
Legacy Hedge Funds	0%	1.49%	0.00%	0%	1.49%	0.00%	0.00%
Cash	2%	0.22%	0.01%	2%	0.17%	0.00%	0.00%
	Total Fund Return		(4.44%)		Target Return	(5.73%)	1.29%

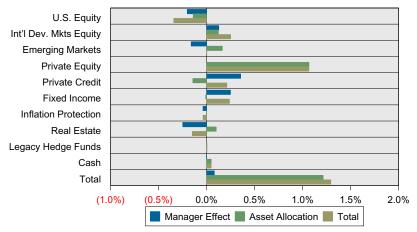
\* Current Quarter Target = 22.0% Blmbg U.S. Agg Bond Index, 31.0% Russell 3000 Index, 12.0% Private Equity, 14.0% MSCI World ex US IMI, 6.3% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 4.0% S&P Levered Loan Index +1% (Qtr lag), 5.0% MSCI EM IMI, 3.0% U.S. TIPS Index, 2.0% 3-month Treasury Bill, 0.7% FTSE EP/NA US Index. Returns are shown gross of fees.



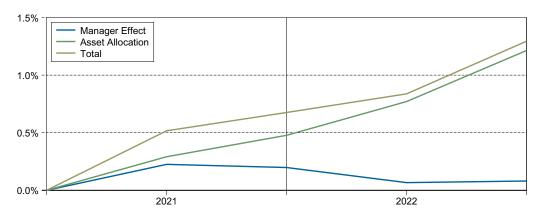
# Cumulative Total Fund Relative Attribution - June 30, 2022

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	30%	30%	(14.44%)	(13.87%)	(0.20%)	(0.14%)	
Int'l Dev. Mkts Equity	13%	14%	(16.85%)	(17.73%)	0.13%	0.12%	<mark>(0.34%)</mark> 0.25%
Emerging Markets	4%	5%	(28.19%)	(24.75%)	(0.16%)	0.16%	0.00%
Private Equity	16%	12%	29.83%	29.83%	0.00%	1.07%	1.07%
Private Credit	3%	4%	17.18%	4.25%	0.35%	(0.14%)	0.21%
Fixed Income	22%	23%	(9.21%)	(10.29%)	0.25%	(0.01%)	0.24%
Inflation Protection	3%	3%	(6.39%)	(5.14%)	(0.04%)	0.00%	(0.04%)
Real Estate	7%	7%	20.54%	24.86%	(0.25%)	0.10%	(0.15%)
Legacy Hedge Funds	0%	0%	1.49%	1.49%	0.00%	0.00%	0.00%
Cash	2%	2%	0.22%	0.17%	0.00%	0.05%	0.05%
Total			(4.44%) =	(5.73%) +	0.08% +	1.21%	1.29%

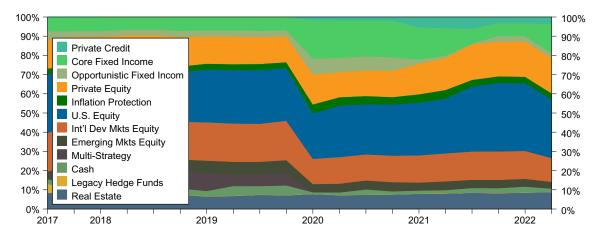
\* Current Quarter Target = 22.0% Blmbg U.S. Agg Bond Index, 31.0% Russell 3000 Index, 12.0% Private Equity, 14.0% MSCI World ex US IMI, 6.3% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 4.0% S&P Levered Loan Index +1% (Qtr lag), 5.0% MSCI EM IMI, 3.0% U.S. TIPS Index, 2.0% 3-month Treasury Bill, 0.7% FTSE EP/NA US Index. Returns are shown gross of fees.



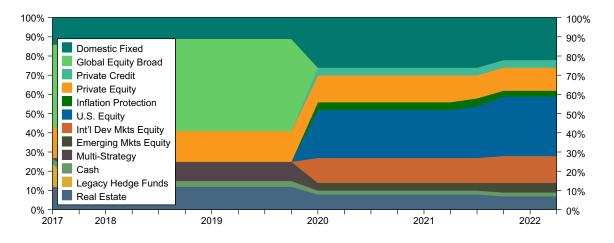
# **Actual vs Target Historical Asset Allocation**

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).

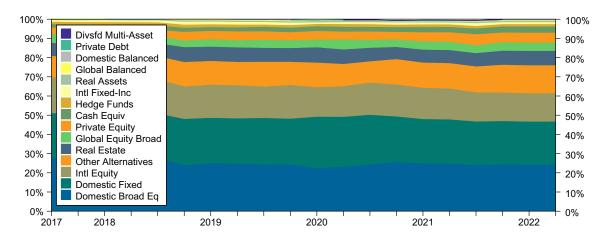
# **Actual Historical Asset Allocation**



## **Target Historical Asset Allocation**



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



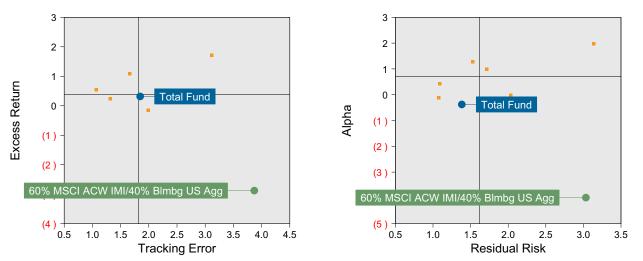


# Total Fund Total Fund vs Target Risk Analysis

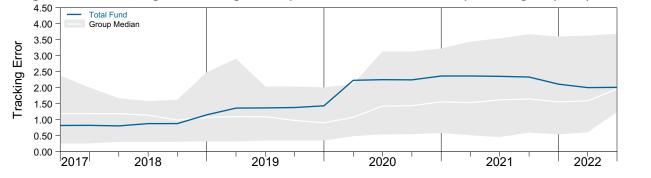
## **Risk Analysis**

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.

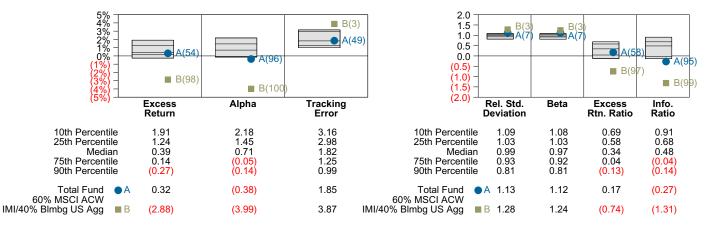
### Risk Analysis vs Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended June 30, 2022







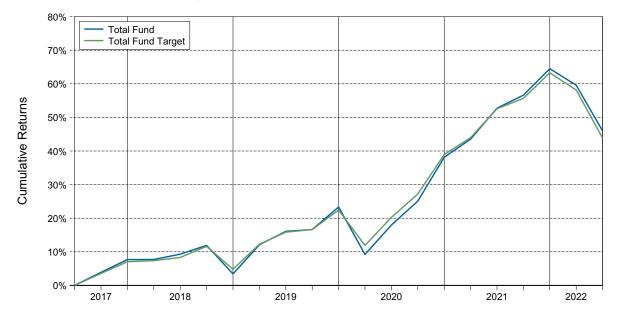
# Risk Statistics Rankings vs Targets Rankings Against Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended June 30, 2022



Callan

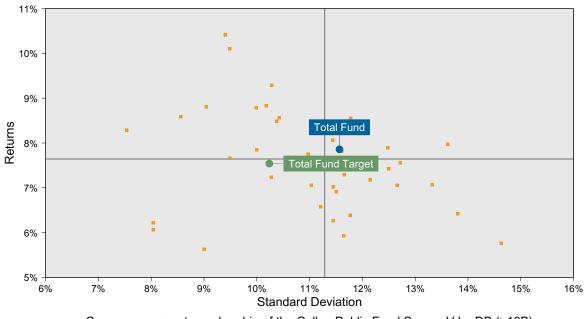
# **Cumulative Performance Relative to Target**

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

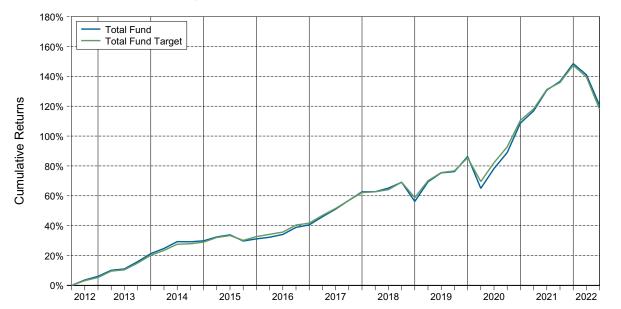


Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)



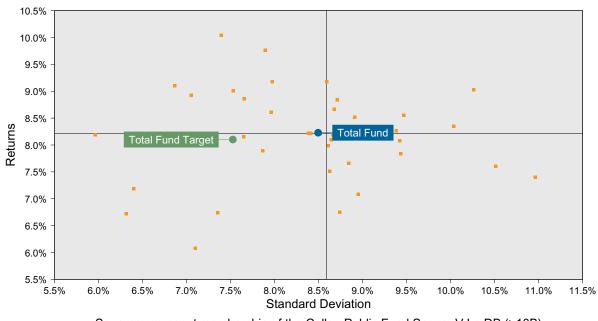
# **Cumulative Performance Relative to Target**

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



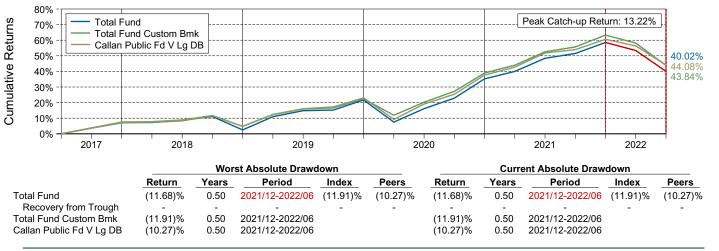
Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)

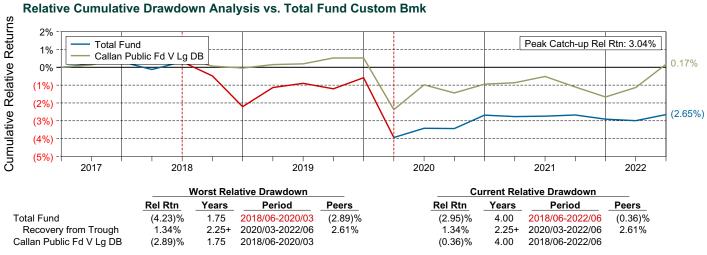


# Total Fund Drawdown Analysis for Five Years Ended June 30, 2022

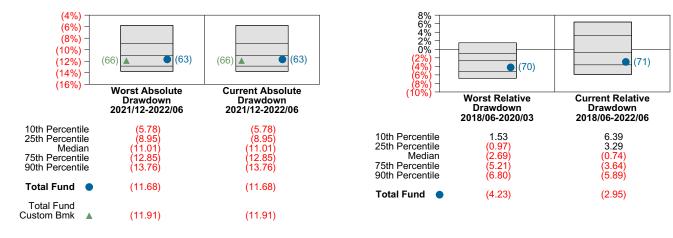
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute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





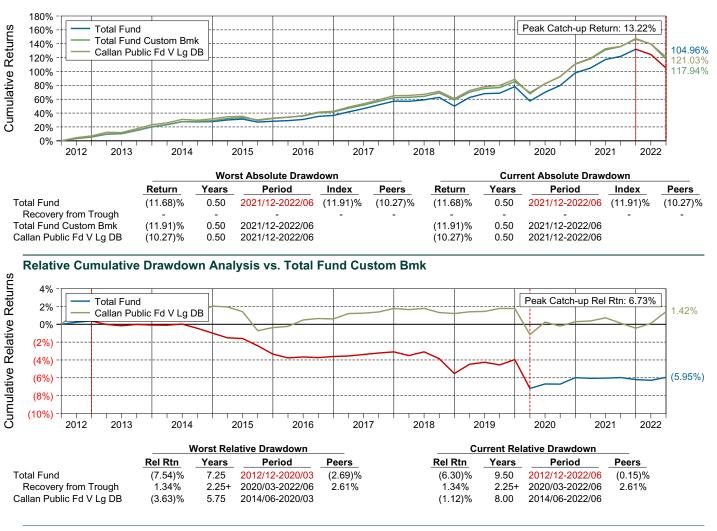
#### Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended June 30, 2022



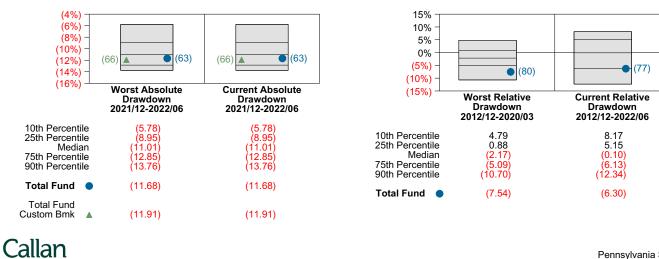
# **Total Fund** Drawdown Analysis for Ten Years Ended June 30, 2022

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**

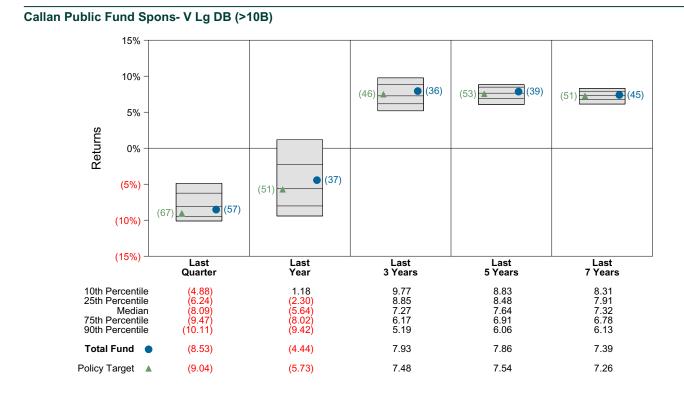


#### Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Ten Years Ended June 30, 2022



# **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 June 30, 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.



#### Asset Allocation Adjusted Ranking

15% 10% • (51) (52) (67) 5% Returns 0% (73) (5%) (88) (10%) (15%) Last Last Last Last Last Quarter Year 3 Years 5 Years 7 Years 8.36 7.78 10th Percentile (1.30) 9.05 8.56 (7.17)25th Percentile (7.76) (2.91 8.38 8.23 Median (8.11 (3.89) 7.96 7.86 7.59 75th Percentile 7.32 8 35 (4.56) 7.22 7.56 90th Percentile ì8 66' (7 68<sup>1</sup> 6 64 6 85 Total Fund (8.53)(4.44)7.93 7.86 7.39

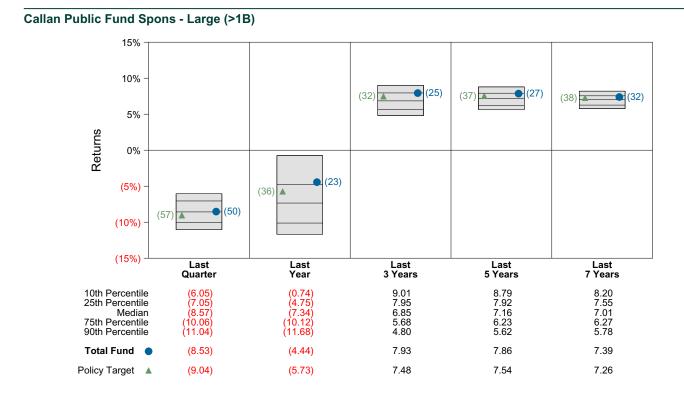
\* Current Quarter Target = 31.0% Russell 3000 Index, 22.0% Blmbg Aggregate, 14.0% MSCI World xUS IMI, 12.0% Private Equity, 6.3% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 5.0% MSCI EM IMI, 4.0% S&P/LSTA Lev Loan lagged 3 months+1.0%, 3.0% Blmbg TIPS, 2.0% 3-month Treasury Bill and 0.7% FTSE EP/NA US Index.

\*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 June 30, 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.



#### Asset Allocation Adjusted Ranking

15% 10% (48) (38) (44) 5% Returns 0% (57) (5%) (84) (10%) (15%) Last Last Last Last Last Quarter Year 3 Years 5 Years 7 Years 8.56 8.16 7.72 10th Percentile 8.52 (2.19)(7.38)25th Percentile (7.75) (3.23 8.33 8.00 7.35 7.11 Median (8.09 (4.04) 7.88 7.72 75th Percentile 5.07 8.38 7.34 7.41 90th Percentile (8.75 ໄ7 10<sup>1</sup> 6 63 6 82 674 Total Fund (8.53)(4.44)7.93 7.86 7.39

\* Current Quarter Target = 31.0% Russell 3000 Index, 22.0% Blmbg Aggregate, 14.0% MSCI World xUS IMI, 12.0% Private Equity, 6.3% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 5.0% MSCI EM IMI, 4.0% S&P/LSTA Lev Loan lagged 3 months+1.0%, 3.0% Blmbg TIPS, 2.0% 3-month Treasury Bill and 0.7% FTSE EP/NA US Index.

\*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 June 30, 2022

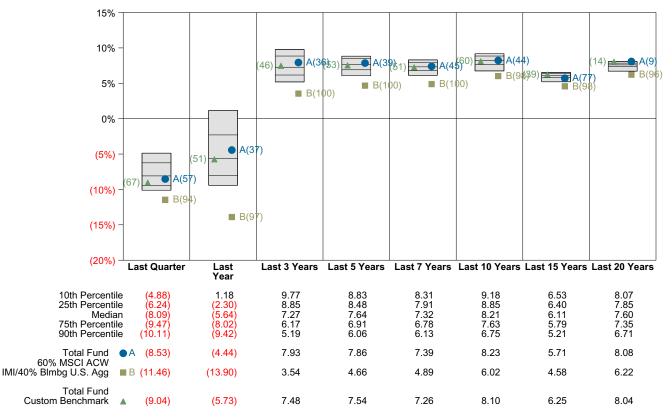
#### **Gross Performance History**

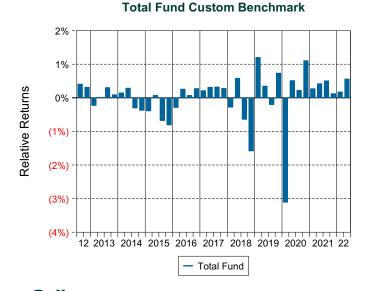
The gross history shown is estimated by BNY Mellon using a gross-up methodology through 12/31/19. Gross performance is calculated for the Total Fund starting 01/01/2020.

#### **Quarterly Summary and Highlights**

- Total Fund's portfolio posted a (8.53)% return for the quarter placing it in the 57 percentile of the Callan Public Fund Spons- V Lg DB (>10B) group for the quarter and in the 37 percentile for the last year.
- Total Fund's portfolio outperformed the Total Fund Custom Benchmark by 0.51% for the quarter and outperformed the Total Fund Custom Benchmark for the year by 1.29%.

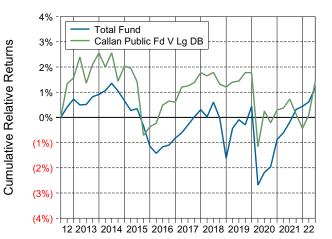
## Performance vs Callan Public Fund Spons- V Lg DB (>10B) (Gross)





**Relative Returns vs** 

#### Cumulative Returns vs Total Fund Custom Benchmark



## Total Fund Period Ended June 30, 2022

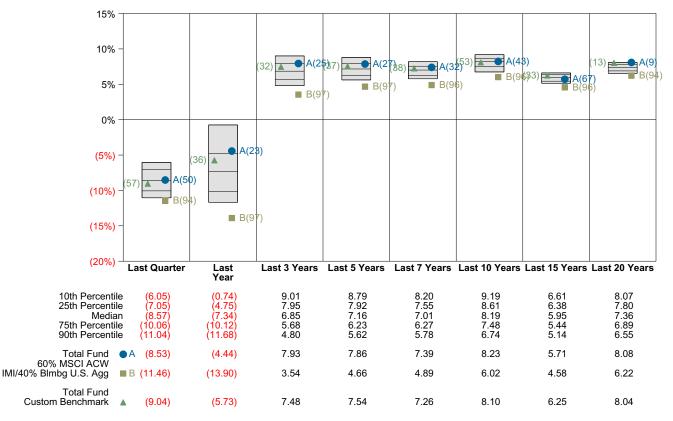
#### **Gross Performance History**

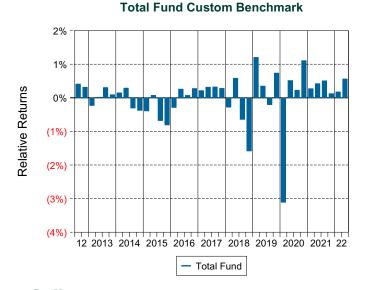
The gross history shown is estimated by BNY Mellon using a gross-up methodology through 12/31/19. Gross performance is calculated for the Total Fund starting 01/01/2020.

#### **Quarterly Summary and Highlights**

- Total Fund's portfolio posted a (8.53)% return for the quarter placing it in the 50 percentile of the Callan Public Fund Spons Large (>1B) group for the quarter and in the 23 percentile for the last year.
- Total Fund's portfolio outperformed the Total Fund Custom Benchmark by 0.51% for the quarter and outperformed the Total Fund Custom Benchmark for the year by 1.29%.

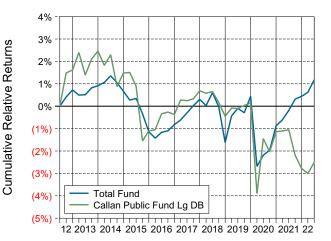
#### Performance vs Callan Public Fund Spons - Large (>1B) (Gross)





**Relative Returns vs** 

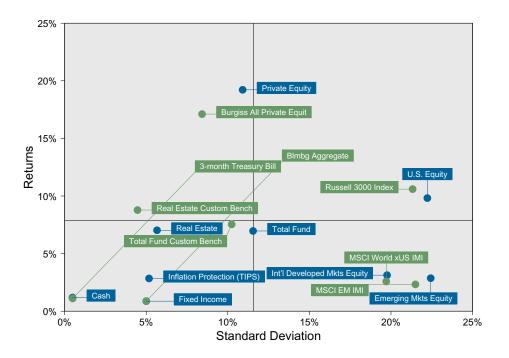
#### Cumulative Returns vs Total Fund Custom Benchmark



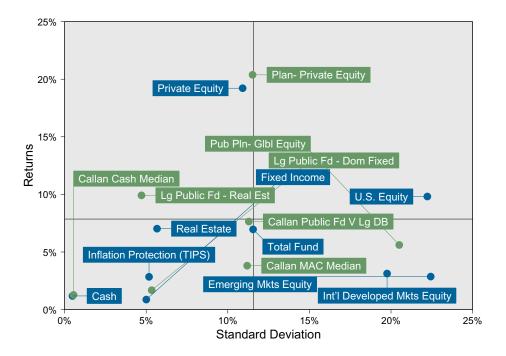
## Asset Class Risk and Return

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 June 30, 2022, with the distribution as of March 31, 2022.

		J	lune 30, 20	22		r	March 31, 2022	
	Market Value	% of Total	(min)	Target	(max)	Market Value	% of Total	Target
	\$(000)	Weight	Weight	\$(000)	Weight	Weight		
NET OF FEES*								
U.S. Equity	\$10,154,430	29.43%	26.00%	31.00%	36.00%	\$11,751,308	30.77%	31.00%
Int'l Developed Markets Equity	\$4,131,937	11.98%	9.00%	14.00%	19.00%	\$4,851,443	12.70%	14.00%
Emerging Mkts Equity	\$1,165,024	3.38%	1.00%	5.00%	9.00%	\$1,342,398	3.51%	5.00%
Private Equity (1)	\$6,058,510	17.56%	10.00%	12.00%	14.00%	\$6,117,368	16.02%	12.00%
Buyouts	3,649,951	10.58%				3,611,038	9.45%	
Special Situations	714,199	2.07%				675,530	1.77%	
Growth Equity	1,418,695	4.11%				1,542,815	4.04%	
	, ,					, ,		
Keystone Legacy (2)	275,665	0.80%				287,985	0.75%	
Private Credit (1)	\$1,136,040	3.29%	N/A	4.00%	N/A	\$1,102,294	2.89%	4.00%
Direct Lending	371.142	1.08%				362.046	0.95%	
Distressed Debt	327,378	0.95%				302.953	0.79%	
Diversified Credit	437,520	1.27%				437,296	1.14%	
	,020	/0				101,200		
Fixed Income	\$7,267,495	21.06%	17.00%	22.00%	27.00%	\$8,001,099	20.95%	22.00%
Core Fixed Income	5,125,319	14.86%				2,208,546	5.78%	
Opportunistic Fixed Income	859,976	2.49%				925,482	2.42%	
Nominal U.S. Treasuries	90,603	0.26%				95,195	0.25%	
	,					,		
New Fixed Income Structure (3)	\$1,191,597	3.45%		-	-	\$4,771,876	12.49%	-
Intermediate Treasury	269.002	0.78%				273,554	0.72%	
Long Duration	544,388	1.58%				1,219,811	3.19%	
Securitized	-17	(0.00%)				668,113	1.75%	
Intermediate Credit	98	0.00%				1,922,146	5.03%	
High Yield	378,126	1.10%				688,252	1.80%	
Inflation Protection (TIPS)	\$1,042,834	3.02%	0.00%	3.00%	6.00%	\$1,121,105	2.94%	3.00%
Real Estate (1)	\$2,920,427	8.46%	N/A	7.00%	N/A	\$2,853,968	7.47%	7.00%
Core/Core Plus Real Estate Funds		3.75%	IN/ <i>P</i> 4	7.00 /6	17/25	1,241,355	3.25%	1.00 /0
Value Add/Opportunistic SMA	569,039	1.65%				549,492	1.44%	
Value Add/Opportunistic Funds	746,581	2.16%				693,738	1.82%	
REITS	309,616	0.90%				369,382	0.97%	
Legacy Real Assets	515	0.00%				0	0.00%	
Legacy Hedge Funds	\$19,412	0.06%	-	-	-	\$21,129	0.06%	-
Cash	\$603,265	1.75%	0.00%	2.00%	7.00%	\$1,033,156	2.70%	2.00%
Total Fund	\$34,500,415	100.0%		100.0%		\$38,196,373	100.0%	100.0%

#### **Asset Distribution Across Investment Managers**

\*Market values shown are net of accrued fees.

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

(2) As of 12/31/2020 Keystone Legacy SPV consists of 119 non-core funds, prior performance in previous sub-asset classes
 (3) The New Fixed Income Structure is a sub-composite of Fixed Income and was incepted 03/01/2021.

# **Investment Manager Asset Allocation**

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

		J	lune 30, 20	22		1	March 31, 2022	
I	Market Value	% of Total	(min)	Target	(max)	Market Value	% of Total	Target
	\$(000)	Weight	Weight	\$(000)	Weight	Weight		
GROSS OF FEES*								
U.S. Equity	\$10,155,126	29.43%	26.00%	31.00%	36.00%	\$11,752,202	30.76%	31.00%
Int'l Developed Markets Equity	\$4,132,942	11.98%	9.00%	14.00%	19.00%	\$4,852,546	12.70%	14.00%
Emerging Mkts Equity	\$1,165,255	3.38%	1.00%	5.00%	9.00%	\$1,342,645	3.51%	5.00%
Private Equity (1)	\$6,058,510	17.56%	10.00%	12.00%	14.00%	\$6,117,368	16.01%	12.00%
Buyouts	3,649,951	10.58%	10.0070	12.0070	14.0070	3,611,038	9.45%	12.0070
Special Situations	714,199	2.07%				675,530	1.77%	
	,							
Growth Equity	1,418,695	4.11%				1,542,815	4.04%	
Keystone Legacy (2)	275,665	0.80%				287,985	0.75%	
Private Credit (1)	\$1,136,040	3.29%	N/A	4.00%	N/A	\$1,102,294	2.89%	4.00%
Direct Lending	371,142	1.08%				362.046	0.95%	
Distressed Debt	327,378	0.95%				302,953	0.79%	
Diversified Credit	437,520	1.27%				437,296	1.14%	
	** *** ***	04.07%	47.000/	00.00%	07.00%	*** *** ***	00.05%	00.000/
Fixed Income	\$7,268,474	21.07%	17.00%	22.00%	27.00%	\$8,002,654	20.95%	22.00%
Core Fixed Income	5,125,586	14.86%				2,208,820	5.78%	
Opportunistic Fixed Income	860,016	2.49%				925,584	2.42%	
Nominal U.S. Treasuries	90,625	0.26%				95,218	0.25%	
New Fixed Income Structure (3)	\$1,192,246	3.46%	_	_	_	\$4,773,031	12.49%	_
Intermediate Treasury	269,009	0.78%	-	-	-	273,562	0.72%	-
Long Duration	544,417	1.58%				1,219,845	3.19%	
Securitized	-	-				668,132	1.75%	
Intermediate Credit	146	0.00%				1,922,199	5.03%	
High Yield	378,674	1.10%				689,293	1.80%	
Inflation Protection (TIPS)	\$1,043,155	3.02%	0.00%	3.00%	6.00%	\$1,121,404	2.94%	3.00%
Real Estate (1)	\$2,920,726	8.46%	N/A	7.00%	N/A	\$2,854,286	7.47%	7.00%
Core/Core Plus Real Estate Funds		3.75%	1.7	1.00/0	11/2	1,241,355	3.25%	1.00/0
Value Add/Opportunistic SMA	569,039	1.65%				549,492	1.44%	
Value Add/Opportunistic Funds	746,581	2.16%				693,738	1.82%	
REITS	309,916	0.90%				369,700	0.97%	
Legacy Real Assets	515	0.00%				0	0.00%	
Legacy Hedge Funds	\$19,412	0.06%	-	-	-	\$21,129	0.06%	-
Cash	\$603,265	1.75%	0.00%	2.00%	7.00%	\$1,033,156	2.70%	2.00%
Total Fund	\$34,503,946	100.0%		100.0%		\$38,200,790	100.0%	100.0%

#### **Asset Distribution Across Investment Managers**

\*Market values shown are gross of accrued fees.

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

(2) As of 12/31/2020 Keystone Legacy SPV consists of 119 non-core funds, prior performance in previous sub-asset classes
 (3) The New Fixed Income Structure is a sub-composite of Fixed Income and was incepted 03/01/2021.

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022									
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years		
Net Performance									
Total Fund	\$34,500	100.00%	<b>(8.72%)</b>	<b>(11.68%)</b>	<b>(5.65%)</b>	<b>6.84%</b>	<b>6.96%</b>		
Total Fund Custom Benchmark(1)	-	-	(9.04%)	(11.91%)	(5.73%)	7.48%	7.54%		
Public Market Equiv Benchmark(2)	-	-	(9.45%)	(12.06%)	(8.02%)	6.35%	6.94%		
60/40 Index(3)	-	-	(11.46%)	(16.44%)	(13.90%)	3.54%	4.66%		
U.S. Equity	\$10,154	29.43%	<b>(16.51%)</b>	<b>(21.07%)</b>	<b>(14.47%)</b>	<b>9.33%</b>	<b>9.82%</b>		
Russell 3000 Index (4)	-	-	(16.70%)	(21.10%)	(13.87%)	9.77%	10.60%		
S&P 1500 Index	-	-	(16.02%)	(19.91%)	(11.02%)	10.29%	10.92%		
Int'I Developed Mkts Equity	\$4,132	11.98%	<b>(14.83%)</b>	<b>(19.73%)</b>	<b>(16.96%)</b>	<b>2.69%</b>	<b>3.13%</b>		
MSCI World ex US IMI	-	-	(15.15%)	(19.54%)	(17.73%)	1.72%	2.58%		
Emerging Mkts Equity	\$1,165	3.38%	<b>(13.21%)</b>	<b>(21.74%)</b>	<b>(28.57%)</b>	<b>1.92%</b>	<b>2.87%</b>		
MSCI EM IMI	-	-	(12.10%)	(17.94%)	(24.75%)	1.15%	2.33%		
Private Equity	\$6,059	17.56%	<b>(1.55%)</b>	<b>1.19%</b>	<b>22.79%</b>	<b>23.63%</b>	<b>19.22%</b>		
Burgiss Private Equity Index (Qtr lag)	-	-	(0.66%)	3.58%	17.15%	19.14%	17.11%		
Global Equity + 3% (Qtr lag)(5)	-	-	(4.22%)	3.82%	12.99%	19.75%	17.67%		
Private Credit	<b>\$1,136</b>	3.29%	<b>2.42%</b>	<b>5.49%</b>	<b>12.68%</b>	<b>12.54%</b>	-		
S&P Levered Loan Index + 1% (Qtr la	g) -	-	0.15%	1.14%	4.25%	5.30%			
Fixed Income	\$7,267	21.06%	<b>(4.88%)</b>	<b>(9.75%)</b>	<b>(9.39%)</b>	<b>(1.01%)</b>	<b>0.87%</b>		
Blmbg U.S. Agg Bond Index	-	-	(4.69%)	(10.35%)	(10.29%)	(0.93%)	0.88%		
Inflation Protection (TIPS)	\$1,043	3.02%	<b>(6.98%)</b>	<b>(9.79%)</b>	<b>(6.49%)</b>	<b>2.44%</b>	<b>2.84%</b>		
Blmbg U.S. TIPS Index	-	-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%		
Real Estate	\$2,920	8.46%	<b>2.59%</b>	<b>6.25%</b>	<b>17.25%</b>	<b>10.04%</b>	<b>7.03%</b>		
Real Estate Custom Bench (Qtr lag)(6	;) -	-	5.09%	11.63%	24.86%	10.54%	8.78%		
CPI + 3% (Qtr lag)	-	-	3.80%	6.23%	11.54%	7.19%	6.35%		
Cash	\$603	1.75%	<b>0.17%</b>	<b>0.19%</b>	<b>0.21%</b>	<b>0.65%</b>	<b>1.19%</b>		
3-month Treasury Bill	-	-	0.10%	0.14%	0.17%	0.63%	1.11%		

(1) The current total fund 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. See page 78 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, 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. See page 78 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) 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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022								
	Last	Last	Last	Last	-			
	10	15	20	25	Since			
	Years	Years	Years	Years	Inception	n		
Net Performance								
Total Fund	7.44%	4.88%	7.23%	6.99%	9.32%	(1/81)		
Total Fund Custom Benchmark(1)	8.10%	6.25%	8.04%	7.44%	-	(		
Public Market Equiv Benchmark(2)	8.00%	6.20%	8.01%	7.42%	-			
60/40 Index(3)	6.02%	4.58%	6.22%	5.65%	-			
			/					
U.S. Equity	11.86%	6.70%	8.55%	7.66%	10.52%	. ,		
Russell 3000 Index (4)	12.57%	8.36%	9.14%	8.02%	10.83%	(1/81)		
S&P 1500 Index	12.77%	8.51%	9.16%	8.18%	-			
Int'l Developed Mkts Equity	6.30%	1.54%	5.74%	-	5.64%	(1/02)		
MSCI World ex US IMI	5.53%	1.72%	5.77%	4.31%	5.64%	(1/02)		
Emorating Mide Equity	3.65%	0.47%	6.36%		6.42%	(()00)		
Emerging Mkts Equity MSCI EM IMI	3.20%	2.12%	8.52%	- 4.00%	8.39%	(1/02)		
	3.20%	2.1270	0.32%	4.00%	0.39%	(1/02)		
Private Equity	14.10%	11.88%	12.31%	13.66%	11.96%	(1/86)		
Burgiss Private Equity Index (Qtr lag)	14.47%	11.75%	13.12%	14.29%	17.14%	(1/86)		
Global Equity + 3% (Qtr lag)(5)	17.02%	13.26%	12.58%	12.84%	14.93%	(1/86)		
Private Credit	_	_	_	_	11.31%	(12/17)		
S&P Levered Loan Index + 1% (Qtr lag)	-	-	-	-	5.12%			
Fixed Income	1.96%	3.63%	4.80%	4.95%	7.73%			
Blmbg U.S. Agg Bond Index	1.54%	3.26%	3.57%	4.36%	7.02%	(1/81) (1/81)		
Birnby U.S. Agg Bond Index	1.54 %	5.20%	5.57%	4.30%	7.02%	(1/81)		
Inflation Protection (TIPS)	1.61%	3.18%	-	-	3.11%	(2/03)		
BImbg U.S. TIPS Index	1.73%	3.92%	4.44%	5.04%	4.10%	(2/03)		
Real Estate	7.72%	3.70%	6.98%	7.86%	8.52%	(3/84)		
Real Estate Custom Bench (Qtr lag)(6)	9.81%	5.91%	7.95%	8.45%	-	(0,04)		
CPI + 3% (Qtr lag)	5.29%	5.27%	5.41%	5.37%	5.76%	(3/84)		
Cash	0.90%	1.07%	4 540/	2 200/	3 400/	(4)(27)		
3-month Treasury Bill	0.64%	0.75%	<b>1.51%</b> 1.25%	<b>2.29%</b> 1.96%	<b>3.40%</b> 3.13%	· · ·		
	0.04%	0.73%	1.20%	1.90%	3.13%	(1/87)		

(1) The current total fund 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. See page 78 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, 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. See page 78 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) 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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022										
Net Performance- Domestic Equity	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years			
U.S. Equity	\$10,154	100.00%	<b>(16.51%)</b>	<b>(21.07%)</b>	<b>(14.47%)</b>	<b>9.33%</b>	<b>9.82%</b>			
Russell 3000 Index (1)	-	_	(16.70%)	(21.10%)	(13.87%)	9.77%	10.60%			
S&P 1500 Index	-	_	(16.02%)	(19.91%)	(11.02%)	10.29%	10.92%			
MCM Russell 1000 Index	9,139	90.00%	(16.43%)	(20.70%)	(12.63%)	10.31%	11.11%			
Russell 1000 Index	-	-	(16.67%)	(20.94%)	(13.04%)	10.17%	11.00%			
S&P 500 Index	-	-	(16.10%)	(19.96%)	(10.62%)	10.60%	11.31%			
MCM Russell 2000 Core Index	392	3.86%	(17.10%)	(23.34%)	(23.28%)	4.70%	5.44%			
Russell 2000 Index	-	-	(17.20%)	(23.43%)	(25.20%)	4.21%	5.17%			
S&P 600 Index	-	-	(14.11%)	(18.94%)	(16.81%)	7.30%	7.20%			
MCM Russell 2000 Val Index	311	3.06%	(15.13%)	(17.17%)	(16.14%)	6.27%	4.91%			
Russell 2000 Value Index	-	-	(15.28%)	(17.31%)	(16.28%)	6.18%	4.89%			
S&P 600 Value Index	-	-	(12.74%)	(14.16%)	(13.93%)	8.02%	6.75%			
Emerald Asset Management	313	3.08%	(20.89%)	(29.12%)	(29.98%)	1.17%	5.69%			
Russell 2000 Growth Index	-	-	(19.25%)	(29.45%)	(33.43%)	1.40%	4.80%			
S&P 600 Growth Index	-	-	(15.62%)	(23.65%)	(19.63%)	6.09%	7.39%			

\*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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022											
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception							
Net Performance- Domestic Equity												
U.S. Equity Russell 3000 Index (1) S&P 1500 Index	<b>11.86%</b> 12.57% 12.77%	<b>6.70%</b> 8.36% 8.51%	<b>8.55%</b> 9.14% 9.16%	<b>7.66%</b> 8.02% 8.18%	<b>10.52%</b> (1/81) 10.83% (1/81) -							
MCM Russell 1000 Index Russell 1000 Index S&P 500 Index	12.87% 12.82% 12.96%	- 8.51% 8.54%	- 9.21% 9.08%	- 8.13% 7.97%	13.16%(1/12)13.14%(1/12)13.28%(1/12)							
MCM Russell 2000 Core Index Russell 2000 Index S&P 600 Index	9.35% 11.26%	- 6.33% 8.03%	- 8.17% 9.58%	- 7.41% 9.31%	6.30% (12/16) 6.05% (12/16) 7.59% (11/16)							
MCM Russell 2000 Val Index Russell 2000 Value Index S&P 600 Value Index	9.05% 11.01%	- 5.58% 7.31%	- 7.77% 8.85%	- 8.15% 9.16%	5.25% (12/16) 5.23% (12/16) 6.79% (11/16)							
Emerald Asset Management Russell 2000 Growth Index S&P 600 Growth Index	9.30% 11.35%	- 6.80% 8.64%	- 8.34% 10.19%	- 6.19% 9.04%	7.24% (12/16) 6.34% (12/16) 8.12% (12/16)							

\*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.

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022									
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years		
Net Performance- International Equity									
Int'l Developed Mkts Equity	\$4,132	100.00%	<b>(14.83%)</b>	<b>(19.73%)</b>	<b>(16.96%)</b>	<b>2.69%</b>	<b>3.13%</b>		
MSCI World ex US IMI	-	-	(15.15%)	(19.54%)	(17.73%)	1.72%	2.58%		
Walter Scott & Partners(1)	630	15.24%	(15.81%)	(23.33%)	(15.92%)	6.75%	9.97%		
MSCI World	-	-	(16.19%)	(20.51%)	(14.34%)	7.00%	7.67%		
BlackRock MSCI World Ex US Index	3,191	77.22%	(14.46%)	(18.47%)	(16.34%)	2.13%	3.09%		
MSCI World ex US	-	-	(14.66%)	(18.76%)	(16.76%)	1.70%	2.66%		
Xponance Non-U.S. Small Cap	197	4.77%	(17.29%)	(24.79%)	(25.01%)	0.37%	2.55%		
MSCI ACWI ex US Small Cap	-	-	(17.55%)	(22.92%)	(22.45%)	2.94%			
Harris Assoc Int'I SCV	111	2.69%	(15.64%)	(24.48%)	(25.14%)	2.37%	0.83%		
MSCI World ex US Sm Cap	-	-	(17.94%)	(23.87%)	(23.02%)	1.97%	2.16%		
MSCI World ex US Sm Value	-	-	(15.64%)	(18.10%)	(17.41%)	1.99%	1.43%		

\*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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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.

	<b>Returns for Per</b>	iods Ended Jun	e 30, 2022		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance- International Equity					
Int'l Developed Mkts Equity	<b>6.30%</b>	<b>1.54%</b>	<b>5.74%</b>	-	<b>5.64%</b> (1/02) 5.64% (1/02)
MSCI World ex US IMI	5.53%	1.72%	5.77%	4.31%	
Walter Scott & Partners(1)	10.93%	8.20%	-	-	8.71% (10/06)
MSCI World	9.51%	5.19%	7.32%	5.93%	6.06% (10/06)
BlackRock MSCI World Ex US Index	-	-	-	-	3.10% (6/17)
MSCI World ex US	5.37%	1.55%	5.47%	4.07%	2.64% (6/17)
Xponance Non-U.S. Small Cap	-	-	-	-	(0.46%) (10/18)
MSCI ACWI ex US Small Cap	6.22%	2.79%	8.16%	5.68%	1.10% (10/18)
Harris Assoc Int'I SCV	6.42%	3.71%	-	-	9.28% (7/03)
MSCI World ex US Sm Cap	6.70%	2.67%	7.69%	-	7.99% (7/03)
MSCI World ex US Sm Value	6.34%	2.48%	8.06%	6.55%	8.04% (7/03)

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022									
Net Performance- Emerging Mkts Eq	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years		
Emerging Mkts Equity	\$1,165	100.00%	<b>(13.21%)</b>	<b>(21.74%)</b>	<b>(28.57%)</b>	<b>1.92%</b>	<b>2.87%</b>		
MSCI EM IMI		_	(12.10%)	(17.94%)	(24.75%)	1.15%	2.33%		
Macquarie Emg Mkts Equity	322	27.62%	(12.05%)	(22.66%)	(28.23%)	1.49%	2.35%		
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%		
Martin Currie Emg Mkts Equity	340	29.14%	(14.73%)	(25.64%)	(33.24%)	0.92%	3.03%		
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%		
BlackRock Emg Mkts Index	173	14.88%	(11.33%)	(17.62%)	(25.37%)	0.33%	1.95%		
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%		
Leading Edge Emg Mkts Fund	215	18.42%	(12.02%)	(20.08%)	(28.19%)	<mark>(0.80%)</mark>	_		
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%		
GlobeFlex Emerging Small Cap	116	9.94%	(16.65%)	(15.57%)	(19.03%)	7.57%	5.11%		
MSCI EM Small Cap		-	(16.41%)	(20.03%)	(20.72%)	5.78%	3.48%		

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Returns for Periods Ended June 30, 2022									
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception				
Net Performance- Emerging Mkts Equity									
Emerging Mkts Equity	<b>3.65%</b>	<b>0.47%</b>	<b>6.36%</b>	-	<b>6.42%</b> (1/02) 8.39% (1/02)				
MSCI EM IMI	3.20%	2.12%	8.52%	4.00%					
Macquarie Emg Mkts Equity	-	-	-	-	2.93% (5/13)				
MSCI EM	3.07%	2.00%	8.43%		2.00% (5/13)				
Martin Currie Emg Mkts Equity	-	-	-	2	3.22% (1/14)				
MSCI EM	3.07%	2.00%	8.43%		2.37% (1/14)				
BlackRock Emg Mkts Index	-	-	-	-	1.95% (7/17)				
MSCI EM	3.07%	2.00%	8.43%		2.18% (7/17)				
Leading Edge Emg Mkts Fund	-	-	-	-	2.40% (11/18)				
MSCI EM	3.07%	2.00%	8.43%		3.64% (11/18)				
GlobeFlex Emerging Small Cap	-	-	-	-	5.41% (8/13)				
MSCI EM Small Cap	4.31%	2.61%	9.63%	4.59%	3.68% (8/13)				

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Returns for Periods Ended June 30, 2022									
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years		
Net Performance - Private Equity									
Private Equity	\$6,059	100.00%	<b>(1.55%)</b>	<b>1.19%</b>	<b>22.79%</b>	<b>23.63%</b>	<b>19.22%</b>		
Burgiss Private Equity Index (Qtr lag)	-	-	(0.66%)	3.58%	17.15%	19.14%	17.11%		
Global Equity + 3% (Qtr lag)(1)	-	-	(4.22%)	3.82%	12.99%	19.75%	17.67%		
Buyouts	3,650	60.25%	0.62%	4.01%	22.56%	23.11%	18.92%		
Burgiss Buyout Index (Qtr lag)	-	-	0.31%	4.89%	19.28%	17.40%	15.98%		
Special Situations	714	11.79%	0.02%	12.26%	34.40%	25.73%	19.81%		
Burgiss Special Situations Idx (Qtr lag	J) -	-	0.84%	3.33%	8.81%	7.06%	7.21%		
Growth Equity	1,419	23.42%	(7.25%)	<mark>(1.23%)</mark>	25.91%	35.66%	31.09%		
Burgiss Venture Capital Index (Qtr lag	g) -		(3.05%)	1.36%	16.73%	30.09%	25.70%		
Keystone Legacy (2)	276	4.55%	(2.12%)	(30.84%)	(11.02%)	(0.05%)	-		

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022										
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception						
Net Performance - Private Equity											
Private Equity	<b>14.10%</b>	<b>11.88%</b>	<b>12.31%</b>	<b>13.66%</b>	<b>11.96%</b> (1/86)						
Burgiss Private Equity Index (Qtr lag)	14.47%	11.75%	13.12%	14.29%	17.14% (1/86)						
Global Equity + 3% (Qtr lag)(1)	17.02%	13.26%	12.58%	12.84%	14.93% (1/86)						
Buyouts	15.67%	12.98%	14.61%	15.80%	13.96% (4/86)						
Burgiss Buyout Index (Qtr lag)	13.92%	11.38%	14.36%	13.81%	19.50% (4/86)						
Special Situations	13.89%	13.01%	14.21%	13.73%	13.66% (1/95)						
Burgiss Special Situations Idx (Qtr lag)	8.26%	7.12%	9.30%	9.80%	10.18% (1/95)						
Growth Equity	17.18%	12.64%	7.94%	9.72%	9.26% (1/86)						
Burgiss Venture Capital Index (Qtr lag)	19.56%	14.92%	10.75%	15.31%	14.91% (1/86)						
Keystone Legacy (2)	-	-	-	-	(0.84%) (7/18)						

\*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 01/01/2020 benchmark consists of 25% MSCI World ex US and 75% Russell 3000 + 3% with a 1 quarter lag.
(2) As of 12/31/2020,Keystone Legacy SPV consists of 119 non-core funds, prior performance in previous sub-asset classes



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022									
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years		
Net Performance - Private Credit	:								
Private Credit S&P Levered Loan Index +1%	<b>\$1,136</b> (Qtr lag) -	100.00% -	<b>2.42%</b> 0.15%	<b>5.49%</b> 1.14%	<b>12.68%</b> 4.25%	<b>12.54%</b> 5.30%	:		
Direct Lending	371	32.67%	2.01%	5.16%	12.02%	-	-		
Distressed Debt	327	28.82%	3.26%	5.93%	21.46%	-	-		
Diversified Credit	438	38.51%	2.18%	5.45%	11.89%	-	-		

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022									
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception				
Net Performance - Private Credit									
Private Credit S&P Levered Loan Index +1% (Qtr lag)	-	-	-	-	<b>11.31%</b> (12/17) 5.12% (12/17)				
Direct Lending	-	-	-	-	9.87% (1/20)				
Distressed Debt	-	-	-	-	23.27% (1/20)				
Diversified Credit	-	-	-	-	15.13% (1/20)				

\*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.



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Returns for Periods Ended June 30, 2022							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Fixed Income	·						
Fixed Income (1) BImbg U.S. Agg Bond Index	\$7,267 -	48.88% -	<b>(4.88%)</b> (4.69%)	<b>(9.75%)</b> (10.35%)	<b>(9.39%)</b> (10.29%)	<b>(1.01%)</b> (0.93%)	<b>0.87%</b> 0.88%
Core Fixed Income Blmbg U.S. Agg Bond Index	\$5,125 -	34.48% -	<b>(3.68%)</b> (4.69%)	<b>(9.28%)</b> (10.35%)	<b>(9.35%)</b> (10.29%)	<b>(0.66%)</b> (0.93%)	<b>1.09%</b> 0.88%
PIMCO Core Bond Fund Blmbg Agg ex Treasury	526	3.54% -	(5.05%) (5.30%)	(10.62%) (11.14%)	(10.61%) (11.19%)	(0.65%) (1.09%)	1.11% 0.88%
Mellon Bond Index BImbg U.S. Agg Bond Index (2)	4,599	30.93% -	(4.83%) (4.69%)	(10.36%) (10.35%)	(10.43%) (10.29%)	(1.06%) (0.93%)	0.79% 0.88%
Nominal U.S. Treasuries Blmbg US Treas Bell 10Y	_\$91 _	0.61% -	<b>(4.82%)</b> (5.20%)	<b>(10.79%)</b> (11.71%)	<b>(10.53%)</b> (11.18%)	<b>(1.68%)</b> (1.54%)	<b>0.50%</b> 0.51%
PIMCO US Treasuries BImbg US Treas Bell 10Y	91 -	0.61% -	(4.82%) (5.20%)	(10.79%) (11.71%)	(10.53%) (11.18%)	(1.09%) (1.54%)	0.87% 0.51%
New Total Fixed Income Structure (1)	\$1,192	8.02%	(7.01%)	(12.84%)	(12.42%)	-	-
Intermediate Treasury Mellon Intermediate Treasury Index BImbg Intmdt Treasury	<b>\$269</b> × 269 -	<b>1.81%</b> 1.81% -	<b>(1.66%)</b> (1.66%) (1.67%)	<b>(5.75%)</b> (5.75%) (5.80%)	<b>(6.34%)</b> (6.34%) (6.35%)	(0.31%)	- 0.87%
Long Duration Mellon Long Duration Index BImbg Long Treasury	<b>\$544</b> 544 -	<b>3.66%</b> 3.66% -	<b>(12.79%)</b> (11.97%) (11.93%)	<b>(21.99%)</b> (20.93%) (21.25%)	<b>(20.43%)</b> (18.49%) (18.45%)	(2.94%)	- 0.51%
High Yield Fidelity HY CMBS (3) BImbg US CMBS Ex AAA Index (	<b>\$378</b> 319 (4) -	<b>2.54%</b> 2.15% -	<b>(6.18%)</b> (3.08%) (4.46%)	<b>(9.81%)</b> (5.95%) (9.98%)	<b>(8.32%)</b> (4.23%) (10.53%)	(0.62%) (0.58%)	1.84% 2.10%
Mellon High Yield Beta Fund Blmbg HY Corp	59	0.40%	(10.94%) (9.83%)	(15.17%) (14.19%)	(14.01%) (12.81%)	_ 0.21%	2.10%

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The market values and performance of such accounts indiced within the quarter of accounts in the process of indicator. (1) Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021. (2) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK. (3) On 03/01/2021, the Fidelity HY CMBS account switched from the Opportunistic Fixed composite to the High Yield

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



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022							
	Last 10	Last 15	Last 20	Last 25	Since		
	Years	Years	Years	Years	Inception		
Net Performance - Fixed Income							
Fixed Income (1)	1.96%	3.63%	4.80%	4.95%	<b>7.73%</b> (1/81)		
Blmbg U.S. Agg Bond Index	1.54%	3.26%	3.57%	4.36%	7.02% (1/81)		
Core Fixed Income	1.96%	3.67%	3.97%	-	<b>4.02%</b> (1/02)		
Blmbg U.S. Agg Bond Index	1.54%	3.26%	3.57%	4.36%	3.67% (1/02)		
PIMCO Core Bond Fund	-	-	-	-	1.61% (1/13)		
Blmbg Agg ex Treasury	1.81%	3.46%	-	-	1.64% (1/13)		
Mellon Bond-Index	1.44%	3.14%	3.52%	4.37%	6.49% (4/84)		
Blmbg U.S. Agg Bond Index (2)	1.54%	3.26%	3.65%	4.48%	-		
Nominal U.S. Treasuries	0.90%	-	-	-	<b>1.35%</b> (9/11)		
BImbg US Treas Bell 10Y	0.82%	3.58%	3.65%	4.26%	1.44% (9/11)		
PIMCO US Treasuries	1.22%	-	-	-	1.68% (9/11)		
Blmbg US Treas Bell 10Y	0.82%	3.58%	3.65%	4.26%	1.44% (9/11)		
New Total Fixed Income Structure (1)	-	-	-	-	<b>(8.48%)</b> (3/21)		
Intermediate Treasury	-	-	-		<b>(4.84%)</b> (3/21)		
Mellon Intermediate Treasury Index	-	-	-	-	(4.84%) (3/21)		
BImbg Intmdt Treasury	0.96%	2.60%	2.77%	3.62%	(4.85%) (3/21)		
Long Duration	-	-	-	-	(13.63%) (3/21)		
Mellon Long Duration Index	- 1.63%	- 5.01%	- 5.22%	- 5.93%	(17.45%) (1/21)		
BImbg Long Treasury	1.63%	5.01%	5.22%	5.93%	(17.39%) (1/21)		
High Yield	-	-	-	-	(3.79%) (3/21)		
Fidelity HY CMBS (3)	5.27%	5.07%	6.38%	7.29%	7.51% (4/97)		
BImbg US CMBS Ex AAA Index (4)	3.25%	0.14%	1.81%	3.38%	3.53% (4/97)		
Mellon High Yield Beta Fund	-	-	-	-	(11.07%) (5/21)		
Blmbg HY Corp	4.47%	5.78%	7.28%	5.98%	(9.84%) (5/21)		

\*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.

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

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

(3) On 03/01/2021, the Fidelity HY CMBS account switched from the Opportunistic Fixed composite to the High Yield

composite under the new fixed income structure.

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



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance - Fixed Income								
Fixed Income (1) Blmbg U.S. Agg Bond Index	\$7,267 -	100.00% -	<b>(4.88%)</b> (4.69%)	<b>(9.75%)</b> (10.35%)	<b>(9.39%)</b> (10.29%)	<b>(1.01%)</b> (0.93%)	<b>0.87%</b> 0.88%	
Opportunistic Fixed Income	\$860	11.83%	1.00%	3.81%	7.67%	5.68%	4.99%	
SEI Str. Credit: HY Bank Loans (2)(3) FTSE HY Corp (1 month lag)	) 13 -	0.17%	(3.00%) (4.13%)	(3.44%) (5.78%)	3.71% (4.81%)	7.49% 3.23%	7.74% 3.45%	
BAAM Keystone (4) HFRI FOF Comp Index	_847 -	11.65% -	1.08% (3.88%)	4.02% (6.53%)	6.23% (5.45%)	7.42% 3.96%	6.34% 3.63%	

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

(1) Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021.

(1) Fixed income also includes the new fixed income sub-composite which was funded in 03/01/2021.
 (2) SEI HY Bank Loans since inception returns were included in the Fixed Income composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.
 (3) SEI HY Bank Loans has a 1 month lag in valuation.
 (4) 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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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.

	<b>Returns for Per</b>	iods Ended Jun	e 30, 2022		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Fixed Income					
Fixed Income (1) BImbg Aggregate	<b>1.96%</b> 1.54%	<b>3.63%</b> 3.26%	<b>4.80%</b> 3.57%	<b>4.95%</b> 4.36%	<b>7.73%</b> (1/81) <b>7.02%</b> (1/81)
Opportunistic Fixed Income	-	-	-	-	<b>4.90%</b> (10/12)
SEI Str. Credit: HY Bank Loans (2)(3) FTSE HY Corp (1 month lag)	8.39% 5.14%	- 5.82%	- 7.02%	- 6.23%	11.56% (5/08) 6.60% (5/08)
BAAM Keystone (4) HFRI FOF Comp Index	7.44% 3.75%	- 1.78%	- 3.49%	- 4.12%	7.44% (7/12) 3.75% (7/12)

\*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) Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021.

(2) SEI HY Bank Loans since inception returns were included in the Fixed Income composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.

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

(4) 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.



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Returns for Periods Ended June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance - Inflation Protection								
Inflation Protection (TIPS)	\$1,043	100.00%	<b>(6.98%)</b>	<b>(9.79%)</b>	<b>(6.49%)</b>	<b>2.44%</b>	<b>2.84%</b>	
Blmbg U.S. TIPS Index	-	-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%	
NISA Inv Adv TIPS	453	43.43%	(6.26%)	(8.88%)	(5.13%)	3.01%	3.19%	
BImbg U.S. TIPS Index (1)		-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%	
Brown Brothers TIPS	475	45.53%	(6.10%)	(8.81%)	(5.32%)	2.92%	3.08%	
BImbg U.S. TIPS Index	-	-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%	
New Century Global TIPS	115	11.04%	(12.96%)	(16.78%)	(14.68%)	(0.66%)	1.05%	
Blmbg Wrld Inflation Linked Unhdg	-	-	(13.17%)	(16.98%)	(14.02%)	(0.65%)	1.00%	

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022								
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception			
Net Performance - Inflation Protection								
Inflation Protection (TIPS)	<b>1.61%</b>	<b>3.18%</b>	-	-	<b>3.11%</b> (2/03)			
Blmbg U.S. TIPS Index	1.73%	3.92%	4.44%	5.04%	4.10% (2/03)			
NISA Inv Adv TIPS	1.63%	3.16%	-	-	3.09% (4/07)			
BImbg U.S. TIPS Index (1)	1.65%	3.17%	3.90%	4.60%	3.09% (4/07)			
Brown Brothers TIPS	1.80%	-	-	-	1.92% (2/12)			
BImbg U.S. TIPS Index	1.73%	3.92%	4.44%	5.04%	1.82% (2/12)			
New Century Global TIPS	1.35%	-	-	-	1.29% (2/12)			
BImbg Wrld Inflation Linked Unhdg	1.06%	2.86%	4.42%	4.99%	1.02% (2/12)			

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance - Real Estate								
Real Estate	<b>\$2,920</b>	100.00%	<b>2.59%</b>	<b>6.25%</b>	<b>17.25%</b>	<b>10.04%</b>	<b>7.03%</b>	
Real Estate Custom Bench (Qtr lag)	(1) -	-	5.09%	11.63%	24.86%	10.54%	8.78%	
CPI +3% (Qtr lag)	-	-	3.80%	6.23%	11.54%	7.19%	6.35%	
Core/Core Plus Real Estate Funds	1,295	44.33%	5.52%	11.65%	20.11%	9.36%	8.38%	
NCREIF ODCE Index (Qtr lag)	-	-	7.77%	15.72%	28.69%	11.11%	9.46%	
Value Add/Opportunistic SMA	_569	19.48%	3.31%	3.68%	16.87%	10.29%	5.01%	
NCREIF ODCE Index (Qtr lag)	_	-	7.77%	15.72%	28.69%	11.11%	9.46%	
Value Add/Opportunistic Funds	747	25.56%	6.71%	12.99%	23.06%	12.12%	10.58%	
NCREIF ODCE Index (Qtr lag)		-	7.77%	15.72%	28.69%	11.11%	9.46%	
REITS	310	10.60%	(16.18%)	(18.72%)	(5.03%)	5.90%	6.76%	
FTSE NAREIT US Index		-	(17.11%)	(20.55%)	(6.97%)	3.01%	4.80%	

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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.

	<b>Returns for Per</b>	riods Ended Jun	ie 30, 2022		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Real Estate					
Real Estate	<b>7.72%</b>	<b>3.70%</b>	<b>6.98%</b>	<b>7.86%</b>	<b>8.52%</b> (3/84)
Real Estate Custom Bench (Qtr lag) (1)	9.81%	5.91%	7.95%	8.45%	-
CPI +3% (Qtr lag)	5.29%	5.27%	5.41%	5.37%	5.76% (3/84)
Core/Core Plus Real Estate Funds	9.77%	6.73%	8.01%	8.68%	7.34% (9/86)
NCREIF ODCE Index (Qtr lag)	10.24%	6.11%	7.62%	8.21%	6.44% (9/86)
Value Add/Opportunistic SMA	6.09%	2.58%	5.21%	6.29%	5.51% (6/88)
NCREIF ODCE Index (Qtr lag)	10.24%	6.11%	7.62%	8.21%	6.51% (6/88)
Value Add/Opportunistic Funds	10.86%	4.05%	8.03%	9.37%	8.20% (3/84)
NCREIF ODCE Index (Qtr lag)	10.24%	6.11%	7.62%	8.21%	6.66% (3/84)
REITS	7.07%	4.42%	8.84%	8.55%	9.43% (4/96)
FTSE NAREIT US Index	7.16%	4.42%	8.63%	8.57%	9.72% (4/96)

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Returns for Periods Ended June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance - DWDO Managers								
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	197	0.57% -	(17.29%) (17.55%)	(24.79%) (22.92%)	(25.01%) (22.45%)	0.37% 2.94%	- 2.55%	
Leading Edge Emg Mkts Fund MSCI EM	215 -	0.62%	(12.02%) (11.45%)	(20.08%) (17.63%)	(28.19%) (25.28%)	<mark>(0.80%)</mark> 0.57%	2.18%	
GlobeFlex Emerging Small Cap MSCI EM Small Cap	116 -	0.34% -	(16.65%) (16.41%)	(15.57%) (20.03%)	(19.03%) (20.72%)	7.57% 5.78%	5.11% 3.48%	
New Century Global TIPS Blmbg Wrld Inflation Linked Unhdg	115 I -	0.33%	(12.96%) (13.17%)	(16.78%) (16.98%)	(14.68%) (14.02%)	(0.66%) (0.65%)	1.05% 1.00%	

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022								
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception			
Net Performance - DWDO Managers								
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	- 6.22%	- 2.79%	- 8.16%	- 5.68%	(0.46%) (10/18) 1.10% (10/18)			
Leading Edge Emg Mkts Fund MSCI EM	3.07%	- 2.00%	- 8.43%	-	2.40% (11/18) 3.64% (11/18)			
GlobeFlex Emerging Small Cap MSCI EM Small Cap	- 4.31%	- 2.61%	- 9.63%	- 4.59%	5.41% (8/13) 3.68% (8/13)			
New Century Global TIPS Blmbg Wrld Inflation Linked Unhdg	1.35% 1.06%	- 2.86%	- 4.42%	- 4.99%	1.29% (2/12) 1.02% (2/12)			

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance							
Total Fund (1) Total Fund Estimated Gross History ( Total Fund Custom Benchmark Public Market Equiv Benchmark 60/40 Index	\$34,504 1) 34,504 - -	<b>100.00%</b> 100.00% - - -	(8.53%) (8.53%) (9.04%) (9.45%) (11.46%)	<b>(11.26%)</b> (11.26%) (11.91%) (12.06%) (16.44%)	(4.44%) (4.44%) (5.73%) (8.02%) (13.90%)	- 7.93% 7.48% 6.35% 3.54%	7.86% 7.54% 6.94% 4.66%
U.S. Equity	\$10,155	29.43%	<b>(16.51%)</b>	<b>(21.06%)</b>	<b>(14.44%)</b>	<b>9.39%</b>	<b>9.88%</b>
Russell 3000 Index	-	-	(16.70%)	(21.10%)	(13.87%)	9.77%	10.60%
S&P 1500 Index	-	-	(16.02%)	(19.91%)	(11.02%)	10.29%	10.92%
Int'I Developed Mkts Equity	\$4,133	11.98%	<b>(14.80%)</b>	<b>(19.67%)</b>	<b>(16.85%)</b>	<b>2.85%</b>	<b>3.26%</b>
MSCI World ex US IMI	-	-	(15.15%)	(19.54%)	(17.73%)	1.72%	2.58%
Emerging Mkts Equity	\$1,165	3.38%	<b>(13.10%)</b>	<b>(21.54%)</b>	<b>(28.19%)</b>	<b>2.44%</b>	<b>3.42%</b>
MSCI EM IMI	-	-	(12.10%)	(17.94%)	(24.75%)	1.15%	2.33%
Private Equity (1)	\$6,059	17.56%	<b>(1.10%)</b>	<b>2.75%</b>	<b>29.83%</b>	-	-
Burgiss Private Equity Index (Qtr lag)	-	-	(0.66%)	3.58%	17.15%	19.14%	17.11%
Global Equity +3% (Qtr lag)	-	-	(4.22%)	3.82%	12.99%	19.75%	17.67%
Private Credit (1)	<b>\$1,136</b>	3.29%	<b>3.59%</b>	<b>7.50%</b>	<b>17.18%</b>	-	:
S&P Levered Loan Index +1% (Qtr La	ag) -	-	0.15%	1.14%	4.25%	5.30%	
Fixed Income	\$7,268	21.07%	<b>(4.84%)</b>	<b>(9.67%)</b>	<b>(9.21%)</b>	<b>(0.82%)</b>	<b>1.07%</b>
Blmbg U.S. Agg Bond Index	_	-	(4.69%)	(10.35%)	(10.29%)	(0.93%)	0.88%
Inflation Protection (TIPS)	\$1,043	3.02%	<b>(6.95%)</b>	<b>(9.74%)</b>	<b>(6.39%)</b>	<b>2.56%</b>	<b>2.97%</b>
Blmbg U.S. TIPS Index	-	-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%
Real Estate (1)	<b>\$2,921</b>	8.46%	<b>3.66%</b>	<b>8.09%</b>	<b>20.54%</b>	-	-
Real Estate Custom Benchmark (Qtr	lag) -	-	5.09%	11.63%	24.86%	10.54%	8.78%
CPI +3% (Qtr lag)	-	-	3.80%	6.23%	11.54%	7.19%	6.35%
Cash	\$603	1.75%	<b>0.17%</b>	<b>0.19%</b>	<b>0.22%</b>	<b>0.65%</b>	<b>1.19%</b>
3-month Treasury Bill	-	-	0.10%	0.14%	0.17%	0.63%	1.11%

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022					
	Last 10	Last 15	Last 20	Last 25	Since	
	Years	Years	Years	Years	Inception	
Gross Performance						
Total Fund (2)	-	-	-	-	6.98%	(1/20)
Total Fund Estimated Gross History (2)	8.23%	5.71%	8.08%	7.78%	8.36%	(1/96)
Total Fund Custom Benchmark	8.10%	6.25%	8.04%	7.44%	7.97%	(1/96)
Public Market Equiv Benchmark	8.00%	6.20%	8.01%	7.42%	7.95%	(1/96)
60/40 Index	6.02%	4.58%	6.22%	5.65%	6.00%	(1/96)
U.S. Equity	11.98%	6.84%	8.69%	7.77%	10.59%	(1/81)
Russell 3000 Index (1)	12.57%	8.36%	9.14%	8.02%	10.83%	· · · /
S&P 1500 Index	12.77%	8.51%	9.16%	8.18%	-	(
Int'l Developed Mkts Equity	6.52%	1.80%	6.04%		5.94%	(1/02)
MSCI World ex US IMI	5.53%	1.72%	5.77%	4.31%		(1/02)
Emerging Mkts Equity	4.13%	0.92%	6.75%		6.81%	(1/02)
MSCI EM IMI	3.20%	2.12%	8.52%	4.00%	8.39%	. ,
Private Equity (2)	<u>.</u>	_		_	34.82%	(1/20)
Burgiss Private Equity Index (Qtr lag)	14.47%	11.75%	13.12%	14.29%		(1/20)
Global Equity +3% (Qtr lag)	17.02%	13.26%	12.58%	12.84%		(1/20)
Private Credit (2)	-	-	-	-	17.80%	(1/20)
S&P Levered Loan Index +1% (Qtr Lag)	-	-	-	-	5.07%	
Fixed Income	2.21%	3.86%	5.04%	5.18%	7.01%	(1/85)
Blmbg U.S. Agg Bond Index	1.54%	3.26%	3.57%	4.36%	6.19%	(1/85)
Inflation Protection (TIPS)	1.74%	3.30%	-	-	3.24%	(2/03)
BImbg U.S. TIPS Index	1.73%	3.92%	4.44%	5.04%	4.10%	(2/03)
Real Estate (2)	-		-	-	12.29%	(1/20)
Real Estate Custom Benchmark (Qtr lag)	9.81%	5.91%	7.95%	8.45%		(1/20)
CPI +3% (Qtr lag)	5.29%	5.27%	5.41%	5.37%		(1/20)
Cash	0.90%	1.08%	1.55%	2.28%	3.77%	(1/87)
3-month Treasury Bill	0.64%	0.75%	1.25%	1.96%	3.13%	(1/87)

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 Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.
 The Total Fund Estimated Gross History is calculated by BNY Mellon using a gross-up methodology through 12/31/19. 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.



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Returns for Periods Ended June 30, 2022							
Gross Performance- Domestic Equit	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
U.S. Equity	\$10,155	100.00%	<b>(16.51%)</b>	<b>(21.06%)</b>	<b>(14.44%)</b>	<b>9.39%</b>	<b>9.88%</b>
Russell 3000 Index(1)	-	_	(16.70%)	(21.10%)	(13.87%)	9.77%	10.60%
S&P 1500 Index	-	_	(16.02%)	(19.91%)	(11.02%)	10.29%	10.92%
MCM Russell 1000 Index	9,139	89.99%	(16.43%)	(20.70%)	(12.62%)	10.31%	11.12%
Russell 1000 Index	-	-	(16.67%)	(20.94%)	(13.04%)	10.17%	11.00%
S&P 500 Index	-	-	(16.10%)	(19.96%)	(10.62%)	10.60%	11.31%
MCM Russell 2000 Core Index	392	3.86%	(17.09%)	(23.32%)	(23.25%)	4.73%	5.47%
Russell 2000 Index	-	-	(17.20%)	(23.43%)	(25.20%)	4.21%	5.17%
S&P 600 Index	-	-	(14.11%)	(18.94%)	(16.81%)	7.30%	7.20%
MCM Russell 2000 Val Index	311	3.06%	(15.12%)	(17.15%)	(16.12%)	6.30%	4.94%
Russell 2000 Value Index	-	-	(15.28%)	(17.31%)	(16.28%)	6.18%	4.89%
S&P 600 Value Index	-	-	(12.74%)	(14.16%)	(13.93%)	8.02%	6.75%
Emerald Asset Management	313	3.09%	(20.74%)	(28.90%)	(29.60%)	1.70%	6.22%
Russell 2000 Growth Index	-	-	(19.25%)	(29.45%)	(33.43%)	1.40%	4.80%
S&P 600 Growth Index	-	-	(15.62%)	(23.65%)	(19.63%)	6.09%	7.39%

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	<b>Returns for Per</b>	iods Ended Jun	e 30, 2022		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance- Domestic Equity					· · · · ·
U.S. Equity	<b>11.98%</b>	<b>6.84%</b>	<b>8.69%</b>	<b>7.77%</b>	<b>10.59%</b> (1/81)
Russell 3000 Index(1)	12.57%	8.36%	9.14%	8.02%	10.83% (1/81)
S&P 1500 Index	12.77%	8.51%	9.16%	8.18%	-
MCM Russell 1000 Index	12.88%	-	-	-	13.16% (1/12)
Russell 1000 Index	12.82%	8.51%	9.21%	8.13%	13.14% (1/12)
S&P 500 Index	12.96%	8.54%	9.08%	7.97%	13.28% (1/12)
MCM Russell 2000 Core Index	-	-	-	-	6.33% (12/16)
Russell 2000 Index	9.35%	6.33%	8.17%	7.41%	6.05% (12/16)
S&P 600 Index	11.26%	8.03%	9.58%	9.31%	7.59% (12/16)
MCM Russell 2000 Val Index	-	-	-	-	5.27% (12/16)
Russell 2000 Value Index	9.05%	5.58%	7.77%	8.15%	5.23% (12/16)
S&P 600 Value Index	11.01%	7.31%	8.85%	9.16%	6.79% (12/16)
Emerald Asset Management	-	-	-	-	7.75% (12/16)
Russell 2000 Growth Index	9.30%	6.80%	8.34%	6.19%	6.34% (12/16)
S&P 600 Growth Index	11.35%	8.64%	10.19%	9.04%	8.12% (12/16)

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Returns for Periods Ended June 30, 2022							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - International Equ	ity						
Int'l Developed Mkts Equity	\$4,133	100.00%	<b>(14.80%)</b>	<b>(19.67%)</b>	<b>(16.85%)</b>	<b>2.85%</b>	<b>3.26%</b>
MSCI World ex US IMI		_	(15.15%)	(19.54%)	(17.73%)	1.72%	2.58%
Walter Scott & Partners (1)	630	15.25%	(15.71%)	(23.15%)	(15.57%)	7.26%	10.45%
MSCI World		-	(16.19%)	(20.51%)	(14.34%)	7.00%	7.67%
BlackRock MSCI World Ex US Index	3,191	77.21%	(14.46%)	(18.46%)	(16.33%)	2.15%	3.10%
MSCI World ex US	-	-	(14.66%)	(18.76%)	(16.76%)	1.70%	2.66%
Xponance Non-U.S. Small Cap	197	4.77%	(17.15%)	(24.53%)	(24.49%)	1.05%	-
MSCI ACWI ex US Small Cap	-	-	(17.55%)	(22.92%)	(22.45%)	2.94%	2.55%
Harris Assoc Int'l SCV	111	2.69%	(15.45%)	(24.13%)	(24.50%)	3.45%	1.68%
MSCI World ex US Sm Cap	-	-	(17.94%)	(23.87%)	(23.02%)	1.97%	2.16%
MSCI World ex US Sm Value	-	-	(15.64%)	(18.10%)	(17.41%)	1.99%	1.43%

\*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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022									
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception					
Gross Performance - International Equity										
Int'l Developed Mkts Equity	<b>6.52%</b>	<b>1.80%</b>	<b>6.04%</b>	-	<b>5.94%</b> (1/02) 5.64% (1/02)					
MSCI World ex US IMI	5.53%	1.72%	5.77%	4.31%						
Walter Scott & Partners (1)	11.39%	8.67%	-	-	9.17% (10/06)					
MSCI World	9.51%	5.19%	7.32%	5.93%	6.06% (10/06)					
BlackRock MSCI World Ex US Index MSCI World ex US	5.37%	- 1.55%	- 5.47%	4.07%	3.11% (6/17) 2.64% (6/17)					
Xponance Non-U.S. Small Cap	-	-	-	-	0.08% (10/18)					
MSCI ACWI ex US Small Cap	6.22%	2.79%	8.16%	5.68%	1.10% (10/18)					
Harris Assoc Int'I SCV	7.25%	4.51%	-	-	10.09% (7/03)					
MSCI World ex US Sm Cap	6.70%	2.67%	7.69%	-	7.99% (7/03)					
MSCI World ex US Sm Value	6.34%	2.48%	8.06%	6.55%	8.04% (7/03)					

\*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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022							
Gross Performance - Emerging Mkts	Market Value \$(mm) Equity	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Emerging Mkts Equity	\$1,165	100.00%	<b>(13.10%)</b>	<b>(21.54%)</b>	<b>(28.19%)</b>	<b>2.44%</b>	<b>3.42%</b>
MSCI EM IMI	-	-	(12.10%)	(17.94%)	(24.75%)	1.15%	2.33%
Macquarie Emg Mkts Equity	322	27.61%	(11.93%)	(22.45%)	(27.83%)	2.02%	2.99%
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%
Martin Currie Emg Mkts Equity	340	29.14%	(14.63%)	(25.45%)	(32.90%)	1.46%	3.69%
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%
BlackRock Emg Mkts Index	173	14.88%	(11.32%)	(17.60%)	(25.32%)	0.42%	2.03%
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%
Leading Edge Emg Mkts Fund	215	18.41%	(11.84%)	(19.76%)	(27.61%)	<mark>(0.02%)</mark>	_
MSCI EM		-	(11.45%)	(17.63%)	(25.28%)	0.57%	2.18%
GlobeFlex Emerging Small Cap	116	9.96%	(16.49%)	(15.27%)	(18.48%)	8.31%	5.82%
MSCI EM Small Cap		-	(16.41%)	(20.03%)	(20.72%)	5.78%	3.48%

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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.

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance - Emerging Mkts Equity	,				
Emerging Mkts Equity	<b>4.13%</b>	<b>0.92%</b>	<b>6.75%</b>	-	<b>6.81%</b> (1/02) 8.39% (1/02)
MSCI EM IMI	3.20%	2.12%	8.52%	4.00%	
Macquarie Emg Mkts Equity	-	_	-	-	3.59% (5/13)
MSCI EM	3.07%	2.00%	8.43%		2.00% (5/13)
Martin Currie Emg Mkts Equity	-	-	-	-	3.76% (1/14)
MSCI EM	3.07%	2.00%	8.43%		2.37% (1/14)
BlackRock Emg Mkts Index	-	_	-	-	2.03% (7/17)
MSCI EM	3.07%	2.00%	8.43%		2.18% (7/17)
Leading Edge Emg Mkts Fund	-	-	-	-	3.06% (11/18)
MSCI EM	3.07%	2.00%	8.43%		3.64% (11/18)
GlobeFlex Emerging Small Cap	-	-	-	-	6.05% (8/13)
MSCI EM Small Cap	4.31%	2.61%	9.63%	4.59%	3.68% (8/13)

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Since Inception	
Gross Performance - Private Equity								
Private Equity (1)	\$6,059	100.00%	<b>(1.10%)</b>	<b>2.75%</b>	<b>29.83%</b>	-	<b>34.82%</b> (1/20)	
Burgiss All Private Equity (Qtr Lag)	-	-	(0.66%)	3.58%	17.15%	19.14%	21.37% (1/20)	
Global Equity +3% (Qtr lag) (2)	-	-	(4.22%)	3.82%	12.99%	19.75%	20.87% (1/20)	
Buyouts	3,650	60.25%	1.40%	5.72%	29.74%	-	33.77% (1/20)	
Burgiss Buyout Index (Qtr Lag)	-	-	0.31%	4.89%	19.28%	17.40%	19.51% (1/20)	
Special Situations	714	11.79%	0.28%	15.52%	42.53%	-	33.66% (1/20)	
Burgiss Special Sits Index (Qtr Lag)		-	0.84%	3.33%	8.81%	7.06%	7.87% (1/20)	
Growth Equity	1,419	23.42%	(8.49%)	<mark>(1.24%)</mark>	33.18%	-	52.72% (1/20)	
Burgiss Venture Capital Idx (Qtr Lag	J) -		(3.05%)	1.36%	16.73%	30.09%	33.66% (1/20)	
Keystone Legacy (3)	276	4.55%	4.29%	(26.30%)	(3.88%)	4.24%	2.34% (7/18)	

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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 01/01/2020 benchmark is 25% MSCI World ex US Index and 75% Russell 3000 + 3% with a 1 Qtr lag.
 (3) As of 12/31/2020,Keystone Legacy SPV consists of 119 non-core funds, prior performance in previous sub-asset classes



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	Returns for Periods Ended June 30, 2022									
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Since Inception			
Gross Performance - Private C	redit									
Private Credit (1) S&P Levered Loan Index +	<b>\$1,136</b> · 1% (Qtr Lag) -	100.00% -	<b>3.59%</b> 0.15%	<b>7.50%</b> 1.14%	<b>17.18%</b> 4.25%	- 5.30%	<b>17.80%</b> (1/20) 5.07% (1/20)			
Direct Lending	371	32.67%	2.83%	6.59%	15.91%	-	13.25% (1/20)			
Distressed Debt	327	28.82%	4.57%	8.18%	29.01%	-	31.71% (1/20)			
Diversified Credit	438	38.51%	3.55%	7.78%	16.67%	-	19.94% (1/20)			

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - Fixed Income			· · ·				
Fixed Income (1) BImbg U.S. Agg Bond Index	\$7,268 -	48.88% -	<b>(4.84%)</b> (4.69%)	<b>(9.67%)</b> (10.35%)	<b>(9.21%)</b> (10.29%)	<b>(0.82%)</b> (0.93%)	<b>1.07%</b> 0.88%
Core Fixed Income Blmbg U.S. Agg Bond Index	\$5,126 -	34.47% -	<b>(3.67%)</b> (4.69%)	<b>(9.25%)</b> (10.35%)	<b>(9.29%)</b> (10.29%)	<b>(0.59%)</b> (0.93%)	<b>1.17%</b> 0.88%
PIMCO Core Bond Fund BImbg Agg ex Treasury	527	3.54%	(5.01%) (5.30%)	(10.51%) (11.14%)	(10.36%) (11.19%)	(0.37%) (1.09%)	1.37% 0.88%
Mellon Bond Index BImbg U.S. Agg Bond Index (2)	4,599	30.93% -	(4.83%) (4.69%)	(10.35%) (10.35%)	(10.41%) (10.29%)	(1.04%) (0.93%)	0.82% 0.88%
Nominal U.S. Treasuries Blmbg US Treas Bell 10Y	\$91 -	0.61% -	<b>(4.80%)</b> (5.20%)	<b>(10.75%)</b> (11.71%)	<b>(10.21%)</b> (11.18%)	<b>(1.50%)</b> (1.54%)	<b>0.65%</b> 0.51%
PIMCO US Treasuries BImbg US Treas Bell 10Y	91 -	0.61% -	(4.80%) (5.20%)	(10.75%) (11.71%)	(10.21%) (11.18%)	(0.91%) (1.54%)	1.02% 0.51%
New Total Fixed Income Structure (1)	\$1,192	8.02%	(6.99%)	(12.81%)	(12.37%)	-	-
Intermediate Treasury Mellon Intermediate Treasury Inde BImbg Intmdt Treasury	<b>\$269</b> x 269 -	<b>1.81%</b> 1.81% -	<b>(1.66%)</b> (1.66%) (1.67%)	<b>(5.75%)</b> (5.75%) (5.80%)	<b>(6.33%)</b> (6.33%) (6.35%)	(0.31%)	- 0.87%
Long Duration Mellon Long Duration Index BImbg Long Treasury	<b>\$544</b> 544 -	<b>3.66%</b> 3.66%	<b>(12.79%)</b> (11.97%) (11.93%)	<b>(21.98%)</b> (20.93%) (21.25%)	<b>(20.42%)</b> (18.48%) (18.45%)	(2.94%)	- 0.51%
High Yield Fidelity HY CMBS (3) BImbg US CMBS Ex AAA Index	<b>\$379</b> 320 (4) -	<b>2.55%</b> 2.15%	<b>(6.09%)</b> (2.93%) (4.46%)	<b>(9.65%)</b> (5.68%) (9.98%)	<b>(8.00%)</b> (3.69%) (10.53%)	0.02% (0.58%)	2.48% 2.10%
Mellon High Yield Beta Fund Blmbg HY Corp	59 -	0.40%	(10.91%) (9.83%)	(15.11%) (14.19%)	(13.89%) (12.81%)	- 0.21%	2.10%

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The market values and performance of such accounts indiced within the quarter of accounts in the process of indicator. (1) Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021. (2) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK. (3) On 03/01/2021, the Fidelity HY CMBS account switched from the Opportunistic Fixed composite to the High Yield

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



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022						
	Last 10	Last 15	Last 20	Last 25	Since	
	Years	Years	Years	Years	Inception	
Gross Performance - Fixed Income					-	
Fixed Income (1)	2.21%	3.86%	5.04%	5.18%	<b>7.01%</b> (1/85)	
Blmbg U.S. Agg Bond Index	1.54%	3.26%	3.57%	4.36%	6.19% (1/85)	
Core Fixed Income	2.06%	3.83%	4.12%	-	<b>4.17%</b> (1/02)	
BImbg U.S. Agg Bond Index	1.54%	3.26%	3.57%	4.36%	3.67% (1/02)	
PIMCO Core Bond Fund	-	-	-	-	1.82% (1/13)	
Blmbg Agg ex Treasury	1.81%	3.46%	-	-	1.64% (1/13)	
Mellon Bond Index	1.46%	3.18%	3.57%	4.41%	4.59% (10/93)	
Bimbg U.S. Agg Bond Index (2)	1.54%	3.26%	3.65%	4.48%	4.65% (10/93)	
Nominal U.S. Treasuries	1.02%	-	-		<b>1.47%</b> (9/11)	
BImbg US Treas Bell 10Y	0.82%	3.58%	3.65%	4.26%	1.44% (9/11)	
PIMCO US Treasuries	1.34%	-	-	-	1.80% (9/11)	
Bimbg US Treas Bell 10Y	0.82%	3.58%	3.65%	4.26%	1.44% (9/11)	
New Total Fixed Income Structure (1)	-	-	-	-	(8.42%) (3/21)	
Intermediate Treasury	-	-	-	-	<b>(4.83%)</b> (3/21)	
Mellon Intermediate Treasury Index	-	-	-	-	(4.83%) (3/21)	
BImbg Intmdt Treasury	0.96%	2.60%	2.77%	3.62%	(4.85%) (3/21)	
Long Duration	-	-	-	-	(13.62%) (3/21)	
Mellon Long Duration Index	-	-	-	-	(17.44%) (1/21)	
BImbg Long Treasury	1.63%	5.01%	5.22%	5.93%	(17.39%) (1/21)	
High Yield	-	-	-	-	(3.43%) (3/21)	
Fidelity HY CMBS (3)	5.95%	5.75%	7.08%	7.98%	8.19% (4/97)	
Blmbg US CMBS Ex AAA Index (4)	3.25%	0.14%	1.81%	3.38%	3.53% (4/97)	
Mellon High Yield Beta Fund	-	-	-	-	(10.96%) (5/21)	
BImbg HY Corp	4.47%	5.78%	7.28%	5.98%	(9.84%) (5/21)	

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

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

(3) On 03/01/2021, the Fidelity HY CMBS account switched from the Opportunistic Fixed composite to the High Yield

composite under the new fixed income structure.

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



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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.

	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - Fixed Income							
Fixed Income (1) BImbg U.S. Agg Bond Index	\$7,268 -	100.00% -	<b>(4.84%)</b> (4.69%)	<b>(9.67%)</b> (10.35%)	<b>(9.21%)</b> (10.29%)	<b>(0.82%)</b> (0.93%)	<b>1.07%</b> 0.88%
Opportunistic Fixed Income	\$860	11.83%	1.26%	4.35%	9.06%	6.54%	5.73%
SEI St. Credit: HY Bank Loans(2)(3) FTSE HY Corp (1 month lag)	13 -	0.17%	(2.70%) (4.13%)	(2.85%) (5.78%)	4.96% (4.81%)	8.74% 3.23%	8.91% 3.45%
BAAM Keystone (4) HFRI FOF Comp Index	_847 -	11.65% -	1.34% (3.88%)	4.56% (6.53%)	7.57% (5.45%)	8.35% 3.96%	6.89% 3.63%

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The market values and performance of such accounts are included within their relevant composites.
(1) Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021.
(2) SEI HY Bank Loans since inception returns are included in the Fixed Income composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.
(3) SEI HY Bank Loans has a 1 month lag in valuation.
(4) 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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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.

	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance - Fixed Income					
Fixed Income (1) Blmbg Aggregate	<b>2.21%</b> 1.54%	<b>3.86%</b> 3.26%	<b>5.04%</b> 3.57%	<b>5.18%</b> 4.36%	<b>7.01%</b> (1/85) 6.19% (1/85)
Opportunistic Fixed Income	-	-	-	-	<b>5.63%</b> (10/12)
SEI St. Credit: HY Bank Loans(2)(3) FTSE HY Corp (1 month lag)	9.43% 5.14%	- 5.82%	- 7.02%	- 6.23%	12.65% (5/08) 6.60% (5/08)
BAAM Keystone (4) HFRI FOF Comp Index	7.72% 3.75%	- 1.78%	- 3.49%	- 4.12%	7.72% (7/12) 3.75% (7/12)

\*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) Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021.

(2) SEI HY Bank Loans since inception returns are included in the Fixed Income composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.

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

(4) 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.



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Returns for Periods Ended June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Gross Performance - Inflation Protecti	on							
Inflation Protection (TIPS)	\$1,043	100.00%	<b>(6.95%)</b>	<b>(9.74%)</b>	<b>(6.39%)</b>	<b>2.56%</b>	<b>2.97%</b>	
Blmbg U.S. TIPS Index	-	-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%	
NISA Inv Adv TIPS	453	43.43%	(6.24%)	(8.84%)	(5.01%)	3.12%	3.30%	
Blmbg U.S. TIPS Index (1)		-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%	
Brown Brothers TIPS	475	45.53%	(6.08%)	(8.76%)	(5.23%)	3.02%	3.21%	
BImbg U.S. TIPS Index		-	(6.08%)	(8.92%)	(5.14%)	3.04%	3.21%	
New Century Global TIPS	115	11.05%	(12.90%)	(16.68%)	(14.48%)	(0.41%)	1.31%	
Blmbg Wrld Inflation Linked Unhdg	9 -	-	(13.17%)	(16.98%)	(14.02%)	(0.65%)	1.00%	

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The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022							
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception		
Gross Performance - Inflation Protection							
Inflation Protection (TIPS)	<b>1.74%</b>	<b>3.30%</b>	-	-	<b>3.24%</b> (2/03)		
Blmbg U.S. TIPS Index	1.73%	3.92%	4.44%	5.04%	4.10% (2/03)		
NISA Inv Adv TIPS	1.74%	3.25%	-	-	3.19% (4/07)		
BImbg U.S. TIPS Index (1)	1.65%	3.17%	3.90%	4.60%	3.09% (4/07)		
Brown Brothers TIPS	1.92%	-	-	-	2.03% (2/12)		
BImbg U.S. TIPS Index	1.73%	3.92%	4.44%	5.04%	1.82% (2/12)		
New Century Global TIPS	1.60%	-	-	-	1.54% (2/12)		
Blmbg Wrld Inflation Linked Unhdg	1.06%	2.86%	4.42%	4.99%	1.02% (2/12)		

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The market values and performance of such accounts are included within their relevant composites. (1) Benchmark history is a blend of current and past benchmark indices. History prior to 12/31/2018 is provided by RVK.

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	Returns for Periods Ended June 30, 2022								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Since Inception		
Gross Performance - Real Estate									
Real Estate (1) Real Estate Custom Bench (Qtr lag CPI + 3% (Qtr lag)	<b>\$2,921</b> g) (2) - -	100.00% - -	<b>3.66%</b> 5.09% 3.80%	<b>8.09%</b> 11.63% 6.23%	<b>20.54%</b> 24.86% 11.54%	10.54% 7.19%	<b>12.29%</b> (1/20) 11.57% (1/20) 7.63% (1/20)		
Core/Core Plus Real Estate Funds	1,295	44.33%	6.11%	12.74%	22.35%	-	11.72% (1/20)		
NCREIF ODCE Index (Qtr lag)	-		7.77%	15.72%	28.69%	11.11%	12.44% (1/20)		
Value Add/Opportunistic SMA	569	19.48%	3.85%	5.05%	19.81%	-	11.57% (1/20)		
NCREIF ODCE Index (Qtr lag)	-	-	7.77%	15.72%	28.69%	11.11%	12.44% (1/20)		
Value Add/Opportunistic Funds	747	25.56%	9.68%	17.76%	30.49%	-	17.77% (1/20)		
NCREIF ODCE Index (Qtr lag)	-	-	7.77%	15.72%	28.69%	11.11%	12.44% (1/20)		
REITS	310	10.61%	(16.09%)	(18.56%)	(4.69%)	_	4.65% (1/20)		
FTSE NAREIT US Index	-	-	(17.11%)	(20.55%)	(6.97%)	3.01%	1.03% (1/20)		

\*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.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 June 30, 2022							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Gross Performance - DWDO Managers	5							
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	197	0.57% -	(17.15%) (17.55%)	(24.53%) (22.92%)	(24.49%) (22.45%)	1.05% 2.94%	2.55%	
Leading Edge Emg Mkts Fund MSCI EM	215 -	0.62%	(11.84%) (11.45%)	(19.76%) (17.63%)	(27.61%) (25.28%)	<mark>(0.02%)</mark> 0.57%	2.18%	
GlobeFlex Emerging Small Cap MSCI EM Small Cap	116 -	0.34%	(16.49%) (16.41%)	(15.27%) (20.03%)	(18.48%) (20.72%)	8.31% 5.78%	5.82% 3.48%	
New Century Global TIPS Blmbg Wrld Inflation Linked Unhdg	115 -	0.33%	(12.90%) (13.17%)	(16.68%) (16.98%)	(14.48%) (14.02%)	(0.41%) (0.65%)	1.31% 1.00%	

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 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 Per	riods Ended Jur	ne 30, 2022		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance - DWDO Managers					
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	- 6.22%	- 2.79%	- 8.16%	- 5.68%	0.08% (10/18) 1.10% (10/18)
Leading Edge Emg Mkts Fund MSCI EM	3.07%	- 2.00%	- 8.43%	-	3.06% (11/18) 3.64% (11/18)
GlobeFlex Emerging Small Cap MSCI EM Small Cap	- 4.31%	- 2.61%	- 9.63%	- 4.59%	6.05% (8/13) 3.68% (8/13)
New Century Global TIPS Blmbg Wrld Inflation Linked Unhdg	1.60% 1.06%	- 2.86%	- 4.42%	- 4.99%	1.54% (2/12) 1.02% (2/12)

### **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.

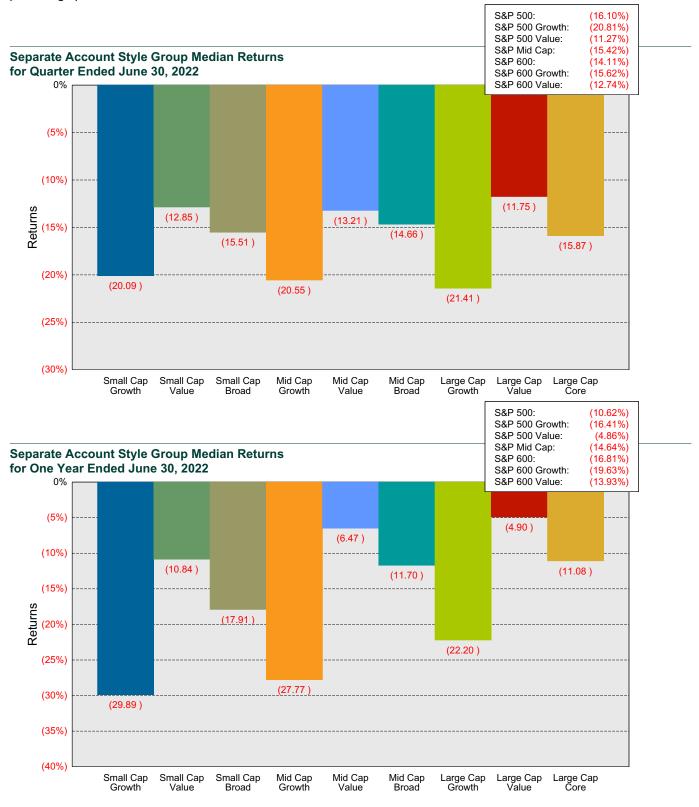
### Public Market Equivalent Benchmark Definition:

- 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.
- Starting10/01/2021, 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.

U.S. Equity

## Domestic Equity Active Management Overview

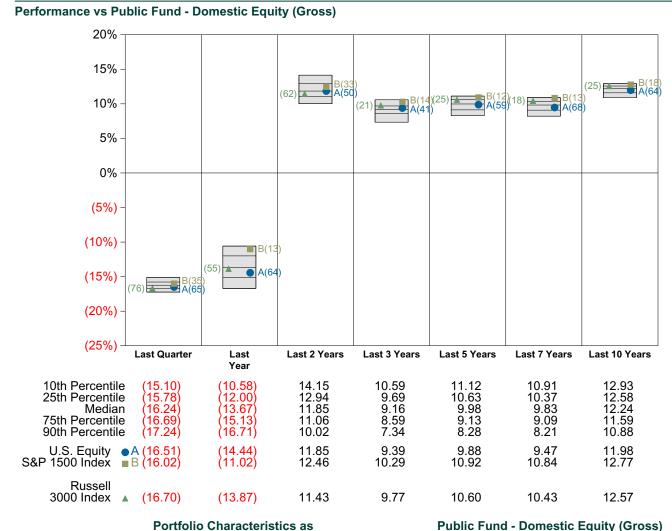
The S&P 500 Index sank 16.1% in 2Q on concerns over rising rates and a slowing economy; the Index is down 20.0% YTD. All sectors posted negative returns, but the worst were Consumer Discretionary (-26%), Communication Services (-21%), and Technology (-20%). Energy, Utilities, and Consumer Staples each lost roughly 5%. Of note, Energy is the only sector to have a positive YTD return (+32%) while most others have negative double-digit results. Value outperformed growth by a substantial margin (Russell 1000 Value: -12.2%; Russell 1000 Growth: -20.9%) and the YTD differential is more than 15 percentage points.



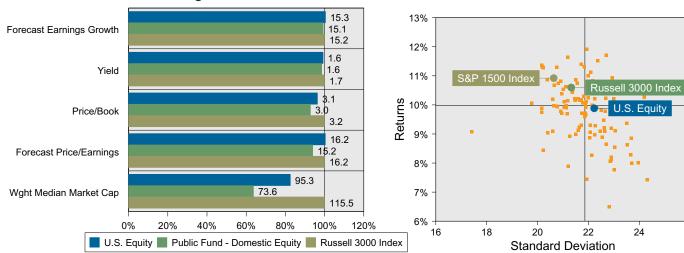
## U.S. Equity Period Ended June 30, 2022

### **Quarterly Summary and Highlights**

- U.S. Equity's portfolio posted a (16.51)% return for the quarter placing it in the 65 percentile of the Public Fund Domestic Equity group for the quarter and in the 64 percentile for the last year.
- U.S. Equity's portfolio outperformed the Russell 3000 Index by 0.20% for the quarter and underperformed the Russell 3000 Index for the year by 0.58%.









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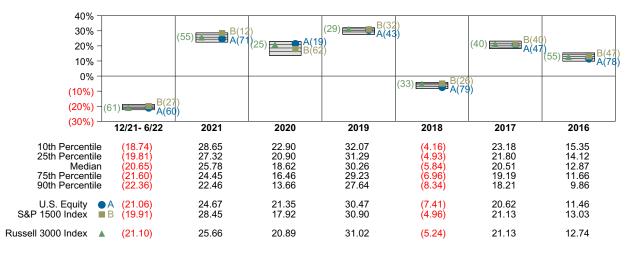
**Annualized Five Year Risk vs Return** 

## U.S. Equity Return Analysis Summary

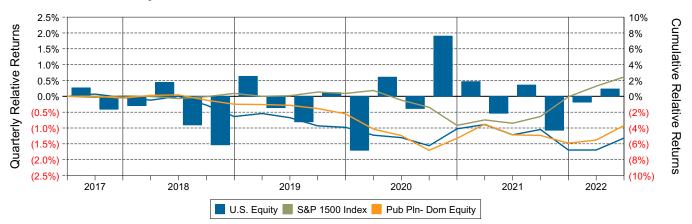
### **Return Analysis**

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.

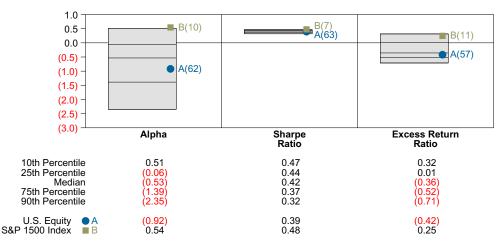




**Cumulative and Quarterly Relative Returns vs Russell 3000 Index** 



Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2022



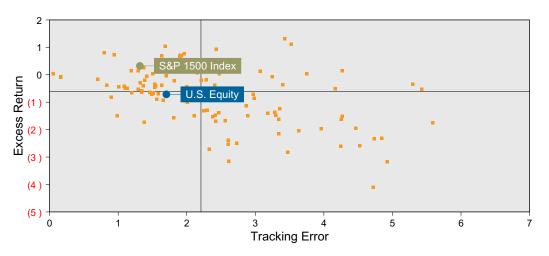


## U.S. Equity Risk Analysis Summary

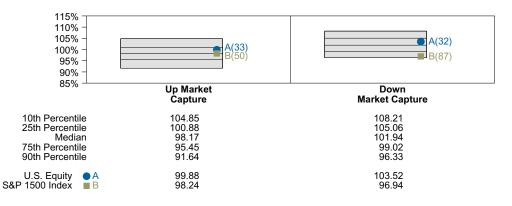
### **Risk Analysis**

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.

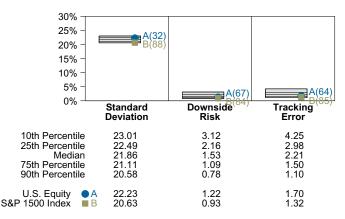
Risk Analysis vs Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2022

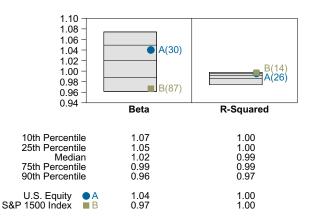


### Market Capture vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2022



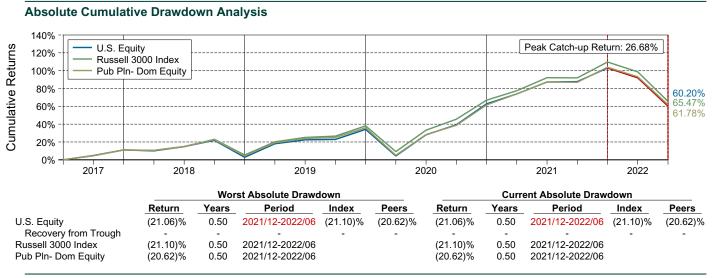
### Risk Statistics Rankings vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2022

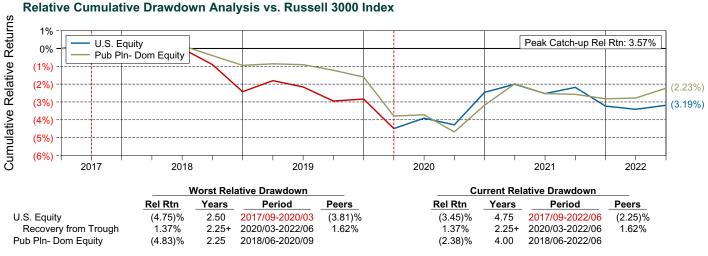




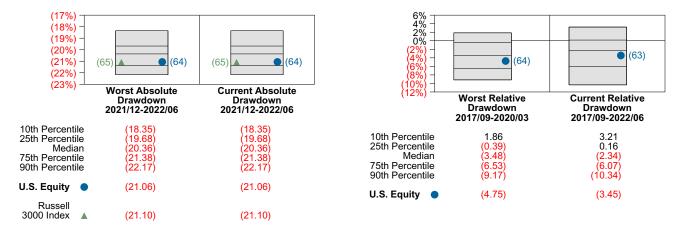
## U.S. Equity Drawdown Analysis for Five Years Ended June 30, 2022

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.





### Drawdown Rankings vs. Russell 3000 Index Rankings against Public Fund - Domestic Equity Five Years Ended June 30, 2022

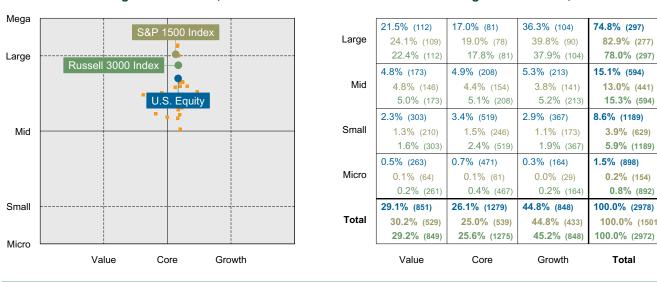


## Current Holdings Based Style Analysis U.S. Equity As of June 30, 2022

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.

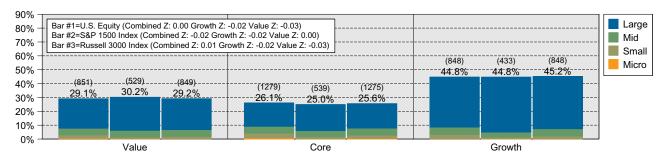
**Style Exposure Matrix** 

Holdings as of June 30, 2022

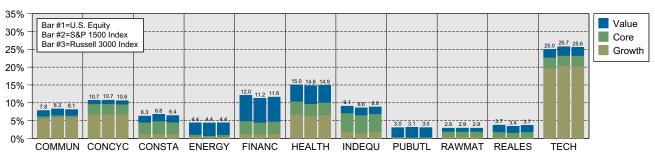


### Style Map vs Pub Pln- Dom Equity Holdings as of June 30, 2022

### Combined Z-Score Style Distribution Holdings as of June 30, 2022



Sector Weights Distribution Holdings as of June 30, 2022

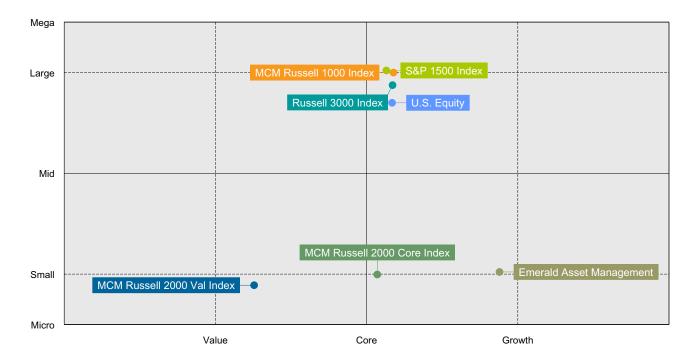


## Holdings Based Style Analysis For One Quarter Ended June 30, 2022

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 June 30, 2022



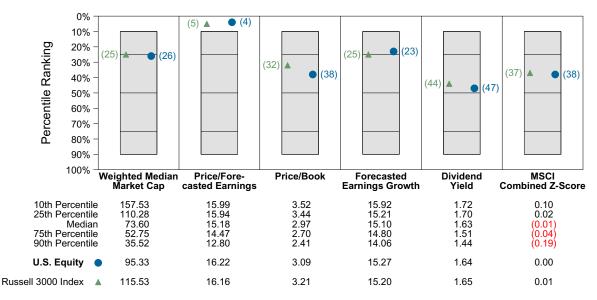
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities D	Security Diversification
MCM Russell 2000 Val Index	3.06%	1.84	(0.65)	(0.29)	0.37	1400	220.27
MCM Russell 2000 Core Inde	x 3.86%	2.21	(0.07)	(0.11)	(0.04)	2001	350.91
Emerald Asset Management	3.09%	2.49	0.53	0.11	(0.42)	116	31.54
MCM Russell 1000 Index	89.99%	129.94	0.01	(0.01)	(0.03)	1027	54.35
U.S. Equity	100.00%	95.33	0.00	(0.02)	(0.03)	3021	72.54
Russell 3000 Index	-	115.53	0.01	(0.02)	(0.03)	3011	63.92
S&P 1500 Index	-	134.03	(0.02)	(0.02)	0.00	1505	51.69

## U.S. Equity Equity Characteristics Analysis Summary

### **Portfolio Characteristics**

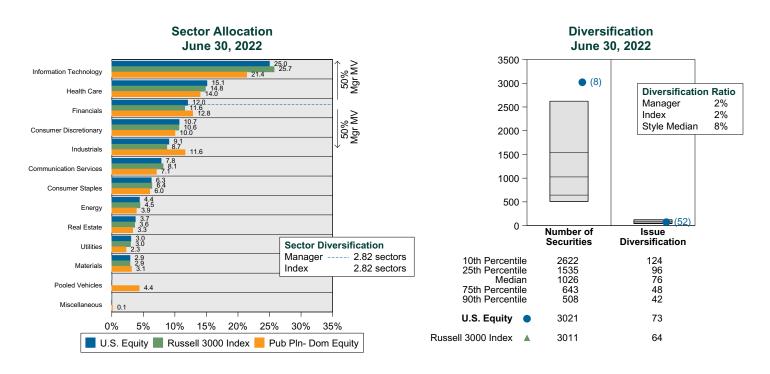
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of June 30, 2022



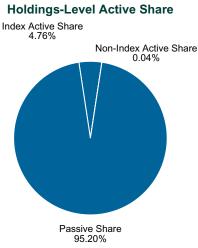
### **Sector Weights**

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.

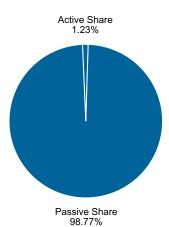


### **U.S. Equity** Active Share Analysis as of June 30, 2022 vs. Russell 3000 Index

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.



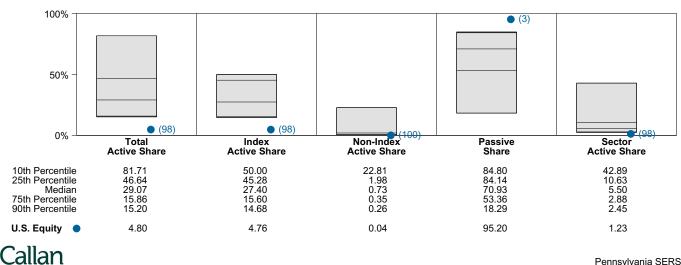




Total Active Share: 4.80%

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	1.30%	0.00%	1.30%	8.13%	7.82%	0.23%
Consumer Discretionary	5.64%	0.04%	5.69%	10.65%	10.68%	0.56%
Consumer Staples	2.72%	0.03%	2.75%	6.35%	6.27%	0.24%
Energy	4.27%	0.29%	4.56%	4.48%	4.39%	0.21%
Financials	7.39%	0.07%	7.46%	11.57%	12.03%	0.71%
Health Care	6.20%	0.01%	6.21%	14.85%	15.09%	0.86%
Industrials	7.42%	0.00%	7.42%	8.73%	9.05%	0.58%
Information Technology	2.56%	0.00%	2.56%	25.73%	25.00%	0.93%
Materials	5.01%	0.02%	5.03%	2.89%	2.89%	0.14%
Miscellaneous	0.00%	100.00%	100.00%	-	0.00%	0.00%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.02%	0.01%
Real Estate	6.39%	0.00%	6.39%	3.63%	3.74%	0.21%
Utilities	3.95%	0.00%	3.95%	2.98%	3.03%	0.12%
Total	4.76%	0.04%	4.80%	100.00%	100.00%	4.80%





U.S. Equity Managers

## MCM Russell 1000 Index Period Ended June 30, 2022

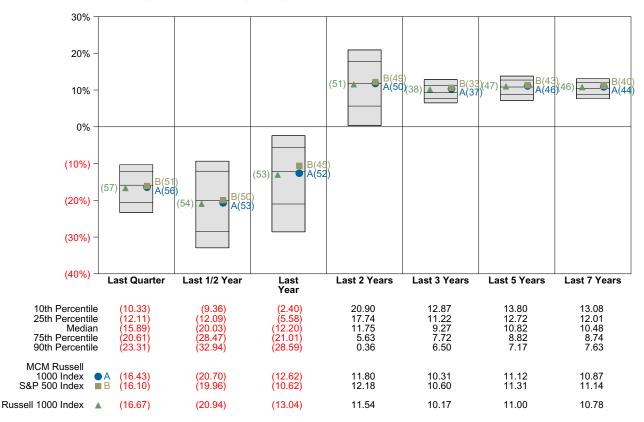
#### **Investment Philosophy**

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

#### **Quarterly Summary and Highlights**

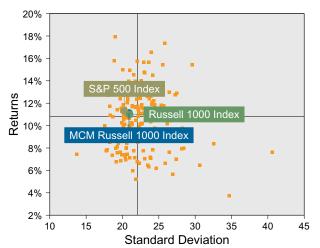
- MCM Russell 1000 Index's portfolio posted a (16.43)% return for the quarter placing it in the 56 percentile of the Callan Large Capitalization group for the quarter and in the 52 percentile for the last year.
- MCM Russell 1000 Index's portfolio outperformed the Russell 1000 Index by 0.24% for the quarter and outperformed ٠ the Russell 1000 Index for the year by 0.41%.

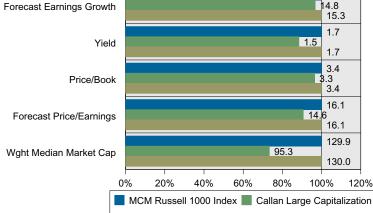
### Performance vs Callan Large Capitalization (Gross)





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





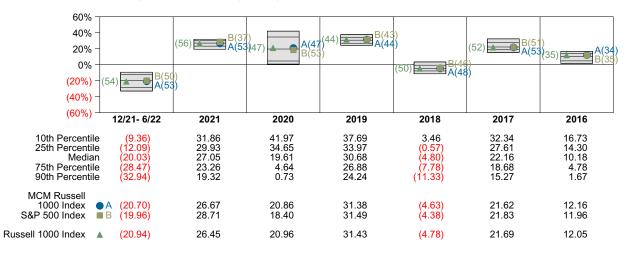
Russell 1000 Index

## MCM Russell 1000 Index Return Analysis Summary

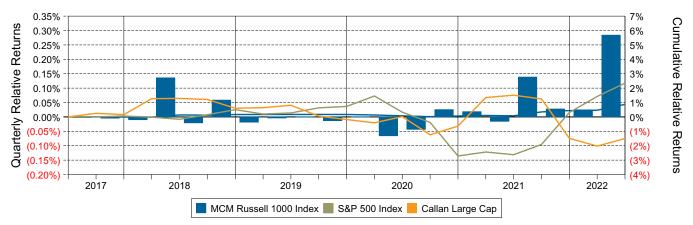
### **Return Analysis**

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

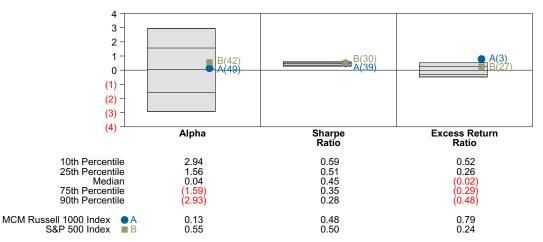
### Performance vs Callan Large Capitalization (Gross)



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





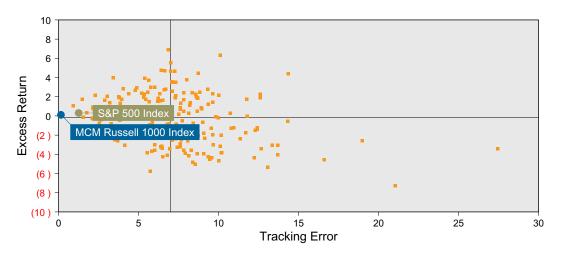


## MCM Russell 1000 Index Risk Analysis Summary

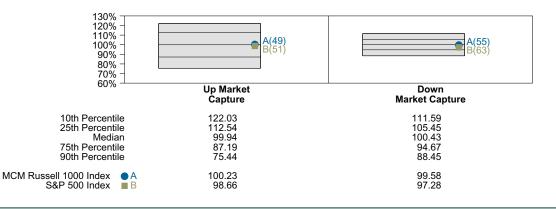
### **Risk Analysis**

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.

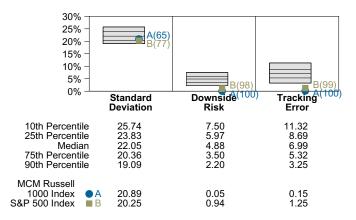
Risk Analysis vs Callan Large Capitalization (Gross) Five Years Ended June 30, 2022

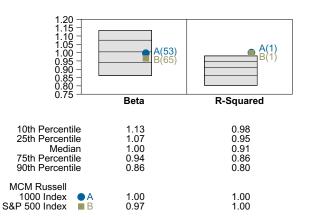


### Market Capture vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended June 30, 2022



### Risk Statistics Rankings vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended June 30, 2022





## Current Holdings Based Style Analysis MCM Russell 1000 Index As of June 30, 2022

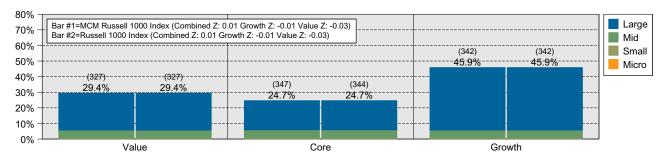
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

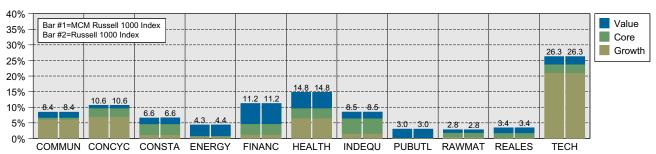


### Style Map vs Callan Large Cap Holdings as of June 30, 2022

### Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

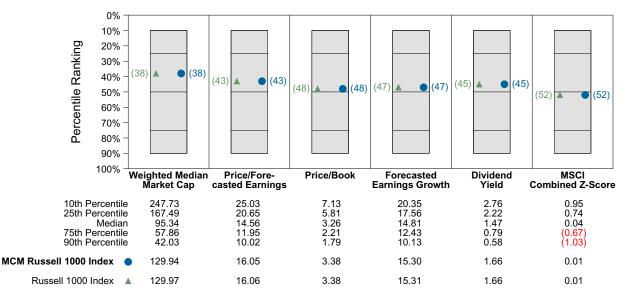


## MCM Russell 1000 Index Equity Characteristics Analysis Summary

### **Portfolio Characteristics**

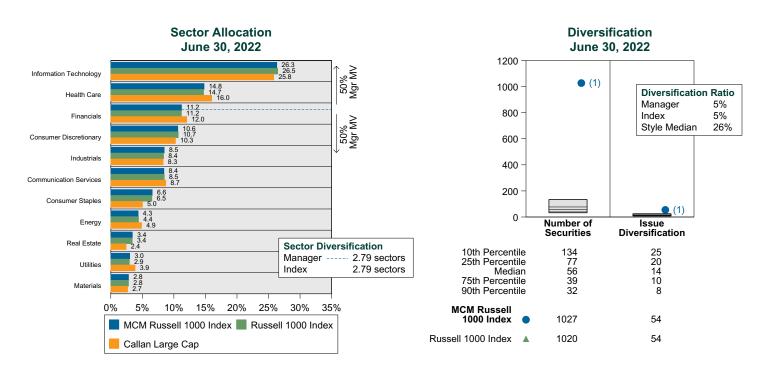
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Capitalization as of June 30, 2022



### **Sector Weights**

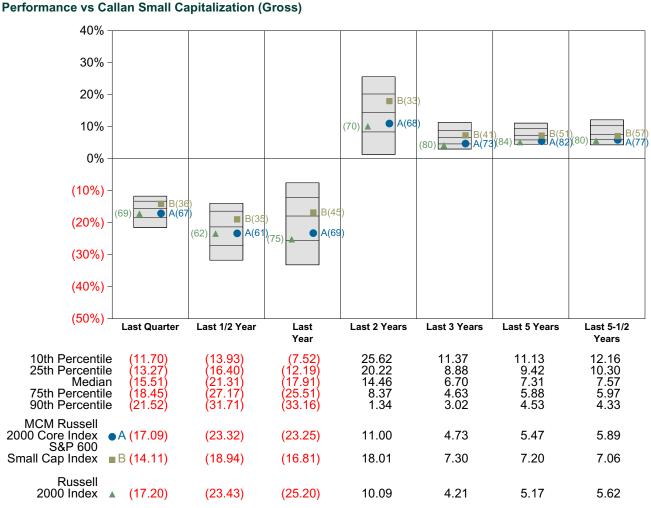
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.

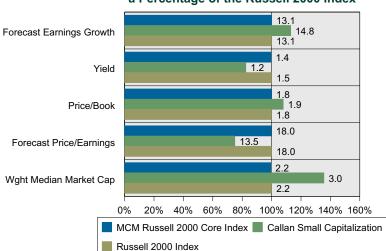


## MCM Russell 2000 Core Index Period Ended June 30, 2022

### **Quarterly Summary and Highlights**

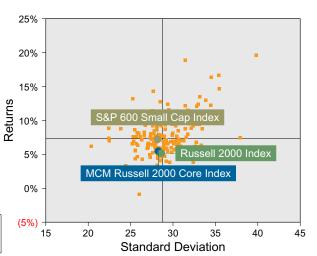
- MCM Russell 2000 Core Index's portfolio posted a (17.09)% return for the quarter placing it in the 67 percentile of the Callan Small Capitalization group for the quarter and in the 69 percentile for the last year.
- MCM Russell 2000 Core Index's portfolio outperformed the Russell 2000 Index by 0.11% for the quarter and outperformed the Russell 2000 Index for the year by 1.94%.





# Portfolio Characteristics as a Percentage of the Russell 2000 Index

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

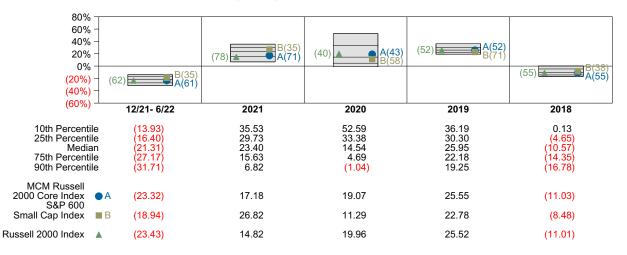


## MCM Russell 2000 Core Index Return Analysis Summary

### **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.

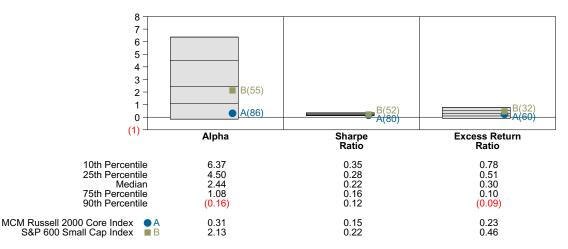
### Performance vs Callan Small Capitalization (Gross)



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 June 30, 2022

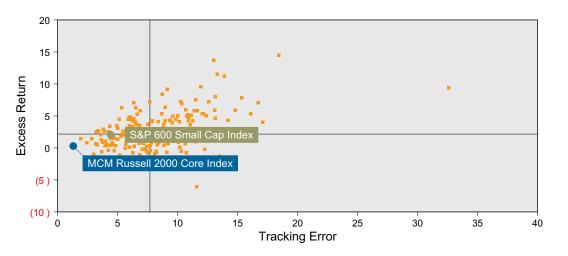


## MCM Russell 2000 Core Index Risk Analysis Summary

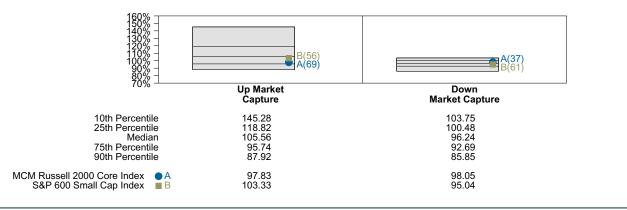
### **Risk Analysis**

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.

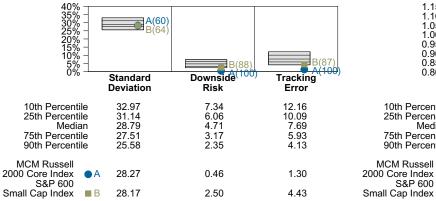
Risk Analysis vs Callan Small Capitalization (Gross) Five Years Ended June 30, 2022

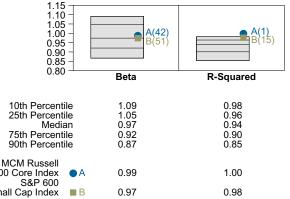


### Market Capture vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended June 30, 2022



### Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Five Years Ended June 30, 2022





## Current Holdings Based Style Analysis MCM Russell 2000 Core Index As of June 30, 2022

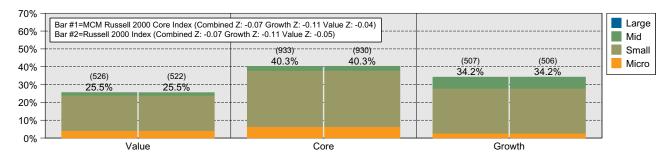
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

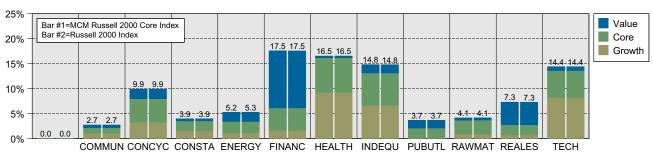


### Style Map vs Callan Small Cap Holdings as of June 30, 2022

### Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

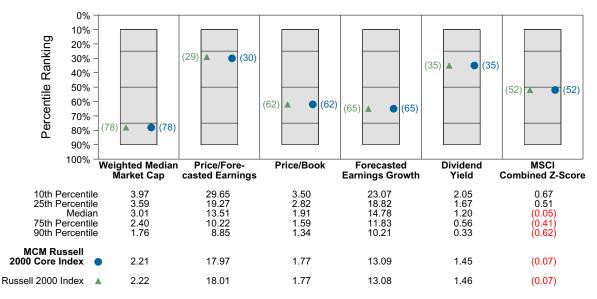


## MCM Russell 2000 Core Index Equity Characteristics Analysis Summary

### **Portfolio Characteristics**

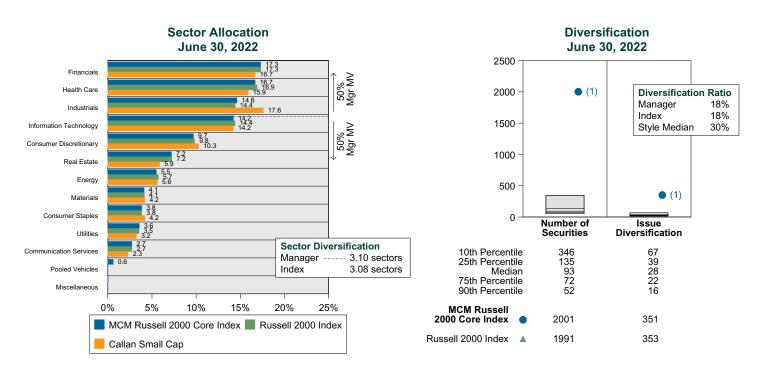
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Capitalization as of June 30, 2022



### **Sector Weights**

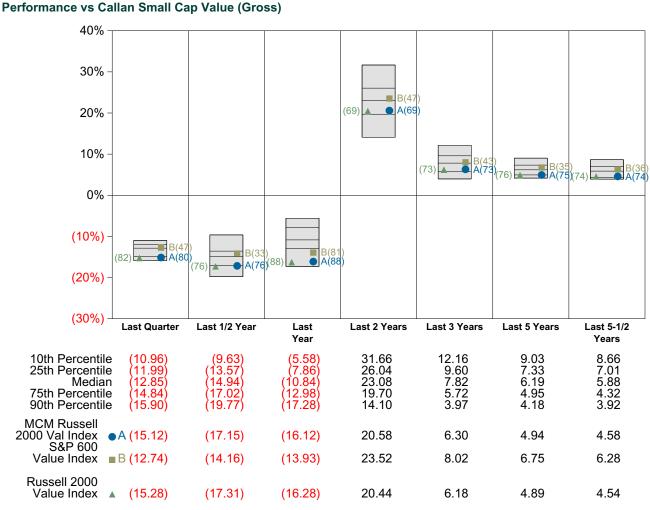
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



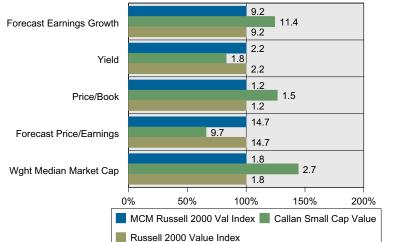
# MCM Russell 2000 Val Index Period Ended June 30, 2022

## **Quarterly Summary and Highlights**

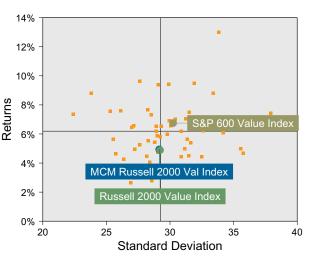
- MCM Russell 2000 Val Index's portfolio posted a (15.12)% return for the quarter placing it in the 80 percentile of the Callan Small Cap Value group for the quarter and in the 88 percentile for the last year.
- MCM Russell 2000 Val Index's portfolio outperformed the Russell 2000 Value Index by 0.16% for the quarter and outperformed the Russell 2000 Value Index for the year by 0.16%.







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



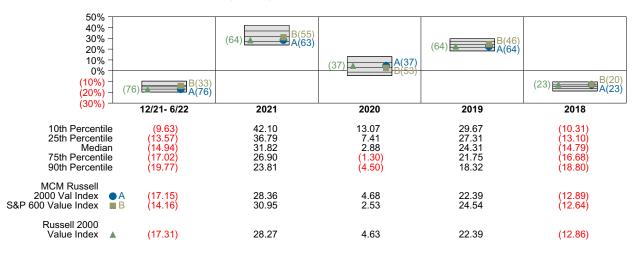


# MCM Russell 2000 Val Index Return Analysis Summary

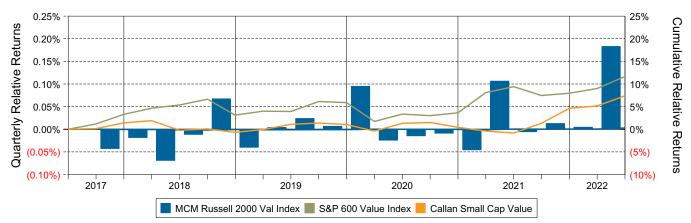
## **Return Analysis**

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.

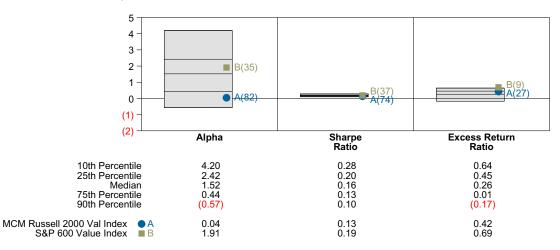
## Performance vs Callan Small Cap Value (Gross)



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 June 30, 2022

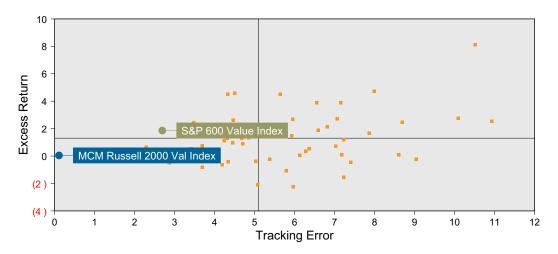


# MCM Russell 2000 Val Index **Risk Analysis Summary**

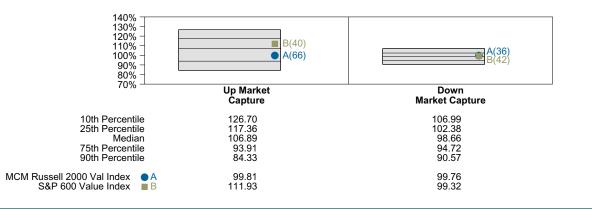
### **Risk Analysis**

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.

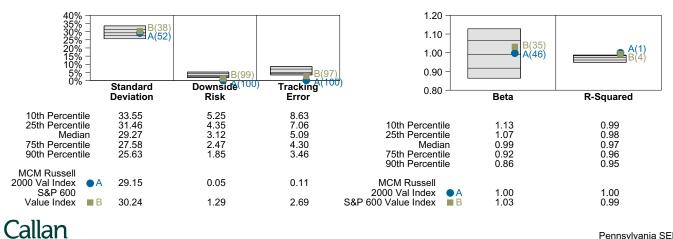
Risk Analysis vs Callan Small Cap Value (Gross) Five Years Ended June 30, 2022



### Market Capture vs Russell 2000 Value Index Rankings Against Callan Small Cap Value (Gross) Five Years Ended June 30, 2022



### **Risk Statistics Rankings vs Russell 2000 Value Index** Rankings Against Callan Small Cap Value (Gross) Five Years Ended June 30, 2022



# Current Holdings Based Style Analysis MCM Russell 2000 Val Index As of June 30, 2022

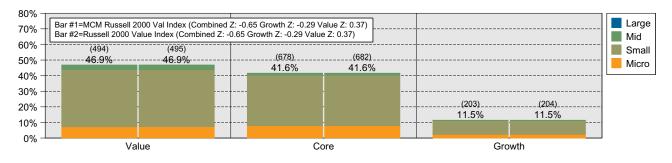
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

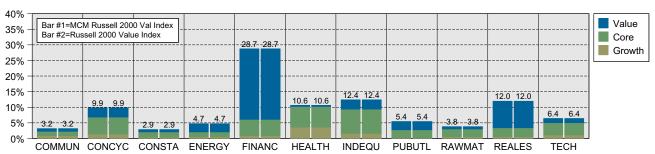


### Style Map vs Callan Small Cap Value Holdings as of June 30, 2022

## Combined Z-Score Style Distribution Holdings as of June 30, 2022



# Sector Weights Distribution Holdings as of June 30, 2022

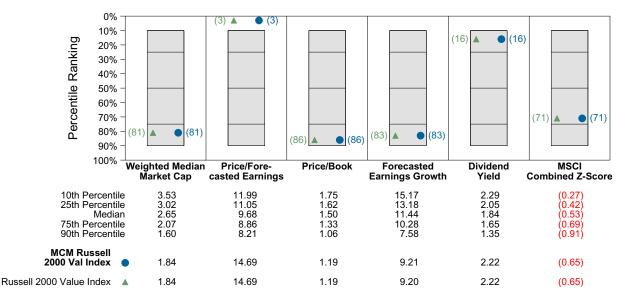


# MCM Russell 2000 Val Index Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

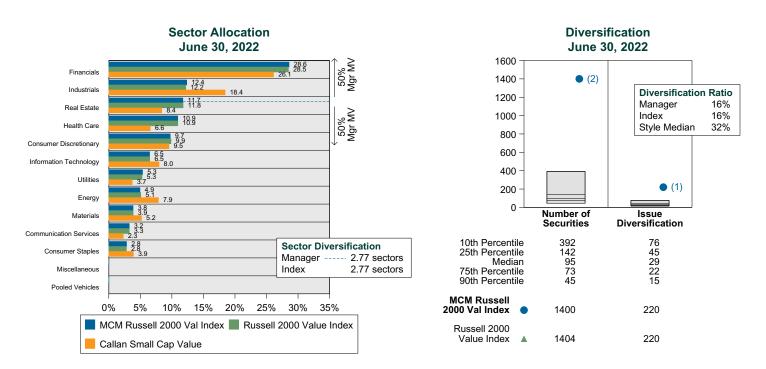
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

### Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Value as of June 30, 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 June 30, 2022

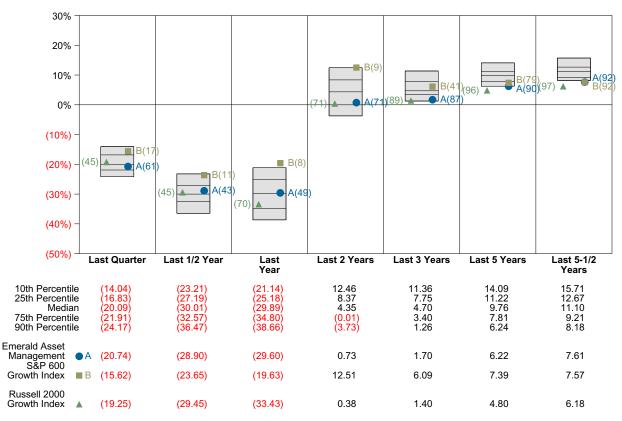
### **Investment Philosophy**

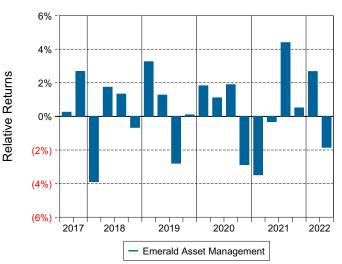
Emerald is dedicated to fundamental, bottom-up research designed to identify unrecognized, under-researched and undervalued growth companies.

#### **Quarterly Summary and Highlights**

- Emerald Asset Management's portfolio posted a (20.74)% return for the quarter placing it in the 61 percentile of the Callan Small Cap Growth group for the quarter and in the 49 percentile for the last year.
- Emerald Asset Management's portfolio underperformed the Russell 2000 Growth Index by 1.49% for the quarter and outperformed the Russell 2000 Growth Index for the year by 3.83%.

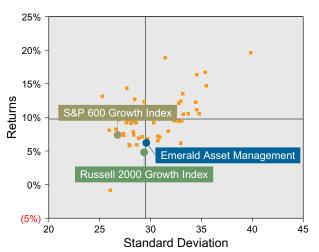






## **Relative Return vs Russell 2000 Growth Index**

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

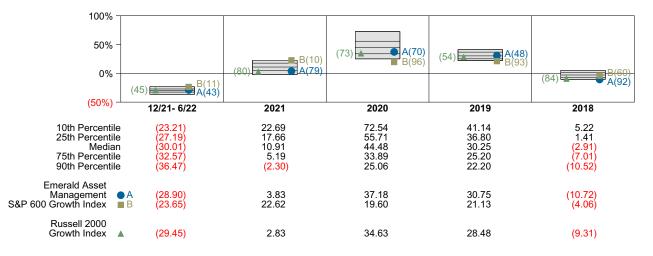


# Emerald Asset Management Return Analysis Summary

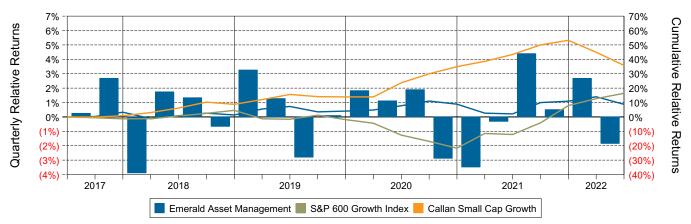
## **Return Analysis**

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.

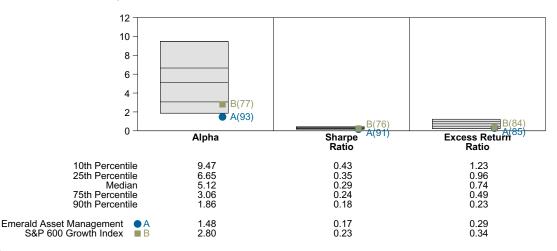
## Performance vs Callan Small Cap Growth (Gross)



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 June 30, 2022



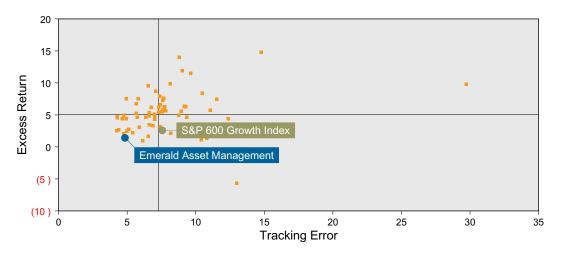


# Emerald Asset Management Risk Analysis Summary

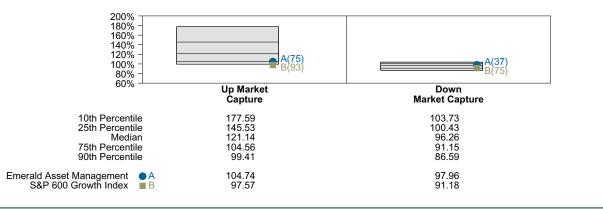
### **Risk Analysis**

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.

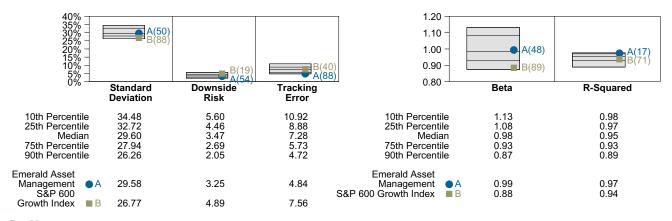
Risk Analysis vs Callan Small Cap Growth (Gross) Five Years Ended June 30, 2022



### Market Capture vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Five Years Ended June 30, 2022



### Risk Statistics Rankings vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Five Years Ended June 30, 2022



# Current Holdings Based Style Analysis Emerald Asset Management As of June 30, 2022

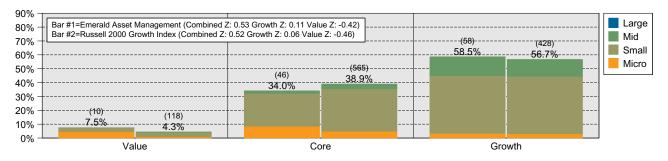
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization 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 Exposure Matrix** 

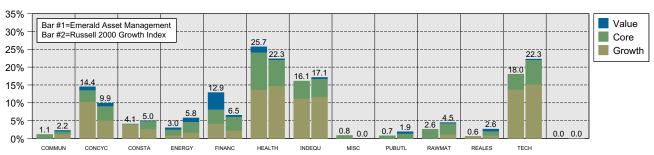


### Style Map vs Callan Small Cap Growth Holdings as of June 30, 2022

## Combined Z-Score Style Distribution Holdings as of June 30, 2022



# Sector Weights Distribution Holdings as of June 30, 2022

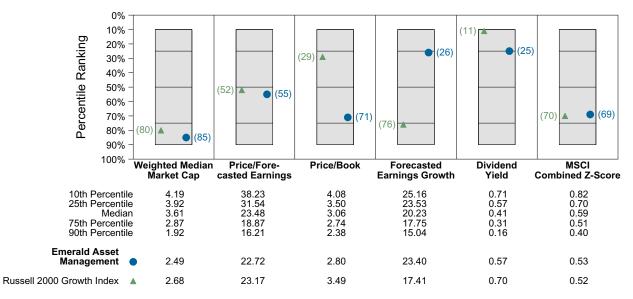


# Emerald Asset Management Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

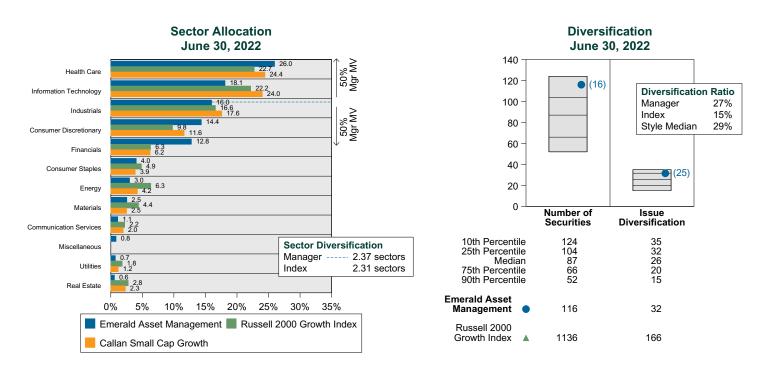
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Growth as of June 30, 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.



# International Equity Active Management Overview

The MSCI ACWI ex USA Index sank 13.7% (Local: -8.3%), bringing its YTD loss to 18.4% (Local: -11.9%). The U.S. dollar continued to strengthen, benefiting from its safe haven status as well as attractive interest rates relative to other developed markets. The yen lost 11% versus the greenback, the euro 6%, and the British pound 8%. Across developed market countries, losses were broad-based, with nearly all posting double-digit declines. As in the U.S., Value (MSCI ACWI ex USA Value: -11.9%) outperformed Growth (MSCI ACWI ex USA Growth: -15.7%). Technology (MSCI ACWI ex USA Technology: -23%) fared the worst with Energy (MSCI ACWI ex USA Energy: -5%) being the relative outperformer.

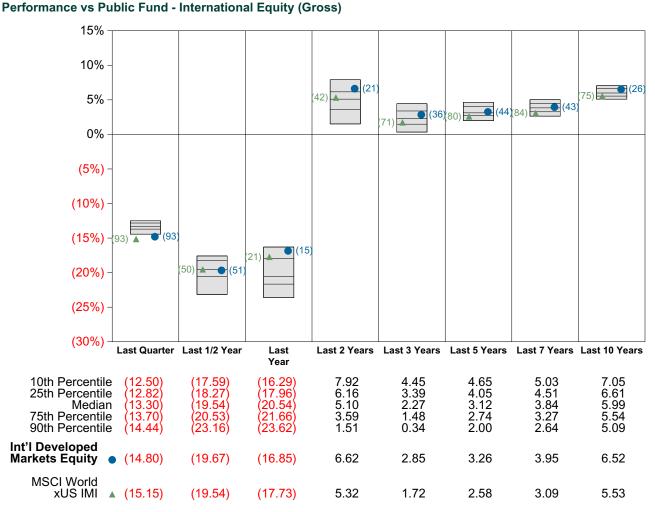


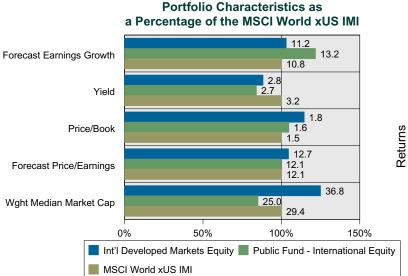
International Developed Markets Equity

# Int'l Developed Markets Equity Period Ended June 30, 2022

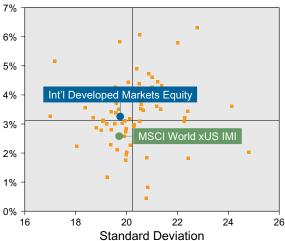
## **Quarterly Summary and Highlights**

- Int'l Developed Markets Equity's portfolio posted a (14.80)% return for the quarter placing it in the 93 percentile of the Public Fund International Equity group for the quarter and in the 15 percentile for the last year.
- Int'l Developed Markets Equity's portfolio outperformed the MSCI World xUS IMI by 0.35% for the quarter and outperformed the MSCI World xUS IMI for the year by 0.88%.





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



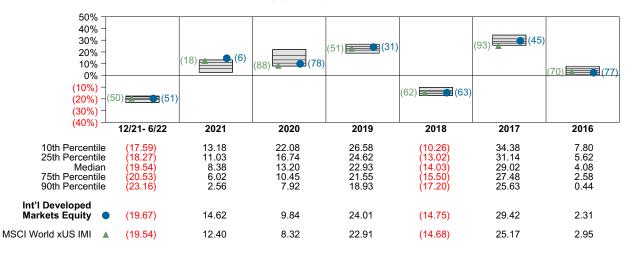


# Int'l Developed Markets Equity Return Analysis Summary

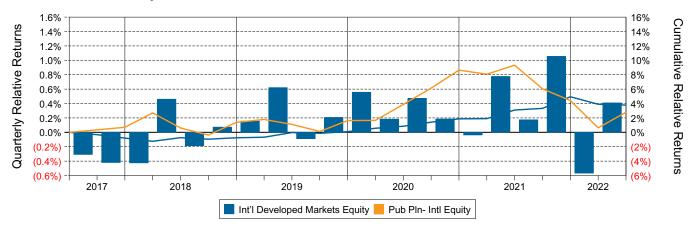
## **Return Analysis**

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.

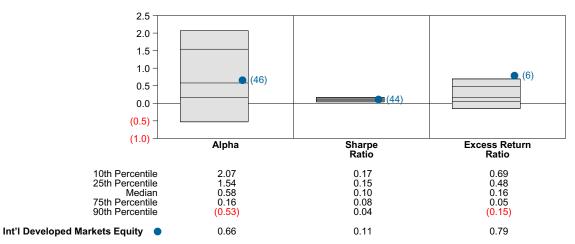
## Performance vs Public Fund - International Equity (Gross)



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 June 30, 2022



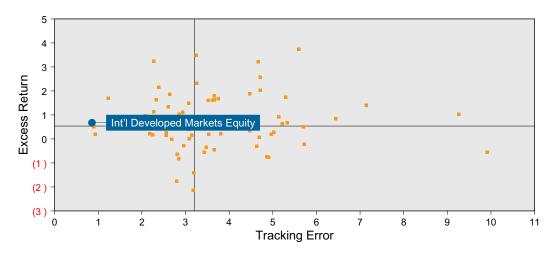


# Int'l Developed Markets Equity Risk Analysis Summary

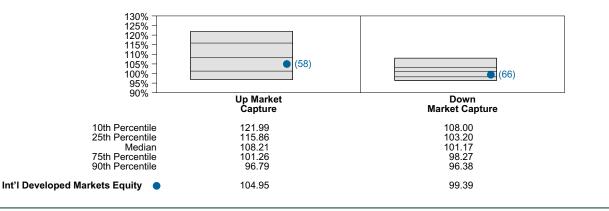
### **Risk Analysis**

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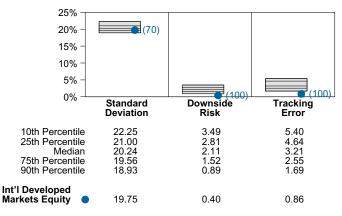
Risk Analysis vs Public Fund - International Equity (Gross) Five Years Ended June 30, 2022

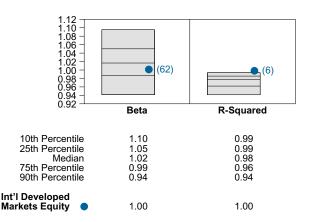


## Market Capture vs MSCI World xUS IMI (Net) Rankings Against Public Fund - International Equity (Gross) Five Years Ended June 30, 2022





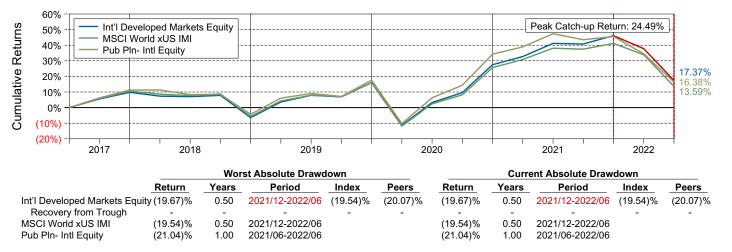


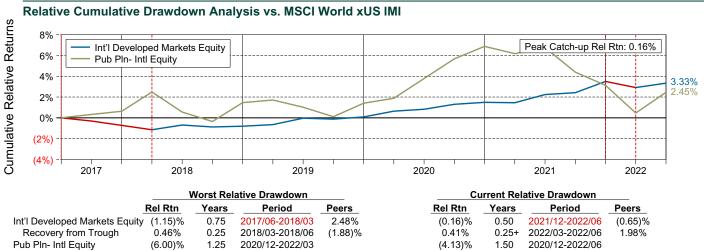


# Int'l Developed Markets Equity Drawdown Analysis for Five Years Ended June 30, 2022

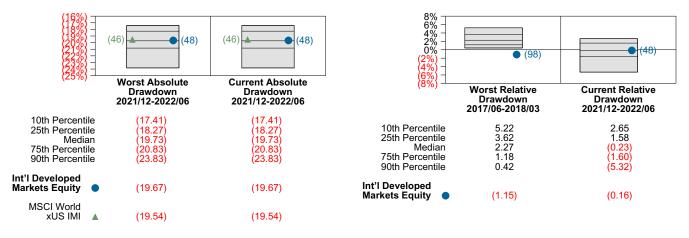
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute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





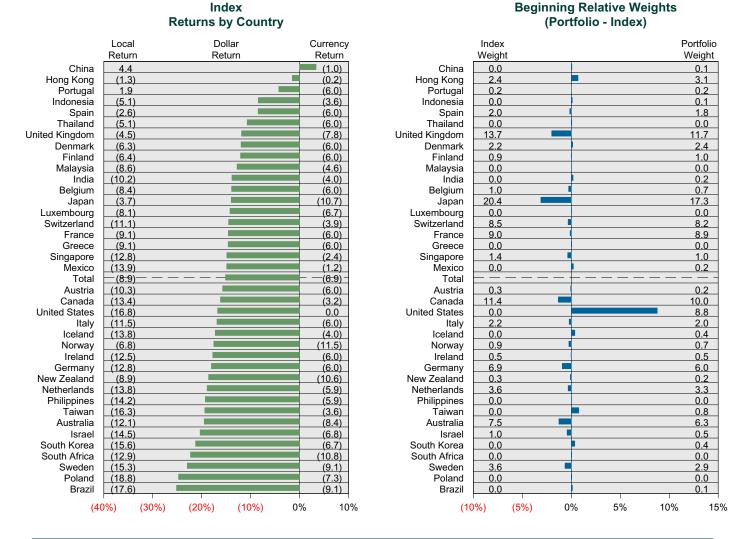
## Drawdown Rankings vs. MSCI World xUS IMI Rankings against Public Fund - International Equity Five Years Ended June 30, 2022

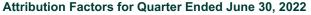


# Int'l Developed Markets Equity vs MSCI World xUS IMI Attribution for Quarter Ended June 30, 2022

### **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.







# Current Holdings Based Style Analysis Int'l Developed Markets Equity As of June 30, 2022

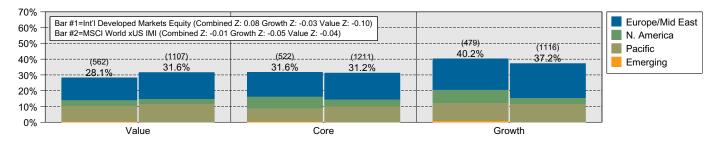
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are 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 Exposure Matrix** 

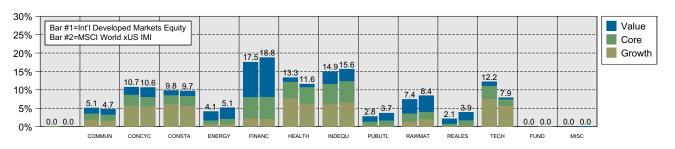


## Style Map vs Pub Pln- Intl Equity Holdings as of June 30, 2022

## Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

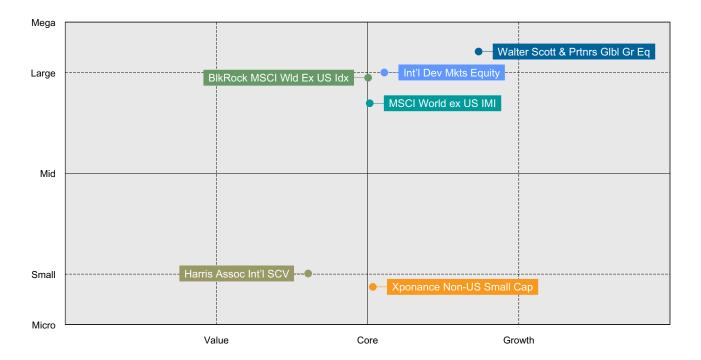


# International Holdings Based Style Analysis For One Quarter Ended June 30, 2022

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 June 30, 2022



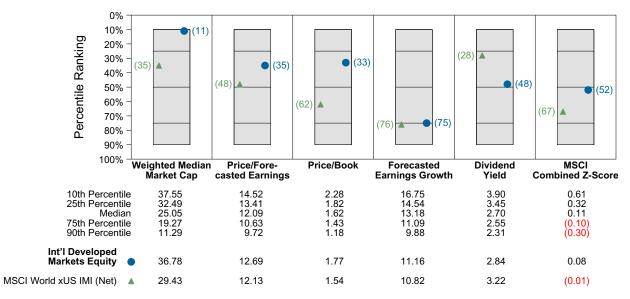
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities I	Security Diversification
Walter Scott & Prtnrs Glbl Gr	E <b>q</b> 5.25%	86.72	0.61	0.08	(0.52)	47	16.28
BlkRock MSCI Wld Ex US Idx	77.21%	35.47	(0.01)	(0.05)	(0.04)	888	107.28
Harris Assoc Int'l SCV	2.69%	2.21	(0.36)	(0.16)	0.20	60	18.35
Xponance Non-US Small Cap	4.77%	1.87	0.01	0.10	0.08	721	113.88
Int'l Dev Mkts Equity	100.00%	36.78	0.08	(0.03)	(0.10)	1648	115.22
MSCI World ex US IMI	-	29.43	(0.01)	(0.05)	(0.04)	3477	152.22

# Int'l Developed Markets Equity Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

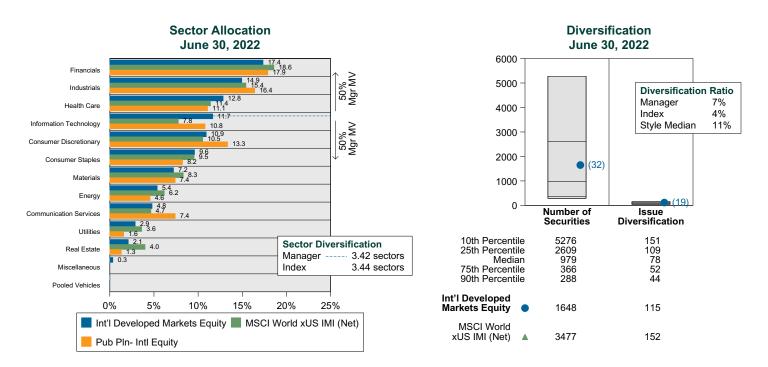
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - International Equity as of June 30, 2022



## **Sector Weights**

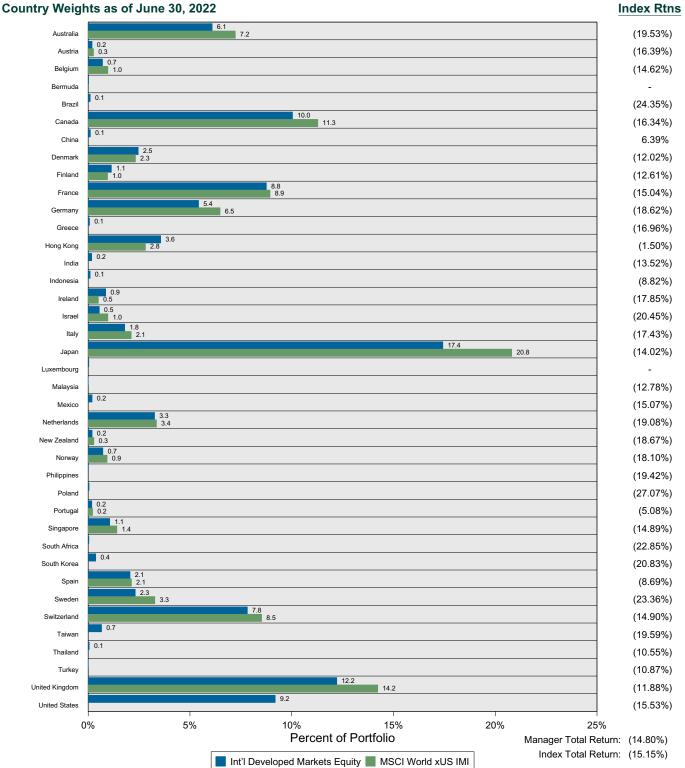
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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.



# **Country Allocation** Int'I Developed Markets Equity VS MSCI World xUS IMI (Net)

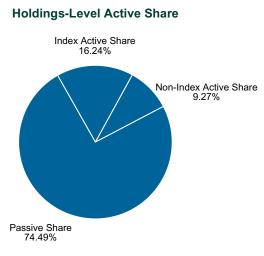
## **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 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.

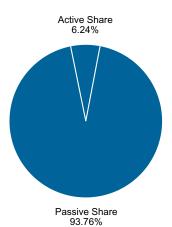


## Int'l Developed Markets Equity Active Share Analysis as of June 30, 2022 vs. MSCI World xUS IMI (Net)

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.



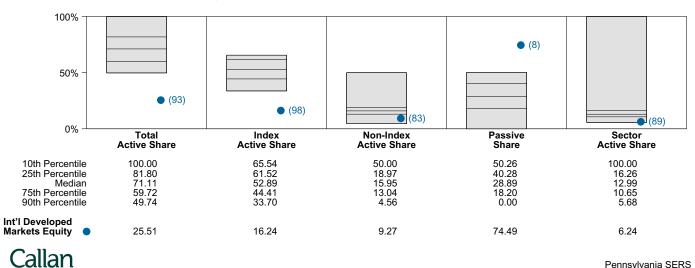
## **Sector Exposure Active Share**



# Total Active Share: 25.51%

	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	12.31%	8.67%	20.98%	4.66%	4.79%	0.95%
Consumer Discretionary	19.69%	11.49%	31.18%	10.52%	10.92%	3.25%
Consumer Staples	12.74%	7.44%	20.18%	9.55%	9.60%	1.93%
Energy	20.29%	15.24%	35.53%	6.17%	5.37%	2.11%
Financials	9.78%	3.44%	13.23%	18.59%	17.35%	2.83%
Health Care	14.86%	9.37%	24.22%	11.41%	12.84%	2.71%
Industrials	19.26%	6.13%	25.39%	15.42%	14.95%	3.98%
Information Technology	26.32%	21.75%	48.07%	7.75%	11.65%	3.94%
Materials	15.24%	5.32%	20.56%	8.32%	7.22%	1.72%
Miscellaneous	50.00%	50.00%	100.00%	-	0.35%	0.17%
Pooled Vehicles	50.00%	50.00%	100.00%	-	0.00%	0.01%
Real Estate	44.09%	4.83%	48.92%	3.99%	2.09%	1.19%
Utilities	18.32%	5.61%	23.93%	3.61%	2.88%	0.73%
Total	16.24%	9.27%	25.51%	100.00%	100.00%	25.50%

## Active Share vs. Pub Pln- Intl Equity



International Developed Equity Managers

# Walter Scott & Prtnrs Glbl Gr Eq Period Ended June 30, 2022

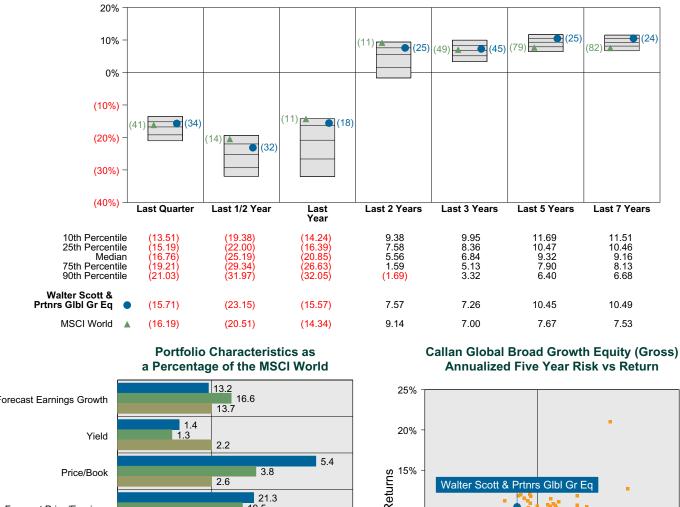
### **Investment Philosophy**

Callan

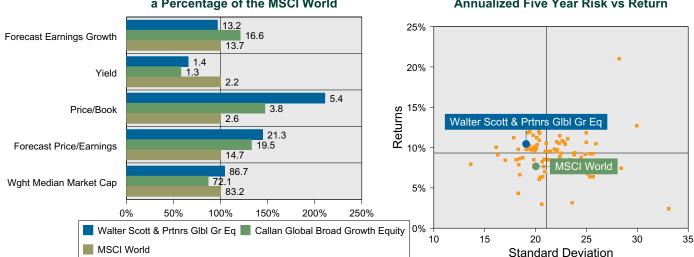
Walter Scott was founded in 1983 and is based in Edinburgh, Scotland. The firm wide philosophy is centered on the belief that companies with sustainable wealth generation, as defined by 1) cash return on capital employed, 2) return on equity, and 3) growth in earnings per share, will outperform over 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 Glbl Gr Eq's portfolio posted a (15.71)% return for the quarter placing it in the 34 percentile of the Callan Global Broad Growth Equity group for the quarter and in the 18 percentile for the last year.
- Walter Scott & Prtnrs Glbl Gr Eg's portfolio outperformed the MSCI World by 0.48% for the guarter and underperformed ٠ the MSCI World for the year by 1.23%.



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

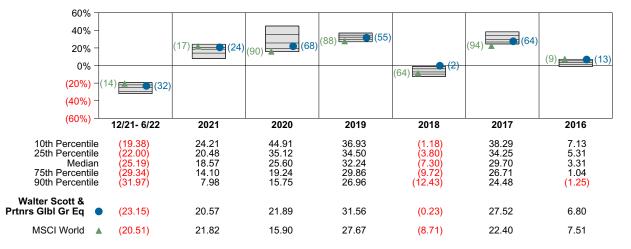


# Walter Scott & Prtnrs Glbl Gr Eq Return Analysis Summary

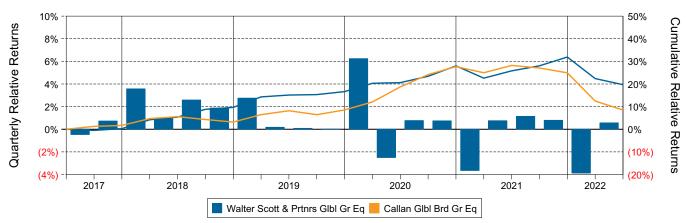
## **Return Analysis**

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.

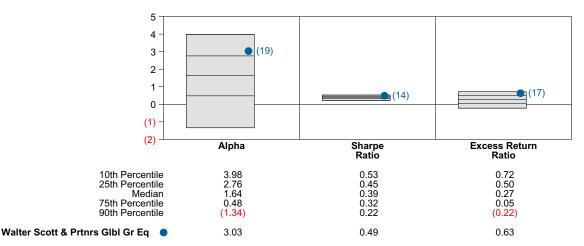




**Cumulative and Quarterly Relative Returns vs MSCI World** 



Risk Adjusted Return Measures vs MSCI World Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2022



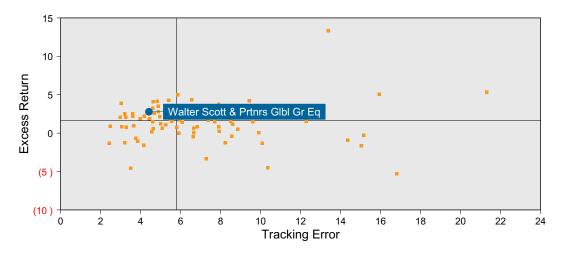


# Walter Scott & Prtnrs Glbl Gr Eq Risk Analysis Summary

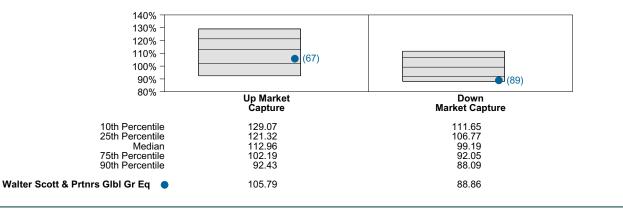
### **Risk Analysis**

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.

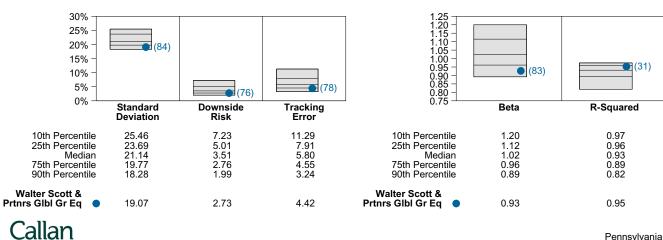
Risk Analysis vs Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2022



## Market Capture vs MSCI World (Net) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2022

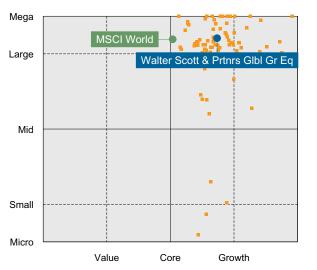


### Risk Statistics Rankings vs MSCI World (Net) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2022



# Current Holdings Based Style Analysis Walter Scott & Prtnrs Glbl Gr Eq As of June 30, 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.

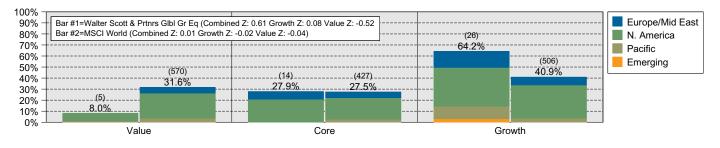


## Style Map vs Callan Glbl Brd Gr Eq Holdings as of June 30, 2022

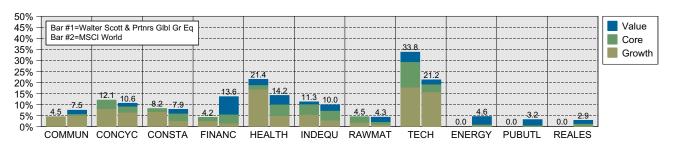
## Style Exposure Matrix Holdings as of June 30, 2022

	0.0% (0)	7.0% (5)	14.6% (6)	21.5% (11)
Europe/				
Mid East	5.00/	5.00/	7.000	47 00/
	5.3% (155)	5.2% (126)	7.2% (161)	17.8% (442)
	6.9% (4)	20.9% (9)	34.9% (13)	<b>62.7%</b> (26)
N. America				
	22.7% (280)	19.5% (205)	29.9% (218)	72.1% (703)
	1.1% (1)	0.0% (0)	11.5% (6)	12.6% (7)
Pacific				
	3.6% (134)	2.7% (96)	3.7% (126)	10.0% (356)
	0.0% (0)	0.0% (0)	3.1% (1)	3.1% (1)
Emerging				
	0.0% (1)	0.0% (0)	0.0% (1)	0.1% (2)
	8.0% (5)	27.9% (14)	<b>64.2%</b> (26)	100.0% (45)
Total				
	31.6% (570)	27.5% (427)	40.9% (506)	100.0% (1503)
	Value	Core	Growth	Total

## Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

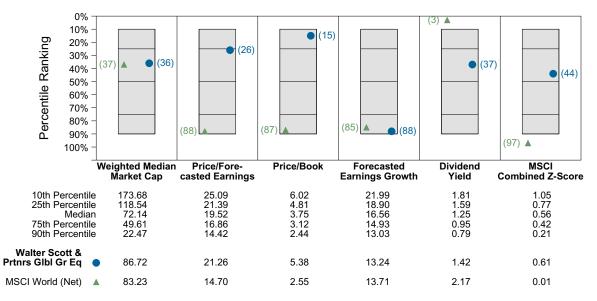


# Walter Scott & Prtnrs Glbl Gr Eq Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

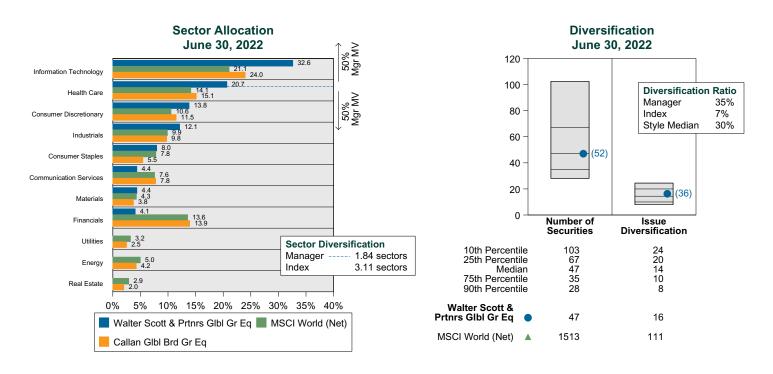
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against Callan Global Broad Growth Equity as of June 30, 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 June 30, 2022

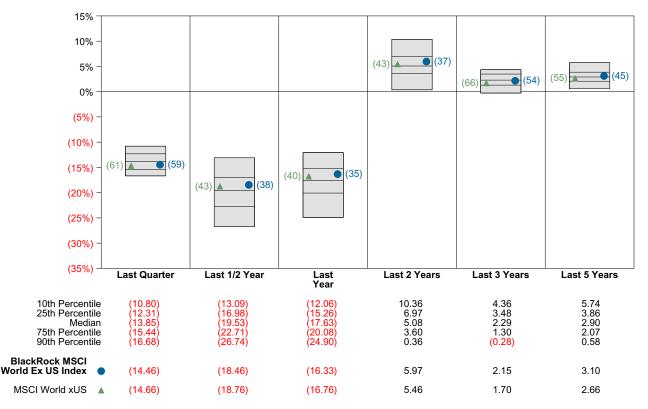
### **Investment Philosophy**

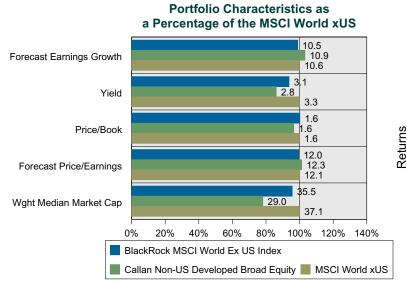
The objective of the World ex-U.S. Index Fund is to track the performance of the MSCI World ex-U.S. Index. The Fund fully replicates the index, holding every stock in the index in its market capitalization weight to ensure close tracking and minimize transaction costs.

### **Quarterly Summary and Highlights**

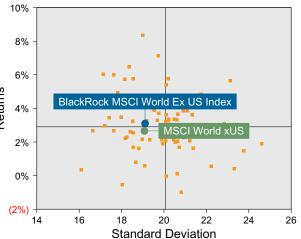
- BlackRock MSCI World Ex US Index's portfolio posted a (14.46)% return for the quarter placing it in the 59 percentile of the Callan Non-US Developed Broad Equity group for the quarter and in the 35 percentile for the last year.
- BlackRock MSCI World Ex US Index's portfolio outperformed the MSCI World xUS by 0.20% for the quarter and outperformed the MSCI World xUS for the year by 0.43%.

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





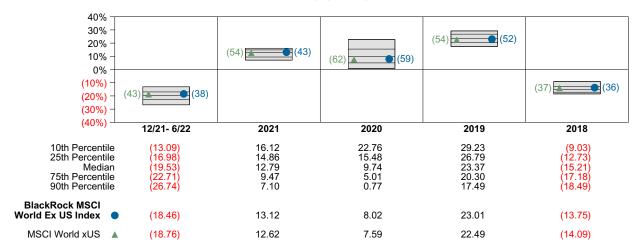
### Callan Non-US Developed Broad Equity (Gross) Annualized Five Year Risk vs Return



# BlackRock MSCI World Ex US Index Return Analysis Summary

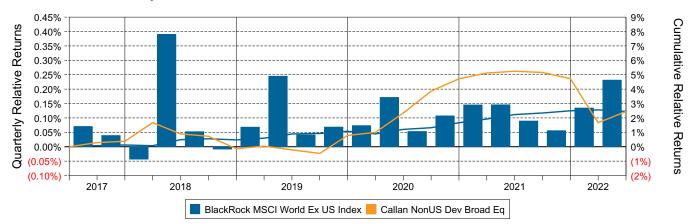
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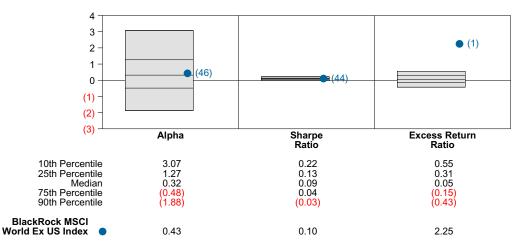


## Performance vs Callan Non-US Developed Broad Equity (Gross)

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 June 30, 2022

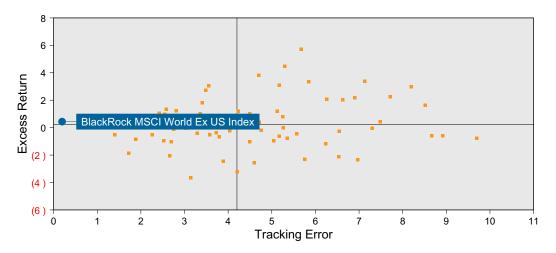


# BlackRock MSCI World Ex US Index Risk Analysis Summary

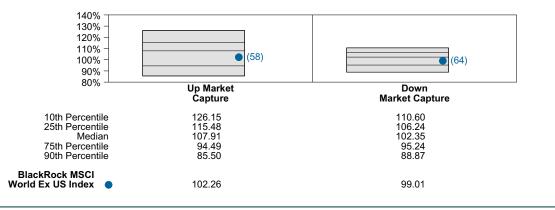
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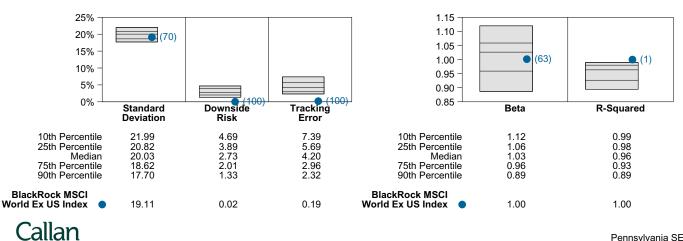
Risk Analysis vs Callan Non-US Developed Broad Equity (Gross) Five Years Ended June 30, 2022



## Market Capture vs MSCI World xUS (Net) Rankings Against Callan Non-US Developed Broad Equity (Gross) Five Years Ended June 30, 2022



### Risk Statistics Rankings vs MSCI World xUS (Net) Rankings Against Callan Non-US Developed Broad Equity (Gross) Five Years Ended June 30, 2022



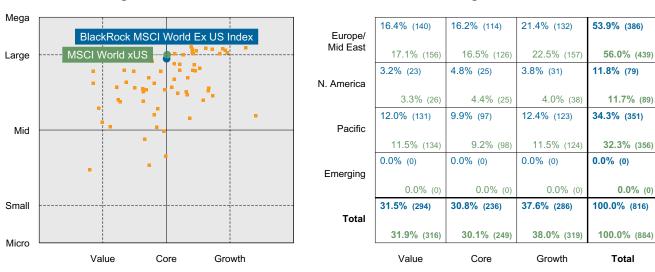
Pennsylvania SERS 131

# Current Holdings Based Style Analysis BlackRock MSCI World Ex US Index As of June 30, 2022

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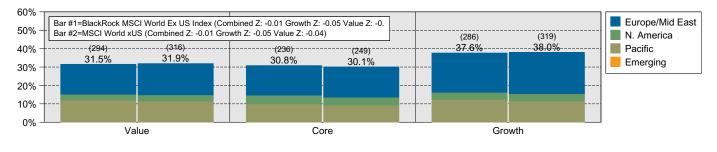
**Style Exposure Matrix** 

Holdings as of June 30, 2022

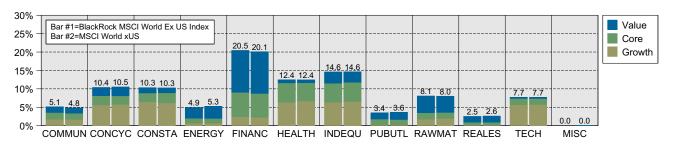


## Style Map vs Callan NonUS Dev Broad Eq Holdings as of June 30, 2022

## Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

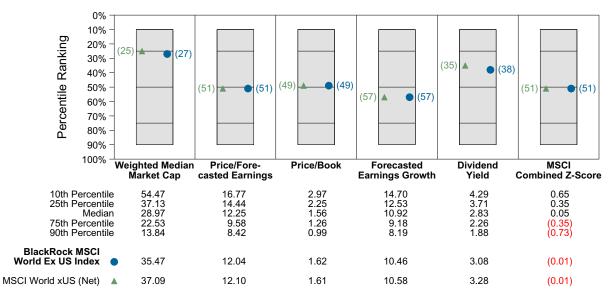


# BlackRock MSCI World Ex US Index Equity Characteristics Analysis Summary

## **Portfolio Characteristics**

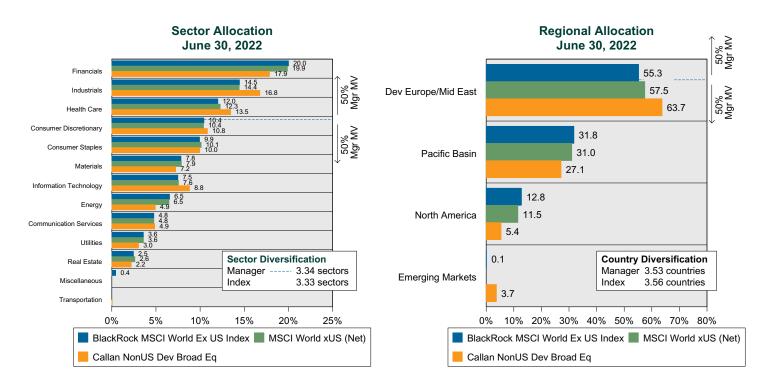
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## Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Developed Broad Equity as of June 30, 2022



## **Sector Weights**

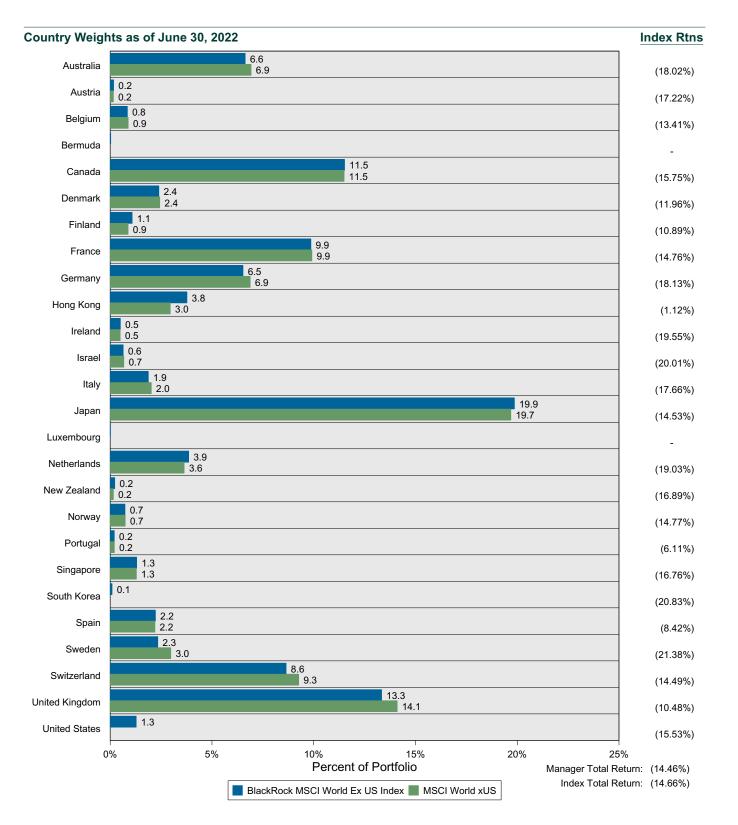
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares 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 June 30, 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.



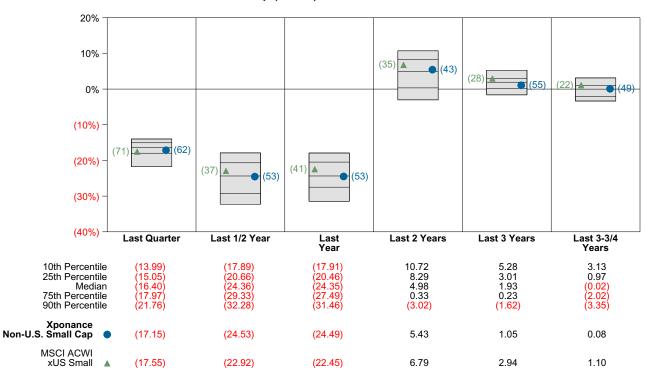
# Xponance Non-U.S. Small Cap Period Ended June 30, 2022

### **Investment Philosophy**

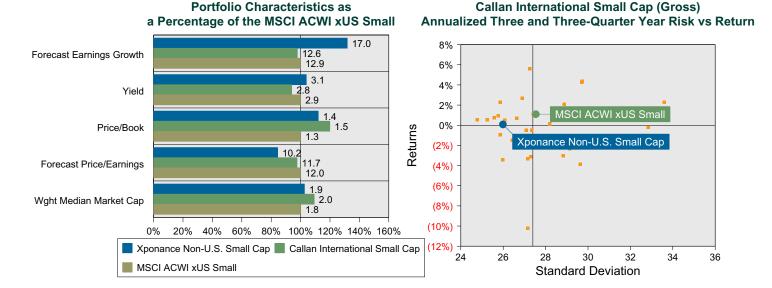
Xponance utilizes an integrated investment process to actively generate investment alpha across its offerings. 25%-50% of outperformance is driven by top-down investment strategy implementation that informs risk management and portfolio construction and provides context to the market environment. Bottom 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 (17.15)% return for the quarter placing it in the 62 percentile of the Callan International Small Cap group for the quarter and in the 53 percentile for the last year.
- Xponance Non-U.S. Small Cap's portfolio outperformed the MSCI ACWI xUS Small by 0.40% for the quarter and underperformed the MSCI ACWI xUS Small for the year by 2.04%.



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



# Current Holdings Based Style Analysis Xponance Non-U.S. Small Cap As of June 30, 2022

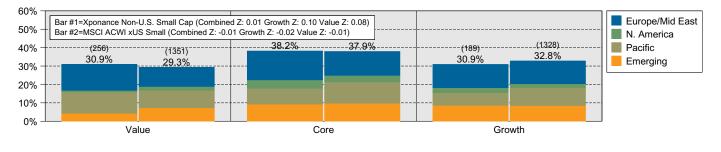
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**Style Exposure Matrix** 

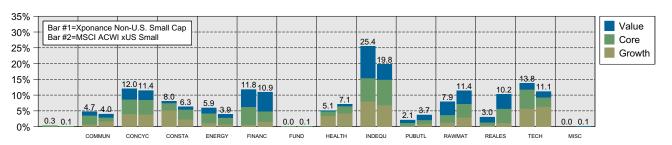


#### Style Map vs Callan Intl Small Cap Holdings as of June 30, 2022

#### Combined Z-Score Style Distribution Holdings as of June 30, 2022



#### Sector Weights Distribution Holdings as of June 30, 2022

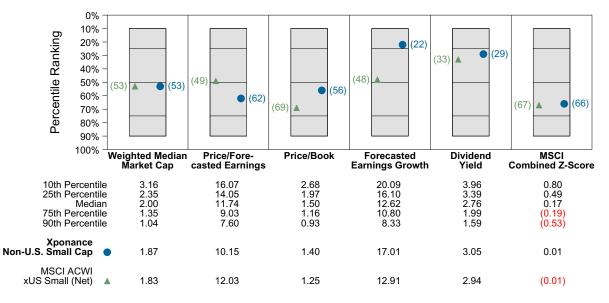


# Xponance Non-U.S. Small Cap Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

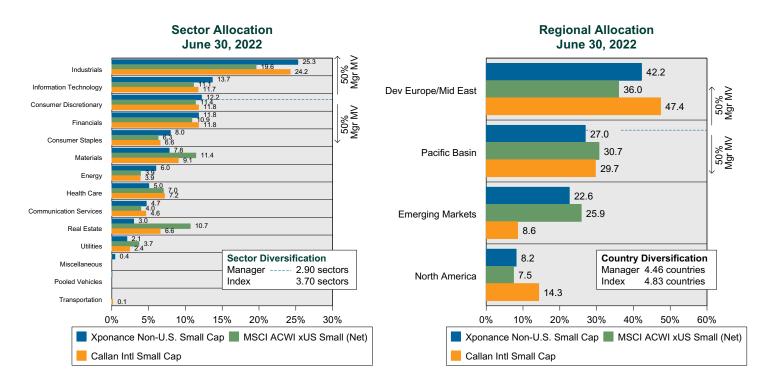
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of June 30, 2022



#### **Sector Weights**

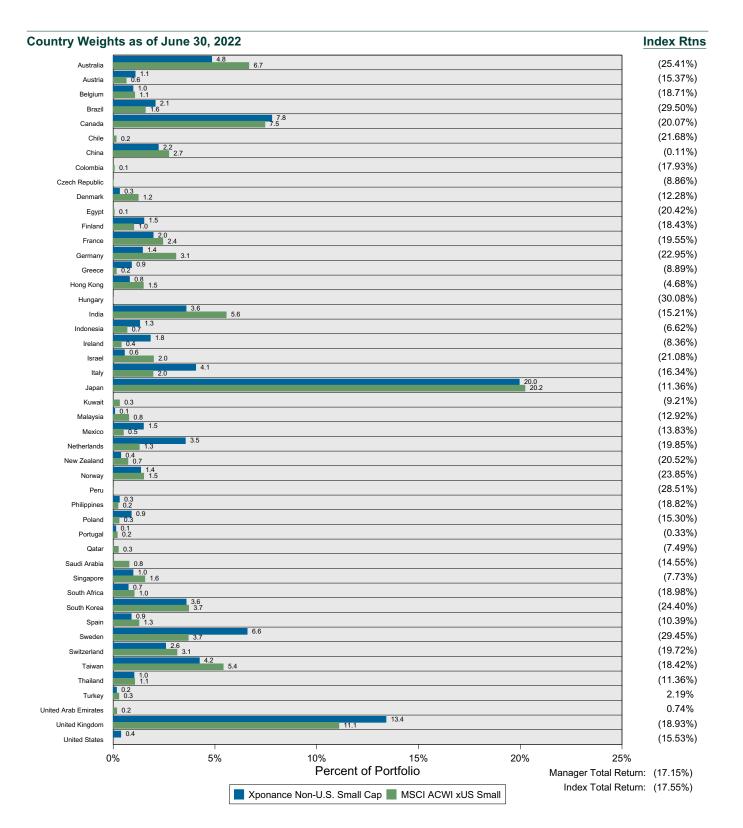
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares 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 June 30, 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.



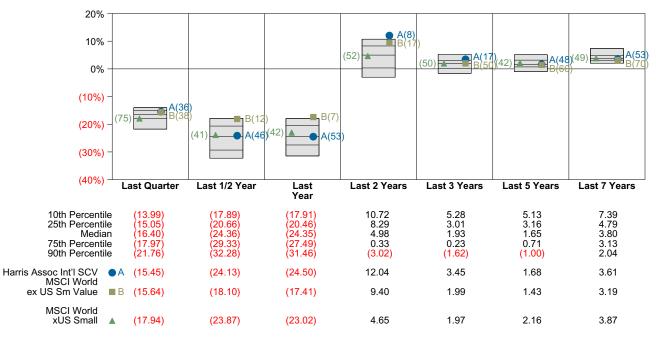
### Harris Assoc Int'l SCV Period Ended June 30, 2022

#### **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.

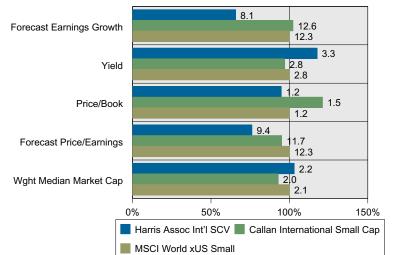
#### **Quarterly Summary and Highlights**

- Harris Assoc Int'I SCV's portfolio posted a (15.45)% return for the quarter placing it in the 36 percentile of the Callan International Small Cap group for the quarter and in the 53 percentile for the last year.
- Harris Assoc Int'l SCV's portfolio outperformed the MSCI World xUS Small by 2.49% for the quarter and underperformed the MSCI World xUS Small for the year by 1.47%.

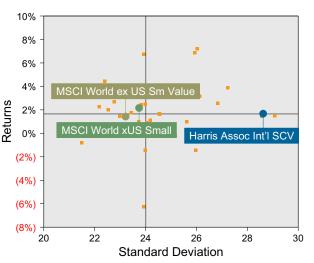


#### Performance vs Callan International Small Cap (Gross)





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



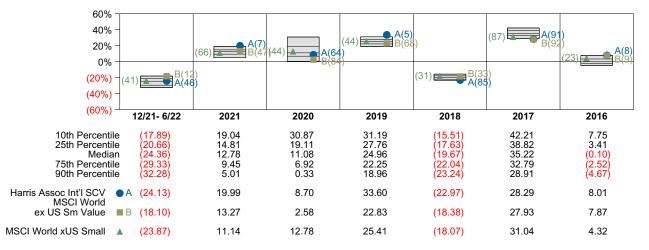


# Harris Assoc Int'l SCV Return Analysis Summary

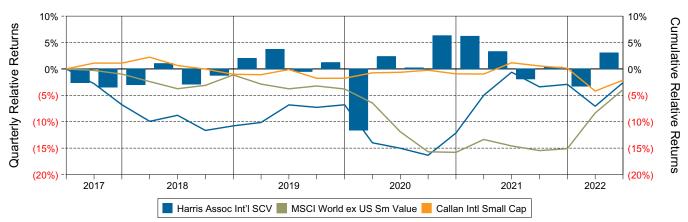
#### **Return Analysis**

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.

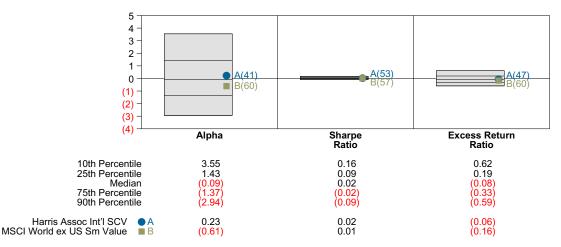
# Performance vs Callan International Small Cap (Gross)







Risk Adjusted Return Measures vs MSCI World xUS Small Rankings Against Callan International Small Cap (Gross) Five Years Ended June 30, 2022

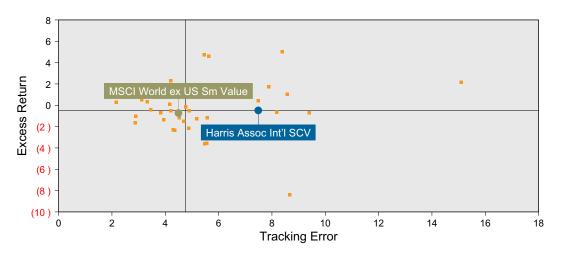


# Harris Assoc Int'l SCV Risk Analysis Summary

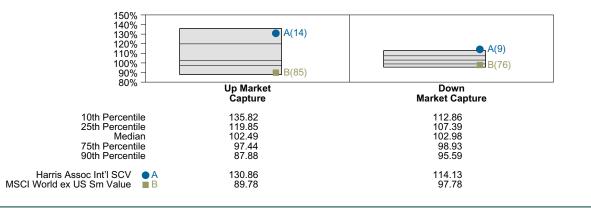
#### **Risk Analysis**

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.

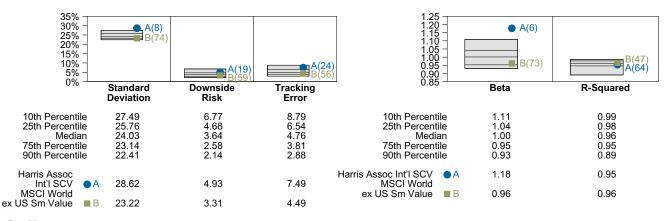
Risk Analysis vs Callan International Small Cap (Gross) Five Years Ended June 30, 2022



#### Market Capture vs MSCI World xUS Small (Net) Rankings Against Callan International Small Cap (Gross) Five Years Ended June 30, 2022



Risk Statistics Rankings vs MSCI World xUS Small (Net) Rankings Against Callan International Small Cap (Gross) Five Years Ended June 30, 2022



# Current Holdings Based Style Analysis Harris Assoc Int'l SCV As of June 30, 2022

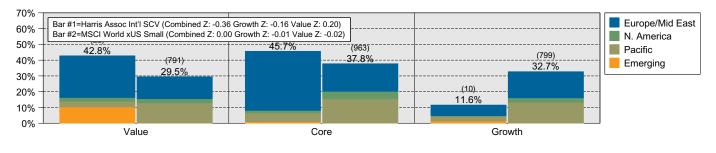
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**Style Exposure Matrix** 

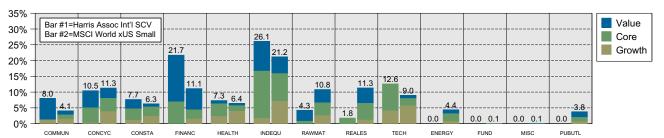


#### Style Map vs Callan Intl Small Cap Holdings as of June 30, 2022

#### Combined Z-Score Style Distribution Holdings as of June 30, 2022





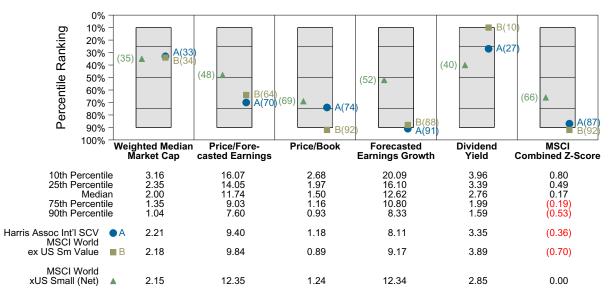


# Harris Assoc Int'l SCV Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

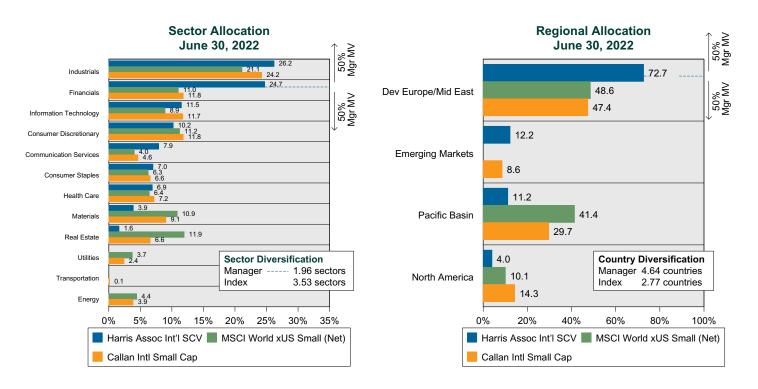
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#### Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of June 30, 2022



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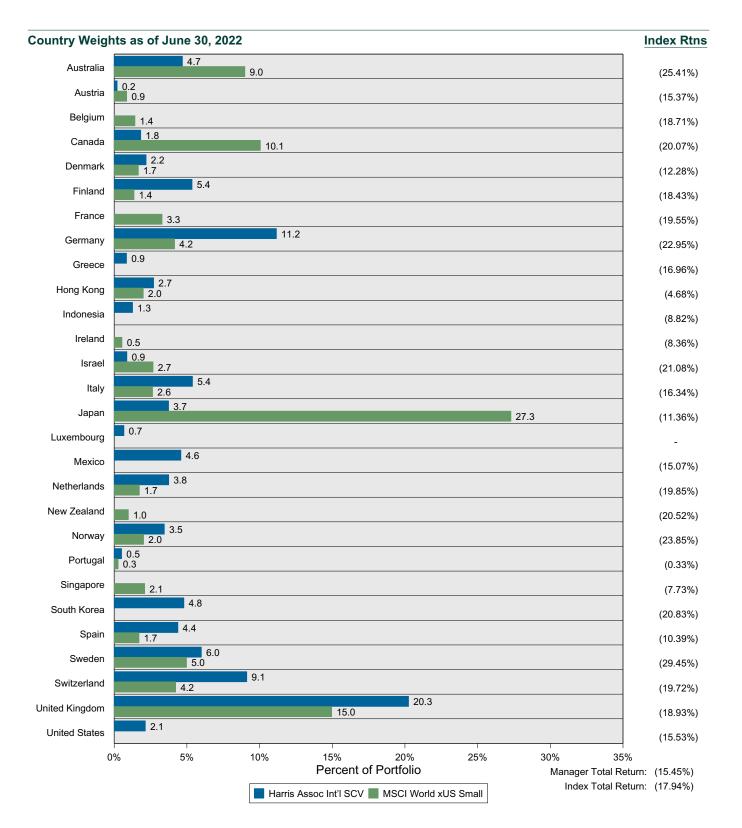
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# Country Allocation Harris Assoc Int'I SCV VS MSCI World xUS Small (Net)

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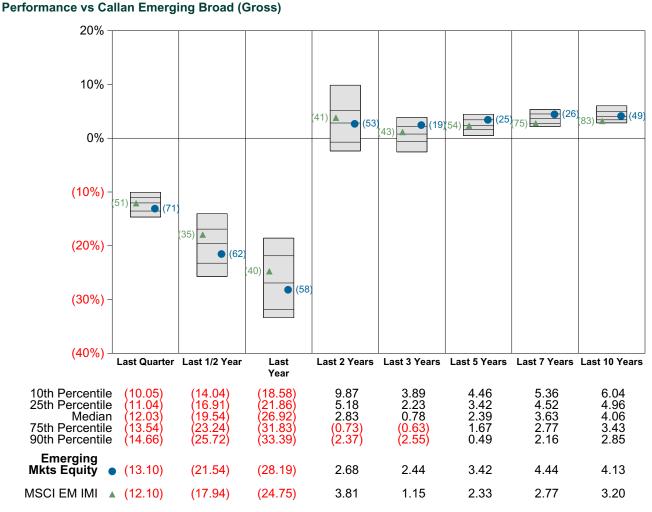


Emerging Markets Equity

# Emerging Mkts Equity Period Ended June 30, 2022

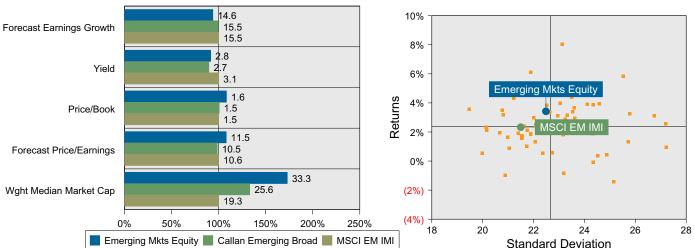
#### **Quarterly Summary and Highlights**

- Emerging Mkts Equity's portfolio posted a (13.10)% return for the quarter placing it in the 71 percentile of the Callan Emerging Broad group for the quarter and in the 58 percentile for the last year.
- Emerging Mkts Equity's portfolio underperformed the MSCI EM IMI by 1.00% for the quarter and underperformed the MSCI EM IMI for the year by 3.43%.



Portfolio Characteristics as a Percentage of the MSCI EM IMI



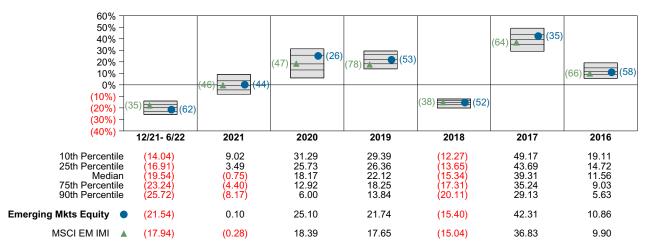


# Emerging Mkts Equity Return Analysis Summary

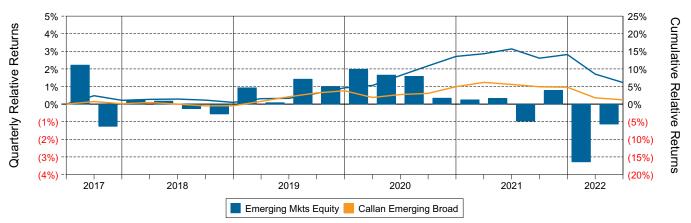
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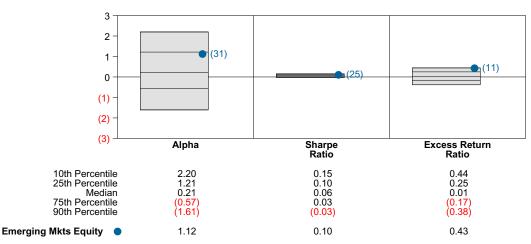
#### Performance vs Callan Emerging Broad (Gross)



**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 June 30, 2022



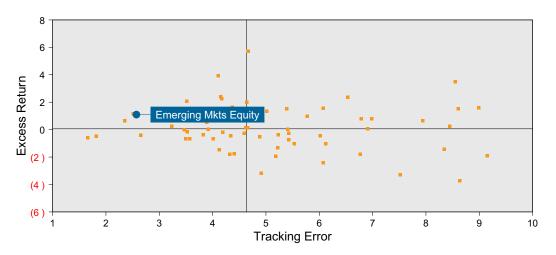


# Emerging Mkts Equity Risk Analysis Summary

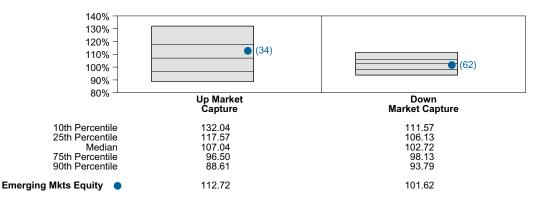
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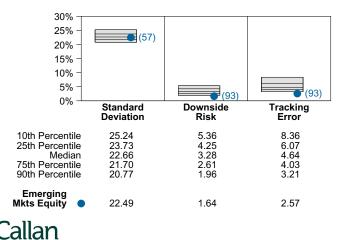
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2022

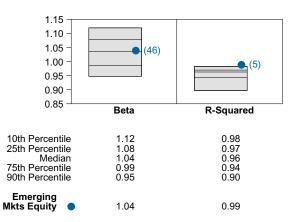


#### Market Capture vs MSCI EM IMI (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



#### Risk Statistics Rankings vs MSCI EM IMI (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



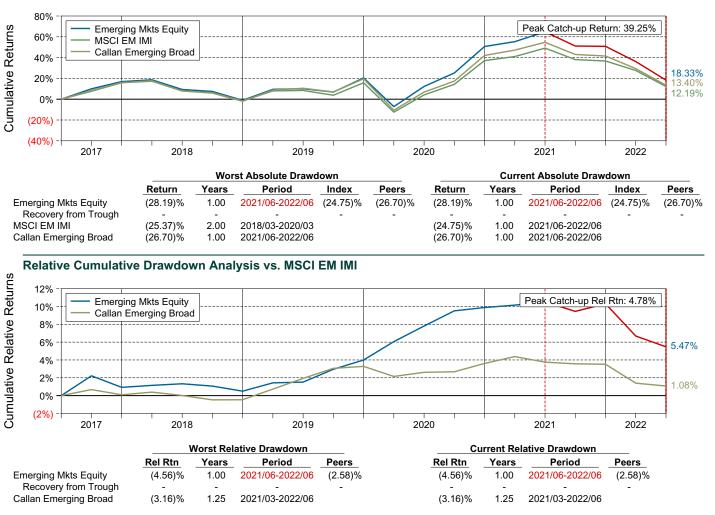


Pennsylvania SERS 148

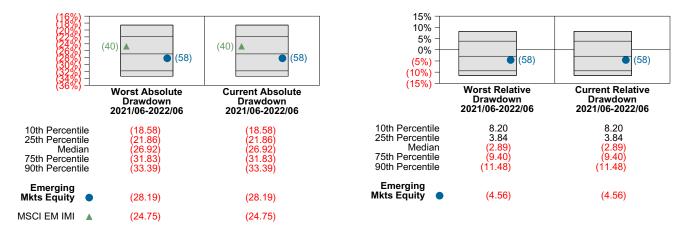
# Emerging Mkts Equity Drawdown Analysis for Five Years Ended June 30, 2022

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.





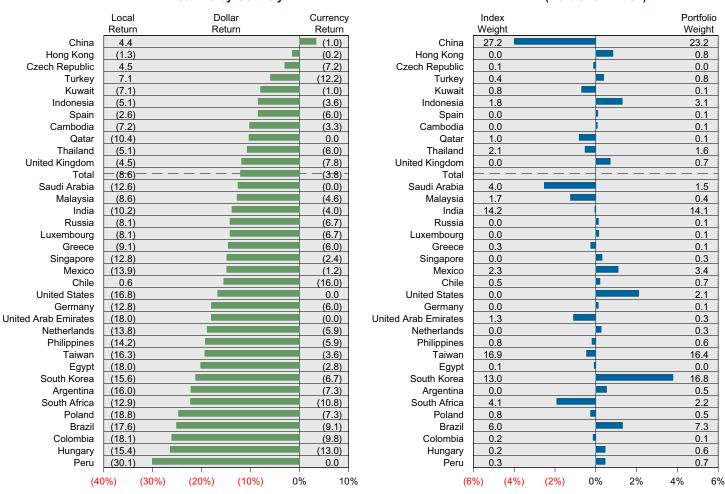
#### Drawdown Rankings vs. MSCI EM IMI Rankings against Callan Emerging Broad Five Years Ended June 30, 2022

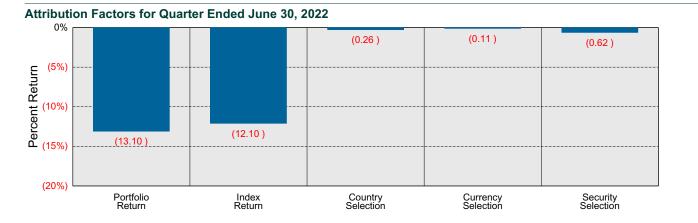


# Emerging Mkts Equity vs MSCI EM IMI Attribution for Quarter Ended June 30, 2022

#### 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.





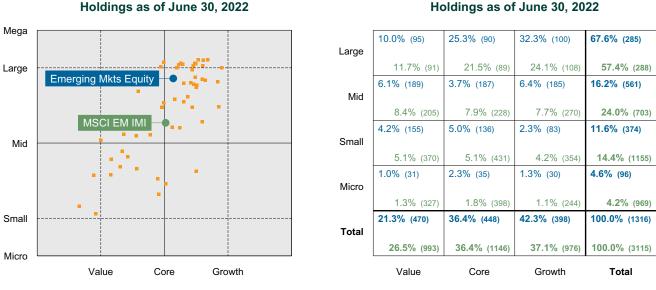
### Index Returns by Country

### Beginning Relative Weights (Portfolio - Index)

# Current Holdings Based Style Analysis Emerging Mkts Equity As of June 30, 2022

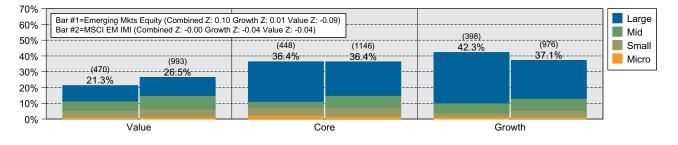
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**Style Exposure Matrix** 

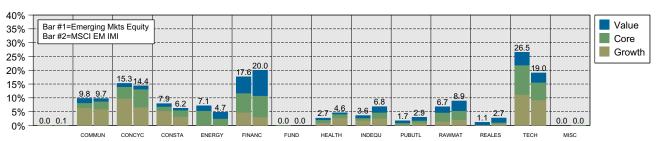


#### Style Map vs Callan Emerging Broad Holdings as of June 30, 2022

#### Combined Z-Score Style Distribution Holdings as of June 30, 2022



#### Sector Weights Distribution Holdings as of June 30, 2022

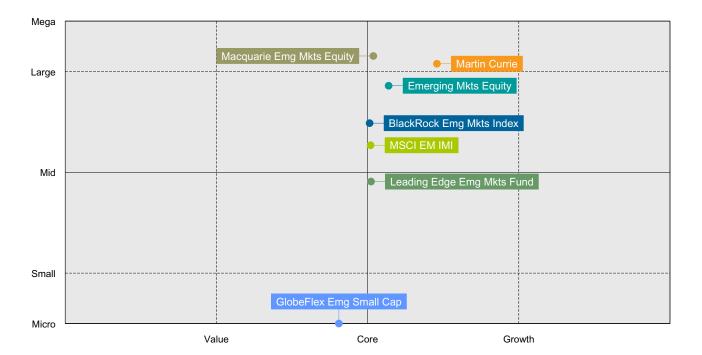


# International Holdings Based Style Analysis For One Quarter Ended June 30, 2022

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 June 30, 2022



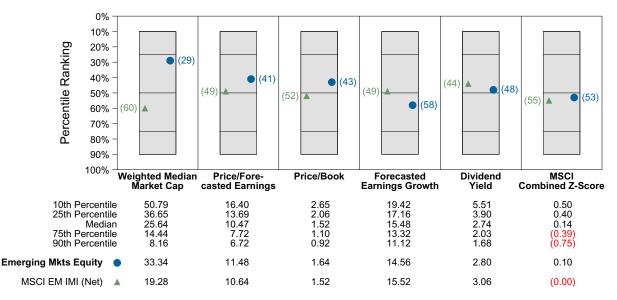
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
BlackRock Emg Mkts Index	14.88%	24.50	(0.01)	(0.03)	(0.02)	1382	81.24
Leading Edge Emg Mkts Fund	18.41%	11.90	0.00	(0.02)	(0.02)	247	42.60
Macquarie Emg Mkts Equity	27.61%	73.72	0.01	(0.01)	(0.02)	87	9.57
Martin Currie	29.14%	55.16	0.37	0.03	(0.34)	54	12.71
GlobeFlex Emg Small Cap	9.96%	0.63	(0.18)	0.17	0.35	133	18.40
Emerging Mkts Equity	100.00%	33.34	0.10	0.01	(0.09)	1658	34.75
MSCI EM IMI	-	19.28	(0.00)	(0.04)	(0.04)	3203	119.94

# Emerging Mkts Equity Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

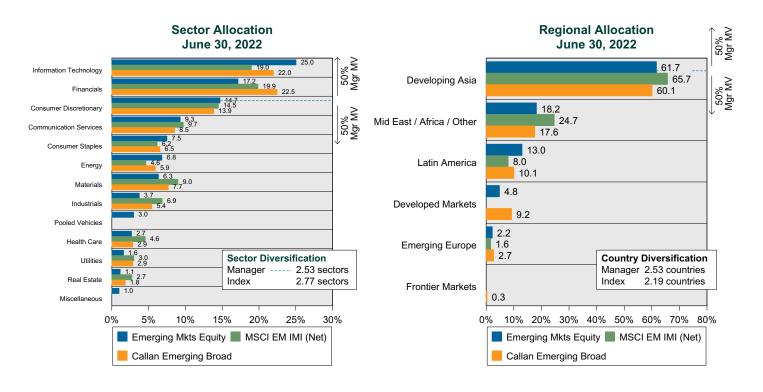
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2022



#### **Sector Weights**

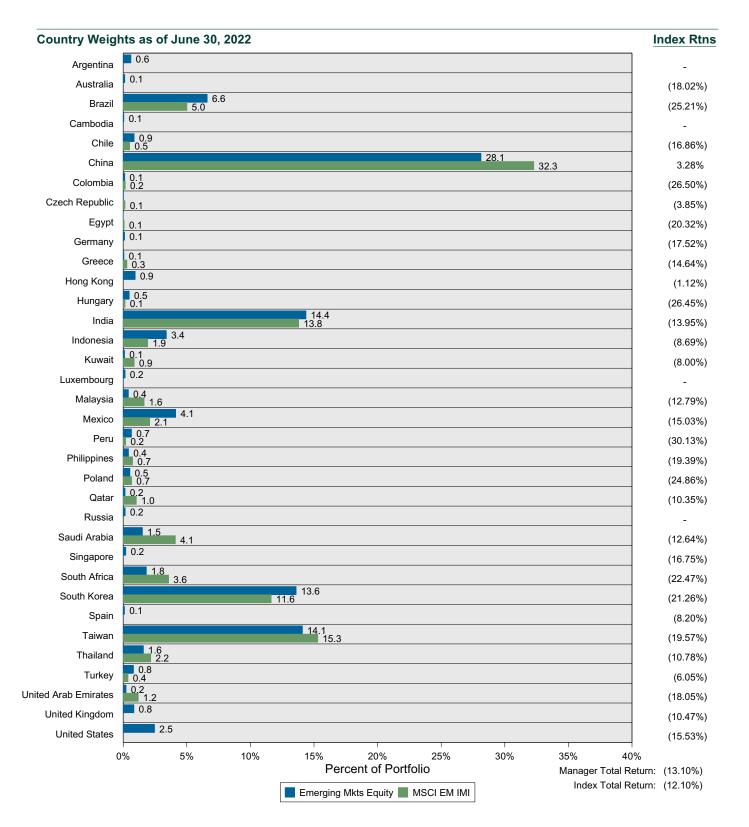
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# Country Allocation Emerging Mkts Equity VS MSCI EM IMI (Net)

#### **Country Allocation**

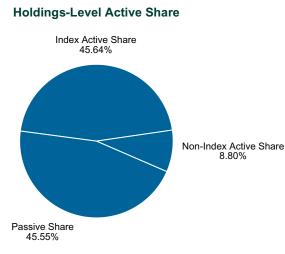
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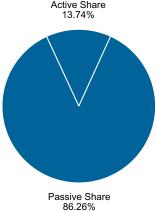
# **Emerging Mkts Equity** Active Share Analysis as of June 30, 2022 vs. MSCI EM IMI (Net)

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.



### Active Share

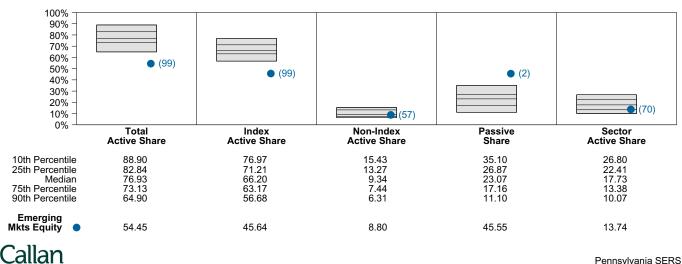
**Sector Exposure Active Share** 



# Total Active Share: 54.45%

	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	49.05%	4.14%	53.19%	9.73%	9.31%	5.11%
Consumer Discretionary	38.25%	11.21%	49.46%	14.49%	14.71%	7.19%
Consumer Staples	62.05%	3.40%	65.45%	6.16%	7.50%	4.49%
Energy	37.40%	3.89%	41.29%	4.65%	6.82%	1.90%
Financials	46.23%	10.77%	57.00%	19.87%	17.15%	10.76%
Health Care	65.98%	5.85%	71.83%	4.55%	2.69%	2.73%
Industrials	61.49%	6.78%	68.27%	6.85%	3.74%	3.77%
Information Technology	36.19%	3.92%	40.11%	18.97%	25.04%	8.72%
Materials	46.18%	12.28%	58.45%	8.99%	6.34%	4.80%
Miscellaneous	50.00%	50.66%	100.66%	-	0.98%	0.49%
Pooled Vehicles	50.00%	50.00%	100.00%	-	2.98%	1.49%
Real Estate	53.72%	11.64%	65.36%	2.73%	1.15%	1.36%
Utilities	59.81%	7.21%	67.02%	3.01%	1.60%	1.61%
Total	45.64%	8.80%	54.45%	100.00%	100.00%	54.42%

#### Active Share vs. Callan Emerging Broad



Emerging Markets Managers

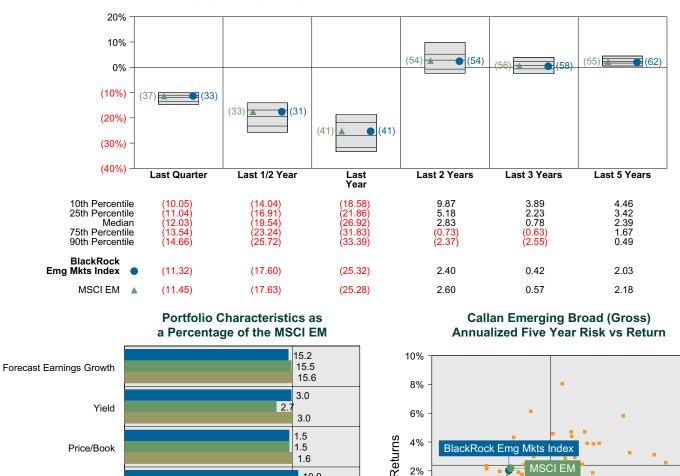
### BlackRock Emg Mkts Index Period Ended June 30, 2022

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

#### **Quarterly Summary and Highlights**

- · BlackRock Emg Mkts Index's portfolio posted a (11.32)% return for the quarter placing it in the 33 percentile of the Callan Emerging Broad group for the quarter and in the 41 percentile for the last year.
- BlackRock Emg Mkts Index's portfolio outperformed the MSCI EM by 0.13% for the guarter and underperformed the MSCI EM for the year by 0.04%.



10.9

10 5 10.6

26.1

120%

140%

24.5 25.6

100%

60%

80%

📕 BlackRock Emg Mkts Index 📕 Callan Emerging Broad 📕 MSCI EM

2%

0%

(2%)

(4%)

18

20

#### Performance vs Callan Emerging Broad (Gross)

# Callan

Forecast Price/Earnings

Wght Median Market Cap

0%

20%

40%

28

26

I FN

Standard Deviation

24

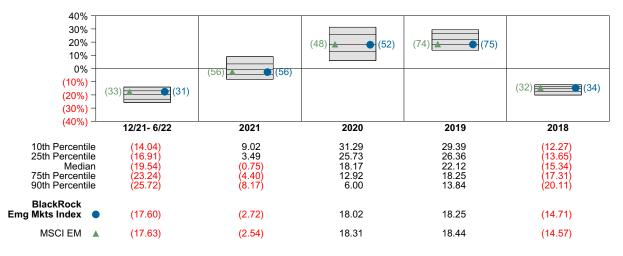
22

# BlackRock Emg Mkts Index Return Analysis Summary

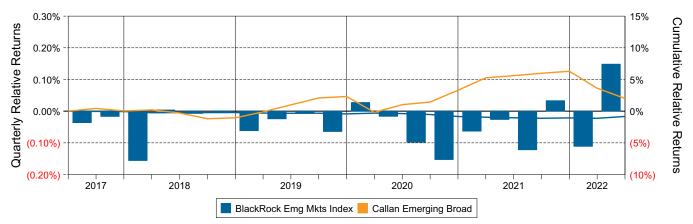
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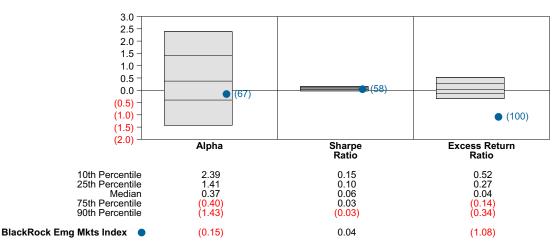




#### **Cumulative and Quarterly Relative Returns vs MSCI EM**



#### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022

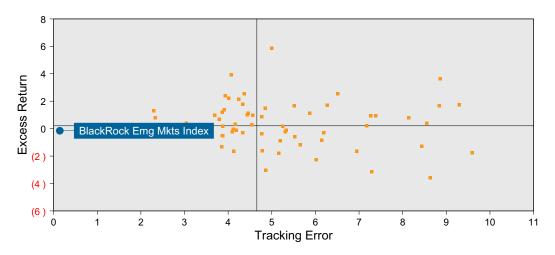


## BlackRock Emg Mkts Index Risk Analysis Summary

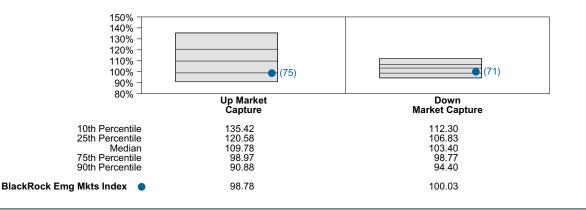
#### **Risk Analysis**

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.

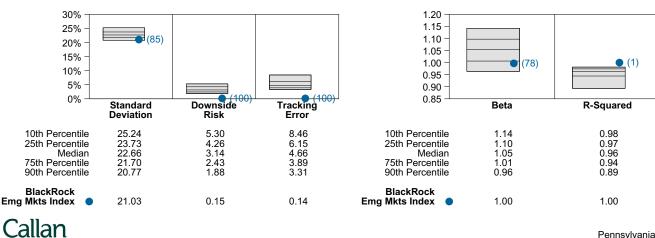
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022







# Current Holdings Based Style Analysis BlackRock Emg Mkts Index As of June 30, 2022

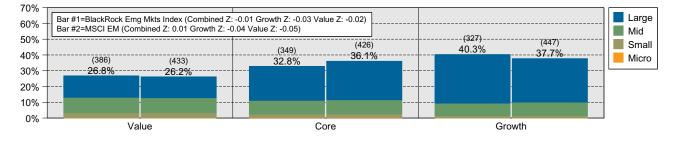
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are 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 Exposure Matrix** 

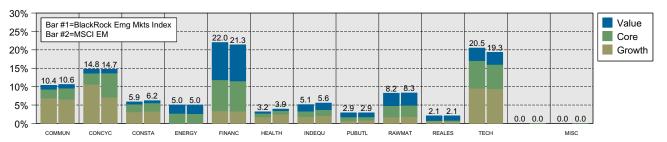


#### Style Map vs Callan Emerging Broad Holdings as of June 30, 2022

#### Combined Z-Score Style Distribution Holdings as of June 30, 2022





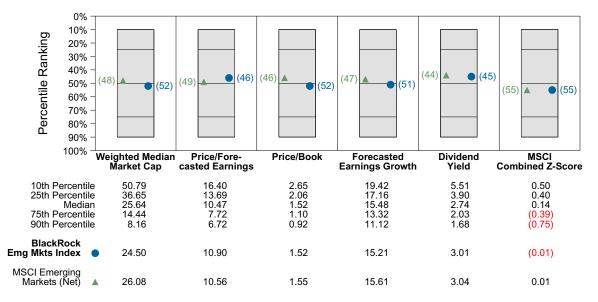


# BlackRock Emg Mkts Index Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

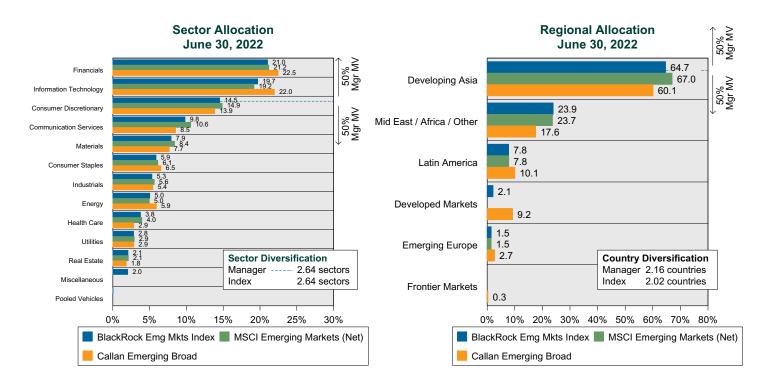
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2022



#### **Sector Weights**

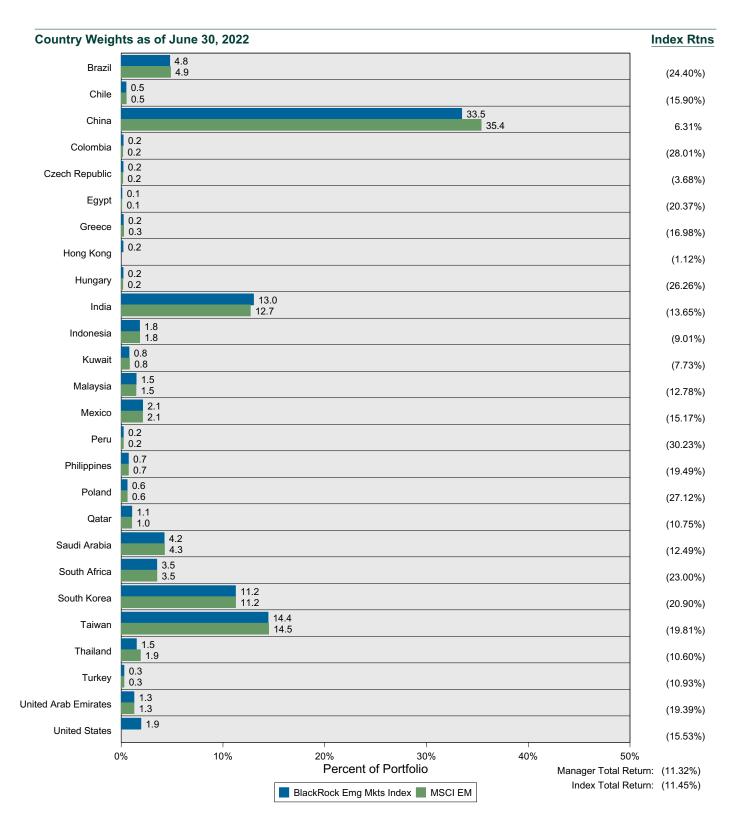
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares 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 June 30, 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.



# Leading Edge Emg Mkts Fund Period Ended June 30, 2022

#### **Investment Philosophy**

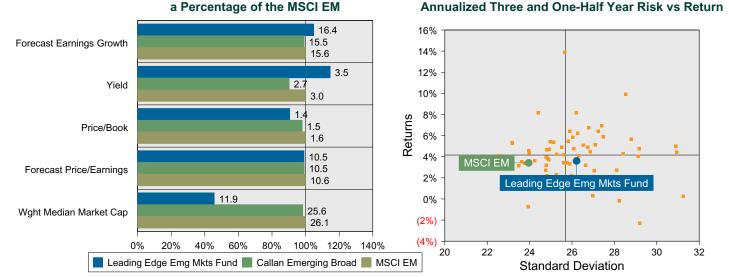
Leading Edge Investment Advisors pursues innovation in research and investment technology to define how managers are discovered, evaluated and selected. They believe smaller, specialized managers are more innovative than their larger peers, thus producing better risk-adjusted performance. They utilize 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 (11.84)% return for the quarter placing it in the 44 percentile of the Callan Emerging Broad group for the quarter and in the 55 percentile for the last year.
- Leading Edge Emg Mkts Fund's portfolio underperformed the MSCI EM by 0.39% for the quarter and underperformed ٠ the MSCI EM for the year by 2.33%.



Portfolio Characteristics as



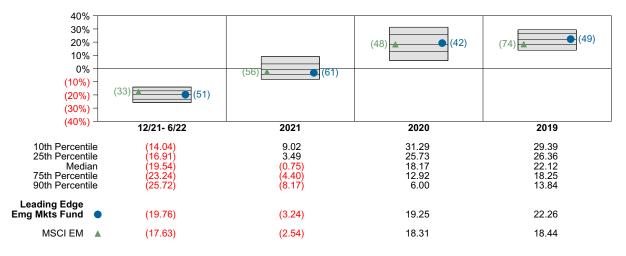
Performance vs Callan Emerging Broad (Gross)

# Leading Edge Emg Mkts Fund Return Analysis Summary

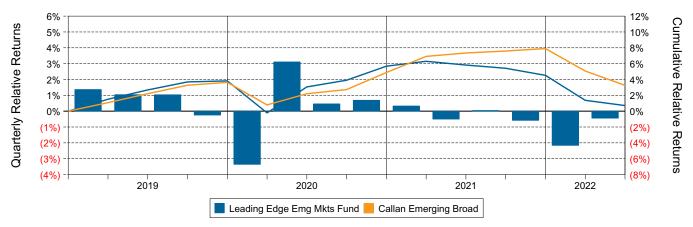
#### **Return Analysis**

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.

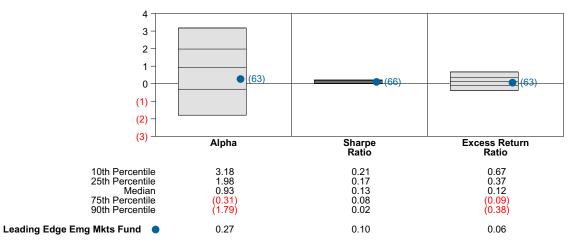
#### Performance vs Callan Emerging Broad (Gross)



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



#### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Three and One-Half Years Ended June 30, 2022



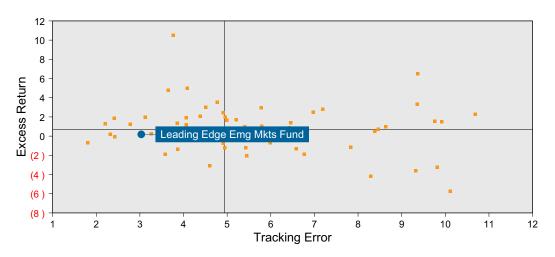


# Leading Edge Emg Mkts Fund Risk Analysis Summary

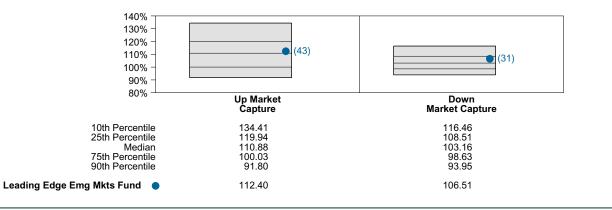
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The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows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

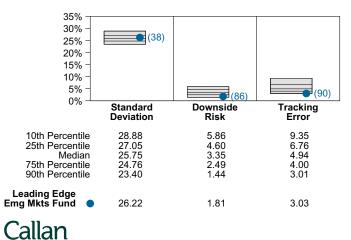
Risk Analysis vs Callan Emerging Broad (Gross) Three and One-Half Years Ended June 30, 2022

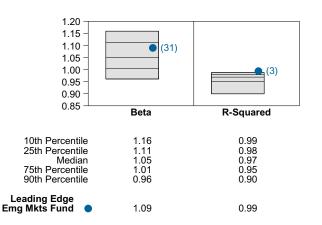


Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Three and One-Half Years Ended June 30, 2022



#### Risk Statistics Rankings vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Three and One-Half Years Ended June 30, 2022





# Current Holdings Based Style Analysis Leading Edge Emg Mkts Fund As of June 30, 2022

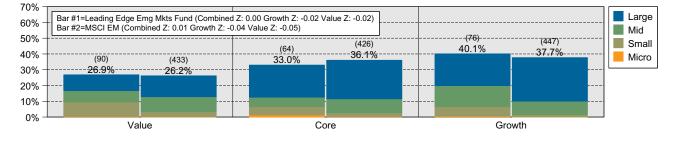
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are 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 Exposure Matrix** 

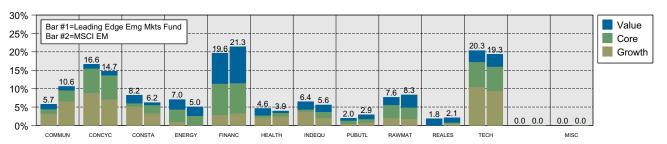


#### Style Map vs Callan Emerging Broad Holdings as of June 30, 2022

#### Combined Z-Score Style Distribution Holdings as of June 30, 2022



#### Sector Weights Distribution Holdings as of June 30, 2022

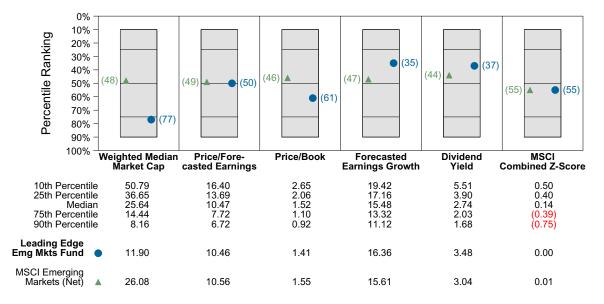


# Leading Edge Emg Mkts Fund Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

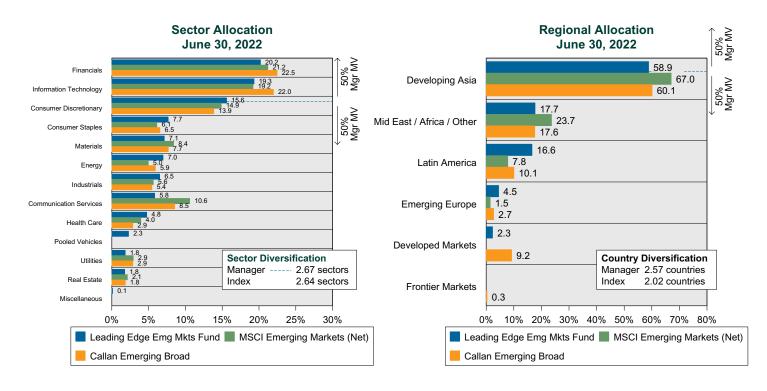
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2022



#### **Sector Weights**

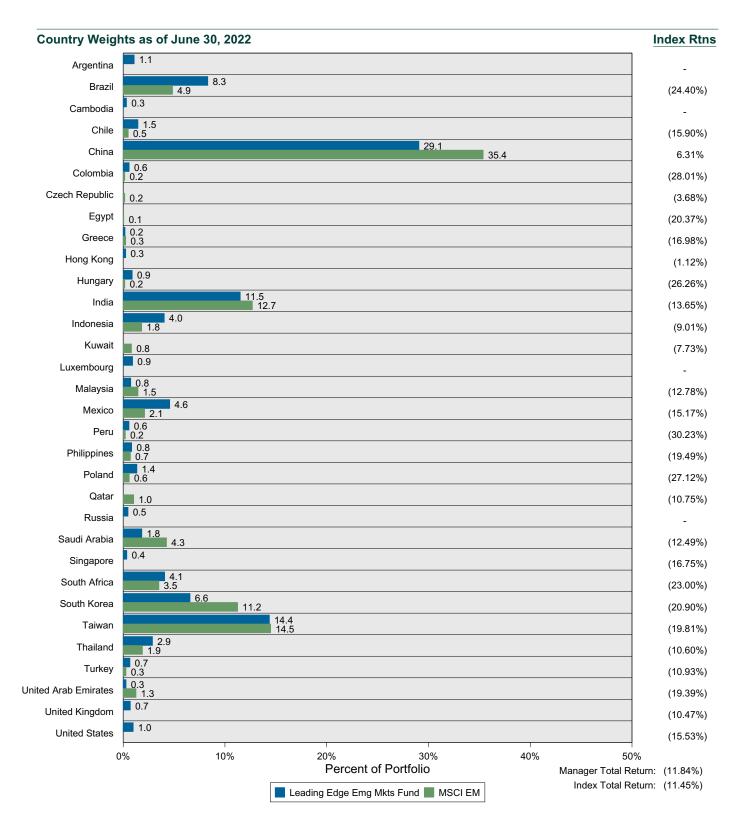
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares 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 June 30, 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 June 30, 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 (11.93)% return for the quarter placing it in the 46 percentile of the Callan Emerging Broad group for the quarter and in the 56 percentile for the last year.
- Macquarie Emerging Markets Equity's portfolio underperformed the MSCI EM by 0.48% for the quarter and underperformed the MSCI EM for the year by 2.55%.



#### Performance vs Callan Emerging Broad (Gross)

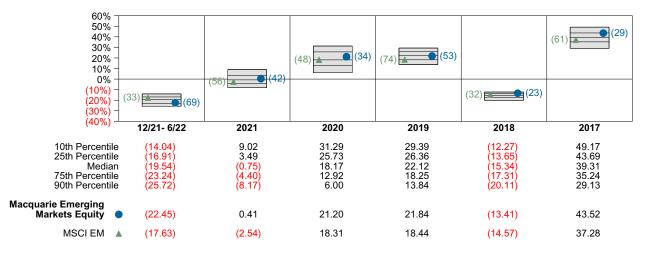


# Macquarie Emerging Markets Equity Return Analysis Summary

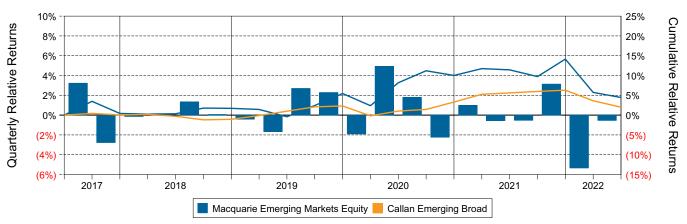
#### **Return Analysis**

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.

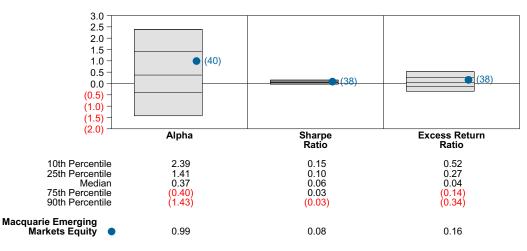
#### Performance vs Callan Emerging Broad (Gross)



**Cumulative and Quarterly Relative Returns vs MSCI EM** 



Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022

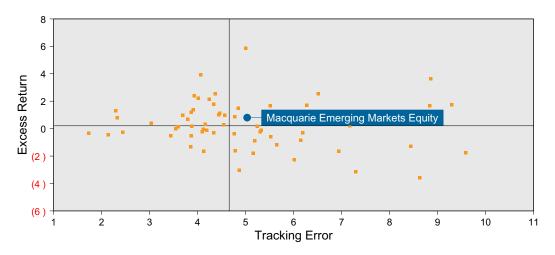


# Macquarie Emerging Markets Equity Risk Analysis Summary

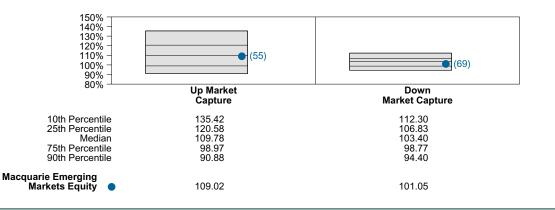
#### **Risk Analysis**

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.

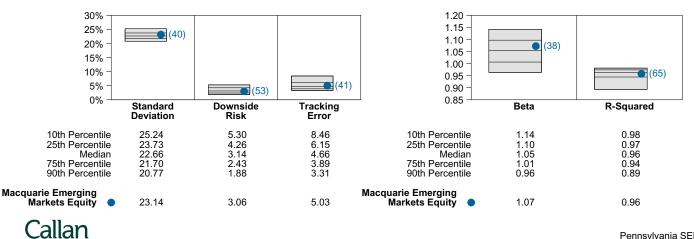
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



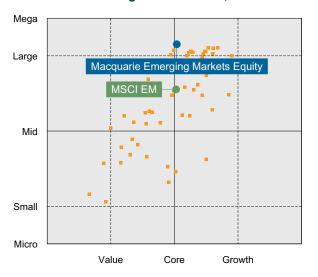




Pennsylvania SERS 171

# Current Holdings Based Style Analysis Macquarie Emerging Markets Equity As of June 30, 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.

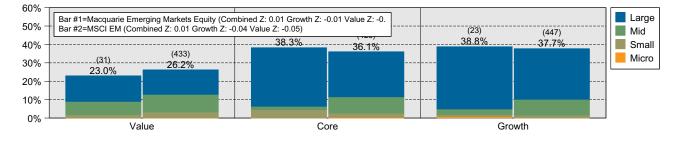


### Style Map vs Callan Emerging Broad Holdings as of June 30, 2022

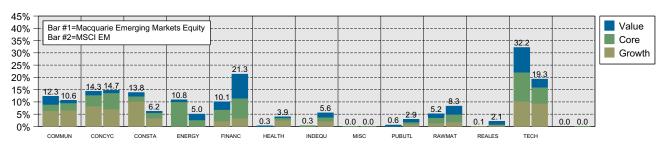
## Style Exposure Matrix Holdings as of June 30, 2022

	Value	Core	Growth	Total
Total	26.2% (433)	36.1% (426)	37.7% (447)	100.0% (1306)
	23.0% (31)	38.3% (28)	38.8% (23)	100.0% (82)
	0.1% (3)	0.3% (3)	0.0% (1)	0.4% (7)
Micro	0.170 (3)	0.070 (1)	0.7 /0 (3)	0.070 (7)
	0.1% (3)	0.0% (1)	0.7% (3)	0.8% (7)
oman	3.2% (136)	2.3% (111)	1.5% (74)	7.0% (321)
Small	1.7% (4)	4.5% (9)	1.1% (3)	7.3% (16)
	9.5% (203)	8.9% (223)	8.6% (264)	27.0% (690)
Mid				
	7.2% (9)	1.8% (4)	3.1% (4)	12.1% (17)
	13.4% (91)	24.6% (89)	27.6% (108)	65.6% (288)
Large				
	14.0% (15)	31.9% (14)	33.9% (13)	79.8% (42)

#### Combined Z-Score Style Distribution Holdings as of June 30, 2022



### Sector Weights Distribution Holdings as of June 30, 2022

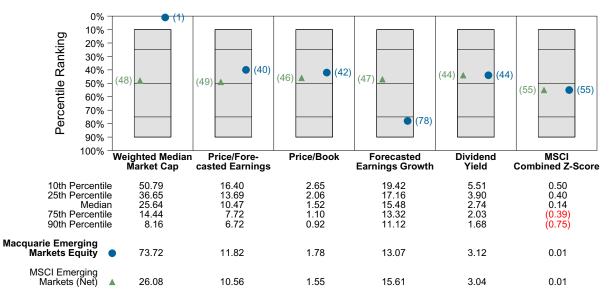


# Macquarie Emerging Markets Equity Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

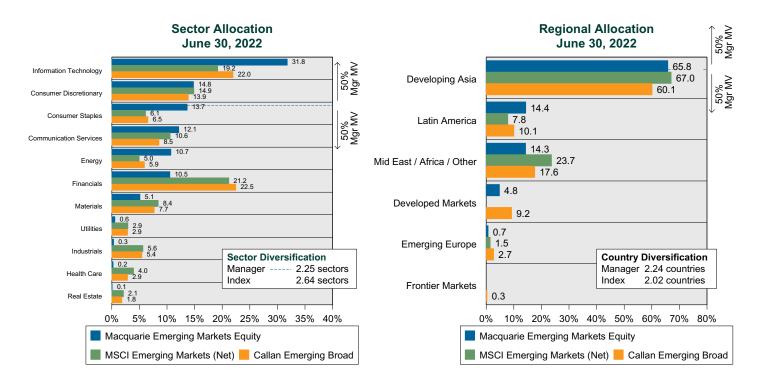
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2022



## **Sector Weights**

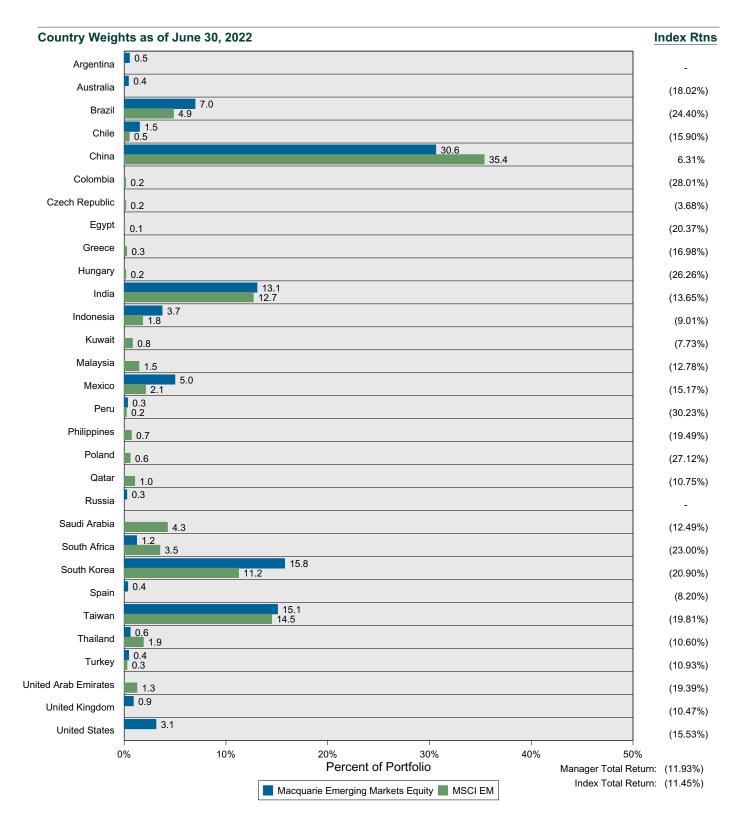
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



# Country Allocation 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 June 30, 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.





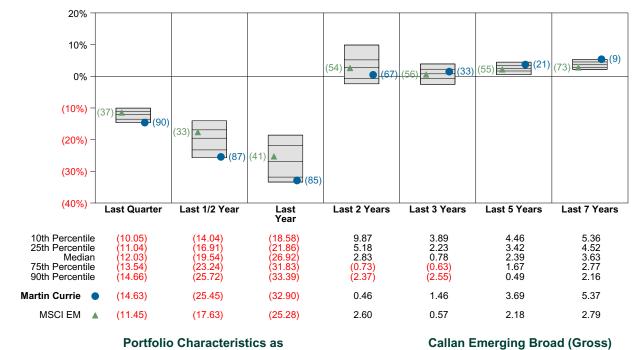
## Martin Currie Period Ended June 30, 2022

#### **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.

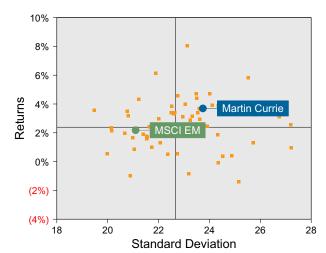
#### **Quarterly Summary and Highlights**

- Martin Currie's portfolio posted a (14.63)% return for the quarter placing it in the 90 percentile of the Callan Emerging Broad group for the quarter and in the 85 percentile for the last year.
- Martin Currie's portfolio underperformed the MSCI EM by 3.18% for the quarter and underperformed the MSCI EM for the year by 7.61%.



#### Performance vs Callan Emerging Broad (Gross)







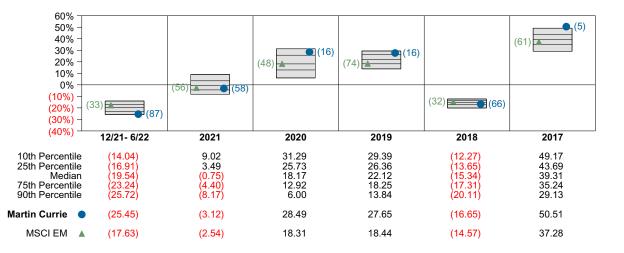
a Percentage of the MSCI EM

# Martin Currie Return Analysis Summary

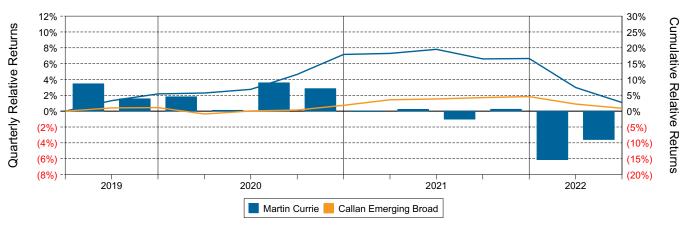
## **Return Analysis**

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.

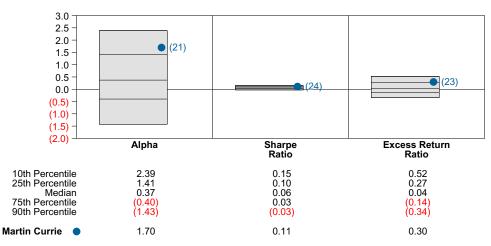
#### Performance vs Callan Emerging Broad (Gross)



**Cumulative and Quarterly Relative Returns vs MSCI EM** 



#### Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



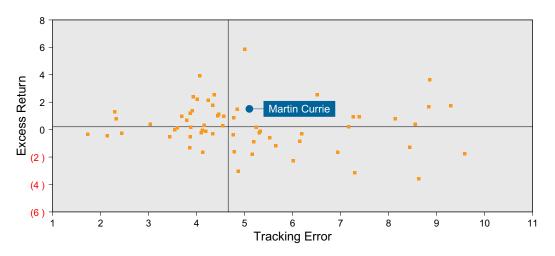


## Martin Currie Risk Analysis Summary

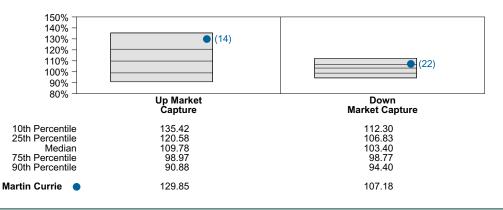
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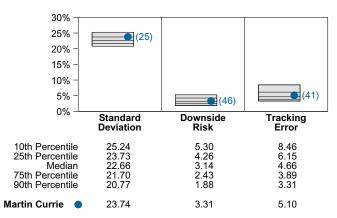
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2022

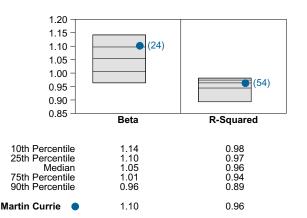


Market Capture vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022



Risk Statistics Rankings vs MSCI Emerging Markets (Net) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2022





# Current Holdings Based Style Analysis Martin Currie As of June 30, 2022

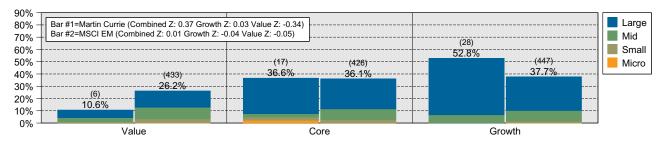
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are 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 Exposure Matrix** 

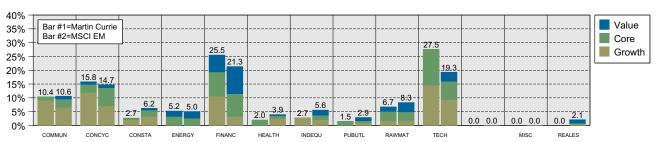


#### Style Map vs Callan Emerging Broad Holdings as of June 30, 2022

### Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

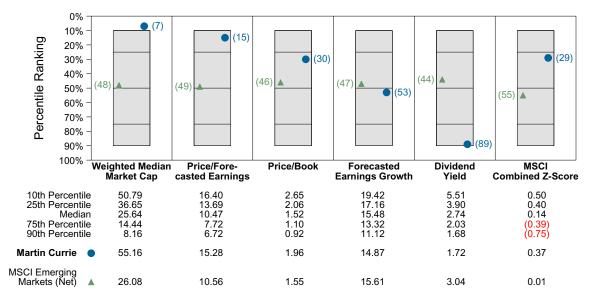


# Martin Currie Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

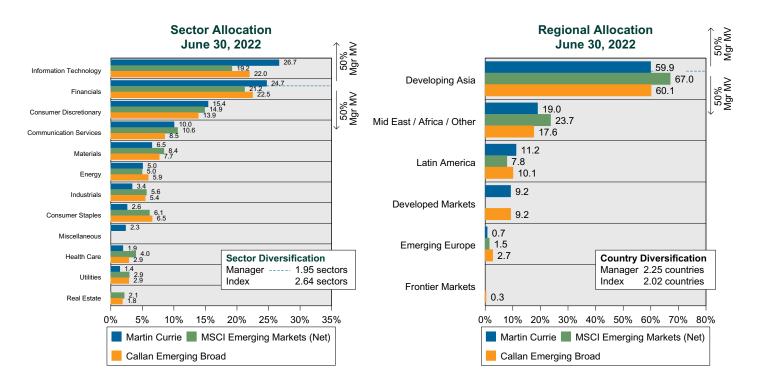
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2022



## **Sector Weights**

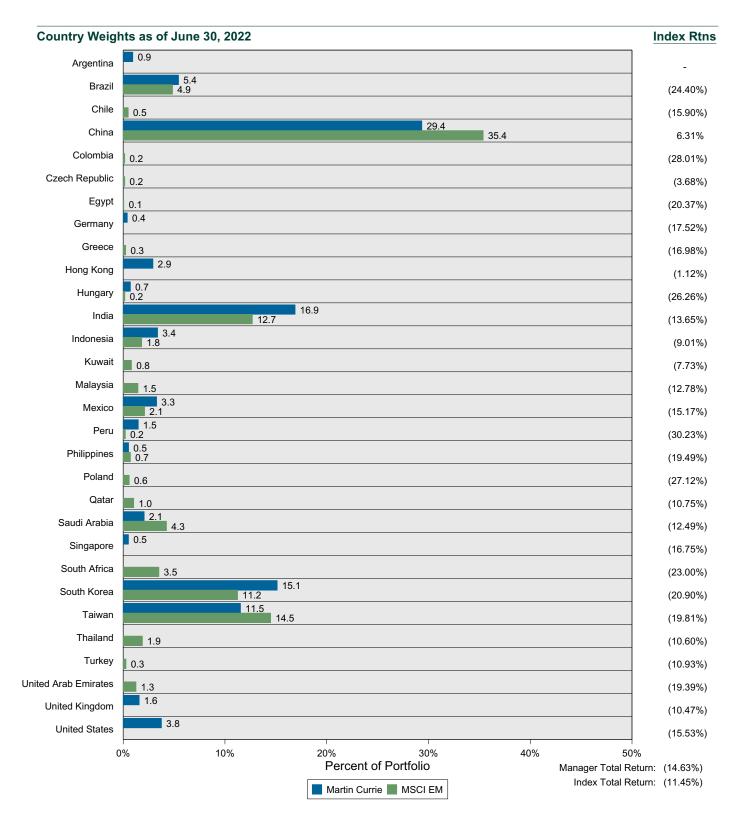
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# Country Allocation Martin Currie VS MSCI Emerging Markets (Net)

#### **Country Allocation**

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 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.



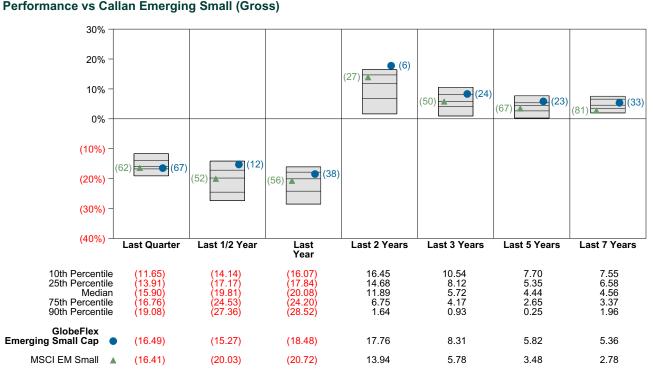
## GlobeFlex Emerging Small Cap Period Ended June 30, 2022

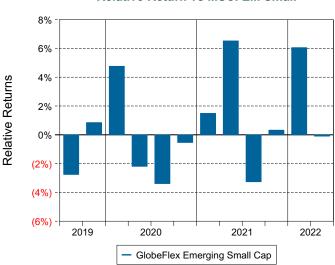
#### **Investment Philosophy**

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**

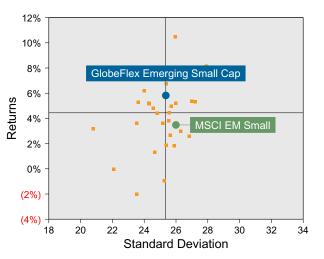
- GlobeFlex Emerging Small Cap's portfolio posted a (16.49)% return for the quarter placing it in the 67 percentile of the Callan Emerging Small group for the quarter and in the 38 percentile for the last year.
- GlobeFlex Emerging Small Cap's portfolio underperformed the MSCI EM Small by 0.08% for the quarter and outperformed the MSCI EM Small for the year by 2.24%.





#### Relative Return vs MSCI EM Small

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

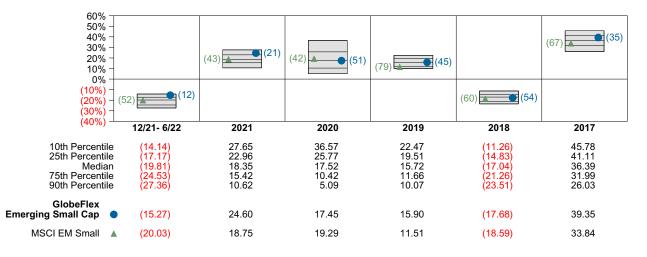


# GlobeFlex Emerging Small Cap Return Analysis Summary

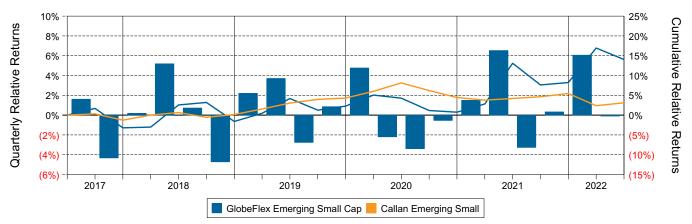
### **Return Analysis**

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.

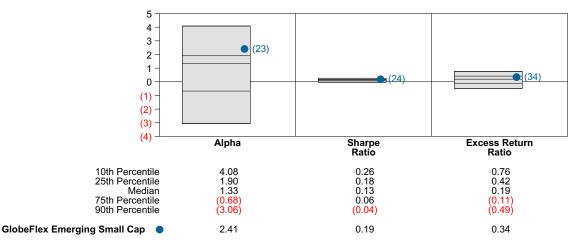
#### Performance vs Callan Emerging Small (Gross)



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





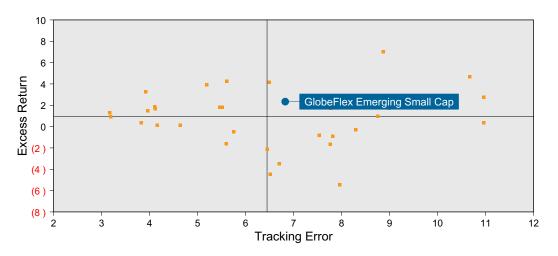


# GlobeFlex Emerging Small Cap Risk Analysis Summary

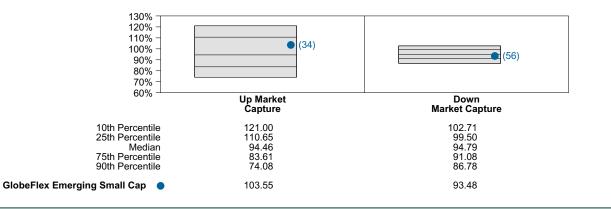
#### **Risk Analysis**

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.

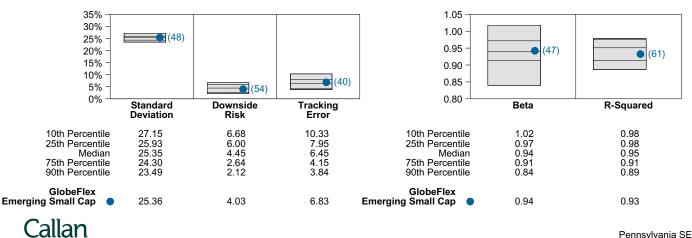
Risk Analysis vs Callan Emerging Small (Gross) Five Years Ended June 30, 2022



#### Market Capture vs MSCI EM Small (Net) Rankings Against Callan Emerging Small (Gross) Five Years Ended June 30, 2022







# Current Holdings Based Style Analysis GlobeFlex Emerging Small Cap As of June 30, 2022

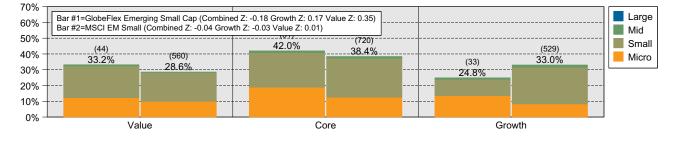
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are 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 Exposure Matrix** 

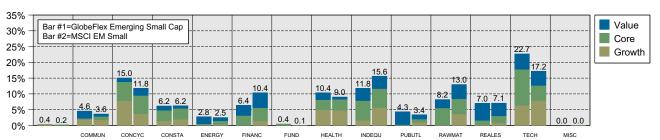


#### Style Map vs Callan Emerging Small Holdings as of June 30, 2022

### Combined Z-Score Style Distribution Holdings as of June 30, 2022



## Sector Weights Distribution Holdings as of June 30, 2022

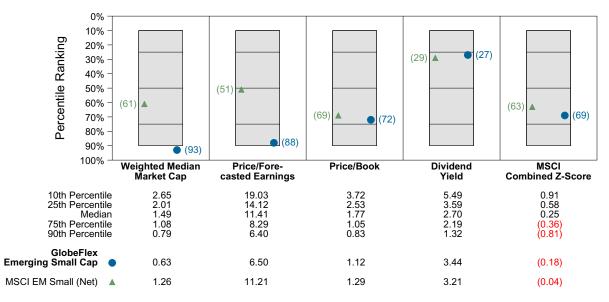


# GlobeFlex Emerging Small Cap Equity Characteristics Analysis Summary

#### **Portfolio Characteristics**

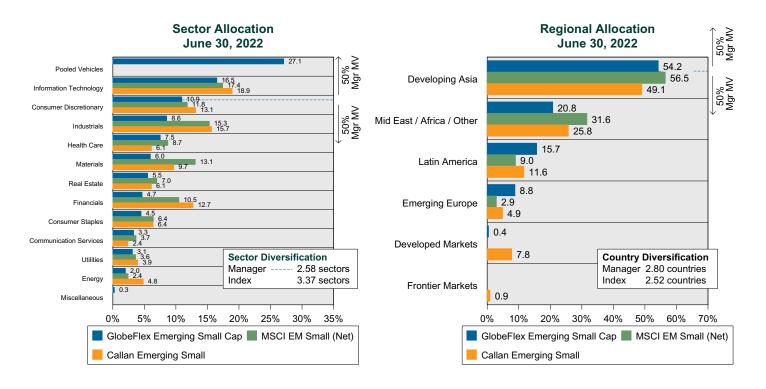
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Small as of June 30, 2022



## **Sector Weights**

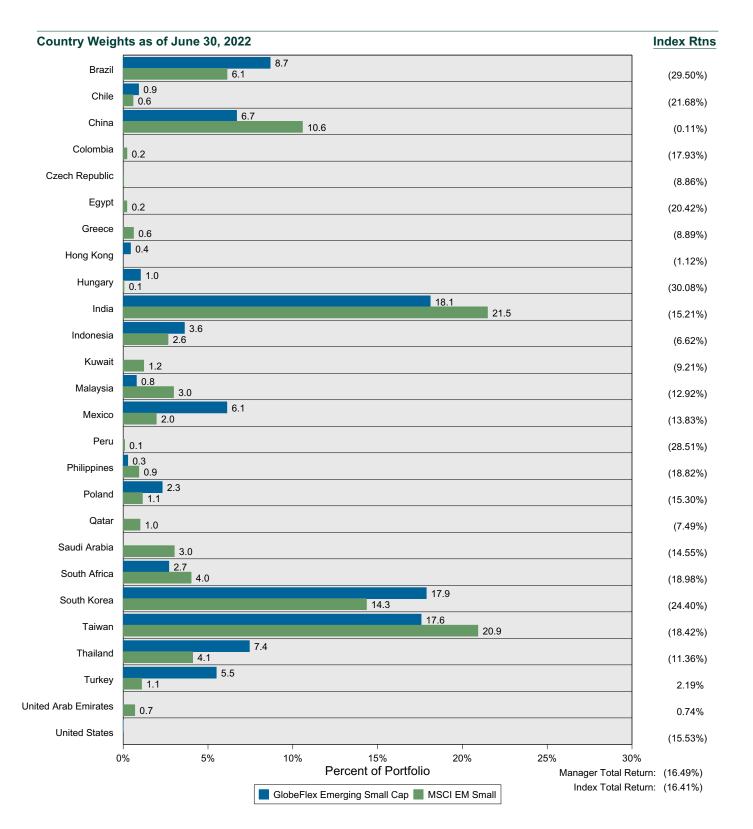
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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

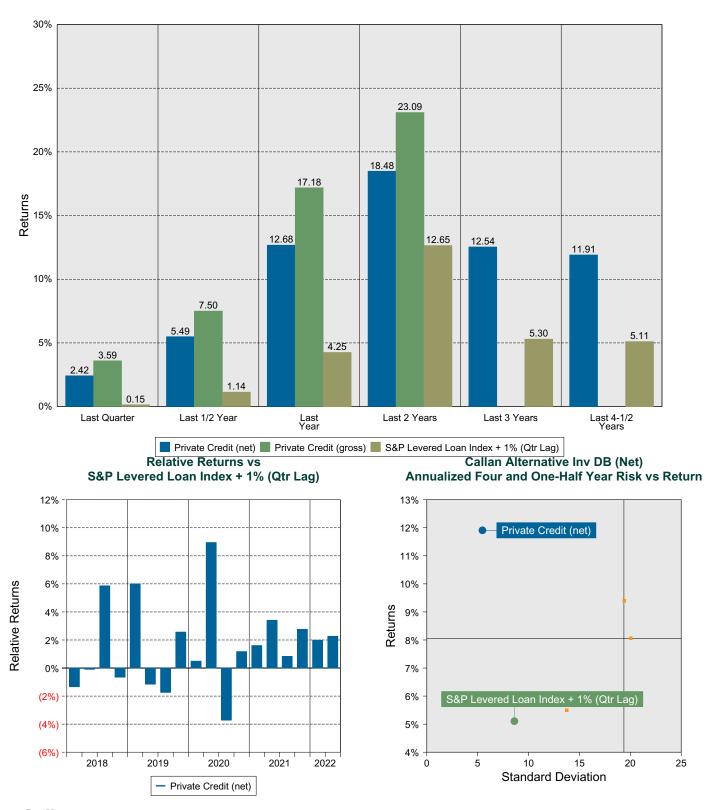
The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2022. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation 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.



## Private Credit Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

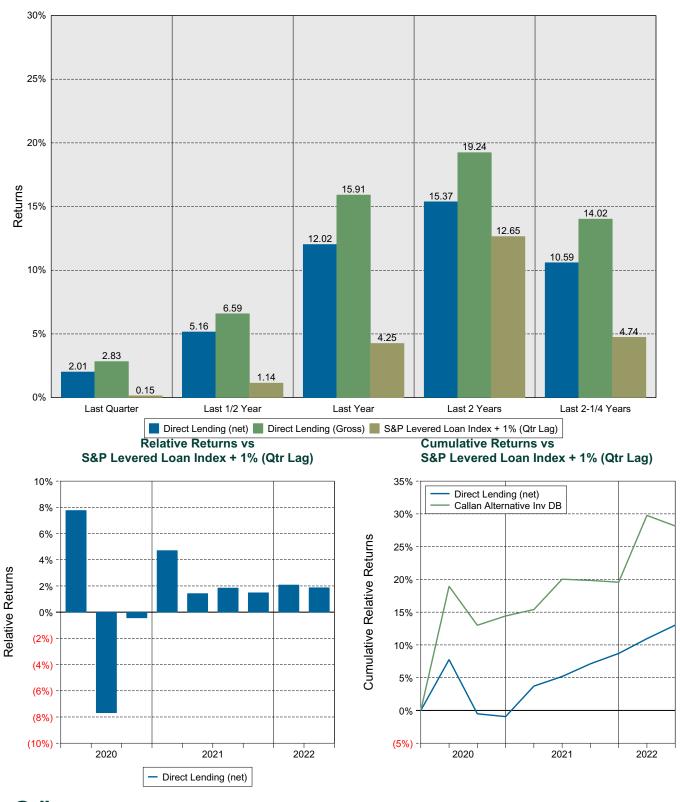
- Private Credit (net)'s portfolio posted a 2.42% return for the quarter placing it in the 11 percentile of the Callan Alternative Inv DB group for the quarter and in the 59 percentile for the last year.
- Private Credit (net)'s portfolio outperformed the S&P Levered Loan Index + 1% (Qtr Lag) by 2.27% for the quarter and outperformed the S&P Levered Loan Index + 1% (Qtr Lag) for the year by 8.42%.



## Direct Lending Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

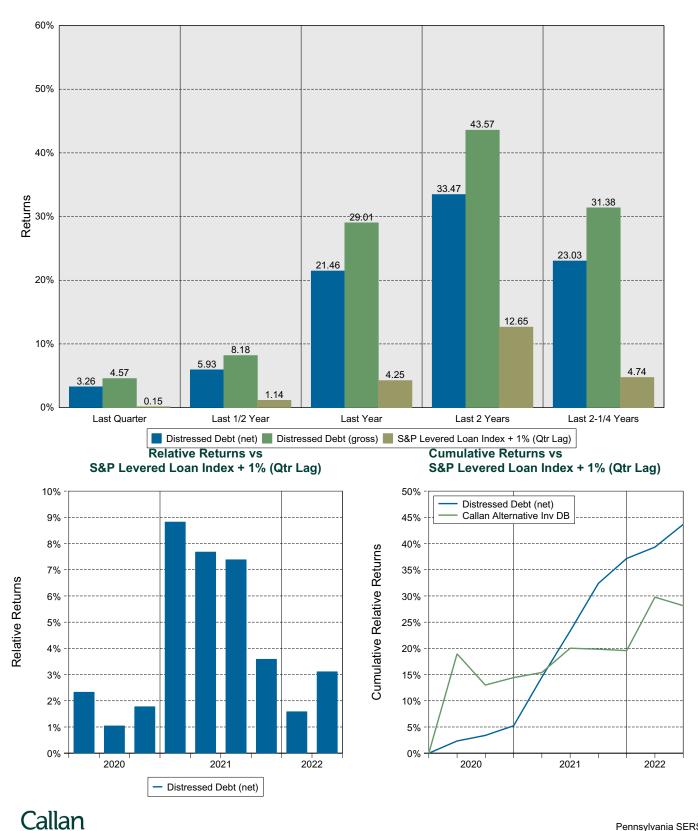
- Direct Lending (net)'s portfolio posted a 2.01% return for the quarter placing it in the 12 percentile of the Callan Alternative Inv DB group for the quarter and in the 60 percentile for the last year.
- Direct Lending (net)'s portfolio outperformed the S&P Levered Loan Index + 1% (Qtr Lag) by 1.87% for the quarter and outperformed the S&P Levered Loan Index + 1% (Qtr Lag) for the year by 7.77%.



## **Distressed Debt** Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

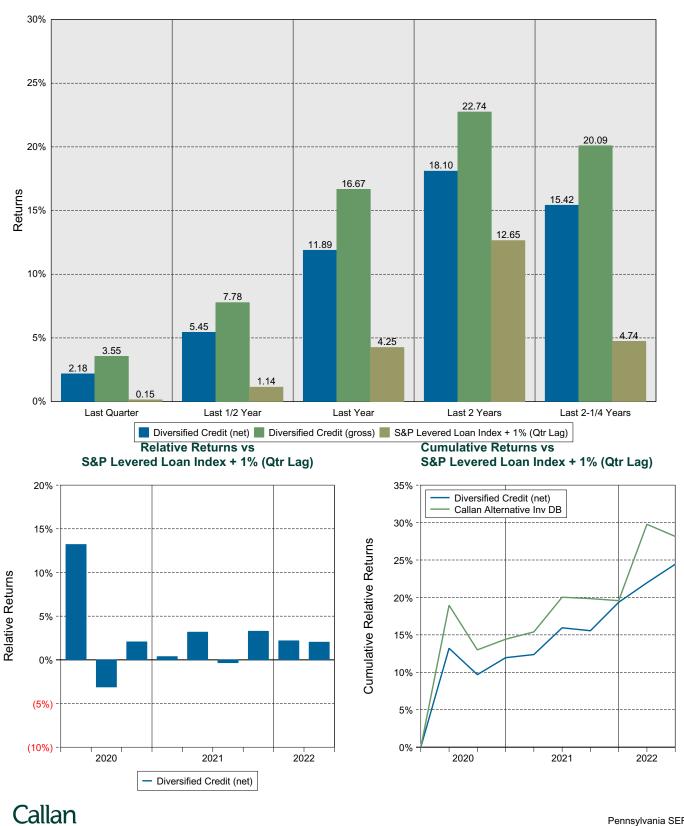
- Distressed Debt (net)'s portfolio posted a 3.26% return for the quarter placing it in the 10 percentile of the Callan Alternative Inv DB group for the quarter and in the 37 percentile for the last year.
- Distressed Debt (net)'s portfolio outperformed the S&P Levered Loan Index + 1% (Qtr Lag) by 3.11% for the quarter and outperformed the S&P Levered Loan Index + 1% (Qtr Lag) for the year by 17.21%.



## **Diversified Credit** Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

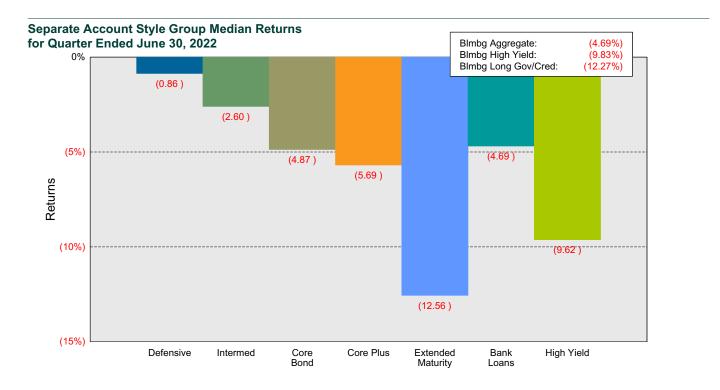
- Diversified Credit (net)'s portfolio posted a 2.18% return for the quarter placing it in the 11 percentile of the Callan Alternative Inv DB group for the quarter and in the 60 percentile for the last year.
- Diversified Credit (net)'s portfolio outperformed the S&P Levered Loan Index + 1% (Qtr Lag) by 2.03% for the quarter and outperformed the S&P Levered Loan Index + 1% (Qtr Lag) for the year by 7.63%.

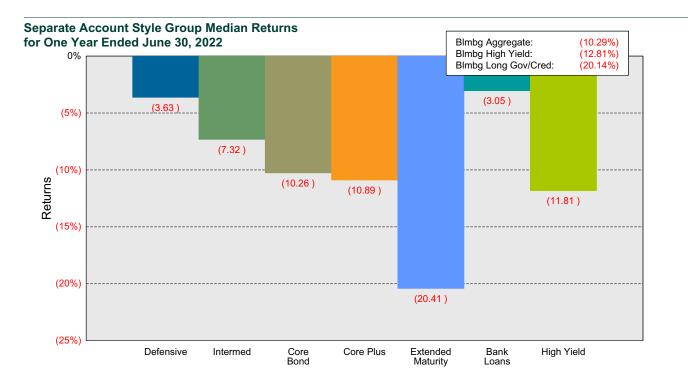


Fixed Income

## Domestic Fixed Income Active Management Overview

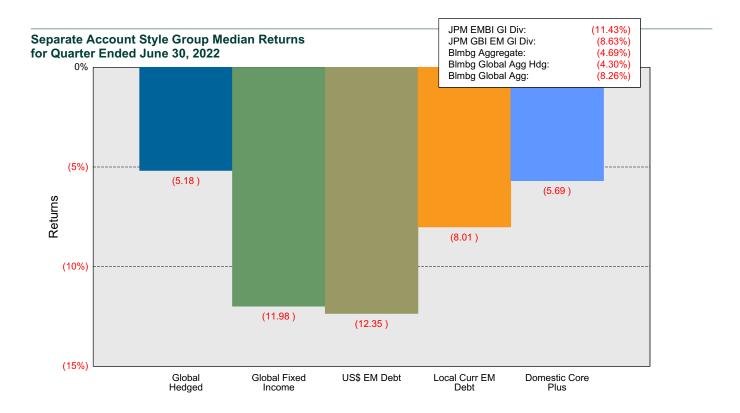
The Bloomberg US Aggregate Bond Index fell 4.7% in 2Q as rates rose sharply and spreads widened. Mortgages and corporates underperformed U.S. Treasuries, and the yield-to-worst of the Aggregate Index climbed to 3.7%. High yield corporates (Bloomberg High Yield: -9.8%) underperformed investment grade, and the Index is down 14.2% YTD. Rates were volatile during the quarter; the 10-year U.S. Treasury hit an intra-quarter high of 3.49% in June, the highest since 2011, before closing the quarter at 2.98%. TIPS (Bloomberg TIPS: -6.1%; -8.9% YTD) sharply underperformed nominal U.S. Treasuries for the quarter as longer-term inflation expectations declined.

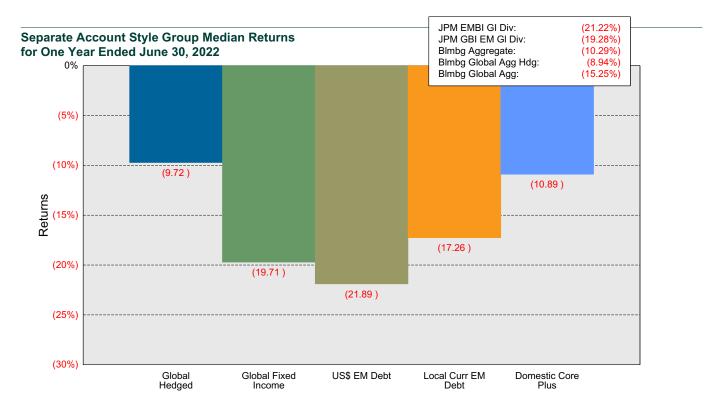




# Global Fixed Income Active Management Overview

Returns were negative as interest rates rose sharply and the U.S. dollar continued to strengthen, hurting unhedged fixed income returns. The Bloomberg Global Aggregate ex USD fell 11.0% (hedged: -4.0%). The yen lost 11% versus the greenback, the euro 6%, and the British pound 8%. Losses were broad-based with double-digit declines across Europe, in Japan, and the U.K.



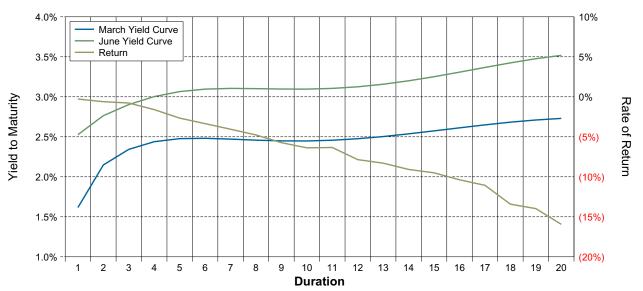


## **Bond Market Environment**

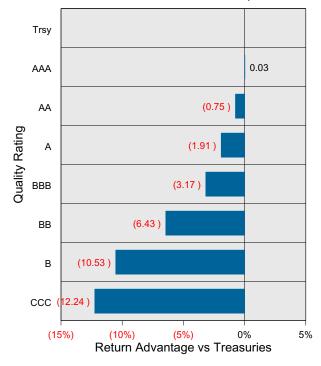
#### **Factors Influencing Bond Returns**

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.

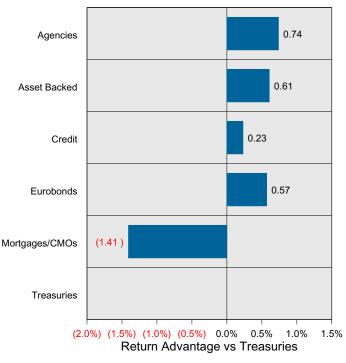
#### Yield Curve Change and Rate of Return One Quarter Ended June 30, 2022



Duration Adjusted Return Premium to Quality One Quarter Ended June 30, 2022



Quality and Duration Adjusted Return Premium by Sector One Quarter Ended June 30, 2022



## Fixed Income Period Ended June 30, 2022

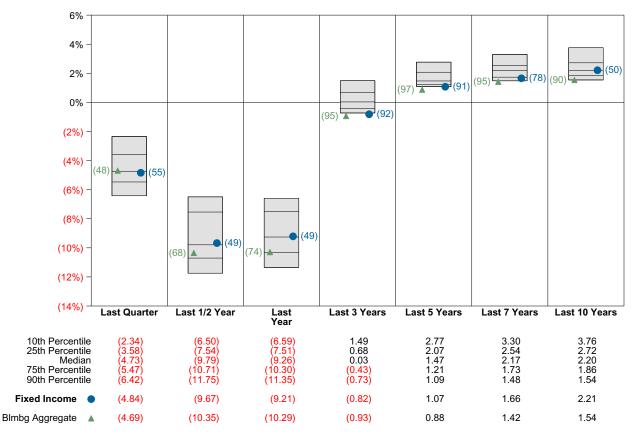
## Asset Class Membership Changes

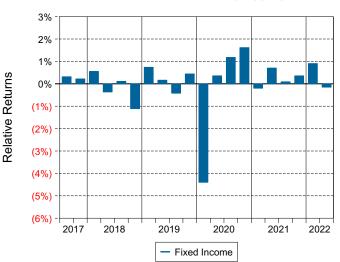
Fixed Income also includes the new fixed income sub-composite which was funded in 03/01/2021.

#### **Quarterly Summary and Highlights**

- Fixed Income's portfolio posted a (4.84)% return for the quarter placing it in the 55 percentile of the Public Fund -Domestic Fixed group for the quarter and in the 49 percentile for the last year.
- Fixed Income's portfolio underperformed the Blmbg Aggregate by 0.15% for the quarter and outperformed the Blmbg Aggregate for the year by 1.08%.

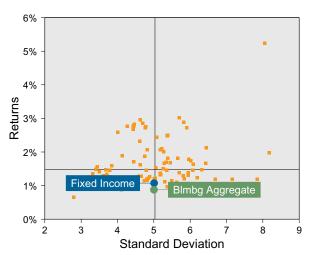
Performance vs Public Fund - Domestic Fixed (Gross)





#### **Relative Return vs Blmbg Aggregate**

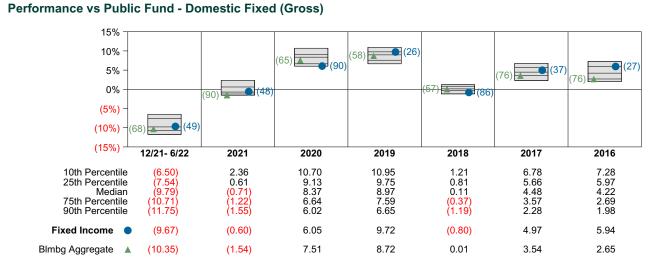
#### Public Fund - Domestic Fixed (Gross) Annualized Five Year Risk vs Return



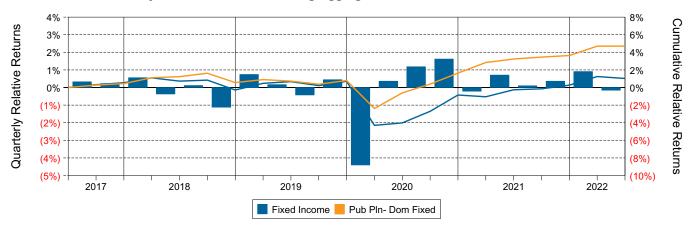
## Fixed Income Return Analysis Summary

### **Return Analysis**

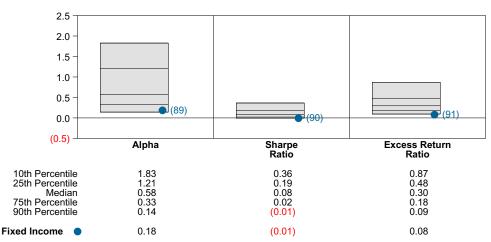
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



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 June 30, 2022



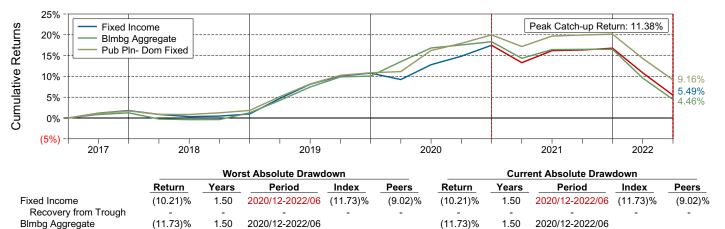


## **Fixed Income** Drawdown Analysis for Five Years Ended June 30, 2022

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**

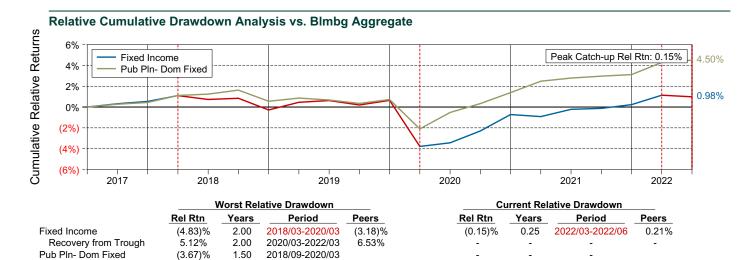
Pub Pln- Dom Fixed



(9.15)%

0.50

2021/12-2022/06

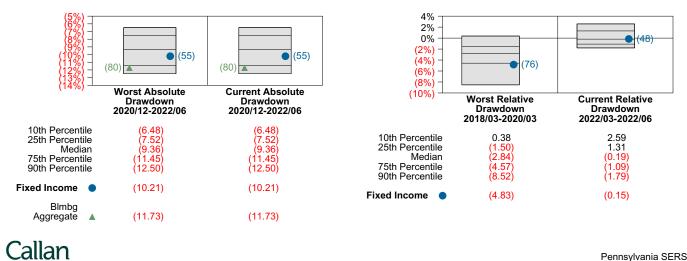


#### Drawdown Rankings vs. Blmbg Aggregate **Rankings against Public Fund - Domestic Fixed** Five Years Ended June 30, 2022

(9.15)%

0.50

2021/12-2022/06

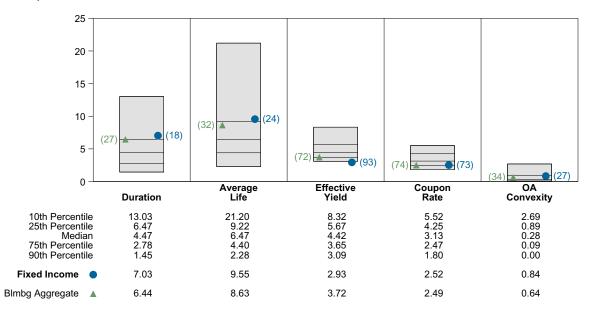


# Fixed Income Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

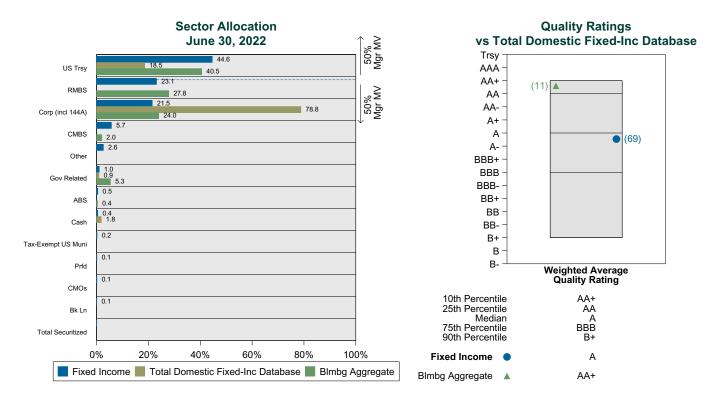
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Total Domestic Fixed-Inc Database as of June 30, 2022



## Sector Allocation and Quality Ratings

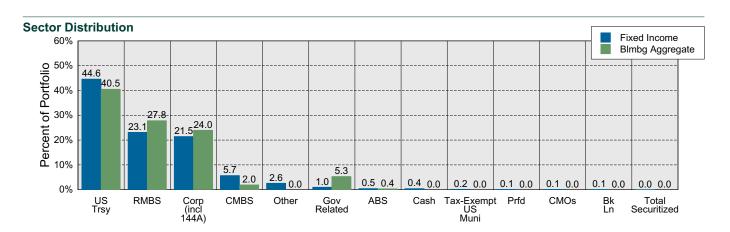
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

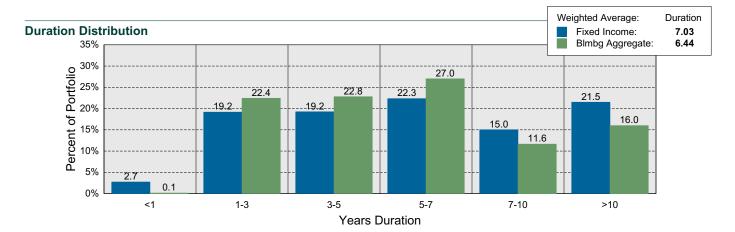


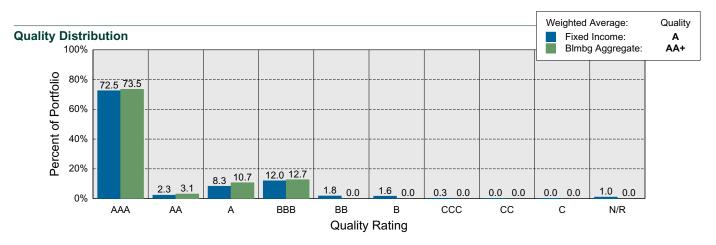
## Fixed Income Portfolio Characteristics Summary As of June 30, 2022

## 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.





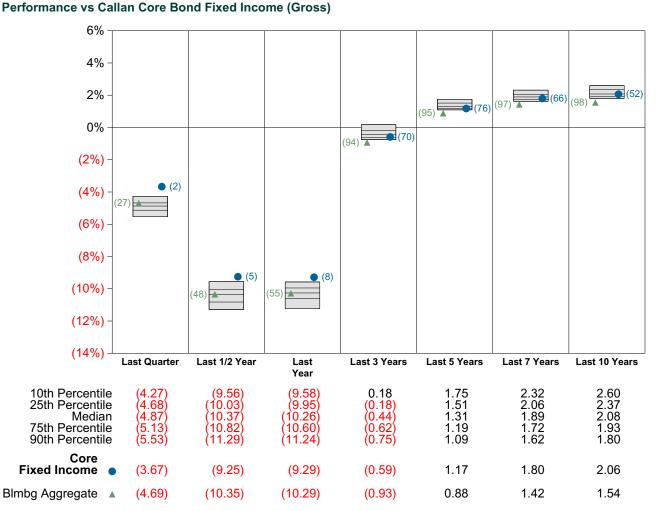


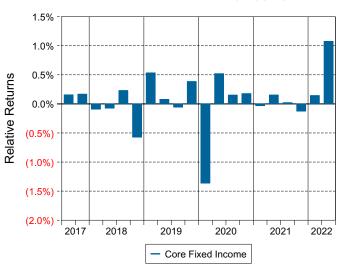
Core Fixed Income

## Core Fixed Income Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

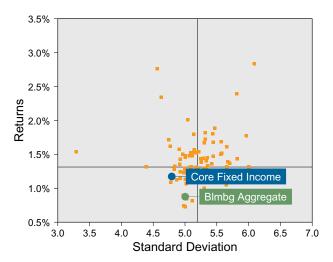
- Core Fixed Income's portfolio posted a (3.67)% return for the quarter placing it in the 2 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 8 percentile for the last year.
- Core Fixed Income's portfolio outperformed the Blmbg Aggregate by 1.03% for the quarter and outperformed the Blmbg Aggregate for the year by 1.01%.





Relative Return vs Blmbg Aggregate

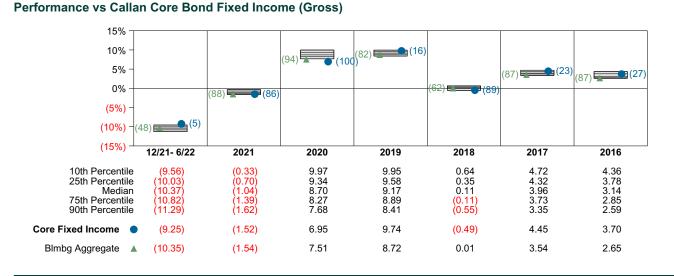
### Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return



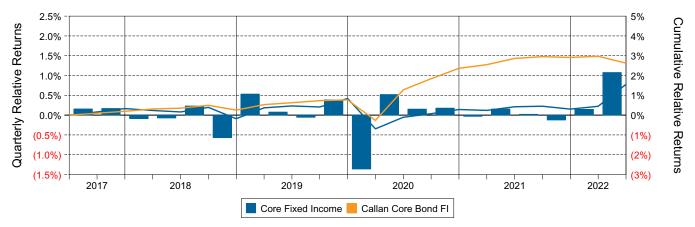
# Core Fixed Income Return Analysis Summary

### **Return Analysis**

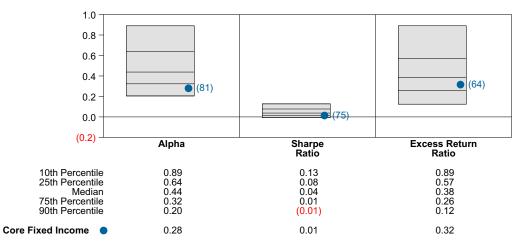
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



#### 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 June 30, 2022



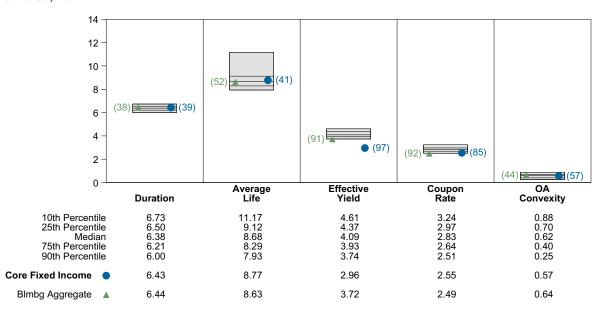


# Core Fixed Income Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

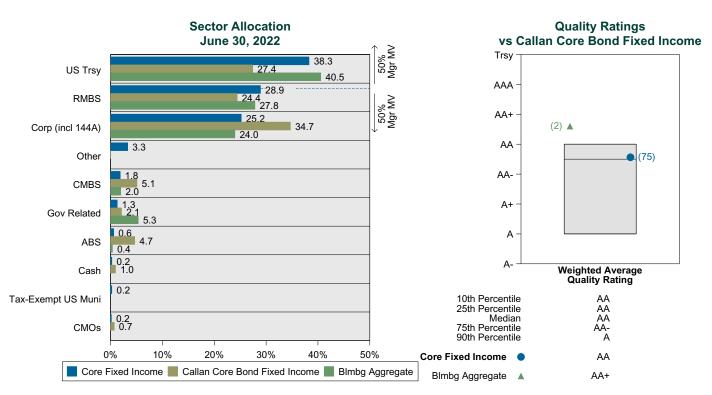
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of June 30, 2022



## Sector Allocation and Quality Ratings

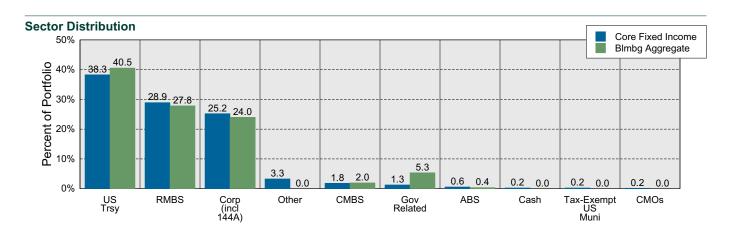
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

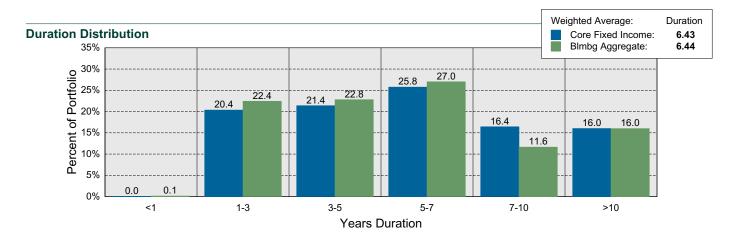


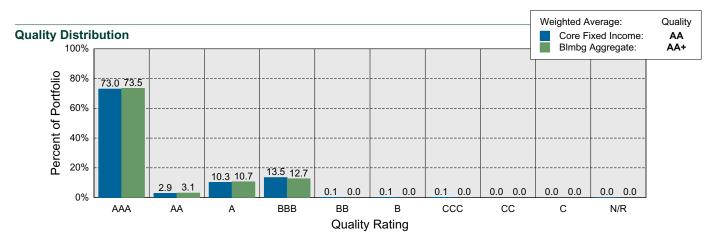
## Core Fixed Income Portfolio Characteristics Summary As of June 30, 2022

## 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.







Core Fixed Income Managers

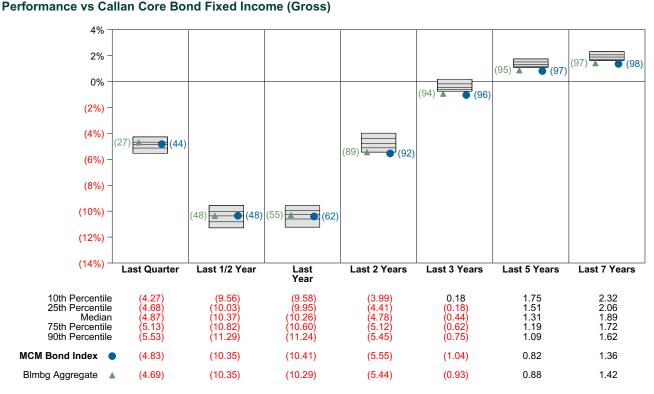
## MCM Bond Index Period Ended June 30, 2022

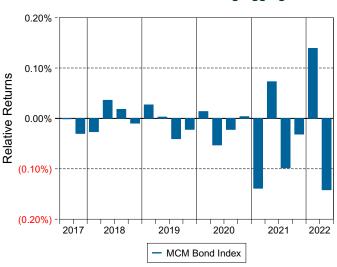
#### **Investment Philosophy**

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**

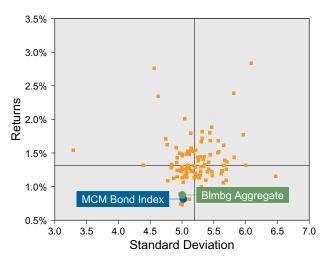
- MCM Bond Index's portfolio posted a (4.83)% return for the quarter placing it in the 44 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 62 percentile for the last year.
- MCM Bond Index's portfolio underperformed the Blmbg Aggregate by 0.14% for the quarter and underperformed the Blmbg Aggregate for the year by 0.12%.





#### **Relative Return vs Blmbg Aggregate**

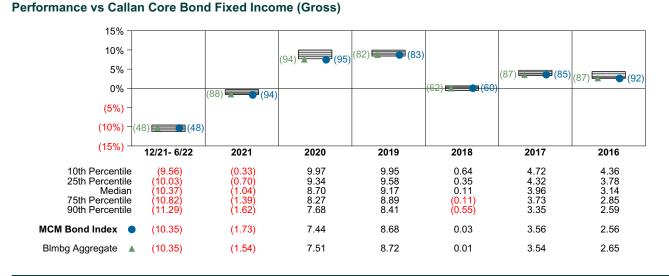
#### Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return



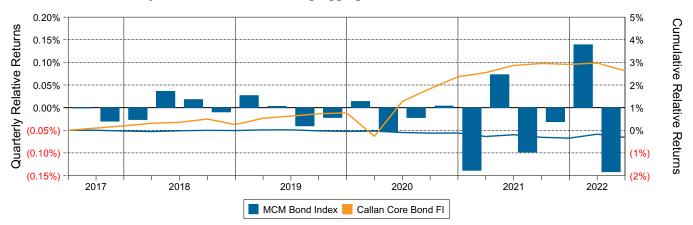
# MCM Bond Index Return Analysis Summary

#### **Return Analysis**

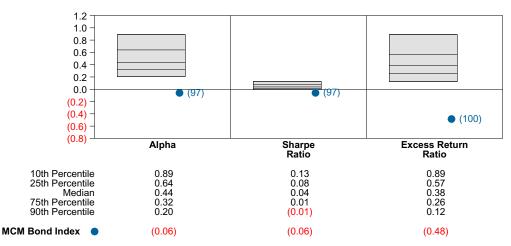
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



**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 June 30, 2022



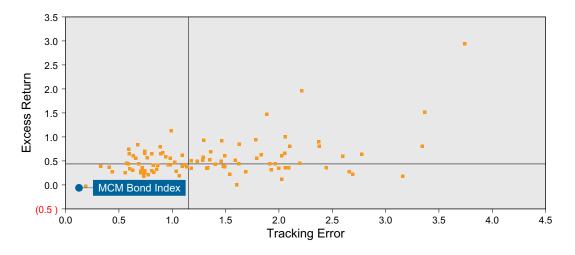


# **MCM Bond Index Risk Analysis Summary**

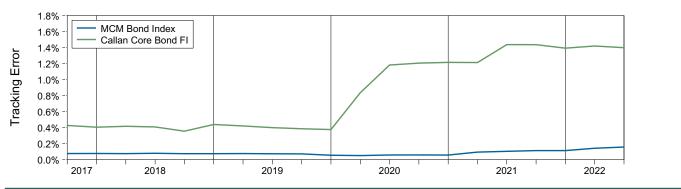
#### **Risk Analysis**

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.

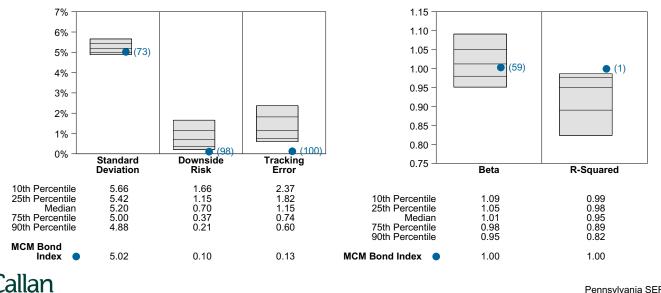
Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2022









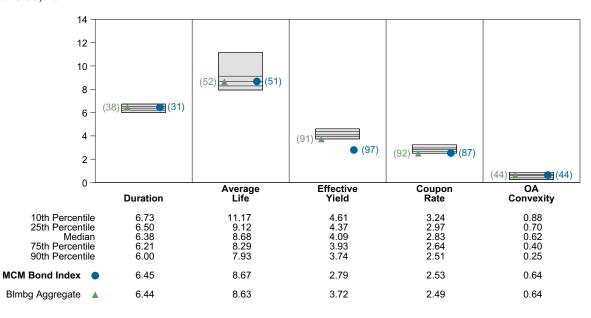


# MCM Bond Index Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

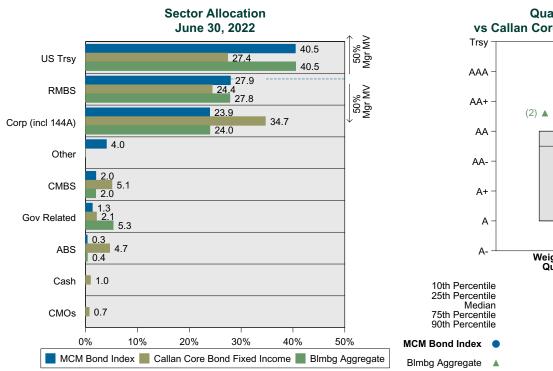
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of June 30, 2022

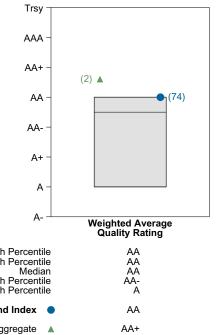


### Sector Allocation and Quality Ratings

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.



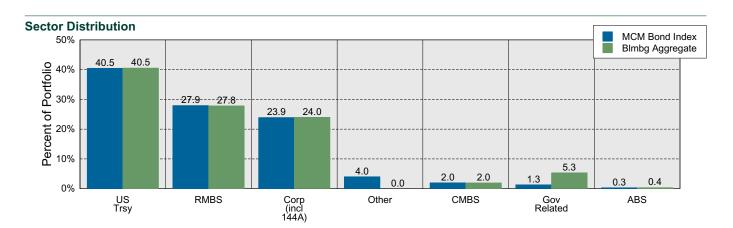
# Quality Ratings vs Callan Core Bond Fixed Income

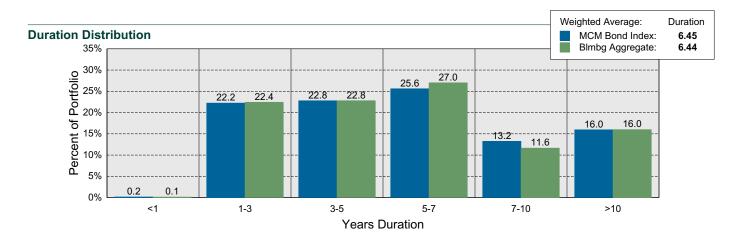


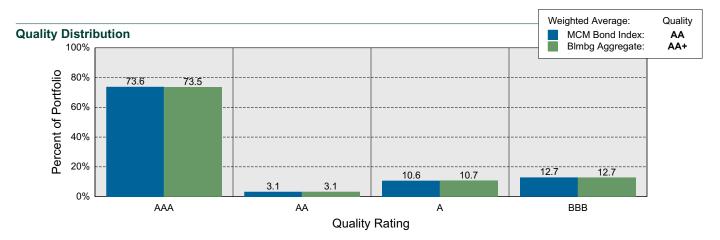
# MCM Bond Index Portfolio Characteristics Summary As of June 30, 2022

# 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.



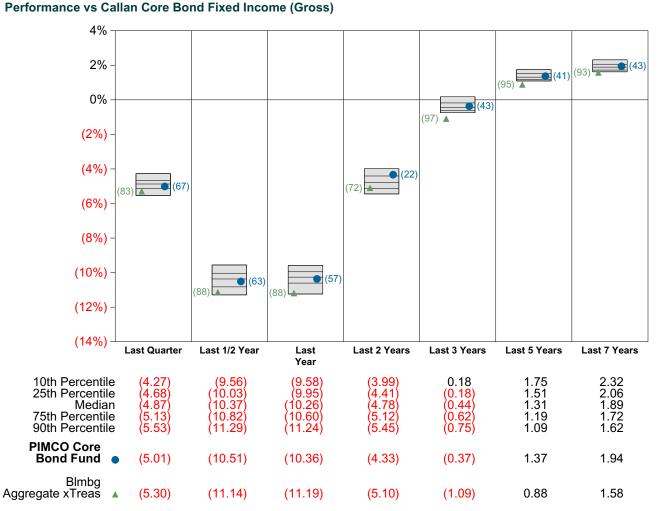


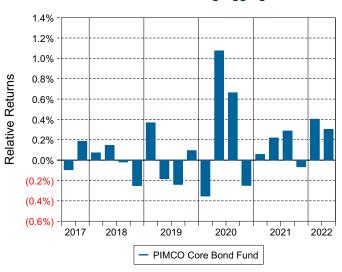


# PIMCO Core Bond Fund Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

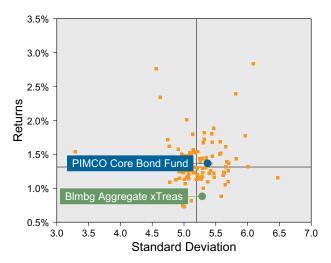
- PIMCO Core Bond Fund's portfolio posted a (5.01)% return for the quarter placing it in the 67 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 57 percentile for the last year.
- PIMCO Core Bond Fund's portfolio outperformed the BImbg Aggregate xTreas by 0.29% for the quarter and outperformed the BImbg Aggregate xTreas for the year by 0.83%.





#### Relative Return vs Blmbg Aggregate xTreas

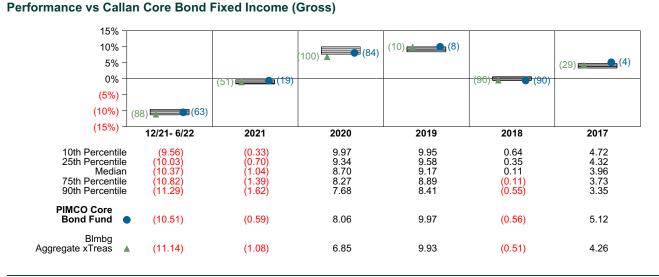




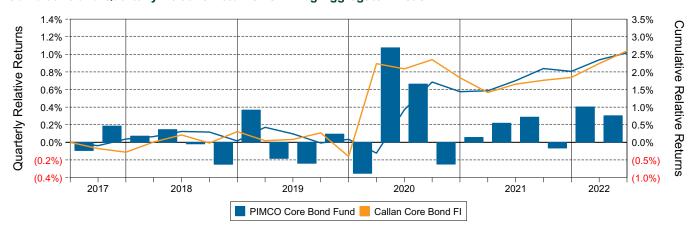
# PIMCO Core Bond Fund Return Analysis Summary

#### **Return Analysis**

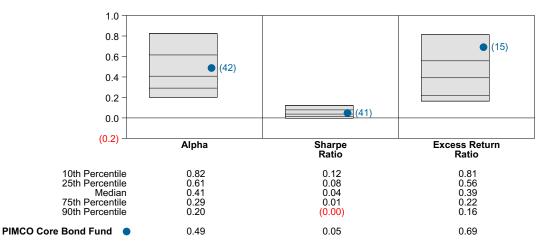
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Returns vs BImbg Aggregate xTreas



Risk Adjusted Return Measures vs Blmbg Aggregate xTreas Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2022



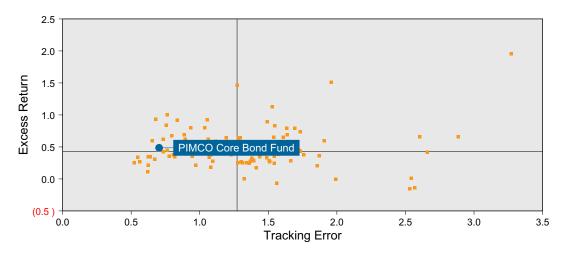


# PIMCO Core Bond Fund Risk Analysis Summary

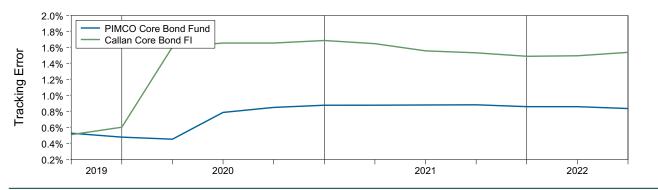
#### **Risk Analysis**

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.

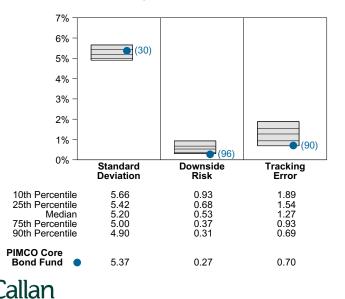
Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2022

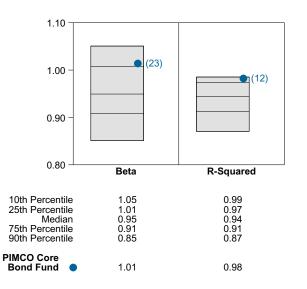










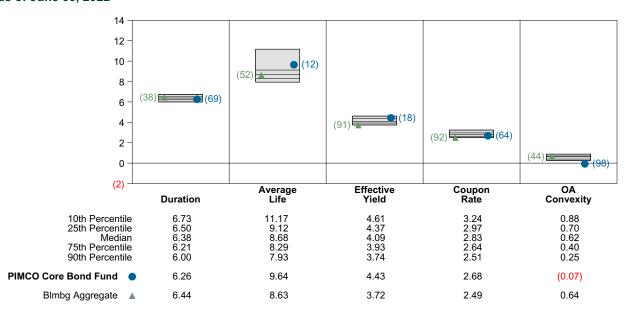


# PIMCO Core Bond Fund Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

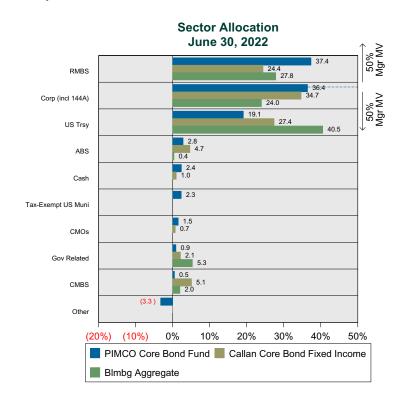
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of June 30, 2022

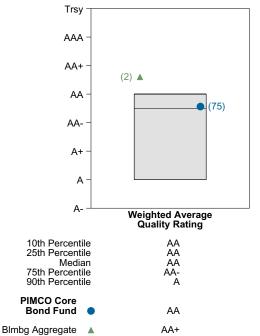


### Sector Allocation and Quality Ratings

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 Callan Core Bond Fixed Income

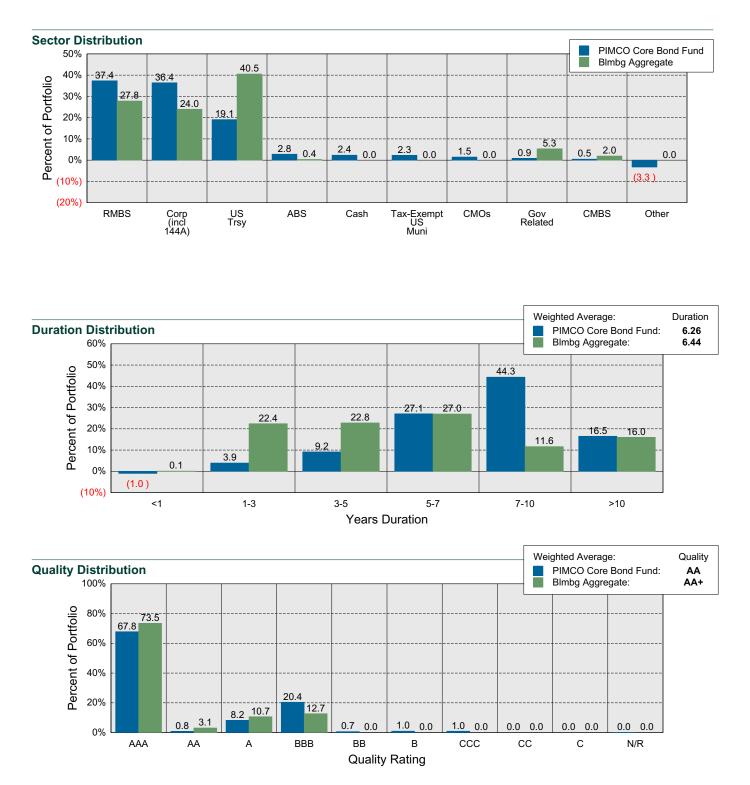




# PIMCO Core Bond Fund Portfolio Characteristics Summary As of June 30, 2022

#### **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.

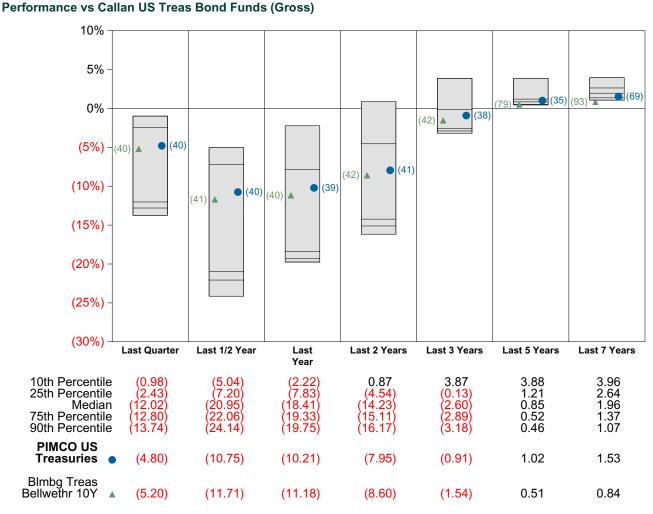


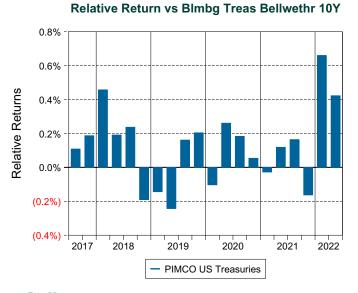
Nominal U.S. Treasuries Managers

# PIMCO US Treasuries Period Ended June 30, 2022

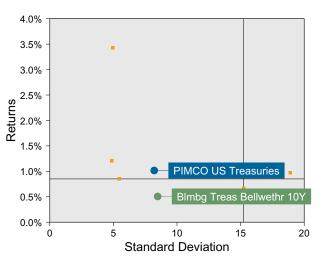
#### **Quarterly Summary and Highlights**

- PIMCO US Treasuries's portfolio posted a (4.80)% return for the quarter placing it in the 40 percentile of the Callan US Treas Bond Funds group for the quarter and in the 39 percentile for the last year.
- PIMCO US Treasuries's portfolio outperformed the BImbg Treas Bellwethr 10Y by 0.40% for the quarter and outperformed the BImbg Treas Bellwethr 10Y for the year by 0.97%.





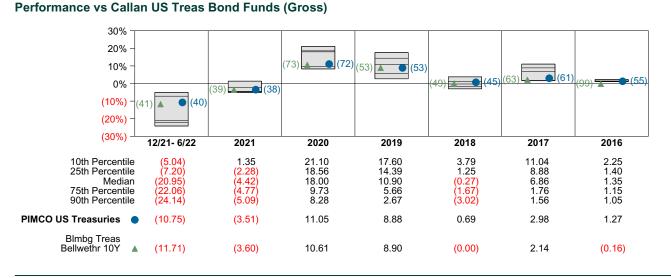




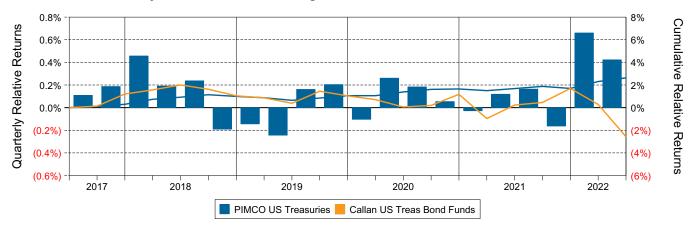
# PIMCO US Treasuries Return Analysis Summary

#### **Return Analysis**

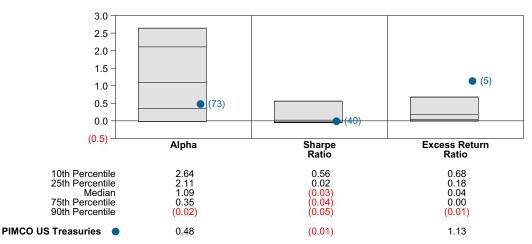
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



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 June 30, 2022



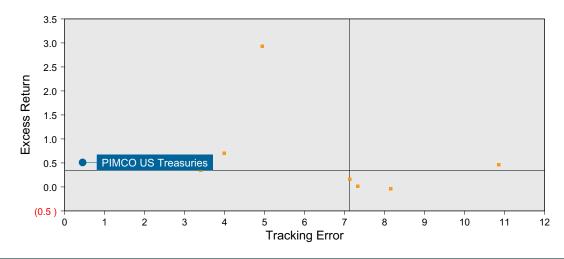


# PIMCO US Treasuries Risk Analysis Summary

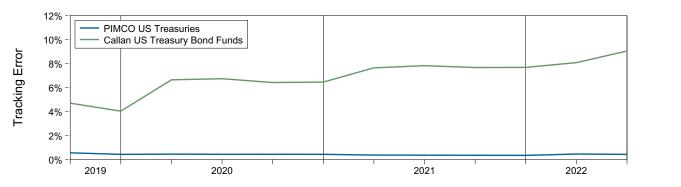
#### **Risk Analysis**

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.

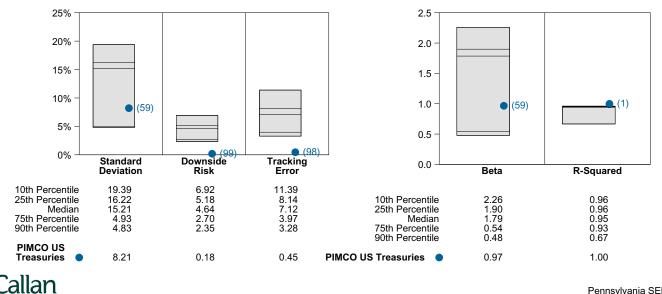
Risk Analysis vs Callan US Treasury Bond Funds (Gross) Five Years Ended June 30, 2022







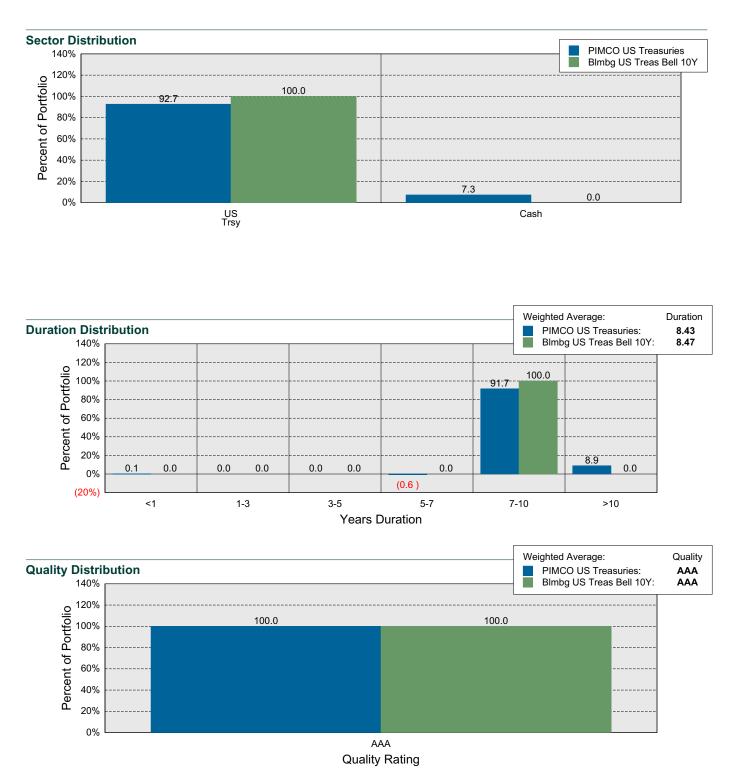




# PIMCO US Treasuries Portfolio Characteristics Summary As of June 30, 2022

#### **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.

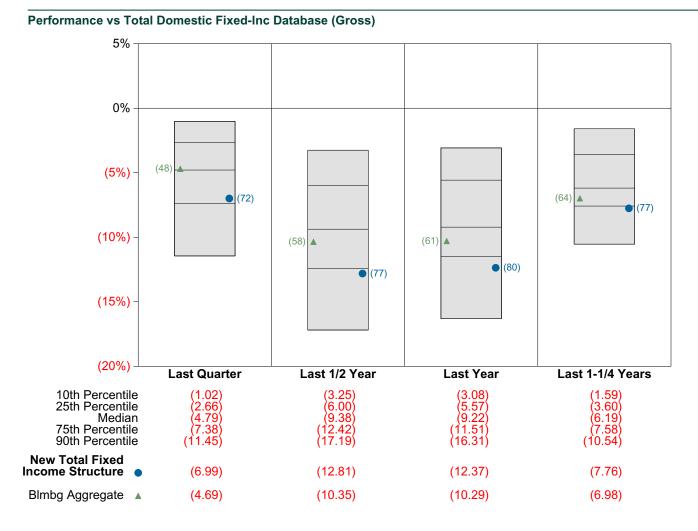


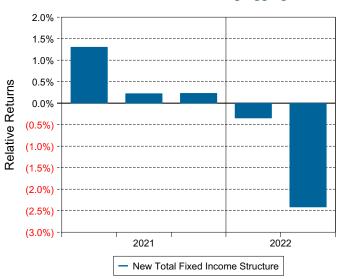
New Total Fixed Income Structure

# New Total Fixed Income Structure Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

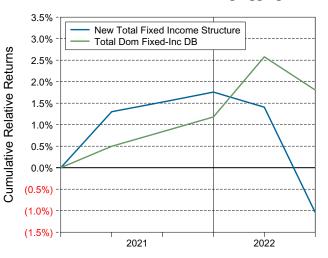
- New Total Fixed Income Structure's portfolio posted a (6.99)% return for the quarter placing it in the 72 percentile of the Total Domestic Fixed-Inc Database group for the quarter and in the 80 percentile for the last year.
- New Total Fixed Income Structure's portfolio underperformed the BImbg Aggregate by 2.30% for the quarter and underperformed the BImbg Aggregate for the year by 2.07%.





#### **Relative Return vs Blmbg Aggregate**

#### **Cumulative Returns vs Blmbg Aggregate**

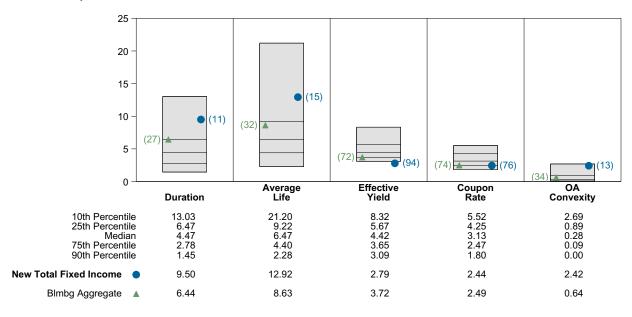


# New Total Fixed Income Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

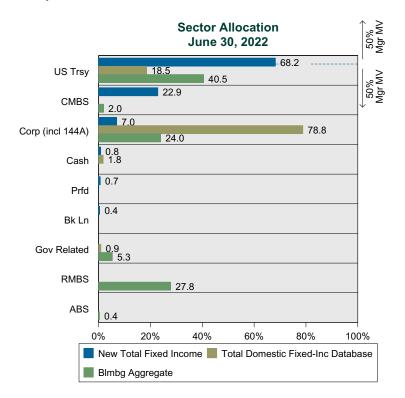
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Total Domestic Fixed-Inc Database as of June 30, 2022

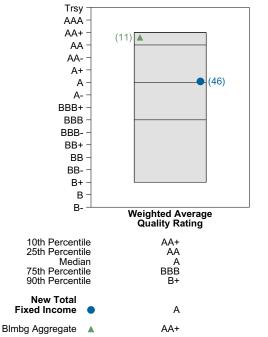


### Sector Allocation and Quality Ratings

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.



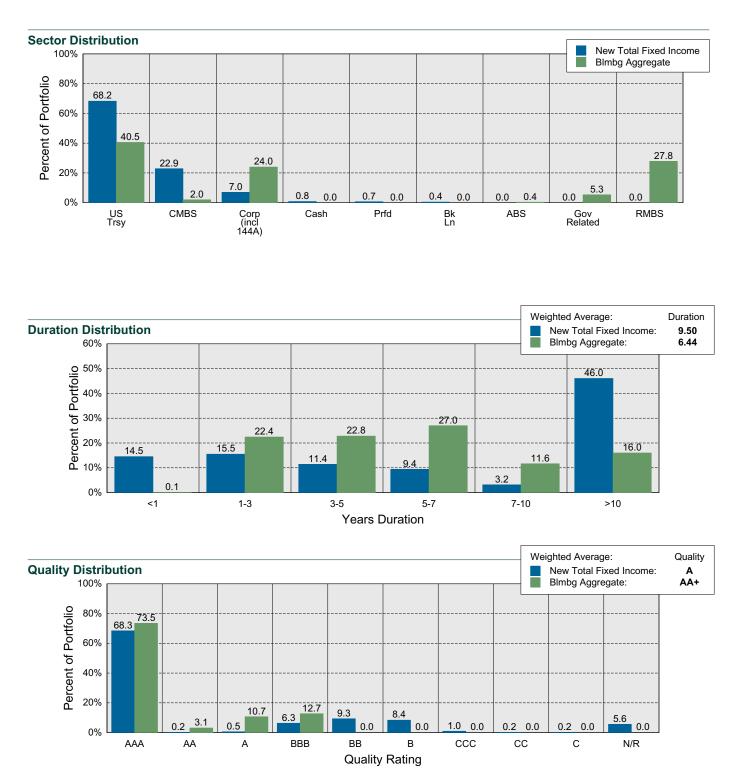
#### Quality Ratings vs Total Domestic Fixed-Inc Database



# New Total Fixed Income Portfolio Characteristics Summary As of June 30, 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.



New Total Fixed Income Managers

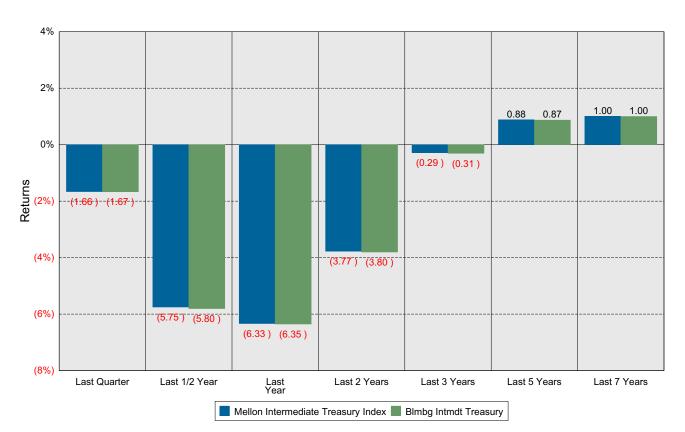
# Mellon Intermediate Treasury Index Period Ended June 30, 2022

#### **Return History**

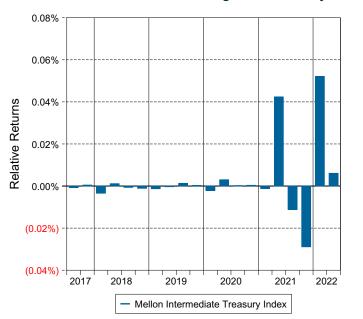
The Mellon Intermediate Treasury Index account was funded in March of 2021. Previous history reflects the manager's composite returns.

#### **Quarterly Summary and Highlights**

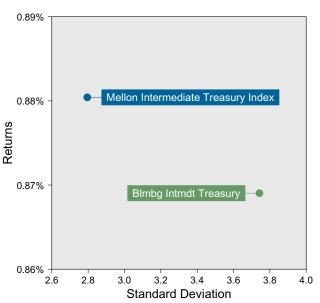
• Mellon Intermediate Treasury Index's portfolio outperformed the Blmbg Intmdt Treasury by 0.01% for the quarter and outperformed the Blmbg Intmdt Treasury for the year by 0.02%.



Relative Return vs Blmbg Intmdt Treasury



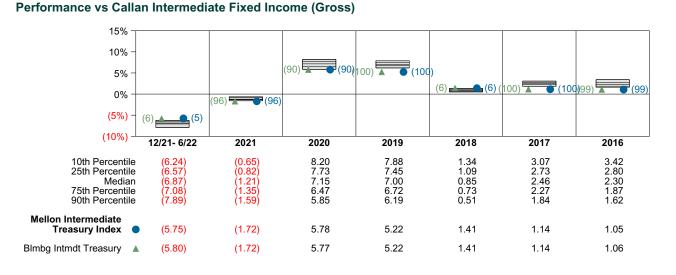
#### Annualized Five Year Risk vs Return



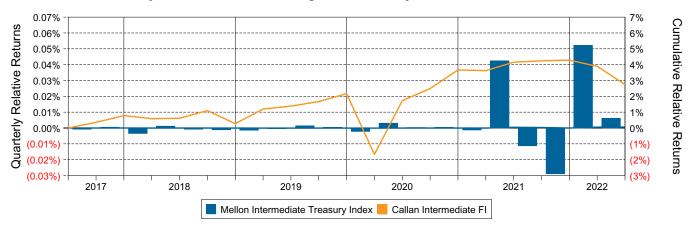
# Mellon Intermediate Treasury Index Return Analysis Summary

#### **Return Analysis**

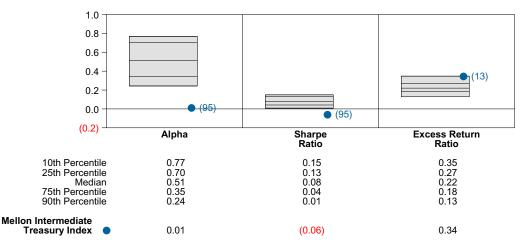
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Returns vs Blmbg Intmdt Treasury



Risk Adjusted Return Measures vs Blmbg Intmdt Treasury Rankings Against Callan Intermediate Fixed Income (Gross) Five Years Ended June 30, 2022

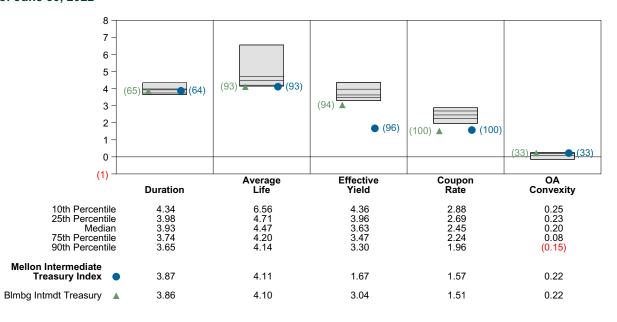


# Mellon Intermediate Treasury Index Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

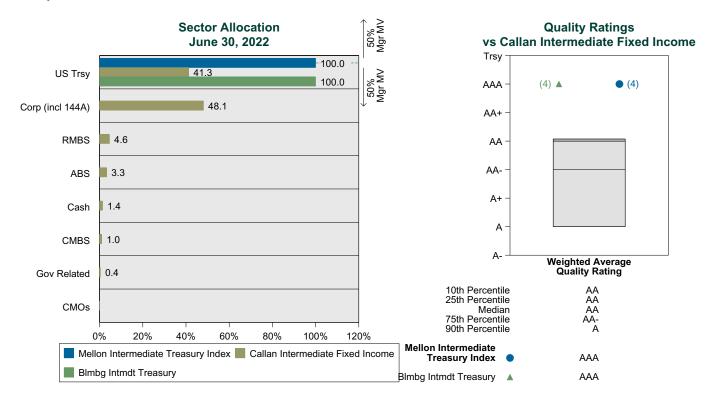
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Intermediate Fixed Income as of June 30, 2022



### Sector Allocation and Quality Ratings

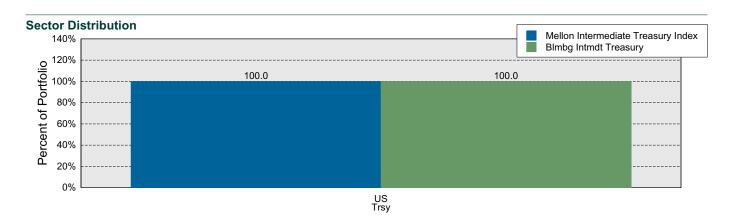
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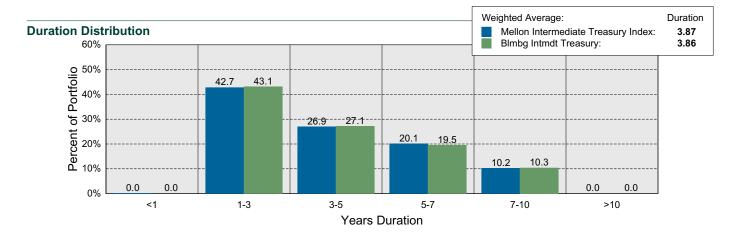


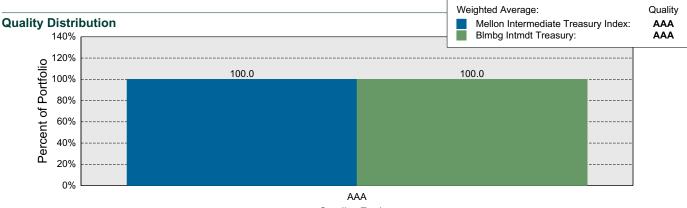
# Mellon Intermediate Treasury Index Portfolio Characteristics Summary As of June 30, 2022

# 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.







Quality Rating



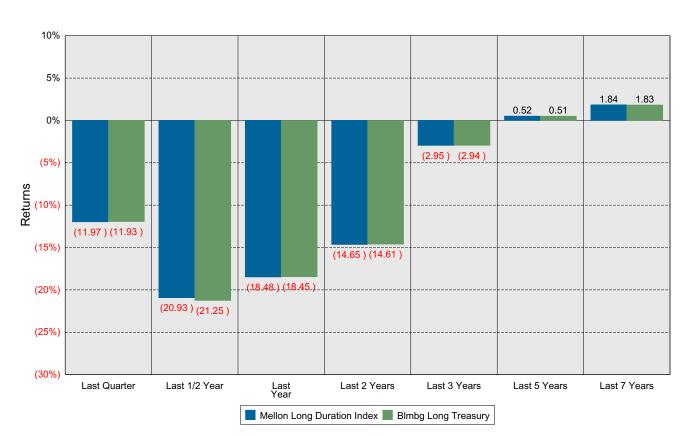
# Mellon Long Duration Index Period Ended June 30, 2022

#### **Return History**

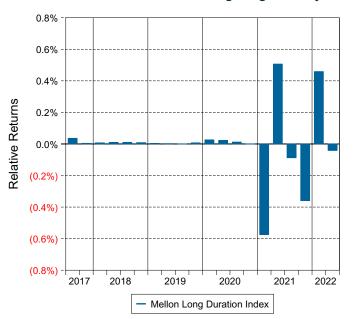
The Mellon Long Duration Index account was funded in March of 2021. Previous history reflects the manager's composite returns.

#### **Quarterly Summary and Highlights**

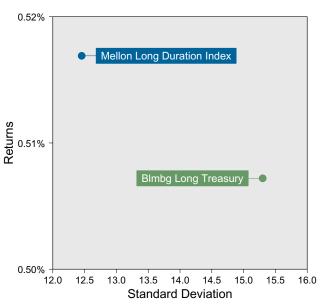
• Mellon Long Duration Index's portfolio underperformed the Blmbg Long Treasury by 0.04% for the quarter and underperformed the Blmbg Long Treasury for the year by 0.03%.



Relative Return vs Blmbg Long Treasury



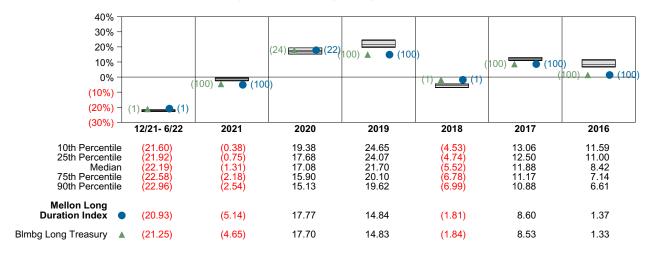




# Mellon Long Duration Index Return Analysis Summary

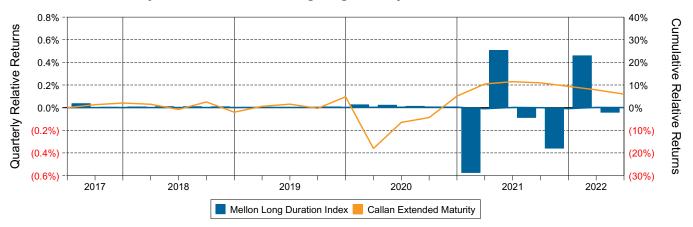
#### **Return Analysis**

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.

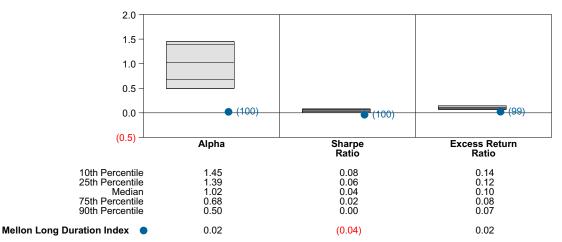


Performance vs Callan Extended Maturity Fixed Income (Gross)

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 June 30, 2022



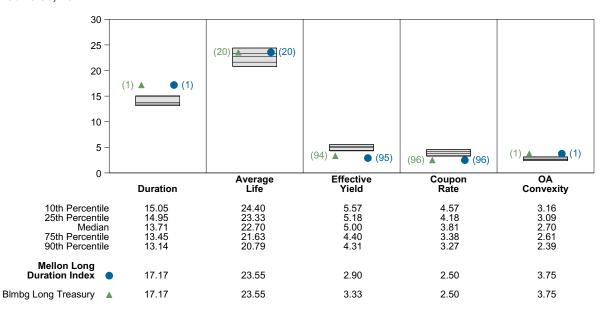


# Mellon Long Duration Index Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

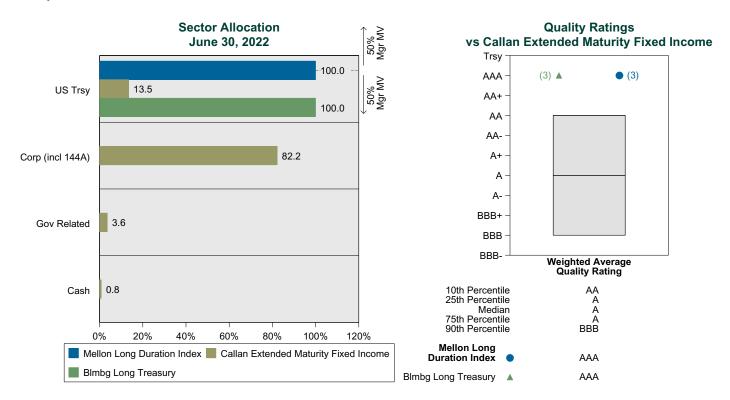
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Extended Maturity Fixed Income as of June 30, 2022



### Sector Allocation and Quality Ratings

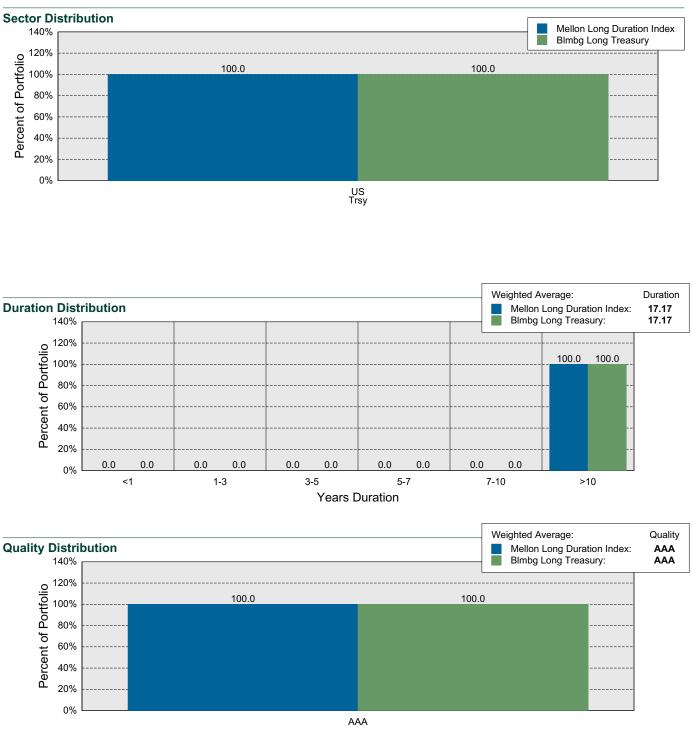
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



# Mellon Long Duration Index Portfolio Characteristics Summary As of June 30, 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.



Quality Rating



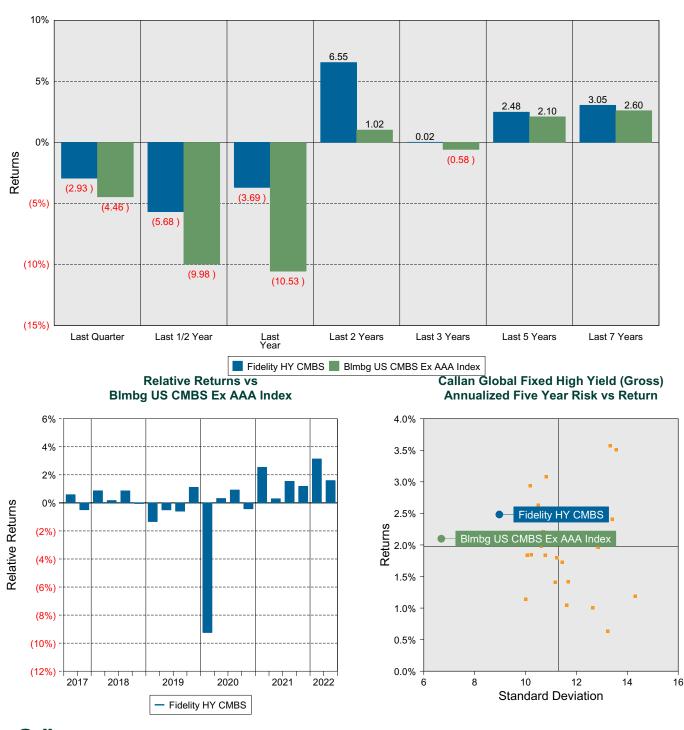
# Fidelity HY CMBS Period Ended June 30, 2022

#### Asset Class Membership Changes

On 03/01/2021, the Fidelity HY CMBS account switched from the Opportunistic Fixed composite to the High Yield composite under the new fixed income structure.

#### **Quarterly Summary and Highlights**

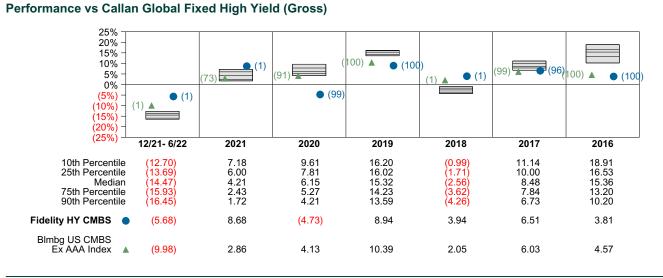
- Fidelity HY CMBS's portfolio posted a (2.93)% return for the quarter placing it in the 1 percentile of the Callan Global Fixed High Yield group for the quarter and in the 1 percentile for the last year.
- Fidelity HY CMBS's portfolio outperformed the BImbg US CMBS Ex AAA Index by 1.52% for the quarter and outperformed the BImbg US CMBS Ex AAA Index for the year by 6.84%.



# Fidelity HY CMBS Return Analysis Summary

#### **Return Analysis**

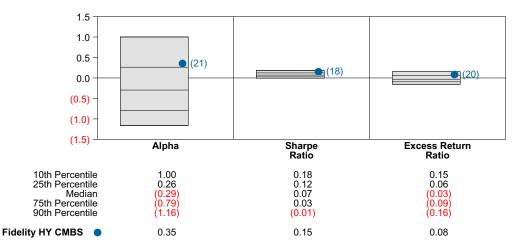
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



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 June 30, 2022



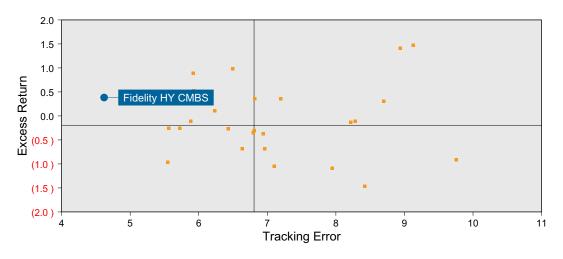


# **Fidelity HY CMBS Risk Analysis Summary**

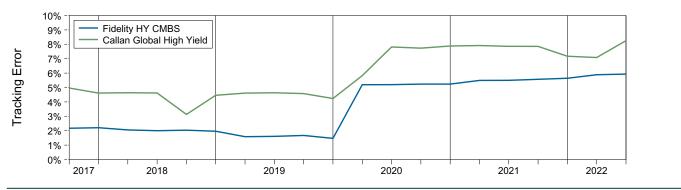
#### **Risk Analysis**

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

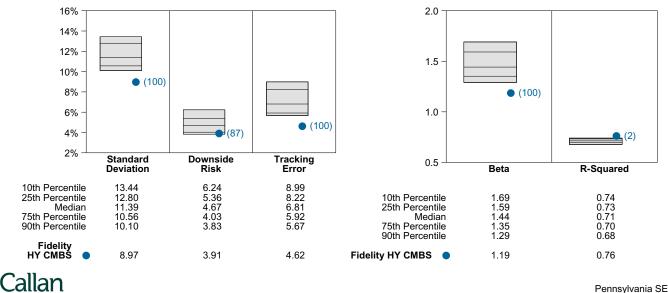
Risk Analysis vs Callan Global Fixed High Yield (Gross) Five Years Ended June 30, 2022









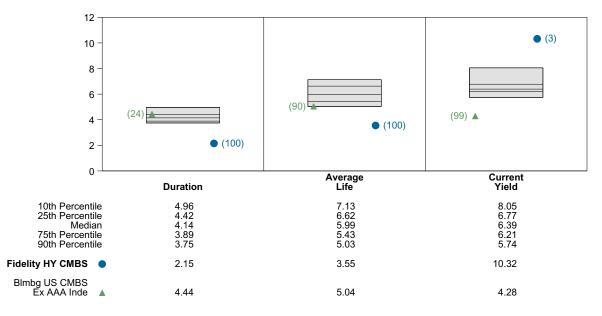


# Fidelity HY CMBS Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

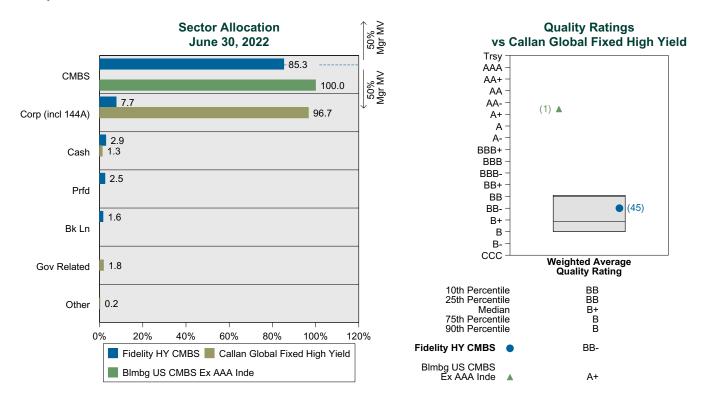
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed High Yield as of June 30, 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.

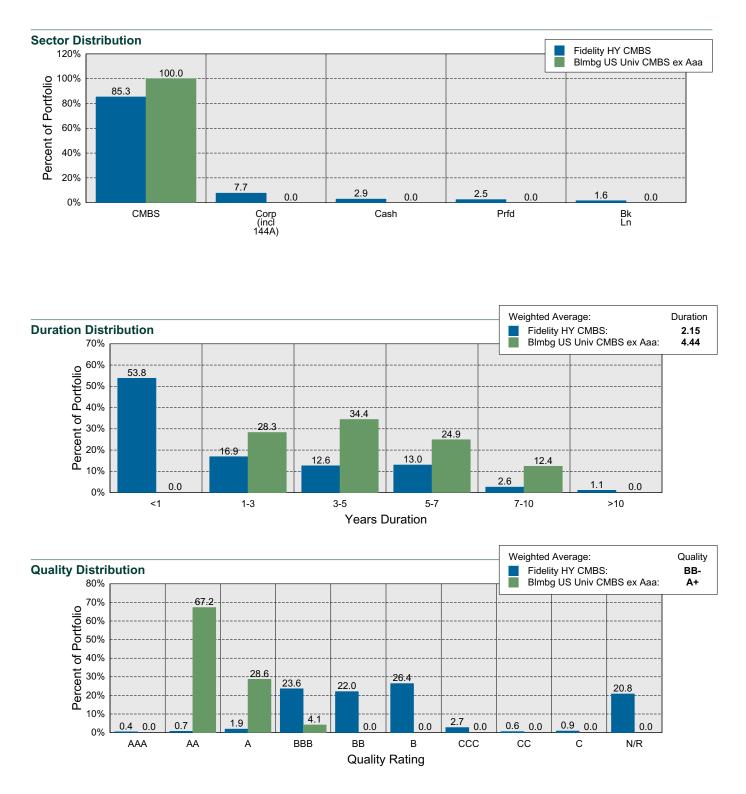




# Fidelity HY CMBS Portfolio Characteristics Summary As of June 30, 2022

# 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.



# Mellon High Yield Beta Period Ended June 30, 2022

#### **Return History**

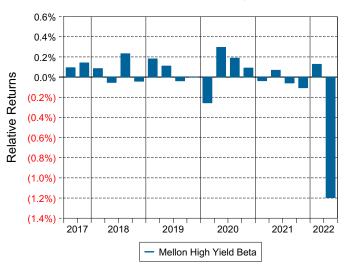
The Mellon High Yield Beta account was funded in May of 2021. Previous history reflects the manager's composite returns.

#### **Quarterly Summary and Highlights**

- Mellon High Yield Beta's portfolio posted a (10.91)% return for the quarter placing it in the 94 percentile of the Callan High Yield Fixed Income group for the quarter and in the 92 percentile for the last year.
- Mellon High Yield Beta's portfolio underperformed the Blmbg HY Corp by 1.08% for the quarter and underperformed the Blmbg HY Corp for the year by 1.08%.

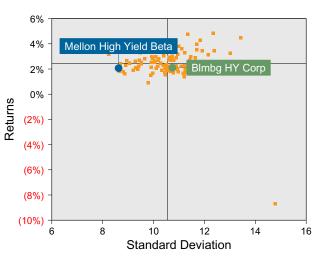
Performance vs Callan High Yield Fixed Income (Gross)





#### Relative Return vs Blmbg HY Corp

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



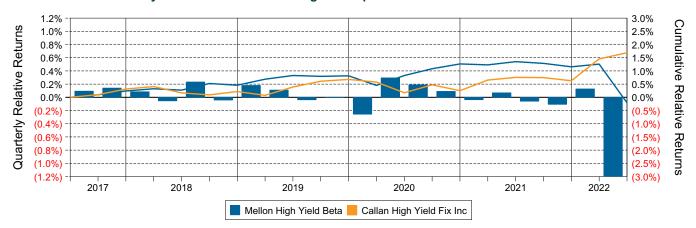
# Mellon High Yield Beta Return Analysis Summary

#### **Return Analysis**

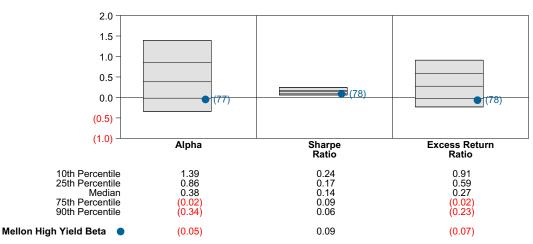
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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

#### Performance vs Callan High Yield Fixed Income (Gross) 25% 20% 15) 15% (68) (56) 10% (32) (55) (43) (57) (61) 5% 0% (46) (5%) (10%) (15%) (91)(20%) 12/21-6/22 2021 2020 2019 2018 2017 2016 8.97 8.83 10th Percentile (11.31)7.77 16.76 (0.76)17.76 6.54 5.50 4.78 7.95 6.72 15.79 15.09 8.35 7.65 7.03 16.20 14.79 25th Percentile (12.44) (1.47) Median 13.42) (2.20) 75th Percentile 14.09 5.86 4.57 14.04 (2.79 13.62 90th Percentile (15.02) 4.31 12.87 (3.75) 6.43 11.47 Mellon High Yield Beta 5.14 7.45 14.61 7.89 17.07 (15.11)(1.87)Blmbg HY Corp 5.28 14.32 7.50 17.13 (14.19)7.11 (2.08)

Cumulative and Quarterly Relative Returns vs Blmbg HY Corp



Risk Adjusted Return Measures vs Blmbg HY Corp Rankings Against Callan High Yield Fixed Income (Gross) Five Years Ended June 30, 2022





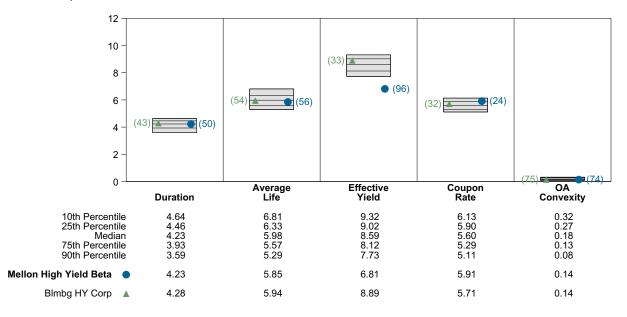
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# Mellon High Yield Beta Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

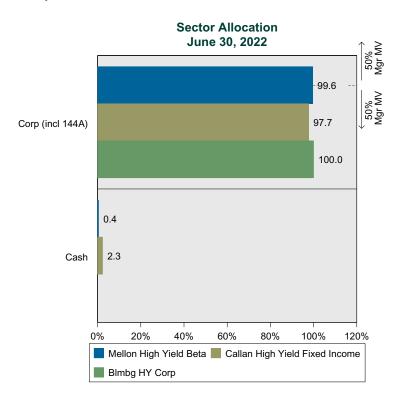
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan High Yield Fixed Income as of June 30, 2022

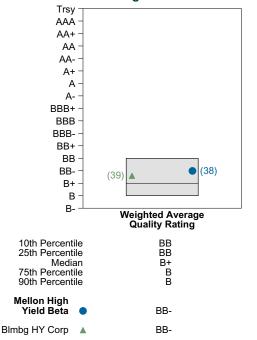


### Sector Allocation and Quality Ratings

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.



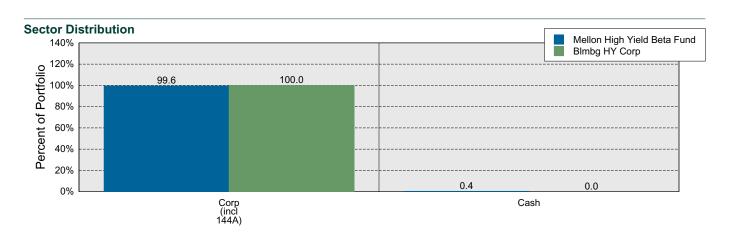
#### Quality Ratings vs Callan High Yield Fixed Income

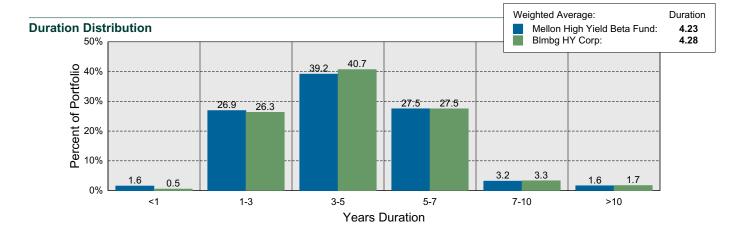


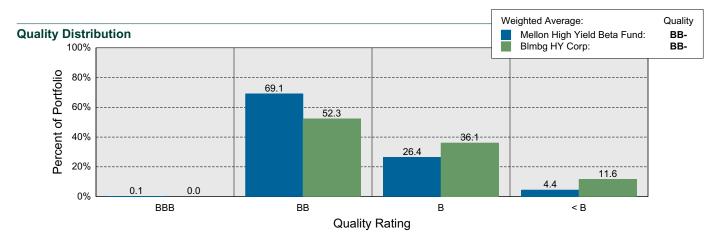
# Mellon High Yield Beta Fund Portfolio Characteristics Summary As of June 30, 2022

### **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.







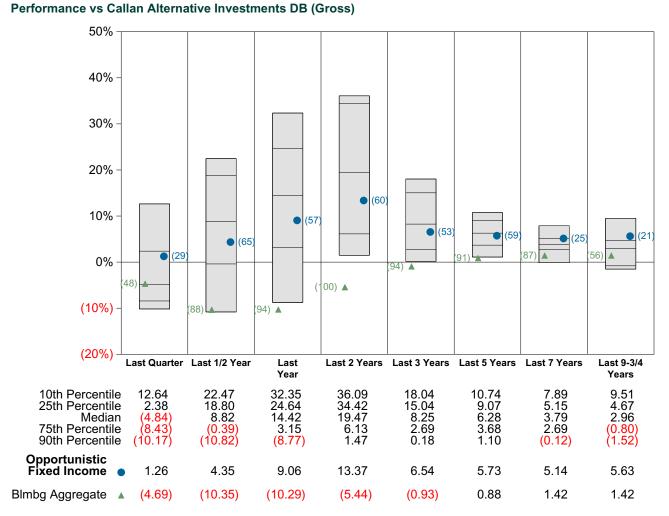


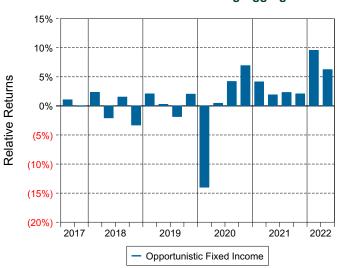
Opportunistic Fixed Income

## Opportunistic Fixed Income Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

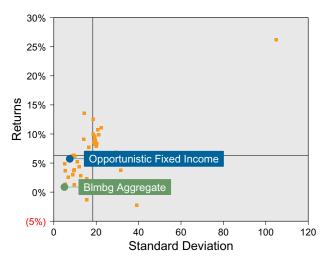
- Opportunistic Fixed Income's portfolio posted a 1.26% return for the quarter placing it in the 29 percentile of the Callan Alternative Investments DB group for the quarter and in the 57 percentile for the last year.
- Opportunistic Fixed Income's portfolio outperformed the Blmbg Aggregate by 5.95% for the quarter and outperformed the Blmbg Aggregate for the year by 19.35%.





**Relative Return vs Blmbg Aggregate** 

Callan Alternative Investments DB (Gross) Annualized Five Year Risk vs Return

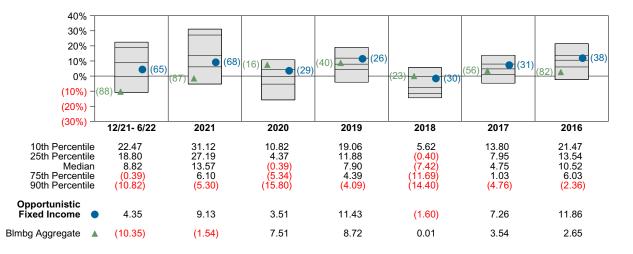


## Opportunistic Fixed Income Return Analysis Summary

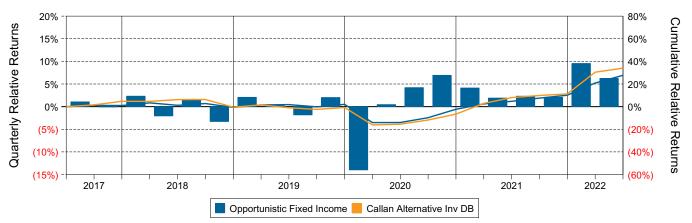
#### **Return Analysis**

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.

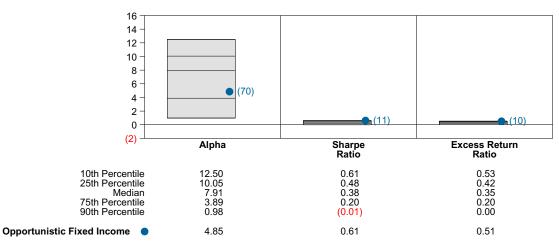




Cumulative and Quarterly Relative Returns vs Blmbg Aggregate



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Alternative Inv DB (Gross) Five Years Ended June 30, 2022





Opportunistic Fixed Income Managers

## Blackstone Keystone Period Ended June 30, 2022

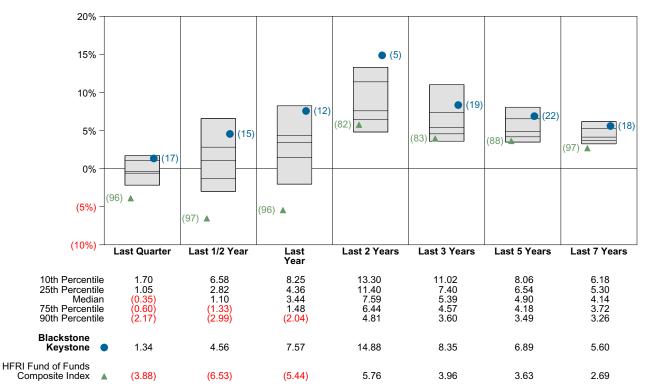
#### Asset Class Membership Changes

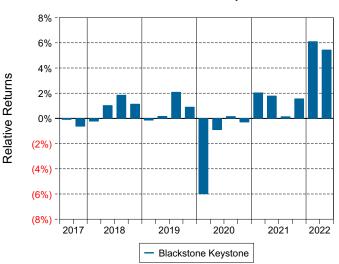
Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017, included in the Multi-Strategy composite from 10/01/2017 through 12/31/2019, included in the Opportunistic Fixed composite from 01/01/2020 through 12/31/2020, included in the Private Credit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

#### **Quarterly Summary and Highlights**

- Blackstone Keystone's portfolio posted a 1.34% return for the quarter placing it in the 17 percentile of the Callan Absolute Rtn Hedge Fund of Funds group for the quarter and in the 12 percentile for the last year.
- Blackstone Keystone's portfolio outperformed the HFRI Fund of Funds Composite Index by 5.22% for the quarter and outperformed the HFRI Fund of Funds Composite Index for the year by 13.01%.

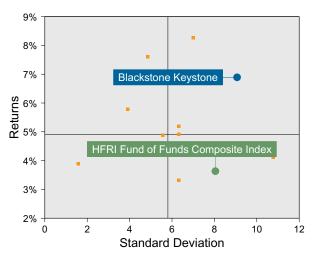
Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)





Relative Returns vs HFRI Fund of Funds Composite Index

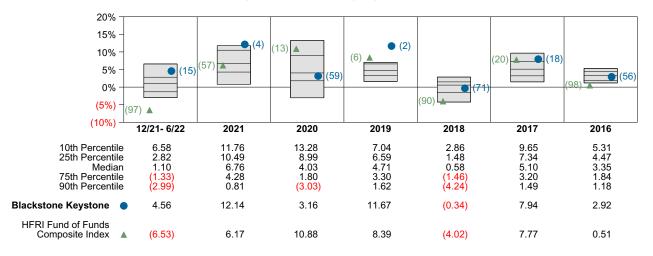
Callan Absolute Rtn Hedge Fund of Funds (Net) Annualized Five Year Risk vs Return



## Blackstone Keystone Return Analysis Summary

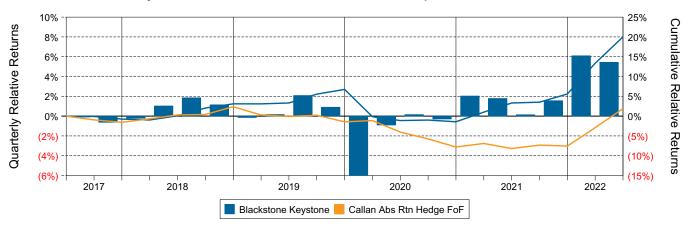
#### **Return Analysis**

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.

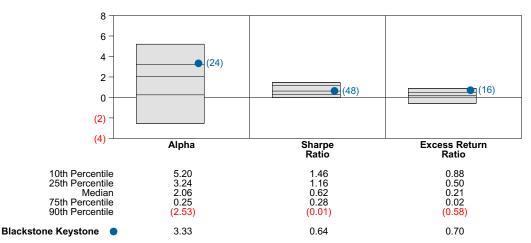


Performance vs Callan Absolute Rtn Hedge Fund of Funds (Net)

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 June 30, 2022



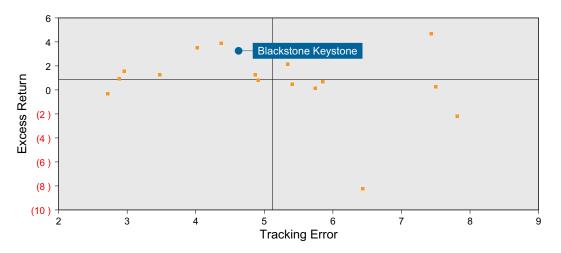


## Blackstone Keystone Risk Analysis Summary

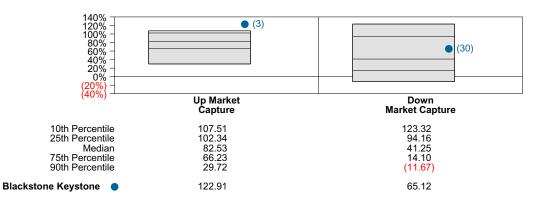
#### **Risk Analysis**

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.

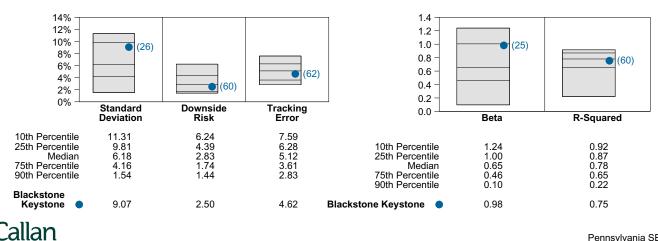
Risk Analysis vs Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2022



Market Capture vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2022



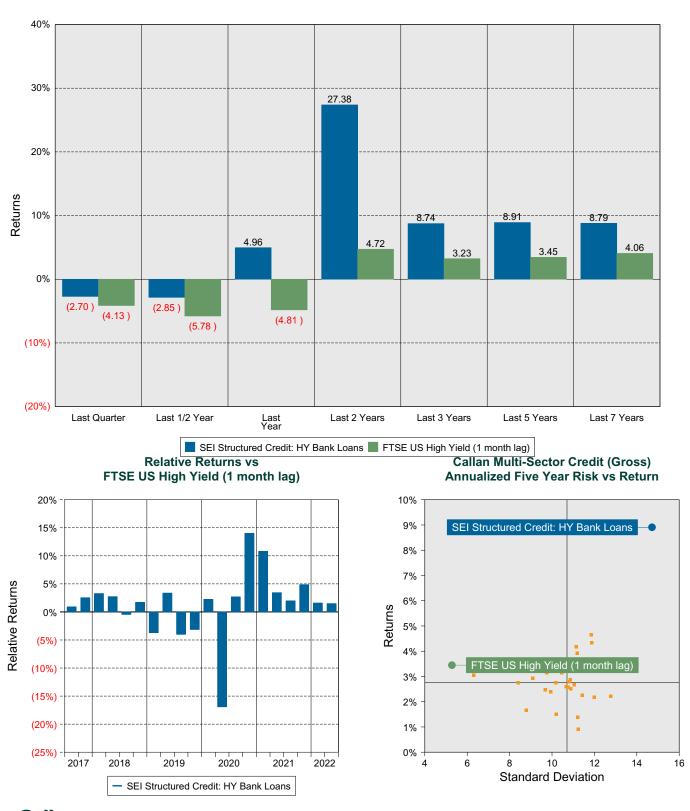
Risk Statistics Rankings vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2022



## SEI Structured Credit: HY Bank Loans Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

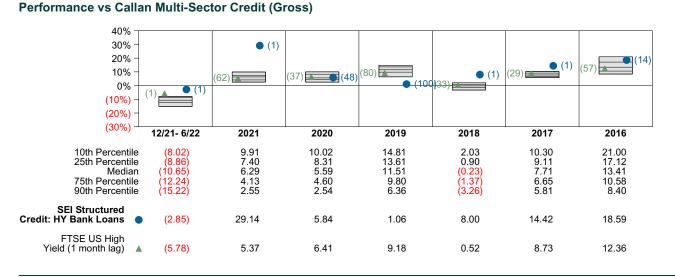
- SEI Structured Credit: HY Bank Loans's portfolio posted a (2.70)% return for the quarter placing it in the 1 percentile of the Callan Multi-Sector Credit group for the quarter and in the 1 percentile for the last year.
- SEI Structured Credit: HY Bank Loans's portfolio outperformed the FTSE US High Yield (1 month lag) by 1.43% for the quarter and outperformed the FTSE US High Yield (1 month lag) for the year by 9.77%.



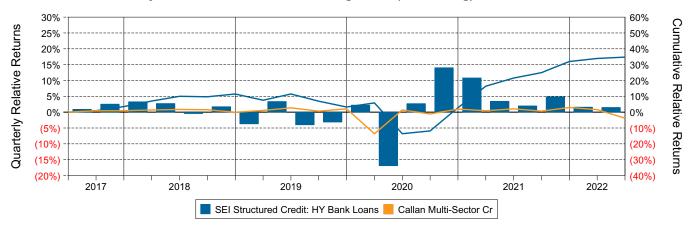
## SEI Structured Credit: HY Bank Loans Return Analysis Summary

#### **Return Analysis**

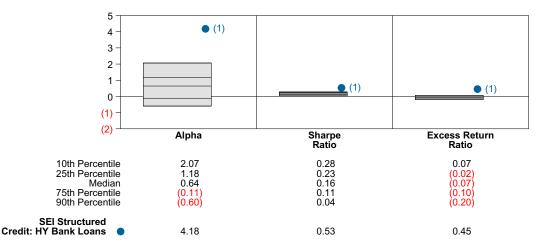
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



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







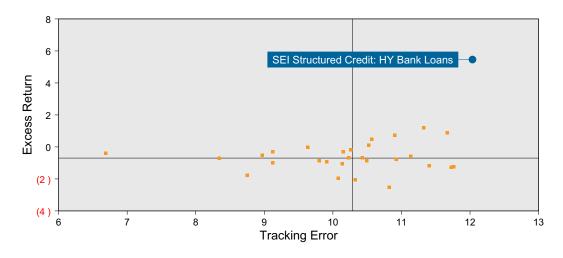


## SEI Structured Credit: HY Bank Loans **Risk Analysis Summary**

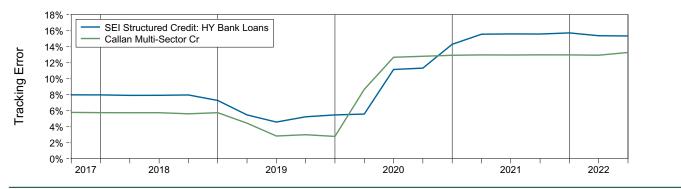
#### **Risk Analysis**

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

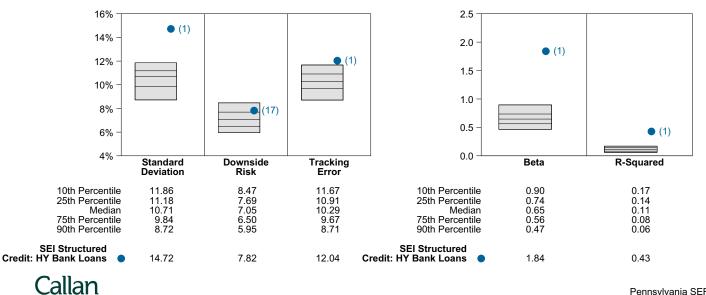
Risk Analysis vs Callan Multi-Sector Credit (Gross) Five Years Ended June 30, 2022











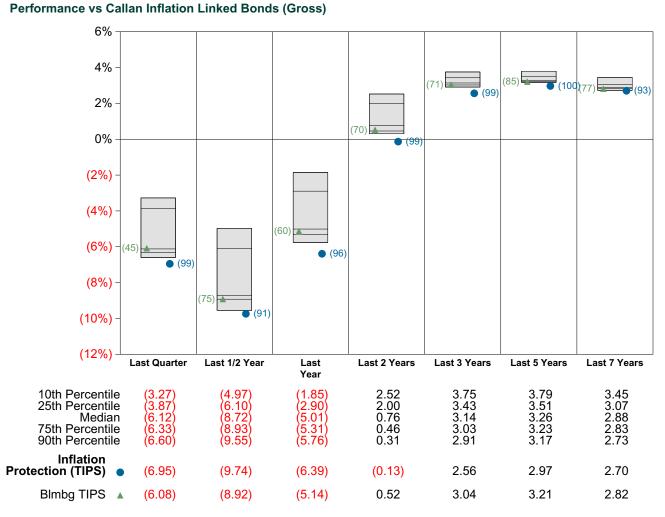
Pennsylvania SERS 257

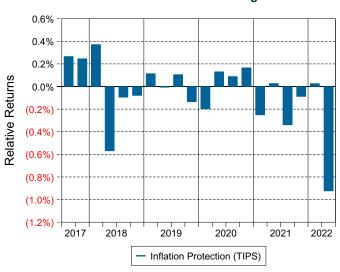
Inflation Protection (TIPS)

## Inflation Protection (TIPS) Period Ended June 30, 2022

#### **Quarterly Summary and Highlights**

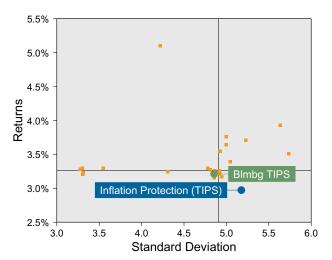
- Inflation Protection (TIPS)'s portfolio posted a (6.95)% return for the quarter placing it in the 99 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 96 percentile for the last year.
- Inflation Protection (TIPS)'s portfolio underperformed the Blmbg TIPS by 0.87% for the quarter and underperformed the Blmbg TIPS for the year by 1.25%.





**Relative Return vs Blmbg TIPS** 

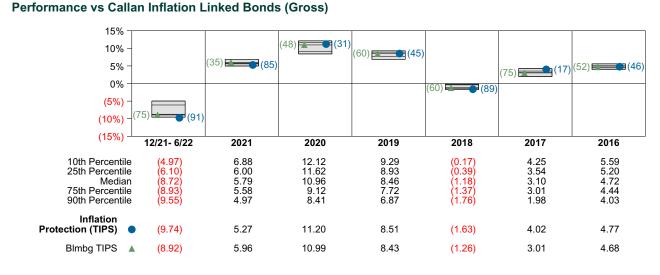
Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return



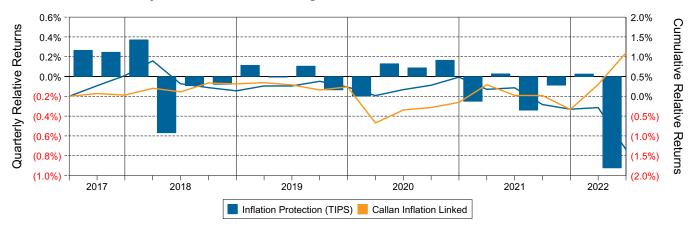
## Inflation Protection (TIPS) Return Analysis Summary

#### **Return Analysis**

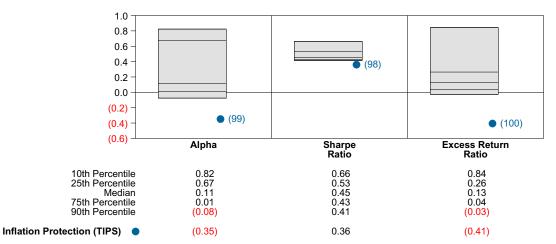
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



#### **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 June 30, 2022



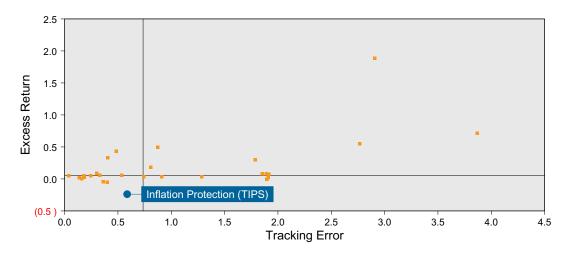


## Inflation Protection (TIPS) Risk Analysis Summary

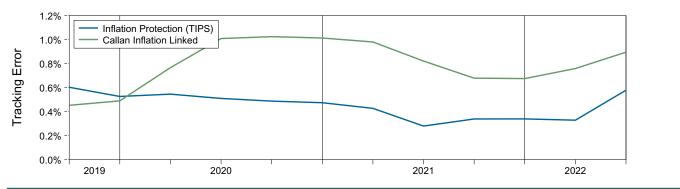
#### **Risk Analysis**

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.

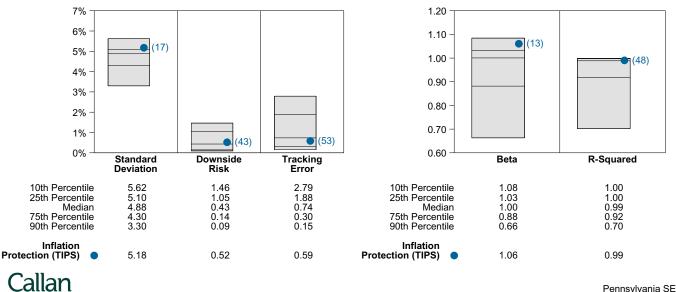
Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2022









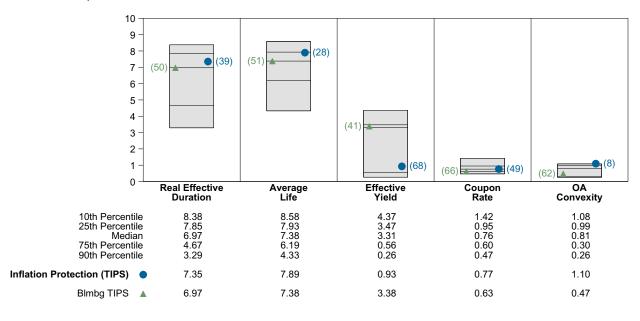


## Inflation Protection (TIPS) Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

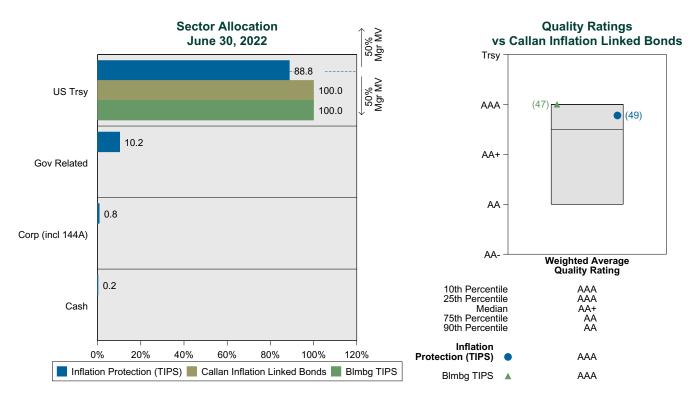
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 2022



#### Sector Allocation and Quality Ratings

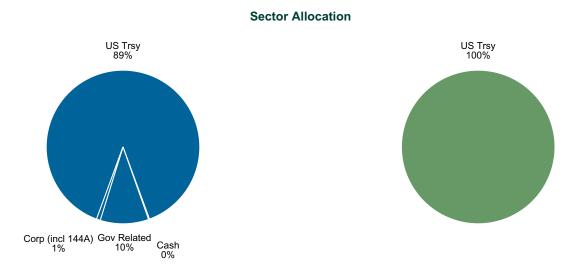
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



## Inflation Protection (TIPS) Portfolio Characteristics Summary As of June 30, 2022

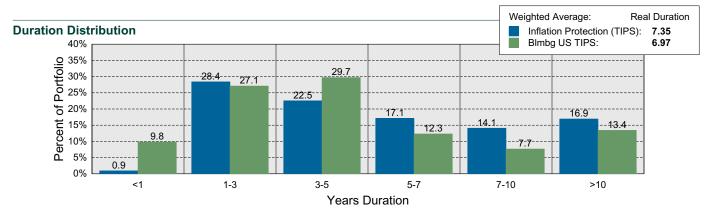
#### **Portfolio Structure Comparison**

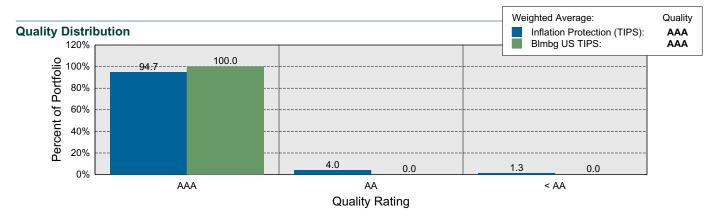
The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution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



**Inflation Protection (TIPS)** 









Inflation Protection (TIPS) Managers

## Brown Brothers TIPS Period Ended June 30, 2022

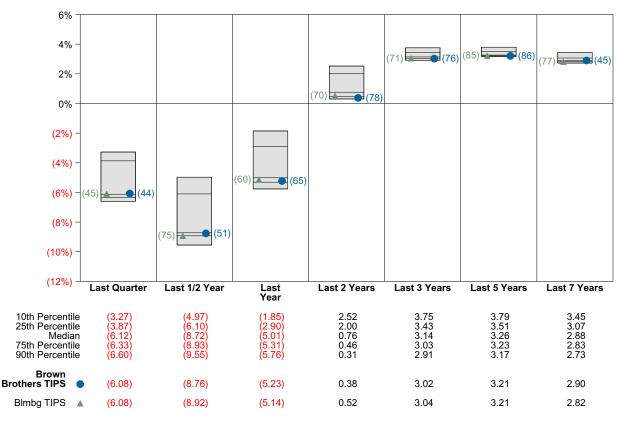
#### **Investment Philosophy**

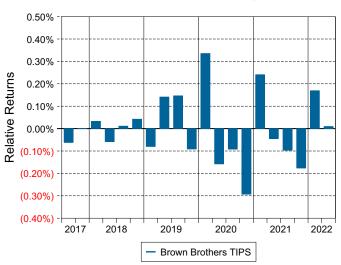
The BBH U.S. TIPS strategy seeks to capture a range of fundamentally-based and technically-based opportunities in the inflation-indexed securities market.

#### **Quarterly Summary and Highlights**

- Brown Brothers TIPS's portfolio posted a (6.08)% return for the quarter placing it in the 44 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 65 percentile for the last year.
- Brown Brothers TIPS's portfolio outperformed the Blmbg TIPS by 0.01% for the quarter and underperformed the Blmbg TIPS for the year by 0.09%.

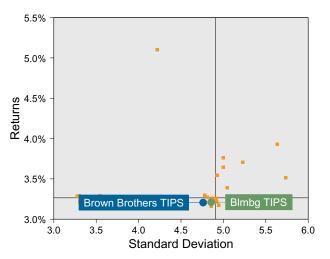
#### Performance vs Callan Inflation Linked Bonds (Gross)





#### **Relative Return vs Blmbg TIPS**

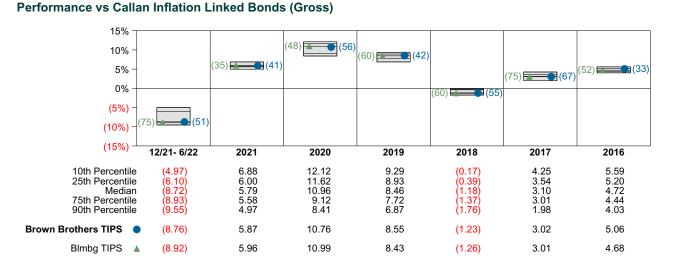
#### Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return



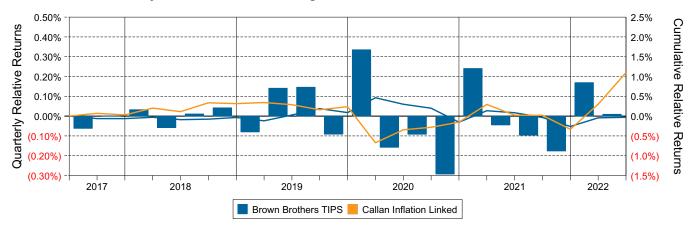
## Brown Brothers TIPS Return Analysis Summary

#### **Return Analysis**

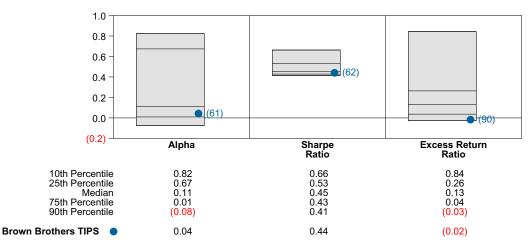
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



#### **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 June 30, 2022





## **Brown Brothers TIPS Risk Analysis Summary**

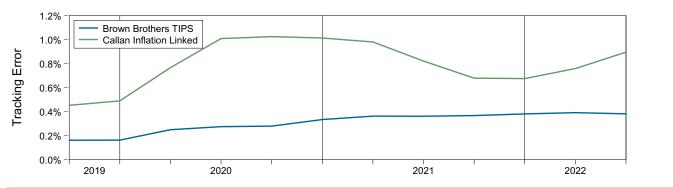
#### **Risk Analysis**

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.

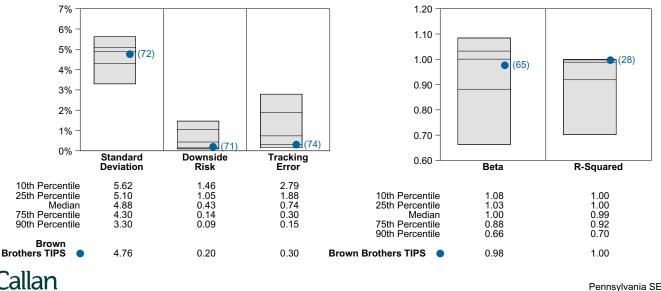
**Risk Analysis vs Callan Inflation Linked Bonds (Gross)** Five Years Ended June 30, 2022









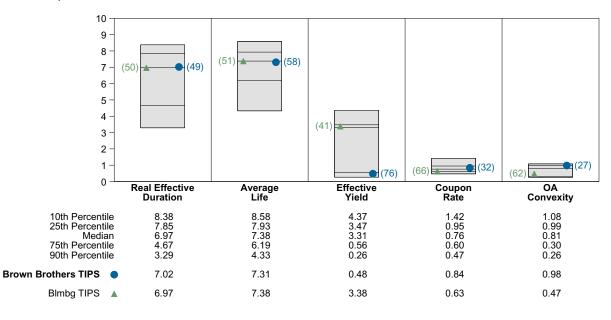


## Brown Brothers TIPS Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

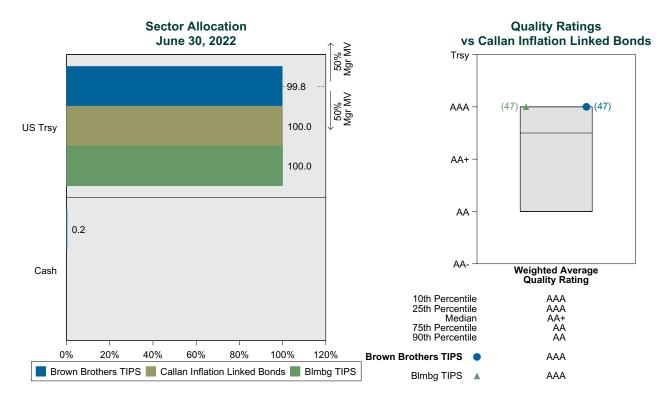
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 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 June 30, 2022

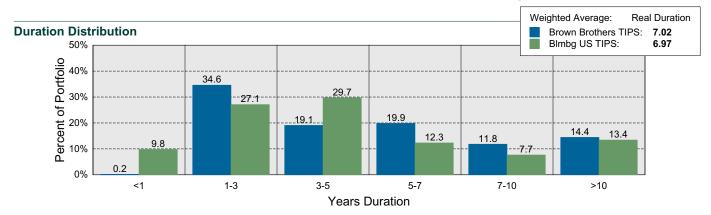
#### **Portfolio Structure Comparison**

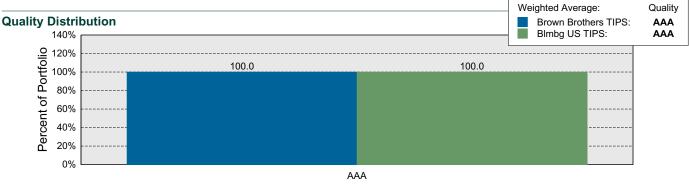
The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution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



## **Brown Brothers TIPS**







Quality Rating



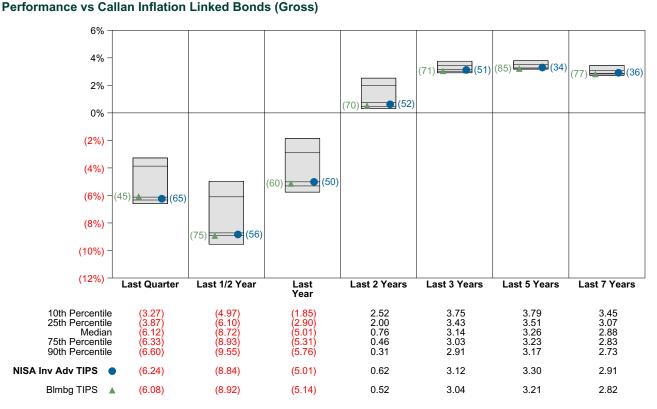
## NISA Inv Adv TIPS Period Ended June 30, 2022

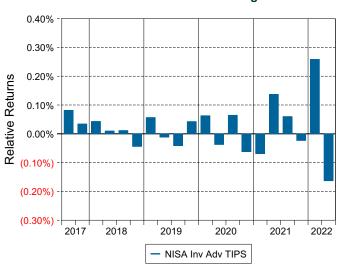
#### **Investment Philosophy**

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**

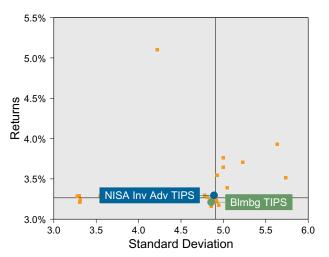
- NISA Inv Adv TIPS's portfolio posted a (6.24)% return for the quarter placing it in the 65 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 50 percentile for the last year.
- NISA Inv Adv TIPS's portfolio underperformed the Blmbg TIPS by 0.15% for the quarter and outperformed the Blmbg TIPS for the year by 0.12%.





#### Relative Return vs Blmbg TIPS

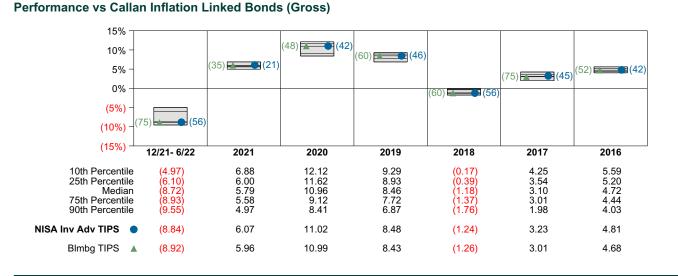
#### Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return



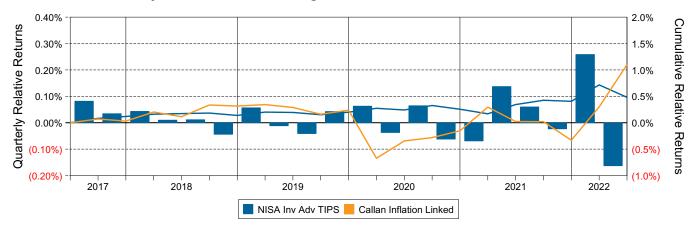
## NISA Inv Adv TIPS Return Analysis Summary

#### **Return Analysis**

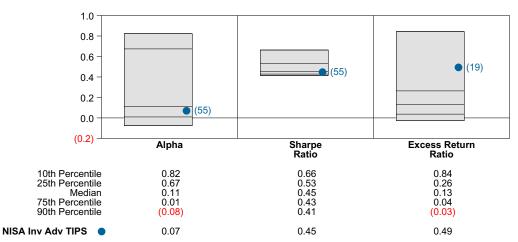
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



#### **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 June 30, 2022



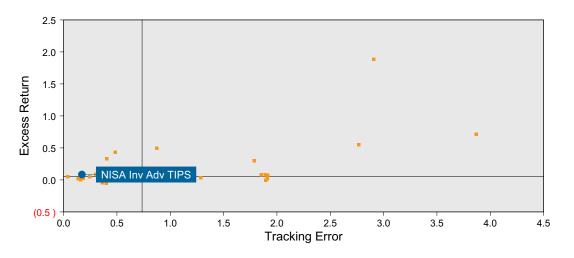


## **NISA Inv Adv TIPS Risk Analysis Summary**

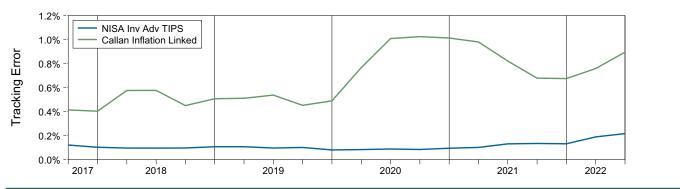
#### **Risk Analysis**

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.

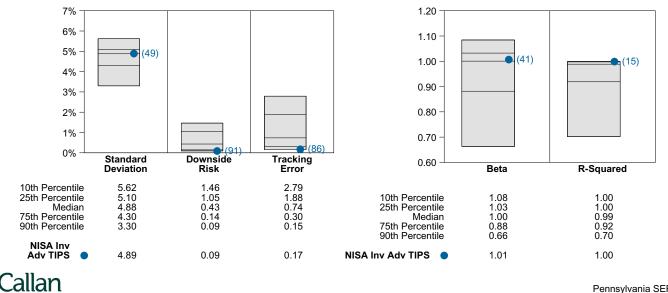
**Risk Analysis vs Callan Inflation Linked Bonds (Gross)** Five Years Ended June 30, 2022









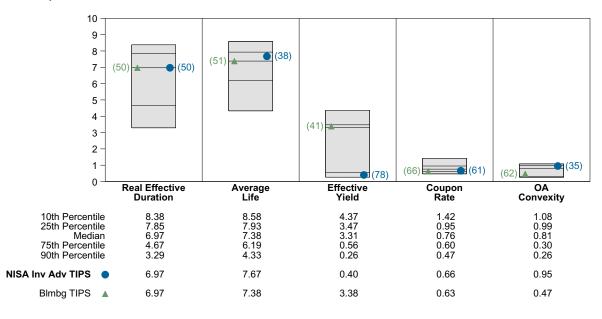


## NISA Inv Adv TIPS Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

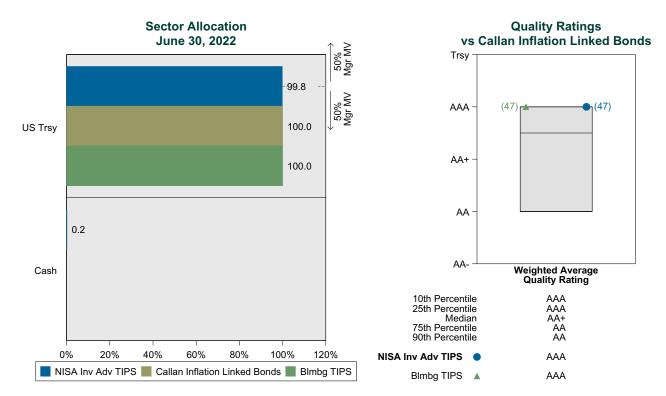
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 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.

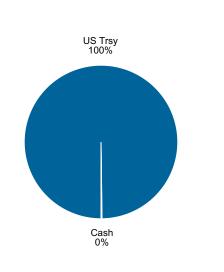


## NISA Inv Adv TIPS Portfolio Characteristics Summary As of June 30, 2022

#### **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.

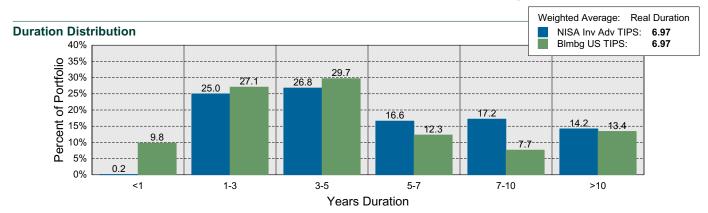
**Sector Allocation** 

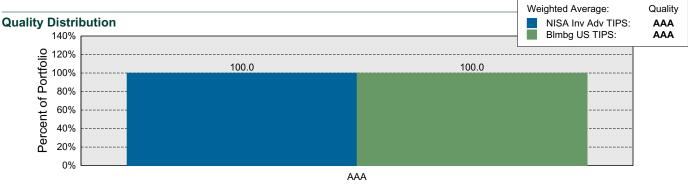


US Trsy 100%

## **NISA Inv Adv TIPS**







Quality Rating



## New Century Global TIPS Period Ended June 30, 2022

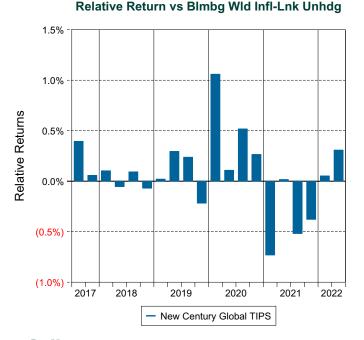
#### **Investment Philosophy**

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.

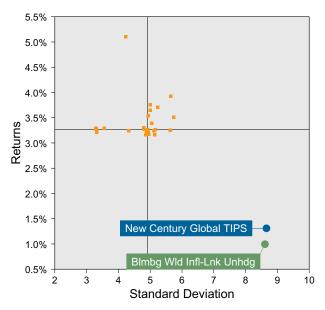
#### **Quarterly Summary and Highlights**

- New Century Global TIPS's portfolio posted a (12.90)% return for the quarter placing it in the 100 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 0.27% for the quarter and underperformed the Blmbg Wld Infl-Lnk Unhdg for the year by 0.46%.





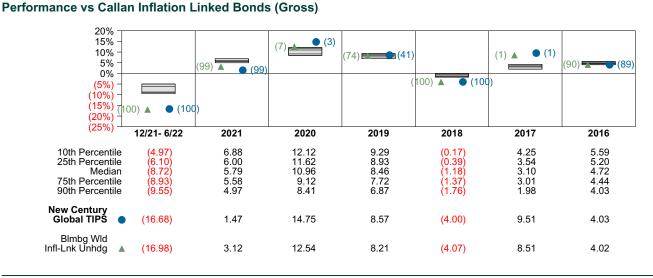




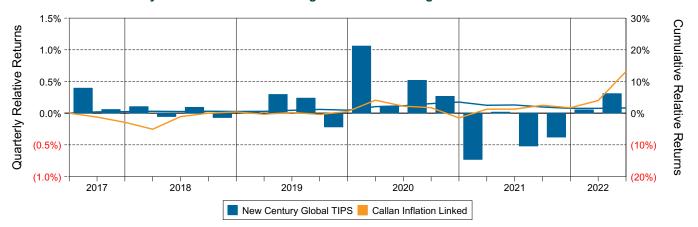
## New Century Global TIPS Return Analysis Summary

#### **Return Analysis**

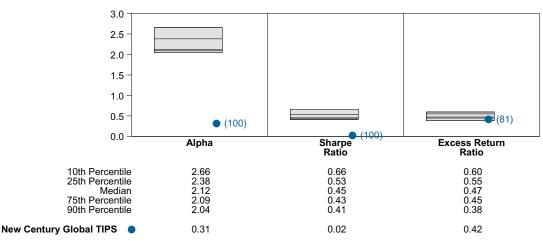
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Returns vs Blmbg Wld Infl-Lnk Unhdg







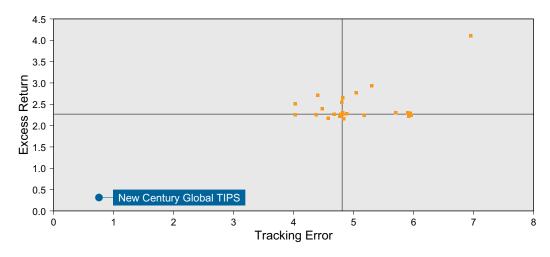


## New Century Global TIPS Risk Analysis Summary

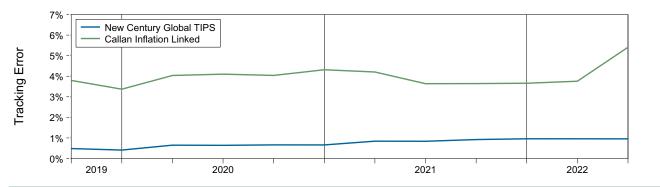
#### **Risk Analysis**

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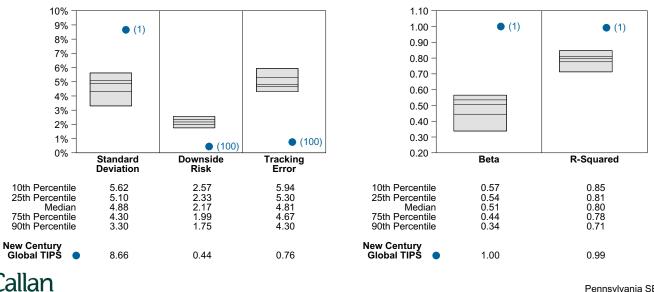
Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2022









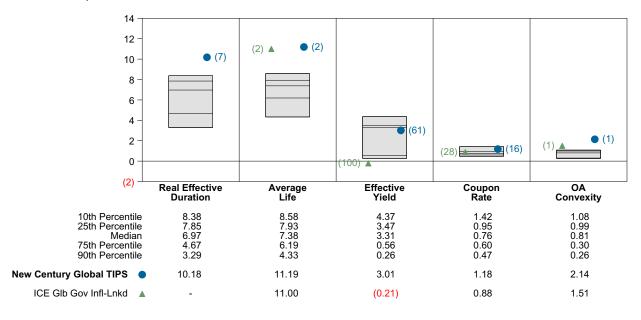


## New Century Global TIPS Bond Characteristics Analysis Summary

#### **Portfolio Characteristics**

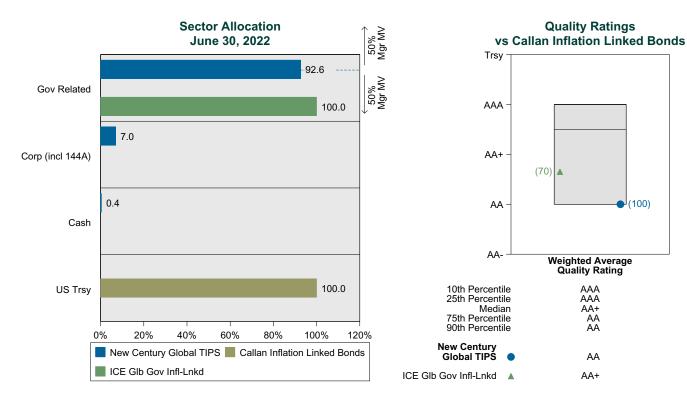
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

#### Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 2022



#### Sector Allocation and Quality Ratings

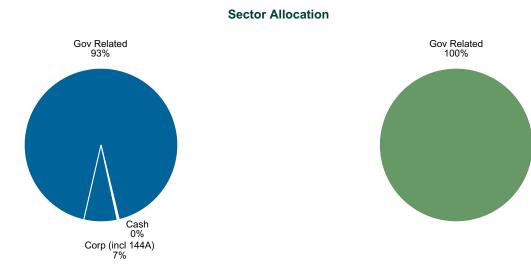
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



## New Century Global TIPS Portfolio Characteristics Summary As of June 30, 2022

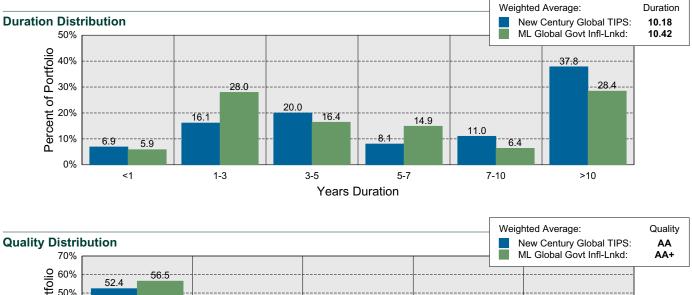
#### **Portfolio Structure Comparison**

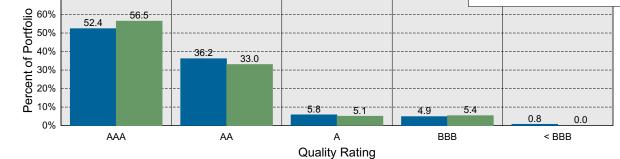
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## **New Century Global TIPS**







Research & Disclosures



## Education

2nd Quarter 2022

## **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 to see all of our publications, and www.callan.com/blog to view our blog. For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

## New Research from Callan's Experts

**Research Cafe: ESG Interview Series** | Mark Wood of Callan discusses with Jon Hale, Director of ESG Strategy at Morningstar, the evolving definition of sustainable investments.

**Research Cafe: Private Equity** | In this session, private equity experts Ashley Kahn and Jonathan Farr provide actionable insights for institutional investors to help them negotiate with private equity managers, and offer private equity managers crucial information about how their peers determine fees and terms. This session also includes a special feature on credit line usage.

Investing in Data Centers: The Real Assets of the Digital Age | Lauren Sertich discusses investing in data centers, a growing sector in which institutional investors have more investment options as the universe of qualified managers/operators rapidly expands.

**Do Active Fixed Income Managers Add Value With Sector Rotation?** | Kevin Machiz analyzes whether institutional investors could take a DIY approach to strategic sector allocations and forego sector rotation within fixed income and still achieve results comparable to active managers. Our study found that the average manager has added value with sector rotation.

#### **Blog Highlights**

**SEC Proposes Rule to Enhance and Standardize Climate-<u>Related Disclosures</u> | The U.S. Securities and Exchange Commission unveiled its proposed rule amendments designed to improve and standardize disclosures around climate change risks for public companies.** 

<u>Unprecedented Territory—and the Inherent Limits of</u> <u>Diversification</u> | Stock and bond markets around the globe were down together for the first four months of 2022. How often does that happen? Did diversification fail us? **<u>Rising</u>** Interest Rates Spur Look at Structured Credit | Structured credit has seen increased interest from institutional investors as they explore ways to adapt their fixed income portfolios for an expected environment of rising rates.

**Hedge Fund Strategies: A Guide for Institutional Investors** | Hedge fund strategies are beginning to see renewed interest from institutional investors seeking diversification benefits and downside protection. But these strategies can be complex; this explainer educates investors about investing in these strategies.

#### **Quarterly Periodicals**

**Private Equity Update**, **1Q22** | A high-level summary of private equity activity in the quarter through all the investment stages

Active vs. Passive Charts, 1Q22 | A comparison of active managers alongside relevant benchmarks over the long term

Market Pulse Flipbook, 1Q22 | 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, 1Q22** | 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, 1Q22 | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**Real Assets Update**, **1Q22** | A summary of market activity for real assets and private real estate during the quarter

**Private Credit Update**, **1Q22** | A review of performance and fundraising activity for private credit during the quarter

## **Events**

A complete list of all upcoming events can be found on our website: callan.com/events-education.

Please mark your calendar and look forward to upcoming invitations:

### October Regional Workshop

Oct. 18, 2022 – Denver, CO Oct. 20, 2022 – San Francisco, CA

## 2023 National Conference

April 2-4, 2023 – Scottsdale, AZ

For more information about events, please contact Barb Gerraty: 415-274-3093 / gerraty@callan.com

## Education

Founded in 1994, the "Callan College" offers educational sessions for industry professionals involved in the investment decision-making process.

### Introduction to Investments September 20-22 – 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: <a href="mailto:callan.com/events/">callan.com/events/</a>

### **Education: By the Numbers**

50+	Unique pieces of research the Institute generates each year
525	Attendees (on average) of the

Institute's annual National Conference

3,700

Total attendees of the "Callan College" since 1994



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."

Greg Allen, CEO and Chief Research Officer

# Callan

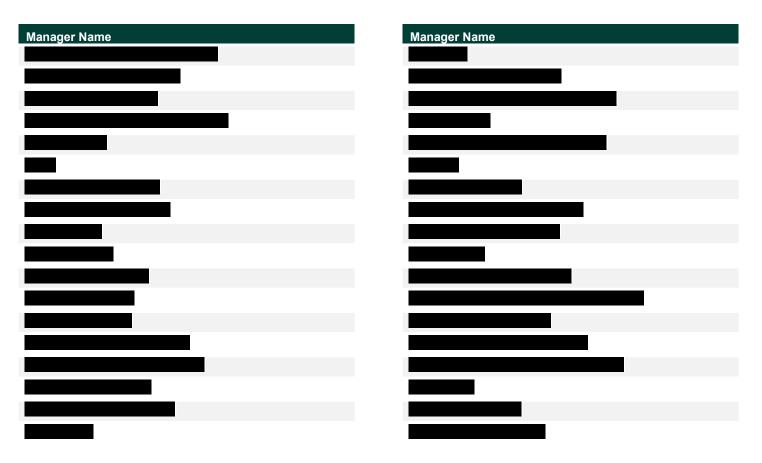
## List of Callan's Investment Manager Clients

Confidential - For Callan Client Use Only

Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry, and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor, and disclose potential conflicts on an ongoing basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database, or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g., attending an educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group, and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan's Compliance department.



Manager Name	Manager Name

Manager Name	Manager Name