Callan

June 30, 2020 Pennsylvania SERS

Investment Measurement Service Quarterly Review

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Capital Market Review

The Stock Market Is Not the Economy

ECONOMY

While equities rebounded in 2Q20, economies around the world face significant challenges as the pandemic creates an unprecedented environment. U.S. GDP, for instance, fell an astonishing 9.5% in the quarter, or 32.9% on an annualized basis, while a quarter of all jobs evaporated.

Appreciation Falters; REITs Underperform

REAL ESTATE/REAL ASSETS

All sectors of the NCREIF Property Index saw negative appreciation in 2Q20, but income remained positive except for Hotels. Transaction volume dropped off with the exception of Industrial assets that have tenants with strong credit. REITs underperformed equity benchmarks.

Returns Positive After 1st Quarter Volatility

INSTITUTIONAL INVESTORS

4 P A G E With the second quarter, rebounding from the first quarter. And while all lagged a 60% stocks/40% bonds benchmark over that time period, over longer periods they have roughly matched its performance.

Heightened Focus on Portfolio Holdings

PRIVATE EQUITY

12 P A G E Activity slowed in 2Q20, although larger transactions helped prop up dollar volumes. The market is in a period of both price discovery and a heightened focus on existing portfolio holdings. First quarter returns were down, but by less than half those of public equity.

Bounceback Leads Indices to Soar in 2Q

EQUITY

6 B U.S. equity markets bounced back from **P** A G E March lows in 2Q20, with three sectors (Technology, Consumer Discretionary, Energy) posting returns in excess of 30%. Accommodative monetary policies helped fuel the market recovery for global equities.

Beta Leads, and Alpha Follows

HEDGE FUNDS/MACs

13 PAGE Global markets reverted to risk-on mode in 2Q20, and most hedge fund strategies benefited. The CS HFI rose 6.2%, while the median manager in the Callan Hedge Fund-of-Funds Database Group gained 7.7%. The Callan Institutional Hedge Fund Peer Group increased 6.0%.

Mixed Performance Around the World

FIXED INCOME

After strong performance in 1Q20, U.S. Treasury returns lagged other "spread" sectors in 2Q20 as risk appetites rebounded. Developed market sovereign bond yields ended lower amid rate cuts overseas. Emerging market debt rebounded, helped by rising oil prices.

Index Posts Largest Drop Since 4Q08

DEFINED CONTRIBUTION

15 PAGE The equity downturn in 1Q20 led to the decline and ended four straight quarters of gains. Balances saw the biggest plunge ever. Stable value funds saw the biggest inflows as participants sought safety. Allocation to equity reached the lowest level since 2012.

Broad Market Quarterly Returns



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



2.9%

Global ex-U.S. Fixed Income Bloomberg Barclays Gbl ex US



Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Stock Market Is Not the Economy

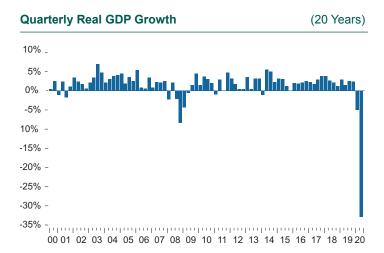
ECONOMY | Jay Kloepfer

Stock markets around the globe staged spectacularly swift recoveries in the second quarter from their sudden and equally spectacular plunge in the first quarter, providing investors with the hallowed V-shaped recovery that once seemed impossible. While major equity indices are headed back toward all-time highs, the economies underlying these markets face a path quite different from a V-shaped recovery. The sectors driving the U.S. stock market, technology in particular, are not the sectors like retail and hospitality that employ the largest number of workers.

The staggered reopening of states within the U.S. and economies around the globe drove a sharp rise in economic activity in May and June, but a range of high-frequency indicators suggests the pace of recovery has since softened following a resurgence in COVID-19 infections and deaths. The prospect for many locales to pause or roll back easing, and the observed retrenchment in spending by businesses and consumers, looms over the path to recovery. Government belt tightening may undermine the rebound, as tax revenues for localities have plummeted in the face of a surge in demand for services. Revenue shortfalls for state and local governments for fiscal year 2021 may total \$200 billion, according to IHS Markit. Consensus forecasts still call for a strong rebound in the third guarter followed by a more gradual recovery, but the risk has risen for a W-shaped trajectory, where a decline follows the third quarter pop, and then a more durable recovery begins with a delay, perhaps in the second half of 2021.

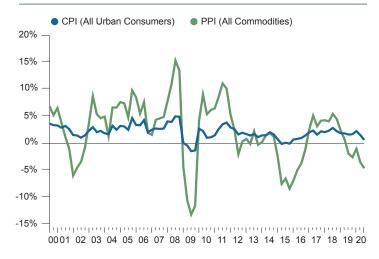
The word "unprecedented" to describe the current environment may seem overused, but the speed and depth of the economic disruption was indeed unprecedented. The total output of the U.S. economy as measured by GDP dropped 9.5% in the second quarter, or an annualized decline of 32.9%, unheard of in modern times. Approximately one quarter of all jobs disappeared in a matter of weeks.

GDP is an admittedly challenged measure of true economic activity even in normal times, and annualized percent changes around the chasm of the COVID-19 economic shutdown are



Source: Bureau of Economic Analysis





Source: Bureau of Labor Statistics

problematic in context. Adding to the data confusion is the seasonal adjustment methodology, which under normal circumstances greatly reduces the signal-to-noise ratio in monthly and quarterly GDP estimates but exacerbates the severity of data swings in times of extreme stress. These limitations aside, GDP remains the most comprehensive metric for examining U.S. and global activity. For the whole year, projections by forecaster Capital Economics suggest a GDP decline of close to 5% in the U.S. and Japan, 7.5% in the euro zone, and greater than 10% in the U.K. Official estimates for China peg 2020 GDP growth at 2%, while unofficial estimates show a small loss (-1%). The focus going forward will be on the level of GDP, employment, unemployment, sales, and production, and when we can recover pre-pandemic levels of economic activity. Consensus estimates peg U.S. GDP regaining its pre-pandemic level in the second half of 2021, barring the appearance of the W-shaped recovery.

The most immediate and severe impact to the U.S. economy has been in the job market. Initial unemployment claims spiked to 6.9 million in the last week of March. The weekly claims have since subsided, but remain at levels unprecedented before the pandemic, topping 1 million every week since then. In addition to regular state unemployment programs, the CARES Act expanded benefits to many not typically covered by states and extended regular benefits for up to 13 weeks. The sum of these programs provided unemployment benefits for over 30 million persons through the end of June, off a starting job base of 155 million in February. The job market staged a surprising surge in May and June, but the high-frequency data are suggesting a marked softening into the summer.

U.S. inflation perked up in June following declines for three consecutive months, but year-over-year CPI is up just 0.6%, well below recent trends and the Fed's long-term target of 2%. By some measures, second quarter inflation fell to its lowest point in SEVEN decades. CPI measures consumer prices against a basket of typical goods and services purchased. GDP and consumption price deflators measure price changes of goods and services as actually transacted, and both measures saw almost 2% declines in the second quarter. While concerns are rising that the fiscal and monetary stimulus enacted to rescue the global economies will be highly inflationary, the prospect

U.S. ECONOMY (Continued)

The Long-Term View

Index				Ended	
U.S. Equity	2Q20	Year	5 115	10 Yrs	25 115
Russell 3000	22.0	6.5	10.0	13.7	9.3
S&P 500	20.5	7.5	10.0	14.0	9.3
Russell 2000	25.4	-6.6	4.3	10.5	8.2
Global ex-U.S. Equity					
MSCIEAFE	14.9	-5.1	2.1	5.7	4.5
MSCI ACWI ex USA	16.1	-4.8	2.3	5.0	
MSCI Emerging Markets	18.1	-3.4	2.9	3.3	
MSCI ACWI ex USA Small Cap	22.8	-4.3	2.5	6.0	5.5
Fixed Income					
Bloomberg Barclays Agg	2.9	8.7	4.3	3.8	5.4
90-Day T-Bill	0.0	1.6	1.2	0.6	2.4
Bloomberg Barclays Long G/C	6.2	18.9	9.0	7.8	7.7
Bloomberg Barclays GI Agg ex US	3.4	0.7	2.9	2.0	3.7
Real Estate					
NCREIF Property	-1.0	2.7	6.8	9.7	9.1
FTSE Nareit Equity	11.8	-13.0	4.1	9.1	9.5
Alternatives					
CS Hedge Fund	6.2	-0.7	1.6	3.8	7.5
Cambridge PE*	-7.8	2.1	10.4	12.3	14.7
Bloomberg Commodity	5.1	-17.4	-7.7	-5.8	0.7
Gold Spot Price	12.8	27.4	9.0	3.8	6.4
Inflation – CPI-U	-0.1	0.6	1.6	1.7	2.1

*Data for most recent period lags by a quarter. Data as of 3/31/20.

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

of near-term deflation is real, and holds the potential to derail the recovery—falling prices could slow consumer and business spending, especially if deflation becomes a spiral rather than a temporary dip.

Recent Quarterly Economic Indicators

2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18
2.7%	2.8%	2.7%	2.8%	2.7%	2.8%	2.9%	2.8%
2.5%*	-0.8%	1.2%	-0.3%	2.7%	3.9%	0.5%	1.6%
-32.9%	-5.0%	2.4%	2.6%	1.5%	2.9%	1.3%	2.1%
63.1%	73.5%	75.0%	75.4%	75.5%	76.4%	77.0%	76.9%
74.0	96.4	97.2	93.8	98.4	94.5	98.2	98.1
	2.7% 2.5%* -32.9% 63.1%	2.7% 2.8% 2.5%* -0.8% -32.9% -5.0% 63.1% 73.5%	2.7% 2.8% 2.7% 2.5%* -0.8% 1.2% -32.9% -5.0% 2.4% 63.1% 73.5% 75.0%	2.7% 2.8% 2.7% 2.8% 2.5%* -0.8% 1.2% -0.3% -32.9% -5.0% 2.4% 2.6% 63.1% 73.5% 75.0% 75.4%	2.7% 2.8% 2.7% 2.8% 2.7% 2.5%* -0.8% 1.2% -0.3% 2.7% -32.9% -5.0% 2.4% 2.6% 1.5% 63.1% 73.5% 75.0% 75.4% 75.5%	2.7% 2.8% 2.7% 2.8% 2.7% 2.8% 2.5%* -0.8% 1.2% -0.3% 2.7% 3.9% -32.9% -5.0% 2.4% 2.6% 1.5% 2.9% 63.1% 73.5% 75.0% 75.4% 75.5% 76.4%	2.7% 2.8% 2.7% 2.8% 2.7% 2.8% 2.9% 2.5%* -0.8% 1.2% -0.3% 2.7% 3.9% 0.5% -32.9% -5.0% 2.4% 2.6% 1.5% 2.9% 1.3% 63.1% 73.5% 75.0% 75.4% 75.5% 76.4% 77.0%

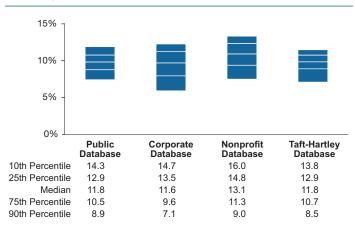
* Estimate

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

Returns Positive After 1st Quarter Volatility

INSTITUTIONAL INVESTORS

- After the pandemic-induced market volatility in 1Q20, all types of institutional investors rebounded to positive performance for the 12 months ending with the second quarter. Corporate defined benefit (DB) plans fared notably better than others, gaining 6.4%. Other types of investors saw increases of roughly 2%-3%. All fell short of major U.S. stock and bond indices, as well as a 60% S&P 500/40% Bloomberg Barclays Aggregate benchmark, but outperformed global ex-U.S. equities by a wide margin.
- Over the last 20 years, institutional investors have performed in line with the 60%/40% benchmark, with returns in a range of 5.7%-5.9% annualized.
- The V-shaped equity market decline and recovery experienced in the first half of 2020 revealed levels of volatility not seen since the Global Financial Crisis of 2008-09. Investors' recent experience with volatility may reveal their "true" tolerance for risk.
- We note that the stock market is not the economy and the path out of recession remains undiscovered.



Quarterly Returns, Callan Database Groups

Source: Callan

 For institutional investors, the key is to stay the course: rebalance; manage liquidity; evaluate their portfolios for impairment or unexpected performance; and watch for opportunity, both inside the portfolio and across the markets.

Callan Database Median and Index Returns* for Periods Ended 6/30/20

Database Group	Quarter	Year-to-date	Year	3 Years	5 Years	10 Years
Public Database	11.79	-2.34	3.26	5.81	6.02	8.09
Corporate Database	11.64	0.00	6.36	6.89	6.74	8.47
Nonprofit Database	13.10	-3.26	2.67	5.52	5.59	7.89
Taft-Hartley Database	11.82	-2.74	3.21	5.93	6.21	8.55
All Institutional Investors	12.04	-2.26	3.63	5.88	6.03	8.24
Large (>\$1 billion)	10.87	-1.62	4.09	6.39	6.40	8.48
Medium (\$100mm - \$1bn)	11.99	-2.18	3.62	5.94	6.12	8.24
Small (<\$100 million)	12.71	-2.71	3.31	5.65	5.76	8.07

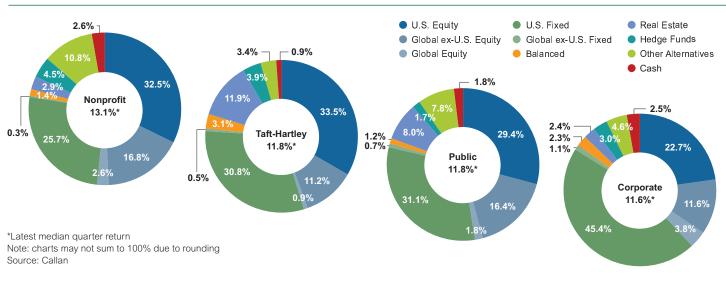
*Returns less than one year are not annualized.

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

- The massive monetary and fiscal intervention by governments will change the landscape:
 - The continuing low-yield environment and the capital markets going forward favor growth.
 - Investors need to remember the purpose of capital market assumptions: To define an investor's return expectation, while matching the investor's risk tolerance and investment time horizon. Importantly, they are not point estimates: they define a range of possible outcomes.
 - Investors also need to assess what can serve as an equity diversifier equal to bonds with the return of zero interest rates. Are they willing to pay for the benefit of fixed income?
- Some decisions are on hold, particularly serious restructuring of asset class exposures, but strategic planning continues apace.
- Based on Callan's client activity, many types of institutional investors plan to adjust their strategic allocations by shifting out of publicly traded asset classes and into alternatives, including private equity, private credit, and real assets.
- This interest has led to a surge in asset allocation reviews and discussions about the capital markets with investors.
- As part of those assessments, investors are re-examining the purposes of all diversifiers, including real assets, hedge funds and liquid alternatives, fixed income, and private equity and private credit.

- Private credit in particular drew attention. All institutional investor types had some interest in increasing private credit, and none indicated an intention to cut their allocations.
- Corporate DB plans indicated they intended to reduce allocations to equities but increase allocations to fixed income.
 The capital market upheaval has not derailed the trend toward de-risking; the commitment to de-risking is solid.
- Public DB plans expressed interest in a range of opportunistic strategies, such as unconstrained fixed income.
- Nonprofits continued to emphasize return enhancement. Strategic asset allocation work is focused on evaluating investment portfolios that can support the desired distribution rate in order to balance intergenerational equity.
- The top concern for insurance clients was yield.
- In terms of their strategic allocations, insurance clients indicated they planned to shift out of equities, both U.S. and global ex-U.S., and increase allocations to a variety of credit and alternative investments.
- Institutional investors expressed strong interest in educational topics relevant to the current market environment.
- Finally, COVID-19 was top of mind for all investor types.
 One noticeable impact was a dramatic shift in meetings.
 Virtually all clients in an exclusive Callan survey said that the vast bulk of their meetings were now occurring virtually, and a third were doing all of their meetings that way.



Average Asset Allocation, Callan Database Groups

Equity

U.S. Equities

U.S. equity markets bounced back from March lows in 2Q20 (Russell 1000: +21.8%). The S&P 500 (+20.5%) recorded its best quarterly performance since 1998. Three sectors (Technology, Consumer Discretionary, and Energy) posted returns in excess of 30%. Information Technology (+30.5%) continues to be a top performer with the "FAAMG" stocks (Facebook, Amazon, Apple, Microsoft, and Google) up 35% in the quarter. Many Technology stocks benefited from the "stay at home" environment. Energy stocks (+30.5%) rebounded after OPEC+ and non-OPEC production cuts buoyed crude prices.

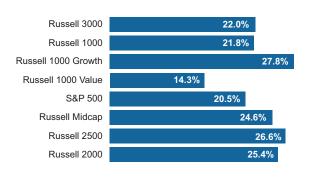
Small cap outgained large cap

- From the first to the second quarter, the Russell 2000 swung from its worst quarterly performance to one of its three best quarterly returns since the inception of the index.
- The Russell 2000 still lags the Russell 1000 on a year-todate and trailing one-year basis, exemplifying the extreme dislocation between large and small cap performance in the first quarter.
- Better-than-expected economic data and Fed actions helped shift investment sentiment in favor of small cap.

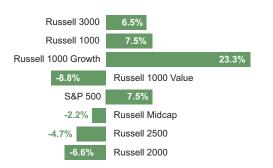
Growth outpaced value across market capitalizations

Russell's value indices underperformed their growth counterparts across the market cap spectrum during the first quarter decline as well as during the second quarter recovery (Russell 1000 Growth: +27.8%; Russell 1000 Value:

U.S. Equity: Quarterly Returns

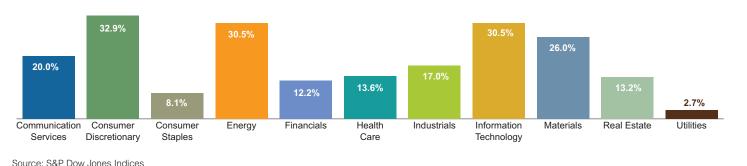


U.S. Equity: One-Year Returns



Sources: FTSE Russell and S&P Dow Jones Indices

- +14.3%; Russell 2000 Growth: +30.6%; Russell 2000 Value: +18.9%).
- Persistently low interest rates, a flatter yield curve, and slower economic growth are some of the headwinds for the value factor.



Quarterly Performance of Industry Sectors

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Global/Global ex-U.S. Equity

Accommodative monetary policies coupled with massive fiscal stimulus helped fuel the second quarter market recovery after the first quarter's declines.

Global/Developed ex-U.S.

- Developed markets with the most success at mitigating the coronavirus led; Australia (+28.9%), New Zealand (+28.1%), and Germany (+26.5%) were the top performers.
- Countries' inability to "flatten the curve" acted as headwinds to their equity markets, namely the U.K. (+7.8%).
- Every sector in MSCI EAFE except Energy (-0.03%) posted positive returns, led by cyclical stocks, whose prices are highly sensitive to changes in the economy; Information Technology (+23.4%) companies also provided strong returns as working-from-home trends continued to support the sector.
- Factor performance in developed ex-U.S. markets was led by momentum and quality, reflecting the cyclical rebound (momentum) coupled with continued pandemic uncertainty (quality, flight to safety); growth continued to outperform value (EAFE Growth: +17.0% vs. EAFE Value: +12.4%).

Emerging Markets

- Emerging markets produced their strongest quarterly gains in over a decade as fiscal and monetary stimulus from countries aided the second quarter rebound across all countries and sectors.
- Most EM countries ended lockdowns during the period, but Latin America, India, and some parts of Southeast Asia ended the second quarter with cases surging.
- Commodity-linked economies such as South Africa (+27.2%), Brazil (+22.9%), and Russia (+18.7%) recovered on the strength of metals, mining, and oil-related securities after being some of the worst-performing countries in 1Q20.
- China (+15.6%) lagged the index as U.S.-China trade tensions reignited and additional sanctions were imposed.
- Every sector posted positive returns, most in double digits.
- Growth outperformed value (EM Growth: +22.1% vs. EM Value: +13.8%)

Global ex-U.S. Small Cap

- Global ex-U.S. small caps rallied during the second quarter as lockdowns eased and economies reopened.
- A risk-on mindset pervaded the global ex-U.S. small cap market that fueled double-digit returns for every sector in the MSCI ACWI ex-USA Small Cap Index.
- Australia (+47.1%) was the top-performing country; Japan (+12.8%) and the U.K. (+14.8%) were two of the weakest.

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



Global ex-U.S. Equity: One-Year Returns

(U.S. Dollar)



Source: MSCI

U.S. Fixed Income

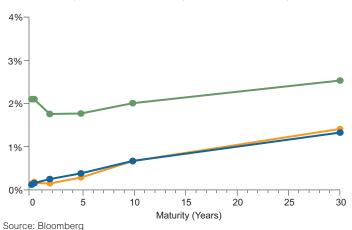
U.S. Treasury yields were range-bound

- The 10-year U.S. Treasury yield reached a high of 0.91% in June before closing the quarter at 0.66%, down slightly from the 1Q20 quarter-end level of 0.70%.
- After strong performance in 1Q20, U.S. Treasury returns lagged other "spread" sectors as risk appetites rebounded, fueled by massive Fed stimulus programs as well as improved liquidity.
- The Fed left rates on hold at 0% 0.25% for the foreseeable future, anchoring the low end of the yield curve.
- TIPS outperformed nominal Treasuries as expectations for inflation rose. The 10-year breakeven spread ended the quarter at 1.34%, up from 0.87% as of the end of 1Q20.

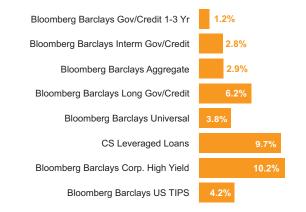
Corporate credit rallied due to spread narrowing

- Corporate credit rebounded amid improving investor confidence and economic data. However, fallen angels continued to spark concern with nearly half the investment grade bond market now rated BBB.
- Investment grade corporate spreads narrowed by 122 bps to 150 bps despite companies issuing record amounts of debt totaling \$1.4 trillion; the Fed provided continued support through the announcements of the Primary and Secondary Market Corporate Credit Facilities.
- In a reversal from 1Q20, lower quality outperformed as BBBrated credit (+11.2%) outperformed single A (+7.0%), AA (+5.0%), and AAA (+1.7%).
- High yield corporates also posted sharp returns (+10.2%).
 CCC-rated high yield corporates (+9.1%) lagged BB-rated corporates (+11.5%).
- The high yield default rate reached a 10-year high (6.2%).
- Energy (+40.0%) was the highest-performing high yield bond sub-sector, reflecting sharply higher oil prices.

U.S. Treasury Yield Curves June 30, 2020 March 31, 2020 June 30, 2019

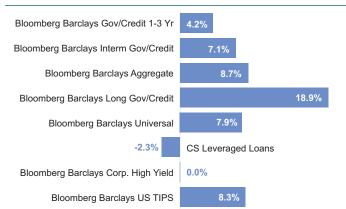


U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and Credit Suisse

FIXED INCOME (Continued)

Global Fixed Income

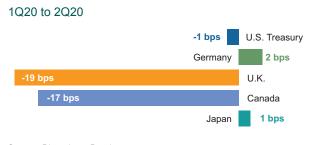
Global ex-U.S. fixed income rose amid rate cuts

- The U.S. dollar depreciated modestly against a basket of developed market currencies, most notably the Australian and New Zealand dollars (-12.5%, -8.4%, respectively). The dollar was roughly flat versus the yen.
- Developed market sovereign bond yields ended the quarter lower amid rate cuts overseas, and the unhedged Bloomberg Barclays Global Aggregate ex-US benchmark posted positive returns (+3.4%)
- The ECB expanded the stimulus program announced in March from €750 billion to €1.35 trillion.

Emerging market debt made up ground

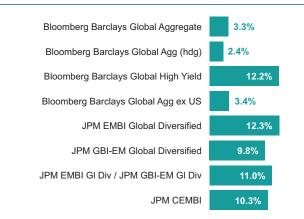
- The J.P. Morgan EMBI Global Diversified dollar-denominated benchmark posted strong returns (+12.3%) as oil prices rose and central bank liquidity measures took effect. However, the index remains slightly below year-end 2019 levels.
- Higher-yielding countries led the way in 2Q20 (+16.6%); however they remain down (-12.7%) relative to investment grade constituents year-to-date, according to index data from J.P. Morgan.
- Within the J.P. Morgan GBI-EM Global Diversified local currency-denominated benchmark (+9.8%), returns were positive for the vast majority of constituents. Oil-sensitive economies such as Mexico, Colombia, and South Africa rebounded to some degree, but remained down year-to-date.

Change in 10-Year Global Government Bond Yields



Source: Bloomberg Barclays

Global Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Global Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Pandemic Has Muted Impact on Private Real Estate; REITs Underperform

REAL ESTATE/REAL ASSETS | Munir Iman

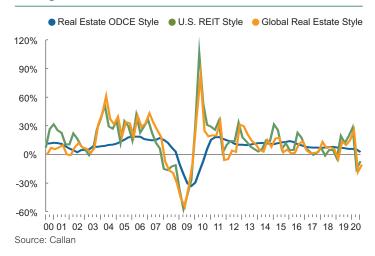
Private U.S. Real Estate

- The continued impact of the pandemic was reflected in 2Q20 results.
- All sectors of the NCREIF Property Index saw negative appreciation, but income remained positive except in the Hotel sector.
- Industrial remains the best performer.
- The dispersion of returns by manager within the NFI ODCE Index was due to both the composition of underlying portfolios and different valuation methodologies/approaches.
- Negative returns are expected over the next few quarters.
- Vacancy rates for all property types are or will be impacted.
- Net operating income has declined as retail experienced the largest drop-off in over 20 years.
- Second quarter rent collections show relatively stable income throughout the quarter in the Industrial, Apartment, and Office sectors. The Retail sector remains challenged, with regional malls impacted most heavily.
- Class A/B urban apartments were relatively strong, followed by certain types of Industrial and Office.
- Supply was in check before the pandemic.
- Construction is limited to finishing up existing projects but has been hampered by shelter-in-place policies and shortages of materials.
- New construction will be basically halted in future quarters except for pre-leased properties.
- Transaction volume has dropped off during the quarter with the exception of Industrial assets that have tenants with strong credit, which are trading at pre-COVID-19 levels.
- Cap rates remained steady during the quarter. The spread between cap rates and 10-year Treasuries is relatively high, leading some market participants to speculate that cap rates may not adjust much. Price discovery is happening and there are limited transactions.
- Callan believes the pandemic may cause a permanent repricing of risk across property types. Property types with more reliable cash flows will experience less of a change in cap rates; however, those with less reliable cash flows will see greater adjustments.

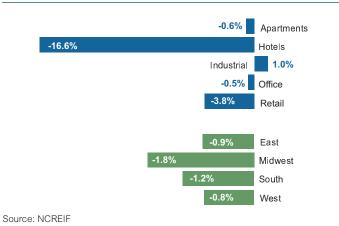
U.S. and Global REITs

- Global REITs underperformed in 2Q20, gaining 10.1% compared to 19.4% for global equities (MSCI World).
- U.S. REITs rose 11.8% in 2Q20, lagging the S&P 500 Index, which jumped 20.5%.
- Globally, REITs (except in Singapore) are trading at a discount to NAV.
- In some regions the discount is at a five-year low.
- All property types except for data centers, hotels, and life sciences are trading at the bottom of their range.
- Ongoing volatility in REIT share prices offers opportunities to purchase mispriced securities, individual assets from REIT

Rolling One-Year Returns



Sector Quarterly Returns by Property Type and Region



10 Callan Institute

REAL ESTATE/REAL ASSETS (Continued)

owners, and discounted debt, as well as lend to companies and/or execute take-privates of public companies.

Infrastructure

- 1Q20 was the third-largest quarter for closed-end infrastructure fundraising (\$37 billion), following 4Q19 (\$43 billion) and 3Q18 (\$38 billion). The closed-end fund market continues to expand, with infrastructure debt, emerging markets, and sector-specific strategies (e.g., communications and renewables). Investor interest in mezzanine or debt-focused funds has increased.
- Open-end funds raised significant capital in 2019, and the universe of investable funds continues to increase as the sector matures.
- In 2020 assets with guaranteed/contracted revenue or more inelastic demand patterns (e.g., renewables, telecoms, and

NCREIF Capitalization Rates by Property Type



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

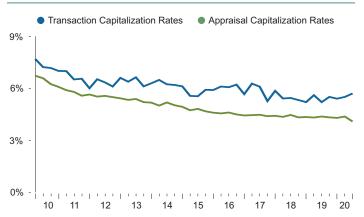
utilities) fared better than assets with GDP/demand-based revenue (e.g. airports, seaports, and midstream-related).

Real estate investment opportunities

- Primary opportunity: purchase of mispriced publicly traded real estate, both equity and debt
- Emerging opportunity: purchase of mezzanine loans from forced sellers

Infrastructure investment opportunities

- Primary opportunity: purchase of mispriced publicly traded infrastructure
- Infrastructure lending if traditional lenders retrench



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

Callan Database Median and Index Returns* for Periods Ended 6/30/20

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	-0.6	-0.2	2.5	5.5	7.2	10.1	6.0
NFI-ODCE (value wt net)	-1.7	-1.0	1.3	4.7	6.3	9.8	6.0
NCREIF Property	-1.0	-0.3	2.7	5.4	6.8	9.7	7.7
NCREIF Farmland	0.6	0.5	2.5	4.9	6.2	10.7	12.9
NCREIF Timberland	0.1	0.2	0.3	2.3	2.7	4.4	6.2
Public Real Estate	·						
Global Real Estate Style	10.5	-17.0	-10.7	2.2	3.7	8.4	5.6
FTSE EPRA Nareit Developed	10.1	-21.3	-16.3	-1.6	1.3	6.3	
Global ex-U.S. Real Estate Style	10.1	-17.2	-9.2	3.1	3.5	7.9	5.6
FTSE EPRA Nareit Dev ex US	8.6	-21.5	-15.9	-0.9	0.6	5.4	
U.S. REIT Style	12.1	-13.9	-7.1	2.9	5.8	10.3	7.1
EPRA Nareit Equity REITs	11.8	-18.7	-13.0	0.0	4.1	9.1	6.0

*Returns less than one year are not annualized.

Sources: Callan, FTSE Russell, NCREIF

NCREIF Transaction and Appraisal Capitalization Rates

Activity Falls but Dollars Continue to Flow

PRIVATE EQUITY | Gary Robertson

Private equity metrics such as fundraising, company purchase prices, and private M&A exits plunged by count in the second quarter, but dollar volumes held relatively steady as larger transactions were able to proceed. Only IPOs increased in the second quarter, supported by the public market rally. Private equity returns in the first quarter fell, but by less than half of public equity's decline.

Fundraising ► Final closes for private equity partnerships in the second quarter totaled \$149 billion of commitments in 229 partnerships, based on preliminary data. (Unless otherwise noted, all data come from PitchBook.) The dollar volume fell 18% but the number of funds rose 1% from the first quarter. For the first half, 2020 is running \$26 billion or 10% ahead of a year ago, although the number of funds raised has fallen by 25%. We expect the second half of 2020 will decline from the first half, as general partners are slowing the deployment pace of their current funds and focusing on existing companies, resulting in fewer new funds coming to market.

Buyouts ► Funds closed 973 investments with \$75 billion in disclosed deal value, a 51% fall in count and a 29% drop in dollar value from the first quarter. Average buyout prices plunged to 9.2x EBITDA in the second quarter, 2.3x lower than pricing for the full year 2019. Average leverage multiples fell to 4.9x.

Funds Closed 1/1/20 to 6/30/20

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	261	59,755	20%
Growth Equity	42	29,669	10%
Buyouts	123	125,411	42%
Mezzanine Debt	4	2,888	1%
Distressed	5	8,000	3%
Energy	3	6,175	2%
Secondary and Other	46	50,431	17%
Fund-of-Funds	25	14,879	5%
Totals	509	297,209	100%

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

Venture Capital ► New rounds of financing in VC companies totaled 5,741, with \$65 billion of announced value. The number of investments fell 20% but value rose 2% from the first quarter.

Exits ► There were 219 private M&A exits of private equitybacked companies, with disclosed values totaling \$121 billion. The count fell 59% but values rose 68%. There were 15 private equity-backed IPOs in the second quarter raising an aggregate \$11 billion, up 15% and 57%, respectively, from the first quarter. Venture-backed M&A exits totaled 283 with disclosed value of \$23 billion. The number of sales declined 31% from the first quarter, but value rose 35%. There were 74 VC-backed IPOs in the second quarter with a combined float of \$11 billion; the count jumped 40% and the issuance grew 83%.

Private Equity Performance (%) (Pooled Horizon IRRs through 3/31/20*)

			•	,				
Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-2.85	9.10	14.62	11.29	14.85	11.36	5.71	28.09
Growth Equity	-5.45	5.44	13.53	11.77	12.82	12.60	10.35	14.17
All Buyouts	-9.93	0.79	10.71	11.31	13.28	12.32	10.95	12.78
Mezzanine	-4.78	2.38	8.70	8.84	10.57	10.16	7.51	9.56
Credit Opportunities	-12.06	-9.91	1.44	3.50	7.84	8.33	9.13	9.32
Control Distressed	-12.20	-8.67	2.09	5.02	9.25	8.92	9.56	10.09
All Private Equity	-7.84	2.24	10.93	10.53	12.85	11.72	9.33	13.77
S&P 500	-19.60	-6.98	5.10	6.73	10.53	7.58	4.79	8.85
Russell 3000	-20.90	-9.13	4.00	5.77	10.15	7.50	4.91	8.81

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and S&P Dow Jones Indices *Most recent data available at time of publication

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

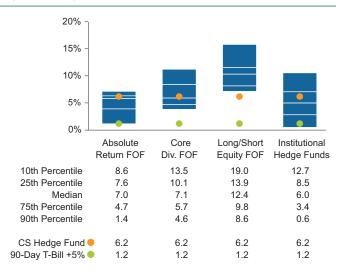
Beta Leads, Alpha Follows

HEDGE FUNDS/MACs | Jim McKee

Emboldened by dramatic monetary and fiscal stimulus, global markets reverted to full risk-on mode in the second quarter, and most hedge fund strategies benefited. Illustrating raw hedge fund performance without implementation costs, the Credit Suisse Hedge Fund Index (CS HFI) rose 6.2% in the second quarter, its strongest quarterly performance since 2009. The median manager in the Callan Hedge Fund-of-Funds Database Group, representing actual hedge fund portfolios, advanced 7.7% net of all fees and expenses.

The median manager in the Callan Institutional Hedge Fund Peer Group, tracking 50 of the largest, broadly diversified hedge funds with low-beta exposure to equity markets, gained 6.0%. Those funds focused on market neutral equity or rates arbitrage edged ahead 3% to 5%; those more exposed to illiquid credit strategies rebounded over 7%.

Hedge Fund Style Group Returns



Sources: Callan, Credit Suisse, and Federal Reserve

Hedge Fund Universe Quarter Year to Date Year 3 Years 5 Years 10 Years Callan Institutional Hedge Fund Peer Group 6.0 -0.6 1.3 3.9 4.1 5.4 Callan Fund-of-Funds Peer Group 7.7 -0.8 1.2 3.1 2.6 4.3 Callan Absolute Return FOF Style 7.0 2.3 3.5 -2.8 -1.8 2.2 **Callan Core Diversified FOF Style** 7.1 0.2 2.1 3.4 2.2 4.2 Callan Long/Short Equity FOF Style 12.4 -1.2 1.7 3.5 3.0 5.2 6.2 -3.3 -0.7 2.1 1.6 3.8 Credit Suisse Hedge Fund CS Convertible Arbitrage 5.9 0.2 3.2 2.8 3.0 3.9 CS Distressed 5.6 -5.7 -7.9 -1.0 0.3 3.3 **CS Emerging Markets** 13.2 1.3 4.7 4.1 4.1 4.8 CS Equity Market Neutral 3.4 -2.1 -2.7 0.0 0.0 1.6 CS Event-Driven Multi 12.0 -9.0 -7.3 -0.6 -1.3 2.1 CS Fixed Income Arb 2.7 -3.2 -0.7 2.1 2.9 4.5 CS Global Macro 4.6 -3.9 -1.1 32 1.8 3.9 -2.5 2.7 5.2 CS Long/Short Equity 9.8 2.6 3.5 CS Managed Futures -2.9 -2.9 -2.0 2.2 -0.4 1.2 5.7 CS Multi-Strategy 3.9 -2.8 -0.9 1.6 3.0 CS Risk Arbitrage 7.5 2.3 2.8 0.2 2.4 3.0 HFRI Asset Wtd Composite 4.5 -7.4 -5.0 0.9 1.1 3.6 90-Day T-Bill + 5% 1.2 3.1 6.6 6.8 6.2 5.6

Callan Peer Group Median and Index Returns* for Periods Ended 6/30/20

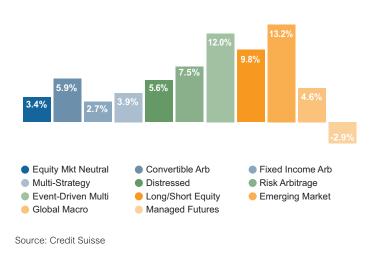
*Net of fees. Sources: Callan, Credit Suisse, Hedge Fund Research

Within CS HFI, the best-performing strategies last quarter were *Emerging Markets* (+13.2%), *Event-Driven Multi-Strategy* (+12.0%), and *Long/Short Equity* (+9.8%). Arbitrage strategies also benefited from the risk-on rally, but their hedges limited gains to mid-single digits or less. As the worstperforming strategy in CS HFI, *Managed Futures* (-2.9%) was caught flat-footed in the sudden equity rally.

Within the Hedge FOF Group, market exposures notably affected performance in the second quarter. Given its net long equity exposure, the median *Callan Long/Short Equity FOF* (+12.4%) decidedly beat the *Callan Absolute Return FOF* (+7.0%).

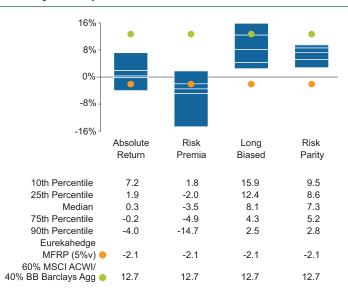
Within Callan's database of liquid alternative solutions, the median managers of the Callan Multi-Asset Class (MAC)

Style Group generated mixed returns, gross of fees, consistent with their underlying risk exposures. Typically targeting equal risk-weighted allocations to major asset classes with leverage, the *Callan Risk Parity MAC* added 7.3%. However, the more traditional equity-centric benchmark of 60% MSCI ACWI and 40% Bloomberg Barclays US Aggregate Bond Index rose 12.7%. Given a usually long equity bias within dynamic asset allocation models, the *Callan Long-Biased MAC* (+8.1%) also trailed the global benchmark. As the most conservative MAC style focused on non-directional strategies of long and short asset class exposures, the *Callan Absolute Return MAC* edged ahead 0.3%. Reflecting the second quarter's challenging environment for alternative betas, such as the equity value and momentum factors, the median *Callan Risk Premia MAC* fell 3.5%.



Credit Suisse Hedge Fund Strategy Returns

MAC Style Group Returns



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

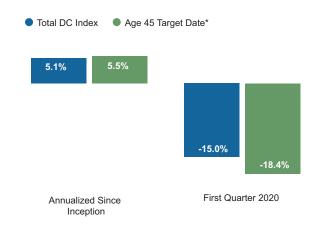
Index Posts Largest Quarterly Drop Since 4Q08

DEFINED CONTRIBUTION | Patrick Wisdom

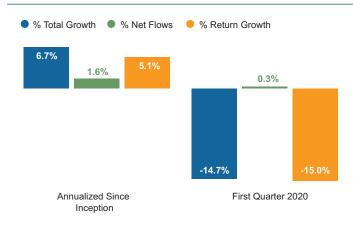
- The Callan DC Index[™] lost 15.0% in 1Q20, the sharpest plunge since 4Q08, ending four consecutive quarters of gains. The Age 45 Target Date Fund posted a larger loss (-18.4%), attributable to its higher allocation to equity, which underperformed fixed income.
- The Index's sharp drop in balances (-14.7%) reversed four straight quarters of growth and was the biggest since the Index's inception. Poor investment returns (-15.0%) were the sole driver; quarterly net flows (0.3%) played a small mitigating role.
- With investors seeking less-risky investments, stable value funds saw the largest inflows (49.7%). U.S. large cap equity (-54.3%) and U.S. small/mid cap equity (-26.0%) had the largest outflows.
- Turnover in the DC Index (i.e., net transfer activity levels within DC plans) increased dramatically to 0.96% from the previous quarter's 0.38%, the highest since 3Q12.
- The allocation to equity fell to 66.0% in 1Q20 from 70.2% in the previous quarter, the lowest since 2012. The allocation to stable value increased to 11.8%.
- The allocations to large cap equity (23.8%) and small/mid cap equity (7.0%) both decreased by more than 1.4 percentage points. Global ex-U.S. equity (4.6%) and company stock (1.8%) had the next-largest decreases in allocation.
- The prevalence of a high yield offering (4.8%) increased in 1Q20 by nearly a percentage point from the previous quarter and now sits at its highest mark since 2017. On the other hand, the percentage of plans offering U.S. small/mid-cap equity dipped for the second straight quarter following six consecutive quarters of 100% prevalence.
- The presence of company stock (20.0%) decreased by more than a percentage point from the previous quarter. Similarly, the percentage of plans offering a brokerage window (40.0%) also fell by more than a percentage point.

The Callan DC Index is an equally weighted index tracking the cash flows and performance of over 100 plans, representing nearly \$300 billion in assets. The Index is updated quarterly and is available on Callan's website.

Investment Performance



Growth Sources



Net Cash Flow Analysis (First Quarter 2020) (Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Stable Value	49.67%
U.S. Fixed Income	21.23%
U.S. Smid Cap	-26.03%
U.S. Large Cap	-54.30%
Total Turnover**	0.96%

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.

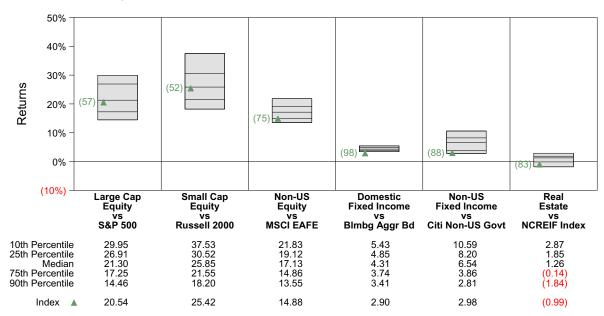
Active Management Overview

Market Overview Active Management vs Index Returns

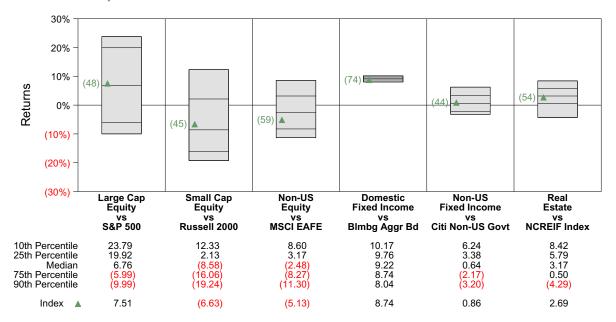
Market Overview

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, 2020



Range of Separate Account Manager Returns by Asset Class One Year Ended June 30, 2020





Asset Allocation and Performance

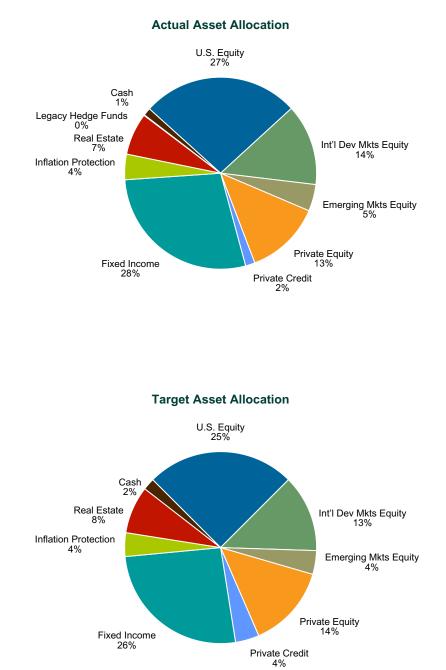
ASSET ALLOCATION AND PERFORMANCE

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, 2020

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.

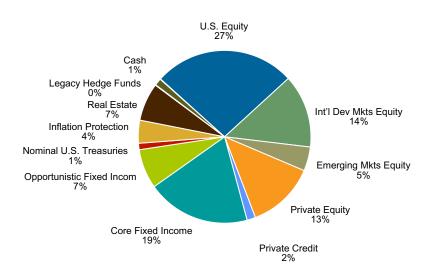


	\$000s	Weight		Percent	\$000s
Asset Class	Actual	Actual	Target	Difference	Difference
U.S. Equity	7,949,375	26.5%	25.0%	1.5%	457,083
Int'l Dev Mkts Equity	4,101,491	13.7%	13.0%	0.7%	205,499
Emerging Mkts Equity	1,357,293	4.5%	4.0%	0.5%	158,527
Private Equity	3,832,839	12.8%	14.0%	(1.2%)	(362,844)
Private Credit	472,172	1.6%	4.0%	(2.4%)	(726,595)
Fixed Income	8,411,741	28.1%	26.0%	2.1%	619,759
Inflation Protection	1,279,985	4.3%	4.0%	0.3%	81,218
Real Estate	2,136,235	7.1%	8.0%	(0.9%)	(261,298)
Legacy Hedge Funds	26,566	0.1%	0.0%	0.1%	26,566
Cash	401,468	1.3%	2.0%	(0.7%)	(197,915)
Total	29,969,165	100.0%	100.0%		



Actual Asset Allocation As of June 30, 2020

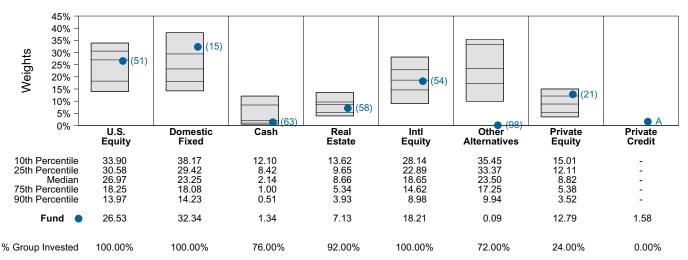
The first chart below shows the Fund's asset allocation as of June 30, 2020. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spons- V Lg DB (>10B).



Actual	Asset A	Allocation

Asset Class	\$000s Actual	Weight Actual
U.S. Equity	7,949,375	26.5%
Int'l Dev Mkts Equity	4,101,491	13.7%
Emerging Mkts Equity	1,357,293	4.5%
Private Equity	3,832,839	12.8%
Private Credit	472,172	1.6%
Core Fixed Income	5,817,398	19.4%
Opportunistic Fixed Incom	2,221,526	7.4%
Nominal U.S. Treasuries	372,817	1.2%
Inflation Protection	1,279,985	4.3%
Real Estate	2,136,235	7.1%
Legacy Hedge Funds	26,566	0.1%
Cash	401,468	1.3%
Total	29,969,165	100.0%

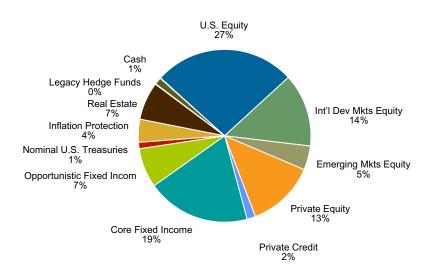
Asset Class Weights vs Callan Public Fund Spons- V Lg DB (>10B)



*Transition account market values are not included in any asset class and are excluded from these charts.

Actual Asset Allocation As of June 30, 2020

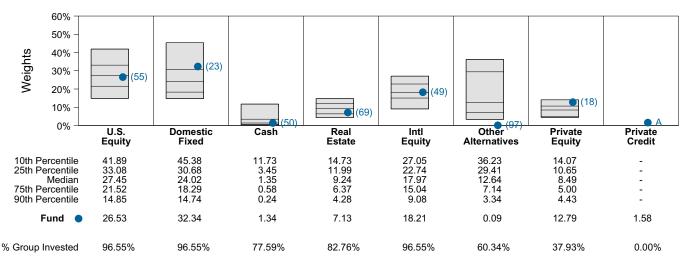
The first chart below shows the Fund's asset allocation as of June 30, 2020. The second chart ranks the fund's asset allocation versus the Callan Public Fund Spons - Large (>1B).



Actual Asset Allocation

Asset Class	\$000s Actual	Weight Actual
U.S. Equity	7,949,375	26.5%
Int'l Dev Mkts Equity	4,101,491	13.7%
Emerging Mkts Equity	1,357,293	4.5%
Private Equity	3,832,839	12.8%
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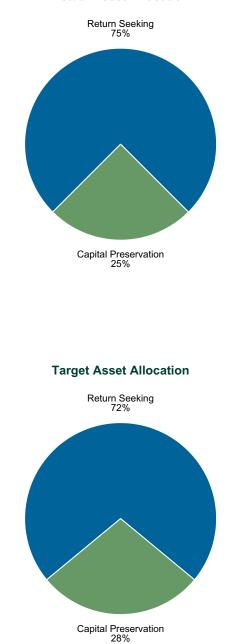
Asset Class Weights vs Callan Public Fund Spons - Large (>1B)



*Transition account market values are not included in any asset class and are excluded from these charts.

Actual vs Target Asset Allocation As of June 30, 2020

The first chart below shows the Fund's asset allocation as of June 30, 2020. The second chart shows the Fund's target asset allocation as outlined in the investment policy statement.



Actual Asset Allocation

Asset Class	\$Millions Actual	Weight Actual	Target	Percent Difference	\$Millions Difference
Return Seeking	22,470	75.0%	72.0%	3.0%	893
Capital Preservation	7,499	25.0%	28.0%	(3.0%)	(893)
Total	29,969	100.0%	100.0%		• •

Return Seeking Assets contains: Domestic Equity, International Developed Equity, Emerging Markets Equity, Opportunistic Fixed Income, Private Equity, Private Credit, and Real Estate.

Capital Preservation Assets contains: Core Fixed Income, Inflation Protection (TIPS), and Cash.

*Transition account market values are not included in any asset class and are excluded from these charts.



Quarterly Total Fund Absolute Attribution - June 30, 2020

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.

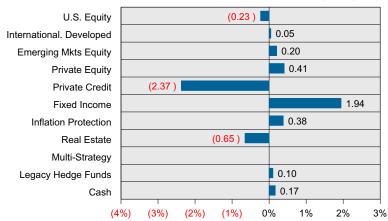


Absolute Attribution Effects for Quarter ended June 30, 2020

	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
U.S. Equity	25%	22.77%	5.64%	25%	22.03%	5.51%	0.13%
International. Developed	13%	16.42%	2.14%	13%	16.21%	2.11%	0.04%
Emerging Mkts Equity	4%	20.89%	0.88%	4%	18.93%	0.76%	0.12%
Private Equity	14%	(8.09%)	(1.17%)	14%	(8.09%)	(1.13%)	(0.03%)
Private Credit	2%	(4.09%)	(0.07%)	4%	(12.67%)	(0.51%)	0.44%
Fixed Income	28%	3.27%	0.91%	26%	2.90%	0.75%	0.16%
Inflation Protection	4%	4.38%	0.19%	4%	4.24%	0.17%	0.02%
Real Estate	7%	(0.27%)	(0.02%)	8%	1.79%	0.14%	(0.16%)
Multi-Strategy	0%	0.00%	0.00%	0%	9.70%	0.00%	0.00%
Legacy Hedge Funds	0%	(1.54%)	(0.00%)	0%	7.90%	0.00%	(0.00%)
Cash	2%	0.17%	0.00%	2%	0.02%	0.00%	0.00%
	Total Fu	nd Return	8.02%		Target Return	7.46%	0.55%

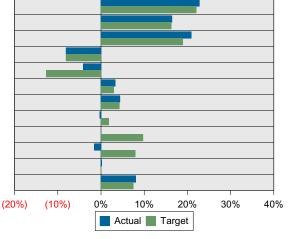
Quarterly Total Fund Relative Attribution - June 30, 2020

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.



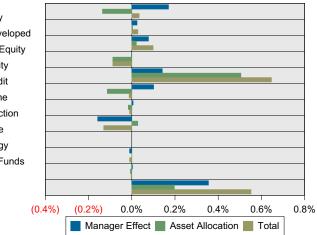
Asset Class Under or Overweighting

Actual vs Target Returns





Relative Attribution by Asset Class

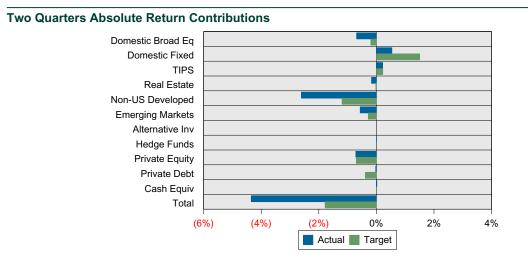


Relative Attribution Effects for Quarter ended June 30, 2020

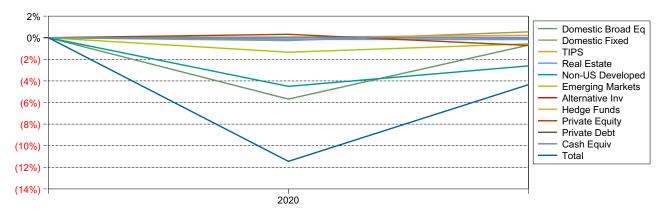
Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
U.S. Equity	25%	25%	22.77%	22.03%	0.17%	(0.14%)	0.03%
International. Developed	13%	13%	16.42%	16.21%	0.02%	0.00%	0.03%
Emerging Mkts Equity	4%	4%	20.89%	18.93%	0.08%	0.02%	0.10%
Private Equity	14%	14%	(8.09%)	(8.09%)	0.00%	(0.09%)	(0.09%)
Private Credit	2%	4%	(4.09%)	(12.67%)	0.14%	0.51%	0.65%
Fixed Income	28%	26%	3.27%	2.90%	0.10%	(0.11%)	(0.01%)
Inflation Protection	4%	4%	4.38%	4.24%	0.01%	(0.02%)	(0.01%)
Real Estate	7%	8%	(0.27%)	1.79%	(0.16%)	0.03%	(0.13%)
Multi-Strategy	0%	0%	0.00%	9.70%	0.00%	0.00%	0.00%
Legacy Hedge Funds	0%	0%	(1.54%)	7.90%	(0.01%)	0.00%	(0.01%)
Cash	2%	2%	0.17%	0.02%	0.00%	(0.01%)	(0.00%)
Total			8.02% =	7.46% +	+ 0.36% +	0.20%	0.55%

Cumulative Total Fund Absolute Attribution - June 30, 2020

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



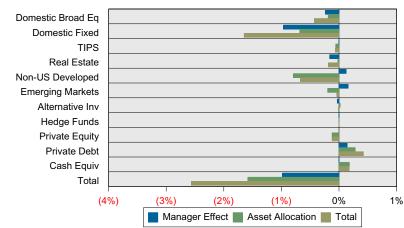
Two Quarters Absolute Attribution Effects

	Effective Actual Weight	Actual Return	Absolute Return Contribution	Effective Target Weight	Target Return	Target Return Contribution	Return Contribution Difference
Domestic Broad Eq	25%	(4.55%)	(0.69%)	25%	(3.48%)	(0.19%)	(0.50%)
Domestic Fixed	24%	1.83%	0.54%	26%	6.14%	1.51%	(0.97%)
TIPS	4%	5.93%	0.22%	4%	6.01%	0.22%	(0.00%)
Real Estate	7%	(2.52%)	(0.17%)	8%	(0.14%)	(0.02%)	(0.15%)
Non-US Developed	16%	(11.03%)	(2.61%)	13%	(11.68%)	(1.19%)	(1.41%)
Emerging Markets	5%	`(6.80%)	(0.56%)	4%	(10.09%)	(0.28%)	(0.28%)
Alternative Inv	1%	0.00%	0.00%	0%	`(4.61%)	0.00%	0.00%
Hedge Funds	0%	(1.46%)	(0.00%)	0%	(1.57%)	0.00%	(0.00%)
Private Equity	14%	(5.89%)	(0.72%)	14%	(5.89%)	(0.70%)	(0.02%)
Private Debt	1%	(0.60%)	(0.03%)	4%	(10.95%)	(0.38%)	0.36%
Cash Equiv	3%	0.55%	0.02%	2%	0.60%	0.01%	0.01%
	Total Fu	nd Return	(4.35%)		Target Return	(1.78%)	(2.57%)



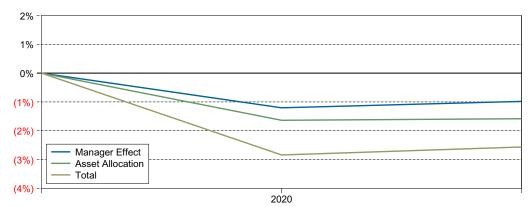
Cumulative Total Fund Relative Attribution - June 30, 2020

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.



Two Quarters Relative Attribution Effects

Cumulative Relative Attribution Effects



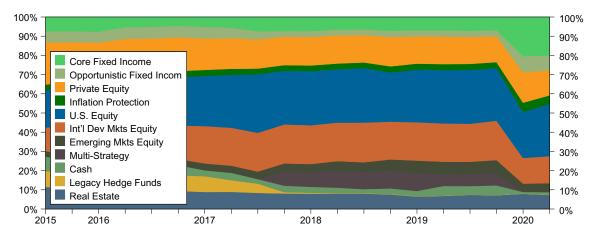
Two Quarters Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Broad Eq	25%	25%	(4.55%)	(3.48%)	(0.24%)	(0.19%)	(0.43%)
Domestic Fixed	24%	26%	1.83%	6.14%	(0.96%)	(0.68%)	(1.65%)
TIPS	4%	4%	5.93%	6.01%	(0.00%)	(0.06%)	(0.06%)
Real Estate	7%	8%	(2.52%)	(0.14%)	(0.16%)	(0.02%)	(0.19%)
Non-US Developed	16%	13%	(11.03%)	(11.68%)	0.12%	(0.79%)	(0.67%)
Emerging Markets	5%	4%	`(6.80%)	(10.09%)	0.16%	(0.20%)	(0.04%)
Alternative Inv	1%	0%	0.00%	`(4.61%)	(0.03%)	0.02%	(0.01%)
Hedge Funds	0%	0%	(1.46%)	(1.57%)	0.00%	0.00%	0.00%
Private Equity	14%	14%	(5.89%)	(5.89%)	0.00%	(0.12%)	(0.12%)
Private Debt	1%	4%	(0.60%)	(10.95%)	0.14%	0.28%	0.42%
Cash Equiv	3%	2%	0.55%	0.60%	(0.00%)	0.18%	0.18%
Total			(4.35%) =	(1.78%) +	(0.98%) +	(1.58%)	(2.57%)

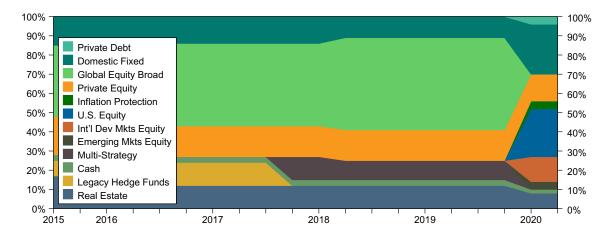
Actual vs Target Historical Asset Allocation

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).

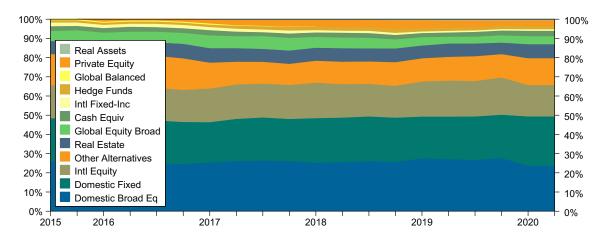
Actual Historical Asset Allocation



Target Historical Asset Allocation



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



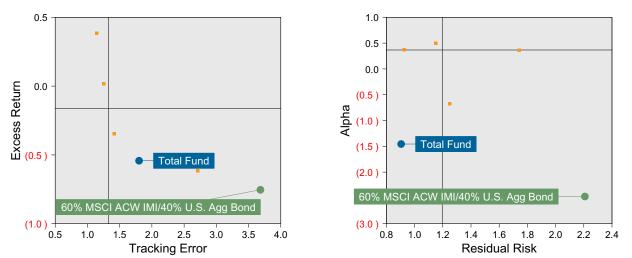


Total Fund Total Fund vs Target Risk Analysis

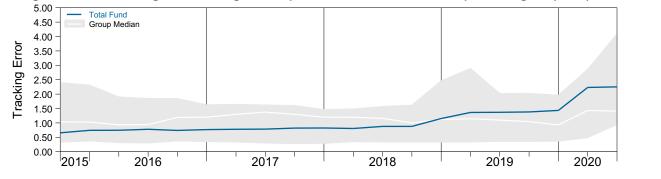
Risk Analysis

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.

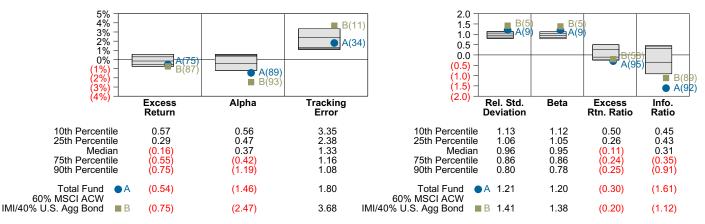
Risk Analysis vs Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended June 30, 2020







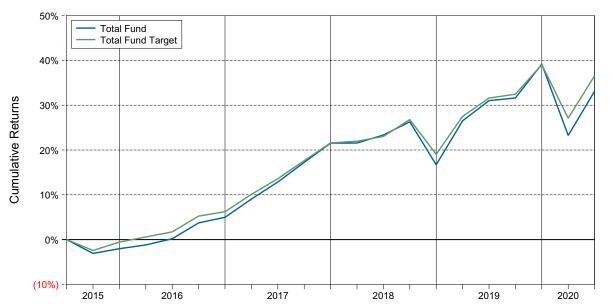
Risk Statistics Rankings vs Targets Rankings Against Callan Public Fund Spons- V Lg DB (>10B) Five Years Ended June 30, 2020



Callan

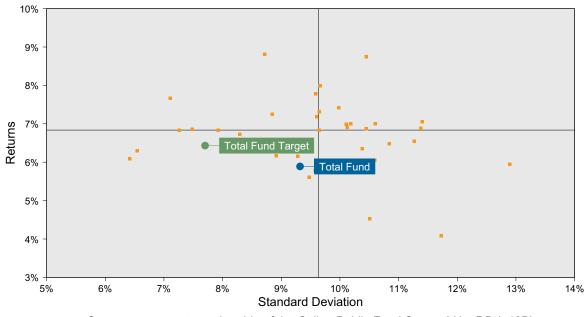
Cumulative Performance Relative to Target

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





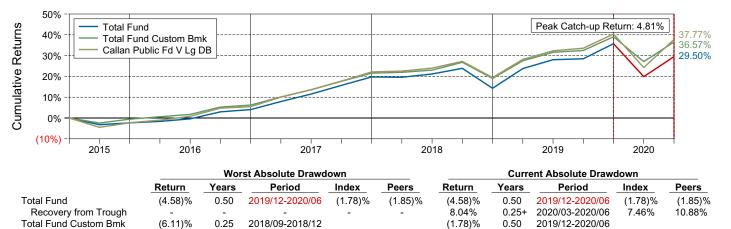
Squares represent membership of the Callan Public Fund Spons- V Lg DB (>10B)

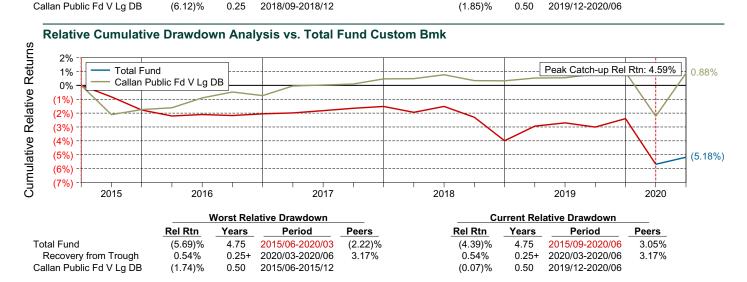


Total Fund Drawdown Analysis for Five Years Ended June 30, 2020

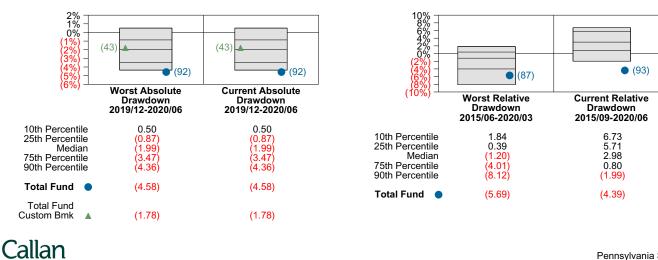
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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, 2020

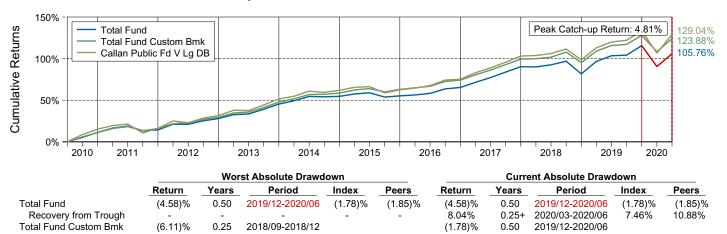


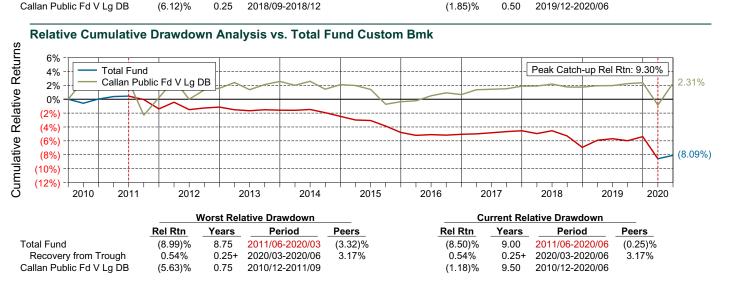
31

Total Fund Drawdown Analysis for Ten Years Ended June 30, 2020

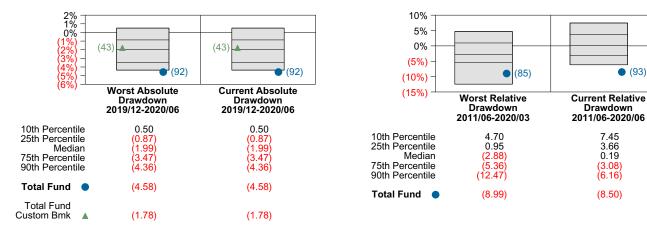
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute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



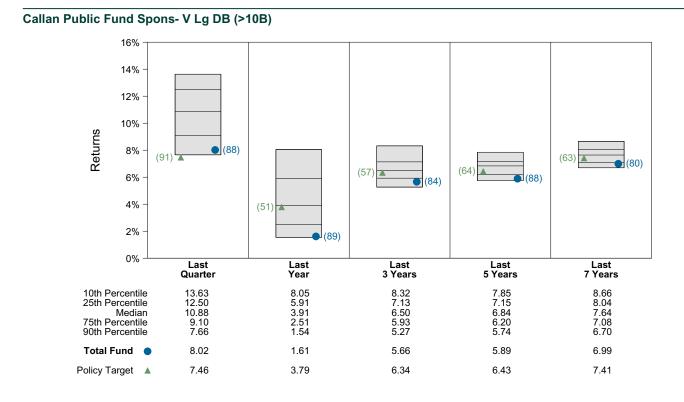


Drawdown Rankings vs. Total Fund Custom Bmk Rankings against Callan Public Fund Spons- V Lg DB (>10B) Ten Years Ended June 30, 2020

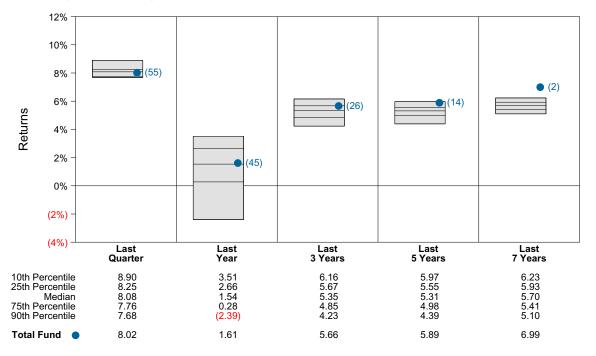


Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Spons- V Lg DB (>10B) for periods ended June 30, 2020. 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

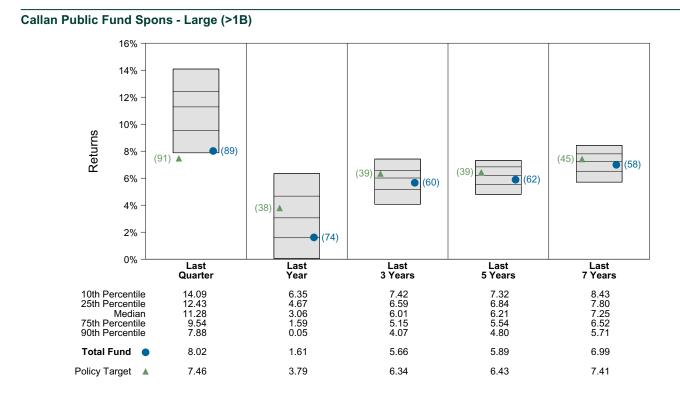


* Current Quarter Target = 26.0% Blmbg Aggregate, 25.0% Russell 3000 Index, 14.0% Private Equity, 13.0% MSCI World ex US IMI, 7.2% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 4.0% S&P:LSTA Lev Loan lagged 3 months+1.0%, 4.0% MSCI EM IMI, 4.0% Blmbg:TIPS, 2.0% 3-month Treasury Bill, 0.8% FTSE EP/NA US Index, 0.0% S&P:LSTA Lev Loan and 0.0% HFRI Fund of Funds Compos.

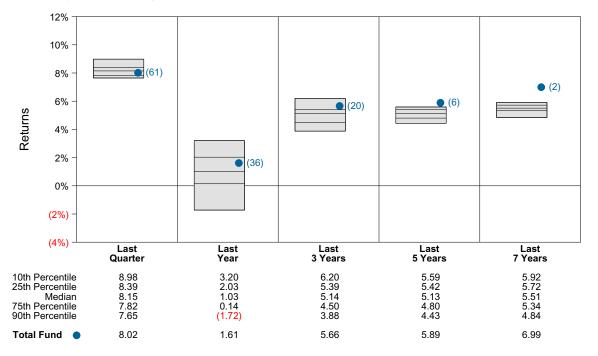


Total Fund Ranking

The first two charts show the ranking of the Total Fund's performance relative to that of the Callan Public Fund Spons - Large (>1B) for periods ended June 30, 2020. 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



* Current Quarter Target = 26.0% Blmbg Aggregate, 25.0% Russell 3000 Index, 14.0% Private Equity, 13.0% MSCI World ex US IMI, 7.2% NCREIF NFI-ODCE Eq Wt Net lagged 3 months, 4.0% S&P:LSTA Lev Loan lagged 3 months+1.0%, 4.0% MSCI EM IMI, 4.0% Blmbg:TIPS, 2.0% 3-month Treasury Bill, 0.8% FTSE EP/NA US Index, 0.0% S&P:LSTA Lev Loan and 0.0% HFRI Fund of Funds Compos.



Total Fund Period Ended June 30, 2020

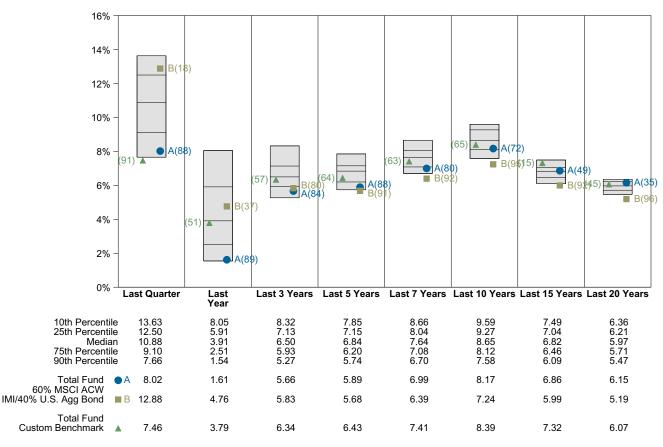
Quarterly Summary and Highlights

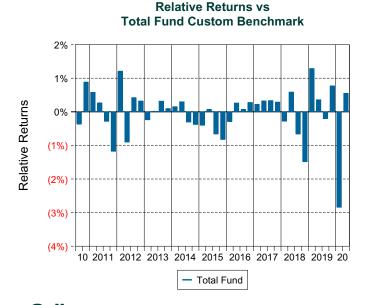
- Total Fund's portfolio posted a 8.02% return for the quarter placing it in the 88 percentile of the Callan Public Fund Spons- V Lg DB (>10B) group for the quarter and in the 89 percentile for the last year.
- Total Fund's portfolio outperformed the Total Fund Custom Benchmark by 0.55% for the quarter and underperformed the Total Fund Custom Benchmark for the year by 2.17%.

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

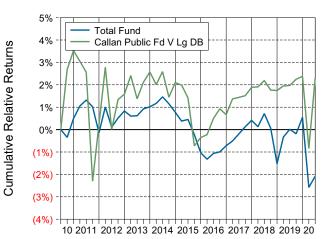
Quarterly Asset Growth

Beginning Market Value	\$26,988,179,202
Net New Investment	\$787,153,627
Investment Gains/(Losses)	\$2,195,461,919
Ending Market Value	\$29,970,794,748





Cumulative Returns vs Total Fund Custom Benchmark



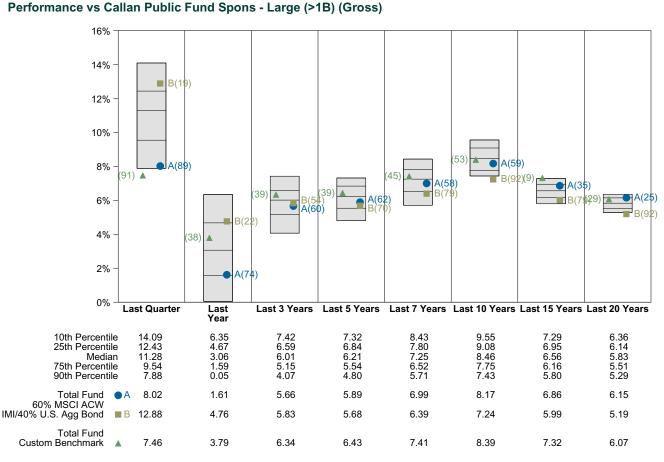
Total Fund Period Ended June 30, 2020

Quarterly Summary and Highlights

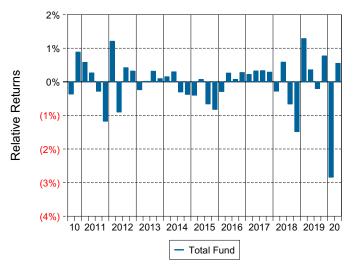
- Total Fund's portfolio posted a 8.02% return for the quarter placing it in the 89 percentile of the Callan Public Fund Spons - Large (>1B) group for the quarter and in the 74 percentile for the last year.
- Total Fund's portfolio outperformed the Total Fund Custom Benchmark by 0.55% for the quarter and underperformed the Total Fund Custom Benchmark for the year by 2.17%.

Quarterly Asset Growth

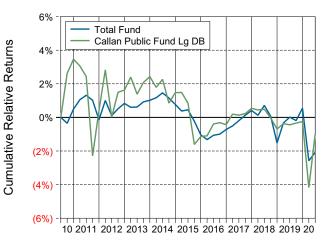
Beginning Market Value	\$26,988,179,202
Net New Investment	\$787,153,627
Investment Gains/(Losses)	\$2,195,461,919
Ending Market Value	\$29,970,794,748







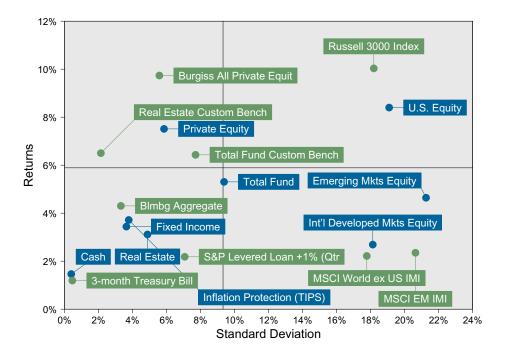
Cumulative Returns vs Total Fund Custom Benchmark



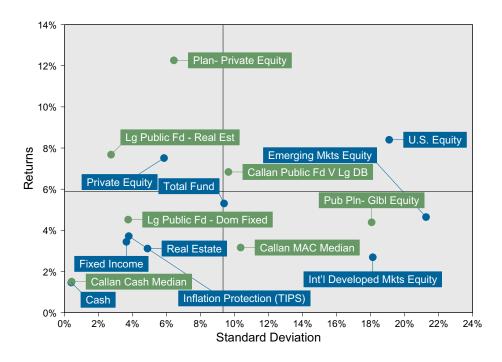
Asset Class Risk and Return

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, 2020, with the distribution as of March 31, 2020.

	June 30, 2020					r	March 31, 2020	
	Market Value	% of Total	(min)	Target	(max)	Market Value	% of Total	Target
	\$(000)	Weight	Weight	\$(000)	Weight	Weight		
U.S. Equity	\$7,949,375	26.52%	20.00%	25.00%	30.00%	\$6,232,203	23.09%	25.00%
Int'l Developed Markets Equity	\$4,101,491	13.68%	8.00%	13.00%	18.00%	\$3,463,065	12.83%	13.00%
Emerging Mkts Equity	\$1,357,293	4.53%	0.00%	4.00%	8.00%	\$1,124,214	4.17%	4.00%
Private Equity (1)	\$3,832,839	12.79%	0.00%	14.00%	0.00%	\$4,124,190	15.28%	14.00%
Buyouts	1,987,687	6.63%				2,086,630	7.73%	
Special Situations	407,220	1.36%				434,596	1.61%	
Growth Equity	851,474	2.84%				895,627	3.32%	
Keystone Legacy (2)	586,458	1.96%				707,337	2.62%	
Private Credit (1)	\$472,172	1.58%	0.00%	4.00%	0.00%	\$403,189	1.49%	4.00%
Fixed Income	\$8,411,741	28.07%	21.00%	26.00%	31.00%	\$8,105,717	30.03%	26.00%
Core Fixed Income	5,817,398	19.41%				5,282,773	19.57%	
Opportunistic Fixed Income	2,221,526	7.41%				2,153,821	7.98%	
Nominal U.S. Treasuries	372,817	1.24%				667,348	2.47%	
Inflation Protection (TIPS)	\$1,279,985	4.27%	1.00%	4.00%	7.00%	\$1,226,904	4.55%	4.00%
Real Estate (1)	\$2,136,235	7.13%	0.00%	8.00%	0.00%	\$2,060,267	7.63%	8.00%
Core/Core Plus Real Estate Funds	5 767,297	2.56%				741,349	2.75%	
Value Add/Opportunistic SMA	649,813	2.17%				638,955	2.37%	
Value Add/Opportunistic Funds	473,831	1.58%				460,237	1.71%	
REITS	239,596	0.80%				213,984	0.79%	
Legacy Real Assets	5,698	0.02%				5,743	0.02%	
Legacy Hedge Funds	\$26,566	0.09%	-	-	-	\$30,415	0.11%	-
Cash	\$401,468	1.34%	0.00%	2.00%	7.00%	\$218,016	0.81%	2.00%
Total Fund	\$29,970,795	100.0%		100.0%		\$26,988,179	100.0%	100.0%

Asset Distribution Across Investment Managers

(1) Private Equity, Real Estate, and Private Credit Market Values have a 1 Qtr lag
(2) As of 7/31/2018, Keystone Legacy SPV consists of 163 non-core funds, prior performance in previous sub-asset classes



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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, 2020								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance								
Total Fund Total Fund Custom Benchmark(1) Public Market Equiv Benchmark(2) 60/40 Index(3)	\$29,971 - - - -	100.00% - - -	8.04% 7.46% 5.56% 12.88%	(4.58%) (1.78%) (2.36%) (1.47%)	1.15% 3.79% 3.79% 4.76%	5.11% 6.34% 6.47% 5.83%	5.31% 6.43% 6.51% 5.68%	
J.S. Equity	\$7,949	26.52%	22.75%	(4.58%)	4.54%	8.51%	8.40%	
Russell 3000 Index	-	-	22.03%	(3.48%)	6.53%	10.04%	10.03%	
nternational Developed Markets Equity	\$4,101	13.68%	16.38%	(11.16%)	(4.50%)	0.95%	2.69%	
MSCI World Ex US IMI	-	-	16.21%	(11.68%)	(5.11%)	0.80%	2.22%	
Emerging Mkts Equity	\$1,357	4.53%	20.74%	(7.04%)	1.53%	3.36%	4.64%	
MSCI EM IMI	-	-	18.93%	(10.09%)	(3.97%)	1.35%	2.35%	
Private Equity	\$3,833	12.79%	(7.80%)	(5.59%)	(2.54%)	7.50%	7.51%	
Burgiss Private Equity Index (Qtr lag)	-	-	(6.76%)	(2.69%)	1.40%	9.72%	9.74%	
Global Equity +3% (Qtr lag)(4)	-	-	(19.65%)	(12.12%)	(6.03%)	7.27%	9.02%	
Private Credit	\$ 472	1.58%	(4.72%)	(2.36%)	1.52%	-	-	
S&P Levered Loan Index +1% (Qtr lag	J) -	-	(12.55%)	(10.82%)	(7.99%)	0.29%	2.18%	
Fixed Income	\$8,412	28.07%	3.21%	1.67%	4.09%	3.87%	3.44%	
U.S. Agg Bond Index	-	-	2.90%	6.14%	8.74%	5.32%	4.30%	
nflation Protection (TIPS)	\$1,280	4.27%	4.35%	5.84%	8.01%	4.95%	3.72%	
U.S. TIPS Index	-		4.24%	6.01%	8.28%	5.05%	3.75%	
Real Estate	\$2,136	7.13%	<mark>(0.06%)</mark>	(2.32%)	1.64%	2.32%	3.11%	
Real Estate Custom Bench (Qtr lag)(5) -	-	1.79%	(0.14%)	2.59%	4.98%	6.50%	
CPI + 3% (Qtr lag)	-	-	1.18%	2.01%	4.54%	4.92%	4.80%	
Cash	\$401	1.34%	0.17%	0.55%	1.62%	1.87%	1.46%	
3-month Treasury Bill	-	-	0.02%	0.60%	1.63%	1.77%	1.19%	

(1) Total Fund Custom Benchmark returns provided by RVK prior to 12/31/2018. As of 01/01/2020, benchmark consists of: 26% Bloomberg US 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 Iag), 4% MSCI Emerging Markets IMI Index, 4% Bloomberg US TIPS Index, 2% ICE BofAML 3 Mo US T-Bill Index, (2) Public Market Equivalent Benchmark returns provided by RVK prior to 12/31/2018. As of 01/01/2020, benchmark consists of: 26% Bloomberg US. Agg Bond Index, 25% Russell 3000, 13% MSCI World ex US Index, 10.5% Russell 3000+3% (Qtr Iag), 8% CPI+3% (Qtr Lag), 4% S&P/LSTA Levered Loan Index + 1% (Qtr Iag), 4% Bloomberg US TIPS Index, 4% MSCI Emerging Markets Index, 3.5% MSCI World ex US +3% (Qtr Iag), 2% ICE BofAML 3 Mo US T-Bill Index
(3) Benchmark consists of 60% MSCI ACW IM Index, 40% Bloomberg U.S. Agg Bond Index (4) As of 01/01/2020 benchmark consists of 25% MSCI World ex US and 75% Russell 3000 + 3% with a 1 quarter Iag. Benchmark performance represents the historical benchmark (Russell 3000 + 3% Qtr Iag) linked to the current benchmark. (5) As of 03/31/2019 benchmark consists of 90% NCREIF ODCE Index (1 Qtr Iag) 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, 2020. 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, 2020							
	Last 10	Last 15	Last 20	Last 25	Since			
	Years	Years	Years	Years	Inception			
Net Performance	Tears	Tears	Tears	Tears	псериоп	•		
Total Fund	7.48%	6.08%	5.39%	7.68%	9.30%	(1/81)		
Total Fund Custom Benchmark(1)	8.39%	7.32%	6.07%	8.13%	-	()		
Public Market Equiv Benchmark(2)	8.67%	7.50%	6.20%	8.24%	-			
60/40 Index(3)	7.24%	5.99%	5.19%	6.46%	-			
U.S. Equity	13.08%	7.63%	5.79%	8.81%	10.46%	(1/81)		
Russell 3000 Index	13.72%	8.78%	6.15%	9.28%	10.90%	(1/81)		
International Developed Markets Equity	6.52%	4.17%	-	-	5.55%	(1/02)		
MSCI World ex US IMI	5.67%	4.32%	3.24%	4.82%		(1/02)		
Emerging Mkts Equity	3.42%	4.24%	-		6.90%	(1/02)		
MSCI EM IMI	3.11%	6.30%	6.47%	4.23%	8.90%	. ,		
Private Equity	9.74%	10.29%	6.71%	12.74%	10.55%	(1/86)		
Burgiss Private Equity Index (Qtr lag)	11.75%	11.73%	8.59%	14.68%	16.48%	(1/86)		
Global Equity +3% (Qtr lag)(4)	13.45%	10.96%	8.39%	12.30%	13.86%	(1/86)		
Private Credit	-	-	-	-	6.05%	(12/17)		
S&P Levered Loan Index +1% (Qtr lag)	4.10%	4.73%	5.13%	-	(0.36%)	(12/17)		
Fixed Income	4.46%	4.92%	5.68%	5.99%	8.33%	(1/81)		
U.S. Agg Bond Index	3.82%	4.39%	5.14%	5.36%	7.69%	(1/81)		
Inflation Protection (TIPS)	2.80%	3.58%	-	-	3.50%	(2/03)		
U.S. TIPS Index	3.52%	4.00%	5.47%	-	4.52%	(2/03)		
Real Estate	6.98%	5.00%	6.38%	7.62%	8.20%	(3/84)		
Real Estate Custom Bench (Qtr lag)(5)	9.96%	6.52%	7.42%	-	-			
CPI +3% (Qtr lag)	4.72%	4.95%	5.08%	5.16%	5.61%	(3/84)		
Cash	0.91%	1.66%	2.17%	2.73%	3.59%	(1/87)		
3-month Treasury Bill	0.64%	1.34%	1.66%	2.37%	3.23%	(1/87)		

(1) Total Fund Custom Benchmark returns provided by RVK prior to 12/31/2018. As of 01/01/2020,

benchmark consists of: 26% Bloomberg US 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,

(2) Public Market Equivalent Benchmark returns provided by RVK prior to 12/31/2018. As of 01/01/2020,

benchmark consists of: 26% Russell 3000, 25% Bloomberg U.S. Agg Bond Index, 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 Iag),

2% ICE BofAML 3 Mo US T-Bill Index

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

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

Benchmark performance represents the historical benchmark linked to the current benchmark.

(5) As of 03/31/2019 benchmark consists of 90% NCREIF ODCE Index (1 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, 2020. 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, 2020								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance- Domestic Equity								
U.S. Equity	\$7,949	100.00%	22.75%	(4.58%)	4.54%	8.51%	8.40%	
Russell 3000 Index (1)	-	-	22.03%	(3.48%)	6.53%	10.04%	10.03%	
MCM Russell 1000 Index	6,376	80.21%	21.74%	(2.88%)	7.39%	10.65%	10.49%	
Russell 1000 Index		-	21.82%	(2.81%)	7.48%	10.64%	10.47%	
MCM Russell 2000 Core Index	366	4.61%	25.13%	(13.18%)	(6.81%)	1.90%	-	
Russell 2000 Index		-	25.42%	(12.98%)	(6.63%)	2.01%	4.29%	
MCM Russell 2000 Val Index	476	5.99%	18.87%	(23.45%)	(17.41%)	(4.37%)	-	
Russell 2000 Value Index		-	18.91%	(23.50%)	(17.48%)	(4.35%)	1.26%	
Emerald Asset Management Russell 2000 Growth Index	731	9.19%	31.90% 30.58%	(0.53%) (3.06%)	3.09% 3.48%	9.50% 7.86%	- 6.86%	

*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, 2020. 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, 2020								
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception				
Net Performance- Domestic Equity									
U.S. Equity	13.08%	7.63%	5.79%	8.81%	10.46% (1/81)				
Russell 3000 Index (1)	13.72%	8.78%	6.15%	9.21%	10.80% (1/81)				
MCM Russell 1000 Index	-	-	-	-	13.48% (1/12)				
Russell 1000 Index	13.97%	8.91%	6.10%	9.41%	13.51% (1/12)				
MCM Russell 2000 Core Index	-	-	-	-	3.78% (12/16)				
Russell 2000 Index	10.50%	7.01%	6.69%	8.16%	3.87% (12/16)				
MCM Russell 2000 Val Index	-	-	-	-	(2.44%) (12/16)				
Russell 2000 Value Index	7.82%	4.97%	7.65%	8.45%	(2.41%) (12/16)				
Emerald Asset Management	-	-	-	-	11.37% (12/16)				
Russell 2000 Growth Index	12.92%	8.85%	5.34%	7.36%	9.82% (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, 2020. 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.

	Ret	urns for Peri	ods Ended J	une 30, 2020			
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance- International Equity							
International Dev Mkts Equity MSCI World ex US IMI	\$4,101 -	75.14% -	16.38% 16.21%	(11.16%) (11.68%)	(4.50%) (5.11%)	0.95% 0.80%	2.69% 2.22%
Walter Scott & Partners(1) MSCI World	553 -	10.13% -	16.26% 19.36%	(2.82%) (5.77%)	5.97% 2.84%	11.90% 6.70%	11.17% 6.90%
BlackRock MSCI World Ex US Index MSCI World ex US	3,054	55.95% -	15.54% 15.34%	(11.28%) (11.49%)	(5.11%) (5.42%)	1.22% 0.84%	2.01%
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	_180 _	3.29%	16.90% 22.83%	(16.14%) (12.80%)	(7.80%) (4.34%)	(0.17%)	- 2.50%
Harris Assoc Int'I SCV MSCI World ex US Sm Cap MSCI World ex US Sm Value	308 - -	5.64% - -	24.34% 21.66% 16.41%	(21.66%) (12.87%) (20.49%)	(12.88%) (3.20%) (11.36%)	(5.42%) 0.53% (3.56%)	<mark>(0.35%)</mark> 3.56% 0.81%
Emerging Mkts Equity MSCI EM IMI	\$1,357 -	24.86% -	20.74% 18.93%	(7.04%) (10.09%)	1.53% (3.97%)	3.36% 1.35%	4.64% 2.35%
Macquarie Emg Mkts Equity MSCI EM	433	7.93%	23.74% 18.08%	(7.40%) (9.78%)	4.01% (3.39%)	3.77% 1.90%	5.25% 2.86%
Martin Currie Emg Mkts Equity MSCI EM	449	8.22%	18.08% 18.08%	(8.27%) (9.78%)	2.89% (3.39%)	5.14% 1.90%	6.77% 2.86%
BlackRock Emg Mkts Index MSCI EM	178 -	3.26% -	18.02% 18.08%	(9.90%) (9.78%)	(3.62%) (3.39%)	1.67% 1.90%	- 2.86%
Leading Edge Emg Mkts Fund MSCI EM	212	3.88%	21.51% 18.08%	(10.46%) (9.78%)	(3.68%) (3.39%)	- 1.90%	2.86%
GlobeFlex Emerging Small Cap MSCI EM Small Cap	- 86	1.58% -	24.16% 27.14%	(11.03%) (12.74%)	(9.12%) (8.82%)	(2.15%) (2.95%)	0.07% (1.37%)

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



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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, 2020							
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception		
Net Performance- International Equity							
International Dev Mkts Equity	6.52%	4.17%	-	-	5.55% (1/02)		
MSCI World ex US IMI	5.67%	4.32%	3.24%	4.82%	5.68% (1/02)		
Walter Scott & Partners(1)	11.85%	-	-	-	8.94% (10/06)		
MSCI World	9.95%	6.55%	4.32%	6.76%	5.62% (10/06)		
BlackRock MSCI World Ex US Index	-	-	-	-	1.29% (6/17)		
MSCI World ex US	5.43%	4.10%	2.98%	4.68%	0.85% (6/17)		
Xponance Non-U.S. Small Cap	-	-	-	-	(6.07%) (10/18)		
MSCI ACWI ex US Small Cap	6.05%	5.73%	6.12%	5.51%	(5.04%) (10/18)		
Harris Assoc Int'l SCV	5.62%	6.18%	-	-	9.09% (7/03)		
MSCI World ex US Sm Cap	7.26%	5.38%	-	-	8.39% (7/03)		
MSCI World ex US Sm Value	5.59%	4.76%	7.00%	6.18%	7.88% (7/03)		
Emerging Mkts Equity	3.42%	4.24%	-	-	6.90% (1/02) 8.90% (1/02)		
MSCI EM IMI	3.11%	6.30%	6.47%	4.23%			
Macquarie Emg Mkts Equity MSCI EM	- 3.27%	- 6.33%	-	-	3.69% (5/13) 1.84% (5/13)		
Martin Currie Emg Mkts Equity MSCI EM	- 3.27%	- 6.33%	-	-	4.24% (1/14) 2.30% (1/14)		
BlackRock Emg Mkts Index MSCI EM	3.27%	- 6.33%	-	-	1.67% (7/17) 1.90% (7/17)		
Leading Edge Emg Mkts Fund MSCI EM	- 3.27%	- 6.33%	-	-	4.51% (11/18) 4.90% (11/18)		
GlobeFlex Emerging Small Cap	-	-	-	-	2.27% (8/13)		
MSCI EM Small Cap	1.78%	6.14%	6.84%	3.57%	0.89% (8/13)		

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

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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, 2020								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance - Private Equity								
Private Equity	\$3,833	89.03%	(7.80%)	(5.59%)	(2.54%)	7.50%	7.51%	
Burgiss Private Equity Index (Qtr lag)	-	-	(6.76%)	(2.69%)	1.40%	9.72%	9.74%	
Global Equity +3% (Qtr lag)(1)	-	-	(19.65%)	(12.12%)	(6.03%)	7.27%	9.02%	
Buyouts	1,988	46.17%	(7.87%)	(4.94%)	(0.35%)	8.29%	9.14%	
Burgiss Buyout Index (Qtr lag)		-	(8.87%)	(4.85%)	(1.39%)	8.55%	9.87%	
Special Situations	407	9.46%	(7.56%)	(2.55%)	6.30%	9.72%	7.75%	
Burgiss Special Situations ldx (Qtr lag	J) -	-	(7.14%)	(5.06%)	(3.59%)	3.63%	4.67%	
Growth Equity	851	19.78%	(1.94%)	<mark>(0.30%)</mark>	1.09%	16.16%	10.51%	
Burgiss Venture Capital Index (Qtr lag	J) -	-	(2.33%)	3.21%	10.02%	16.18%	12.14%	
Keystone Legacy(2)	586	13.62%	(15.24%)	(15.49%)	(17.44%)	-	-	
Private Credit	\$472	10.97%	(4.72%)	(2.36%)	1.52%	-	-	
S&P Levered Loan Index +1% (Qtr lag	g) -	-	(12.55%)	(10.82%)	(7.99%)	0.29%	2.18%	

(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 7/31/2018, Keystone Legacy SPV consists of 163 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, 2020. 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, 2020									
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception				
Net Performance - Private Equity									
Private Equity Burgiss Private Equity Index (Qtr lag) Global Equity + 3% (Qtr lag)(1)	9.74% 11.75% 13.45%	10.29% 11.73% 10.96%	6.71% 8.59% 8.39%	12.74% 14.68% 12.30%	10.55%(1/86)16.48%(1/86)13.86%(1/86)				
Buyouts Burgiss Buyout Index (Qtr lag)	11.79% 11.57%	12.56% 12.22%	9.29% 10.41%	15.83% 13.23%	12.75% (4/86) 19.05% (9/86)				
Special Situations Burgiss Special Situations ldx (Qtr lag)	9.50% 7.63%	11.01% 7.54%	11.49% 8.83%	12.00% 10.04%	12.03% (1/95) 10.08% (6/95)				
Growth Equity Burgiss Venture Capital Index (Qtr lag)	10.01% 14.86%	7.21% 11.39%	<mark>(0.07%)</mark> 3.61%	7.25% 15.50%	6.98% (1/86) 13.53% (1/86)				
Keystone Legacy(2)	-	-	-	-	(10.59%) (7/18)				
Private Credit S&P Levered Loan Index +1% (Qtr lag)	- 4.10%	- 4.73%	- 5.13%	-	6.05% (12/17) (0.36%) (12/17)				

(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 7/31/2018, Keystone Legacy SPV consists of 163 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, 2020. 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, 2020								
	Market Value	Ending	Last	Year Last to Last			Last 5	
	\$(mm)	Weight	Quarter	Date	Year	3 Years	Years	
Net Performance - Fixed Income								
Fixed Income	\$8,412	57.61%	3.21%	1.67%	4.09%	3.87%	3.44%	
Blmbg Aggregate	-	-	2.90%	6.14%	8.74%	5.32%	4.30%	
Core Fixed Income	\$5,817	39.84%	3.42%	5.18%	8.07%	5.19%	4.40%	
Blmbg Aggregate	-	-	2.90%	6.14%	8.74%	5.32%	4.30%	
PIMCO Core Bond Fund	704	4.82%	5.57%	4.91%	7.84%	5.14%	4.37%	
Blmbg Agg ex Treasury		-	4.48%	4.29%	7.44%	5.08%	4.38%	
Mellon Bond-Index	4,899	33.55%	2.84%	6.08%	8.60%	5.26%	4.24%	
Blmbg Aggregate (1)		-	2.90%	6.14%	8.74%	5.32%	4.30%	
BMO (TCH) Corp FI	214	1.47%	9.75%	4.45%	9.31%	5.98%	5.52%	
BImbg Credit		-	8.22%	4.82%	9.07%	6.14%	5.54%	
Nominal U.S. Treasuries	\$373	2.55%	0.92%	12.80%	14.71%	7.36%	5.22%	
Blmbg US Treas Bell 10Y	-	-	0.68%	12.70%	14.24%	7.07%	4.89%	
PIMCO US Treasuries	373	2.55%	0.92%	12.80%	14.71%	7.36%	5.48%	
Blmbg US Treas Bell 10Y		-	0.68%	12.70%	14.24%	7.07%	4.89%	

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	Returns for Per	riods Ended Jur	ne 30, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Fixed Income					
Fixed Income	4.46%	4.92%	5.68%	5.99%	8.33% (1/81)
Blmbg Aggregate	3.82%	4.39%	5.14%	5.36%	7.69% (1/81)
Core Fixed Income	4.52%	4.74%	-	-	5.01% (1/02)
Blmbg Aggregate	3.82%	4.39%	5.14%	5.36%	4.70% (1/02)
PIMCO Core Bond Fund Bimbg Agg ex Treasury	- 4.03%	- 4.58%	-	2	3.35% (1/13) 3.51% (1/13)
Mellon Bond-Index	3.71%	4.28%	5.08%	5.39%	7.20% (4/84)
Blmbg Aggregate (1)	3.82%	4.39%	5.20%	5.49%	
BMO (TCH) Corp FI	5.38%	5.36%	-	-	6.02% (12/00)
Blmbg Credit	5.24%	5.26%	6.08%	6.06%	5.98% (12/00)
Nominal U.S. Treasuries	-	-	-	-	3.85% (9/11)
Blmbg US Treas Bell 10Y	4.50%	4.76%	5.42%	5.42%	3.86% (9/11)
PIMCO US Treasuries	-	-	-	-	4.05% (9/11)
Bimbg US Treas Bell 10Y	4.50%	4.76%	5.42%	5.42%	3.86% (9/11)

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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.

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance - Fixed Income		•					
Opportunistic Fixed Income	\$2,222	100.00%	3.19%	(8.63%)	(6.50%)	0.34%	1.37%
BAAM Keystone(1)	886	39.89%	6.70%	(8.63%)	<mark>(4.33%)</mark>	1.63%	1.95%
HFRI FOF Comp Index	-	-	7.90%	(1.57%)	0.49%	2.26%	1.50%
Brandywine Global Opp Fl	198	8.92%	8.66%	<mark>(3.01%)</mark>	<mark>(0.63%)</mark>	1.14%	2.59%
FTSE Wrld Gov't Bond Index	-	-	2.04%	4.08%	4.60%	3.98%	3.70%
Eaton Vance GMARA(2)	_214	9.63%	9.17%	0.35%	7.73%	-	-
3 Mo LIBOR Index +6%		-	1.57%	3.46%	7.57%	7.97%	7.48%
Fidelity HY CMBS	292	13.13%	2.07%	(14.40%)	(12.56%)	<mark>(0.81%)</mark>	0.97%
Bloomberg US CMBS Ex AAA Index	-	-	2.09%	(5.51%)	(3.69%)	2.83%	3.24%
SEI Str. Credit: HY Bank Loans(3)(4)	_274	12.34%	(20.39%)	(18.67%)	<mark>(21.60%)</mark>	<mark>(2.86%)</mark>	1.17%
FTSE:HY Corp (1 month lag)		-	(4.01%)	(3.66%)	0.32%	2.61%	3.80%
Stone Harbor Glbl HY	157	7.07%	9.57%	(3.57%)	(0.73%)	2.93%	3.81%
FTSE High Yield Market Index	-		9.56%	(4.78%)	(1.14%)	2.90%	4.31%
Stone Harbor EMD	200	9.01%	17.20%	(3.48%)	<mark>(1.71%)</mark>	1.98%	4.71%
JPM Emg Mkts Bond Global Index		-	11.21%	(1.87%)	1.52%	3.31%	5.12%

Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.
 Eaton Vance since inception returns were included in the Multi-Strategy composite through 12/31/2019.
 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.
 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.
 SEI HY Bank Loans has a 1 month lag in valuation.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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 Jun	ie 30, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Fixed Income					
Opportunistic Fixed Income	-	-	-	-	3.06% (10/12)
BAAM Keystone(1)	_	-	-	-	5.90% (7/12)
HFRI FOF Comp Index	2.79%	2.64%	3.09%	4.90%	3.26% (7/12)
Brandywine Global Opp Fl	_	-	-	-	3.47% (2/11)
FTSE Wrld Gov't Bond Index	2.37%	3.28%	4.42%	4.17%	1.86% (2/11)
Eaton Vance GMARA(2)	-	-	-	-	3.30% (6/18)
3 Mo LIBOR Index +6%	6.90%	7.72%	7.97%		8.10% (6/18)
Fidelity HY CMBS	7.26%	5.23%	7.13%	-	7.65% (4/97)
Bloomberg US CMBS Ex AAA Index	5.89%	0.33%	-		-
SEI Str. Credit: HY Bank Loans(3)(4)	7.47%	-	-	-	9.37% (5/08)
FTSE:HY Corp (1 month lag)	6.35%	6.49%	6.82%	6.76%	6.92% (5/08)
Stone Harbor Glbl HY	5.70%	6.04%	7.16%	-	7.16% (7/00)
FTSE High Yield Market Index	6.32%	6.43%	6.75%	6.77%	6.75% (7/00)
Stone Harbor EMD	5.33%	6.60%	-	-	6.98% (4/05)
JPM Emg Mkts Bond Global Index	5.82%	6.59%	8.06%	9.54%	6.92% (4/05)

(1) Blackstone Keystone since inception returns were included in the Legacy Hedge Fund composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.

(2) Eaton Vance since inception returns were included in the Multi-Strategy composite through 12/31/2019.

(3) 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.

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



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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.

	Ret	urns for Peri	iods Ended J	une 30, 2020	1		
	Market Value	Ending	Last	Year to	Last Year	Last 3	Last 5
Net Performance - Inflation Protection	\$(mm)	Weight	Quarter	Date	rear	Years	Years
Inflation Protection (TIPS)	\$1,280	100.00%	4.35%	5.84%	8.01%	4.95%	3.72%
Blmbg US TIPS	-	-	4.24%	6.01%	8.28%	5.05%	3.75%
NISA Inv Adv TIPS	552	43.15%	4.18%	5.96%	8.18%	5.01%	3.73%
Blmbg US TIPS (1)		-	4.24%	6.01%	8.28%	5.05%	3.75%
Brown Brothers TIPS	_601	46.99%	4.06%	6.11%	8.38%	4.99%	3.78%
BImbg US TIPS	_	-	4.24%	6.01%	8.28%	5.05%	3.75%
New Century Global TIPS	126	9.86%	6.56%	4.98%	6.75%	4.69%	3.55%
Blmbg:Wid Infl-Lnk Unhdg		-	6.50%	3.94%	5.80%	4.27%	3.26%

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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, 2020. 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, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Inflation Protection					
Inflation Protection (TIPS)	2.80%	3.58%	-	-	3.50% (2/03)
Blmbg US TIPS	3.52%	4.00%	5.47%		4.52% (2/03)
NISA Inv Adv TIPS	2.61%	-	-	-	3.48% (4/07)
BImbg US TIPS (1)	2.61%	3.28%	4.92%		3.49% (4/07)
Brown Brothers TIPS	-	-	-	-	2.30% (2/12)
BImbg US TIPS	3.52%	4.00%	5.47%		2.14% (2/12)
New Century Global TIPS	-	-	-	:	2.63% (2/12)
Blmbg:Wld Infl-Lnk Unhdg	3.81%	3.92%	5.54%		2.18% (2/12)

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

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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, 2020. 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, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Net Performance - Real Estate								
Real Estate	\$2,136	100.00%	<mark>(0.06%)</mark>	(2.32%)	1.64%	2.32%	3.11%	
Real Estate Custom Bench (Qtr lag)(1) -	-	1.79%	(0.14%)	2.59%	4.98%	6.50%	
CPI +3% (Qtr lag)	-	-	1.18%	2.01%	4.54%	4.92%	4.80%	
Core/Core Plus Real Estate Funds	767	35.92%	<mark>(2.08%)</mark>	<mark>(1.02%)</mark>	0.58%	4.77%	6.81%	
NCREIF ODCE Index (Qtr lag)		-	0.71%	2.02%	4.38%	6.14%	7.82%	
Value Add/Opportunistic SMA	_650	30.42%	1.81%	2.36%	8.61%	1.12%	2.26%	
NCREIF ODCE Index (Qtr lag)	_	-	0.71%	2.02%	4.38%	6.14%	7.82%	
Value Add/Opportunistic Funds	474	22.18%	<mark>(4.91%)</mark>	<mark>(2.42%)</mark>	0.48%	5.64%	5.64%	
NCREIF ODCE Index (Qtr lag)		-	0.71%	2.02%	4.38%	6.14%	7.82%	
Legacy Real Assets CPI +3% (Qtr lag)	- 6	0.27%	<mark>(0.77%)</mark> 1.18%	<mark>(1.63%)</mark> 2.01%	11.06% 4.54%	<mark>(0.68%)</mark> 4.92%	<mark>(0.50%)</mark> 4.80%	
REITS	_240	11.22%	12.09%	(15.52%)	(9.57%)	1.84%	0.67%	
FTSE NAREIT US Index		-	11.68%	(20.70%)	(15.50%)	(0.77%)	0.72%	

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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, 2020. 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	iods Ended Jur	ie 30, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Net Performance - Real Estate					
Real Estate	6.98%	5.00%	6.38%	7.62%	8.20% (3/84)
Real Estate Custom Benchmark (Qtr lag)	9.96%	6.52%	7.42%	-	-
CPI +3% (Qtr lag)	4.72%	4.95%	5.08%	5.16%	5.61% (3/84)
Core/Core Plus Real Estate Funds	10.29%	6.91%	7.42%	8.57%	6.96% (9/86)
NCREIF ODCE Index (Qtr lag)	10.55%	6.41%	6.92%	7.73%	5.98% (9/86)
Value Add/Opportunistic SMA	5.54%	3.84%	4.73%	6.31%	5.17% (6/88)
NCREIF ODCE Index (Qtr lag)	10.55%	6.41%	6.92%	7.73%	6.02% (6/88)
Value Add/Opportunistic Funds	10.42%	5.49%	7.31%	8.65%	7.66% (3/84)
NCREIF ODCE Index (Qtr lag)	10.55%	6.41%	6.92%	7.73%	6.24% (3/84)
Legacy Real Assets	(0.34%)	1.57%	2.10%	3.75%	4.30% (3/93)
CPI +3% (Qtr lag)	4.72%	4.95%	5.08%	5.16%	5.21% (3/93)
REITS	6.63%	6.67%	9.51%	-	9.01% (4/96)
FTSE NAREIT US Index	7.97%	6.39%	9.60%	9.84%	9.39% (4/96)

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Returns for Periods Ended June 30, 2020								
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Gross Performance								
Total Fund Total Fund Estimated Gross History Total Fund Custom Benchmark Public Market Equiv Benchmark 60/40 Index	\$29,971 (1) 29,971 - - -	100.00% 100.00% - - -	8.02% 8.02% 7.46% 5.56% 12.88%	(4.35%) (4.35%) (1.78%) (2.36%) (1.47%)	1.61% 3.79% 3.79% 4.76%	5.66% 6.34% 6.47% 5.83%	5.89% 6.43% 6.51% 5.68%	
U.S. Equity Russell 3000 Index	\$7,949 -	26.52% -	22.77% 22.03%	(4.55%) (3.48%)	4.62% 6.53%	8.59% 10.04%	8.53% 10.03%	
International. Developed Markets Equi MSCI World ex US IMI	ty \$4,101 -	13.68% -	16.42% 16.21%	(11.03%) (11.68%)	(4.29%) (5.11%)	1.07% 0.80%	2.90% 2.22%	
Emerging Mkts Equity MSCI EM IMI	\$1,357 -	4.53% -	20.89% 18.93%	(6.80%) (10.09%)	1.98% (3.97%)	3.93% 1.35%	5.16% 2.35%	
Private Equity Burgiss Private Equity Index (Qtr lag Global Equity +3% (Qtr lag)	\$3,833) - -	12.79% - -	(8.10%) (6.76%) (19.65%)	(5.01%) (2.69%) (12.12%)	1.40% (6.03%)	- 9.72% 7.27%	9.74% 9.02%	
Private Credit S&P Levered Loan Index +1% (Qtr I	\$472 .ag) -	1.58% -	(4.09%) (12.55%)	(0.60%) (10.82%)	(7.99%)	:	:	
Fixed Income Blmbg Aggregate	\$8,412 -	28.07% -	3.27% 2.90%	1.83% 6.14%	4.35% 8.74%	4.10% 5.32%	3.71% 4.30%	
Inflation Protection (TIPS) Blmbg US TIPS	\$1,280 -	4.27% -	4.38% 4.24%	5.93% 6.01%	8.17% 8.28%	5.10% 5.05%	3.86% 3.75%	
Real Estate Real Estate Custom Benchmark (Qt CPI +3% (Qtr lag)	\$2,136 - lag) - -	7.13% - -	<mark>(0.28%)</mark> 1.79% 1.18%	(1.38%) (0.14%) 2.01%	- 2.59% 4.54%	- 4.98% 4.92%	6.50% 4.80%	
Cash 3-month Treasury Bill	\$401 -	1.34% -	0.17% 0.02%	0.55% 0.60%	1.62% 1.63%	1.87% 1.77%	1.46% 1.19%	

(1) Total Fund Estimated Gross History is calculated by BNY Mellon using a gross-up methodology through 12/31/19. Starting 01/31/2020 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 Per	riods Ended Jun	ne 30, 2020			
	Last 10	Last 15	Last 20	Last 25	Since	
	Years	Years	Years	Years	Inception	
Gross Performance						
Total Fund	-	-	-	-	(4.35%)	(1/20)
Total Fund Estimated Gross History (1)	8.17%	6.86%	6.15%	-		(1/96)
Total Fund Custom Benchmark	8.39%	7.32%	6.07%	8.13%		(1/96)
Public Market Equiv Benchmark	8.67%	7.50%	6.20%	8.24%		(1/96)
60/40 Index	7.24%	5.99%	5.19%	6.46%	6.25%	(1/96)
U.S. Equity	13.23%	7.78%	5.92%	8.92%	10.53%	(1/81)
Russell 3000 Index	13.72%	8.78%	6.15%	9.28%		(1/81)
International. Developed Markets Equity	6.78%	4.47%	_		5.86%	(1/02)
MSCI World ex US IMI	5.67%	4.32%	3.24%	4.82%		(1/02)
	3.85%	4.66%			7.00%	
Emerging Mkts Equity			-	-		(1/02)
MSCI EM IMI	3.11%	6.30%	6.47%	4.23%	8.90%	(1/02)
Private Equity	-	-	-	-	(5.01%)	
Burgiss Private Equity Index (Qtr lag)	11.75%	11.73%	8.59%	14.68%	(2.69%)	
Global Equity +3% (Qtr lag)	13.45%	10.96%	8.39%	12.30%	(12.12%)	(1/20)
Private Credit	-	-	-	-	(0.60%)	(1/20)
S&P Levered Loan Index +1% (Qtr Lag)	4.10%	4.73%	5.13%	-	(10.82%)	
Fixed Income	4.73%	5.18%	5.93%	6.22%	7.62%	(1/85)
BImbg Aggregate	3.82%	4.39%	5.14%	5.36%	6.88%	(1/85)
Inflation Protection (TIPS)	2.93%	3.70%	-	-	3.63%	(2/03)
BImbg US TIPS	3.52%	4.00%	5.47%	-		(2/03)
Real Estate	_	_	_		(1.38%)	(1/20)
Real Estate Custom Benchmark (Qtr lag)	- 9.96%	- 6.52%	- 7.42%	-	(0.14%)	
CPI +3% (Qtr lag)	4.72%	4.95%	5.08%	5.16%	2.01%	
Cash	0.92%	1.68%	2.00%	2.72%	3.99%	(1/87)
3-month Treasury Bill	0.64%	1.34%	1.66%	2.37%		(1/87)
	0.0170	1.0170	1.0070	2.01 /3	0.2070	()

(1) Total Fund Estimated Gross History is calculated by BNY Mellon using a gross-up methodology through 12/31/19. Starting 01/31/2020 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, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Gross Performance- Domestic Equit	y .							
U.S. Equity	\$7,949	100.00%	22.77%	(4.55%)	4.62%	8.59%	8.53%	
Russell 3000 Index(1)	-	-	22.03%	(3.48%)	6.53%	10.04%	10.03%	
MCM Russell 1000 Index	6,376	80.21%	21.74%	(2.87%)	7.39%	10.66%	10.50%	
Russell 1000 Index		-	21.82%	(2.81%)	7.48%	10.64%	10.47%	
MCM Russell 2000 Core Index	366	4.61%	25.13%	(13.17%)	(6.79%)	1.93%	-	
Russell 2000 Index		-	25.42%	(12.98%)	(6.63%)	2.01%	4.29%	
MCM Russell 2000 Val Index	476	5.99%	18.88%	(23.44%)	(17.39%)	(4.35%)	-	
Russell 2000 Value Index		-	18.91%	(23.50%)	(17.48%)	(4.35%)	1.26%	
Emerald Asset Management	731	9.19%	32.04%	(0.19%)	3.67%	10.04%	-	
Russell 2000 Growth Index		-	30.58%	(3.06%)	3.48%	7.86%	6.86%	

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	Returns for Per	riods Ended Jun	ie 30, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance- Domestic Equity					
U.S. Equity	13.23%	7.78%	5.92%	8.92%	10.53% (1/81)
Russell 3000 Index(1)	13.72%	8.78%	6.15%	9.21%	10.80% (1/81)
MCM Russell 1000 Index	-	-	-	-	13.49% (1/12)
Russell 1000 Index	13.97%	8.91%	6.10%	9.41%	13.51% (1/12)
MCM Russell 2000 Core Index	-	-	-	-	3.80% (12/16)
Russell 2000 Index	10.50%	7.01%	6.69%	8.16%	3.87% (12/16)
MCM Russell 2000 Val Index	-	-	-	-	(2.42%) (12/16)
Russell 2000 Value Index	7.82%	4.97%	7.65%	8.45%	(2.41%) (12/16)
Emerald Asset Management	-	-	-	-	11.88% (12/16)
Russell 2000 Growth Index	12.92%	8.85%	5.34%	7.36%	9.82% (12/16)

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	Returns for Periods Ended June 30, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	
Gross Performance - International Equ			4	2.00				
Int'I Developed Mkts Equity	\$4,101	75.14%	16.42%	(11.03%)	(4.29%)	1.07%	2.90%	
MSCI World ex US IMI	-	-	16.21%	(11.68%)	(5.11%)	0.80%	2.22%	
Walter Scott & Partners (1)	553	10.13%	16.37%	(2.39%)	6.63%	12.42%	11.68%	
MSCI World	-	-	19.36%	(5.77%)	2.84%	6.70%	6.90%	
BlackRock MSCI World Ex US Index	3,054	55.95%	15.54%	(11.27%)	(5.09%)	1.23%	_	
MSCI World ex US		-	15.34%	(11.49%)	(5.42%)	0.84%	2.01%	
Xponance Non-U.S. Small Cap MSCI ACWI ex US Small Cap	_180 _	3.29%	17.11% 22.83%	(15.81%) (12.80%)	(7.17%) (4.34%)	(0.17%)	- 2.50%	
Harris Assoc Int'l SCV	308	5.64%	24.54%	(21.17%)	(11.80%)	<mark>(4.69%)</mark>	0.41%	
MSCI World ex US Sm Cap		-	21.66%	(12.87%)	(3.20%)	0.53%	3.56%	
Emerging Mkts Equity	\$1,357	24.86%	20.89%	(6.80%)	1.98%	3.93%	5.16%	
MSCI EM IMI		-	18.93%	(10.09%)	(3.97%)	1.35%	2.35%	
Macquarie Emg Mkts Equity	433	7.93%	23.90%	(7.14%)	4.46%	4.46%	5.86%	
MSCI EM		-	18.08%	(9.78%)	(3.39%)	1.90%	2.86%	
Martin Currie Emg Mkts Equity	449	8.22%	18.22%	(8.03%)	3.49%	5.91%	7.41%	
MSCI EM	-	-	18.08%	(9.78%)	(3.39%)	1.90%	2.86%	
BlackRock Emg Mkts Index	178	3.26%	18.06%	(9.77%)	(3.44%)	1.78%	-	
MSCI EM	-	-	18.08%	(9.78%)	(3.39%)	1.90%	2.86%	
Leading Edge Emg Mkts Fund	212	3.88%	21.75%	(10.10%)	(2.97%)	_	-	
MSCI EM		-	18.08%	(9.78%)	(3.39%)	1.90%	2.86%	
GlobeFlex Emerging Small Cap	- 86	1.58%	24.35%	(10.59%)	(8.38%)	(1.46%)	0.77%	
MSCI EM Small Cap		-	27.14%	(12.74%)	(8.82%)	(2.95%)	(1.37%)	

*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, 2020. 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 - International Equity					
Int'l Developed Mkts Equity	6.78%	4.47%	-	-	5.86% (1/02)
MSCI World ex US IMI	5.67%	4.32%	3.24%	4.82%	5.68% (1/02)
Walter Scott & Partners (1)	12.32%	-	-	-	9.41% (10/06)
MSCI World	9.95%	6.55%	4.32%	6.76%	5.62% (10/06)
BlackRock MSCI World Ex US Index	5.43%	-	-	-	1.30% (6/17)
MSCI World ex US		4.10%	2.98%	4.68%	0.85% (6/17)
Xponance Non-U.S. Small Cap	-	-	-	-	(5.70%) (10/18)
MSCI ACWI ex US Small Cap	6.05%	5.73%	6.12%	5.51%	(5.04%) (10/18)
Harris Assoc Int'l SCV MSCI World ex US Sm Cap	6.36% 7.26%	6.94% 5.38%	-	-	9.86% (7/03) 8.39% (7/03)
Emerging Mkts Equity	3.85%	4.66%	-	-	7.26% (1/02)
MSCI EM IMI	3.11%	6.30%	6.47%	4.23%	8.90% (1/02)
Macquarie Emg Mkts Equity	-	-	-	-	4.37% (5/13)
MSCI EM	3.27%	6.33%	-		1.84% (5/13)
Martin Currie Emg Mkts Equity MSCI EM	- 3.27%	- 6.33%	-	-	4.80% (1/14) 2.30% (1/14)
BlackRock Emg Mkts Index MSCI EM	- 3.27%	- 6.33%	-	-	1.78% (7/17) 1.90% (7/17)
Leading Edge Emg Mkts Fund MSCI EM	- 3.27%	- 6.33%	-	-	4.97% (11/18) 4.90% (11/18)
GlobeFlex Emerging Small Cap	-	-	-	-	2.89% (8/13)
MSCI EM Small Cap	1.78%	6.14%	6.84%	3.57%	0.89% (8/13)

*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, 2020. 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, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - Private Equity							
Private Equity Burgiss All Private Equity (Qtr Lag) Global Equity +3% (Qtr lag)(1)	\$3,833 - -	89.03% - -	(8.10%) (6.76%) (19.65%)	(5.01%) (2.69%) (12.12%)	1.40% (6.03%)	- 9.72% 7.27%	- 9.74% 9.02%
Buyouts Burgiss Buyout Index (Qtr Lag)	1,988 -	46.17% -	(8.66%) (8.87%)	(4.68%) (4.85%)	(1.39%)	- 8.55%	- 9.87%
Special Situations Burgiss Special Sits Index (Qtr Lag)	407	9.46% -	(8.63%) (7.14%)	(3.51%) (5.06%)	(3.59%)	- 3.63%	4.67%
Growth Equity Burgiss Venture Capital Idx (Qtr Lag	851) -	19.78% -	(1.64%) (2.33%)	1.47% 3.21%	- 10.02%	- 16.18%	- 12.14%
Keystone Legacy(2)	586	13.62%	(14.39%)	(14.53%)	-	-	-
Private Credit S&P Levered Loan Index + 1% (Qtr I	\$472 Lag) -	10.97% -	(4.09%) (12.55%)	(0.60%) (10.82%)	(7.99%)	- 0.29%	- 2.18%

(1) As of 01/01/2020 benchmark is 25% MSCI World ex US Index and 75% Russell 3000 + 3% with a 1 Qtr lag. (2) As of 7/31/2018, Keystone Legacy SPV consists of 163 non-core funds, prior performance in previous sub-asset classes



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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, 2020							
	Market Value	Ending	Year Last to Last			Last 3	Last 5
	\$(mm)	Weight	Quarter	Date	Year	Years	Years
Gross Performance - Fixed Income							
Fixed Income BImbg Aggregate	\$8,412 -	57.61% -	3.27% 2.90%	1.83% 6.14%	4.35% 8.74%	4.10% 5.32%	3.71% 4.30%
Core Fixed Income Blmbg Aggregate	\$5,817 -	39.84% -	3.43% 2.90%	5.23% 6.14%	8.17% 8.74%	5.29% 5.32%	4.52% 4.30%
PIMCO Core Bond Fund Bloomberg Agg ex. Treasury	704	4.82%	5.61% 4.48%	5.04% 4.29%	8.05% 7.44%	5.36% 5.08%	4.56% 4.38%
Mellon Bond Index Blmbg Aggregate(1)	4,899	33.55% -	2.84% 2.90%	6.09% 6.14%	8.63% 8.74%	5.29% 5.32%	4.27% 4.30%
BMO (TCH) Corp FI BImbg Credit	214	1.47% -	9.81% 8.22%	4.63% 4.82%	9.62% 9.07%	6.24% 6.14%	5.80% 5.54%
Nominal U.S. Treasuries Blmbg:Treas Bellwethr 10Y	\$373 -	2.55% -	0.95% 0.68%	12.88% 12.70%	14.84% 14.24%	7.47% 7.07%	5.32% 4.89%
PIMCO US Treasuries Blmbg:Treas Bellwethr 10Y	373	2.55%	0.95% 0.68%	12.88% 12.70%	14.84% 14.24%	7.47% 7.07%	5.59% 4.89%

(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, 2020. 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, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance - Fixed Income					
Fixed Income	4.73%	5.18%	5.93%	6.22%	7.62%(1/85)6.88%(1/85)
Blmbg Aggregate	3.82%	4.39%	5.14%	5.36%	
Core Fixed Income	4.68%	4.91%	-	-	5.18% (1/02)
BImbg Aggregate	3.82%	4.39%	5.14%	5.36%	4.70% (1/02)
PIMCO Core Bond Fund Bloomberg Agg ex. Treasury	- 4.03%	- 4.58%	-	-	3.53% (1/13) 3.51% (1/13)
Mellon Bond Index	3.75%	4.32%	5.12%	5.43%	5.37% (9/93)
Bimbg Aggregate(1)	3.82%	4.39%	5.20%	5.49%	-
BMO (TCH) Corp FI	5.65%	5.63%	-	-	6.29% (12/00)
BImbg Credit	5.24%	5.26%	6.08%	6.06%	5.98% (12/00)
Nominal U.S. Treasuries	-	-	-	-	3.95% (9/11)
Blmbg:Treas Bellwethr 10Y	4.50%	4.76%	5.42%	5.42%	3.86% (9/11)
PIMCO US Treasuries	-	-	-	-	4.14% (9/11)
BImbg:Treas Bellwethr 10Y	4.50%	4.76%	5.42%	5.42%	3.86% (9/11)

(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, 2020. 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, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - Fixed Income Opportunistic Fixed Income	\$2,222	100.00%	3.37%	(8.29%)	(5.90%)	0.92%	2.01%
BAAM Keystone(1)(5)	886	39.89%	6.88%	(8.35%)	(3.61%)	1.88%	2.10%
HFRI Fund of Funds Compos		-	7.90%	(1.57%)	0.49%	2.26%	1.50%
Brandywine Global Opp FI	198	8.92%	8.76%	<mark>(2.73%)</mark>	<mark>(0.15%)</mark>	1.60%	3.03%
FTSE WGBI	-	-	2.04%	4.08%	4.60%	3.98%	3.70%
Eaton Vance GMARA(2) 3 Month LIBOR + 6%	_214	9.63% -	9.27% 1.57%	0.53% 3.46%	8.36% 7.57%	7.97%	- 7.48%
Fidelity HY CMBS	_292	13.13%	2.42%	(13.98%)	(11.86%)	<mark>(0.14%)</mark>	1.68%
BImbg:Universal CMBS xAaa		-	2.09%	(5.51%)	(3.69%)	2.83%	3.24%
SEI St. Credit: HY Bank Loans(3)(4)	_274	12.34%	(20.24%)	(18.17%)	<mark>(20.76%)</mark>	<mark>(1.89%)</mark>	2.14%
FTSE:HY Corp (1 month lag)		-	(4.01%)	(3.66%)	0.32%	2.61%	3.80%
Stone Harbor Glbl HY	157	7.07%	9.67%	(3.28%)	(0.14%)	3.39%	4.27%
FTSE:HY Corp		-	9.56%	(4.78%)	(1.14%)	2.90%	4.31%
Stone Harbor EMD	_200	9.01%	17.27%	(3.22%)	<mark>(1.15%)</mark>	2.41%	5.16%
JPM EMBI Global		-	11.21%	(1.87%)	1.52%	3.31%	5.12%

Blackstone Keystone since inception returns are included in the Legacy Hedge Fund composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.
 Eaton Vance GMARA since inception returns are included in the Multi-Strategy composite through 12/31/2019.
 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.
 SEI HY Bank Loans has a 1 month lag in valuation.
 Blackstone Keystone performance is shown Net of Fees.



The table below details the rates of return for the Fund's investment managers over various time periods ended June 30, 2020. 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, 2020							
	Market Value \$(mm)	Ending Weight	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance - Fixed Income	, , ,						
Opportunistic Fixed Income	\$2,222	100.00%	-	-	-	-	3.72% (10/12)
BAAM Keystone(1)(5) HFRI Fund of Funds Compos	886 -	39.89% -	- 2.79%	- 2.64%	- 3.09%	- 4.90%	6.00% (7/12) 3.26% (7/12)
Brandywine Global Opp Fl FTSE WGBI	198 -	8.92% -	2.37%	- 3.28%	- 4.42%	- 4.17%	3.87% (2/11) 1.86% (2/11)
Eaton Vance GMARA(2) 3 Month LIBOR + 6%	_214 -	9.63% -	- 6.90%	- 7.72%	- 7.97%	-	3.58% (6/18) 8.10% (6/18)
Fidelity HY CMBS BImbg:Universal CMBS xAaa	292	13.13% -	7.97% 5.89%	5.93% 0.33%	7.84%	-	8.34% (4/97)
SEI St. Credit: HY Bank Loans(3)(4) FTSE:HY Corp (1 month lag)	274	12.34% -	8.46% 6.35%	- 6.49%	- 6.82%	- 6.76%	10.39% (5/08) 6.92% (5/08)
Stone Harbor Glbl HY FTSE:HY Corp	157	7.07%	6.17% 6.32%	6.51% 6.43%	7.36% 6.75%	- 6.77%	7.36% (7/00) 6.75% (7/00)
Stone Harbor EMD JPM EMBI Global	200	9.01% -	5.78% 5.82%	7.06% 6.59%	- 8.06%	- 9.54%	7.43% (4/05) 6.92% (4/05)

Blackstone Keystone since inception returns are included in the Legacy Hedge Fund composite through 9/30/2017 and in the Multi-Strategy composite through 12/31/2019.
 Eaton Vance GMARA since inception returns are included in the Multi-Strategy composite through 12/31/2019.
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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, 2020. 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.

	Ret	urns for Per	iods Ended J	une 30, 2020			
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - Inflation Prot	ection						
Inflation Protection (TIPS)	\$1,280	100.00%	4.38%	5.93%	8.17%	5.10%	3.86%
Blmbg US TIPS	-	-	4.24%	6.01%	8.28%	5.05%	3.75%
NISA Inv Adv TIPS	552	43.15%	4.20%	6.03%	8.31%	5.12%	3.85%
BImbg US TIPS(1)		-	4.24%	6.01%	8.28%	5.05%	3.75%
Brown Brothers TIPS	_601	46.99%	4.08%	6.19%	8.53%	5.13%	3.92%
Blmbg US TIPS	_		4.24%	6.01%	8.28%	5.05%	3.75%
New Century Global TIPS	_126	9.86%	6.62%	5.16%	7.06%	4.97%	3.83%
Blmbg:Wld Infl-Lnk Unhdg	_	-	6.50%	3.94%	5.80%	4.27%	3.26%

(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 Per	riods Ended Jur	ne 30, 2020		
	Last 10 Years	Last 15 Years	Last 20 Years	Last 25 Years	Since Inception
Gross Performance - Inflation Protection					
Inflation Protection (TIPS)	2.93%	3.70%	-	:	3.63% (2/03)
Blmbg US TIPS	3.52%	4.00%	5.47%		4.52% (2/03)
NISA Inv Adv TIPS	2.71%	-	-	:	3.58% (4/07)
BImbg US TIPS(1)	3.52%	4.00%	5.47%		4.31% (4/07)
Brown Brothers TIPS	-	-	-	-	2.43% (2/12)
BImbg US TIPS	3.52%	4.00%	5.47%		2.14% (2/12)
New Century Global TIPS	-	-	-	-	2.89% (2/12)
Blmbg:Wld Infl-Lnk Unhdg	3.81%	3.92%	5.54%		2.18% (2/12)

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

Investment Manager Returns

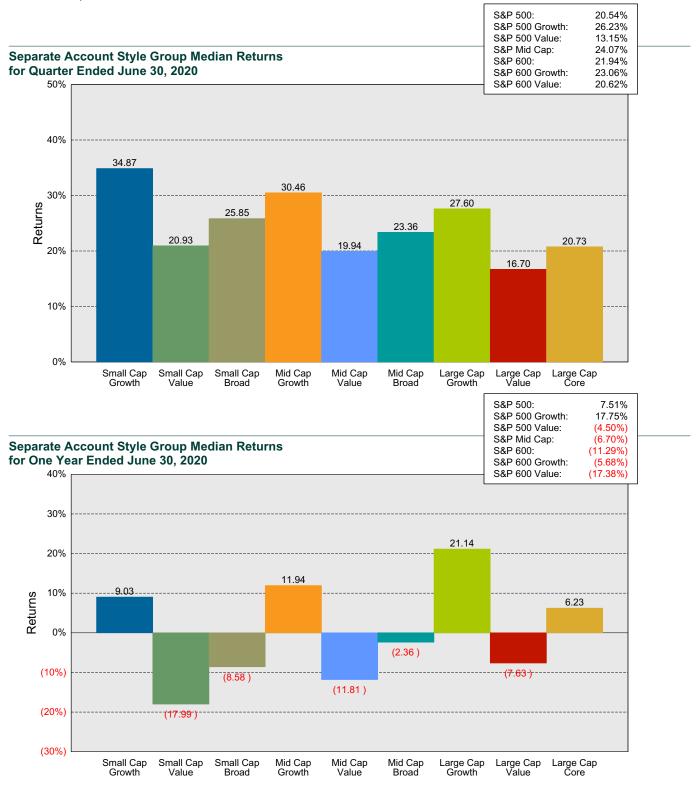
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Returns for Periods Ended June 30, 2020							
	Market Value \$(mm)	Ending Weight	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Gross Performance - Real Estate							
Real Estate Real Estate Custom Benchmark (C CPI + 3% (Qtr lag)	\$2,136 Qtr lag)- -	100.00% - -	<mark>(0.28%)</mark> 1.79% 1.18%	(1.38%) (0.14%) 2.01%	- 2.59% 4.54%	- 4.98% 4.92%	- 6.50% 4.80%
Core/Core Plus Real Estate Funds NCREIF ODCE Index (Qtr lag)	767	35.92% -	<mark>(2.42%)</mark> 0.71%	<mark>(0.91%)</mark> 2.02%	4.38%	- 6.14%	- 7.82%
Value Add/Opportunistic SMA NCREIF ODCE Index (Qtr lag)	650 -	30.42% -	2.07% 0.71%	4.93% 2.02%	- 4.38%	- 6.14%	- 7.82%
Value Add/Opportunistic Funds NCREIF ODCE Index (Qtr lag)	474 -	22.18% -	<mark>(5.64%)</mark> 0.71%	<mark>(1.73%)</mark> 2.02%	- 4.38%	- 6.14%	- 7.82%
Legacy Real Assets CPI + 3% (Qtr lag)	- 6	0.27%	<mark>(0.77%)</mark> 1.18%	<mark>(1.48%)</mark> 2.01%	- 4.54%	4.92%	4.80%
REITS FTSE NAREIT US RE Index	_240	11.22% -	12.19% 11.68%	(15.28%) (20.70%)	(15.50%)	(0.77%)	- 0.72%

U.S. Equity

Domestic Equity Active Management Overview

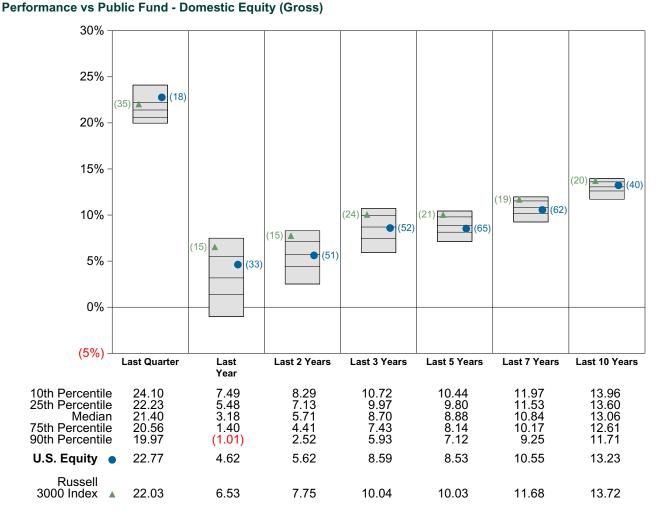
U.S. stock markets posted double-digit returns in the second quarter, with some segments erasing all of the first quarter's sharp losses. Growth, benefiting from its 44% exposure to Technology, sharply outperformed value (R1000 Growth: +27.8%; R1000 Value: +14.3%) and the spread is even larger on a ytd basis (R1000 Growth: +9.8%; R1000 Value: -16.3%). Small caps outperformed large (RMicrocap +38.8%; R2000: +25.4%; R1000: +21.8%). Within the S&P 500 (+20.5%), several sectors posted returns over 30% (Energy, Consumer Discretionary, Technology) while Utilities (+2.7%) fared the worst. It is worth nothing that the "FAAMG" stocks accounted for nearly 30% of the return for the S&P 500; collectively the group was up 35% for the quarter.



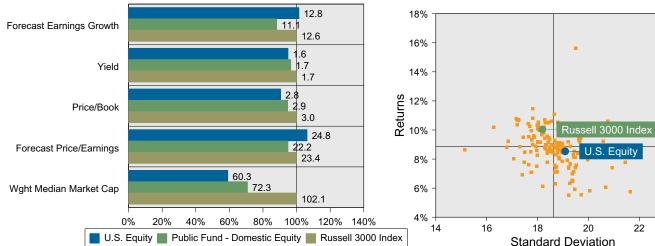
U.S. Equity Period Ended June 30, 2020

Quarterly Summary and Highlights

- U.S. Equity's portfolio posted a 22.77% return for the guarter placing it in the 18 percentile of the Public Fund -Domestic Equity group for the quarter and in the 33 percentile for the last year.
- U.S. Equity's portfolio outperformed the Russell 3000 Index by 0.74% for the quarter and underperformed the Russell ٠ 3000 Index for the year by 1.91%.







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

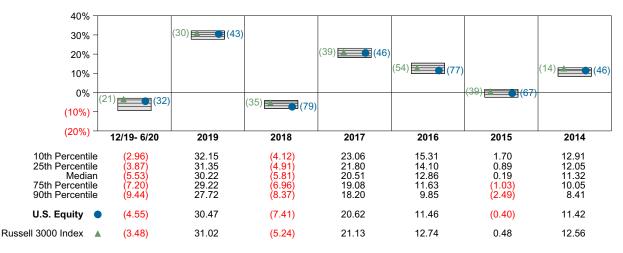


U.S. Equity Return Analysis Summary

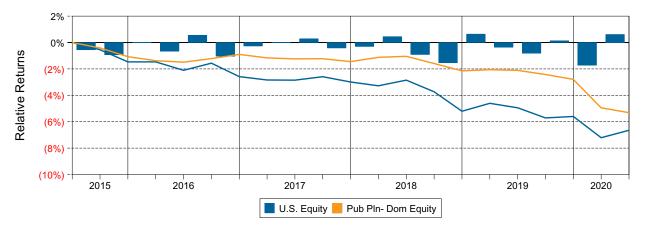
Return Analysis

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

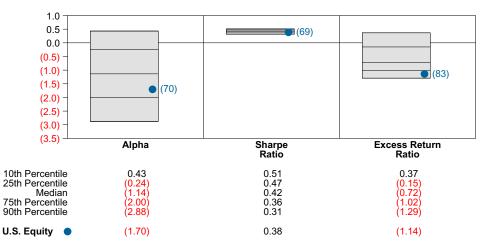




Cumulative and Quarterly Relative Return vs Russell 3000 Index



Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2020



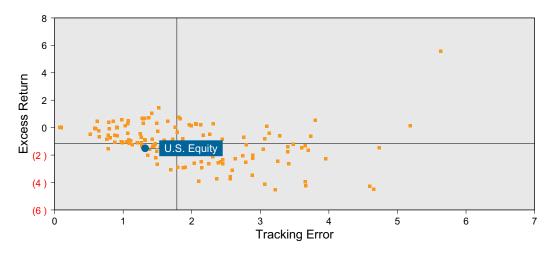


U.S. Equity Risk Analysis Summary

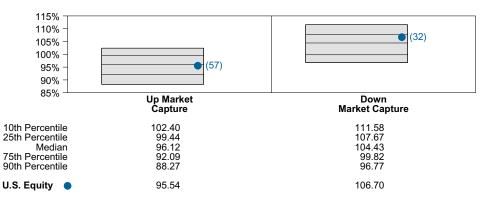
Risk Analysis

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.

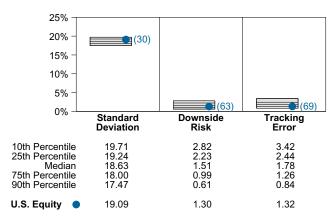
Risk Analysis vs Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2020

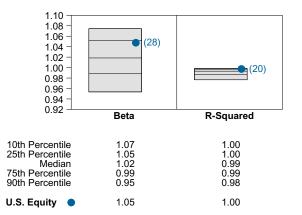


Market Capture vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2020



Risk Statistics Rankings vs Russell 3000 Index Rankings Against Public Fund - Domestic Equity (Gross) Five Years Ended June 30, 2020



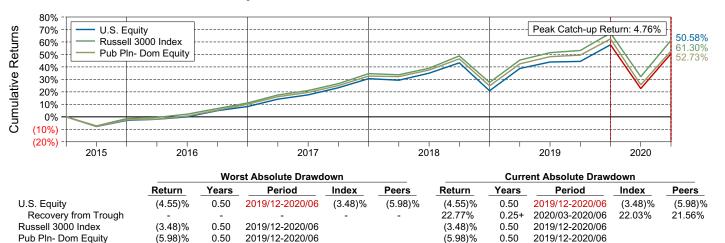


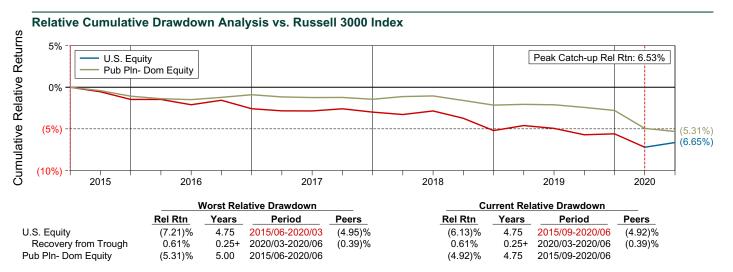


U.S. Equity Drawdown Analysis for Five Years Ended June 30, 2020

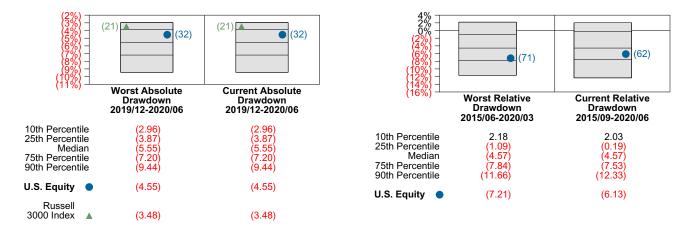
The following analysis focuses on downside risk by looking at cumulative drawdowns experienced from peak-to-trough for the portfolio, index, and peer group. Drawdown is measured from the "high-water mark" of cumulative return to the subsequent "trough". The first chart illustrates the Worst Absolute 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. Russell 3000 Index Rankings against Public Fund - Domestic Equity Five Years Ended June 30, 2020



Current Holdings Based Style Analysis U.S. Equity As of June 30, 2020

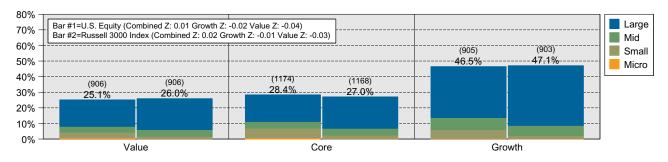
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization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

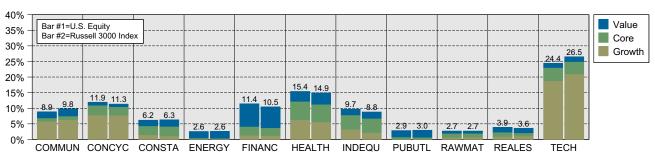


Style Map vs Pub Pln- Dom Equity Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

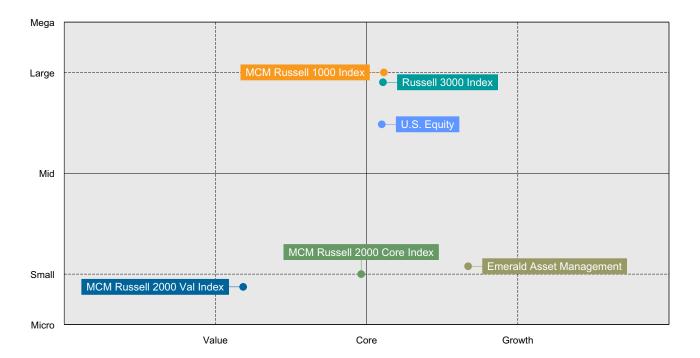


Holdings Based Style Analysis For One Quarter Ended June 30, 2020

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 capitialization 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, 2020



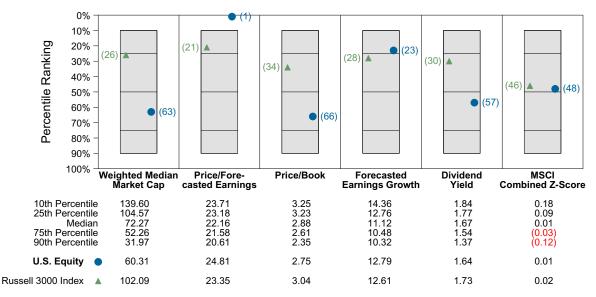
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities I	Security Diversification
MCM Russell 2000 Val Index	5.99%	1.49	(0.75)	(0.29)	0.46	1424	221.06
MCM Russell 2000 Core Inde	x 4.61%	1.82	(0.10)	(0.13)	(0.04)	2006	329.95
Emerald Asset Management	9.19%	2.59	0.47	0.04	(0.43)	122	32.34
MCM Russell 1000 Index	80.21%	111.97	0.02	(0.00)	(0.03)	1004	53.32
U.S. Equity	100.00%	60.31	0.01	(0.02)	(0.04)	3015	97.01
Russell 3000 Index	-	102.09	0.02	(0.01)	(0.03)	3005	61.99

U.S. Equity Equity Characteristics Analysis Summary

Portfolio Characteristics

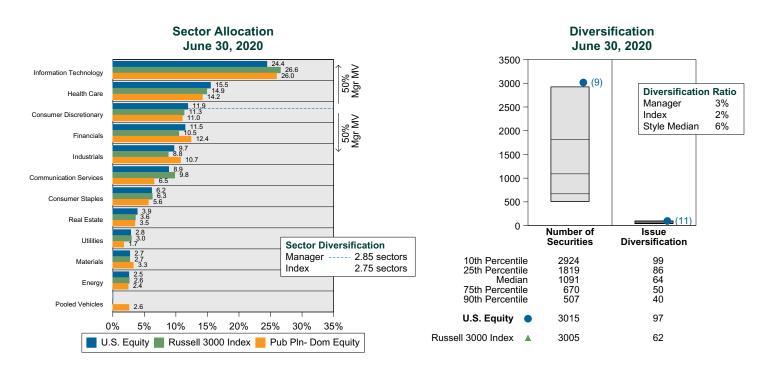
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - Domestic Equity as of June 30, 2020



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.

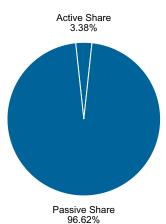


U.S. Equity Active Share Analysis as of June 30, 2020 vs. Russell 3000 Index

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.



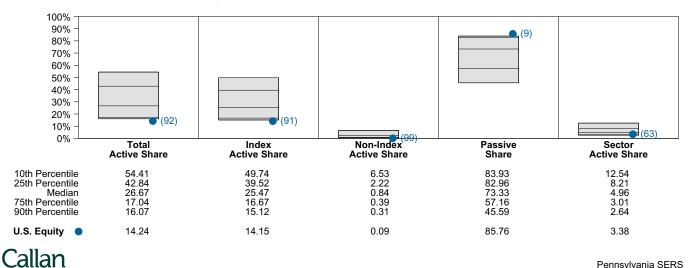
Sector Exposure Active Share



Total Active Share: 14.24%

	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	5.72%	0.00%	5.72%	9.81%	8.87%	0.97%
Consumer Discretionary	18.14%	0.00%	18.14%	11.31%	11.89%	1.89%
Consumer Staples	13.00%	0.00%	13.00%	6.27%	6.16%	0.85%
Energy	11.33%	0.75%	12.08%	2.61%	2.55%	0.34%
Financials	19.83%	0.12%	19.95%	10.47%	11.46%	1.88%
Health Care	17.71%	0.02%	17.74%	14.90%	15.50%	2.47%
Industrials	20.74%	0.28%	21.03%	8.80%	9.71%	1.66%
Information Technology	7.25%	0.06%	7.32%	26.58%	24.43%	2.82%
Materials	13.27%	0.00%	13.27%	2.69%	2.70%	0.36%
Miscellaneous	24.29%	24.29%	48.58%	-	-	0.00%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.01%	0.00%
Real Estate	19.54%	0.00%	19.54%	3.60%	3.89%	0.64%
Utilities	10.44%	0.16%	10.60%	2.95%	2.84%	0.35%
Total	14.15%	0.09%	14.24%	100.00%	100.00%	14.24%





U.S. Equity Managers

MCM Russell 1000 Index Period Ended June 30, 2020

Investment Philosophy

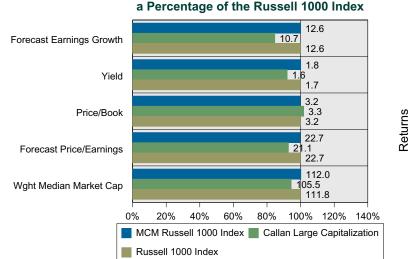
The Russell 1000 Stock Index Fund attempts to replicate the performance and portfolio characteristics of the Russell 1000 Index.

Quarterly Summary and Highlights

- MCM Russell 1000 Index's portfolio posted a 21.74% return for the quarter placing it in the 46 percentile of the Callan Large Capitalization group for the quarter and in the 49 percentile for the last year.
- MCM Russell 1000 Index's portfolio underperformed the Russell 1000 Index by 0.08% for the quarter and underperformed the Russell 1000 Index for the year by 0.09%.

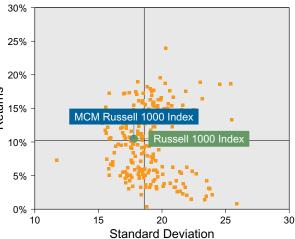
Performance vs Callan Large Capitalization (Gross)





Portfolio Characteristics as

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



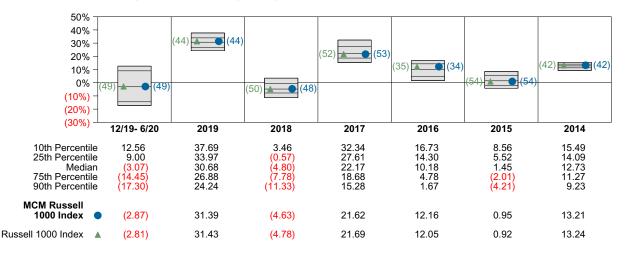


MCM Russell 1000 Index Return Analysis Summary

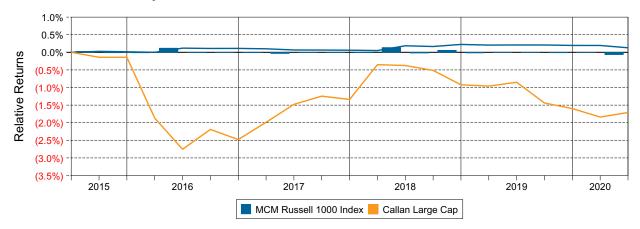
Return Analysis

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

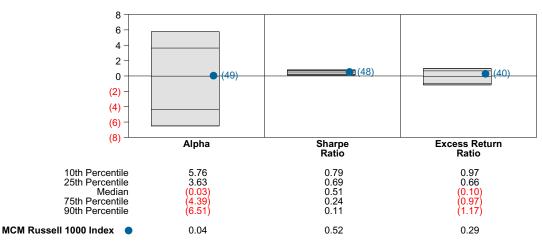
Performance vs Callan Large Capitalization (Gross)



Cumulative and Quarterly Relative Return vs Russell 1000 Index



Risk Adjusted Return Measures vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended June 30, 2020



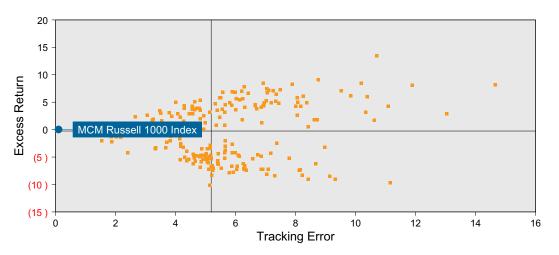


MCM Russell 1000 Index Risk Analysis Summary

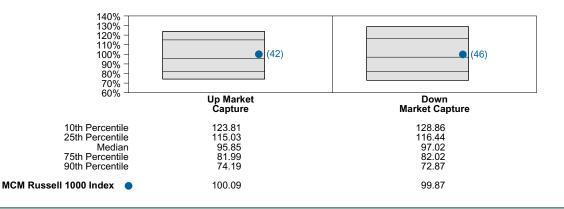
Risk Analysis

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.

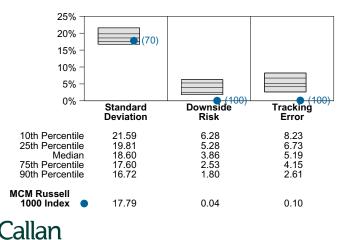
Risk Analysis vs Callan Large Capitalization (Gross) Five Years Ended June 30, 2020

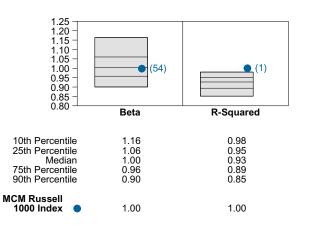


Market Capture vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended June 30, 2020



Risk Statistics Rankings vs Russell 1000 Index Rankings Against Callan Large Capitalization (Gross) Five Years Ended June 30, 2020





Current Holdings Based Style Analysis MCM Russell 1000 Index As of June 30, 2020

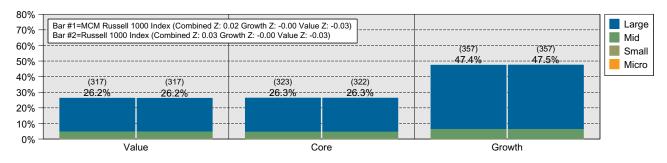
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Style Exposure Matrix

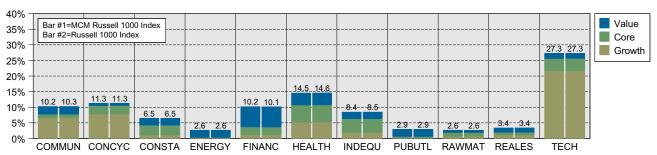


Style Map vs Callan Large Cap Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

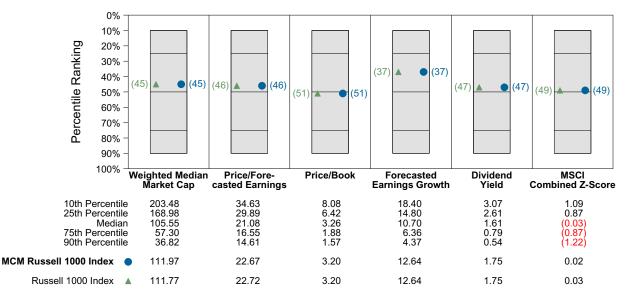


MCM Russell 1000 Index Equity Characteristics Analysis Summary

Portfolio Characteristics

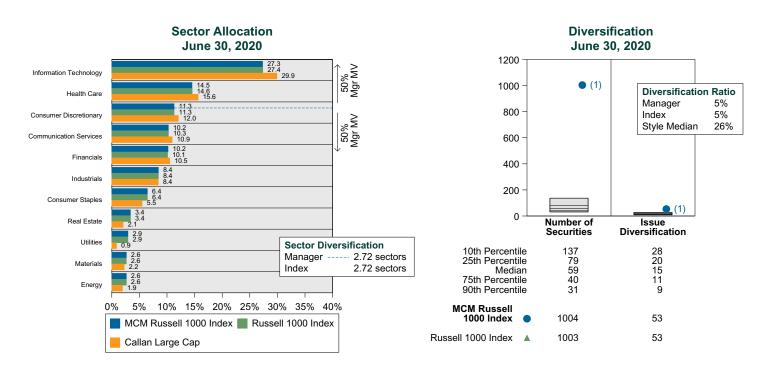
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Large Capitalization as of June 30, 2020



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.

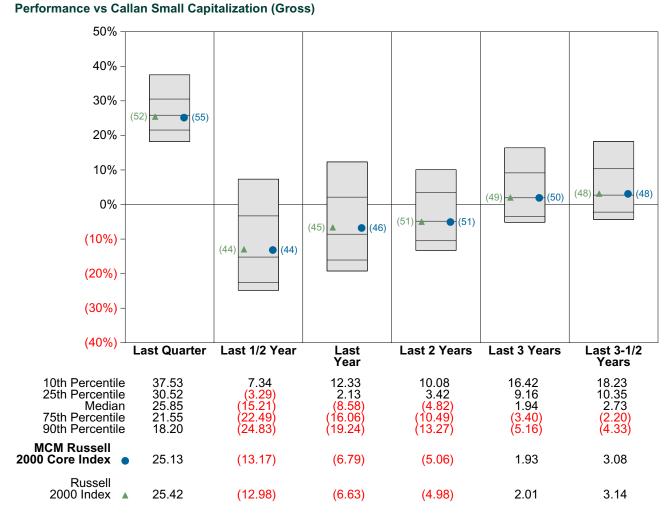


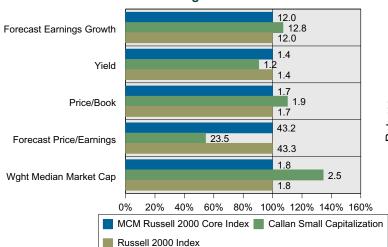


MCM Russell 2000 Core Index Period Ended June 30, 2020

Quarterly Summary and Highlights

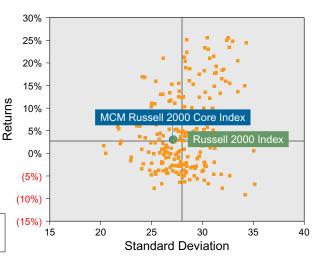
- MCM Russell 2000 Core Index's portfolio posted a 25.13% return for the quarter placing it in the 55 percentile of the Callan Small Capitalization group for the quarter and in the 46 percentile for the last year.
- MCM Russell 2000 Core Index's portfolio underperformed the Russell 2000 Index by 0.29% for the quarter and underperformed the Russell 2000 Index for the year by 0.16%.





Portfolio Characteristics as a Percentage of the Russell 2000 Index

Callan Small Capitalization (Gross) Annualized Three and One-Half Year Risk vs Return

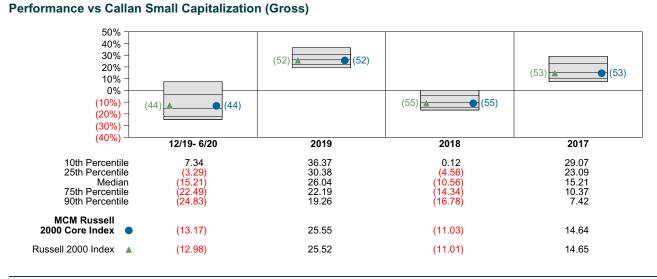




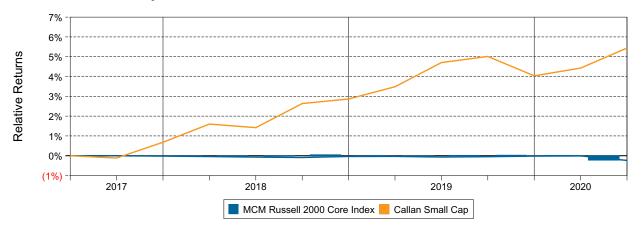
MCM Russell 2000 Core Index Return Analysis Summary

Return Analysis

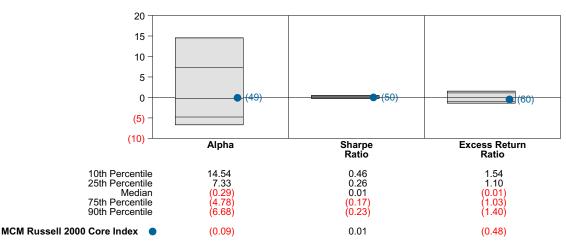
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Cumulative and Quarterly Relative Return vs Russell 2000 Index



Risk Adjusted Return Measures vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Three Years Ended June 30, 2020



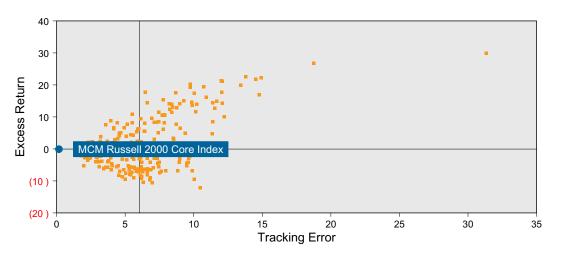


MCM Russell 2000 Core Index Risk Analysis Summary

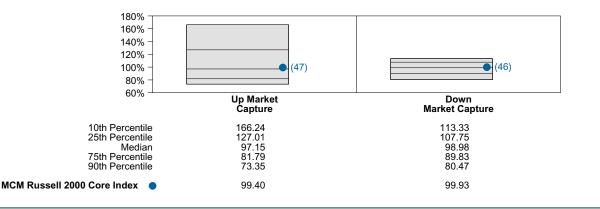
Risk Analysis

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

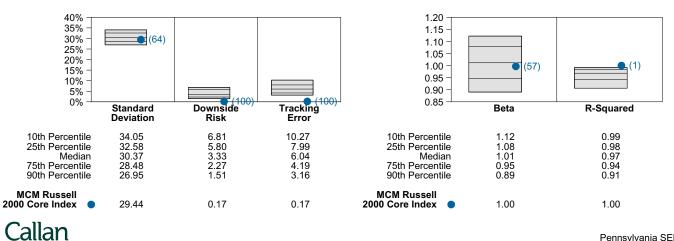
Risk Analysis vs Callan Small Capitalization (Gross) Three Years Ended June 30, 2020



Market Capture vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Three Years Ended June 30, 2020



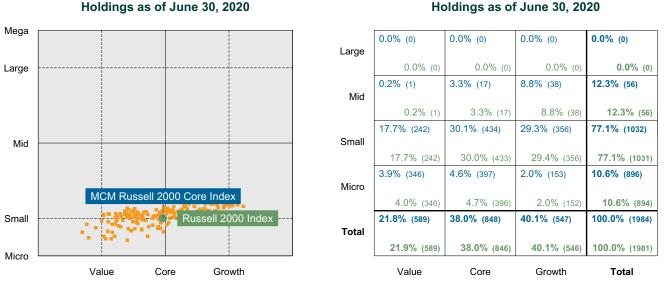
Risk Statistics Rankings vs Russell 2000 Index Rankings Against Callan Small Capitalization (Gross) Three Years Ended June 30, 2020



Current Holdings Based Style Analysis MCM Russell 2000 Core Index As of June 30, 2020

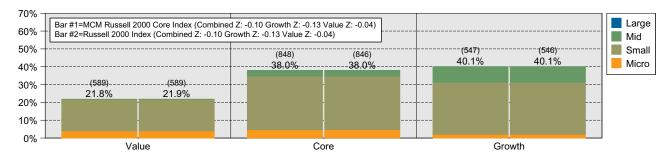
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Style Exposure Matrix

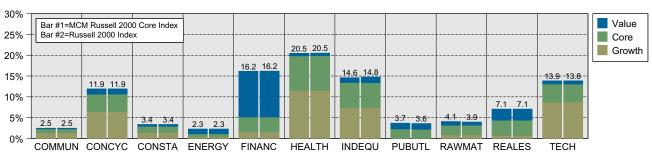


Style Map vs Callan Small Cap Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

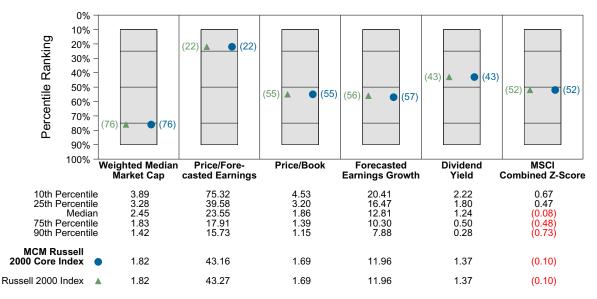


MCM Russell 2000 Core Index Equity Characteristics Analysis Summary

Portfolio Characteristics

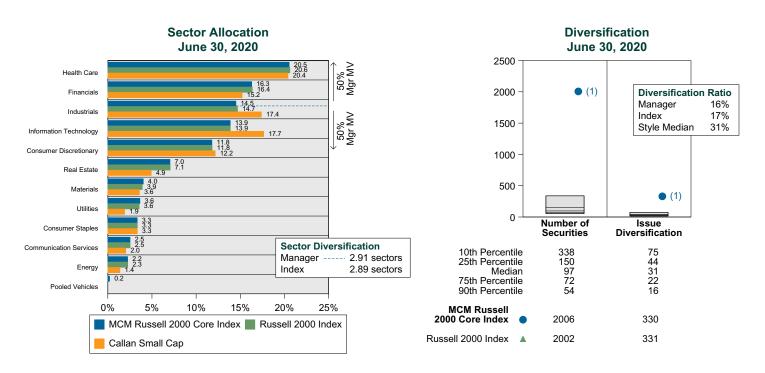
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Capitalization as of June 30, 2020



Sector Weights

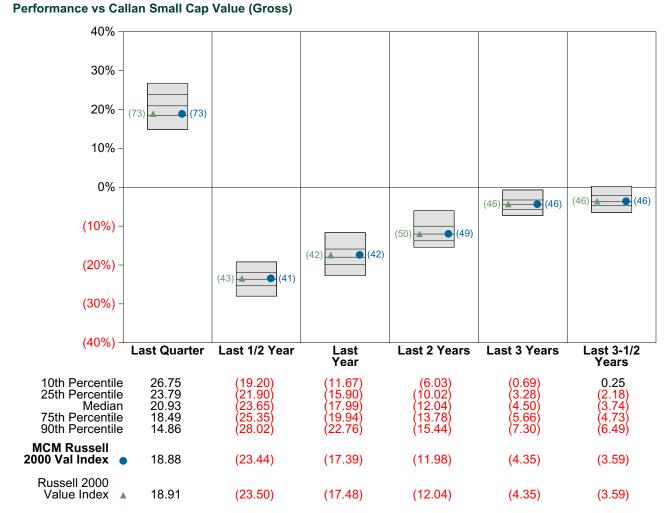
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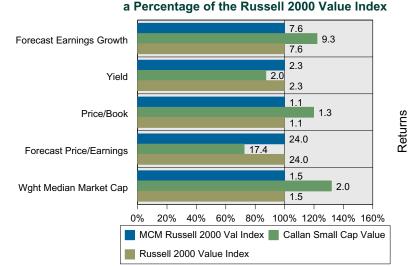


MCM Russell 2000 Val Index Period Ended June 30, 2020

Quarterly Summary and Highlights

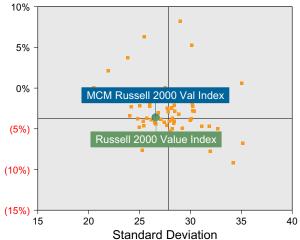
- MCM Russell 2000 Val Index's portfolio posted a 18.88% return for the quarter placing it in the 73 percentile of the Callan Small Cap Value group for the quarter and in the 42 percentile for the last year.
- MCM Russell 2000 Val Index's portfolio underperformed the Russell 2000 Value Index by 0.03% for the quarter and outperformed the Russell 2000 Value Index for the year by 0.08%.





Portfolio Characteristics as

Callan Small Cap Value (Gross) Annualized Three and One-Half Year Risk vs Return

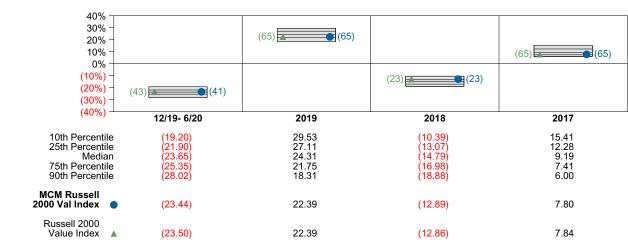




MCM Russell 2000 Val Index Return Analysis Summary

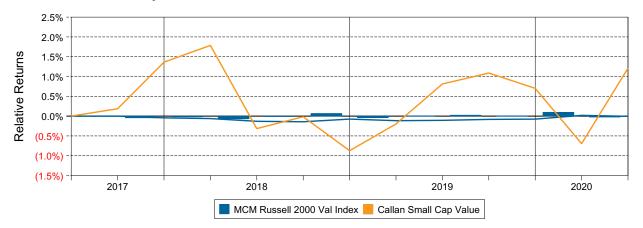
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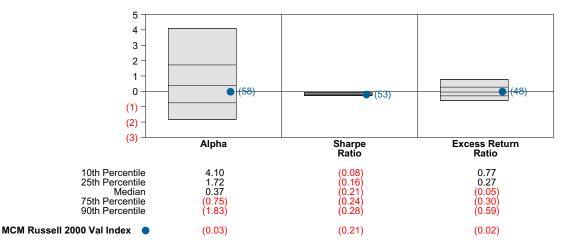


Performance vs Callan Small Cap Value (Gross)

Cumulative and Quarterly Relative Return vs Russell 2000 Value Index





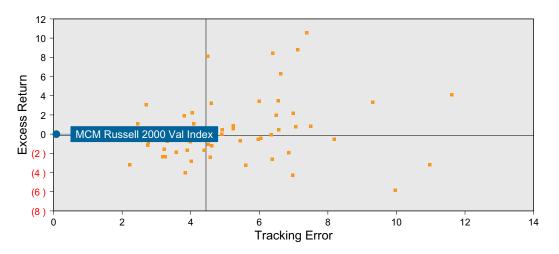


MCM Russell 2000 Val Index Risk Analysis Summary

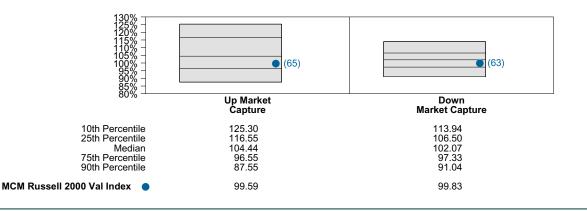
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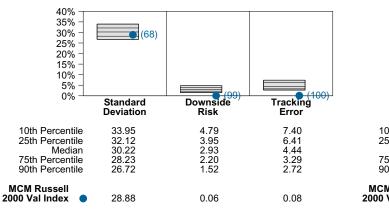
Risk Analysis vs Callan Small Cap Value (Gross) Three Years Ended June 30, 2020

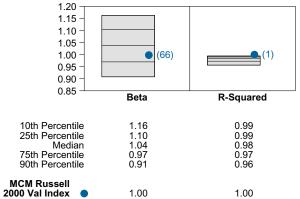


Market Capture vs Russell 2000 Value Index Rankings Against Callan Small Cap Value (Gross) Three Years Ended June 30, 2020











Current Holdings Based Style Analysis MCM Russell 2000 Val Index As of June 30, 2020

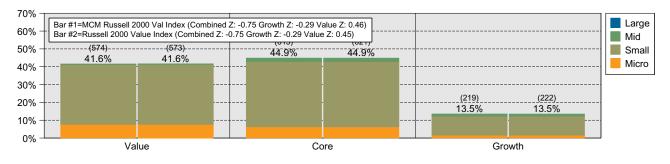
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Style Exposure Matrix

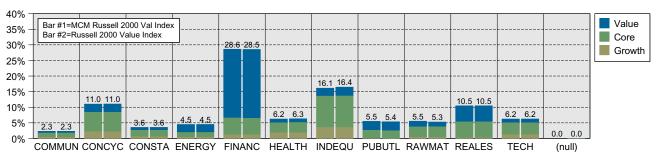


Style Map vs Callan Small Cap Value Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

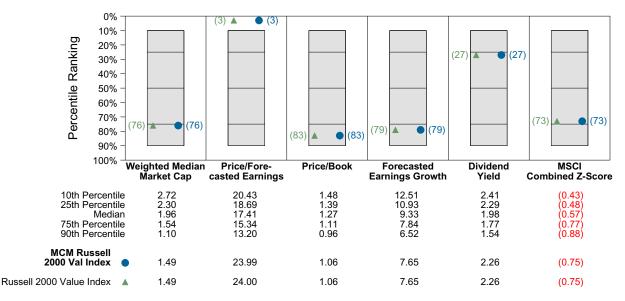


MCM Russell 2000 Val Index Equity Characteristics Analysis Summary

Portfolio Characteristics

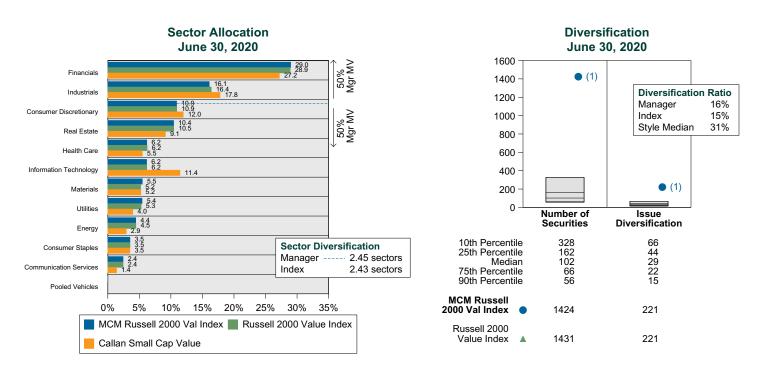
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Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Value as of June 30, 2020



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, 2020

Investment Philosophy

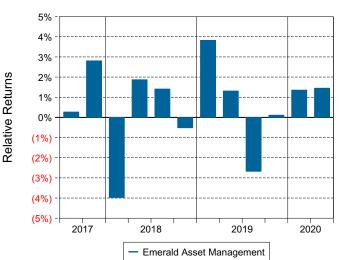
Emerald is dedicated to fundamental, bottom-up research designed to identify unrecognized, under-researched and undervalued growth companies.

Quarterly Summary and Highlights

- Emerald Asset Management's portfolio posted a 32.04% return for the quarter placing it in the 62 percentile of the Callan Small Cap Growth group for the quarter and in the 72 percentile for the last year.
- Emerald Asset Management's portfolio outperformed the Russell 2000 Growth Index by 1.45% for the quarter and outperformed the Russell 2000 Growth Index for the year by 0.19%.

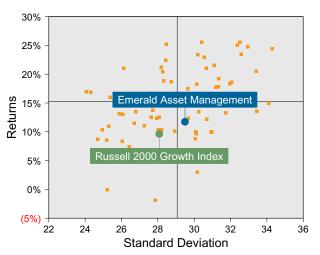






Relative Return vs Russell 2000 Growth Index

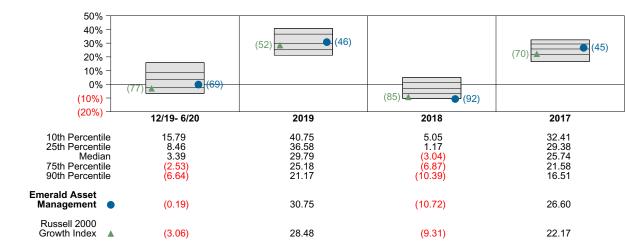
Callan Small Cap Growth (Gross) Annualized Three and One-Half Year Risk vs Return



Emerald Asset Management Return Analysis Summary

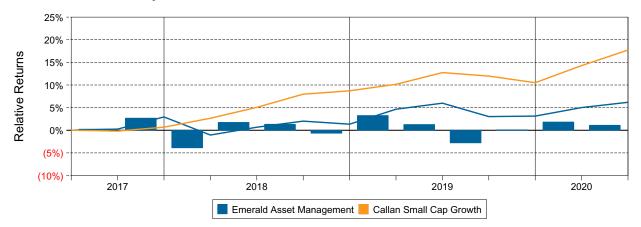
Return Analysis

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.

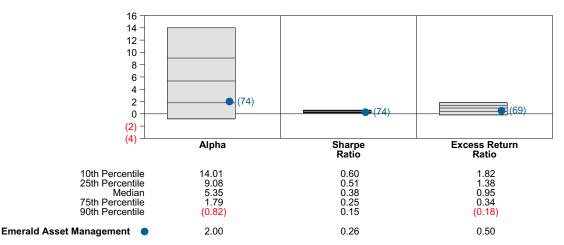


Performance vs Callan Small Cap Growth (Gross)

Cumulative and Quarterly Relative Return vs Russell 2000 Growth Index





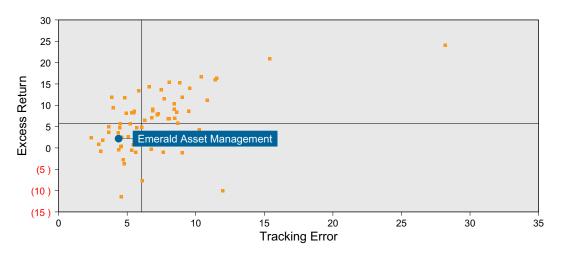


Emerald Asset Management Risk Analysis Summary

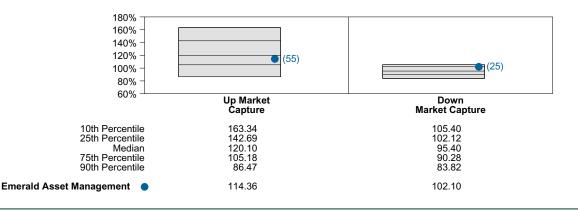
Risk Analysis

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.

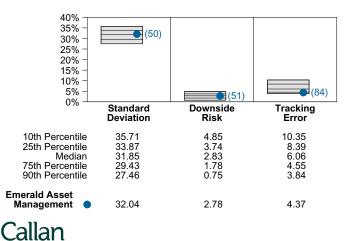
Risk Analysis vs Callan Small Cap Growth (Gross) Three Years Ended June 30, 2020

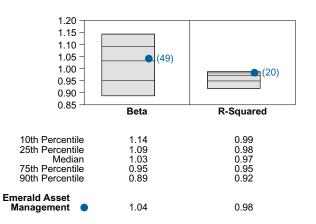


Market Capture vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Three Years Ended June 30, 2020



Risk Statistics Rankings vs Russell 2000 Growth Index Rankings Against Callan Small Cap Growth (Gross) Three Years Ended June 30, 2020





Current Holdings Based Style Analysis Emerald Asset Management As of June 30, 2020

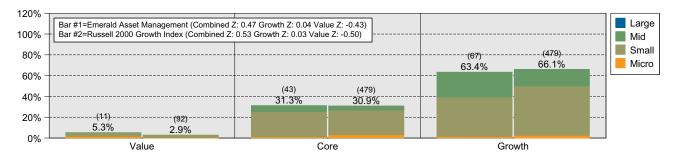
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various market capitalization and style segments of the domestic equity market. The market is segmented quarterly by capitalization and style. The capitalization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

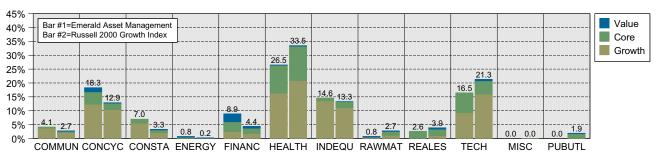


Style Map vs Callan Small Cap Growth Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

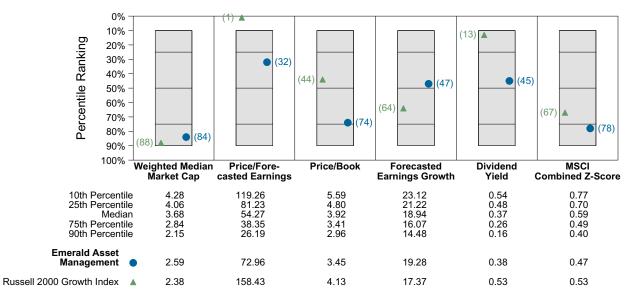


Emerald Asset Management Equity Characteristics Analysis Summary

Portfolio Characteristics

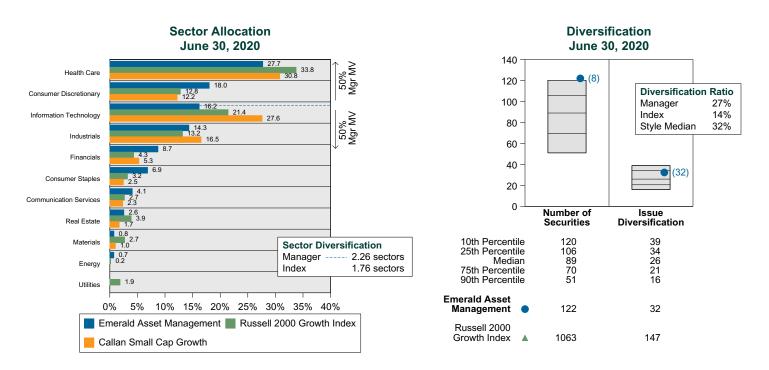
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Small Cap Growth as of June 30, 2020



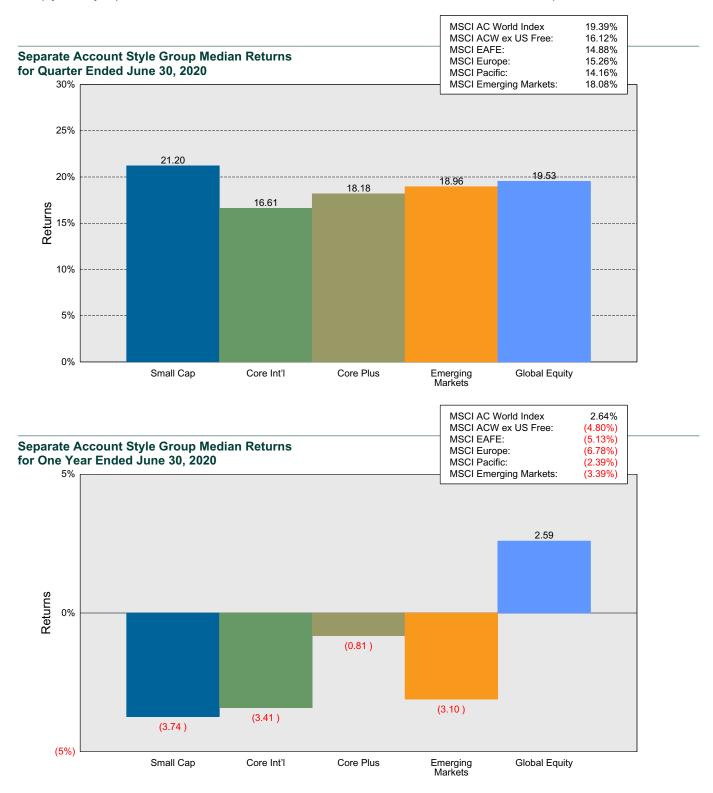
Sector Weights

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

Outside of the U.S., double-digit returns were broad-based across developed and emerging markets (MSCI EAFE: +14.9%; MSCI EM: +18.1%) but both remain down roughly 10% over the six-month period. As in the U.S., growth outperformed value and the US, Technology and Consumer Discretionary were top performers and Utilities were the worst. Currency had a limited impact on developed market results this quarter; the US dollar was fairly flat vs the euro and yen and mixed versus other developed market currencies. In developed markets, Germany (+27%) and Australia (+29%) were top performers while Japan (+12%) and UK (+8%) were at the bottom of the pack. The BRIC countries all performed well in Q2 but most remain sharply down ytd (Brazil: +23%; -39%; Russia: +19%; -25%, China +15%, +4%; India +21%; -17%).

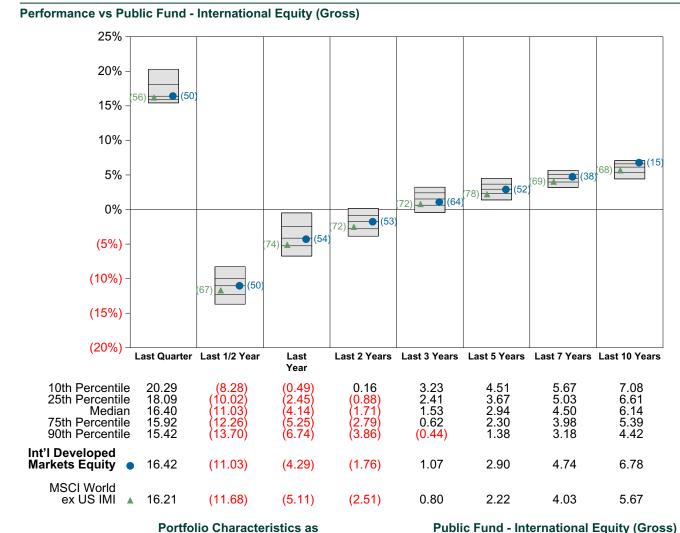


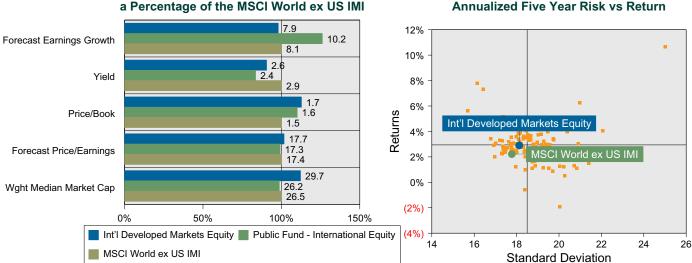
International Developed Markets Equity

Int'l Developed Markets Equity Period Ended June 30, 2020

Quarterly Summary and Highlights

- Int'l Developed Markets Equity's portfolio posted a 16.42% return for the quarter placing it in the 50 percentile of the Public Fund International Equity group for the quarter and in the 54 percentile for the last year.
- Int'l Developed Markets Equity's portfolio outperformed the MSCI World ex US IMI by 0.21% for the quarter and outperformed the MSCI World ex US IMI for the year by 0.82%.





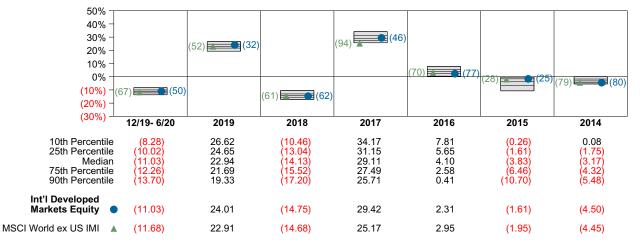
Public Fund - International Equity (Gross) Annualized Five Year Risk vs Return

Int'l Developed Markets Equity Return Analysis Summary

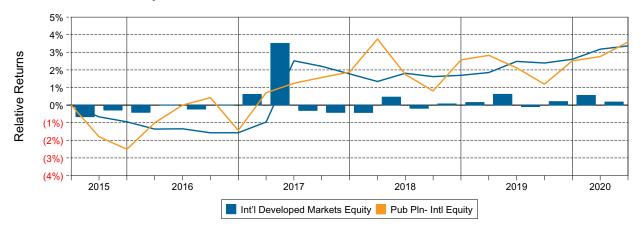
Return Analysis

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.

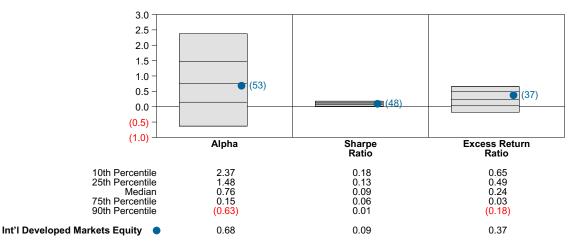




Cumulative and Quarterly Relative Return vs MSCI World ex US IMI



Risk Adjusted Return Measures vs MSCI World ex US IMI Rankings Against Public Fund - International Equity (Gross) Five Years Ended June 30, 2020



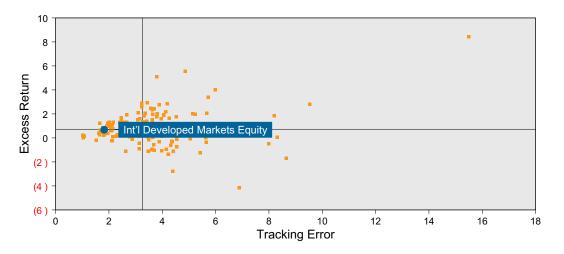


Int'l Developed Markets Equity Risk Analysis Summary

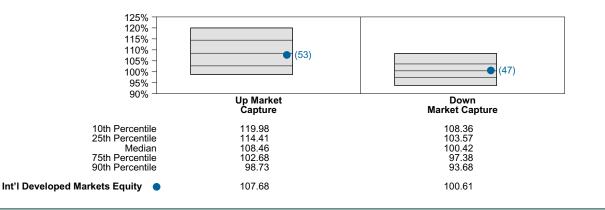
Risk Analysis

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

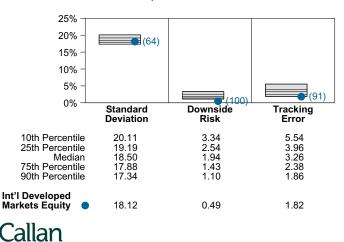
Risk Analysis vs Public Fund - International Equity (Gross) Five Years Ended June 30, 2020

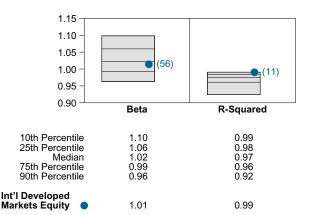


Market Capture vs MSCI World ex US IMI Index (USD Net Div) Rankings Against Public Fund - International Equity (Gross) Five Years Ended June 30, 2020



Risk Statistics Rankings vs MSCI World ex US IMI Index (USD Net Div) Rankings Against Public Fund - International Equity (Gross) Five Years Ended June 30, 2020



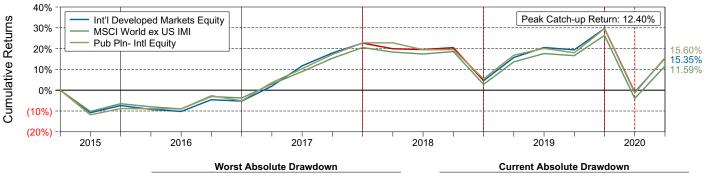


Pennsylvania SERS 105

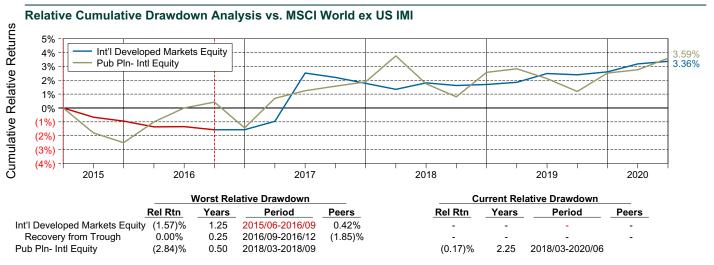
Int'l Developed Markets Equity Drawdown Analysis for Five Years Ended June 30, 2020

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.

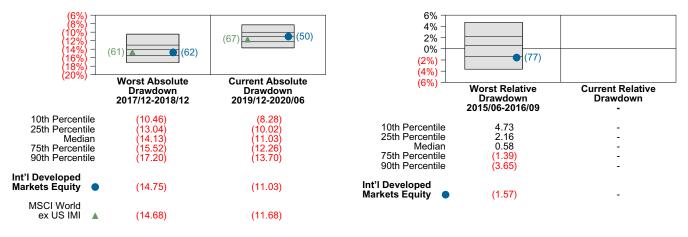
Absolute Cumulative Drawdown Analysis



	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Int'l Developed Markets Equity	/(14.75)%	1.00	2017/12-2018/12	(14.68)%	(14.11)%	(11.03)%	0.50	2019/12-2020/06	(11.68)%	(10.77)%
Recovery from Trough	24.01%	1.00	2018/12-2019/12	22.91%	22.85%	16.42%	0.25+	2020/03-2020/06	16.21%	17.15%
MSCI World ex US IMI	(14.68)%	1.00	2017/12-2018/12			(11.68)%	0.50	2019/12-2020/06		
Pub Pln- Intl Equity	(14.11)%	0.75	2018/03-2018/12			(10.77)%	0.50	2019/12-2020/06		



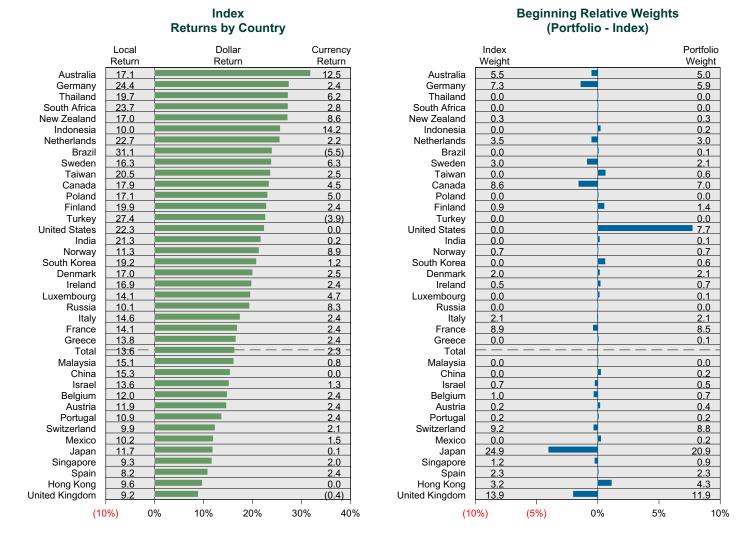
Drawdown Rankings vs. MSCI World ex US IMI Rankings against Public Fund - International Equity Five Years Ended June 30, 2020

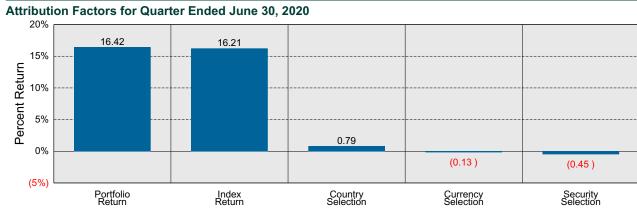


Int'l Developed Markets Equity vs MSCI World ex US IMI Attribution for Quarter Ended June 30, 2020

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, 2020

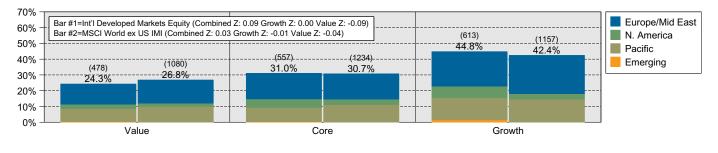
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are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

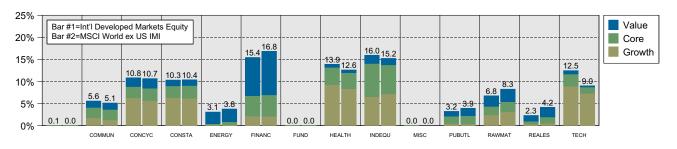


Style Map vs Pub Pln- Intl Equity Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

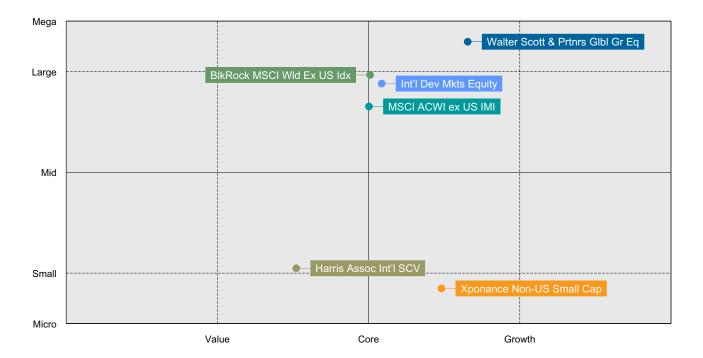


International Holdings Based Style Analysis For One Quarter Ended June 30, 2020

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 capitialization 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, 2020



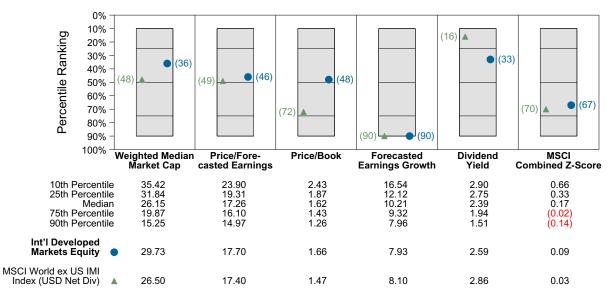
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities I	Security Diversification
Walter Scott & Prtnrs Glbl Gr	E q 3.48%	95.03	0.58	0.08	(0.50)	50	17.73
BlkRock MSCI Wld Ex US Idx	74.46%	31.44	0.03	(0.01)	(0.04)	996	120.17
Harris Assoc Int'l SCV	7.50%	2.50	(0.38)	(0.13)	0.24	61	17.84
Xponance Non-US Small Cap	4.38%	1.71	0.43	0.25	(0.18)	689	112.11
Int'l Dev Mkts Equity	100.00%	29.73	0.09	0.00	(0.09)	1714	140.66
MSCI ACWI ex US IMI	-	25.18	0.02	(0.01)	(0.03)	6435	239.24

Int'l Developed Markets Equity Equity Characteristics Analysis Summary

Portfolio Characteristics

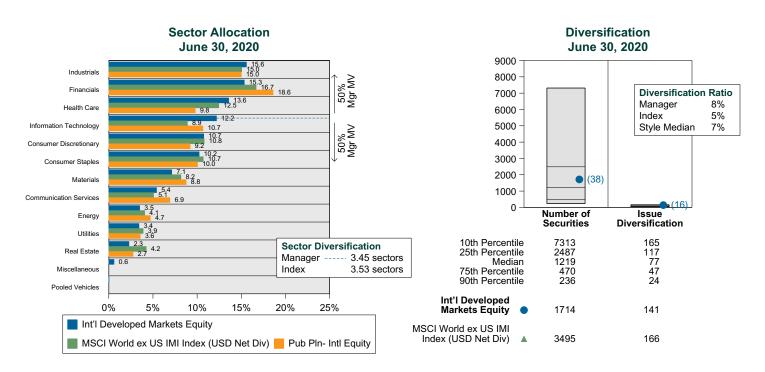
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Public Fund - International Equity as of June 30, 2020



Sector Weights

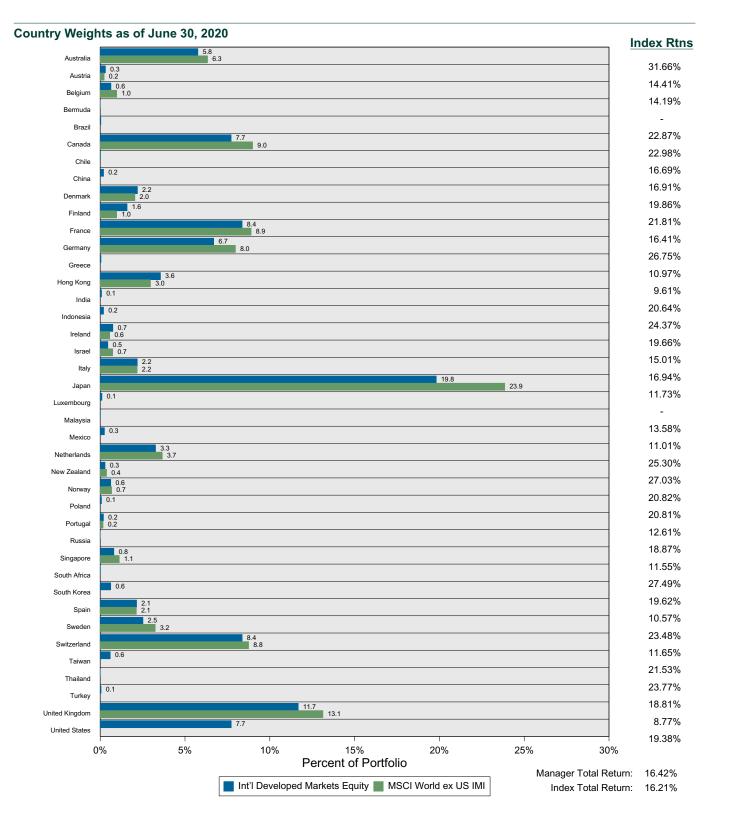
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration 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 ex US IMI Index (USD Net Div)

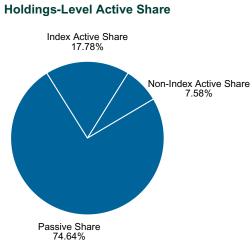
Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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.

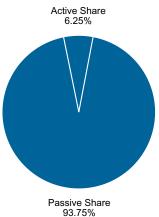


Int'l Developed Markets Equity Active Share Analysis as of June 30, 2020 vs. MSCI World ex US IMI Index (USD Net Div)

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



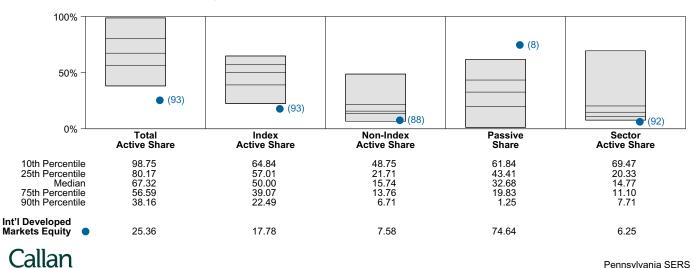
Sector Exposure Active Share



Total Active Share: 25.36%

	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	15.68%	10.01%	25.69%	5.07%	5.41%	1.24%
Consumer Discretionary	18.43%	7.62%	26.04%	10.80%	10.75%	2.71%
Consumer Staples	14.74%	5.89%	20.64%	10.69%	10.23%	2.29%
Energy	11.67%	2.17%	13.84%	4.06%	3.50%	0.57%
Financials	11.00%	2.95%	13.95%	16.68%	15.34%	2.75%
Health Care	14.02%	8.69%	22.71%	12.46%	13.58%	2.74%
Industrials	26.10%	3.92%	30.02%	15.05%	15.58%	4.46%
Information Technology	24.39%	16.74%	41.13%	8.90%	12.20%	3.72%
Materials	17.52%	7.02%	24.53%	8.16%	7.12%	2.15%
Miscellaneous	0.00%	100.00%	100.00%	-	0.59%	0.46%
Pooled Vehicles	50.00%	50.00%	100.00%	-	0.02%	0.01%
Real Estate	40.15%	4.25%	44.40%	4.23%	2.28%	1.21%
Utilities	14.61%	5.33%	19.94%	3.89%	3.41%	0.88%
Total	17.78%	7.58%	25.36%	100.00%	100.00%	25.18%

Active Share vs. Pub Pln- Intl Equity



International Developed Equity Managers

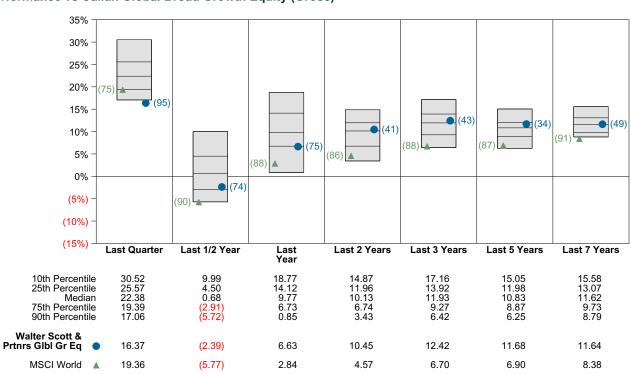
Walter Scott & Prtnrs Glbl Gr Eq Period Ended June 30, 2020

Investment Philosophy

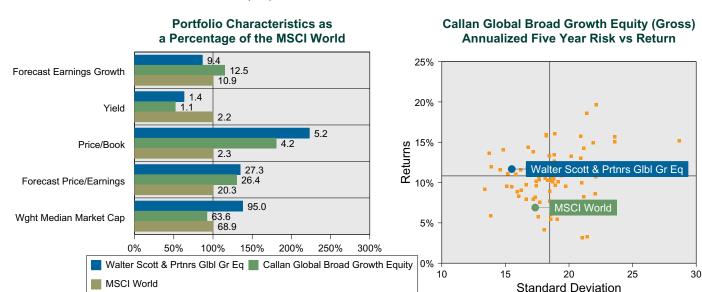
Walter Scott believes that the objective for all long term investors is to maintain and enhance the real after inflation purchasing power of their assets. This is most likely to be achieved by investing in companies with high rates of internal wealth generation which in time translates into total return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

Quarterly Summary and Highlights

- Walter Scott & Prtnrs Glbl Gr Eq's portfolio posted a 16.37% return for the quarter placing it in the 95 percentile of the Callan Global Broad Growth Equity group for the quarter and in the 75 percentile for the last year.
- Walter Scott & Prtnrs Glbl Gr Eq's portfolio underperformed the MSCI World by 2.99% for the quarter and outperformed the MSCI World for the year by 3.79%.



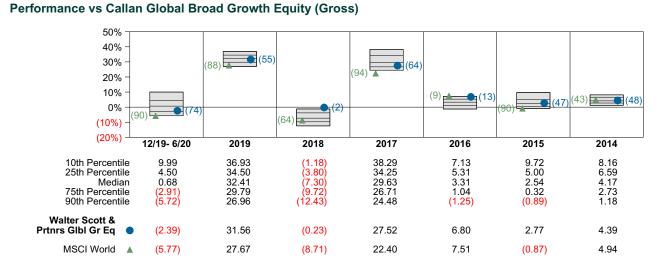




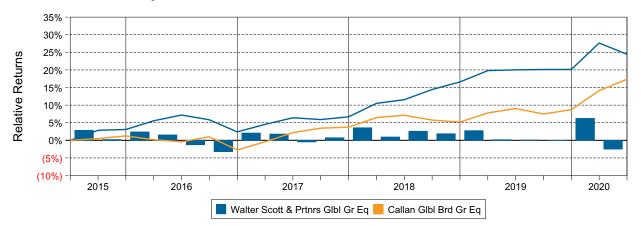
Walter Scott & Prtnrs Glbl Gr Eq Return Analysis Summary

Return Analysis

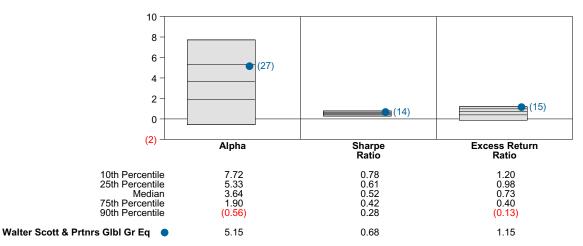
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Return vs MSCI World



Risk Adjusted Return Measures vs MSCI World Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2020



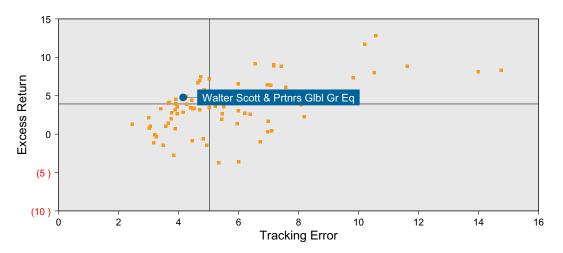


Walter Scott & Prtnrs Glbl Gr Eq Risk Analysis Summary

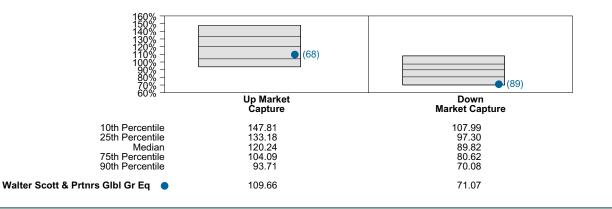
Risk Analysis

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.

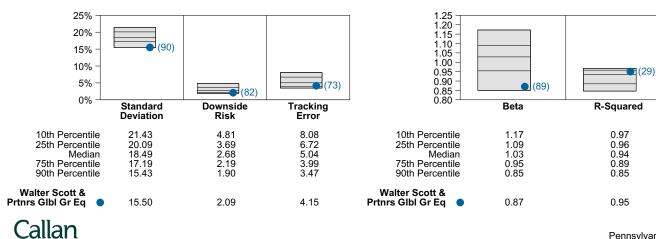
Risk Analysis vs Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2020



Market Capture vs MSCI World Index (USD Net Div) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2020



Risk Statistics Rankings vs MSCI World Index (USD Net Div) Rankings Against Callan Global Broad Growth Equity (Gross) Five Years Ended June 30, 2020

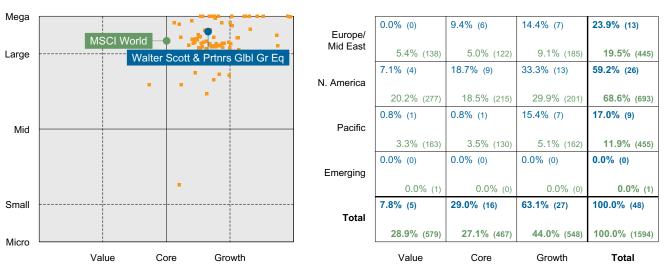


Current Holdings Based Style Analysis Walter Scott & Prtnrs Glbl Gr Eq As of June 30, 2020

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.

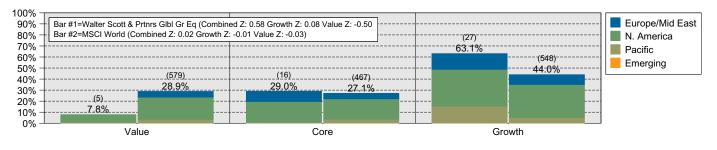
Style Exposure Matrix

Holdings as of June 30, 2020

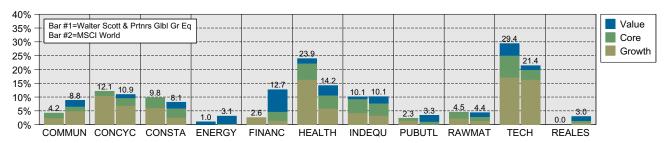


Style Map vs Callan Glbl Brd Gr Eq Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020





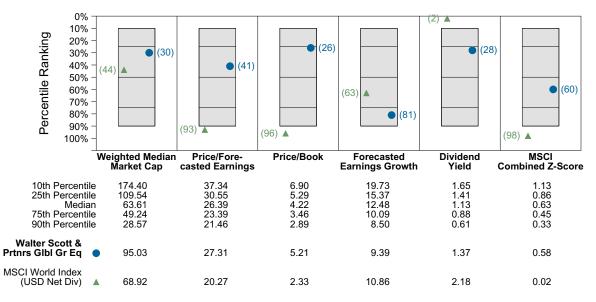


Walter Scott & Prtnrs Glbl Gr Eq Equity Characteristics Analysis Summary

Portfolio Characteristics

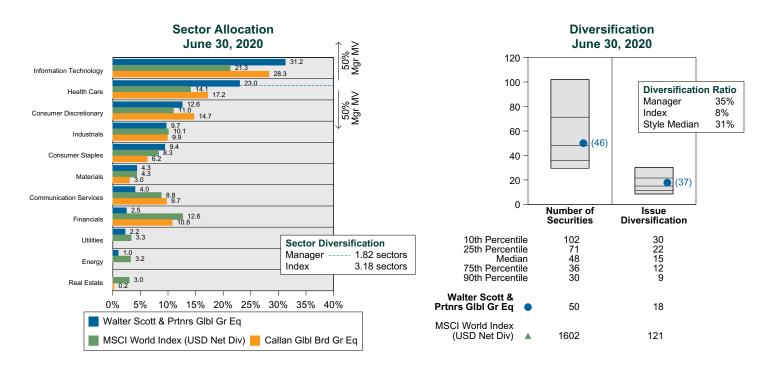
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Global Broad Growth Equity as of June 30, 2020



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, 2020

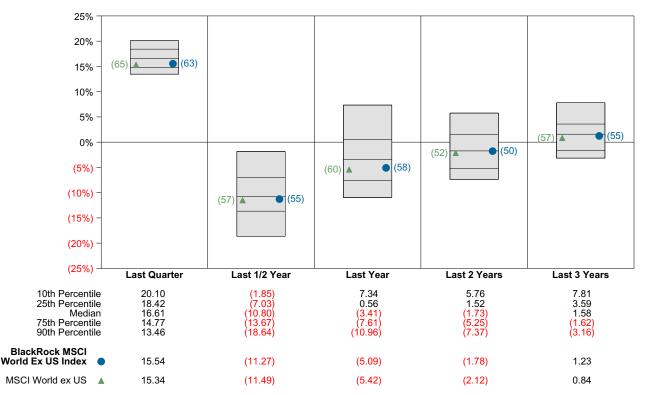
Investment Philosophy

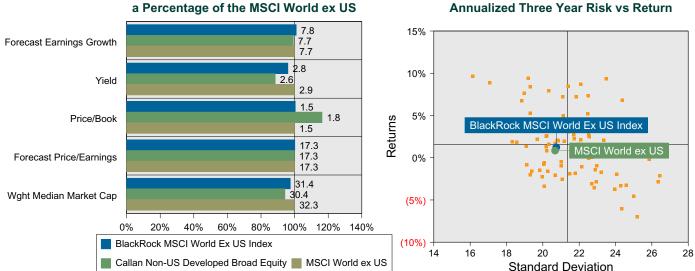
The objective of the World ex-U.S. Index Fund is to track the performance of the MSCI World ex-U.S. Index. The Fund fully replicates the index, holding every stock in the index in its market capitalization weight to ensure close tracking and minimize transaction costs.

Quarterly Summary and Highlights

- BlackRock MSCI World Ex US Index's portfolio posted a 15.54% return for the quarter placing it in the 63 percentile of the Callan Non-US Developed Broad Equity group for the quarter and in the 58 percentile for the last year.
- BlackRock MSCI World Ex US Index's portfolio outperformed the MSCI World ex US by 0.20% for the guarter and • outperformed the MSCI World ex US for the year by 0.34%.

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





Portfolio Characteristics as a Percentage of the MSCI World ex US

Callan

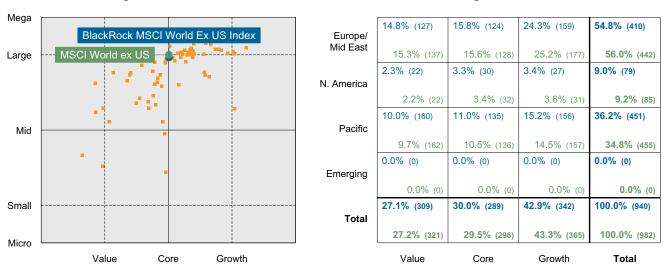
Callan Non-US Developed Broad Equity (Gross)

Current Holdings Based Style Analysis BlackRock MSCI World Ex US Index As of June 30, 2020

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.

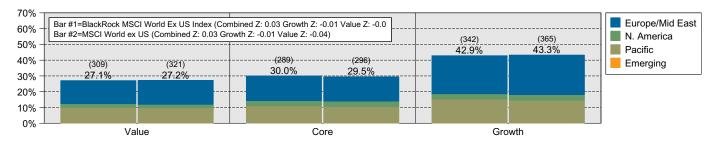
Style Exposure Matrix

Holdings as of June 30, 2020

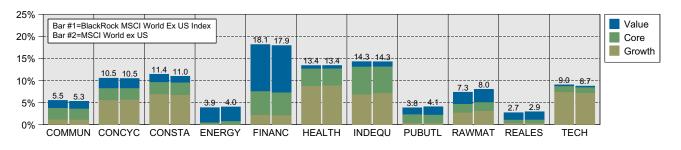


Style Map vs Callan NonUS Dev Broad Eq Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

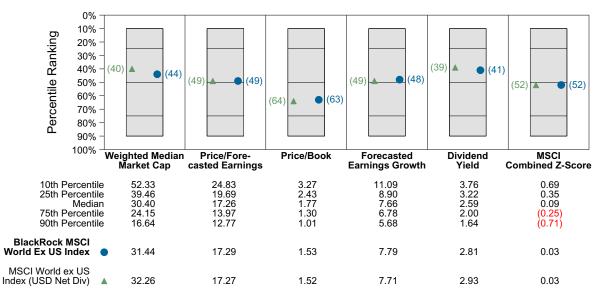


BlackRock MSCI World Ex US Index Equity Characteristics Analysis Summary

Portfolio Characteristics

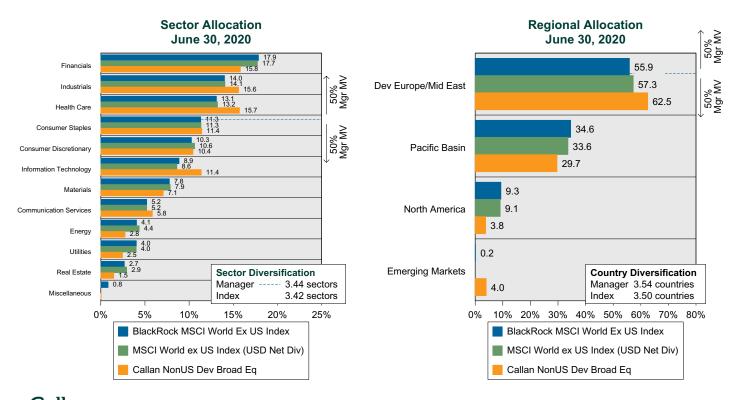
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Non-US Developed Broad Equity as of June 30, 2020



Sector Weights

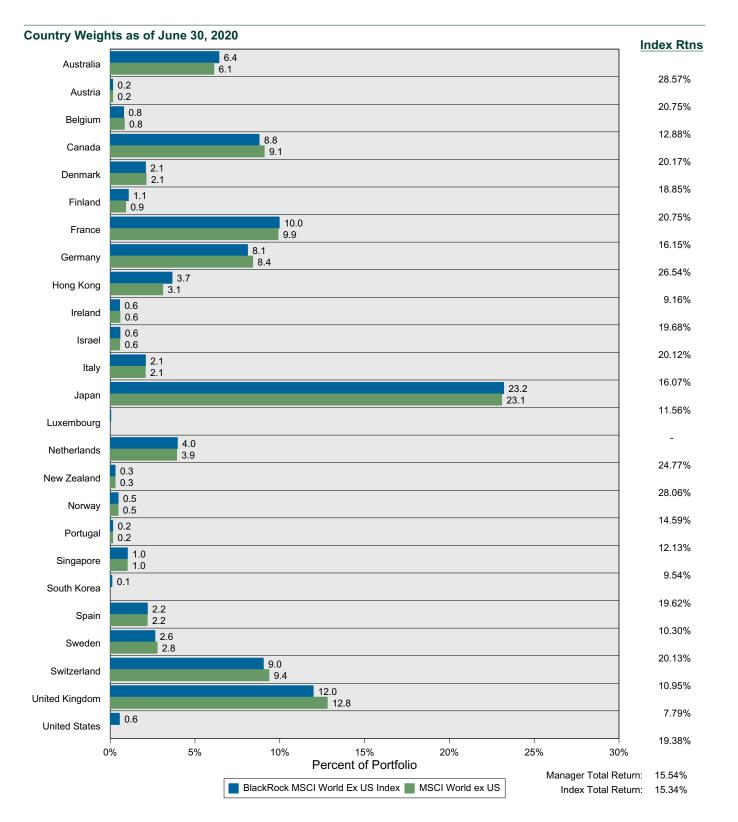
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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.



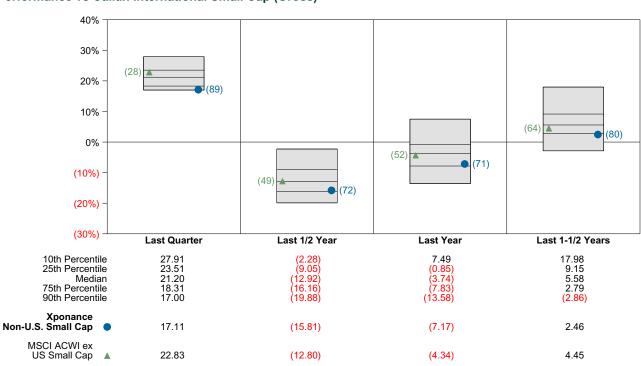
Xponance Non-U.S. Small Cap Period Ended June 30, 2020

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.

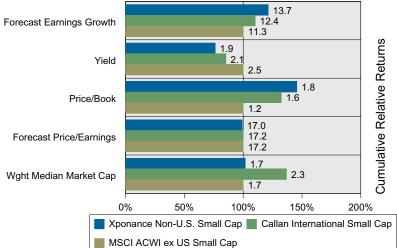
Quarterly Summary and Highlights

- Xponance Non-U.S. Small Cap's portfolio posted a 17.11% return for the quarter placing it in the 89 percentile of the Callan International Small Cap group for the quarter and in the 71 percentile for the last year.
- Xponance Non-U.S. Small Cap's portfolio underperformed the MSCI ACWI ex US Small Cap by 5.72% for the quarter and underperformed the MSCI ACWI ex US Small Cap for the year by 2.83%.

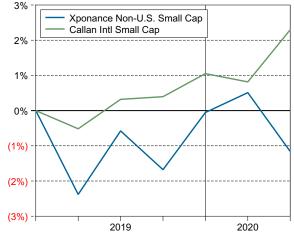


Performance vs Callan International Small Cap (Gross)





Cumulative Returns vs MSCI ACWI ex US Small Cap



Current Holdings Based Style Analysis Xponance Non-U.S. Small Cap As of June 30, 2020

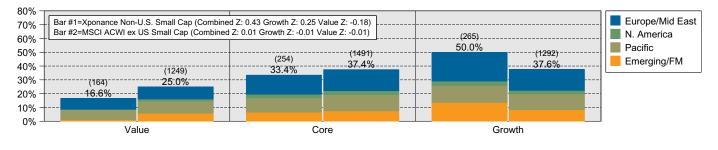
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are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

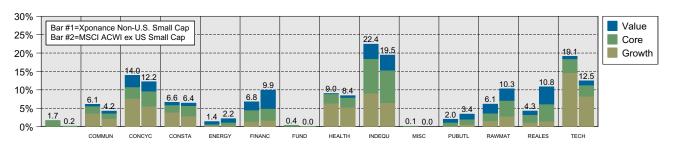


Style Map vs Callan Intl Small Cap Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

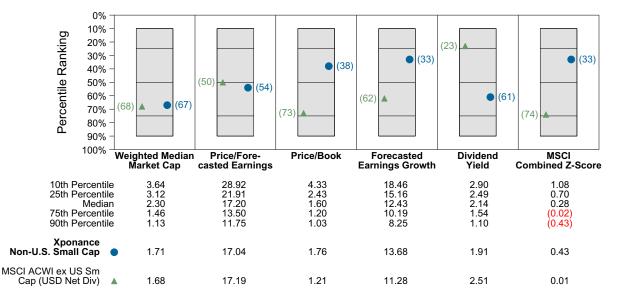


Xponance Non-U.S. Small Cap Equity Characteristics Analysis Summary

Portfolio Characteristics

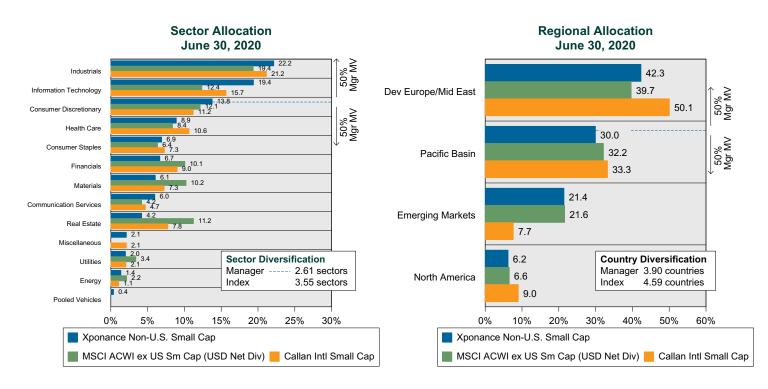
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of June 30, 2020



Sector Weights

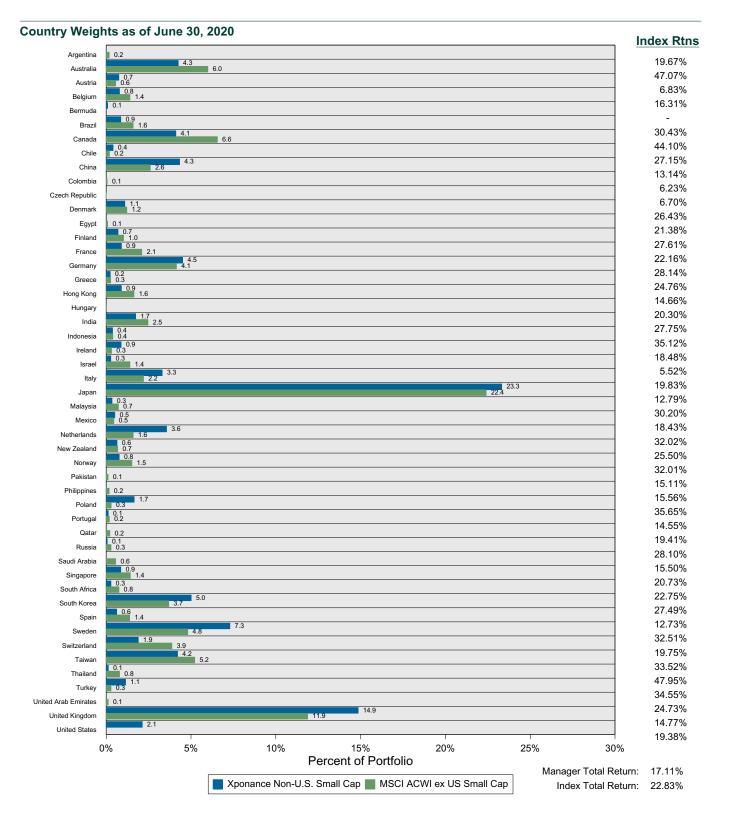
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares 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 ex US Sm Cap (USD Net Div)

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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, 2020

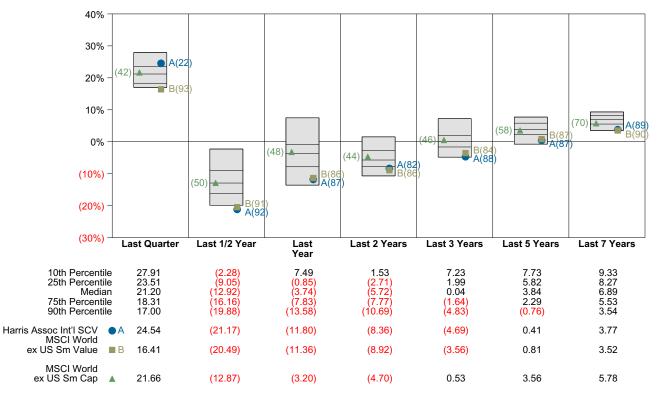
Investment Philosophy

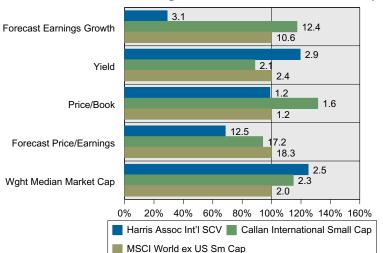
The team seeks to invest in companies that trade at a substantial discount to their underlying business values and are run by managers who think and act as owners. Portfolio managers believe that purchasing a quality business at a discount to its underlying value minimizes risk while providing substantial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

Quarterly Summary and Highlights

- Harris Assoc Int'I SCV's portfolio posted a 24.54% return for the quarter placing it in the 22 percentile of the Callan International Small Cap group for the quarter and in the 87 percentile for the last year.
- Harris Assoc Int'I SCV's portfolio outperformed the MSCI World ex US Sm Cap by 2.87% for the quarter and underperformed the MSCI World ex US Sm Cap for the year by 8.59%.

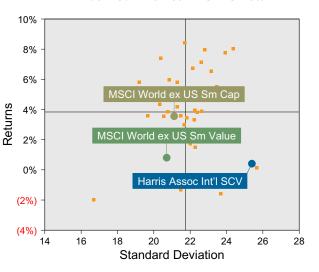
Performance vs Callan International Small Cap (Gross)





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

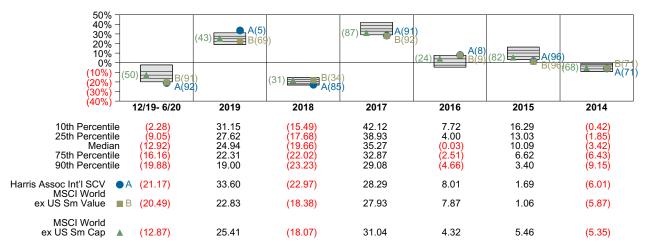
Callan International Small Cap (Gross) Annualized Five Year Risk vs Return



Harris Assoc Int'l SCV Return Analysis Summary

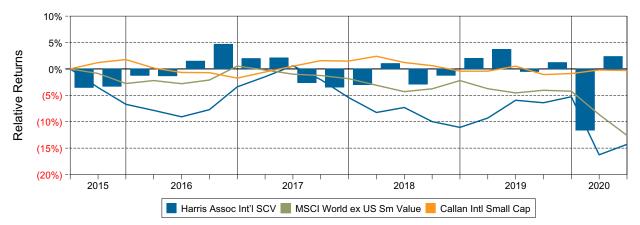
Return Analysis

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

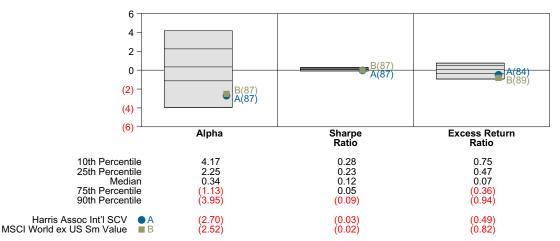


Performance vs Callan International Small Cap (Gross)







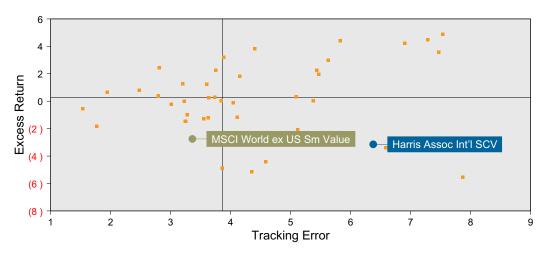


Harris Assoc Int'l SCV Risk Analysis Summary

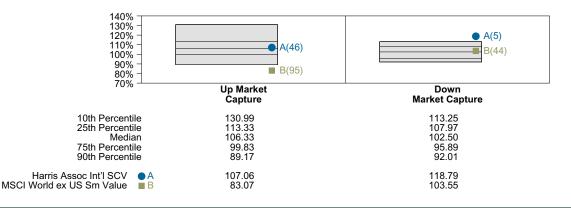
Risk Analysis

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.

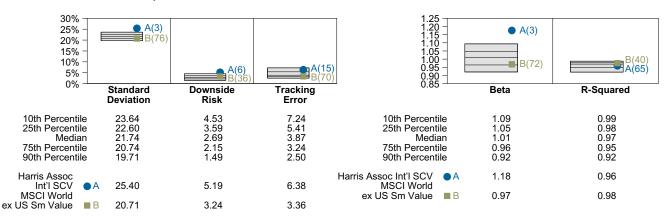
Risk Analysis vs Callan International Small Cap (Gross) Five Years Ended June 30, 2020



Market Capture vs MSCI World ex US Small Cap (USD Net Div) Rankings Against Callan International Small Cap (Gross) Five Years Ended June 30, 2020



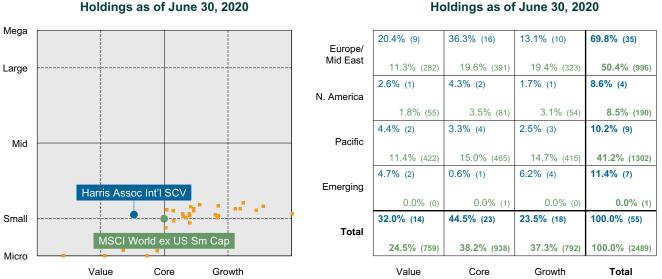
Risk Statistics Rankings vs MSCI World ex US Small Cap (USD Net Div) Rankings Against Callan International Small Cap (Gross) Five Years Ended June 30, 2020



Current Holdings Based Style Analysis Harris Assoc Int'l SCV As of June 30, 2020

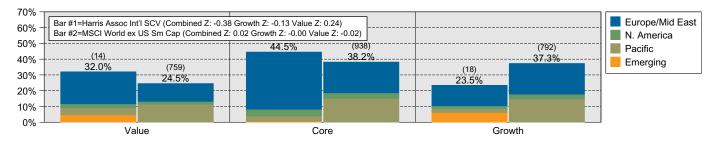
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are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

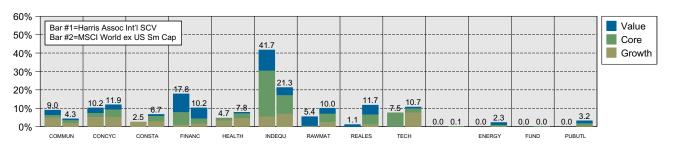


Style Map vs Callan Intl Small Cap Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

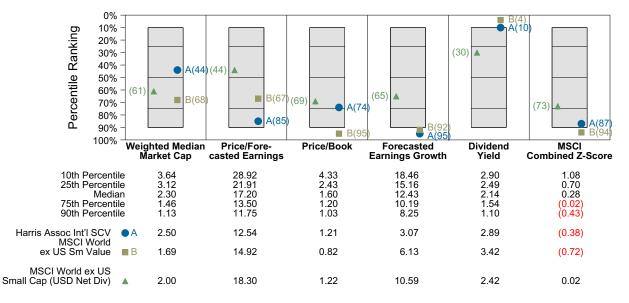


Harris Assoc Int'l SCV Equity Characteristics Analysis Summary

Portfolio Characteristics

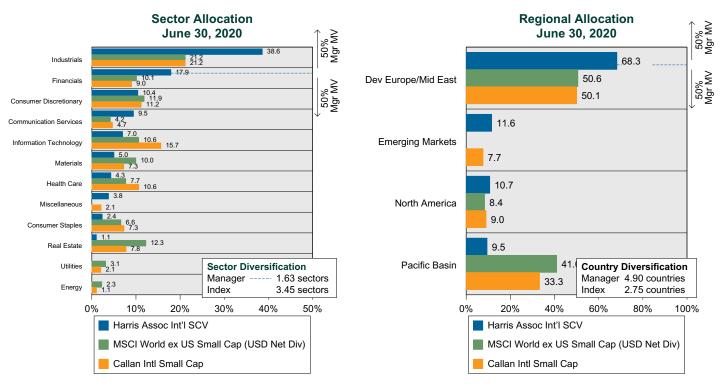
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan International Small Cap as of June 30, 2020



Sector Weights

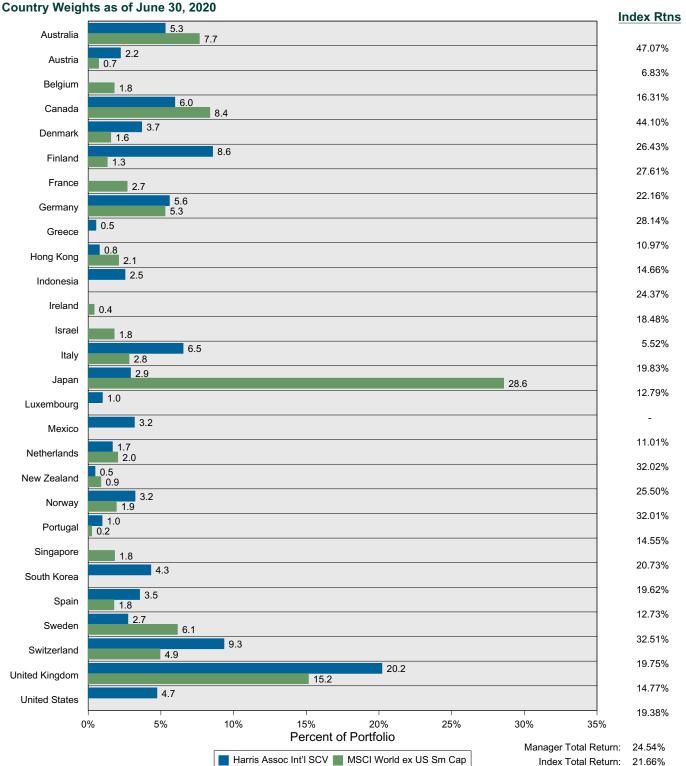
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent guarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



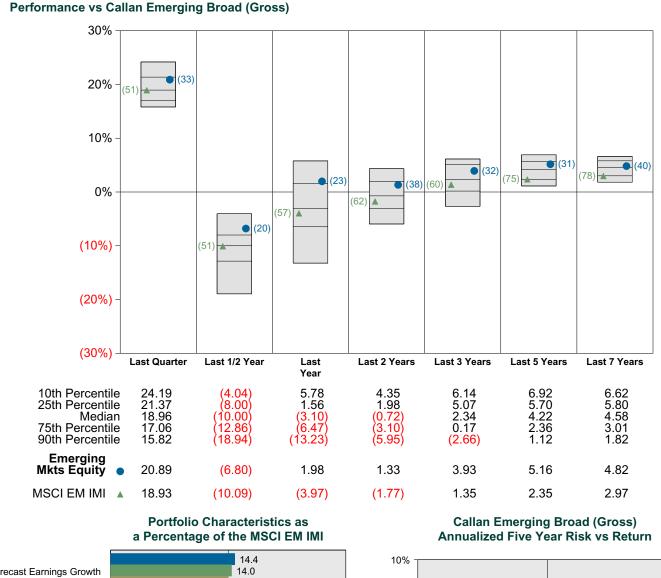


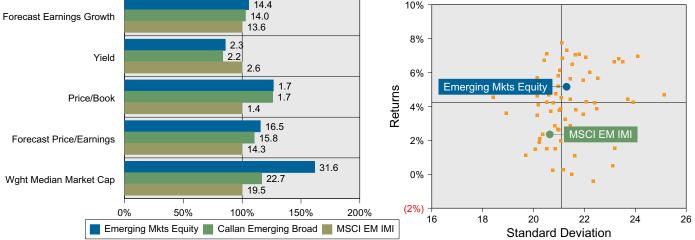
Emerging Markets Equity

Emerging Mkts Equity Period Ended June 30, 2020

Quarterly Summary and Highlights

- Emerging Mkts Equity's portfolio posted a 20.89% return for the quarter placing it in the 33 percentile of the Callan Emerging Broad group for the quarter and in the 23 percentile for the last year.
- Emerging Mkts Equity's portfolio outperformed the MSCI EM IMI by 1.96% for the quarter and outperformed the MSCI EM IMI for the year by 5.95%.



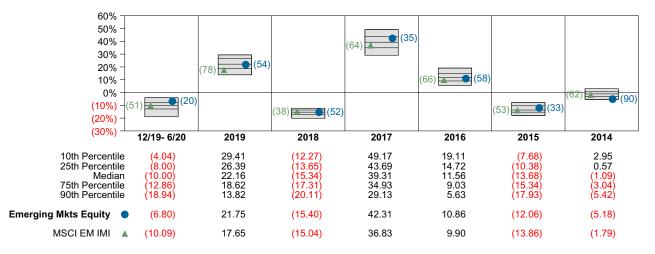


Emerging Mkts Equity Return Analysis Summary

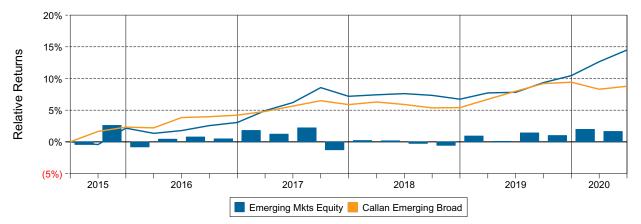
Return Analysis

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

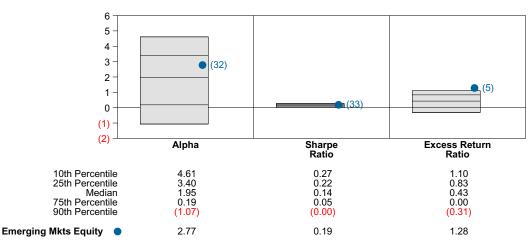
Performance vs Callan Emerging Broad (Gross)



Cumulative and Quarterly Relative Return vs MSCI EM IMI



Risk Adjusted Return Measures vs MSCI EM IMI Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020



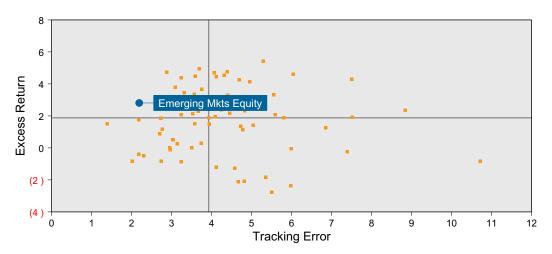


Emerging Mkts Equity Risk Analysis Summary

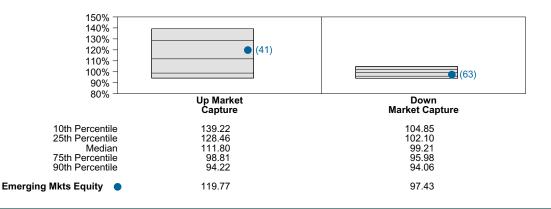
Risk Analysis

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

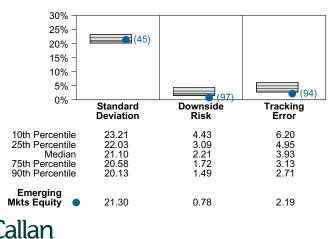
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2020

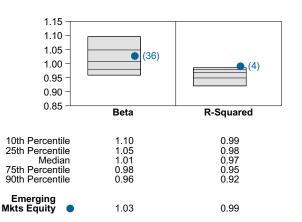


Market Capture vs MSCI EM IMI Index (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020





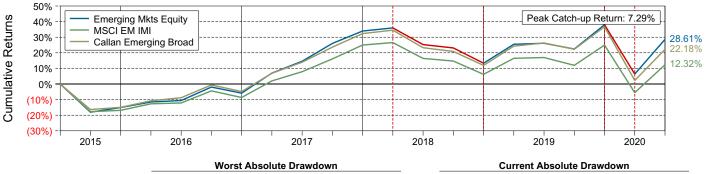




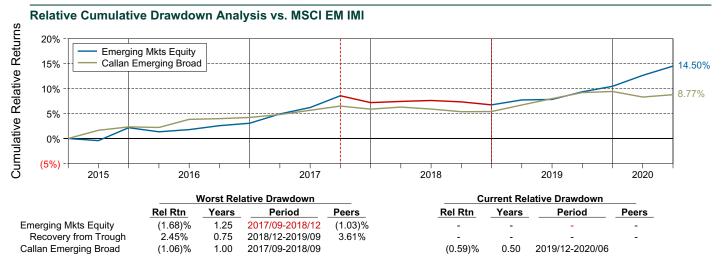
Emerging Mkts Equity Drawdown Analysis for Five Years Ended June 30, 2020

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.

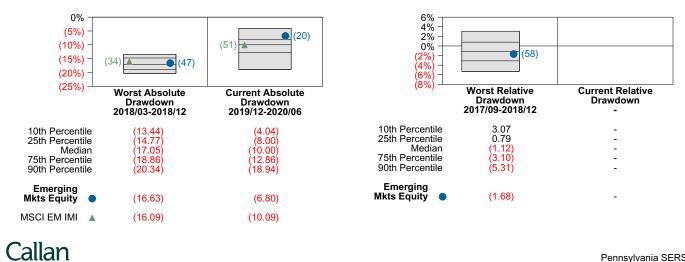
Absolute Cumulative Drawdown Analysis



	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers	
Emerging Mkts Equity	(16.63)%	0.75	2018/03-2018/12	(16.09)%	(16.79)%	(6.80)%	0.50	2019/12-2020/06	(10.09)%	(10.62)%	
Recovery from Trough	21.75%	1.00	2018/12-2019/12	17.65%	22.14%	20.89%	0.25+	2020/03-2020/06	18.93%	19.45%	
MSCI EM IMI	(25.37)%	2.00	2018/03-2020/03			(11.24)%	2.25	2018/03-2020/06			
Callan Emerging Broad	(16.79)%	0.75	2018/03-2018/12			(10.62)%	0.50	2019/12-2020/06			
0.0	. ,					. ,					



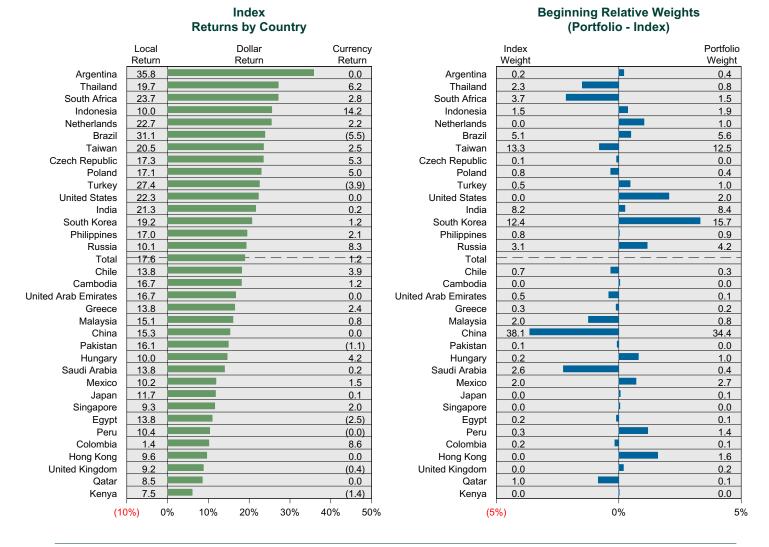
Drawdown Rankings vs. MSCI EM IMI **Rankings against Callan Emerging Broad** Five Years Ended June 30, 2020

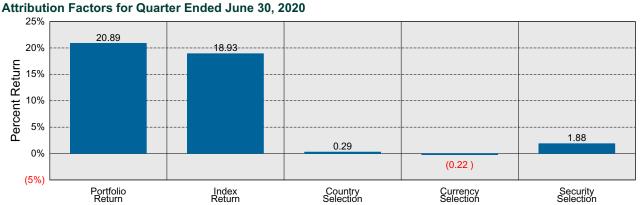


Emerging Mkts Equity vs MSCI EM IMI Attribution for Quarter Ended June 30, 2020

International Attribution

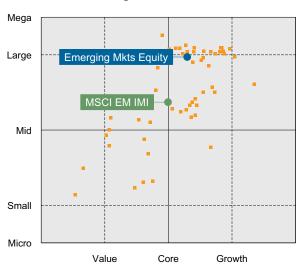
The first chart below illustrates the return for each country in the index sorted from high to low. The total return for the index is highlighted with a dotted line. The second chart (countries presented in the same order) illustrates the manager's country allocation decisions relative to the index. 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 Emerging Mkts Equity As of June 30, 2020

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.

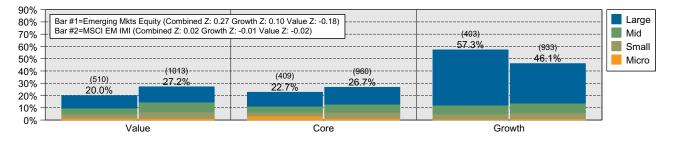


Style Map vs Callan Emerging Broad Holdings as of June 30, 2020

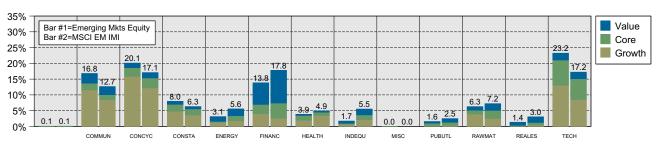
Style Exposure Matrix Holdings as of June 30, 2020

	10.3% (82)	11.5% (55)	45.2% (91)	67.1% (228)
Large				
	12.6% (91)	13.9% (67)	32.4% (102)	58.9% (260)
	4.8% (171)	5.0% (168)	7.3% (173)	17.0% (512)
Mid				
	8.1% (201)	6.7% (199)	7.9% (235)	22.6% (635)
	3.6% (219)	3.1% (148)	4.1% (115)	10.8% (482)
Small				
	5.3% (389)	4.6% (365)	4.9% (365)	14.8% (1119)
	1.3% (38)	3.1% (38)	0.7% (24)	5.2% (100)
Micro				
	1.2% (332)	1.5% (329)	0.9% (231)	3.7% (892)
	20.0% (510)	22.7% (409)	57.3% (403)	100.0% (1322)
Total				
	27.2% (1013)	26.7% (960)	46.1% (933)	100.0% (2906)
	Value	Core	Growth	Total

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

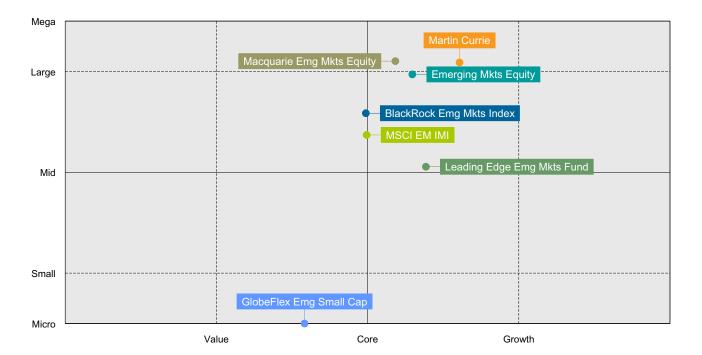


International Holdings Based Style Analysis For One Quarter Ended June 30, 2020

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 capitialization 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, 2020



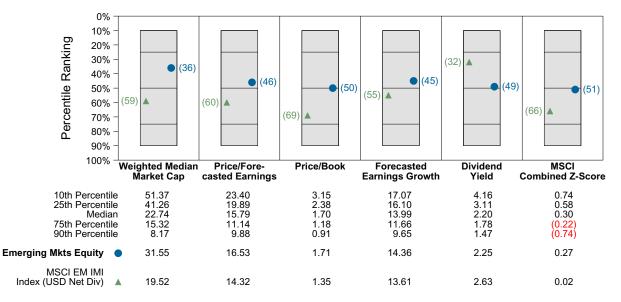
	Weight %	Wtd Median Mkt Cap	Combined Z-Score	Growth Z-Score	Value Z-Score	Number of Securities	Security Diversification
BlackRock Emg Mkts Index	13.13%	23.84	0.01	(0.01)	(0.02)	1371	62.21
Leading Edge Emg Mkts Fund	15.60%	13.20	0.35	0.19	(0.15)	216	33.75
Macquarie Emg Mkts Equity	31.89%	54.03	0.18	(0.02)	(0.20)	85	9.16
Martin Currie	33.05%	51.28	0.54	0.22	(0.32)	47	8.76
GlobeFlex Emg Small Cap	6.34%	0.61	(0.32)	0.05	0.38	141	24.03
Emerging Mkts Equity	100.00%	31.55	0.27	0.10	(0.18)	1634	26.23
MSCI EM IMI	-	19.52	0.02	(0.01)	(0.02)	2940	92.24

Emerging Mkts Equity Equity Characteristics Analysis Summary

Portfolio Characteristics

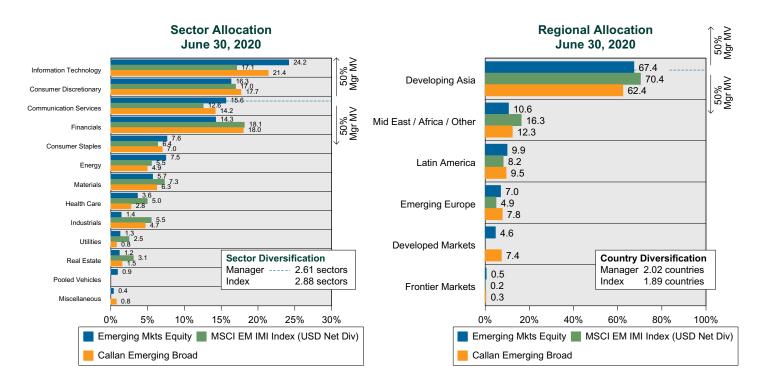
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2020



Sector Weights

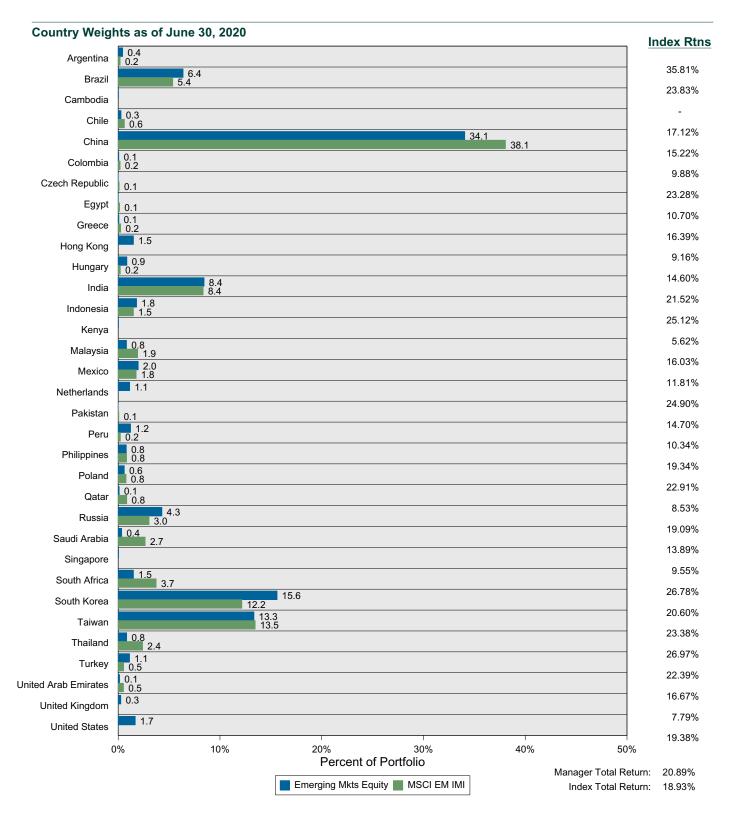
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



Country Allocation Emerging Mkts Equity VS MSCI EM IMI Index (USD Net Div)

Country Allocation

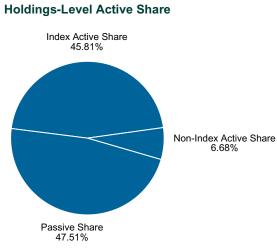
The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation is similar to the index, the portfolio should experience more "index-like" performance. In order to illustrate the performance effect on the portfolio and index of these country allocations, the individual index country returns are also shown.



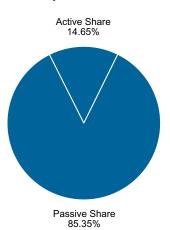


Emerging Mkts Equity Active Share Analysis as of June 30, 2020 vs. MSCI EM IMI Index (USD Net Div)

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



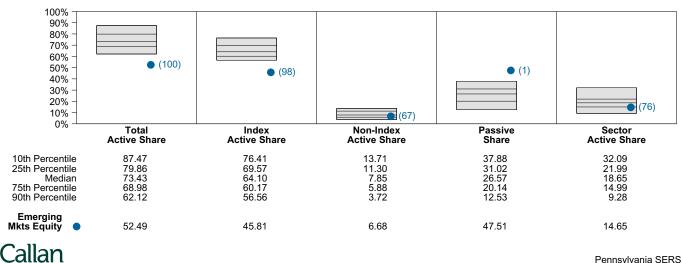
Sector Exposure Active Share



Total Active Share: 52.49%

	Index Active Share Within Sector	Non-Index Active Share Within Sector	Total Active Share Within Sector	Index Weight	Manager Weight	Contribution to Total Portfolio Active Share
Communication Services	46.61%	2.52%	49.13%	12.57%	15.64%	6.53%
Consumer Discretionary	34.26%	4.62%	38.88%	16.96%	16.34%	6.34%
Consumer Staples	59.05%	4.44%	63.49%	6.38%	7.64%	4.50%
Energy	41.73%	6.77%	48.51%	5.53%	7.48%	2.81%
Financials	48.74%	13.17%	61.91%	18.14%	14.25%	10.18%
Health Care	60.01%	6.02%	66.03%	4.96%	3.63%	2.93%
Industrials	46.04%	10.44%	56.48%	5.50%	1.41%	2.55%
Information Technology	33.86%	6.08%	39.94%	17.11%	24.18%	8.61%
Materials	62.47%	3.29%	65.76%	7.29%	5.69%	4.38%
Miscellaneous	0.00%	100.00%	100.00%	-	0.38%	0.14%
Pooled Vehicles	0.00%	100.00%	100.00%	-	0.92%	0.46%
Real Estate	55.99%	7.26%	63.25%	3.08%	1.17%	1.58%
Utilities	66.43%	3.84%	70.27%	2.48%	1.26%	1.38%
Total	45.81%	6.68%	52.49%	100.00%	100.00%	52.39%

Active Share vs. Callan Emerging Broad



Emerging Markets Managers

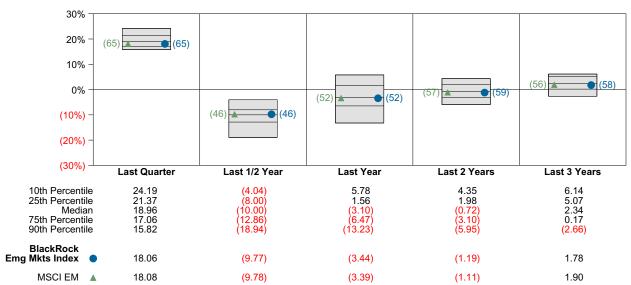
BlackRock Emg Mkts Index Period Ended June 30, 2020

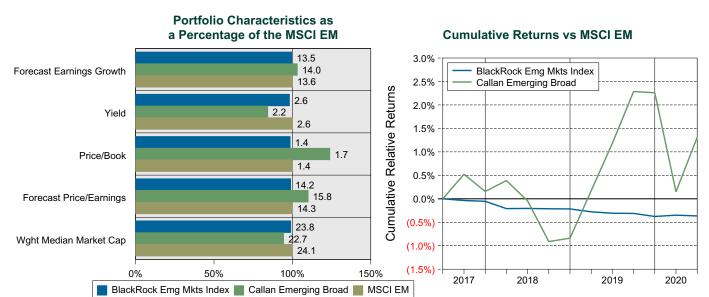
Investment Philosophy

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

Quarterly Summary and Highlights

- BlackRock Emg Mkts Index's portfolio posted a 18.06% return for the quarter placing it in the 65 percentile of the Callan Emerging Broad group for the quarter and in the 52 percentile for the last year.
- BlackRock Emg Mkts Index's portfolio underperformed the MSCI EM by 0.02% for the quarter and underperformed the MSCI EM for the year by 0.06%.

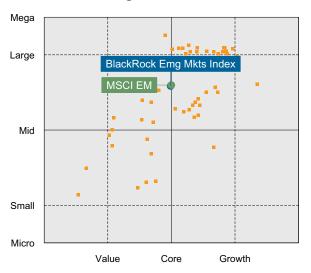




Performance vs Callan Emerging Broad (Gross)

Current Holdings Based Style Analysis BlackRock Emg Mkts Index As of June 30, 2020

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.

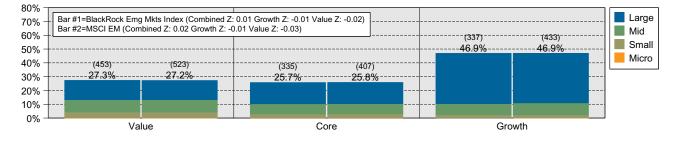


Style Map vs Callan Emerging Broad Holdings as of June 30, 2020

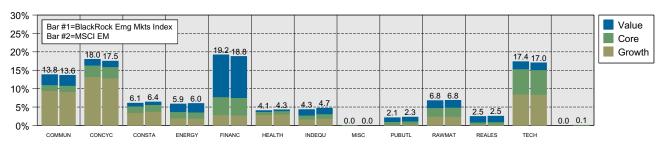
Style Exposure Matrix Holdings as of June 30, 2020

(00)	/ ()		
27.2% (523)	25.8% (407)	46.9% (433)	100.0% (1363)
27.3% (453)	25.7% (335)	46.9% (337)	100.0% (1125)
0.1% (7)	0.2% (3)	0.0% (2)	0.3% (12)
0.170 (7)	0.270 (4)	0.070 (0)	0.070 (11)
. ,	. ,		0.3% (11)
4.2% (225)	2.8% (139)	2.2% (95)	9.2% (459)
4.3% (198)	2.6% (116)	2.2% (82)	9.1% (396)
8.9% (200)	7.4% (198)	8.7% (234)	25.1% (632)
8.9% (167)	7.4% (163)	8.1% (172)	24.4% (502)
14.0% (91)	15.4% (67)	36.0% (102)	65.4% (260)
14.1% (81)	15.5% (52)	36.6% (83)	66.2% (216)
	8.9% (167) 8.9% (200) 4.3% (198) 4.2% (225) 0.1% (7) 0.1% (7)	14.0% (91) 15.4% (67) 8.9% (167) 7.4% (163) 8.9% (200) 7.4% (198) 4.3% (198) 2.6% (116) 4.2% (225) 2.8% (139) 0.1% (7) 0.2% (4) 0.1% (7) 0.2% (3) 27.3% (453) 25.7% (335)	14.0% (91) 15.4% (67) 36.0% (102) 8.9% (167) 7.4% (163) 8.1% (172) 8.9% (200) 7.4% (198) 8.7% (234) 4.3% (198) 2.6% (116) 2.2% (82) 4.2% (225) 2.8% (139) 2.2% (95) 0.1% (7) 0.2% (4) 0.0% (0) 0.1% (7) 0.2% (3) 0.0% (2) 27.3% (453) 25.7% (335) 46.9% (337)

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

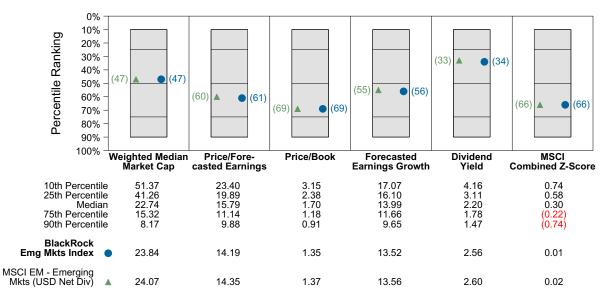


BlackRock Emg Mkts Index Equity Characteristics Analysis Summary

Portfolio Characteristics

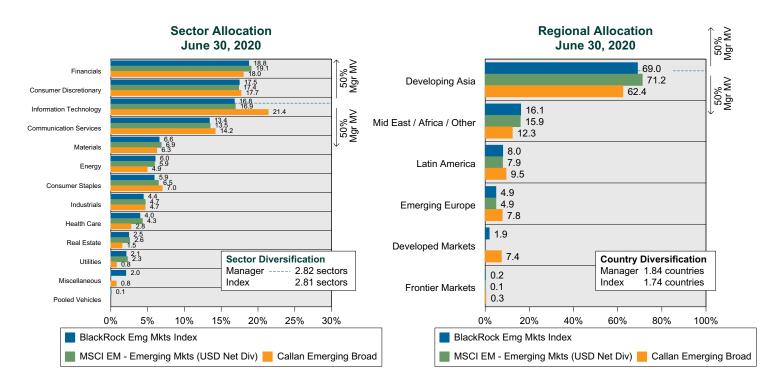
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2020



Sector Weights

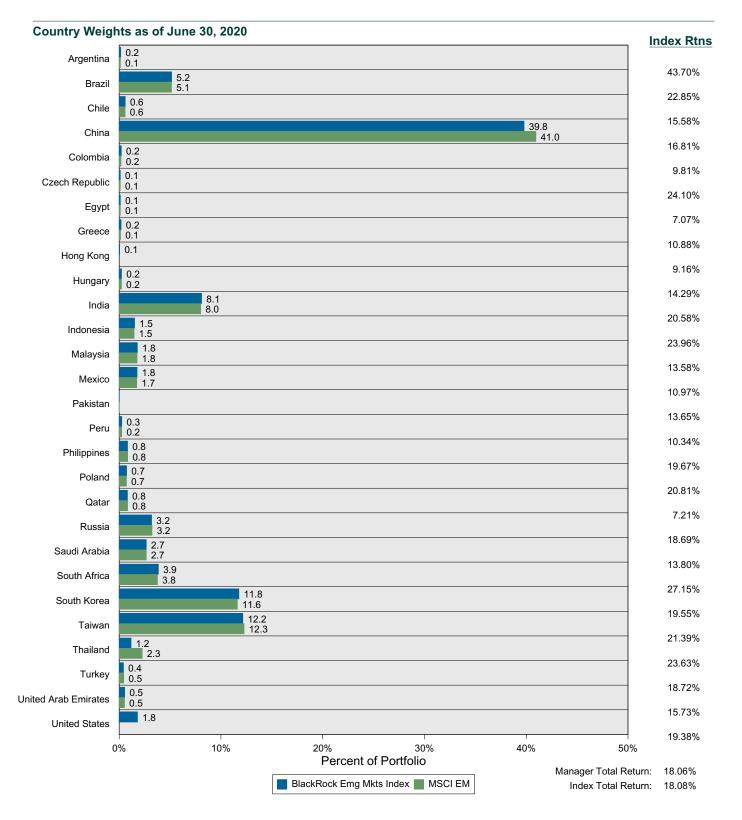
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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.



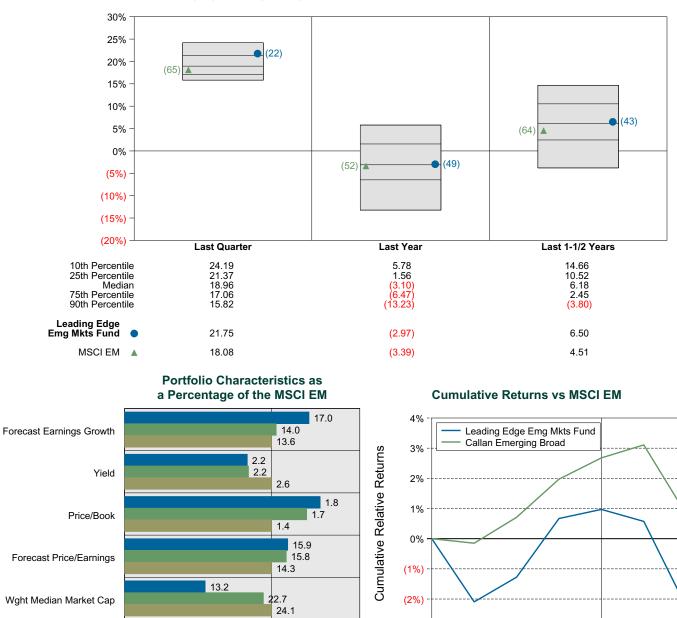
Leading Edge Emg Mkts Fund Period Ended June 30, 2020

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 21.75% return for the quarter placing it in the 22 percentile of the Callan Emerging Broad group for the quarter and in the 49 percentile for the last year.
- Leading Edge Emg Mkts Fund's portfolio outperformed the MSCI EM by 3.67% for the quarter and outperformed the MSCI EM for the year by 0.41%.



(3%)

2019

Performance vs Callan Emerging Broad (Gross)



0%

20%

60%

Leading Edge Emg Mkts Fund 📕 Callan Emerging Broad 📕 MSCI EM

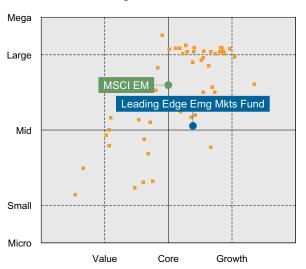
40%

80% 100% 120% 140% 160%

2020

Current Holdings Based Style Analysis Leading Edge Emg Mkts Fund As of June 30, 2020

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.

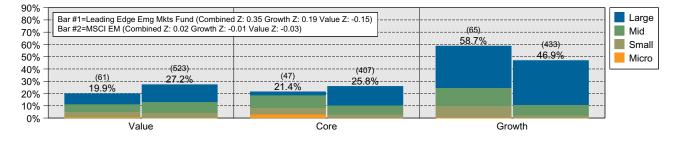


Style Map vs Callan Emerging Broad Holdings as of June 30, 2020

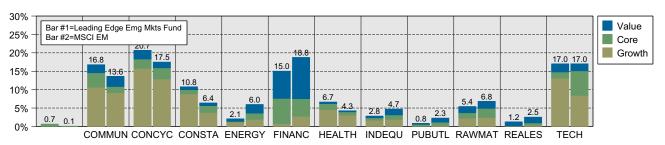
Style Exposure Matrix Holdings as of June 30, 2020

Total	19.9% (61)	21.4% (47)	58.7% (65)	100.0% (173)
	0.1% (7)	0.2% (3)	0.0% (2)	0.3% (12)
Micro				
	0.8% (3)	3.1% (3)	0.4% (2)	4.3% (8)
omai	4.2% (225)	2.8% (139)	2.2% (95)	9.2% (459)
Small	4.4% (23)	5.3% (19)	9.6% (21)	19.3% (63)
	8.9% (200)	7.4% (198)	8.7% (234)	25.1% (632)
Mid	8.0% (000)	7 49/ (400)	9 70/ (00.4)	25 49/ (000)
	6.2% (22)	10.2% (20)	14.9% (20)	31.4% (62)
	14.0% (91)	15.4% (67)	36.0% (102)	65.4% (260)
Large	0.070 (13)	2.7 /0 (3)	00.070 (22)	40.070 (40)
	8.5% (13)	2.7% (5)	33.8% (22)	45.0% (40)

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

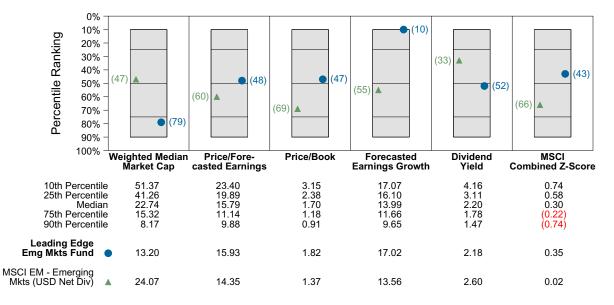


Leading Edge Emg Mkts Fund Equity Characteristics Analysis Summary

Portfolio Characteristics

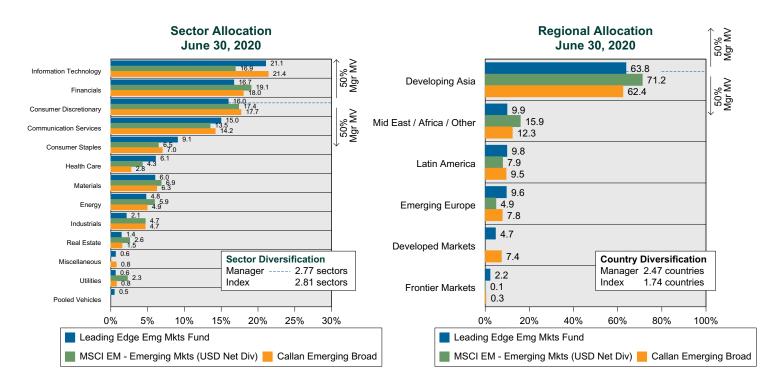
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2020



Sector Weights

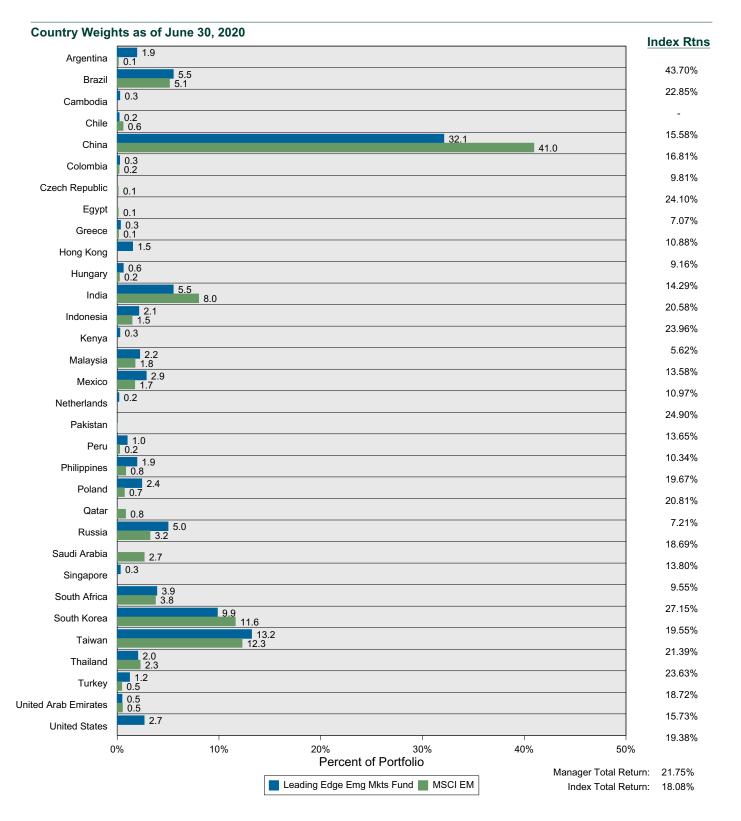
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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, 2020

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 23.90% return for the quarter placing it in the 11 percentile of the Callan Emerging Broad group for the quarter and in the 15 percentile for the last year.
- Macquarie Emerging Markets Equity's portfolio outperformed the MSCI EM by 5.82% for the quarter and outperformed the MSCI EM for the year by 7.85%.



(2%) + 16

18

20

22

Standard Deviation

24

Macquarie Emerging Markets Equity 📕 Callan Emerging Broad

Performance vs Callan Emerging Broad (Gross)

Callan

MSCI EM

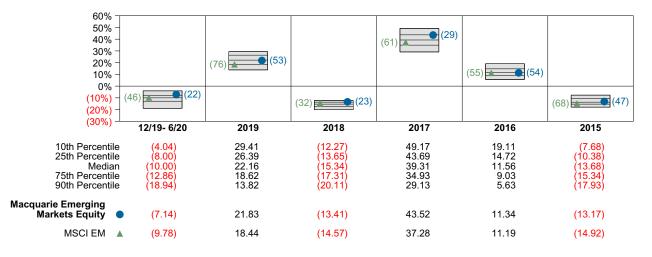
26

Macquarie Emerging Markets Equity Return Analysis Summary

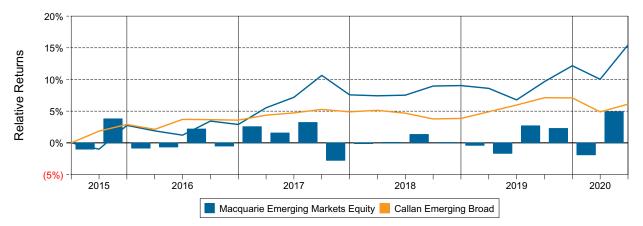
Return Analysis

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

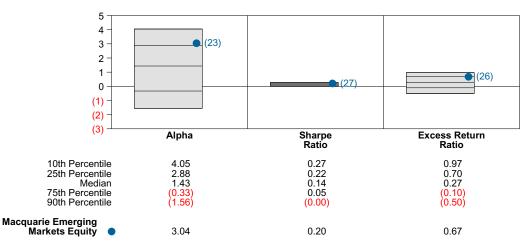
Performance vs Callan Emerging Broad (Gross)



Cumulative and Quarterly Relative Return vs MSCI EM



Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020

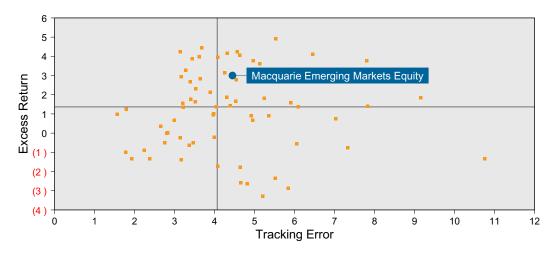


Macquarie Emerging Markets Equity Risk Analysis Summary

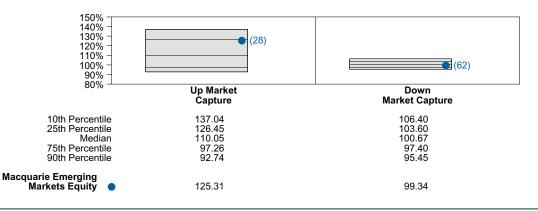
Risk Analysis

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.

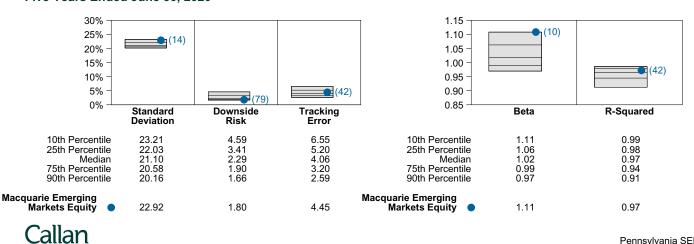
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2020



Market Capture vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020

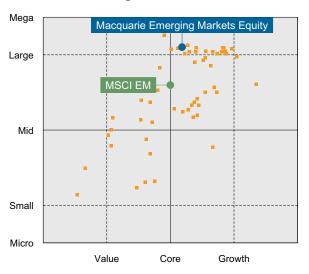


Risk Statistics Rankings vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020



Current Holdings Based Style Analysis Macquarie Emerging Markets Equity As of June 30, 2020

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.

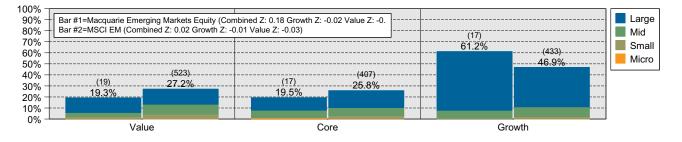


Style Map vs Callan Emerging Broad Holdings as of June 30, 2020

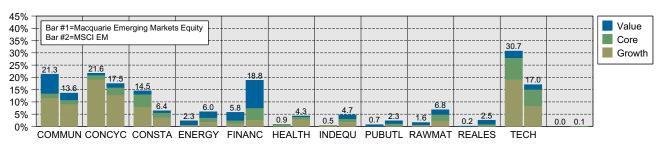
Style Exposure Matrix Holdings as of June 30, 2020

	27.2% (523)	25.8% (407)	46.9% (433)	100.0% (1363)
Total	19.3% (19)	19.5% (17)	61.2% (17)	100.0% (53)
	0.1% (7)	0.2% (3)	0.0% (2)	0.3% (12)
Micro	0.3% (3)	1.0 % (3)	0.0% (0)	1.3 /0 (0)
	4.2% (225)	2.8% (139) 1.0% (3)	2.2% (95)	9.2% (459) 1.3% (6)
Small	4.00/ (005)	0.00/ //000	0.00((0.7)	0.00/ //
	1.8% (3)	0.0% (0)	0.8% (2)	2.6% (5)
	8.9% (200)	7.4% (198)	8.7% (234)	25.1% (632)
Mid	3.7% (5)	6.8% (10)	7.0% (3)	17.5% (18)
	14.0% (91)	15.4% (67)	36.0% (102)	65.4% (260)
Large	44.000		00.00/	0 = 404
	13.5% (8)	11.6% (4)	53.4% (12)	78.5% (24)

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

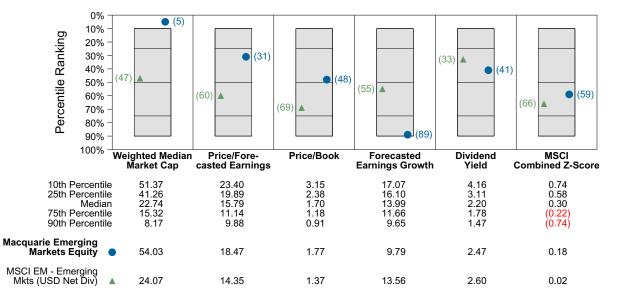


Macquarie Emerging Markets Equity Equity Characteristics Analysis Summary

Portfolio Characteristics

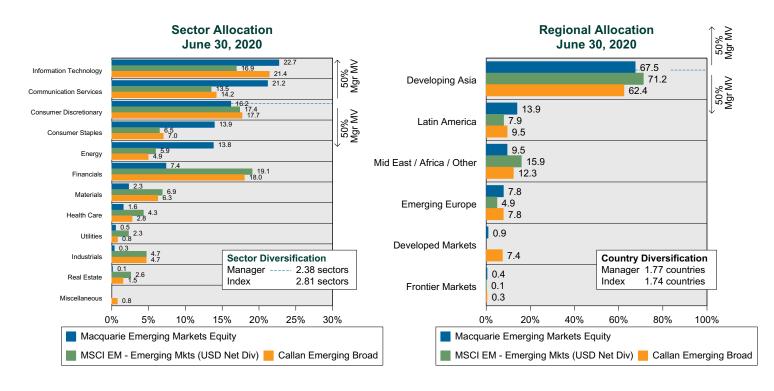
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2020



Sector Weights

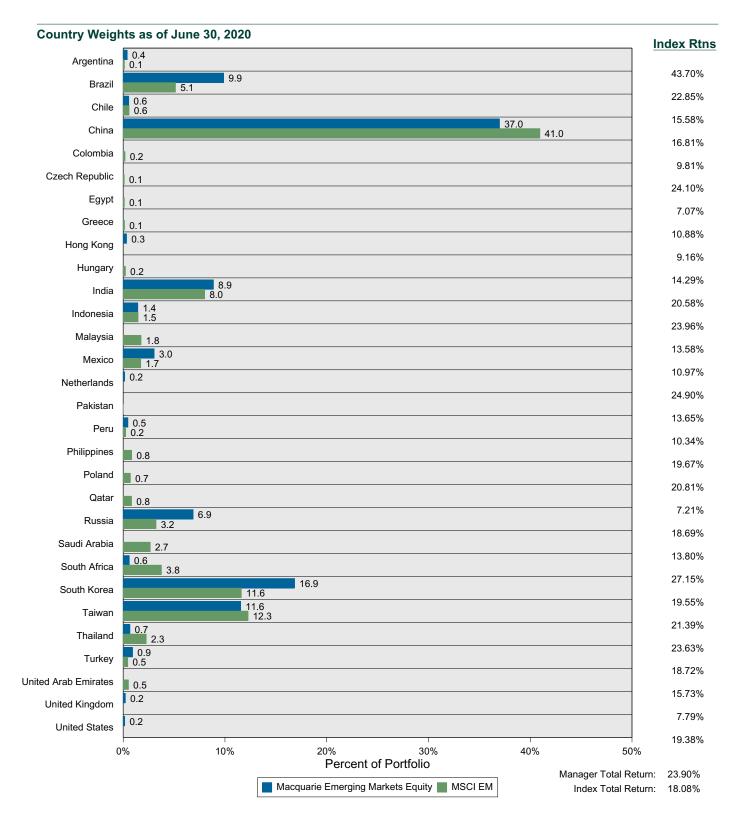
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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.





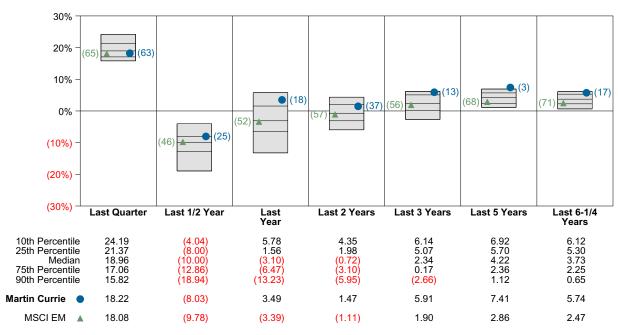
Martin Currie Period Ended June 30, 2020

Investment Philosophy

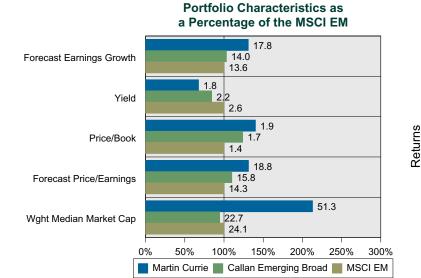
The Martin Currie GEMs team builds long-term, high conviction stock-focused portfolios, driven by fundamental research within an appropriate risk framework. Their primary belief with regard to GEMs investing is that sustainable cash flows and the effective allocation of capital are the main determinants 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

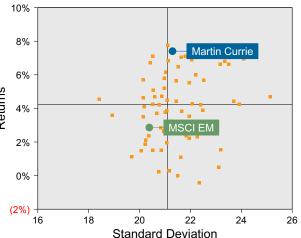
- Martin Currie's portfolio posted a 18.22% return for the quarter placing it in the 63 percentile of the Callan Emerging Broad group for the quarter and in the 18 percentile for the last year.
- Martin Currie's portfolio outperformed the MSCI EM by 0.14% for the quarter and outperformed the MSCI EM for the year by 6.88%.



Performance vs Callan Emerging Broad (Gross)



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

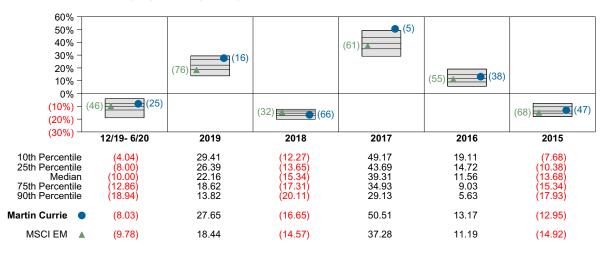


Martin Currie Return Analysis Summary

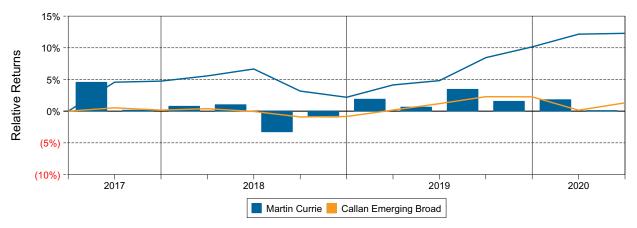
Return Analysis

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

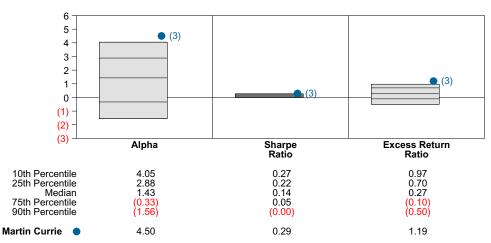
Performance vs Callan Emerging Broad (Gross)



Cumulative and Quarterly Relative Return vs MSCI EM



Risk Adjusted Return Measures vs MSCI EM Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020



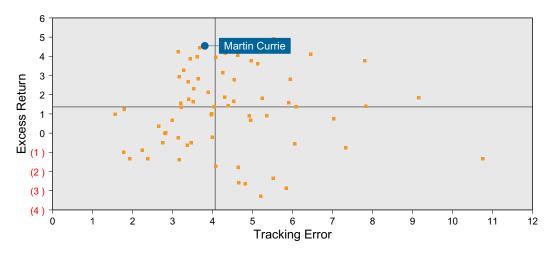


Martin Currie Risk Analysis Summary

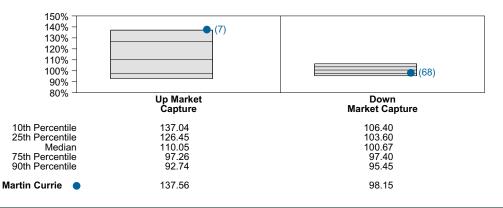
Risk Analysis

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

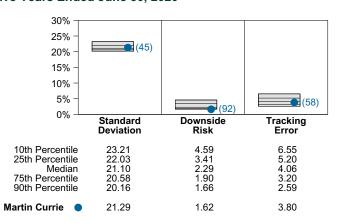
Risk Analysis vs Callan Emerging Broad (Gross) Five Years Ended June 30, 2020

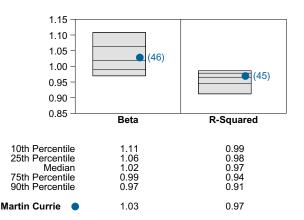


Market Capture vs MSCI EM - Emerging Mkts (USD Net Div) Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020



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Risk Statistics Rankings vs MSCI EM - Emerging Mkts (USD Net Div)
Rankings Against Callan Emerging Broad (Gross)
Five Years Ended June 30, 2020
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Current Holdings Based Style Analysis Martin Currie As of June 30, 2020

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.

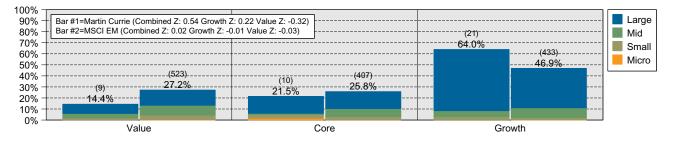


Style Map vs Callan Emerging Broad Holdings as of June 30, 2020

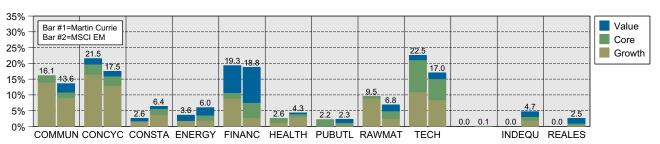
Style Exposure Matrix Holdings as of June 30, 2020

	27.2% (523)	25.8% (407)	46.9% (433)	100.0% (1363)
Total				
	14.4% (9)	21.5% (10)	64.0% (21)	100.0% (40)
	0.1% (7)	0.2% (3)	0.0% (2)	0.3% (12)
Micro			0.0 /0 (0)	
	0.0% (0)	1.8% (1)	0.0% (0)	1.8% (1)
C	4.2% (225)	2.8% (139)	2.2% (95)	9.2% (459)
Small	1.070 (2)	3.270 (3)	5.170 (2)	0.170 (7)
	1.8% (2)	3.2% (3)	3.1% (2)	8.1% (7)
Wild	8.9% (200)	7.4% (198)	8.7% (234)	25.1% (632)
Mid	4.0% (3)	0.9% (1)	5.3% (2)	10.2% (6)
	. ,		. ,	. ,
Large	14.0% (91)	15.4% (67)	36.0% (102)	65.4% (260)
Large	8.6% (4)	15.6% (5)	55.7% (17)	79.9% (26)

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020

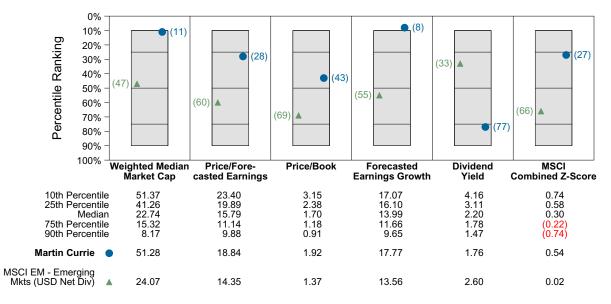


Martin Currie Equity Characteristics Analysis Summary

Portfolio Characteristics

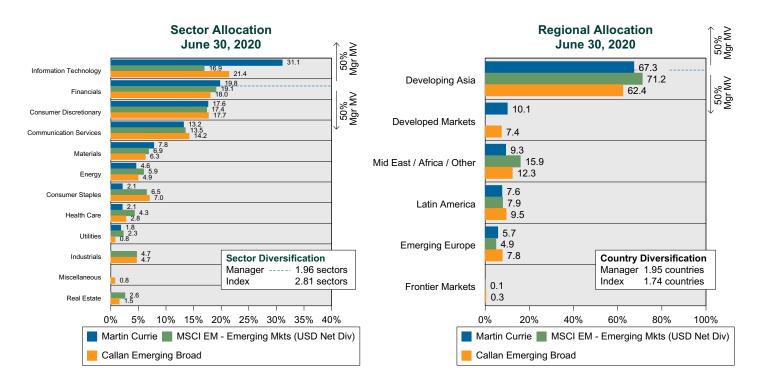
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Broad as of June 30, 2020



Sector Weights

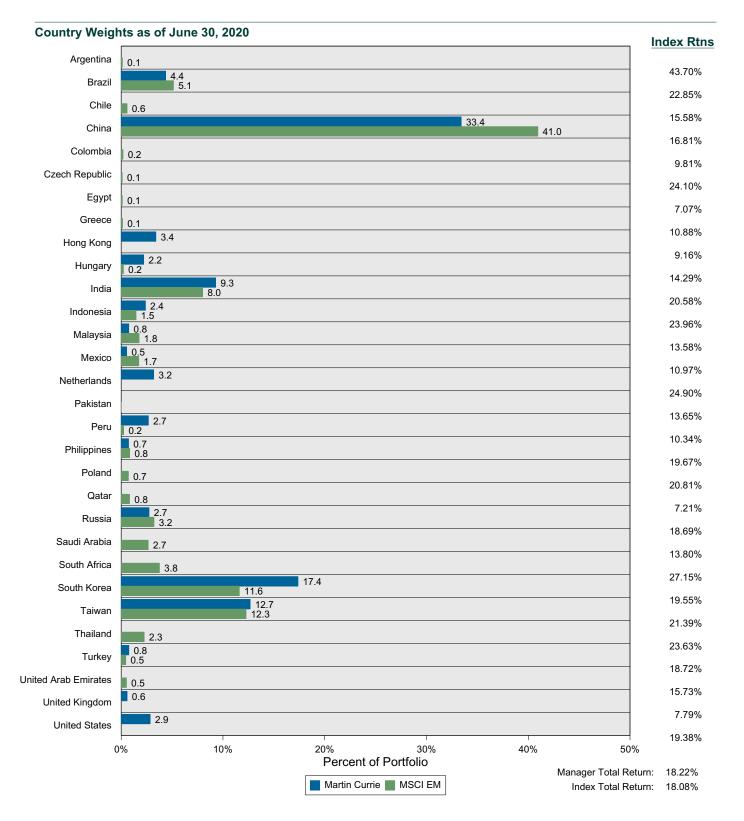
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. 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.



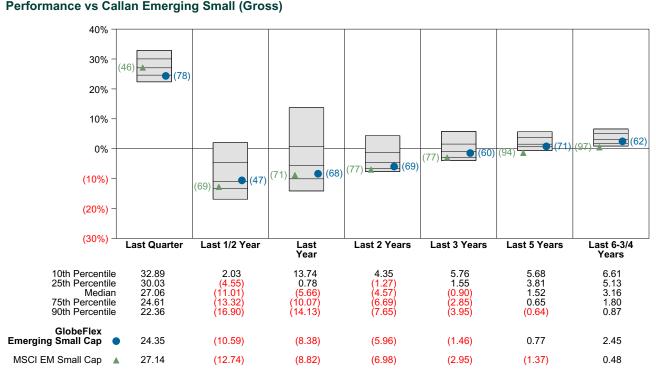
GlobeFlex Emerging Small Cap Period Ended June 30, 2020

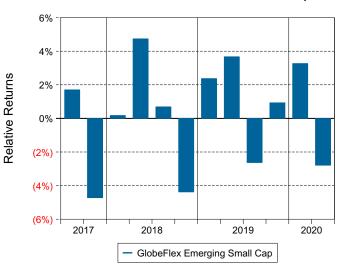
Investment Philosophy

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

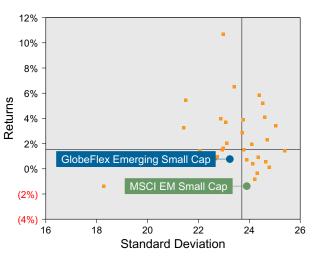
- GlobeFlex Emerging Small Cap's portfolio posted a 24.35% return for the quarter placing it in the 78 percentile of the Callan Emerging Small group for the quarter and in the 68 percentile for the last year.
- GlobeFlex Emerging Small Cap's portfolio underperformed the MSCI EM Small Cap by 2.79% for the quarter and outperformed the MSCI EM Small Cap for the year by 0.44%.





Relative Return vs MSCI EM Small Cap

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

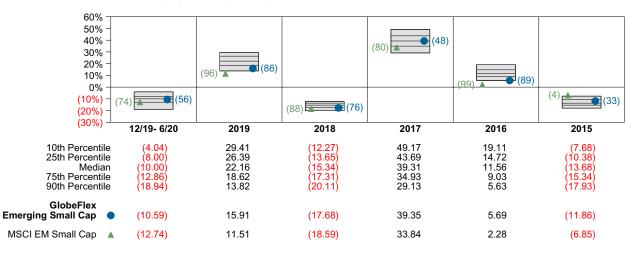


GlobeFlex Emerging Small Cap Return Analysis Summary

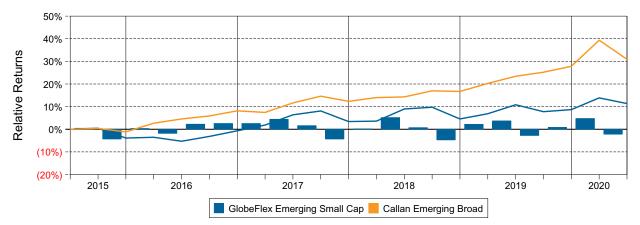
Return Analysis

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.

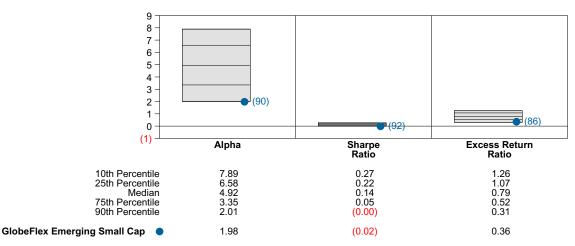
Performance vs Callan Emerging Broad (Gross)



Cumulative and Quarterly Relative Return vs MSCI EM Small Cap



Risk Adjusted Return Measures vs MSCI EM Small Cap Rankings Against Callan Emerging Broad (Gross) Five Years Ended June 30, 2020



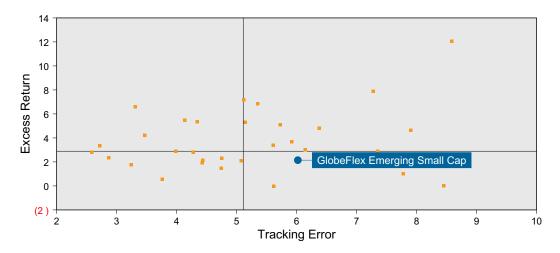


GlobeFlex Emerging Small Cap Risk Analysis Summary

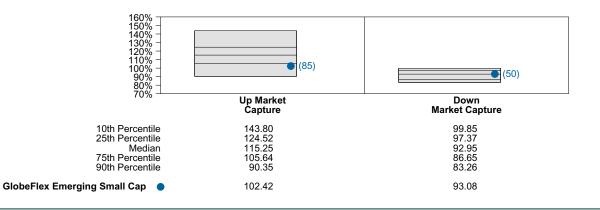
Risk Analysis

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.

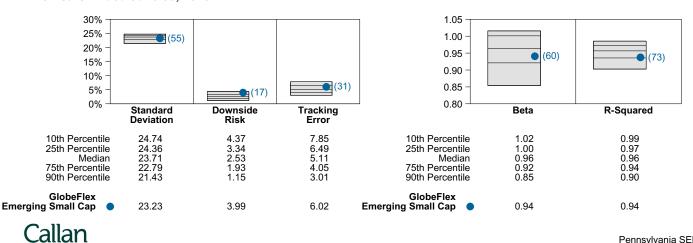
Risk Analysis vs Callan Emerging Small (Gross) Five Years Ended June 30, 2020



Market Capture vs MSCI EM Small Cap Index (USD Net Div) Rankings Against Callan Emerging Small (Gross) Five Years Ended June 30, 2020



Risk Statistics Rankings vs MSCI EM Small Cap Index (USD Net Div) Rankings Against Callan Emerging Small (Gross) Five Years Ended June 30, 2020



Pennsylvania SERS 167

Current Holdings Based Style Analysis GlobeFlex Emerging Small Cap As of June 30, 2020

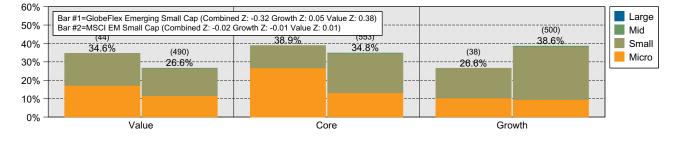
This page analyzes the current investment style of a portfolio utilizing a detailed holdings-based style analysis to determine actual exposures to various regional and style segments of the international/global equity market. The market is segmented quarterly by region and style. The style segments are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

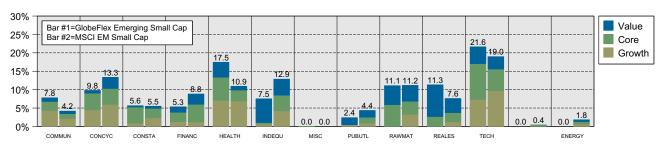


Style Map vs Callan Emerging Small Holdings as of June 30, 2020

Combined Z-Score Style Distribution Holdings as of June 30, 2020



Sector Weights Distribution Holdings as of June 30, 2020



GlobeFlex Emerging Small Cap Equity Characteristics Analysis Summary

Portfolio Characteristics

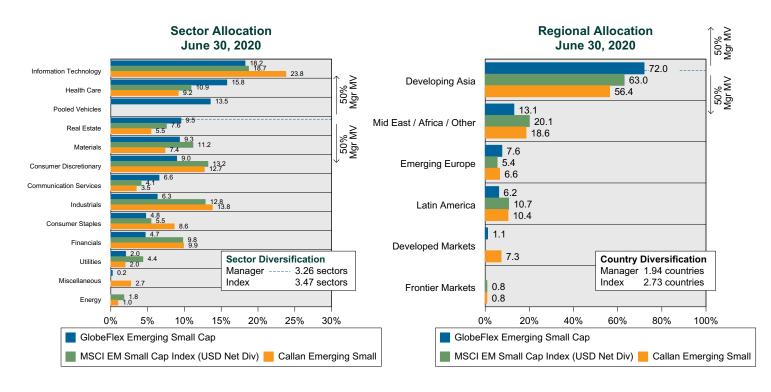
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Portfolio Characteristics Percentile Rankings Rankings Against Callan Emerging Small as of June 30, 2020



Sector Weights

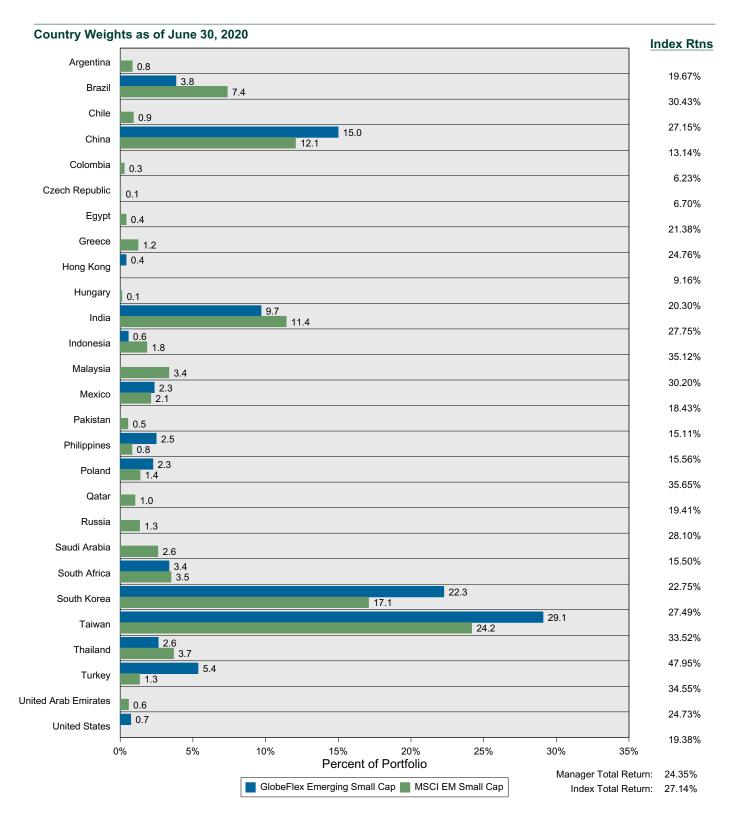
The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares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



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

Country Allocation

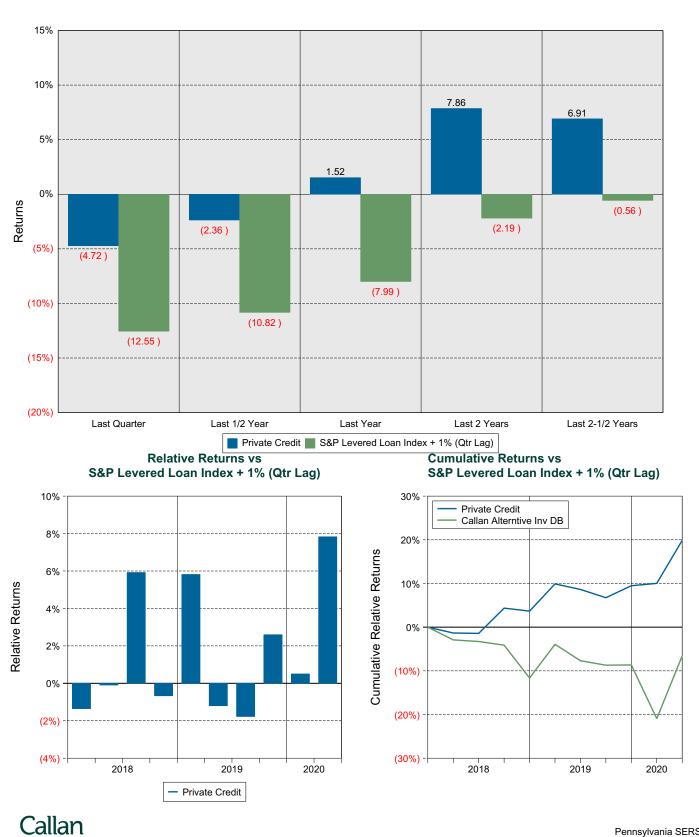
The chart below contrasts the portfolio's country allocation with that of the index as of June 30, 2020. This chart is useful because large deviations in country allocation relative to the index are often good predictors of tracking error in the subsequent quarter. To the extent that the portfolio allocation 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, 2020

Quarterly Summary and Highlights

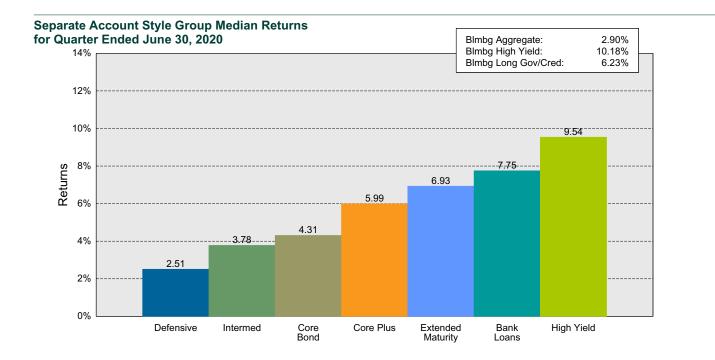
- Private Credit's portfolio posted a (4.72)% return for the quarter placing it in the 96 percentile of the Callan Alternative Investments DB group for the quarter and in the 22 percentile for the last year.
- Private Credit's portfolio outperformed the S&P Levered Loan Index + 1% (Qtr Lag) by 7.83% for the quarter and outperformed the S&P Levered Loan Index + 1% (Qtr Lag) for the year by 9.52%.

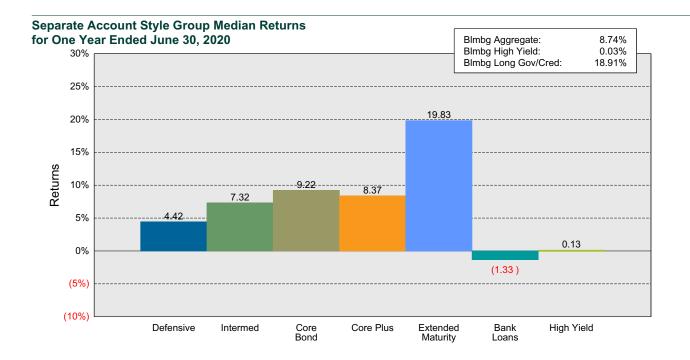


Fixed Income

Domestic Fixed Income Active Management Overview

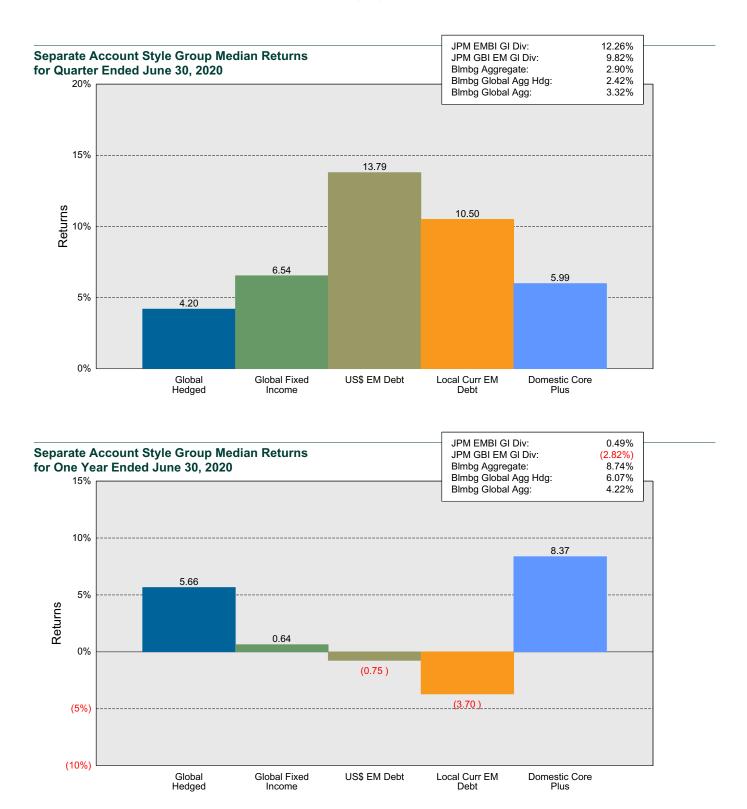
U.S. Treasury yields were range-bound in the second quarter; the 10-year U.S. Treasury yield closed the quarter at 0.66%; down only 4 bps from March 31 but off far more sharply from the year-end level of 1.92%. As a result, the Bloomberg Barclays US Treasury Index was up a modest 0.5% for the quarter. Other sectors recovered from sharp underperformance in the first quarter as investor confidence improved. For the quarter, the Bloomberg Barclays US Aggregate Bond Index gained 2.9%, with non-Treasury sectors faring the best. This is a stark contrast to the first quarter, when U.S. Treasuries were virtually the lone sector to post a positive return. The Bloomberg Barclays US Corporate Bond Index rose 9.0% in the second quarter but has underperformed like-duration U.S. Treasuries by 540 bps ytd. The Bloomberg Barclays High Yield Bond Index posted a double-digit return (+10.2%) in Q2 but remains down 3.8% ytd. Meanwhile, default rates and downgrades escalated. Defaults in Q2 across bank loans and bonds hit a quarterly record of more than \$80 billion.





Global Fixed Income Active Management Overview

Rates were lower overseas, fueled by rate cuts across a broad swath of countries and strong performance from corporates. The Bloomberg Barclays Global Aggregate ex-US Bond Index rose 3.4% (unhedged). Emerging market debt indices posted lofty results (EMBI Global Div:+12.3%; GBI-EM GI Div: +9.8%) but remain down single digits from year-end. Returns varied widely across the index of 70+ countries but generally, lower quality/higher yielding countries outperformed in Q2 but remain sharply lower than their higher quality brethren ytd. The local currency index also reflected broad dispersion of returns across its 19 constituents, but returns were positive for the vast majority of the countries.

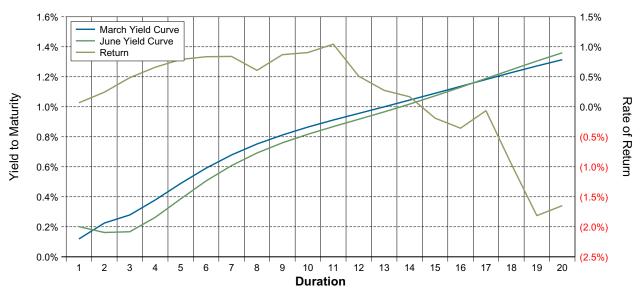


Bond Market Environment

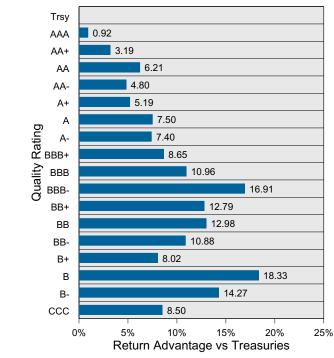
Factors Influencing Bond Returns

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.

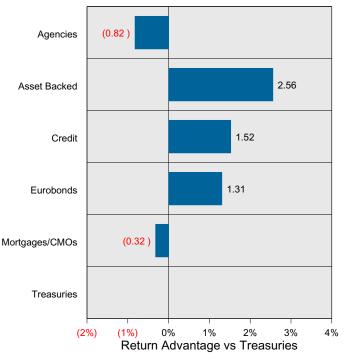
Yield Curve Change and Rate of Return One Quarter Ended June 30, 2020



Duration Adjusted Return Premium to Quality One Quarter Ended June 30, 2020



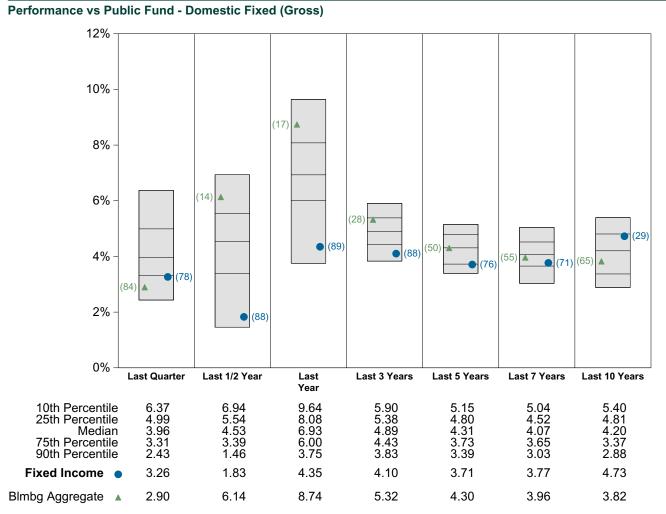
Quality and Duration Adjusted Return Premium by Sector One Quarter Ended June 30, 2020

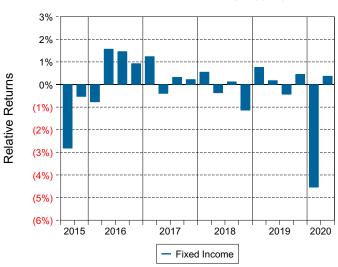


Fixed Income Period Ended June 30, 2020

Quarterly Summary and Highlights

- Fixed Income's portfolio posted a 3.26% return for the guarter placing it in the 78 percentile of the Public Fund -Domestic Fixed group for the quarter and in the 89 percentile for the last year.
- Fixed Income's portfolio outperformed the BImbg Aggregate by 0.37% for the quarter and underperformed the BImbg ٠ Aggregate for the year by 4.39%.

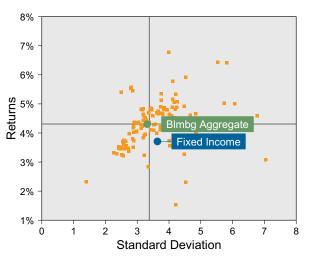




Relative Return vs Blmbg Aggregate



Annualized Five Year Risk vs Return

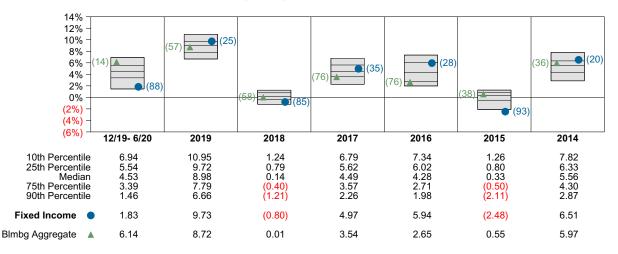


Fixed Income Return Analysis Summary

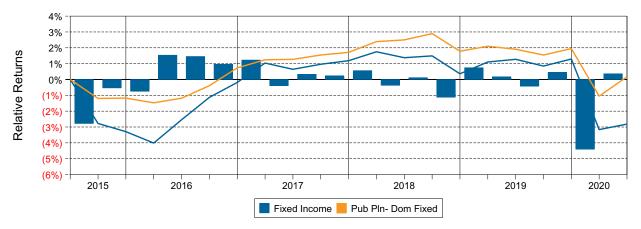
Return Analysis

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

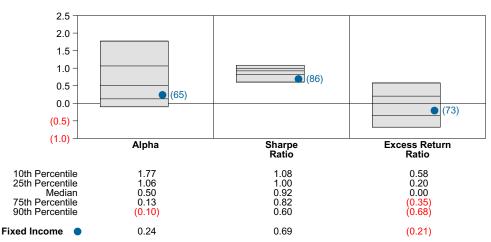
Performance vs Public Fund - Domestic Fixed (Gross)



Cumulative and Quarterly Relative Return vs Blmbg Aggregate



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Public Fund - Domestic Fixed (Gross) Five Years Ended June 30, 2020

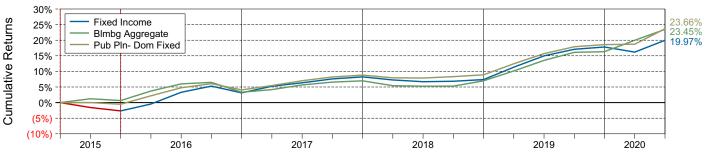




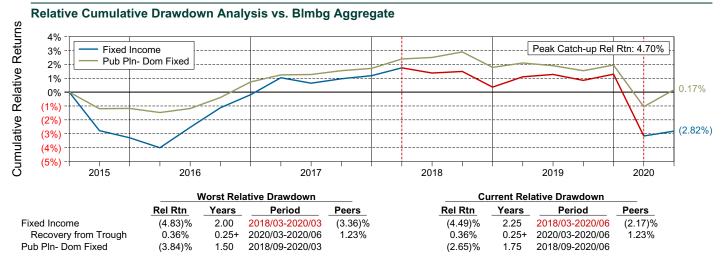
Fixed Income Drawdown Analysis for Five Years Ended June 30, 2020

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

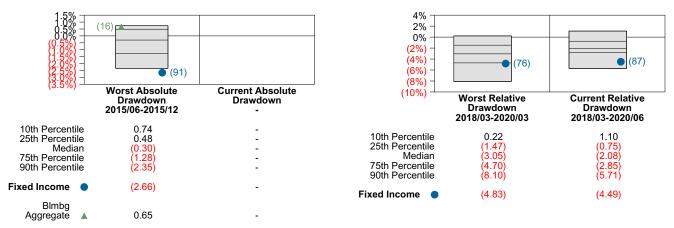
Absolute Cumulative Drawdown Analysis



	Worst Absolute Drawdown					Current Absolute Drawdown				
	Return	Years	Period	Index	Peers	Return	Years	Period	Index	Peers
Fixed Income	(2.66)%	0.50	2015/06-2015/12	0.65%	(0.53)%	-	-	-	-	-
Recovery from Trough	6.13%	0.50	2015/12-2016/06	5.31%	5.31%	-	-	-	-	-
Blmbg Aggregate	(2.18)%	0.50	2016/09-2017/03			-	-	-		
Pub Pln- Dom Fixed	(0.86)%	0.50	2017/12-2018/06			-	-	-		



Drawdown Rankings vs. Blmbg Aggregate Rankings against Public Fund - Domestic Fixed Five Years Ended June 30, 2020

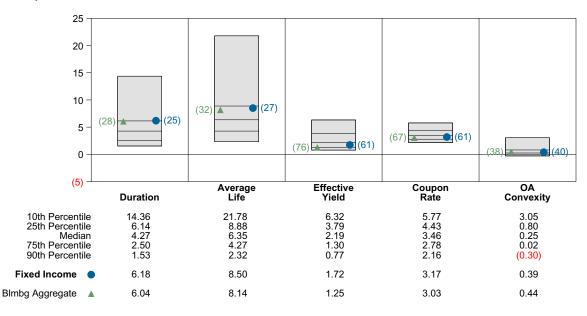


Fixed Income Bond Characteristics Analysis Summary

Portfolio Characteristics

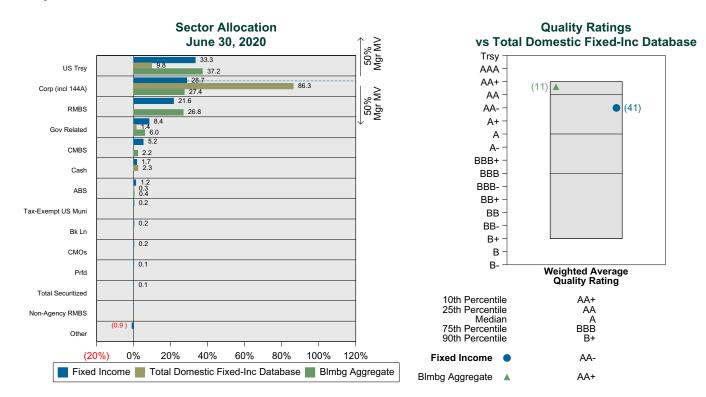
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Total Domestic Fixed-Inc Database as of June 30, 2020



Sector Allocation and Quality Ratings

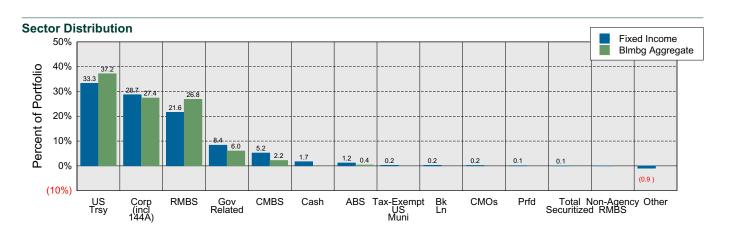
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

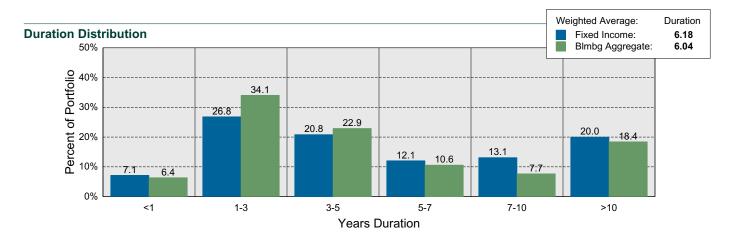


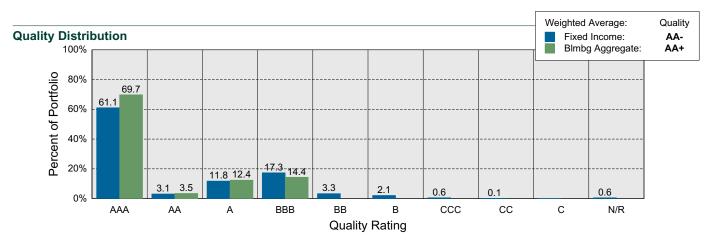
Fixed Income Portfolio Characteristics Summary As of June 30, 2020

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.





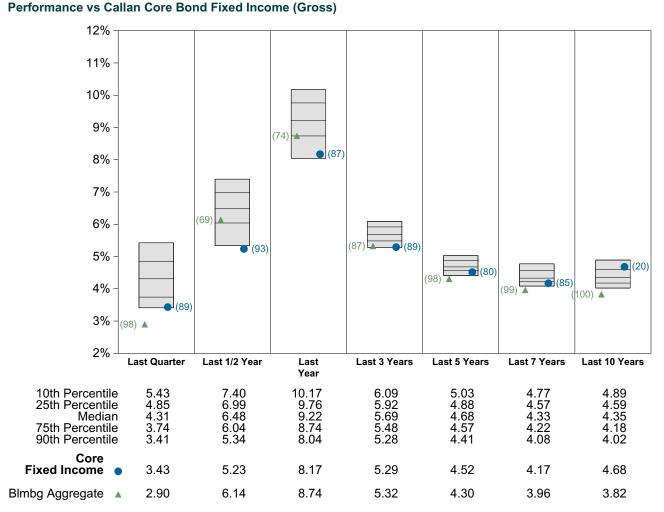


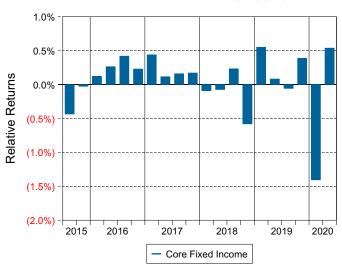
Core Fixed Income

Core Fixed Income Period Ended June 30, 2020

Quarterly Summary and Highlights

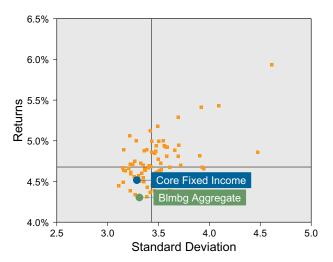
- Core Fixed Income's portfolio posted a 3.43% return for the quarter placing it in the 89 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 87 percentile for the last year.
- Core Fixed Income's portfolio outperformed the Blmbg Aggregate by 0.54% for the quarter and underperformed the Blmbg Aggregate for the year by 0.57%.





Relative Return vs Blmbg Aggregate



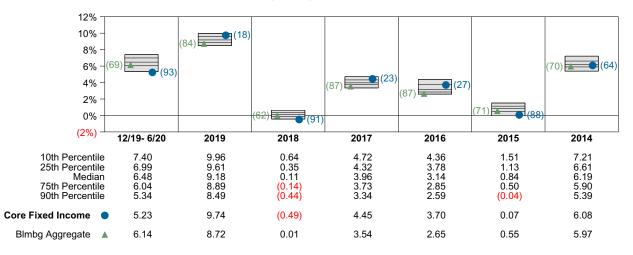


Core Fixed Income Return Analysis Summary

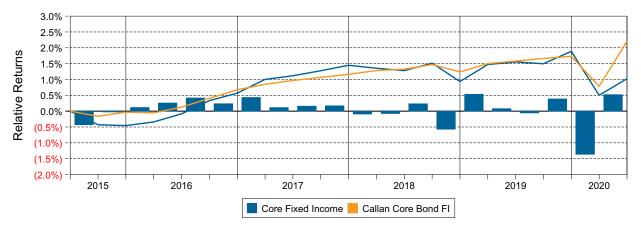
Return Analysis

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.

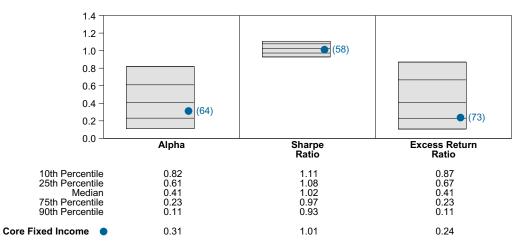




Cumulative and Quarterly Relative Return vs Blmbg Aggregate



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2020



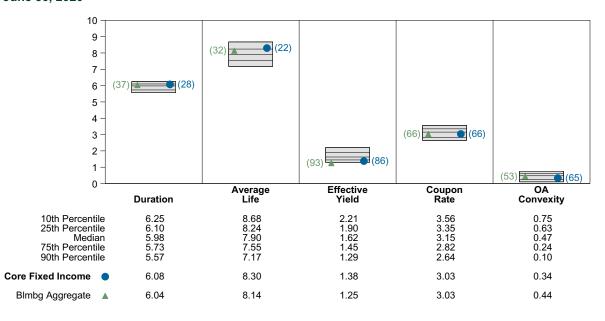


Core Fixed Income Bond Characteristics Analysis Summary

Portfolio Characteristics

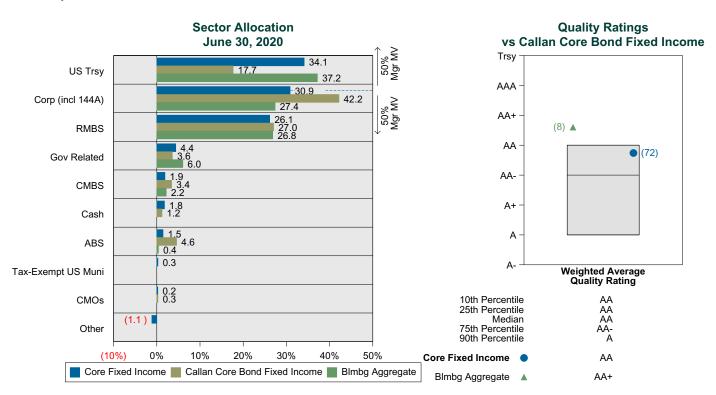
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of June 30, 2020



Sector Allocation and Quality Ratings

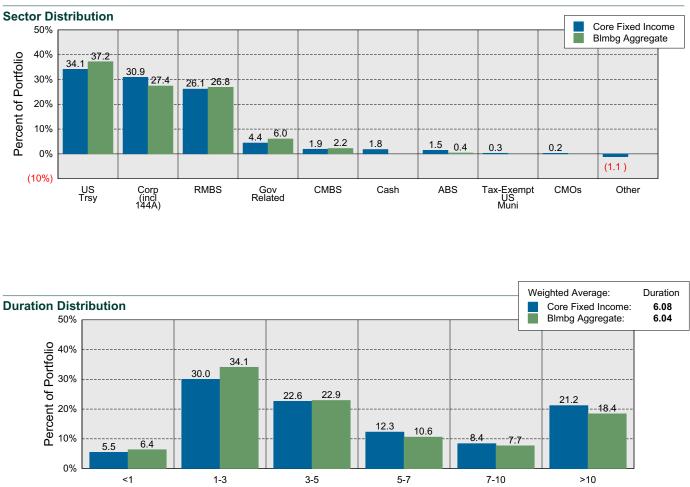
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



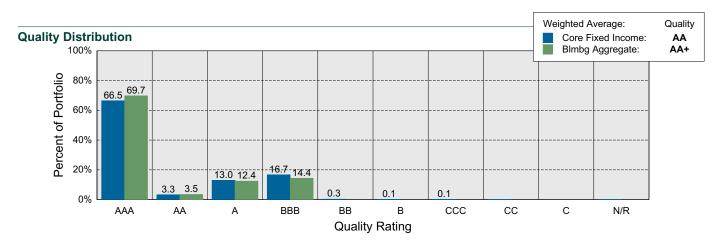
Core Fixed Income Portfolio Characteristics Summary As of June 30, 2020

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.



Years Duration



Core Fixed Income Managers

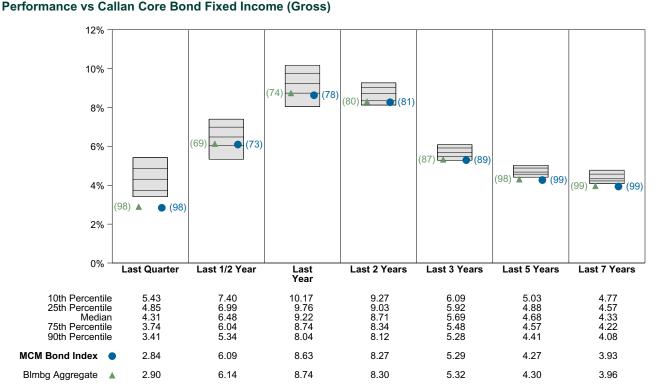
MCM Bond Index Period Ended June 30, 2020

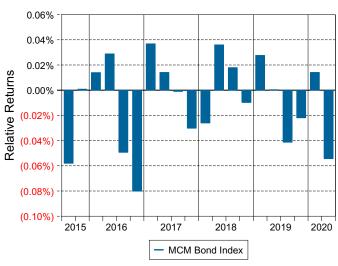
Investment Philosophy

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

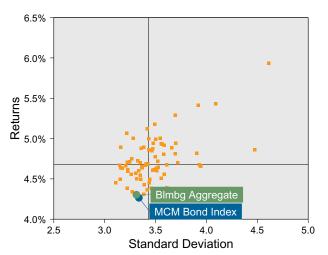
- MCM Bond Index's portfolio posted a 2.84% return for the quarter placing it in the 98 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 78 percentile for the last year.
- MCM Bond Index's portfolio underperformed the Blmbg Aggregate by 0.05% for the quarter and underperformed the Blmbg Aggregate for the year by 0.11%.





Relative Return vs Blmbg Aggregate

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

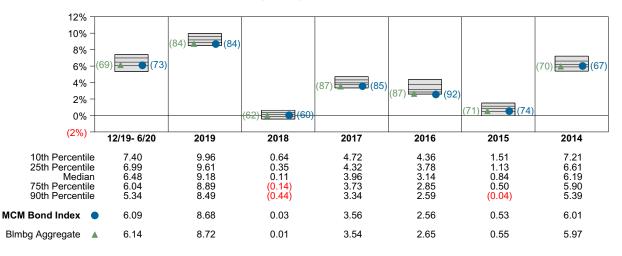


MCM Bond Index Return Analysis Summary

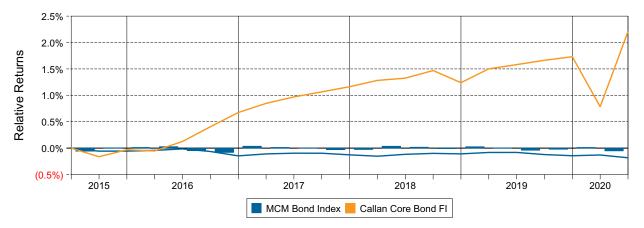
Return Analysis

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

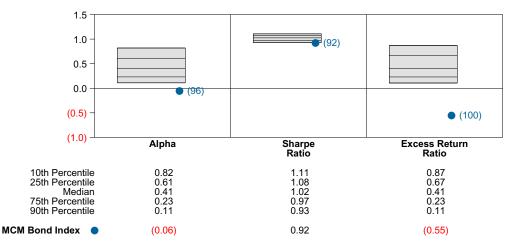
Performance vs Callan Core Bond Fixed Income (Gross)



Cumulative and Quarterly Relative Return vs Blmbg Aggregate



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2020



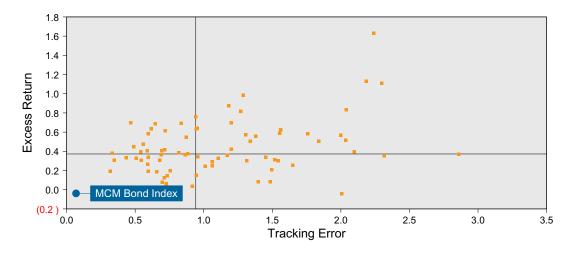


MCM Bond Index Risk Analysis Summary

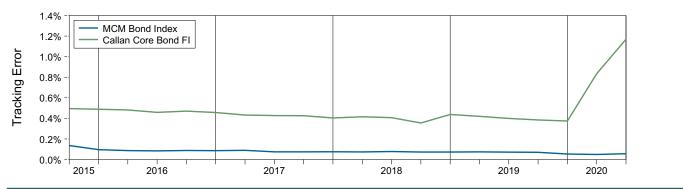
Risk Analysis

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.

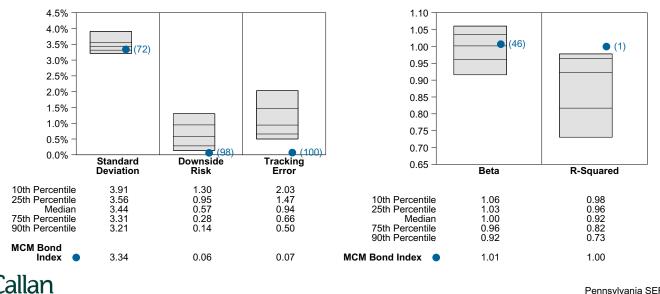
Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2020









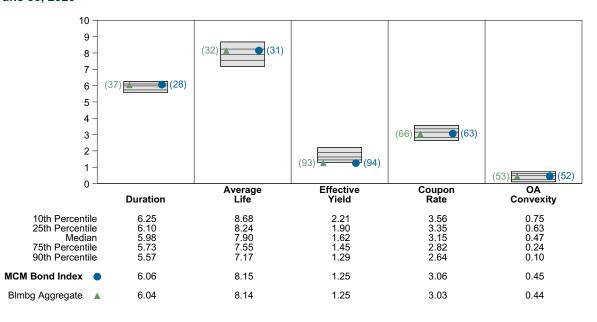


MCM Bond Index Bond Characteristics Analysis Summary

Portfolio Characteristics

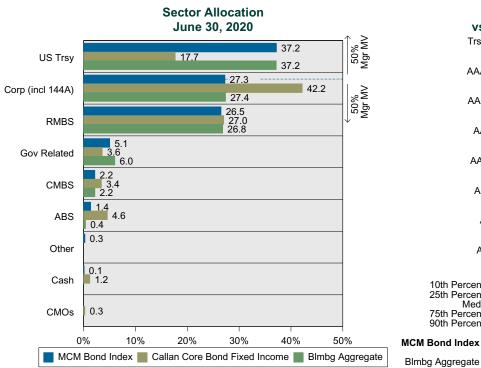
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of June 30, 2020

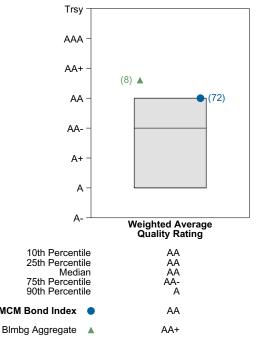


Sector Allocation and Quality Ratings

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

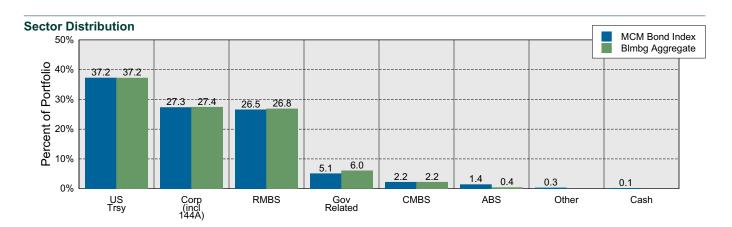


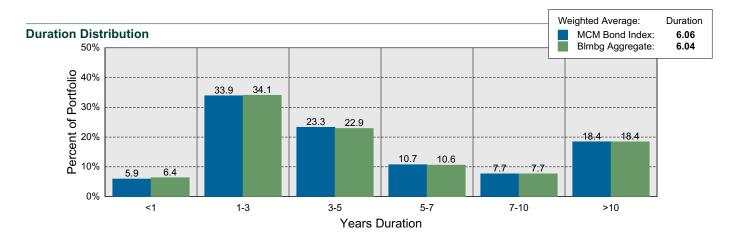


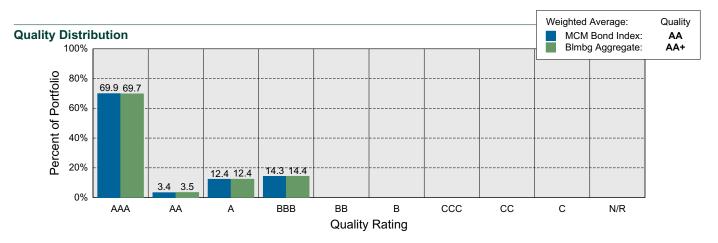
MCM Bond Index Portfolio Characteristics Summary As of June 30, 2020

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.



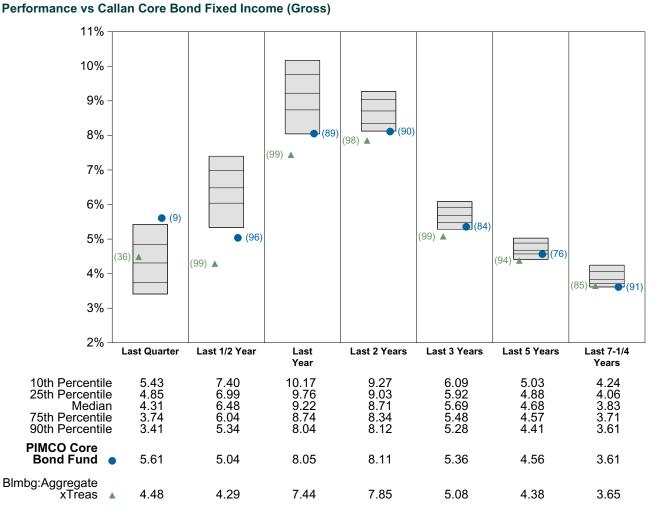


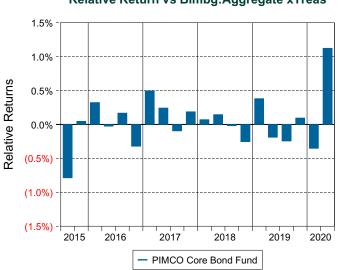


PIMCO Core Bond Fund Period Ended June 30, 2020

Quarterly Summary and Highlights

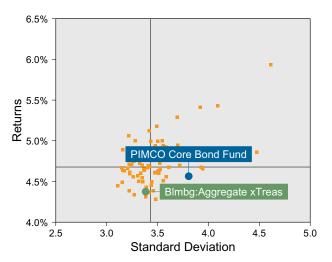
- PIMCO Core Bond Fund's portfolio posted a 5.61% return for the quarter placing it in the 9 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 89 percentile for the last year.
- PIMCO Core Bond Fund's portfolio outperformed the BImbg:Aggregate xTreas by 1.12% for the quarter and outperformed the BImbg:Aggregate xTreas for the year by 0.61%.





Relative Return vs Blmbg:Aggregate xTreas

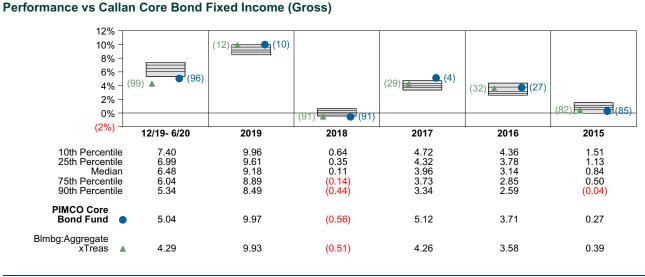




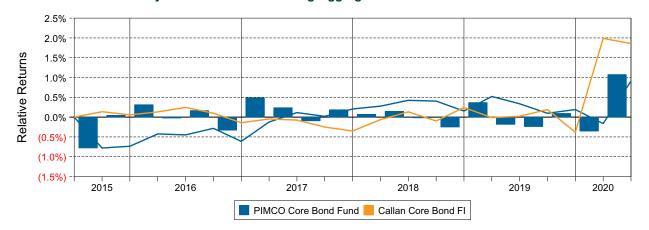
PIMCO Core Bond Fund Return Analysis Summary

Return Analysis

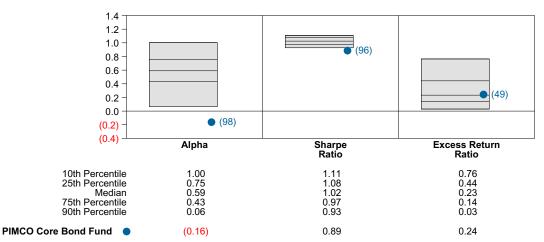
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Return vs Blmbg:Aggregate xTreas



Risk Adjusted Return Measures vs Blmbg:Aggregate xTreas Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2020



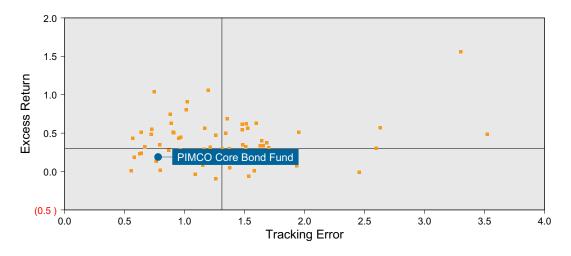


PIMCO Core Bond Fund Risk Analysis Summary

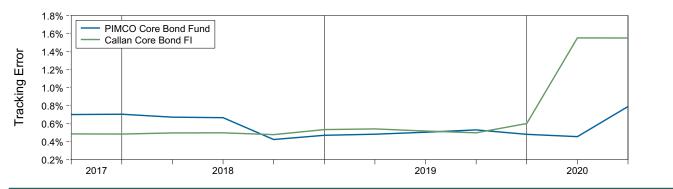
Risk Analysis

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.

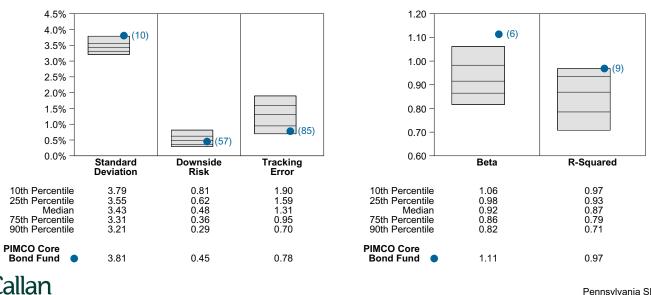
Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended June 30, 2020









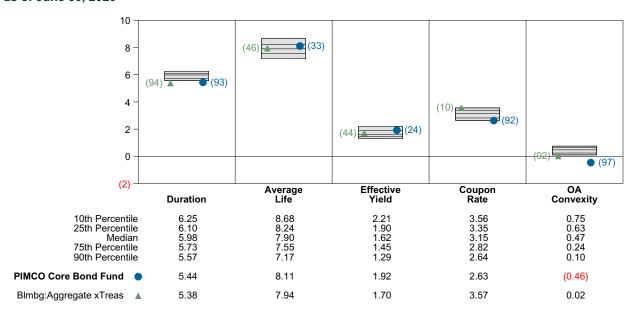


PIMCO Core Bond Fund Bond Characteristics Analysis Summary

Portfolio Characteristics

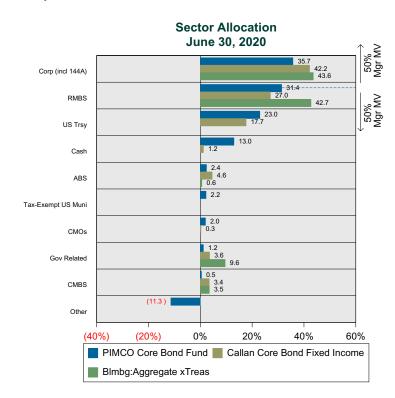
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of June 30, 2020

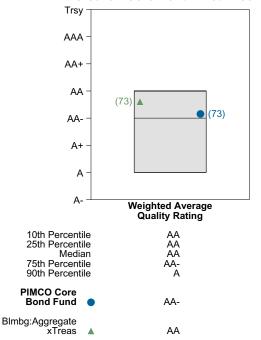


Sector Allocation and Quality Ratings

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.



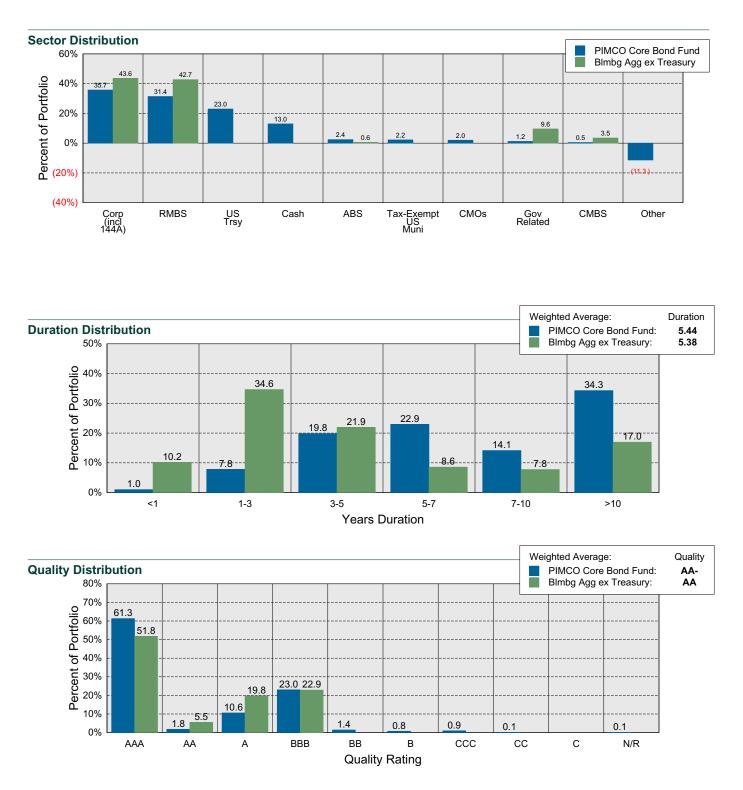
Quality Ratings vs Callan Core Bond Fixed Income



PIMCO Core Bond Fund Portfolio Characteristics Summary As of June 30, 2020

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.



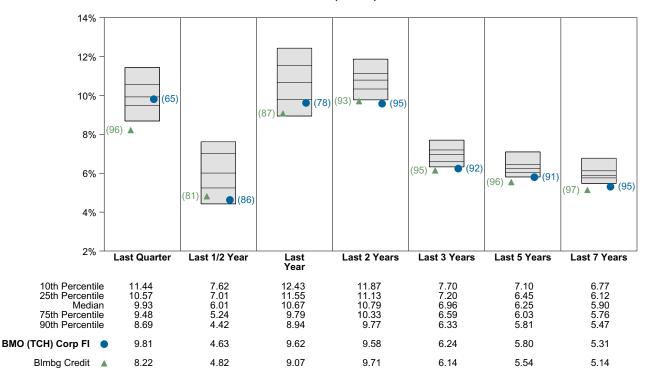
BMO (TCH) Corp FI Period Ended June 30, 2020

Investment Philosophy

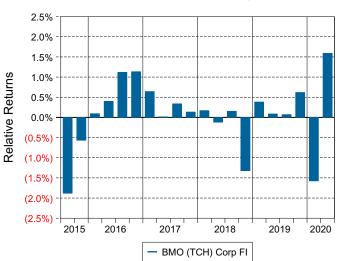
Taplin's philosophy in managing credit accounts is to add value above the benchmark index by following a strict relative value discipline, emphasizing debt securities valued too cheaply relative to the issuers fundamental creditworthiness. Yield curve positioning adds further value by focusing on the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

Quarterly Summary and Highlights

- BMO (TCH) Corp FI's portfolio posted a 9.81% return for the quarter placing it in the 65 percentile of the Callan Investment Grade Credit Fixed Inc group for the quarter and in the 78 percentile for the last year.
- BMO (TCH) Corp FI's portfolio outperformed the Blmbg Credit by 1.59% for the quarter and outperformed the Blmbg Credit for the year by 0.54%.

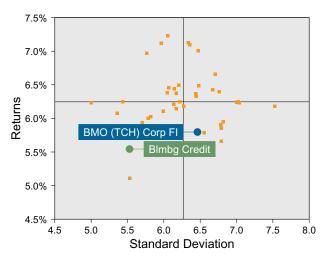






Relative Return vs Blmbg Credit

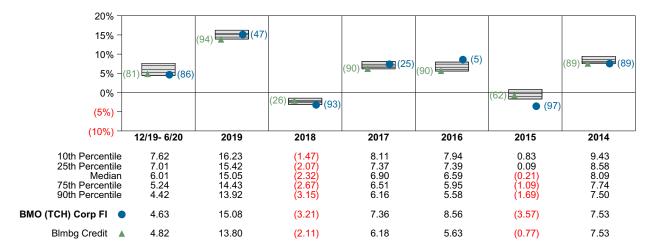
Callan Investment Grade Credit Fixed Inc (Gross) Annualized Five Year Risk vs Return



BMO (TCH) Corp FI Return Analysis Summary

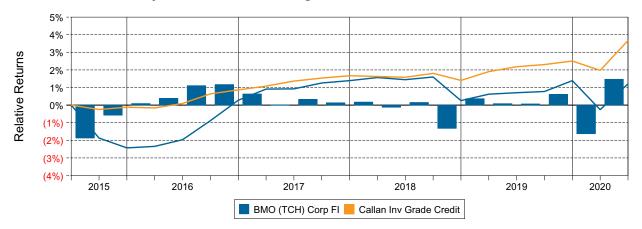
Return Analysis

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

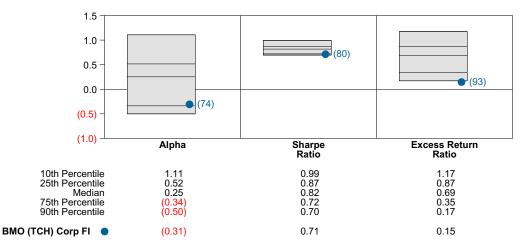


Performance vs Callan Investment Grade Credit Fixed Inc (Gross)

Cumulative and Quarterly Relative Return vs Blmbg Credit



Risk Adjusted Return Measures vs Blmbg Credit Rankings Against Callan Investment Grade Credit Fixed Inc (Gross) Five Years Ended June 30, 2020



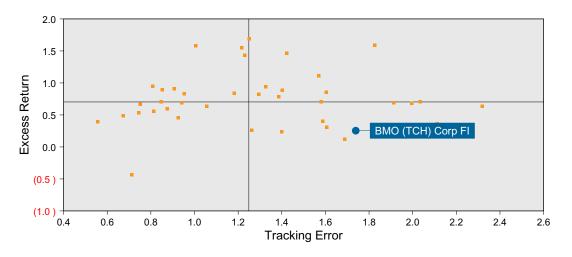


BMO (TCH) Corp FI Risk Analysis Summary

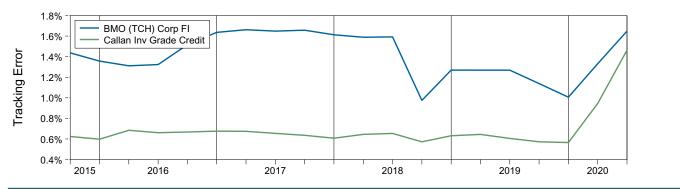
Risk Analysis

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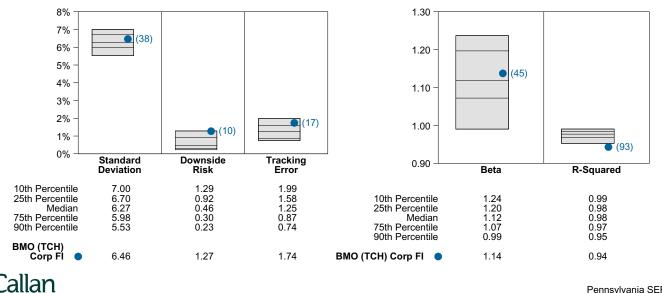
Risk Analysis vs Callan Investment Grade Credit Fixed Inc (Gross) Five Years Ended June 30, 2020









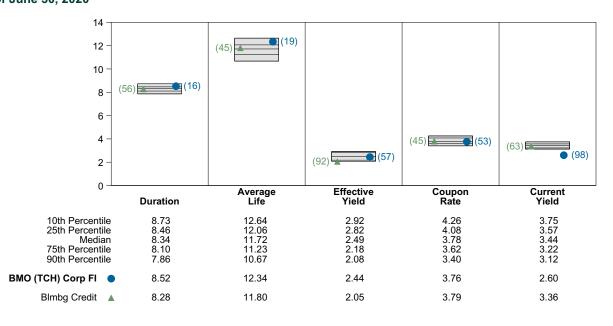


BMO (TCH) Corp FI Bond Characteristics Analysis Summary

Portfolio Characteristics

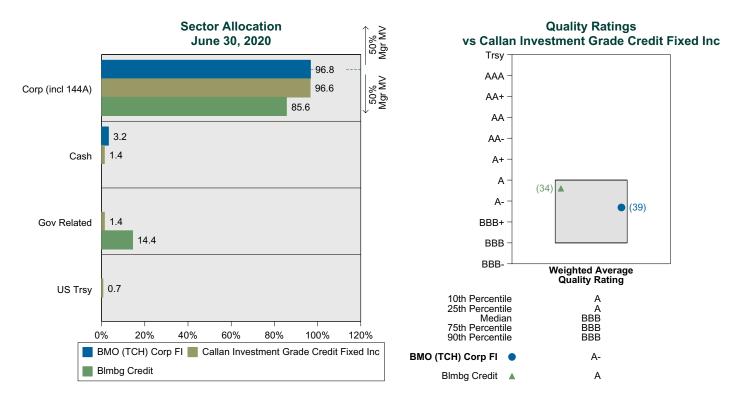
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Investment Grade Credit Fixed Inc as of June 30, 2020



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.



BMO (TCH) Corp FI Portfolio Characteristics Summary As of June 30, 2020

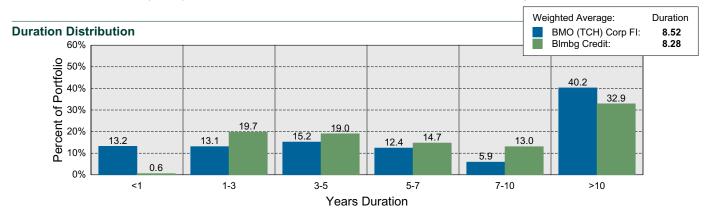
Portfolio Structure Comparison

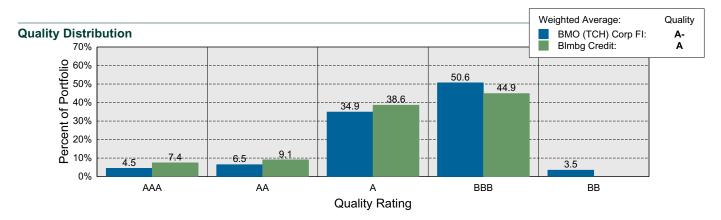
The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution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



BMO (TCH) Corp FI

Blmbg Credit





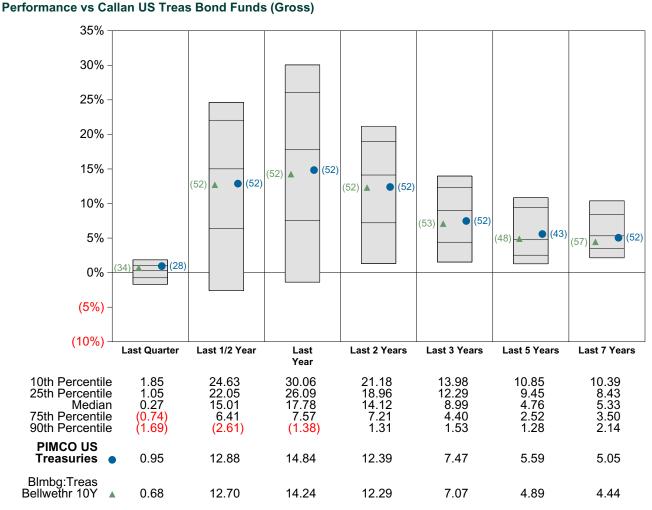


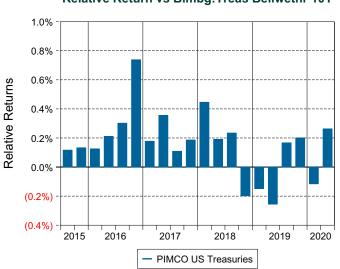
Nominal U.S. Treasuries Managers

PIMCO US Treasuries Period Ended June 30, 2020

Quarterly Summary and Highlights

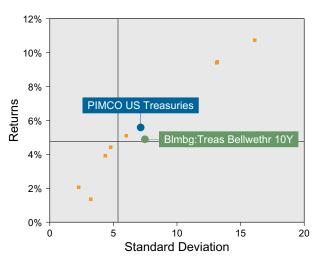
- PIMCO US Treasuries's portfolio posted a 0.95% return for the quarter placing it in the 28 percentile of the Callan US Treas Bond Funds group for the quarter and in the 52 percentile for the last year.
- PIMCO US Treasuries's portfolio outperformed the BImbg:Treas Bellwethr 10Y by 0.26% for the quarter and outperformed the BImbg:Treas Bellwethr 10Y for the year by 0.60%.





Relative Return vs Blmbg:Treas Bellwethr 10Y



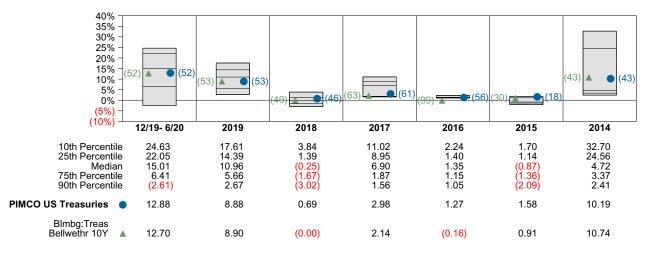


PIMCO US Treasuries Return Analysis Summary

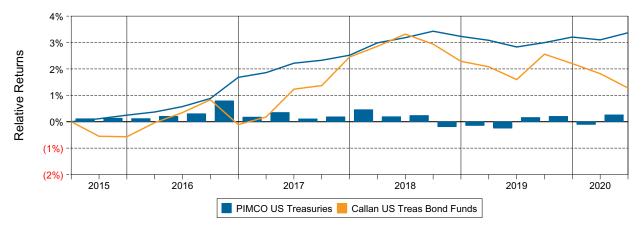
Return Analysis

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.

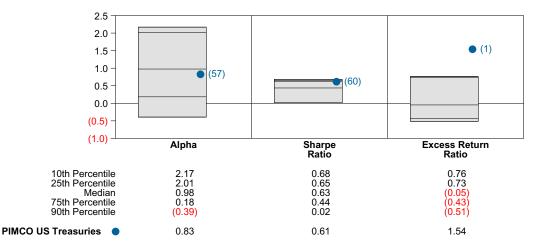




Cumulative and Quarterly Relative Return vs Blmbg:Treas Bellwethr 10Y



Risk Adjusted Return Measures vs Blmbg:Treas Bellwethr 10Y Rankings Against Callan US Treas Bond Funds (Gross) Five Years Ended June 30, 2020



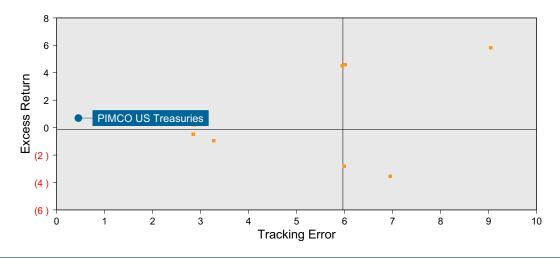


PIMCO US Treasuries Risk Analysis Summary

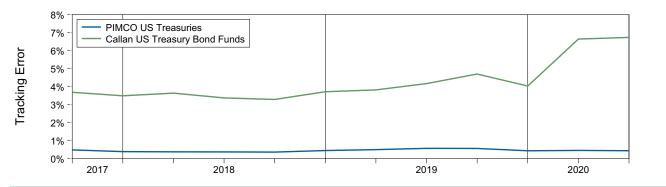
Risk Analysis

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.

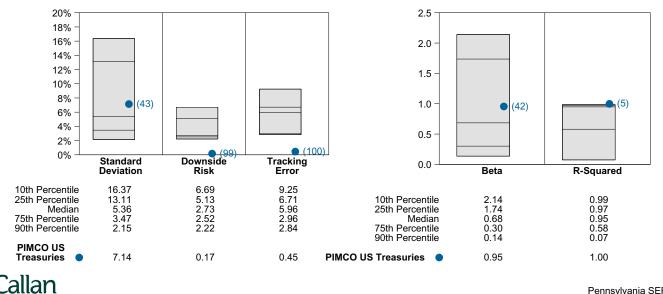
Risk Analysis vs Callan US Treasury Bond Funds (Gross) Five Years Ended June 30, 2020







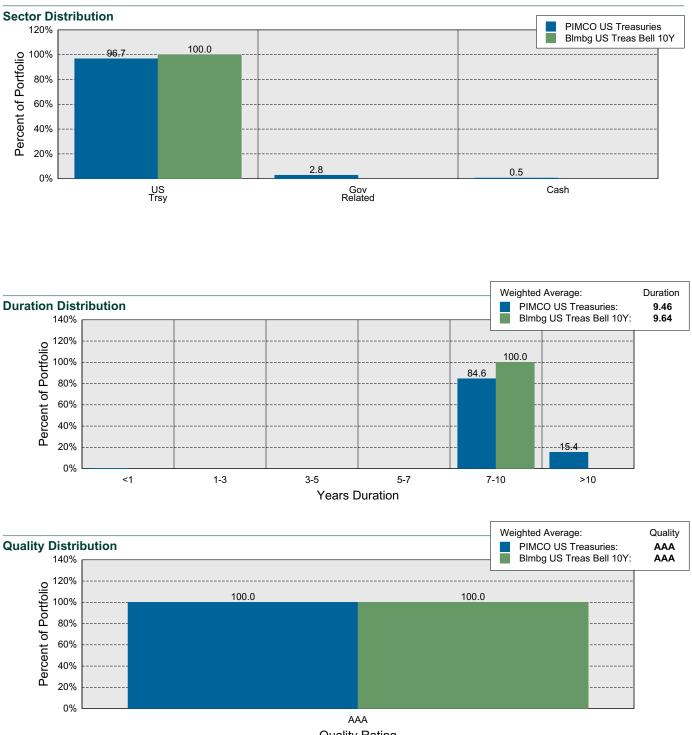




PIMCO US Treasuries Portfolio Characteristics Summary As of June 30, 2020

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

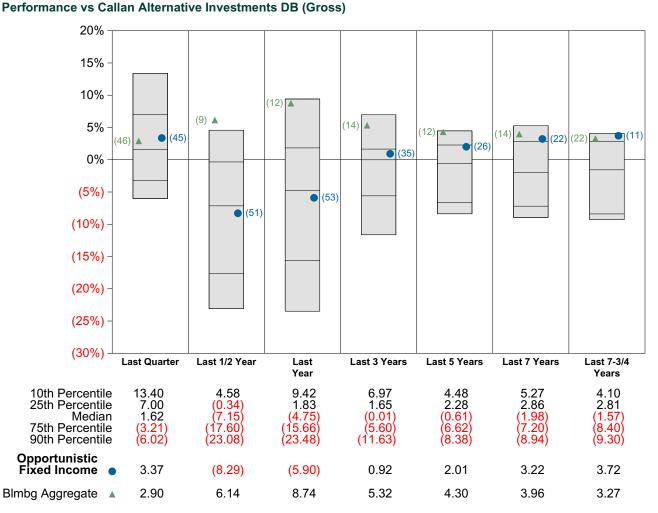


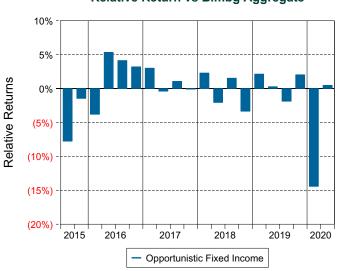
Opportunistic Fixed Income

Opportunistic Fixed Income Period Ended June 30, 2020

Quarterly Summary and Highlights

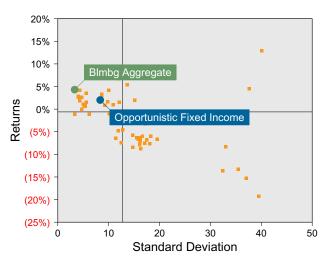
- Opportunistic Fixed Income's portfolio posted a 3.37% return for the quarter placing it in the 45 percentile of the Callan Alternative Investments DB group for the quarter and in the 53 percentile for the last year.
- Opportunistic Fixed Income's portfolio outperformed the BImbg Aggregate by 0.47% for the quarter and underperformed the BImbg Aggregate for the year by 14.64%.





Relative Return vs Blmbg Aggregate

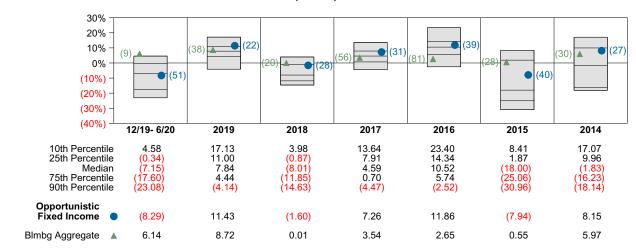
Callan Alternative Investments DB (Gross) Annualized Five Year Risk vs Return



Opportunistic Fixed Income Return Analysis Summary

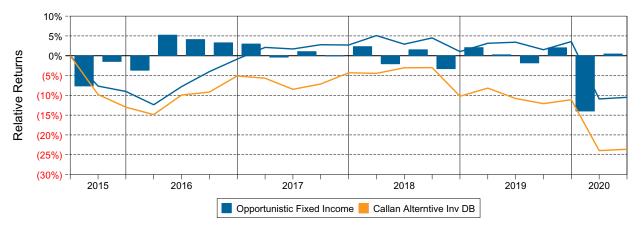
Return Analysis

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.

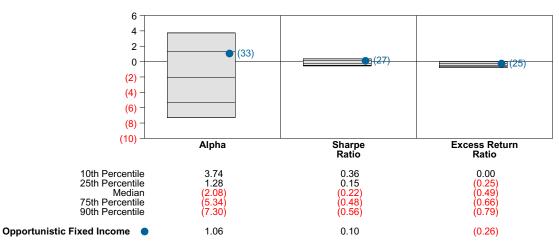


Performance vs Callan Alternative Investments DB (Gross)

Cumulative and Quarterly Relative Return vs Blmbg Aggregate



Risk Adjusted Return Measures vs Blmbg Aggregate Rankings Against Callan Alternative Investments DB (Gross) Five Years Ended June 30, 2020

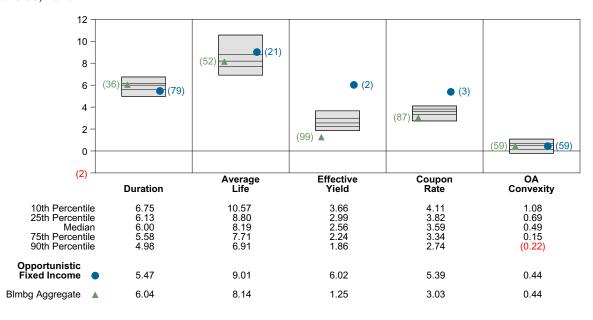


Opportunistic Fixed Income Bond Characteristics Analysis Summary

Portfolio Characteristics

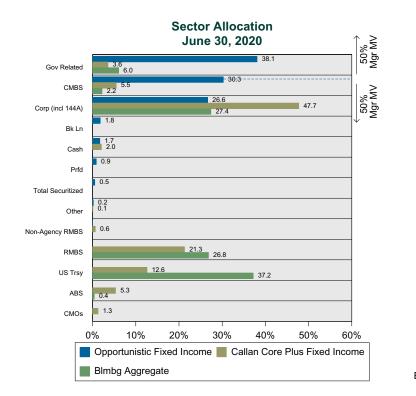
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Core Plus Fixed Income as of June 30, 2020

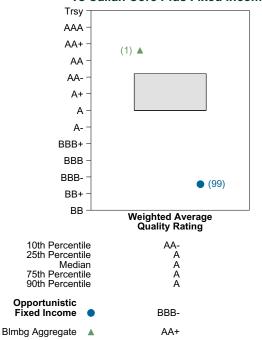


Sector Allocation and Quality Ratings

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 Plus Fixed Income

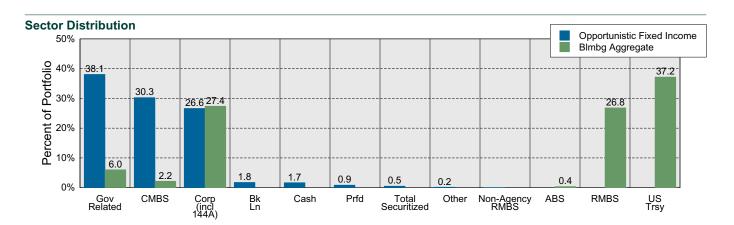


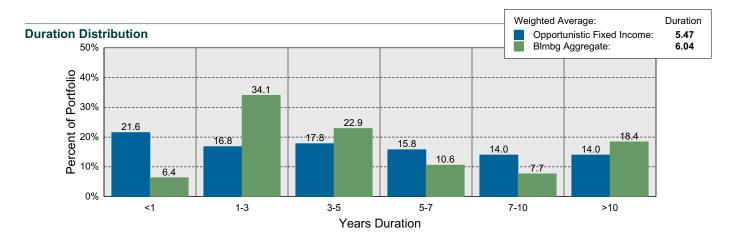


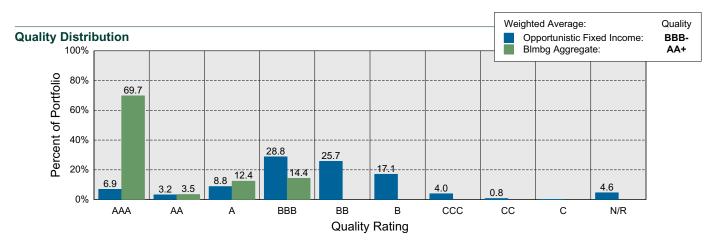
Opportunistic Fixed Income Portfolio Characteristics Summary As of June 30, 2020

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.





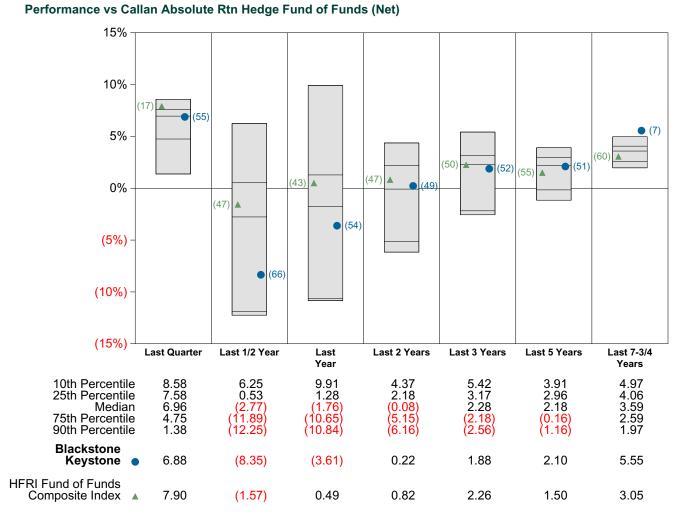


Opportunistic Fixed Income Managers

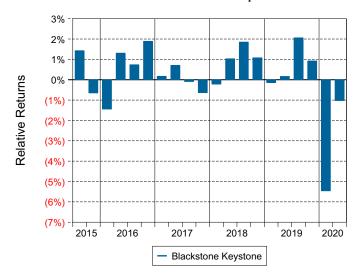
Blackstone Keystone Period Ended June 30, 2020

Quarterly Summary and Highlights

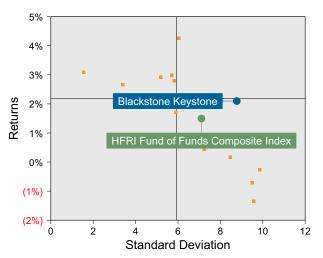
- Blackstone Keystone's portfolio posted a 6.88% return for the quarter placing it in the 55 percentile of the Callan Absolute Rtn Hedge Fund of Funds group for the quarter and in the 54 percentile for the last year.
- Blackstone Keystone's portfolio underperformed the HFRI Fund of Funds Composite Index by 1.03% for the quarter and underperformed the HFRI Fund of Funds Composite Index for the year by 4.11%.







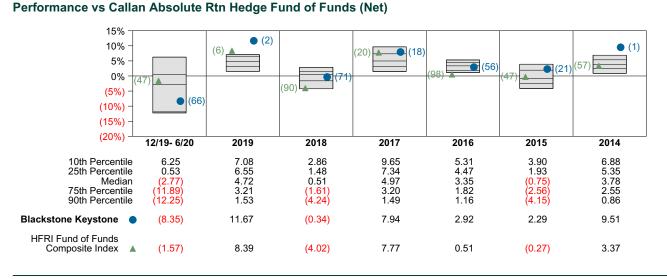
Callan Absolute Rtn Hedge Fund of Funds (Net) Annualized Five Year Risk vs Return



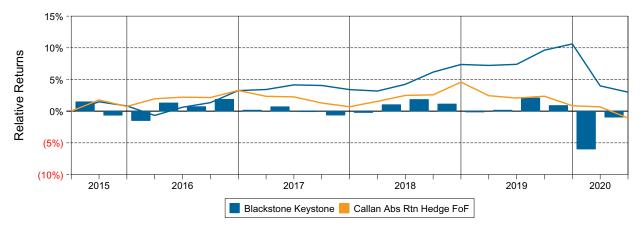
Blackstone Keystone Return Analysis Summary

Return Analysis

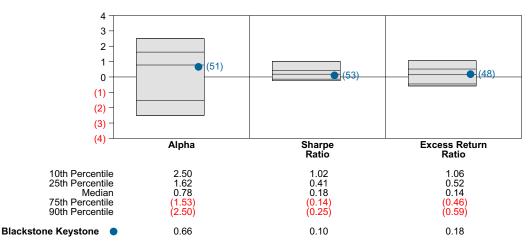
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Return vs HFRI Fund of Funds Composite Index



Risk Adjusted Return Measures vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2020

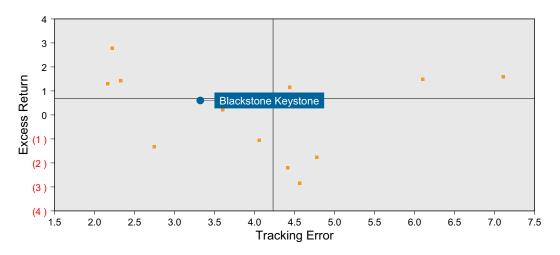


Blackstone Keystone Risk Analysis Summary

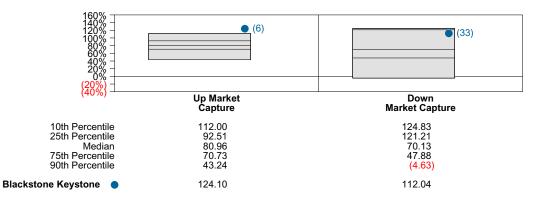
Risk Analysis

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.

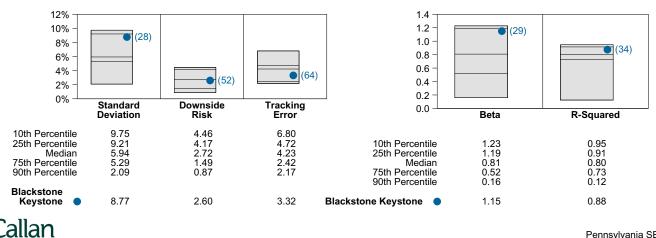
Risk Analysis vs Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2020



Market Capture vs HFRI Fund of Funds Composite Index Rankings Against Callan Absolute Rtn Hedge Fund of Funds (Net) Five Years Ended June 30, 2020







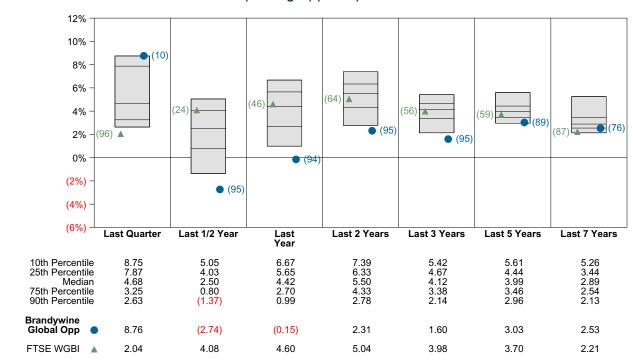
Brandywine Global Opp Period Ended June 30, 2020

Investment Philosophy

Brandywine's Global Opportunistic Fixed Income philosophy is a value-driven, active, strategic approach. This strategy allows for a 0-15% allocation to emerging markets and for a 0-15% allocation to high yield debt. Value is defined as a combination of above-average real interest rates and an under-valued currency. They concentrate investments where existing economic and market conditions can enable that value to be realized in an intermediate time frame. They capture excess returns through strategic investment in countries, sectors, and securities, rather than by maintaining minimum, core commitments.

Quarterly Summary and Highlights

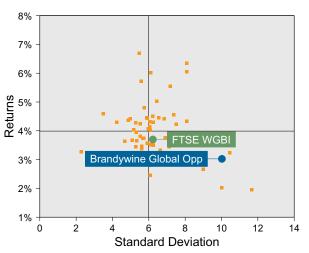
- Brandywine Global Opp's portfolio posted a 8.76% return for the quarter placing it in the 10 percentile of the Callan Global Fixed Income (Unhedged) group for the quarter and in the 94 percentile for the last year.
- Brandywine Global Opp's portfolio outperformed the FTSE WGBI by 6.71% for the quarter and underperformed the FTSE WGBI for the year by 4.75%.



Performance vs Callan Global Fixed Income (Unhedged) (Gross)



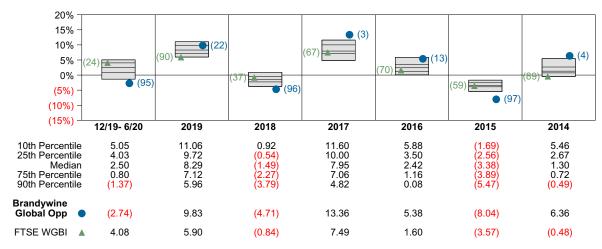
Callan Global Fixed Income (Unhedged) (Gross) Annualized Five Year Risk vs Return



Brandywine Global Opp Return Analysis Summary

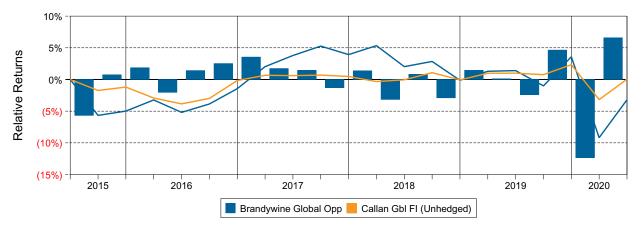
Return Analysis

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

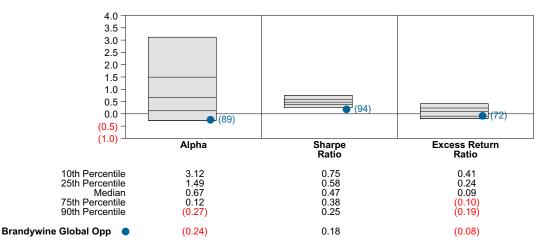


Performance vs Callan Global Fixed Income (Unhedged) (Gross)

Cumulative and Quarterly Relative Return vs FTSE WGBI



Risk Adjusted Return Measures vs FTSE WGBI Rankings Against Callan Global Fixed Income (Unhedged) (Gross) Five Years Ended June 30, 2020

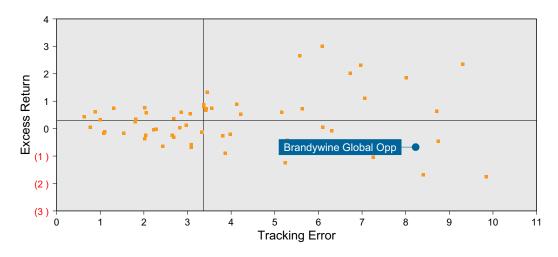


Brandywine Global Opp Risk Analysis Summary

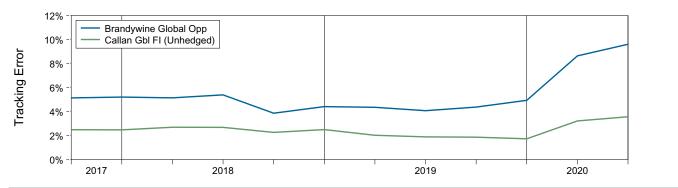
Risk Analysis

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

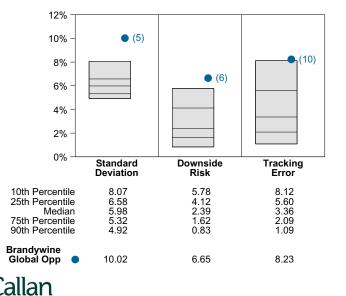
Risk Analysis vs Callan Global Fixed Income (Unhedged) (Gross) Five Years Ended June 30, 2020

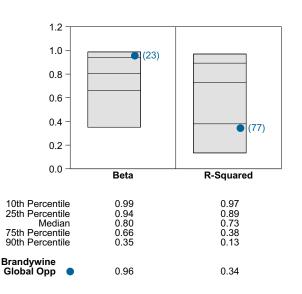












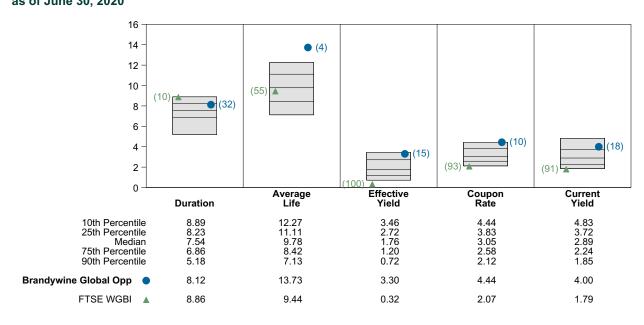
Pennsylvania SERS 219

Brandywine Global Opp Bond Characteristics Analysis Summary

Portfolio Characteristics

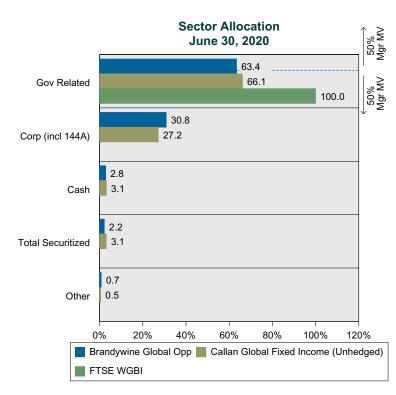
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed Income (Unhedged) as of June 30, 2020

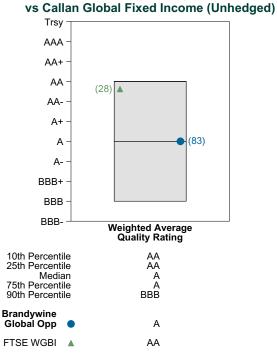


Sector Allocation and Quality Ratings

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

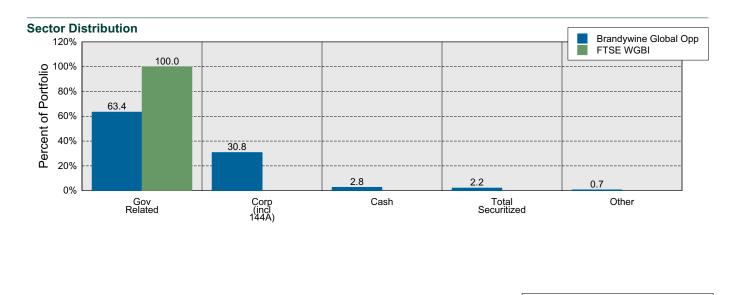


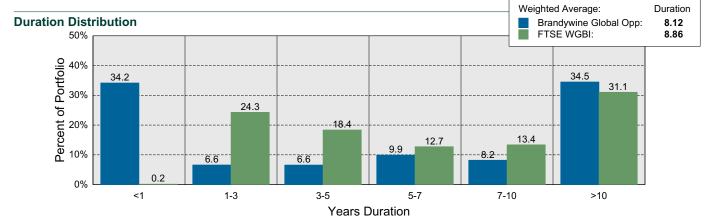


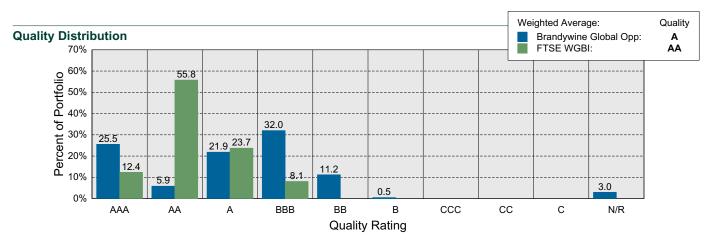
Brandywine Global Opp Portfolio Characteristics Summary As of June 30, 2020

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.



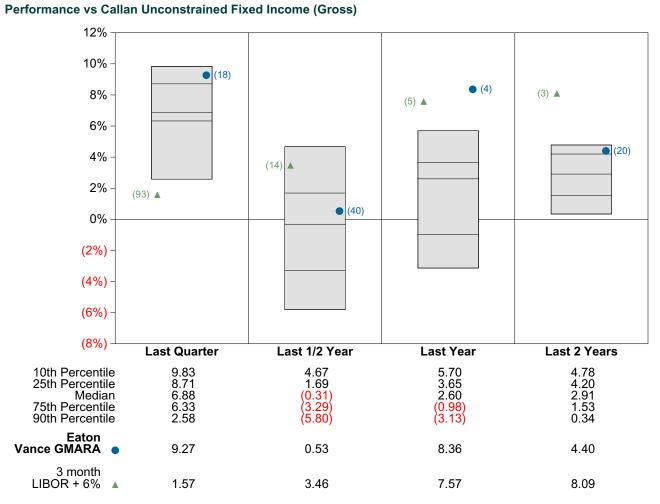


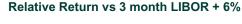


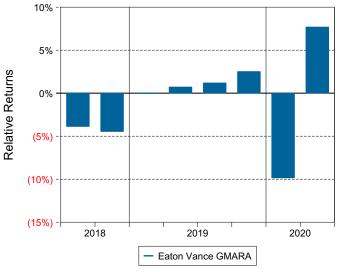
Eaton Vance GMARA Period Ended June 30, 2020

Quarterly Summary and Highlights

- Eaton Vance GMARA's portfolio posted a 9.27% return for the quarter placing it in the 18 percentile of the Callan Unconstrained Fixed Income group for the quarter and in the 4 percentile for the last year.
- Eaton Vance GMARA's portfolio outperformed the 3 month LIBOR + 6% by 7.69% for the quarter and outperformed the 3 month LIBOR + 6% for the year by 0.79%.

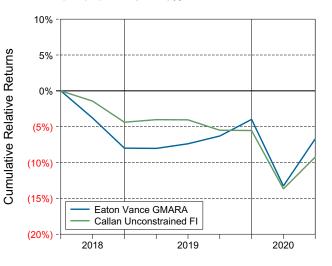






Callan





Pennsylvania SERS 222

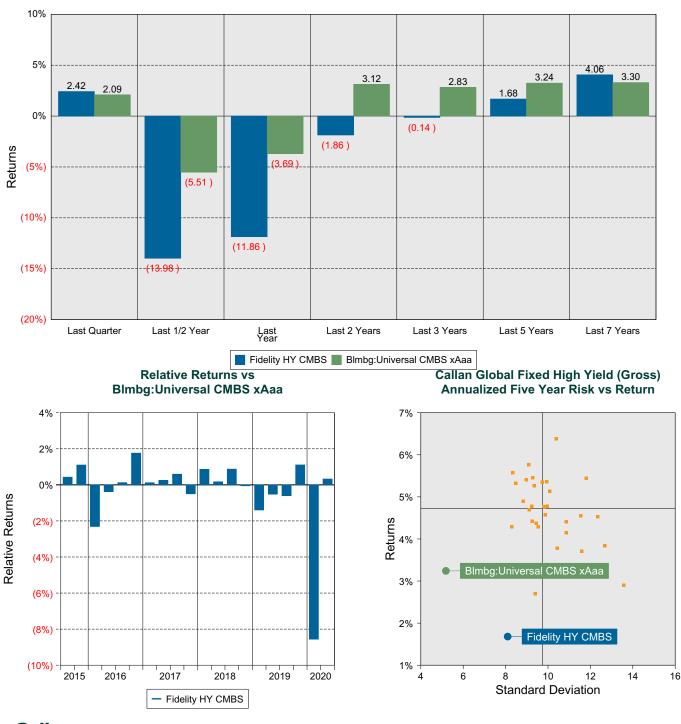
Fidelity HY CMBS Period Ended June 30, 2020

Investment Philosophy

FIAM believes that unsurpassed bottom-up research on more CMBS issues than other investors will yield premiums relative to others.

Quarterly Summary and Highlights

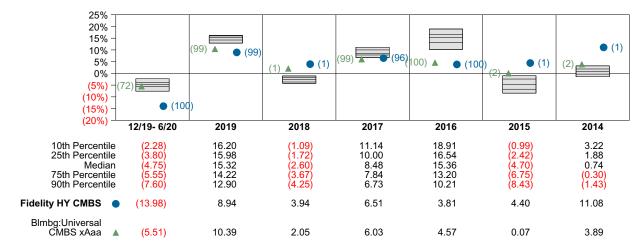
- Fidelity HY CMBS's portfolio posted a 2.42% return for the quarter placing it in the 100 percentile of the Callan Global Fixed High Yield group for the quarter and in the 100 percentile for the last year.
- Fidelity HY CMBS's portfolio outperformed the Blmbg:Universal CMBS xAaa by 0.32% for the quarter and underperformed the Blmbg:Universal CMBS xAaa for the year by 8.17%.



Fidelity HY CMBS Return Analysis Summary

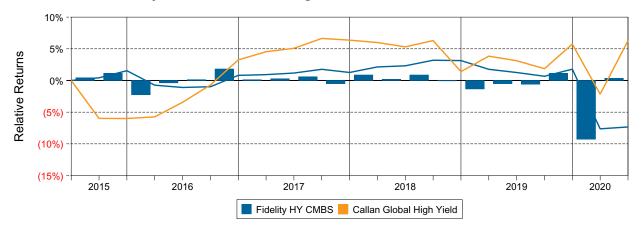
Return Analysis

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.

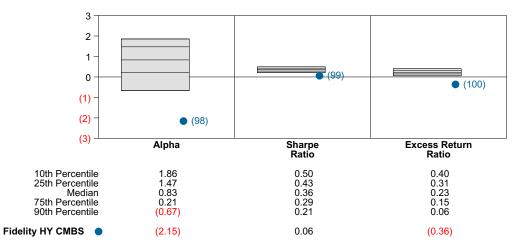


Performance vs Callan Global Fixed High Yield (Gross)

Cumulative and Quarterly Relative Return vs Blmbg:Universal CMBS xAaa



Risk Adjusted Return Measures vs Blmbg:Universal CMBS xAaa Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended June 30, 2020



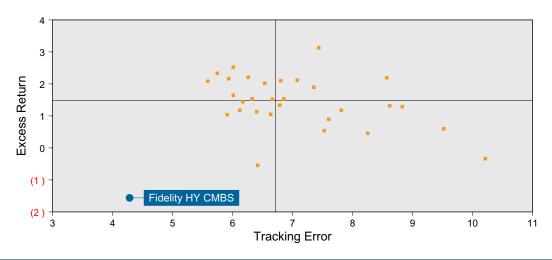


Fidelity HY CMBS Risk Analysis Summary

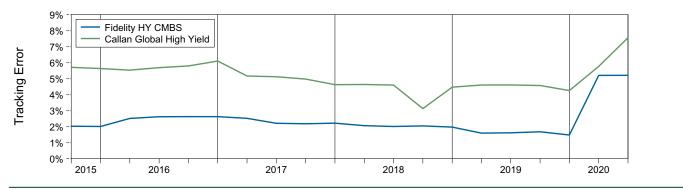
Risk Analysis

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.

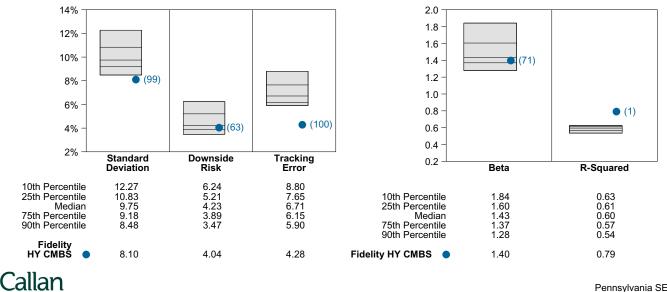
Risk Analysis vs Callan Global Fixed High Yield (Gross) Five Years Ended June 30, 2020









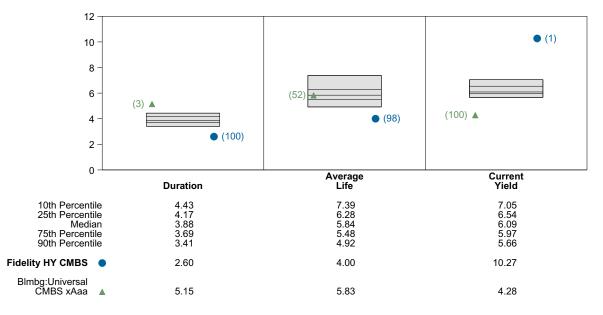


Fidelity HY CMBS Bond Characteristics Analysis Summary

Portfolio Characteristics

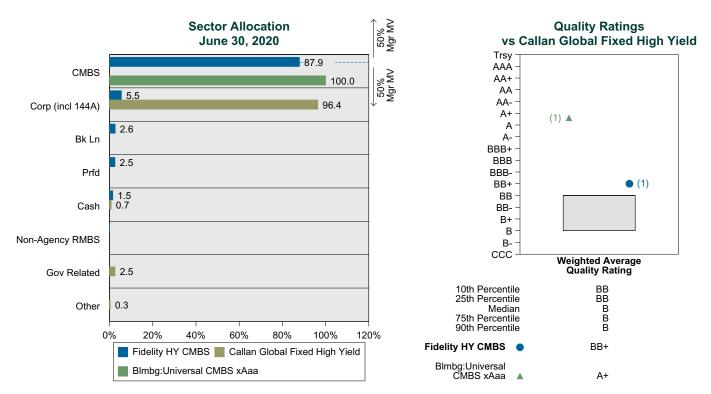
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed High Yield as of June 30, 2020



Sector Allocation and Quality Ratings

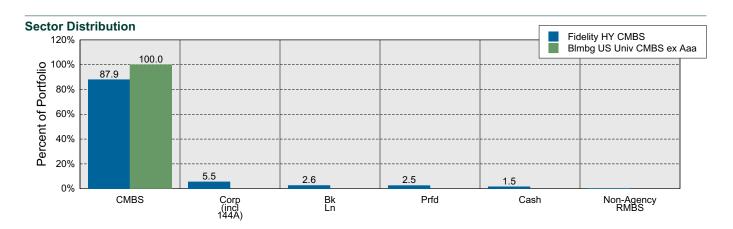
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

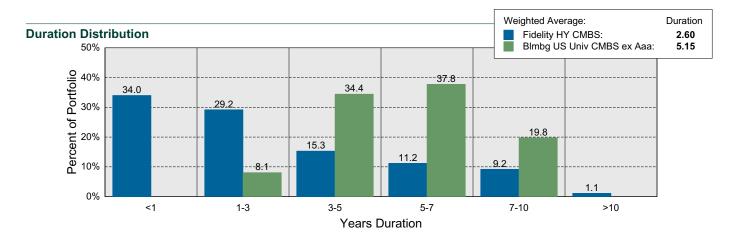


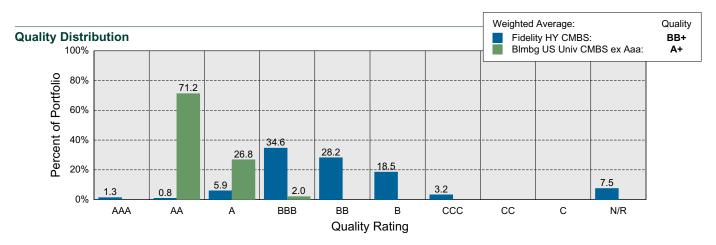
Fidelity HY CMBS Portfolio Characteristics Summary As of June 30, 2020

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.







SEI Structured Credit: HY Bank Loans Period Ended June 30, 2020

Quarterly Summary and Highlights

- SEI Structured Credit: HY Bank Loans's portfolio posted a (20.24)% return for the quarter placing it in the 100 percentile of the Callan Multi-Sector Credit group for the quarter and in the 100 percentile for the last year.
- SEI Structured Credit: HY Bank Loans's portfolio underperformed the FTSE US High Yield (1 month lag) by 16.23% for the quarter and underperformed the FTSE US High Yield (1 month lag) for the year by 21.08%.

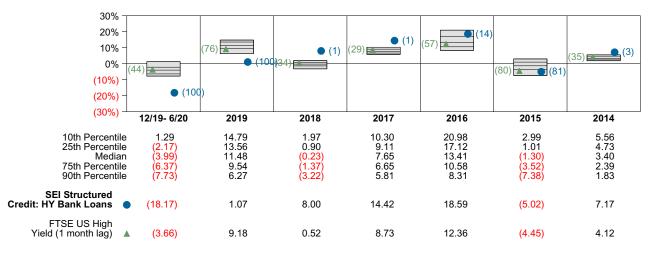


SEI Structured Credit: HY Bank Loans Return Analysis Summary

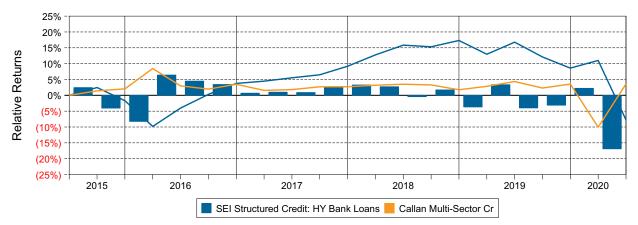
Return Analysis

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.

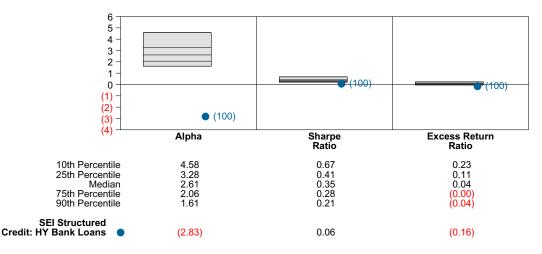




Cumulative and Quarterly Relative Return vs FTSE US High Yield (1 month lag)





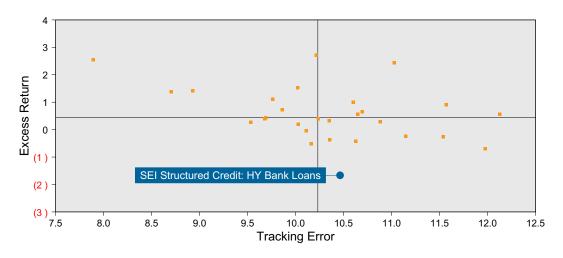


SEI Structured Credit: HY Bank Loans **Risk Analysis Summary**

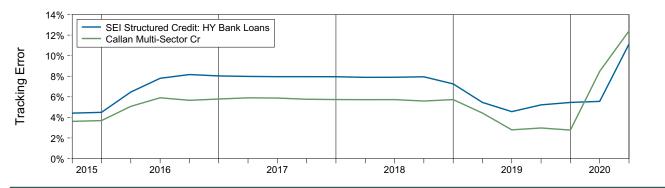
Risk Analysis

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.

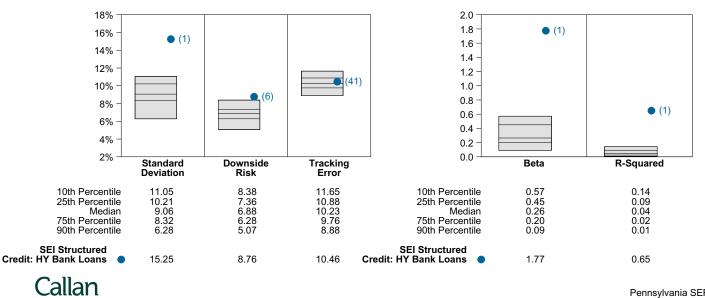
Risk Analysis vs Callan Multi-Sector Credit (Gross) Five Years Ended June 30, 2020











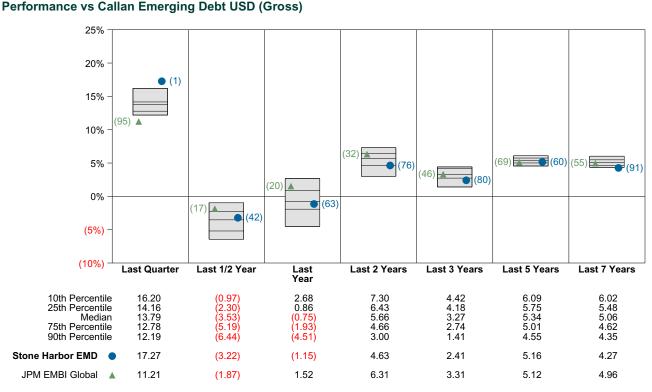
Stone Harbor EMD Period Ended June 30, 2020

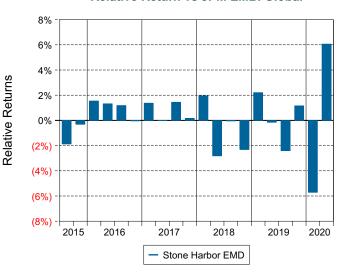
Investment Philosophy

Stone Harbor believes that a disciplined credit and relative value approach will best capture what the investment team views as a secular trend towards the expansion and development of the emerging debt markets. The team also believes that investing in a diversified portfolio of improving emerging markets debt instruments will result in strong, long-term performance. Also, they believe the key to successfully generating excess returns is through a process of rigorous credit analysis. The team's active style of investment management is characterized by fundamental credit analysis.

Quarterly Summary and Highlights

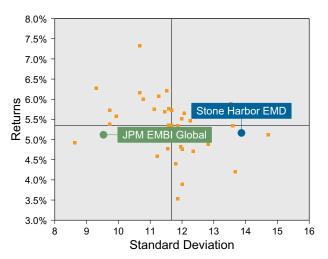
- Stone Harbor EMD's portfolio posted a 17.27% return for the quarter placing it in the 1 percentile of the Callan Emerging Debt USD group for the quarter and in the 63 percentile for the last year.
- Stone Harbor EMD's portfolio outperformed the JPM EMBI Global by 6.06% for the quarter and underperformed the JPM EMBI Global for the year by 2.67%.





Relative Return vs JPM EMBI Global

Callan Emerging Debt USD (Gross) Annualized Five Year Risk vs Return

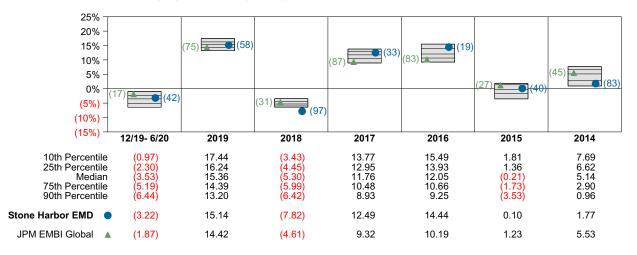


Stone Harbor EMD Return Analysis Summary

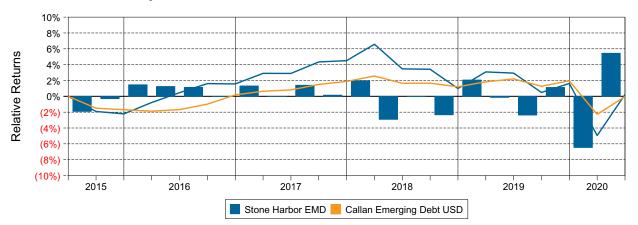
Return Analysis

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

Performance vs Callan Emerging Debt USD (Gross)



Cumulative and Quarterly Relative Return vs JPM EMBI Global



Risk Adjusted Return Measures vs JPM EMBI Global Rankings Against Callan Emerging Debt USD (Gross) Five Years Ended June 30, 2020



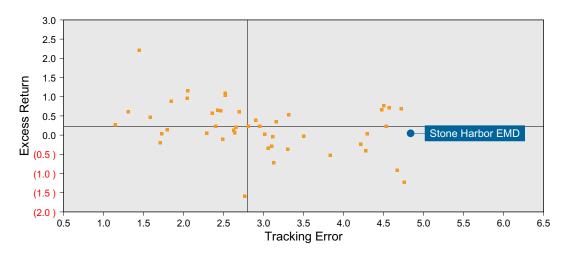


Stone Harbor EMD **Risk Analysis Summary**

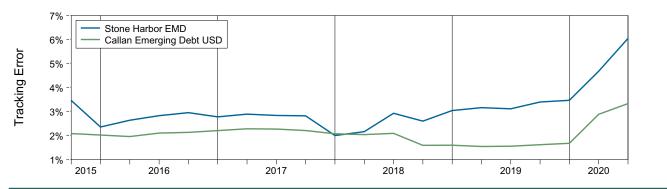
Risk Analysis

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

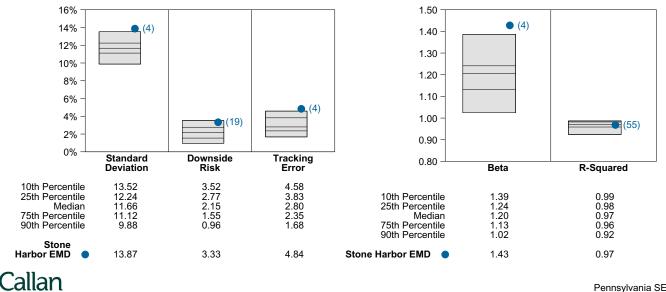
Risk Analysis vs Callan Emerging Debt USD (Gross) Five Years Ended June 30, 2020









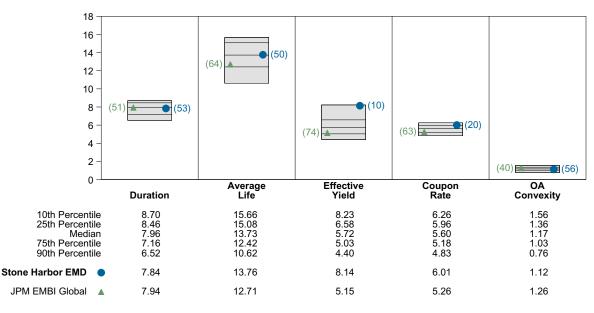


Stone Harbor EMD Bond Characteristics Analysis Summary

Portfolio Characteristics

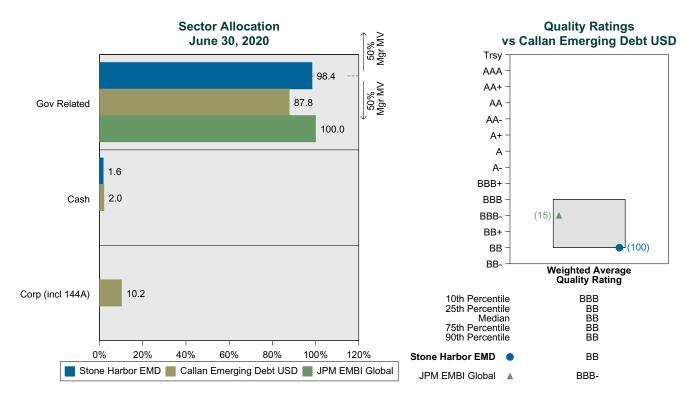
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Emerging Debt USD as of June 30, 2020



Sector Allocation and Quality Ratings

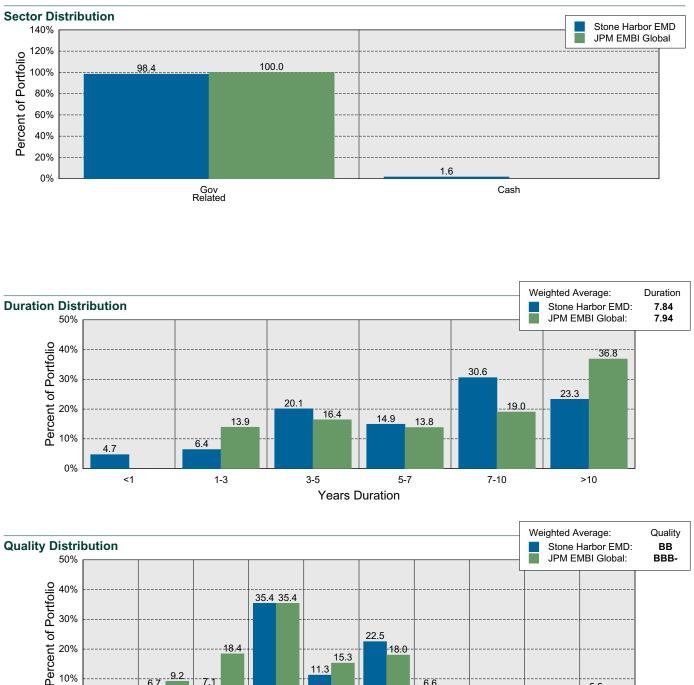
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

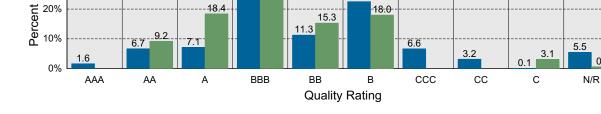


Stone Harbor EMD Portfolio Characteristics Summary As of June 30, 2020

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.





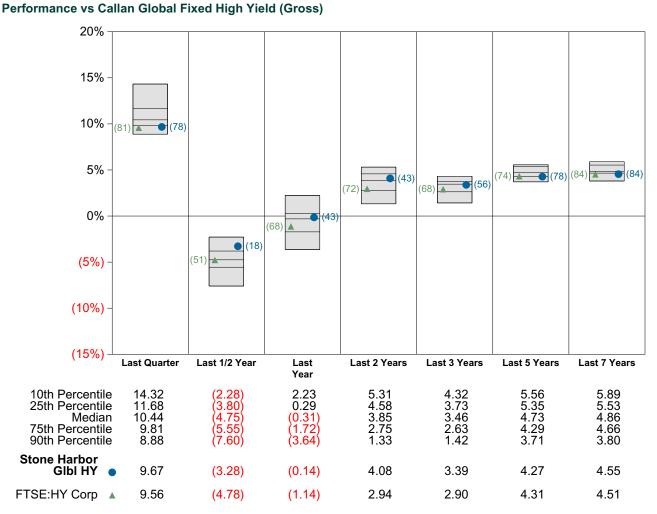
Callan

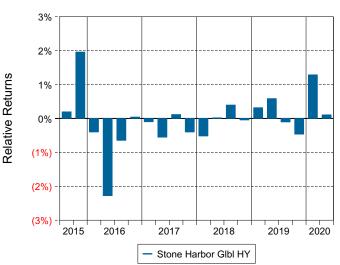
0.6

Stone Harbor Glbl HY Period Ended June 30, 2020

Quarterly Summary and Highlights

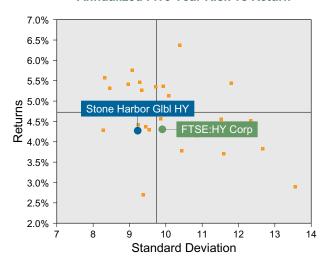
- Stone Harbor Glbl HY's portfolio posted a 9.67% return for the quarter placing it in the 78 percentile of the Callan Global Fixed High Yield group for the quarter and in the 43 percentile for the last year.
- Stone Harbor GlbI HY's portfolio outperformed the FTSE:HY Corp by 0.11% for the quarter and outperformed the FTSE:HY Corp for the year by 1.00%.





Relative Return vs FTSE:HY Corp

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

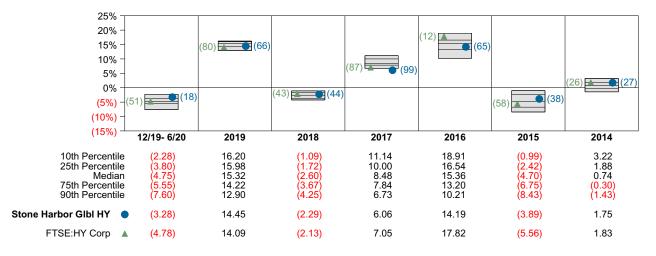


Stone Harbor Glbl HY Return Analysis Summary

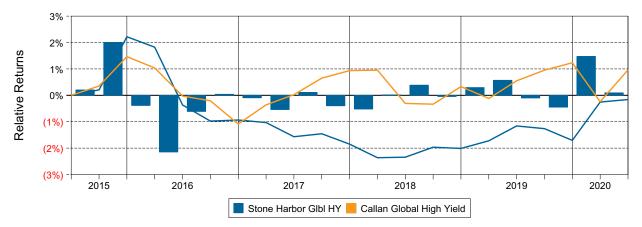
Return Analysis

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

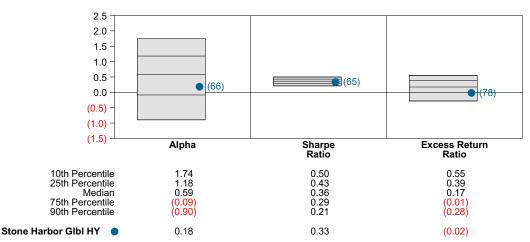




Cumulative and Quarterly Relative Return vs FTSE:HY Corp



Risk Adjusted Return Measures vs FTSE:HY Corp Rankings Against Callan Global Fixed High Yield (Gross) Five Years Ended June 30, 2020



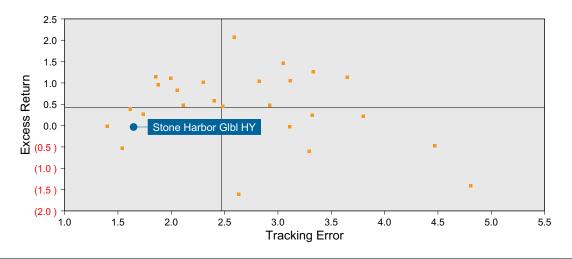


Stone Harbor Glbl HY Risk Analysis Summary

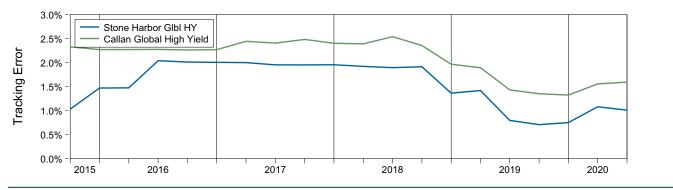
Risk Analysis

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

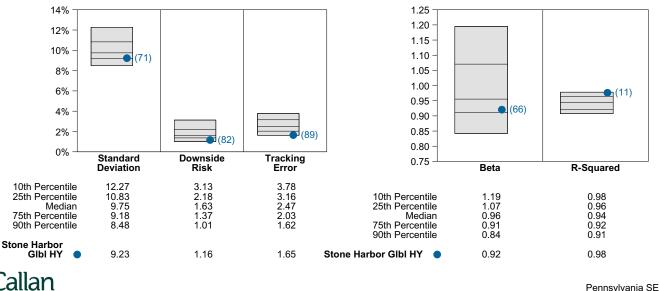
Risk Analysis vs Callan Global Fixed High Yield (Gross) Five Years Ended June 30, 2020









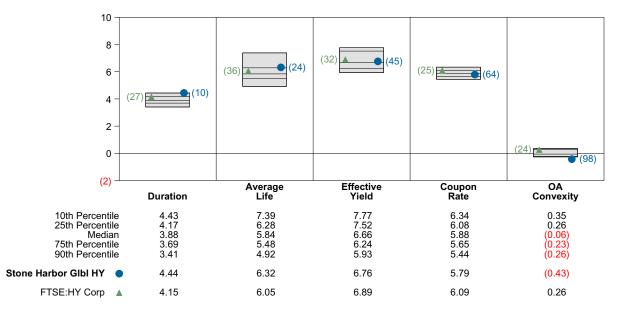


Stone Harbor GlbI HY Bond Characteristics Analysis Summary

Portfolio Characteristics

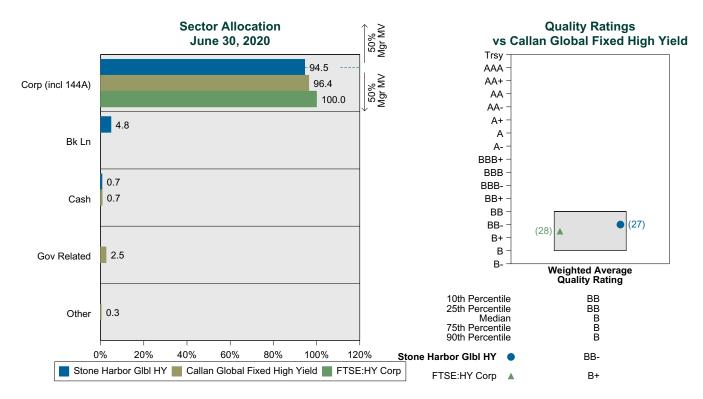
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Global Fixed High Yield as of June 30, 2020



Sector Allocation and Quality Ratings

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

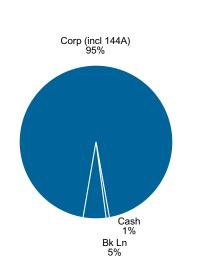


Stone Harbor Glbl HY Portfolio Characteristics Summary As of June 30, 2020

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.

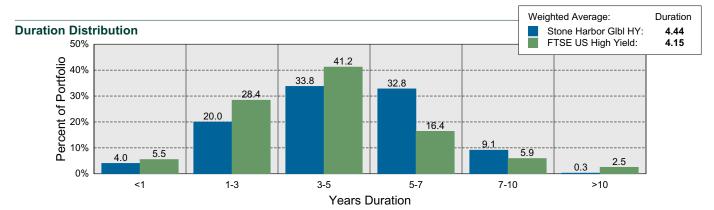
Sector Allocation

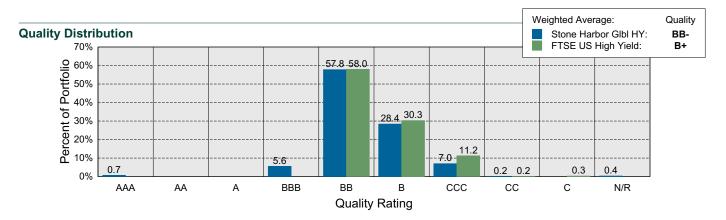


Corp (incl 144A) 100%

Stone Harbor GlbI HY





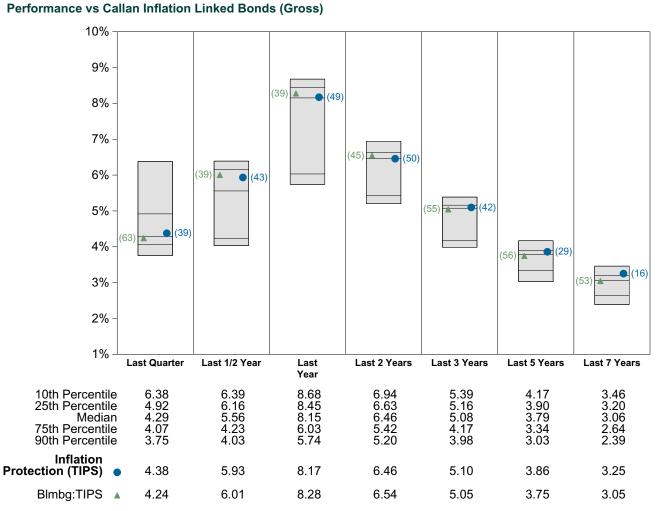


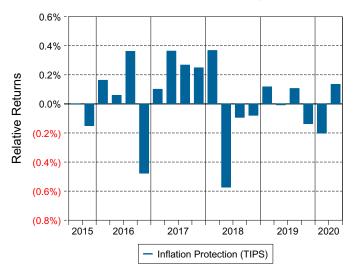
Inflation Protection (TIPS)

Inflation Protection (TIPS) Period Ended June 30, 2020

Quarterly Summary and Highlights

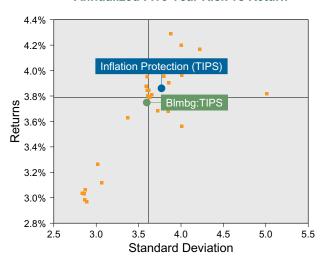
- Inflation Protection (TIPS)'s portfolio posted a 4.38% return for the quarter placing it in the 39 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 49 percentile for the last year.
- Inflation Protection (TIPS)'s portfolio outperformed the BImbg:TIPS by 0.13% for the quarter and underperformed the BImbg:TIPS for the year by 0.11%.





Relative Return vs BImbg:TIPS

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

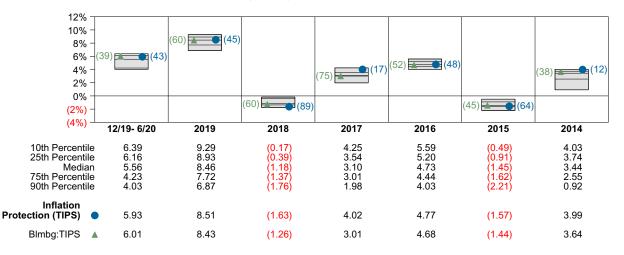


Inflation Protection (TIPS) Return Analysis Summary

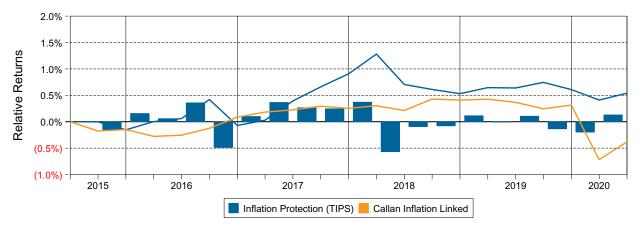
Return Analysis

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

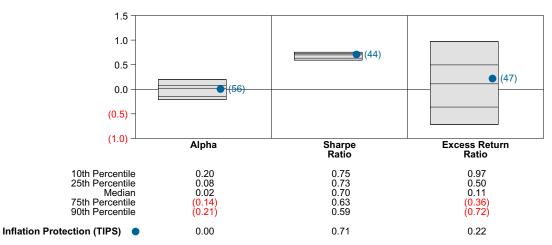
Performance vs Callan Inflation Linked Bonds (Gross)



Cumulative and Quarterly Relative Return vs Blmbg:TIPS



Risk Adjusted Return Measures vs Blmbg:TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020



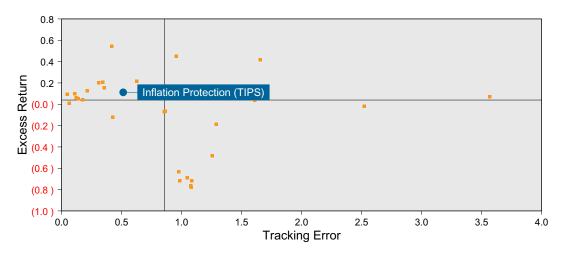


Inflation Protection (TIPS) **Risk Analysis Summary**

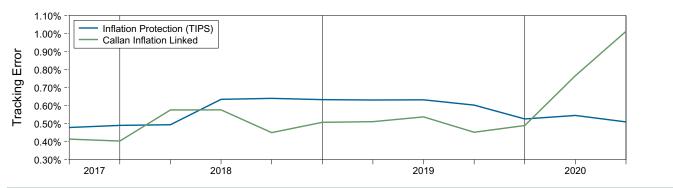
Risk Analysis

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.

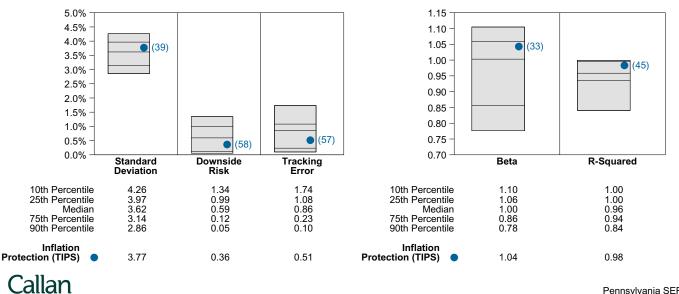
Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020









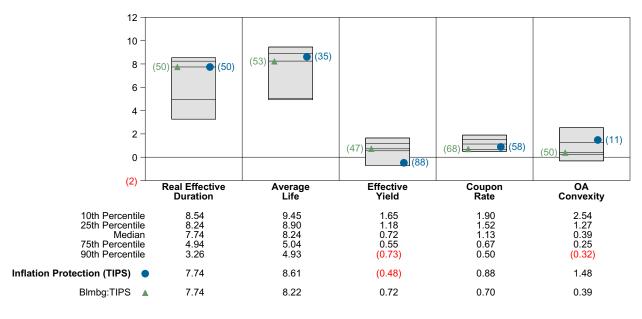


Inflation Protection (TIPS) Bond Characteristics Analysis Summary

Portfolio Characteristics

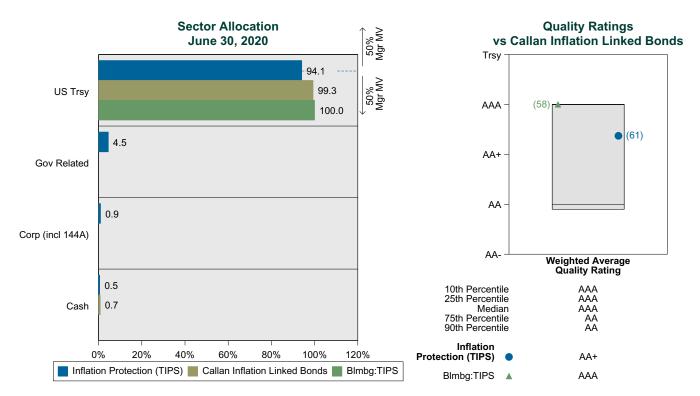
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 2020



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.

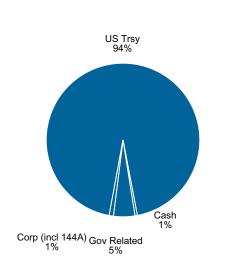


Inflation Protection (TIPS) Portfolio Characteristics Summary As of June 30, 2020

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.

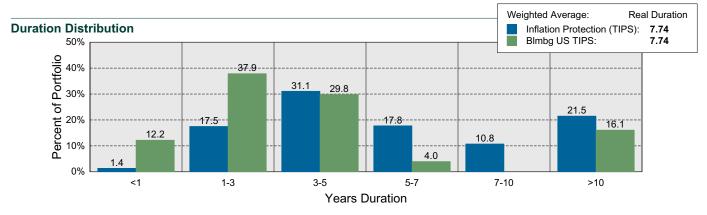
Sector Allocation

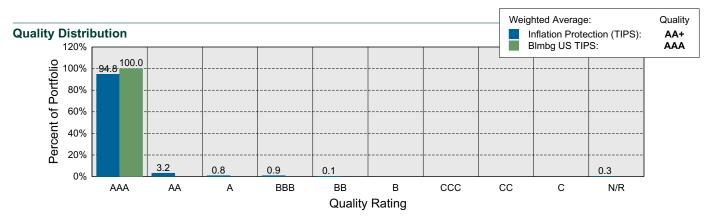


US Trsy 100%

Inflation Protection (TIPS)







Inflation Protection (TIPS) Managers

Brown Brothers TIPS Period Ended June 30, 2020

Investment Philosophy

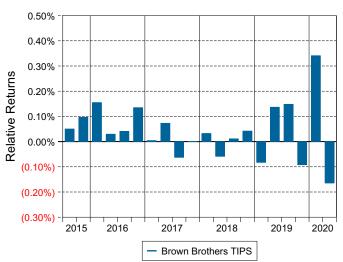
The BBH U.S. TIPS strategy seeks to capture a range of fundamentally-based and technically-based opportunities in the inflation-indexed securities market.

Quarterly Summary and Highlights

- Brown Brothers TIPS's portfolio posted a 4.08% return for the quarter placing it in the 75 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 17 percentile for the last year.
- Brown Brothers TIPS's portfolio underperformed the BImbg:TIPS by 0.16% for the quarter and outperformed the BImbg:TIPS for the year by 0.25%.

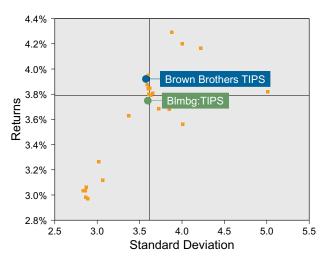
Performance vs Callan Inflation Linked Bonds (Gross)





Relative Return vs Blmbg:TIPS

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



Brown Brothers TIPS Return Analysis Summary

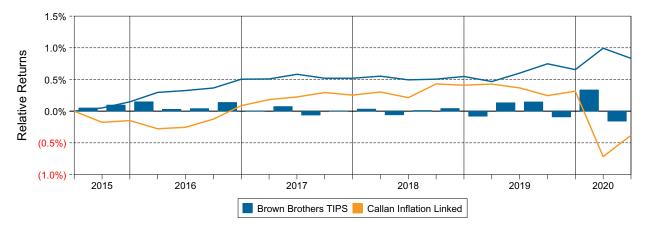
Return Analysis

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.

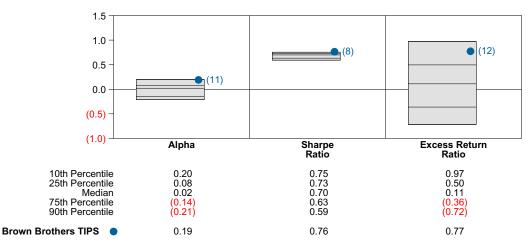
12% 10% (43 60) 8% 6% (33) 52) 4% 38) 75) 2% 0% (45) (60) (2%) (4%) 12/19- 6/20 2019 2018 2017 2016 2015 2014 5.59 4.03 10th Percentile 6.39 9.29 (0.17)4.25 (0.49)3.54 3.10 5.20 4.73 4.44 3.74 3.44 2.55 6.16 5.56 (0.39) (1.18) 25th Percentile 8.93 (0.91) 8.46 (1.45) (1.62) Median 75th Percentile (1.37)3.01 4.23 7.72 90th Percentile 4.03 6.87 (1.76) 1.98 4.03 (2.21)0.92 6.19 Brown Brothers TIPS 8.54 3.02 5.06 (0.93)3.89 (1.23)Blmbg:TIPS 6.01 8.43 3.01 4.68 3.64 (1.26)(1.44)

Cumulative and Quarterly Relative Return vs Blmbg:TIPS

Performance vs Callan Inflation Linked Bonds (Gross)



Risk Adjusted Return Measures vs BImbg:TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020





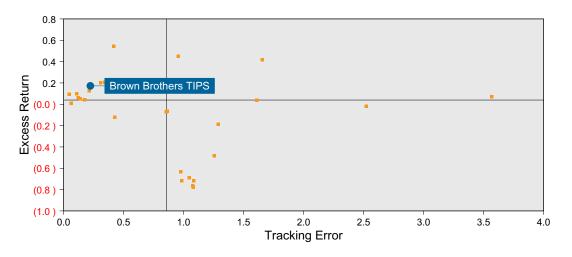
(18)

Brown Brothers TIPS Risk Analysis Summary

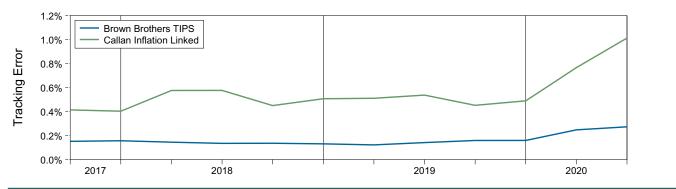
Risk Analysis

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.

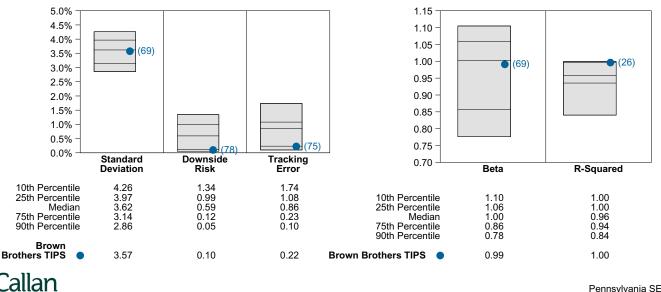
Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020









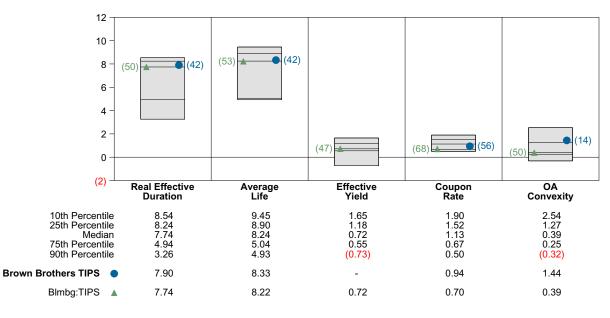


Brown Brothers TIPS Bond Characteristics Analysis Summary

Portfolio Characteristics

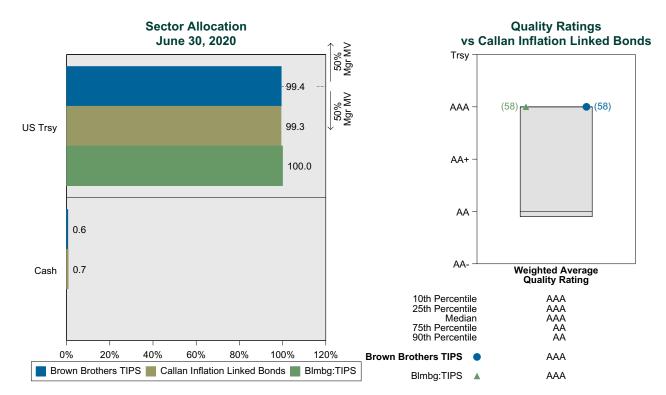
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 2020



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, 2020

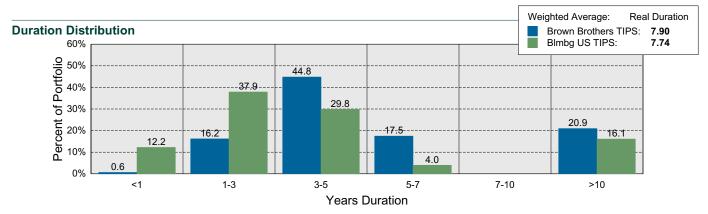
Portfolio Structure Comparison

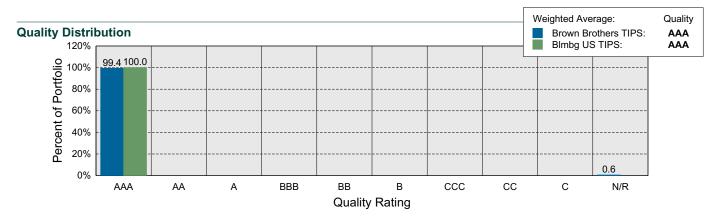
The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution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



Brown Brothers TIPS









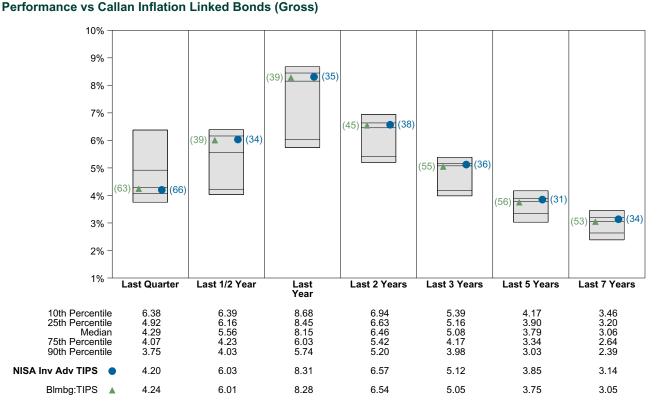
NISA Inv Adv TIPS Period Ended June 30, 2020

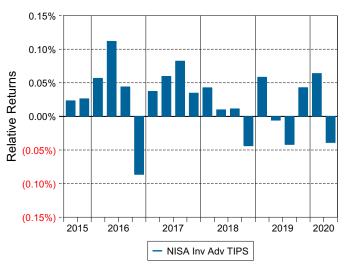
Investment Philosophy

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

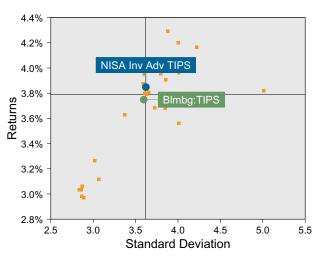
- NISA Inv Adv TIPS's portfolio posted a 4.20% return for the quarter placing it in the 66 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 35 percentile for the last year.
- NISA Inv Adv TIPS's portfolio underperformed the Blmbg:TIPS by 0.04% for the quarter and outperformed the Blmbg:TIPS for the year by 0.03%.





Relative Return vs BImbg:TIPS

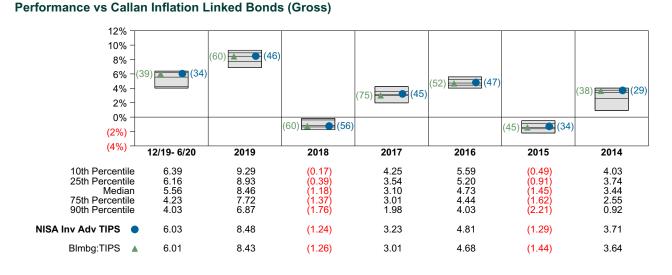
Callan Inflation Linked Bonds (Gross) Annualized Five Year Risk vs Return



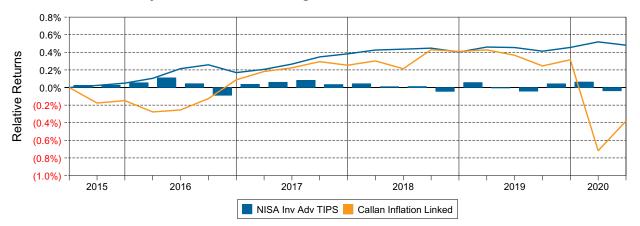
NISA Inv Adv TIPS Return Analysis Summary

Return Analysis

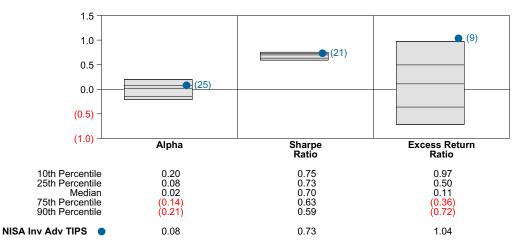
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate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



Cumulative and Quarterly Relative Return vs BImbg:TIPS



Risk Adjusted Return Measures vs BImbg:TIPS Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020



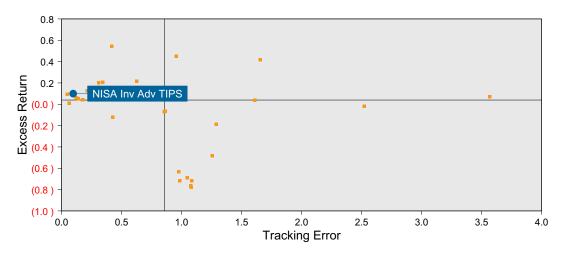


NISA Inv Adv TIPS Risk Analysis Summary

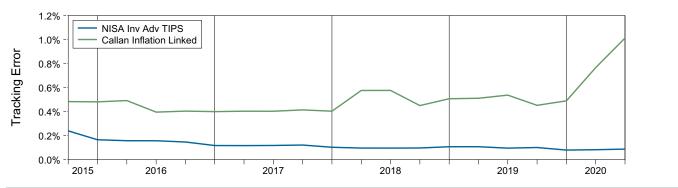
Risk Analysis

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.

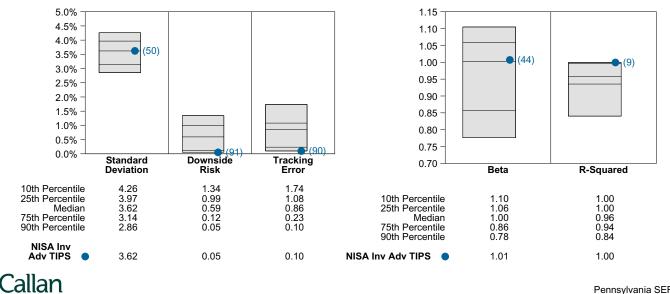
Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020









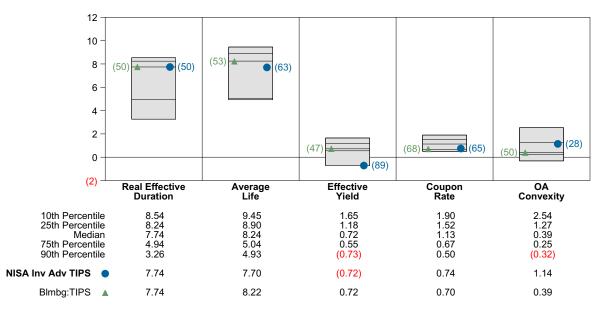


NISA Inv Adv TIPS Bond Characteristics Analysis Summary

Portfolio Characteristics

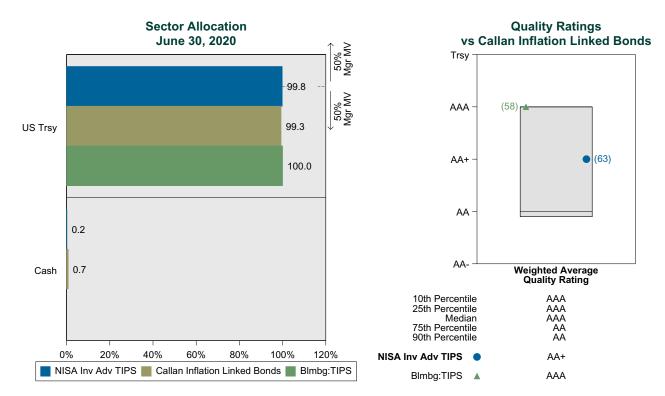
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 2020



Sector Allocation and Quality Ratings

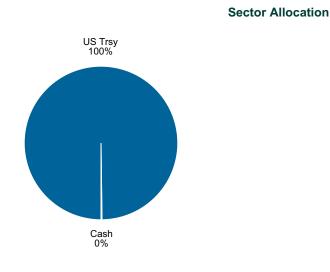
The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.



NISA Inv Adv TIPS Portfolio Characteristics Summary As of June 30, 2020

Portfolio Structure Comparison

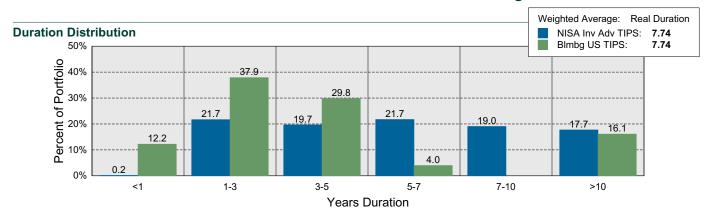
The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution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

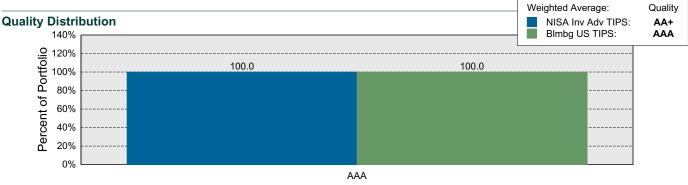


US Trsy 100%

NISA Inv Adv TIPS







Quality Rating



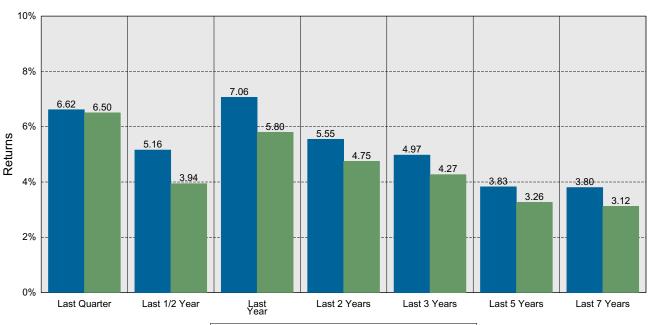
New Century Global TIPS Period Ended June 30, 2020

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

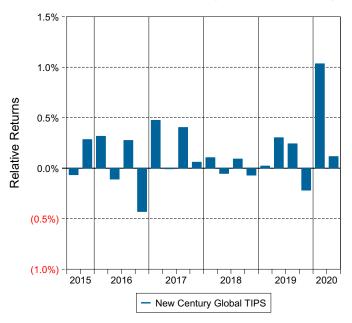
- New Century Global TIPS's portfolio posted a 6.62% return for the quarter placing it in the 7 percentile of the Callan Inflation Linked Bonds group for the quarter and in the 62 percentile for the last year.
- New Century Global TIPS's portfolio outperformed the Blmbg:Wld Infl-Lnk Unhdg by 0.12% for the quarter and outperformed the Blmbg:Wld Infl-Lnk Unhdg for the year by 1.26%.

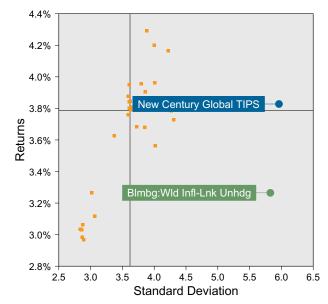




Relative Return vs Blmbg:Wld Infl-Lnk Unhdg





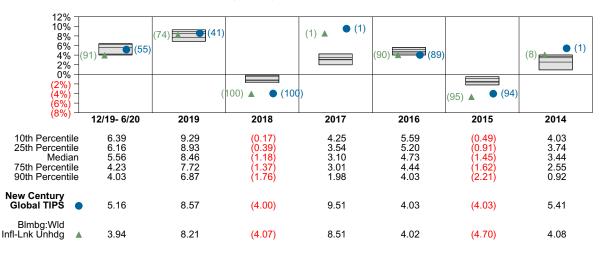


New Century Global TIPS Return Analysis Summary

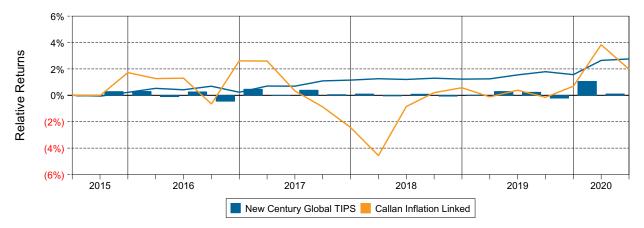
Return Analysis

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.

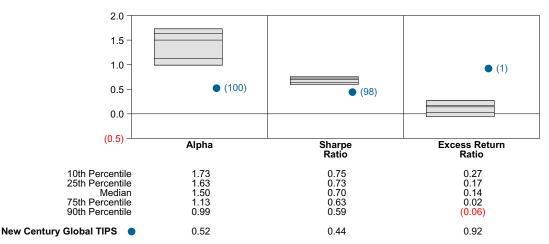
Performance vs Callan Inflation Linked Bonds (Gross)



Cumulative and Quarterly Relative Return vs Blmbg:Wld Infl-Lnk Unhdg



Risk Adjusted Return Measures vs Blmbg:Wld Infl-Lnk Unhdg Rankings Against Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020



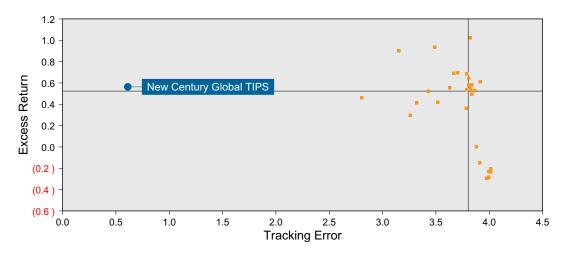


New Century Global TIPS Risk Analysis Summary

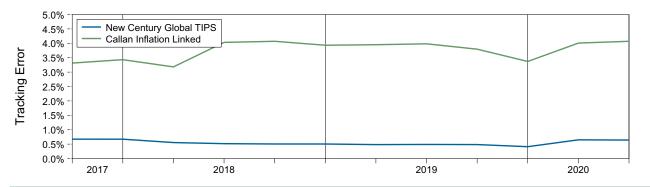
Risk Analysis

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

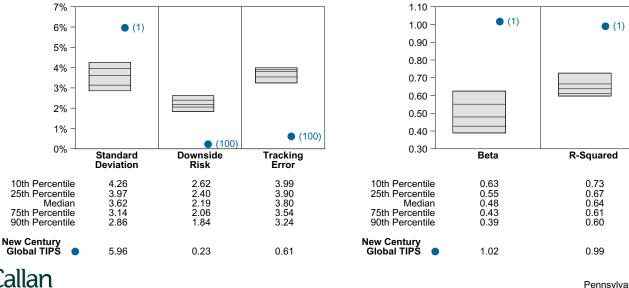
Risk Analysis vs Callan Inflation Linked Bonds (Gross) Five Years Ended June 30, 2020











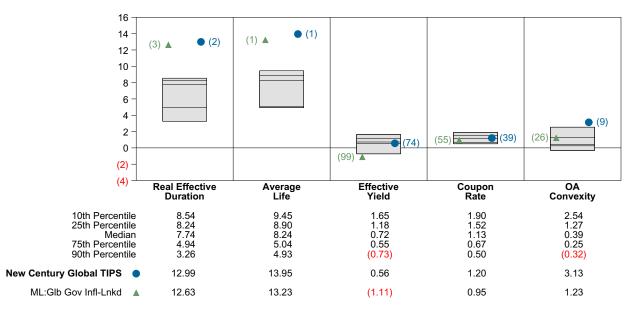
Pennsylvania SERS 260

New Century Global TIPS Bond Characteristics Analysis Summary

Portfolio Characteristics

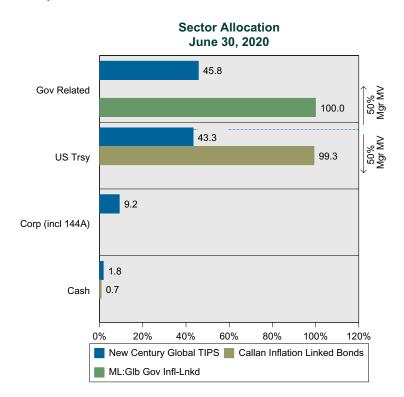
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

Fixed Income Portfolio Characteristics Rankings Against Callan Inflation Linked Bonds as of June 30, 2020

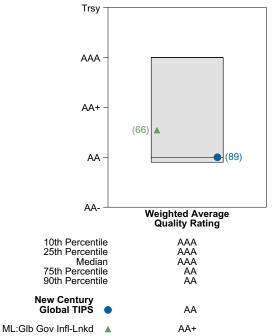


Sector Allocation and Quality Ratings

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 Inflation Linked Bonds

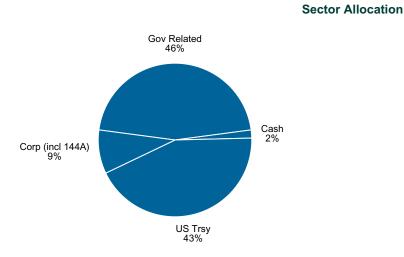




New Century Global TIPS Portfolio Characteristics Summary As of June 30, 2020

Portfolio Structure Comparison

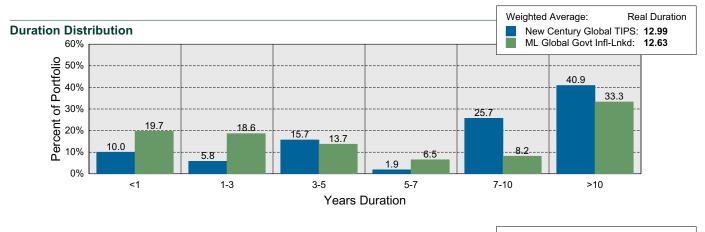
The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution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

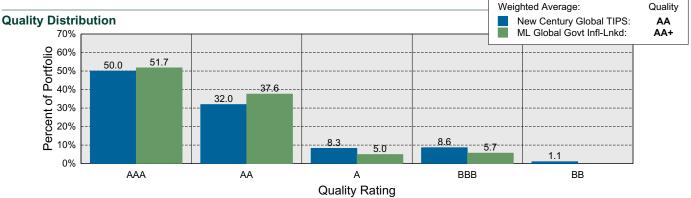


Gov Related 100%

New Century Global TIPS

ML Global Govt Infl-Lnkd





Research & Disclosures



Education

2nd Quarter 2020

Research and Educational Programs

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/library to see all of our publications, and www.callan.com/blog to view our blog "Perspectives." For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

New Research from Callan's Experts

Coping with COVID-19: How Work Is Evolving for Investment Managers | Callan surveyed over 100 investment managers regarding how their firms were responding to the COVID-19 pandemic, focusing on office closures and reopenings, work-from-home approaches, business travel, and meetings. Respondents reflected a wide variety of firms by location, employee size, assets under management, and ownership structure.

Breaking Bad: Better Call Hedge Funds? | In his latest *Hedge Fund Monitor,* Callan's Jim McKee discusses four opportunities for hedge fund investors arising from the market dislocations stemming from the COVID-19 pandemic.

Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle? | Callan's Real Assets Consulting group identifies seven indicators, based on spreads in real estate and fixed income markets, that, combined with an understanding of prevailing market dynamics, have helped signal when the institutional real estate market is overheated or cooled.

Blog Highlights

<u>Guidance on Substantial Workforce Cuts and DC Plan</u> <u>Terminations</u> | Employers that reduce their workforce or discontinue defined contribution (DC) plan eligibility for certain employee groups may experience an inadvertent "partial plan termination." If not properly managed, this event could result in a disqualification of the entire plan.

'Social Washing' and How COVID-19 Has Emphasized the 'S' in ESG | While ESG-savvy investors are most likely familiar with "greenwashing," which refers to the misrepresentation of environmental impact, the term "social washing" has gained new prominence as the investment community evaluates corporations' responses to the sudden challenges presented by the coronavirus. Social washing refers to statements or policies that make a company appear more socially responsible than it actually is.

Nonprofits and the Pandemic: What to Do Now | For nonprofits, this environment creates unique challenges, with many organizations not only contending with the health crisis but also the impact of portfolio returns on their organization's ability to fund grants, provide scholarships, and support programs and operations essential to their constituents. At the same time, these organizations face a potential decline in philanthropic contributions.

Quarterly Periodicals

Private Equity Trends, 1Q20 | A high-level summary of private equity activity in the quarter through all the investment stages

<u>Active vs. Passive Charts, 1Q20</u> | A comparison of active managers alongside relevant benchmarks over the long term

Market Pulse Flipbook, 1Q20 | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data on the capital markets

<u>Capital Market Review, 1Q20</u> | Analysis and a broad overview of the economy and public and private market activity each quarter across a wide range of asset classes

Hedge Fund Quarterly, 1Q20 | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

Real Assets Reporter, 1Q20 | In this quarter's edition, we discuss the implications of the COVID-19 pandemic on the prospects for farmland investments. In addition, it includes analysis of the performance of real estate and other real assets in 1Q20.

Events

Miss out on a Callan conference or workshop? Event summaries and speakers' presentations are available on our website: www.callan.com/library/

Please mark your calendar and look forward to upcoming invitations:

Upcoming Webinars

Education: By the Numbers

50+

525

3,700

August 20 Credit Dislocation—Opportunities in Private Credit

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

Unique pieces of research the

Institute generates each year

Attendees (on average) of the

Total attendees of the "Callan

College" since 1994

Institute's annual National Conference

Education

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

Introduction to Investments—Virtual

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. It is held over three days with virtual modules of 2.5-3 hours. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Tuition is \$950 per person and includes instruction and digital materials.

Next Session: October 13-15, 2020

Additional information including registration can be found at: www.callan.com/cc-introduction-virtual/

Introduction to Investments—In Person

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. It lasts one-and-a-half days and is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Additional information including dates and registration can be found at: www.callan.com/callan-college-intro-2/



"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 Institute

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List of Callan's Investment Manager Clients

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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

Manager Name	Manager Name