



AGENDA

RETIREMENT BOARD MEETING

REGULAR MEETING
May 27, 2020, 9:00 a.m.

The Board of Retirement meeting will be accessible telephonically at +1 (571) 317-3122, access code 412-204-541 due to the Contra Costa County and State of California Coronavirus (COVID-19) Shelter In Place Orders, and as permitted by Executive Order N-29-20 issued on March 17, 2020.

Persons who wish to address the Board of Retirement during public comment or regarding an item that is on the agenda may submit public comment to info@cccera.org either before or during the meeting. Public comments are limited to any item of interest to the public that is within the subject matter jurisdiction of the Board of Retirement. (Gov't Code Section 54954.3(a).) All comments submitted will be included in the record of the meeting. The comments will be read into the record at the meeting, subject to a three-minute time limit per comment.

THE RETIREMENT BOARD MAY DISCUSS AND TAKE ACTION ON THE FOLLOWING:

1. Pledge of Allegiance.
2. Accept comments from the public.

CLOSED SESSION

3. The Board will go into closed session pursuant to Govt. Code Section 54956.9(d)(1) to confer with legal counsel regarding pending litigation:

CCCERA v. Salgado, Contra Costa County Superior Court, Case No. MSC19-00580

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

OPEN SESSION

4. Review of total portfolio performance for period ending March 31, 2020.
 - a. Presentation from Verus.
 - b. Presentation from staff.
5. Report out from Audit Committee Chair on May 6, 2020 Audit Committee meeting.
6. Miscellaneous
 - a. Staff Report
 - b. Outside Professionals' Report
 - c. Trustees' comments

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

Meeting Date
05/27/20
Agenda Item
#4a.

Verus⁷⁷⁷



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: MARCH 31, 2020

Investment Performance Review for

Contra Costa County Employees' Retirement Association

Table of Contents

Verus⁷⁷⁷

[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

SEATTLE 206-622-3700

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Investment Landscape

TAB I

Investment Performance
Review

TAB II



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

2ND QUARTER 2020
Investment Landscape

Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

Annual outlooks

ACTIVE MANAGEMENT ENVIRONMENT

Our work on active management addresses some shortfalls of the traditional analysis, which uses the median product to describe the active management universe as a whole. These improvements and insights have allowed us to better understand product behavior and may allow for more informed selection in the future.

Sound thinking

TEN THOUGHTS FOR 2020

A new year begins, and with it comes an opportunity to assess whether the correct areas were focused on in the previous year, and to create new suggested topics of interest for the year ahead. In this piece, our CIO, Ian Toner, will try to help investors prioritize shorter-term actions they might take, while addressing longer-term issues to improve their success.

THE JUDGMENTAL WAITER

In this piece our CIO, Ian Toner, lays out how Verus is approaching the challenge of building customized ESG advice and service to each of our clients, and outlines the significant resource commitment Verus is making during 2020 and beyond to provide that tailored support.

COVID-19

MARKET UPDATE 3/17/20

The first few weeks of March have been almost unprecedented in terms of market volatility and behavior. The combination of health concerns and oil market disruption has led to market moves of a type that we rarely see. Underlying this, there is also a real human concern about our families, and the human effect on people we love as the coronavirus spreads. So what are long term investors to do?

MARKET UPDATE 4/9/20

The COVID-19 crisis has had a sudden impact on the capital markets, which has been made worse by the recent disruption in the oil market. Now is a good time for investors to take stock of the possible intermediate and long-term implications of these disruptions, as well as to try to assess the possible short-term factors which might cause further market disruption.

Table of contents



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SAN FRANCISCO 415-362-3484

Economic environment 6

Fixed income rates & credit 18

Equity 24

Other assets 35

Appendix 39

1st quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 2.3% rate year-over-year in the fourth quarter (2.1% quarterly annualized rate). Companies drew down inventories, which detracted 1% from growth. Investors appear to be bracing for an unprecedented slowdown of the economy during the first half of 2020, due to the coronavirus outbreak. Forecasts of Q2 GDP growth have varied between -15% to -35%. **p. 9**
- The U.S. government quickly crafted and implemented historic stimulus measures to combat the economic impact of the virus. Support of this magnitude has not been seen since the Great Depression of the 1930s. **p. 10**

PORTFOLIO IMPACTS

- U.S. equities experienced an unusually sudden and significant sell-off in March as investors grew fearful of the health and economic impacts of COVID-19. During Q1 the S&P 500 fell -19.6%, international developed equities (MSCI EAFE) fell -22.8% and emerging markets (MSCI EM) fell -23.6%. **p. 25**
- U.S. core inflation increased 2.1% YoY in March. Headline inflation slowed to 1.5%, pushed lower by a sharp decline in energy prices which will likely have persistent effects in future months. Downward pressure could be compounded as households slow spending due to loss of income and a greater propensity to save rather than spend. **p. 11**

THE INVESTMENT CLIMATE

- In mid-March, the Federal Open Market Committee cut interest rates by a full 1.00% to a new range of 0 – 0.25%. This surprise action was taken on a Sunday with the intent to get out ahead of economic impacts of COVID-19. **p. 19**
- Implied volatility spiked in March to a record daily close of 82.7%, surpassing the high of 80.9% reached in November 2008 during the depths of the global financial crisis. **p. 32**
- Central banks are facing an economic slowdown and need for monetary policy support, but very little room to cut interest rates. This is a risk that has been discussed for years. We believe fiscal policies will play a much larger role in addressing the inevitable economic slowdown. **p. 19**

ASSET ALLOCATION ISSUES

- Risk markets experienced one of the most sudden corrections on record, amidst extreme volatility. The S&P 500 showed its largest one-day drop since 1987 (March 16 -11.98%) and its largest one-day gain since 2008 (March 24 +9.38%). Implied volatility reached global financial crisis levels, and high yield credit spreads temporarily expanded above 11%. Some of these losses were recovered toward the end of March as the market rebounded. **p. 27**
- The U.S. dollar appreciated significantly in the first quarter, rising 7.1% on a trade-weighted basis, resulting in losses for investors with unhedged currency exposure. **p. 36**

An underweight risk stance appears appropriate in today's environment

We remain watchful for investment opportunities

What drove the market in Q1?

“World Health Organization declares the coronavirus outbreak a global pandemic”

GLOBAL CONFIRMED COVID-19 CASES

1/31	2/15	2/29	3/15	3/31	4/15
11,374	69,267	86,351	164,403	857,778	2,077,469

Article Source: CNBC, March 11th, 2020

“Vix Hits Highest Level Since the Financial Crisis as Volatility Soars”

CBOE VIX INDEX

Oct	Nov	Dec	Jan	Feb	Mar
13.22	12.62	13.78	18.84	40.11	53.54

Article Source: Barron's, March 9th, 2020

“Fed announces unlimited QE and sets up several new lending programs”

FEDERAL RESERVE BALANCE SHEET (USD TRILLIONS)

3/4	3/11	3/18	3/25	4/1	4/8
4.3	4.4	4.7	5.3	5.9	6.1

Article Source: MarketWatch, March 23rd, 2020

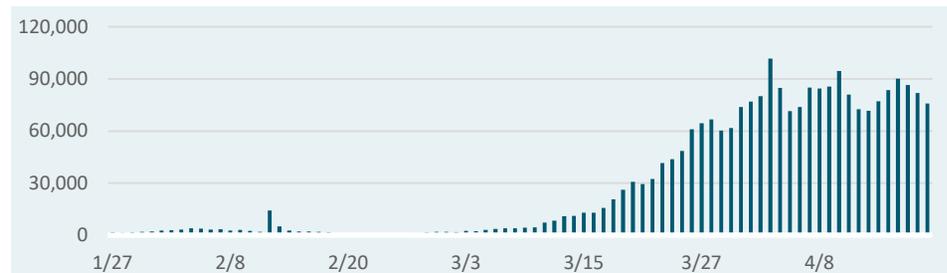
“Coronavirus job losses could total 47 million, unemployment rate may hit 32 percent, Fed estimates”

INITIAL WEEKLY JOBLESS CLAIMS

3/6	3/13	3/20	3/27	4/3	4/10
211,000	282,000	3,307,000	6,867,000	6,615,000	5,245,000

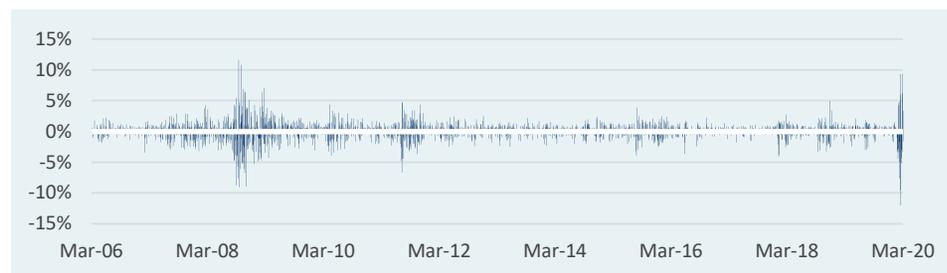
Article Source: NBC News, March 30th, 2020

DAILY NEW COVID-19 CASES (WORLDWIDE)



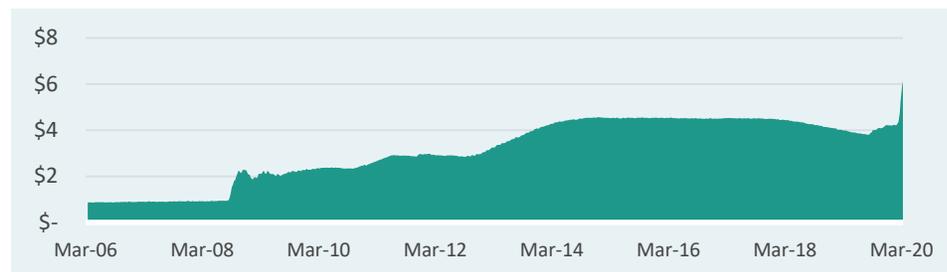
Source: Worldometer, as of 4/19/20

S&P 500 INDEX 1-DAY PERCENTAGE PRICE MOVE



Source: Standard & Poor's, Bloomberg, as of 3/31/20

FEDERAL RESERVE BALANCE SHEET (USD TRILLIONS)



Source: Federal Reserve, as of 4/8/20

Economic environment

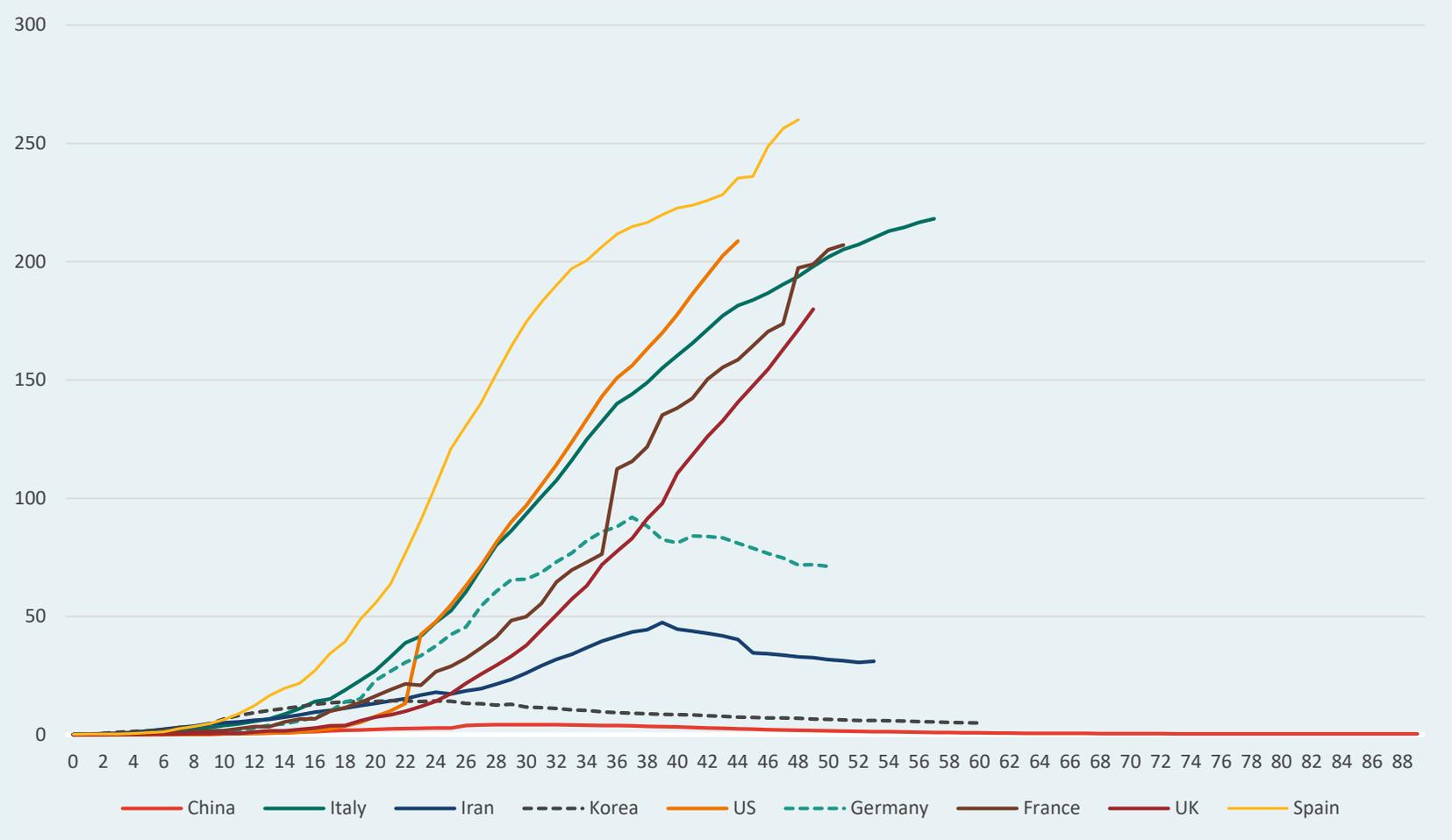
U.S. economics summary

- Real GDP grew at a 2.3% rate year-over-year in the fourth quarter (2.1% quarterly annualized rate). Companies drew down inventories, which detracted -1% from growth. Investors appear to be bracing for an unprecedented slowdown of the economy during the first half of 2020, due to COVID-19. Forecasts of Q2 GDP growth have varied between -15% to -35%.
- The U.S. government quickly crafted and implemented historic stimulus measures to combat the economic impacts of the virus. Support of this magnitude has not been seen since the Great Depression of the 1930s.
- U.S. core inflation rose 2.1% YoY in March. Headline inflation slowed to 1.5%, pushed lower by a sharp decline in energy prices which will likely have persistent effects in the coming months. This downward pressure could be compounded as households slow spending due to loss of income and show a greater propensity to save.
- The U.S. labor market exhibited a sharp weakening in March, as unemployment jumped to 4.4%. Some have estimated the true unemployment rate in April to be above 10%.
- March economic data should not be expected to fully reflect the extent of COVID-19. We are watching daily data releases to gain a better understanding of how conditions are evolving.
- The Bloomberg Consumer Comfort Index exhibited its sharpest two week drop since 1985, from 63.0 to 56.3, dipping from a 20-year high of 67.3 that was achieved in January.
- Existing homes sales increased +7.2% in February YoY, and new homes sales were up +14.3%. The 30-year fixed mortgage interest rate has continued to fall, finishing Q1 at 3.33%.

	Most Recent	12 Months Prior
GDP (YoY)	2.3% <i>12/31/19</i>	2.5% <i>12/31/18</i>
Inflation (CPI YoY, Core)	2.1% <i>3/31/20</i>	2.0% <i>3/31/19</i>
Expected Inflation (5yr-5yr forward)	1.3% <i>3/31/20</i>	2.4% <i>3/31/19</i>
Fed Funds Target Range	0% – 0.25% <i>3/31/20</i>	2.25% – 2.50% <i>3/31/19</i>
10 Year Rate	0.7% <i>3/31/20</i>	2.4% <i>3/31/19</i>
U-3 Unemployment	4.4% <i>3/31/20</i>	3.8% <i>3/31/19</i>
U-6 Unemployment	8.7% <i>3/31/20</i>	7.4% <i>3/31/19</i>

COVID-19 update

ACTIVE CASES PER 100,000 PEOPLE



The COVID-19 crisis has quickly become a global pandemic

Source: Bloomberg, aggregated official country statistics, x-axis indexed to when the country first reached 100 cases, as of 4/17/20

GDP growth

Real GDP grew at a 2.3% rate year-over-year in the fourth quarter (2.1% quarterly annualized rate). Companies drew down inventories, which detracted -1% from growth. Investors are bracing for an unprecedented slowdown of the economy during the first half of 2020 due to the coronavirus. Forecasts of Q2 GDP growth have varied between -15% to -35%.

The United States fiscal and monetary response to COVID-19 is unparalleled. The first response was from the Federal Reserve, swiftly cutting interest rates to zero, though 0% was not far away from levels at the time. The administration then rolled out the Families First

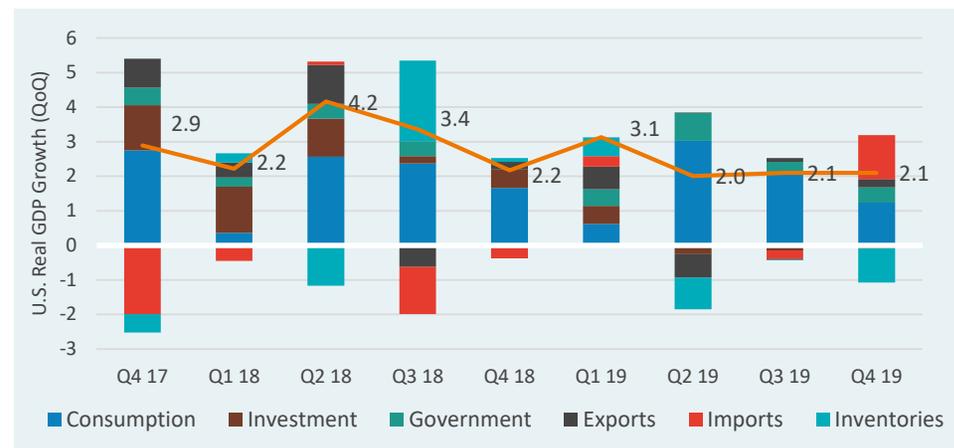
Coronavirus Response Act, which guaranteed sick days to full-time workers, prorated for part-time workers. Next was an expansion of the Family and Medical Leave Act, which provided paid leave for employees of businesses with fewer than 500 staff. For workers requiring more than two weeks of leave, the act covered those employees for up to 14 weeks. The most recent CARES Act was the largest in modern history, at \$2.2 Trillion in size. It included up to \$1,200 payments to every American, a \$600 increase in weekly unemployment benefits, expansion of unemployment to many of those not previously eligible, \$350 Billion in loans to small businesses, \$500 Billion in aid to corporations, and additional funding to individual states and government programs.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 12/31/19

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 12/31/19

U.S. fiscal response

Families First Coronavirus Response Act:

- 10 sick days to full-time workers, prorated for part-time workers. This legislation applies to most U.S. workers, though some restrictions exist.
- Food support for low-income families increased through programs such as: increased SNAP coverage for jobless and lower-income Americans, emergency food allotments, and guaranteed school lunches.

Family and Medical Leave Act:

- This existing act has been amended to provide paid leave for employees of businesses with fewer than 500 staff in size.
- For workers who still require time off after the first two weeks, this act covers these employees for up to 14 weeks.

\$2.2 Trillion Coronavirus Relief Package

- \$1,200 checks to every American, which begin to be phased out for Americans with more than \$75,000 of income and fully phased out for Americans with more than \$99,000 in income. It was communicated that these non-taxable checks would be issued within weeks.
- Weekly unemployment benefits were increased by \$600 per week for up to 4 months and were made available to many who previously did not qualify, such as freelance workers and furloughed employees.
- \$350 Billion in loans to small businesses.
- Companies with fewer than 500 employees could be eligible for up to \$10 Million in forgivable loans to meet payroll needs.
- \$500 Billion in aid to corporations, \$100 Billion in aid to hospitals, \$150 Billion for state and local governments.
- 60-day delays in home foreclosures. Optional 6-month student loan deferrals.

Inflation

U.S. core inflation increased 2.1% YoY in March. Headline inflation slowed to 1.5%, pushed lower by a sharp decline in energy prices which will likely have continued effects over the coming months. This downward pressure could be compounded as households slow spending due to loss of income and show a greater propensity to save rather than spend.

During the sudden market sell-off in March, the U.S. TIPS inflation breakeven rate fell drastically from 1.7% to a low of 0.5%, ending the month at 0.9%. U.S. TIPS breakevens have historically tended to plummet in times of market turmoil.

We believe these moves may partially reflect the illiquidity of TIPS in volatile environments, rather than falling inflation expectations. This draws into question the usefulness of TIPS breakeven rates as a pure indication of investors' inflation forecasts. Inflation swaps, such as the 5-year Inflation Swap Forward Rate, may offer a cleaner reflection of true inflation expectations.

Consumer inflation surveys indicate that expectations were relatively flat, moving from 2.3% in December to 2.2% in March.

U.S. CPI (YOY)



Source: Bloomberg, as of 3/31/20

U.S. INFLATION INDICATORS



Source: FRED, Bloomberg, as of 3/31/20

INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/20

Labor market

The U.S. labor market exhibited a sharp weakening in March, as unemployment jumped to 4.4%. Some have estimated the true unemployment rate in April to be above 10%.

The total number of Americans applying for unemployment skyrocketed to 6.65 Million at the end of March – a number historically unthinkable. This figure may stay elevated due to shelter-in-place mandates and widespread business closures across the country.

The NFIB Small Business Optimism Index decreased by 8.1 in March to 96.4, which was the largest drop of the series' history. Survey respondents indicated greater uncertainty on the horizon, contracting business conditions, falling sales in the coming six months, and fewer job openings. NFIB stated that "Small business orders are bracing themselves for a significant reduction in consumer spending and future orders." The organization also reported that around half of small businesses indicated that they cannot survive a shutdown of more than two months under current conditions.

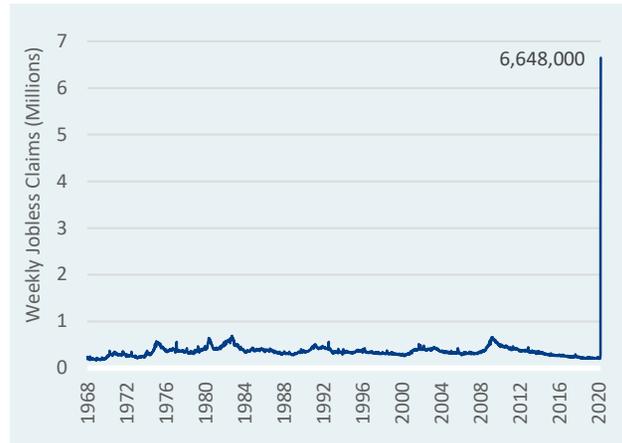
U.S. labor market is experiencing the largest negative shock in modern history

U.S. UNEMPLOYMENT



Source: FRED, as of 3/31/20

WEEKLY JOBLESS CLAIMS



Source: FRED, as 3/31/20

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 3/31/20

The consumer

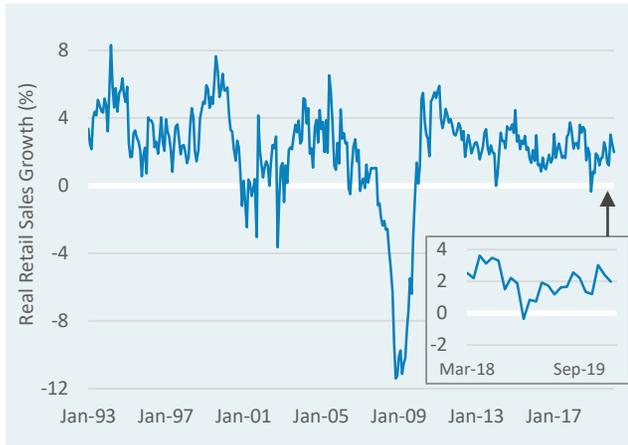
The U.S. consumer has been the greatest support to moderate domestic economic growth of recent years. At the same time, spending and use of credit has been conservative, and household balance sheets have remained robust. The relatively strong position of households at the onset of the crisis may help mitigate some pain of the COVID-19 economic slowdown.

U.S. retail sales declined -8.7% in March from the prior month, the largest ever decline since the series' inception in 1992. Big ticket discretionary purchases are likely to see severe slowdowns due to coronavirus.

Consumers appear to be paring back more elective purchases and allocating more of their income toward staple goods. In March, sales at clothing and home furnishing stores fell -51% and -27% respectively, while food and beverage purchases (+27%) posted a record advance.

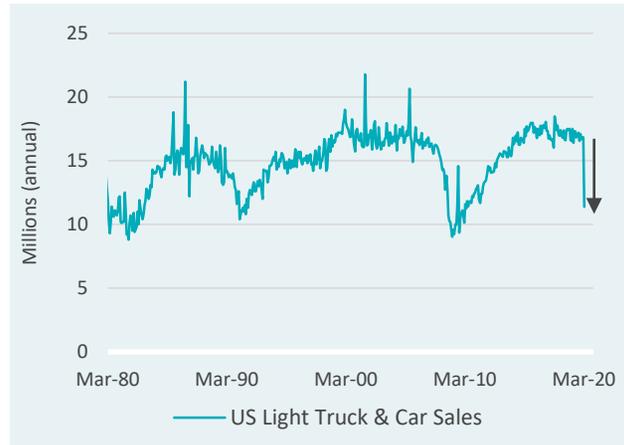
Data from Google suggests that consumers have been travelling far less as of late, and whether that trend continues will be interesting to observe as we move into spring in the United States. Filling station receipts fell around 17% in March, and those revenues are less likely to be "made up" later in the year.

REAL RETAIL SALES GROWTH (YOY)



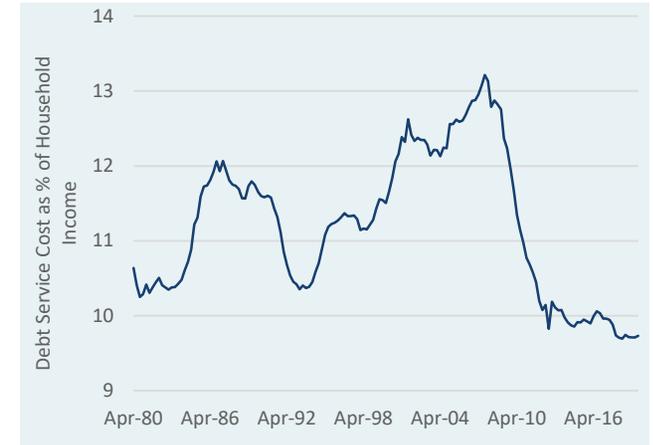
Source: FRED, as of 2/29/20

U.S. AUTO SALES



Source: Bloomberg, as of 3/31/20

HOUSEHOLD DEBT BURDEN



Source: FRED, as of 12/31/19

Sentiment

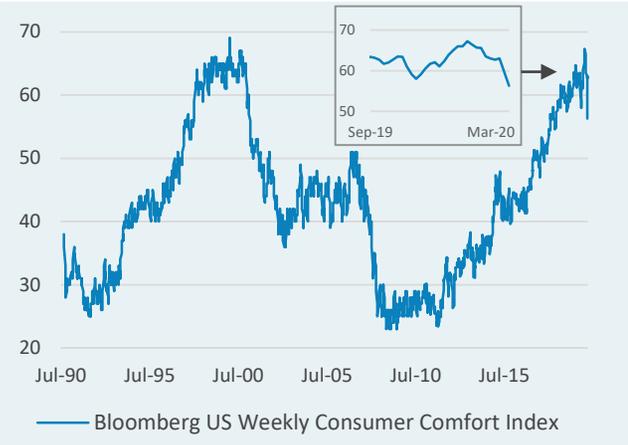
The Bloomberg Consumer Comfort Index exhibited its sharpest two week drop since 1985, falling from 63.0 to 56.3, down from a 20-year high of 67.3 that was achieved in January. Slowing business activity, rising unemployment, and greater uncertainty has led to a broad deterioration in consumer confidence.

Small business owners have been among the hardest hit by the COVID-19 economic disruptions. The NFIB Small Business Optimism Index registered its largest ever single month drop

in March, falling -8.1 points to 96.4. Plummeting expectations for real sales over the next six months drove the decline in the overall index, and it appears Main Street business owners are anticipating and bracing themselves for continued economic disruptions moving forward.

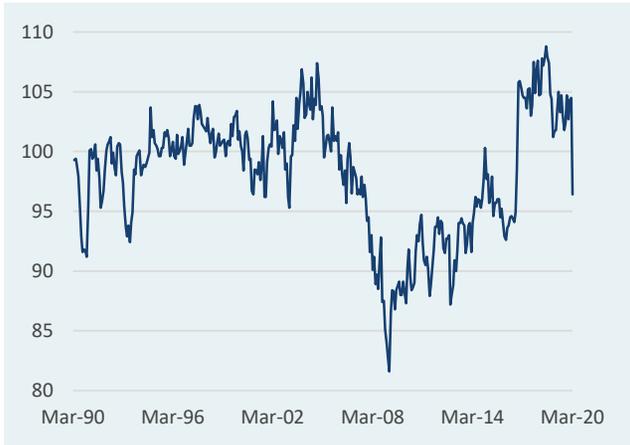
While hiring activity remained relatively healthy in early March, hiring plans showed a significant drop-off in February, a signal of a strong downturn in the coming months.

CONSUMER COMFORT



Source: Bloomberg, as of 3/31/20

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 3/31/20

SMALL BUSINESS HIRING PLANS INDEX



Source: NFIB, as of 3/31/20

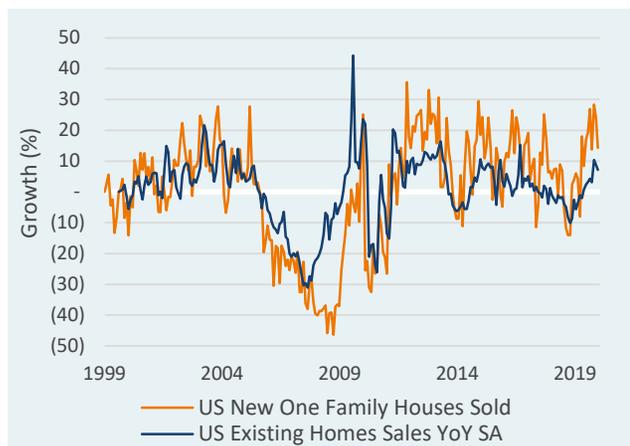
Housing

The housing market exhibited strength to start the year, with February existing homes sales rising 7.2% YoY, and new home sales up 14.3%. The 30-year fixed mortgage interest rate has continued to fall, finishing Q1 at 3.33%. Near record-low interest rates will likely continue to support housing prices and demand, as home affordability improves for Americans.

It is difficult to forecast the effect that COVID-19 will have on the housing market, as there are perhaps two opposing forces at work. The first effect is falling mortgage rates, which should be supportive of home values and purchase activity, assuming U.S. interest rates remain lower as they

typically do during market strain. The second effect – a slowing U.S. economy – is of course negative on housing values and demand. Millions of job losses have occurred in the first few weeks of the COVID-19 nationwide shutdown, and many Americans will soon struggle to meet mortgage payments. Under the new CARES Act, homeowners with Federally-backed mortgages who have been affected by COVID-19 can request forbearance on mortgage payments for up to 180 days, with an option to extend for an additional 180 days. This intervention will hopefully ease some of the strains and mitigate some downside risk during a time of historically unprecedented spikes in unemployment.

U.S. HOME SALES (YOY)



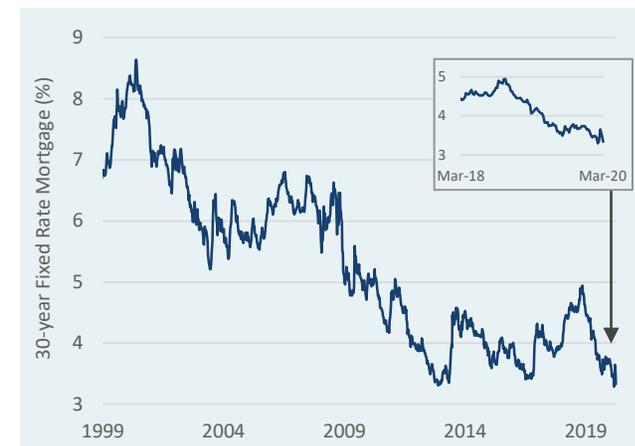
Source: FRED, as of 2/29/20

HOUSING AFFORDABILITY INDEX



Source: Bloomberg, NAHB, as of 12/31/19 (see appendix)

30YR FIXED RATE MORTGAGE



Source: FRED, as of 3/31/20

International economics summary

- Most international developed economies grew at a rate of 0.5% to 2.5% in Q4. The low and stable expansion of recent years has changed suddenly with the onset of COVID-19. Many global economies will enter recession in 2020. On April 14th the IMF revised their 2020 global growth forecast from +3.3% to -3.0%.
- Governments are using monetary and fiscal policies to fill the large hole in spending and lending that the slowdown may cause. These policies vary in their characteristics and aggressiveness.
- Governments with limited ability to implement stimulus policies may face tougher economic fallout. Specifically, European Union member nations that cannot exercise independent actions may see greater difficulties ahead as income gaps cannot be supplemented with fiscal spending.
- The World Trade Organization (WTO) forecast a 13%-32% fall in global trade in 2020 – a larger decrease than witnessed during the global financial crisis. This forecast was paired with the expectation of a 21%-24% rebound in trade throughout 2021.
- While not yet reflected in the most recent economic data, unemployment rates around the world are certain to rise considerably.
- The COVID-19 virus breakout originated in China, and many investors have pointed to China as a testcase for how the virus might play out economically. Although the data released by China suggests the outbreak has been defeated, there is increasing evidence that the severity of virus has been underreported – perhaps severely.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.3% <i>12/31/19</i>	1.5% <i>3/31/20</i>	4.4% <i>3/31/20</i>
Eurozone	1.0% <i>12/31/19</i>	0.7% <i>3/31/20</i>	7.3% <i>2/29/20</i>
Japan	(0.7%) <i>12/31/19</i>	0.4% <i>3/31/20</i>	2.3% <i>2/29/20</i>
BRICS Nations	5.0% <i>12/31/19</i>	4.9% <i>3/31/20</i>	5.0% <i>12/31/19</i>
Brazil	1.7% <i>12/31/19</i>	3.3% <i>3/31/20</i>	11.6% <i>2/29/20</i>
Russia	2.1% <i>12/31/19</i>	2.6% <i>3/31/20</i>	4.6% <i>2/29/20</i>
India	4.7% <i>12/31/19</i>	5.9% <i>3/31/20</i>	8.5% <i>12/31/17</i>
China	6.0% <i>12/31/19</i>	4.3% <i>3/31/20</i>	3.6% <i>12/31/19</i>

International economics

Most international developed economies grew at a rate of 0.5% to 2.5% in Q4. The low and stable expansion of recent years has changed suddenly with the onset of COVID-19. Many global economies will enter recession in 2020. On April 14th the IMF revised their 2020 global growth forecast from +3.3% to -3.0%.

Governments are using monetary and fiscal policies to fill the potentially large hole in spending and lending that the slowdown may cause. These policies vary in their characteristics. For example, the UK government has taken a more aggressive stance, committing to subsidize 80% of the salaries of workers who become unemployed, up to £2,500 per month for a three-month period.

The World Trade Organization (WTO) forecast a 13%-32% fall in global trade in 2020 – a larger decrease than witnessed during the global financial crisis due to broader restrictions on labor and travel that are not involved with a typical recession. This forecast was paired with the expectation of a 21%-24% rebound in trade throughout 2021, though forecasts of the shape and nature of the recovery may be more speculative in nature.

Due to the extremely quick onset of COVID-19 and its economic impacts, many traditional economic metrics do not yet reflect the effects of the virus since these metrics are released with a one-month or greater lag.

REAL GDP GROWTH (YOY)



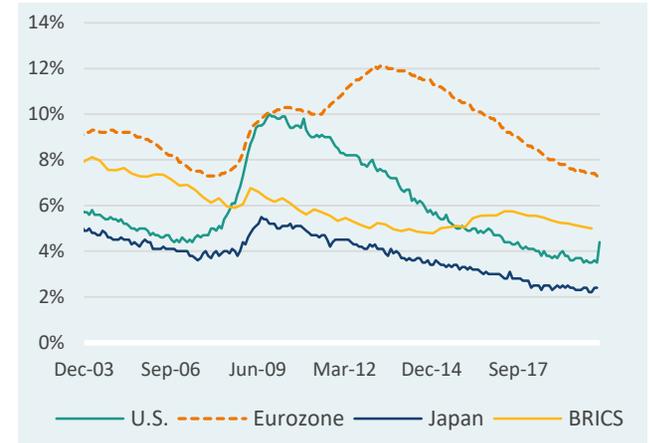
Source: Bloomberg, as of 12/31/19

INFLATION (CPI YOY)



Source: Bloomberg, inflation range of past 5 years, as of 2/29/20

UNEMPLOYMENT RATE



Source: Bloomberg, as of 3/31/20 or most recent release

Fixed income rates & credit

Interest rate environment

- In mid-March, the Federal Open Market Committee cut interest rates by a full 1.00% to a new range of 0 – 0.25%. This surprise action was taken on a Sunday with the intent to get out ahead of the economic impacts of COVID-19.
- On April 9th, the Federal Reserve announced an additional \$2.3 Trillion program aimed towards providing financing to small businesses and municipalities. The program included \$1M-\$25M sized loans at an interest rate of 2.5%-4.0% with a four-year maturity. This move involved Fed purchases of certain types of low-grade speculative debt, a reversal from comments just weeks earlier that the Federal Reserve would stick to investment-grade debt purchases.
- The European Central Bank (ECB) announced a €750B asset purchase program in March to address effects of the virus. ECB President Christine Lagarde claimed that there are “no limits to our commitment to the euro”. Bond yields of Euro member countries fell on the news.
- Central banks are now facing a unique problem – an immediate economic slowdown and need for monetary policy support, but very little room to cut interest rates to provide that support. This is a risk that has been discussed by investors for years, only now becoming reality. We believe fiscal policies will play a much larger role in addressing the inevitable economic slowdown.
- The Federal Reserve rolled out several liquidity programs which were components of its Global Financial Crisis playbook and are aimed at ensuring the flow of credit to U.S. households and businesses, as well as financial market stability. The New York Fed began offering up to \$500B in overnight liquidity through repurchase agreements and has expanded dollar swap lines to alleviate any possible strains in global U.S. dollar funding markets.

Area	Short Term (3M)	10-Year
United States	0.09%	0.67%
Germany	(0.71%)	(0.47%)
France	(0.50%)	(0.02%)
Spain	(0.23%)	0.67%
Italy	(0.05%)	1.52%
Greece	0.16%	1.63%
U.K.	0.03%	0.36%
Japan	(0.30%)	0.01%
Australia	0.37%	0.76%
China	1.34%	2.58%
Brazil	3.37%	7.77%
Russia	5.47%	6.70%

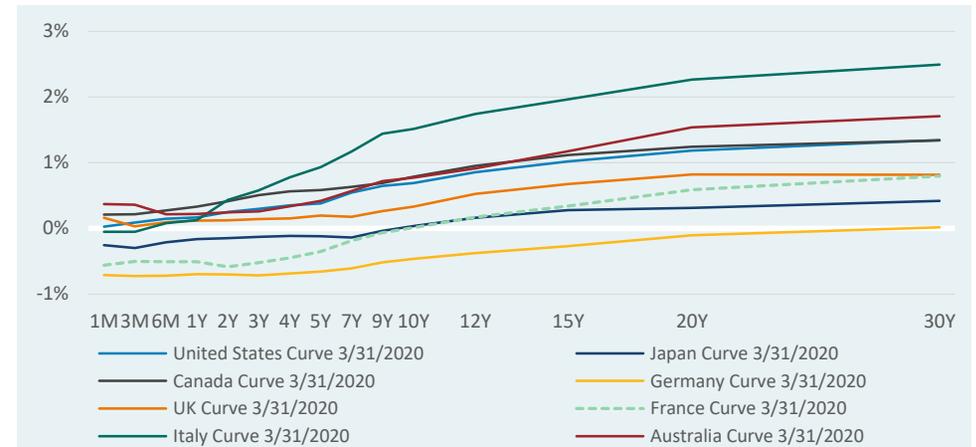
Source: Bloomberg, as of 3/31/20

Yield environment

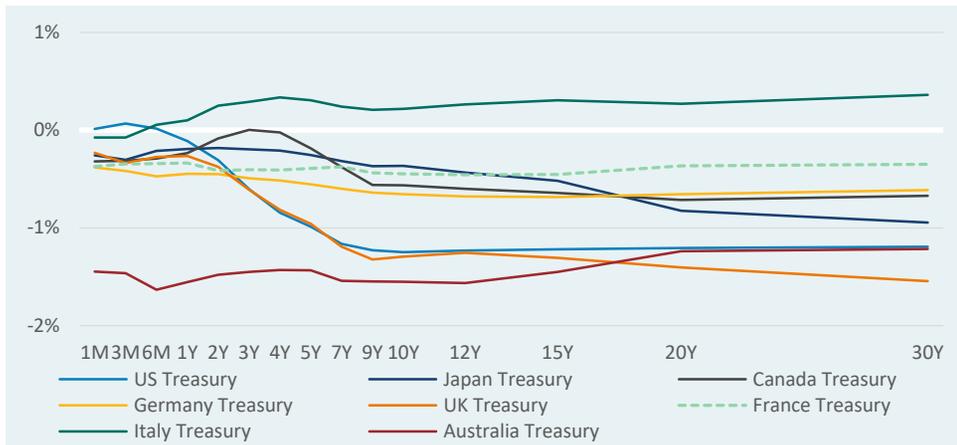
U.S. YIELD CURVE



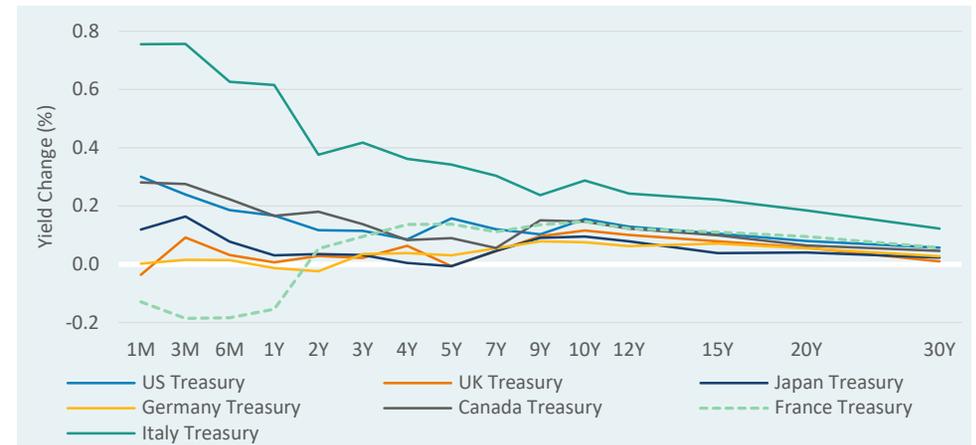
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/20

Credit environment

After a positive start to the year following the completion of phase one of the US-China trade deal, the impacts of the COVID-19 pandemic struck fear into credit markets, causing a broad-based sell-off and liquidity crisis in early March. This volatility prompted decisive Fed action, including but not limited to announcing unlimited QE and the reopening of several financial crisis-era liquidity facilities, which collectively incited a partial recovery in the last week of the quarter and restored a reasonable level of liquidity to credit markets.

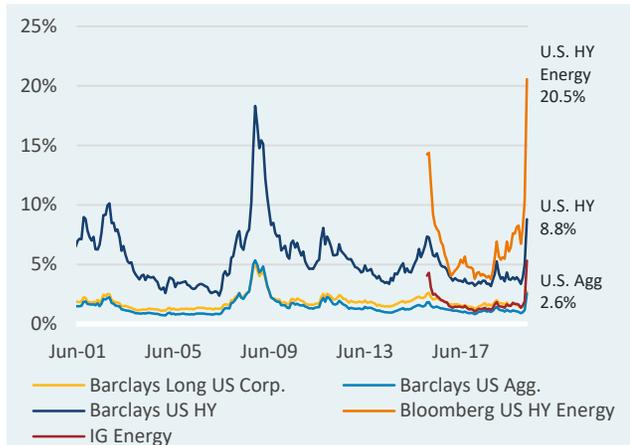
U.S. investment grade credit spreads widened from 93 bps at the end of 2019 to 272 bps at the end of the quarter after reaching highs of 373 bps in March. Similarly, high yield credit spreads spiked from 336 bps to 880 bps over the quarter, after March highs of 1100 bps. High yield ex-

Energy spreads increased from 295 bps to 749 bps over the same period.

The US Aggregate finished the quarter up 3.15%, while investment grade credit fell -3.63% followed by high yield -12.68% and leveraged loans -13.05%. In general, higher quality bonds meaningfully outperformed lower quality.

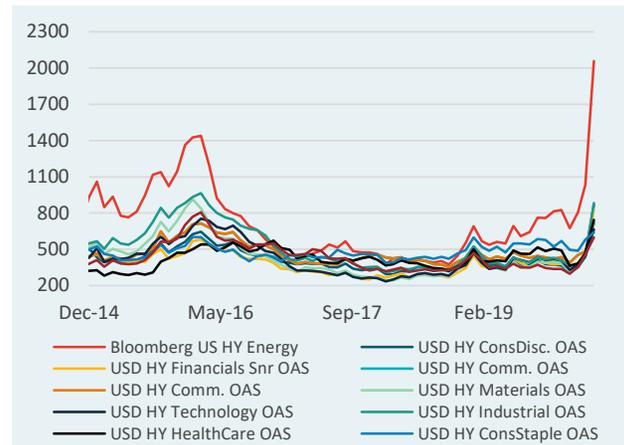
While the energy sector within high yield was the top performer in Q4 2019, the sector was faced with both a supply and demand shock with the Saudi Arabia-Russia production conflict and COVID-19 outbreak, causing it to decline by -38.94% in Q1 2020. The utility and technology sectors held up relatively well, declining -5.1% and -5.3%, respectively.

SPREADS



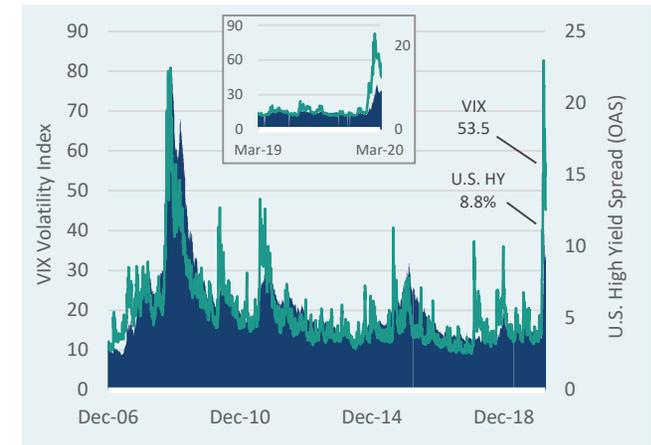
Source: Barclays, Bloomberg, as of 3/31/20

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 3/31/20

CREDIT SPREADS MOVING WITH VOLATILITY



Source: CBOE, BofA, as of 3/31/20

Default & issuance

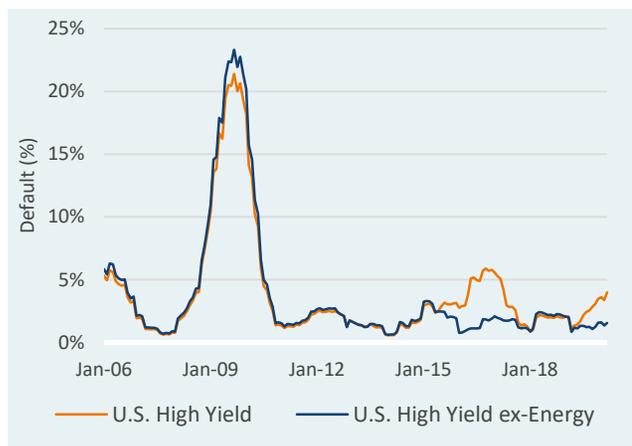
The first quarter saw 13 defaults affecting \$23.5 Billion in bonds and loans. However, one company, Frontier Communications, accounted for \$16.7 Billion of the total. For context, this quarterly amount compares with 43 defaults affecting \$51.5 Billion in bonds and loans for the full year of 2019. While this quarter ranks as the seventh highest in default volume on record, fixed income investors are expecting the worst is yet to come as companies grapple with the COVID-19-induced economic shutdown.

In March, the par-weighted U.S. high-yield default rate rose to a three-year high of 3.4%, up from 2.6% at the end of last year. Loan default rates rose less dramatically, to 1.9% over the trailing 12 months, up from 1.6% at year end.

Energy has driven around 45% of total defaults over the last 12 months, and in Q1 the full year 2020 outlook for the sector worsened dramatically. The trailing 12-month energy default rate in high yield ended the quarter at 9.8% (high yield ex-energy was 2.2%) while the trailing 12-month energy default rate in loans ended at 13.0% (loan ex-energy was 1.8%). In addition to energy, travel and tourism, gaming, leisure, retail, and restaurants appear particularly vulnerable in the current economic environment.

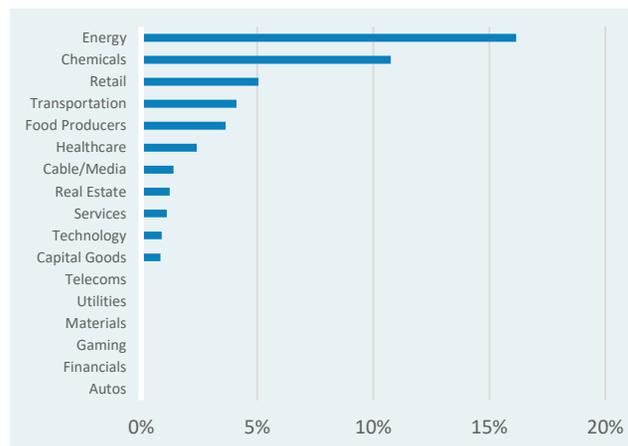
Investment grade bond issuance boomed in Q1 as companies tried to shore up liquidity for the coming recession. This was particularly pronounced in March, which saw a record \$262 Billion in investment grade issuance. Q1 also saw \$73 Billion in high yield volume and loan issuance spike to \$199 Billion.

HY DEFAULT RATE (ROLLING 1-YEAR)



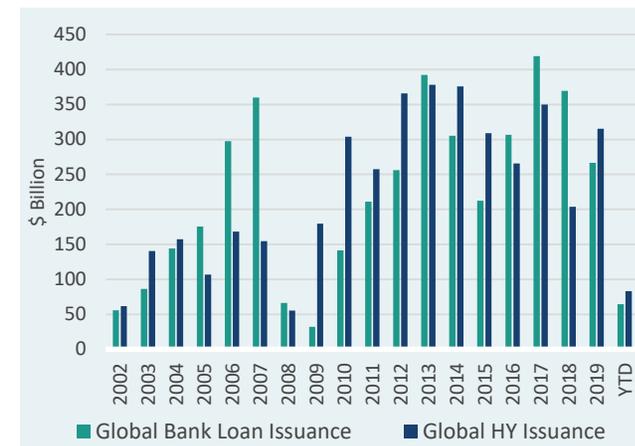
Source: BofA Merrill Lynch, as of 3/31/20

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 3/31/20 – par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 3/31/20

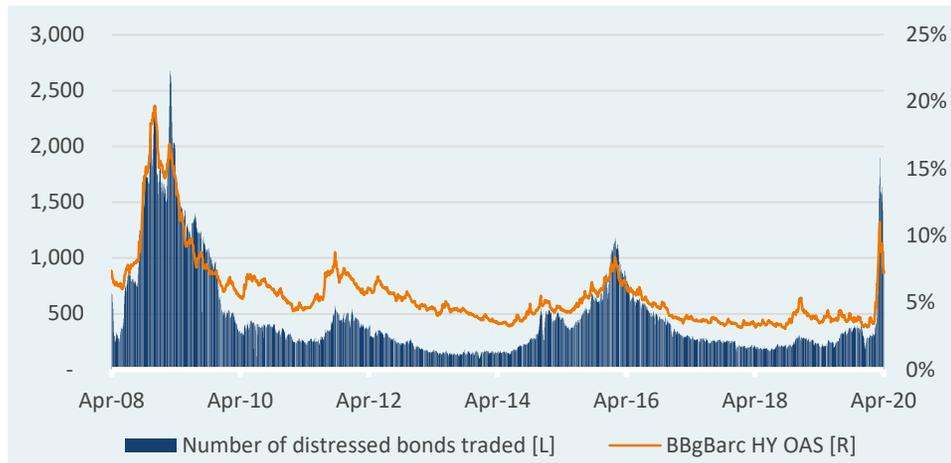
High yield – what happened?

The considerable economic fallout from the COVID-19 pandemic and collapsing oil prices broadly impacted credit markets. Credit spreads topped 1,000 basis points for the first time since the global financial crisis and the number of distressed bonds soared from 218 at the beginning of the year to a peak of 1,896. Higher defaults typically follow slowing growth and credit spread widening. J.P. Morgan’s estimates of credit defaults increased from a 3% rate to an 8% rate for the near-term.

Approximately half of the investment grade bond market now sits within the BBB rated segment, which is the lowest

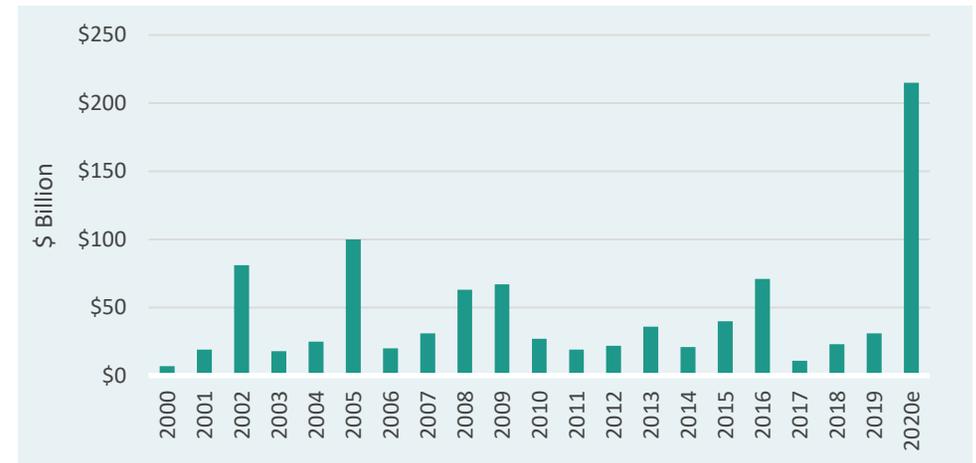
rung on the investment grade scale. Some market participants now expect more than \$200 Billion to fall from the investment grade to the high yield space. Because the BBB sector alone totals more the twice the size of the entire high yield market, downgrades and subsequent forced selling are likely to add pressure to that already stressed market segment throughout the rest of the year. These dislocations have already impacted strategies across the space as investors redeem capital, resulting in suspensions and even closures.

VOLUME AND SPREADS



Source: J.P. Morgan, Bloomberg, as of 4/16/20

FALLEN ANGELS



Equity

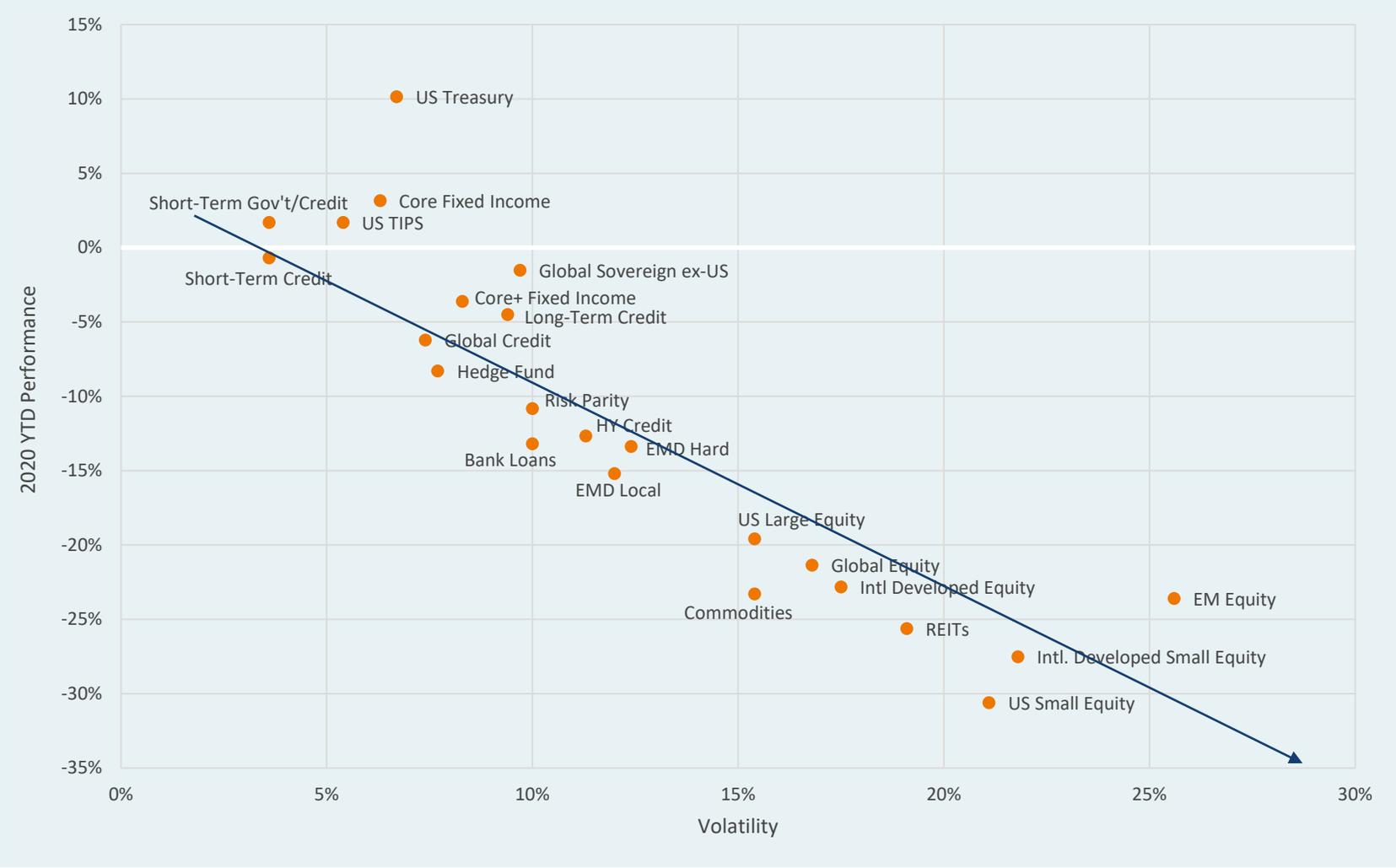
Equity environment

- U.S. equities experienced an unusually sudden and significant sell-off in March as investors grew fearful of the health and economic impacts of COVID-19 spread. During Q1 the S&P 500 fell -19.6%, international developed equities (MSCI EAFE) fell -22.8% and emerging markets (MSCI EM) fell -23.6%.
- The greatest influence on equity performance in 2020 will perhaps be the path of corporate earnings. The degree to which corporate earnings will fall is largely unknown with few reliable estimates.
- Implied volatility spiked in March to a record daily close of 82.7%, surpassing the high of 80.9% in November 2008 during the depths of the global financial crisis.
- In March, a squabble between OPEC+ members led to a historic drop in energy prices. The energy sector faces sharply falling demand and potentially significant oversupply due to oil producers' decision to ramp up production in an oil war. The energy sector experienced a loss of -50.5% in Q1.
- The U.S. dollar appreciated significantly in the first quarter, rising 7.1% on a trade-weighted basis, resulting in large losses for investors with unhedged currency exposure. As is often the case during higher risk market environments, demand for safe-haven currencies positively impacted the dollar.
- Value stocks severely underperformed growth stocks during the first quarter (Russell 1000 Value -26.7%, Russell 1000 Growth -14.1%). Small cap stocks underperformed large cap stocks by a similar magnitude (Russell 2000 -30.6%, Russell 1000 -20.2%). Value and size factors continue to experience an extended period of relative underperformance.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	(19.6%)		(7.0%)	
US Small Cap (Russell 2000)	(30.6%)		(24.0%)	
US Large Value (Russell 1000 Value)	(26.7%)		(17.2%)	
US Large Growth (Russell 1000 Growth)	(14.1%)		(0.9%)	
International Large (MSCI EAFE)	(22.8%)	(19.9%)	(14.4%)	(10.3%)
Eurozone (Euro Stoxx 50)	(27.0%)	(24.8%)	(16.6%)	(12.0%)
U.K. (FTSE 100)	(28.8%)	(23.0%)	(22.0%)	(16.4%)
Japan (NIKKEI 225)	(18.6%)	(18.8%)	(6.7%)	(6.8%)
Emerging Markets (MSCI Emerging Markets)	(23.6%)	(18.5%)	(17.7%)	(12.7%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/20

Q1 performance



Riskier assets performed the worst in Q1...

...and this relationship was fairly consistent across most asset classes

Source: Verus, as of 3/31/20 – Volatility is based on our forward looking 10-year Capital Market Assumptions

Domestic equity

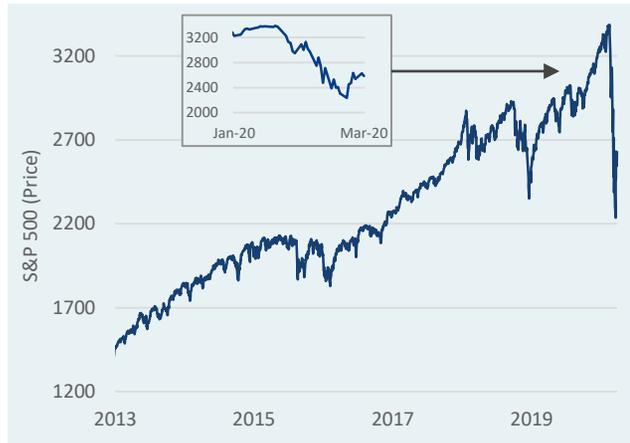
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At the same time that COVID-19 was spreading throughout the U.S., a squabble between OPEC+ members led to a historic drop in energy prices. The energy sector faces a perfect storm – sharply falling demand due to a global economic slowdown, and potentially significant oversupply due to oil producers’ decision to ramp up production in an oil war. The energy sector experienced a loss of -50.5% in Q1.

The greatest influence on equity performance in 2020 will perhaps be the path of corporate earnings. The degree to which corporate earnings will fall throughout the year is largely unknown with few reliable estimates.

We continue to believe an underweight to international developed equities is appropriate. The economic pain that European Union member countries face may be significant, and membership to the EU inherently limits the ability of these countries to enact certain changes to address weakening economies. The U.S. market may continue to perform relatively well throughout the economic recovery.

S&P 500



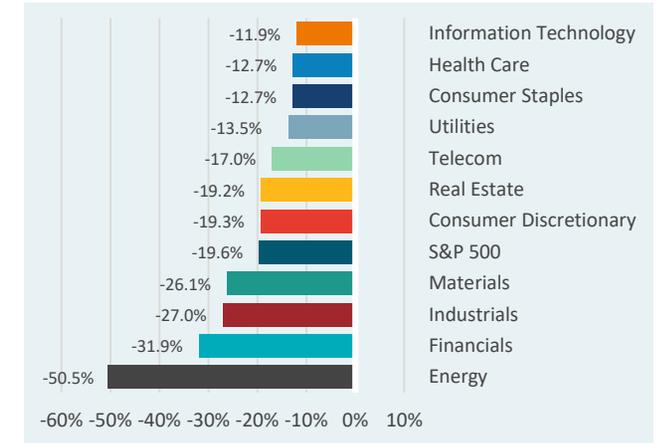
Source: Standard & Poor's, as of 3/31/20

WORST S&P 500 MAX MONTHLY DRAWDOWNS



Source: Standard & Poor's, as of 3/31/20

Q1 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 3/31/20

Domestic equity size & style

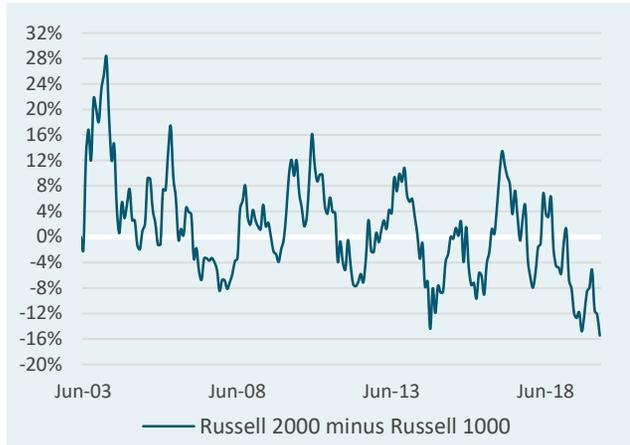
Value stocks severely underperformed growth stocks during the first quarter (Russell 1000 Value -26.7%, Russell 1000 Growth -14.1%). Small cap stocks underperformed large cap stocks by a similar magnitude (Russell 2000 -30.6%, Russell 1000 -20.2%). Value and size factors continue to experience a surprisingly long period of relative underperformance.

Once again, the impact of sector performance on the value premium in Q1 was notable – specifically energy and financial sectors (-50.5% and -31.9%, respectively) which tend to be value-tilted. Energy prices saw a historic drop fueled by OPEC+ infighting and likely the intent of the cartel to push out U.S. energy producers. Financial stocks delivered losses as

falling interest rates hurt profitability. Information Technology (-11.9%), a sector that tends to contain more growth stocks, was the best performer.

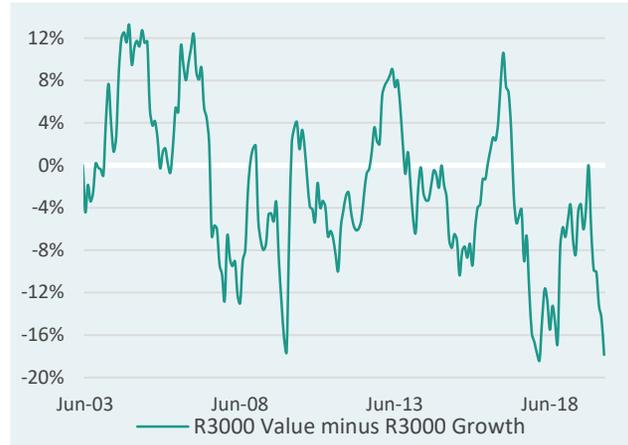
We believe that it is extremely difficult to successfully make short-term bets on style factors. Factor performance can be incredibly noisy and vulnerable to sector randomness. Market events of the past month seem to support this belief. While value in particular continues to be historically cheap, price itself does not translate to short-term outperformance – a catalyst for a turnaround should also be clearly identified and understood. We remain watchful and believe that consistent long-term exposure to these style factors is an ideal implementation approach for most investors, most of the time.

SMALL CAP VS LARGE CAP (YOY)



Source: FTSE, as of 3/31/20

VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/20

VALUE HISTORICALLY CHEAP



Source: Russell, Bloomberg, as of 3/31/20

International developed equity

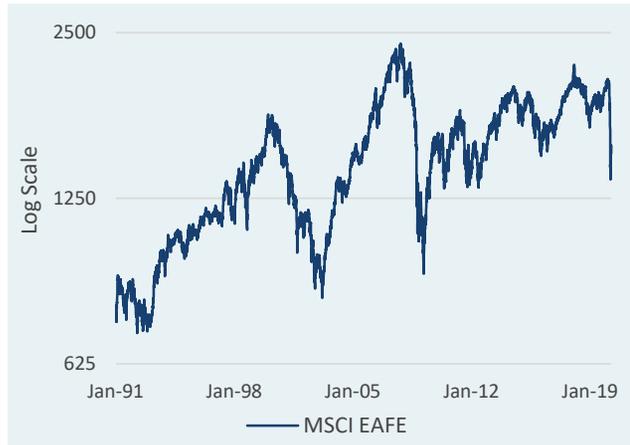
Equity markets around the world sold off broadly in the first quarter, down between -16% to -29%. Japanese equities were among the best performing (MSCI Japan -17%) while the U.K. was one of the worst performing (MSCI U.K. -29%).

As the global transactional currency, demand for U.S. dollars tends to ramp up when markets become stressed and companies abroad require dollars to pay down dollar-denominated liabilities. In the first quarter, the U.S. dollar gained +2.3% against the Euro and +6.4% against the British pound, resulting in losses for U.S. investors in European

equities with unhedged currency exposure. In mid-March, the Federal Reserve expanded its dollar swap liquidity lines and opened a FIMA repo facility which will allow foreign monetary authorities to enter repurchase agreements with the Fed. Both measures worked to help improve U.S. dollar liquidity abroad, and as a result, slow the pace of appreciation of the U.S. dollar relative to international pairs.

Cross-currency basis, which measure the additional premia investors must pay to swap one currency for another over a term, narrowed in March, signaling that the Fed's efforts to ease dollar funding strains have proved effective thus far.

INTERNATIONAL DEVELOPED EQUITIES



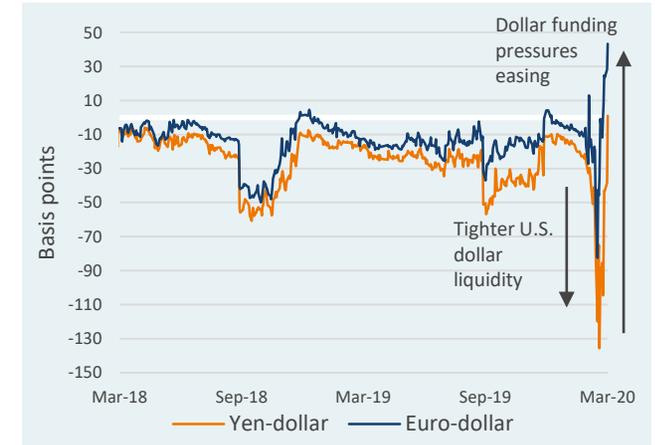
Source: MSCI, as of 3/31/20

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/20

3M/3M CROSS CURRENCY BASIS SWAPS



Source: Bloomberg, as of 3/31/20

Emerging market equity

Emerging market equities (MSCI EM -23.6%) underperformed both U.S. (S&P 500 -19.6%) and international developed equities (MSCI EAFE -22.8%) over the quarter. Within the complex, Latin American equities (MSCI EM Latin American -45.6%) dramatically underperformed Asian equities (MSCI EM Asia -18.1%), which were propped up by remarkably resilient Chinese equity markets. Currency exposure also played a big role in the outperformance of EM Latin America over EM Asia, as the U.S. dollar strengthened significantly against the Brazilian real, and the Mexican peso, and was little changed against the Chinese renminbi.

Inflation remains low in emerging economies and may face downward pressure in the coming months as energy prices have fallen. Central banks may have more room to maneuver relative to developed economies with regard to monetary policy, as interest rates are closer to average levels.

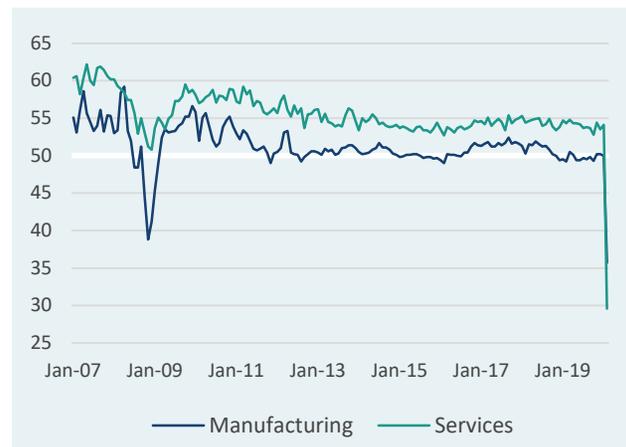
Countries viewed as having poor health infrastructure as well as economic dependence on oil prices fared the worst. Mexico's sovereign debt rating was downgraded by several rating agencies, and Moody's downgraded South Africa's sovereign debt rating below investment-grade.

EMERGING MARKET EQUITY



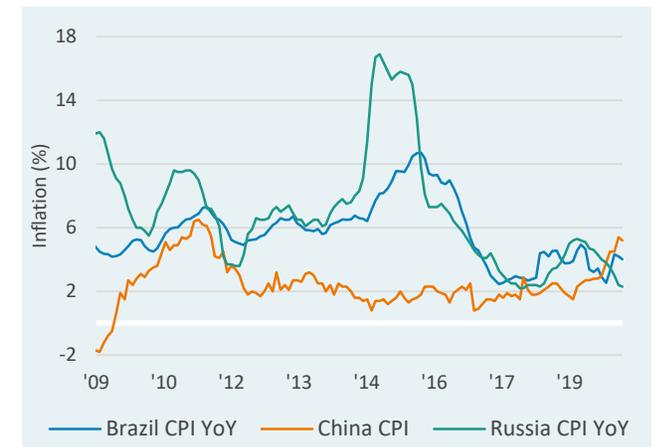
Source: MSCI, as of 3/31/20

CHINA PURCHASING MANAGERS' INDICES



Source: China Federation of Logistics and Purchasing, as of 2/29/20

INFLATION (CPI YOY)



Source: Bloomberg, as of 2/29/20

Equity valuations

Throughout the significant Q1 market sell-off, losses across global markets have been fairly similar. This has resulted in U.S. equities retaining their status as the most expensive market, though we believe this may be justified as governments with limited ability to implement stimulus policies could face tougher economic fallout. Specifically, European Union member nations that cannot exercise independent actions may see greater difficulties ahead as income gaps cannot be supplemented with government spending.

In 2005, Thomas Friedman put forth the notion that “The World is Flat”, and that the 21st century will be characterized by globalization, with historical and geographical divisions becoming less relevant. In Friedman’s world, companies produce their goods where it is cheapest to do so, often in emerging and developing economies with fewer labor protections. Supply chains are built within profit maximization frameworks often with little regard for the risks associated with having a supply chain concentrated in one or a few countries. Looking ahead, it will be interesting to follow whether Friedman’s world becomes slightly bumpier.

FORWARD P/E RATIOS



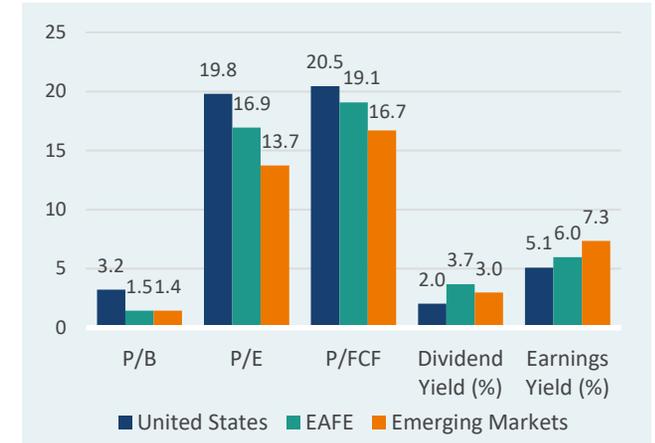
Source: MSCI, 12m forward P/E, as of 3/31/20

FORWARD P/E RATIOS (RELATIVE TO THE U.S.)



Source: MSCI, 12m forward P/E, as of 3/31/20

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 3/31/20 - trailing P/E

Equity volatility

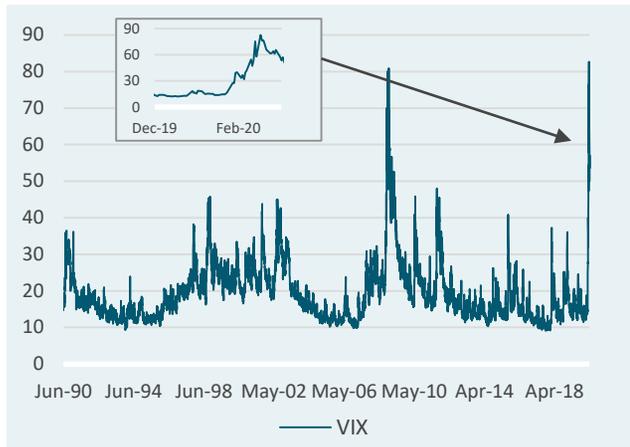
Risk markets experienced one of the most sudden corrections on record, amidst extreme volatility. The S&P 500 showed its largest one-day drop since 1987 (March 16 -11.9%) and its largest one-day gain since 2008 (March 24 +9.4%). The transition from a very low- to a very high-volatility environment likely caught many investors off guard.

Implied volatility (CBOE VIX Index) spiked in March to a record daily close of 82.7, surpassing the high of 80.9 on November 20th, 2008 during the depths of the global financial crisis. Such extreme levels of market volatility can

create difficulties for investors in managing portfolios. Processes such as portfolio rebalancing that are often systematic can become complex and subjective when equities are exhibiting nearly double-digit daily moves.

The S&P 500 Price Index closed at 2237 on March 23rd, -33.9% below February 19th peaks. Since then, U.S. equities have staged a remarkable rebound in the foreground of a historically bleak economic background. Debate over whether the rebound is justified has continued as economic uncertainty remains at unprecedented levels.

U.S. IMPLIED VOLATILITY (VIX)



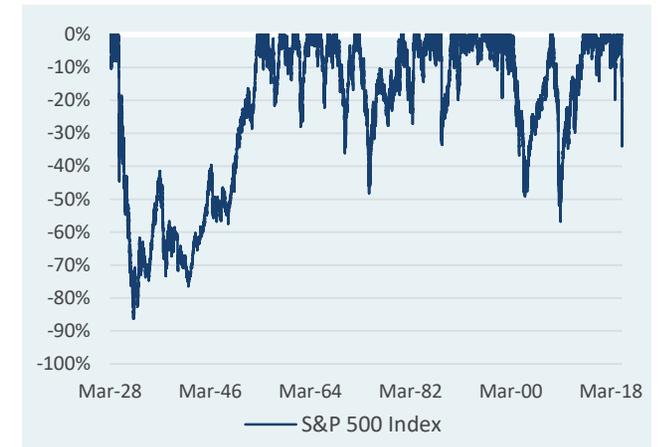
Source: CBOE, as of 3/31/20

ROLLING 1-YEAR REALIZED VOLATILITY



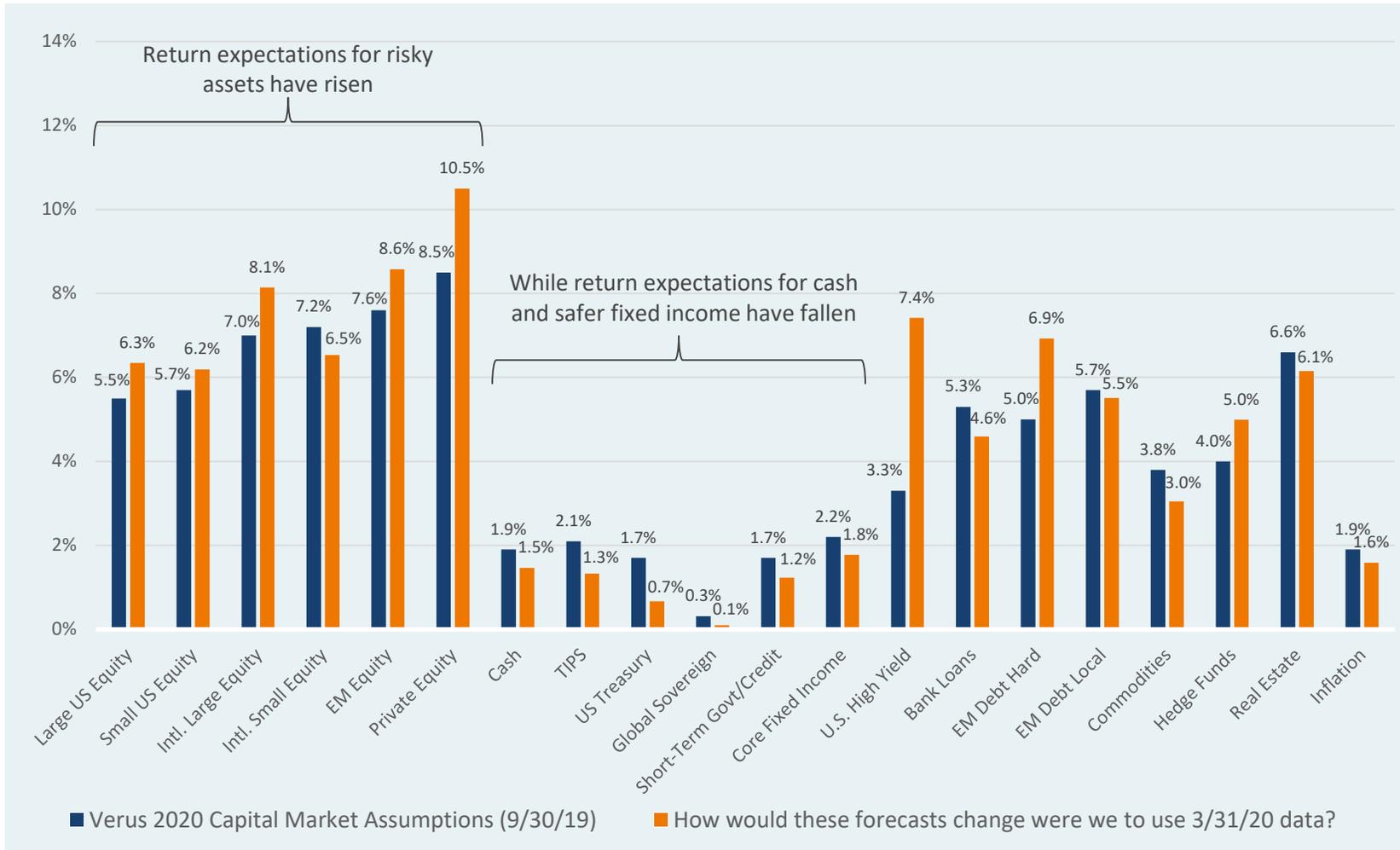
Source: Standard & Poor's, MSCI, Bloomberg, as of 3/31/20

MAX DRAWDOWN FROM PRIOR PEAKS



Source: Standard & Poor's, Bloomberg, as of 3/31/20

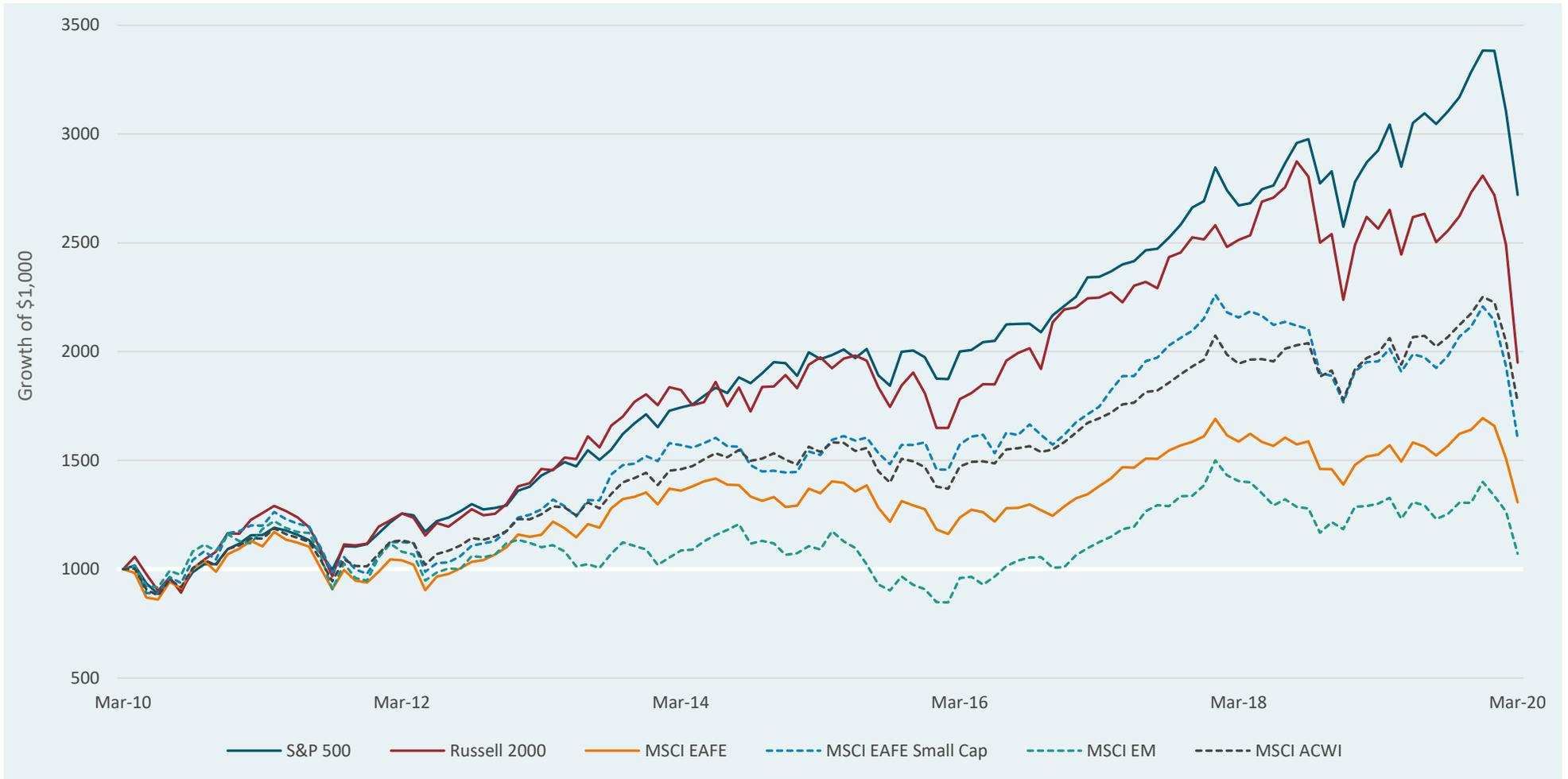
How have return expectations changed?



The overall portfolio's expected return may have risen or fallen during Q1, depending on the asset allocation & risk level

Source: Verus

Long-term equity performance



Source: Morningstar, as of 3/31/20

Other assets

Currency

The U.S. dollar appreciated significantly in the first quarter, rising 7.1% on a trade-weighted basis, resulting in losses for investors with unhedged currency exposure. As is often the case during higher risk market environments, demand for safe-haven currencies contributed to the rising dollar.

Historically speaking, environments where the U.S. dollar was much more expensive than average tended to be followed by an eventual mean-reversion. However, this mean-reversion effect is not a sure bet, and it can take years (or perhaps decades) to occur. As recent years have shown,

leaving currency exposure unhedged tends to result in uncompensated volatility, and occasional (or frequent) large and sharp losses or gains.

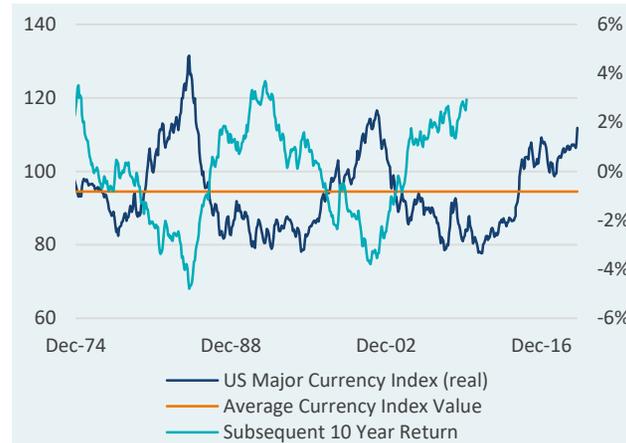
The MSCI Currency Factor Mix Index, constructed as a combination of individual Currency Factor indices (carry, value, momentum) advanced 1.2% in Q1. The momentum factor (+8.7%) posted strong gains as appreciating currencies continued to strengthen while the carry factor (-7.2%) lagged as the exchange rate adjustments implied by local interest rate differentials occurred faster than expected.

BLOOMBERG DOLLAR SPOT INDEX



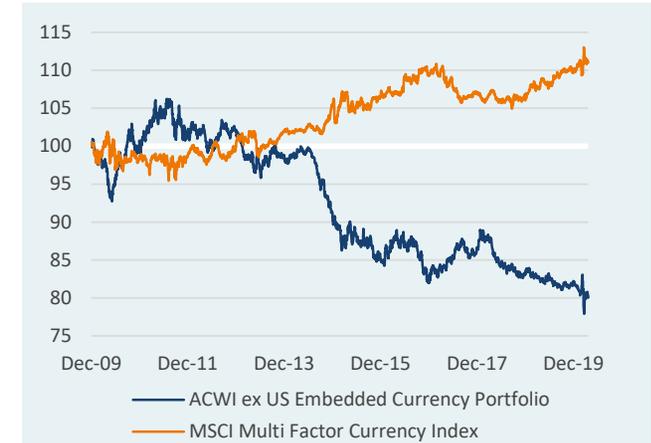
Source: Bloomberg, as of 3/31/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



Source: Federal Reserve, Verus, as of 3/31/20

EMBEDDED CURRENCY VS CURRENCY BETA



Source: MSCI, Bloomberg, as of 3/31/20

Oil crisis

In mid-March, the price of oil experienced a sudden drop as Russia refused to join the OPEC recommended production cuts. In retribution, Saudi Arabia signaled that they would increase production drastically in April upon expiration of the OPEC pact. These events led to a 30% one-day drop in price, and historically volatile trading.

Russia's actions are likely linked to increased U.S. sanctions on its energy producers, which have negatively impacted the economy. Sanctions have prevented Russia from completing the Nord Stream 2 gas pipeline in the Baltic Sea, a project that \$11 Billion had previously been invested in, which would

carry Russian Gas directly to Germany and would circumvent the Ukraine. Sanctions were also levied against Russia's Rosneft for allegedly supporting the Nicolas Maduro regime in Venezuela. It is estimated that 70% of oil production in Venezuela was going through Rosneft.

A similar dynamic occurred during the oil crash of 2014 as OPEC let oil plummet, arguably with the intent to put U.S. oil producers out of business. American oil production has been ramped up drastically over the last decade, at a time when OPEC producers were working to minimize their own production in order to balance global supply.

WTI OIL PRICE



Source: FRED, as of 3/31/20

GLOBAL OIL PRODUCER CONFLICT



Source: Bloomberg, U.S. Energy Information Administration, as of 3/31/20

Private markets

Deals plateaued in buyouts and venture; multiples are steady; buyout fundraising has slowed

- Before the impending market dislocation, venture capital fundraising was on pace to eclipse 2019, while total deal volume and number of deals had plateaued. \$21 Billion of venture capital was raised in the U.S. in Q1 2020, constituting 40% of capital raised in 2019. Deal value and number of deals in the quarter represented 25% and 19% of 2019's totals, respectively.
- Buyout activity continued to decrease in Q1 2020 from 2019. Through the first quarter, buyouts dollar value and number of transactions amounted to 18% and 19% of 2019 levels, respectively. The size of the average buyout, \$135.6M, has decreased from 2019, \$145.2M. Similarly, fundraising has also slowed. Only 46 buyout funds representing \$45 Billion closed in Q1 2020, down from 249 funds representing \$315 Billion in 2019.
- Pricing multiples on completed buyout deals remained in line with 2019's. Median EV/EBITDA is 12.9x (up slightly from 12.7x in 2019) with debt multiples unchanged at 5.9x. Debt as a percentage of transaction value hovers around 45%.

VENTURE DEAL VOLUME & FUNDRAISING



*2020 figures through 3/31/20

Source: PitchBook

TRANSACTION MULTIPLES



*2020 figures through 3/31/20

Source: PitchBook

BUYOUTS DEAL VOLUME & CAPITAL RAISED



*2020 figures through 3/31/20

Source: PitchBook

Appendix

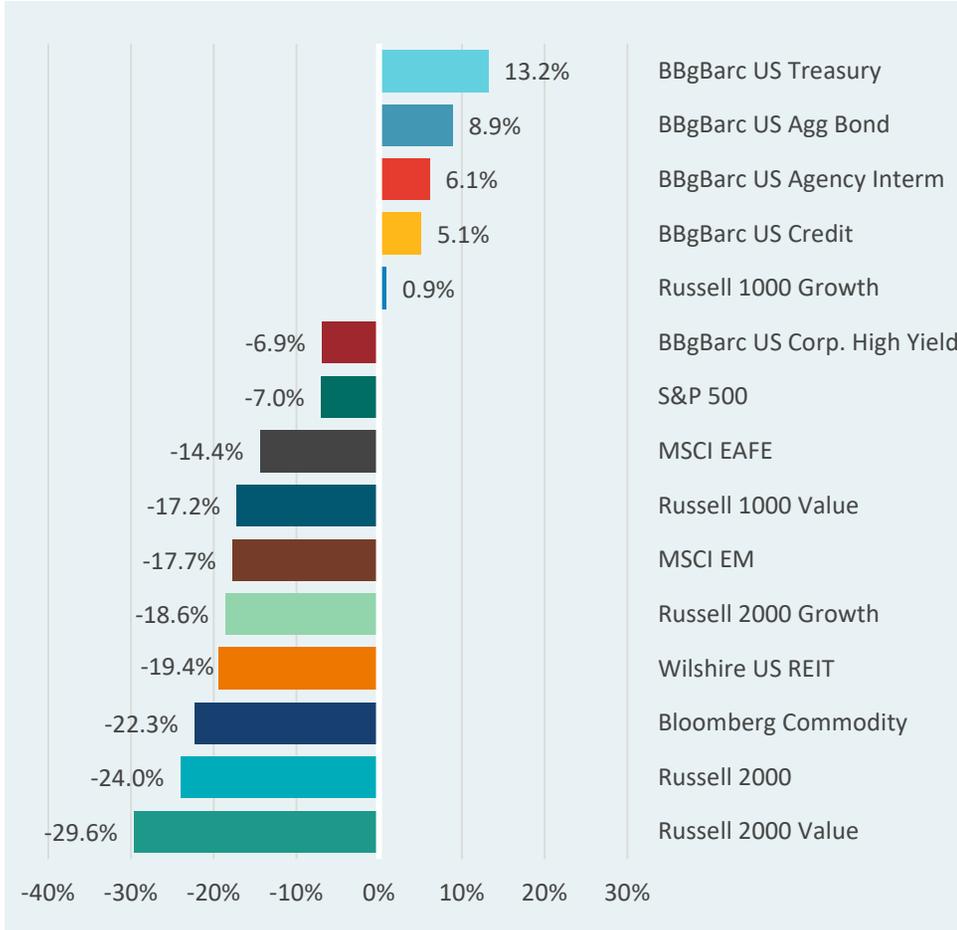
Periodic table of returns



Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 12/31/19.

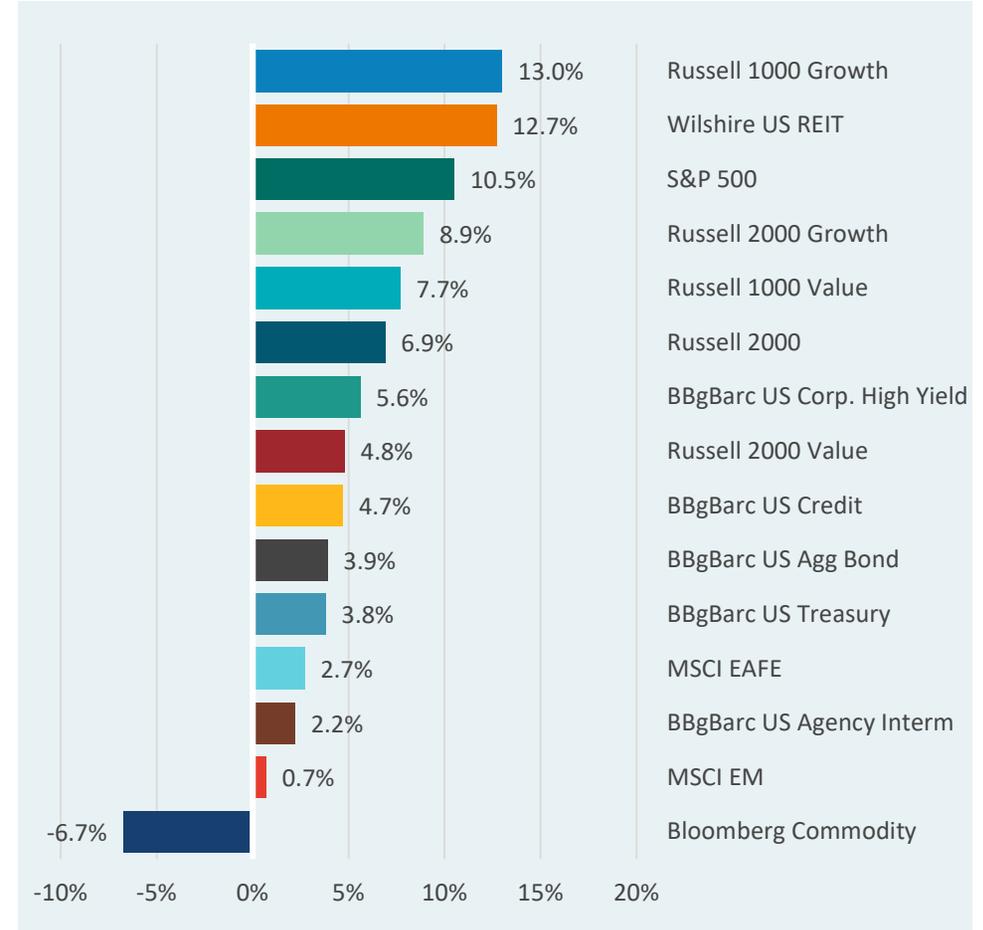
Major asset class returns

ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/20

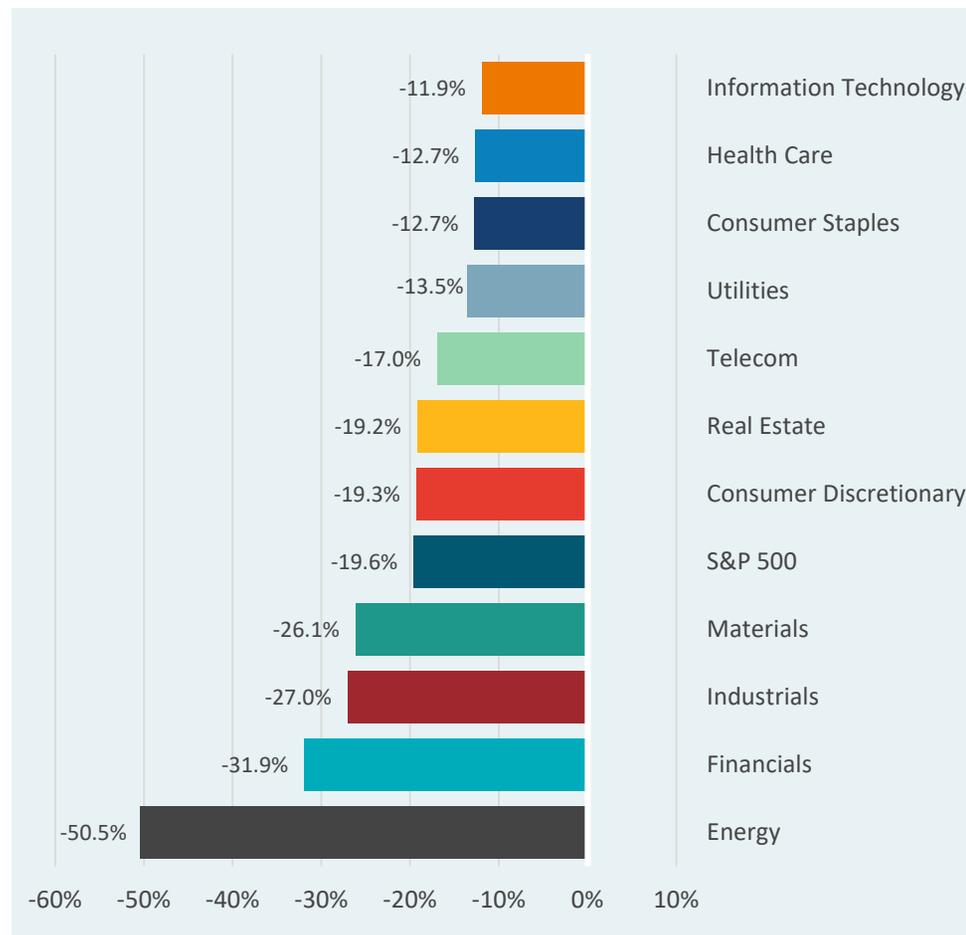
TEN YEARS ENDING MARCH



Source: Morningstar, as of 3/31/20

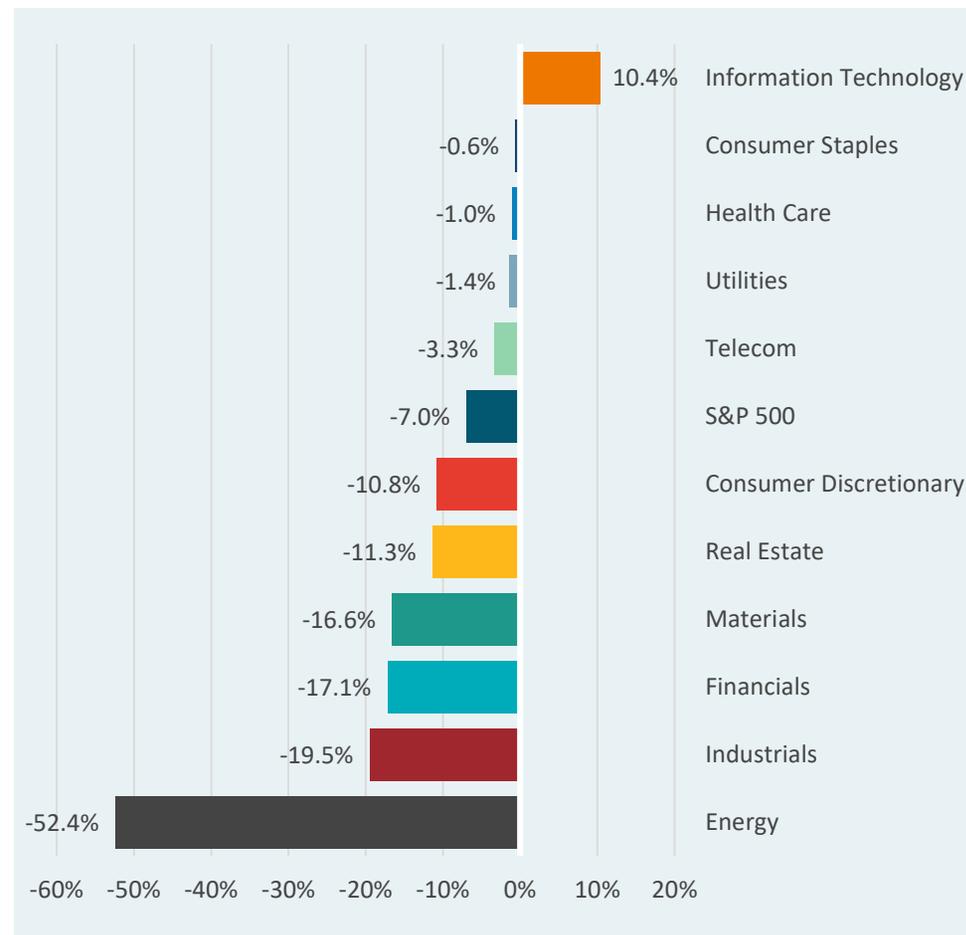
S&P 500 sector returns

Q1 2020



Source: Morningstar, as of 3/31/20

ONE YEAR ENDING MARCH

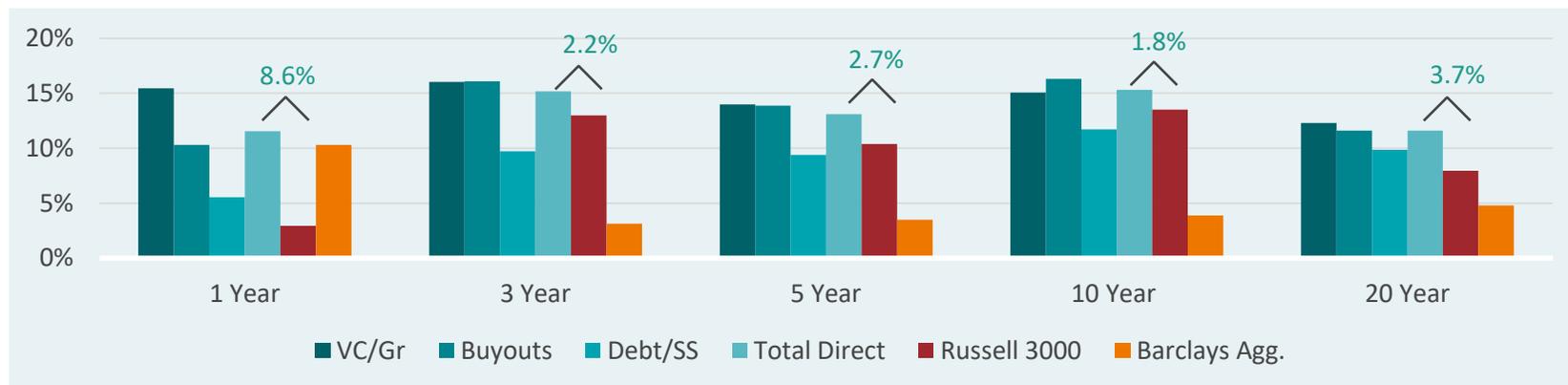


Source: Morningstar, as of 3/31/20

Private equity vs. public performance

As of 9/30/2019

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods

"PASSIVE" STRATEGIES



"Passive" strategies outperformed comparable public equities on a 1-, 5-, and 20-year basis, and underperformed on a 3- and 10-year basis

Sources: Thomson Reuters Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of September 30, 2019. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

Private equity vs. liquid real assets performance

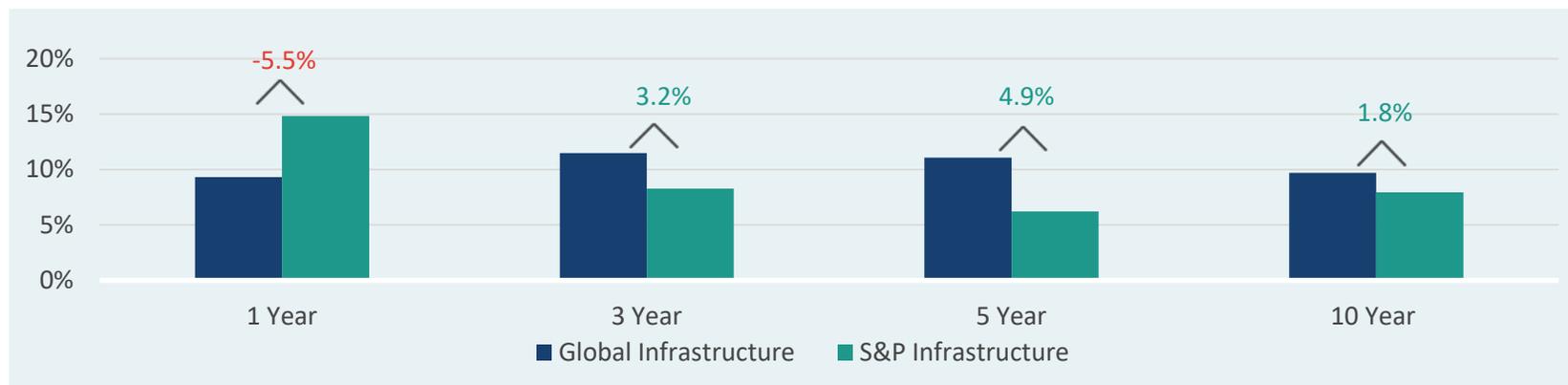
As of 9/30/2019

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds outperformed the MSCI World Natural Resources benchmark across all time periods

GLOBAL INFRASTRUCTURE FUNDS



Infra. funds outperformed the S&P Infra. across all periods, except on a 1-year basis

Sources: Thomson Reuters C|A PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of September 30, 2019. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

Private vs. liquid & core real estate performance

As of 9/30/2019

U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index on a 1-, 10-, and 20-year basis, but not over 3- and 5-years

U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. Funds outperformed the NCREIF Property Index over all time periods

Sources: Thomson Reuters CJA PME: Global and U.S. Real Estate universes as of September 30, 2019. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(12.4)	(19.6)	(19.6)	(7.0)	5.1	6.7	10.5
S&P 500 Equal Weighted	(18.0)	(26.7)	(26.7)	(17.6)	(0.4)	2.8	9.2
DJ Industrial Average	(13.6)	(22.7)	(22.7)	(13.4)	4.4	6.9	10.0
Russell Top 200	(11.0)	(17.7)	(17.7)	(4.1)	6.7	7.9	11.0
Russell 1000	(13.2)	(20.2)	(20.2)	(8.0)	4.6	6.2	10.4
Russell 2000	(21.7)	(30.6)	(30.6)	(24.0)	(4.6)	(0.2)	6.9
Russell 3000	(13.8)	(20.9)	(20.9)	(9.1)	4.0	5.8	10.1
Russell Mid Cap	(19.5)	(27.1)	(27.1)	(18.3)	(0.8)	1.8	8.8
Style Index							
Russell 1000 Growth	(9.8)	(14.1)	(14.1)	0.9	11.3	10.4	13.0
Russell 1000 Value	(17.1)	(26.7)	(26.7)	(17.2)	(2.2)	1.9	7.7
Russell 2000 Growth	(19.1)	(25.8)	(25.8)	(18.6)	0.1	1.7	8.9
Russell 2000 Value	(24.7)	(35.7)	(35.7)	(29.6)	(9.5)	(2.4)	4.8

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	(13.5)	(21.4)	(21.4)	(11.3)	1.5	2.8	5.9
MSCI ACWI ex US	(14.5)	(23.4)	(23.4)	(15.6)	(2.0)	(0.6)	2.1
MSCI EAFE	(13.3)	(22.8)	(22.8)	(14.4)	(1.8)	(0.6)	2.7
MSCI EM	(15.4)	(23.6)	(23.6)	(17.7)	(1.6)	(0.4)	0.7
MSCI EAFE Small Cap	(17.2)	(27.5)	(27.5)	(18.1)	(2.9)	1.0	4.8
Style Index							
MSCI EAFE Growth	(9.2)	(17.5)	(17.5)	(5.8)	3.0	2.5	4.7
MSCI EAFE Value	(17.7)	(28.2)	(28.2)	(22.8)	(6.7)	(3.8)	0.6
Regional Index							
MSCI UK	(16.0)	(28.8)	(28.8)	(23.0)	(4.9)	(3.3)	1.6
MSCI Japan	(7.1)	(16.8)	(16.8)	(6.7)	1.0	1.8	3.8
MSCI Euro	(17.2)	(27.0)	(27.0)	(18.3)	(4.4)	(2.3)	1.1
MSCI EM Asia	(11.7)	(18.1)	(18.1)	(12.1)	1.3	1.4	3.5
MSCI EM Latin American	(34.5)	(45.6)	(45.6)	(40.8)	(13.0)	(5.9)	(6.7)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(1.8)	1.7	1.7	6.8	3.5	2.7	3.5
BBgBarc US Treasury Bills	0.3	0.6	0.6	2.4	1.8	1.2	0.7
BBgBarc US Agg Bond	(0.6)	3.1	3.1	8.9	4.8	3.4	3.9
Duration							
BBgBarc US Treasury 1-3 Yr	1.3	2.8	2.8	5.4	2.7	1.8	1.4
BBgBarc US Treasury Long	6.1	20.9	20.9	32.6	13.4	7.3	9.0
BBgBarc US Treasury	2.9	8.2	8.2	13.2	5.8	3.6	3.8
Issuer							
BBgBarc US MBS	1.1	2.8	2.8	7.0	4.0	2.9	3.3
BBgBarc US Corp. High Yield	(11.5)	(12.7)	(12.7)	(6.9)	0.8	2.8	5.6
BBgBarc US Agency Interm	0.9	2.9	2.9	6.1	3.2	2.3	2.2
BBgBarc US Credit	(6.6)	(3.1)	(3.1)	5.1	4.2	3.3	4.7

OTHER

Index							
Bloomberg Commodity	(12.8)	(23.3)	(23.3)	(22.3)	(8.6)	(7.8)	(6.7)
Wilshire US REIT	(20.0)	(25.6)	(25.6)	(19.4)	(2.5)	5.7	12.7
CS Leveraged Loans	(12.5)	(13.2)	(13.2)	(9.5)	(0.7)	4.6	5.0
Alerian MLP	(48.1)	(58.1)	(58.1)	(61.9)	(29.9)	(21.1)	(4.7)
Regional Index							
JPM EMBI Global Div	(13.8)	(13.4)	(13.4)	(6.8)	0.4	2.8	4.9
JPM GBI-EM Global Div	(11.1)	(15.2)	(15.2)	(6.5)	(0.8)	0.3	0.5
Hedge Funds							
HFRI Composite	(5.9)	(8.3)	(8.3)	(4.0)	0.7	1.3	2.9
HFRI FOF Composite	(4.9)	(6.0)	(6.0)	(2.6)	1.0	0.6	2.1
Currency (Spot)							
Euro	(0.1)	(2.3)	(2.3)	(2.3)	0.9	0.4	(2.1)
Pound	(2.9)	(6.4)	(6.4)	(4.8)	(0.3)	(3.5)	(2.0)
Yen	(0.1)	0.7	0.7	2.5	1.1	2.1	(1.4)

Source: Morningstar, HFR, as of 3/31/20

Definitions

Bloomberg US Weekly Consumer Comfort Index - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.lanqerresearch.com)

University of Michigan Consumer Sentiment Index - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)

NFIB Small Business Outlook - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

NAHB Housing Market Index - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula $(\text{Good-Poor} + 100)/2$ to the present and future sales series and $(\text{High/Very High-Low/Very Low} + 100)/2$ to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: March 31, 2020



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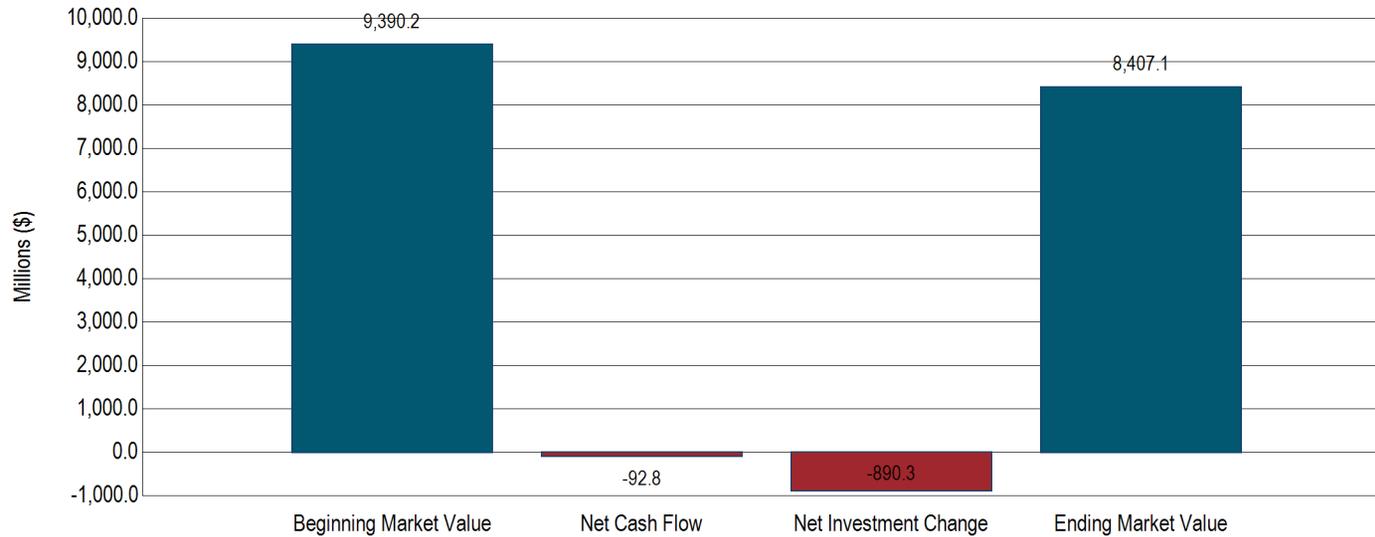
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

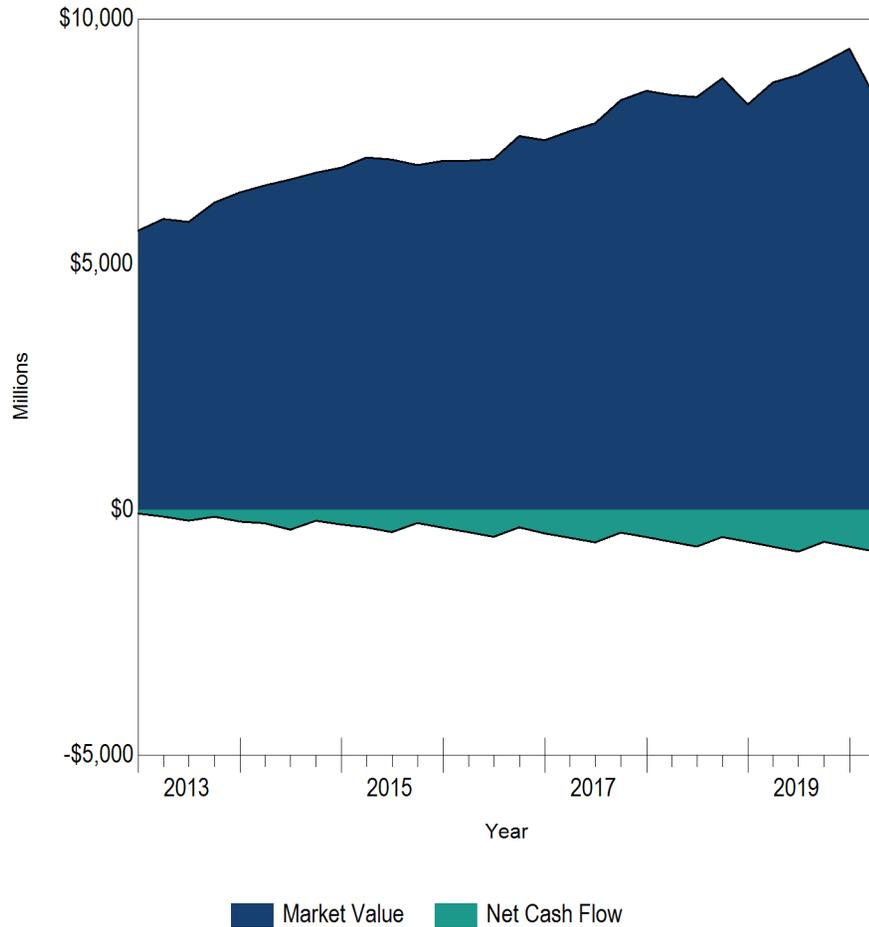
	Last Three Months	Year-To-Date
Beginning Market Value	\$9,390,188,036	\$9,390,188,036
Net Cash Flow	-\$92,776,261	-\$92,776,261
Net Investment Change	-\$890,299,340	-\$890,299,340
Ending Market Value	\$8,407,112,435	\$8,407,112,435

Change in Market Value
Last Three Months

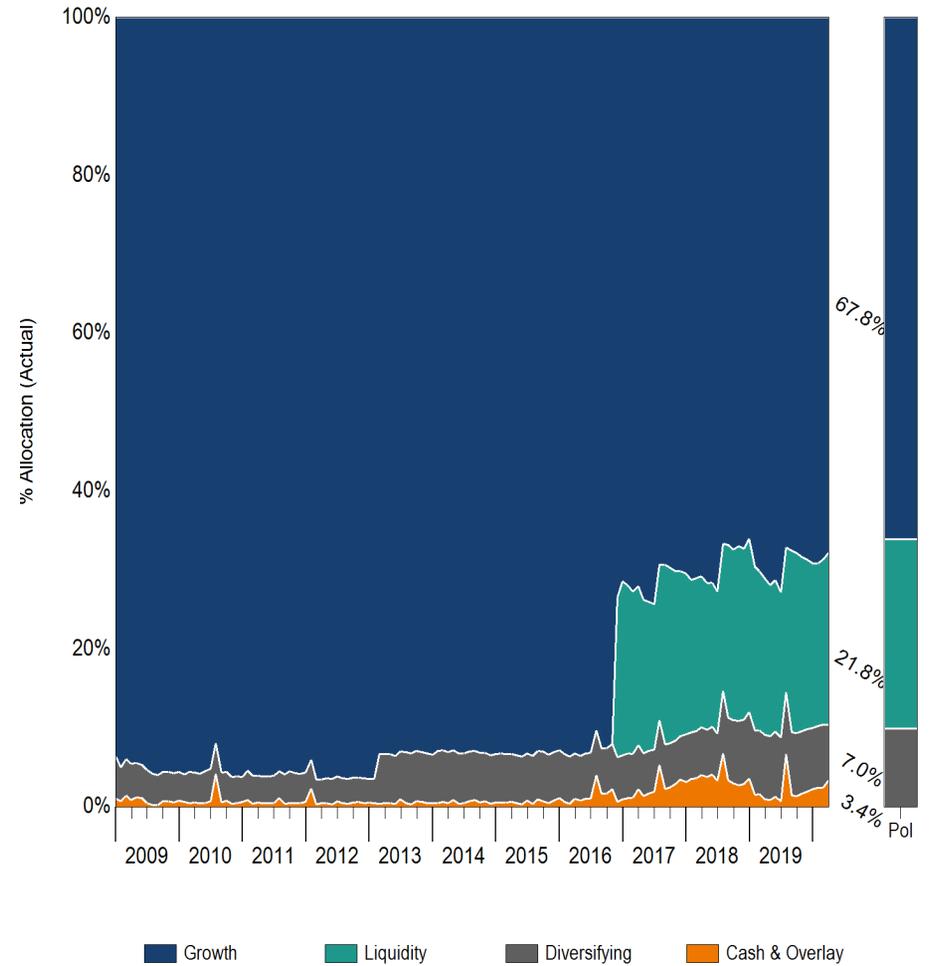


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows



Asset Allocation History

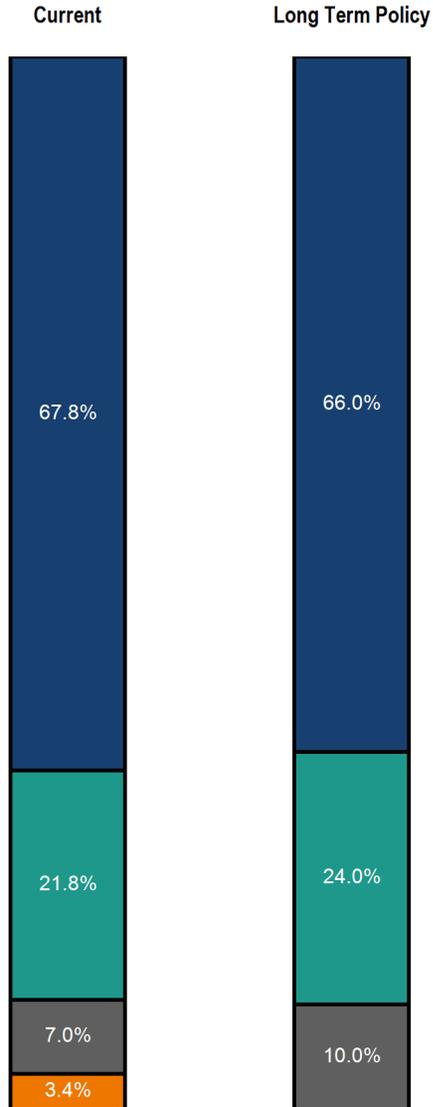


Policy reflects FFP 4-Yr allocations approved in June 2019.

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: March 31, 2020



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	\$5,698,643,487	67.8%	66.0%	\$149,949,280
Liquidity	\$1,832,145,450	21.8%	24.0%	-\$185,561,534
Diversifying	\$590,715,870	7.0%	10.0%	-\$249,995,373
Cash & Overlay	\$285,607,628	3.4%	--	\$285,607,628
Total	\$8,407,112,435	100.0%	100.0%	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	\$5,698,643,487	67.8%	68.0%	-\$18,192,969
Liquidity	\$1,832,145,450	21.8%	24.0%	-\$185,561,534
Diversifying	\$590,715,870	7.0%	8.0%	-\$81,853,125
Cash & Overlay	\$285,607,628	3.4%	--	\$285,607,628
Total	\$8,407,112,435	100.0%	100.0%	

Long Term Targets reflect FFP 4-Yr allocations approved in June 2019.
 Current Targets reflect targets approved in June 2019.

Total Fund

Executive Summary (Net of Fees)

Period Ending: March 31, 2020

	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Fund	100.0	-9.5	-2.6	3.5	3.9	7.1	14.6	-2.7	13.9	6.9	2.1
Policy Index		-8.6	0.0	4.3	4.7	7.7	14.6	-0.9	13.7	8.9	0.6
Growth	67.8	-12.6	-4.5	4.0	4.6	--	18.4	-3.9	18.7	7.6	2.3
Custom Growth Benchmark		-13.1	-2.4	4.8	5.5	--	19.3	-2.1	19.3	10.1	0.3
Diversifying	7.0	-5.1	-1.0	0.3	-0.5	1.6	6.8	-2.3	2.6	0.8	-1.8
Custom Diversifying Benchmark		0.7	4.5	3.8	3.6	4.0	6.1	1.4	4.7	4.1	2.5
Liquidity	21.8	0.1	3.1	2.5	--	--	4.8	1.7	1.4	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR		1.7	4.5	2.6	--	--	4.0	1.6	0.8	--	--

*Correlation between the Growth and Diversifying composites is .77, .59 and .50 over the previous 1, 3 and 5 year periods respectively.

Policy Index (7/1/2019-Present): 10% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 24% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 5% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.0% CPI +4%, 11% S&P 500 +4%(Lagged), 2.5% HFRI EH Equity Market Neutral. Policy Index (7/1/2018-6/30/2019): 11% Russell 3000, 19% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 23% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 4% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.8% NCREIF Property Index, 7.2% NCREIF ODCE Index, 2.0% CPI +4%, 10% S&P 500 +4%(Lagged), 2.5% HFRI EH Equity Market Neutral. Policy Index (10/1/2017-6/30/2018): 16.3% Russell 3000, 18.8% MSCI ACWI ex-US (Gross), 8.6% MSCI ACWI (Net), 25% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 1.9% ICE BofAML High Yield Master II +2%, 4.3% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.5% CPI +4%, 10.1% S&P 500 +4%(Lagged). Policy Index (1/1/2017-9/30/2017): 22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI +4%, 8.1% S&P 500 +4%(Lagged), 1.6% 90-day T-Bills. Policy Index (4/1/2012-12/31/16): 27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 5.4% Wilshire REIT, 6.75% NCREIF Property Index, 1.35% FTSE/EPRA NAREIT Developed exUS, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (4/1/2011-3/31/2012): 31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (4/1/2010-3/31/2011): 35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills. Policy Index (7/1/2009-3/31/2010): 40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% Wilshire REIT, 3.1% NCREIF Property Index, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.

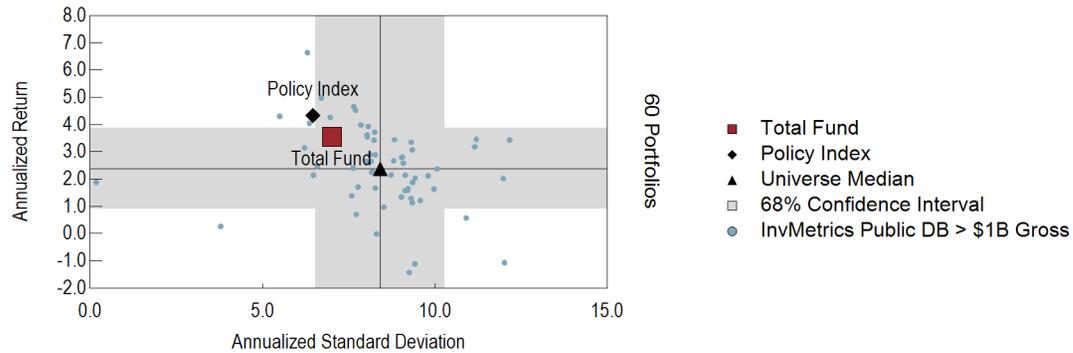
Total Fund Executive Summary (Net of Fees)

Period Ending: March 31, 2020

3 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	3.54%	-0.79%	7.00%	-1.04%	1.06	1.57%	0.95	0.26	-0.50	98.34%	108.14%

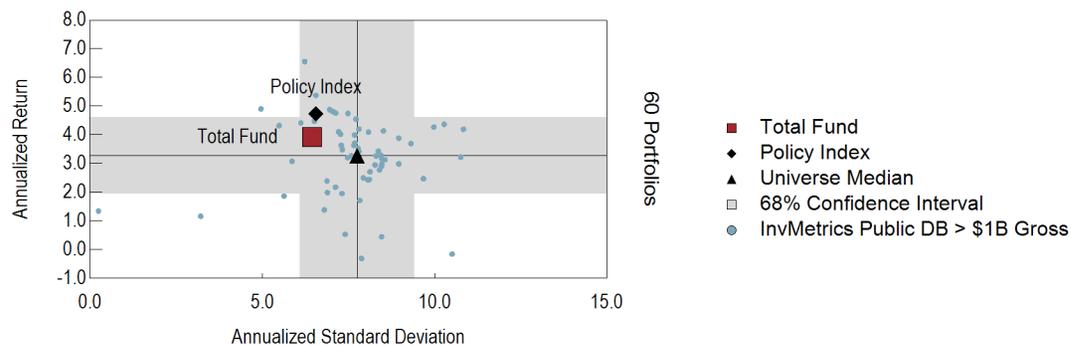
Risk vs. Return



5 Years

	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	3.91%	-0.82%	6.44%	-0.58%	0.95	1.71%	0.93	0.43	-0.48	89.78%	98.61%

Risk vs. Return



Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	8,407,112,435	100.0	-9.4	-2.3	3.8	4.3	7.6	14.9	-2.5	14.2	7.4	2.7		
Policy Index			-8.6	0.0	4.3	4.7	7.7	14.6	-0.9	13.7	8.9	0.6		
InvMetrics Public DB > \$1B Gross Rank			13	12	15	21	8	83	25	83	74	5		
Total Fund ex Overlay & Cash	8,121,504,807	96.6	-9.3	-2.3	3.9	4.3	7.6	14.7	-2.1	14.1	7.4	2.7		
Policy Index			-8.6	0.0	4.3	4.7	7.7	14.6	-0.9	13.7	8.9	0.6		
InvMetrics Public DB > \$1B Gross Rank			13	12	14	19	8	85	20	84	74	5		
Growth	5,698,643,487	67.8	-12.6	-4.3	4.4	5.0	--	18.7	-3.6	19.1	8.1	3.0		
Custom Growth Benchmark			-13.1	-2.4	4.8	5.5	--	19.3	-2.1	19.3	10.1	0.3		
Total Domestic Equity	783,815,264	9.3	-23.1	-14.0	2.0	4.1	9.8	26.7	-7.2	23.9	11.5	1.1		
Russell 3000			-20.9	-9.1	4.0	5.8	10.1	31.0	-5.2	21.1	12.7	0.5		
InvMetrics Public DB US Eq Gross Rank			70	80	64	66	31	87	78	6	77	21		
BlackRock Russell 1000 Index	163,246,783	1.9	-20.2	-8.0	--	--	--	31.4	-4.8	--	--	--	4.4	Apr-17
Russell 1000			-20.2	-8.0	--	--	--	31.4	-4.8	--	--	--	4.4	Apr-17
eV US Large Cap Equity Gross Rank			49	46	--	--	--	39	47	--	--	--		
Jackson Square Partners	213,837,026	2.5	-12.5	0.0	9.7	6.9	12.2	27.9	-2.0	29.3	-4.4	6.1	9.4	May-05
Russell 1000 Growth			-14.1	0.9	11.3	10.4	13.0	36.4	-1.5	30.2	7.1	5.7	9.9	May-05
eV US Large Cap Growth Equity Gross Rank			27	44	59	86	56	93	59	47	98	37		
Boston Partners	179,037,451	2.1	-28.7	-19.1	-2.3	1.4	8.0	24.3	-8.7	20.1	15.1	-3.9	9.2	Jun-95
Russell 1000 Value			-26.7	-17.2	-2.2	1.9	7.7	26.5	-8.3	13.7	17.3	-3.8	8.1	Jun-95
eV US Large Cap Value Equity Gross Rank			74	72	67	69	54	77	55	23	50	65		
Emerald Advisers	120,381,318	1.4	-24.3	-18.7	2.8	3.5	11.8	30.3	-10.1	28.8	10.1	4.1	11.6	Apr-03
Russell 2000 Growth			-25.8	-18.6	0.1	1.7	8.9	28.5	-9.3	22.2	11.3	-1.4	9.5	Apr-03
eV US Small Cap Growth Equity Gross Rank			56	66	58	64	29	45	85	26	54	19		
Ceredex	107,312,686	1.3	-33.1	-29.0	-8.4	-1.1	--	18.4	-11.3	11.4	29.8	-4.4	5.8	Nov-11
Russell 2000 Value			-35.7	-29.6	-9.5	-2.4	--	22.4	-12.9	7.8	31.7	-7.5	5.0	Nov-11
eV US Small Cap Value Equity Gross Rank			33	54	48	35	--	87	25	48	32	52		

Individual closed end funds are not shown in performance summary table. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total International Equity	1,307,612,445	15.6	-23.8	-15.0	-1.6	-0.5	3.1	23.7	-14.3	25.5	1.2	-1.2		
MSCI ACWI ex USA Gross			-23.3	-15.1	-1.5	-0.2	2.5	22.1	-13.8	27.8	5.0	-5.3		
MSCI EAFE Gross			-22.7	-13.9	-1.3	-0.1	3.2	22.7	-13.4	25.6	1.5	-0.4		
InvMetrics Public DB ex-US Eq Gross Rank			40	37	34	57	44	28	44	90	89	28		
International Equity	798,330,362	9.5	-19.0	-7.9	1.3	1.3	4.0	27.0	-13.6	25.3	1.2	-1.2		
MSCI ACWI ex USA Gross			-23.3	-15.1	-1.5	-0.2	2.5	22.1	-13.8	27.8	5.0	-5.3		
InvMetrics Public DB ex-US Eq Gross Rank			6	5	8	15	17	7	21	93	89	28		
Pyrford	392,588,559	4.7	-19.2	-9.8	-0.2	0.6	--	22.1	-10.1	19.8	3.4	-2.9	0.6	May-14
MSCI ACWI ex USA Value			-28.5	-23.7	-6.5	-3.5	--	15.7	-14.0	22.7	8.9	-10.1	-3.9	May-14
eV ACWI ex-US Value Equity Gross Rank			2	4	4	11	--	35	5	84	74	59		
William Blair	405,741,804	4.8	-18.9	-6.0	2.8	1.9	--	32.0	-16.8	30.9	-1.4	0.5	4.7	Oct-10
MSCI ACWI ex USA Growth			-18.2	-7.3	2.5	2.1	--	27.3	-14.4	32.0	0.1	-1.3	3.4	Oct-10
eV ACWI ex-US Growth Equity Gross Rank			42	37	62	75	--	39	69	81	55	69		
Emerging Markets Equity	509,282,082	6.1	-30.1	-24.1	-5.9	--	--	19.4	-15.3	--	--	--		
MSCI Emerging Markets			-23.6	-17.7	-1.6	--	--	18.4	-14.6	--	--	--		
InvMetrics Public DB Emg Mkt Eq Gross Rank			86	86	85	--	--	31	51	--	--	--		
PIMCO RAE Emerging Markets	246,810,121	2.9	-33.1	-27.8	-7.9	--	--	14.6	-12.3	--	--	--	-7.5	Feb-17
MSCI Emerging Markets			-23.6	-17.7	-1.6	--	--	18.4	-14.6	--	--	--	-0.8	Feb-17
eV Emg Mkts Equity Gross Rank			98	93	94	--	--	82	19	--	--	--		
TT Emerging Markets	262,471,962	3.1	-27.2	-20.3	--	--	--	24.8	-18.4	--	--	--	-6.6	Jul-17
MSCI Emerging Markets			-23.6	-17.7	--	--	--	18.4	-14.6	--	--	--	-6.1	Jul-17
eV Emg Mkts Equity Gross Rank			72	66	--	--	--	24	83	--	--	--		
Total Global Equity	670,187,481	8.0	-15.5	-3.9	4.7	5.7	7.2	28.9	-7.8	23.7	7.6	2.2		
MSCI ACWI			-21.4	-11.3	1.5	2.8	5.9	26.6	-9.4	24.0	7.9	-2.4		
InvMetrics Public DB Glbl Eq Gross Rank			3	3	2	1	1	3	60	79	40	16		
Artisan Partners	352,105,128	4.2	-12.7	2.6	9.8	9.9	--	37.0	-7.9	32.9	5.6	9.2	11.3	Oct-12
MSCI ACWI			-21.4	-11.3	1.5	2.8	--	26.6	-9.4	24.0	7.9	-2.4	6.0	Oct-12
eV All Global Equity Gross Rank			4	4	8	5	--	7	40	11	61	4		
First Eagle	317,958,422	3.8	-18.5	-10.3	-0.2	2.7	--	21.0	-7.6	15.1	11.7	0.2	5.8	Jan-11
MSCI ACWI			-21.4	-11.3	1.5	2.8	--	26.6	-9.4	24.0	7.9	-2.4	5.4	Jan-11
eV All Global Equity Gross Rank			28	44	67	53	--	82	38	89	19	49		

Individual closed end funds are not shown in performance summary table. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Private Credit	568,997,177	6.8	-0.1	8.0	7.4	8.7	12.9	7.7	8.3	10.4	8.2	12.9		
ICE BofAML High Yield Master II +2%			-12.7	-5.5	2.6	4.7	7.6	16.7	-0.3	9.6	19.8	-2.7		
Total High Yield	186,258,968	2.2	-10.8	-4.5	1.5	2.8	5.7	16.0	-3.2	6.5	14.3	-3.5		
ICE BofAML High Yield Master II			-13.1	-7.5	0.6	2.7	5.5	14.4	-2.3	7.5	17.5	-4.6		
eV US High Yield Fixed Inc Gross Rank			32	30	38	52	48	15	88	74	47	68		
Allianz Global Investors	186,258,968	2.2	-10.8	-4.5	1.5	2.8	5.7	16.0	-3.2	6.5	14.3	-3.5	6.4	Apr-00
ICE BofAML High Yield Master II			-13.1	-7.5	0.6	2.7	5.5	14.4	-2.3	7.5	17.5	-4.6	6.3	Apr-00
eV US High Yield Fixed Inc Gross Rank			32	30	38	52	48	15	88	74	47	68		
Total Real Estate	702,949,729	8.4	-0.9	2.7	7.7	7.3	11.8	8.1	7.4	11.1	5.5	13.5		
Real Estate Benchmark			-2.1	2.3	5.8	6.0	10.0	7.7	6.7	7.1	6.7	8.3		
NCREIF-ODCE			1.0	4.9	6.8	8.5	11.4	5.3	8.3	7.6	8.8	15.0		
NCREIF Property Index			0.7	5.3	6.4	7.6	10.2	6.4	6.7	7.0	8.0	13.3		
Adelante	61,404,863	0.7	-23.4	-16.5	-0.1	0.7	8.8	28.2	-5.0	7.8	4.1	5.1	9.0	Sep-01
Wilshire REIT			-25.6	-19.4	-2.5	-0.2	7.7	25.8	-4.8	4.2	7.2	4.2	8.5	Sep-01
Private Equity	1,064,279,679	12.7	2.2	9.1	11.1	9.5	11.8	8.4	12.1	11.9	9.4	11.6		
S&P 500 Index +4% (Lagged)			10.1	36.6	19.8	16.1	18.1	8.4	22.6	23.3	20.0	3.4		
Risk Parity	414,542,745	4.9	-9.8	-0.6	--	--	--	--	--	--	--	--		
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			-13.3	-4.9	--	--	--	--	--	--	--	--		
AQR Global Risk Premium-EL	212,979,688	2.5	-10.0	-0.3	--	--	--	--	--	--	--	--	5.2	Jan-19
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			-13.3	-4.9	--	--	--	--	--	--	--	--	2.2	Jan-19
PanAgora Risk Parity Multi Asset	201,563,057	2.4	-9.7	-1.0	--	--	--	--	--	--	--	--	2.1	Feb-19
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			-13.3	-4.9	--	--	--	--	--	--	--	--	-3.5	Feb-19

Individual closed end funds are not shown in performance summary table. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Diversifying	590,715,870	7.0	-5.0	-0.7	0.6	-0.1	2.0	7.1	-2.0	2.8	1.3	-1.4		
Custom Diversifying Benchmark			0.7	4.5	3.8	3.6	4.0	6.1	1.4	4.7	4.1	2.5		
Diversifying Fixed Income	412,764,249	4.9	-1.6	3.6	2.4	2.1	3.3	8.6	-1.7	2.8	2.8	1.6		
eV US Core Fixed Inc Gross Rank			94	96	99	99	98	80	99	96	72	15		
AFL-CIO	343,041,456	4.1	3.5	9.1	5.0	3.6	4.2	8.2	0.6	3.6	2.4	1.6	6.3	Jun-91
BBgBarc US Aggregate TR			3.1	8.9	4.8	3.4	3.9	8.7	0.0	3.5	2.6	0.6	5.8	Jun-91
eV US Core Fixed Inc Gross Rank			14	21	27	34	61	88	16	76	87	15		
Wellington Real Total Return	69,722,794	0.8	-10.2	-5.6	-2.1	-3.1	--	9.2	-5.6	1.9	-0.1	-4.9	-2.0	Feb-13
CPI + 4%			1.4	5.6	6.0	5.9	--	6.4	6.0	6.2	6.2	4.8	5.7	Feb-13
Diversifying Equity	177,951,621	2.1	-13.1	-10.9	--	--	--	3.3	--	--	--	--		
Parametric Defensive Equity	177,951,621	2.1	-13.1	-10.9	--	--	--	3.3	--	--	--	--	-7.5	Jul-18
91 Day T-Bill +4%			1.3	5.7	--	--	--	6.1	--	--	--	--	6.0	Jul-18
Liquidity	1,832,145,450	21.8	0.1	3.2	2.6	--	--	4.9	1.8	1.5	--	--		
BBgBarc US Govt/Credit 1-3 Yr. TR			1.7	4.5	2.6	--	--	4.0	1.6	0.8	--	--		
eV US Short Duration Fixed Inc Gross Rank			56	56	42	--	--	34	24	50	--	--		
DFA Short Credit	413,652,257	4.9	-0.9	2.2	2.2	--	--	5.2	1.2	1.9	--	--	2.2	Nov-16
ICE BofAML 1-5 Yrs US Corp & Govt TR			2.0	5.4	3.1	--	--	5.1	1.4	1.3	--	--	2.9	Nov-16
eV US Short Duration Fixed Inc Gross Rank			74	75	78	--	--	21	93	26	--	--		
Insight Short Duration	865,823,667	10.3	-1.2	1.9	2.0	--	--	4.7	1.7	1.5	--	--	2.0	Nov-16
BBgBarc US Govt/Credit 1-3 Yr. TR			1.7	4.5	2.6	--	--	4.0	1.6	0.8	--	--	2.5	Nov-16
eV US Short Duration Fixed Inc Gross Rank			78	79	82	--	--	45	38	50	--	--		
Sit Short Duration	552,669,526	6.6	3.2	6.2	3.8	--	--	4.9	2.5	1.3	--	--	3.6	Nov-16
BBgBarc US Govt 1-3 Yr TR			2.7	5.4	2.7	--	--	3.6	1.6	0.4	--	--	2.5	Nov-16
eV US Short Duration Fixed Inc Gross Rank			2	3	1	--	--	35	1	68	--	--		
Total Cash	248,163,803	3.0	0.5	3.1	2.1	1.5	3.1	3.3	1.7	0.9	0.9	0.1		
91 Day T-Bills			0.4	1.9	1.7	1.1	0.6	2.1	1.9	0.9	0.3	0.0		
Cash	247,963,497	2.9	0.5	3.3	2.1	1.5	3.1	3.4	1.7	0.9	0.9	0.1		
State Street Cash/Tax Reclaims	189,831	0.0	-3.1	-11.5	--	--	--	--	--	--	--	--		
Northern Trust Transition	10,474	0.0	1.5	4.3	--	--	--	--	--	--	--	--		

Individual closed end funds are not shown in performance summary table. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. State Street Cash/Tax Reclaims reflects \$-33,916 in cash and \$223,127 in potential tax reclaims at State Street after assets were transferred to Northern Trust. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund Performance Summary (Net of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	8,407,112,435	100.0	-9.5	-2.6	3.5	3.9	7.1	14.6	-2.7	13.9	6.9	2.1		
<i>Policy Index</i>			-8.6	0.0	4.3	4.7	7.7	14.6	-0.9	13.7	8.9	0.6		
Total Fund ex Overlay & Cash	8,121,504,807	96.6	-9.4	-2.6	3.6	4.0	7.1	14.4	-2.4	13.8	6.9	2.1		
<i>Policy Index</i>			-8.6	0.0	4.3	4.7	7.7	14.6	-0.9	13.7	8.9	0.6		
Growth	5,698,643,487	67.8	-12.6	-4.5	4.0	4.6	--	18.4	-3.9	18.7	7.6	2.3		
<i>Custom Growth Benchmark</i>			-13.1	-2.4	4.8	5.5	--	19.3	-2.1	19.3	10.1	0.3		
Total Domestic Equity	783,815,264	9.3	-23.2	-14.3	1.6	3.7	9.4	26.1	-7.6	23.5	11.1	0.6		
<i>Russell 3000</i>			-20.9	-9.1	4.0	5.8	10.1	31.0	-5.2	21.1	12.7	0.5		
BlackRock Russell 1000 Index	163,246,783	1.9	-20.2	-8.0	--	--	--	31.4	-4.8	--	--	--	4.4	Apr-17
<i>Russell 1000</i>			-20.2	-8.0	--	--	--	31.4	-4.8	--	--	--	4.4	Apr-17
Jackson Square Partners	213,837,026	2.5	-12.5	-0.4	9.2	6.4	11.7	27.3	-2.4	28.7	-4.8	5.6	9.0	May-05
<i>Russell 1000 Growth</i>			-14.1	0.9	11.3	10.4	13.0	36.4	-1.5	30.2	7.1	5.7	9.9	May-05
Boston Partners	179,037,451	2.1	-28.8	-19.4	-2.6	1.1	7.6	23.8	-8.9	19.7	14.7	-4.2	8.8	Jun-95
<i>Russell 1000 Value</i>			-26.7	-17.2	-2.2	1.9	7.7	26.5	-8.3	13.7	17.3	-3.8	8.1	Jun-95
Emerald Advisers	120,381,318	1.4	-24.4	-19.3	2.2	2.9	11.1	29.4	-10.7	28.0	9.4	3.5	10.9	Apr-03
<i>Russell 2000 Growth</i>			-25.8	-18.6	0.1	1.7	8.9	28.5	-9.3	22.2	11.3	-1.4	9.5	Apr-03
Ceredex	107,312,686	1.3	-33.2	-29.4	-8.9	-1.7	--	17.7	-11.8	10.7	29.1	-5.0	5.2	Nov-11
<i>Russell 2000 Value</i>			-35.7	-29.6	-9.5	-2.4	--	22.4	-12.9	7.8	31.7	-7.5	5.0	Nov-11
Total International Equity	1,307,612,445	15.6	-23.9	-15.4	-2.1	-1.0	2.6	23.2	-14.7	25.0	0.8	-1.6		
<i>MSCI ACWI ex USA Gross</i>			-23.3	-15.1	-1.5	-0.2	2.5	22.1	-13.8	27.8	5.0	-5.3		
<i>MSCI EAFE Gross</i>			-22.7	-13.9	-1.3	-0.1	3.2	22.7	-13.4	25.6	1.5	-0.4		
International Equity	798,330,362	9.5	-19.1	-8.3	0.9	0.9	3.6	26.5	-13.9	24.8	0.8	-1.6		
<i>MSCI ACWI ex USA Gross</i>			-23.3	-15.1	-1.5	-0.2	2.5	22.1	-13.8	27.8	5.0	-5.3		
Pyrford	392,588,559	4.7	-19.3	-10.2	-0.6	0.2	--	21.6	-10.5	19.3	3.0	-3.3	0.2	May-14
<i>MSCI ACWI ex USA Value</i>			-28.5	-23.7	-6.5	-3.5	--	15.7	-14.0	22.7	8.9	-10.1	-3.9	May-14
William Blair	405,741,804	4.8	-19.0	-6.4	2.4	1.5	--	31.5	-17.1	30.4	-1.8	0.0	4.2	Oct-10
<i>MSCI ACWI ex USA Growth</i>			-18.2	-7.3	2.5	2.1	--	27.3	-14.4	32.0	0.1	-1.3	3.4	Oct-10
Emerging Markets Equity	509,282,082	6.1	-30.3	-24.6	-6.5	--	--	18.7	-15.7	--	--	--		
<i>MSCI Emerging Markets</i>			-23.6	-17.7	-1.6	--	--	18.4	-14.6	--	--	--		
PIMCO RAE Emerging Markets	246,810,121	2.9	-33.2	-28.2	-8.3	--	--	14.0	-12.6	--	--	--	-7.9	Feb-17
<i>MSCI Emerging Markets</i>			-23.6	-17.7	-1.6	--	--	18.4	-14.6	--	--	--	-0.8	Feb-17
TT Emerging Markets	262,471,962	3.1	-27.3	-20.8	--	--	--	24.0	-18.9	--	--	--	-7.2	Jul-17
<i>MSCI Emerging Markets</i>			-23.6	-17.7	--	--	--	18.4	-14.6	--	--	--	-6.1	Jul-17

Individual closed end funds are not shown in performance summary table. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Global Equity	670,187,481	8.0	-15.7	-4.7	4.0	5.0	6.5	27.9	-8.5	22.8	6.9	1.6		
<i>MSCI ACWI</i>			-21.4	-11.3	1.5	2.8	5.9	26.6	-9.4	24.0	7.9	-2.4		
Artisan Partners	352,105,128	4.2	-12.9	1.8	9.0	9.1	--	36.0	-8.6	31.9	4.8	8.4	10.5	Oct-12
<i>MSCI ACWI</i>			-21.4	-11.3	1.5	2.8	--	26.6	-9.4	24.0	7.9	-2.4	6.0	Oct-12
First Eagle	317,958,422	3.8	-18.7	-11.0	-1.0	2.0	--	20.1	-8.3	14.3	10.9	-0.6	5.0	Jan-11
<i>MSCI ACWI</i>			-21.4	-11.3	1.5	2.8	--	26.6	-9.4	24.0	7.9	-2.4	5.4	Jan-11
Private Credit	568,997,177	6.8	-0.1	8.0	7.4	8.2	11.5	7.7	8.3	10.4	6.9	11.6		
<i>ICE BofAML High Yield Master II +2%</i>			-12.7	-5.5	2.6	4.7	7.6	16.7	-0.3	9.6	19.8	-2.7		
Total High Yield	186,258,968	2.2	-10.9	-5.0	1.0	2.4	5.4	15.4	-3.6	6.1	13.9	-3.9		
<i>ICE BofAML High Yield Master II</i>			-13.1	-7.5	0.6	2.7	5.5	14.4	-2.3	7.5	17.5	-4.6		
Allianz Global Investors	186,258,968	2.2	-10.9	-5.0	1.0	2.4	5.3	15.4	-3.6	6.1	13.9	-3.9	6.0	Apr-00
<i>ICE BofAML High Yield Master II</i>			-13.1	-7.5	0.6	2.7	5.5	14.4	-2.3	7.5	17.5	-4.6	6.3	Apr-00
Total Real Estate	702,949,729	8.4	-1.0	2.6	7.6	7.0	11.0	8.1	7.4	11.0	4.8	12.4		
<i>Real Estate Benchmark</i>			-2.1	2.3	5.8	6.0	10.0	7.7	6.7	7.1	6.7	8.3		
<i>NCREIF-ODCE</i>			1.0	4.9	6.8	8.5	11.4	5.3	8.3	7.6	8.8	15.0		
<i>NCREIF Property Index</i>			0.7	5.3	6.4	7.6	10.2	6.4	6.7	7.0	8.0	13.3		
Adelante	61,404,863	0.7	-23.5	-16.9	-0.6	0.2	8.2	27.5	-5.5	7.2	3.6	4.6	8.5	Sep-01
<i>Wilshire REIT</i>			-25.6	-19.4	-2.5	-0.2	7.7	25.8	-4.8	4.2	7.2	4.2	8.5	Sep-01
Private Equity	1,064,279,679	12.7	2.2	9.1	11.1	9.2	10.4	8.4	12.1	11.9	8.9	9.9		
<i>S&P 500 Index +4% (Lagged)</i>			10.1	36.6	19.8	16.1	18.1	8.4	22.6	23.3	20.0	3.4		
Risk Parity	414,542,745	4.9	-9.8	-0.6	--	--	--	--	--	--	--	--		
<i>60% MSCI ACWI Net/40% BBgBarc Global Aggregate</i>			-13.3	-4.9	--	--	--	--	--	--	--	--		
AQR Global Risk Premium-EL	212,979,688	2.5	-10.0	-0.3	--	--	--	--	--	--	--	--	5.2	Jan-19
<i>60% MSCI ACWI Net/40% BBgBarc Global Aggregate</i>			-13.3	-4.9	--	--	--	--	--	--	--	--	2.2	Jan-19
PanAgora Risk Parity Multi Asset	201,563,057	2.4	-9.7	-1.0	--	--	--	--	--	--	--	--	2.1	Feb-19
<i>60% MSCI ACWI Net/40% BBgBarc Global Aggregate</i>			-13.3	-4.9	--	--	--	--	--	--	--	--	-3.5	Feb-19

Individual closed end funds are not shown in performance summary table. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Diversifying	590,715,870	7.0	-5.1	-1.0	0.3	-0.5	1.6	6.8	-2.3	2.6	0.8	-1.8		
<i>Custom Diversifying Benchmark</i>			0.7	4.5	3.8	3.6	4.0	6.1	1.4	4.7	4.1	2.5		
Diversifying Fixed Income	412,764,249	4.9	-1.6	3.3	2.1	1.8	3.0	8.3	-2.0	2.6	2.3	1.1		
AFL-CIO	343,041,456	4.1	3.4	8.6	4.5	3.2	3.7	7.8	0.2	3.2	1.9	1.1	5.9	Jun-91
<i>BBgBarc US Aggregate TR</i>			3.1	8.9	4.8	3.4	3.9	8.7	0.0	3.5	2.6	0.6	5.8	Jun-91
Wellington Real Total Return	69,722,794	0.8	-10.2	-5.6	-2.1	-3.3	--	9.2	-5.6	1.9	-0.6	-5.4	-2.3	Feb-13
<i>CPI + 4%</i>			1.4	5.6	6.0	5.9	--	6.4	6.0	6.2	6.2	4.8	5.7	Feb-13
Diversifying Equity	177,951,621	2.1	-13.2	-11.3	--	--	--	3.0	--	--	--	--		
Parametric Defensive Equity	177,951,621	2.1	-13.2	-11.3	--	--	--	3.0	--	--	--	--	-7.7	Jul-18
<i>91 Day T-Bill +4%</i>			1.3	5.7	--	--	--	6.1	--	--	--	--	6.0	Jul-18
Liquidity	1,832,145,450	21.8	0.1	3.1	2.5	--	--	4.8	1.7	1.4	--	--		
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			1.7	4.5	2.6	--	--	4.0	1.6	0.8	--	--		
DFA Short Credit	413,652,257	4.9	-1.0	2.1	2.1	--	--	5.2	1.1	1.8	--	--	2.1	Nov-16
<i>ICE BofAML 1-5 Yrs US Corp & Govt TR</i>			2.0	5.4	3.1	--	--	5.1	1.4	1.3	--	--	2.9	Nov-16
Insight Short Duration	865,823,667	10.3	-1.2	1.9	2.0	--	--	4.6	1.7	1.5	--	--	2.0	Nov-16
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			1.7	4.5	2.6	--	--	4.0	1.6	0.8	--	--	2.5	Nov-16
Sit Short Duration	552,669,526	6.6	3.2	6.0	3.7	--	--	4.7	2.3	1.1	--	--	3.4	Nov-16
<i>BBgBarc US Govt 1-3 Yr TR</i>			2.7	5.4	2.7	--	--	3.6	1.6	0.4	--	--	2.5	Nov-16
Total Cash	248,163,803	3.0	0.5	3.1	2.1	1.5	3.1	3.3	1.7	0.9	0.9	0.1		
<i>91 Day T-Bills</i>			0.4	1.9	1.7	1.1	0.6	2.1	1.9	0.9	0.3	0.0		
Cash	247,963,497	2.9	0.5	3.3	2.1	1.5	3.1	3.4	1.7	0.9	0.9	0.1		
State Street Cash/Tax Reclaims	189,831	0.0	-3.1	-11.5	--	--	--	--	--	--	--	--		
Northern Trust Transition	10,474	0.0	1.5	4.3	--	--	--	--	--	--	--	--		

Individual closed end funds are not shown in performance summary table. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. State Street Cash/Tax Reclaims reflects \$-33,916 in cash and \$223,127 in potential tax reclaims at State Street after assets were transferred to Northern Trust. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Closed End Funds - Investment Summary

Period Ending: March 31, 2020

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/20 ¹	Total Commitment	% Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI) ²	Tot. Value/ Paid-In (TVPI) ³	Latest Valuation
Private Credit												
8/31/2015	Angelo Gordon Energy Credit Opp. ⁴	\$4,138,549	\$16,500,000	114%	\$18,750,000	\$0	\$0	\$18,829,566	\$2,319,783	1.00	1.22	12/31/2019
12/18/2017	Stepstone CC Opportunities Fund	\$533,130,411	\$920,000,000	57%	\$524,858,936	\$35,275,474	\$72,229	\$21,561,632	\$419,980,965	0.04	1.06	9/30/2019
8/1/2012	Torchlight IV	\$10,150,950	\$60,000,000	141%	\$84,866,971	\$0	\$0	\$104,809,507	\$0	1.23	1.35	12/31/2019
3/12/2015	Torchlight V	\$21,577,267	\$75,000,000	80%	\$60,000,000	\$0	\$0	\$55,039,262	\$15,000,000	0.92	1.28	12/31/2019
Total Private Credit		\$568,997,177										
% of Portfolio (Market Value)		6.8%										

*All Data provided by StepStone Group

¹Latest valuation + capital calls - distributions

²(DPI) is equal to (capital returned / capital called)

³(TVPI) is equal to (market value + capital returned) / capital called

⁴Capital has been fully called and fund is in redemption.

Total Fund
Closed End Funds - Investment Summary

Period Ending: March 31, 2020

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/2020 ¹	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁸	Remaining Commitment	Distrib./Paid-In (DPI) ²	Tot. Value/Paid-In (TVPI) ³	Latest Valuation
Real Estate												
1/23/2012	Angelo Gordon Realty Fund VIII ⁷	\$21,842,935	\$80,000,000	94%	\$75,401,855	\$0	\$0	\$98,433,174	\$12,334,302	1.31	1.60	12/31/2019
12/8/2014	Angelo Gordon Realty Fund IX	\$63,315,041	\$65,000,000	86%	\$55,575,000	\$4,550,000	\$6,500,000	\$15,275,000	\$7,572,500	0.27	1.41	12/31/2019
6/23/2005	DLJ RECP III	\$20,350,266	\$75,000,000	134%	\$100,709,313 ⁴	\$0	\$0	\$69,364,915	\$4,031,338	0.69	0.89	12/31/2019
2/11/2008	DLJ RECP IV	\$78,630,243	\$100,000,000	130%	\$129,892,605 ⁵	\$0	\$0	\$89,287,687	\$3,162,610	0.69	1.29	12/31/2019
7/1/2014	DLJ RECP V	\$50,089,896	\$75,000,000	114%	\$85,562,412 ⁶	\$0	\$0	\$58,913,882	\$20,556,753	0.69	1.27	12/31/2019
3/19/2019	DLJ RECP VI	\$26,377,494	\$50,000,000	51%	\$25,335,866	\$0	\$0	\$220,742	\$25,050,462	0.01	1.05	12/31/2019
6/17/1998	Hearthstone II ⁷	\$2,620	\$25,000,000	80%	\$19,932,386	\$0	\$0	\$27,473,662	\$0	1.38	1.38	12/31/2019
6/30/2013	Invesco Real Estate III ⁷	\$2,080,497	\$35,000,000	93%	\$32,386,423	\$0	\$0	\$42,502,805	\$2,613,577	1.31	1.38	3/31/2020
6/30/2014	Invesco Real Estate IV ⁷	\$17,000,720	\$35,000,000	85%	\$29,808,739	\$0	\$0	\$22,353,948	\$5,191,261	0.75	1.32	3/31/2020
6/30/2013	Invesco Real Estate V	\$23,089,469	\$75,000,000	35%	\$25,911,997	\$3,394,952	\$0	\$4,723,439	\$52,829,506 ⁹	0.18	1.07	3/31/2020
7/16/2013	LaSalle Income & Growth VI ⁷	\$25,473,622	\$75,000,000	95%	\$71,428,571	\$0	\$18,936	\$81,401,001	\$3,571,429	1.14	1.50	12/31/2019
2/28/2017	LaSalle Income & Growth VII	\$54,212,390	\$75,000,000	93%	\$70,098,608	\$2,643,052	\$0	\$31,765,322	\$4,901,392	0.45	1.23	12/31/2019
7/3/2013	Long Wharf Fund IV ⁷	\$3,575,910	\$25,000,000	100%	\$25,000,000	\$0	\$3,205,761	\$33,793,648	\$0	1.35	1.49	3/31/2020
9/30/2016	Long Wharf Fund V ⁷	\$41,410,258	\$50,000,000	100%	\$50,000,000	\$0	\$0	\$19,764,653	\$0	0.40	1.22	3/31/2020
6/27/2019	Long Wharf Fund VI	\$5,717,110	\$50,000,000	13%	\$6,607,653	\$6,607,653	\$0	\$0	\$43,392,347	0.00	0.87	3/31/2020
12/31/2011	Oaktree REOF V ⁷	\$4,153,132	\$50,000,000	100%	\$50,000,000	\$0	\$0	\$75,380,955	\$5,000,000	1.51	1.59	3/31/2020
9/30/2013	Oaktree REOF VI ⁷	\$28,142,423	\$80,000,000	100%	\$80,000,000	\$0	\$0	\$84,010,175	\$18,400,000 ⁹	1.05	1.40	3/31/2020
4/1/2015	Oaktree REOF VII	\$50,772,170	\$65,000,000	96%	\$62,400,000	\$2,405,000	\$8,125,000	\$27,040,000	\$21,515,000 ⁹	0.43	1.25	3/31/2020
11/10/2013	Paulson Real Estate Fund II ⁷	\$26,082,500	\$20,000,000	97%	\$19,345,623	\$0	\$1,001,312	\$7,797,502	\$654,377	0.40	1.75	12/31/2019
1/25/2012	Siguler Guff DREOF ¹⁰	\$30,642,527	\$75,000,000	93%	\$69,375,000	\$0	\$3,835,684	\$94,118,247	\$5,625,000	1.36	1.80	12/31/2019
8/31/2013	Siguler Guff DREOF II ¹⁰	\$48,595,331	\$70,000,000	89%	\$61,985,000	\$0	\$1,792,414	\$38,524,419	\$8,015,000	0.62	1.41	12/31/2019
1/27/2016	Siguler Guff DREOF II Co-Inv ¹⁰	\$19,988,311	\$25,000,000	82%	\$20,537,862	\$0	\$0	\$8,321,475	\$4,462,138	0.41	1.38	12/31/2019
Total Closed End Real Estate		\$641,544,866	\$1,275,000,000	92%	\$1,167,294,915	\$19,600,657	\$24,479,107	\$930,466,650	\$248,878,991	0.80	1.35	
% of Portfolio (Market Value)		7.6%										

¹Latest valuation + capital calls - distributions

²(DPI) is equal to (capital returned / capital called)

³(TVPI) is equal to (market value + capital returned) / capital called

⁴Includes \$7,360,987 in management fees charged outside the fund.

⁵Includes \$11,322,966 in management fees charged outside the fund.

⁶Includes \$936,933 in management fees charged outside the fund.

⁷Capital has been fully called and fund is in redemption.

⁸Total distributions may include recallable distributions

⁹Remaining commitment includes recallable distributions

¹⁰12/31/2019 valuation is an estimate provided by the manager.

Total Fund
Closed End Funds - Investment Summary

Period Ending: March 31, 2020

StepStone Group Analysis (*)

Closing Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/20 ¹	Total Commitment	Total % Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./Paid-In (DPI) ²	Tot. Value/Paid-In (TVPI) ³	Latest Valuation
Private Equity & Venture Capital												
2/11/2004	Adams Street Partners	\$149,971,656	\$210,000,000	89%	\$186,793,125	\$0	\$2,414,282	\$158,130,901	\$23,206,875	0.85	1.65	12/31/2019
1/15/2009	Adams Street Partners II	\$5,933,326	\$30,000,000	95%	\$28,365,000	\$0	\$906,119	\$42,440,681	\$1,635,000	1.50	1.71	12/31/2019
9/21/2012	Adams Street Partners - Fund 5	\$21,193,651	\$40,000,000	77%	\$30,845,875	\$233,975	\$0	\$17,181,437	\$9,154,125	0.56	1.24	12/31/2019
1/18/1996	Adams Street Partners - BPF	\$1,765,111	\$59,565,614	97%	\$57,517,409	\$0	\$0	\$102,731,103	\$2,048,205	1.79	1.82	12/31/2019
3/31/2016	Adams Street Venture Innovation	\$63,077,688	\$75,000,000	68%	\$51,037,500	\$5,625,000	\$0	\$0	\$23,962,500	0.00	1.24	12/31/2019
5/18/2018	AE Industrial Partners Fund II, LP	\$7,608,903	\$35,000,000	23%	\$7,921,855	\$2,818,171	\$0	\$0	\$29,896,316	0.00	0.96	12/31/2019
11/27/2013	Aether Real Assets III	\$20,716,819	\$25,000,000	94%	\$23,596,647	\$413,130	\$55,196	\$3,813,799	\$3,887,782	0.16	1.04	9/30/2019
11/30/2013	Aether Real Assets III Surplus	\$49,700,234	\$50,000,000	101%	\$50,483,471	\$787,101	\$448,521	\$8,965,238	\$3,336,311	0.18	1.16	9/30/2019
1/30/2016	Aether Real Assets IV	\$40,784,110	\$50,000,000	78%	\$39,090,752	\$2,135,427	\$122,427	\$2,271,703	\$15,187,389	0.06	1.10	9/30/2019
4/30/2004	Bay Area Equity Fund I ⁴	\$2,403,851	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$37,018,019	\$0	3.70	3.94	12/31/2019
6/29/2009	Bay Area Equity Fund II ⁴	\$9,718,219	\$10,000,000	100%	\$10,000,000	\$0	\$1,658,597	\$3,684,910	\$0	0.37	1.34	12/31/2019
6/30/2013	Commonfund	\$41,612,032	\$50,000,000	90%	\$44,774,995	\$1,450,000	\$1,450,000	\$11,910,771	\$6,675,005	0.27	1.20	9/30/2019
7/15/2005	EIF US Power Fund II ⁴	\$6,601,604	\$50,000,000	130%	\$65,029,556	\$0	\$0	\$72,650,020	\$0	1.12	1.22	9/30/2019
5/31/2007	EIF US Power Fund III ⁴	\$14,958,655	\$65,000,000	110%	\$71,409,097	\$0	\$0	\$73,638,258	\$0	1.03	1.24	12/31/2019
11/28/2011	EIF US Power Fund IV	\$40,172,052	\$50,000,000	127%	\$63,433,206	\$345,452	\$345,452	\$31,018,038	\$4	0.49	1.12	12/31/2019
11/28/2016	EIF US Power Fund V	\$46,731,189	\$50,000,000	97%	\$48,308,385	\$874,274	\$12,500	\$9,217,121	\$9,566,328	0.19	1.16	12/31/2019
2/21/2019	Genstar Capital Partners IX, L.P.	\$11,929,381	\$50,000,000	25%	\$12,306,038	\$717,736	\$684,246	\$684,246	\$38,411,698	0.06	1.02	12/31/2019
11/18/2009	Oaktree PIF 2009	\$2,081,025	\$40,000,000	87%	\$34,816,729	\$0	\$0	\$45,239,703	\$6,308,961	1.30	1.36	12/31/2019
5/2/2013	Ocean Avenue Fund II	\$26,134,471	\$30,000,000	87%	\$26,100,000	\$0	\$3,598,337	\$16,039,096	\$3,900,000	0.61	1.62	12/31/2019
4/15/2016	Ocean Avenue Fund III	\$56,618,468	\$50,000,000	87%	\$43,500,000	\$0	\$0	\$10,000,000	\$6,500,000	0.23	1.53	12/31/2019
11/30/2007	Paladin III	\$48,793,097	\$25,000,000	135%	\$33,767,853	\$0	\$0	\$24,922,119	\$519,296	0.74	2.18	12/31/2019
8/22/2011	Pathway 6	\$34,913,357	\$40,000,000	96%	\$38,253,918	\$303,993	\$1,038,626	\$27,210,284	\$4,324,230	0.71	1.62	9/30/2019
7/10/2013	Pathway 7	\$70,504,750	\$70,000,000	93%	\$65,383,746	\$1,124,209	\$2,098,776	\$27,083,545	\$8,732,121	0.41	1.49	9/30/2019
11/23/2015	Pathway 8	\$48,534,113	\$50,000,000	78%	\$38,858,455	\$1,979,610	\$160,960	\$5,748,233	\$14,980,114	0.15	1.40	9/30/2019
1/19/1999	Pathway	\$13,982,429	\$125,000,000	100%	\$124,952,575	\$79,590	\$650,644	\$174,347,100	\$10,972,469	1.40	1.51	9/30/2019
7/31/2009	Pathway 2008	\$18,183,959	\$30,000,000	97%	\$29,237,231	\$61,070	\$565,661	\$29,998,381	\$3,194,260	1.03	1.65	9/30/2019
6/3/2014	Siguler Guff CCCERA Opportunities	\$168,864,020	\$200,000,000	81%	\$162,441,282	\$6,735,541	\$15,211,166	\$66,430,997	\$51,874,772	0.41	1.45	9/30/2019
11/30/2016	Siguler Guff Secondary Opportunities ⁴	\$68,660	\$50,000,000	60%	\$29,999,802	\$0	\$0	\$42,724,959	\$46,394,813	1.42	1.43	9/30/2019
5/18/2018	Siris Partners IV, L.P.	\$18,790,695	\$35,000,000	46%	\$16,204,485	\$0	\$0	\$0	\$18,795,515	0.00	1.16	12/31/2019
6/28/2019	TPG Healthcare Partners, L.P.	\$43,107	\$24,000,000	3%	\$707,439	\$89,753	\$0	\$0	\$23,382,314	-	-	12/31/2019
5/24/2019	Trident VIII, L.P.	\$0	\$40,000,000	0%	\$0	\$0	\$0	\$0	\$40,000,000	-	-	-
12/8/2015	Wastewater Opportunity Fund	\$21,889,049	\$25,000,000	95%	\$23,769,697	\$1,480,773	\$0	\$2,031,922	\$2,733,302	0.09	1.01	12/31/2019
Total Private Equity and Venture Capital		\$1,064,279,679	\$1,743,565,614	84%	\$1,468,906,124	\$27,254,805	\$31,421,509	\$1,047,132,584	\$409,579,705	0.71	1.44	

% of Portfolio (Market Value) 12.7%

* All Data provided by StepStone Group

¹Latest valuation + capital calls - distributions

²(DPI) is equal to (capital returned / capital called)

³(TVPI) is equal to (market value + capital returned) / capital called

⁴Capital has been fully called and fund is in redemption.

Total Fund
Closed End Funds - IRR Summary

Period Ending: March 31, 2020

Private Credit	Inception	Fund Level (G) ²	CCCERA (G)	Fund Level (N) ^{2,3}	CCCERA (N) ³	IRR Date
Angelo Gordon Energy Cred Opp. ⁴	09/24/2015	-	-	-	9.4%	12/31/2019
Stepstone CC Opportunities Fund	02/02/2018	-	11.8%	-	10.0%	09/30/2019
Torchlight IV	08/01/2012	12.5%	12.9%	9.9%	10.6%	03/31/2020
Torchlight V	03/12/2015	17.9%	17.9%	11.9%	11.8%	12/31/2019
Real Estate	Inception	Fund Level (G) ²	CCCERA (G)	Fund Level (N) ^{2,3}	CCCERA (N) ³	IRR Date
Angelo Gordon VIII ⁴	01/23/2012	-	-	-	14.7%	12/31/2019
Angelo Gordon IX	12/08/2014	-	-	-	11.3%	12/31/2019
DLJ RECP III	06/23/2005	0.0%	0.0%	-3.0%	-2.0%	12/31/2019
DLJ RECP IV	02/11/2008	6.0%	6.0%	4.0%	5.0%	12/31/2019
DLJ RECP V	07/01/2014	22.0%	22.0%	12.0%	12.0%	12/31/2019
DLJ RECP VI ¹	03/19/2019	-	-	-	-	-
Hearthstone II ⁴	06/17/1998	-	30.1%	-	30.1%	12/31/2019
Invesco Fund III ⁴	06/30/2013	15.1%	-	12.0%	-	03/31/2020
Invesco Fund IV ⁴	06/30/2014	17.6%	-	13.1%	-	12/31/2019
Invesco Fund V	02/20/2019	15.3%	-	12.0%	-	12/31/2019
LaSalle Income & Growth VI ⁴	07/16/2013	14.7%	14.7%	12.2%	12.2%	12/31/2019
LaSalle Income & Growth VII	02/28/2017	13.9%	14.1%	11.3%	11.4%	12/31/2019
Long Wharf IV ⁴	07/03/2013	17.4%	17.5%	12.9%	12.9%	03/31/2020
Long Wharf V ⁴	09/30/2016	13.6%	14.5%	9.6%	10.4%	03/31/2020
Long Wharf VI	06/27/2019	3.5%	2.7%	-16.3%	-12.3%	03/31/2020
Oaktree REOF V ⁴	12/31/2011	16.8%	-	12.4%	-	03/31/2020
Oaktree REOF VI ⁴	09/30/2013	13.5%	-	9.0%	-	03/31/2020
Oaktree REOF VII	04/01/2015	36.1%	-	21.6%	-	03/31/2020
Paulson ⁴	11/10/2013	-	-	13.8%	-	12/31/2019
Siguler Guff I ⁵	01/25/2012	14.1%	16.8%	12.6%	13.7%	12/31/2019
Siguler Guff II ⁵	08/31/2013	12.4%	12.3%	11.1%	10.0%	12/31/2019
Siguler Guff DREOF II Co-In ⁵	01/27/2016	14.1%	14.4%	13.1%	11.2%	12/31/2019

¹Manager has yet to report IRR figure.

²Fund level data includes CCCERA and all other fund investors.

³Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴Capital has been fully called and fund is in redemption.

⁵IRR information based on 12/31/2019 estimated capital account statement provided by the manager.

Total Fund

Closed End Funds - IRR Summary

Period Ending: March 31, 2020

Private Equity & Venture Capital	Closing Date	Fund Level (G) ²	CCCERA (G)	Fund Level (N) ^{2,3}	CCCERA (N) ³	IRR Date
Adams Street Partners	2/11/2004	--	12.8%	-	10.5%	12/31/2019
Adams Street Partners II	1/15/2009	--	18.0%	-	14.4%	12/31/2019
Adams Street Partners - Fund 5	9/21/2012	-	9.1%	-	6.5%	12/31/2019
Adams Street Partners Venture	1/18/1996	-	26.8%	-	21.8%	12/31/2019
Adams Street Partners - BPF	3/31/2016	--	14.3%	-	11.5%	12/31/2019
AE Industrial Partners Fund II, LP ¹	5/18/2018	-	-	-	-	-
Aether Real Assets III	11/27/2013	5.1%	5.1%	1.5%	1.5%	9/30/2019
Aether Real Assets III Surplus	11/30/2013	6.7%	6.7%	4.7%	4.7%	9/30/2019
Aether Real Assets IV	1/30/2016	13.3%	13.2%	7.2%	7.2%	9/30/2019
Bay Area Equity Fund I ⁴	4/30/2004	31.5%	31.5%	23.2%	23.2%	12/31/2019
Bay Area Equity Fund II ⁴	6/29/2009	9.2%	9.2%	4.4%	4.4%	12/31/2019
CommonFund	6/30/2013	-	-	-	7.3%	9/30/2019
EIF US Power Fund II ⁴	7/15/2005	6.3%	5.9%	3.7%	3.3%	12/31/2019
EIF US Power Fund III ⁴	5/31/2007	6.2%	6.2%	3.6%	3.6%	12/31/2019
EIF US Power Fund IV	11/28/2011	7.2%	7.3%	3.6%	3.4%	12/31/2019
EIF US Power Fund V	11/28/2016	19.4%	15.6%	14.1%	10.6%	12/31/2019
Genstar Capital Partners IX, L.P. ¹	2/21/2019	-	-	-	-	-
Oaktree PIF 2009	11/18/2009	6.8%	-	6.6%	-	12/31/2019
Ocean Avenue Fund II	5/2/2013	-	-	14.3%	-	12/31/2019
Ocean Avenue Fund III	4/15/2016	-	-	29.9%	-	12/31/2019
Paladin III	11/30/2007	22.5%	-	13.9%	-	12/31/2019
Pathway 6 ⁵	8/22/2011	16.9%	16.9%	14.5%	14.5%	12/31/2019
Pathway 7 ⁵	7/10/2013	17.9%	17.9%	15.4%	15.4%	12/31/2019
Pathway 8 ⁵	11/23/2015	20.9%	21.3%	19.0%	19.6%	12/31/2019
Pathway Private Equity Fund ⁵	1/19/1999	10.2%	10.2%	8.4%	8.4%	12/31/2019
Pathway Private Equity Fund 2008 ⁵	7/31/2009	14.7%	14.7%	12.1%	12.1%	12/31/2019
Siguler Guff CCCERA Opportunities ⁵	6/3/2014	18.1%	18.8%	17.5%	15.8%	12/31/2019
Siguler Guff Secondary Opportunities ⁵	11/30/2016	55.4%	118.5%	49.5%	69.1%	12/31/2019
Siris Partners IV, L.P. ¹	5/18/2018	-	-	-	-	-
TPG Healthcare Partners, L.P.	6/28/2019	-	-	-	-	-
Trident VIII, L.P.	5/24/2019	-	-	-	-	-
Wastewater Opportunity Fund	12/8/2015	7.8%	-	1.5%	-	12/31/2019

¹Manager has yet to report IRR figure due to no capital invested or meaningful distributions.

²Fund level data includes CCCERA and all other fund investors.

³Net IRR calculated after deductions of management fees and carried interest to the General Partner.

⁴Capital has been fully called and fund is in redemption.

⁵IRR information based on 12/31/2019 estimated capital account statement provided by the manager.

Total Fund
Performance Analysis - 3 Years (Net of Fees)

Period Ending: March 31, 2020

	3 Years										
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	9.19%	-2.13%	14.95%	-1.40%	0.94	4.13%	0.93	0.50	-0.52	85.80%	96.12%
Boston Partners	-2.59%	-0.41%	17.66%	-0.32%	1.04	2.65%	0.98	-0.24	-0.16	104.20%	103.38%
Emerald Advisers	2.19%	2.09%	21.20%	2.09%	1.00	4.82%	0.95	0.02	0.43	101.70%	95.25%
Ceredex	-8.89%	0.62%	22.21%	0.27%	0.96	5.36%	0.94	-0.48	0.12	95.49%	97.36%
Pyrford	-0.61%	5.88%	12.39%	3.88%	0.69	6.65%	0.89	-0.19	0.88	76.21%	70.10%
William Blair	2.39%	-0.14%	15.06%	-0.27%	1.05	2.61%	0.97	0.04	-0.05	102.33%	102.09%
PIMCO RAE Emerging Markets	-8.34%	-6.72%	20.20%	-6.53%	1.12	5.81%	0.93	-0.50	-1.16	85.56%	112.57%
Artisan Partners	8.95%	7.45%	14.08%	7.62%	0.89	5.07%	0.88	0.51	1.47	122.38%	82.88%
First Eagle	-0.99%	-2.49%	11.40%	-2.11%	0.75	4.41%	0.96	-0.24	-0.56	58.20%	80.60%
Allianz Global Investors	1.04%	0.49%	7.26%	0.56%	0.87	1.66%	0.97	-0.09	0.30	99.53%	93.59%
Adelante	-0.62%	1.88%	16.31%	1.71%	0.93	1.93%	0.99	-0.14	0.98	95.50%	90.63%
AFL-CIO	4.54%	-0.28%	3.09%	-0.01%	0.94	0.65%	0.96	0.91	-0.43	91.53%	88.20%
Wellington Real Total Return	-2.09%	-8.08%	5.96%	-10.63%	1.43	5.85%	0.04	-0.64	-1.38	-23.33%	NM

Performance Analysis excludes closed end funds and those funds without 3 years of performance.

Total Fund
Performance Analysis - 5 Years (Net of Fees)

Period Ending: March 31, 2020

	5 Years											
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio	
Jackson Square Partners	6.42%	-3.94%	13.98%	-3.29%	0.94	4.98%	0.88	0.38	-0.79	81.47%	104.09%	
Boston Partners	1.09%	-0.82%	15.82%	-0.91%	1.05	2.83%	0.97	0.00	-0.29	102.37%	103.92%	
Emerald Advisers	2.90%	1.20%	19.51%	1.22%	0.99	4.85%	0.94	0.09	0.25	101.67%	97.87%	
Ceredex	-1.69%	0.73%	18.94%	0.50%	0.90	6.11%	0.91	-0.15	0.12	84.81%	93.92%	
Pyrford	0.23%	3.74%	11.96%	2.66%	0.69	6.58%	0.87	-0.07	0.57	63.75%	74.18%	
William Blair	1.51%	-0.59%	13.97%	-0.60%	1.00	2.70%	0.96	0.03	-0.22	95.25%	99.95%	
Artisan Partners	9.08%	6.23%	13.85%	6.43%	0.93	5.50%	0.85	0.57	1.13	126.68%	87.35%	
First Eagle	1.98%	-0.87%	10.39%	-0.10%	0.73	4.70%	0.92	0.08	-0.19	57.35%	75.90%	
Allianz Global Investors	2.37%	-0.29%	6.79%	0.05%	0.87	1.64%	0.96	0.18	-0.18	90.64%	94.70%	
Adelante	0.20%	0.39%	15.59%	0.38%	0.94	1.89%	0.99	-0.06	0.21	90.16%	95.03%	
AFL-CIO	3.17%	-0.19%	2.89%	0.12%	0.91	0.76%	0.94	0.71	-0.25	87.41%	82.37%	
Wellington Real Total Return	-3.25%	-9.11%	6.15%	-11.97%	1.49	6.03%	0.04	-0.71	-1.51	-32.36%	NM	

Performance Analysis excludes closed end funds and those funds without 5 years of performance.

Total Fund Investment Fund Fee Analysis

Period Ending: March 31, 2020

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	\$163,246,783	\$48,974	0.03%
Jackson Square Partners	Growth	0.50% of First 100.0 Mil, 0.40% of Next 150.0 Mil, 0.35% Thereafter	\$213,837,026	\$955,348	0.45%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	\$179,037,451	\$587,112	0.33%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	\$120,381,318	\$737,288	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	\$107,312,686	\$649,295	0.61%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	\$392,588,559	\$1,624,060	0.41%
William Blair	Growth	0.80% of First 20.0 Mil, 0.60% of Next 30.0 Mil, 0.50% of Next 50.0 Mil, 0.45% of Next 50.0 Mil, 0.40% of Next 50.0 Mil, 0.30% Thereafter	\$405,741,804	\$1,632,225	0.40%
PIMCO RAE Emerging Markets	Growth	0.75% of First 50.0 Mil, 0.68% of Next 50.0 Mil, 0.50% of Next 100.0 Mil, 0.45% Thereafter	\$246,810,121	\$1,423,146	0.58%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	\$262,471,962	\$1,724,832	0.66%
Artisan Partners	Growth	0.75% of Assets	\$352,105,128	\$2,640,788	0.75%
First Eagle	Growth	0.75% of Assets	\$317,958,422	\$2,384,688	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$186,258,968	\$751,906	0.40%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	\$212,979,688	\$809,323	0.38%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund
Investment Fund Fee Analysis

Period Ending: March 31, 2020

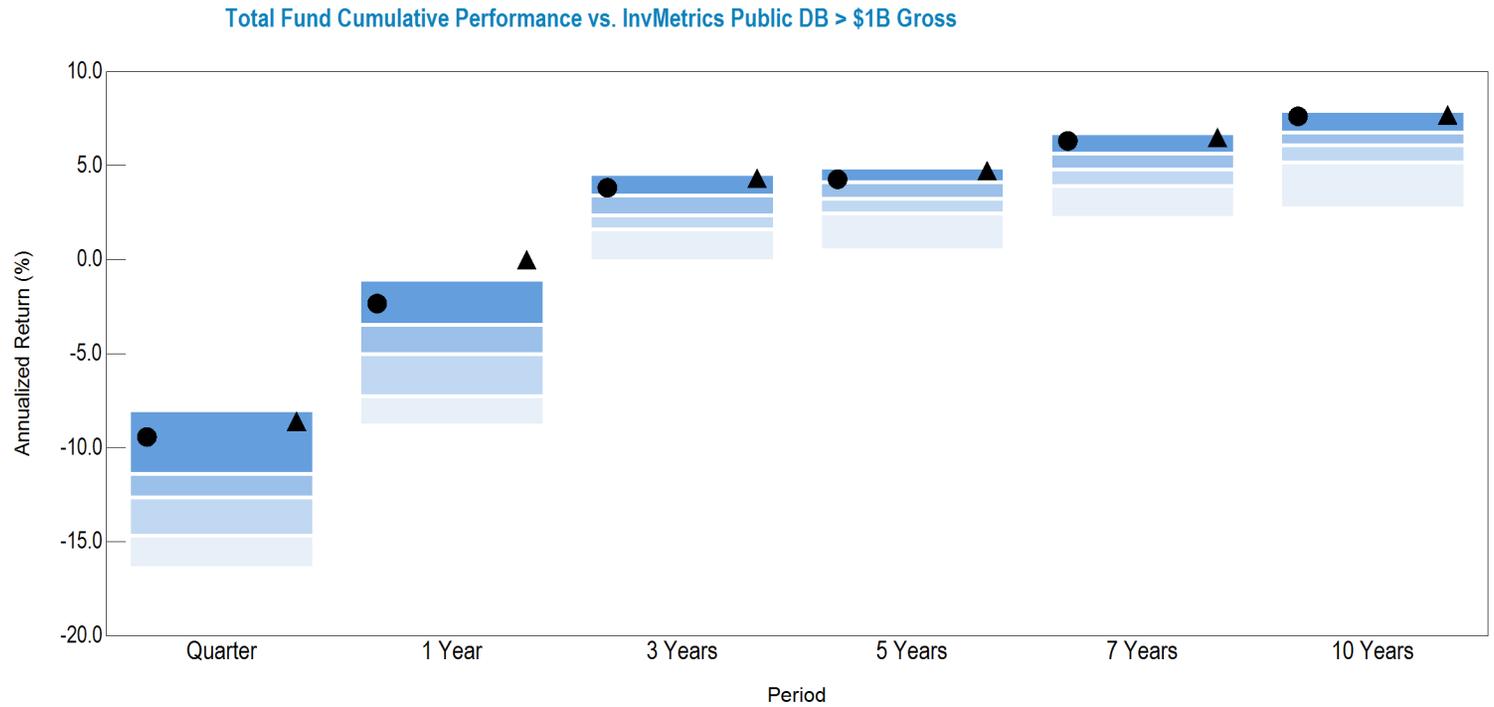
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	\$201,563,057	\$705,471	0.35%
AFL-CIO	Diversifying	0.43% of Assets	\$343,041,456	\$1,475,078	0.43%
Wellington Real Total Return	Diversifying	0.35% of Assets	\$69,722,794	\$244,030	0.35%
Parametric Defensive Equity	Diversifying	0.42% of First 200.0 Mil, 0.39% Thereafter	\$177,951,621	\$747,397	0.42%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	\$413,652,257	\$438,652	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	\$865,823,667	\$482,912	0.06%
Sit Short Duration	Liquidity	0.15% of Assets	\$552,669,526	\$829,004	0.15%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: March 31, 2020



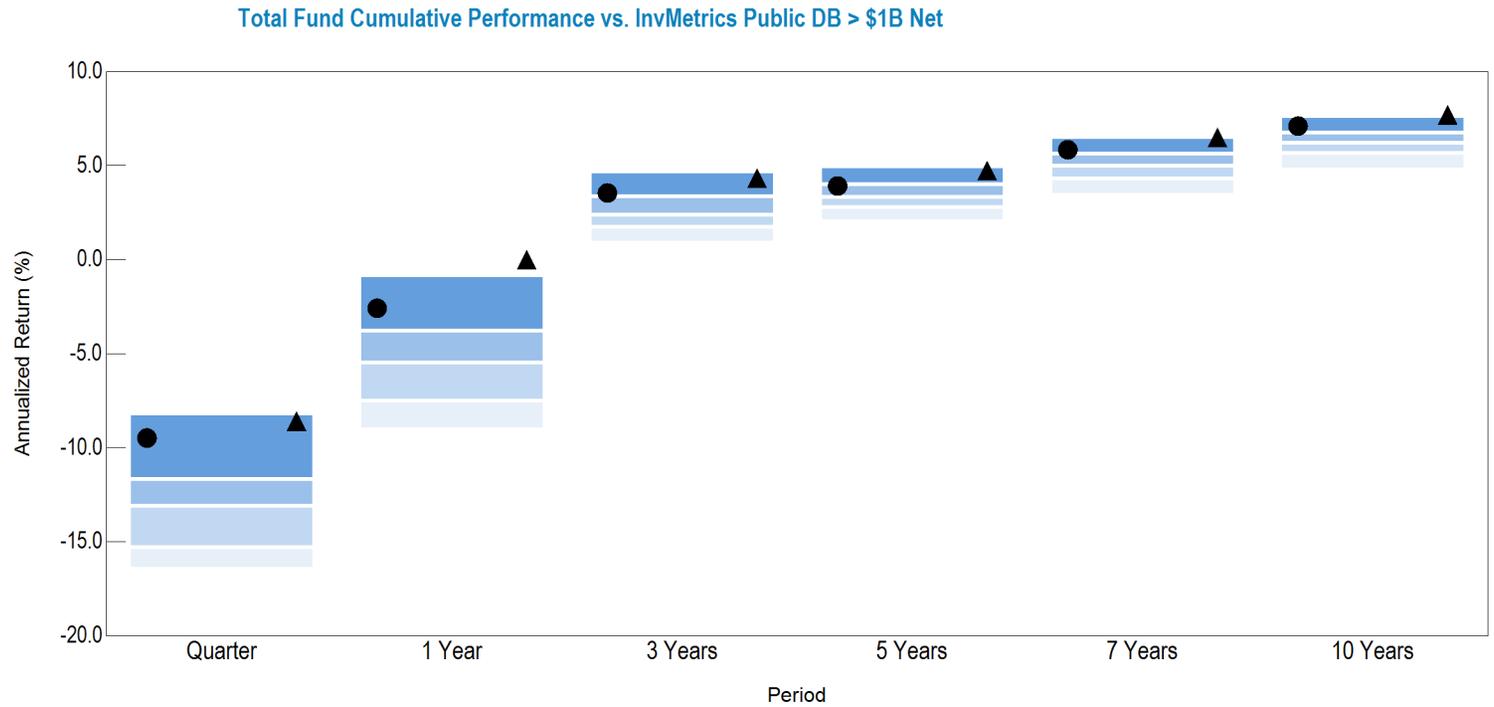
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-8.0	-1.1	4.5	4.9	6.7	7.9						
25th Percentile	-11.4	-3.5	3.4	4.1	5.7	6.8						
Median	-12.6	-5.0	2.4	3.3	4.8	6.1						
75th Percentile	-14.7	-7.2	1.6	2.5	3.9	5.2						
95th Percentile	-16.4	-8.8	-0.1	0.5	2.3	2.8						
# of Portfolios	60	60	60	60	58	55						
● Total Fund	-9.4	(13)	-2.3	(12)	3.8	(15)	4.3	(21)	6.3	(7)	7.6	(8)
▲ Policy Index	-8.6	(7)	0.0	(3)	4.3	(7)	4.7	(11)	6.5	(7)	7.7	(8)

Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: March 31, 2020

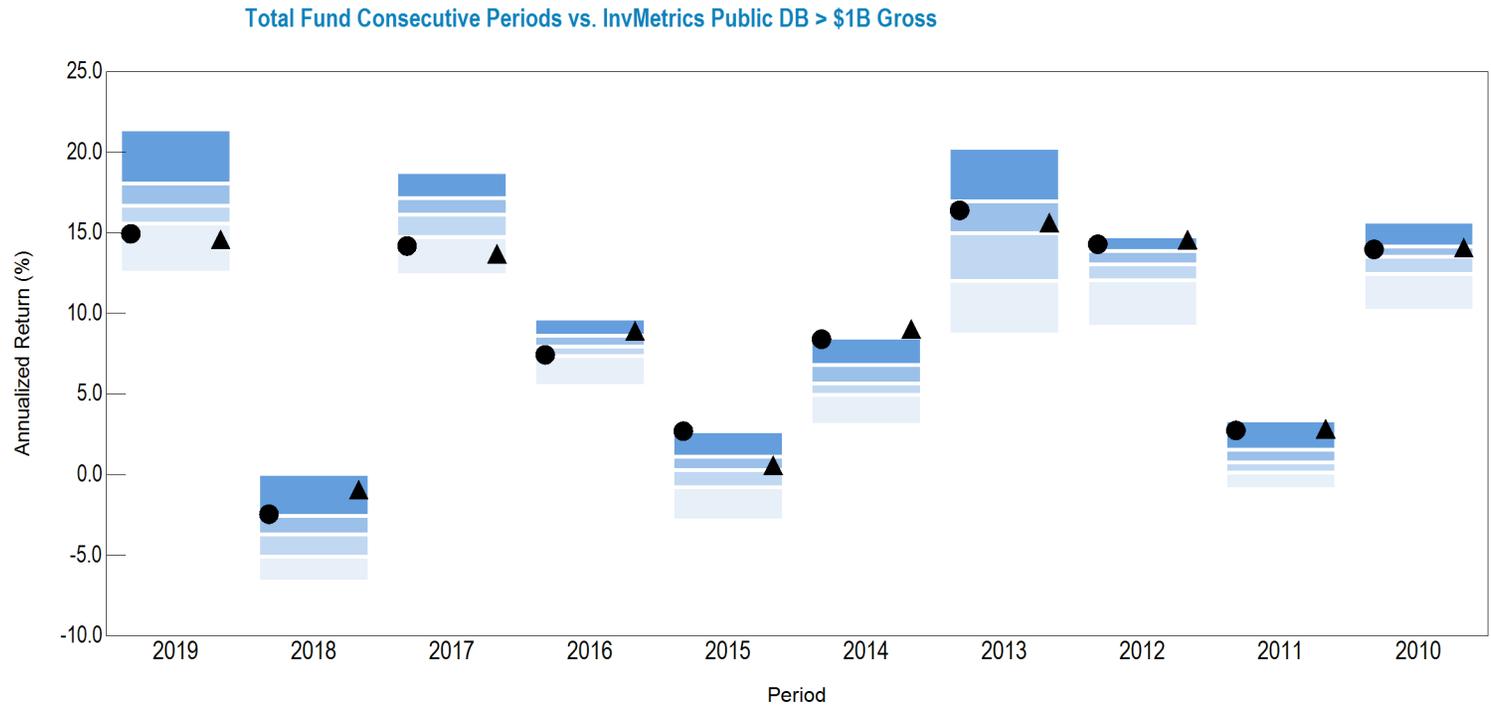


	Return (Rank)											
	Quarter	1 Year	3 Years	5 Years	7 Years	10 Years	Quarter	1 Year	3 Years	5 Years	7 Years	10 Years
5th Percentile	-8.2	-0.9	4.7	4.9	6.5	7.6						
25th Percentile	-11.6	-3.8	3.4	4.0	5.7	6.8						
Median	-13.1	-5.4	2.4	3.4	5.0	6.2						
75th Percentile	-15.3	-7.5	1.8	2.8	4.3	5.7						
95th Percentile	-16.4	-9.0	0.9	2.1	3.4	4.8						
# of Portfolios	50	50	50	49	48	45						
● Total Fund	-9.5	(10)	-2.6	(12)	3.5	(22)	3.9	(33)	5.8	(15)	7.1	(13)
▲ Policy Index	-8.6	(7)	0.0	(3)	4.3	(8)	4.7	(6)	6.5	(6)	7.7	(3)

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: March 31, 2020



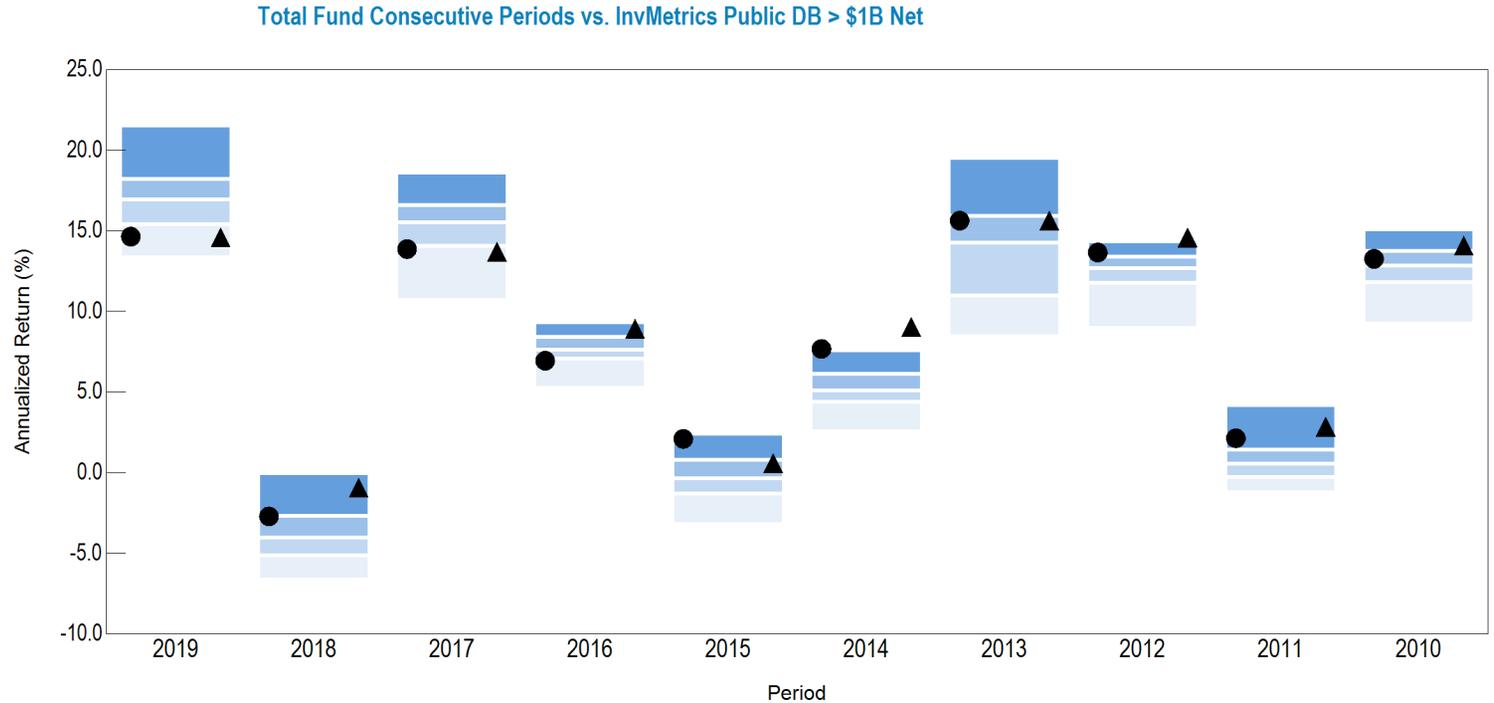
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Return (Rank)										
5th Percentile	21.4	0.0	18.8	9.7	2.7	8.5	20.2	14.7	3.3	15.7
25th Percentile	18.1	-2.6	17.2	8.6	1.1	6.8	17.0	13.9	1.6	14.2
Median	16.7	-3.7	16.2	8.0	0.3	5.7	15.0	13.0	0.8	13.5
75th Percentile	15.6	-5.1	14.8	7.4	-0.7	4.9	12.0	12.1	0.1	12.5
95th Percentile	12.5	-6.6	12.4	5.5	-2.8	3.1	8.7	9.2	-0.9	10.2
# of Portfolios	81	71	98	92	98	79	67	74	68	66
● Total Fund	14.9 (83)	-2.5 (25)	14.2 (83)	7.4 (74)	2.7 (5)	8.4 (6)	16.4 (33)	14.3 (13)	2.7 (9)	14.0 (29)
▲ Policy Index	14.6 (87)	-0.9 (8)	13.7 (89)	8.9 (15)	0.6 (40)	9.0 (2)	15.6 (43)	14.6 (8)	2.8 (9)	14.1 (27)

Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund

Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: March 31, 2020

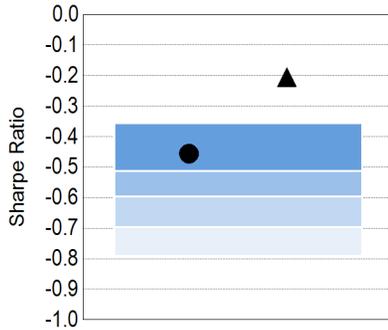


	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
5th Percentile	21.5	-0.1	18.6	9.3	2.4	7.6	19.5	14.3	4.2	15.1
25th Percentile	18.2	-2.7	16.6	8.4	0.8	6.1	16.0	13.4	1.5	13.8
Median	17.0	-4.0	15.6	7.7	-0.4	5.1	14.3	12.7	0.6	12.8
75th Percentile	15.4	-5.1	14.1	7.1	-1.3	4.4	11.0	11.8	-0.3	11.8
95th Percentile	13.4	-6.6	10.7	5.3	-3.2	2.6	8.5	9.0	-1.2	9.3
# of Portfolios	69	63	61	62	57	55	48	44	42	41
● Total Fund	14.6 (92)	-2.7 (27)	13.9 (81)	6.9 (78)	2.1 (12)	7.7 (5)	15.6 (33)	13.6 (21)	2.1 (12)	13.3 (34)
▲ Policy Index	14.6 (92)	-0.9 (8)	13.7 (85)	8.9 (13)	0.6 (29)	9.0 (2)	15.6 (33)	14.6 (1)	2.8 (11)	14.1 (15)

Total Fund
Sharpe Ratio Ranking (Gross of Fees)

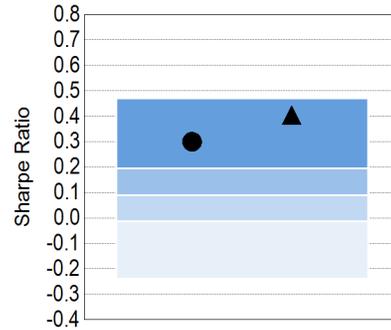
Period Ending: March 31, 2020

Sharpe Ratio
1 Year



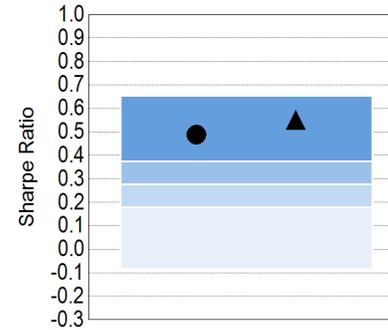
● Total Fund	
Value	-0.5
Rank	14
▲ Policy Index	
Value	-0.2
Rank	3
Universe	
5th %tile	-0.4
25th %tile	-0.5
Median	-0.6
75th %tile	-0.7
95th %tile	-0.8

Sharpe Ratio
3 Year



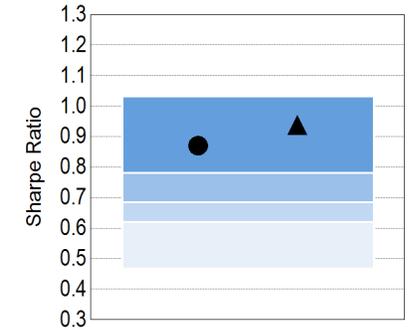
● Total Fund	
Value	0.3
Rank	14
▲ Policy Index	
Value	0.4
Rank	7
Universe	
5th %tile	0.5
25th %tile	0.2
Median	0.1
75th %tile	0.0
95th %tile	-0.2

Sharpe Ratio
5 Year



● Total Fund	
Value	0.5
Rank	17
▲ Policy Index	
Value	0.6
Rank	9
Universe	
5th %tile	0.7
25th %tile	0.4
Median	0.3
75th %tile	0.2
95th %tile	-0.1

Sharpe Ratio
10 Year



● Total Fund	
Value	0.9
Rank	12
▲ Policy Index	
Value	0.9
Rank	8
Universe	
5th %tile	1.0
25th %tile	0.8
Median	0.7
75th %tile	0.6
95th %tile	0.5

Domestic Equity Managers

Jackson Square Partners Manager Portfolio Overview

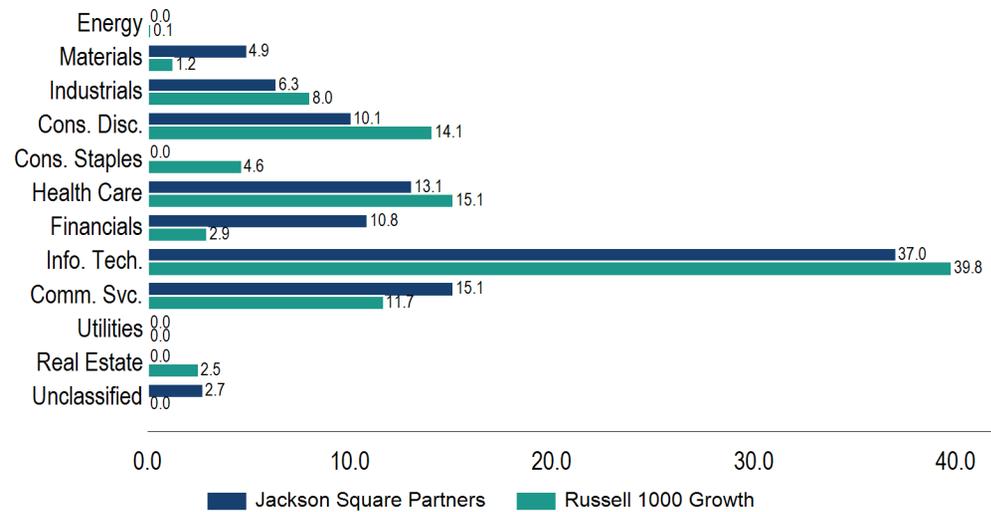
Period Ending: March 31, 2020

Domestic equity large cap growth portfolio concentrated in companies with sustainable long-term growth characteristics. Primary personnel include Jeffrey Van Harte, Christopher Bonavico, Christopher Ericksen, and Daniel Prislin.

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	29	532
Weighted Avg. Market Cap. (\$B)	266.90	355.15
Median Market Cap. (\$B)	54.39	9.83
Price To Earnings	31.35	23.75
Price To Book	5.52	6.72
Price To Sales	4.80	3.97
Return on Equity (%)	26.96	35.36
Yield (%)	0.69	1.34
Beta	0.82	1.00

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT	9.80	0.28
VISA 'A'	5.71	-14.13
AMAZON.COM	5.47	5.51
BALL	4.88	0.20
CHARTER COMMS.CL.A	4.78	-10.05
IQVIA HOLDINGS	4.61	-30.19
CME GROUP	4.58	-13.50
ALPHABET A	4.45	-13.25
UNITEDHEALTH GROUP	4.07	-14.83
MASTERCARD	3.89	-18.99

Top Contributors

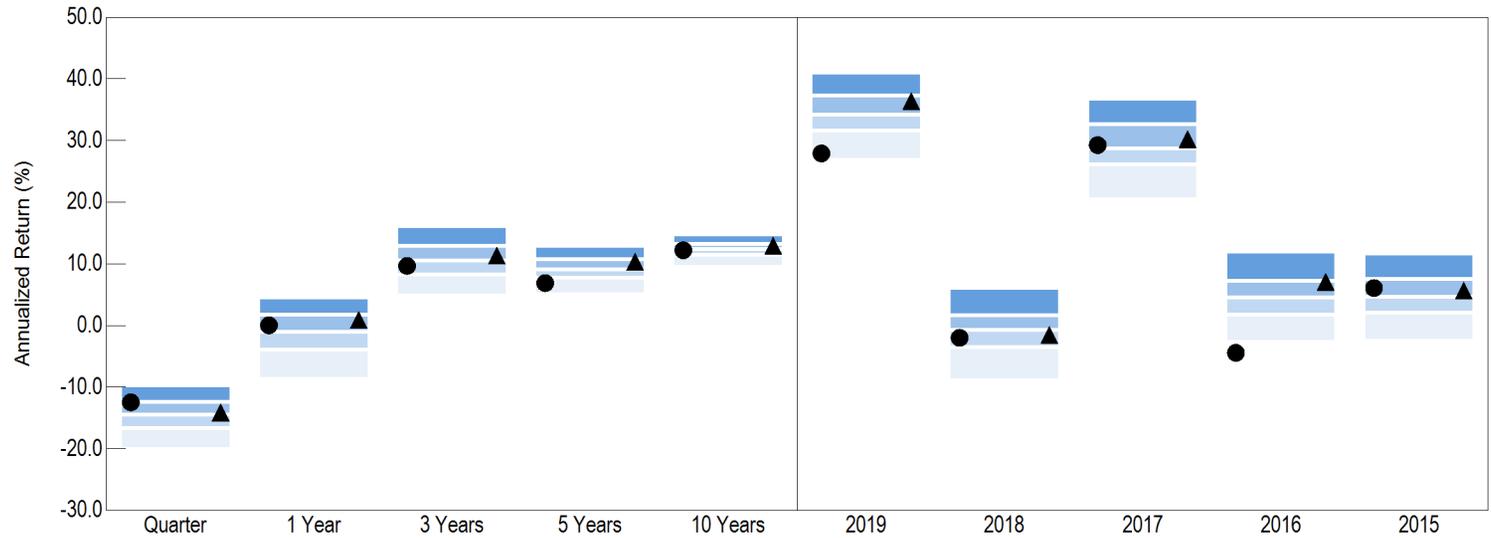
	Avg Wgt	Return	Contribution
NETFLIX	0.97	16.05	0.16
DOMINO'S PIZZA	1.09	10.58	0.12
CROWN CASTLE INTL.	0.60	2.44	0.01
SERVICENOW	0.73	1.51	0.01
MICROSOFT	3.32	0.28	0.01
BALL	1.62	0.20	0.00
ARISTA NETWORKS	0.68	-0.42	0.00
ALPHABET 'C'	0.15	-13.03	-0.02
TAKE TWO INTACT.SFTW.	0.97	-3.12	-0.03
CME GROUP	0.95	-13.50	-0.13

Bottom Contributors

	Avg Wgt	Return	Contribution
IQVIA HOLDINGS	1.85	-30.19	-0.56
HASBRO	1.47	-31.80	-0.47
CONSTELLATION BRANDS 'A'	1.60	-24.16	-0.39
CHARLES SCHWAB	1.26	-29.04	-0.36
DOLLAR TREE	1.30	-21.88	-0.28
MASTERCARD	1.36	-18.99	-0.26
KKR AND A	1.30	-19.24	-0.25
APPLIED MATS.	0.94	-24.69	-0.23
UNITEDHEALTH GROUP	1.49	-14.83	-0.22
ALPHABET A	1.63	-13.25	-0.22

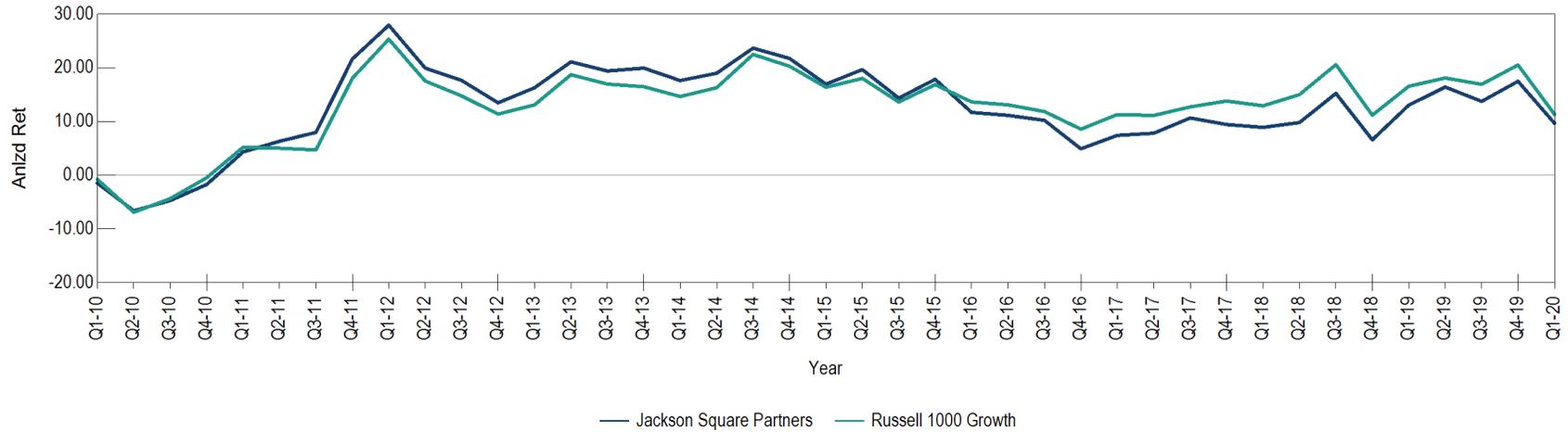
Unclassified sector allocation includes cash allocations.

Jackson Square Partners vs. eV US Large Cap Growth Equity Gross Universe

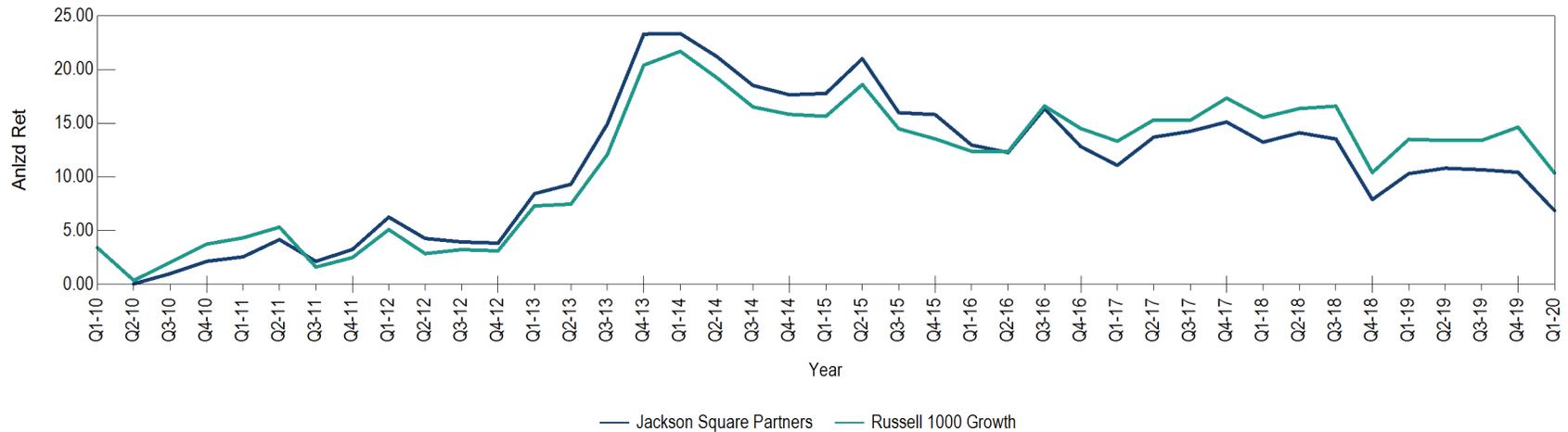


	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-9.8	4.5	16.1	12.9	14.8	41.0	6.1	36.7	12.0	11.6
25th Percentile	-12.4	1.8	13.0	10.8	13.3	37.3	1.7	32.7	7.3	7.6
Median	-14.4	-1.0	10.5	9.1	12.4	34.2	-0.6	28.8	4.6	4.7
75th Percentile	-16.6	-3.9	8.4	7.8	11.5	31.7	-3.5	26.2	1.8	2.1
95th Percentile	-20.0	-8.6	4.9	5.1	9.5	26.9	-8.8	20.5	-2.7	-2.4
# of Portfolios	244	244	238	231	206	253	255	265	282	270
● Jackson Square Partners	-12.5 (27)	0.0 (44)	9.7 (59)	6.9 (86)	12.2 (56)	27.9 (93)	-2.0 (59)	29.3 (47)	-4.4 (98)	6.1 (37)
▲ Russell 1000 Growth	-14.1 (47)	0.9 (33)	11.3 (41)	10.4 (33)	13.0 (34)	36.4 (32)	-1.5 (57)	30.2 (42)	7.1 (26)	5.7 (42)

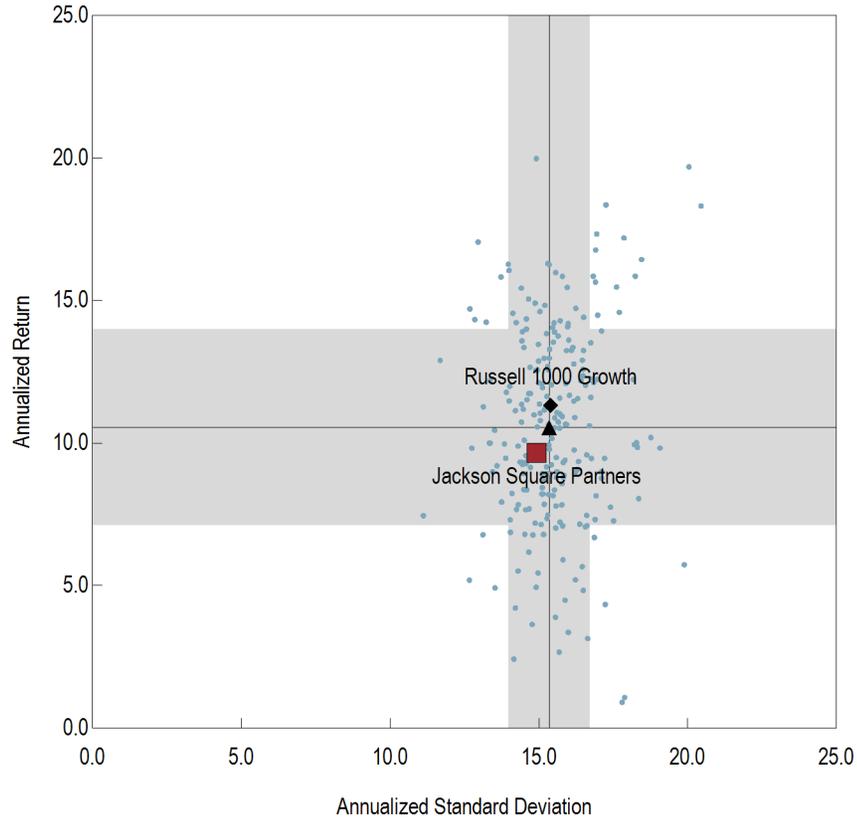
Rolling 3 Year Annualized Return (%)



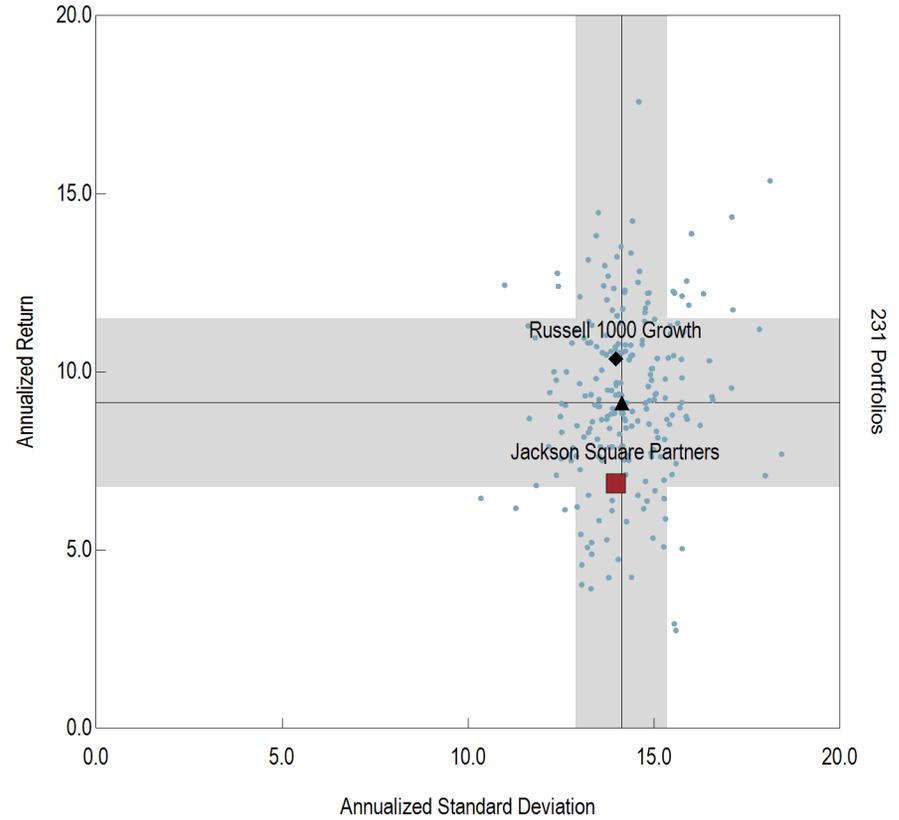
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	9.7%	14.9%	0.5
Russell 1000 Growth	11.3%	15.4%	0.6
eV US Large Cap Growth Equity Gross Median	10.5%	15.3%	0.6

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	6.9%	14.0%	0.4
Russell 1000 Growth	10.4%	14.0%	0.7
eV US Large Cap Growth Equity Gross Median	9.1%	14.1%	0.6

Boston Partners Manager Portfolio Overview

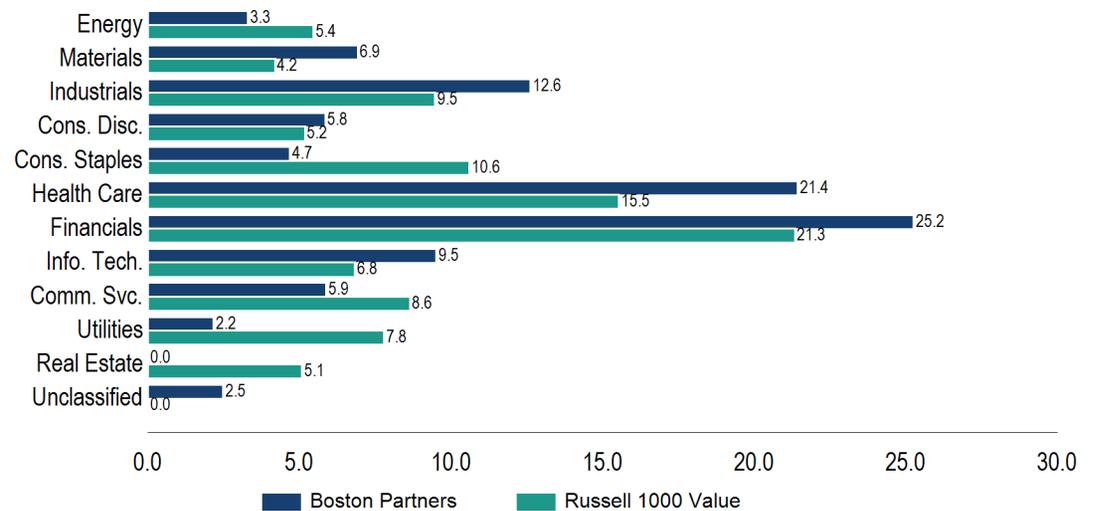
Period Ending: March 31, 2020

Domestic equity large cap value portfolio exhibiting low turnover in companies with low valuations relative to intrinsic value. Primary personnel include Mark Donovan and David Pyle.

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	101	765
Weighted Avg. Market Cap. (\$B)	116.20	98.90
Median Market Cap. (\$B)	22.87	6.29
Price To Earnings	11.27	12.56
Price To Book	2.45	2.17
Price To Sales	1.53	1.86
Return on Equity (%)	21.33	15.02
Yield (%)	2.85	3.48
Beta	1.06	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
BERKSHIRE HATHAWAY 'B'	4.71	-19.28
BANK OF AMERICA	3.47	-39.32
JP MORGAN CHASE & CO.	3.14	-35.00
JOHNSON & JOHNSON	3.12	-9.52
CIGNA	2.92	-13.34
BARRICK GOLD (NYS)	2.60	-1.10
PFIZER	2.59	-15.84
VERIZON COMMUNICATIONS	2.58	-11.58
PROCTER & GAMBLE	2.41	-11.40
CHUBB	2.35	-27.70

Top Contributors

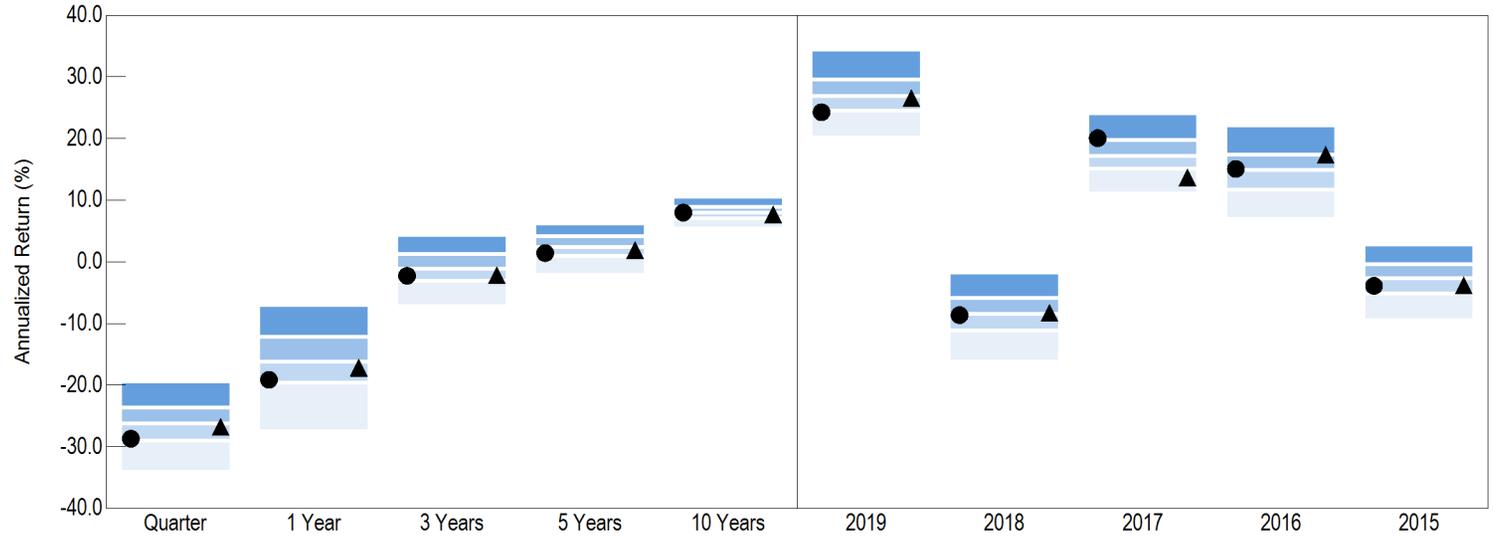
	Avg Wgt	Return	Contribution
NORTONLIFELOCK	0.24	27.67	0.07
BIOGEN	0.28	6.62	0.02
NOVO NORDISK 'B' ADR 1:1	0.12	5.44	0.01
MICROSOFT	0.20	0.28	0.00
BARRICK GOLD (NYS)	0.50	-1.10	-0.01
MCKESSON	0.35	-1.93	-0.01
MONDELEZ INTERNATIONAL CL.A	0.24	-8.57	-0.02
CH ROBINSON WWD.	0.14	-14.69	-0.02
AON CLASS A	0.11	-20.61	-0.02
ALTICE USA 'A'	0.14	-18.47	-0.03

Bottom Contributors

	Avg Wgt	Return	Contribution
BANK OF AMERICA	1.49	-39.32	-0.59
CITIGROUP	0.87	-46.92	-0.41
JP MORGAN CHASE & CO.	1.16	-35.00	-0.40
WELLS FARGO & CO	0.85	-46.09	-0.39
MARATHON PETROLEUM	0.64	-60.39	-0.39
CONOCOPHILLIPS	0.66	-52.30	-0.34
VALERO ENERGY	0.65	-51.00	-0.33
AMERICAN INTL.GP.	0.62	-52.23	-0.32
BERKSHIRE HATHAWAY 'B'	1.49	-19.28	-0.29
RAYTHEON TECHNOLOGIES	0.74	-36.71	-0.27

Unclassified sector allocation includes cash allocations.

Boston Partners vs. eV US Large Cap Value Equity Gross Universe

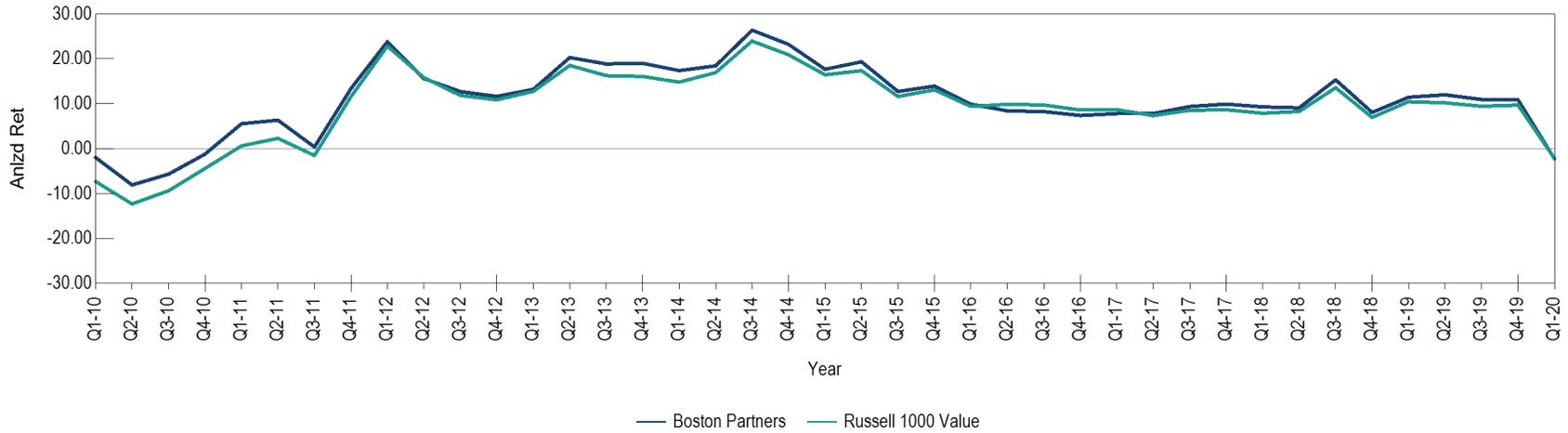


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-19.4	-7.1	4.3	6.1	10.5	34.4	-1.8	24.0	22.1	2.8
25th Percentile	-23.5	-12.1	1.3	4.2	9.0	29.6	-5.8	19.8	17.4	-0.4
Median	-26.2	-16.2	-1.1	2.4	8.1	26.9	-8.3	17.2	15.0	-2.6
75th Percentile	-28.9	-19.5	-3.0	1.0	7.1	24.5	-11.1	15.1	11.8	-5.1
95th Percentile	-34.0	-27.4	-7.1	-2.1	5.4	20.3	-16.1	11.2	7.0	-9.4
# of Portfolios	320	320	315	305	261	331	336	342	346	312
● Boston Partners	-28.7 (74)	-19.1 (72)	-2.3 (67)	1.4 (69)	8.0 (54)	24.3 (77)	-8.7 (55)	20.1 (23)	15.1 (50)	-3.9 (65)
▲ Russell 1000 Value	-26.7 (57)	-17.2 (59)	-2.2 (65)	1.9 (62)	7.7 (63)	26.5 (54)	-8.3 (50)	13.7 (87)	17.3 (26)	-3.8 (64)

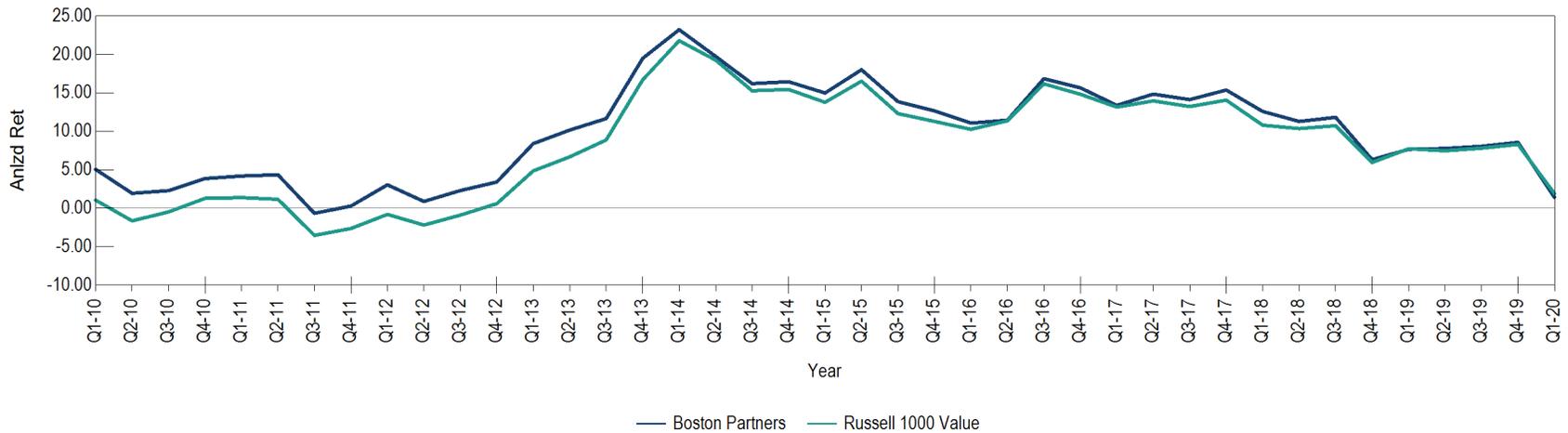
Boston Partners
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2020

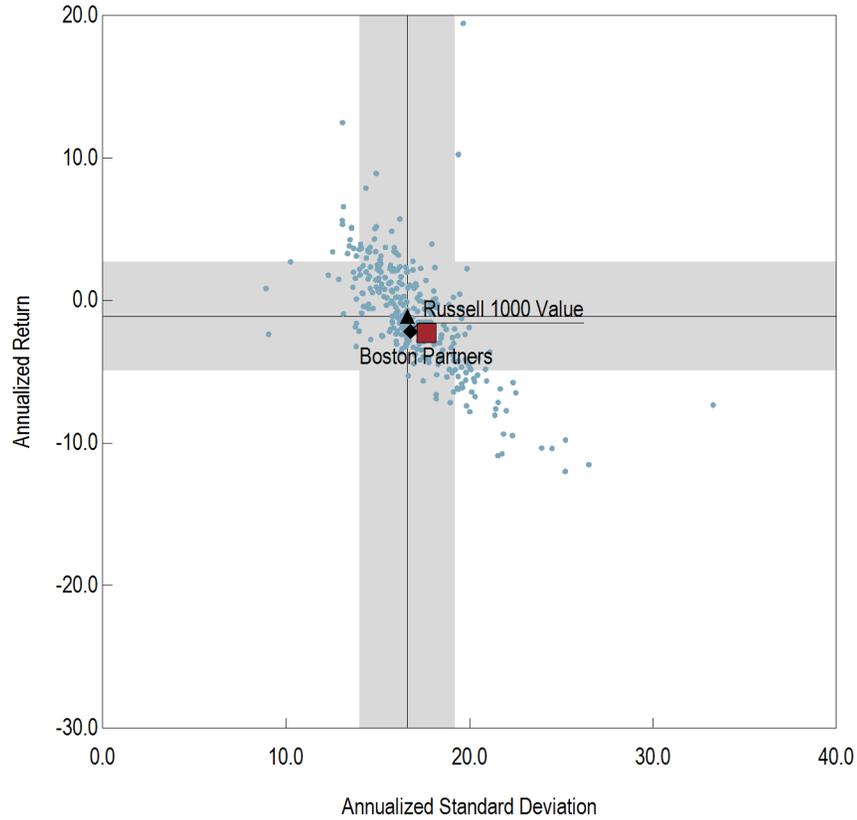
Rolling 3 Year Annualized Return (%)



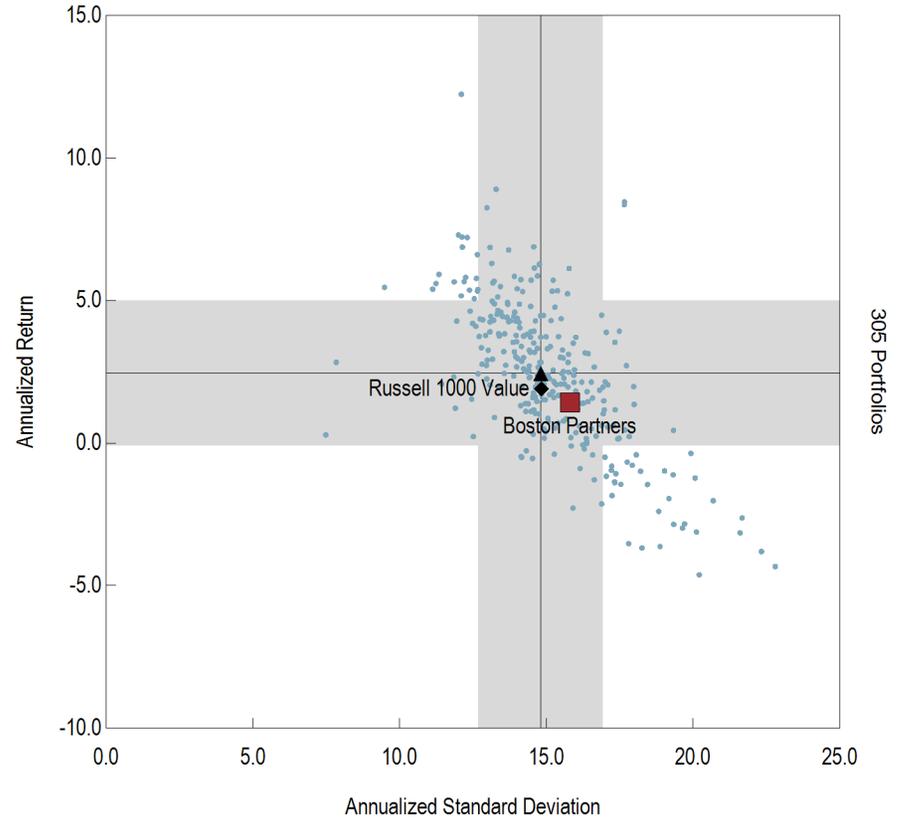
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	-2.3%	17.6%	-0.2
Russell 1000 Value	-2.2%	16.8%	-0.2
eV US Large Cap Value Equity Gross Median	-1.1%	16.6%	-0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	1.4%	15.8%	0.0
Russell 1000 Value	1.9%	14.8%	0.1
eV US Large Cap Value Equity Gross Median	2.4%	14.8%	0.1

Emerald Advisers Manager Portfolio Overview

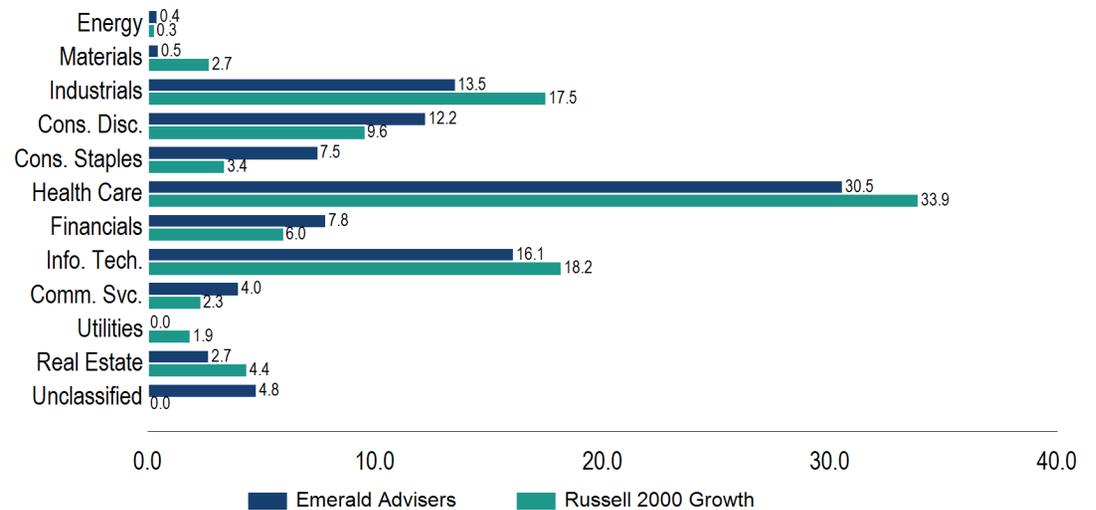
Period Ending: March 31, 2020

Domestic equity small cap growth portfolio of companies with significantly high growth rates. Primary personnel include Kenneth Mertz, Joseph Garner, and Stacey Sears.

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	117	1,167
Weighted Avg. Market Cap. (\$B)	2.62	2.37
Median Market Cap. (\$B)	1.48	0.60
Price To Earnings	19.55	18.61
Price To Book	4.18	3.38
Price To Sales	3.19	2.27
Return on Equity (%)	-11.59	-4.48
Yield (%)	0.49	0.99
Beta	1.05	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return
CHEGG	3.12	-5.62
FRESHPET	2.82	8.09
TREX	2.50	-10.84
NEOGENOMICS	2.11	-5.61
HORIZON THERAPEUTICS PUBLIC	2.10	-18.18
THE SIMPLY GOOD FOODS	2.04	-32.52
CHURCHILL DOWNS	1.97	-24.96
COGENT COMMS.HOLDINGS	1.97	25.62
RAPID7	1.88	-22.65
MERCURY SYSTEMS	1.82	3.23

Top Contributors

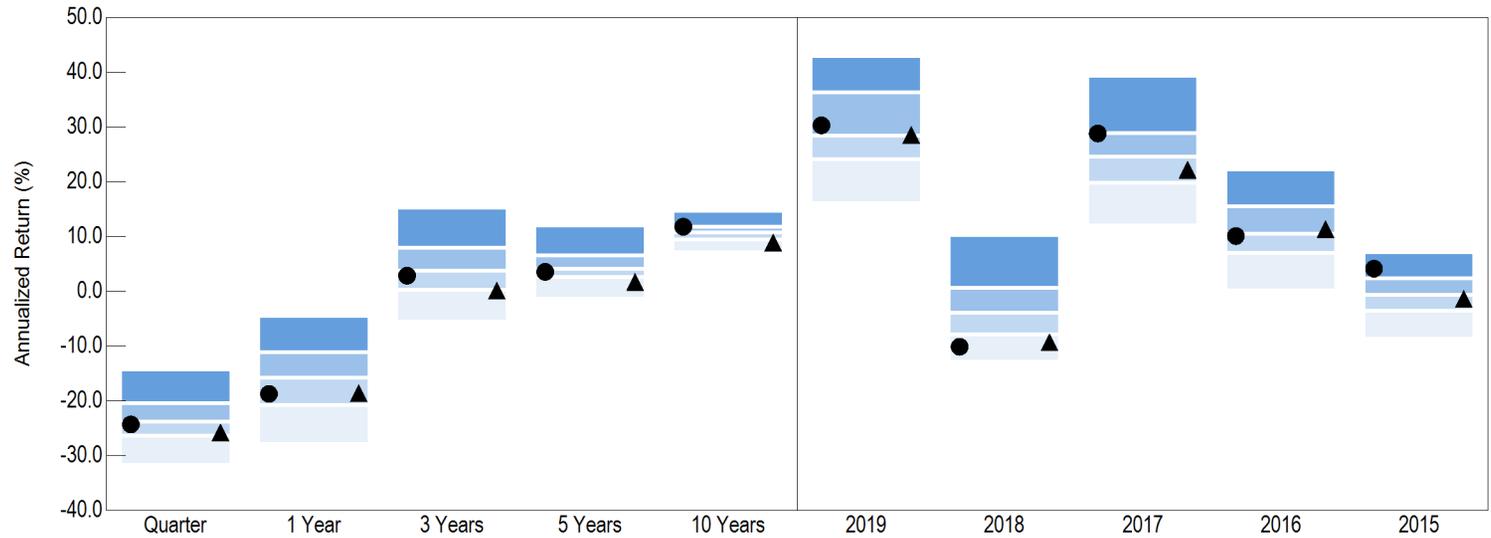
	Avg Wgt	Return	Contribution
TELADOC HEALTH	0.23	85.15	0.20
COGENT	0.35	25.62	0.09
COMMS.HOLDINGS	0.18	46.57	0.08
EHEALTH	0.70	8.09	0.06
FRESHPET	0.13	43.21	0.06
OYSTER POINT PHARMA	0.10	45.62	0.05
TWIST BIOSCIENCE	0.25	15.19	0.04
PALOMAR HOLDINGS	0.32	7.95	0.03
TANDEM DIABETES CARE	0.25	7.42	0.02
TABULA RASA HEALTHCARE	0.21	7.96	0.02
QTS REALTY TRUST CL.A			

Bottom Contributors

	Avg Wgt	Return	Contribution
EVERI HOLDINGS	0.35	-75.43	-0.26
SEAWORLD ENTERTAINMENT	0.39	-65.25	-0.25
HARSCO	0.34	-69.71	-0.24
FIVE BELOW	0.51	-44.96	-0.23
PLANET FITNESS CL.A	0.66	-34.79	-0.23
CHART INDUSTRIES	0.40	-57.06	-0.23
STEVEN MADDEN	0.47	-45.62	-0.21
JACK IN THE BOX	0.37	-54.83	-0.20
THE SIMPLY GOOD FOODS	0.60	-32.52	-0.20
LENDINGTREE	0.48	-39.56	-0.19

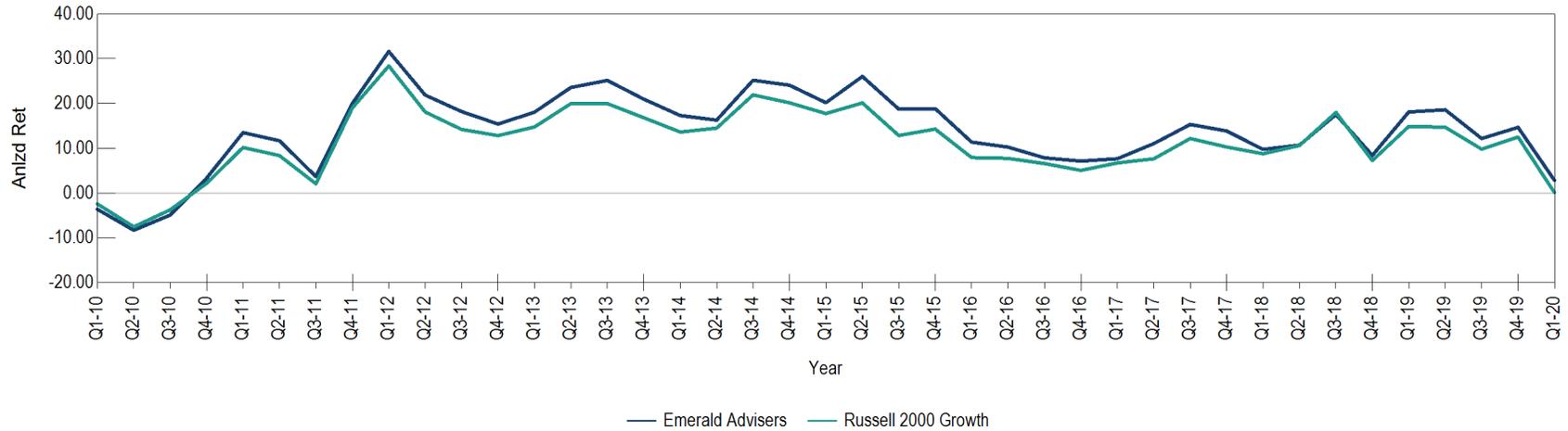
Unclassified sector allocation includes cash allocations.

Emerald Advisers vs. eV US Small Cap Growth Equity Gross Universe

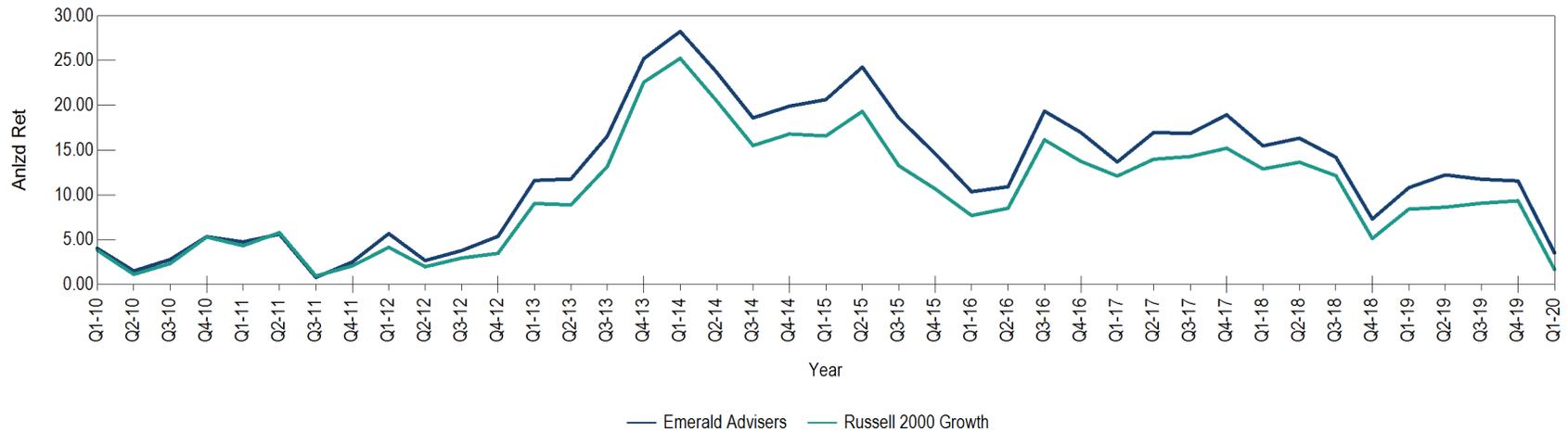


	Return (Rank)									
5th Percentile	-14.3	-4.6	15.3	11.9	14.6	42.8	10.2	39.2	22.2	7.1
25th Percentile	-20.4	-11.0	8.0	6.6	11.9	36.4	0.7	28.9	15.5	2.5
Median	-23.7	-15.7	3.8	4.2	10.8	28.5	-3.9	24.6	10.6	-0.6
75th Percentile	-26.3	-20.7	0.3	2.7	9.6	24.2	-7.9	19.8	7.1	-3.5
95th Percentile	-31.6	-27.8	-5.5	-1.3	7.2	16.2	-12.8	12.1	0.2	-8.7
# of Portfolios	157	157	157	148	135	157	164	174	170	154
● Emerald Advisers	-24.3 (56)	-18.7 (66)	2.8 (58)	3.5 (64)	11.8 (29)	30.3 (45)	-10.1 (85)	28.8 (26)	10.1 (54)	4.1 (19)
▲ Russell 2000 Growth	-25.8 (69)	-18.6 (65)	0.1 (78)	1.7 (79)	8.9 (84)	28.5 (51)	-9.3 (80)	22.2 (62)	11.3 (49)	-1.4 (59)

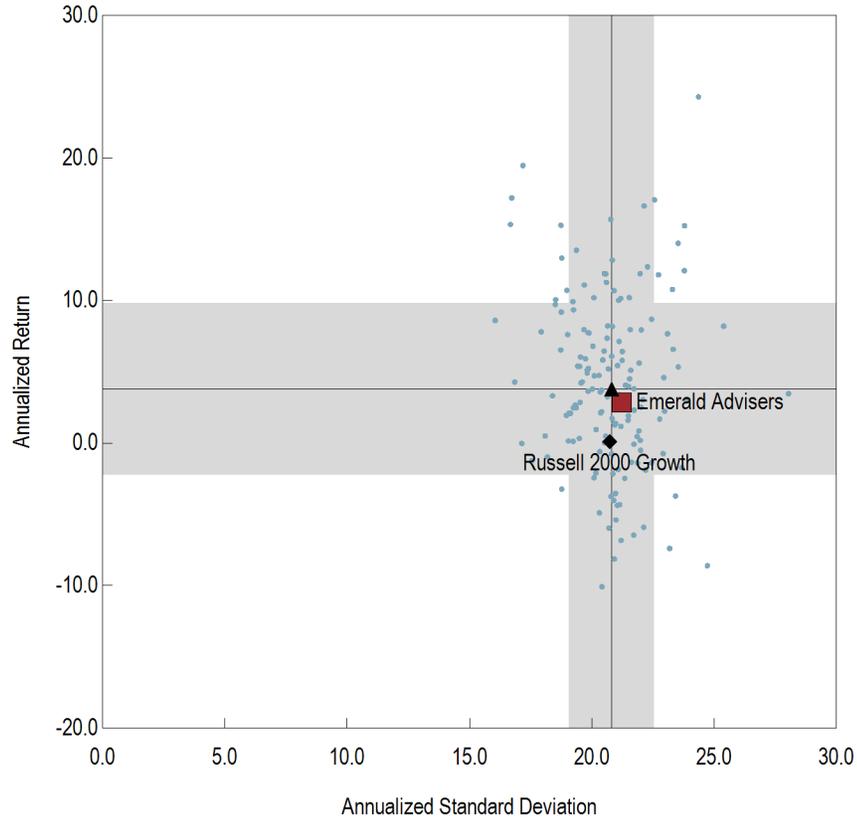
Rolling 3 Year Annualized Return (%)



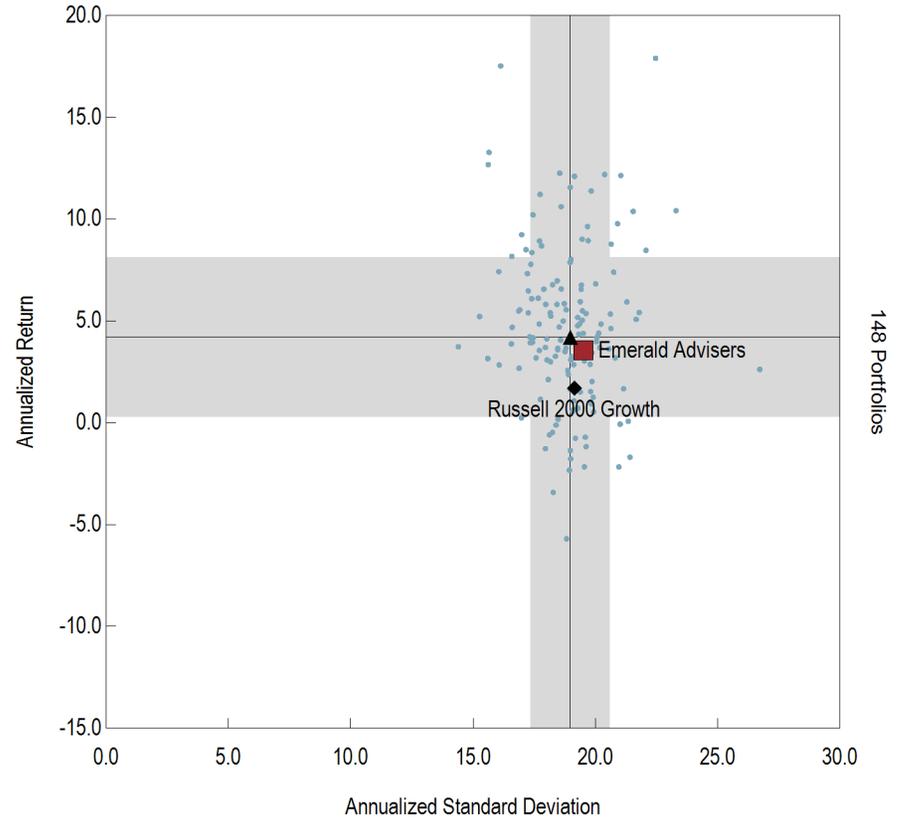
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	2.8%	21.2%	0.1
Russell 2000 Growth	0.1%	20.7%	-0.1
eV US Small Cap Growth Equity Gross Median	3.8%	20.8%	0.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	3.5%	19.5%	0.1
Russell 2000 Growth	1.7%	19.1%	0.0
eV US Small Cap Growth Equity Gross Median	4.2%	19.0%	0.2

Ceredex Manager Portfolio Overview

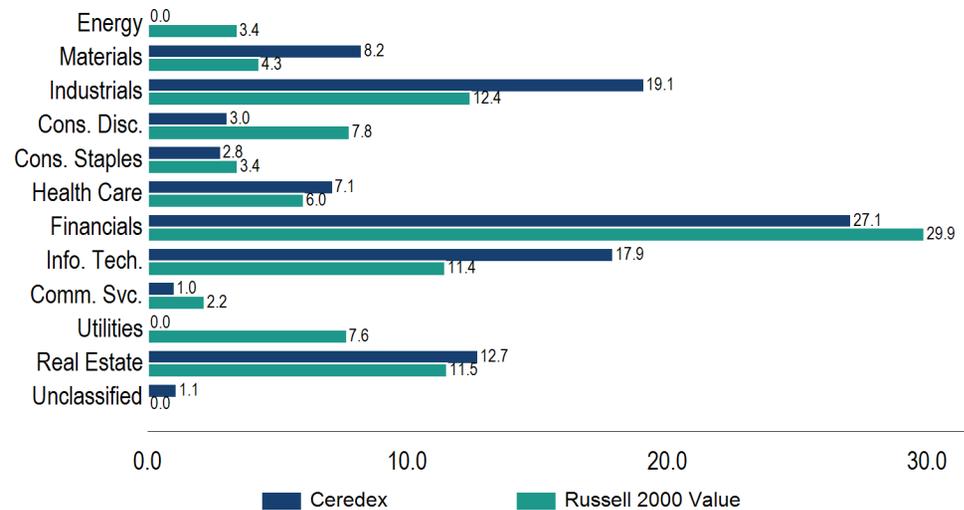
Period Ending: March 31, 2020

Domestic equity small cap value portfolio of companies with dividend yields and low valuations. Primary personnel include Brett Barner and David Maynard.

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	53	1,391
Weighted Avg. Market Cap. (\$B)	3.63	1.62
Median Market Cap. (\$B)	2.49	0.42
Price To Earnings	13.09	10.46
Price To Book	1.81	1.64
Price To Sales	1.57	1.11
Return on Equity (%)	14.76	5.52
Yield (%)	2.89	3.17
Beta	0.91	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
KEMPER	6.33	-3.68
HILL-ROM HOLDINGS	5.69	-11.15
POWER INTEGRATIONS	5.35	-10.50
HEALTHCARE TRUST OF AM. CL.A	4.67	-19.82
CUBIC	4.59	-34.86
APTARGROUP	4.49	-13.64
PHYSICIANS REALTY TST.	4.29	-25.47
QUANTA SERVICES	4.19	-22.06
FIRST AMER.FINL.	4.09	-26.80
SLM	3.49	-19.07

Top Contributors

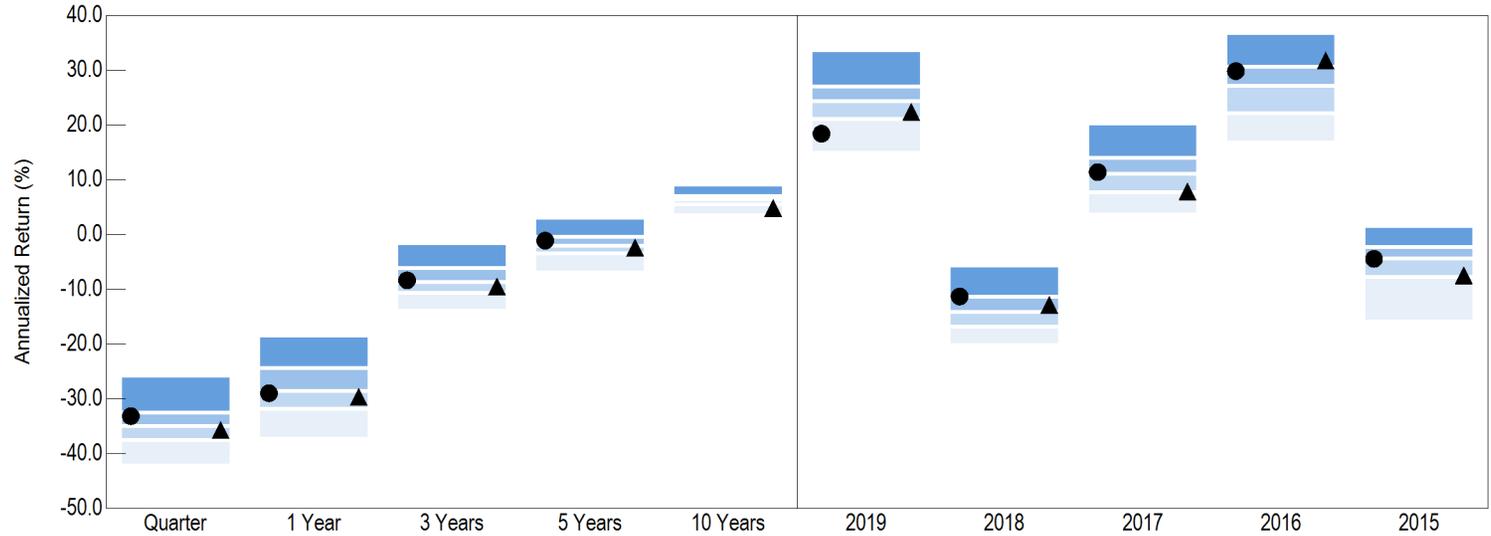
	Avg Wgt	Return	Contribution
TAUBMAN CENTERS	0.08	36.60	0.03
AVX	0.02	6.80	0.00
WERNER ENTERPRISES	0.02	-0.11	0.00
LINDSAY	0.02	-4.32	0.00
DAKTRONICS	0.01	-18.26	0.00
PHIBRO ANIMAL HLTH.CL.A	0.07	-2.20	0.00
PRICESMART	0.01	-25.58	0.00
BOISE CASCADE	0.01	-34.74	0.00
EMERALD HOLDING	0.00	-75.25	0.00
COHEN & STEERS	0.01	-27.13	0.00

Bottom Contributors

	Avg Wgt	Return	Contribution
SABRE	1.49	-72.61	-1.08
ENERGIZER HOLDINGS	1.49	-39.41	-0.59
CHILDRENS PLACE	0.84	-68.71	-0.58
AMER.EAG.OUTFITTERS	0.92	-45.40	-0.42
TANGER FAC.OUTLET CNTRS.	0.61	-65.27	-0.40
CUBIC	1.14	-34.86	-0.40
W R GRACE	0.79	-48.78	-0.38
PENSKE AUTOMOTIVE GP.	0.86	-43.80	-0.38
PHYSICIANS REALTY TST.	1.30	-25.47	-0.33
FIRST AMER.FINL.	1.23	-26.80	-0.33

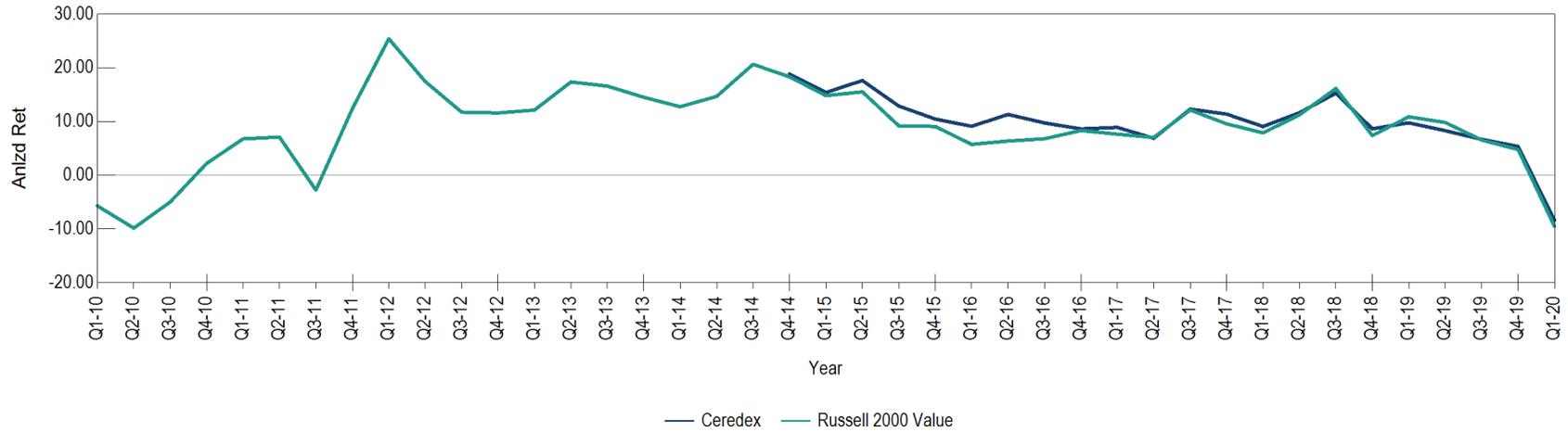
Unclassified sector allocation includes cash allocations.

Ceredex vs. eV US Small Cap Value Equity Gross Universe

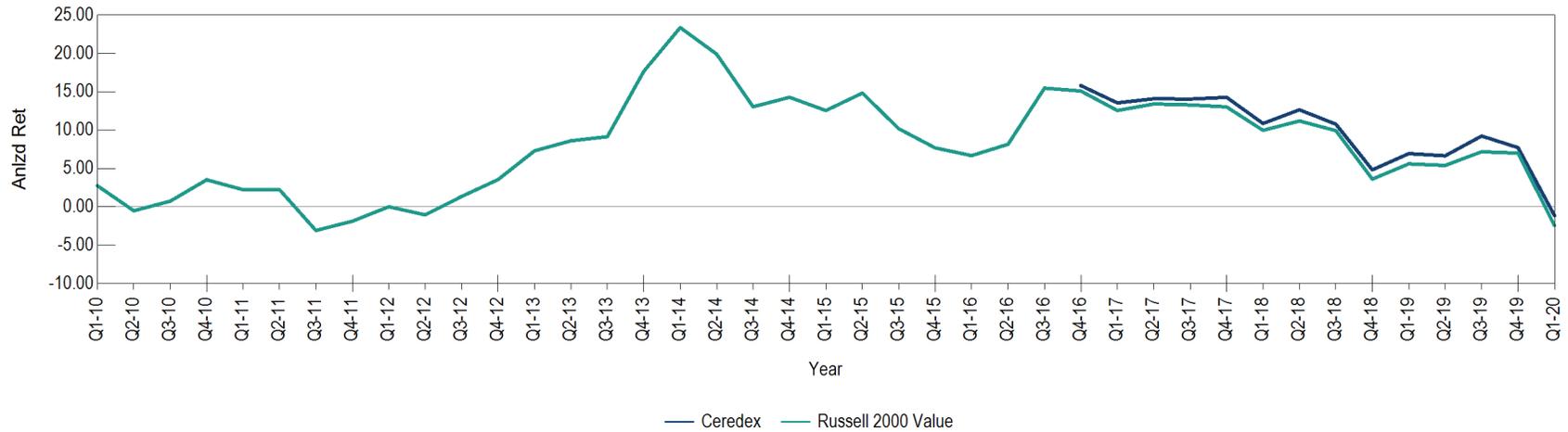


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-25.9	-18.5	-1.6	3.0	9.0	33.6	-5.7	20.2	36.7	1.5
25th Percentile	-32.5	-24.3	-6.0	-0.4	7.0	27.0	-11.4	14.1	30.7	-2.2
Median	-34.9	-28.6	-8.6	-2.0	6.4	24.4	-14.0	11.1	27.2	-4.3
75th Percentile	-37.4	-31.8	-10.6	-3.4	5.6	21.2	-16.7	7.8	22.2	-7.7
95th Percentile	-42.0	-37.2	-13.9	-6.8	3.6	15.0	-20.2	3.7	16.8	-15.8
# of Portfolios	214	214	208	201	180	217	220	224	222	212
● Ceredex	-33.1 (33)	-29.0 (54)	-8.4 (48)	-1.1 (35)	-- (--)	18.4 (87)	-11.3 (25)	11.4 (48)	29.8 (32)	-4.4 (52)
▲ Russell 2000 Value	-35.7 (58)	-29.6 (61)	-9.5 (60)	-2.4 (62)	4.8 (86)	22.4 (69)	-12.9 (39)	7.8 (75)	31.7 (17)	-7.5 (74)

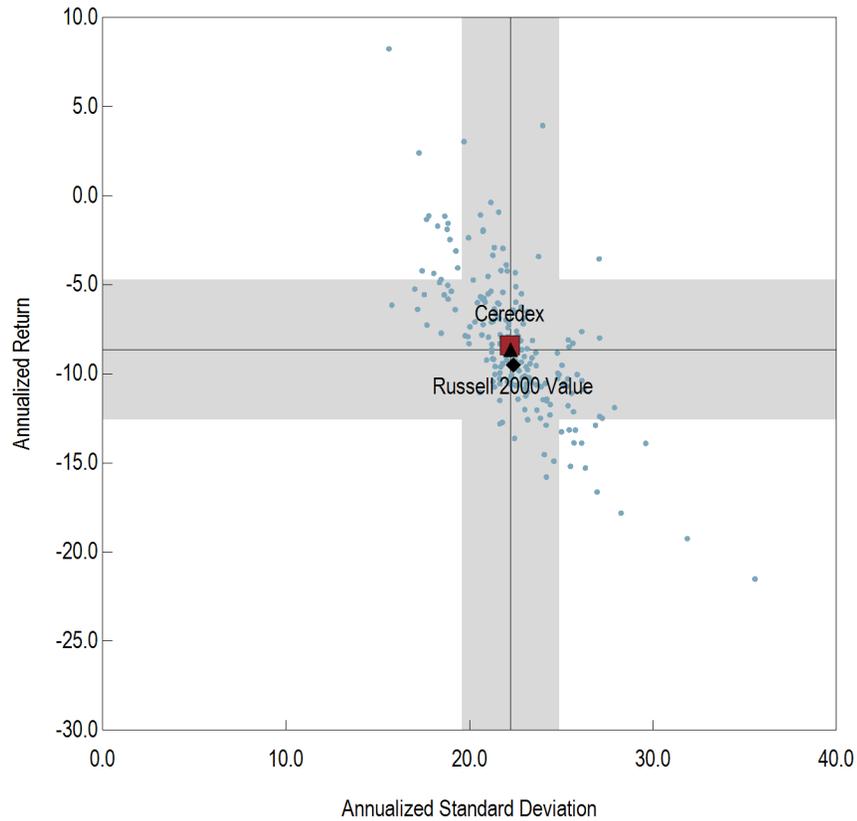
Rolling 3 Year Annualized Return (%)



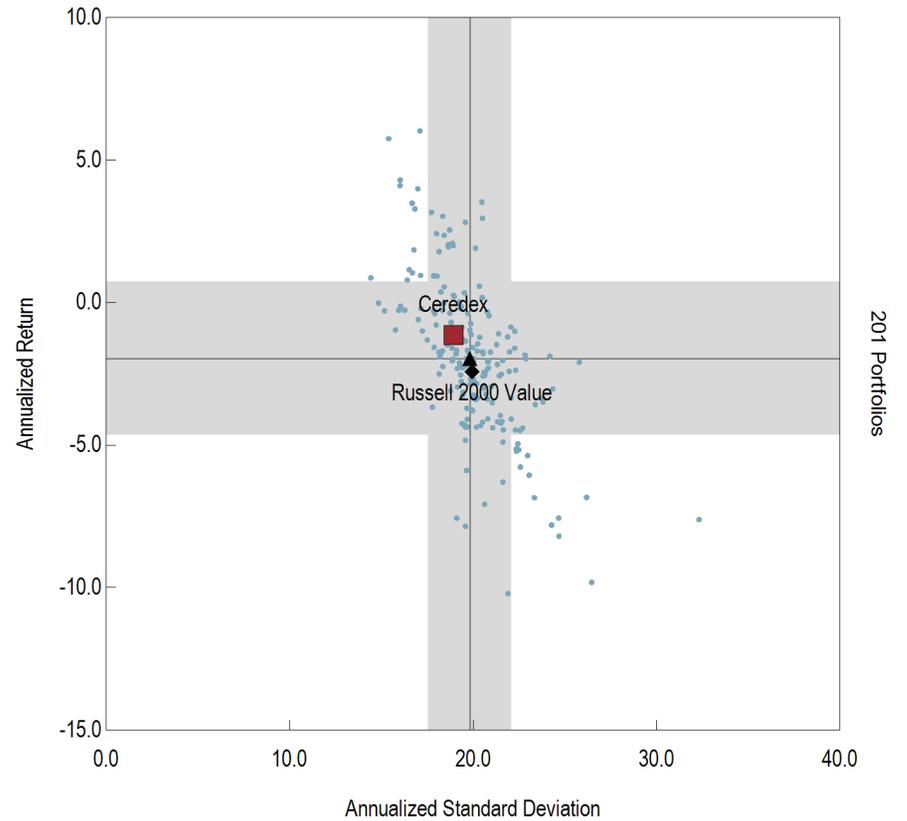
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	-8.4%	22.2%	-0.5
Russell 2000 Value	-9.5%	22.4%	-0.5
eV US Small Cap Value Equity Gross Median	-8.6%	22.2%	-0.5

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	-1.1%	18.9%	-0.1
Russell 2000 Value	-2.4%	19.9%	-0.2
eV US Small Cap Value Equity Gross Median	-2.0%	19.8%	-0.2

International Equity Managers

Pyrford Manager Portfolio Overview

Period Ending: March 31, 2020

International equity value portfolio of non-US companies with low valuations at the country and stock level. Primary personnel include Tony Cousins, Daniel McDonagh, and Paul Simons.

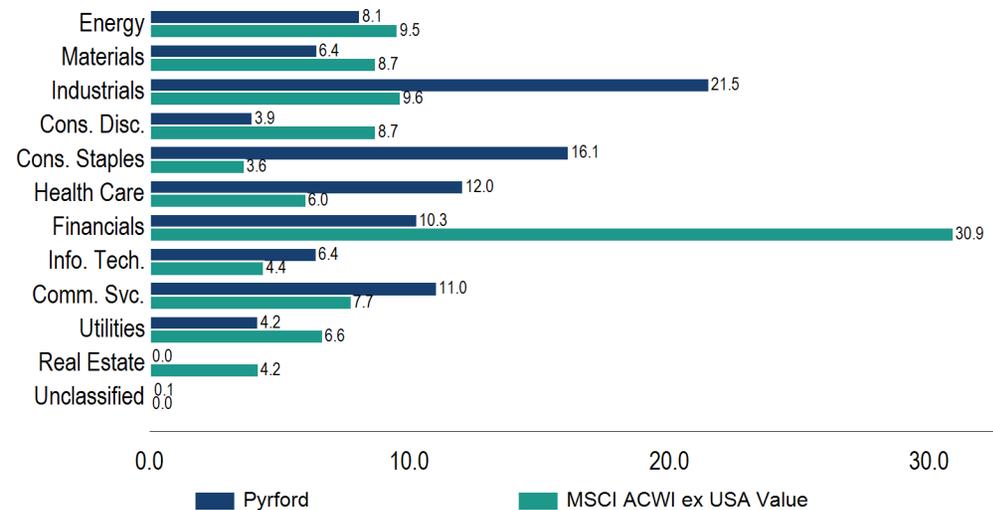
Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Value
Number of Holdings	74	1,476
Weighted Avg. Market Cap. (\$B)	56.96	41.69
Median Market Cap. (\$B)	19.30	5.01
Price To Earnings	15.17	9.45
Price To Book	2.41	1.61
Price To Sales	1.53	0.88
Return on Equity (%)	17.11	11.11
Yield (%)	4.54	5.59
Beta	0.76	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.0%	72.4%
Emerging*	6.9%	27.6%
Top 10 Largest Countries		
United Kingdom	16.7%	13.5%
Japan	12.8%	18.0%
Switzerland	12.4%	4.1%
Australia	10.2%	3.9%
France	9.5%	6.9%
Germany	9.1%	6.2%
Hong Kong	5.1%	2.6%
Netherlands	4.7%	0.9%
Singapore	4.5%	0.9%
Taiwan*	4.1%	3.6%
Total-Top 10 Largest Countries	89.1%	60.6%

Sector Allocation (%) vs MSCI ACWI ex USA Value



Top Contributors

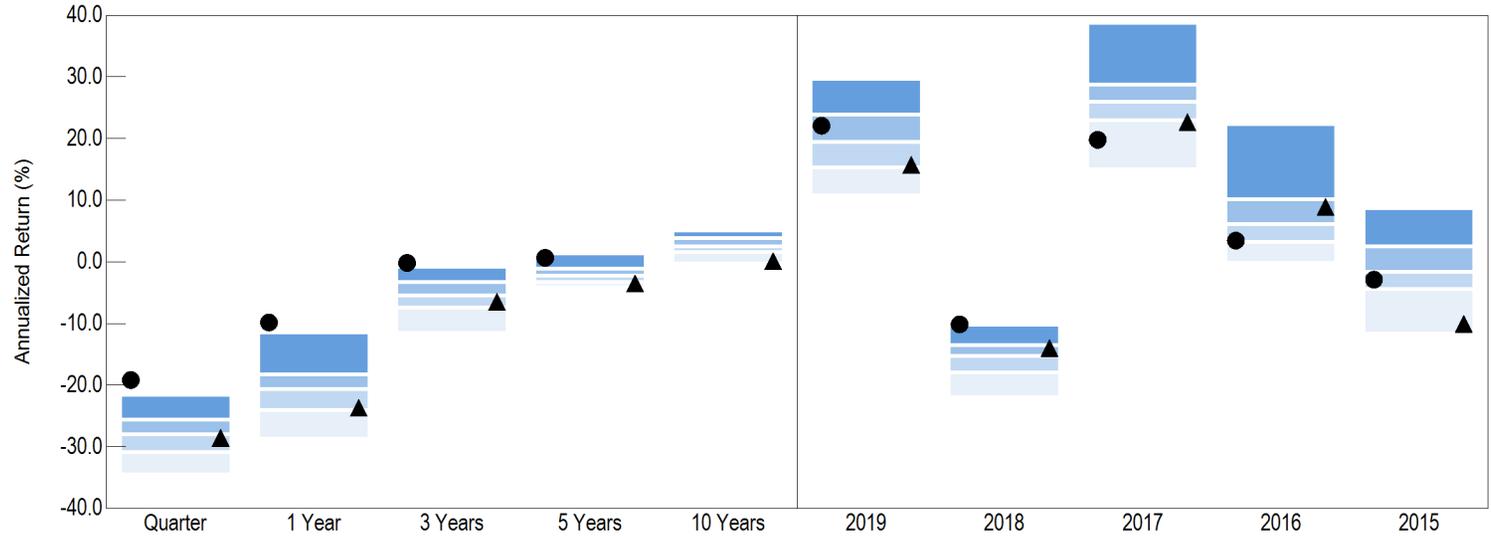
	Avg Wgt	Return	Contribution
NIHON KOHDEN	1.37	35.45	0.49
ROCHE HOLDING	3.30	3.03	0.10
KDDI	2.06	0.56	0.01
GIVAUDAN 'N'	0.81	1.04	0.01
CHUNGHWA TELECOM	1.32	-3.13	-0.04
ESSITY B	0.98	-4.20	-0.04
KONINKLIJKE VOPAK	1.55	-4.09	-0.06
SCHINDLER 'P'	0.66	-11.93	-0.08
RECKITT BENCKISER GROUP	1.34	-6.08	-0.08
SGS 'N'	0.78	-12.40	-0.10

Bottom Contributors

	Avg Wgt	Return	Contribution
WOODSIDE PETROLEUM	1.78	-52.65	-0.94
COMPUTERSHARE	1.70	-48.95	-0.83
LEGAL & GENERAL	1.78	-40.12	-0.71
FUCHS PETROLUB PREF.	2.32	-28.87	-0.67
BRENNTAG	1.88	-33.03	-0.62
GEA GROUP	1.42	-38.87	-0.55
QBE INSURANCE GROUP	1.35	-40.62	-0.55
SAMPO 'A'	1.56	-33.13	-0.52
COMFORTDELGRO CORPORATION	1.22	-39.69	-0.49
ROYAL DUTCH SHELL A	1.23	-37.99	-0.47

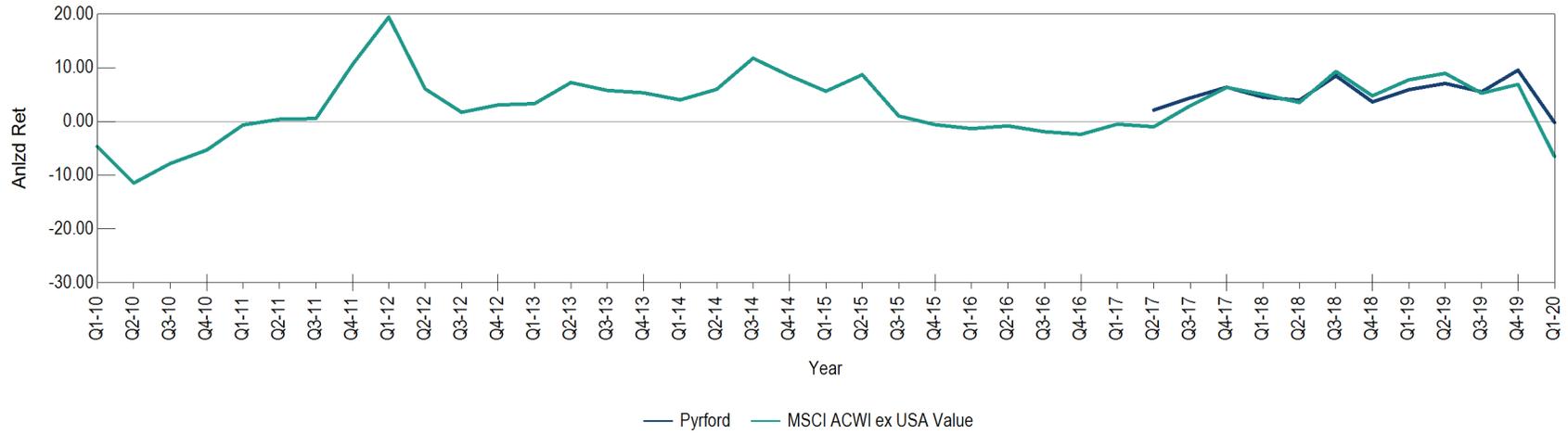
Unclassified sector allocation includes cash allocations.

Pyrford vs. eV ACWI ex-US Value Equity Gross Universe

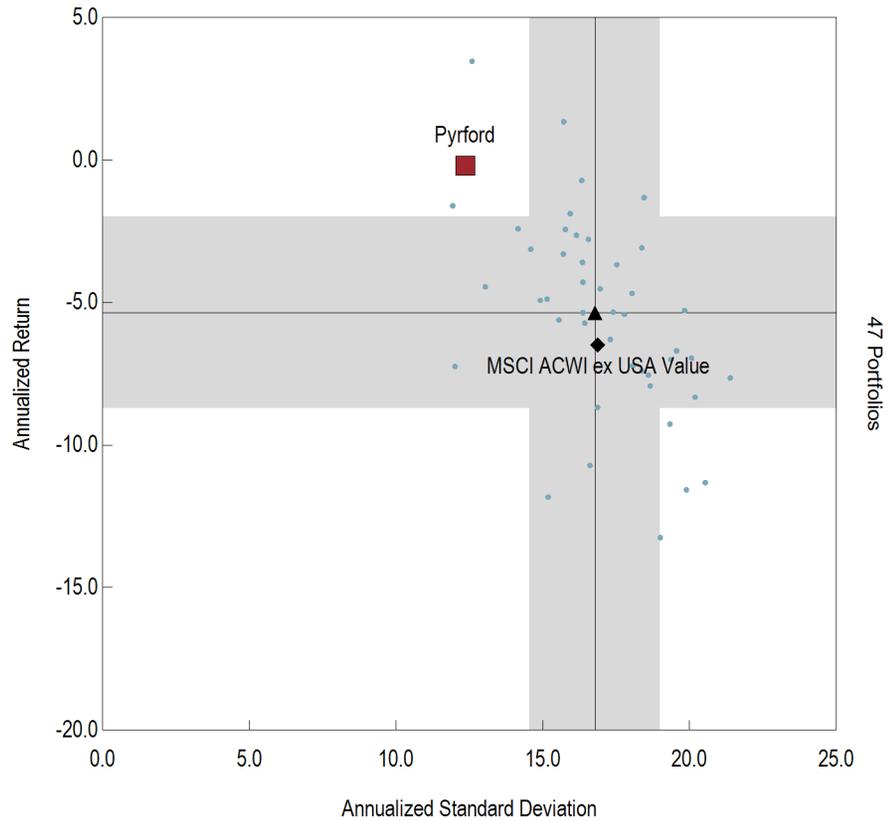


	Return (Rank)									
5th Percentile	-21.6	-11.5	-0.9	1.4	5.0	29.6	-10.2	38.8	22.3	8.7
25th Percentile	-25.5	-18.2	-3.2	-1.0	3.9	24.0	-13.4	28.8	10.2	2.5
Median	-27.9	-20.6	-5.4	-2.2	2.6	19.5	-15.2	26.0	6.2	-1.6
75th Percentile	-30.8	-24.0	-7.3	-3.2	1.6	15.4	-17.9	23.0	3.3	-4.3
95th Percentile	-34.4	-28.6	-11.5	-4.0	-0.2	10.8	-21.9	15.0	-0.1	-11.6
# of Portfolios	50	50	47	43	27	52	54	56	55	45
● Pyrford	-19.2 (2)	-9.8 (4)	-0.2 (4)	0.6 (11)	-- (--)	22.1 (35)	-10.1 (5)	19.8 (84)	3.4 (74)	-2.9 (59)
▲ MSCI ACWI ex USA Value	-28.5 (59)	-23.7 (70)	-6.5 (64)	-3.5 (84)	0.1 (94)	15.7 (74)	-14.0 (32)	22.7 (77)	8.9 (35)	-10.1 (93)

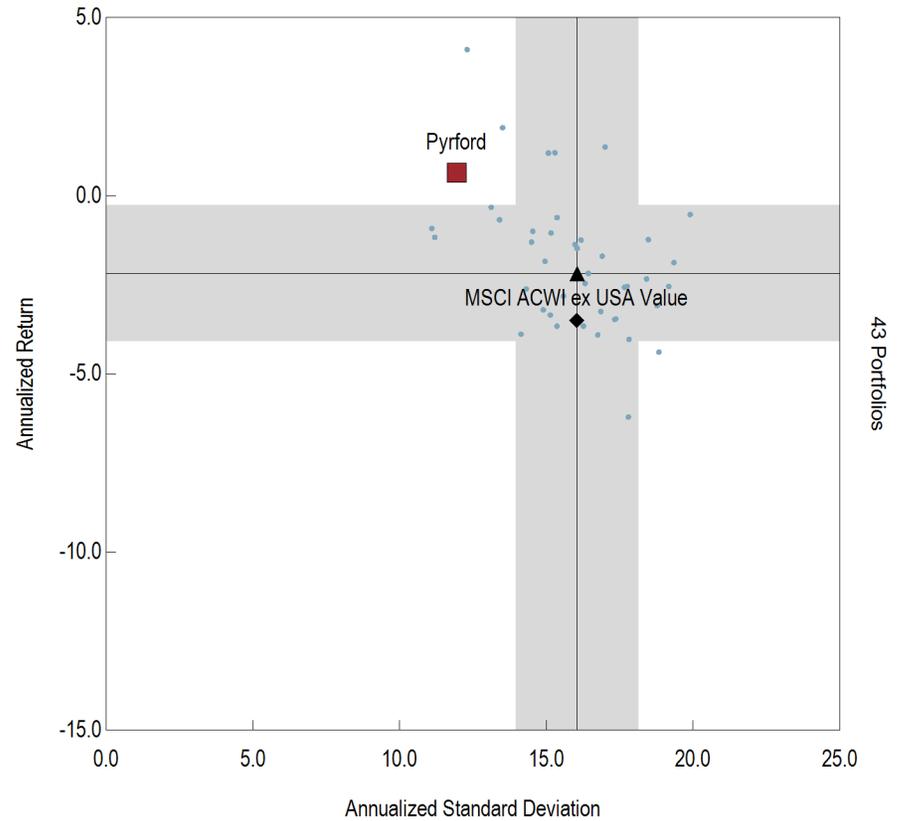
Rolling 3 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	-0.2%	12.4%	-0.2
MSCI ACWI ex USA Value	-6.5%	16.9%	-0.5
eV ACWI ex-US Value Equity Gross Median	-5.4%	16.8%	-0.4

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	0.6%	11.9%	0.0
MSCI ACWI ex USA Value	-3.5%	16.0%	-0.3
eV ACWI ex-US Value Equity Gross Median	-2.2%	16.0%	-0.2

William Blair Manager Portfolio Overview

Period Ending: March 31, 2020

International equity growth portfolio of non-US companies with high growth rates constructed from the security level. Primary personnel include Simon Fennell and Kenneth McAtamney.

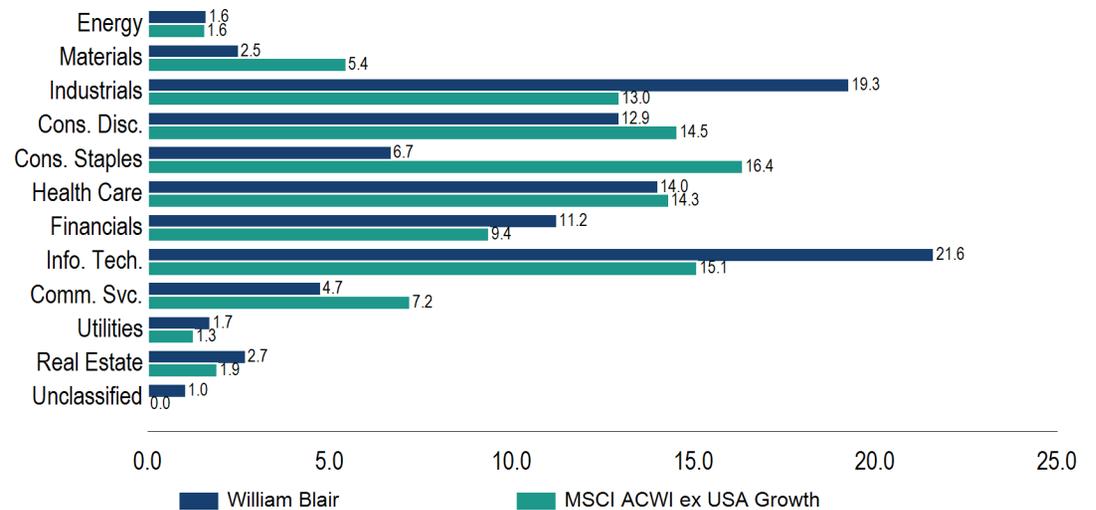
Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	200	1,234
Weighted Avg. Market Cap. (\$B)	67.00	92.71
Median Market Cap. (\$B)	8.12	6.86
Price To Earnings	23.59	19.50
Price To Book	4.17	3.25
Price To Sales	3.51	2.21
Return on Equity (%)	23.13	19.65
Yield (%)	1.53	2.18
Beta	1.11	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	80.0%	72.7%
Emerging*	19.1%	27.3%
Top 10 Largest Countries		
Japan	13.1%	16.9%
United Kingdom	12.4%	7.0%
China*	11.0%	11.2%
France	10.0%	7.3%
Switzerland	6.6%	9.7%
Hong Kong	6.2%	2.4%
Denmark	6.1%	2.5%
Germany	4.3%	4.8%
Sweden	4.1%	2.1%
Canada	4.0%	6.5%
Total-Top 10 Largest Countries	78.1%	70.4%

Sector Allocation (%) vs MSCI ACWI ex USA Growth



Top Contributors

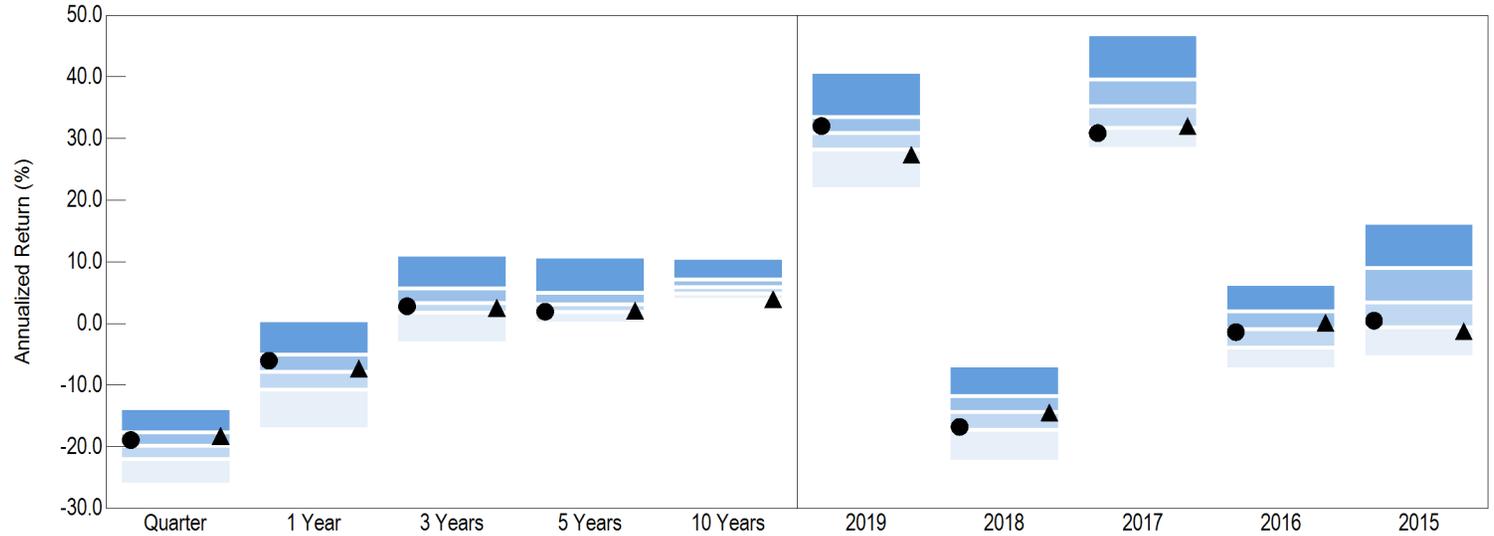
	Avg Wgt	Return	Contribution
LONZA GROUP	1.50	13.97	0.21
COLOPLAST 'B'	0.65	16.86	0.11
CG SERVICES ORD	0.24	20.63	0.05
NOVO NORDISK 'B'	0.96	5.03	0.05
QIAGEN	0.20	23.08	0.05
EVOLUTION GAMING GROUP	0.29	13.24	0.04
NETEASE ADR 1:25	0.76	5.03	0.04
TENCENT HOLDINGS	2.00	1.76	0.04
TEAMVIEWER	0.29	11.27	0.03
WDP	0.19	10.40	0.02

Bottom Contributors

	Avg Wgt	Return	Contribution
AIRBUS	1.73	-55.55	-0.96
MTU AERO ENGINES HLDG.	1.13	-49.42	-0.56
SAFRAN	1.23	-43.09	-0.53
AMADEUS IT GROUP	1.21	-41.65	-0.51
COMPASS GROUP	1.23	-36.53	-0.45
MACQUARIE GP LTD	0.81	-45.84	-0.37
TAIWAN SEMICON.SPN.ADR 1:5	2.08	-16.96	-0.35
BANK CENTRAL ASIA	1.16	-29.65	-0.34
BROOKFIELD ASSET MAN.'A' (NYS)	1.34	-23.22	-0.31
MELROSE INDUSTRIES	0.48	-64.33	-0.31

Unclassified sector allocation includes cash allocations.

William Blair vs. eV ACWI ex-US Growth Equity Gross Universe

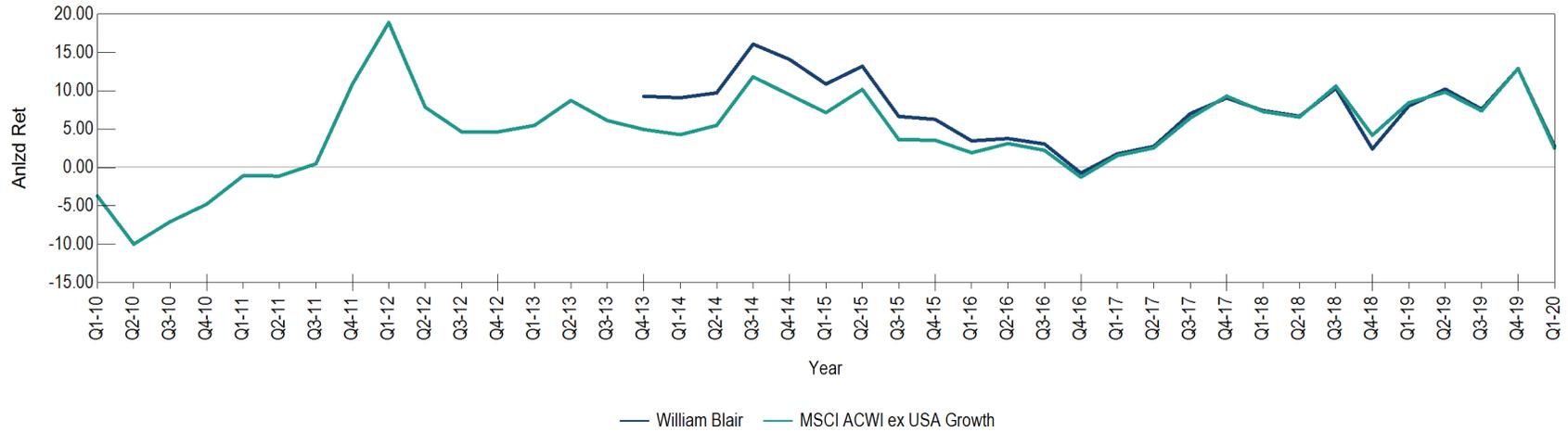


	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-13.8	0.5	11.1	10.8	10.6	40.8	-6.8	46.8	6.3	16.3
25th Percentile	-17.6	-5.0	5.8	5.0	7.2	33.6	-11.7	39.6	2.0	9.0
Median	-19.7	-7.8	3.3	3.2	5.9	31.0	-14.3	35.3	-0.9	3.5
75th Percentile	-22.0	-10.7	1.8	1.9	4.9	28.3	-17.2	31.8	-3.9	-0.5
95th Percentile	-26.1	-17.1	-3.1	0.1	3.9	21.8	-22.3	28.3	-7.4	-5.4
# of Portfolios	94	94	90	82	57	93	82	94	90	70
● William Blair	-18.9 (42)	-6.0 (37)	2.8 (62)	1.9 (75)	-- (--)	32.0 (39)	-16.8 (69)	30.9 (81)	-1.4 (55)	0.5 (69)
▲ MSCI ACWI ex USA Growth	-18.2 (32)	-7.3 (49)	2.5 (64)	2.1 (72)	3.9 (96)	27.3 (80)	-14.4 (51)	32.0 (75)	0.1 (45)	-1.3 (83)

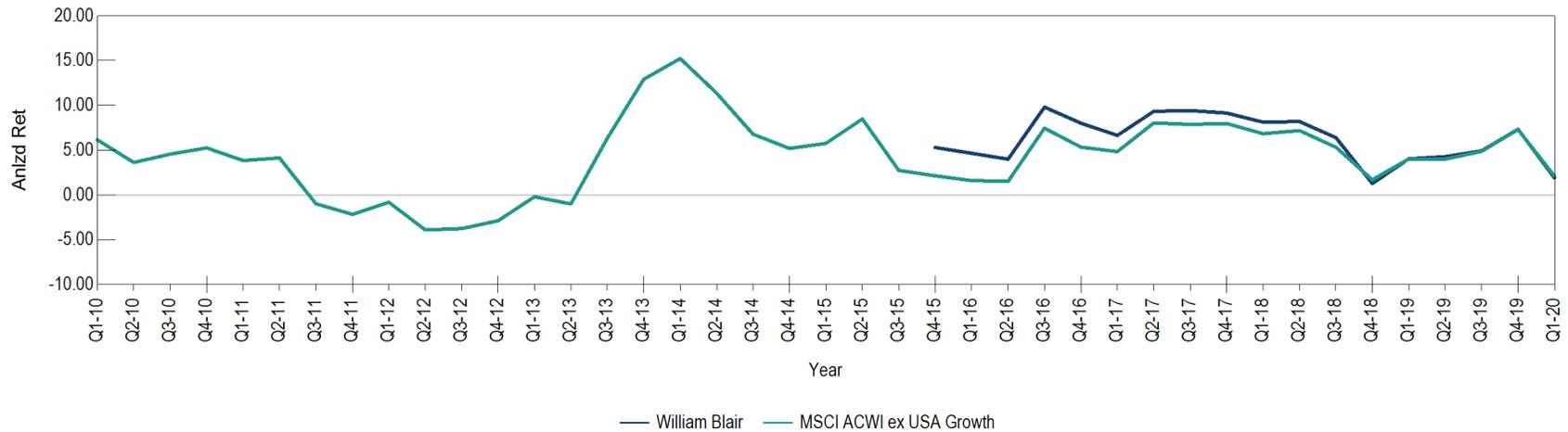
William Blair
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2020

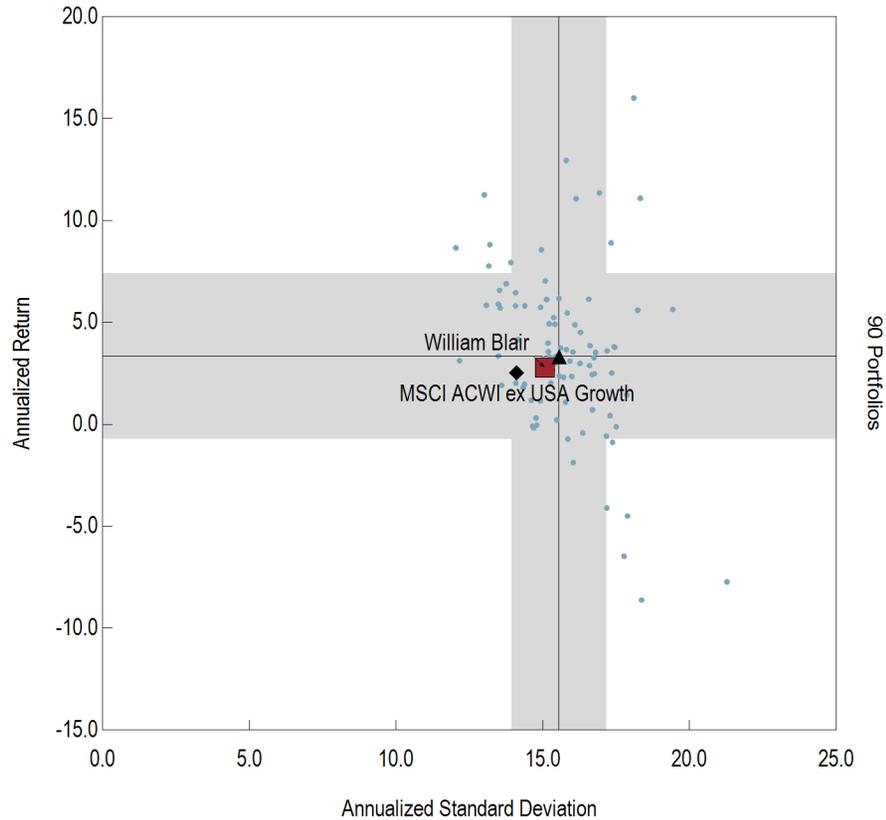
Rolling 3 Year Annualized Return (%)



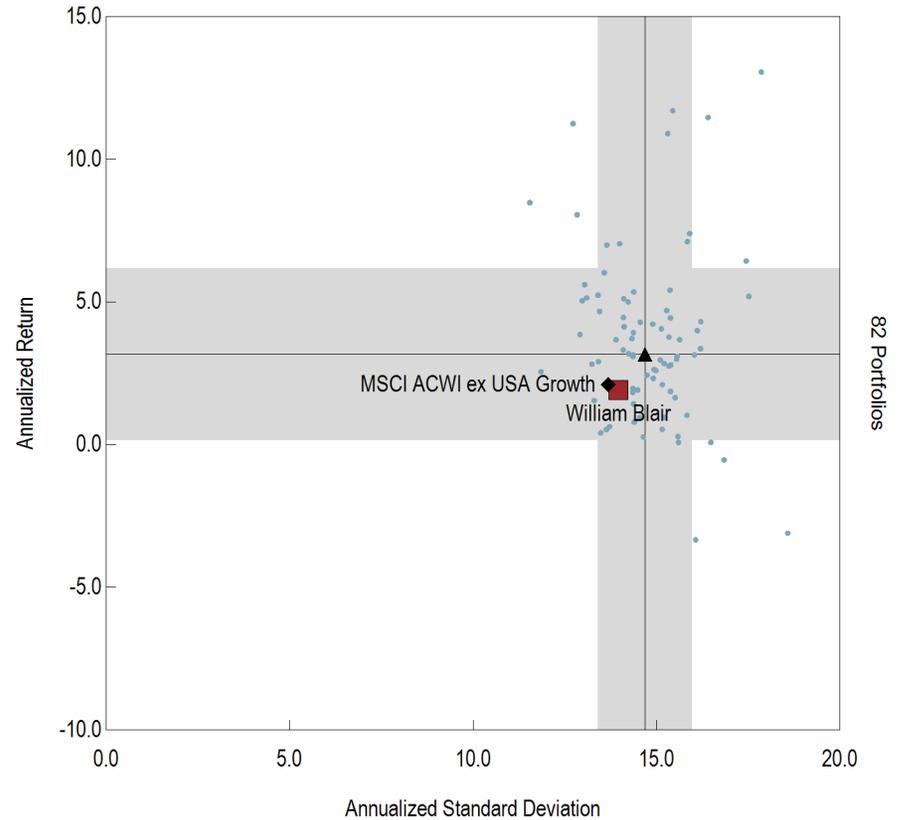
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	2.8%	15.1%	0.1
MSCI ACWI ex USA Growth	2.5%	14.1%	0.1
eV ACWI ex-US Growth Equity Gross Median	3.3%	15.6%	0.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	1.9%	14.0%	0.1
MSCI ACWI ex USA Growth	2.1%	13.7%	0.1
eV ACWI ex-US Growth Equity Gross Median	3.2%	14.7%	0.1

PIMCO RAE Emerging Markets Manager Portfolio Overview

Period Ending: March 31, 2020

The PIMCO RAE Emerging Markets seeks to invest 80% of its assets in investments that are economically tied to emerging market countries. The portfolio is sub-advised by Research Affiliates, LLC.

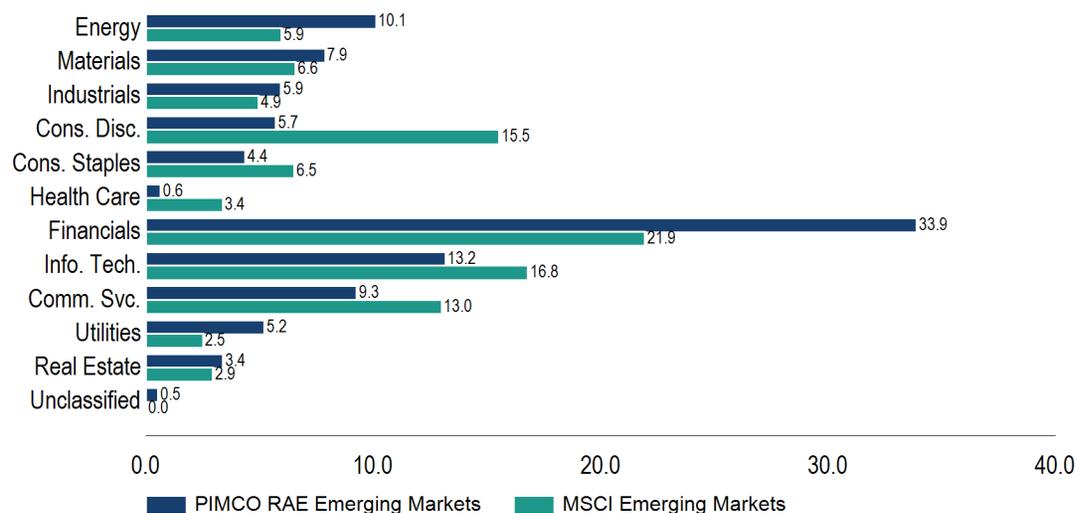
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	620	1,397
Weighted Avg. Market Cap. (\$B)	36.02	109.75
Median Market Cap. (\$B)	2.51	4.41
Price To Earnings	6.32	12.16
Price To Book	1.66	2.56
Price To Sales	0.54	1.45
Return on Equity (%)	10.96	17.62
Yield (%)	5.64	3.39
Beta	1.15	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	8.6%	0.0%
Emerging*	90.9%	100.0%
Top 10 Largest Countries		
China*	19.5%	40.1%
Korea*	16.5%	12.0%
Taiwan*	12.6%	12.4%
Russia*	10.0%	3.2%
Hong Kong	8.0%	0.0%
Brazil*	7.0%	5.0%
India*	5.7%	7.8%
Turkey*	4.8%	0.5%
South Africa*	3.6%	3.7%
Mexico*	2.9%	1.9%
Total-Top 10 Largest Countries	90.6%	86.6%

Sector Allocation (%) vs MSCI Emerging Markets



Top Contributors

	End Weight	Return	Contribution
PLDT	0.27	18.32	0.05
SOHO CHINA	0.11	36.77	0.04
VIPSHOP HOLDINGS SPONSORED ADS 5:1	0.18	9.95	0.02
CHANGYOU COM ADR 1:2	0.12	9.30	0.01
POLYMETAL INTERNATIONAL	0.07	9.35	0.01
HENGAN INTL.GP.	0.08	5.69	0.00
SEMICON.MNFG.INTL.	0.16	2.72	0.00
CHINA RAILWAY CON.'H'	0.17	2.30	0.00
LONGFOR GROUP HOLDINGS	0.09	3.97	0.00
CHINA LESSO GROUP HDG.	0.12	2.84	0.00

Bottom Contributors

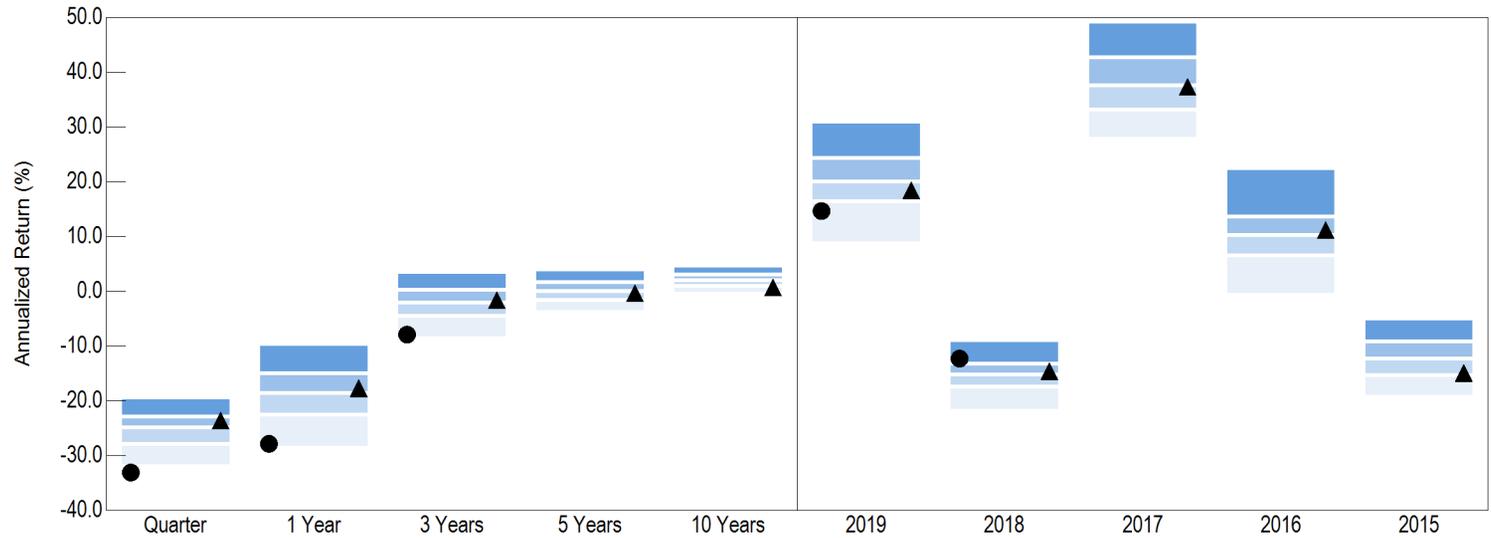
	End Weight	Return	Contribution
PJSC GAZPROM ADR CDI 1:2	3.57	-43.62	-1.56
SAMSUNG ELECTRONICS	3.44	-18.71	-0.64
SURGUTNEFTEGAS PUBLIC JOINT ADR 1:10	1.00	-46.98	-0.47
PJSC LUKOIL SPON (LON) ADR	0.93	-39.50	-0.37
ITAU UNIBANCO BANCO HLDG.ADR 1:1	0.69	-49.24	-0.34
BNC.BRADESCO PF.SPN.ADR 1:1	0.62	-54.46	-0.34
SHINHAN FINL.GROUP	0.82	-37.33	-0.31
KOREA ELECTRIC POWER	0.90	-34.22	-0.31
HYUNDAI MOTOR	1.02	-30.07	-0.31

Unclassified sector allocation includes cash allocations.

PIMCO RAE Emerging Markets
 Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2020

PIMCO RAE Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Return (Rank)															
5th Percentile	-19.4	-9.7	3.4	3.9	4.7	30.9	-9.0	49.2	22.4	-5.0						
25th Percentile	-22.8	-14.9	0.4	1.7	3.1	24.4	-13.2	42.8	13.7	-9.0						
Median	-24.8	-18.5	-2.0	0.1	2.1	20.1	-15.2	37.6	10.4	-12.2						
75th Percentile	-27.8	-22.5	-4.4	-1.5	1.1	16.5	-17.4	33.2	6.6	-15.3						
95th Percentile	-31.8	-28.5	-8.5	-3.7	-0.4	8.8	-21.8	27.8	-0.6	-19.2						
# of Portfolios	389	385	356	314	158	386	355	343	337	273						
● PIMCO RAE Emerging Markets	-33.1 (98)	-27.8 (93)	-7.9 (94)	-- (--)	-- (--)	14.6 (82)	-12.3 (19)	-- (--)	-- (--)	-- (--)						
▲ MSCI Emerging Markets	-23.6 (35)	-17.7 (44)	-1.6 (44)	-0.4 (56)	0.7 (84)	18.4 (63)	-14.6 (43)	37.3 (53)	11.2 (45)	-14.9 (70)						

TT Emerging Markets Manager Portfolio Overview

Period Ending: March 31, 2020

The Emerging Markets Unconstrained strategy aims to outperform its benchmark, MSCI Emerging Markets Index by 5% per annum over a three-year rolling period. It targets high returns and long term capital growth by investing in a focused portfolio of primarily equity and equity-related securities traded in the Emerging Markets.

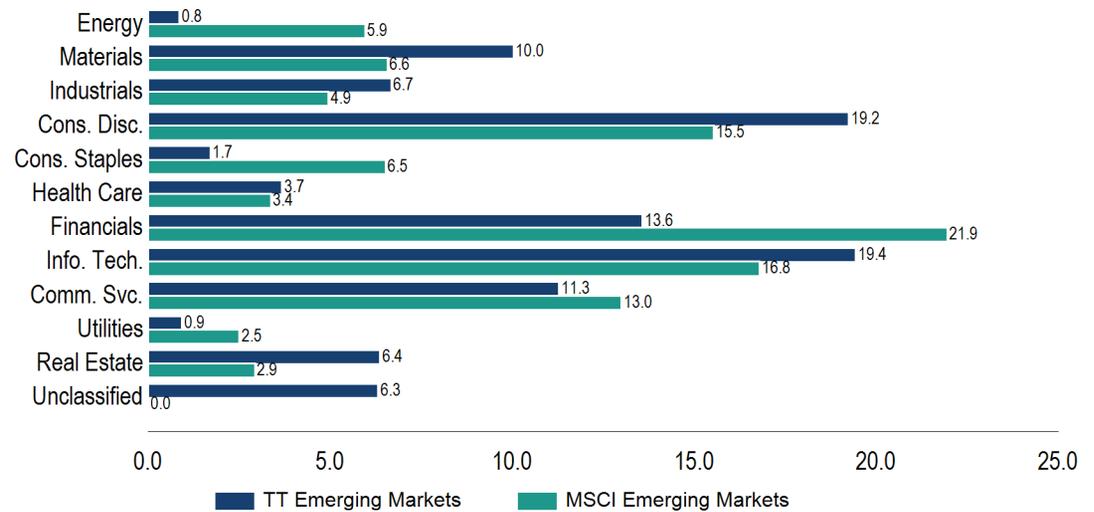
Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	70	1,397
Weighted Avg. Market Cap. (\$B)	90.87	109.75
Median Market Cap. (\$B)	5.97	4.41
Price To Earnings	9.65	12.16
Price To Book	2.72	2.56
Price To Sales	1.43	1.45
Return on Equity (%)	17.38	17.62
Yield (%)	3.24	3.39
Beta		1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	27.7%	0.0%
Emerging*	66.9%	100.0%
Frontier**	0.7%	0.0%
Top 10 Largest Countries		
Korea*	14.8%	12.0%
Hong Kong	14.0%	0.0%
Taiwan*	10.8%	12.4%
China*	10.5%	40.1%
India*	7.5%	7.8%
Brazil*	6.2%	5.0%
United States	6.1%	0.0%
South Africa*	5.4%	3.7%
Cash	4.6%	0.0%
Netherlands	4.5%	0.0%
Total-Top 10 Largest Countries	86.1%	81.0%

Sector Allocation (%) vs MSCI Emerging Markets



Top Contributors

	End Weight	Return	Contribution
PUBLIC JOINT STOCK POLYUS GDR	2.84	20.28	0.58
PING AN HEALTHCARE AND TECHNOLOGY COMPANY	1.92	27.85	0.53
A-LIVING ORD H	0.39	40.89	0.16
TENCENT HOLDINGS	3.50	1.76	0.06
PARADE TECHNOLOGIES	0.56	3.96	0.02
LG CHEM	0.00	-8.74	0.00
ULTRATECH CEMENT	0.01	-24.33	0.00
LG PF.	0.08	-24.99	-0.02
ARVIND FASHIONS	0.07	-61.04	-0.04
ZOOLION HDY.SCTC. 'H'	0.41	-13.17	-0.05

Bottom Contributors

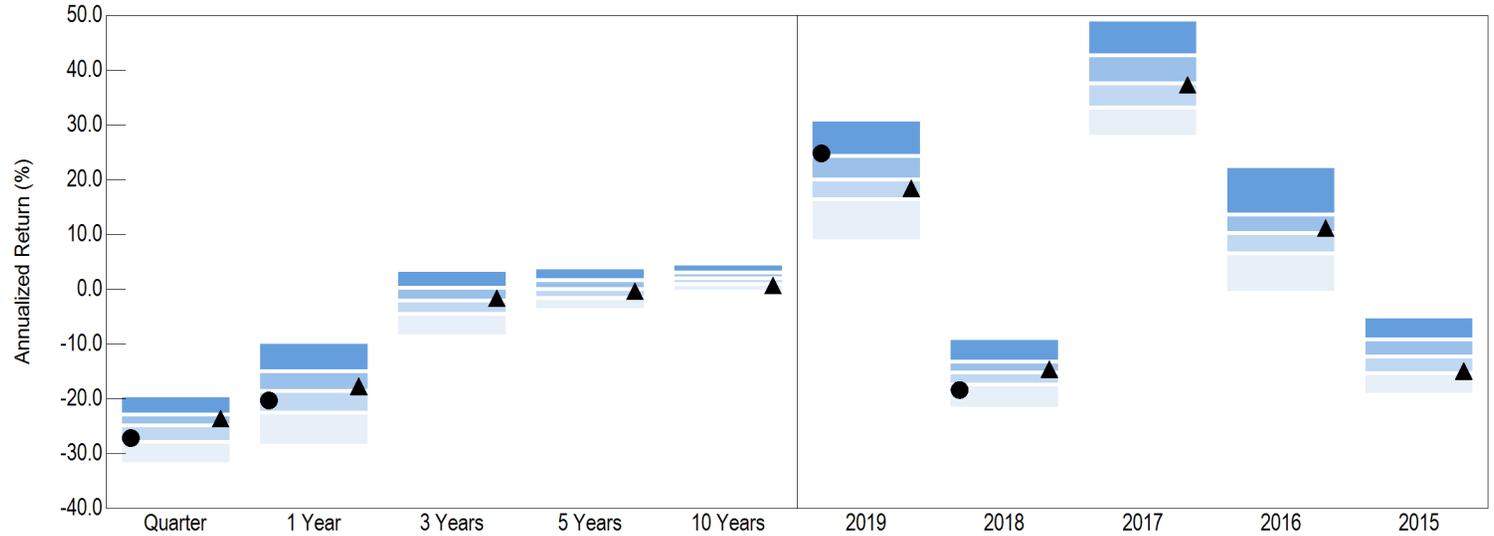
	End Weight	Return	Contribution
ICICI BANK	2.80	-43.32	-1.21
SAMSUNG ELTN.PREF.	6.80	-16.09	-1.09
VEON ADR 1:1	2.48	-36.25	-0.90
HANA FINANCIAL GROUP	2.02	-40.53	-0.82
VALE ON ADR 1:1	2.18	-37.20	-0.81
TAIWAN SEMICON.MNFG.	4.70	-17.12	-0.80
FIBRA UNO ADMINISTRACION REIT	1.51	-47.94	-0.73
MELCO RESORTS ENTERTAINMENT ADR 1:3	1.44	-48.21	-0.69
NASPERS	5.44	-12.72	-0.69
COGNA EDUCACAO ON	0.93	-72.86	-0.68

Unclassified sector allocation includes cash allocations.

TT Emerging Markets
 Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2020

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	-19.4	-9.7	3.4	3.9	4.7	30.9	-9.0	49.2	22.4	-5.0										
25th Percentile	-22.8	-14.9	0.4	1.7	3.1	24.4	-13.2	42.8	13.7	-9.0										
Median	-24.8	-18.5	-2.0	0.1	2.1	20.1	-15.2	37.6	10.4	-12.2										
75th Percentile	-27.8	-22.5	-4.4	-1.5	1.1	16.5	-17.4	33.2	6.6	-15.3										
95th Percentile	-31.8	-28.5	-8.5	-3.7	-0.4	8.8	-21.8	27.8	-0.6	-19.2										
# of Portfolios	389	385	356	314	158	386	355	343	337	273										
● TT Emerging Markets	-27.2 (72)	-20.3 (66)	-- (--)	-- (--)	-- (--)	24.8 (24)	-18.4 (83)	-- (--)	-- (--)	-- (--)										
▲ MSCI Emerging Markets	-23.6 (35)	-17.7 (44)	-1.6 (44)	-0.4 (56)	0.7 (84)	18.4 (63)	-14.6 (43)	37.3 (53)	11.2 (45)	-14.9 (70)										

Global Equity Managers

Artisan Partners Manager Portfolio Overview

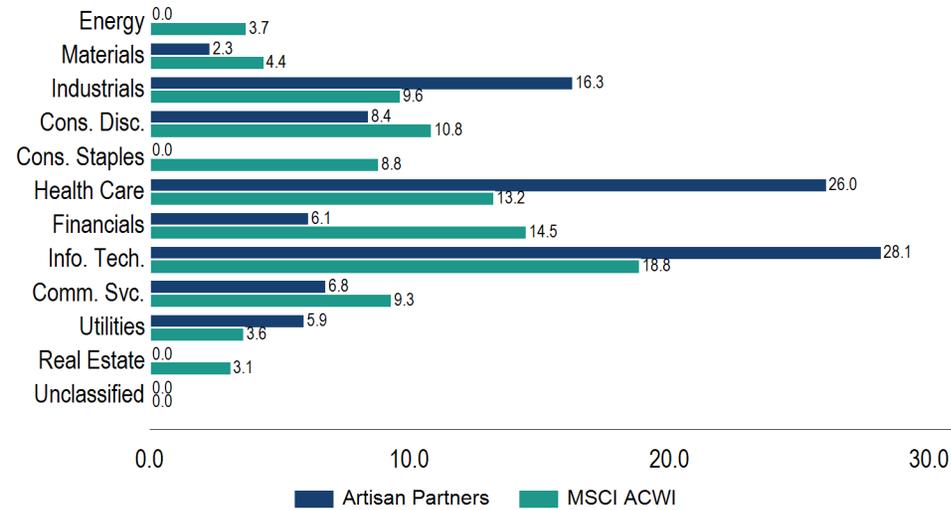
Period Ending: March 31, 2020

Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation. Primary personnel include James Hamel, Craigh Cepukenas, and Matthew Kamm.

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	45	3,040
Weighted Avg. Market Cap. (\$B)	122.38	173.13
Median Market Cap. (\$B)	32.24	7.33
Price To Earnings	29.63	15.24
Price To Book	4.73	3.11
Price To Sales	4.24	1.85
Return on Equity (%)	19.53	20.30
Yield (%)	1.16	2.93
Beta	0.90	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	99.3%	88.1%
Emerging*	0.7%	11.9%
Top 10 Largest Countries		
United States	59.5%	56.7%
United Kingdom	9.0%	4.3%
Denmark	6.3%	0.6%
Hong Kong	5.8%	1.1%
Switzerland	4.6%	3.1%
Netherlands	4.6%	1.2%
Japan	3.8%	7.5%
Spain	2.1%	0.7%
Sweden	1.9%	0.8%
Germany	1.7%	2.4%
Total-Top 10 Largest Countries	99.3%	78.4%

Top Contributors

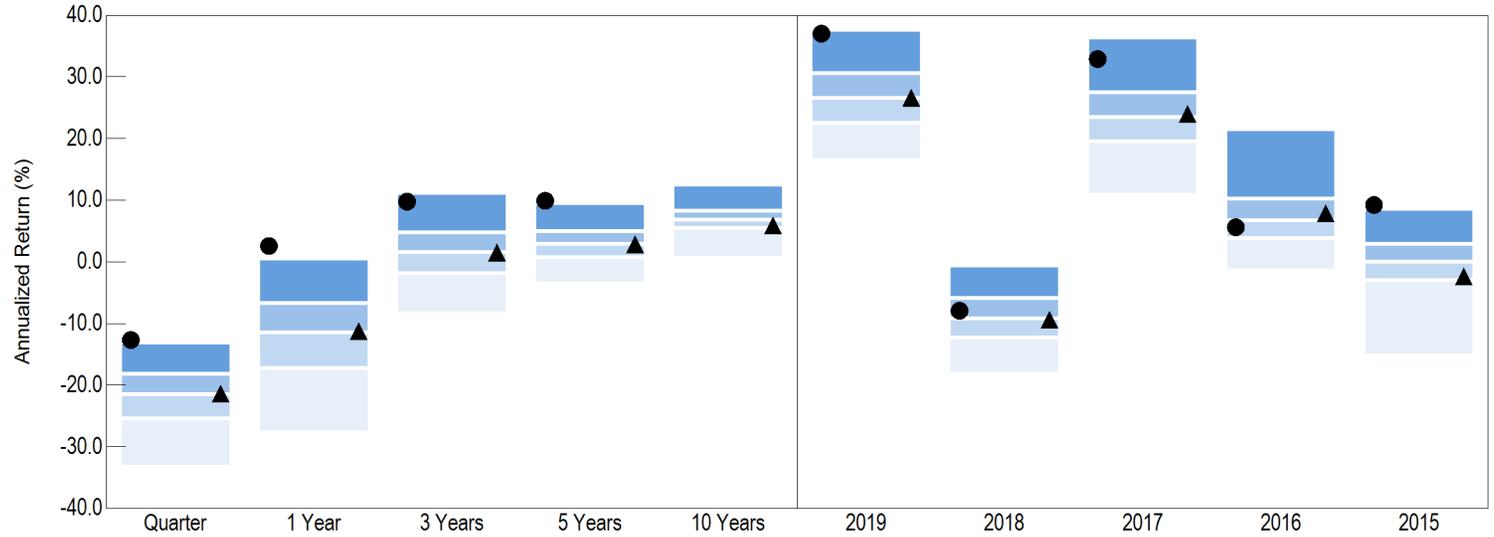
	Avg Wgt	Return	Contribution
ZOOM VIDEO COMMUNICATIONS A	1.62	114.76	1.86
LONZA GROUP	3.46	13.97	0.48
VEEVA SYSTEMS CL.A	2.01	11.17	0.22
ATLASSIAN 'A'	0.73	14.06	0.10
AMAZON.COM	0.63	5.51	0.03
ADYEN	0.78	3.04	0.02
TENCENT HOLDINGS	1.19	1.76	0.02
MICROSOFT	3.92	0.28	0.01
ACTIVISION BLIZZARD	2.14	0.10	0.00
NEXTERA ENERGY	1.26	-0.09	0.00

Bottom Contributors

	Avg Wgt	Return	Contribution
BANK OF AMERICA	3.73	-39.32	-1.46
APTIV	2.64	-48.03	-1.27
IHS MARKIT	5.68	-20.20	-1.15
BURBERRY GROUP	2.37	-43.78	-1.04
TECHTRONIC INDS.	4.01	-20.43	-0.82
LOWE'S COMPANIES	2.95	-27.82	-0.82
BOSTON SCIENTIFIC	2.63	-27.84	-0.73
ADIDAS	1.88	-30.72	-0.58
PAGSEGURO DIGITAL A	1.29	-43.41	-0.56
FORTIVE	1.98	-27.68	-0.55

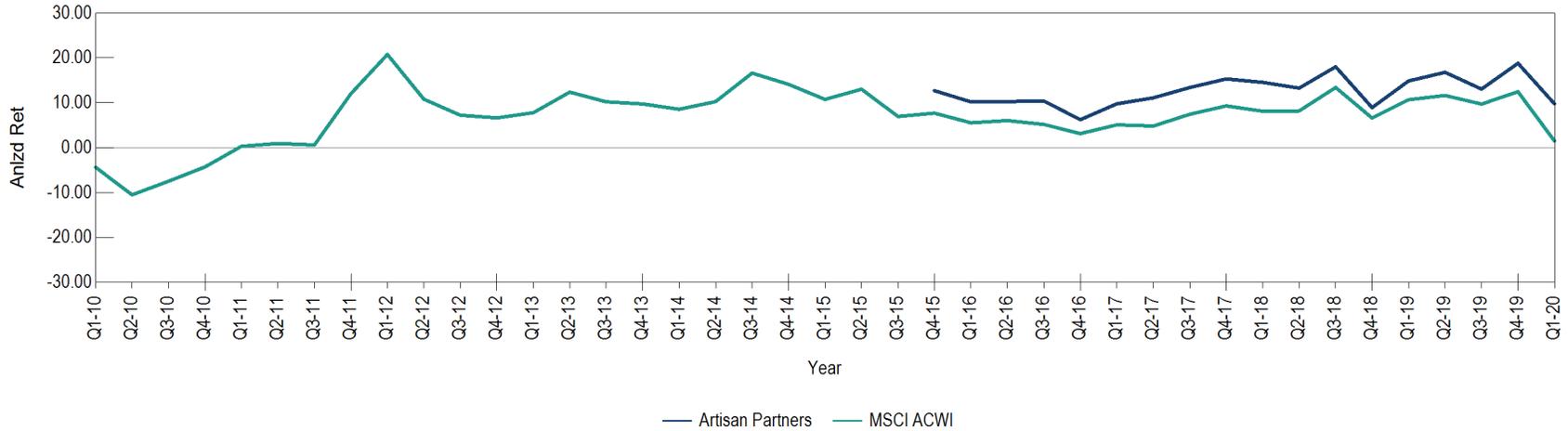
Unclassified sector allocation includes cash allocations.

Artisan Partners vs. eV All Global Equity Gross Universe

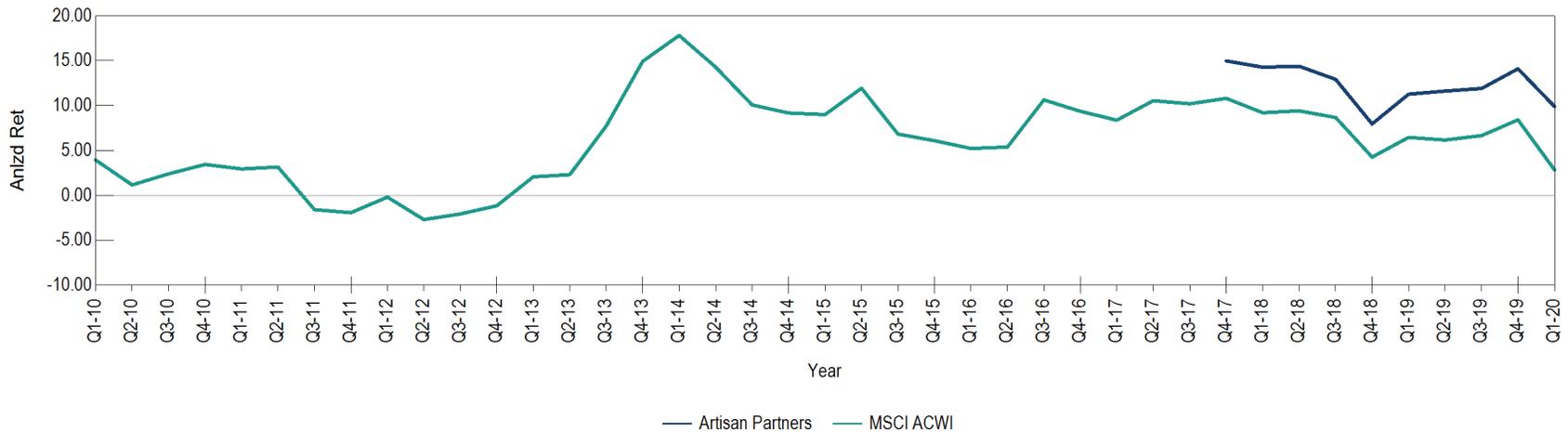


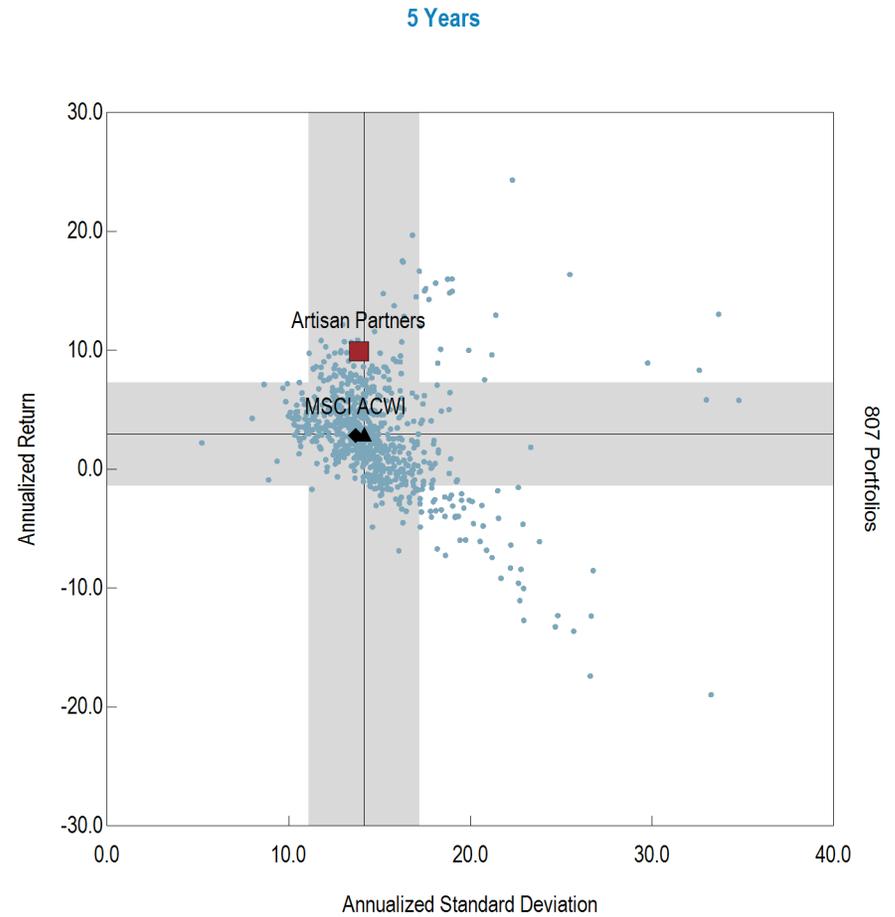
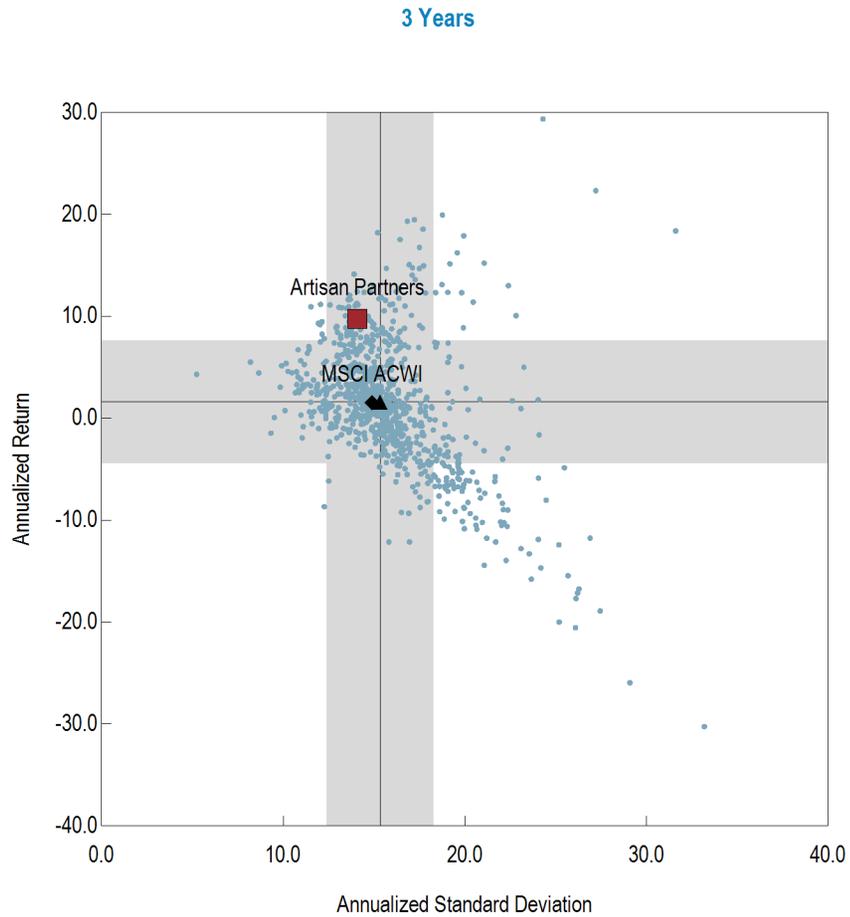
	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-13.1	0.5	11.2	9.5	12.5	37.6	-0.7	36.3	21.5	8.5
25th Percentile	-18.1	-6.6	4.8	5.0	8.3	30.7	-5.8	27.6	10.3	3.0
Median	-21.4	-11.4	1.6	3.0	6.9	26.6	-9.1	23.5	6.8	0.1
75th Percentile	-25.4	-17.2	-1.8	0.8	5.6	22.6	-12.2	19.6	3.9	-2.9
95th Percentile	-33.2	-27.6	-8.2	-3.4	0.7	16.5	-18.1	11.0	-1.4	-15.1
# of Portfolios	996	996	926	807	507	989	920	880	842	692
● Artisan Partners	-12.7 (4)	2.6 (4)	9.8 (8)	9.9 (5)	-- (--)	37.0 (7)	-7.9 (40)	32.9 (11)	5.6 (61)	9.2 (4)
▲ MSCI ACWI	-21.4 (50)	-11.3 (50)	1.5 (51)	2.8 (52)	5.9 (72)	26.6 (50)	-9.4 (53)	24.0 (47)	7.9 (42)	-2.4 (73)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	9.8%	14.1%	0.6
MSCI ACWI	1.5%	14.9%	0.0
eV All Global Equity Gross Median	1.6%	15.3%	0.0

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	9.9%	13.9%	0.6
MSCI ACWI	2.8%	13.7%	0.1
eV All Global Equity Gross Median	3.0%	14.2%	0.1

First Eagle Manager Portfolio Overview

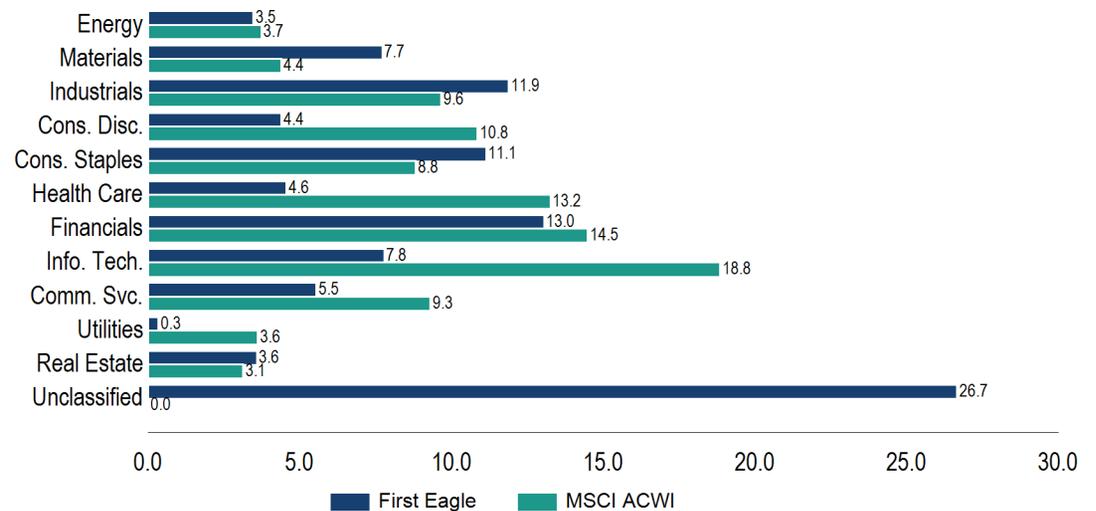
Period Ending: March 31, 2020

Global equity portfolio that is benchmark agnostic comprised of companies with low valuations. Primary personnel include Matt McLennan and Kimball Brooker.

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	142	3,040
Weighted Avg. Market Cap. (\$B)	74.11	173.13
Median Market Cap. (\$B)	16.88	7.33
Price To Earnings	13.34	15.24
Price To Book	2.34	3.11
Price To Sales	1.70	1.85
Return on Equity (%)	16.67	20.30
Yield (%)	3.02	2.93
Beta	0.77	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	81.8%	88.1%
Emerging*	4.7%	11.9%
Top 10 Largest Countries		
United States	48.3%	56.7%
Cash	13.5%	0.0%
Japan	11.0%	7.5%
France	5.0%	3.1%
United Kingdom	4.4%	4.3%
Canada	3.2%	2.7%
Switzerland	2.5%	3.1%
Singapore	1.9%	0.3%
Korea*	1.8%	1.4%
Sweden	1.1%	0.8%
Total-Top 10 Largest Countries	92.6%	80.0%

Top Contributors

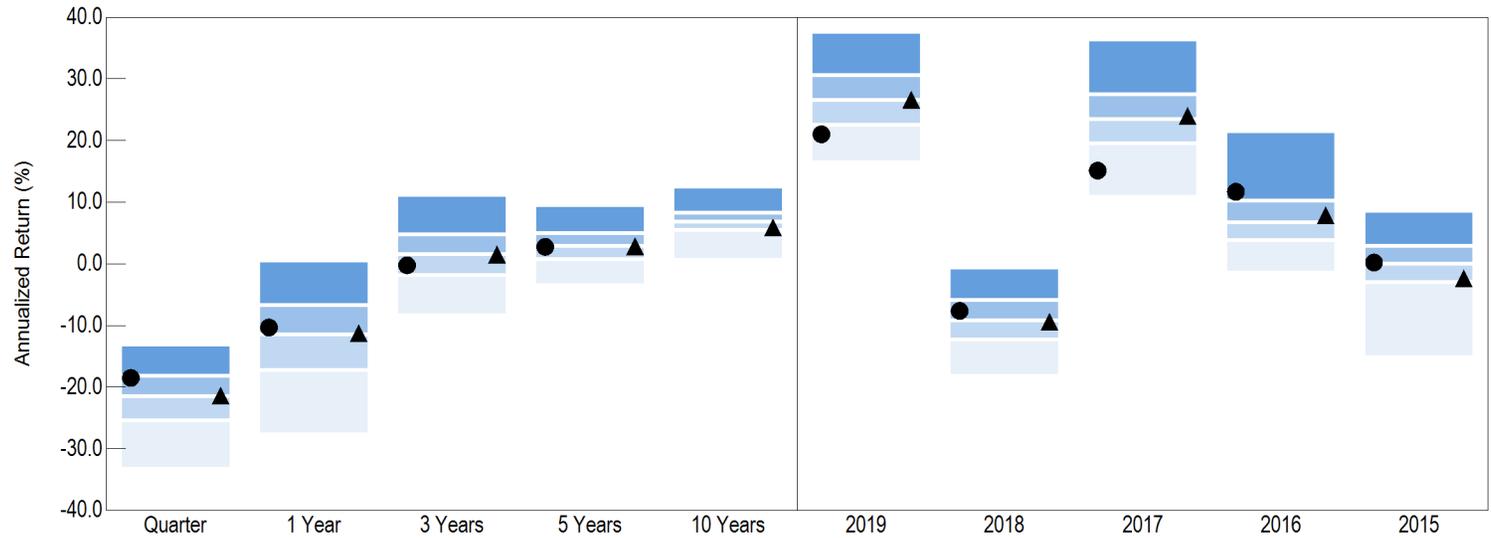
	End Weight	Return	Contribution
SPDR GOLD SHARES	11.29	3.60	0.41
NEWMONT	1.18	4.50	0.05
NISSIN FOODS HOLDINGS	0.25	12.23	0.03
KDDI	0.97	0.56	0.01
CHOFU SEISAKUSHO	0.12	3.98	0.00
MICROSOFT	0.99	0.28	0.00
CENOVUS ENERGY (NYS)	0.00	-79.75	0.00
SAN JUAN BASIN RTY.TST.	0.01	-13.68	0.00
T HASEGAWA	0.06	-2.95	0.00
OLYMPUS	0.07	-6.28	0.00

Bottom Contributors

	End Weight	Return	Contribution
EXXON MOBIL	1.73	-44.80	-0.77
SCHLUMBERGER	0.79	-65.95	-0.52
WEYERHAEUSER	1.10	-43.17	-0.47
COMCAST A	2.04	-22.68	-0.46
FANUC	1.48	-27.43	-0.41
BANK OF NEW YORK MELLON	1.16	-32.63	-0.38
DANONE	1.60	-22.44	-0.36
BRITISH AMERICAN TOBACCO	1.61	-18.55	-0.30
NUTRIEN (NYS)	1.05	-28.18	-0.30
LLOYDS BANKING GROUP	0.56	-52.08	-0.29

Unclassified sector allocation includes cash allocations and Gold allocations (11.3% as of 3/31/2020).

First Eagle vs. eV All Global Equity Gross Universe

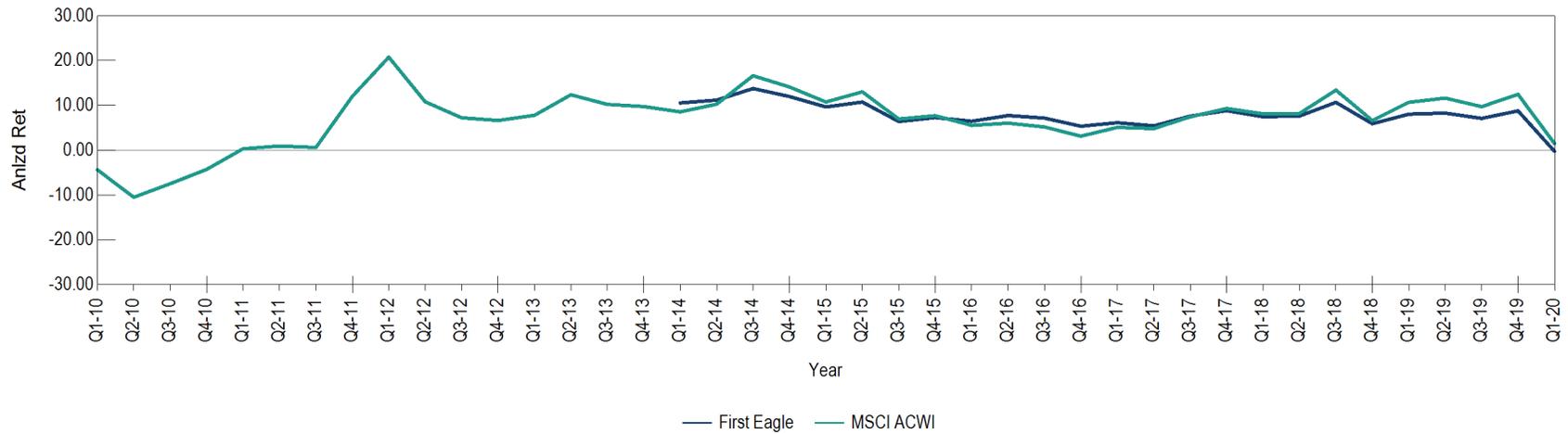


	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-13.1	0.5	11.2	9.5	12.5	37.6	-0.7	36.3	21.5	8.5
25th Percentile	-18.1	-6.6	4.8	5.0	8.3	30.7	-5.8	27.6	10.3	3.0
Median	-21.4	-11.4	1.6	3.0	6.9	26.6	-9.1	23.5	6.8	0.1
75th Percentile	-25.4	-17.2	-1.8	0.8	5.6	22.6	-12.2	19.6	3.9	-2.9
95th Percentile	-33.2	-27.6	-8.2	-3.4	0.7	16.5	-18.1	11.0	-1.4	-15.1
# of Portfolios	996	996	926	807	507	989	920	880	842	692
● First Eagle	-18.5 (28)	-10.3 (44)	-0.2 (67)	2.7 (53)	-- (--)	21.0 (82)	-7.6 (38)	15.1 (89)	11.7 (19)	0.2 (49)
▲ MSCI ACWI	-21.4 (50)	-11.3 (50)	1.5 (51)	2.8 (52)	5.9 (72)	26.6 (50)	-9.4 (53)	24.0 (47)	7.9 (42)	-2.4 (73)

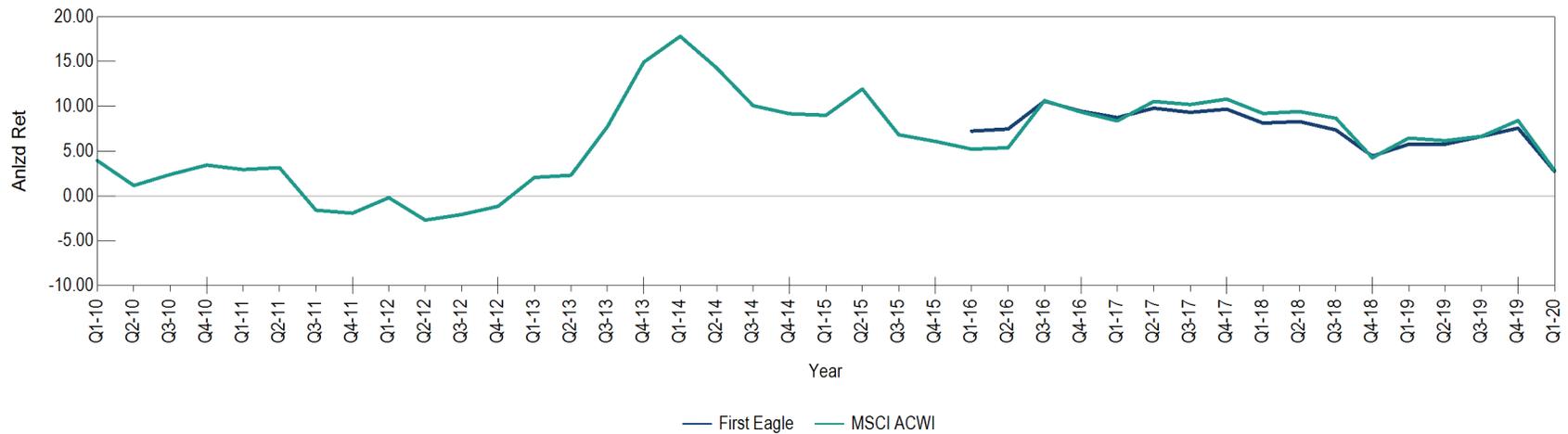
First Eagle
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2020

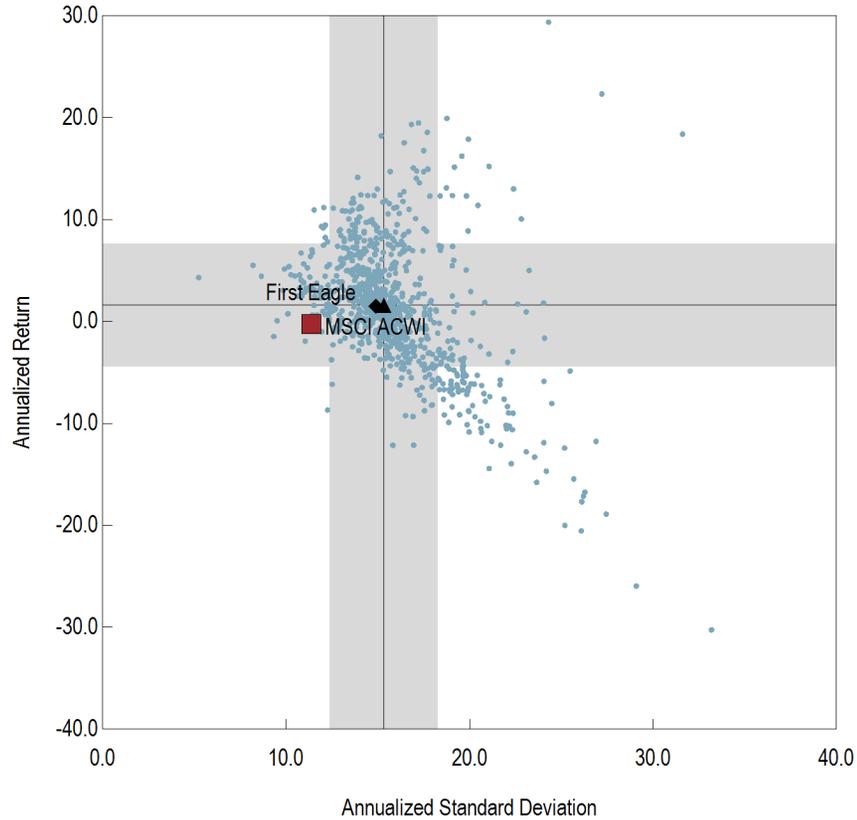
Rolling 3 Year Annualized Return (%)



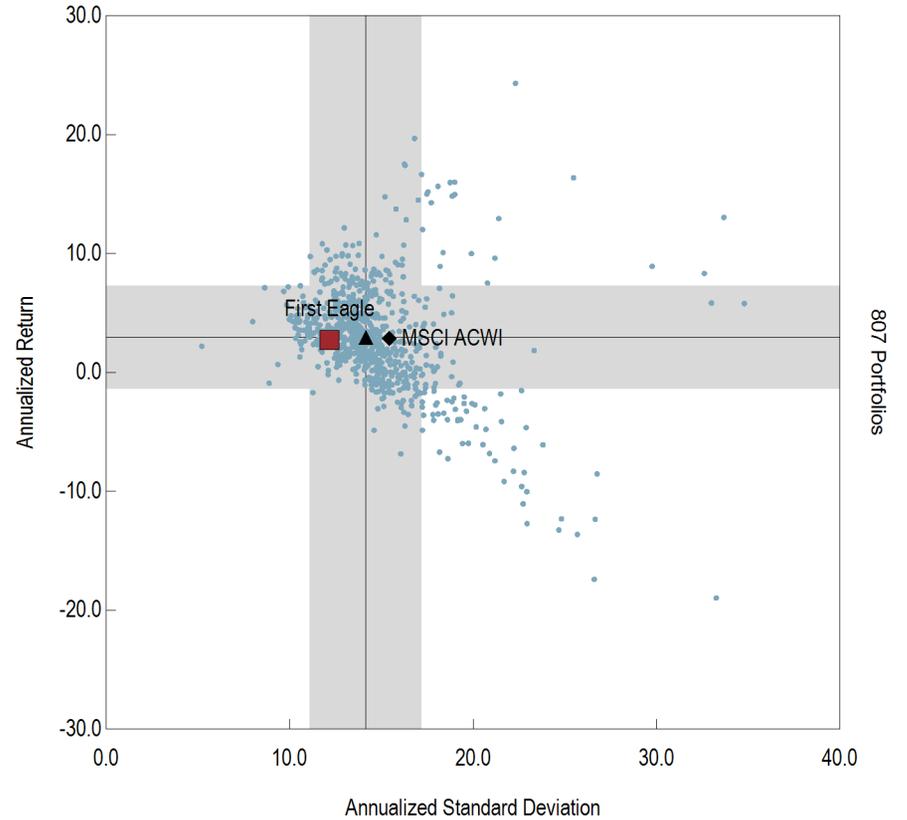
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	-0.2%	11.4%	-0.2
MSCI ACWI	1.5%	14.9%	0.0
eV All Global Equity Gross Median	1.6%	15.3%	0.0

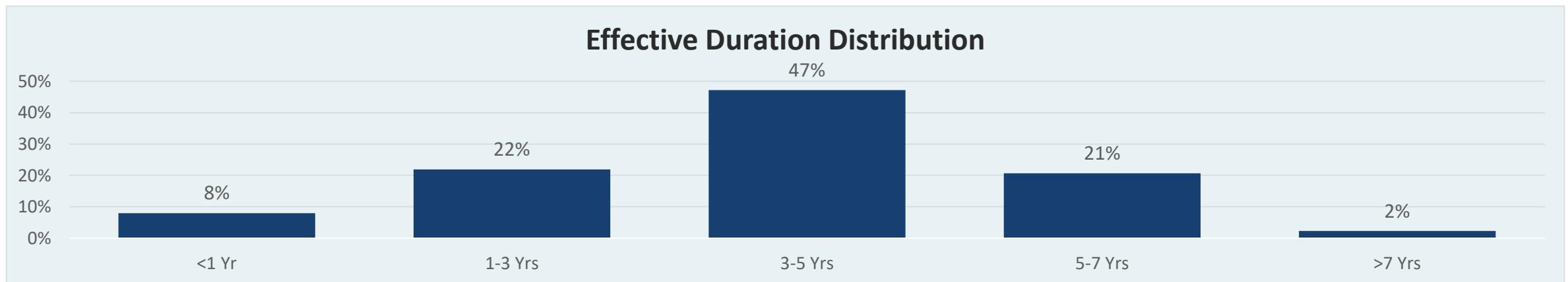
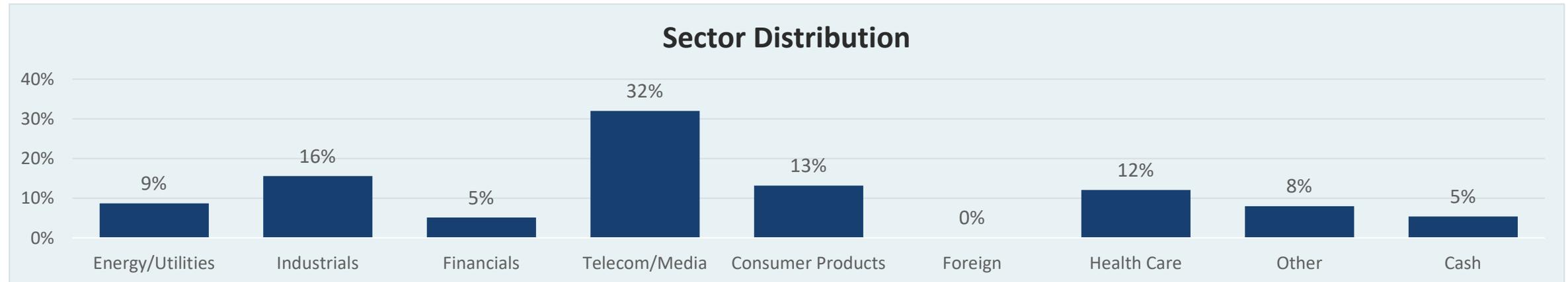
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	2.7%	10.4%	0.2
MSCI ACWI	2.8%	13.7%	0.1
eV All Global Equity Gross Median	3.0%	14.2%	0.1

High Yield Managers

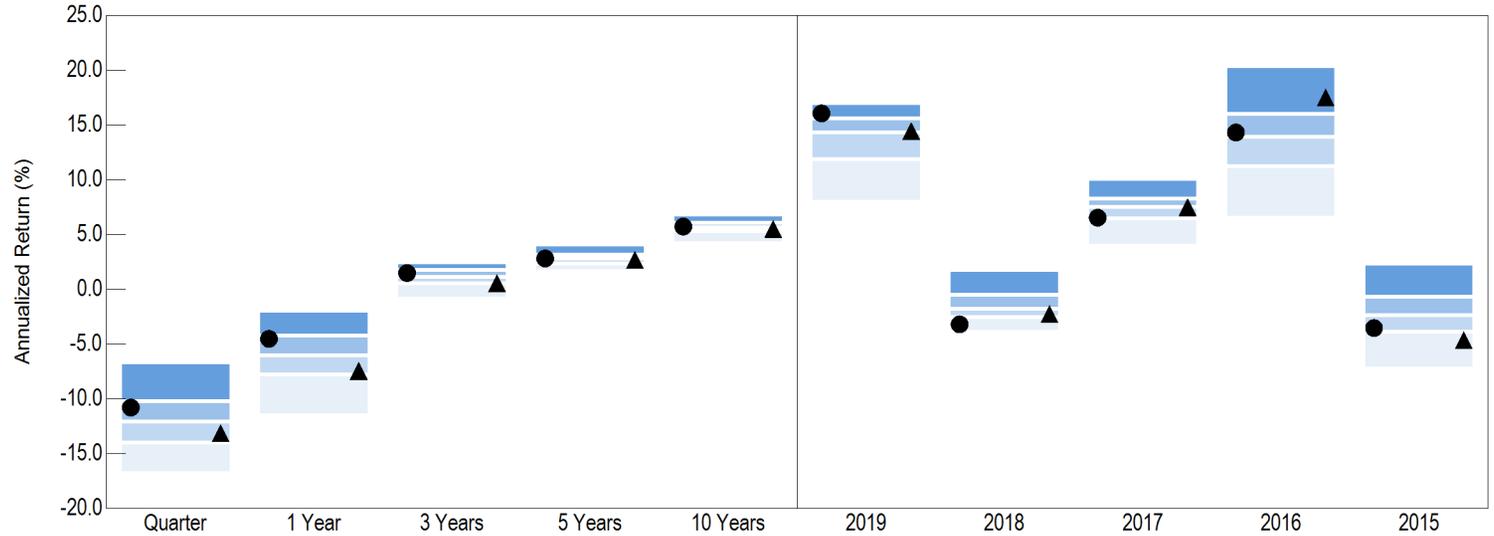
Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

	Allianz	ICE BofAML HY Master II
Effective Duration	4.30	4.30
Yield to Maturity	7.90	9.30
Average Quality	B1	B1
Average Coupon	6.4%	6.2%



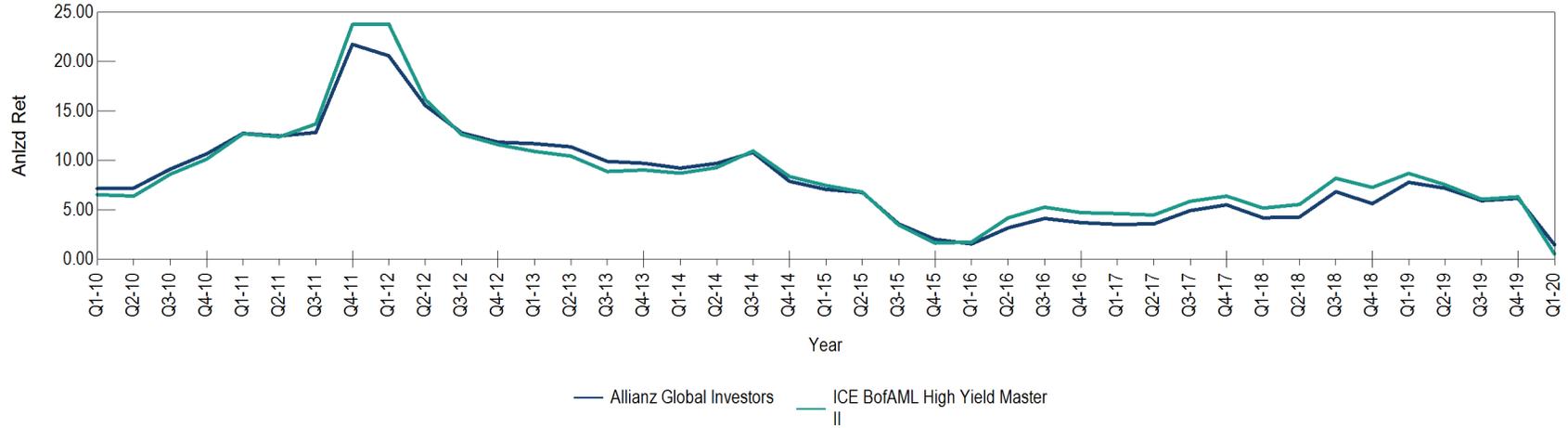
Quality distribution excludes cash.

Allianz Global Investors vs. eV US High Yield Fixed Inc Gross Universe

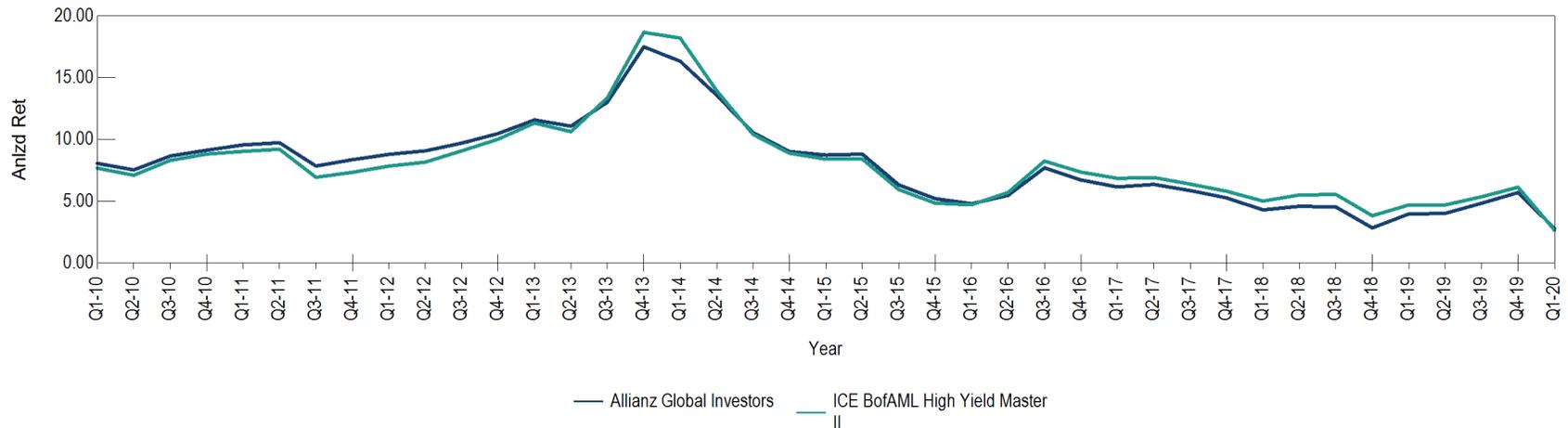


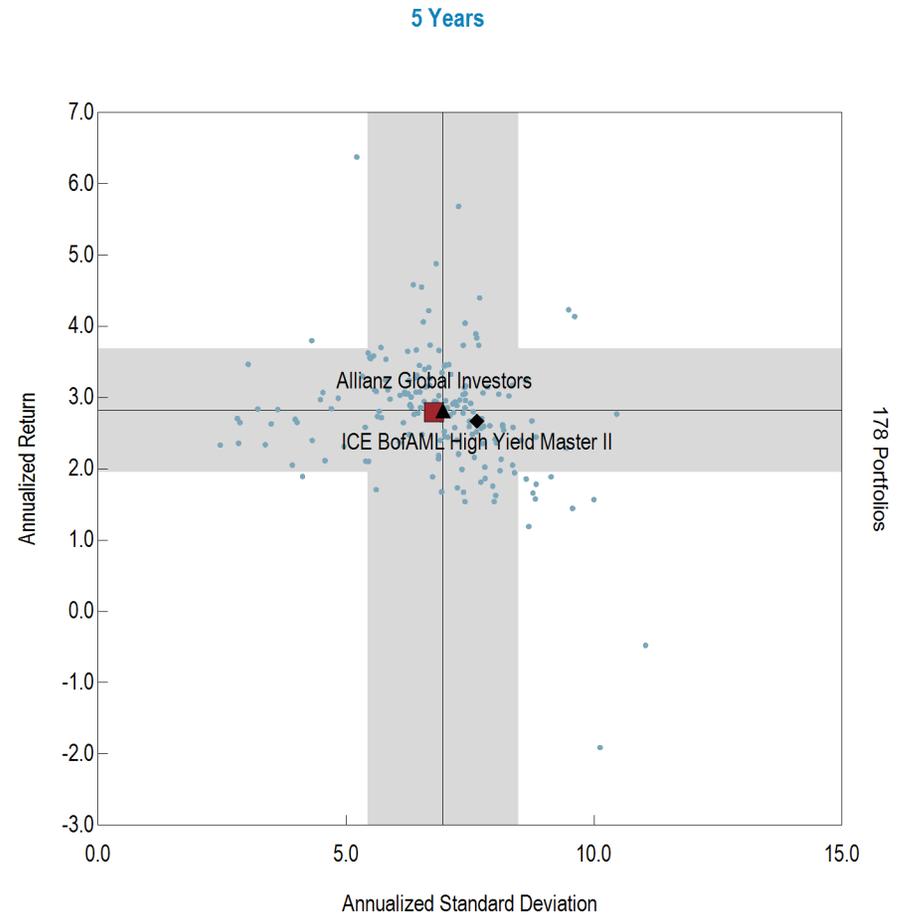
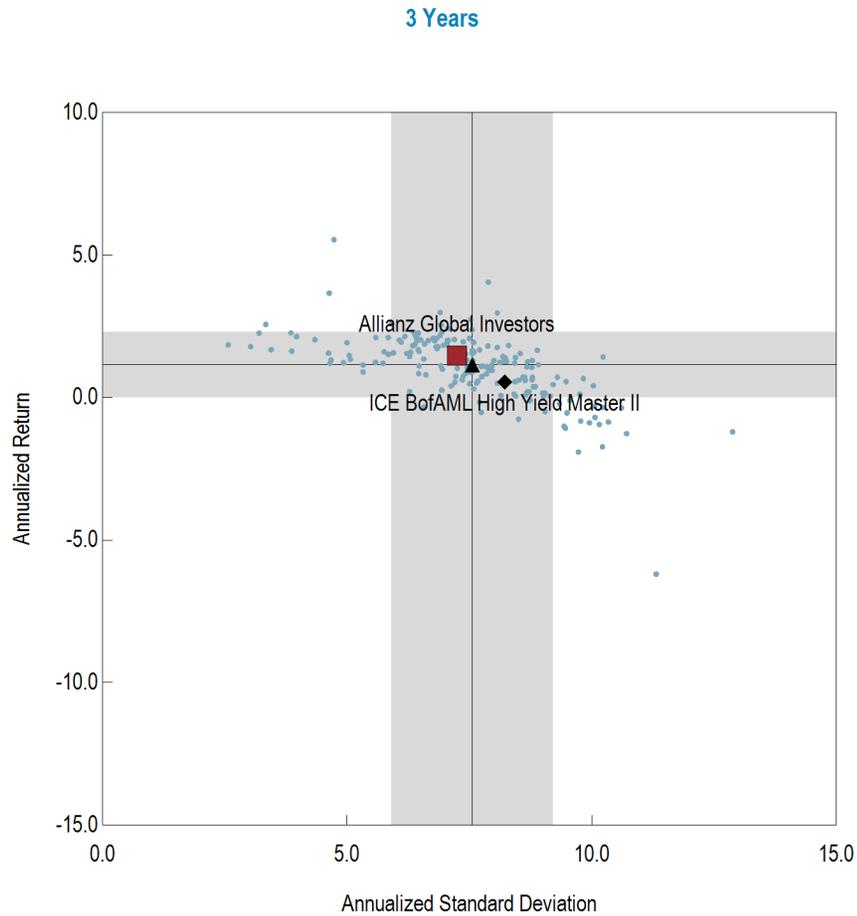
	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	-6.7	-2.0	2.4	4.1	6.8	16.9	1.7	10.0	20.3	2.3
25th Percentile	-10.2	-4.2	1.8	3.2	6.1	15.6	-0.5	8.3	16.0	-0.7
Median	-12.0	-6.0	1.2	2.8	5.7	14.3	-1.8	7.5	14.0	-2.4
75th Percentile	-14.0	-7.8	0.5	2.4	5.3	11.9	-2.5	6.5	11.3	-3.8
95th Percentile	-16.7	-11.4	-0.8	1.7	4.2	8.0	-3.8	4.0	6.6	-7.2
# of Portfolios	202	202	189	178	127	226	210	198	183	155
● Allianz Global Investors	-10.8 (32)	-4.5 (30)	1.5 (38)	2.8 (52)	5.7 (48)	16.0 (15)	-3.2 (88)	6.5 (74)	14.3 (47)	-3.5 (68)
▲ ICE BofAML High Yield Master II	-13.1 (68)	-7.5 (73)	0.6 (75)	2.7 (60)	5.5 (62)	14.4 (49)	-2.3 (69)	7.5 (53)	17.5 (14)	-4.6 (83)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	3 Years			5 Years			
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	
Allianz Global Investors	1.5%	7.2%	0.0	Allianz Global Investors	2.8%	6.8%	0.2
ICE BofAML High Yield Master II	0.6%	8.2%	-0.1	ICE BofAML High Yield Master II	2.7%	7.6%	0.2
eV US High Yield Fixed Inc Gross Median	1.2%	7.6%	-0.1	eV US High Yield Fixed Inc Gross Median	2.8%	7.0%	0.3

Real Estate Managers

Adelante Manager Portfolio Overview

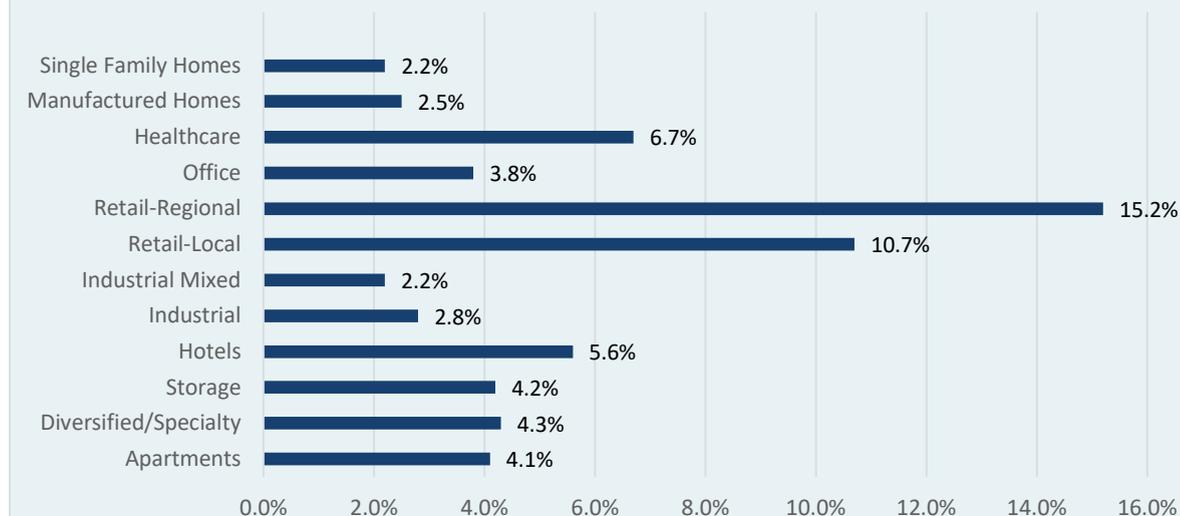
Period Ending: December 31, 2019

Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets

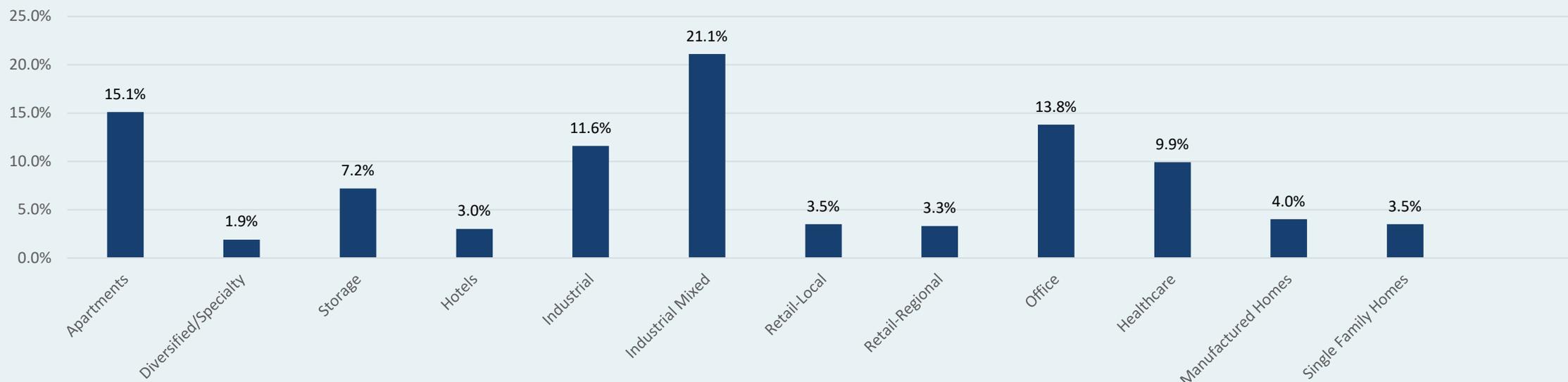
Top Five Holdings

Company	Property Type	Allocation
Equinix Inc	Industrial Mixed	11.6%
ProLogis Inc.	Industrial	9.6%
Equity Residential	Apartments	5.8%
Healthpeak Properties	Healthcare	4.7%
Duke Realty Corporation	Industrial Mixed	4.5%

Dividend Yield by Property Type



Property Type Allocation



2% is allocated to Cash and Cash Equivalents.

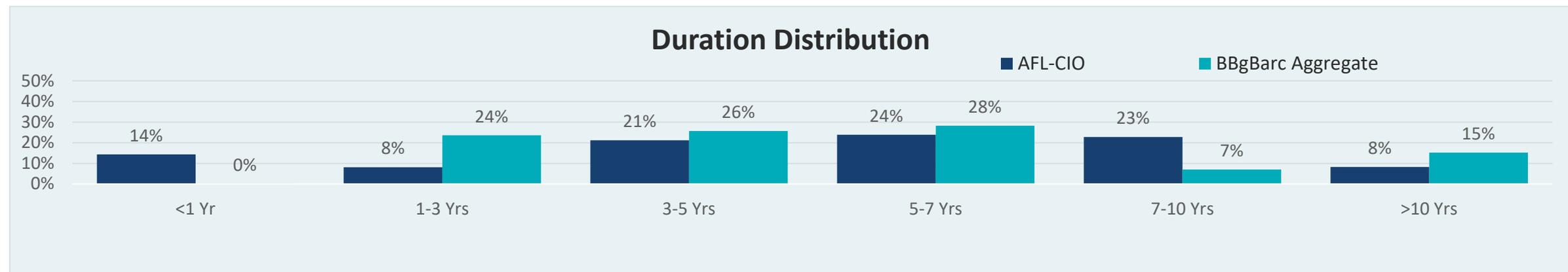
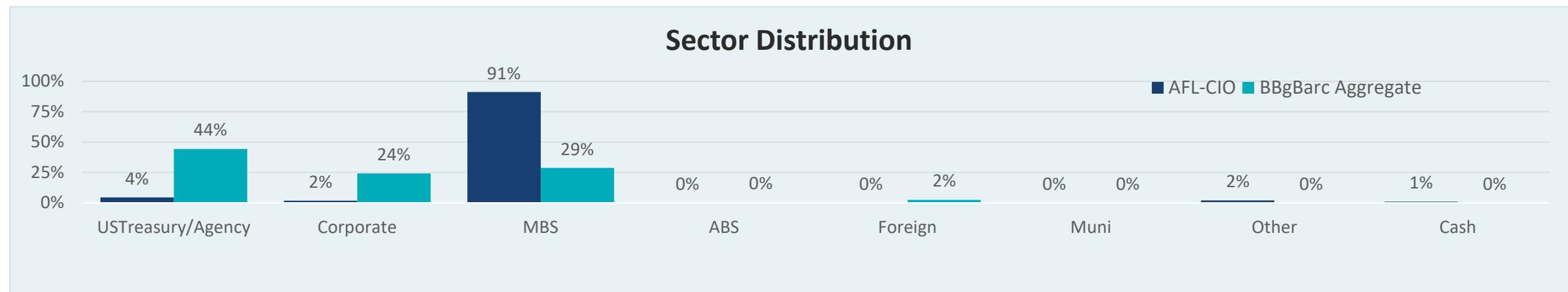
Diversifying Fixed Income Managers

AFL-CIO Manager Portfolio Overview

Period Ending: December 31, 2019

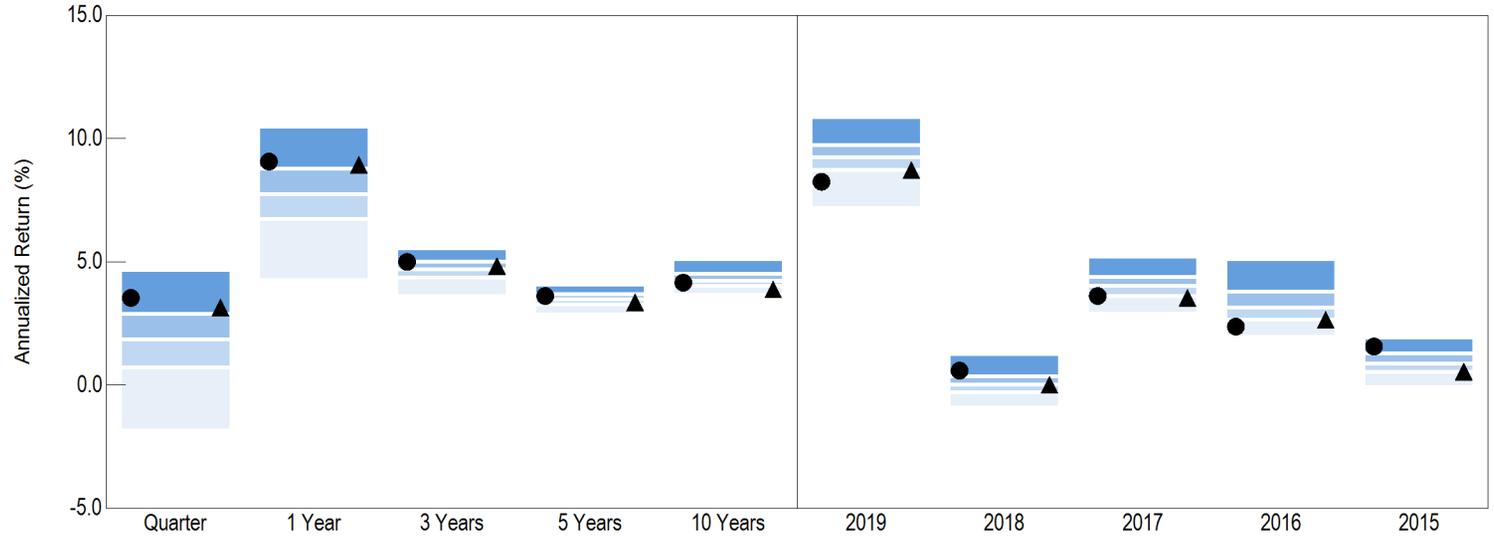
Domestic core fixed income portfolio with an exclusive focus on mortgage-related securities. Primary personnel include Stephen Coyle and Chang Su.

	AFL-CIO	BBgBarc Aggregate
Effective Duration	5.64	5.86
Yield to Maturity	3.02	2.87
Average Quality	AAA	AA/AA+
Average Coupon	3.2%	3.1%



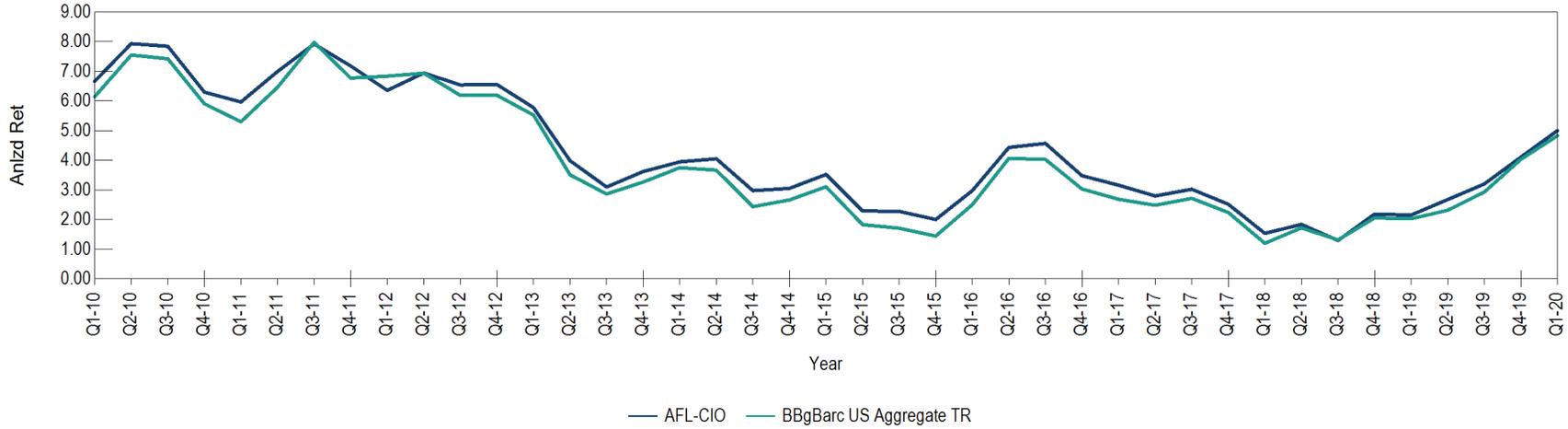
Duration and Quality distributions exclude cash.

AFL-CIO vs. eV US Core Fixed Inc Gross Universe

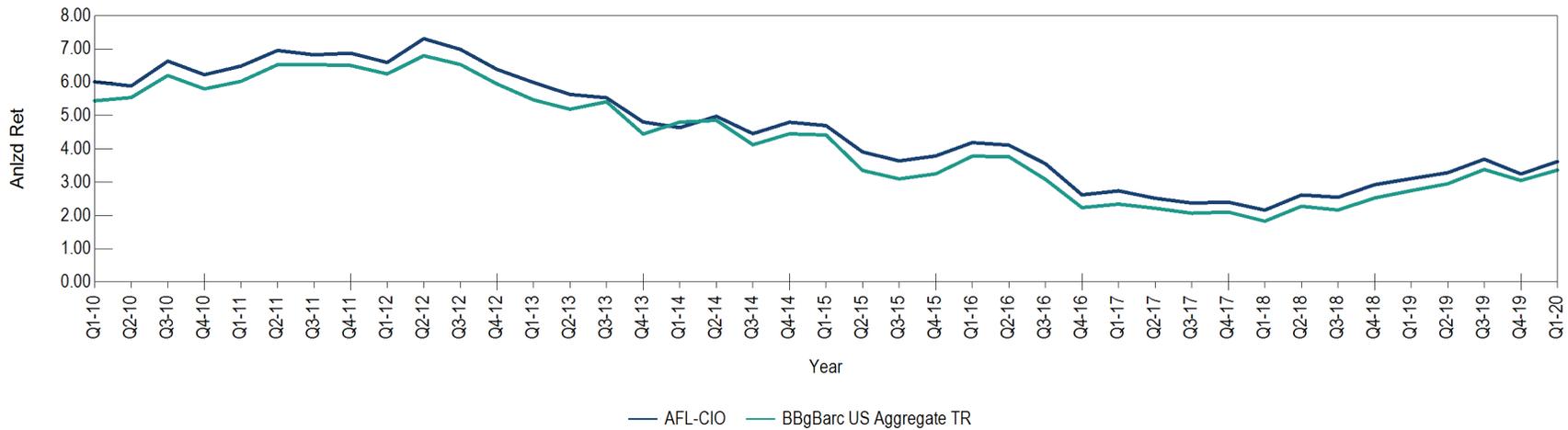


	Quarter	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	2016	2015
5th Percentile	4.7	10.5	5.5	4.1	5.1	10.9	1.2	5.2	5.1	1.9
25th Percentile	2.9	8.8	5.0	3.7	4.5	9.8	0.4	4.4	3.8	1.3
Median	1.9	7.8	4.7	3.5	4.2	9.3	0.0	4.0	3.2	0.9
75th Percentile	0.7	6.8	4.4	3.3	4.0	8.7	-0.3	3.6	2.7	0.5
95th Percentile	-1.8	4.3	3.6	2.9	3.7	7.2	-0.9	2.9	2.0	-0.1
# of Portfolios	214	214	212	208	196	228	240	233	223	196
● AFL-CIO	3.5 (14)	9.1 (21)	5.0 (27)	3.6 (34)	4.2 (61)	8.2 (88)	0.6 (16)	3.6 (76)	2.4 (87)	1.6 (15)
▲ BBgBarc US Aggregate TR	3.1 (21)	8.9 (21)	4.8 (41)	3.4 (66)	3.9 (89)	8.7 (77)	0.0 (54)	3.5 (79)	2.6 (77)	0.6 (75)

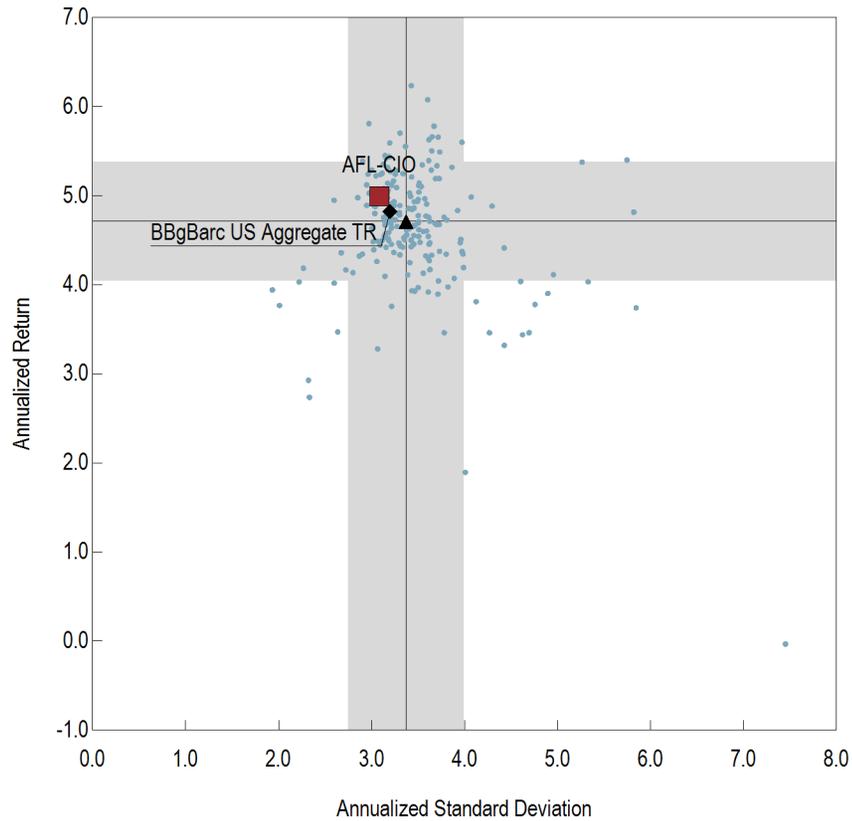
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)

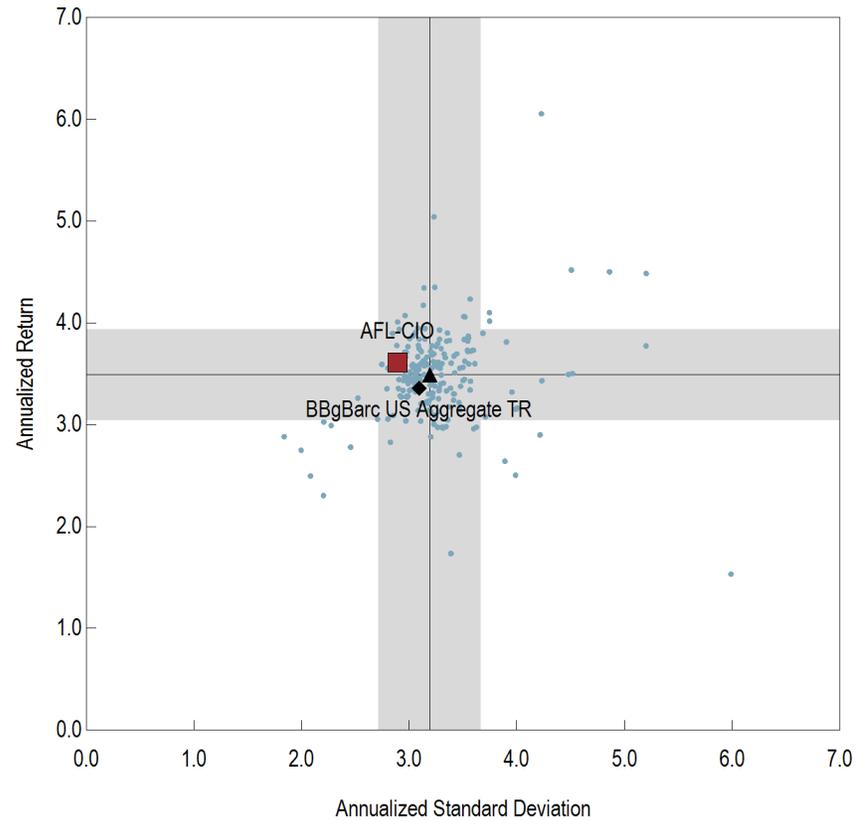


3 Years



212 Portfolios

5 Years



208 Portfolios

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	5.0%	3.1%	1.1
BBgBarc US Aggregate TR	4.8%	3.2%	1.0
eV US Core Fixed Inc Gross Median	4.7%	3.4%	0.9

5 Years

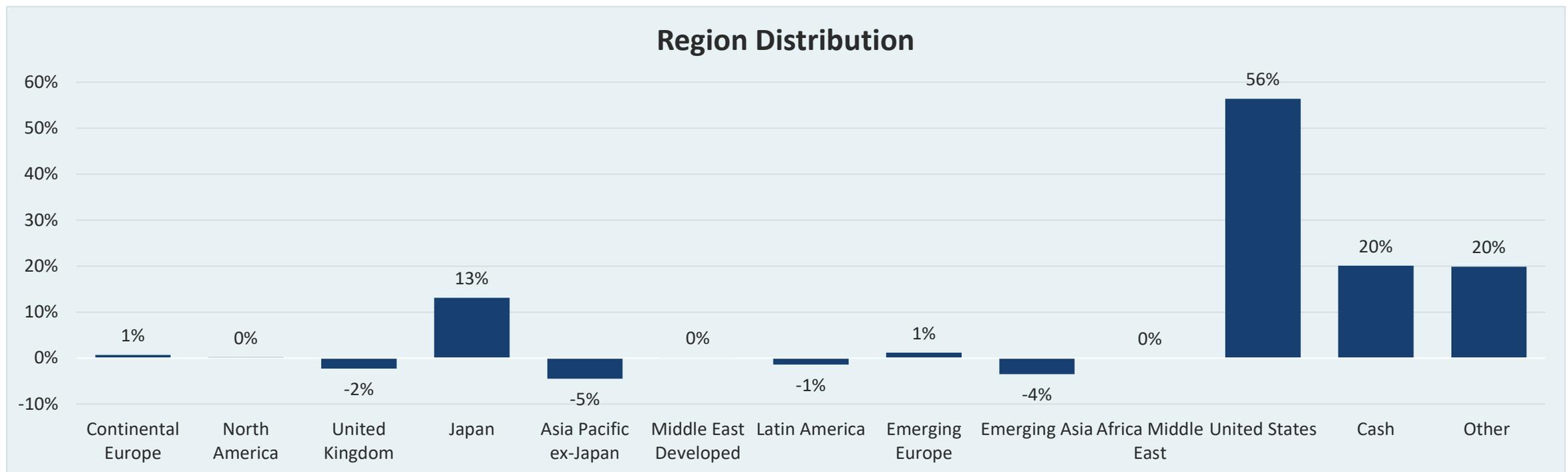
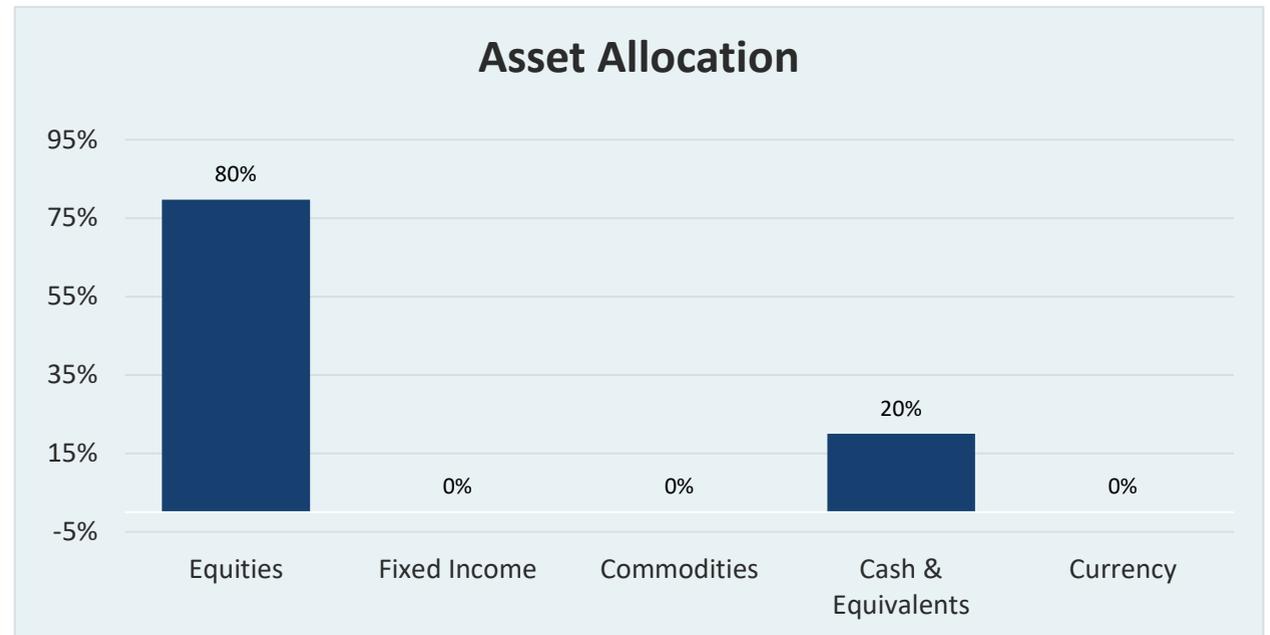
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	3.6%	2.9%	0.9
BBgBarc US Aggregate TR	3.4%	3.1%	0.7
eV US Core Fixed Inc Gross Median	3.5%	3.2%	0.7

Wellington Total Return Manager Portfolio Overview

Period Ending: December 31, 2019

Tactical multi-asset class real return strategy with a focus on managing risk of active strategies used to gain exposure to attractive assets of markets.

	Wellington Total Return
Number of Equity Holdings	906
Number of Commodity Holdings	123
Effective Duration (Years)	4.90



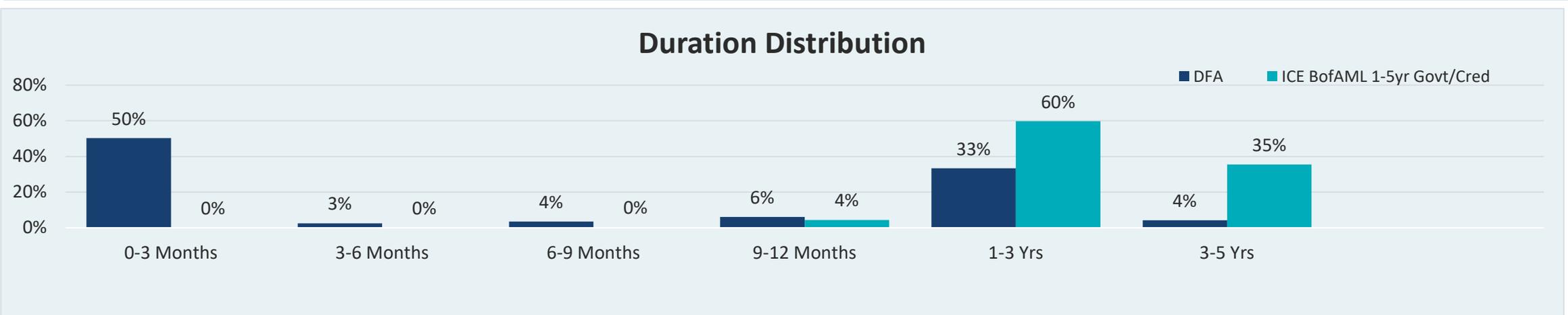
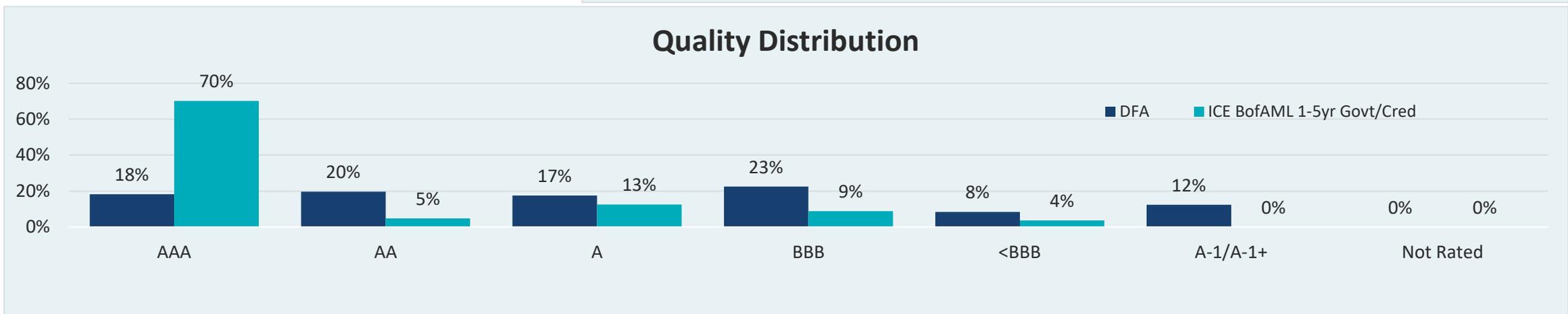
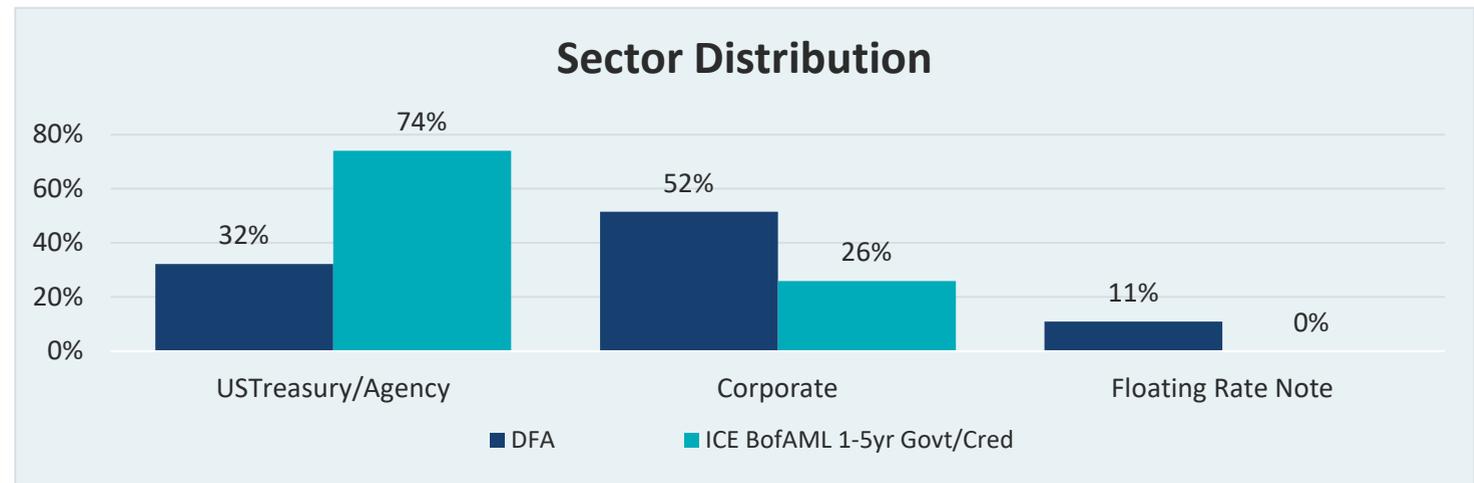
Liquidity Managers

DFA Short Credit Manager Portfolio Overview

Period Ending: December 31, 2019

Domestic short term US credit fixed income portfolio that maximizes total return through income and capital appreciation. Primary personnel include Dave Plecha and Joseph Kolerich.

	DFA	ICE BofAML 1-5yr Govt/Cred
Effective Duration	0.92	2.57
Yield to Maturity	2.72	1.14
Average Quality	A+	AA+
Average Coupon	2.12%	2.53%

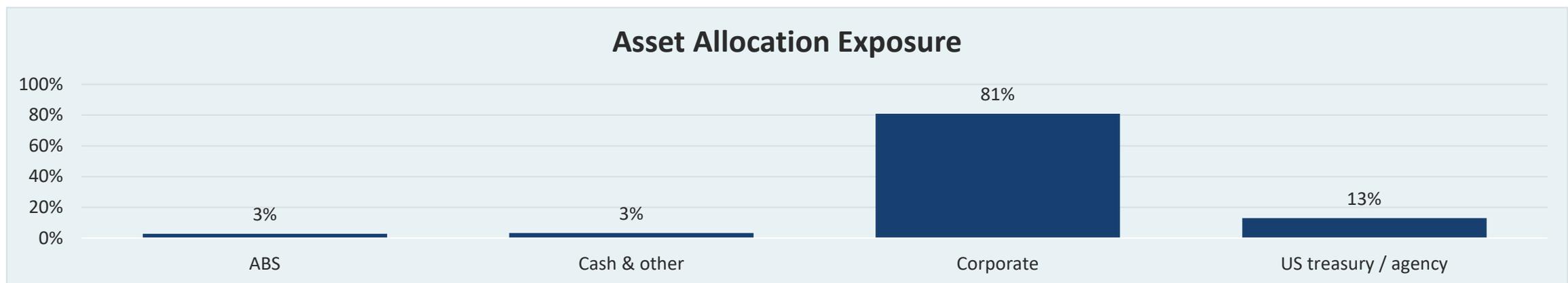
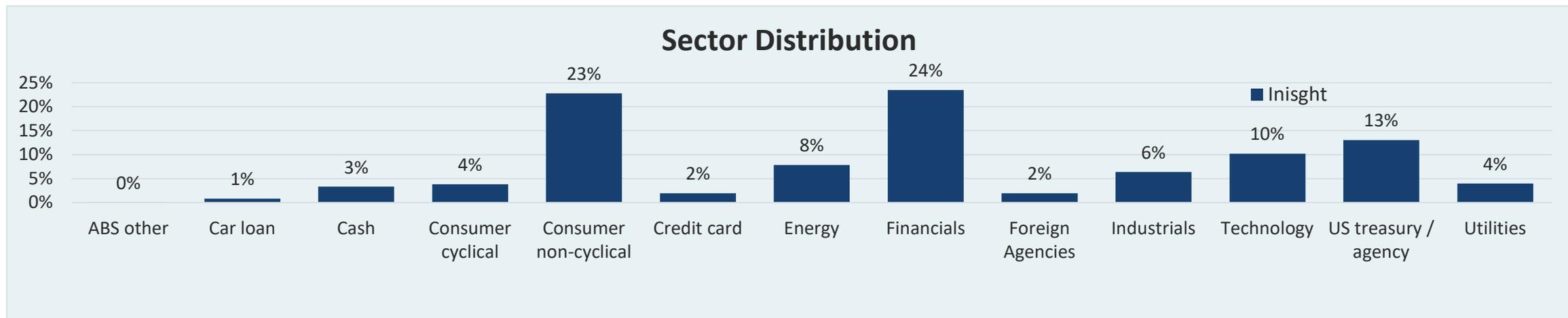


Insight Short Duration Manager Portfolio Overview

Period Ending: December 31, 2019

High quality, short duration multi-sector fixed income portfolio comprised of Treasuries, Agencies, investment grade corporates, and ABS designed specifically to meet CCCERA's liabilities. Key personnel include Gerard Berrigan and Jesse Fogarty.

	Inisght	BBgBarc 1-3yr Govt
Effective Duration	1.39	1.88
Yield to Maturity	2.67	1.93
Average Quality	A+	AAA
Average Coupon	2.59%	1.92%

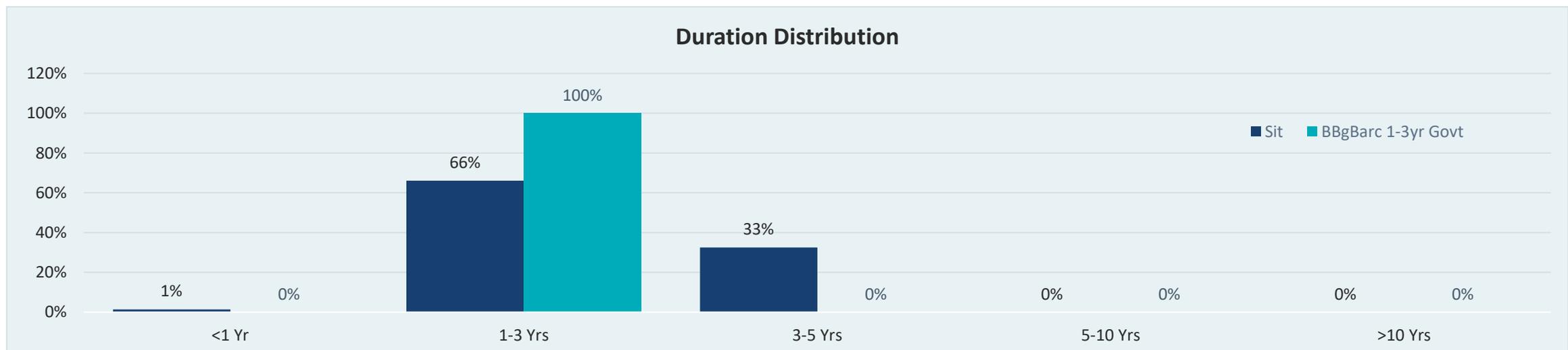
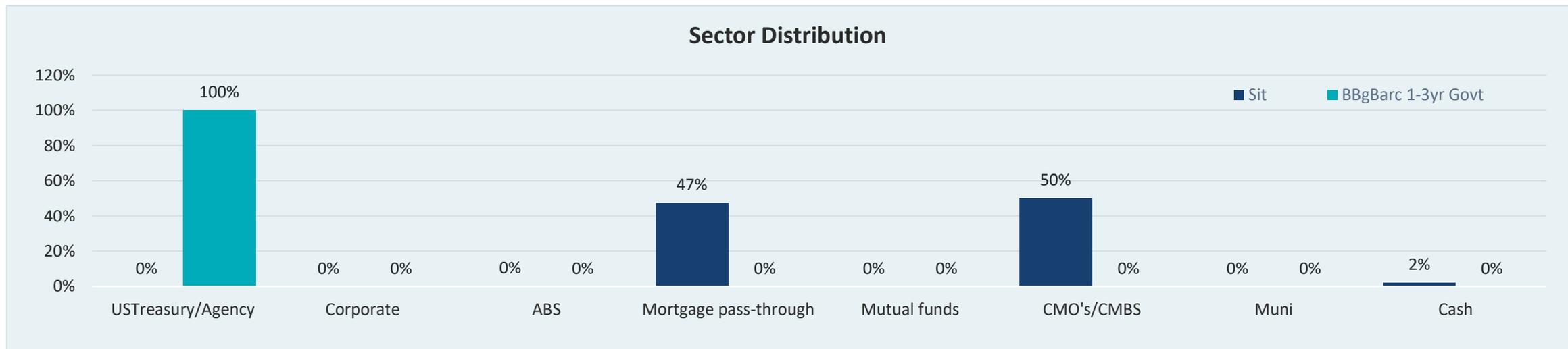


Sit Short Duration Manager Portfolio Overview

Period Ending: December 31, 2019

Short duration fixed income portfolio with a focus on earning high levels of interest income. Primary personnel include Bryce Doty, Paul Jungquist and Michael Brilley.

	Sit	BBgBarc 1-3yr Govt
Modified Duration	2.60	1.88
Yield to Maturity	1.70	1.93
Average Quality	AAA	AAA
Average Coupon	6.50%	1.92%



Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Policy & Custom Index Composition

Policy Index (7/1/2019 - present)	10% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2% CPI + 4%, 11% S&P 500 +4% (Lagged), 5% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 24% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 2.5% HFRI EH Equity Market Neutral.
Policy Index (7/1/2018 - 6/30/2019)	11% Russell 3000, 19% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.8% NCREIF Property Index, 7.2% NCREIF ODCE Index, 2% CPI + 4%, 10% S&P 500 +4% (Lagged), 4% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 23% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 2.5% HFRI EH Equity Market Neutral.
Policy Index (10/1/2017 - 6/30/2018)	16.3% Russell 3000, 18.8% MSCI ACWI ex-US (Gross), 8.6% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.5% CPI + 4%, 8.1% S&P 500 +4% (Lagged), 1.9% ICE BofAML High Yield Master II +2%, 4.3% ICE BofAML High Yield Master II, 25% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate.
Policy Index (1/1/2017 - 9/30/2017)	22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI + 4%, 8.1% S&P 500 +4% (Lagged), 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.6% 91-Day T-Bills.
Policy Index (4/1/2012-12/31/2016)	27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2011-3/31/2012)	31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2010-3/31/2011)	35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (7/1/2009-3/31/2010)	40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Custom Growth Benchmark (7/1/2019 - present)	14.7% Russell 3000, 26.4% MSCI ACWI ex-US (Gross), 16.2% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.4% NCREIF Property Index, 9.4% NCREIF ODCE Index, 16.2% S&P 500 +4% (Lagged), 7.4% ICE BofAML High Yield Master II +2%, 2.9% ICE BofAML High Yield Master II, 2.9% BBgBarc Global Bond
Custom Growth Benchmark (7/1/2018 - 6/30/2019)	16.0% Russell 3000, 27.5% MSCI ACWI ex-US (Gross), 15.9% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.6% NCREIF Property Index, 10.4% NCREIF ODCE Index, 14.5% S&P 500 +4% (Lagged), 5.8% ICE BofAML High Yield Master II +2%, 2.9% ICE BofAML High Yield Master II, 2.9% BBgBarc Global Bond
Custom Growth Benchmark (9/30/2017-6/30/2018)	23.6% Russell 3000, 27.2% MSCI ACWI ex-US (Gross), 12.5% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.3% NCREIF Property Index, 9.3% NCREIF ODCE Index, 14.6% S&P 500 +4% (Lagged), 2.8% ICE BofAML High Yield Master II +2%, 6.2% ICE BofAML High Yield Master II
Custom Growth Benchmark (1/1/2017-9/30/2017)	32.6% Russell 3000, 15.7% MSCI ACWI ex-US (Gross), 15.5% MSCI ACWI (Net), 1.4% Wilshire REIT, 2.4% NCREIF Property Index, 9.6% NCREIF ODCE Index, 1.6% CPI +4%, 11.5% S&P 500 +4% (Lagged), 2.4% ICE BofAML High Yield Master II +2%, 7.3% ICE BofAML High Yield Master II
Custom Growth Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Custom Diversifying Benchmark (7/1/2018 - present)	43.75% BBgBarc US Aggregate, 25% CPI + 4%, 31.25% HFRI EH Equity Market Neutral.
Custom Diversifying Benchmark (10/1/2017 - 6/30/2018)	58.33% BBgBarc US Aggregate, 41.67% CPI + 4%.
Custom Diversifying Benchmark (1/1/2017 - 9/30/2017)	56.1% BBgBarc US Aggregate, 43.9% CPI + 4%.
Custom Diversifying Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Real Estate Benchmark (current)	11% Wilshire REIT, 18% NCREIF Property Index, 71% NCREIF ODCE Index.
Real Estate Benchmark (4/1/2012-11/30/2016)	40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPRA NAREIT Developed ex-US.

Manager Line Up					
Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 1000 Index	4/20/2017	BlackRock	Invesco Real Estate IV	6/30/2014	Invesco
Jackson Square Partners	5/1/2005	Northern Trust	Invesco Real Estate V	2/20/2019	Invesco
Boston Partners	6/1/1995	Northern Trust	Oaktree REOF V	12/31/2011	Oaktree
Emerald Advisors	4/7/2003	Northern Trust	Oaktree REOF VI	9/30/2013	Oaktree
Ceredex	11/6/2011	Northern Trust	Oaktree REOF VII	4/1/2015	Oaktree
Pyrford	4/25/2014	State Street	Siguler Guff DREOF	1/25/2012	Siguler Guff
William Blair	10/29/2010	William Blair	Siguler Guff DREOF II	8/31/2013	Siguler Guff
PIMCO RAE Emerging Markets	2/28/2017	State Street	Siguler Guff DREOF II Co-Inv	1/27/2016	Siguler Guff
TT Emerging Markets	7/27/2017	TT	Paulson Real Estate Fund II	11/10/2013	Paulson
Artisan Partners	10/1/2012	SEI Trust	AE Industrial Partners Fund II	4/8/2019	StepStone Group
First Eagle	1/18/2011	Northern Trust	Adams Street Partners	3/18/1996	StepStone Group
Allianz Global Investors	4/25/2000	Northern Trust	Adams Street Partners II	1/16/2009	StepStone Group
Adelante	9/30/2001	Northern Trust	Adams Street Partners Venture	4/28/2017	StepStone Group
AQR Global Risk Premium - EL	1/18/2019	AQR	Adams Street Partners - BFP	1/18/1996	StepStone Group
Panagora Risk Parity Multi Asset	3/15/2019	Panagora	Adams Street Partners - Fund 5	9/21/2012	StepStone Group
AFL-CIO	6/30/1991	AFL-CIO	Aether Real Assets IV	3/16/2016	StepStone Group
Wellington Real Total Return	2/26/2013	Northern Trust	Aether Real Assets III	11/27/2013	StepStone Group
Parametric Defensive Equity	7/23/2018	Northern Trust	Aether Real Assets III Surplus	11/30/2013	StepStone Group
Sit Short Duration	11/2/2016	Northern Trust	Bay Area Equity Fund	6/14/2004	StepStone Group
DFA Short Credit	11/21/2016	Northern Trust	Bay Area Equity Fund II	12/7/2009	StepStone Group
Insight Short Duration	11/18/2016	Northern Trust	Commonfund	6/28/2013	StepStone Group
Parametric Overlay	3/29/2017	Northern Trust	EIF US Power Fund II	8/16/2005	StepStone Group
Cash	-	Northern Trust	EIF US Power Fund III	5/30/2007	StepStone Group
Angelo Gordon Energy Credit Opp	9/24/2015	StepStone Group	EIF US Power Fund IV	11/28/2011	StepStone Group
StepStone CC Opportunities Fund	2/1/2018	StepStone Group	EIF US Power Fund V	11/28/2016	StepStone Group
Torchlight II	9/30/2006	StepStone Group	Genstar Capital Partners IX, L.P.	2/21/2019	StepStone Group
Torchlight IV	7/1/2012	StepStone Group	Oaktree PIF 2009	2/28/2010	StepStone Group
Torchlight V	7/1/2012	StepStone Group	Paladin III	11/30/2007	StepStone Group
Angelo Gordon Realty Fund VIII	1/23/2012	Angelo Gordon	Ocean Avenue Fund II	6/11/2014	StepStone Group
Angelo Gordon Realty Fund IX	12/8/2014	Angelo Gordon	Ocean Avenue Fund III	4/15/2016	StepStone Group
DLJ RECP III	6/23/2005	DLJ	Pathway 6	5/24/2011	StepStone Group
DLJ RECP IV	2/11/2008	DLJ	Pathway 7	2/7/2013	StepStone Group
DLJ RECP V	7/1/2014	DLJ	Pathway 8	11/23/2015	StepStone Group
DLJ RECP VI	3/19/2019	DLJ	Pathway	11/9/1998	StepStone Group
LaSalle Income & Growth VI	7/16/2013	LaSalle	Pathway 2008	12/26/2008	StepStone Group
LaSalle Income & Growth VII	2/28/2017	LaSalle	Siguler Guff CCCERA Opps	6/3/2014	StepStone Group
Hearthstone II	6/17/1998	Hearthstone	Siguler Guff Secondary Opps	11/30/2016	StepStone Group
Long Wharf Fund IV	7/3/2013	Long Wharf	Siris Partners IV	3/15/2019	StepStone Group
Long Wharf Fund V	9/30/2016	Long Wharf	TPG Healthcare Partners, L.P.	6/28/2019	StepStone Group
Long Wharf Fund VI	2/5/2020	Long Wharf	Trident VIII, L.P.	5/24/2019	StepStone Group
Invesco Real Estate III	6/30/2013	Invesco	Wastewater Opp. Fund	12/8/2015	StepStone Group

Other Disclosures

All data prior to 12/31/2014 was provided by previous consultant.
 As of 7/1/2018 all Private Equity and Private Credit data is provided by StepStone Group.

Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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Meeting Date
05/27/20
Agenda Item
#4b.

Memorandum

Date: May 20, 2020

To: CCCERA Board of Retirement Trustees

From: Timothy Price, Chief Investment Officer

Subject: Investment Staff Report – Q1 2020

Overview

On a quarterly basis CCCERA's Board receives a report which details critical elements of CCCERA's Functionally Focused Portfolio's sub-portfolios. The purpose of the report is to highlight elements of the sub-portfolios which are good indicators to the Board of the program's efficient and effective operation.

Summary

CCCERA's Total Fund is performing as expected, exhibiting returns above expectations for the amount of risk taken. This is measured by the Sharpe Ratio (risk-adjusted return), and a comparison to the Simple Target Index. The Simple Target Index is the most basic index which could replicate CCCERA's Total Fund, and is made up of 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills (please see the Total Fund pages in the appendix for additional details). CCCERA's portfolio is much more complex, especially as it relates to allocations to private equity, private credit, and real estate.

CCCERA has been rewarded for implementing a more complex portfolio, and has outperformed the Simple Target Index over the trailing five years, while experiencing less risk (volatility). Details on performance relative to this index are included in the appendix. It is worth noting that CCCERA's Total Fund return is an aggregate of the performance of the Liquidity, Growth, and Risk Diversifying sub-portfolios.

Given the COVID-19 related economic shock that occurred during the first quarter, it is important to note that CCCERA investment staff have been rebalancing from the Risk Diversifying sub-portfolio into credit and equity on a measured basis. While we raised cash during February and March, much of the rebalancing activity occurred in April and May and will be reflected in the second quarter Investment Staff Report.

1) Liquidity

The purpose of the liquidity program is to match four years of benefit payments with high credit quality, low duration assets. The liquidity sub-portfolio is made up of three fixed income managers, all of whom pursue a high quality, low duration investment approach. In the first quarter of 2020, all managers held high quality (as measured by credit ratings), low duration portfolios. The average credit quality for the entire liquidity program is AA- (AAA is the highest rating), and the duration is 1.7 years, which is considered short.

2) Growth

The Growth portfolio is designed to take advantage of capital appreciation and income opportunities globally. To achieve this, the Growth portfolio includes a variety of assets, from stocks and growth-oriented bonds to private equity, real estate, and private credit.

One notable change from the prior quarter is the Growth portfolio's 5-year annualized performance relative to the MSCI ACWI. For the trailing five-year period ending March 31, 2020, the Growth portfolio returned 4.6% relative to the index return of 2.8%, for an excess return of 1.8%. During the first quarter of 2020, the public markets fell sharply, with the MSCI ACWI Index returning -21.4% and CCCERA's diversified Growth portfolio returning -12.6%. This single quarter had an outsized impact on the trailing five-year period ending March 31, 2020, where CCCERA's Growth portfolio returned 4.6% (a 3.6% decrease from the prior quarter) but the MSCI ACWI Index returned 2.8% (a 5.6% decrease from the prior quarter). This shifted our five-year excess return from -0.2% as of December 31, 2019 to +1.8% as of March 31, 2020.

3) Risk Diversifying

The Risk Diversifying mandate holds assets that are expected to diversify the growth portfolio's volatility while offering moderate growth. The mandate as a whole seeks to be highly liquid, have a low beta to the growth market, and produce positive real returns. In the first quarter, the Risk Diversifying mandate fulfilled one of these goals. The entire mandate is able to be liquidated within 90 days, meeting the requirement of high liquidity. The correlation of the mandate to growth markets is 0.7, which shows slightly deteriorating diversification compared to 0.5 correlation as of December 31, 2019. Trailing real (net of inflation) returns over the past five years is -2.3%, a worsening from last quarter's -0.7% and remains below expectations. While the long-term results have not met our expectations, it is important to note that the Risk Diversifying portfolio experienced approximately 40% of the performance decline seen in the Growth sub-portfolio during the first quarter.

We are in the process of redeploying and restructuring this sub-portfolio. After the end of the first quarter, the Wellington strategy was liquidated. We also have three additional complimentary strategies in our research pipeline, one of which is nearing a final recommendation.

The Liquidity and Growth sub-portfolios are largely functioning well and within expectations. The Risk Diversifying sub-portfolio will be restructured over the next several months to address performance concerns. By and large, the product teams and asset managers across all managers are stable, and at

this time we have no organizational concerns with our investment managers. CCCERA's Total Fund in aggregate is performing in line with expectations, having a higher return and a lower level of volatility compared to the Simple Target Index. Enclosed are additional details on CCCERA's Total Fund, sub-portfolios, and individual investment strategies.

CCCERA Portfolio Report Card

Below we have itemized those elements of each of CCCERA’s sub-portfolios and Total Fund which we believe the Board should pay particular attention to. Additional details on each of the sub-portfolios are available in the appendix. All CCCERA performance is stated on a net of fees basis.

Liquidity

Objective	Measurement	Current Period Data	Status
High Quality	Credit Quality	AA-	Meeting Expectations
Low Risk	Duration	1.7 years	Meeting Expectations
Appropriately Sized	Months of Benefit Payments Invested	40 Months	Meeting Expectations

Growth

Objective	Measurement	Current Period Data	Status
Growth of Plan Assets	Absolute Returns	Trailing 5 yr return of 4.6%	Meeting Expectations
	Benchmark Relative Returns	1.8% over ACWI over trailing 5 years	Meeting Expectations
Efficient Capital Deployment	Sharpe Ratio	CCCERA: 0.4 MSCI ACWI: 0.1 (over trailing 5 years)	Meeting Expectations

Risk Diversifying

Objective	Measurement	Current Period Data	Status
Offset Volatility in Growth Portfolio	Correlation	0.7 over trailing 5 years	Below Expectations
Positive Real Returns	Returns	Trailing 5 yr real return of -2.3%	Below Expectations
High Liquidity	% of Portfolio that can be liquidated within 90 days	100%	Meeting Expectations

Total Fund

Objective	Component/Measurement	Status
Store 4 Years of Benefit Payments	Liquidity Sub-portfolio	Meeting Expectations
Participate in Growth Opportunities	Growth Sub-portfolio	Meeting Expectations
Provide an offset to Growth volatility	Risk Diversifying Sub-portfolio	Below Expectations
Produce superior risk adjusted returns	Total Fund Sharpe Ratio	Meeting Expectations

Appendix – Liquidity Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Insight	Good	9%	-3%	N
Sit	Good	8%	-1%	N
DFA	Good	4%	-21%	N

Performance

	Portfolio Average Credit Quality	Portfolio Average Duration	Portfolio Average Yield	1 Year Total Return
Insight	A+	1.4	2.7	2.1%
Sit	AAA	2.6	1.7	6.4%
DFA	A+	0.9	2.7	2.1%

Manager Notes:

All three Liquidity managers performed in line with expectations over the prior year, with Sit in particular experiencing the benefit of a slight to quality in their portfolio of government-guaranteed mortgages.

Manager Theses:

The Liquidity Portfolio is a combination of three managers which work together to match four years of CCCERA’s liabilities. The portfolio is refreshed every year during the annual funding plan.

Insight: Insight plays a completion role in the liquidity program, matching out liabilities with short duration government and corporate fixed income securities.

DFA: Dimensional Fund Advisors runs a strategy that focuses on obtaining fixed income exposures via the most liquid securities available. DFA contributes to the Liquidity Program by selling securities at regular intervals to pay a portion of CCCERA’s monthly benefit payment.

Sit: Sit invests in high yielding government backed mortgages. The cash flow from these securities is harvested monthly to make up a portion of CCCERA’s monthly benefit payment.

Appendix – Growth Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Boston Partners	Good	-31%	-32%	N
Jackson Square	Good	-16%	-12%	N
BlackRock Index Fund	Good	-8%	-1%	N
Emerald Advisors	Good	-29%	-31%	N
Ceredex	Good	-49%	-30%	N
Pyrford (BMO)	Good	-13%	-8%	N
William Blair	Good	-17%	-14%	N
First Eagle	Good	-23%	-2%	N
Artisan Global	Good	-2%	-12%	N
PIMCO/RAE EM	Good	-8%	1%	N
TT EM	Good	-5%	-4%	N
Adelante	Good	-25%	-24%	N
Allianz	Good	-30%	-7%	N
AQR	Good	-20%	-30%	N
PanAgora	Good	-14%	-34%	N
Private Equity	Good	--	--	N
Private Credit	Good	--	--	N
Real Estate	Good	--	--	N

Performance

	Trailing 1 Year Return	Trailing 5 Year Return	Performance in Line with Expectations?
Boston Partners	-20%	1%	Y
Jackson Square	0%	6%	Y
BlackRock Index Fund	-8%	6%	Y
Emerald Advisors	-19%	3%	Y
Ceredex	-29%	-1%	N
Pyrford (BMO)	-10%	0%	Y
William Blair	-7%	1%	Y
First Eagle	-12%	2%	Y
Artisan Global	2%	9%	Y
PIMCO/RAE EM	-28%	-2%	N
TT EM	-21%	3%	Y
Adelante	-17%	0%	Y
Allianz	-6%	1%	Y
AQR	0%	2%	Y
PanAgora	-1%	5%	Y
	1Yr Premium	5 Year Premium	
Private Equity	20%	6%	Y
Private Credit	19%	5%	Y
Real Estate	14%	4%	Y

Manager Notes:

In a difficult quarter for any strategy tied to global economic growth, it is notable that many value-oriented strategies suffered even more than their growth or core peers. Boston Partners (large cap value), Ceredex (small cap value) and PIMCO (emerging market value), all suffered considerable short-term underperformance relative to the MSCI ACWI index. In the cases of Ceredex and PIMCO, it was enough to pull their trailing five year figures below the broad MSCI ACWI index. By some measures, value as a factor is the cheapest it has been in decades. The underperformance of value strategies has been a topic of considerable discussion over the past few years and we are focused on re-underwriting our investment theses to these strategies in collaboration with Verus.

Manager Theses:

The growth portfolio includes all managers in public and private equity, real estate, and private credit. These managers grow CCCERA's assets for future benefit payments (beyond the four years already covered by the Liquidity program).

Boston Partners: Large cap domestic equity which follows a value discipline. Boston Partners will buy out of favor companies and sell them when their intrinsic values are reflected in the market. Expected to outperform in flat to falling markets.

Jackson Square: Domestic equity large cap growth portfolio concentrated in companies with sustainable long-term growth characteristics. This portfolio should outperform in rapidly rising markets.

BlackRock Index Fund: Large cap domestic equity portfolio which should follow the Russell 1000 Index.

Emerald Advisors: Small cap growth equity seeking companies with high growth rates. Expected to produce strong returns in rising markets, and weak returns in falling markets.

Ceredex: Domestic equity small cap value portfolio of companies with dividend yields and low valuations. This portfolio should outperform flat markets.

Pyrford (BMO): International equity value portfolio of non-US companies with low valuations at the country and stock level. This portfolio should outperform in flat markets.

William Blair: International equity growth portfolio of non-US companies with high growth rates constructed from the security level. This portfolio should outperform in rapidly rising markets.

First Eagle: Global equity portfolio that is benchmark agnostic comprised of companies with low valuations.

Artisan Global Opportunities: Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation.

PIMCO/RAE Emerging Markets: Quantitative equity with a value orientation. This portfolio follows the fundamental indexing approach (ranking companies by metrics other than market capitalization), resulting in a diversified, low turnover portfolio. This portfolio underperforms in momentum driven markets.

TT International Emerging Markets: Concentrated, growth oriented manager which invests in small and mid-cap emerging market companies. TT employs both a top-down and a bottom-up research approach, and seeks to outperform by identifying companies that have a catalyst to drive future growth.

Adelante: Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets. Adelante is a public market proxy of the core real estate market.

Allianz High Yield Fixed Income: Domestic high yield fixed income portfolio with a focus on security selection. Allianz will focus on the higher quality segment of the high yield universe. Allianz should provide a steady income stream, and provide downside protection in falling markets.

Private Equity: CCCERA invests in private equity to generate returns above those available in the public equity markets.

Private Credit: CCCERA invests in private credit to generate cash flow streams above those available in the public debt markets.

Real Estate: CCCERA invests in value-add, distressed, and opportunistic real estate to generate returns from the capital appreciation and cash flow associated with commercial real estate investment.

Risk Parity: Multi-asset approach that strives for balanced contributions to total portfolio risk from multiple asset classes.

Appendix – Risk Diversifying Sub-Portfolio

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Wellington	Satisfactory	-86%	-6%	N
AFL-CIO	Good	4%	NA	N
Parametric	Good	0%	102%	N

Performance

	Trailing 1 Year Correlation to Growth	Trailing 3 Year Correlation to Growth	1 Year Return	5 Year Return	% of Portfolio Liquid in 90 Days
Wellington	1.0	0.9	-4.0%	-2.5%	100%
AFL-CIO	-0.7	-0.4	8.6%	3.2%	100%
Parametric	1.0	1.0	-11.2%	3.2%	100%

Manager Notes:

After the end of the first quarter, the Wellington strategy was liquidated.

Manager Theses:

Managers in the risk diversifying allocation seek to have a low correlation with the growth portfolio, positive returns in flat and falling equity markets, and a high degree of liquidity. These managers work together to offset some of the risks in the growth portfolio.

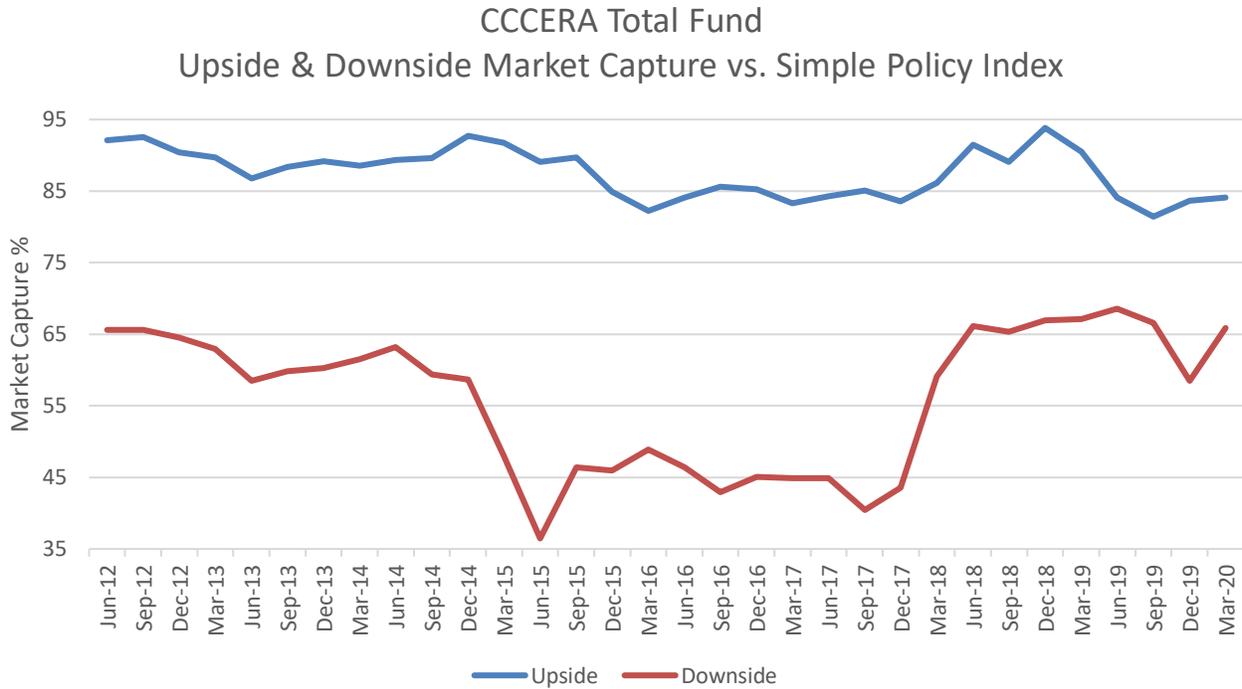
AFL-CIO: Portfolio of domestic, high quality fixed income securities which are backed by commercial and residential mortgages.

Parametric: Portfolio of paired options selling intended to collect insurance premiums by selling puts and calls on the S&P 500 with collateral invested in US Treasury portfolio.

Wellington: Multi-strategy fund which tactically rotates between assets to produce returns. Approximately 50% of underlying strategies pursue an inflation-hedging goal.

Appendix Data – Total Fund

Rolling 3-Year Total Fund Upside/Downside Market Capture



*The composition of the Simple Target Index has mirrored changes in CCCERA’s asset allocation over time: from 2008 to 2012 the benchmark was 73% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 4% 3-Month Treasury Bills. From 2012 to 2016 the composition was 74% MSCI ACWI, 18% Bloomberg 1-3 Year Gov/Credit, and 9% 3-Month Treasury Bills. From 2016 to 2017 the composition was 63% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from 2017 to June 2018 the composition was 61% MSCI ACWI, 27% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from July 2018 to June 2019 the composition is 69% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills, and from July 2019 to the present the composition is 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills.

Total Fund Quarterly Attribution

	CCCERA Total Fund			Simple Target Index			Analysis		
	Allocation	Return	Return Contribution	Allocation	Return	Return Contribution	Allocation Difference	Return Difference	Total Effect
Liquidity	23.1%	0.1%	0.0%	24.0%	1.7%	0.4%	-0.9%	-1.6%	-0.4%
Growth	69.1%	-12.6%	-8.7%	68.0%	-21.4%	-14.5%	1.1%	8.7%	5.8%
Risk Diversifying	7.8%	-5.1%	-0.4%	8.0%	0.6%	0.0%	-0.2%	-5.6%	-0.4%
Total Fund	100%		-9.1%	100%		-14.1%	-0.1%		5.0%

CCCERA Total Fund Performance vs. Simple Target Index

	One Year		Three Years		Five Years		Ten Years	
	CCCERA	STI	CCCERA	STI	CCCERA	STI	CCCERA	STI
Return	-2.6	-5.9	3.5	1.9	3.9	2.4	7.1	4.7
Volatility	12.3	17.9	8.7	12.5	7.3	10.4	8.1	10.7
Sharpe	-0.4	-0.4	0.2	0.0	0.4	0.1	0.8	0.4

The Simple Target Index is made up of 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bill. The purpose of this index is to examine whether CCCERA is being rewarded for pursuing a more nuanced portfolio versus a very simple representative portfolio.

CCCERA's Total Fund has produced strong risk adjusted returns over most trailing periods. Additionally, the CCCERA Portfolio has exceeded the STI over all trailing periods. This would indicate that CCCERA has been rewarded for engaging in more complex investments which target outperformance versus investing passively in the publicly traded market.

The Sharpe ratio is a measure of risk adjusted returns which shows the amount of return a portfolio earns above the risk free rate per unit of volatility. Over all trailing periods, the Total Fund has met or exceeded the Sharpe ratio relative of the Simple Target Index, indicating that CCCERA is being favorably rewarded for the risk taken in the portfolio.