



## **AGENDA**

### **RETIREMENT BOARD MEETING**

REGULAR MEETING  
May 26, 2021, 9:00 a.m.

The Board of Retirement will hold its meeting via teleconferencing as permitted by Executive Order N-29-20. The meeting is accessible telephonically at 669-900-6833, Webinar ID: 925 6489 6305, Passcode: 807968, or via the web at:

<https://zoom.us/j/92564896305?pwd=UjBZYW5KQlIMMGJvZVlaRXE1MjZRQT09> Passcode: 807968

**Persons may request to make public comment by emailing [publiccomment@cccera.org](mailto:publiccomment@cccera.org)** the day before the Board meeting or the day of the Board meeting either before or during the meeting. Public comments are limited to any item that is within the subject matter jurisdiction of the Board of Retirement. Both written and oral comments will be accepted, subject to a three-minute time limit per speaker. Written comments will be read into the record at the meeting. All comments submitted will be included in the record of the meeting.

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

1. Pledge of Allegiance.
2. Roll Call.
3. Accept comments from the public.
4. Approve minutes from the April 28, 2021 meeting.

### ***CLOSED SESSION***

5. The Board will go into closed session pursuant to Govt. Code Section 54956.9(d)(1) to confer with legal counsel regarding pending litigation:
  - a. *Contra Costa County Deputy Sheriffs Association, et al., v. Board of Retirement of CCCERA, et al., Contra Costa County Superior Court, Case No. MSN12-1870*

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.

- b. *Contra Costa County Deputy Sheriffs Association, et al., v. Board of Retirement of CCCERA, et al.*, Contra Costa County Superior Court, Case No. C15-00598
- c. *Public Employees Union Local No. 1, et al., v. Board of Retirement of CCCERA, et al.*, Contra Costa County Superior Court, Case No. N14-2021

**OPEN SESSION**

- 6. Review of total portfolio performance for period ending March 31, 2021.
  - a. Presentation from Verus
  - b. Presentation from staff
- 7. Consider and take possible action to amend the Investment Policy Statement.
- 8. Report from Audit Committee Chair on May 5, 2021 Audit Committee meeting.
- 9. Miscellaneous
  - a. Staff Report
  - b. Outside Professionals' Report
  - c. Trustees' comments



**RETIREMENT BOARD MEETING MINUTES**

REGULAR MEETING

April 28, 2021

9:00 a.m.

The Board of Retirement meeting was accessible telephonically at (669) 900-6833, Webinar ID: 978 3819 2662, Passcode: 934303 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.

**1. Pledge of Allegiance**

The Board and staff joined in the *Pledge of Allegiance*.

**2. Roll Call**

Present: Candace Andersen, Donald Finley, Scott Gordon, Jerry Holcombe, Louie Kroll, Jay Kwon, David MacDonald, John Phillips, Reggie Powell, Mike Sloan and Russell Watts

Absent: None

Staff: Gail Strohl, Chief Executive Officer; Christina Dunn, Deputy Chief Executive Officer; Timothy Price, Chief Investment Officer; Karen Levy, General Counsel; Wrally Dutkiewicz, Compliance Officer; Anne Sommers, Administrative/HR Manager; Henry Gudino, Accounting Manager; Tim Hoppe, Retirement Services Manager; and Jasmine Lee, Member Services Manager

Outside Professional Support: Representing:

Harvey Leiderman	Reed Smith LLP
Scott Whalen	Verus Consulting
John Botsford	Milliman, Inc.
David Plecha	Dimensional Fund Advisors
Ted Simpson	Dimensional Fund Advisors

**3. Select a successor Board Chairperson and make any other necessary selection of board officers**

Due to the retirement of Trustee Todd Smithey, the Board Chairperson's seat is vacant.

It was **M/S/C** to appoint Scott Gordon as Board Chairperson. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Powell and Watts)

It was **M/S/C** to appoint David MacDonald as Vice Chairperson. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Powell and Watts)

It was **M/S/C** to appoint Jerry Holcombe as Board Secretary. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Powell and Watts)

**4. Audit committee member appointment**

Board Chairperson Gordon appointed David MacDonald to fill the vacant seat on the CCCERA Board Audit Committee.

**5. Accept comments from the public**

CCCERA staff read the following statements into public comments:

Melissa J. Hagen asked where the money is that was taken out of her paycheck for on-call contributions.

Lacey Friedman stated she wants a serious discussion item about where the money she put into the retirement system that is no longer deemed retire-able is.

**6. Approve minutes from the March 24, 2021 meeting**

It was **M/S/C** to approve the minutes from the March 24, 2021 meeting. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Powell and Watts)

It was the consensus of the Board to move to Item 8.

**8. Presentation from Milliman regarding the December 31, 2020 Other Post-Employment Benefits (OPEB) valuation report**

Botsford presented the Actuarial Valuation of Other Post Employment Benefits (OPEB) for staff employees and retirees as of January 1, 2020 and GASB 74/75 Disclosures for the fiscal year ending December 31, 2020.

**CLOSED SESSION**

The Board moved into Closed Session pursuant to Govt. Code Section 54956.9(d)(1).

The Board moved into open session.



7. Trustee MacDonald recused himself from Items 7a and 7b and was not present for subsequent discussion and voting.
  - a. There was no reportable action related to *Contra Costa County Deputy Sheriffs Association, et al., v. Board of Retirement of CCCERA, et al.*, Contra Costa County Superior Court, Case No. MSN12-1870
  - b. There was no reportable action related to *Contra Costa County Deputy Sheriffs Association, et al., v. Board of Retirement of CCCERA, et al.*, Contra Costa County Superior Court, Case No. C15-00598
  - c. There was no reportable action related to *Morant v. CCCERA*, EEOC Charge No. 555-2021-00303

9. **Update from Verus regarding the firm and its role as the board's investment consultant**

Whalen provided an update on the firm's growth and stated their primary role is to help the CCCERA Board and Investment staff build and maintain a portfolio that meets CCCERA's specific needs for the Plan participants.

10. **Discussion with Board regarding potential modifications of the Investment Policy Statement**

Whalen presented proposed language to the Investment Policy Statement.

Whalen reported he will reword the language based on the direction from the Board and bring it back at an upcoming meeting.

11. **Review of report on liquidity sub-portfolio**

- a. Presentation from staff

Price provided a brief background on the liquidity program.

Taylor reviewed the current manager roles and statistics.

- b. Presentation from Dimensional Fund Advisors

Simpson gave a brief overview of the firm.

Plecha reviewed the Global Fixed Income Team, their investment philosophy and implementation strategies.

Andersen, Kroll and Powell were no longer present for subsequent discussion and voting.

12. **Consider and take possible action to adopt Board of Retirement Resolution No. 2021-4, Investment Asset Allocation Targets and Ranges**

It was **M/S/C** to adopt Board of Retirement Resolution No. 2021-4, Investment Asset Allocation Targets and Ranges. (Yes: Finley, Gordon, Holcombe, Kwon, MacDonald, Phillips, Sloan and Watts)

**13. Miscellaneous**

(a) Staff Report –

Strohl reported we are working with Sagitec on the new pension administration system for CCCERA and will have an official kick-off meeting soon.

(b) Outside Professionals' Report -

None

(c) Trustees' comments –

Holcombe complimented Gordon on his first day as Board Chairperson.

MacDonald asked that the meeting be adjourned in memory of Dr. Kent Hobart, a long-time physician who worked at the County Hospital and had a private practice in Martinez. His memorial is being held this evening.

It was **M/S/C** to adjourn the meeting in memory of Dr. Kent Hobart. (Yes: Finley, Gordon, Holcombe, Kwon, MacDonald, Phillips, Sloan and Watts)

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Scott Gordon, Chairman

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Jerry Holcombe, Secretary

Meeting Date  
05/26/2021  
Agenda Item  
#6

Verus<sup>777</sup>



# PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: MARCH 31, 2021

Investment Performance Review for

**Contra Costa County Employees' Retirement Association**

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Investment Landscape

TAB I

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Investment Performance  
Review

TAB II





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

2<sup>ND</sup> QUARTER 2021  
Investment Landscape



# Recent Verus research

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

## Topics of interest

### IS THERE ALPHA AVAILABLE FROM EMERGING & DIVERSE MANAGERS?

While discussion on the alpha-generating ability of emerging and diverse managers has been part of institutional conversation for decades, the use of emerging and diverse managers has become a mainstay of industry conferences and in many Board meetings more recently. This paper explores the alpha-generating ability of emerging and diverse firms across asset classes and structures.

### LEVERAGE IN PORTFOLIOS

Our latest Topics of Interest paper hopes to shed light on one segment of today's investment challenge, the benefits and risks associated with using leverage. This paper finds that for investors with sufficient capital to leverage market opportunities and allocate to a wide range of asset classes, and with an appropriate Enterprise Risk Tolerance to accept the range of outcomes involved, modest leverage may be responsibly employed to provide greater diversification of risk while maintaining a similar return target.

### HOW TO MAKE MANAGER DECISIONS

Manager research decisions are made harder if you use the wrong tools and approaches. In this new paper, we outline the reasons why many investors may be finding these decisions harder than they need to and discuss a different way of thinking that may make the task of manager assessment clearer and more effective.

### DEVELOPING AN END-GAME STRATEGY FOR CORPORATE PENSIONS

As a plan sponsor's de-risking strategy ultimately bears fruit and the plan approaches full funding, a new phase of the pension management lifecycle brings with it new challenges. Navigating the later stages of the asset-liability journey requires that plan sponsors establish a clear and well-defined view of the end-state. Doing so requires careful consideration of costs (some knowable, some not), risks, and less tangible company-specific considerations. Once this end-state is defined, investment and contribution strategy can be cohesively aligned to maximize the probability of success. With greater flexibility, the probability of a successful outcome increases.

## Annual research

### ACTIVE MANAGEMENT ENVIRONMENT

We are pleased to release the Verus 2021 Active Management Environment. The past year has been one of extreme volatility and divergence in many respects, creating interesting opportunities for active managers to show differentiated performance and deliver alpha to clients. We hope the insights from this research will allow for a deeper understanding of active manager behavior and inform selection in the future.

### IMPLICATIONS OF RISK TOLERANCE ON ESTABLISHING AN EFFECTIVE INVESTMENT STRATEGY FOR PUBLIC PENSION PLANS

The future health of public pension plans is dependent on many factors and faces many risks, including low prospective returns, unfavorable plan demographics, and stressed plan sponsor financial conditions. This paper will explore these risks and provide a framework for discussion and evaluation designed to ensure a plan's investment program is appropriately aligned with its risk tolerance.

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# 1<sup>st</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued at a brisk pace. [p. 11](#)
- The speed of vaccinations in the U.S. has exceeded expectations, reaching more than 3 million doses per day during the first week of April. Approximately 23% of the country have been fully vaccinated, and 37% have received a first dose. [p. 7](#)
- The Europe Union has been slower to roll out vaccinations, suggesting member countries may be grappling with the virus for longer periods of time. [p. 19](#)

## PORTFOLIO IMPACTS

- We believe the U.S. economy is playing catch-up to the markets in the current environment. While it seems increasingly likely that the economy will rapidly come back to life over the next year, this optimism may already be baked into equity prices. [p. 29](#)
- U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation will continue to see a temporary rise in the coming months due to the lower prices of Q2 2020, since inflation is a year-over-year measure. [p. 13](#)

## THE INVESTMENT CLIMATE

- President Biden announced his \$2 trillion Infrastructure Plan. In its initial form, the plan did not have bipartisan support, reportedly due to the lower proportion of the plan that related to traditional infrastructure spending, the size of the plan, and the proposed methods to fund it. Negotiations will commence in late-April, though it remains possible that the bill is modified in order to pass it via the “reconciliation” process, to avoid the need for Republican support. [p. 11](#)
- According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020. [p. 28](#)

## ASSET ALLOCATION ISSUES

- U.S. equities were a top performer in Q1, returning +6.2%. International equities returned +3.5% (MSCI EAFE Index) and emerging markets returned +2.3% (MSCI Emerging Markets Index), on an unhedged currency basis. [p. 28](#)
- Size and value factors both delivered strong relative performance. U.S. value stocks beat growth stocks (Russell 1000 Value +11.3%, Russell 1000 Growth +0.9%), as growth stocks entered a correction in February. Small capitalization stocks continued their rally (Russell 2000 +12.7%, Russell 1000 +5.9%). [p. 31](#)

Prospects for a strong economic rebound are compelling, though this good news may already be reflected in asset prices

We believe a neutral risk stance is warranted in the current environment



# What drove the market in Q1?

**“Biden signs \$1.9 trillion Covid relief bill, clearing way for stimulus checks, vaccine aid”**

## U.S. PERSONAL INCOME GROWTH (YEAR-OVER-YEAR)

Sep	Oct	Nov	Dec	Jan	Feb
6.0%	5.0%	3.2%	3.7%	13.1%	4.3%

Article Source: CNBC, as of March 11<sup>th</sup>, 2021

**“U.S. vaccination campaign gains steam as White House speeds shipments”**

## AVERAGE DAILY VACCINE DOSE ADMINISTRATIONS (TRAILING SEVEN DAYS)

1/15	1/31	2/14	2/28	3/15	3/31
843,447	1,348,021	1,681,951	1,735,053	2,427,429	2,828,491

Article Source: Reuters, March 31<sup>st</sup>, 2021

**“Bond Traders Gird for More Pain After Biggest Loss Since 1980”**

## BLOOMBERG BARCLAYS US LONG TREASURY INDEX TOTAL RETURN

Oct	Nov	Dec	Jan	Feb	Mar
-3.01%	+1.20%	-1.18%	-3.61%	-5.57%	-4.99%

Article Source: Bloomberg, March 31<sup>st</sup>, 2021

**“OECD More Than Doubles US Economic Growth Forecast”**

## U.S. 2021 GDP GROWTH FORECAST (BLOOMBERG MEDIAN ESTIMATE)

Oct	Nov	Dec	Jan	Feb	Mar
3.8%	3.8%	3.9%	4.1%	4.9%	5.7%

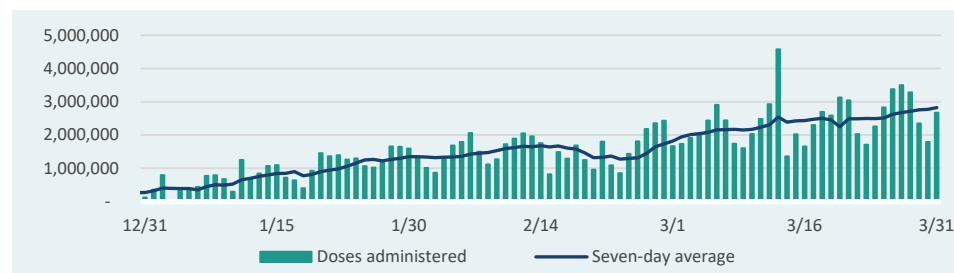
Article Source: Chief Investment Officer, March 17<sup>th</sup>, 2021

## AMERICAN RESCUE PLAN ACT ALLOCATIONS



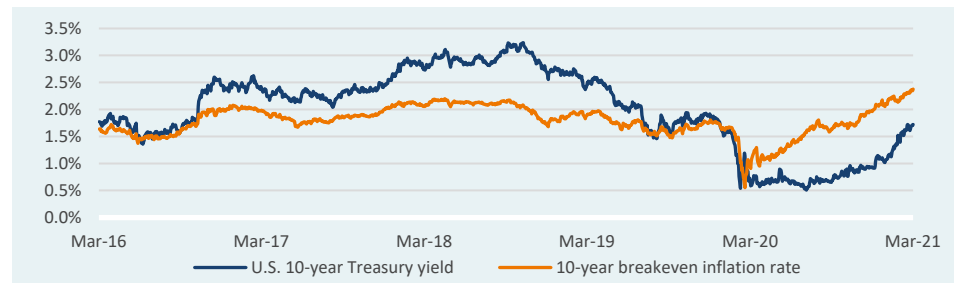
Source: Wall Street Journal, as of 3/11/21

## U.S. COVID-19 VACCINATION CAMPAIGN



Source: Bloomberg, as of 3/31/21

## INTEREST RATES AND INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/21

# Economic environment

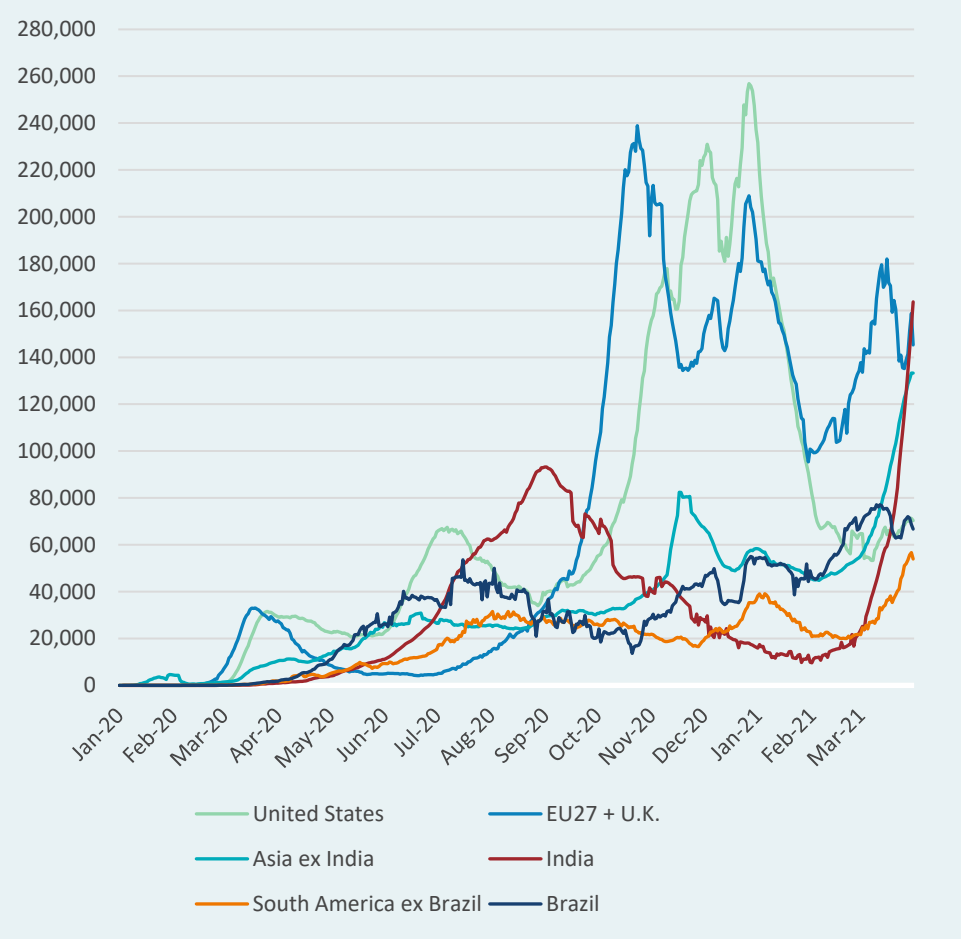
# U.S. economics summary

- Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued. The Atlanta Fed's GDPNow forecast for 2021 Q1 growth was 6.0% on a quarter-over-quarter annualized basis as of April 9th, suggesting an even more robust pace than the prior quarter.
  - The speed of vaccinations in the U.S. has exceeded expectations, reaching 3 million doses per day. Approximately 23% of the country have been fully vaccinated, and 37% have received a first dose.
  - President Biden announced his \$2 trillion Infrastructure Plan. In its initial form, the bill would spend \$400b on expanded care for the elderly and disabled, spend \$500b on electric vehicle subsidies and incentives, and spend \$100B on national high-speed broadband internet access, with a smaller portion of the spending going towards traditional infrastructure
- such as power grid, railway, and public transit.
- U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation will continue to see a temporary rise in the coming months due to the lower prices of Q2 2020, since inflation is a year-over-year measure.
  - While the U.S. unemployment rate continues to improve, falling from 6.7% to 6.0% during the quarter, the overall labor participation rate has stagnated. A disconnect seems to exist between the strong economy and weaker labor market.
  - Consumer sentiment improved during Q1, along with the economic recovery. Sentiment is now at an average level relative to history.

	Most Recent	12 Months Prior
GDP (YoY)	(2.4%) 12/31/20	2.3% 12/31/19
Inflation (CPI YoY, Core)	1.6% 3/31/21	2.1% 3/31/20
Expected Inflation (5yr-5yr forward)	2.20% 3/31/21	1.25% 3/31/20
Fed Funds Target Range	0% – 0.25% 3/31/21	0% – 0.25% 3/31/20
10-Year Rate	1.74% 3/31/21	0.67% 3/31/20
U-3 Unemployment	6.0% 3/31/21	4.4% 3/31/20
U-6 Unemployment	10.7% 3/31/21	8.8% 3/31/20

# COVID-19 case growth

SEVEN-DAY AVERAGE DAILY CASE GROWTH



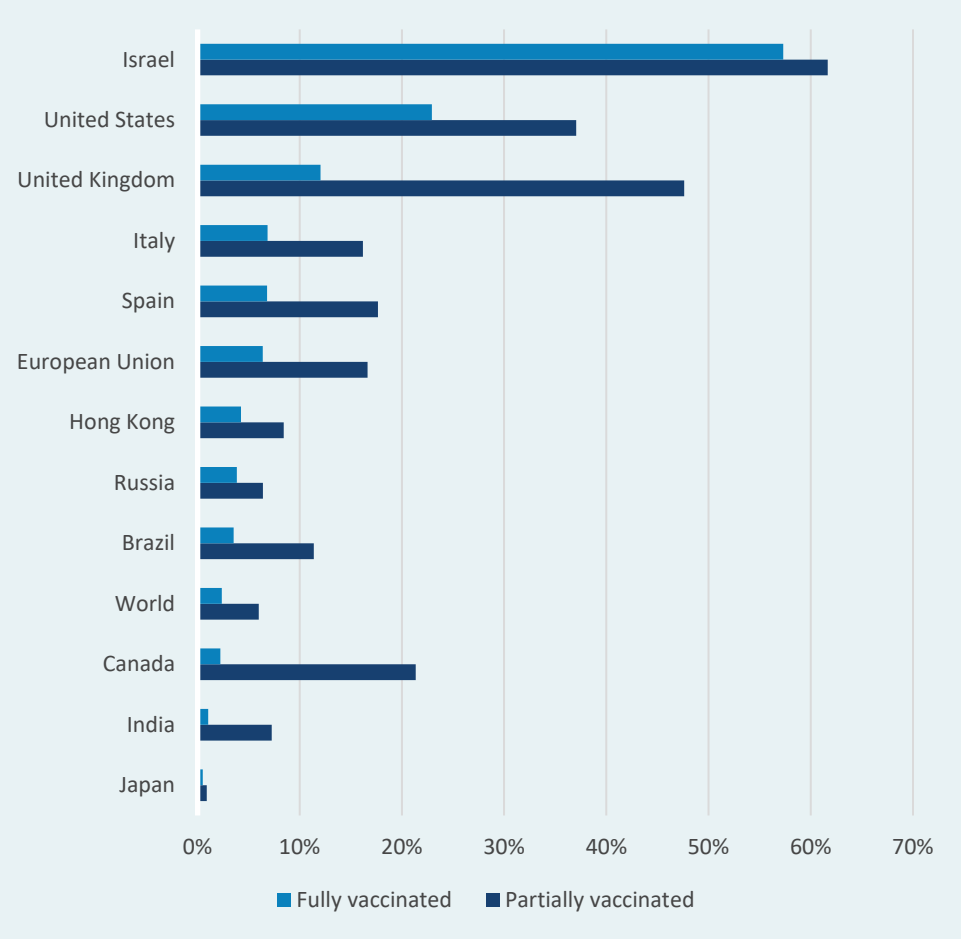
SEVEN-DAY AVERAGE DAILY CASE GROWTH – PER 100,000 RESIDENTS



Source: Bloomberg, as of 4/15/21

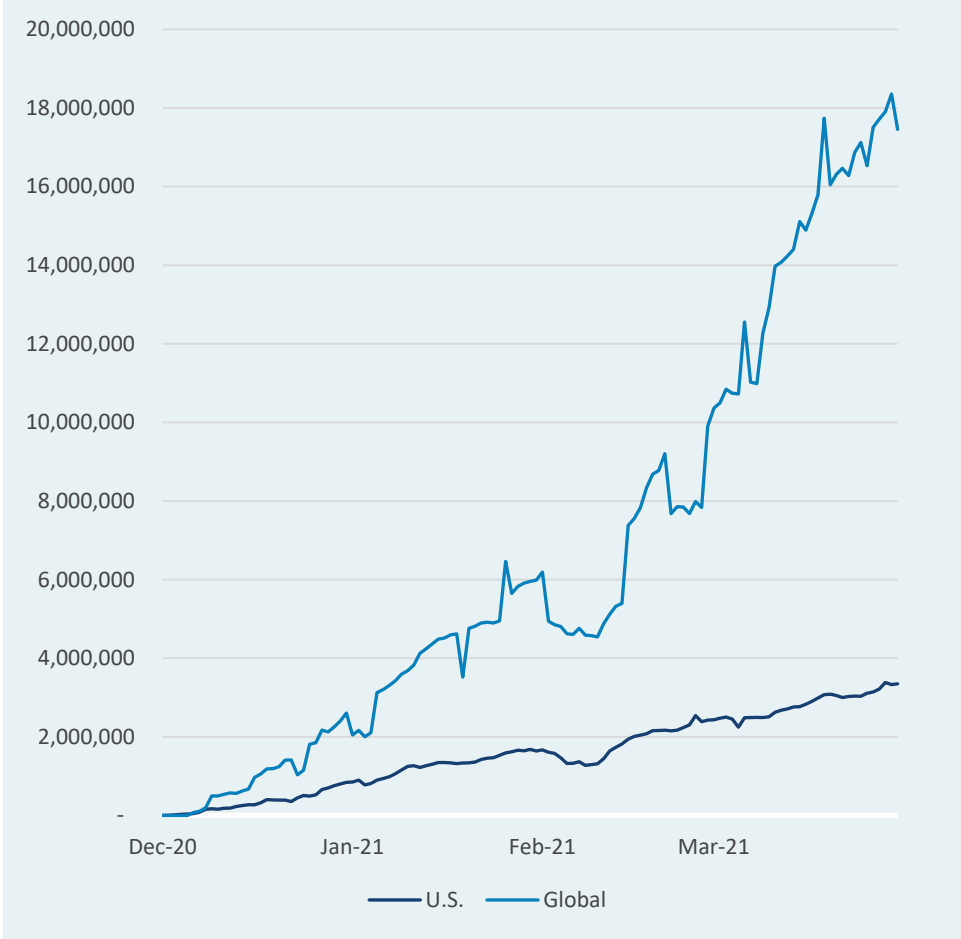
# Global vaccination campaign

PERCENTAGE OF PEOPLE WHO ARE...



Source: Our World in Data, as of 4/14/21, or most recent release.

DAILY VACCINE DOSE ADMINISTRATIONS (7-DAY TRAILING AVERAGE)



Source: Bloomberg, as of 4/15/21

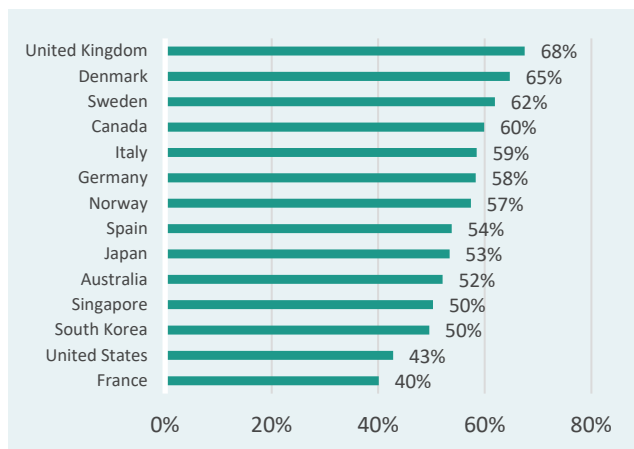
# Vaccine hesitancy

Toward quarter-end, concerns over the development of blood clots in a very small percentage of recipients of the AstraZeneca/Oxford and Johnson & Johnson vaccines led policymakers in many countries to suspend administrations pending further investigation.

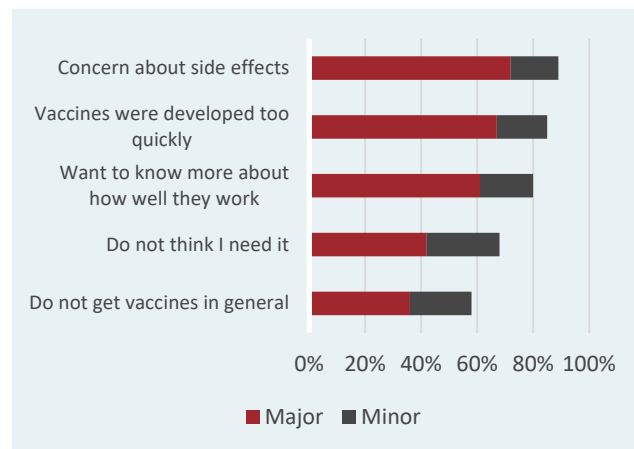
Though today these side effects appear quite rare, these developments will likely result in further delays in the push toward herd immunity over the short-term. If suspensions are lifted in the intermediate term, the vaccines in question are likely to face public relations issues which could

further hamper vaccination efforts. This dynamic is currently playing out in Europe with regard to the AstraZeneca vaccine—most of the Western part of the continent is taking a more cautious approach, while the Eastern segment has largely dismissed any clot-related concerns. Over the longer term, we believe that expanded vaccine production capacity, sufficiently diversified vaccine portfolios, and the coming online of new vaccines will reduce significantly the risk that idiosyncratic vaccine concerns create problems for the global vaccination campaign.

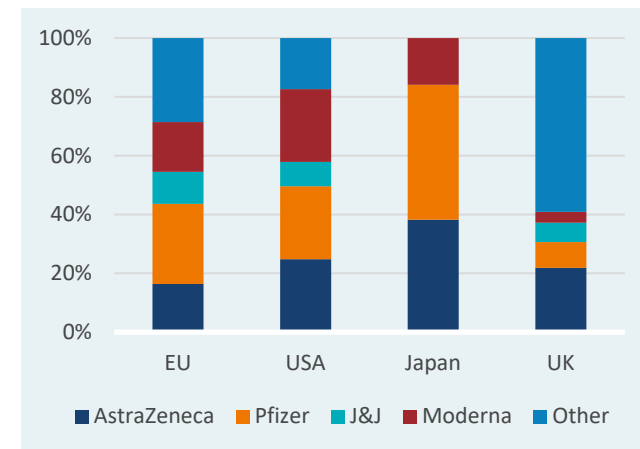
## VACCINE WILLINGNESS



## AMONG U.S. ADULTS ELECTING NOT TO BE VACCINATED, THE PERCENTAGE WHO SAY EACH OF THE FOLLOWING IS A MAJOR/MINOR REASON



## VACCINE PORTFOLIO COMPOSITION ESTIMATE



Source: Our World in Data, Pew Research, Duke Global Health Innovation Centre, as of 3/31/21, or most recent release. The bars in the “Vaccine Willingness” chart indicate the percentage of people who agree with the following statement: “If a COVID-19 vaccine were made available to me this week, I would definitely get it.”

# GDP growth

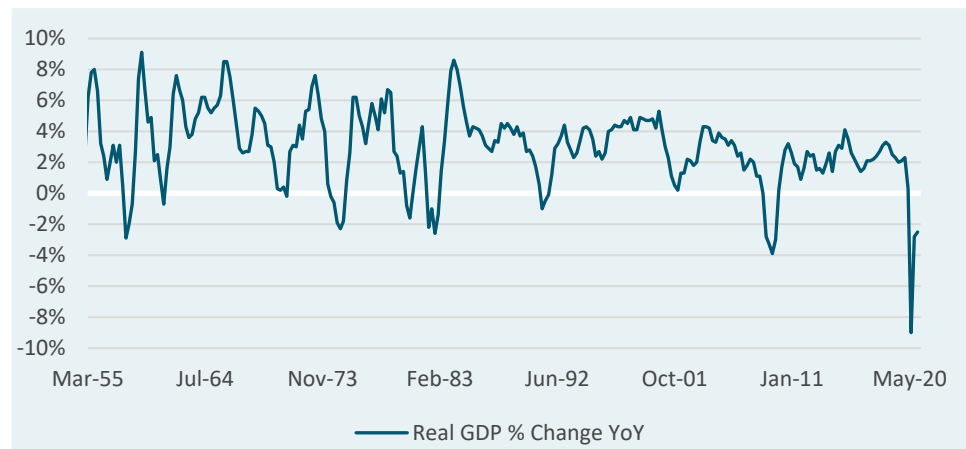
Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued. The Atlanta Fed's GDPNow forecast for 2021 Q1 growth was 6.0% on a quarter-over-quarter annualized basis as of April 9th, suggesting an even quicker pace than the prior quarter.

President Biden announced his \$2 trillion Infrastructure Plan. In its initial form, the bill would spend \$400b on care for the elderly and disabled, \$500b on electric vehicle subsidies and incentives, and \$100b on national high-speed broadband internet access, with a smaller portion of spending going towards traditional infrastructure such as power grid, railway, and transit.

The plan as originally proposed did not have bipartisan support, reportedly due to the lower proportion of the plan dedicated to traditional infrastructure spending, its size, and its funding methods. Negotiations will commence in late-April, though it remains possible that the bill is modified in order to pass it via the "reconciliation" process, to avoid the need for Republican support.

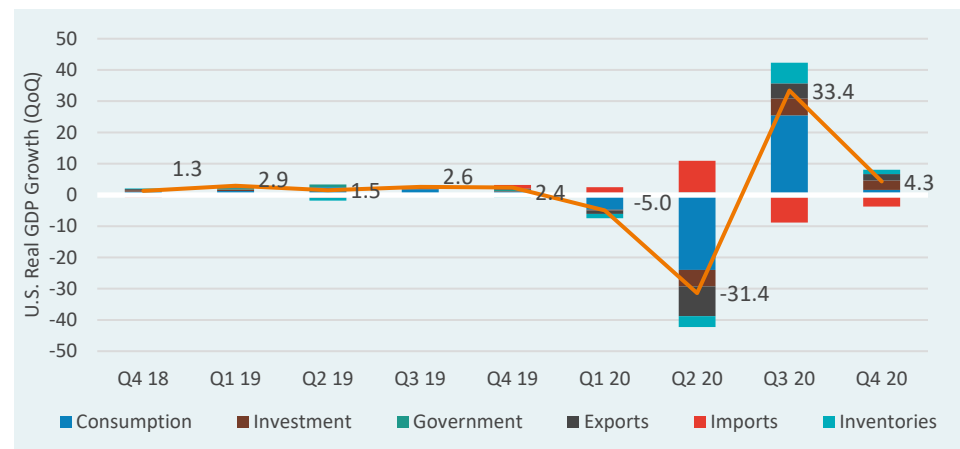
Large government stimulus programs are typically implemented during earlier stages of a recession, with the intent to fill a gap in demand and offset initial weakness. The current stimulus plans are very large and are being implemented at a time when the economy is well on the way to recovery. This creates risks of economic overheating, excesses, and inflation.

## U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 12/31/20

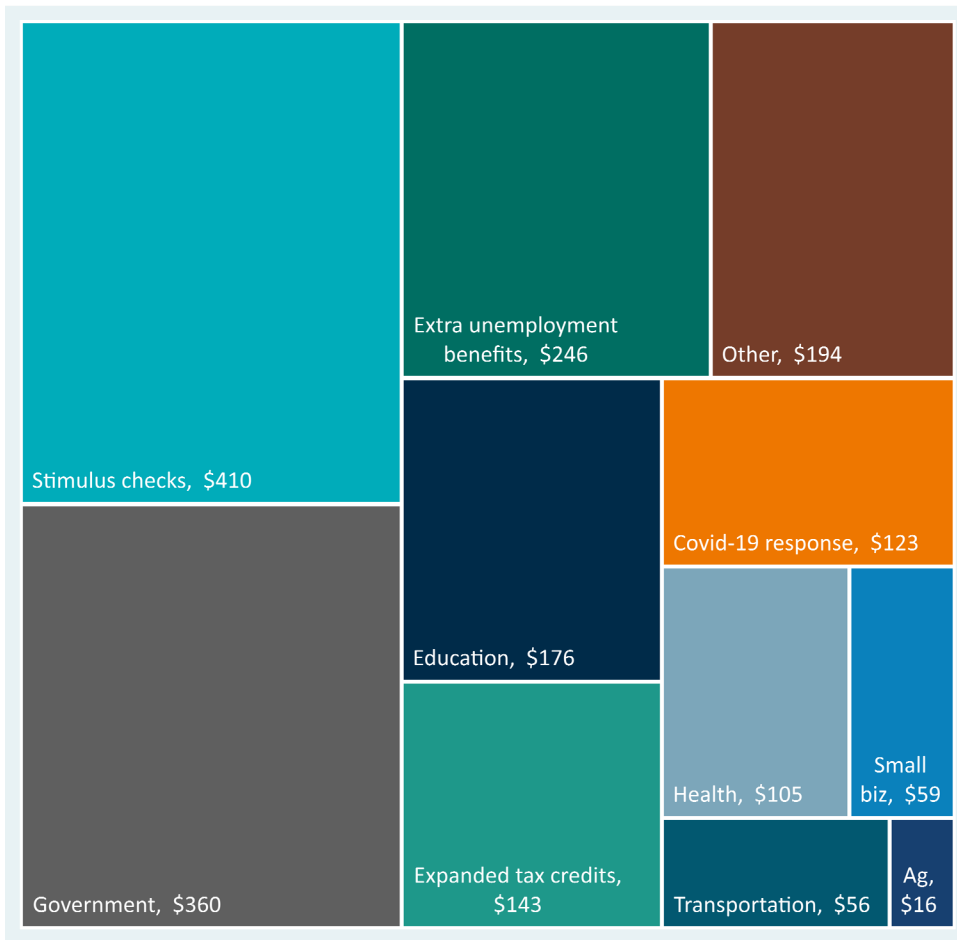
## U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 12/31/20

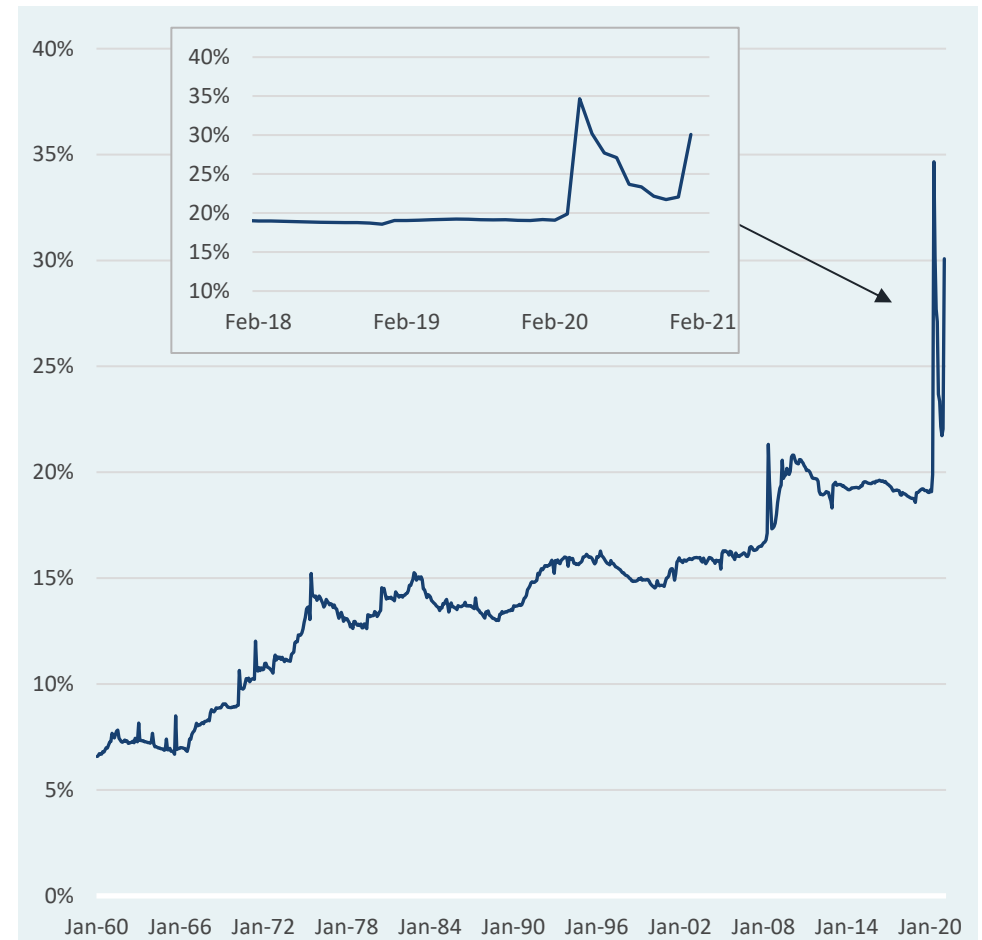
# American Rescue Plan Act of 2021

STIMULUS BILL ALLOCATIONS (BILLIONS)



Source: Wall Street Journal, as of 3/13/21

GOVT. TRANSFER PAYMENTS AS A % OF DISPOSABLE PERSONAL INCOME



Source: BEA, as of 2/28/21



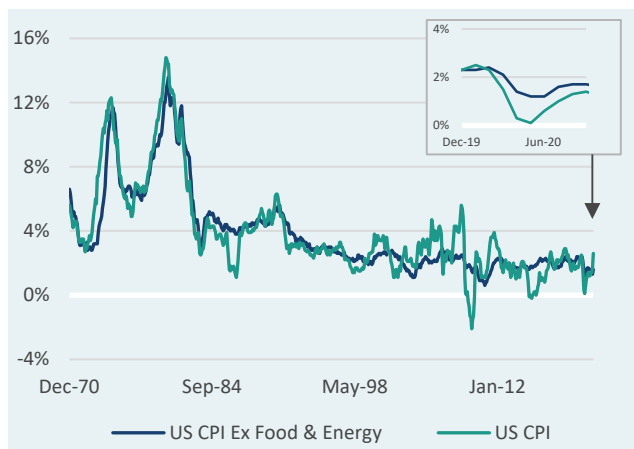
# Inflation

U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation may jump temporarily in the coming months due to the lower prices of spring 2020, which will flow through to inflation, since inflation is a year-over-year measure.

The 10-year TIPS breakeven inflation rate continued higher during the quarter to nearly 2.4% from 2.0%. Most inflation indicators have risen, though we believe that government purchases of TIPS may be artificially pushing up the breakeven rate.

Investor fears persist around potential inflation. Following the response of central banks to the Global Financial Crisis, and very little inflationary effects resulting from that monetary experiment, it is reasonable to have doubts around whether ultra low interest rates and easy money are highly inflationary. Some have argued that most money “printed” after 2008-2009 ended up on bank balance sheets, rather than in the real economy, which resulted in muted inflationary effects. In the current environment, much easy money is arriving in the form of checks delivered straight to households. This new form of stimulus, along with broader government spending, may suggest possible rising inflation, though we believe the probability of this remains low.

## U.S. CPI (YOY)



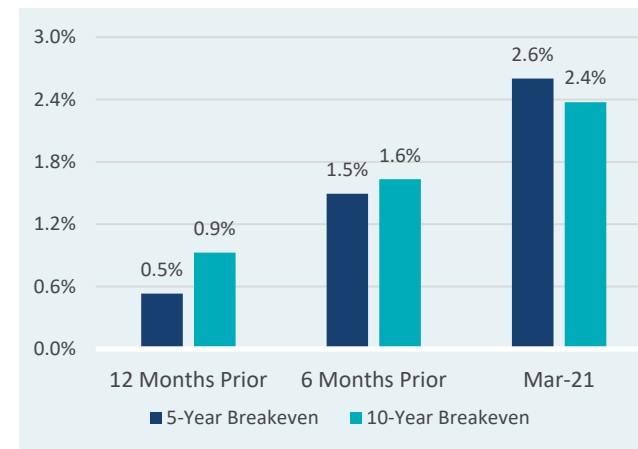
Source: Bloomberg, as of 3/31/21

## MARKET INFLATION EXPECTATIONS



Source: FRED, as of 3/31/21

## BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 3/31/21

# Labor market

Unemployment fell from 6.7% in December to 6.0% in March. However, the overall labor force participation rate paints a less optimistic picture. At 61.5% participation in March, this metric has not budged since June of 2020.

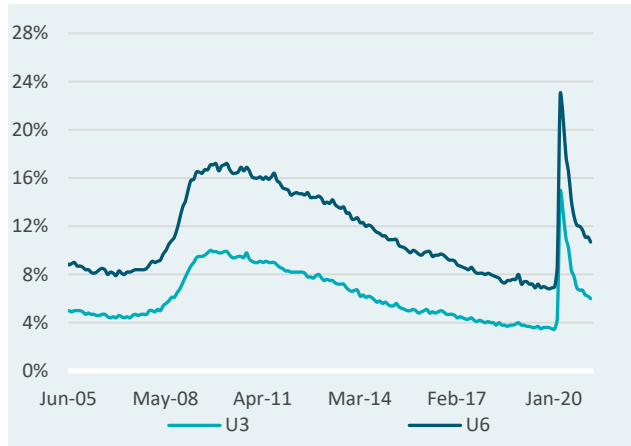
The U.S. labor force showed a strong rebound during the fall of 2020, but more recently appears to have stalled. Approximately 2% of the total U.S. workforce remains out of a job and is not seeking work, relative to pre-COVID levels. This effect is illustrated in the labor participation rate, which is a broad measure of employment—defined as the percentage of the country’s population that is currently employed, among all

eligible workers. The participation rate fell from 63.3% immediately before the pandemic, to 60.2% in April, then back to 61.7% in August. The labor market remains weak despite an impressive economic comeback.

The most recent NFIB Small Business Optimism report explained “Main Street is doing better as state and local restrictions are eased, but finding qualified labor is a critical issue for small businesses nationwide... Small business owners are competing with the pandemic and increased unemployment benefits that are keeping some workers out of the labor force.”

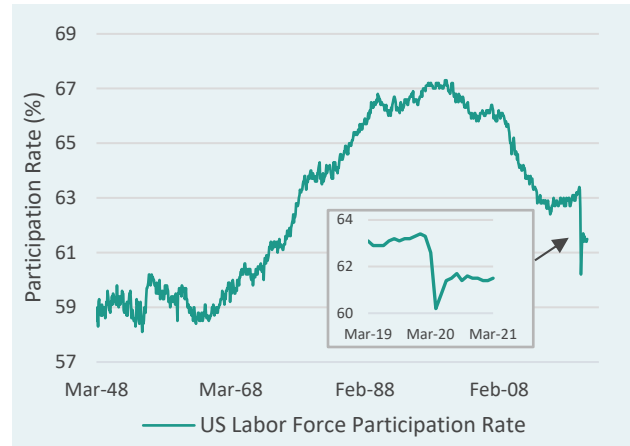
**A large portion of the U.S. labor force remains neither employed nor seeking work**

## U.S. UNEMPLOYMENT



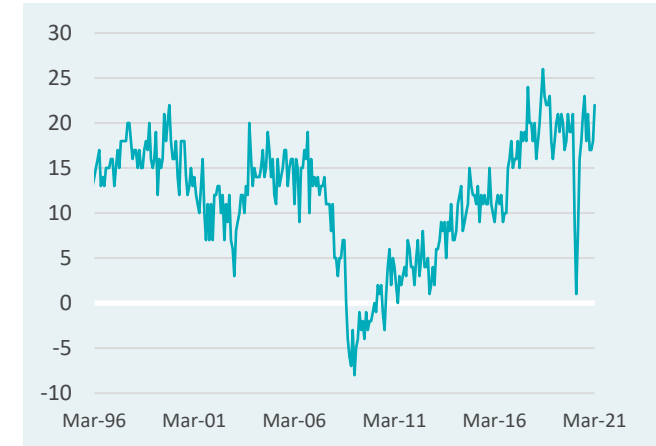
Source: FRED, as of 3/31/21

## LABOR PARTICIPATION RATE



Source: FRED, as of 3/31/21

## NFIB SMALL BUSINESS HIRING PLANS INDEX



Source: NFIB, as of 3/31/21

# Employment conditions

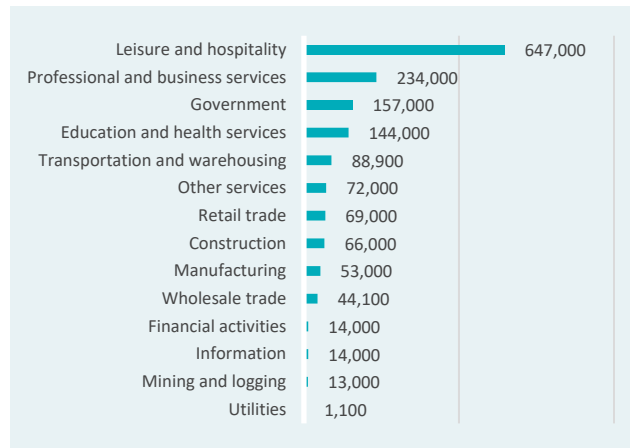
Hiring activity picked up considerably in the first quarter of 2021, supported by strong progress on the vaccination campaign and the concurrent relaxation of social distancing controls. While the broad unemployment rate dipped from 6.7% to 6.0%, that number probably overstates the magnitude of the labor market recovery thus far. Labor force participation dropped from 63.4% in January of 2020 to 60.2% in April, and as of the end of the first quarter, that number had recovered to just 61.5%. As a result, while unemployment has improved, there remain roughly nine million U.S. citizens who have yet to regain employment.

The primary concern of the Federal Reserve remains limiting the potential scarring of the labor market as a result of the shutdowns over the last year, and the Fed's accommodation, paired with continued progress on the vaccination campaign should lay the foundation for a continued recovery in the labor market over the next several quarters. There remains much wood to chop.

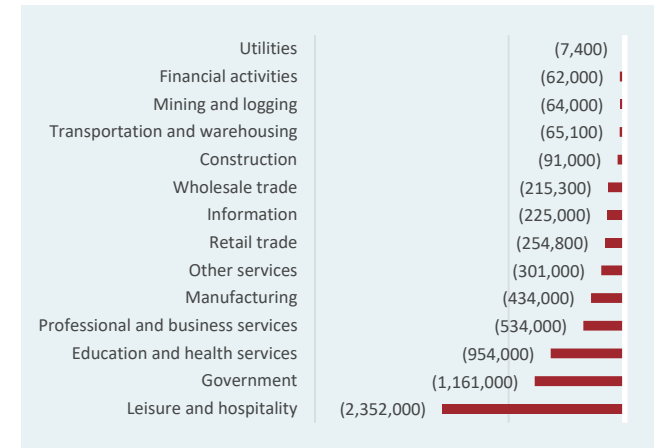
## NON-FARM PAYROLLS – ONE-MONTH CHANGE



## NON-FARM PAYROLLS – THREE-MONTH CHANGE



## NON-FARM PAYROLLS – ONE-YEAR CHANGE



Source: BLS, as of 3/31/21

# The consumer

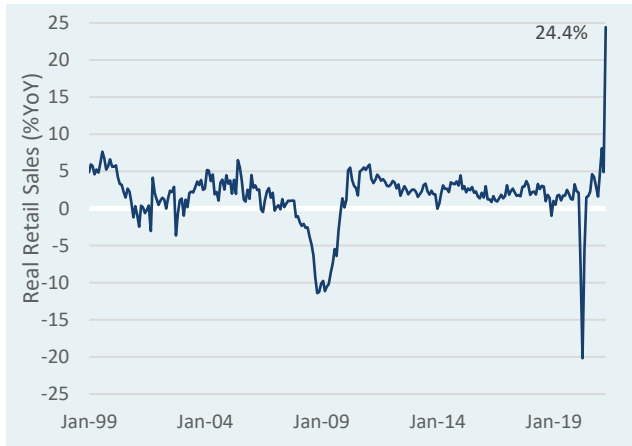
U.S. retail sales rocketed higher in the first quarter, accelerating to a 9.8% month-over-month pace in March (this rate was an astounding 24.4% on a year-over-year basis, though this metric is more difficult to interpret since it calculates growth from a starting point of March 2020—the depths of the recession). As expected, vast government stimulus is translating to red hot consumer spending.

According to anonymized cellular phone data collected by Google for COVID-19 public health research, Americans began returning to their daily routines through late spring and summer, as activity began moving back towards normalcy. Then, as COVID-19 cases

began to surge, many types of activities dipped once again. It now appears that activity such as retail, recreation, and grocery shopping are moving back to normal levels. At the same time, public transit usage and travel to workplaces remains depressed.

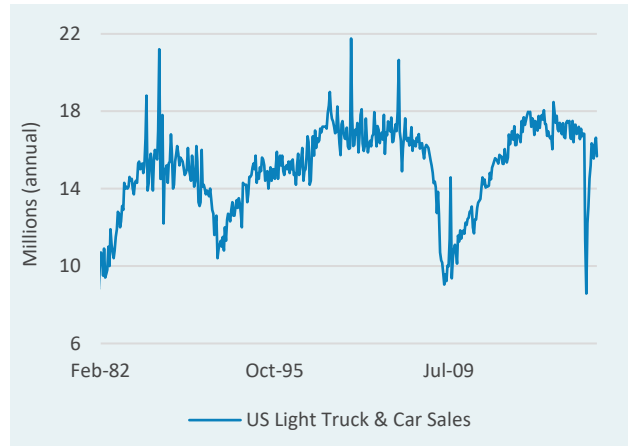
In last quarter’s landscape we discussed concerns around the difficulty in determining what portion of the economic bounceback may have been due to unprecedented government stimulus, rather than a “natural” recovery of jobs and the financial health of Americans. We remain cautious, as certain aspects of the economy remain very weak, such as the labor market trends outlined earlier in this document.

**REAL RETAIL SALES GROWTH (YOY)**



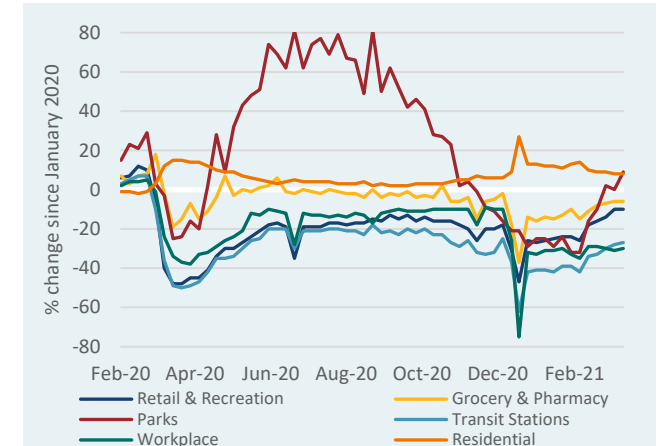
Source: FRED, as of 3/31/21

**AUTO SALES**



Source: Federal Reserve, as of 2/28/21

**GOOGLE U.S. ACTIVITY TRACKER**



Source: Google anonymized U.S. citizen mobility, as of 3/31/21

# Sentiment

Consumer sentiment has seen only mild improvement, despite the stronger-than-expected pace of economic recovery.

The Bloomberg Consumer Comfort Index attempts to gauge Americans' views on the economy, their personal financial situation, and buying conditions. The index rose from 44.6 to 50.0 during the quarter. The University of Michigan Consumer Sentiment Survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. The index jumped from 80.7 to 84.9 in Q1,

directionally in line with the continued economic recovery.

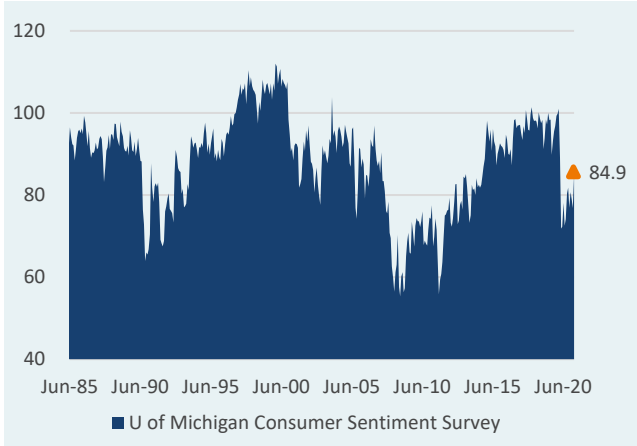
The NFIB Small Business Optimism Index returned to an average reading in Q4 and remains materially weaker than pre-pandemic levels. Participants in the survey expressed uncertainty around business conditions, and extreme difficulties in finding qualified workers due to attractive unemployment benefits. A surprising 42% of small business owners reported job openings that could not be filled, which was a record-high figure.

**CONSUMER COMFORT**



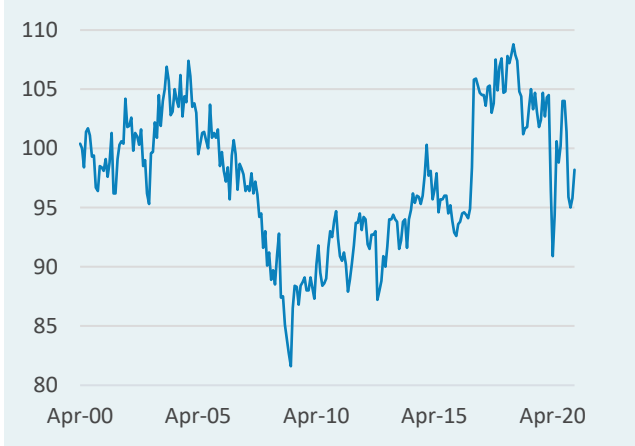
Source: Bloomberg, Langer, as of 3/28/21

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 3/31/21

**SMALL BUSINESS OPTIMISM**



Source: NFIB, as of 3/31/21

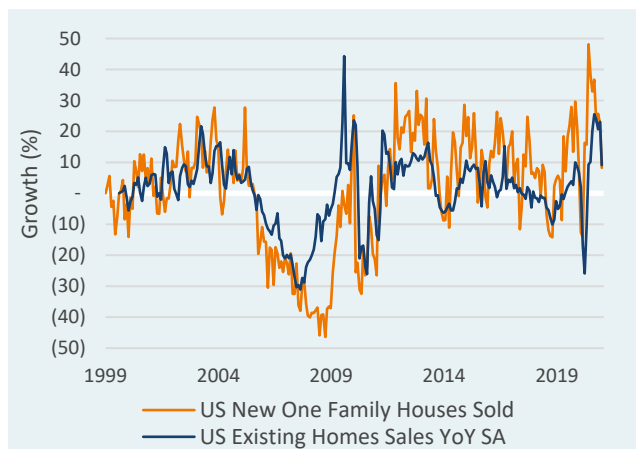
# Housing

Sales of existing homes continued at a near-record pace through fall of 2020 and the beginning of 2021, before decelerating to 9.1% year-over-year in February. Sales of new homes followed a similar directional trend, though new homes have shown an even stronger growth rate consistently over the past decade. The impressive number of sales were achieved despite there being an extremely slim inventory of homes available on the market.

It has been surprising to witness a housing boom coincide with a sharp and deep global recession, although the dynamics that led to this environment are fairly simple to understand with

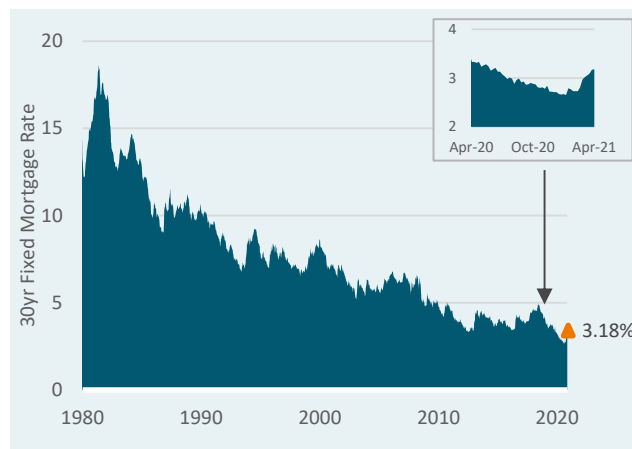
hindsight. Record-low interest rates, record-low inventory of homes, and a desire of Americans for more space during the work-from-home environment, have lifted the cost of homes significantly. Some of these influences appear to be easing. Rising interest rates since the beginning of the year have contributed to higher mortgage rates, as the 30-year fixed average mortgage rate has risen from 2.65% to 3.18%. And the nationwide inventory of homes has improved to 4.8 months worth of supply. A further easing of conditions may help to cool down an extremely hot market.

**U.S. HOME SALES (YOY)**



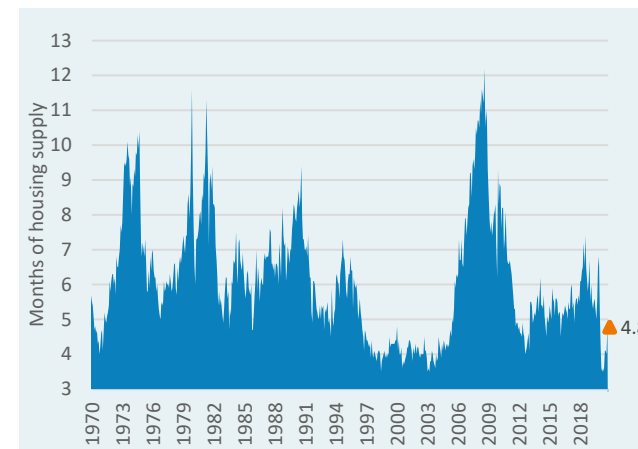
Source: FRED, as of 2/28/21

**30-YEAR FIXED MORTGAGE RATE (AVERAGE)**



Source: FRED, as of 3/31/21

**HOUSING INVENTORY**



Source: FRED, as of 2/28/21

# International economics summary

- Economic growth continued to recover during the fourth quarter, though was still negative on a year-over-year basis in many countries. Growth expectations have risen as successful vaccine rollouts suggest that the world may get back to normal more quickly than originally assumed.
- Europe may unfortunately be excluded from this optimism, as a renewed wave of COVID-19 has once again led to lockdowns and restrictions. The Europe Union has been slower to rollout vaccinations, suggesting member countries may be grappling with the virus for longer periods of time.
- Unemployment was stable in the Eurozone and Japan, and fell modestly in the United States. As we described in prior quarters, governments have taken very different approaches to supporting workers, which makes labor market comparisons difficult.
- Despite heightened discussions about inflation risk, inflation remains muted and stable around the world, though the rebound in energy prices from record-low levels last year is having a lifting impact. This influence, driven by base effects, will most likely persist for the next few months.
- The gap between the manufacturing and services sectors of the economy narrowed toward the end of the quarter, as the beaten-down services sector showed signs of life across Europe. Extended periods of service sector activity expansion will likely depend on manageable levels of case growth and relaxed social distancing controls.
- Vaccine campaigns across mainland Europe as well as Japan have materially lagged those of the U.S. and the U.K., and the indefinite suspension of the AstraZeneca vaccine in many countries is likely to widen the gap in the short-term.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(2.4%) 12/31/20	2.6% 3/31/21	6.0% 3/31/21
Eurozone	(4.9%) 12/31/20	1.3% 3/31/21	8.3% 2/28/21
Japan	(1.4%) 12/31/20	(0.2%) 3/31/21	2.8% 2/28/21
BRICS Nations	1.6% 12/31/20	1.4% 3/31/21	5.7% 12/31/20
Brazil	(4.1%) 12/31/20	6.1% 3/31/21	14.2% 1/31/21
Russia	(3.0%) 12/31/20	5.8% 3/31/21	5.4% 3/31/21
India	0.4% 12/31/20	5.5% 3/31/21	6.5% 3/31/21
China	18.3% 3/31/21	0.4% 3/31/21	4.2% 12/31/20

*NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy*

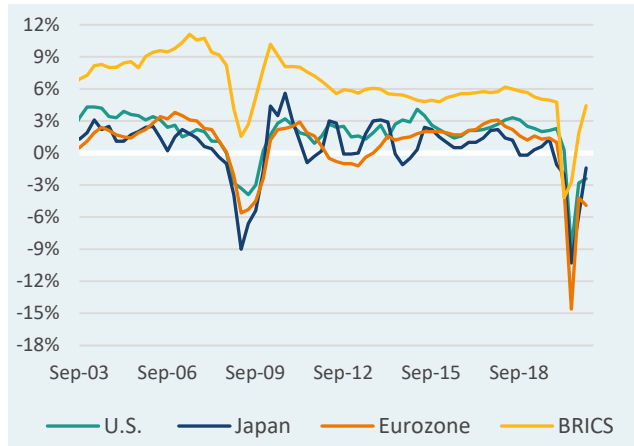
# International economics

Economic growth continued to recover during the fourth quarter, though still negative on a year-over-year basis in many countries. Growth expectations have risen as successful vaccine rollouts suggest that the world may move back to normal more quickly than originally expected, although the speed of vaccine distribution has differed wildly. As of quarter-end, the U.S. and United Kingdom lead in vaccine rollouts, while the European Union and Japan lag behind. Europe is seeing a renewed wave of COVID-19, which has once again led to lockdowns and restrictions.

Despite heightened discussions about inflation risk, inflation around the world remains muted and stable, though the rebound in energy prices from record-low levels last year is having a lifting impact. This influence, driven by base effects, will most likely persist for the next few months.

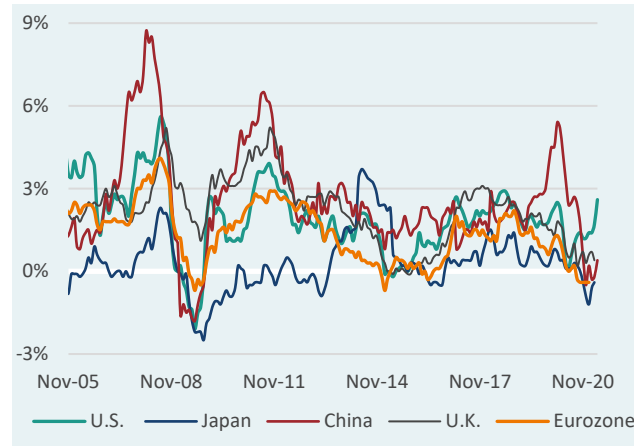
Unemployment was stable in the Eurozone and Japan, and fell modestly in the United States. As we have described in prior quarters, governments have taken very different approaches to supporting workers, which has made global labor market comparisons difficult.

**REAL GDP GROWTH (YOY)**



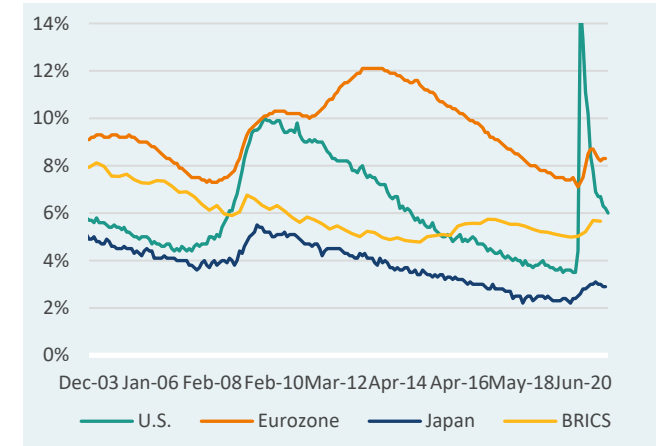
Source: Bloomberg, as of 12/31/20

**INFLATION (CPI YOY)**



Source: Bloomberg, as of 3/31/21 – or most recent release

**UNEMPLOYMENT**



Source: Bloomberg, as of 3/31/21 – or most recent release



# Fixed income rates & credit

# Interest rate environment

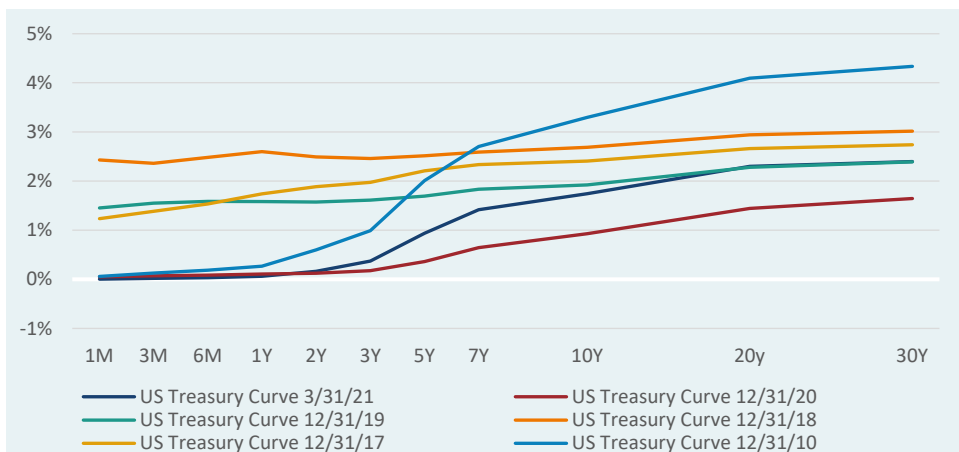
- Ten-year U.S. Treasury yields moved sharply higher, rising from 0.91% to 1.74%. Higher interest rates and tighter financial conditions create concerns for currently above-average risk asset prices, and for the economic recovery more broadly.
- Bond yields around the world rose in tandem with the United States, though the yield of shorter-dated bonds and cash remained anchored near zero. Rising bond yields at longer tenors and relatively steady movement in short tenor yields resulted in yield curve steepening in many countries.
- The spike in global interest rates tested the standing policies at a number of major central banks. The Reserve Bank of Australia was forced to step in to defend its 3-year bond yield target, the Bank of Japan widened the target band for its 10-year bond yield, and the ECB tweaked its asset purchase program to allow for more flexible purchases.
- The Federal Reserve maintained an accommodative tone and signaled it will continue to provide support until substantial progress has been made in the labor market and the pandemic is clearly in the rear-view mirror. On balance, the Fed remains of the view that any pickup in inflation over the next few months is likely to be transitory.
- Breakeven inflation rates surged as reflation bets continued to mount. The five-year breakeven inflation rate closed the quarter at 2.6%, its highest level since 2008.
- Credit spreads compressed to near decade-tights as demand for higher-yielding bonds remained high, and concerns over a wave of pandemic-driven defaults abated.
- Long-duration Treasuries posted their worst quarter since Q1 of 1980. The Bloomberg Barclays U.S. Long Treasury Index delivered a total return of -13.5%.

Area	Short Term (3M)	10-Year
United States	0.02%	1.74%
Germany	(0.67%)	(0.29%)
France	(0.62%)	(0.05%)
Spain	(0.56%)	0.34%
Italy	(0.54%)	0.67%
Greece	(0.24%)	0.86%
U.K.	(0.01%)	0.85%
Japan	(0.11%)	0.09%
Australia	0.00%	1.79%
China	2.28%	3.19%
Brazil	3.32%	9.28%
Russia	4.70%	7.00%

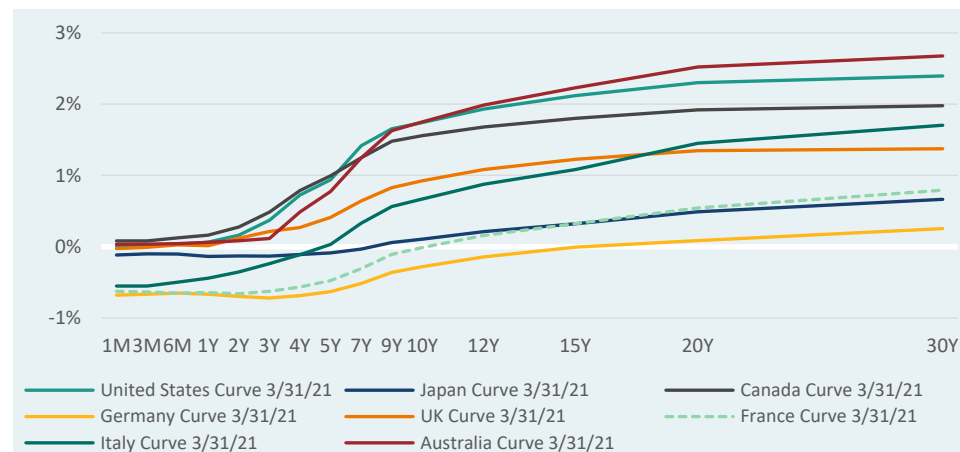
Source: Bloomberg, as of 3/31/21

# Yield environment

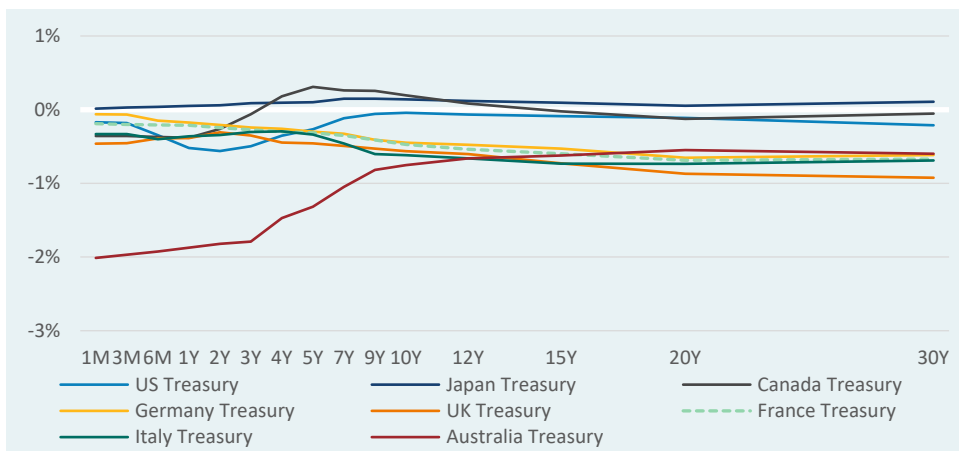
## U.S. YIELD CURVE



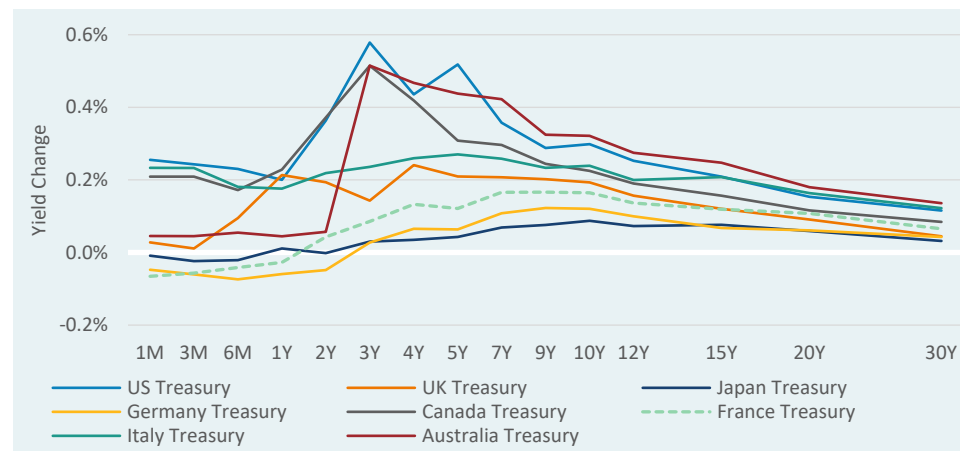
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/21

# Yield increases have tested central banks

**Bank of Japan:** Clarified that 10-year yields can move within 25 basis points of the 0.00% target; tweaked guidance around buying ¥6 trillion in equity ETFs to make its purchases more “flexible and nimble”.

**Reserve Bank of Australia:** Purchased A\$7 billion of bonds in a matter of days, A\$5 billion more than the scheduled amount, in order to defend its 0.10% target for its three-year bond yield.

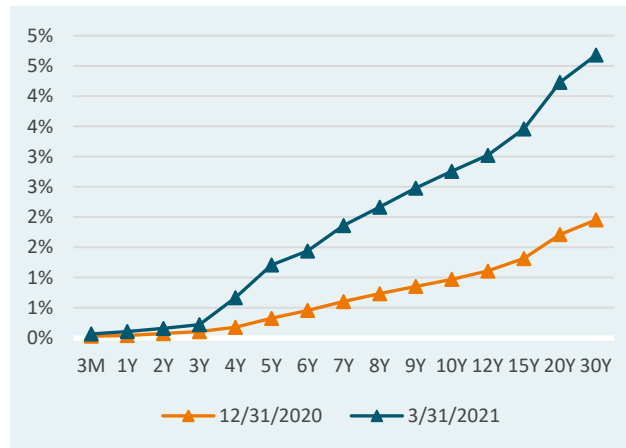
**European Central Bank:** Elected not to expand the size of its Pandemic Emergency Purchase Programme (PEPP), but elected to frontload bond purchases to increase short-term accommodation.

**Federal Reserve:** Fed officials have largely avoided comment and have been sticking to the script that financial conditions remain loose, and that higher long rates are indicative of an improving economic outlook. As a result, some have surmised that the ambiguity around the Fed’s reaction function may result in elevated levels of bond market volatility in the near-term.

**BANK OF JAPAN 10-YEAR YIELD TARGET BAND**



**AUD AUSTRALIAN YIELD CURVE**



**VALUE OF GLOBAL NEGATIVE YIELDING DEBT**



Source: Bloomberg, as of 3/31/21

# Credit environment

During the first quarter, credit market performance largely reflected the movements of the US Treasury curve, which steepened significantly as 10-year yields rose 82 basis points while 2-year yields remained anchored near zero.

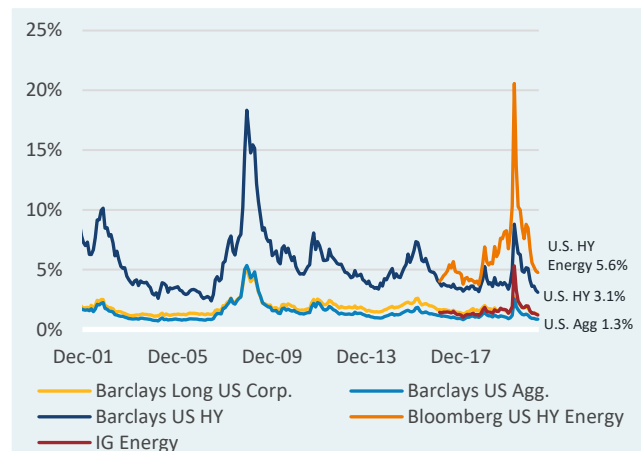
Investment grade credit, with an effective duration of 8.5, returned -4.65% over the quarter while high yield, with an effective duration of 3.9, return +0.85%. Bank Loans outperformed, returning +2.0% over the quarter.

Credit spreads continued to tighten during the quarter, as the vaccine rollout, which accelerated faster than expected, led to higher growth expectations for 2021. High yield spreads

tightened 51 basis points, to 308 basis points, while investment grade tightened a more modest 6 basis points to end the quarter at 90 basis points.

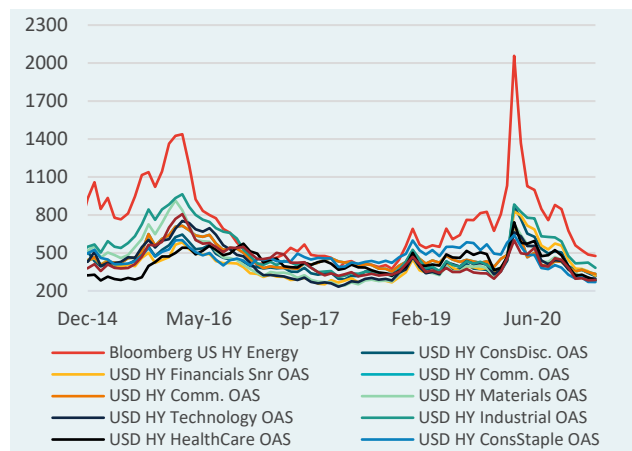
Spreads in higher quality investment grade assets have continued to compress over the past year. Notably, the BBB/A spread is now at an all-time low of 40 basis points, down from a high of 163 basis points experienced in Q1 2020. Similarly, the BB/BBB spread is now 155 basis points, down from recent high of 512 basis points established in March of 2020 and below the ten-year average of 215 basis points.

## SPREADS



Source: Barclays, Bloomberg, as of 3/31/21

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 3/31/21

Market	Credit Spread (OAS)	
	3/31/21	3/31/20
Long U.S. Corp	1.3%	2.8%
U.S. Inv Grade Corp	0.9%	2.7%
U.S. High Yield	3.1%	8.8%
U.S. Bank Loans*	4.3%	8.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/21

\*Discount margin (4-year life)

# Default & issuance

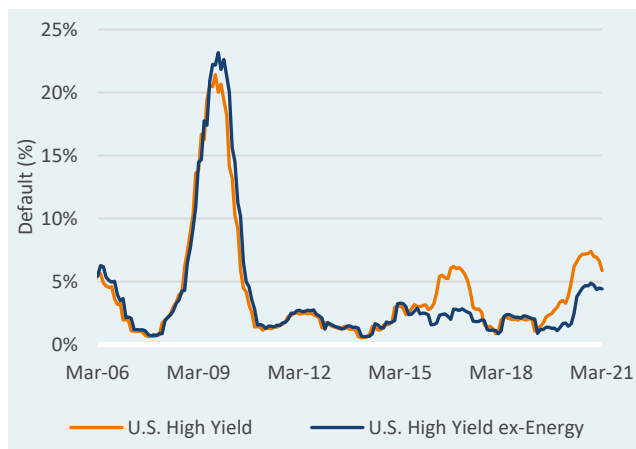
Default activity was modest over the quarter, with 5 companies totaling \$3.2 billion defaulting on bonds and loans. The par-weighted U.S. high yield default rate retreated 139 basis points from recent highs to end the quarter at 5.4%. Similarly, the loan par-weighted default rate ended the quarter at an eleven-month low of 3.3%, down 61 basis points year-to-date.

Given the market perception of upside rate risk throughout the remainder of 2021, high yield bond issuers continued to come to market at a blistering pace. Gross issuance for the quarter set a new quarterly record of \$158.6 billion, outpacing the previous record set in Q2 2020 of \$145.5

billion. Quarterly issuance remains significantly elevated relative to the ten-year average of \$79.9 billion. Notably, \$44.8 billion was issued to take-out leverage loans in Q1, which was roughly 60% of the previous annual record of \$78.5 billion set in 2012. \$154.6 billion in leverage loans were issued during the quarter, an amount eclipsing the previous record of \$139.5 in Q1 2017.

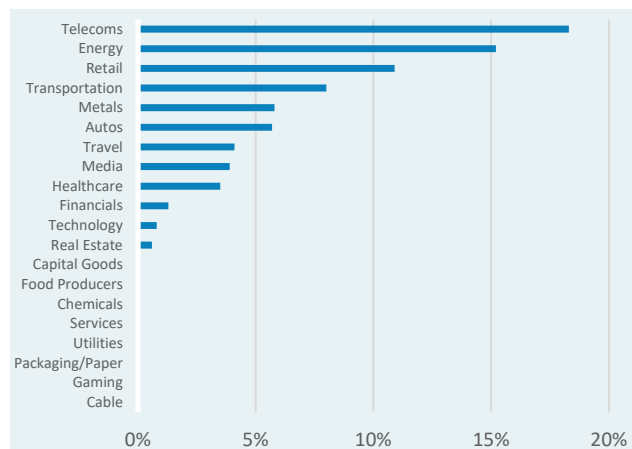
Investment grade issuance for the quarter totaled \$423 billion, which remains elevated from the 4-year average first quarter issuance of \$375, but lower than \$480 billion issued in Q1 2020 when supply surged due to COVID funding.

**HY DEFAULT RATE (ROLLING 1-YEAR)**



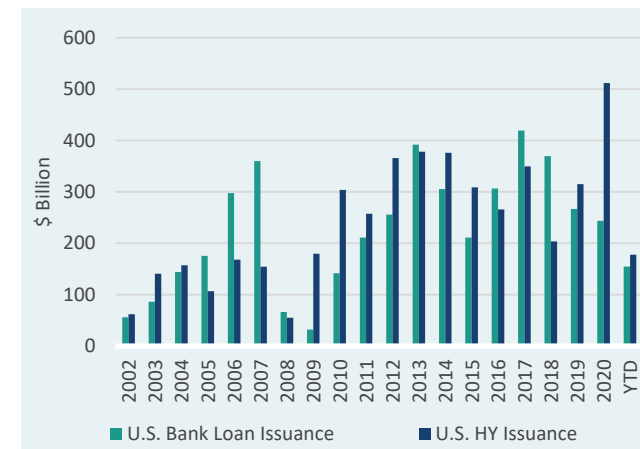
Source: BofA Merrill Lynch, as of 3/31/21

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



Source: BofA Merrill Lynch, as of 3/31/21 – par weighted

**U.S. ISSUANCE (\$ BILLIONS)**



Source: BofA Merrill Lynch, as of 3/31/21

# Equity

# Equity environment

- U.S. equities were a top performer in Q1, delivering +6.2%. International equities delivered +3.5% (MSCI EAFE Index) and emerging markets delivered +2.3% (MSCI Emerging Markets Index), on an unhedged currency basis. Trailing one-year returns hit extremely high levels, reflecting low base effects (markets bottomed out during March of 2020), and a recovery from those depressed levels year-over-year.
- We believe the U.S. economy is playing catch-up to the markets in the current environment. While it seems increasingly likely that the economy will rapidly recover over the next year, this optimism may already be baked into equity prices. It is reasonable to be enthusiastic about U.S. economic prospects while also being cautious about lofty equity valuations.
- According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the

quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

- The Cboe VIX Index has slowly been falling back towards the longer-term average of 19. The index fluctuated in the low 20s during Q1, falling below 19 briefly in late March.
- The U.S. dollar stabilized in the first quarter, paring some of the losses accrued in the final three quarters of last year. Rising relative yields helped the dollar to appreciate materially relative to the euro, yen, and a broad basket of emerging market currencies.
- A rotation towards value stocks persisted during the quarter, as beaten-down sectors delivered outsized performance. Energy, financials, industrials, and materials were the strongest performers.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	6.2%		56.4%	
US Small Cap (Russell 2000)	12.7%		94.8%	
US Large Value (Russell 1000 Value)	11.3%		56.1%	
US Large Growth (Russell 1000 Growth)	0.9%		62.7%	
International Large (MSCI EAFE)	3.5%	7.6%	44.6%	37.7%
Eurozone (Euro Stoxx 50)	6.3%	10.6%	53.7%	45.3%
U.K. (FTSE 100)	5.9%	5.0%	35.6%	22.5%
Japan (NIKKEI 225)	(0.2%)	7.0%	52.6%	57.4%
Emerging Markets (MSCI Emerging Markets)	2.3%	3.7%	58.4%	52.2%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/21



# Domestic equity

U.S. equities moved higher in Q1, returning +6.2%. According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

Equities continued upward and valuations have followed. The U.S. market has been a top performer but has also remained one of the most expensive markets. On the other hand, successful COVID-19 vaccine rollouts, rosy earnings expectations, and the potential for an impressive economic

reopening may be supportive of high prices. This reopening appears to be fueling a rotation towards traditional cyclical sectors, such as energy, financials, and industrials.

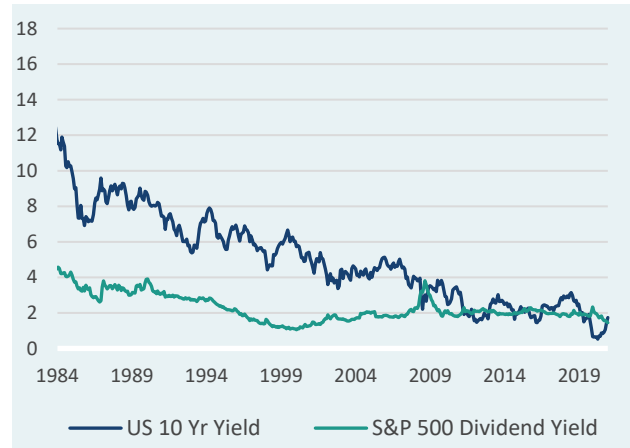
As markets move higher, it appears to us that the economy may be playing catch-up to the markets. While it seems increasingly likely that the economy will rapidly recover during the next year, this optimism may already be reflected in equity prices. In other words, it is reasonable to be enthusiastic about U.S. economic prospects while also being cautious about higher equity valuations.

## S&P 500 INDEX



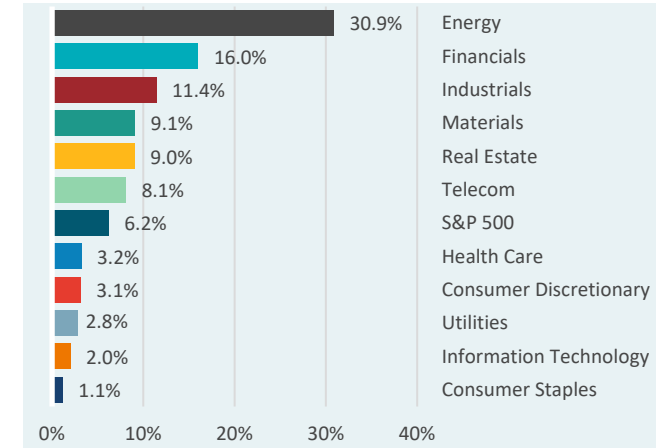
Source: Standard & Poor's, as of 3/31/21

## DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 3/31/21

## Q1 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 3/31/21

# Retail market speculation

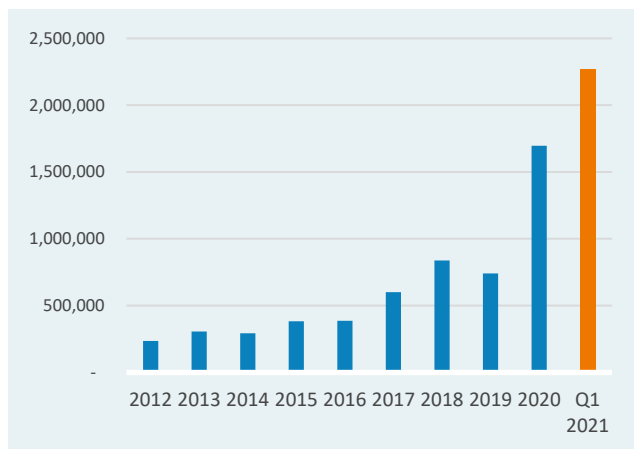
In recent years, trading has become free on certain platforms, making day trading a more attractive proposition. Retail's portion of total market trading has increased from 10% in 2010 to 23% in 2020, according to Bloomberg Intelligence.

Some trading platforms have attracted users by designing the trading process to be entertaining, similar to a video game. Discussion sites such as Reddit have also become popular places to talk about trades in a social setting.

Lockdowns due to COVID-19 have prevented many Americans from pursuing their usual hobbies, leading to boredom. Stock trading may have become an entertaining outlet for otherwise non-traders. And government stimulus checks may have provided idle cash to fuel this new hobby.

This environment appears to have contributed to intense speculation in stocks such as GME and AMC. In these instances, retail traders aimed to force a "short squeeze" on these heavily-shorted stocks.

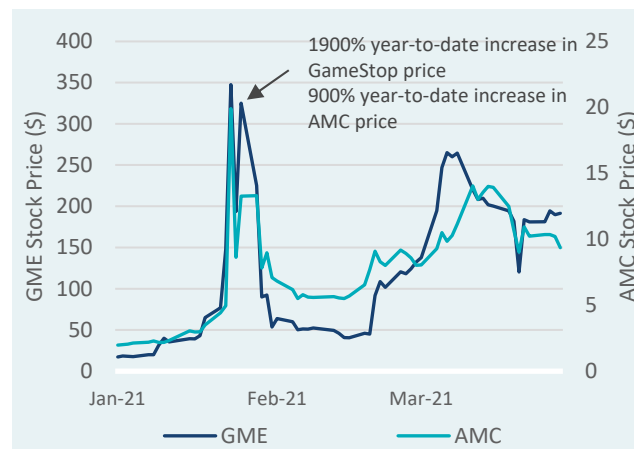
## SCHWAB - ORGANIC CHANGE IN ACTIVE BROKERAGE ACCOUNTS\*



Source: Bloomberg, as of 4/15/21.

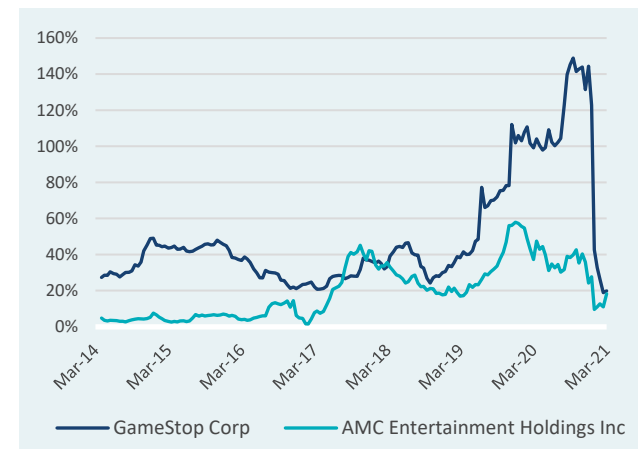
\*Excludes 15.6 million brokerage accounts which Schwab added in 2020 as a result of its acquisition of TD Ameritrade and its acquisition of the assets of USAA's Investment Management Company.

## GAMESTOP & AMC THEATERS STOCK PRICES



Source: Bloomberg, as of 3/31/21

## SHORT INTEREST AS A PERCENTAGE OF FLOAT



Source: Bloomberg, as of 3/31/21

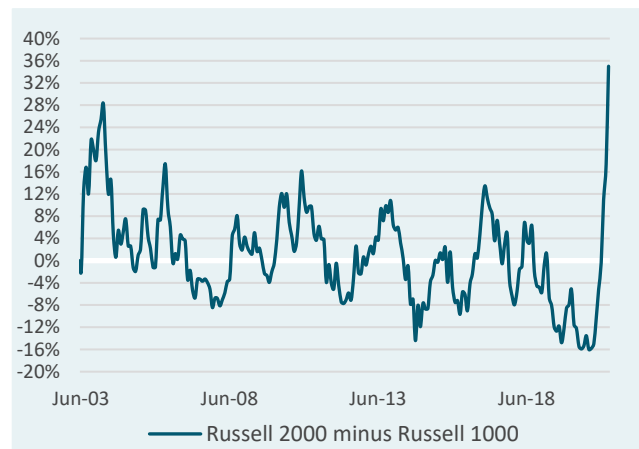
# Domestic equity size & style

Factor performance surged during the quarter, as small capitalization and value stocks delivered strong relative returns. U.S. value stocks beat growth stocks by a wide margin (Russell 1000 Value +11.3%, Russell 1000 Growth +0.9%), as growth entered a correction in February and value marched higher. Small cap stocks continued their surprisingly strong rally, outperforming growth (Russell 2000 +12.7%, Russell 1000 +5.9%).

A rotation towards value occurred as beaten-down sectors such as energy, financials, and materials delivered outsized performance—sectors which tend to possess a heavier concentration of value stocks. Companies which benefited from the pandemic due to a shift in household habits may see a further reversal of that windfall as households begin to go back to normal life. Additionally, value stocks typically exhibit strength during economic recoveries. These dynamics of growth and value may suggest further value factor strength, though factor trends are noisy and extremely difficult to predict.

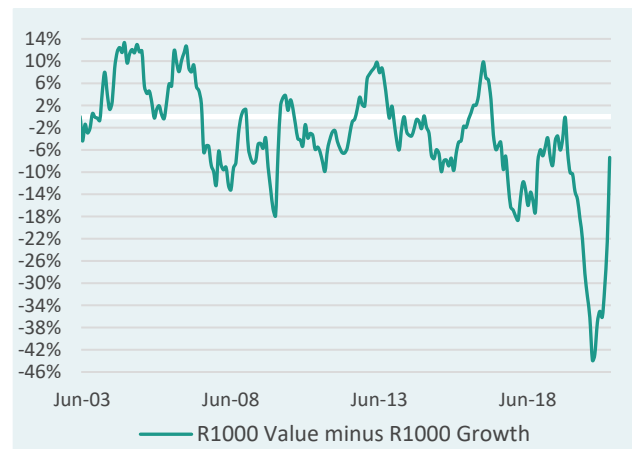
Small cap and value stocks delivered strong relative performance during Q1

SMALL CAP VS LARGE CAP (YOY)



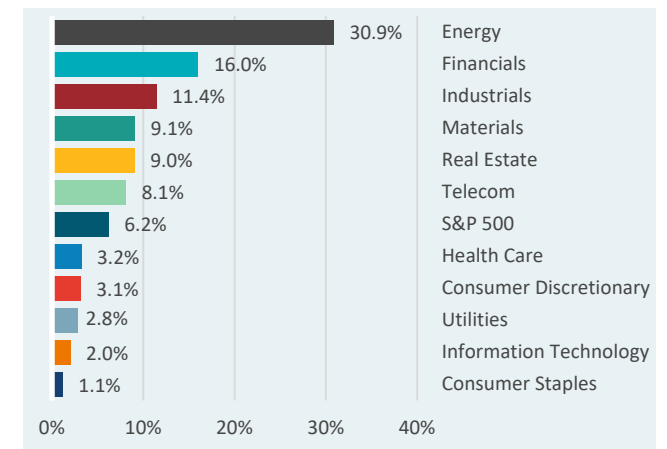
Source: FTSE, as of 3/31/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/21

Q1 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 3/31/21

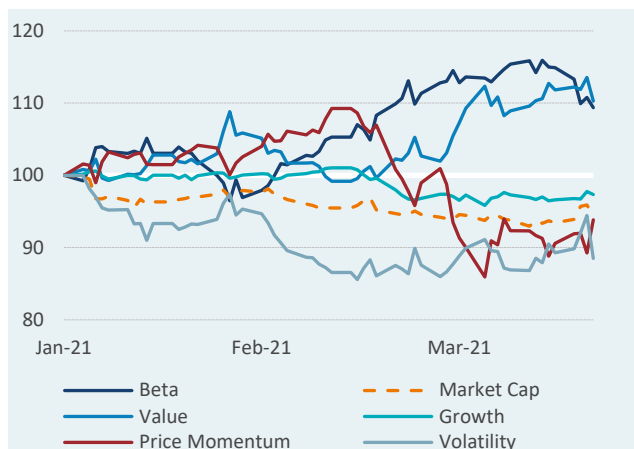
# Factor portfolios in 2021

Factor performance trends that started with positive COVID vaccine news in late 2020 continued into 2021 Q1. Investors kept favoring the value factor; they also bought stocks with higher betas and higher volatility (long/short, sector neutral, S&P 500 Index quintiles). This was a significant change from pre-vaccine pandemic behavior when investors had bid up the low volatility, growth, and price momentum factors.

From a longer-term perspective, the latest rotation did not come close to reversing the trend of positive results accruing to the momentum and low volatility factors.

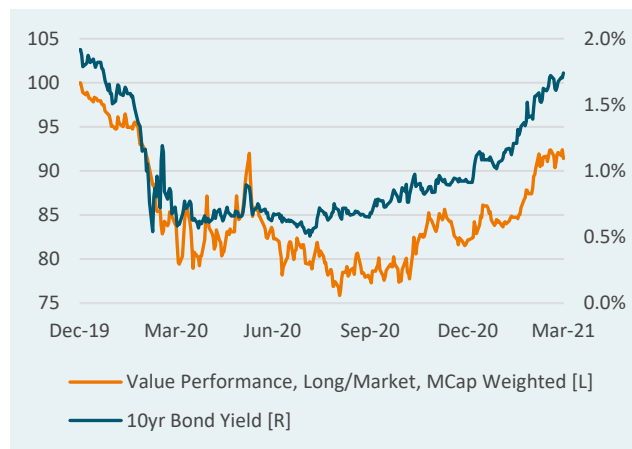
Value stocks, which were largely beaten down during the pandemic, remain an ongoing beneficiary of the economic recovery rooted in both positive medical news and ongoing government stimulus programs. Higher interest rates and a steepening yield curve, which are related to the recovery trade, also help certain cheap financial stocks. In contrast, certain growth stocks are hurt by higher rates as future profits are further discounted. The recent market activity is reflected within the momentum factor itself as investors sold growth and low volatility stocks to keep buying stocks with higher exposure to value and other factors.

## Q1 2021 PERFORMANCE



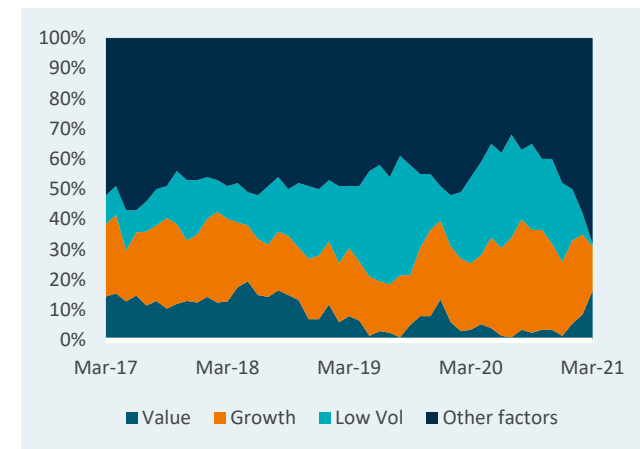
Source: J.P. Morgan, as of 3/27/21

## VALUE PERFORMANCE AND RATE MOVEMENT



Source: J.P. Morgan, as of 3/31/21

## J.P. MORGAN MOMENTUM BUCKET: LONG-SIDE FACTOR EXPOSURES (S&P 500 INDEX UNIVERSE)



Source: J.P. Morgan, as of 3/31/21

# International developed equity

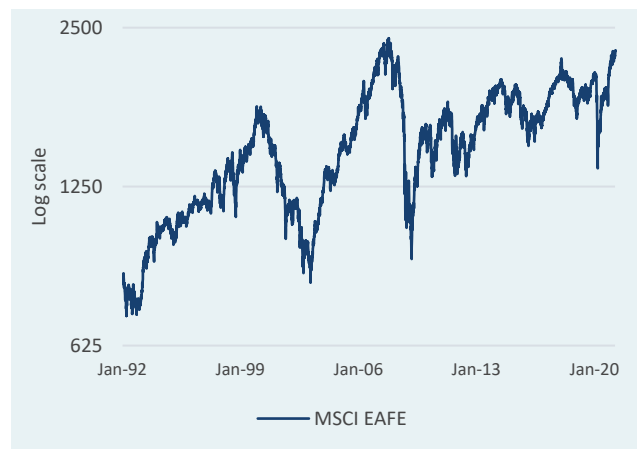
International equities delivered +3.5% (MSCI EAFE Index) during the first quarter on an unhedged currency basis. International developed underperformed the S&P 500 Index (+6.2%) while outperforming the MSCI Emerging Markets Index (+2.3%). The trend towards U.S. dollar weakness has boosted the performance of unhedged international equities, adding +6.8% over the past year, though this trend may have begun to reverse in the first quarter.

International developed equity weakness may be partly attributed to snags in the European COVID-19 vaccination

campaign, which has materially lagged the rest of the world. However, European equities (+4.1%) managed to outperform Japanese equities (+1.6%) in U.S. dollar terms, primarily due to currency movements, as the yen (-6.7%) depreciated more sharply relative to the U.S. dollar than the euro (-4.0%) or swiss franc (-6.2%).

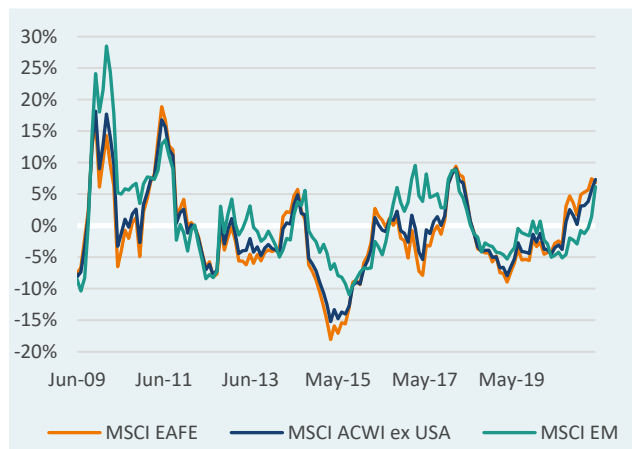
Bets against the Japanese yen rose to multi-year highs amid a backdrop of increasing relative interest rates available in the U.S., and a wave of risk-on sentiment pouring cold water on the appeal of traditional safe-haven assets.

**INTERNATIONAL DEVELOPED EQUITIES**



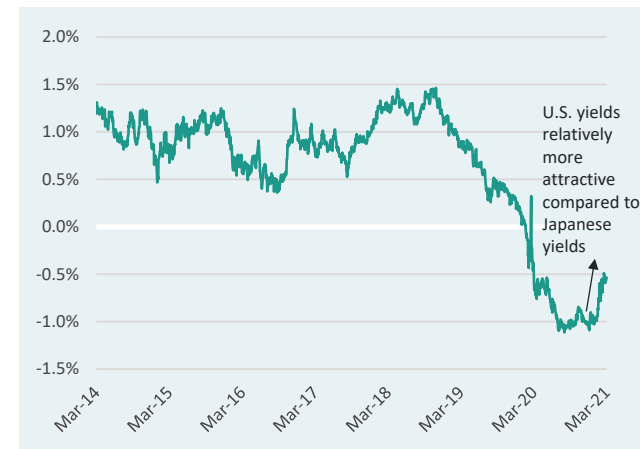
Source: MSCI, as of 3/31/21

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



Source: MSCI, as of 3/31/21

**10-YEAR REAL YIELD SPREAD (US MINUS JAPAN)**



Source: Bloomberg, as of 3/31/21

# Emerging market equity

Emerging market equities (MSCI EM +2.3%) underperformed U.S. (S&P 500 +6.2%) and international developed equities (MSCI EAFE +3.5%) during the quarter. Latin American equities pulled back from strong performance in Q4, underperforming the broader index (MSCI Latin America -5.3%).

Chinese mainland equities, which account for roughly 36% of the MSCI EM Index, slumped -0.4%, dampening overall index returns. Many analysts attributed the relative weakness in China to tightening liquidity conditions, as the People's Bank

of China shifted focus away from promoting economic recovery and toward clamping down on real estate speculation and leverage broadly, in the interest of preventing the buildup of financial excesses.

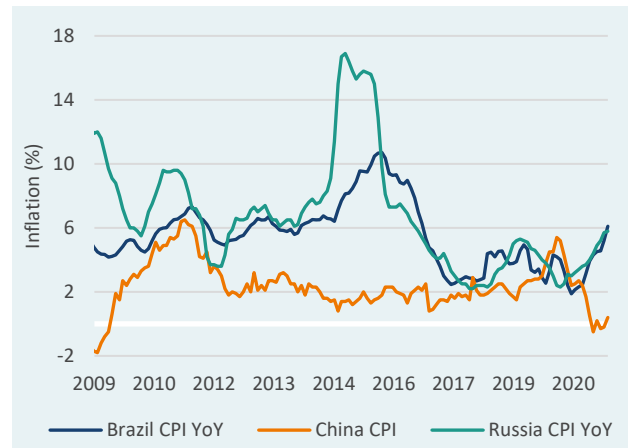
Central banks from Turkey to Russia to Brazil delivered surprise rate hikes in part to respond to a resurgence in inflation, which weighed on markets. Idiosyncratic political developments further pressured returns in Turkey (-20.4%) and Brazil (-10.0%), while Russian equities held up better (+2.4%) despite a weaker ruble (-2.1%).

## EMERGING MARKET EQUITY



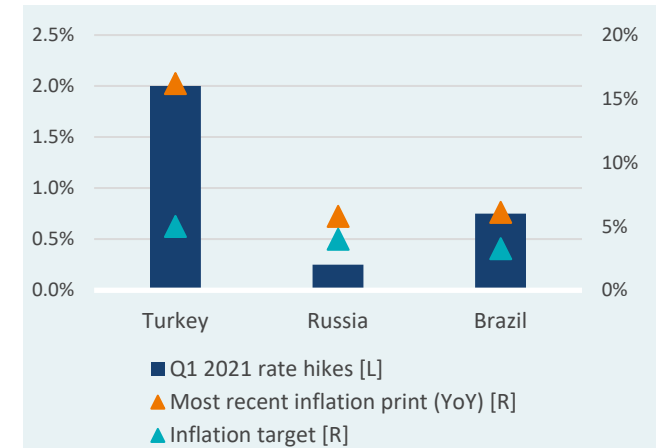
Source: MSCI, as of 3/31/21

## INFLATION (YOY)



Source: Bloomberg, as of 3/31/21 or most recent data

## SURPRISE CENTRAL BANK RATE HIKES



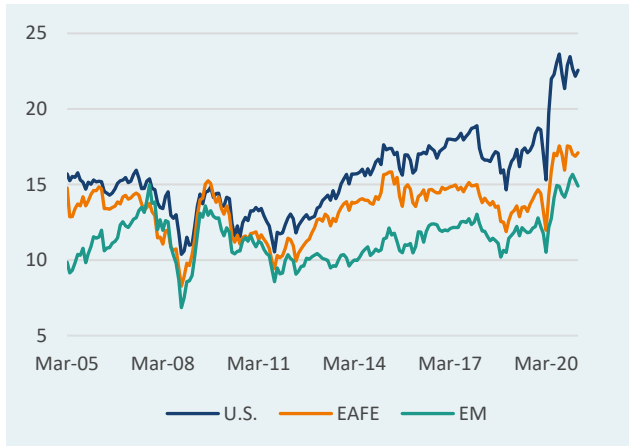
Source: Bloomberg, as of 3/31/21

# Equity valuations

Valuations remain at very high levels relative to history. However, prices may be somewhat justified, considering the historically low (though slightly higher over the quarter) level of interest rates, and the fact that earnings are expected to rebound sharply later this year. Additionally, some have projected that aggressive cost-cutting measures and pandemic-driven innovation could result in higher operating leverage within U.S. companies, which would allow them to generate more earnings per dollar of revenue than before the pandemic began, and perhaps more earnings overall if revenues were to return to near pre-pandemic levels.

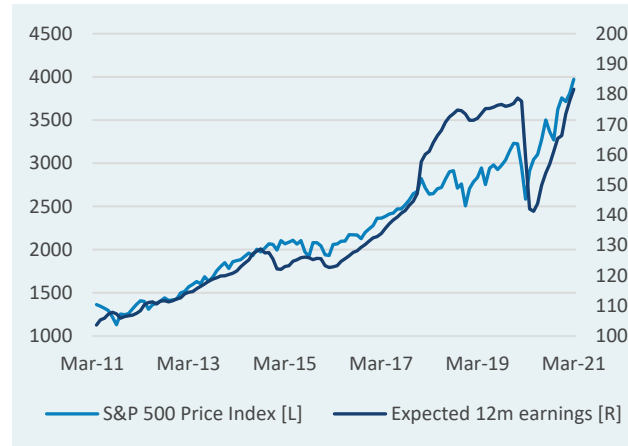
Equity prices proved quite resilient to the significant increase in global interest rates, leaving investors pondering the level at which rising interest rates would materially impact the present value of equities. While this is difficult to gauge, the answer is likely dependent on the sector and duration characteristics of the various global equity benchmarks. Additionally, central bank accommodation remains a crucial support for equity prices. Looking ahead, if central bankers were to adopt a more hawkish tone as the developed world approaches herd immunity, valuations may be challenged.

## FORWARD P/E RATIOS



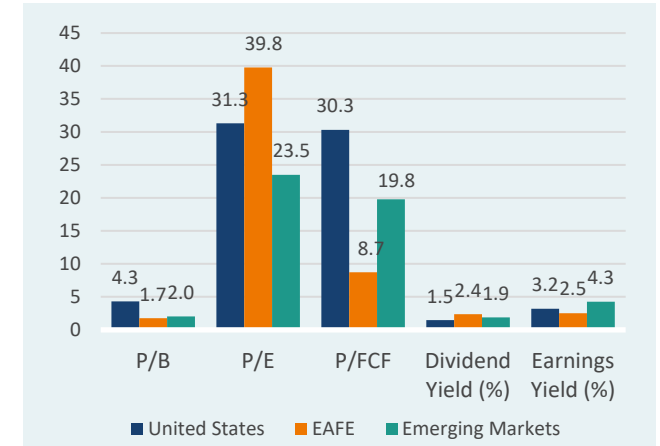
Source: MSCI, 12m forward P/E, as of 3/31/21

## S&P 500 PRICE & EARNINGS EXPECTATIONS



Source: Bloomberg, as of 3/31/21

## VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 3/31/21 - trailing P/E

# Equity volatility

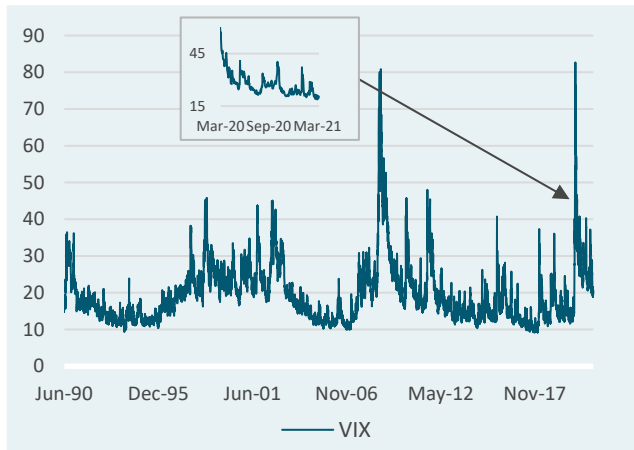
The Cboe VIX Index has slowly been falling back towards the longer-term average of 19. The index fluctuated in the low 20s during Q1, falling below 19 briefly in late March.

One-year trailing realized volatility began to fade alongside implied volatility in the first quarter of the year, as the tumultuous markets of Q1 2020 fell out of the lookback period. Central bank accommodation has translated to easy global financial conditions, though policy normalization and liquidity tightening in China has likely contributed to recent

weakness in Chinese equity markets.

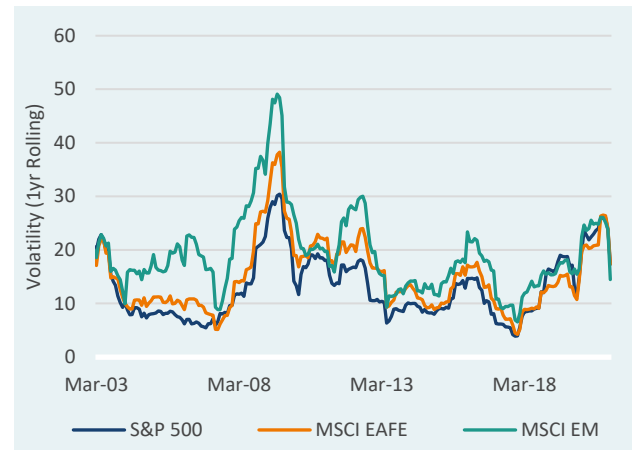
Since seeing recoveries during Q3 and Q4 of last year, respectively, U.S. and international equities have headed higher with relatively low volatility. Idiosyncratic political developments across the emerging markets universe, surprise central bank rate hikes, and the high concentration of tech in Asian EM countries in a period of rising rates, all contributed to a more volatile quarter for the emerging markets complex.

**U.S. IMPLIED VOLATILITY (VIX)**



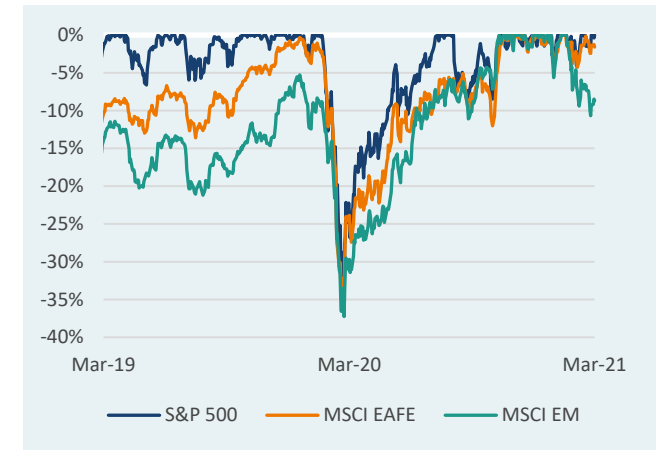
Source: Cboe, as of 3/31/21

**REALIZED VOLATILITY**



Source: Standard & Poor's, MSCI, as of 3/31/21

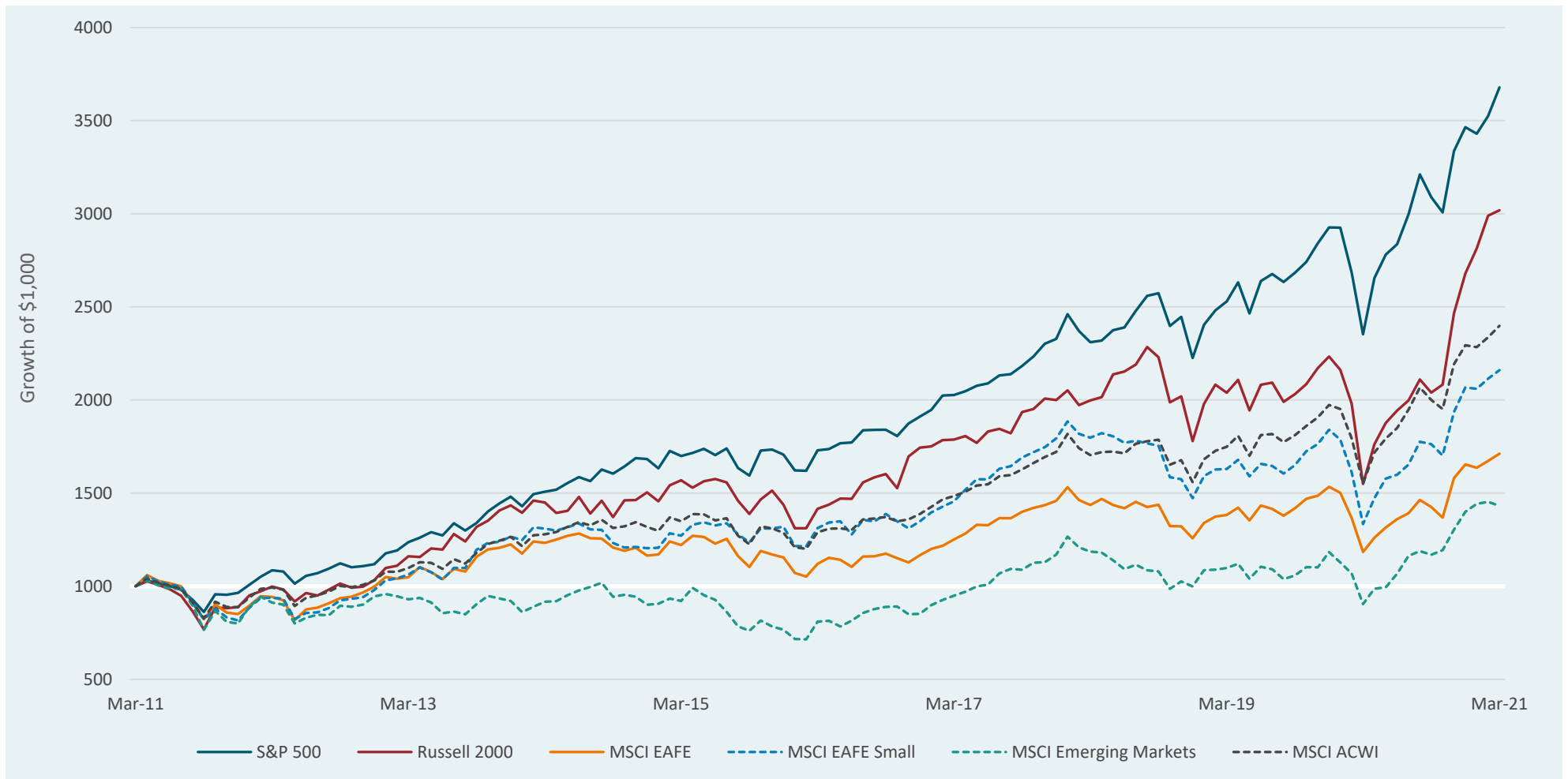
**MAX DRAWDOWNS FROM PRIOR PEAKS**



Source: Standard & Poor's, MSCI, Bloomberg, as of 3/31/21



# Long-term equity performance



Source: Morningstar, as of 3/31/21

# Other assets

# Currency

U.S. dollar weakness had prevailed for most of 2020, but turned around in the first quarter of 2021. The Bloomberg Dollar Spot Index increased 2.8% over the quarter, after slipping -5.4% in 2020. Strength in the dollar was attributed to rising relative yields in the U.S., the relatively effective vaccination campaign, and speculation that a series of fiscal support packages might fuel supernormal growth over the next few years.

Currency beta returns, or the returns of a long-short portfolio of G10 currencies constructed by investing in three equally-weighted factors (carry, value, momentum), remained negative over the trailing year. Rotations back into the U.S. dollar and

out of the euro and yen supported performance for the carry factor while detracting from the performance of the currency momentum factor.

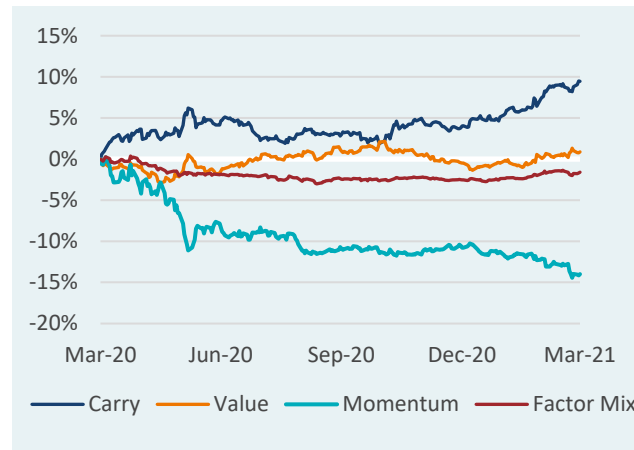
International developed currencies fared poorly, pressured by risk-on sentiment, a lackluster European vaccination effort, and concerns expressed by the European Central Bank about rising global interest rates. The embedded currency portfolio of the MSCI EAFE Index returned -4.1%, as the yen (-6.7%) and euro (-4.0%) weakened relative to the U.S. dollar. Emerging market currencies (-3.1%) softened, driven by declines in the Brazilian real (-7.8%) and Turkish lira (-9.9%).

**BLOOMBERG DOLLAR SPOT INDEX**



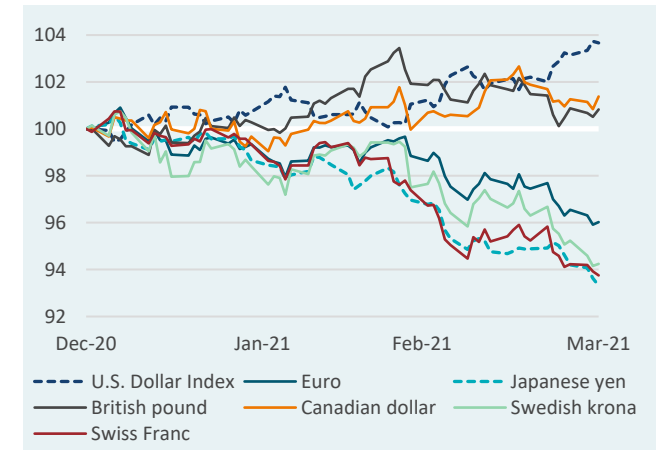
Source: Bloomberg, as of 3/31/21

**CURRENCY BETA (ONE-YEAR RETURNS)**



Source: MSCI, Bloomberg, as of 3/31/21

**U.S. DOLLAR INDEX CONSTITUENTS**



Source: Bloomberg, as of 3/31/21

# Appendix

# Periodic table of returns

BEST ↑

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD	5-Year	10-Year
Small Cap Value	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	21.2	21.0	16.6
Small Cap Equity	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	12.7	18.6	14.0
Large Cap Value	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	11.3	16.7	13.0
Commodities	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	6.9	16.4	11.7
Large Cap Equity	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	5.9	13.6	11.0
Small Cap Growth	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	14.0	4.9	12.1	10.1
International Equity	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	10.3	3.5	11.7	8.6
Emerging Markets Equity	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	2.3	9.2	6.6
Hedge Funds of Funds	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	2.0	8.8	5.5
60/40 Global Portfolio	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	1.0	5.6	3.7
Large Cap Growth	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	0.9	5.4	3.4
Cash	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	3.1	3.4
Real Estate	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	0.0	2.3	0.6
US Bonds	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-3.4	1.1	-6.3

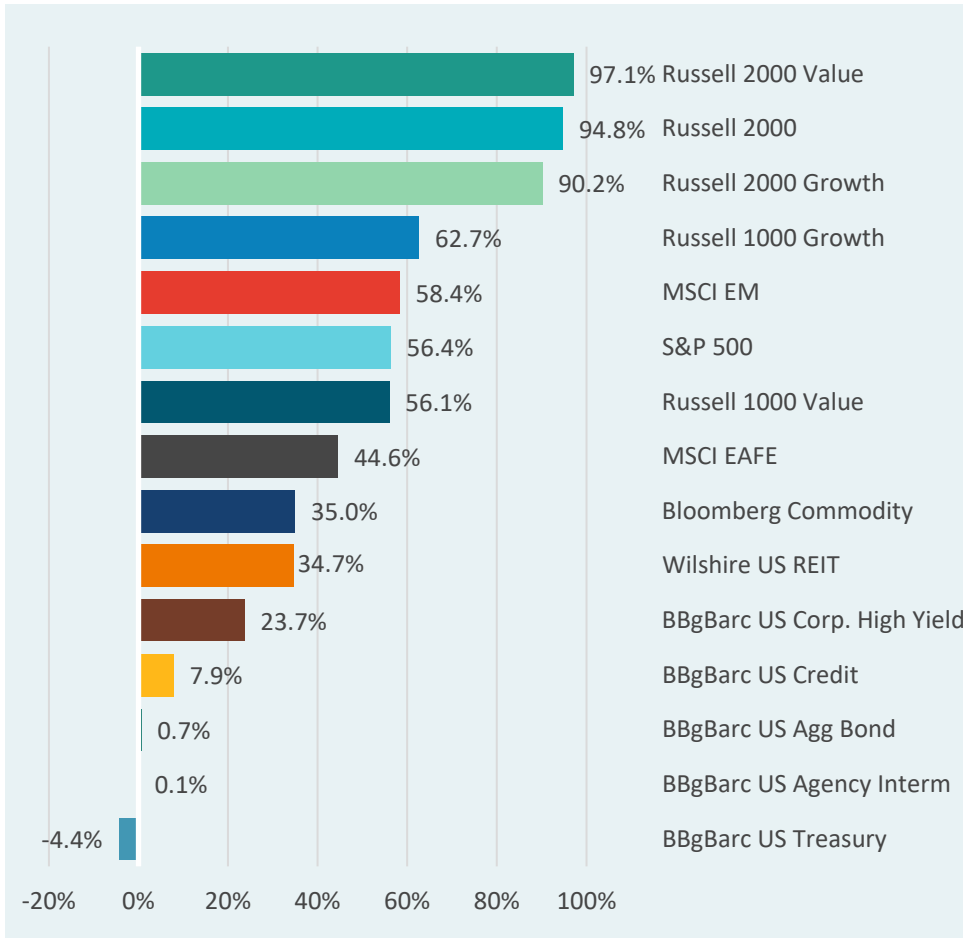
↓ WORST

- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- Large Cap Growth
- Emerging Markets Equity
- Hedge Funds of Funds
- US Bonds
- 60% MSCI ACWI/40% BBgBarc Global Bond
- Cash

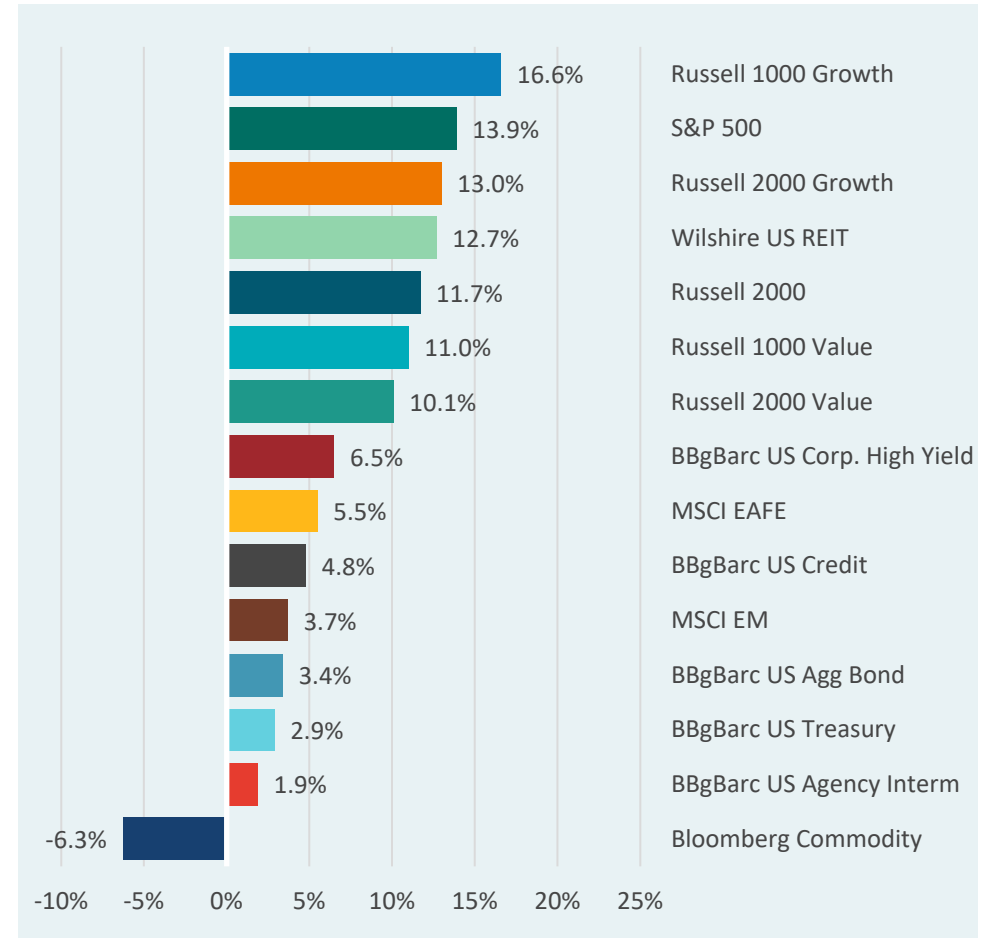
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 12/31/20.

# Major asset class returns

ONE YEAR ENDING MARCH



TEN YEARS ENDING MARCH



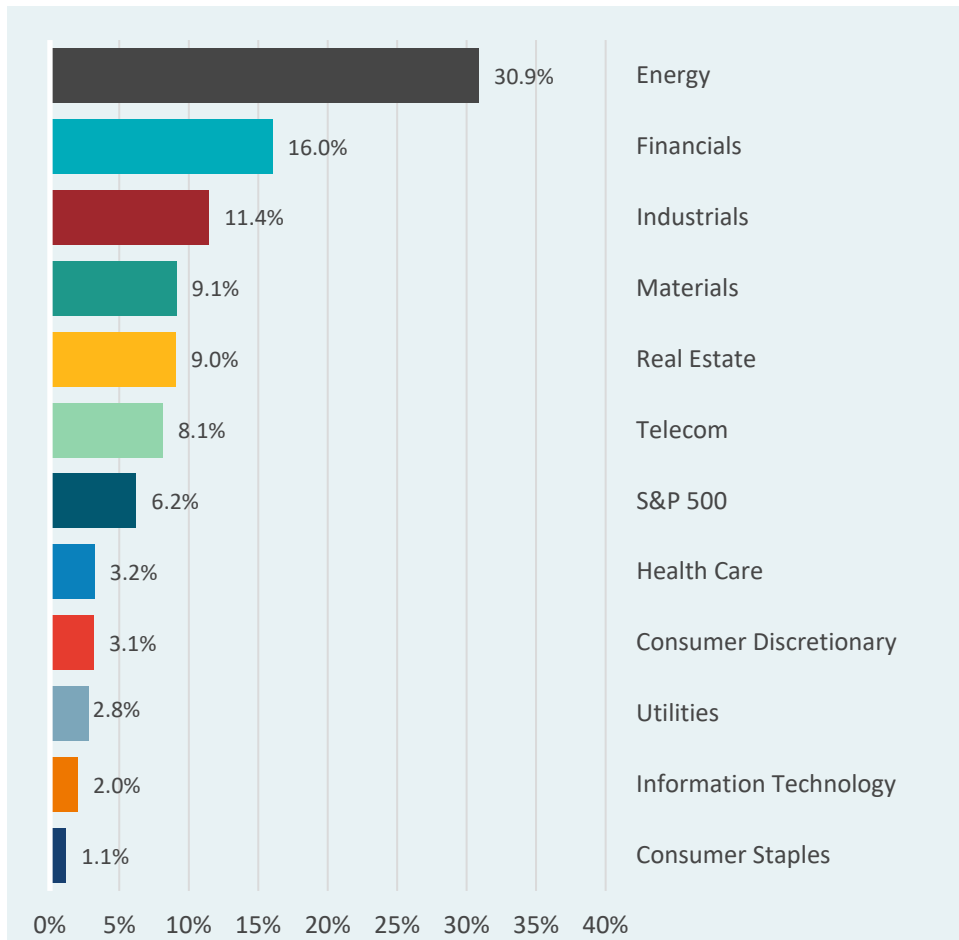
\*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 3/31/21

Source: Morningstar, as of 3/31/21

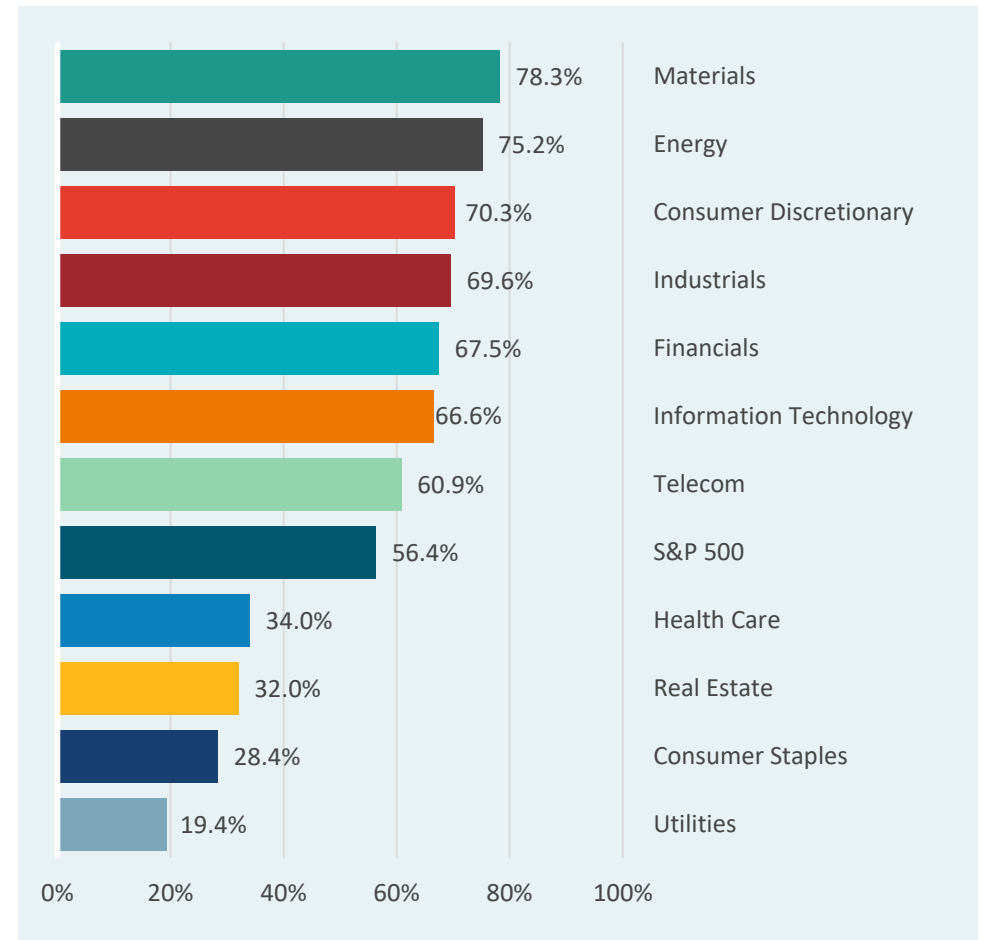
# S&P 500 sector returns

Q1 2021



Source: Morningstar, as of 3/31/21

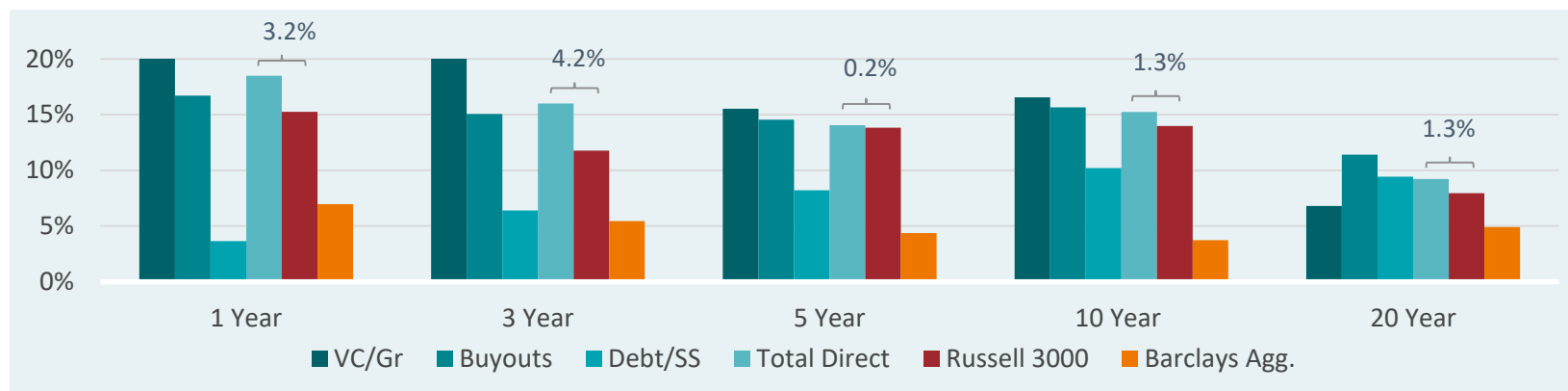
ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/21

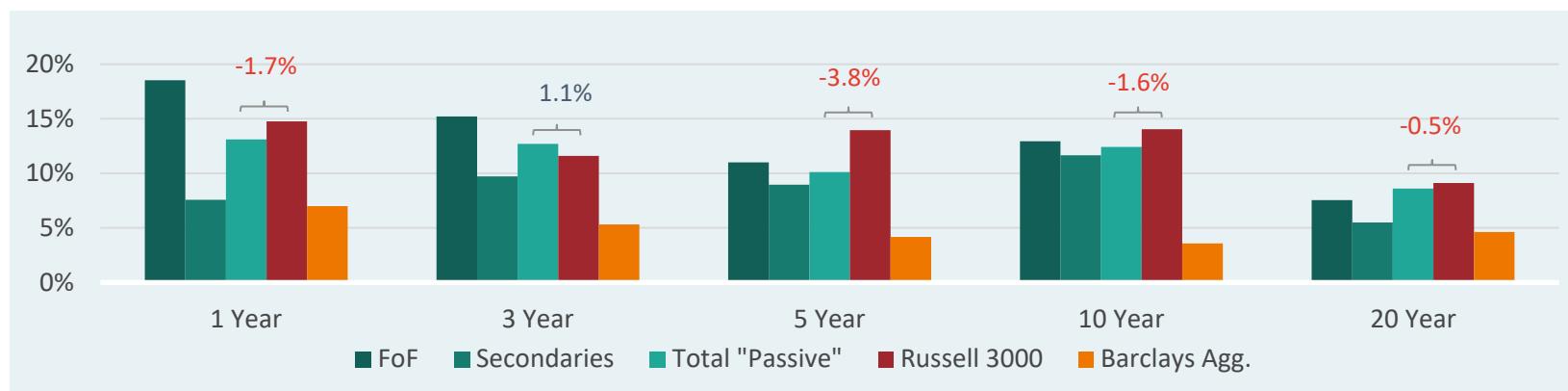
# Private equity vs. traditional assets performance

## DIRECT PRIVATE EQUITY FUND INVESTMENTS



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

## "PASSIVE" STRATEGIES



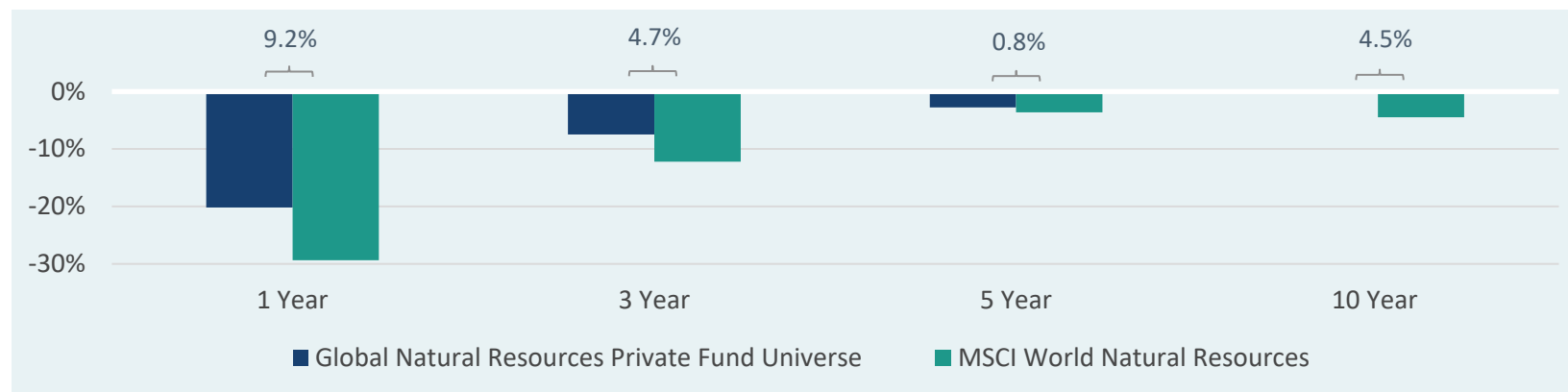
"Passive" strategies underperformed comparable public equities across all time periods, aside from the 3-year basis.

Sources: Refinitiv Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of September 30, 2020. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.



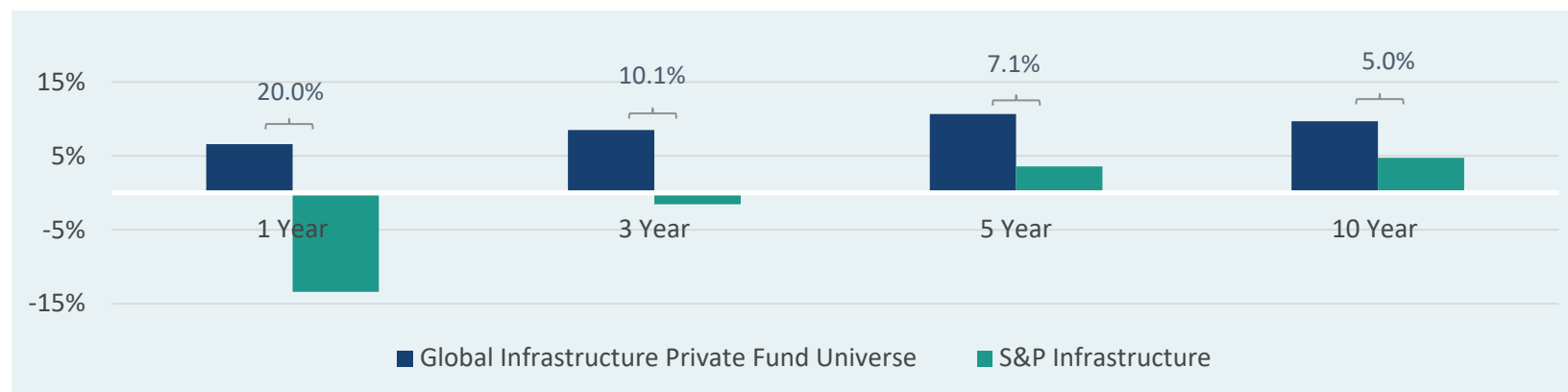
# Private vs. liquid real assets performance

## GLOBAL NATURAL RESOURCES FUNDS



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

## GLOBAL INFRASTRUCTURE FUNDS

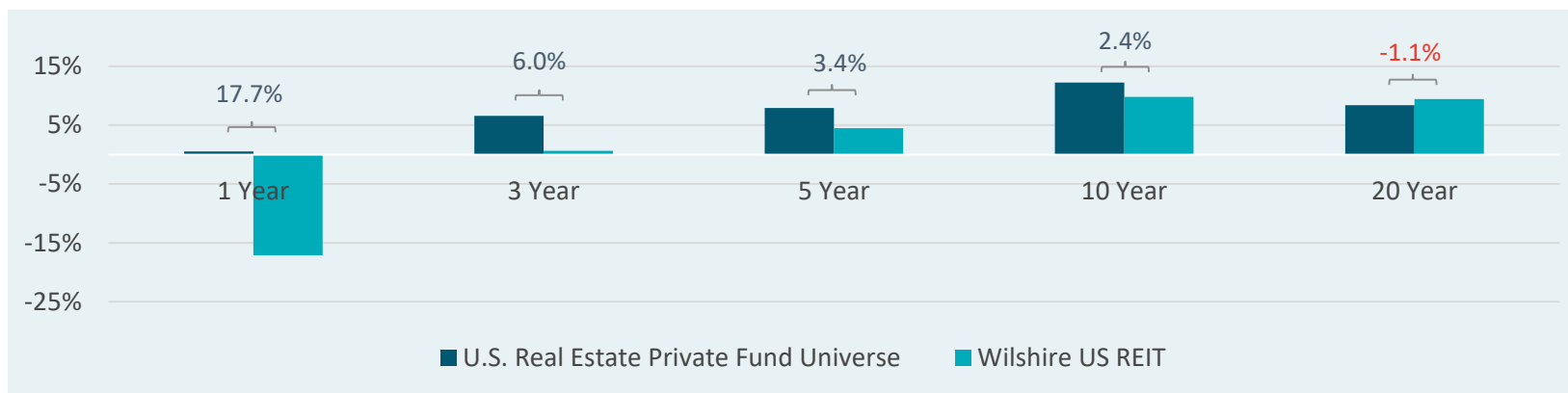


Infra. funds outperformed the S&P Infra. across all periods.

Sources: Refinitiv CJA 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, 2020. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

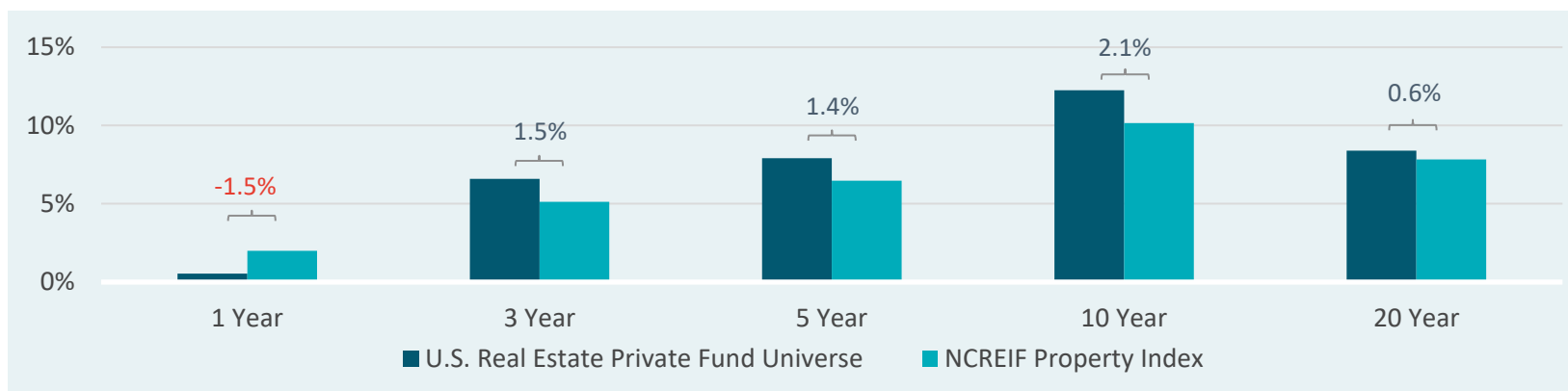
# Private vs. liquid and core real estate performance

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



U.S. Private R.E. funds outperformed the Wilshire U.S. REIT Index across all time periods, aside on a 20-year basis.

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



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods, aside on a 1-year basis.

Sources: Refinitiv CJA PME: Global and U.S. Real Estate universes as of September 30, 2020. 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
<b>Core Index</b>							
S&P 500	4.4	6.2	6.2	56.4	16.8	16.3	13.9
S&P 500 Equal Weighted	6.0	11.5	11.5	71.6	14.9	14.7	13.1
DJ Industrial Average	6.8	8.3	8.3	53.8	13.6	16.0	13.1
Russell Top 200	4.2	5.1	5.1	56.3	18.3	17.4	14.6
Russell 1000	3.8	5.9	5.9	60.6	17.3	16.7	14.0
Russell 2000	1.0	12.7	12.7	94.8	14.8	16.4	11.7
Russell 3000	3.6	6.3	6.3	62.5	17.1	16.6	13.8
Russell Mid Cap	2.7	8.1	8.1	73.6	14.7	14.7	12.5
<b>Style Index</b>							
Russell 1000 Growth	1.7	0.9	0.9	62.7	22.8	21.0	16.6
Russell 1000 Value	5.9	11.3	11.3	56.1	11.0	11.7	11.0
Russell 2000 Growth	(3.1)	4.9	4.9	90.2	17.2	18.6	13.0
Russell 2000 Value	5.2	21.2	21.2	97.1	11.6	13.6	10.1

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	2.7	4.6	4.6	54.6	12.1	13.2	9.1
MSCI ACWI ex US	1.3	3.5	3.5	49.4	6.5	9.8	4.9
MSCI EAFE	2.3	3.5	3.5	44.6	6.0	8.8	5.5
MSCI EM	(1.5)	2.3	2.3	58.4	6.5	12.1	3.7
MSCI EAFE Small Cap	2.2	4.5	4.5	62.0	6.3	10.5	8.0
<b>Style Index</b>							
MSCI EAFE Growth	1.2	(0.6)	(0.6)	42.6	9.8	10.8	7.2
MSCI EAFE Value	3.4	7.4	7.4	45.7	1.8	6.6	3.7
<b>Regional Index</b>							
MSCI UK	2.8	6.2	6.2	33.5	0.9	4.3	3.3
MSCI Japan	1.1	1.6	1.6	39.7	6.3	10.5	7.2
MSCI Europe	3.1	4.1	4.1	44.9	5.6	8.2	5.1
MSCI EM Asia	(3.0)	2.2	2.2	60.1	9.5	14.5	6.6
MSCI EM Latin American	4.6	(5.3)	(5.3)	50.1	(6.1)	4.0	(4.1)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	(0.2)	(1.5)	(1.5)	7.5	5.7	3.9	3.4
BBgBarc US Treasury Bills	0.0	0.0	0.0	0.1	1.5	1.2	0.7
BBgBarc US Agg Bond	(1.2)	(3.4)	(3.4)	0.7	4.7	3.1	3.4
BBgBarc US Universal	(1.2)	(3.1)	(3.1)	3.0	4.9	3.6	3.8
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	(0.0)	(0.1)	(0.1)	0.3	2.8	1.7	1.3
BBgBarc US Treasury Long	(5.0)	(13.5)	(13.5)	(15.8)	5.9	3.1	6.3
BBgBarc US Treasury	(1.5)	(4.3)	(4.3)	(4.4)	4.1	2.2	2.9
<b>Issuer</b>							
BBgBarc US MBS	(0.5)	(1.1)	(1.1)	(0.1)	3.7	2.4	2.8
BBgBarc US Corp. High Yield	0.1	0.9	0.9	23.7	6.8	8.1	6.5
BBgBarc US Agency Interim	(0.4)	(1.0)	(1.0)	0.1	3.2	2.0	1.9
BBgBarc US Credit	(1.6)	(4.5)	(4.5)	7.9	5.9	4.7	4.8

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	(2.1)	6.9	6.9	35.0	(0.2)	2.3	(6.3)
Wilshire US REIT	4.8	8.8	8.8	34.7	9.0	5.7	12.7
CS Leveraged Loans	0.1	2.0	2.0	20.8	4.1	4.6	5.0
Alerian MLP	6.9	22.0	22.0	99.1	(4.0)	(2.1)	(0.7)
<b>Regional Index</b>							
JPM EMBI Global Div	(1.0)	(4.5)	(4.5)	16.0	4.0	5.1	5.6
JPM GBI-EM Global Div	(3.1)	(6.7)	(6.7)	13.0	(0.8)	3.1	0.5
<b>Hedge Funds</b>							
HFRI Composite	1.0	6.1	6.1	34.0	7.7	7.5	4.6
HFRI FOF Composite	0.4	2.0	2.0	23.9	5.4	5.6	3.4
<b>Currency (Spot)</b>							
Euro	(3.2)	(3.9)	(3.9)	7.1	(1.5)	0.6	(1.9)
Pound Sterling	(1.3)	0.9	0.9	11.3	(0.6)	(0.8)	(1.5)
Yen	(3.6)	(6.6)	(6.6)	(2.3)	(1.3)	0.3	(2.8)

Source: Morningstar, HFRI, as of 3/31/21

# 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](http://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](http://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.

# Notices & disclosures

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# Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: March 31, 2021



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SEATTLE 206-622-3700

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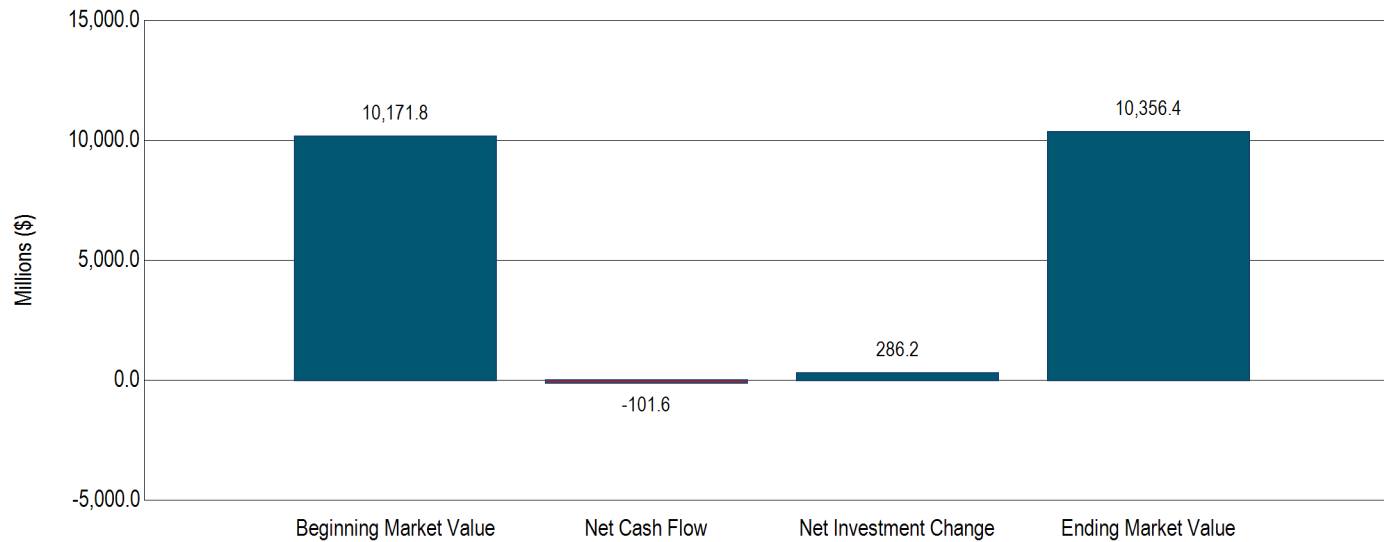
SAN FRANCISCO 415-362-3484

PITTSBURGH 412-784-6678

Portfolio Reconciliation

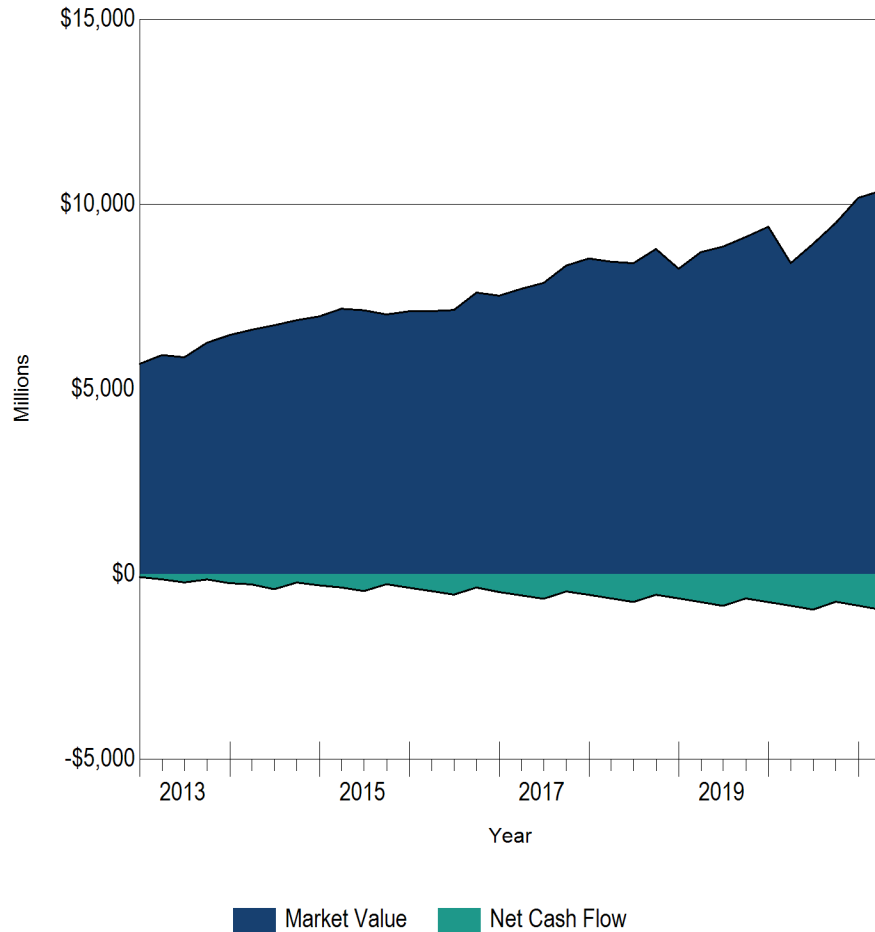
	Last Three Months	Year-To-Date
Beginning Market Value	\$10,171,802,463	\$10,171,802,463
Net Cash Flow	-\$101,564,968	-\$101,564,968
Net Investment Change	\$286,173,346	\$286,173,346
Ending Market Value	\$10,356,410,842	\$10,356,410,842

Change in Market Value  
Last Three Months

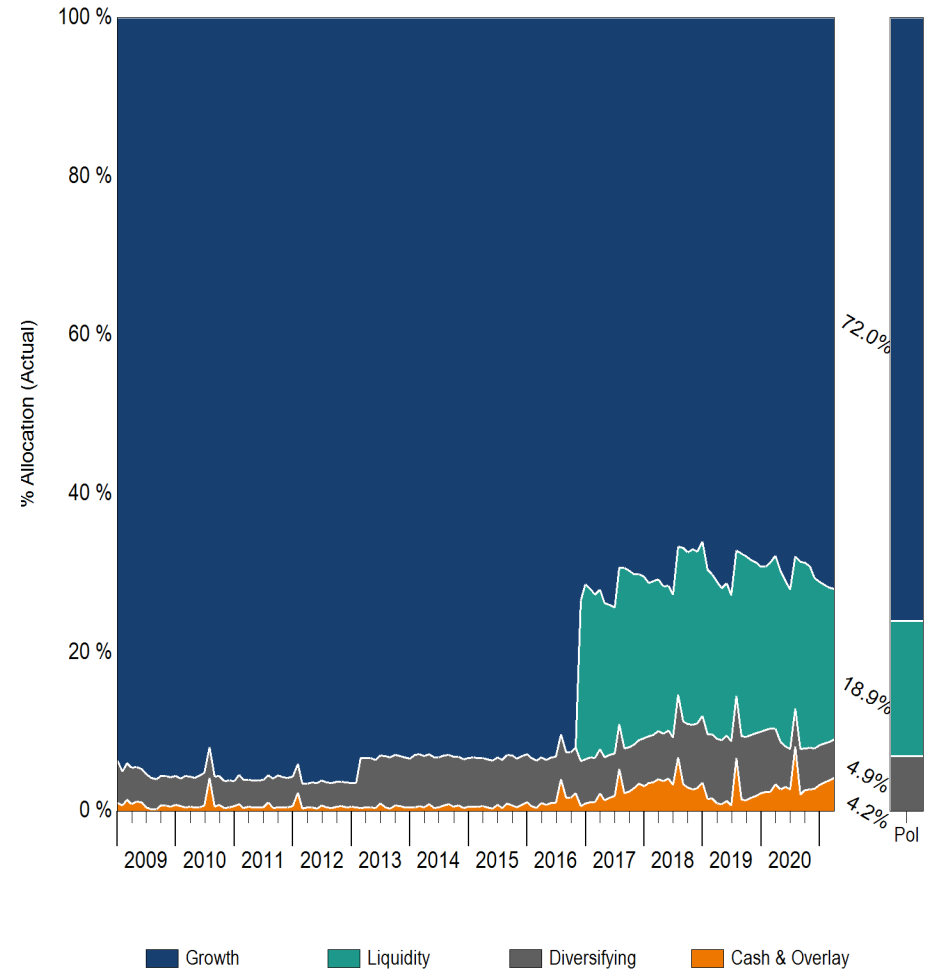


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History  
Cumulative Cash Flows



Asset Allocation History

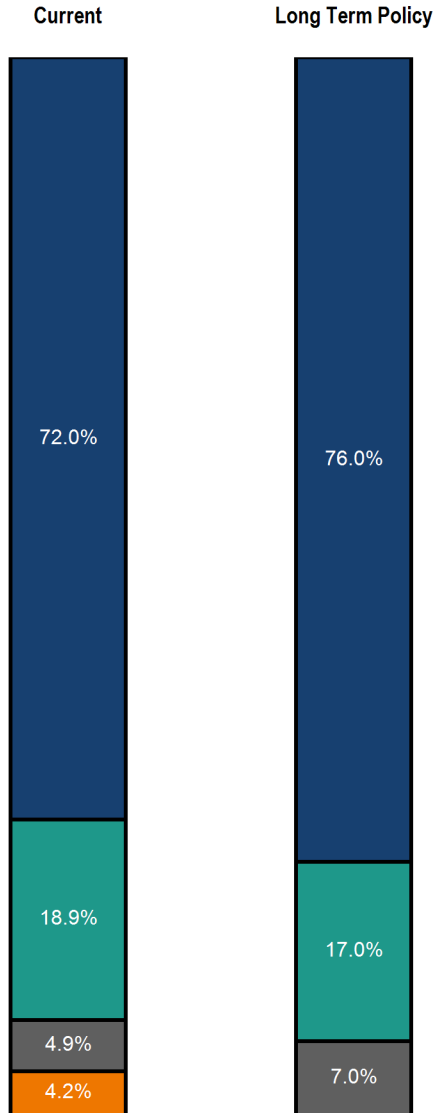


Policy reflects FFP 4-Yr allocations approved in June 2020.

Total Fund

Asset Allocation vs. Long Term Target Policy

Period Ending: March 31, 2021



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	\$7,456,847,922	72.0%	76.0%	-\$414,024,317
Liquidity	\$1,962,174,180	18.9%	17.0%	\$201,584,337
Diversifying	\$502,337,635	4.9%	7.0%	-\$222,611,124
Cash & Overlay	\$435,051,104	4.2%	--	\$435,051,104
<b>Total</b>	<b>\$10,356,410,842</b>	<b>100.0%</b>	<b>100.0%</b>	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	\$7,456,847,922	72.0%	68.5%	\$362,706,496
Liquidity	\$1,962,174,180	18.9%	25.0%	-\$626,928,531
Diversifying	\$502,337,635	4.9%	6.5%	-\$170,829,070
Cash & Overlay	\$435,051,104	4.2%	--	\$435,051,104
<b>Total</b>	<b>\$10,356,410,842</b>	<b>100.0%</b>	<b>100.0%</b>	

Long Term Targets reflect FFP 4-Yr allocations approved in June 2020.  
 Current Targets reflect targets approved in June 2020.



Total Fund  
Executive Summary (Net of Fees)

Period Ending: March 31, 2021

	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Fund</b>	<b>100.0</b>	<b>2.8</b>	<b>24.1</b>	<b>7.8</b>	<b>8.6</b>	<b>8.0</b>	<b>9.2</b>	<b>14.6</b>	<b>-2.7</b>	<b>13.9</b>	<b>6.9</b>
<i>Policy Index</i>		3.2	25.1	8.9	9.4	8.7	10.8	14.6	-0.9	13.7	8.9
<b>Growth</b>	<b>72.0</b>	<b>4.0</b>	<b>33.3</b>	<b>9.7</b>	<b>10.8</b>	<b>--</b>	<b>12.0</b>	<b>18.4</b>	<b>-3.9</b>	<b>18.7</b>	<b>7.6</b>
<i>Custom Growth Benchmark</i>		4.7	37.1	11.4	12.2	--	13.8	19.3	-2.1	19.3	10.1
<b>Diversifying</b>	<b>4.9</b>	<b>-0.4</b>	<b>3.1</b>	<b>1.0</b>	<b>1.5</b>	<b>1.4</b>	<b>-1.7</b>	<b>6.8</b>	<b>-2.3</b>	<b>2.6</b>	<b>0.8</b>
<i>Custom Diversifying Benchmark</i>		-1.0	3.0	3.7	3.5	3.8	4.7	6.1	1.4	4.7	4.1
<b>Liquidity</b>	<b>18.9</b>	<b>-0.1</b>	<b>3.2</b>	<b>3.3</b>	<b>--</b>	<b>--</b>	<b>3.4</b>	<b>4.8</b>	<b>1.7</b>	<b>1.4</b>	<b>--</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>		0.0	1.6	3.0	--	--	3.3	4.0	1.6	0.8	--

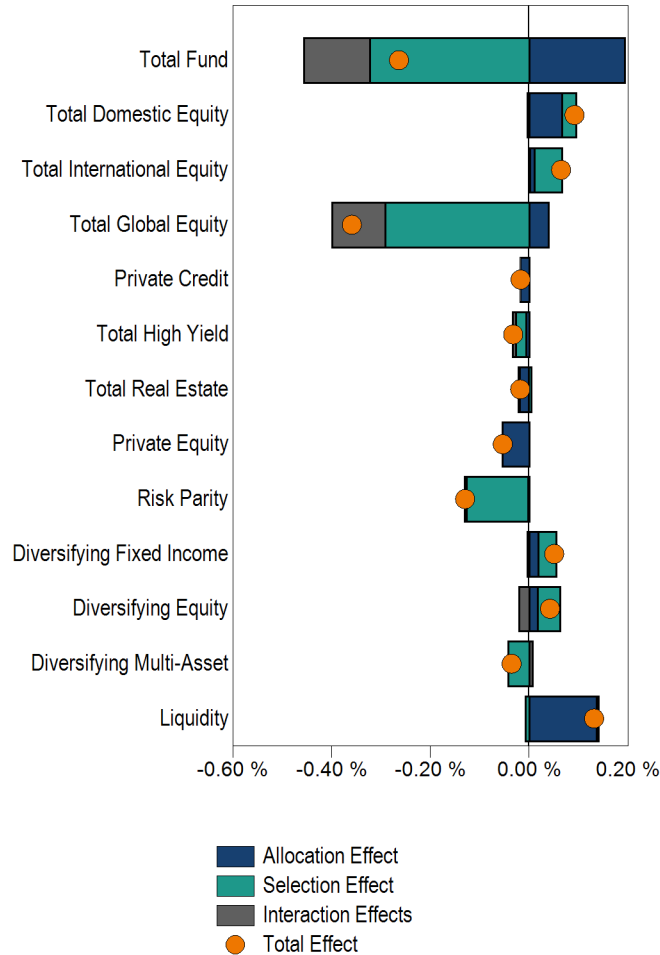
\*Correlation between the Growth and Diversifying composites is .50, .64 and .55 over the previous 1, 3 and 5 year periods respectively.

Policy Index (1/1/2021-Present): 9% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 25% BBgBarc 1-3 Yr Gov/Credit, 3% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 7% Private Credit composite returns, 1.5% ICE BofAML High Yield Master II, 1% Wilshire REIT, 8% Private Real Estate composite returns, 1.5% CPI +4%, 11% Private Equity composite returns, 2% HFRI EH Equity Market Neutral. Policy Index (7/1/2020-12/31/2020): 9% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 25% BBgBarc 1-3 Yr Gov/Credit, 3% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 7% ICE BofAML High Yield Master II +2%, 1.5% ICE BofAML High Yield Master II, 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 1.5% CPI +4%, 11% S&P 500 +4%(Lagged), 2% HFRI EH Equity Market Neutral.

Total Fund  
Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: March 31, 2021

Attribution Effects  
3 Months Ending March 31, 2021



Performance Attribution

	Quarter
Wtd. Actual Return	2.89%
Wtd. Index Return *	3.13%
<b>Excess Return</b>	<b>-0.24%</b>
Selection Effect	-0.32%
Allocation Effect	0.19%
Interaction Effect	-0.13%

\*Calculated from benchmark returns and weightings of each component.

Attribution Summary  
Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	6.6%	6.3%	0.3%	0.0%	0.1%	0.0%	0.1%
Total International Equity	3.9%	3.6%	0.3%	0.1%	0.0%	0.0%	0.1%
Total Global Equity	0.9%	4.6%	-3.6%	-0.3%	0.0%	-0.1%	-0.4%
Private Credit	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Total High Yield	-0.5%	0.9%	-1.4%	0.0%	0.0%	0.0%	0.0%
Total Real Estate	4.1%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	10.7%	10.7%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Risk Parity	-1.6%	0.9%	-2.5%	-0.1%	0.0%	0.0%	-0.1%
Diversifying Fixed Income	-2.2%	-3.4%	1.1%	0.0%	0.0%	0.0%	0.1%
Diversifying Equity	3.7%	1.7%	2.0%	0.0%	0.0%	0.0%	0.0%
Diversifying Multi-Asset	-0.1%	2.7%	-2.8%	0.0%	0.0%	0.0%	0.0%
Liquidity	-0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
<b>Total</b>	<b>2.9%</b>	<b>3.1%</b>	<b>-0.2%</b>	<b>-0.3%</b>	<b>0.2%</b>	<b>-0.1%</b>	<b>-0.3%</b>

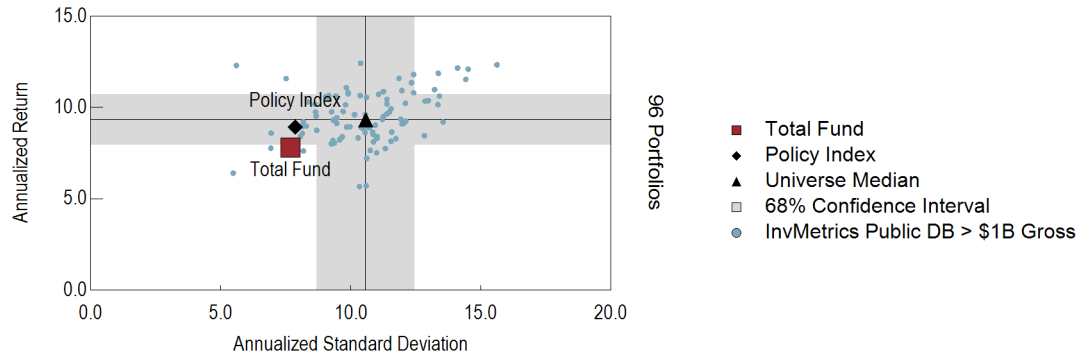
# Total Fund Executive Summary (Net of Fees)

Period Ending: March 31, 2021

## 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	7.79%	-1.12%	7.68%	-0.53%	0.93	2.34%	0.91	0.84	-0.48	92.89%	102.41%

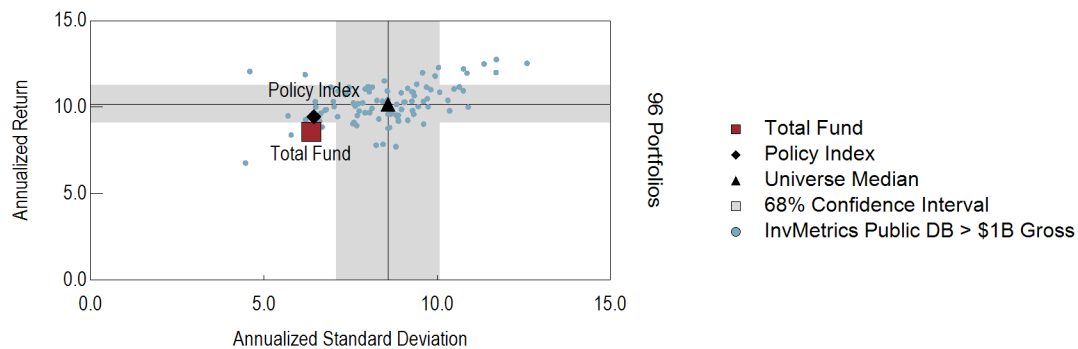
## Risk vs. Return



## 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	8.56%	-0.86%	6.36%	-0.28%	0.94	2.02%	0.90	1.17	-0.43	93.88%	103.63%

## Risk vs. Return



Total Fund  
Performance Summary (Gross of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Total Fund</b>	<b>10,356,410,842</b>	<b>100.0</b>	<b>2.9</b>	<b>24.4</b>	<b>8.1</b>	<b>8.9</b>	<b>8.5</b>	<b>9.5</b>	<b>15.0</b>	<b>-2.5</b>	<b>14.2</b>	<b>7.4</b>		
Policy Index			3.2	25.1	8.9	9.4	8.7	10.8	14.6	-0.9	13.7	8.9		
InvMetrics Public DB > \$1B Gross Rank			73	96	89	93	47	78	83	25	83	74		
<b>Total Fund ex Overlay &amp; Cash</b>	<b>9,921,359,737</b>	<b>95.8</b>	<b>3.0</b>	<b>24.6</b>	<b>8.2</b>	<b>9.0</b>	<b>8.5</b>	<b>9.7</b>	<b>14.7</b>	<b>-2.1</b>	<b>14.1</b>	<b>7.4</b>		
Policy Index			3.2	25.1	8.9	9.4	8.7	10.8	14.6	-0.9	13.7	8.9		
InvMetrics Public DB > \$1B Gross Rank			70	96	85	92	45	72	84	20	84	74		
<b>Growth</b>	<b>7,456,847,922</b>	<b>72.0</b>	<b>4.0</b>	<b>33.7</b>	<b>10.1</b>	<b>11.2</b>	<b>--</b>	<b>12.4</b>	<b>18.8</b>	<b>-3.6</b>	<b>19.1</b>	<b>8.1</b>		
Custom Growth Benchmark			4.7	37.1	11.4	12.2	--	13.8	19.3	-2.1	19.3	10.1		
<b>Total Domestic Equity</b>	<b>1,138,840,038</b>	<b>11.0</b>	<b>6.7</b>	<b>69.6</b>	<b>15.7</b>	<b>16.3</b>	<b>13.7</b>	<b>22.2</b>	<b>26.7</b>	<b>-7.2</b>	<b>23.9</b>	<b>11.5</b>		
Russell 3000			6.3	62.5	17.1	16.6	13.8	20.9	31.0	-5.2	21.1	12.7		
InvMetrics Public DB US Eq Gross Rank			77	15	67	44	26	10	87	78	6	77		
BlackRock Russell 1000 Index	243,392,950	2.4	5.9	60.6	17.3	--	--	21.0	31.4	-4.8	--	--	16.5	Apr-17
Russell 1000			5.9	60.6	17.3	--	--	21.0	31.4	-4.8	--	--	16.5	Apr-17
eV US Large Cap Equity Gross Rank			58	40	39	--	--	36	39	47	--	--		
Jackson Square Partners	237,239,524	2.3	-2.5	61.2	20.3	18.4	15.7	44.8	27.9	-2.0	29.3	-4.4	12.1	May-05
Russell 1000 Growth			0.9	62.7	22.8	21.0	16.6	38.5	36.4	-1.5	30.2	7.1	12.6	May-05
eV US Large Cap Growth Equity Gross Rank			97	48	66	74	59	20	93	59	47	98		
Boston Partners	270,191,010	2.6	15.1	66.1	10.9	13.2	12.1	3.0	24.3	-8.7	20.1	15.1	10.9	Jun-95
Russell 1000 Value			11.3	56.1	11.0	11.7	11.0	2.8	26.5	-8.3	13.7	17.3	9.6	Jun-95
eV US Large Cap Value Equity Gross Rank			16	29	61	43	38	61	77	55	23	50		
Emerald Advisers	199,810,544	1.9	2.5	88.1	19.2	20.3	15.2	39.0	30.3	-10.1	28.8	10.1	14.9	Apr-03
Russell 2000 Growth			4.9	90.2	17.2	18.6	13.0	34.6	28.5	-9.3	22.2	11.3	12.9	Apr-03
eV US Small Cap Growth Equity Gross Rank			73	66	71	64	50	57	45	85	26	54		
Ceredex	188,206,009	1.8	14.6	75.4	8.5	10.5	--	2.3	18.4	-11.3	11.4	29.8	11.6	Nov-11
Russell 2000 Value			21.2	97.1	11.6	13.6	--	4.6	22.4	-12.9	7.8	31.7	12.3	Nov-11
eV US Small Cap Value Equity Gross Rank			82	87	85	89	--	69	87	25	48	32		

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Total International Equity</b>	<b>2,017,432,062</b>	<b>19.5</b>	<b>4.0</b>	<b>58.0</b>	<b>8.3</b>	<b>10.2</b>	<b>6.9</b>	<b>15.8</b>	<b>23.7</b>	<b>-14.3</b>	<b>25.5</b>	<b>1.2</b>		
MSCI ACWI ex USA Gross			3.6	50.0	7.0	10.3	5.4	11.1	22.1	-13.8	27.8	5.0		
MSCI EAFE Gross			3.6	45.2	6.5	9.4	6.0	8.3	22.7	-13.4	25.6	1.5		
InvMetrics Public DB ex-US Eq Gross Rank			29	20	23	61	26	23	28	44	90	89		
<b>International Equity</b>	<b>1,138,629,634</b>	<b>11.0</b>	<b>0.5</b>	<b>47.7</b>	<b>9.8</b>	<b>10.7</b>	<b>7.1</b>	<b>19.0</b>	<b>27.0</b>	<b>-13.6</b>	<b>25.3</b>	<b>1.2</b>		
MSCI ACWI ex USA Gross			3.6	50.0	7.0	10.3	5.4	11.1	22.1	-13.8	27.8	5.0		
InvMetrics Public DB ex-US Eq Gross Rank			95	87	12	39	19	13	7	21	93	89		
Pyrford	520,286,529	5.0	2.4	32.5	6.2	7.2	--	4.7	22.1	-10.1	19.8	3.4	4.7	May-14
MSCI ACWI ex USA Value			7.1	48.7	2.4	7.2	--	-0.8	15.7	-14.0	22.7	8.9	2.4	May-14
eV ACWI ex-US Value Equity Gross Rank			99	99	22	66	--	33	35	5	84	74		
William Blair	618,343,105	6.0	-1.0	62.7	13.0	14.0	9.2	33.3	32.0	-16.8	30.9	-1.4	9.2	Oct-10
MSCI ACWI ex USA Growth			-0.1	49.4	10.3	12.0	6.7	22.2	27.3	-14.4	32.0	0.1	7.1	Oct-10
eV ACWI ex-US Growth Equity Gross Rank			70	40	41	57	50	30	39	69	81	55		
<b>Emerging Markets Equity</b>	<b>878,802,429</b>	<b>8.5</b>	<b>8.9</b>	<b>73.6</b>	<b>6.3</b>	<b>--</b>	<b>--</b>	<b>11.4</b>	<b>19.4</b>	<b>-15.3</b>	<b>--</b>	<b>--</b>		
MSCI Emerging Markets			2.3	58.4	6.5	--	--	18.3	18.4	-14.6	--	--		
InvMetrics Public DB Emg Mkt Eq Gross Rank			4	4	49	--	--	81	31	51	--	--		
PIMCO RAE Emerging Markets	418,111,180	4.0	11.6	70.3	3.5	--	--	2.1	14.6	-12.3	--	--	7.4	Feb-17
MSCI Emerging Markets Value NR			4.1	52.5	2.6	--	--	5.5	12.0	-10.7	--	--	6.6	Feb-17
eV Emg Mkts All Cap Value Equity Gross Rank			3	19	72	--	--	85	72	44	--	--		
TT Emerging Markets	460,691,249	4.4	6.5	76.6	9.1	--	--	20.8	24.8	-18.4	--	--	11.1	Jul-17
MSCI Emerging Markets			2.3	58.4	6.5	--	--	18.3	18.4	-14.6	--	--	8.3	Jul-17
eV Emg Mkts Equity Gross Rank			21	21	31	--	--	39	24	83	--	--		
<b>Total Global Equity</b>	<b>1,095,104,189</b>	<b>10.6</b>	<b>1.1</b>	<b>50.0</b>	<b>14.2</b>	<b>14.8</b>	<b>10.4</b>	<b>25.3</b>	<b>28.9</b>	<b>-7.8</b>	<b>23.7</b>	<b>7.6</b>		
MSCI ACWI			4.6	54.6	12.1	13.2	9.1	16.3	26.6	-9.4	24.0	7.9		
InvMetrics Public DB Glbl Eq Gross Rank			98	72	4	4	5	2	3	60	79	40		
Artisan Partners	588,130,287	5.7	-1.6	59.7	19.4	19.9	--	41.7	37.0	-7.9	32.9	5.6	16.1	Oct-12
MSCI ACWI Growth NR USD			0.3	59.0	17.5	17.1	--	33.6	32.7	-8.1	30.0	3.3	13.6	Oct-12
eV All Global Equity Gross Rank			96	41	12	9	--	9	7	40	11	61		
First Eagle	506,842,348	4.9	4.5	39.1	8.7	9.5	8.3	8.5	21.0	-7.6	15.1	11.7	8.6	Jan-11
MSCI ACWI Value NR USD			8.9	48.8	6.2	9.0	6.4	-0.3	20.6	-10.8	18.3	12.6	6.8	Jan-11
eV All Global Equity Gross Rank			60	85	76	81	79	70	82	38	89	19		

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Private Credit</b>	<b>743,969,878</b>	<b>7.2</b>	<b>0.1</b>	<b>4.1</b>	<b>5.5</b>	<b>7.5</b>	<b>10.4</b>	<b>4.0</b>	<b>7.7</b>	<b>8.3</b>	<b>10.4</b>	<b>8.2</b>		
<b>Total High Yield</b>	<b>176,316,258</b>	<b>1.7</b>	<b>-0.4</b>	<b>17.3</b>	<b>6.0</b>	<b>7.0</b>	<b>5.9</b>	<b>5.1</b>	<b>16.0</b>	<b>-3.2</b>	<b>6.5</b>	<b>14.3</b>		
<i>ICE BofAML High Yield Master II</i>			0.9	23.3	6.5	7.9	6.3	6.2	14.4	-2.3	7.5	17.5		
<i>eV US High Yield Fixed Inc Gross Rank</i>			99	85	77	69	82	74	15	88	74	47		
Allianz Global Investors	176,316,258	1.7	-0.4	17.3	6.0	7.0	5.9	5.1	16.0	-3.2	6.5	14.3	6.9	Apr-00
<i>ICE BofAML High Yield Master II</i>			0.9	23.3	6.5	7.9	6.3	6.2	14.4	-2.3	7.5	17.5	7.1	Apr-00
<i>eV US High Yield Fixed Inc Gross Rank</i>			99	85	77	69	82	74	15	88	74	47		
<b>Total Real Estate</b>	<b>693,762,659</b>	<b>6.7</b>	<b>4.1</b>	<b>-1.1</b>	<b>3.7</b>	<b>5.5</b>	<b>9.5</b>	<b>-5.9</b>	<b>8.1</b>	<b>7.4</b>	<b>11.1</b>	<b>5.5</b>		
<i>Real Estate Benchmark</i>			4.1	7.0	6.0	5.8	8.9	0.6	7.5	6.8	7.1	6.7		
<i>NCREIF-ODCE</i>			2.1	2.3	4.9	6.2	9.7	1.2	5.3	8.3	7.6	8.8		
<i>NCREIF Property Index</i>			1.7	2.6	4.9	5.8	8.8	1.6	6.4	6.7	7.0	8.0		
Adelante	83,443,913	0.8	9.0	35.9	10.7	6.5	9.5	-4.6	28.2	-5.0	7.8	4.1	10.2	Sep-01
<i>Wilshire REIT</i>			8.8	34.8	9.0	5.0	8.5	-7.9	25.8	-4.8	4.2	7.2	9.7	Sep-01
<b>Total Private Real Estate Private Equity</b>	<b>610,318,746</b>	<b>5.9</b>	<b>3.5</b>	<b>-4.6</b>	<b>2.9</b>	<b>5.4</b>	<b>--</b>	<b>-6.1</b>	<b>6.2</b>	<b>8.8</b>	<b>11.4</b>	<b>6.0</b>		
<b>Risk Parity</b>	<b>1,095,477,088</b>	<b>10.6</b>	<b>10.7</b>	<b>17.7</b>	<b>13.4</b>	<b>11.8</b>	<b>12.4</b>	<b>8.7</b>	<b>8.4</b>	<b>12.1</b>	<b>11.9</b>	<b>9.4</b>		
<b>Risk Parity</b>	<b>495,945,751</b>	<b>4.8</b>	<b>-1.5</b>	<b>20.1</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>		
<i>60% MSCI ACWI Net/40% BBgBarc Global Aggregate</i>			0.9	32.7	--	--	--	14.0	--	--	--	--		
AQR Global Risk Premium-EL	247,937,376	2.4	-0.8	16.9	--	--	--	6.2	--	--	--	--	10.4	Jan-19
<i>HFR Risk Parity Vol 10 Index</i>			-1.5	16.0	--	--	--	3.6	--	--	--	--	8.8	Jan-19
PanAgora Risk Parity Multi Asset	248,008,375	2.4	-2.1	23.5	--	--	--	14.0	--	--	--	--	12.1	Feb-19
<i>HFR Risk Parity Vol 10 Index</i>			-1.5	16.0	--	--	--	3.6	--	--	--	--	6.4	Feb-19

Individual closed end funds are not shown in performance summary table.

# Total Fund Performance Summary (Gross of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Diversifying</b>	<b>502,337,635</b>	<b>4.9</b>	<b>-0.3</b>	<b>3.6</b>	<b>1.3</b>	<b>1.8</b>	<b>1.8</b>	<b>-1.3</b>	<b>7.1</b>	<b>-2.0</b>	<b>2.8</b>	<b>1.3</b>		
Custom Diversifying Benchmark			-1.0	3.0	3.7	3.5	3.8	4.7	6.1	1.4	4.7	4.1		
<b>Diversifying Fixed Income</b>	<b>262,385,933</b>	<b>2.5</b>	<b>-2.1</b>	<b>1.0</b>	<b>2.3</b>	<b>1.8</b>	<b>2.9</b>	<b>1.6</b>	<b>8.6</b>	<b>-1.7</b>	<b>2.8</b>	<b>2.8</b>		
eV US Core Fixed Inc Gross Rank			8	88	99	99	99	99	80	99	96	72		
AFL-CIO	262,263,894	2.5	-2.1	0.8	4.8	3.2	3.7	6.6	8.2	0.6	3.6	2.4	6.1	Jun-91
BBgBarc US Aggregate TR			-3.4	0.7	4.7	3.1	3.4	7.5	8.7	0.0	3.5	2.6	5.6	Jun-91
eV US Core Fixed Inc Gross Rank			8	90	84	87	82	95	88	16	76	87		
<b>Diversifying Equity</b>	<b>112,348,727</b>	<b>1.1</b>	<b>3.8</b>	<b>8.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-8.9</b>	<b>3.3</b>	<b>--</b>	<b>--</b>	<b>--</b>		
Parametric Defensive Equity	112,348,727	1.1	3.8	8.7	--	--	--	-8.9	3.3	--	--	--	-1.8	Jul-18
91 Day T-Bill +4%			1.1	4.1	--	--	--	4.5	6.1	--	--	--	5.3	Jul-18
<b>Diversifying Multi-Asset</b>	<b>127,602,974</b>	<b>1.2</b>	<b>0.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>		
FTSE 3-Month T-bill +5%			1.2	--	--	--	--	--	--	--	--	--		
Acadian Multi-Asset Absolute Return Fund	127,602,974	1.2	0.0	--	--	--	--	--	--	--	--	--	1.8	Aug-20
FTSE 3-Month T-bill +5%			1.2	--	--	--	--	--	--	--	--	--	3.4	Aug-20
<b>Liquidity</b>	<b>1,962,174,180</b>	<b>18.9</b>	<b>0.0</b>	<b>3.3</b>	<b>3.4</b>	<b>--</b>	<b>--</b>	<b>3.5</b>	<b>4.9</b>	<b>1.8</b>	<b>1.5</b>	<b>--</b>		
BBgBarc US Govt/Credit 1-3 Yr. TR			0.0	1.6	3.0	--	--	3.3	4.0	1.6	0.8	--		
eV US Short Duration Fixed Inc Gross Rank			37	49	49	--	--	77	34	24	50	--		
DFA Short Credit	380,581,485	3.7	-0.3	3.7	3.3	--	--	2.9	5.2	1.2	1.9	--	2.6	Nov-16
ICE BofA 1-5 Yrs US Corp & Govt TR			-0.5	2.1	3.7	--	--	4.6	5.1	1.4	1.3	--	2.7	Nov-16
eV US Short Duration Fixed Inc Gross Rank			68	42	63	--	--	90	21	93	26	--		
Insight Short Duration	985,650,693	9.5	0.0	4.4	3.2	--	--	3.2	4.7	1.7	1.5	--	2.5	Nov-16
BBgBarc US Govt/Credit 1-3 Yr. TR			0.0	1.6	3.0	--	--	3.3	4.0	1.6	0.8	--	2.3	Nov-16
eV US Short Duration Fixed Inc Gross Rank			36	36	72	--	--	86	45	38	50	--		
Sit Short Duration	595,942,002	5.8	0.1	1.4	4.0	--	--	4.6	4.9	2.5	1.3	--	3.1	Nov-16
BBgBarc US Govt 1-3 Yr TR			-0.1	0.4	2.8	--	--	3.1	3.6	1.6	0.4	--	2.0	Nov-16
eV US Short Duration Fixed Inc Gross Rank			21	88	13	--	--	26	35	1	68	--		
<b>Total Cash</b>	<b>302,475,480</b>	<b>2.9</b>	<b>0.1</b>	<b>0.9</b>	<b>2.0</b>	<b>1.6</b>	<b>3.1</b>	<b>1.3</b>	<b>3.3</b>	<b>1.7</b>	<b>0.9</b>	<b>0.9</b>		
91 Day T-Bills			0.0	0.1	1.4	1.1	0.6	0.5	2.1	1.9	0.9	0.3		
Cash	302,455,423	2.9	0.1	0.8	2.1	1.6	3.2	1.3	3.4	1.7	0.9	0.9		
Northern Trust Transition	20,057	0.0	-4.8	91.5	--	--	--	104.1	--	--	--	--		

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. Wellington Real Total Return was liquidated 4/30/2020. \$122,039.04 in residual value is reflected in the Diversifying Fixed Income composite. State Street Cash/Tax Reclaims balance of \$-28,918 in cash and \$223,127 in potential tax reclaims at State Street after assets were transferred to Northern Trust.



# Total Fund Performance Summary (Net of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Total Fund</b>	<b>10,356,410,842</b>	<b>100.0</b>	<b>2.8</b>	<b>24.1</b>	<b>7.8</b>	<b>8.6</b>	<b>8.0</b>	<b>9.2</b>	<b>14.6</b>	<b>-2.7</b>	<b>13.9</b>	<b>6.9</b>		
<i>Policy Index</i>			3.2	25.1	8.9	9.4	8.7	10.8	14.6	-0.9	13.7	8.9		
<b>Total Fund ex Overlay &amp; Cash</b>	<b>9,921,359,737</b>	<b>95.8</b>	<b>2.9</b>	<b>24.2</b>	<b>7.9</b>	<b>8.6</b>	<b>8.0</b>	<b>9.4</b>	<b>14.4</b>	<b>-2.4</b>	<b>13.8</b>	<b>6.9</b>		
<i>Policy Index</i>			3.2	25.1	8.9	9.4	8.7	10.8	14.6	-0.9	13.7	8.9		
<b>Growth</b>	<b>7,456,847,922</b>	<b>72.0</b>	<b>4.0</b>	<b>33.3</b>	<b>9.7</b>	<b>10.8</b>	<b>--</b>	<b>12.0</b>	<b>18.4</b>	<b>-3.9</b>	<b>18.7</b>	<b>7.6</b>		
<i>Custom Growth Benchmark</i>			4.7	37.1	11.4	12.2	--	13.8	19.3	-2.1	19.3	10.1		
<b>Total Domestic Equity</b>	<b>1,138,840,038</b>	<b>11.0</b>	<b>6.6</b>	<b>69.0</b>	<b>15.2</b>	<b>15.8</b>	<b>13.3</b>	<b>21.8</b>	<b>26.1</b>	<b>-7.6</b>	<b>23.5</b>	<b>11.1</b>		
<i>Russell 3000</i>			6.3	62.5	17.1	16.6	13.8	20.9	31.0	-5.2	21.1	12.7		
BlackRock Russell 1000 Index	243,392,950	2.4	5.9	60.6	17.3	--	--	20.9	31.4	-4.8	--	--	16.5	Apr-17
<i>Russell 1000</i>			5.9	60.6	17.3	--	--	21.0	31.4	-4.8	--	--	16.5	Apr-17
Jackson Square Partners	237,239,524	2.3	-2.6	60.5	19.8	17.9	15.2	44.1	27.3	-2.4	28.7	-4.8	11.7	May-05
<i>Russell 1000 Growth</i>			0.9	62.7	22.8	21.0	16.6	38.5	36.4	-1.5	30.2	7.1	12.6	May-05
Boston Partners	270,191,010	2.6	15.0	65.6	10.6	12.8	11.8	2.6	23.8	-8.9	19.7	14.7	10.6	Jun-95
<i>Russell 1000 Value</i>			11.3	56.1	11.0	11.7	11.0	2.8	26.5	-8.3	13.7	17.3	9.6	Jun-95
Emerald Advisers	199,810,544	1.9	2.3	87.0	18.5	19.5	14.5	38.2	29.4	-10.7	28.0	9.4	14.2	Apr-03
<i>Russell 2000 Growth</i>			4.9	90.2	17.2	18.6	13.0	34.6	28.5	-9.3	22.2	11.3	12.9	Apr-03
Ceredex	188,206,009	1.8	14.4	74.4	7.9	9.9	--	1.7	17.7	-11.8	10.7	29.1	11.0	Nov-11
<i>Russell 2000 Value</i>			21.2	97.1	11.6	13.6	--	4.6	22.4	-12.9	7.8	31.7	12.3	Nov-11
<b>Total International Equity</b>	<b>2,017,432,062</b>	<b>19.5</b>	<b>3.9</b>	<b>57.2</b>	<b>7.8</b>	<b>9.7</b>	<b>6.4</b>	<b>15.2</b>	<b>23.2</b>	<b>-14.7</b>	<b>25.0</b>	<b>0.8</b>		
<i>MSCI ACWI ex USA Gross</i>			3.6	50.0	7.0	10.3	5.4	11.1	22.1	-13.8	27.8	5.0		
<i>MSCI EAFE Gross</i>			3.6	45.2	6.5	9.4	6.0	8.3	22.7	-13.4	25.6	1.5		
<b>International Equity</b>	<b>1,138,629,634</b>	<b>11.0</b>	<b>0.4</b>	<b>47.1</b>	<b>9.3</b>	<b>10.3</b>	<b>6.7</b>	<b>18.5</b>	<b>26.5</b>	<b>-13.9</b>	<b>24.8</b>	<b>0.8</b>		
<i>MSCI ACWI ex USA Gross</i>			3.6	50.0	7.0	10.3	5.4	11.1	22.1	-13.8	27.8	5.0		
Pyrford	520,286,529	5.0	2.3	32.0	5.8	6.8	--	4.2	21.6	-10.5	19.3	3.0	4.2	May-14
<i>MSCI ACWI ex USA Value</i>			7.1	48.7	2.4	7.2	--	-0.8	15.7	-14.0	22.7	8.9	2.4	May-14
William Blair	618,343,105	6.0	-1.0	62.1	12.6	13.6	8.8	32.8	31.5	-17.1	30.4	-1.8	8.7	Oct-10
<i>MSCI ACWI ex USA Growth</i>			-0.1	49.4	10.3	12.0	6.7	22.2	27.3	-14.4	32.0	0.1	7.1	Oct-10
<b>Emerging Markets Equity</b>	<b>878,802,429</b>	<b>8.5</b>	<b>8.7</b>	<b>72.6</b>	<b>5.7</b>	<b>--</b>	<b>--</b>	<b>10.7</b>	<b>18.7</b>	<b>-15.7</b>	<b>--</b>	<b>--</b>		
<i>MSCI Emerging Markets</i>			2.3	58.4	6.5	--	--	18.3	18.4	-14.6	--	--		
PIMCO RAE Emerging Markets	418,111,180	4.0	11.5	69.4	3.0	--	--	1.6	14.0	-12.6	--	--	6.9	Feb-17
<i>MSCI Emerging Markets Value NR</i>			4.1	52.5	2.6	--	--	5.5	12.0	-10.7	--	--	6.6	Feb-17
TT Emerging Markets	460,691,249	4.4	6.4	75.5	8.4	--	--	20.0	24.0	-18.9	--	--	10.4	Jul-17
<i>MSCI Emerging Markets</i>			2.3	58.4	6.5	--	--	18.3	18.4	-14.6	--	--	8.3	Jul-17

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Total Global Equity</b>	<b>1,095,104,189</b>	<b>10.6</b>	<b>0.9</b>	<b>48.9</b>	<b>13.4</b>	<b>14.0</b>	<b>9.6</b>	<b>24.4</b>	<b>27.9</b>	<b>-8.5</b>	<b>22.8</b>	<b>6.9</b>		
<i>MSCI ACWI</i>			4.6	54.6	12.1	13.2	9.1	16.3	26.6	-9.4	24.0	7.9		
Artisan Partners	588,130,287	5.7	-1.8	58.5	18.5	19.0	--	40.6	36.0	-8.6	31.9	4.8	15.3	Oct-12
<i>MSCI ACWI Growth NR USD</i>			0.3	59.0	17.5	17.1	--	33.6	32.7	-8.1	30.0	3.3	13.6	Oct-12
First Eagle	506,842,348	4.9	4.3	38.1	7.9	8.7	7.5	7.7	20.1	-8.3	14.3	10.9	7.8	Jan-11
<i>MSCI ACWI Value NR USD</i>			8.9	48.8	6.2	9.0	6.4	-0.3	20.6	-10.8	18.3	12.6	6.8	Jan-11
<b>Private Credit</b>	<b>743,969,878</b>	<b>7.2</b>	<b>0.1</b>	<b>4.1</b>	<b>5.5</b>	<b>7.3</b>	<b>9.5</b>	<b>4.0</b>	<b>7.7</b>	<b>8.3</b>	<b>10.4</b>	<b>6.9</b>		
<b>Total High Yield</b>	<b>176,316,258</b>	<b>1.7</b>	<b>-0.5</b>	<b>16.9</b>	<b>5.5</b>	<b>6.6</b>	<b>5.5</b>	<b>4.7</b>	<b>15.4</b>	<b>-3.6</b>	<b>6.1</b>	<b>13.9</b>		
<i>ICE BofAML High Yield Master II</i>			0.9	23.3	6.5	7.9	6.3	6.2	14.4	-2.3	7.5	17.5		
Allianz Global Investors	176,316,258	1.7	-0.5	16.9	5.5	6.6	5.5	4.7	15.4	-3.6	6.1	13.9	6.5	Apr-00
<i>ICE BofAML High Yield Master II</i>			0.9	23.3	6.5	7.9	6.3	6.2	14.4	-2.3	7.5	17.5	7.1	Apr-00
<b>Total Real Estate</b>	<b>693,762,659</b>	<b>6.7</b>	<b>4.1</b>	<b>-1.2</b>	<b>3.6</b>	<b>5.4</b>	<b>8.8</b>	<b>-6.0</b>	<b>8.1</b>	<b>7.4</b>	<b>11.0</b>	<b>4.8</b>		
<i>Real Estate Benchmark</i>			4.1	7.0	6.0	5.8	8.9	0.6	7.5	6.8	7.1	6.7		
<i>NCREIF-ODCE</i>			2.1	2.3	4.9	6.2	9.7	1.2	5.3	8.3	7.6	8.8		
<i>NCREIF Property Index</i>			1.7	2.6	4.9	5.8	8.8	1.6	6.4	6.7	7.0	8.0		
Adelante	83,443,913	0.8	8.9	35.1	10.0	5.9	9.0	-5.2	27.5	-5.5	7.2	3.6	9.7	Sep-01
<i>Wilshire REIT</i>			8.8	34.8	9.0	5.0	8.5	-7.9	25.8	-4.8	4.2	7.2	9.7	Sep-01
<b>Total Private Real</b>	<b>610,318,746</b>	<b>5.9</b>	<b>3.5</b>	<b>-4.6</b>	<b>2.9</b>	<b>5.3</b>	<b>--</b>	<b>-6.1</b>	<b>6.2</b>	<b>8.8</b>	<b>11.4</b>	<b>5.2</b>		
<b>Estate Private Equity</b>	<b>1,095,477,088</b>	<b>10.6</b>	<b>10.7</b>	<b>17.7</b>	<b>13.4</b>	<b>11.7</b>	<b>11.3</b>	<b>8.7</b>	<b>8.4</b>	<b>12.1</b>	<b>11.9</b>	<b>8.9</b>		
<b>Risk Parity</b>	<b>495,945,751</b>	<b>4.8</b>	<b>-1.6</b>	<b>19.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>9.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>		
<i>60% MSCI ACWI Net/40% BBgBarc Global Aggregate</i>			0.9	32.7	--	--	--	14.0	--	--	--	--		
AQR Global Risk Premium-EL	247,937,376	2.4	-0.9	16.4	--	--	--	5.8	--	--	--	--	10.0	Jan-19
<i>HFR Risk Parity Vol 10 Index</i>			-1.5	16.0	--	--	--	3.6	--	--	--	--	8.8	Jan-19
PanAgora Risk Parity Multi Asset	248,008,375	2.4	-2.2	23.0	--	--	--	13.6	--	--	--	--	11.7	Feb-19
<i>HFR Risk Parity Vol 10 Index</i>			-1.5	16.0	--	--	--	3.6	--	--	--	--	6.4	Feb-19

Individual closed end funds are not shown in performance summary table.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: March 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016	Inception	Inception Date
<b>Diversifying</b>	<b>502,337,635</b>	<b>4.9</b>	<b>-0.4</b>	<b>3.1</b>	<b>1.0</b>	<b>1.5</b>	<b>1.4</b>	<b>-1.7</b>	<b>6.8</b>	<b>-2.3</b>	<b>2.6</b>	<b>0.8</b>		
<i>Custom Diversifying Benchmark</i>			-1.0	3.0	3.7	3.5	3.8	4.7	6.1	1.4	4.7	4.1		
<b>Diversifying Fixed Income</b>	<b>262,385,933</b>	<b>2.5</b>	<b>-2.2</b>	<b>0.6</b>	<b>2.0</b>	<b>1.4</b>	<b>2.6</b>	<b>1.2</b>	<b>8.3</b>	<b>-2.0</b>	<b>2.6</b>	<b>2.3</b>		
AFL-CIO	262,263,894	2.5	-2.2	0.4	4.3	2.8	3.3	6.2	7.8	0.2	3.2	1.9	5.7	Jun-91
<i>BBgBarc US Aggregate TR</i>			-3.4	0.7	4.7	3.1	3.4	7.5	8.7	0.0	3.5	2.6	5.6	Jun-91
<b>Diversifying Equity</b>	<b>112,348,727</b>	<b>1.1</b>	<b>3.7</b>	<b>8.2</b>	--	--	--	<b>-9.4</b>	<b>3.0</b>	--	--	--		
Parametric Defensive Equity	112,348,727	1.1	3.7	8.2	--	--	--	-9.4	3.0	--	--	--	-2.1	Jul-18
<i>91 Day T-Bill +4%</i>			1.1	4.1	--	--	--	4.5	6.1	--	--	--	5.3	Jul-18
<b>Diversifying Multi-Asset</b>	<b>127,602,974</b>	<b>1.2</b>	<b>-0.1</b>	--	--	--	--	--	--	--	--	--		
<i>FTSE 3-Month T-bill +5%</i>			1.2	--	--	--	--	--	--	--	--	--		
Acadian Multi-Asset Absolute Return Fund	127,602,974	1.2	-0.1	--	--	--	--	--	--	--	--	--	1.4	Aug-20
<i>FTSE 3-Month T-bill +5%</i>			1.2	--	--	--	--	--	--	--	--	--	3.4	Aug-20
<b>Liquidity</b>	<b>1,962,174,180</b>	<b>18.9</b>	<b>-0.1</b>	<b>3.2</b>	<b>3.3</b>	--	--	<b>3.4</b>	<b>4.8</b>	<b>1.7</b>	<b>1.4</b>	--		
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.0	1.6	3.0	--	--	3.3	4.0	1.6	0.8	--		
DFA Short Credit	380,581,485	3.7	-0.3	3.5	3.2	--	--	2.8	5.2	1.1	1.8	--	2.5	Nov-16
<i>ICE BofA 1-5 Yrs US Corp &amp; Govt TR</i>			-0.5	2.1	3.7	--	--	4.6	5.1	1.4	1.3	--	2.7	Nov-16
Insight Short Duration	985,650,693	9.5	-0.1	4.3	3.2	--	--	3.1	4.6	1.7	1.5	--	2.5	Nov-16
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.0	1.6	3.0	--	--	3.3	4.0	1.6	0.8	--	2.3	Nov-16
Sit Short Duration	595,942,002	5.8	0.0	1.2	3.8	--	--	4.4	4.7	2.3	1.1	--	2.9	Nov-16
<i>BBgBarc US Govt 1-3 Yr TR</i>			-0.1	0.4	2.8	--	--	3.1	3.6	1.6	0.4	--	2.0	Nov-16
<b>Total Cash</b>	<b>302,475,480</b>	<b>2.9</b>	<b>0.1</b>	<b>0.9</b>	<b>2.0</b>	<b>1.6</b>	<b>3.1</b>	<b>1.3</b>	<b>3.3</b>	<b>1.7</b>	<b>0.9</b>	<b>0.9</b>		
<i>91 Day T-Bills</i>			0.0	0.1	1.4	1.1	0.6	0.5	2.1	1.9	0.9	0.3		
Cash	302,455,423	2.9	0.1	0.8	2.1	1.6	3.1	1.3	3.4	1.7	0.9	0.9		
Northern Trust Transition	20,057	0.0	-4.8	91.5	--	--	--	104.1	--	--	--	--		

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. Wellington Real Total Return was liquidated 4/30/2020. \$122,039.04 in residual value is reflected in the Diversifying Fixed Income composite.

Total Fund  
Closed End Funds - Investment Summary

Period Ending: March 31, 2021

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/2021 <sup>1</sup>	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) <sup>2</sup>	Tot. Value/ Paid-In (TVPI) <sup>3</sup>	Latest Valuation
<b>Private Credit</b>												
8/31/2015	Angelo Gordon Energy Credit Opp. <sup>4</sup>	\$2,347,372	\$16,500,000	114%	\$18,750,000	\$0	\$0	\$18,829,566	\$2,319,783	1.00	1.13	12/31/2020
12/18/2017	Stepstone CC Opportunities Fund	\$711,825,537	\$1,020,000,000	68%	\$690,599,992	\$0	\$0	\$41,561,970	\$370,864,909	0.06	1.09	9/30/2020
7/1/2006	Torchlight II	-\$59,952	\$128,000,000	171%	\$218,263,562	\$0	\$0	\$208,623,727	\$0	0.96	0.96	9/30/2020
12/12/2008	Torchlight III	-\$13,696	\$75,000,000	112%	\$83,825,058	\$0	\$0	\$124,848,870	\$0	1.49	1.49	9/30/2020
8/1/2012	Torchlight IV	\$9,678,825	\$60,000,000	141%	\$84,866,971	\$0	\$0	\$104,809,507	\$0	1.23	1.35	12/31/2020
3/12/2015	Torchlight V	\$20,191,792	\$75,000,000	80%	\$60,000,000	\$0	\$1,204,472	\$56,243,734	\$15,000,000	0.94	1.27	12/31/2020
<b>Total Private Credit</b>		<b>\$743,969,878</b>										
<b>% of Portfolio (Market Value)</b>		<b>7.2%</b>										

\*All Data provided by StepStone Group

<sup>1</sup>Latest valuation + capital calls - distributions

<sup>2</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>4</sup>Capital has been fully called and fund is in redemption.

Total Fund  
Closed End Funds - Investment Summary

Period Ending: March 31, 2021

Verus Internal Analysis												
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/2021 <sup>1</sup>	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions <sup>8</sup>	Remaining Commitment	Distrib./Paid-In (DPI) <sup>2</sup>	Tot. Value/Paid-In (TVPI) <sup>3</sup>	Latest Valuation
<b>Real Estate</b>												
1/23/2012	Angelo Gordon Realty Fund VIII <sup>7</sup>	\$18,365,714	\$80,000,000	94%	\$75,401,855	\$0	\$0	\$98,433,174	\$12,334,302	1.31	1.55	12/31/2020
12/8/2014	Angelo Gordon Realty Fund IX	\$60,562,230	\$65,000,000	93%	\$60,125,000	\$0	\$3,087,501	\$18,362,501	\$7,572,500	0.31	1.31	12/31/2020
6/23/2005	DLJ RECP III	\$16,565,544	\$75,000,000	134%	\$100,709,313 <sup>4</sup>	\$0	\$0	\$69,364,915	\$4,031,338	0.69	0.85	12/31/2020
2/11/2008	DLJ RECP IV	\$56,669,479	\$100,000,000	130%	\$129,892,605 <sup>5</sup>	\$0	\$0	\$90,463,629	\$3,162,610	0.70	1.13	12/31/2020
7/1/2014	DLJ RECP V	\$47,651,508	\$75,000,000	114%	\$85,612,038 <sup>6</sup>	\$0	\$0	\$58,913,882	\$20,556,753	0.69	1.24	12/31/2020
3/19/2019	DLJ RECP VI	\$24,597,661	\$50,000,000	51%	\$25,335,866	\$0	\$0	\$220,742	\$25,050,462	0.01	0.98	12/31/2020
6/17/1998	Hearthstone II <sup>7</sup>	\$7,458	\$25,000,000	80%	\$19,938,463	\$6,077	\$0	\$27,473,662	\$0	1.38	1.38	12/31/2020
6/30/2013	Invesco Real Estate III <sup>7</sup>	\$162,975	\$35,000,000	93%	\$32,386,423	\$0	\$0	\$47,423,062	\$2,613,577	1.46	1.47	3/31/2021
6/30/2014	Invesco Real Estate IV <sup>7</sup>	\$17,668,791	\$35,000,000	87%	\$30,546,401	\$0	\$0	\$22,353,948	\$4,453,599	0.73	1.31	3/31/2021
6/30/2013	Invesco Real Estate V	\$51,146,801	\$75,000,000	65%	\$48,997,669	\$2,885,709	\$0	\$4,723,439	\$29,743,834 <sup>9</sup>	0.10	1.14	3/31/2021
7/16/2013	LaSalle Income & Growth VI <sup>7</sup>	\$22,449,699	\$75,000,000	95%	\$71,428,571	\$0	\$16,763	\$81,417,763	\$3,571,429	1.14	1.45	12/31/2020
2/28/2017	LaSalle Income & Growth VII	\$57,272,398	\$75,000,000	103%	\$77,293,582	\$2,643,052	\$0	\$33,471,843	-\$2,293,582	0.43	1.17	12/31/2020
7/3/2013	Long Wharf Fund IV <sup>7</sup>	\$1,862,422	\$25,000,000	100%	\$25,000,000	\$0	\$0	\$34,528,873	\$0	1.38	1.46	3/31/2021
9/30/2016	Long Wharf Fund V <sup>7</sup>	\$35,689,598	\$50,000,000	100%	\$50,000,000	\$0	\$1,142,465	\$26,619,445	\$0	0.53	1.25	3/31/2021
6/27/2019	Long Wharf Fund VI	\$7,470,120	\$50,000,000	23%	\$11,278,493	\$4,212,091	\$5,153,617	\$5,153,617	\$38,721,507	0.46	1.12	3/31/2021
12/31/2011	Oaktree REOF V <sup>7</sup>	\$3,789,870	\$50,000,000	100%	\$50,065,841	\$0	\$0	\$75,692,733	\$5,000,000 <sup>9</sup>	1.51	1.59	3/31/2021
9/30/2013	Oaktree REOF VI <sup>7</sup>	\$27,929,114	\$80,000,000	100%	\$80,000,000	\$0	\$0	\$84,010,175	\$18,400,000 <sup>9</sup>	1.05	1.40	3/31/2021
4/1/2015	Oaktree REOF VII	\$48,569,709	\$65,000,000	96%	\$62,400,000	\$0	\$3,884,587	\$27,040,000	\$21,515,000 <sup>9</sup>	0.43	1.21	3/31/2021
11/10/2013	Paulson Real Estate Fund II <sup>7</sup>	\$24,470,042	\$20,000,000	97%	\$19,345,623	\$0	\$994,197	\$7,790,387	\$654,377	0.40	1.67	12/31/2020
1/25/2012	Siguler Guff DREOF	\$27,013,985	\$75,000,000	93%	\$69,375,000	\$0	\$623,407	\$94,741,653	\$5,625,000	1.37	1.76	9/30/2020
8/31/2013	Siguler Guff DREOF II	\$43,989,324	\$70,000,000	89%	\$61,985,000	\$0	\$1,867,987	\$40,392,406	\$8,015,000	0.65	1.36	9/30/2020
1/27/2016	Siguler Guff DREOF II Co-Inv	\$16,414,305	\$25,000,000	82%	\$20,537,862	\$0	\$500,000	\$10,273,350	\$4,462,138	0.50	1.30	9/30/2020
<b>Total Closed End Real Estate</b>		<b>\$610,318,746</b>	<b>\$1,275,000,000</b>	<b>95%</b>	<b>\$1,207,655,607</b>	<b>\$9,746,929</b>	<b>\$17,270,525</b>	<b>\$958,865,200</b>	<b>\$213,189,842</b>	<b>0.79</b>	<b>1.30</b>	
<b>% of Portfolio (Market Value)</b>		<b>6.0%</b>										

<sup>1</sup>Latest valuation + capital calls - distributions

<sup>2</sup>(DPI) is equal to (capital returned / capital called)

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

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

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

<sup>6</sup>Includes \$986,559 in management fees charged outside the fund.

<sup>7</sup>Capital has been fully called and fund is in redemption.

<sup>8</sup>Total distributions may include recallable distributions

<sup>9</sup>Remianing commitment includes recallable distributions

Total Fund  
Closed End Funds - Investment Summary

Period Ending: March 31, 2021

StepStone Group Analysis (*)													
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/2021 <sup>1</sup>	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) <sup>2</sup>	Tot. Value/Paid-In (TVPI) <sup>3</sup>	Latest Valuation	
<b>Private Equity &amp; Venture Capital</b>													
2/11/2004	Adams Street Partners	\$176,375,748	\$210,000,000	89%	\$187,400,625	\$0	\$7,263,188	\$186,221,763	\$22,599,375	0.99	1.93	12/31/2020	
1/15/2009	Adams Street Partners II	\$5,917,328	\$30,000,000	95%	\$28,365,000	\$0	\$0	\$42,951,012	\$1,635,000	1.51	1.72	12/31/2020	
9/21/2012	Adams Street Partners - Fund 5	\$20,263,011	\$40,000,000	77%	\$30,845,875	\$0	\$0	\$19,649,219	\$9,154,125	0.64	1.29	12/31/2020	
1/18/1996	Adams Street Partners - BPF	\$1,899,027	\$59,565,614		\$57,517,409	\$0	\$0	\$102,731,103	\$2,048,205	1.79	1.82	12/31/2020	
3/31/2016	Adams Street Venture Innovation	\$109,832,564	\$75,000,000	74%	\$55,537,500	\$0	\$0	\$0	\$19,462,500	0.00	1.98	12/31/2020	
5/18/2018	AE Industrial Partners Fund II, LP	\$17,306,235	\$35,000,000	47%	\$16,554,769	\$0	\$0	\$804,335	\$19,249,566	0.05	1.09	12/31/2020	
11/27/2013	Aether Real Assets III	\$18,791,650	\$25,000,000	98%	\$24,407,721	\$0	\$0	\$3,913,883	\$2,817,919	0.16	0.93	12/31/2020	
11/30/2013	Aether Real Assets III Surplus	\$45,903,200	\$50,000,000	103%	\$51,339,959	\$0	\$0	\$8,973,151	\$1,925,536	0.17	1.07	12/31/2020	
1/30/2016	Aether Real Assets IV	\$41,894,145	\$50,000,000	87%	\$43,675,593	\$1,455,819	\$0	\$3,474,286	\$8,926,864	0.08	1.04	12/31/2020	
4/30/2004	Bay Area Equity Fund I <sup>4</sup>	\$2,392,861	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$37,018,019	\$0	3.70	3.94	12/31/2020	
6/29/2009	Bay Area Equity Fund II <sup>4</sup>	\$11,210,395	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$3,684,910	\$0	0.37	1.49	12/31/2020	
6/30/2013	Commonfund	\$32,957,423	\$50,000,000	92%	\$45,899,994	\$0	\$0	\$12,693,451	\$4,100,006	0.28	0.99	9/30/2020	
7/15/2005	EIF US Power Fund II <sup>4</sup>	\$4,901,362	\$50,000,000	130%	\$65,029,556	\$0	\$0	\$74,001,371	\$0	1.14	1.21	12/31/2020	
5/31/2007	EIF US Power Fund III <sup>4</sup>	\$13,258,474	\$65,000,000	110%	\$71,409,097	\$0	\$0	\$73,782,321	\$0	1.03	1.22	9/30/2020	
11/28/2011	EIF US Power Fund IV	\$37,520,404	\$50,000,000	129%	\$64,534,462	\$378,988	\$526,142	\$32,266,448	-\$378,984	0.50	1.08	9/30/2020	
11/28/2016	EIF US Power Fund V	\$37,933,167	\$50,000,000	106%	\$52,779,673	\$0	\$6,008,966	\$29,287,396	\$14,537,204	0.55	1.27	12/31/2020	
2/21/2019	Genstar Capital Partners IX, L.P.	\$24,722,151	\$50,000,000	39%	\$19,628,275	\$0	\$0	\$1,166,668	\$31,525,882	0.06	1.32	12/31/2020	
11/18/2009	Oaktree PIF 2009	\$947,789	\$40,000,000	87%	\$34,816,559	-\$170	\$325,175	\$46,124,785	\$6,308,961	1.32	1.35	12/31/2020	
5/2/2013	Ocean Avenue Fund II	\$14,575,316	\$30,000,000	90%	\$27,000,000	\$0	\$9,000,000	\$31,639,096	\$3,000,000	1.17	1.71	9/30/2020	
4/15/2016	Ocean Avenue Fund III	\$43,242,527	\$50,000,000	87%	\$43,500,000	\$0	\$4,500,000	\$22,000,000	\$6,500,000	0.51	1.50	9/30/2020	
11/30/2007	Paladin III	\$27,924,818	\$25,000,000	137%	\$34,331,097	\$0	\$0	\$60,680,169	\$419,157	1.77	2.58	12/31/2020	
8/22/2011	Pathway 6	\$37,892,364	\$40,000,000	97%	\$38,977,218	\$301,895	\$2,003,937	\$34,748,693	\$3,620,385	0.89	1.86	9/30/2020	
7/10/2013	Pathway 7	\$73,148,855	\$70,000,000	96%	\$67,470,913	\$148,225	\$7,505,874	\$43,810,611	\$6,352,236	0.65	1.73	9/30/2020	
11/23/2015	Pathway 8	\$59,514,608	\$50,000,000	87%	\$43,297,812	\$783,431	\$2,143,164	\$10,558,791	\$10,144,110	0.24	1.62	9/30/2020	
1/19/1999	Pathway	\$10,177,565	\$125,000,000	100%	\$125,468,002	\$68,830	\$1,251,247	\$179,590,995	\$10,681,592	1.43	1.51	9/30/2020	
7/31/2009	Pathway 2008	\$16,646,770	\$30,000,000	99%	\$29,574,269	\$85,361	\$2,531,601	\$36,155,169	\$2,995,774	1.22	1.79	9/30/2020	
6/3/2014	Siguler Guff CCCERA Opportunities	\$156,015,694	\$200,000,000	85%	\$170,583,208	\$0	\$5,132,479	\$113,302,656	\$33,097,500	0.66	1.58	12/31/2020	
11/30/2016	Siguler Guff Secondary Opportunities <sup>4</sup>	\$0	\$50,000,000	60%	\$29,999,802	\$0	\$0	\$42,773,166	\$20,000,198	1.43	1.43	9/30/2020	
5/18/2018	Siris Partners IV, L.P.	\$18,954,137	\$35,000,000	56%	\$19,610,842	\$127,342	\$2,695,958	\$2,894,896	\$17,473,632	0.15	1.11	12/31/2020	
6/28/2019	TPG Healthcare Partners, L.P.	\$6,661,633	\$24,000,000	28%	\$6,796,104	\$0	\$294,013	\$1,382,305	\$18,491,481	-	-	12/31/2020	
5/24/2019	Trident VIII, L.P.	\$14,068,898	\$40,000,000	34%	\$13,549,528	\$0	\$0	\$565,951	\$26,912,492	-	-	-	
12/8/2015	Wastewater Opportunity Fund	\$12,660,001	\$25,000,000	115%	\$28,693,102	\$3,670,876	\$10,207,166	\$12,239,088	\$1,754,258	0.43	0.87	9/30/2020	
<b>Total Private Equity and Venture Capital</b>		<b>\$1,095,510,121</b>	<b>\$1,743,565,614</b>	<b>89%</b>	<b>\$1,548,593,964</b>	<b>\$7,020,598</b>	<b>\$61,388,909</b>	<b>\$1,271,085,707</b>	<b>\$305,354,971</b>	<b>0.82</b>	<b>1.53</b>		
<b>% of Portfolio (Market Value)</b>		<b>10.6%</b>											

\* All Data provided by StepStone Group

<sup>1</sup>Latest valuation + capital calls - distributions

<sup>2</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>4</sup>Capital has been fully called and fund is in redemption.



Total Fund  
Closed End Funds - IRR Summary

Period Ending: March 31, 2021

Private Credit	Inception	Fund Level (G) <sup>2</sup>	CCCERA (G)	Fund Level (N) <sup>2,3</sup>	CCCERA (N) <sup>3</sup>	IRR Date
Angelo Gordon Energy Cred Opp. <sup>4</sup>	09/24/2015	-	-	-	5.6%	12/31/2020
Stepstone CC Opportunities Fund	02/02/2018	-	8.8%	-	7.4%	09/30/2020
Torchlight IV	08/01/2012	12.0%	12.5%	9.7%	10.4%	12/31/2020
Torchlight V	03/12/2015	15.0%	15.0%	10.4%	10.4%	12/31/2020
Real Estate	Inception	Fund Level (G) <sup>2</sup>	CCCERA (G)	Fund Level (N) <sup>2,3</sup>	CCCERA (N) <sup>3</sup>	IRR Date
Angelo Gordon VIII <sup>4</sup>	01/23/2012	-	-	-	13.6%	12/31/2020
Angelo Gordon IX	12/08/2014	-	-	-	8.6%	12/31/2020
DLJ RECP III	06/23/2005	-1.0%	-1.0%	-4.0%	-3.0%	12/31/2020
DLJ RECP IV	02/11/2008	4.0%	4.0%	2.0%	2.0%	12/31/2020
DLJ RECP V	07/01/2014	16.0%	16.0%	9.0%	9.0%	12/31/2020
DLJ RECP VI <sup>1</sup>	03/19/2019	-	-	-	-	-
Hearthstone II <sup>4</sup>	06/17/1998	-	30.1%	-	30.1%	03/31/2020
Invesco Fund III <sup>4</sup>	06/30/2013	16.6%	-	13.6%	-	12/31/2020
Invesco Fund IV <sup>4</sup>	06/30/2014	16.3%	-	12.3%	-	12/31/2020
Invesco Fund V	02/20/2019	12.5%	-	6.5%	-	12/31/2020
LaSalle Income & Growth VI <sup>4</sup>	07/16/2013	13.0%	13.0%	10.8%	10.8%	12/31/2020
LaSalle Income & Growth VII	02/28/2017	8.7%	8.7%	6.9%	6.8%	12/31/2020
Long Wharf IV <sup>4</sup>	07/03/2013	16.6%	16.2%	12.0%	12.0%	03/31/2021
Long Wharf V <sup>4</sup>	09/30/2016	11.1%	11.7%	8.1%	8.5%	03/31/2021
Long Wharf VI	06/27/2019	33.2%	45.9%	12.5%	16.3%	03/31/2021
Oaktree REOF V <sup>4</sup>	12/31/2011	16.7%	-	12.3%	-	03/31/2021
Oaktree REOF VI <sup>4</sup>	09/30/2013	12.4%	-	8.5%	-	03/31/2021
Oaktree REOF VII	04/01/2015	25.1%	-	15.6%	-	03/31/2021
Paulson <sup>4</sup>	11/10/2013	-	-	13.8%	-	12/31/2020
Siguler Guff I	01/25/2012	13.0%	15.8%	11.5%	12.7%	12/31/2020
Siguler Guff II	08/31/2013	10.9%	10.9%	9.6%	8.7%	12/31/2020
Siguler Guff DREOF II Co-Inv	01/27/2016	8.3%	8.6%	7.3%	7.2%	12/31/2020

<sup>1</sup>Manager has yet to report IRR figure.

<sup>2</sup>Fund level data includes CCCERA and all other fund investors.

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

<sup>4</sup>Capital has been fully called and fund is in redemption.

Total Fund  
Closed End Funds - IRR Summary

Period Ending: March 31, 2021

Private Equity & Venture Capital	Closing Date	Fund Level (G) <sup>2</sup>	CCCERA (G)	Fund Level (N) <sup>2,3</sup>	CCCERA (N) <sup>3</sup>	IRR Date
Adams Street Partners	2/11/2004	-	14.3%	-	12.1%	12/31/2020
Adams Street Partners II	12/31/2008	-	17.9%	-	14.2%	12/31/2020
Adams Street Partners - Fund 5	12/31/2008	-	9.2%	-	6.6%	12/31/2020
Adams Street Partners Venture	1/18/1996	-	44.5%	-	40.9%	12/31/2020
Adams Street Partners - BPF	3/31/2016	-	14.3%	-	11.6%	12/31/2020
AE Industrial Partners Fund II, LP	5/18/2018	20.1%	-	11.7%	-	12/31/2020
Aether Real Assets III	11/27/2013	1.1%	1.1%	-2.2%	-2.2%	9/30/2020
Aether Real Assets III Surplus	11/30/2013	3.4%	3.4%	1.5%	1.5%	9/30/2020
Aether Real Assets IV	1/30/2016	6.0%	6.0%	1.5%	1.5%	9/30/2020
Bay Area Equity Fund I <sup>9</sup>	11/26/2003	31.4%	31.4%	23.1%	23.1%	12/31/2020
Bay Area Equity Fund II <sup>9</sup>	11/26/2003	10.0%	10.0%	5.4%	5.4%	12/31/2020
CommonFund	6/30/2013	-	-	-	1.5%	9/30/2020
Energy Investor Fund II <sup>9</sup>	7/15/2005	6.1%	5.7%	3.5%	3.1%	12/31/2020
Energy Investor Fund III <sup>9</sup>	5/31/2007	6.1%	6.1%	3.6%	3.6%	12/31/2020
Energy Investor Fund IV	8/31/2010	4.5%	4.5%	1.1%	0.9%	12/31/2020
Energy Investor Fund V	11/28/2016	20.1%	16.1%	16.1%	12.2%	12/31/2020
Genstar Capital Partners IX, L.P. <sup>1</sup>	2/21/2019	29.6%	-	-	-	12/31/2020
Oaktree PIF 2009	2/28/2010	6.8%	-	6.5%	-	3/31/2021
Ocean Avenue II	8/15/2013	-	-	17.3%	-	12/31/2020
Ocean Avenue III	4/15/2016	-	-	22.6%	-	12/31/2020
Paladin III	11/30/2007	22.2%	-	15.3%	-	12/31/2020
Pathway 6	8/22/2011	18.9%	18.9%	16.6%	16.6%	12/31/2020
Benchmark <sup>4</sup>		14.0%	-	-	-	9/30/2020
Pathway 7	7/10/2013	20.6%	20.6%	18.4%	18.4%	12/31/2020
Benchmark <sup>5</sup>		14.1%	-	-	-	9/30/2020
Pathway 8	11/23/2015	25.5%	25.7%	23.9%	24.3%	12/31/2020
Benchmark <sup>6</sup>		14.2%	-	-	-	9/30/2020
Pathway Private Equity Fund	1/19/1999	10.2%	10.2%	8.4%	8.4%	12/31/2020
Benchmark <sup>7</sup>		10.2%	-	-	-	9/30/2020
Pathway Private Equity Fund 2008	7/31/2009	16.3%	16.3%	13.9%	13.9%	12/31/2020
Benchmark <sup>8</sup>		12.9%	-	-	-	9/30/2020
Siguler Guff CCCERA Opportunities	6/3/2014	17.2%	17.9%	16.7%	15.2%	12/31/2020
Siguler Guff Secondary Opportunities <sup>9</sup>	8/31/2013	55.3%	118.4%	49.5%	69.0%	9/30/2020
Siris Partners IV, L.P. <sup>1</sup>	5/18/2018	-	-	-	-	-
TPG Healthcare Partners, L.P. <sup>1</sup>	6/28/2019	-	-	-	-	-
Trident VIII, L.P. <sup>1</sup>	5/24/2019	-	-	-	-	-
Wastewater Opportunity Fund	12/8/2015	3.7%	-	-0.9%	-	12/31/2020

<sup>1</sup>Manager has yet to report IRR figure.

<sup>2</sup>Fund level data includes CCCERA and all other fund investors.

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

<sup>4</sup>Private iQ global all private equity median pooled return for vintage years 2011-2014, as of June 30, 2020.

<sup>5</sup>Private iQ global all private equity median pooled return for vintage years 2012-2016, as of June 30, 2020.

<sup>6</sup>Private iQ global all private equity median pooled return for vintage years 2015-2018, as of June 30, 2020.

<sup>7</sup>Private iQ global all private equity median pooled return for vintage years 1999-2011, as of June 30, 2020.

<sup>8</sup>Private iQ global all private equity median pooled return for vintage years 2008-2014, as of June 30, 2020.

<sup>9</sup>Capital has been fully called and fund is in redemption.



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

Period Ending: March 31, 2021

	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
BlackRock Russell 1000 Index	17.29%	-0.02%	18.98%	-0.01%	1.00	0.02%	1.00	0.84	-1.22	99.90%	99.98%
Jackson Square Partners	19.79%	-3.01%	19.58%	-2.01%	0.96	6.29%	0.90	0.94	-0.48	83.07%	92.84%
Boston Partners	10.58%	-0.38%	21.39%	-1.07%	1.06	2.90%	0.99	0.43	-0.13	104.26%	104.13%
Emerald Advisers	18.46%	1.30%	25.29%	1.91%	0.96	5.84%	0.95	0.68	0.22	101.68%	98.18%
Ceredex	7.88%	-3.69%	24.82%	-2.48%	0.90	6.46%	0.95	0.26	-0.57	79.04%	95.81%
Pyrford	5.79%	3.40%	14.84%	4.13%	0.69	7.84%	0.90	0.30	0.43	73.31%	73.41%
William Blair	12.59%	2.28%	17.88%	1.40%	1.08	3.59%	0.97	0.63	0.63	115.48%	103.06%
PIMCO RAE Emerging Markets	2.98%	0.39%	22.66%	0.08%	1.12	4.76%	0.97	0.07	0.08	114.43%	105.90%
Artisan Partners	18.54%	1.03%	17.03%	2.35%	0.92	4.29%	0.94	1.01	0.24	95.50%	91.10%
First Eagle	7.85%	1.63%	13.91%	3.46%	0.71	6.58%	0.94	0.47	0.25	70.75%	72.20%
Allianz Global Investors	5.52%	-1.01%	8.38%	-0.12%	0.86	2.30%	0.95	0.50	-0.44	85.75%	91.59%
Adelante	10.05%	1.01%	17.64%	1.54%	0.94	1.86%	0.99	0.49	0.54	97.33%	93.87%
AFL-CIO	4.32%	-0.33%	3.12%	0.41%	0.84	1.05%	0.92	0.95	-0.32	83.56%	72.72%

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, 2021

	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	17.91%	-3.14%	16.41%	-2.47%	0.97	5.85%	0.87	1.02	-0.54	83.22%	98.67%
Boston Partners	12.85%	1.10%	17.41%	0.33%	1.07	3.05%	0.97	0.67	0.36	108.58%	101.02%
Emerald Advisers	19.54%	0.93%	20.67%	1.52%	0.97	5.13%	0.94	0.89	0.18	98.25%	96.13%
Ceredex	9.86%	-3.70%	20.30%	-2.00%	0.88	6.27%	0.92	0.43	-0.59	72.21%	94.95%
Pyrford	6.81%	-0.44%	12.43%	1.81%	0.69	7.07%	0.85	0.46	-0.06	61.61%	75.68%
William Blair	13.57%	1.54%	14.84%	0.83%	1.06	3.24%	0.96	0.84	0.48	110.87%	100.57%
Total Global Equity	14.01%	0.80%	12.43%	3.01%	0.83	3.88%	0.94	1.04	0.21	87.28%	84.18%
Artisan Partners	19.03%	1.96%	14.54%	2.89%	0.94	4.47%	0.91	1.23	0.44	102.35%	91.63%
First Eagle	8.66%	-0.39%	11.27%	2.29%	0.70	5.53%	0.92	0.67	-0.07	64.89%	73.02%
Allianz Global Investors	6.55%	-1.38%	6.77%	-0.23%	0.86	1.97%	0.94	0.80	-0.70	82.54%	92.64%
Adelante	5.93%	0.97%	15.28%	1.29%	0.94	1.85%	0.99	0.31	0.52	93.40%	93.04%
AFL-CIO	2.78%	-0.32%	2.89%	0.18%	0.84	0.97%	0.92	0.57	-0.33	80.45%	76.62%

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

# Total Fund Investment Fund Fee Analysis

Period Ending: March 31, 2021

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	\$243,392,950	\$73,018	0.03%
Jackson Square Partners	Growth	0.50% of First 100.0 Mil, 0.40% of Next 150.0 Mil, 0.35% Thereafter	\$237,239,524	\$1,048,958	0.44%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	\$270,191,010	\$860,573	0.32%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	\$199,810,544	\$1,213,863	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	\$188,206,009	\$1,061,851	0.56%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	\$520,286,529	\$2,071,003	0.40%
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	\$618,343,105	\$2,270,029	0.37%
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	\$418,111,180	\$2,194,000	0.52%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	\$460,691,249	\$2,914,147	0.63%
Artisan Partners	Growth	0.75% of Assets	\$588,130,287	\$4,410,977	0.75%
First Eagle	Growth	0.75% of Assets	\$506,842,348	\$3,801,318	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$176,316,258	\$717,107	0.41%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	\$247,937,376	\$942,162	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, 2021

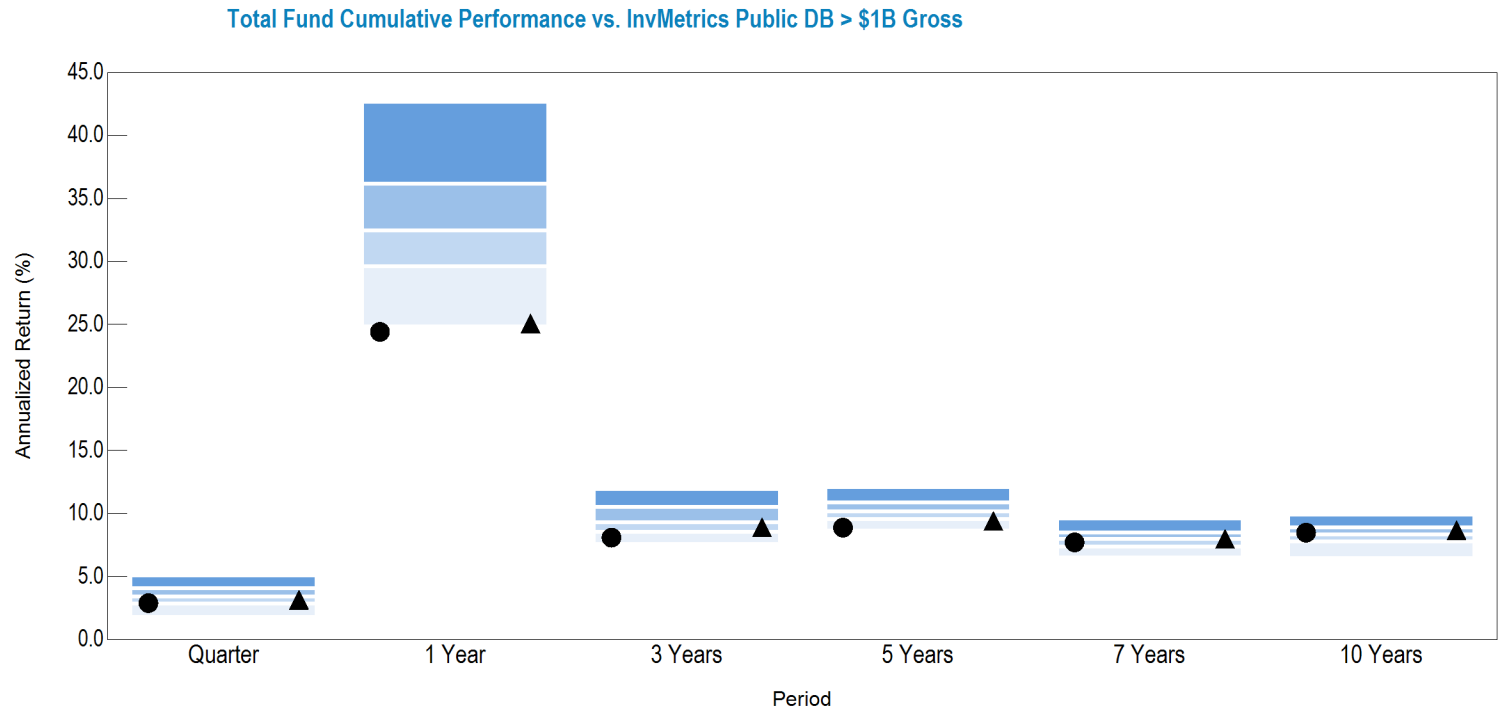
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	\$248,008,375	\$868,029	0.35%
AFL-CIO	Diversifying	0.43% of Assets	\$262,263,894	\$1,127,735	0.43%
Parametric Defensive Equity	Diversifying	0.42% of First 200.0 Mil, 0.39% Thereafter	\$112,348,727	\$471,865	0.42%
Acadian Multi-Asset Absolute Return Fund	Diversifying	0.50% of Assets	\$127,602,974	\$638,015	0.50%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	\$380,581,485	\$405,581	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	\$985,650,693	\$542,825	0.06%

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)

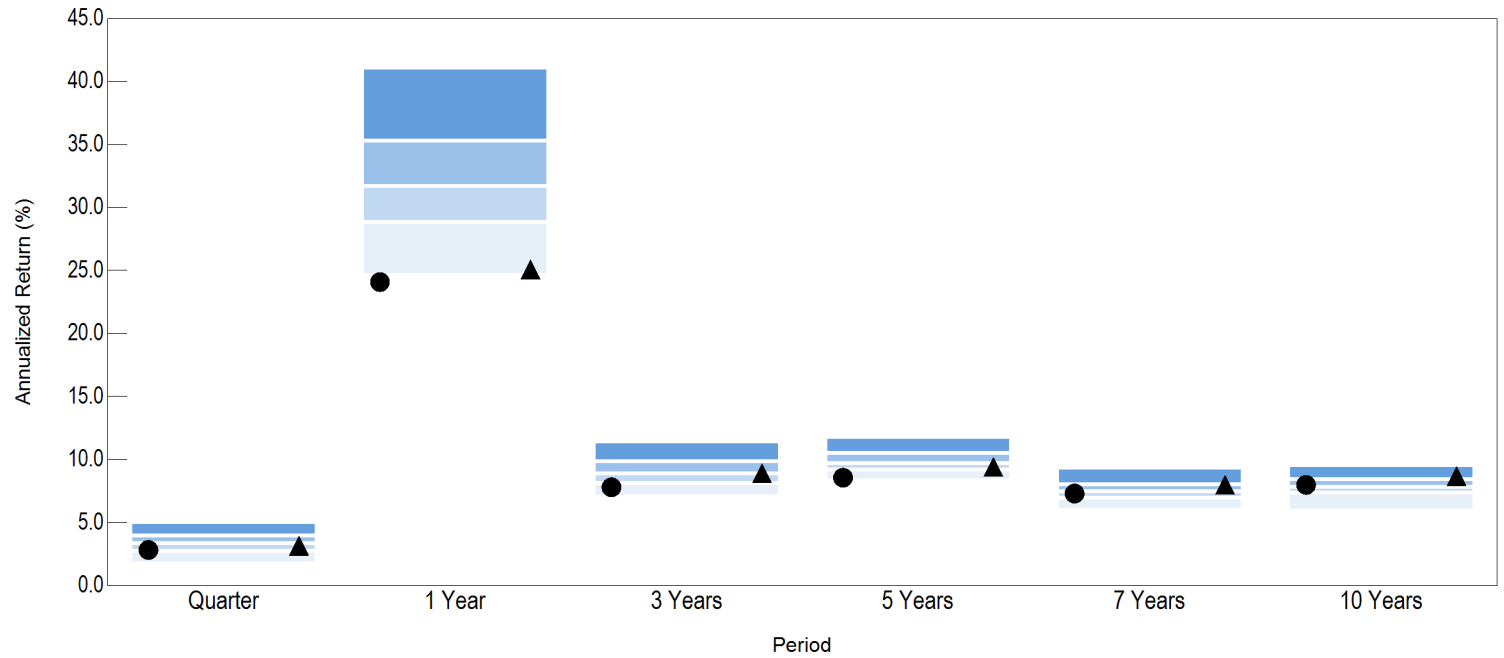
Period Ending: March 31, 2021



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	5.1		42.6		11.9		12.1		9.6		9.9	
<b>25th Percentile</b>	4.1		36.2		10.6		10.9		8.5		8.9	
<b>Median</b>	3.4		32.5		9.3		10.2		8.0		8.4	
<b>75th Percentile</b>	2.9		29.7		8.6		9.6		7.4		7.8	
<b>95th Percentile</b>	1.8		24.9		7.6		8.7		6.5		6.5	
<b># of Portfolios</b>	96		96		96		96		95		91	
<b>● Total Fund</b>	2.9	(73)	24.4	(96)	8.1	(89)	8.9	(93)	7.7	(64)	8.5	(47)
<b>▲ Policy Index</b>	3.2	(61)	25.1	(95)	8.9	(64)	9.4	(82)	8.0	(51)	8.7	(39)

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 Cumulative Performance vs. InvMetrics Public DB > \$1B Net

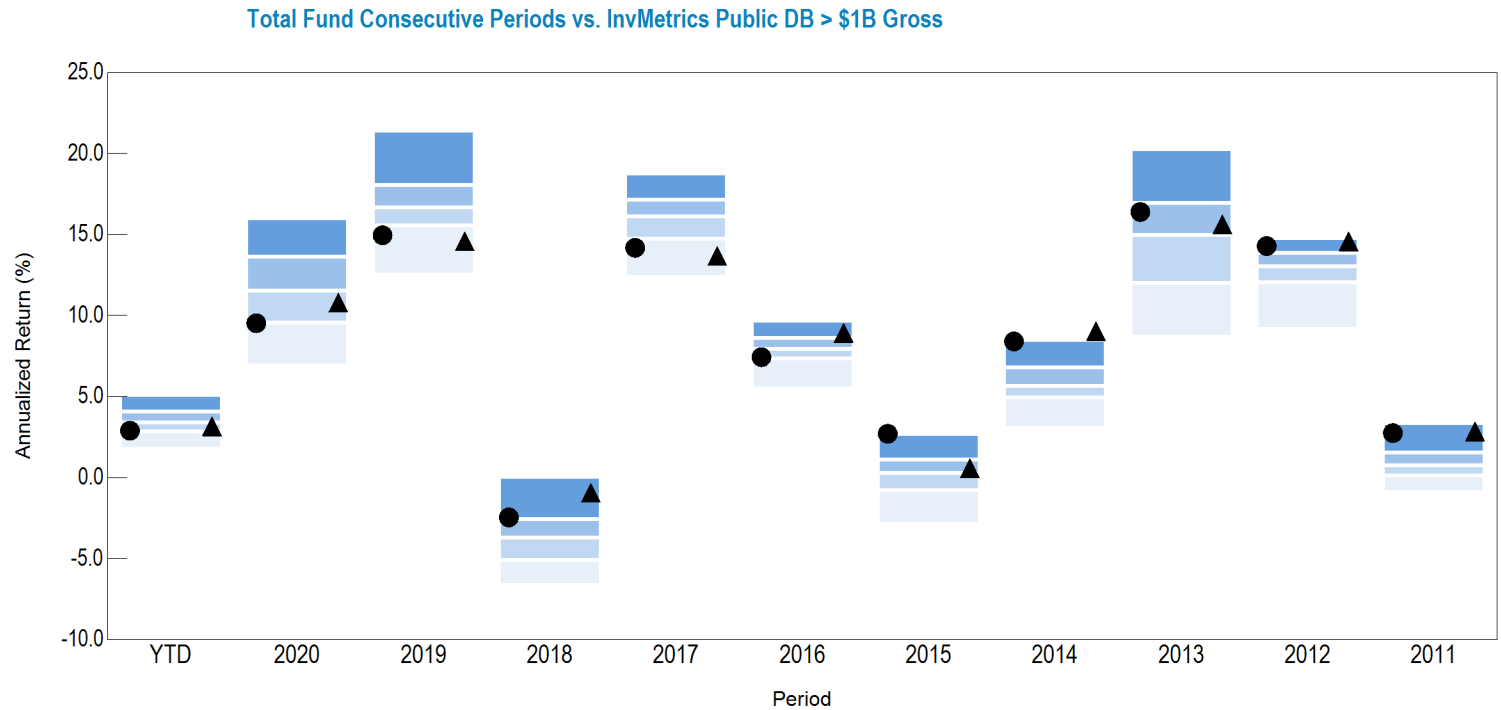


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	5.0		41.1		11.4		11.8		9.3		9.6	
<b>25th Percentile</b>	4.0		35.4		9.9		10.6		8.1		8.4	
<b>Median</b>	3.4		31.7		8.9		9.7		7.5		7.9	
<b>75th Percentile</b>	2.8		28.9		8.2		9.3		7.0		7.4	
<b>95th Percentile</b>	1.7		24.6		7.1		8.4		6.0		6.0	
<b># of Portfolios</b>	83		83		83		83		80		75	
<b>● Total Fund</b>	2.8	(73)	24.1	(98)	7.8	(88)	8.6	(91)	7.3	(62)	8.0	(45)
<b>▲ Policy Index</b>	3.2	(60)	25.1	(94)	8.9	(51)	9.4	(69)	8.0	(32)	8.7	(18)

# Total Fund

## Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: March 31, 2021



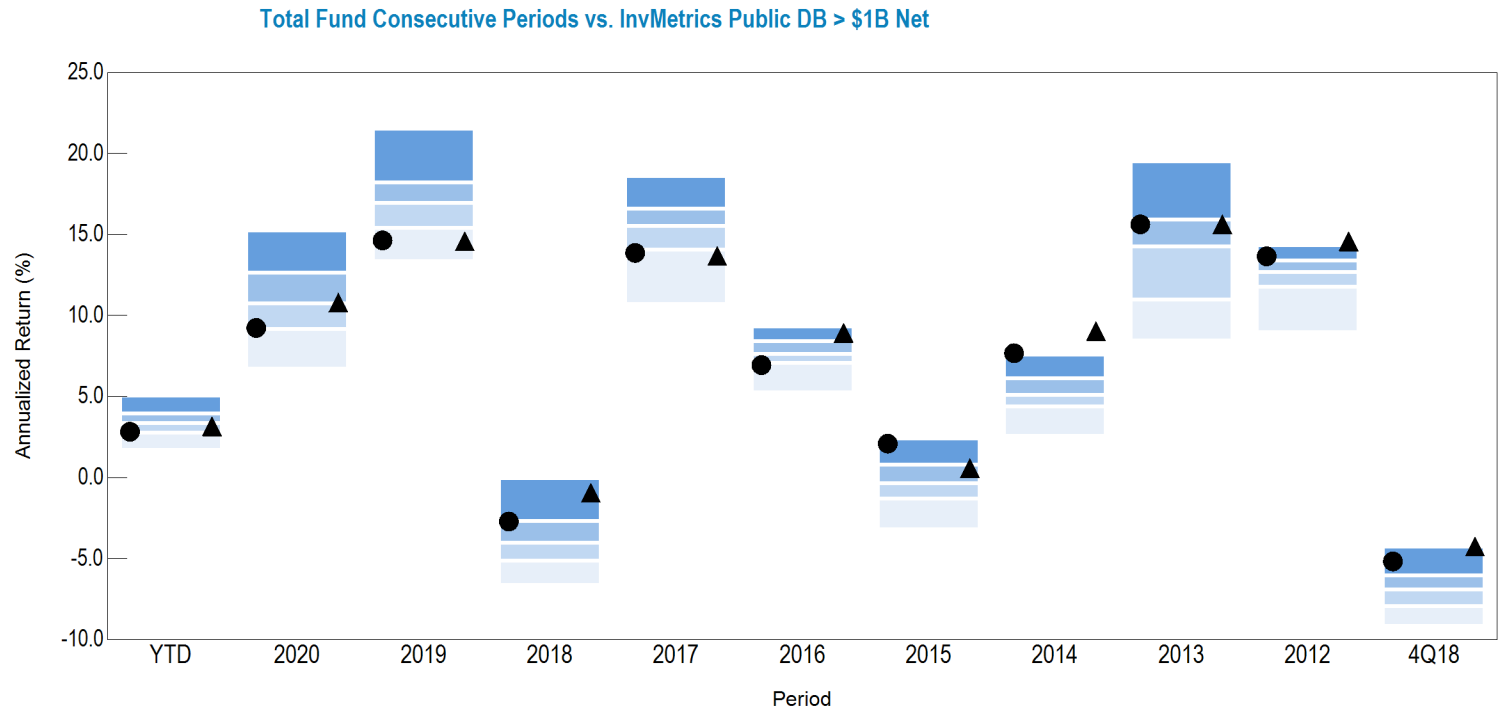
	YTD	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
<b>Return (Rank)</b>											
5th Percentile	5.1	16.0	21.4	0.0	18.8	9.7	2.7	8.5	20.2	14.7	3.3
25th Percentile	4.1	13.6	18.1	-2.6	17.2	8.6	1.1	6.8	17.0	13.9	1.6
Median	3.4	11.5	16.7	-3.7	16.2	8.0	0.3	5.7	15.0	13.0	0.8
75th Percentile	2.9	9.6	15.6	-5.1	14.8	7.4	-0.7	4.9	12.0	12.1	0.1
95th Percentile	1.8	6.9	12.5	-6.6	12.4	5.5	-2.8	3.1	8.7	9.2	-0.9
# of Portfolios	96	94	81	71	98	92	98	79	67	74	68
● Total Fund	2.9 (73)	9.5 (78)	15.0 (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)
▲ Policy Index	3.2 (61)	10.8 (60)	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)

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, 2021



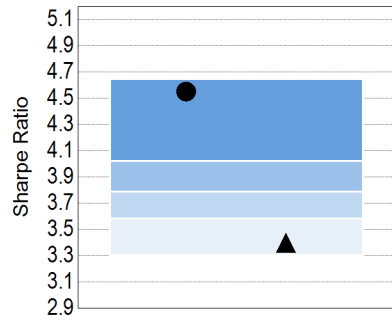
	YTD	2020	2019	2018	2017	2016	2015	2014	2013	2012	4Q18
<b>Return (Rank)</b>											
5th Percentile	5.0	15.2	21.5	-0.1	18.6	9.3	2.4	7.6	19.5	14.3	-4.3
25th Percentile	4.0	12.7	18.2	-2.7	16.6	8.4	0.8	6.1	16.0	13.4	-6.0
Median	3.4	10.8	17.0	-4.0	15.6	7.7	-0.4	5.1	14.3	12.7	-6.9
75th Percentile	2.8	9.2	15.4	-5.1	14.1	7.1	-1.3	4.4	11.0	11.8	-7.9
95th Percentile	1.7	6.8	13.4	-6.6	10.7	5.3	-3.2	2.6	8.5	9.0	-9.1
# of Portfolios	83	80	69	63	61	62	57	55	48	44	64
● Total Fund	2.8 (73)	9.2 (73)	14.6 (92)	-2.7 (27)	13.9 (81)	6.9 (78)	2.1 (12)	7.7 (5)	15.6 (33)	13.6 (21)	-5.2 (13)
▲ Policy Index	3.2 (60)	10.8 (49)	14.6 (92)	-0.9 (8)	13.7 (85)	8.9 (13)	0.6 (29)	9.0 (2)	15.6 (33)	14.6 (1)	-4.3 (5)



Total Fund  
Sharpe Ratio Ranking (Gross of Fees)

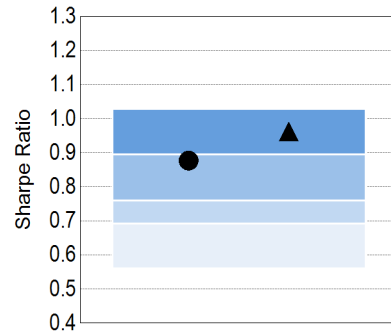
Period Ending: March 31, 2021

Sharpe Ratio  
1 Year



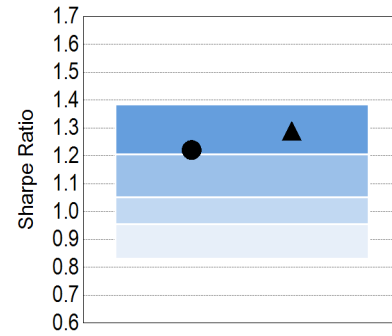
● Total Fund Value	4.6
Rank	7
▲ Policy Index Value	3.4
Rank	92
Universe	
5th %tile	4.6
25th %tile	4.0
Median	3.8
75th %tile	3.6
95th %tile	3.3

Sharpe Ratio  
3 Year



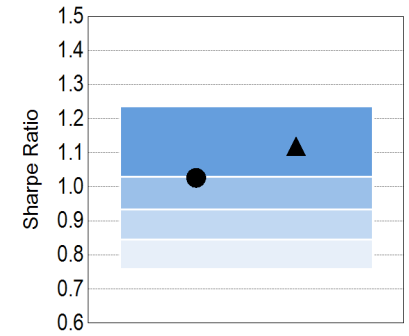
● Total Fund Value	0.9
Rank	28
▲ Policy Index Value	1.0
Rank	14
Universe	
5th %tile	1.0
25th %tile	0.9
Median	0.8
75th %tile	0.7
95th %tile	0.6

Sharpe Ratio  
5 Year



● Total Fund Value	1.2
Rank	24
▲ Policy Index Value	1.3
Rank	13
Universe	
5th %tile	1.4
25th %tile	1.2
Median	1.1
75th %tile	1.0
95th %tile	0.8

Sharpe Ratio  
10 Year



● Total Fund Value	1.0
Rank	27
▲ Policy Index Value	1.1
Rank	12
Universe	
5th %tile	1.2
25th %tile	1.0
Median	0.9
75th %tile	0.8
95th %tile	0.8

## **Domestic Equity Managers**

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# Jackson Square Partners Manager Portfolio Overview

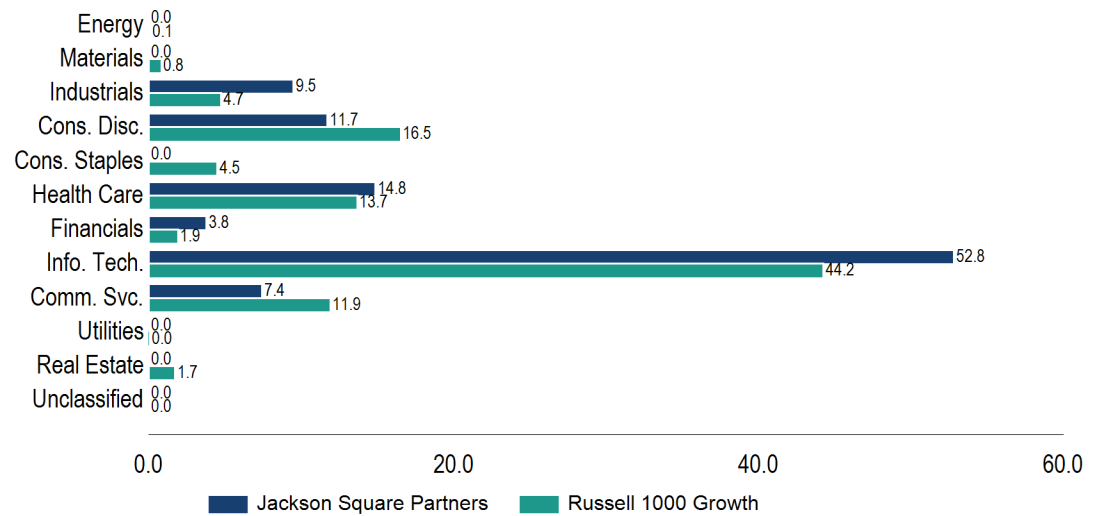
Period Ending: March 31, 2021

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 Prislín.

## Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	27	453
Weighted Avg. Market Cap. (\$B)	369.12	688.96
Median Market Cap. (\$B)	81.37	17.32
Price To Earnings	48.85	38.26
Price To Book	10.97	11.53
Price To Sales	9.14	5.46
Return on Equity (%)	10.45	36.90
Yield (%)	0.31	0.79
Beta	0.95	1.00

## Sector Allocation (%) vs Russell 1000 Growth



## Largest Holdings

	End Weight	Return
MICROSOFT CORP	8.91	6.25
UBER TECHNOLOGIES INC	6.63	6.88
AMAZON.COM INC	5.96	-5.00
VISA INC	5.80	-3.05
TWILIO INC	5.19	0.67
PAYPAL HOLDINGS INC	4.77	3.69
MASTERCARD INC	4.64	-0.12
CHARTER COMMUNICATIONS INC	4.39	-6.73
SERVICENOW INC	4.08	-9.14
EDWARDS LIFESCIENCES CORP	3.56	-8.32

## Top Contributors

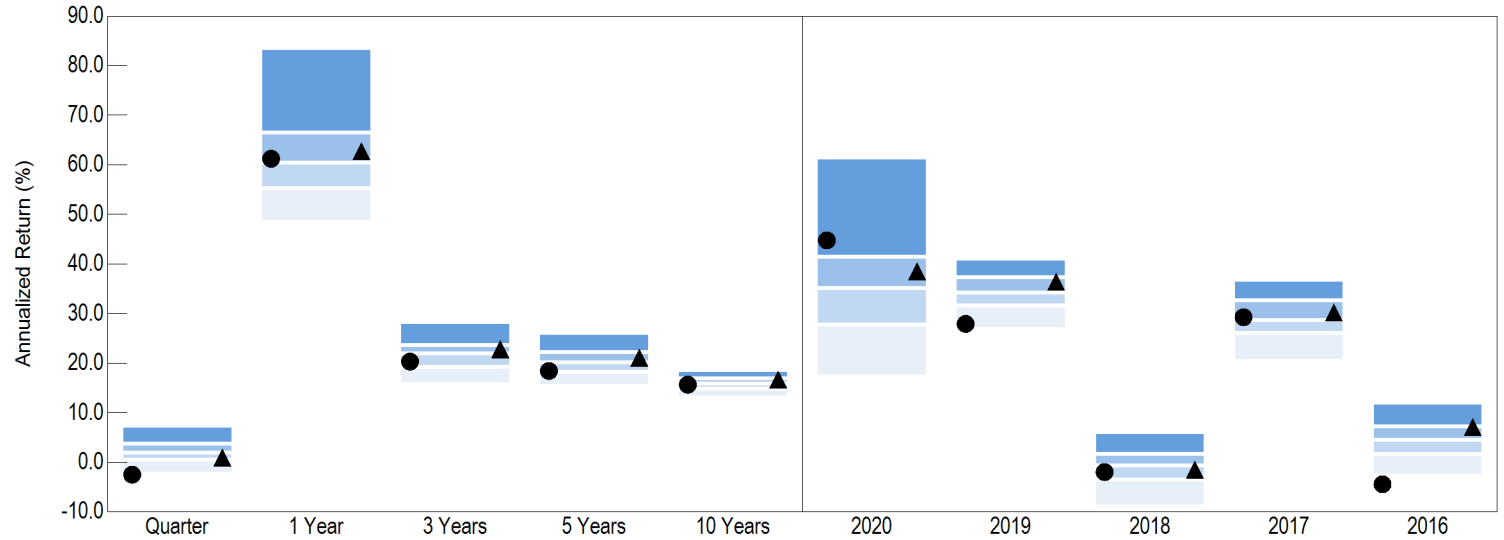
	Avg Wgt	Return	Contribution
KKR & CO INC	0.90	21.00	0.19
ALPHABET INC	1.00	17.68	0.18
MICROSOFT CORP	2.62	6.25	0.16
UBER TECHNOLOGIES INC	1.94	6.88	0.13
WASTE MANAGEMENT INC.	0.98	9.93	0.10
WIX.COM LTD	0.76	11.71	0.09
PAYPAL HOLDINGS INC	1.53	3.69	0.06
ILLUMINA INC	0.86	3.80	0.03
META FINANCIAL GRP INC	0.10	24.07	0.02
STARBUCKS CORP	0.85	2.58	0.02

## Bottom Contributors

	Avg Wgt	Return	Contribution
COUPA SOFTWARE INC	0.96	-24.91	-0.24
PAYCOM SOFTWARE INC	1.25	-18.17	-0.23
SERVICENOW INC	1.44	-9.14	-0.13
INTUITIVE SURGICAL INC	1.09	-9.68	-0.11
EDWARDS LIFESCIENCES CORP	1.21	-8.32	-0.10
DATADOG INC	0.65	-15.34	-0.10
CHARTER COMMUNICATIONS INC	1.47	-6.73	-0.10
AMAZON.COM INC	1.96	-5.00	-0.10
AUTODESK INC.	0.91	-9.23	-0.08
BALL CORP	0.83	-8.90	-0.07

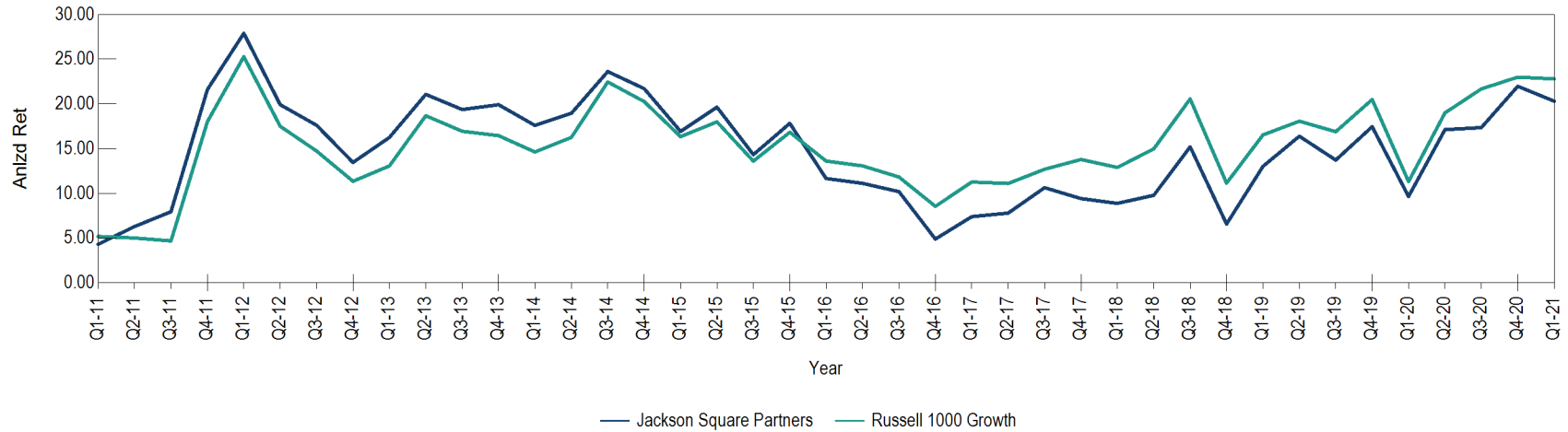
Unclassified sector allocation includes cash allocations.

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

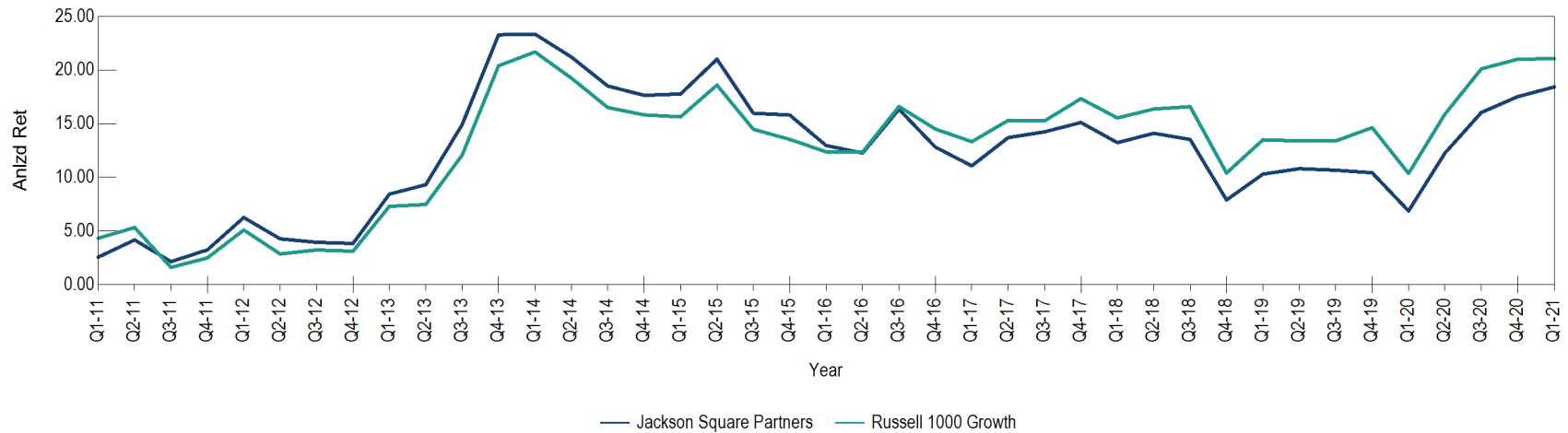


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016
5th Percentile	7.3	83.5	28.2	26.0	18.6	61.4	41.0	6.1	36.7	12.0
25th Percentile	3.8	66.5	23.8	22.3	17.0	41.6	37.3	1.7	32.7	7.3
Median	2.1	60.5	22.0	20.2	16.0	35.2	34.2	-0.6	28.8	4.6
75th Percentile	0.6	55.3	19.3	18.3	14.9	27.9	31.7	-3.5	26.2	1.8
95th Percentile	-2.2	48.4	15.8	15.4	13.1	17.4	26.9	-8.8	20.5	-2.7
# of Portfolios	259	259	254	234	210	263	253	255	265	282
● Jackson Square Partners	-2.5 (97)	61.2 (48)	20.3 (66)	18.4 (74)	15.7 (59)	44.8 (20)	27.9 (93)	-2.0 (59)	29.3 (47)	-4.4 (98)
▲ Russell 1000 Growth	0.9 (70)	62.7 (40)	22.8 (36)	21.0 (43)	16.6 (32)	38.5 (34)	36.4 (32)	-1.5 (57)	30.2 (42)	7.1 (26)

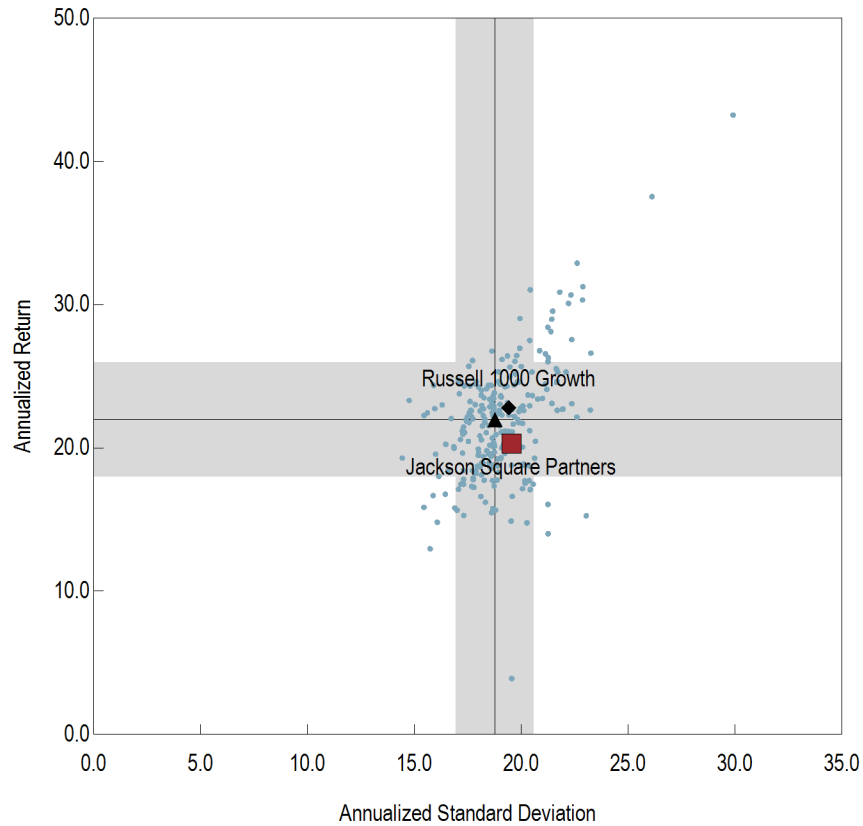
Rolling 3 Year Annualized Return (%)



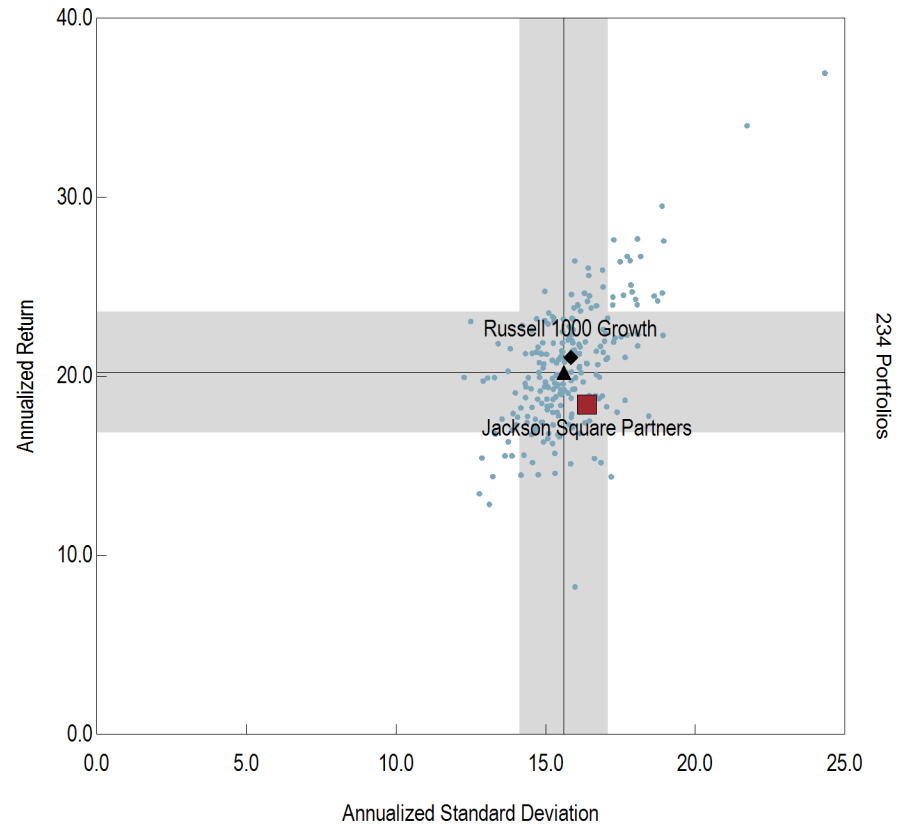
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	20.3%	19.5%	1.0
Russell 1000 Growth	22.8%	19.4%	1.1
eV US Large Cap Growth Equity Gross Median	22.0%	18.8%	1.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	18.4%	16.4%	1.1
Russell 1000 Growth	21.0%	15.8%	1.3
eV US Large Cap Growth Equity Gross Median	20.2%	15.6%	1.2

# Boston Partners Manager Portfolio Overview

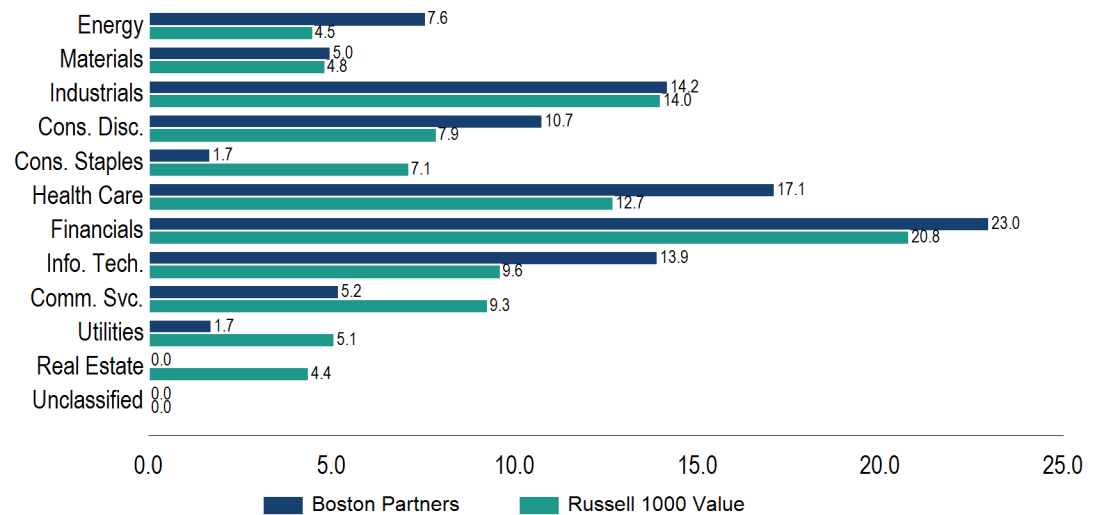
Period Ending: March 31, 2021

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	95	849
Weighted Avg. Market Cap. (\$B)	154.49	146.56
Median Market Cap. (\$B)	41.31	12.99
Price To Earnings	22.88	24.09
Price To Book	2.58	2.72
Price To Sales	1.73	2.29
Return on Equity (%)	12.07	10.75
Yield (%)	1.72	2.01
Beta	1.10	1.00

## Sector Allocation (%) vs Russell 1000 Value



## Largest Holdings

	End Weight	Return
JPMORGAN CHASE & CO	3.40	20.66
JOHNSON & JOHNSON	3.26	5.08
BANK OF AMERICA CORP	3.01	28.28
BERKSHIRE HATHAWAY INC	2.81	10.18
CISCO SYSTEMS INC	2.80	16.50
CIGNA CORP	2.10	16.61
AUTOZONE INC	2.06	18.46
CONOCOPHILLIPS	2.02	33.69
DEERE & CO	1.98	39.39
TRUIST FINANCIAL CORP	1.93	22.71

## Top Contributors

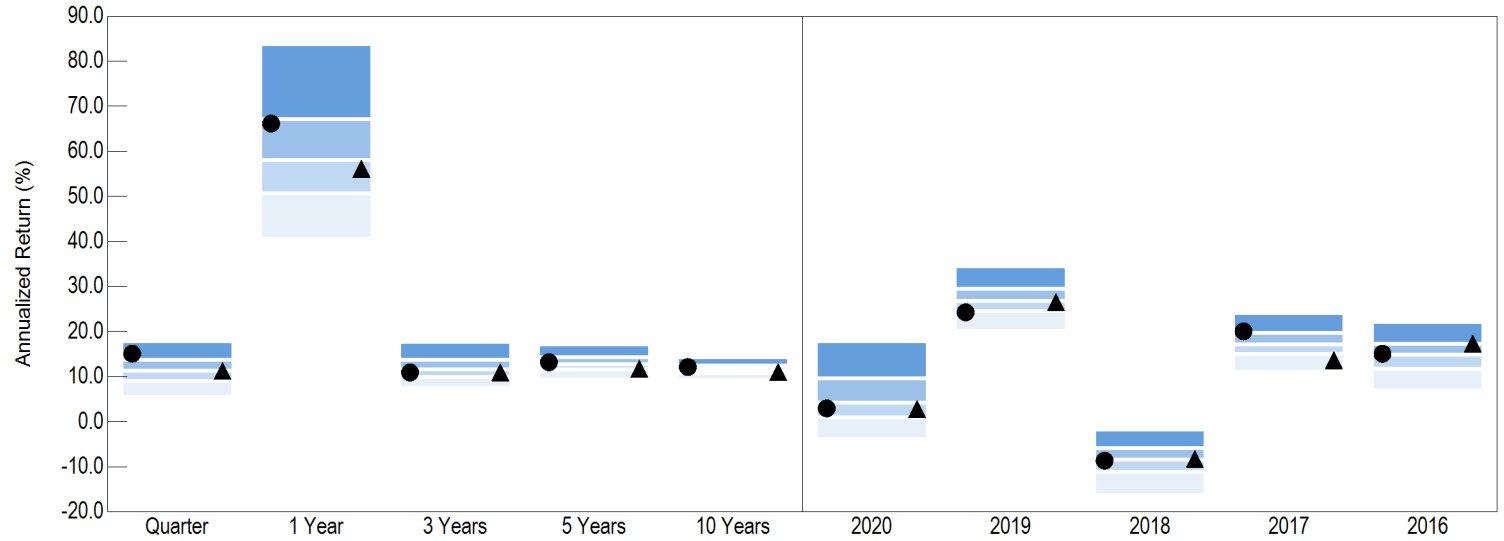
	Avg Wgt	Return	Contribution
APPLIED MATERIALS INC.	0.50	55.09	0.28
BANK OF AMERICA CORP	0.91	28.28	0.26
DEERE & CO	0.60	39.39	0.24
JPMORGAN CHASE & CO	1.09	20.66	0.23
CONOCOPHILLIPS	0.59	33.69	0.20
LAM RESEARCH CORP	0.63	26.34	0.17
TRUIST FINANCIAL CORP	0.61	22.71	0.14
CIGNA CORP	0.81	16.61	0.13
CISCO SYSTEMS INC	0.79	16.50	0.13
MOHAWK INDUSTRIES INC.	0.36	36.44	0.13

## Bottom Contributors

	Avg Wgt	Return	Contribution
PETROLEO BRASILEIRO S.A.- PETROBRAS	0.20	-24.49	-0.05
YAMANA GOLD INC	0.20	-23.52	-0.05
VIATRIS INC	0.14	-25.45	-0.04
T-MOBILE US INC	0.49	-7.09	-0.03
NOVARTIS AG	0.56	-6.01	-0.03
VISTRA CORP	0.28	-9.33	-0.03
EDISON INTERNATIONAL	0.34	-5.68	-0.02
SS&C TECHNOLOGIES HOLDINGS INC	0.29	-3.73	-0.01
KINROSS GOLD CORP	0.11	-8.71	-0.01
FMC CORP.	0.21	-3.34	-0.01

Unclassified sector allocation includes cash allocations.

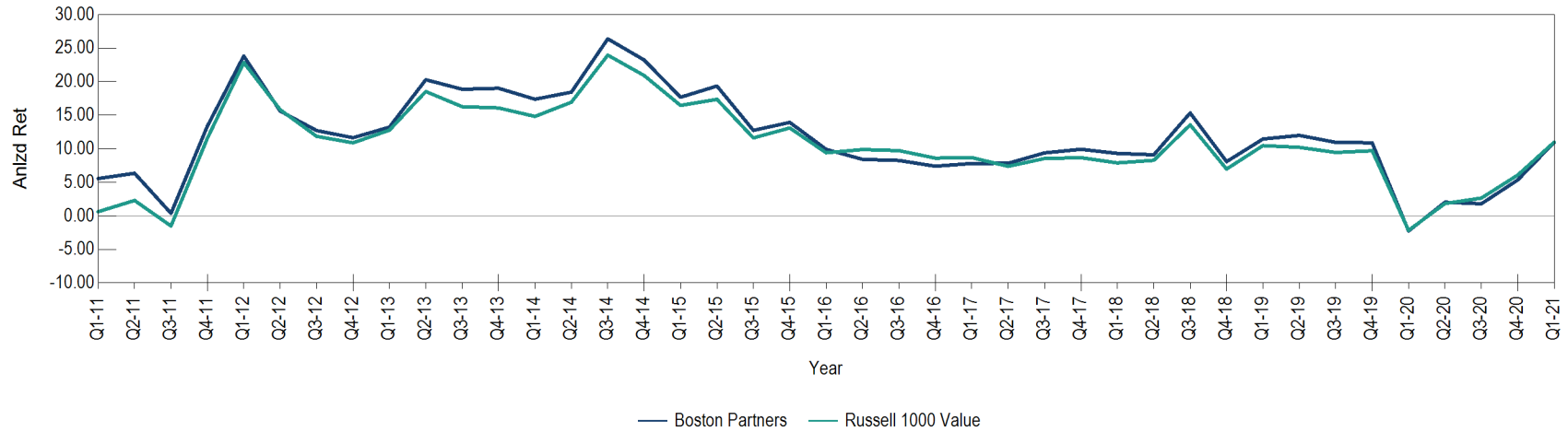
Boston Partners vs. eV US Large Cap Value Equity Gross Universe



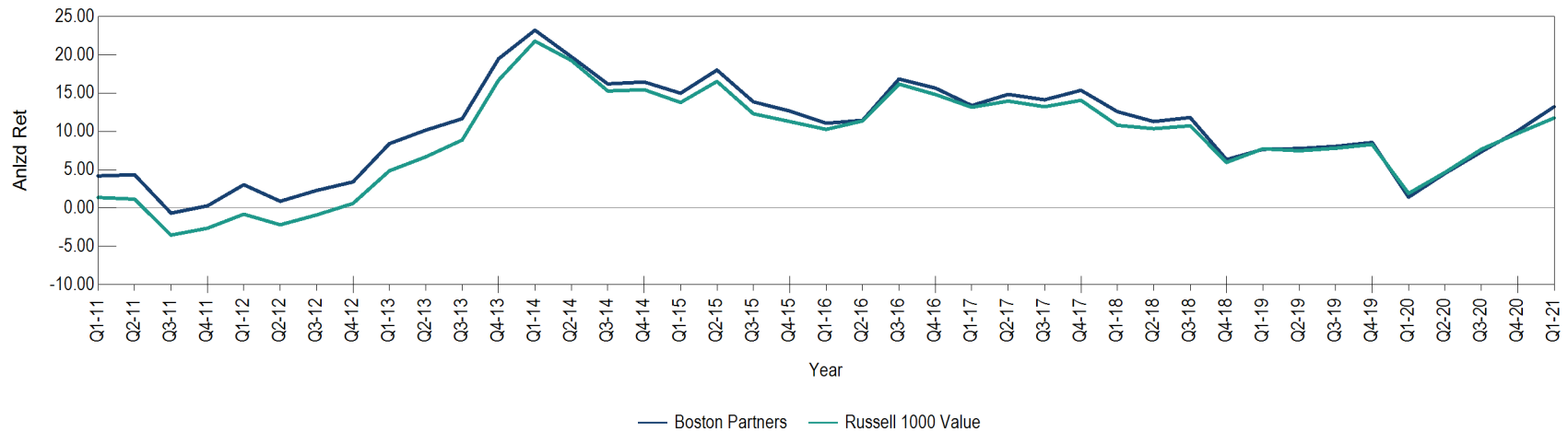
	Return (Rank)										
5th Percentile	17.8	83.7	17.7	17.0	14.3	17.8	34.4	-1.8	24.0	22.1	
25th Percentile	13.8	67.2	13.9	14.3	12.6	9.6	29.6	-5.8	19.8	17.4	
Median	11.4	58.2	11.7	12.8	11.7	4.2	26.9	-8.3	17.2	15.0	
75th Percentile	9.1	50.8	10.0	11.7	10.8	1.1	24.5	-11.1	15.1	11.8	
95th Percentile	5.5	40.6	7.6	9.4	9.3	-3.8	20.3	-16.1	11.2	7.0	
# of Portfolios	327	326	320	305	260	326	331	336	342	346	
● Boston Partners	15.1 (16)	66.1 (29)	10.9 (61)	13.2 (43)	12.1 (38)	3.0 (61)	24.3 (77)	-8.7 (55)	20.1 (23)	15.1 (50)	
▲ Russell 1000 Value	11.3 (53)	56.1 (57)	11.0 (60)	11.7 (73)	11.0 (70)	2.8 (62)	26.5 (54)	-8.3 (50)	13.7 (87)	17.3 (26)	



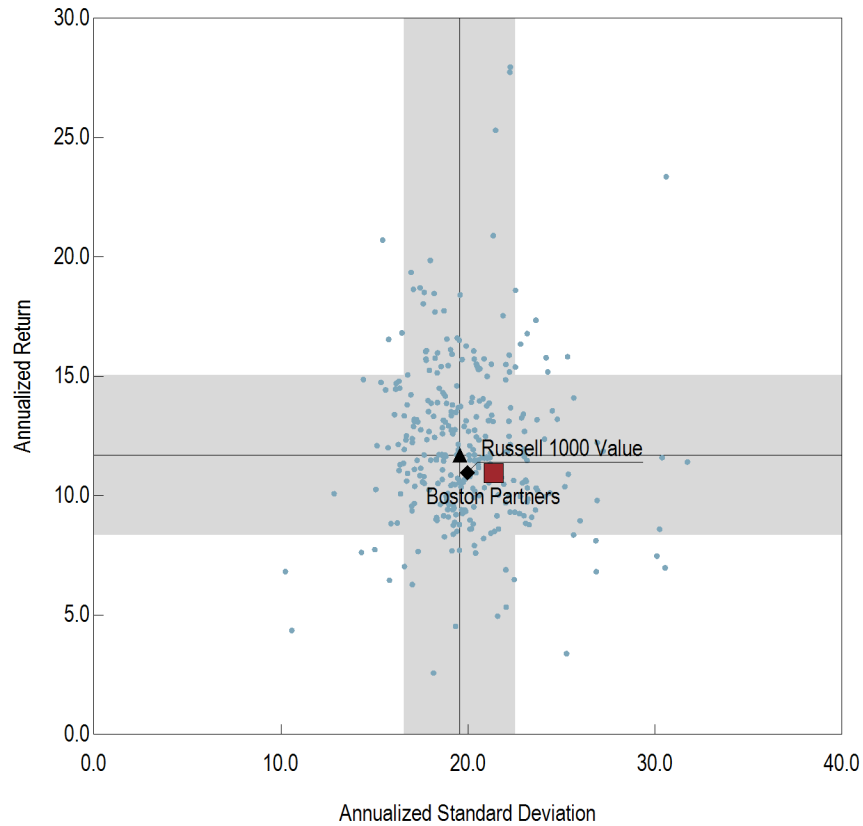
Rolling 3 Year Annualized Return (%)



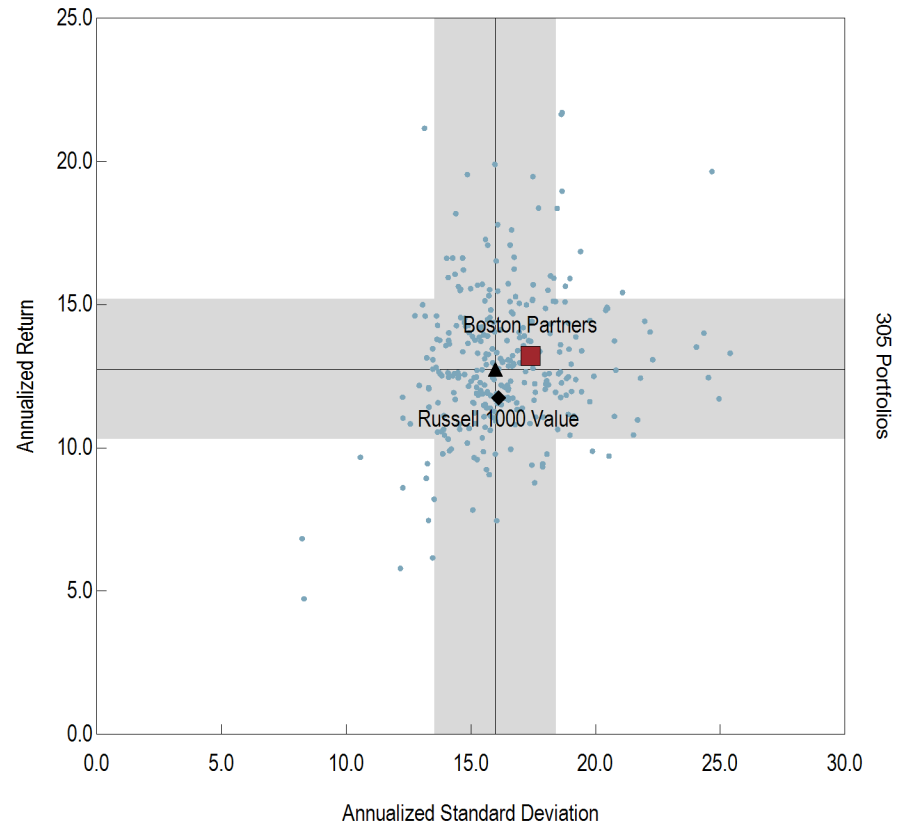
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	10.9%	21.4%	0.4
Russell 1000 Value	11.0%	20.0%	0.5
eV US Large Cap Value Equity Gross Median	11.7%	19.6%	0.5

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	13.2%	17.4%	0.7
Russell 1000 Value	11.7%	16.1%	0.7
eV US Large Cap Value Equity Gross Median	12.8%	16.0%	0.7

# Emerald Advisers Manager Portfolio Overview

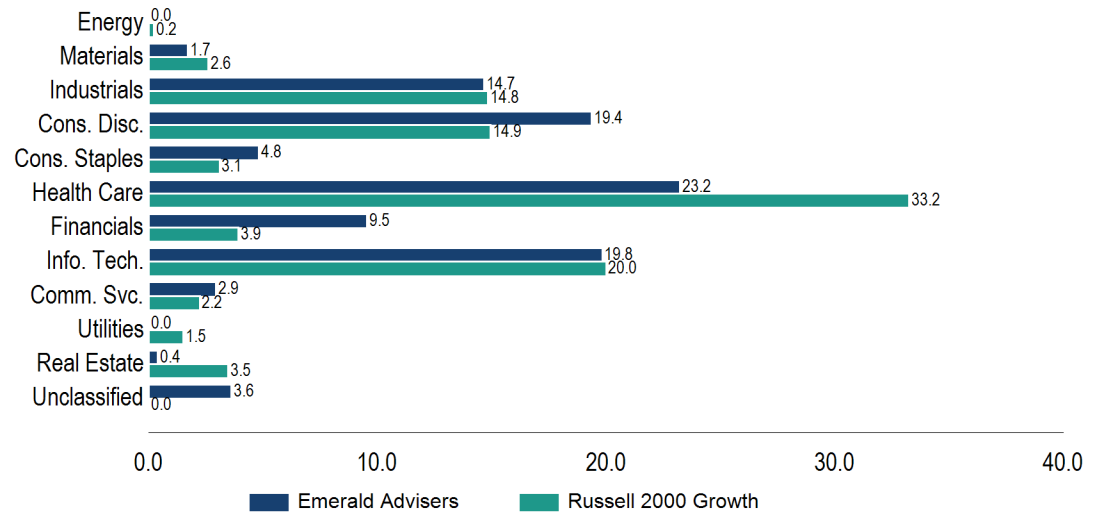
Period Ending: March 31, 2021

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	118	1,114
Weighted Avg. Market Cap. (\$B)	4.00	4.23
Median Market Cap. (\$B)	3.27	1.25
Price To Earnings	38.88	33.45
Price To Book	4.68	5.29
Price To Sales	3.46	3.13
Return on Equity (%)	-13.21	-8.16
Yield (%)	0.37	0.39
Beta	1.01	1.00

## Sector Allocation (%) vs Russell 2000 Growth



## Largest Holdings

	End Weight	Return
FRESHPET INC	2.44	11.85
NEOGENOMICS INC	2.08	-10.42
CHART INDUSTRIES INC	2.03	20.85
CHURCHILL DOWNS INC	1.95	16.75
CHEGG INC	1.86	-5.17
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	1.83	5.41
VARONIS SYSTEMS INC	1.83	-5.86
RAPID7 INC	1.77	-17.25
TETRA TECH INC	1.68	17.37
JACK IN THE BOX INC.	1.67	18.75

## Top Contributors

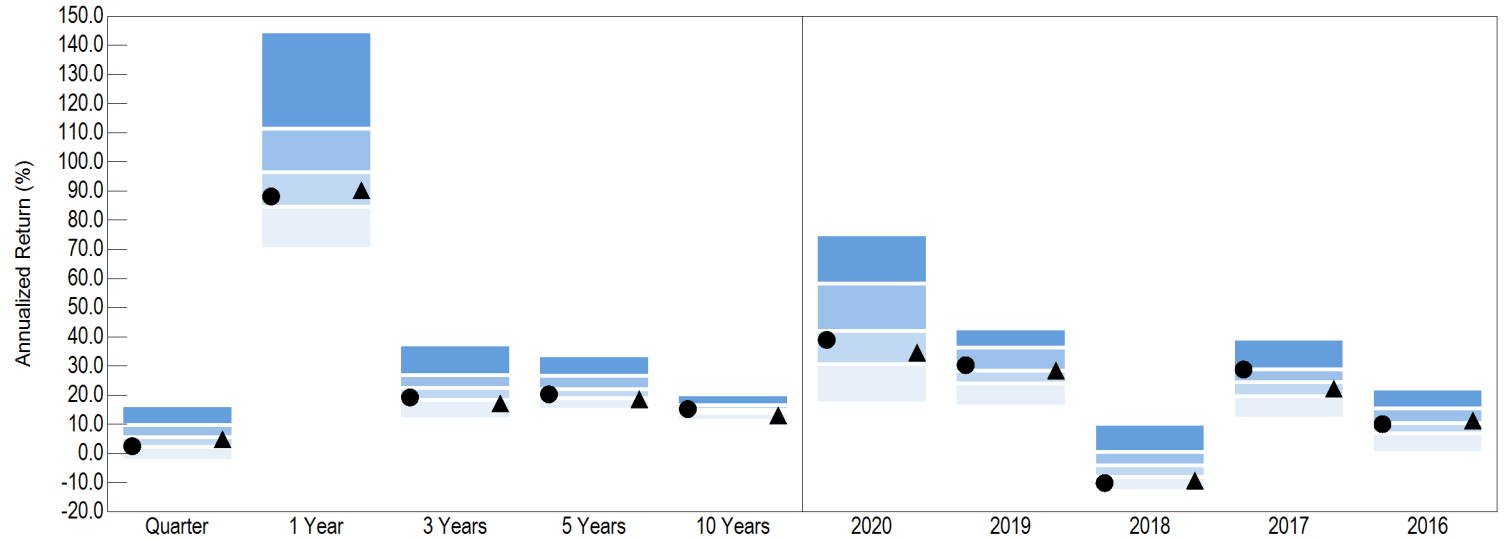
	Avg Wgt	Return	Contribution
PACIFIC PREMIER BANCORP INC	0.41	39.81	0.17
TRANSMEDICS GROUP INC	0.15	108.49	0.16
MONTROSE ENVIRONMENTAL GROUP INC	0.20	62.11	0.13
CHART INDUSTRIES INC	0.58	20.85	0.12
ONTO INNOVATION INC	0.28	38.19	0.11
SEAWORLD ENTERTAINMENT INC	0.17	57.23	0.10
CHUY'S HOLDINGS INC	0.15	67.31	0.10
DICK'S SPORTING GOODS INC.	0.27	36.11	0.10

## Bottom Contributors

	Avg Wgt	Return	Contribution
IMMUNOVANT INC	0.32	-65.27	-0.21
RAPID7 INC	0.74	-17.25	-0.13
SVMK INC	0.42	-28.30	-0.12
TURNING POINT THERAPEUTICS INC	0.50	-22.37	-0.11
KARYOPHARM THERAPEUTICS INC	0.31	-32.04	-0.10
LIVERAMP HOLDINGS INC	0.33	-29.12	-0.10
PALOMAR HOLDINGS INC	0.39	-24.54	-0.09
NEOGENOMICS INC	0.80	-10.42	-0.08
REPLIMUNE GROUP INC	0.40	-20.03	-0.08
Q2 HOLDINGS INC	0.33	-20.81	-0.07

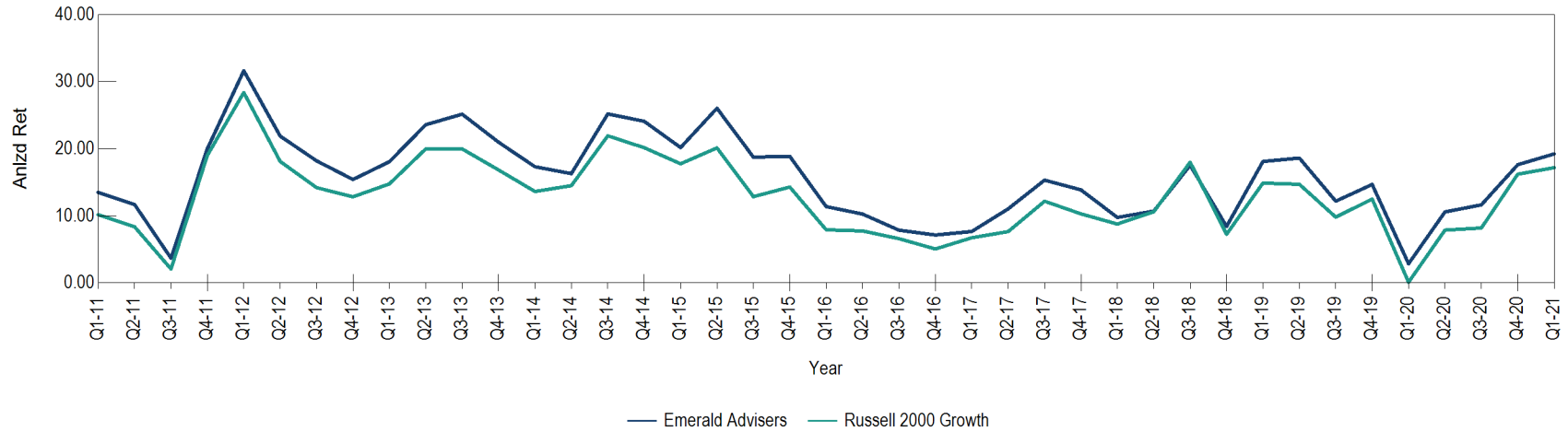
Unclassified sector allocation includes cash allocations.

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

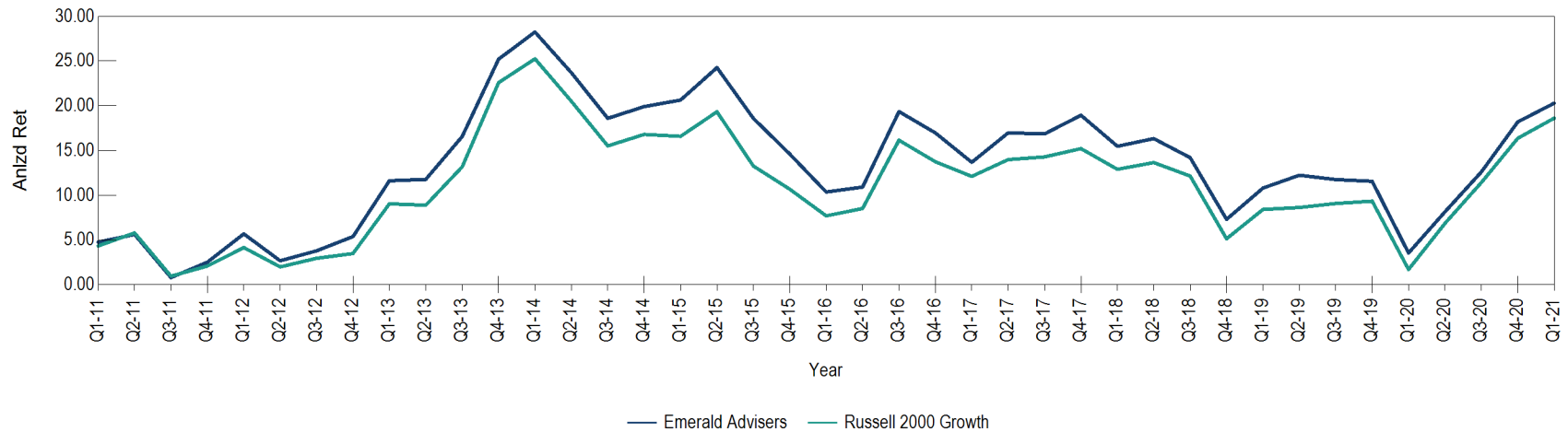


	Return (Rank)										
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016	
5th Percentile	16.4	144.6	37.2	33.5	20.2	75.0	42.8	10.2	39.2	22.2	
25th Percentile	9.9	111.6	26.9	26.9	16.8	58.3	36.4	0.7	28.9	15.5	
Median	5.7	96.6	22.6	22.1	15.2	42.2	28.5	-3.9	24.6	10.6	
75th Percentile	2.3	84.7	18.5	19.1	13.9	30.8	24.2	-7.9	19.8	7.1	
95th Percentile	-2.5	70.3	11.8	15.1	11.4	17.4	16.2	-12.8	12.1	0.2	
# of Portfolios	157	157	155	149	135	161	157	164	174	170	
● Emerald Advisers	2.5 (73)	88.1 (66)	19.2 (71)	20.3 (64)	15.2 (50)	39.0 (57)	30.3 (45)	-10.1 (85)	28.8 (26)	10.1 (54)	
▲ Russell 2000 Growth	4.9 (55)	90.2 (62)	17.2 (84)	18.6 (78)	13.0 (86)	34.6 (66)	28.5 (51)	-9.3 (80)	22.2 (62)	11.3 (49)	

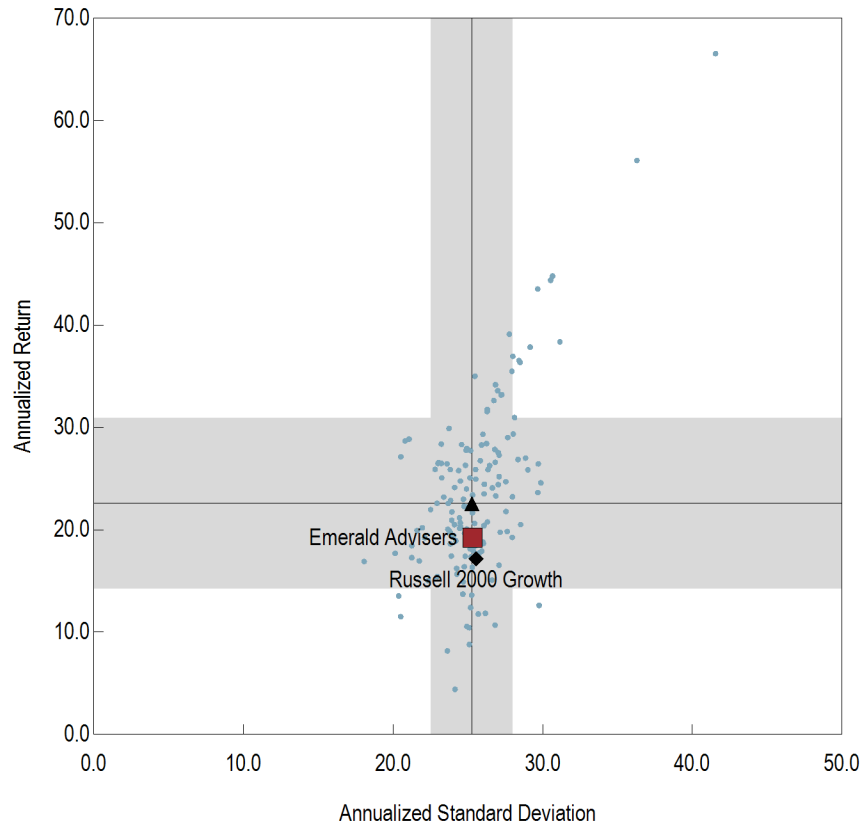
Rolling 3 Year Annualized Return (%)



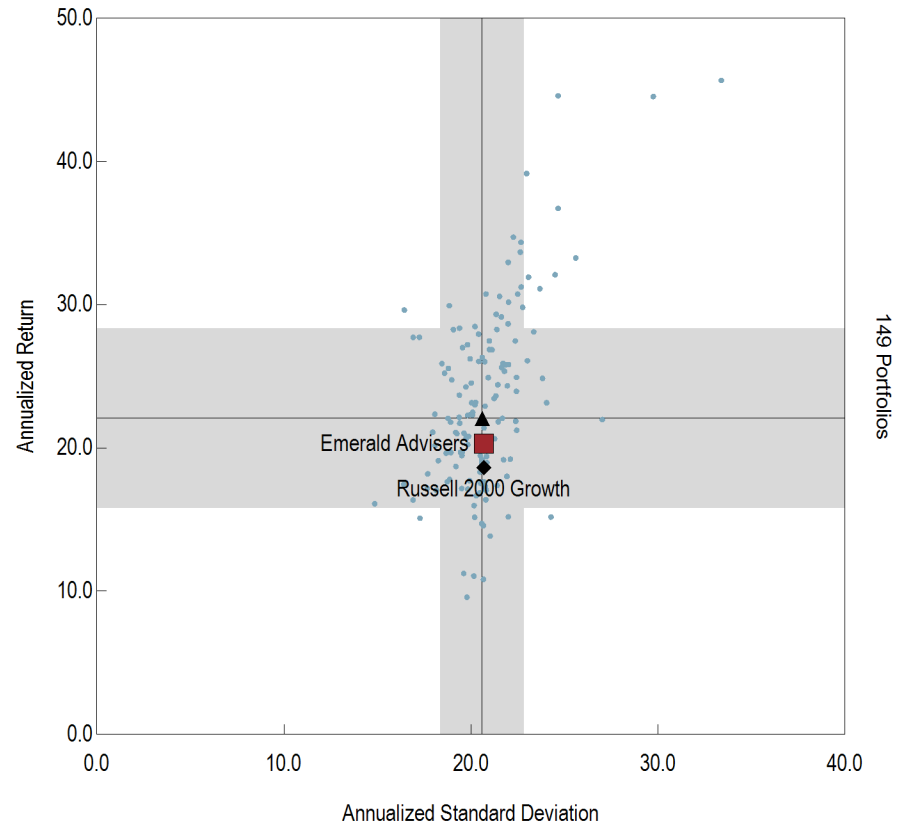
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	19.2%	25.3%	0.7
Russell 2000 Growth	17.2%	25.5%	0.6
eV US Small Cap Growth Equity Gross Median	22.6%	25.3%	0.8

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	20.3%	20.7%	0.9
Russell 2000 Growth	18.6%	20.7%	0.8
eV US Small Cap Growth Equity Gross Median	22.1%	20.6%	1.1

# Ceredex Manager Portfolio Overview

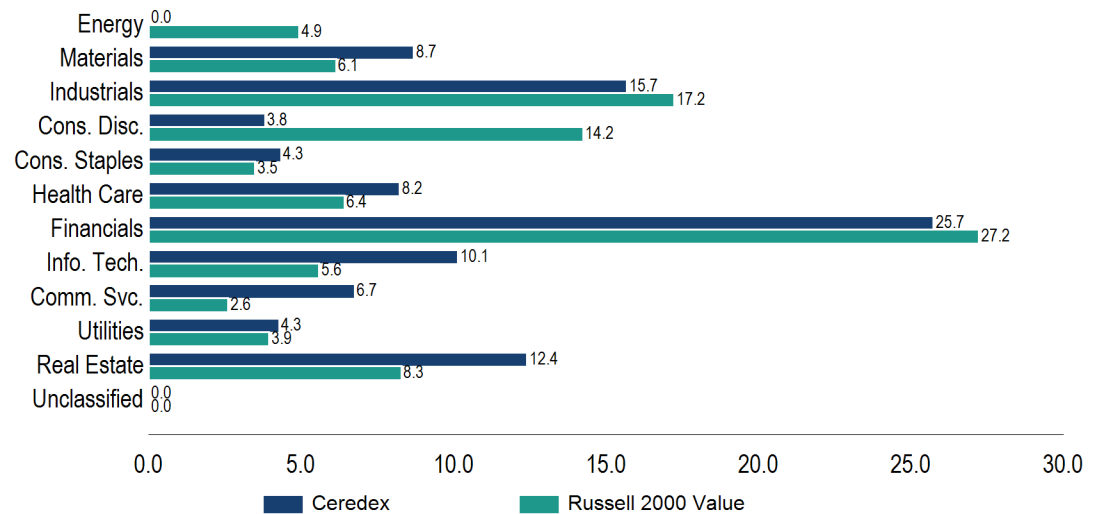
Period Ending: March 31, 2021

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	1,474
Weighted Avg. Market Cap. (\$B)	6.30	3.16
Median Market Cap. (\$B)	5.54	0.94
Price To Earnings	27.14	19.34
Price To Book	2.80	1.97
Price To Sales	2.17	1.30
Return on Equity (%)	11.27	-5.98
Yield (%)	2.03	1.46
Beta	0.86	1.00

## Sector Allocation (%) vs Russell 2000 Value



## Largest Holdings

	End Weight	Return
INTERPUBLIC GROUP OF COS INC (THE)	4.97	25.43
APTARGROUP INC.	4.37	3.76
HILL-ROM HOLDINGS INC	3.94	13.02
POWER INTEGRATIONS INC	3.75	-0.31
EVERCORE INC	3.70	20.77
KEMPER CORP	3.66	4.19
PHYSICIANS REALTY TRUST	3.36	1.94
FIRST CITIZENS BANCSHARES INC	3.33	45.62
HEALTHCARE TRUST OF AMERICA INC	3.31	2.55
STANTEC INC	3.23	32.43

## Top Contributors

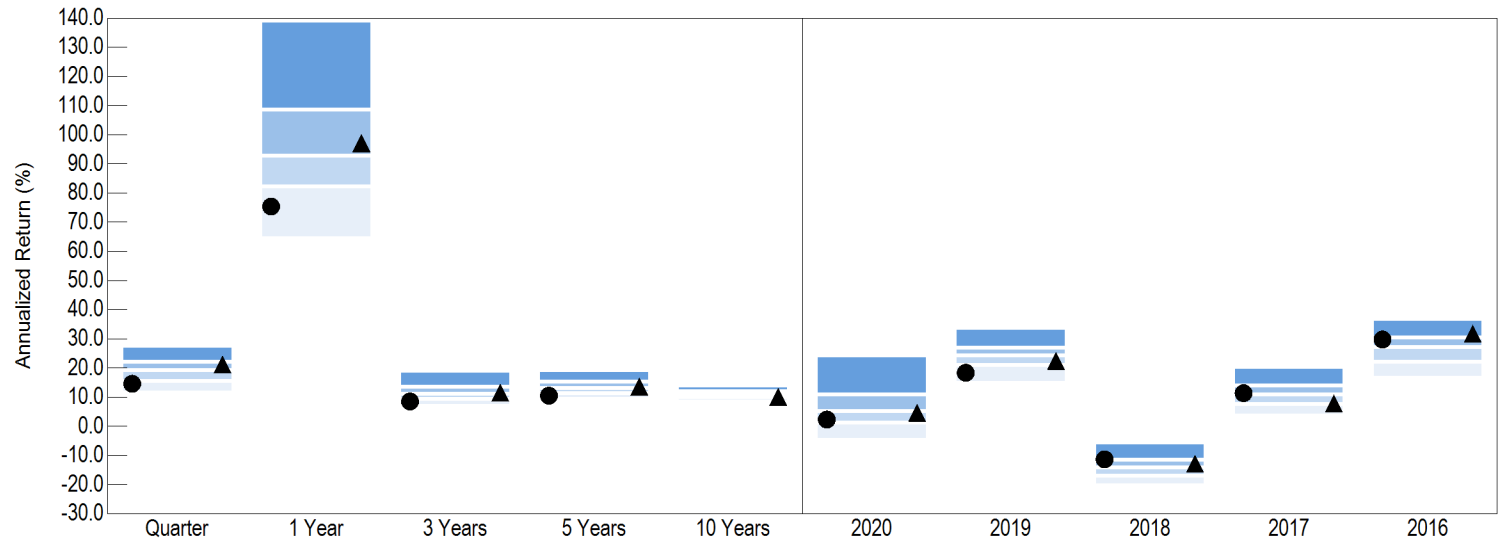
	Avg Wgt	Return	Contribution
SLM CORP	1.51	45.31	0.68
INTERPUBLIC GROUP OF COS INC (THE)	1.61	25.43	0.41
FIRST CITIZENS BANCSHARES INC	0.78	45.62	0.35
EVERCORE INC	1.18	20.77	0.24
FLIR SYSTEMS INC	0.80	29.25	0.23
JEFFERIES FINANCIAL GROUP INC	0.88	23.22	0.20
STANTEC INC	0.61	32.43	0.20
HILL-ROM HOLDINGS INC	1.27	13.02	0.17
MKS INSTRUMENTS INC	0.65	23.39	0.15
CONMED CORP	0.86	16.79	0.14

## Bottom Contributors

	Avg Wgt	Return	Contribution
ESSENTIAL UTILITIES INC	0.76	-4.87	-0.04
NATIONAL INSTRUMENTS CORP	0.50	-1.09	-0.01
POWER INTEGRATIONS INC	1.44	-0.31	0.00
REYNOLDS CONSUMER PRODUCTS INC	0.29	-0.09	0.00
SOUTH STATE CORP	0.05	9.24	0.00
SENSIENT TECHNOLOGIES CORP	0.08	6.28	0.01
IDACORP INC.	0.16	4.94	0.01
DOLBY LABORATORIES INC	0.50	1.88	0.01
AMERICAN CAMPUS COMMUNITIES INC	0.49	2.10	0.01

Unclassified sector allocation includes cash allocations.

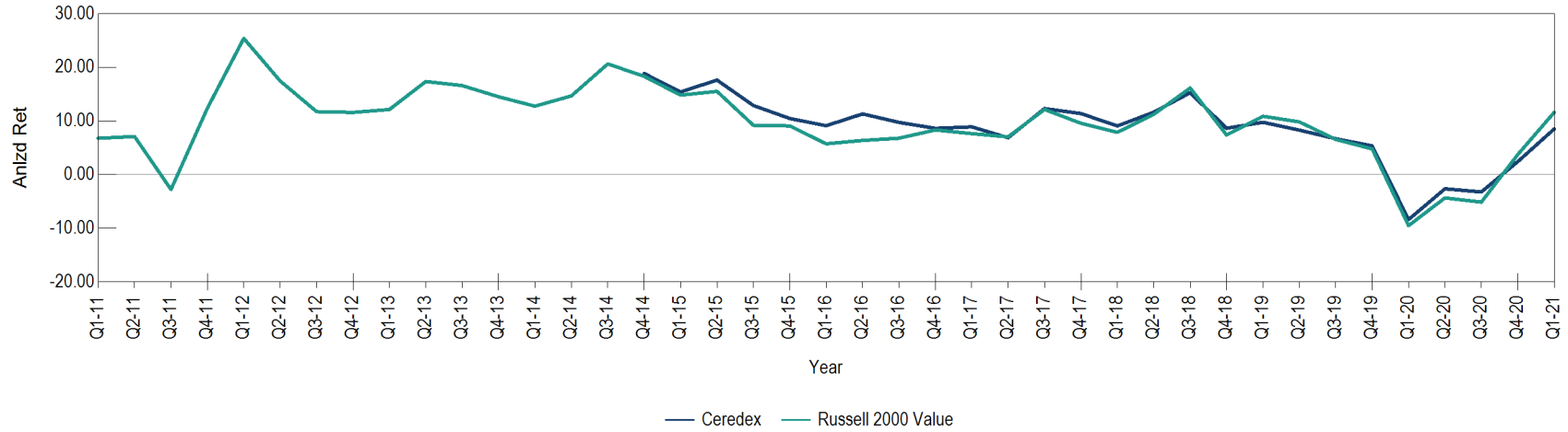
Ceredex vs. eV US Small Cap Value Equity Gross Universe



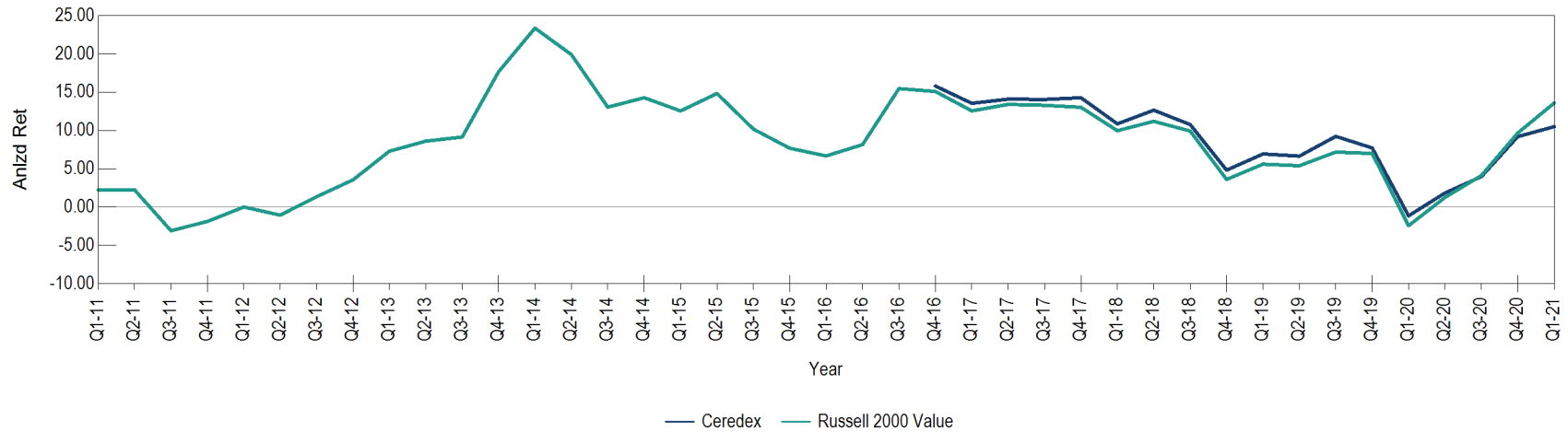
	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016
5th Percentile	27.5	139.1	18.9	19.1	14.0	24.2	33.6	-5.7	20.2	36.7
25th Percentile	22.3	108.6	13.6	15.3	12.2	11.1	27.0	-11.4	14.1	30.7
Median	19.3	92.9	11.2	13.2	11.1	5.3	24.4	-14.0	11.1	27.2
75th Percentile	15.6	82.3	9.6	11.5	10.3	1.3	21.2	-16.7	7.8	22.2
95th Percentile	11.8	64.7	7.1	9.5	8.7	-4.6	15.0	-20.2	3.7	16.8
# of Portfolios	215	214	206	201	177	219	217	220	224	222
● Ceredex	14.6 (82)	75.4 (87)	8.5 (85)	10.5 (89)	-- (--)	2.3 (69)	18.4 (87)	-11.3 (25)	11.4 (48)	29.8 (32)
▲ Russell 2000 Value	21.2 (33)	97.1 (43)	11.6 (46)	13.6 (45)	10.1 (81)	4.6 (53)	22.4 (69)	-12.9 (39)	7.8 (75)	31.7 (17)

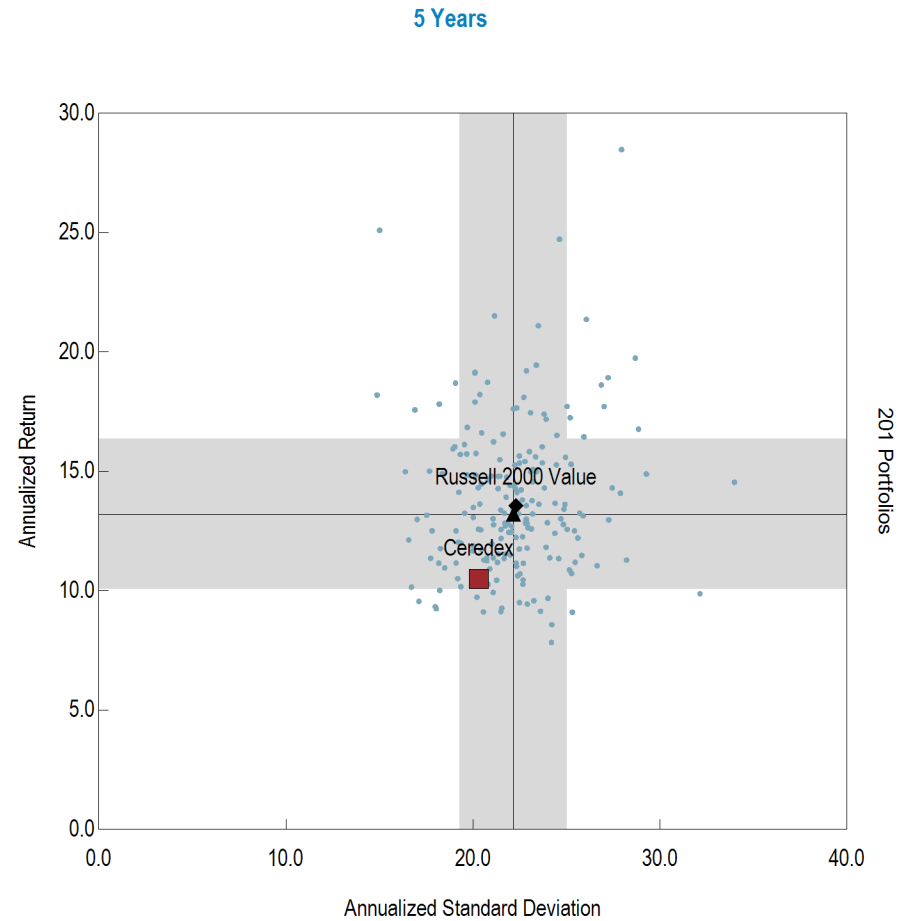
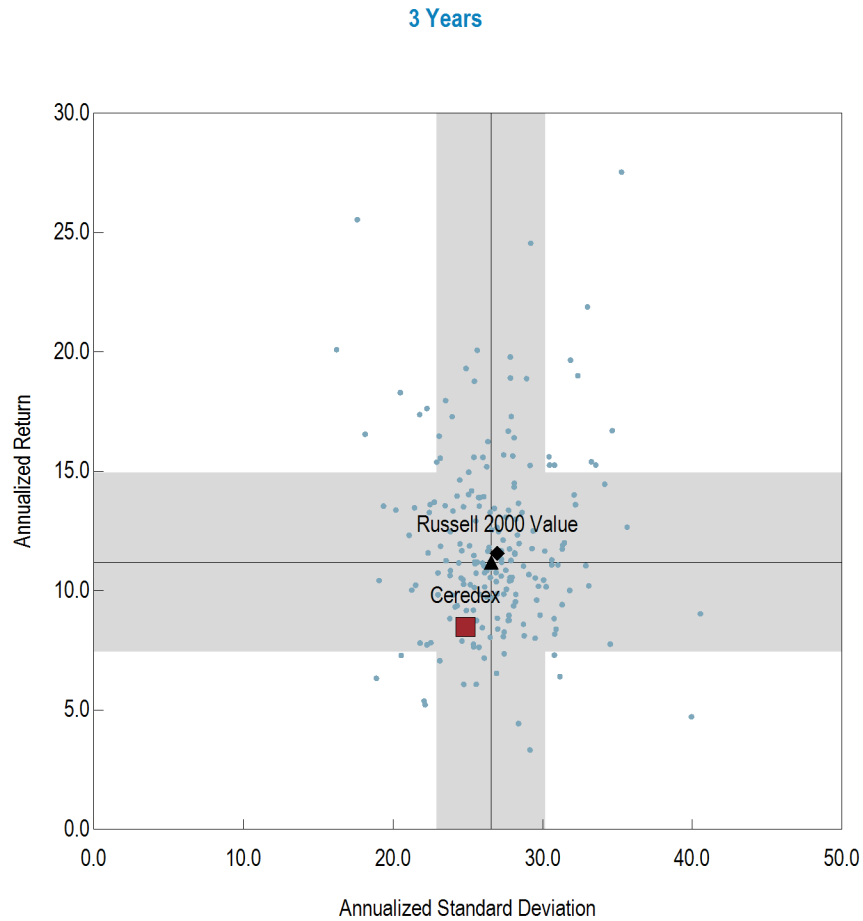


Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





	<b>3 Years</b>		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	8.5%	24.8%	0.3
Russell 2000 Value	11.6%	27.0%	0.4
eV US Small Cap Value Equity Gross Median	11.2%	26.6%	0.4

	<b>5 Years</b>		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	10.5%	20.3%	0.5
Russell 2000 Value	13.6%	22.3%	0.6
eV US Small Cap Value Equity Gross Median	13.2%	22.2%	0.5

# International Equity Managers

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# Pyrford Manager Portfolio Overview

Period Ending: March 31, 2021

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.

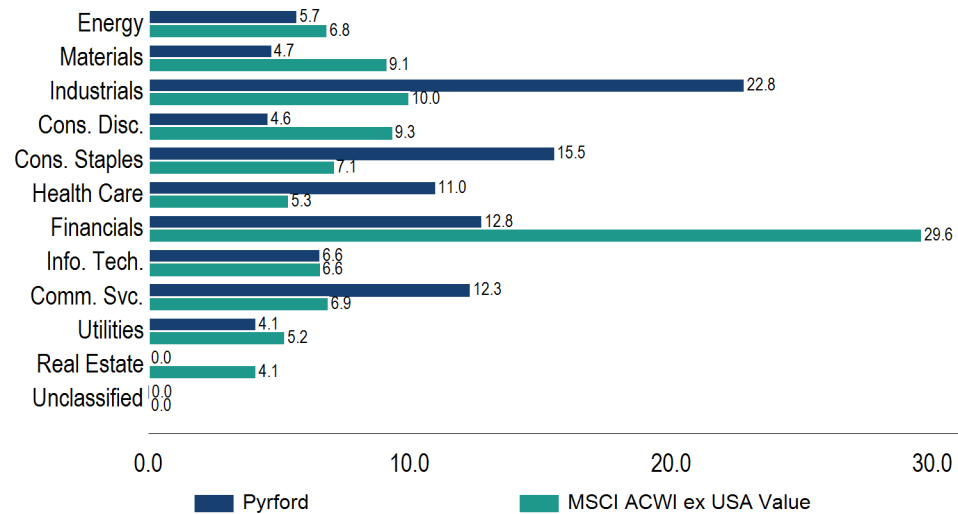
## Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Value
Number of Holdings	71	1,593
Weighted Avg. Market Cap. (\$B)	64.02	61.77
Median Market Cap. (\$B)	30.16	9.06
Price To Earnings	19.30	16.24
Price To Book	2.36	1.85
Price To Sales	1.58	0.95
Return on Equity (%)	12.62	6.99
Yield (%)	3.53	3.22
Beta	0.71	1.00

## Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Totals</b>		
Developed	92.2%	70.5%
Emerging*	7.8%	29.5%
<b>Top 10 Largest Countries</b>		
United Kingdom	17.7%	11.8%
Japan	14.8%	15.5%
Switzerland	10.9%	3.8%
Australia	9.5%	4.8%
Germany	9.2%	7.4%
France	7.8%	7.3%
Singapore	6.2%	0.7%
Hong Kong	4.8%	2.0%
Netherlands	3.3%	1.2%
Malaysia*	2.9%	0.5%
<b>Total-Top 10 Largest Countries</b>	<b>87.1%</b>	<b>54.9%</b>

## Sector Allocation (%) vs MSCI ACWI ex USA Value



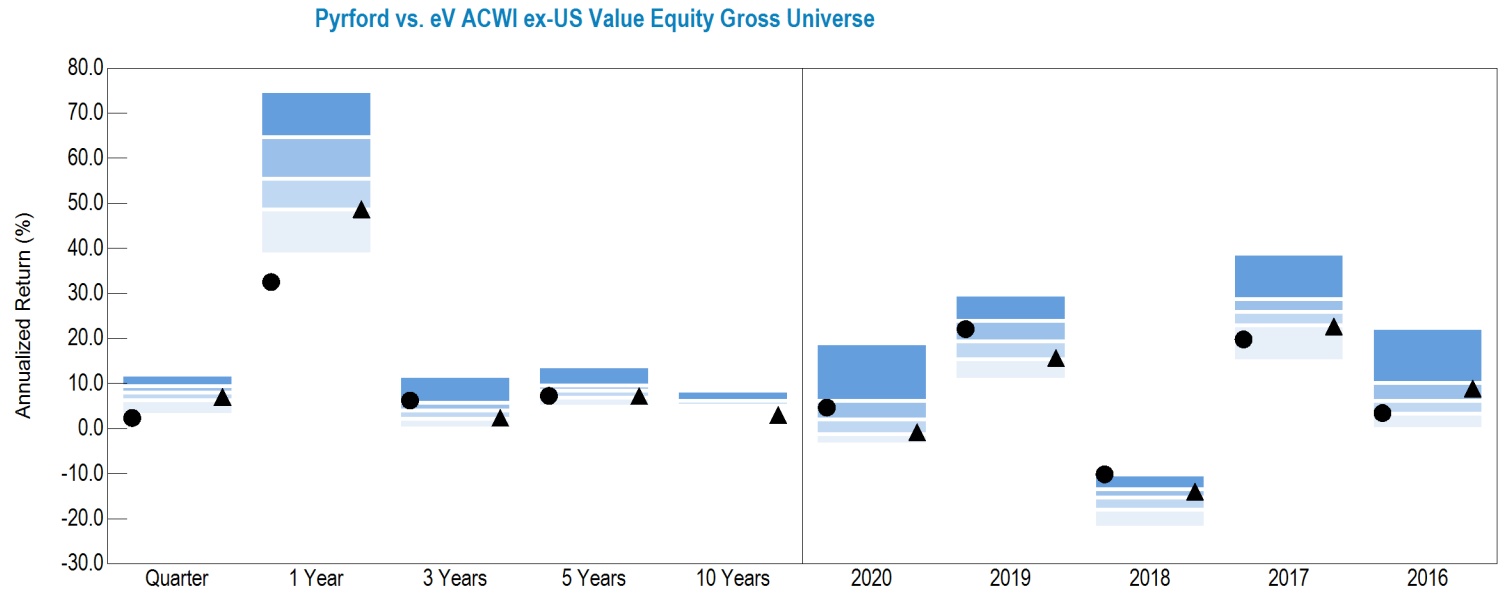
## Top Contributors

	Avg Wgt	Return	Contribution
SUMITOMO RUBBER INDUSTRIES LTD	1.23	37.29	0.46
BRENTAG SE	2.03	10.28	0.21
UNITED OVERSEAS BANK LTD	1.59	12.37	0.20
CHINA MOBILE LTD	1.27	14.95	0.19
BP PLC	0.97	18.31	0.18
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.74	9.66	0.17
VTECH HOLDINGS LTD	1.03	16.05	0.16
DEUTSCHE POST AG	1.43	10.68	0.15
LEGAL & GENERAL GROUP PLC	2.52	5.79	0.15

## Bottom Contributors

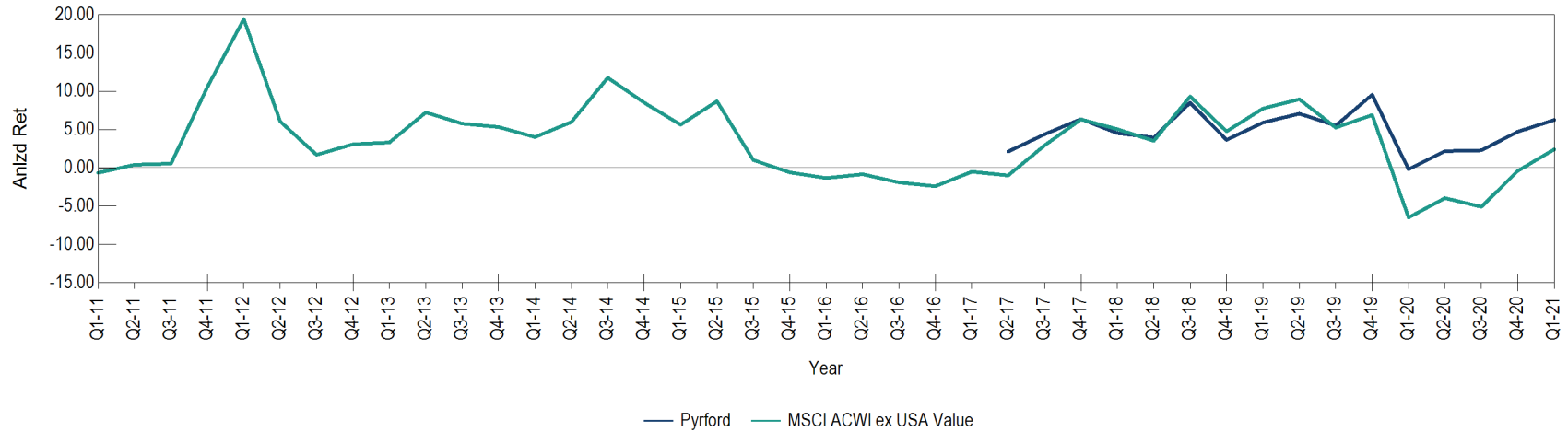
	Avg Wgt	Return	Contribution
NIHON KOHDEN CORP	1.85	-21.08	-0.39
JAPAN TOBACCO INC	3.25	-5.67	-0.18
NOVARTIS AG	2.47	-5.89	-0.15
NESTLE SA, CHAM UND VEVEY	2.78	-5.16	-0.14
UNILEVER PLC COMMON STOCK GBP.0311	2.02	-6.99	-0.14
SAP SE	1.97	-6.56	-0.13
ROCHE HOLDING AG	2.42	-4.46	-0.11
MALAYAN BANKING BHD MAYBANK	1.98	-5.31	-0.11
KONINKLIJKE VOPAK NV	1.19	-5.26	-0.06
BUNZL PLC	1.18	-4.06	-0.05

Unclassified sector allocation includes cash allocations.

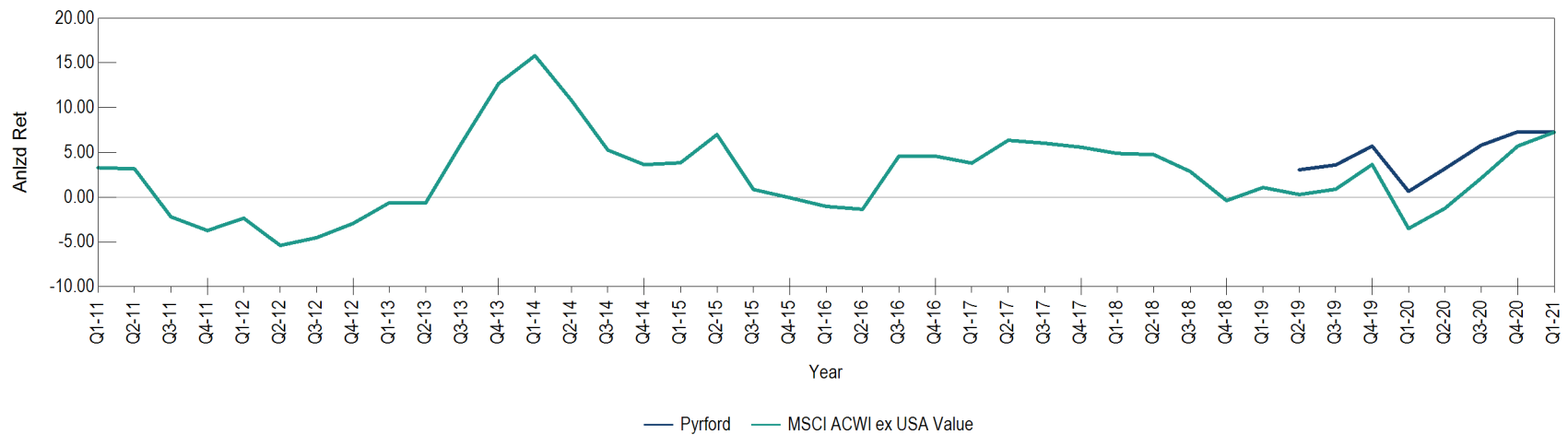


	Return (Rank)									
5th Percentile	11.9	74.8	11.6	13.7	8.3	18.8	29.6	-10.2	38.8	22.3
25th Percentile	9.5	64.8	5.8	9.7	6.2	6.2	24.0	-13.4	28.8	10.2
Median	8.0	55.4	4.0	8.4	5.3	2.1	19.5	-15.2	26.0	6.2
75th Percentile	6.3	48.7	2.2	6.9	4.4	-1.2	15.4	-17.9	23.0	3.3
95th Percentile	3.1	38.7	0.1	5.0	3.6	-3.5	10.8	-21.9	15.0	-0.1
# of Portfolios	47	47	46	45	26	49	52	54	56	55
● Pyrford	2.4 (99)	32.5 (99)	6.2 (22)	7.2 (66)	-- (--)	4.7 (33)	22.1 (35)	-10.1 (5)	19.8 (84)	3.4 (74)
▲ MSCI ACWI ex USA Value	7.1 (60)	48.7 (76)	2.4 (70)	7.2 (66)	3.0 (99)	-0.8 (73)	15.7 (74)	-14.0 (32)	22.7 (77)	8.9 (35)

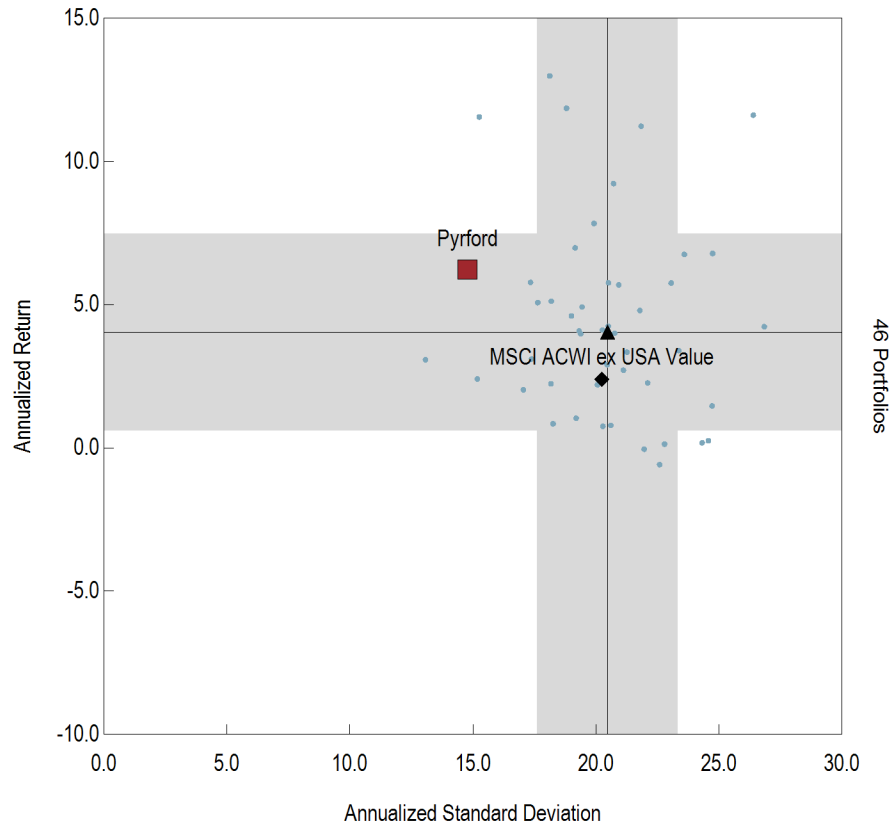
Rolling 3 Year Annualized Return (%)



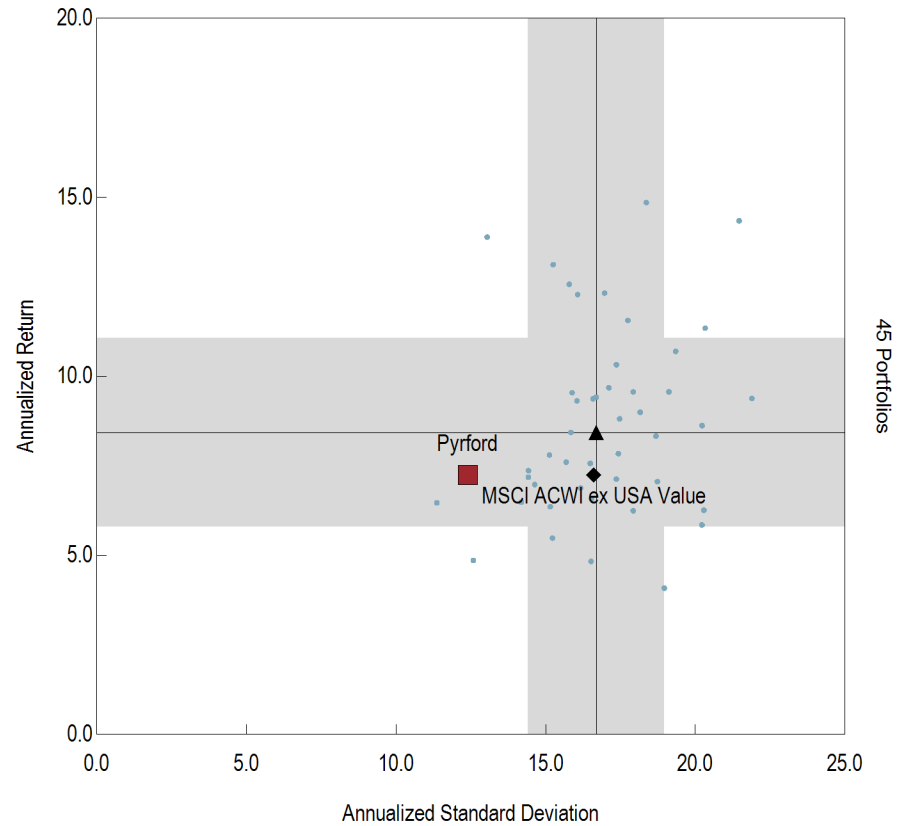
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	6.2%	14.8%	0.3
MSCI ACWI ex USA Value	2.4%	20.2%	0.1
eV ACWI ex-US Value Equity Gross Median	4.0%	20.5%	0.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	7.2%	12.4%	0.5
MSCI ACWI ex USA Value	7.2%	16.6%	0.4
eV ACWI ex-US Value Equity Gross Median	8.4%	16.7%	0.4

# William Blair Manager Portfolio Overview

Period Ending: March 31, 2021

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.

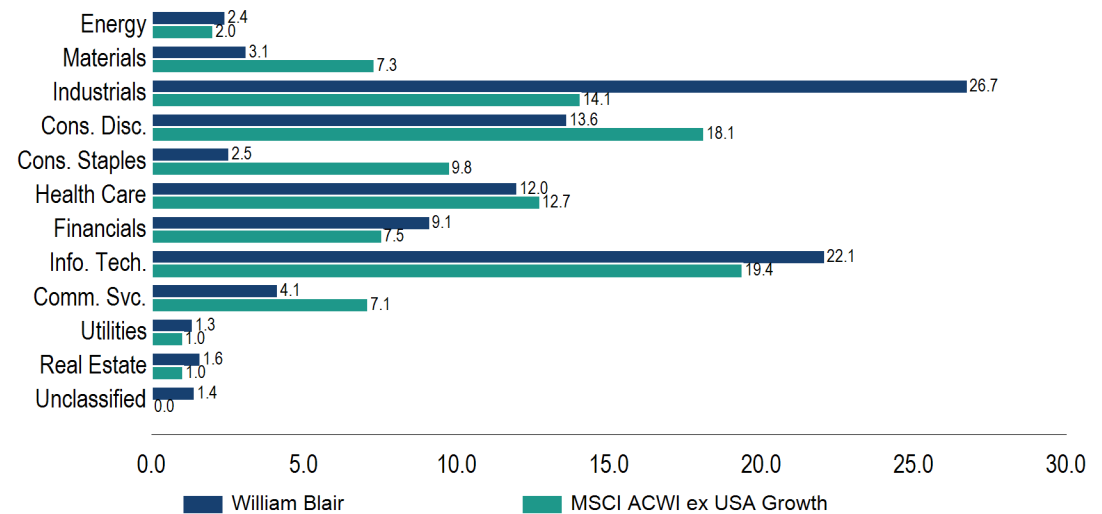
## Characteristics

	MSCI ACWI Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	196	1,013
Weighted Avg. Market Cap. (\$B)	81.24	145.73
Median Market Cap. (\$B)	12.30	9.99
Price To Earnings	43.85	31.79
Price To Book	6.15	4.13
Price To Sales	5.31	3.05
Return on Equity (%)	12.54	14.07
Yield (%)	0.73	1.24
Beta	1.18	1.00

## Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Totals</b>		
Developed	78.1%	67.8%
Emerging*	21.9%	32.2%
<b>Top 10 Largest Countries</b>		
Japan	10.5%	15.6%
United Kingdom	10.5%	5.9%
China*	9.2%	12.4%
France	8.8%	6.6%
Switzerland	6.8%	7.8%
Sweden	6.1%	3.4%
Germany	6.1%	4.4%
Netherlands	5.9%	4.2%
Hong Kong	4.3%	2.2%
Denmark	4.2%	2.7%
<b>Total-Top 10 Largest Countries</b>	<b>73.1%</b>	<b>65.2%</b>

## Sector Allocation (%) vs MSCI ACWI ex USA Growth



## Top Contributors

	Avg Wgt	Return	Contribution
ASML HOLDING NV	1.98	24.78	0.49
MEDIATEK INCORPORATION	1.30	27.91	0.36
EVOLUTION GAMING GROUP AB	0.74	45.05	0.34
ATLAS COPCO AB	1.56	18.87	0.29
DSV PANALPINA A/S	1.54	17.96	0.28
ASHTREAD GROUP PLC	0.88	27.24	0.24
COUNTRY GARDEN SERVICES HOLDINGS COMPANY LIMITED	0.47	49.82	0.24
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.36	8.87	0.21

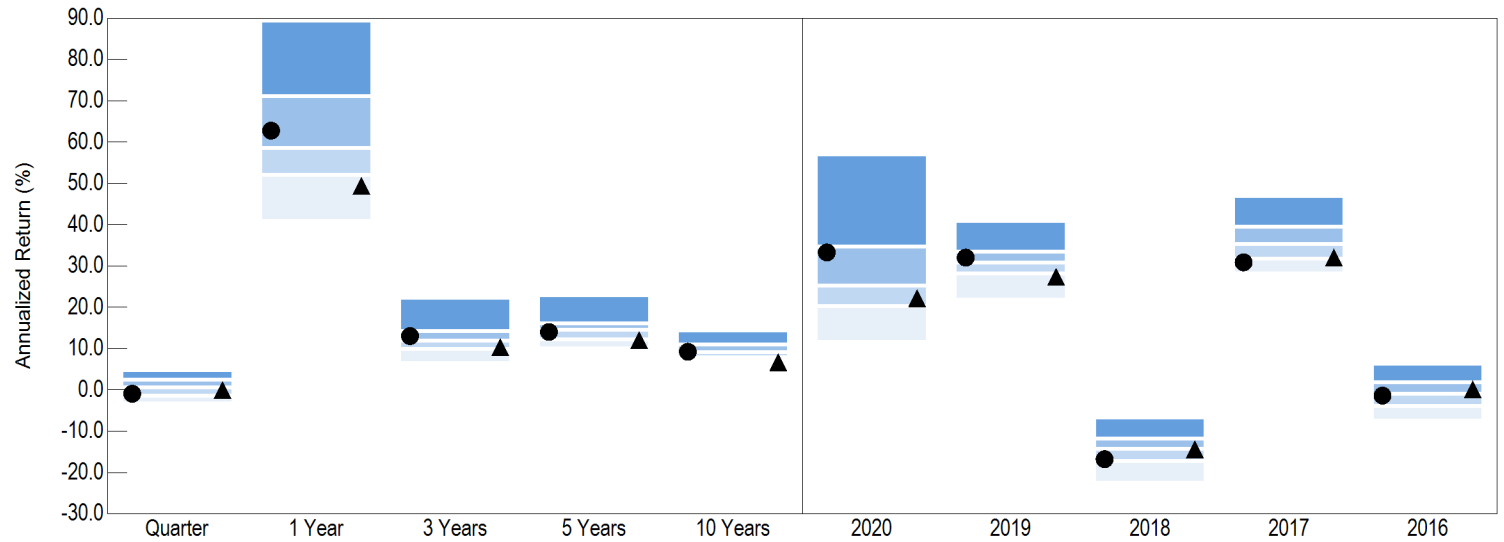
## Bottom Contributors

	Avg Wgt	Return	Contribution
KEYENCE CORP	1.95	-18.97	-0.37
NESTE OYJ	1.19	-25.95	-0.31
TAL EDUCATION GROUP	0.90	-24.70	-0.22
LONDON STOCK EXCHANGE GROUP PLC	0.91	-22.26	-0.20
M3 INC	0.60	-27.37	-0.16
ORSTED A/S	0.81	-19.96	-0.16
LONZA GROUP AG, ZUERICH	1.23	-12.80	-0.16
GENMAB A/S	0.70	-18.64	-0.13
OMRON CORP	1.08	-11.95	-0.13
MTU AERO ENGINES AG	1.27	-9.76	-0.12

Unclassified sector allocation includes cash allocations.

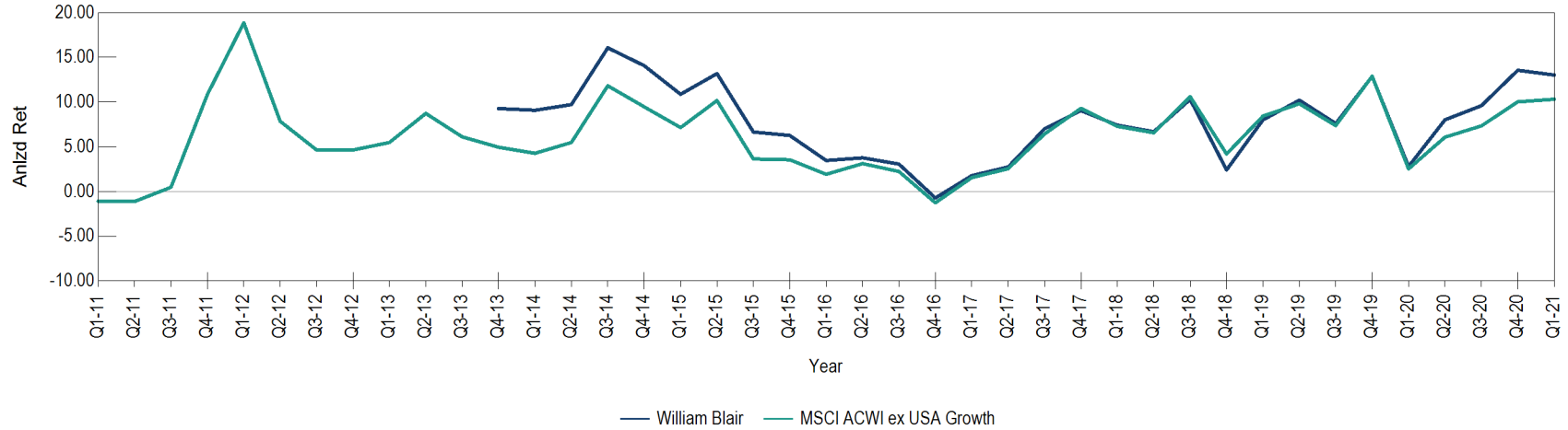


William Blair vs. eV ACWI ex-US Growth Equity Gross Universe

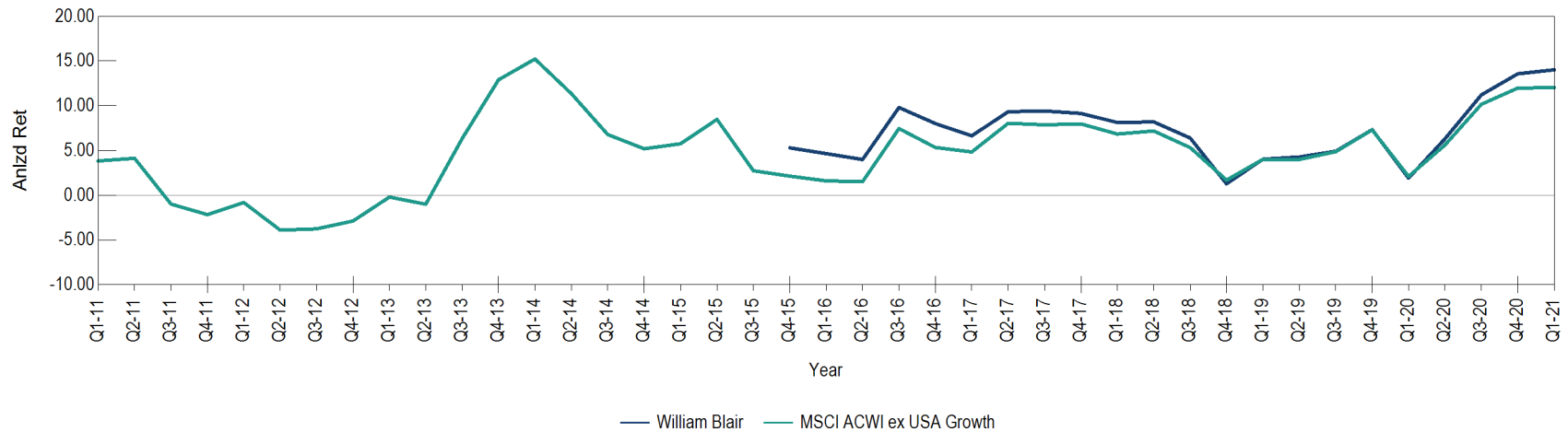


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016
5th Percentile	4.7	89.3	22.2	22.9	14.3	57.0	40.8	-6.8	46.8	6.3
25th Percentile	2.6	71.1	14.3	16.2	11.0	34.8	33.6	-11.7	39.6	2.0
Median	0.6	58.6	12.0	14.6	9.2	25.4	31.0	-14.3	35.3	-0.9
75th Percentile	-1.3	52.1	9.9	12.3	8.0	20.3	28.3	-17.2	31.8	-3.9
95th Percentile	-3.2	41.0	6.5	10.2	7.2	11.6	21.8	-22.3	28.3	-7.4
# of Portfolios	97	97	93	86	57	95	93	82	94	90
● William Blair	-1.0 (70)	62.7 (40)	13.0 (41)	14.0 (57)	9.2 (50)	33.3 (30)	32.0 (39)	-16.8 (69)	30.9 (81)	-1.4 (55)
▲ MSCI ACWI ex USA Growth	-0.1 (64)	49.4 (82)	10.3 (71)	12.0 (80)	6.7 (99)	22.2 (64)	27.3 (80)	-14.4 (51)	32.0 (75)	0.1 (45)

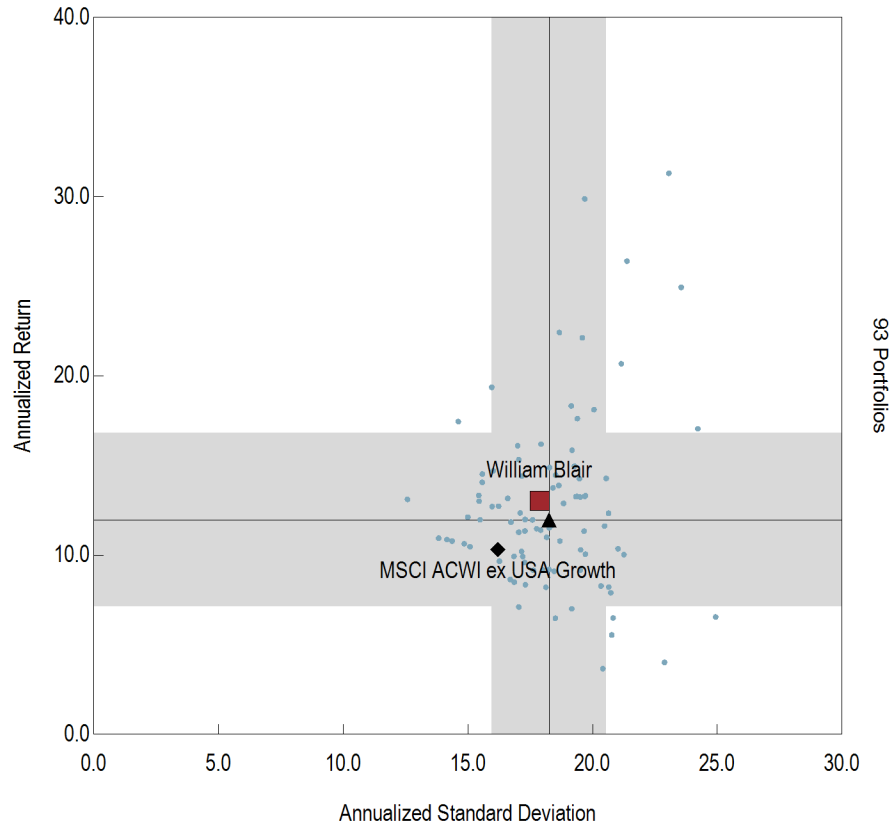
Rolling 3 Year Annualized Return (%)



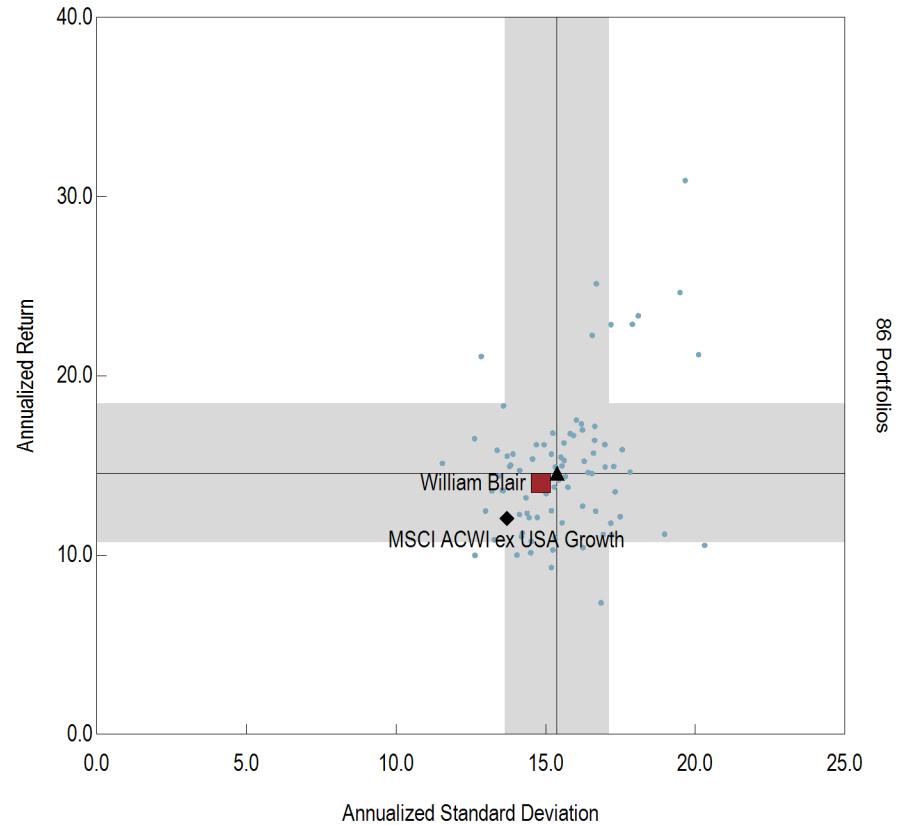
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	13.0%	17.9%	0.7
MSCI ACWI ex USA Growth	10.3%	16.2%	0.6
eV ACWI ex-US Growth Equity Gross Median	12.0%	18.3%	0.6

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	14.0%	14.8%	0.9
MSCI ACWI ex USA Growth	12.0%	13.7%	0.8
eV ACWI ex-US Growth Equity Gross Median	14.6%	15.4%	0.9

# PIMCO RAE Emerging Markets Manager Portfolio Overview

Period Ending: March 31, 2021

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.

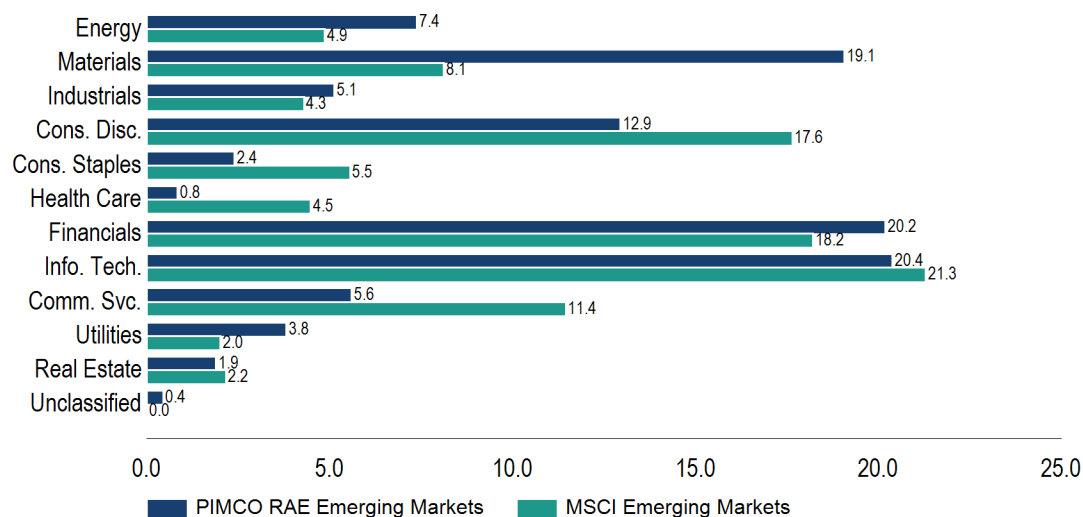
## Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	430	1,381
Weighted Avg. Market Cap. (\$B)	37.35	176.64
Median Market Cap. (\$B)	4.77	7.07
Price To Earnings	11.62	19.15
Price To Book	1.75	3.03
Price To Sales	0.49	1.55
Return on Equity (%)	6.12	11.97
Yield (%)	3.05	1.96
Beta	1.16	1.00

## Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Totals</b>		
Developed	4.4%	0.0%
Emerging*	95.6%	100.0%
<b>Top 10 Largest Countries</b>		
India*	17.2%	9.7%
Korea*	17.0%	13.4%
Taiwan*	15.4%	13.9%
China*	12.8%	38.0%
Brazil*	8.4%	4.5%
Russia*	6.3%	2.8%
Mexico*	5.3%	1.7%
Hong Kong	4.1%	0.0%
South Africa*	4.0%	3.8%
Thailand*	2.9%	1.9%
<b>Total-Top 10 Largest Countries</b>	<b>93.4%</b>	<b>89.7%</b>

## Sector Allocation (%) vs MSCI Emerging Markets



## Top Contributors

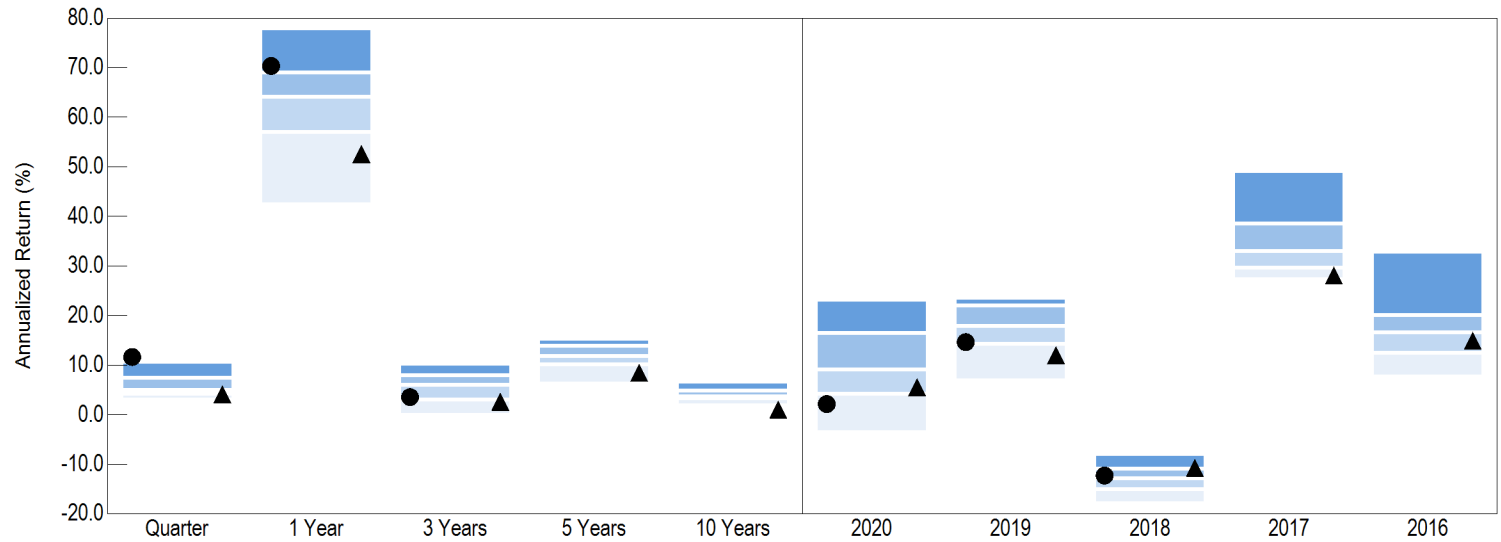
	End Weight	Return	Contribution
TATA MOTORS	4.73	63.85	3.02
LENOVO GROUP LTD	1.96	50.67	0.99
AU OPTRONICS	2.00	48.26	0.96
VEDANTA LTD	1.67	41.46	0.69
INNOLUX CORP	1.43	47.56	0.68
ASUSTEK COMPUTER	1.45	46.63	0.68
KIA CORPORATION	1.83	28.21	0.52
HON HAI PRECISION INDUSTRY CO LTD	1.33	32.90	0.44
CEMEX SAB DE CV	1.10	36.69	0.40
CEMEX SAB DE CV	1.06	34.82	0.37

## Bottom Contributors

	End Weight	Return	Contribution
BANCO DO BRASIL ON	0.95	-26.51	-0.25
BANCO BRADESCO SA	2.31	-9.16	-0.21
BRAD			
KOREA ELECTRIC POWER CORP	0.72	-18.46	-0.13
HACI OMER SABANCI HOLDING AS	0.32	-32.46	-0.10
ULTRAPAR PARTICIPACOES SA	0.57	-16.04	-0.09
AMERICA MOVIL SA DE CV, MEXICO	1.35	-6.21	-0.08
EMLAK KONUT REIT	0.37	-19.68	-0.07
TKI.GARANTI BKSI.	0.17	-41.94	-0.07
INDIABULLS HOUSING FINANCE LTD	0.64	-10.97	-0.07

Unclassified sector allocation includes cash allocations.

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



	Return (Rank)															
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016						
5th Percentile	10.7	77.9	10.2	15.3	6.6	23.1	23.5	-7.9	49.0	32.8						
25th Percentile	7.5	69.1	8.0	14.0	4.9	16.6	22.1	-10.8	38.6	20.1						
Median	5.1	64.2	6.0	11.9	3.7	9.2	18.0	-12.7	33.0	16.6						
75th Percentile	4.3	57.1	3.1	10.2	3.4	4.3	14.4	-14.9	29.8	12.6						
95th Percentile	3.1	42.5	0.1	6.3	1.9	-3.4	7.0	-17.8	27.4	7.8						
# of Portfolios	33	33	30	27	16	37	33	36	37	38						
● PIMCO RAE Emerging Markets	11.6 (3)	70.3 (19)	3.5 (72)	-- (--)	-- (--)	2.1 (85)	14.6 (72)	-12.3 (44)	-- (--)	-- (--)						
▲ MSCI Emerging Markets Value NR	4.1 (82)	52.5 (85)	2.6 (78)	8.4 (88)	1.0 (99)	5.5 (73)	12.0 (86)	-10.7 (25)	28.1 (90)	14.9 (59)						

# TT Emerging Markets Manager Portfolio Overview

Period Ending: March 31, 2021

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.

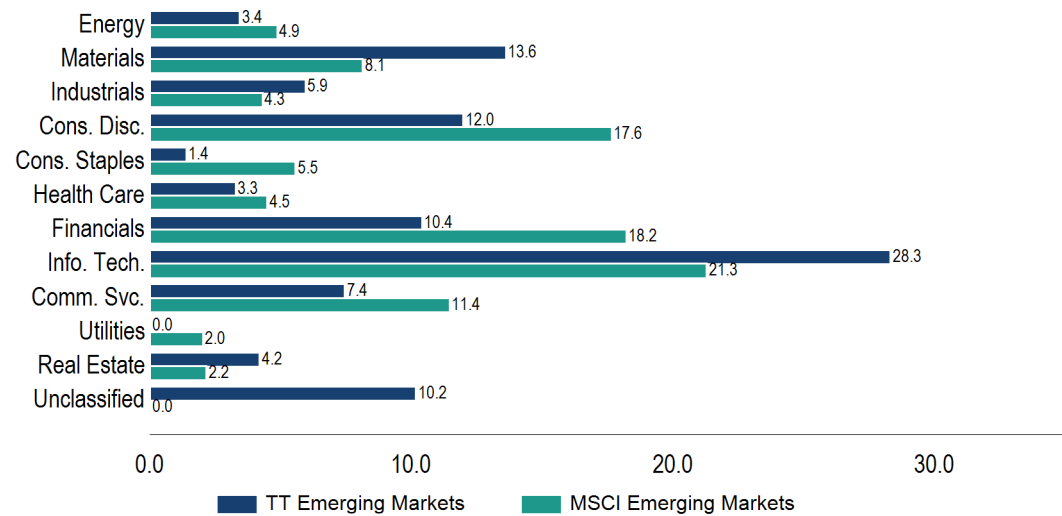
## Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	77	1,381
Weighted Avg. Market Cap. (\$B)	156.62	176.64
Median Market Cap. (\$B)	15.11	7.07
Price To Earnings	20.04	19.15
Price To Book	3.34	3.03
Price To Sales	1.90	1.55
Return on Equity (%)	7.47	11.97
Yield (%)	1.64	1.96
Beta	1.17	1.00

## Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Totals</b>		
Developed	20.0%	0.0%
Emerging*	79.3%	100.0%
Frontier**	0.6%	0.0%
<b>Top 10 Largest Countries</b>		
China*	22.5%	38.0%
Korea*	15.8%	13.4%
Taiwan*	13.7%	13.9%
Netherlands	9.2%	0.0%
India*	8.3%	9.7%
Brazil*	7.4%	4.5%
Hong Kong	4.2%	0.0%
South Africa*	4.0%	3.8%
Mexico*	3.4%	1.7%
United Kingdom	2.4%	0.0%
<b>Total-Top 10 Largest Countries</b>	<b>93.8%</b>	<b>85.0%</b>

## Sector Allocation (%) vs MSCI Emerging Markets



## Top Contributors

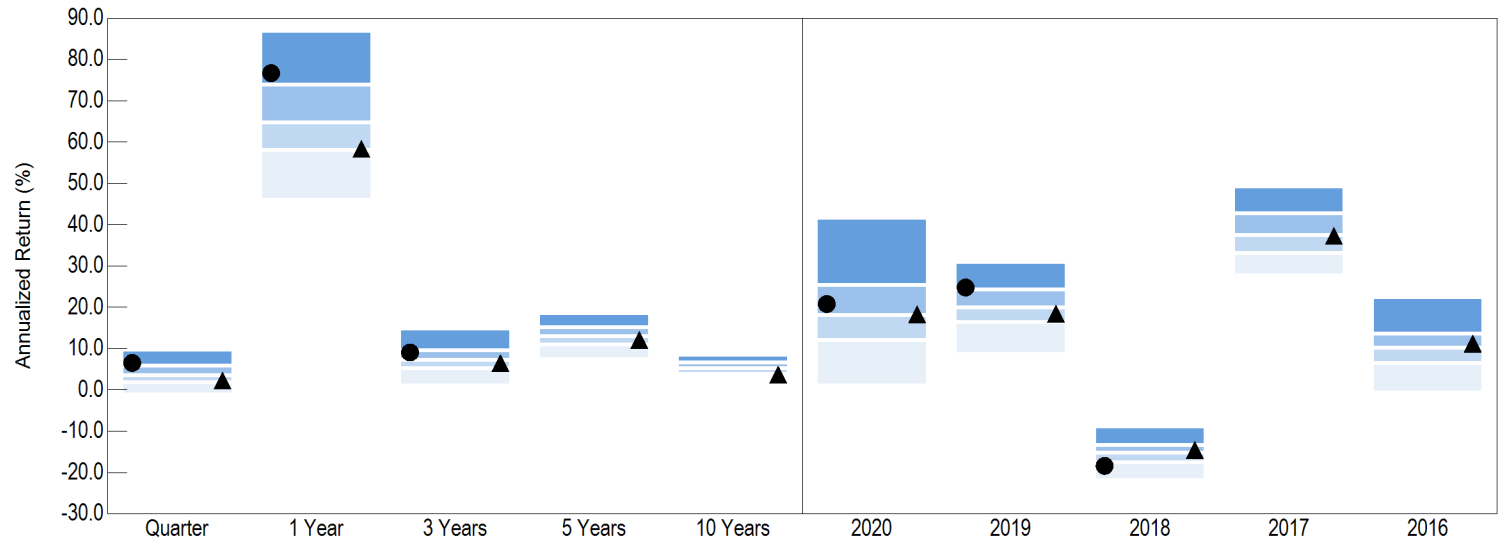
	End Weight	Return	Contribution
360 DIGITECH INC	1.89	120.61	2.28
CEMEX SAB DE CV	2.14	34.82	0.75
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	7.17	9.66	0.69
NASPERS LTD	2.96	16.08	0.48
PHARMARON BEIJING CO LTD	1.77	24.03	0.42
HANSOL CHEMICAL	1.59	18.36	0.29
SUNAC CHINA HOLDINGS LTD	1.80	16.08	0.29

## Bottom Contributors

	End Weight	Return	Contribution
B2W COMPANHIA DIGITAL	2.15	-26.18	-0.56
GEELY AUTOMOBILE HOLDINGS LTD	1.55	-25.57	-0.40
XINYI SOLAR HOLDINGS LTD	0.95	-37.06	-0.35
B3 S.A.-BRASIL BOLSA BALCAO	1.37	-16.63	-0.23
OI SA	1.06	-20.24	-0.21
POLYMETAL INTERNATIONAL PLC	1.35	-14.97	-0.20
SAMSUNG ELECTRONICS CO LTD	4.81	-3.82	-0.18
BANDHAN BANK LIMITED	1.11	-15.91	-0.18

Unclassified sector allocation includes cash allocations.

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



	Return (Rank)															
5th Percentile	9.7	86.9	14.8	18.5	8.5	41.6	30.9	-9.0	49.2	22.4						
25th Percentile	5.9	74.0	9.7	15.2	6.7	25.5	24.4	-13.2	42.8	13.7						
Median	3.6	64.8	7.3	13.1	5.3	18.2	20.1	-15.2	37.6	10.4						
75th Percentile	1.9	58.2	5.3	11.1	3.9	12.2	16.5	-17.4	33.2	6.6						
95th Percentile	-1.0	46.1	1.2	7.5	3.1	1.2	8.8	-21.8	27.8	-0.6						
# of Portfolios	382	382	352	318	191	391	386	355	343	337						
● TT Emerging Markets	6.5 (21)	76.6 (21)	9.1 (31)	-- (--)	-- (--)	20.8 (39)	24.8 (24)	-18.4 (83)	-- (--)	-- (--)						
▲ MSCI Emerging Markets	2.3 (70)	58.4 (74)	6.5 (60)	12.1 (64)	3.7 (84)	18.3 (49)	18.4 (63)	-14.6 (43)	37.3 (53)	11.2 (45)						

## Global Equity Managers

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# Artisan Partners Manager Portfolio Overview

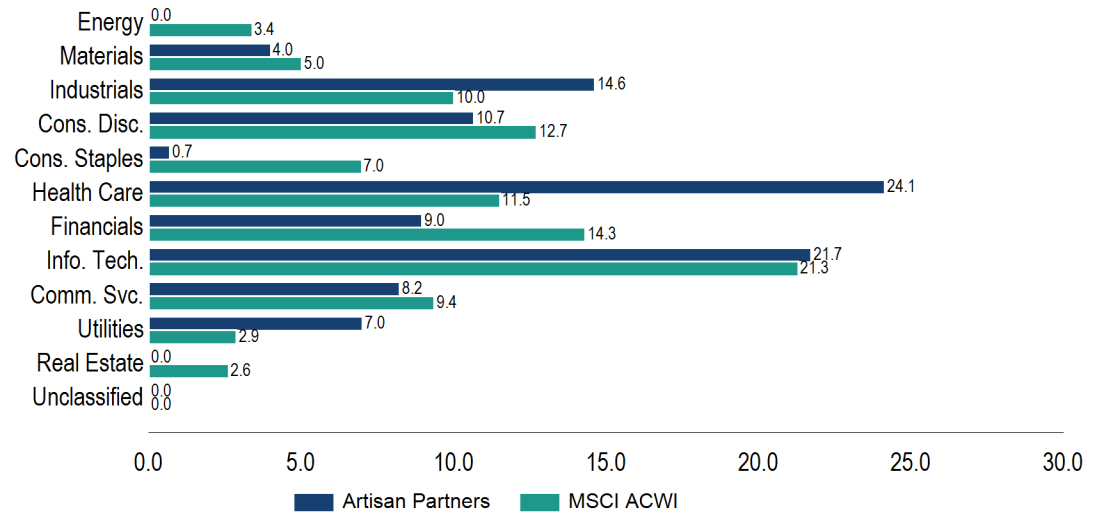
Period Ending: March 31, 2021

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	47	2,965
Weighted Avg. Market Cap. (\$B)	152.35	298.11
Median Market Cap. (\$B)	55.98	12.91
Price To Earnings	38.98	26.09
Price To Book	5.39	3.61
Price To Sales	4.81	2.16
Return on Equity (%)	13.88	15.34
Yield (%)	0.97	1.77
Beta	0.98	1.00

## Sector Allocation (%) vs MSCI ACWI



## Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Totals</b>		
Developed	96.4%	87.0%
Emerging*	3.6%	13.0%
<b>Top 10 Largest Countries</b>		
United States	46.8%	57.8%
United Kingdom	11.9%	3.8%
Hong Kong	6.9%	0.9%
Switzerland	5.1%	2.4%
Denmark	5.1%	0.6%
Sweden	4.9%	1.0%
Netherlands	4.0%	1.1%
Spain	3.7%	0.6%
Japan	3.1%	6.5%
Canada	2.2%	2.8%
<b>Total-Top 10 Largest Countries</b>	<b>93.7%</b>	<b>77.6%</b>

## Top Contributors

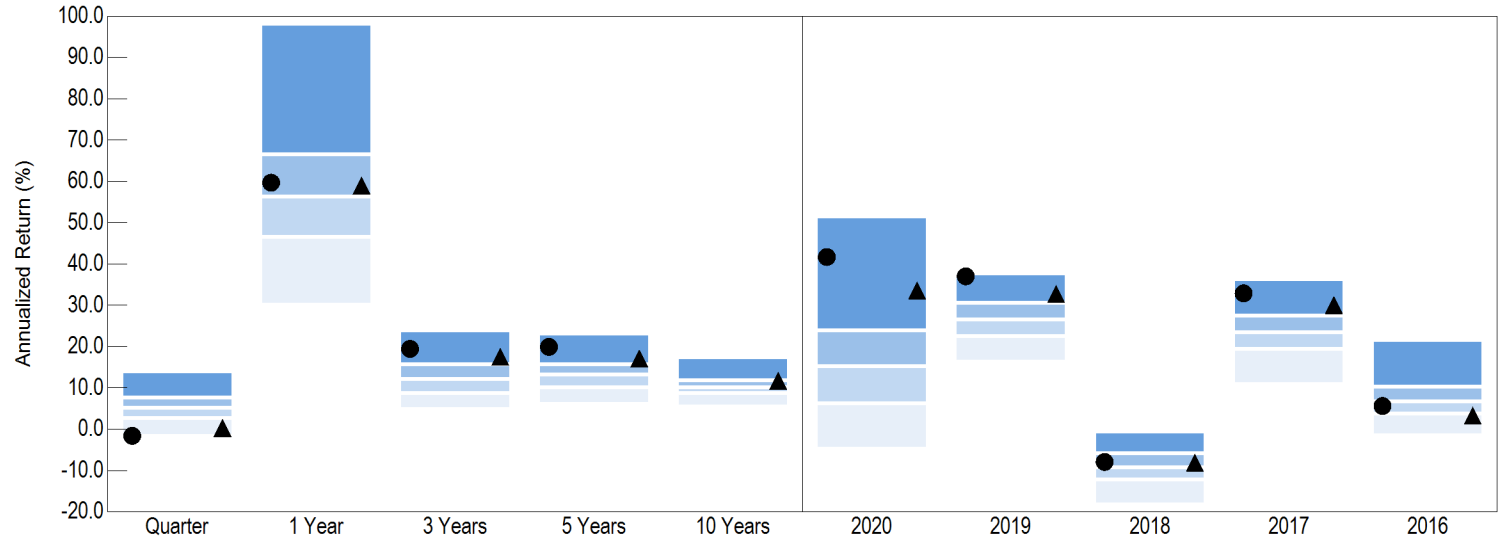
	Avg Wgt	Return	Contribution
TECHTRONIC INDUSTRIES CO LTD	5.13	19.92	1.02
LOWE'S COS INC	2.57	18.90	0.49
ALPHABET INC	2.13	17.68	0.38
TELEFONAKTIEBOLAGET LM ERICSSON	2.73	12.40	0.34
IHS MARKIT LTD	2.94	7.98	0.23
BOSTON SCIENTIFIC CORP	2.76	7.51	0.21
MICROSOFT CORP	2.64	6.25	0.17
APTIV PLC	2.31	5.84	0.14
UBS GROUP AG	1.14	10.16	0.12

## Bottom Contributors

	Avg Wgt	Return	Contribution
GENMAB A/S	3.21	-18.64	-0.60
LONDON STOCK EXCHANGE GROUP PLC	2.53	-22.26	-0.56
ADVANCED MICRO DEVICES INC	3.73	-14.40	-0.54
LONZA GROUP AG, ZUERICH	3.60	-12.80	-0.46
PAGSEGURO DIGITAL LTD	2.28	-18.60	-0.42
VESTAS WIND SYSTEMS A/S	2.88	-13.16	-0.38
KEYENCE CORP	1.91	-18.97	-0.36
ORSTED A/S	1.76	-19.96	-0.35
CERIDIAN HCM HOLDING INC	1.26	-20.92	-0.26

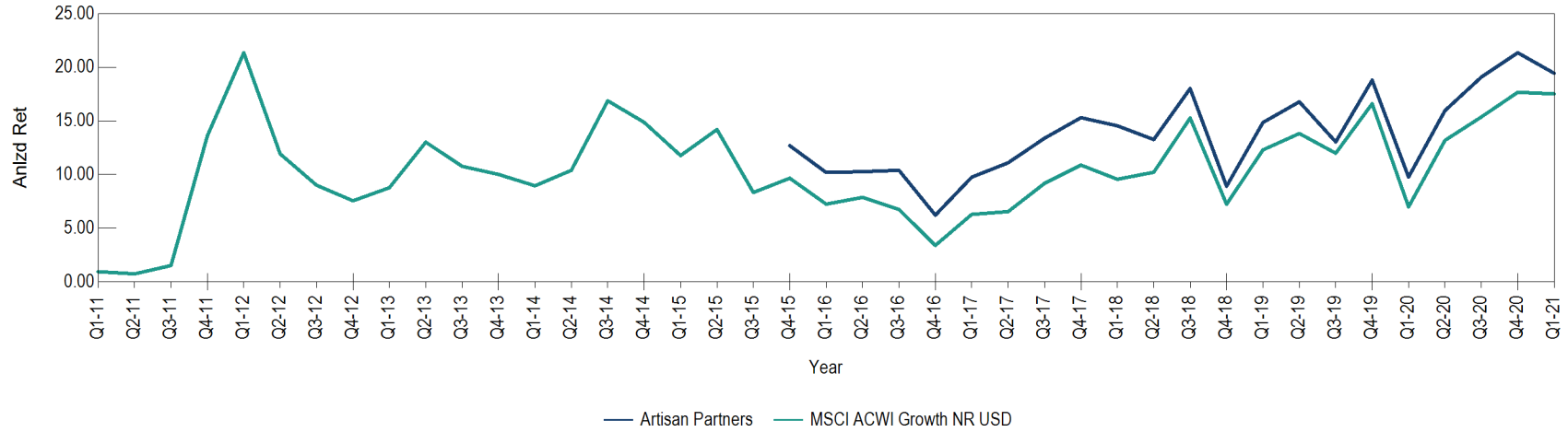
Unclassified sector allocation includes cash allocations.

Artisan Partners vs. eV All Global Equity Gross Universe

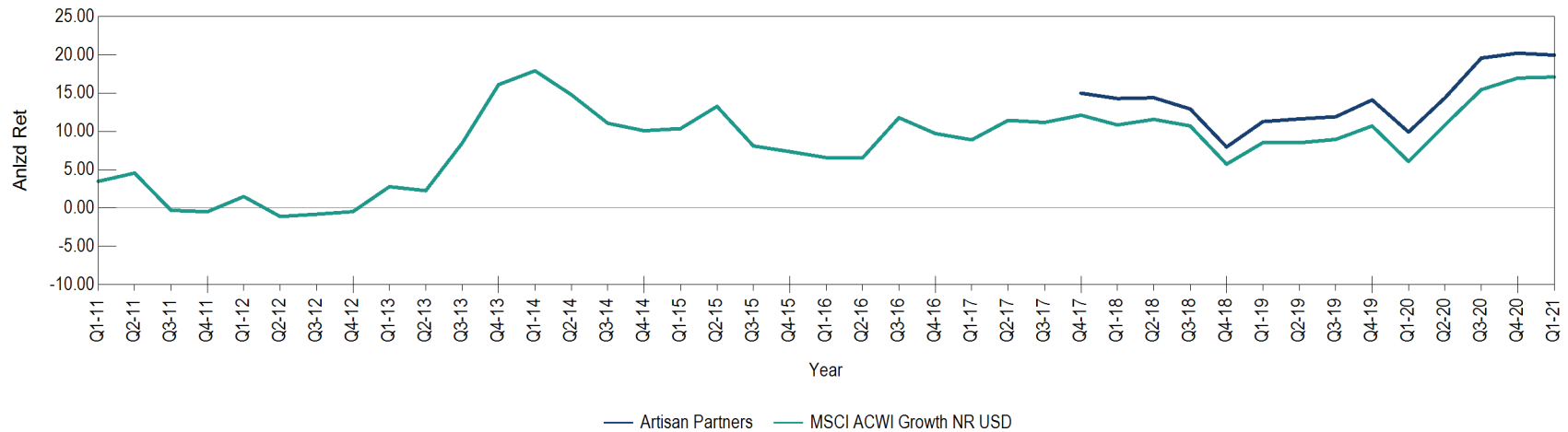


	Return (Rank)									
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016
5th Percentile	14.0	98.1	23.9	23.1	17.3	51.5	37.6	-0.7	36.3	21.5
25th Percentile	7.8	66.6	15.8	15.9	11.9	24.0	30.7	-5.8	27.6	10.3
Median	5.2	56.4	12.2	13.3	10.2	15.4	26.6	-9.1	23.5	6.8
75th Percentile	2.9	46.6	8.8	10.3	8.8	6.3	22.6	-12.2	19.6	3.9
95th Percentile	-1.5	30.2	4.9	6.2	5.6	-4.7	16.5	-18.1	11.0	-1.4
# of Portfolios	1,090	1,088	1,000	882	556	1,093	989	920	880	842
● Artisan Partners	-1.6 (96)	59.7 (41)	19.4 (12)	19.9 (9)	-- (--)	41.7 (9)	37.0 (7)	-7.9 (40)	32.9 (11)	5.6 (61)
▲ MSCI ACWI Growth NR USD	0.3 (92)	59.0 (43)	17.5 (18)	17.1 (19)	11.7 (27)	33.6 (14)	32.7 (17)	-8.1 (42)	30.0 (17)	3.3 (80)

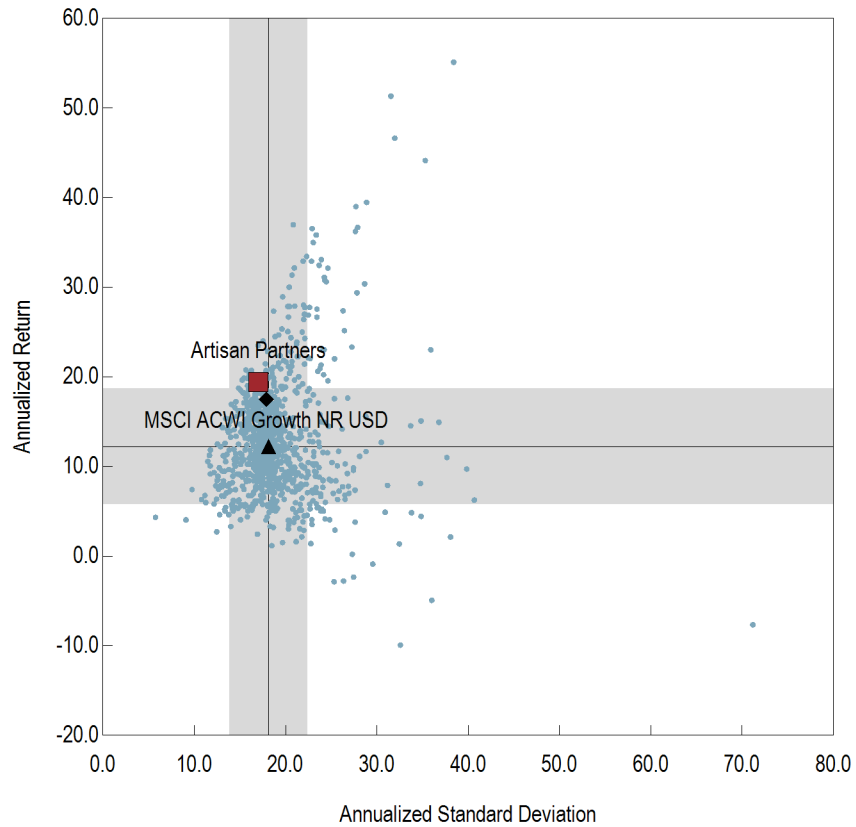
Rolling 3 Year Annualized Return (%)



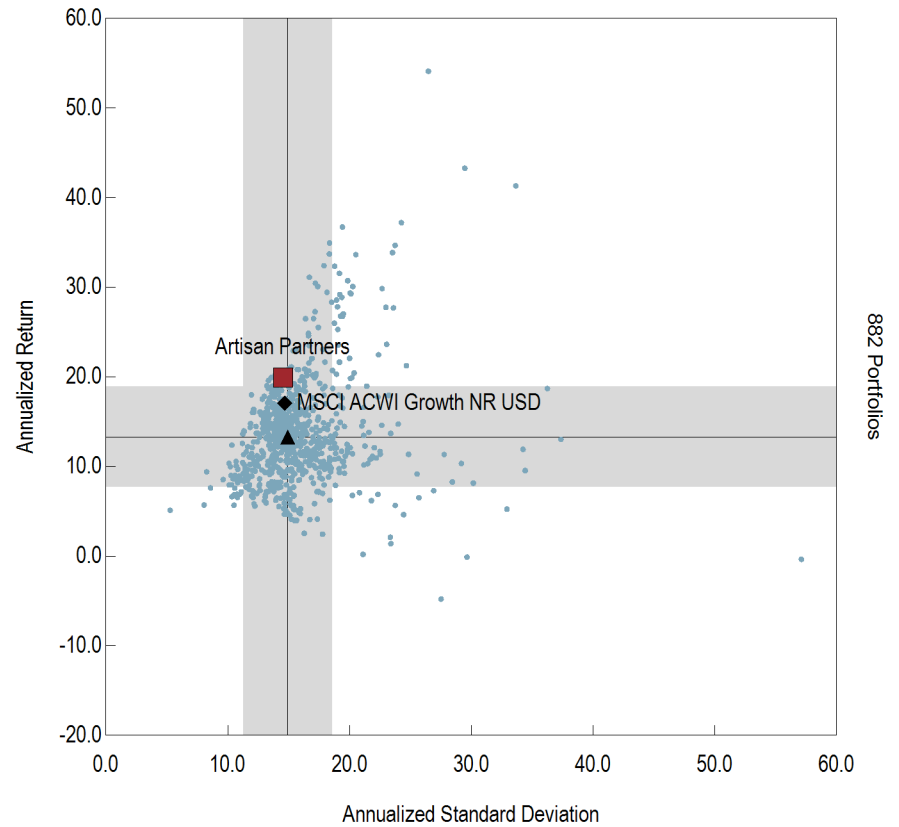
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	19.4%	17.0%	1.1
MSCI ACWI Growth NR USD	17.5%	17.9%	0.9
eV All Global Equity Gross Median	12.2%	18.1%	0.6

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	19.9%	14.5%	1.3
MSCI ACWI Growth NR USD	17.1%	14.7%	1.1
eV All Global Equity Gross Median	13.3%	14.9%	0.8

# First Eagle Manager Portfolio Overview

Period Ending: December 31, 2020

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

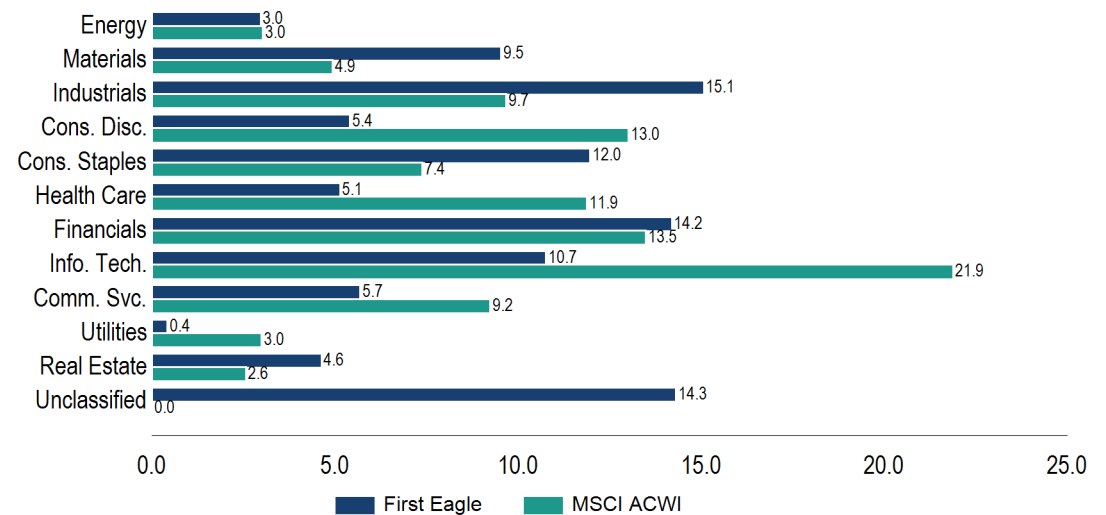
## Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	126	2,982
Weighted Avg. Market Cap. (\$B)	119.31	306.44
Median Market Cap. (\$B)	27.58	12.22
Price To Earnings	22.17	25.54
Price To Book	2.90	3.68
Price To Sales	1.76	1.96
Return on Equity (%)	13.64	15.76
Yield (%)	2.05	1.81
Beta	0.76	1.00

## Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
<b>Totals</b>		
Developed	93.7%	86.7%
Emerging*	6.3%	13.3%
<b>Top 10 Largest Countries</b>		
United States	56.6%	57.3%
Japan	11.5%	6.8%
United Kingdom	5.7%	3.8%
Canada	5.4%	2.7%
France	5.1%	3.0%
Korea*	2.6%	1.8%
Switzerland	2.3%	2.6%
Belgium	1.7%	0.3%
Sweden	1.3%	0.9%
Taiwan*	1.2%	1.7%
<b>Total-Top 10 Largest Countries</b>	<b>94.5%</b>	<b>80.7%</b>

## Sector Allocation (%) vs MSCI ACWI



## Top Contributors

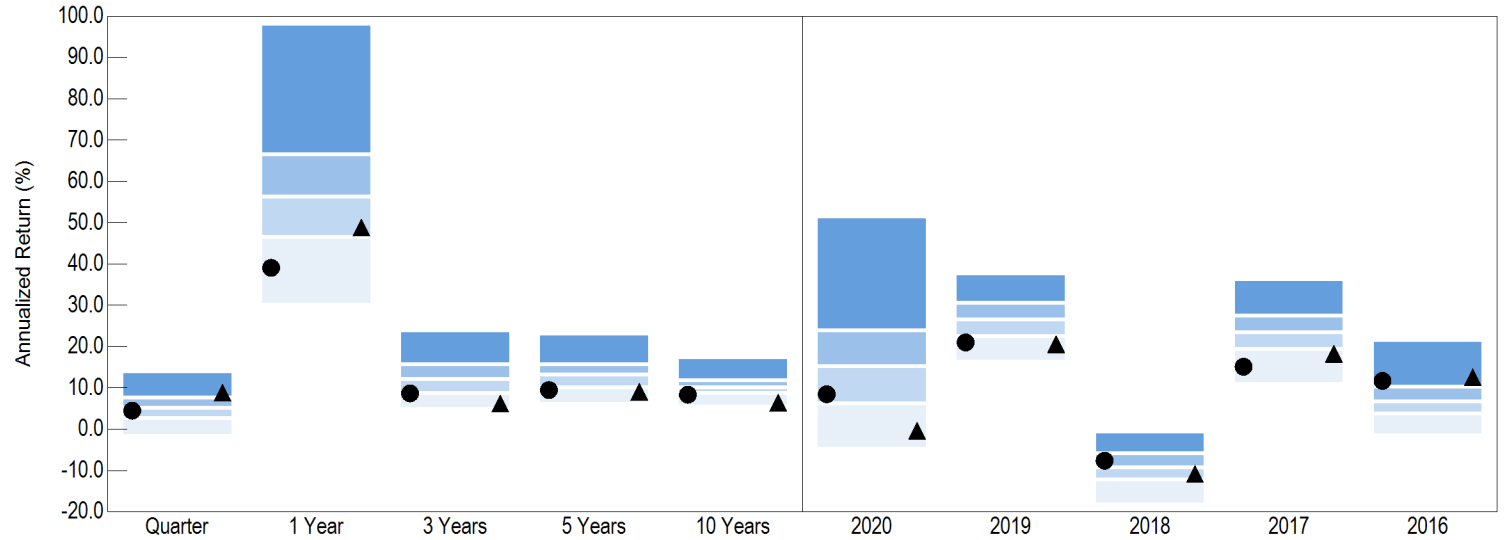
	End Weight	Return	Contribution
FANUC CORP	2.10	28.80	0.60
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.16	35.07	0.41
EXXON MOBIL CORP	1.67	22.90	0.38
CIE FINANCIERE RICHEMONT AG, ZUG	1.11	34.57	0.38
COMCAST CORP	2.76	13.86	0.38
SCHLUMBERGER LTD	0.90	41.13	0.37
DEERE & CO	1.66	21.74	0.36
BANK OF NEW YORK MELLON CORP (THE)	1.19	24.67	0.29
NUTRIEN LTD	1.23	23.93	0.29
ORACLE CORP	3.23	8.79	0.28

## Bottom Contributors

	End Weight	Return	Contribution
BARRICK GOLD CORP	0.99	-18.64	-0.18
WHEATON PRECIOUS METALS CORP	1.14	-14.67	-0.17
C.H. ROBINSON WORLDWIDE INC.	1.94	-7.64	-0.15
SALESFORCE.COM INC	0.79	-11.46	-0.09
NEWMONT CORPORATION	1.64	-4.97	-0.08
AGNICO EAGLE MINES LTD	0.71	-11.21	-0.08
NEWCREST MINING LTD	0.55	-11.19	-0.06
SANOFI	1.21	-3.92	-0.05
ROYAL GOLD INC	0.32	-11.29	-0.04
FRANCO-NEVADA CORP	0.28	-10.14	-0.03

First Eagle holdings only available as of 12/31/2020. Unclassified sector allocation includes cash allocations and Gold allocations (11.2% as of 12/31/2020).

First Eagle vs. eV All Global Equity Gross Universe

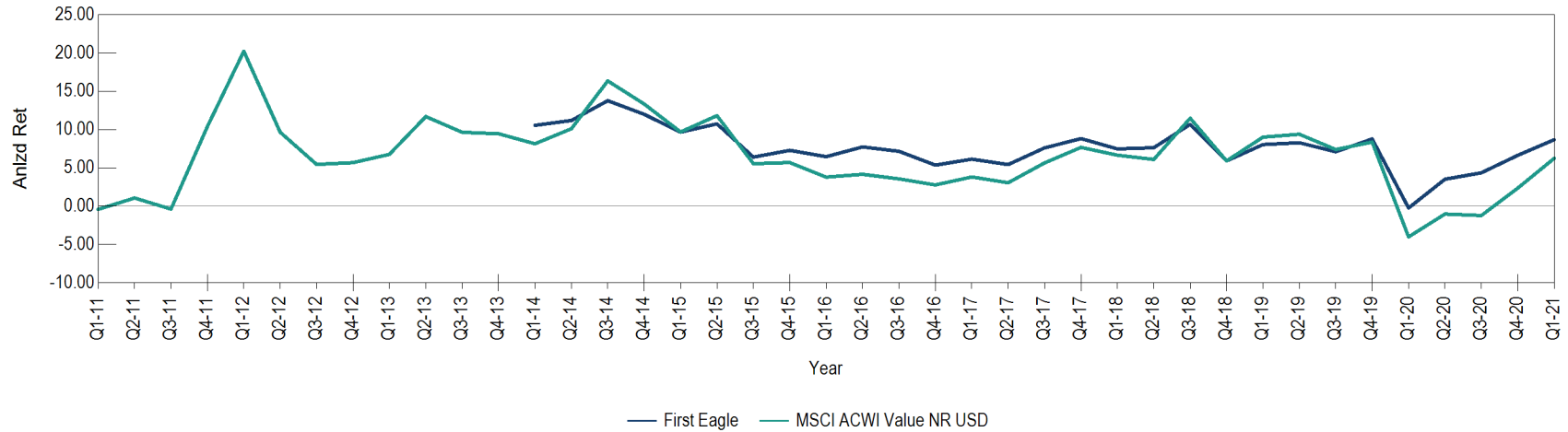


	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016
<b>5th Percentile</b>	14.0	98.1	23.9	23.1	17.3	51.5	37.6	-0.7	36.3	21.5
<b>25th Percentile</b>	7.8	66.6	15.8	15.9	11.9	24.0	30.7	-5.8	27.6	10.3
<b>Median</b>	5.2	56.4	12.2	13.3	10.2	15.4	26.6	-9.1	23.5	6.8
<b>75th Percentile</b>	2.9	46.6	8.8	10.3	8.8	6.3	22.6	-12.2	19.6	3.9
<b>95th Percentile</b>	-1.5	30.2	4.9	6.2	5.6	-4.7	16.5	-18.1	11.0	-1.4
<b># of Portfolios</b>	1,090	1,088	1,000	882	556	1,093	989	920	880	842
● <b>First Eagle</b>	4.5 (60)	39.1 (85)	8.7 (76)	9.5 (81)	8.3 (79)	8.5 (70)	21.0 (82)	-7.6 (38)	15.1 (89)	11.7 (19)
▲ <b>MSCI ACWI Value NR USD</b>	8.9 (21)	48.8 (72)	6.2 (90)	9.0 (84)	6.4 (93)	-0.3 (89)	20.6 (83)	-10.8 (65)	18.3 (81)	12.6 (16)

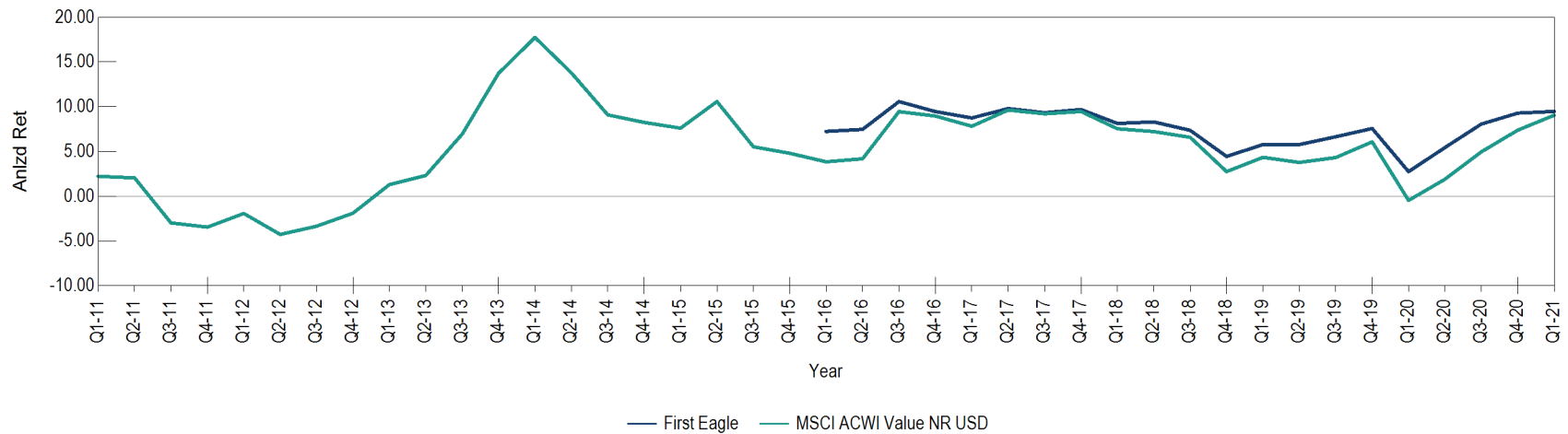
First Eagle  
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2021

Rolling 3 Year Annualized Return (%)



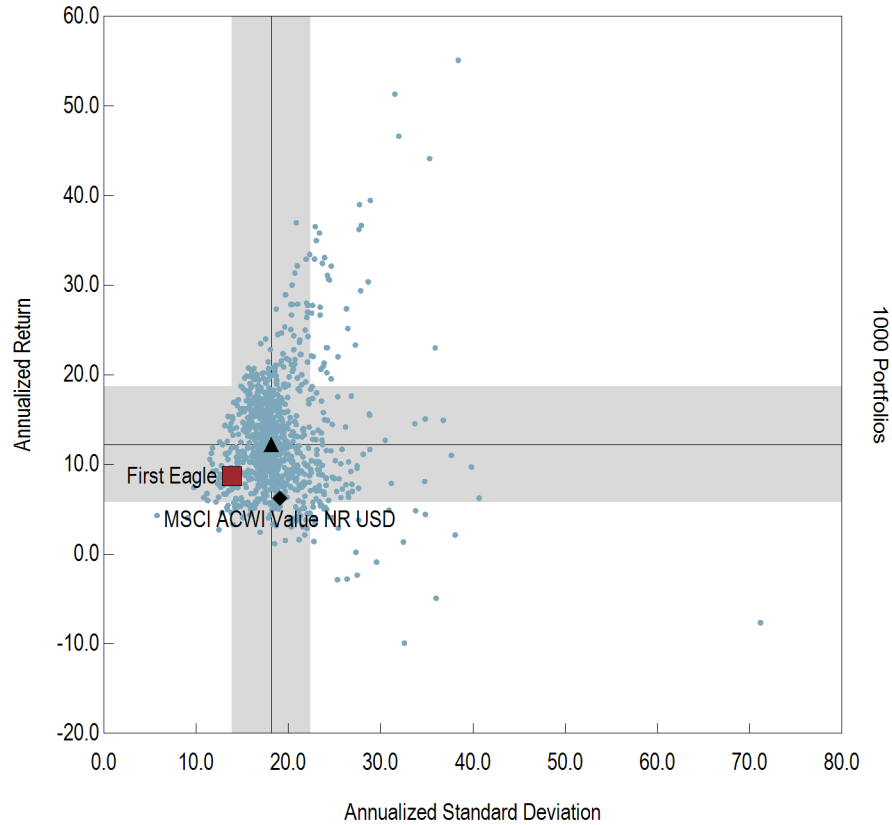
Rolling 5 Year Annualized Return (%)



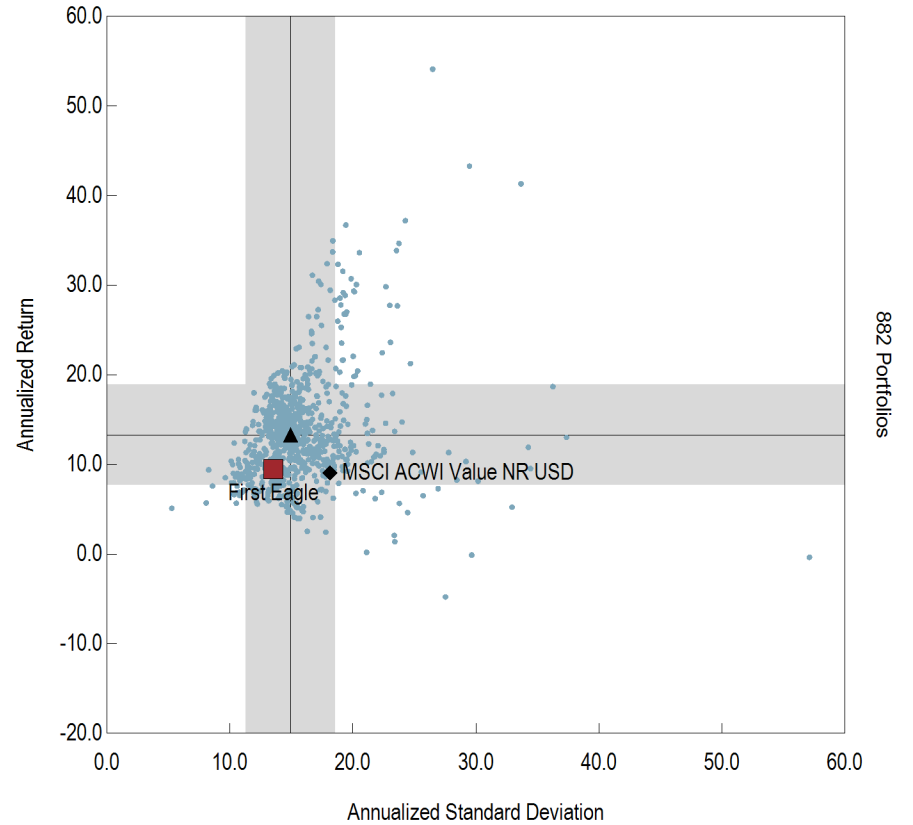
First Eagle  
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2021

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	8.7%	13.9%	0.5
MSCI ACWI Value NR USD	6.2%	19.1%	0.3
eV All Global Equity Gross Median	12.2%	18.1%	0.6

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	9.5%	11.3%	0.7
MSCI ACWI Value NR USD	9.0%	15.4%	0.5
eV All Global Equity Gross Median	13.3%	14.9%	0.8



## High Yield Managers

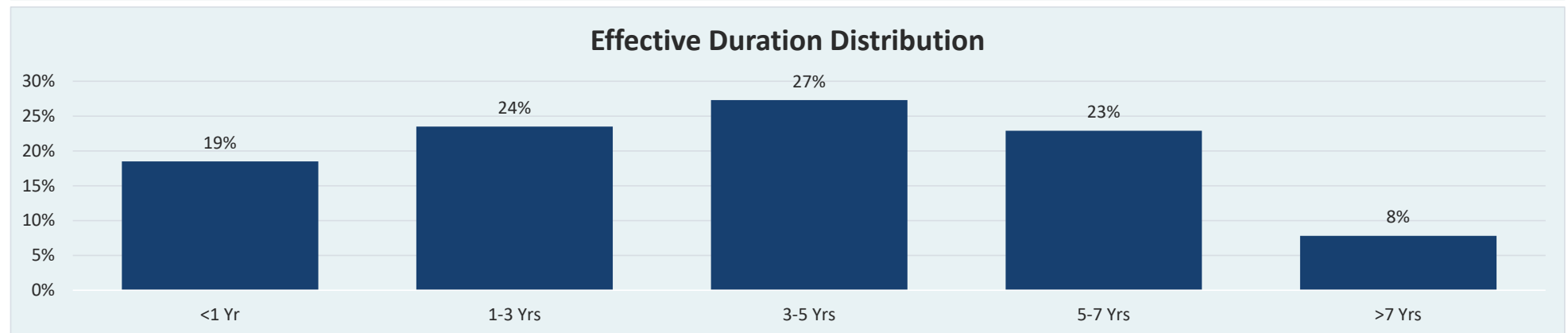
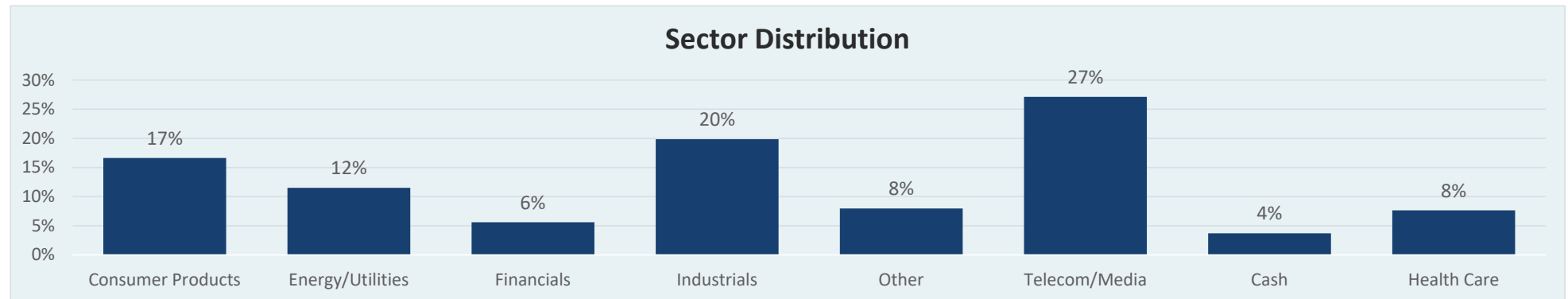
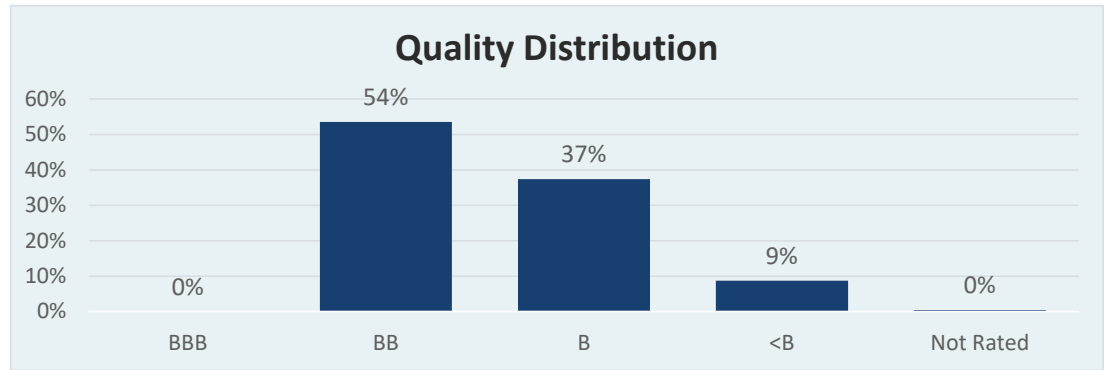
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# Allianz Global Investors Manager Portfolio Overview

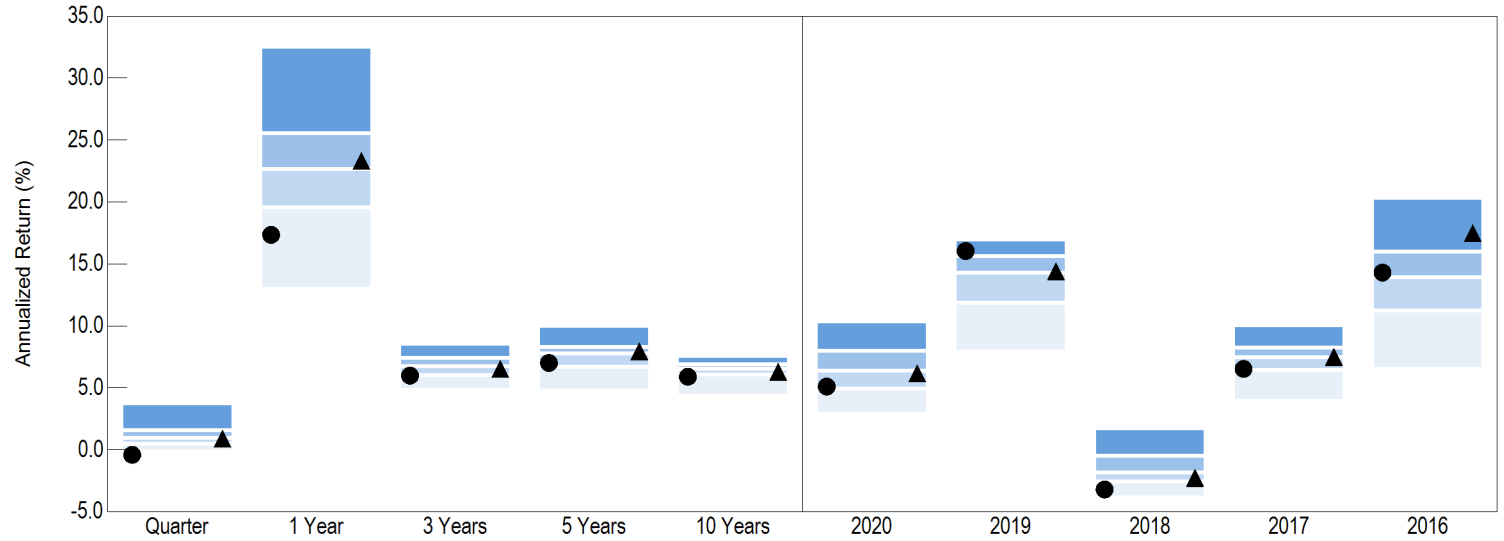
Period Ending: March 31, 2021

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	3.60	4.00
Yield to Maturity	5.00	4.90
Average Quality	B1	B1
Average Coupon	6.2%	5.9%

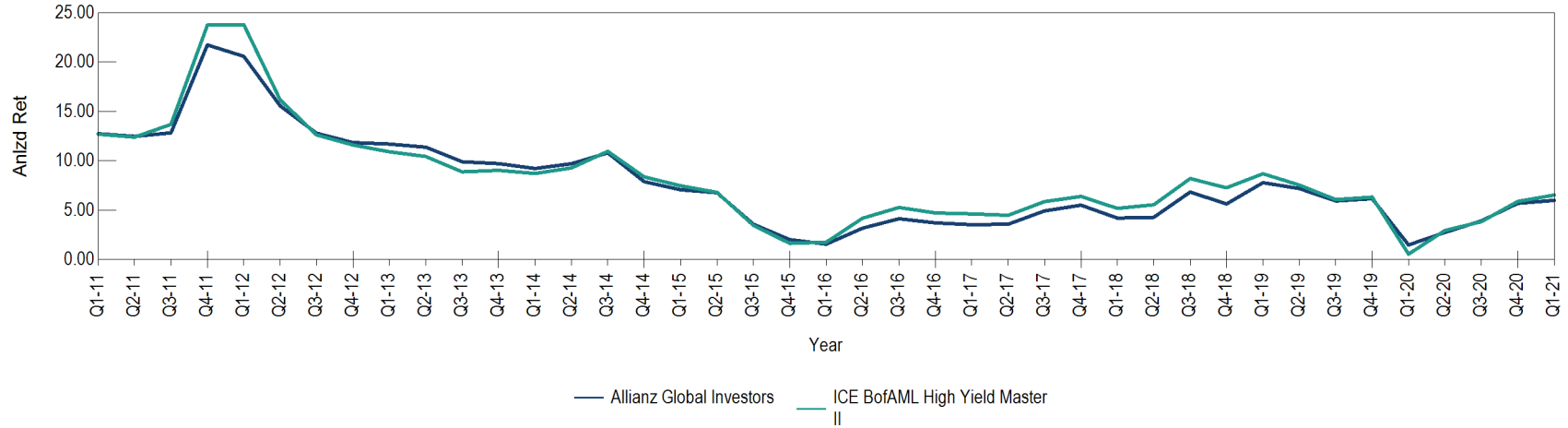


Allianz Global Investors vs. eV US High Yield Fixed Inc Gross Universe

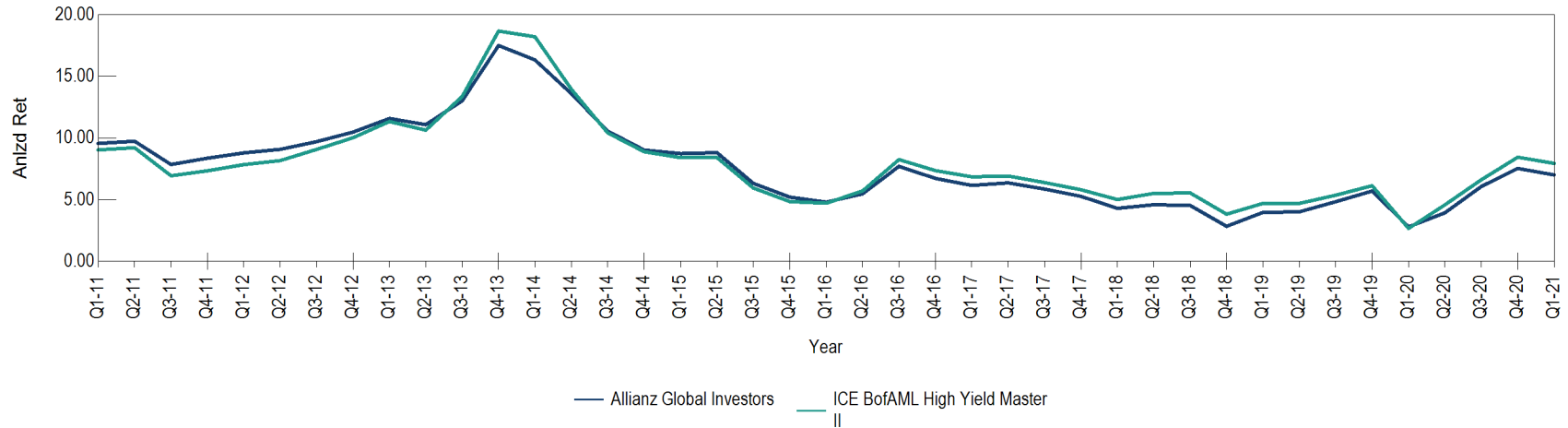


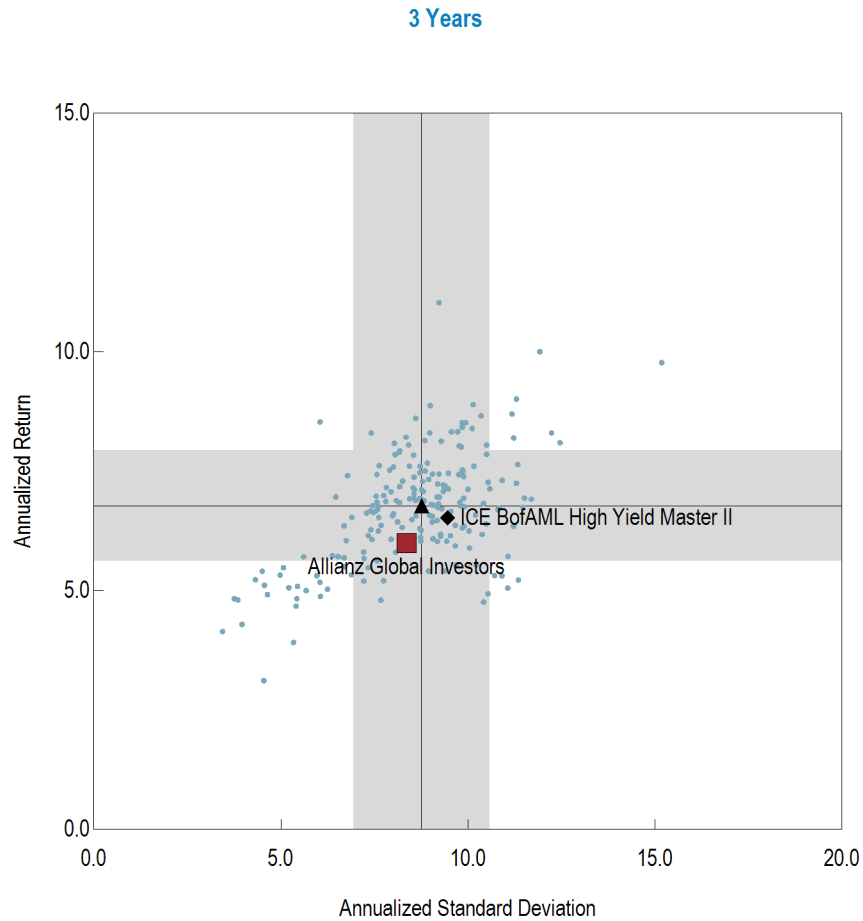
	Return (Rank)										
5th Percentile	3.7	32.5	8.5	10.0	7.6	10.3	16.9	1.7	10.0	20.3	
25th Percentile	1.6	25.6	7.4	8.3	6.9	8.0	15.6	-0.5	8.3	16.0	
Median	1.0	22.7	6.8	7.8	6.6	6.4	14.3	-1.8	7.5	14.0	
75th Percentile	0.5	19.6	6.0	6.7	6.1	5.0	11.9	-2.5	6.5	11.3	
95th Percentile	-0.1	13.0	4.9	4.8	4.4	2.9	8.0	-3.8	4.0	6.6	
# of Portfolios	210	210	205	190	140	217	226	210	198	183	
● Allianz Global Investors	-0.4 (99)	17.3 (85)	6.0 (77)	7.0 (69)	5.9 (82)	5.1 (74)	16.0 (15)	-3.2 (88)	6.5 (74)	14.3 (47)	
▲ ICE BofAML High Yield Master II	0.9 (59)	23.3 (45)	6.5 (61)	7.9 (43)	6.3 (64)	6.2 (55)	14.4 (49)	-2.3 (69)	7.5 (53)	17.5 (14)	

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)





**3 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	6.0%	8.4%	0.6
ICE BofAML High Yield Master II	6.5%	9.5%	0.5
eV US High Yield Fixed Inc Gross Median	6.8%	8.8%	0.6

**5 Years**

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	7.0%	6.8%	0.9
ICE BofAML High Yield Master II	7.9%	7.7%	0.9
eV US High Yield Fixed Inc Gross Median	7.8%	7.1%	0.9

# Real Estate Managers

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# Adelante Manager Portfolio Overview

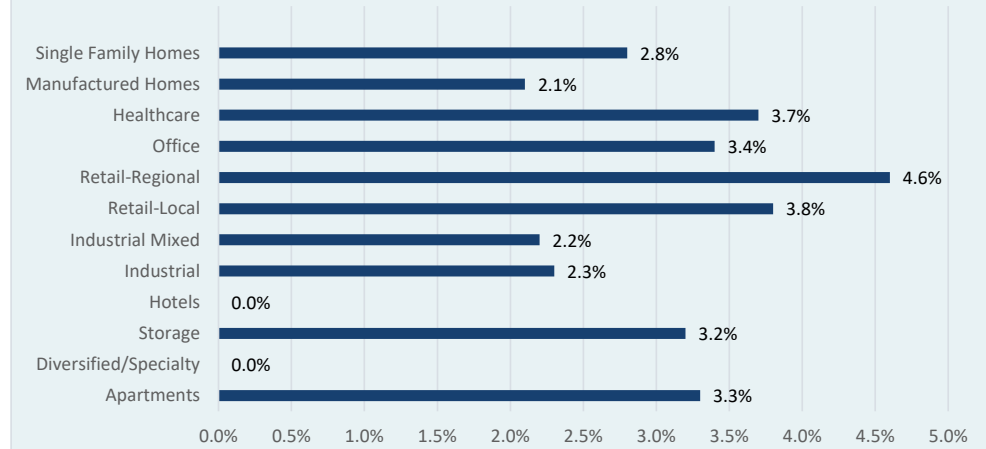
Period Ending: March 31, 2021

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

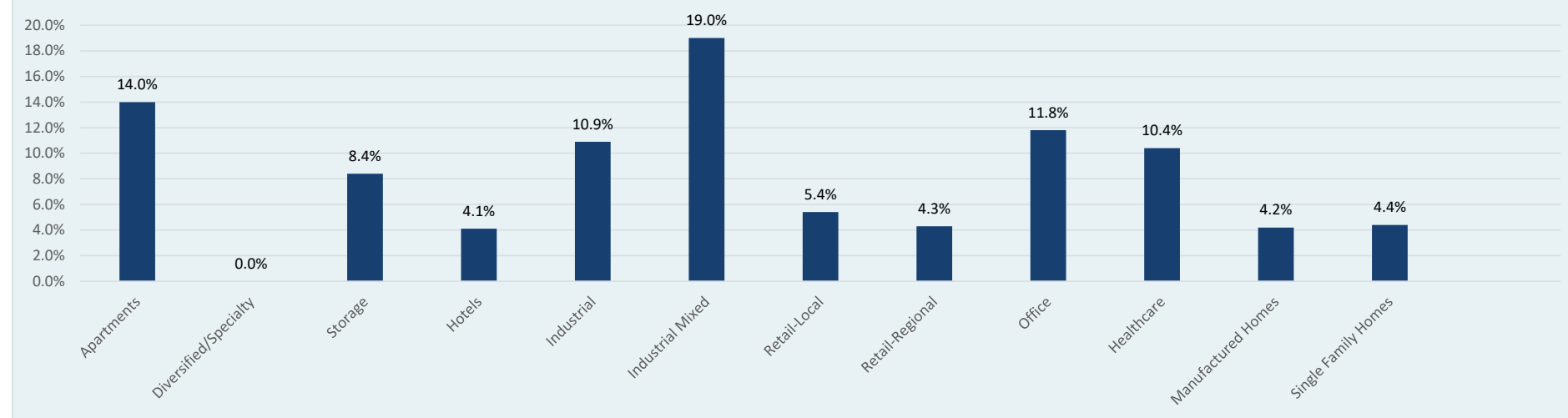
## Top Five Holdings

Company	Property Type	Allocation
Equinix Inc	Industrial Mixed	9.7%
ProLogis Inc.	Industrial	9.9%
Welltower, Inc.	Healthcare	6.5%
Equity Residential	Apartments	5.6%
Duke Realty Corporation	Industrial Mixed	4.8%

## Dividend Yield by Property Type



## Property Type Allocation



## **Diversifying Fixed Income Managers**

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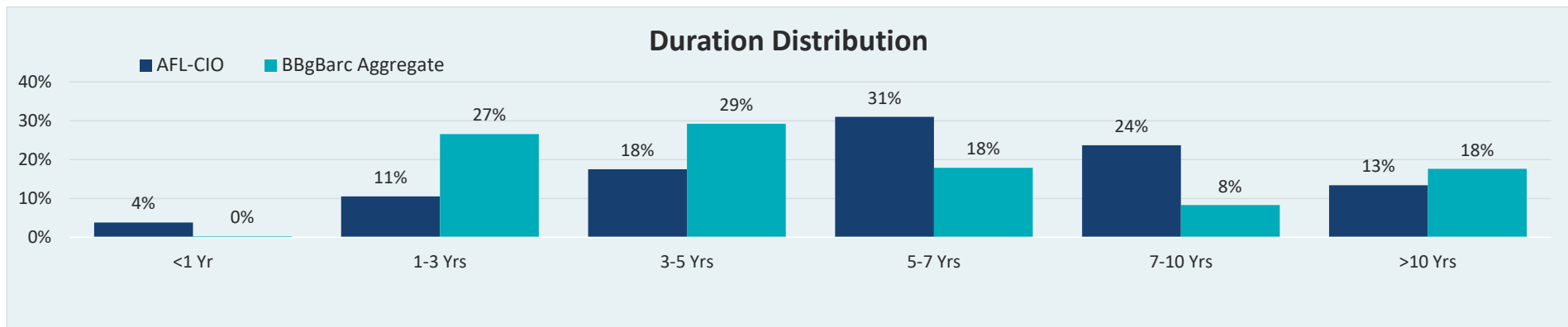
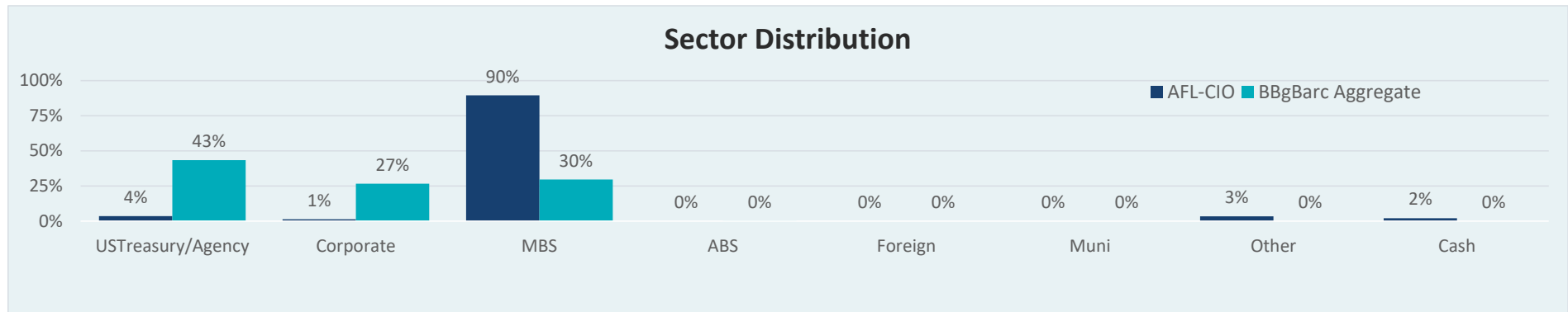
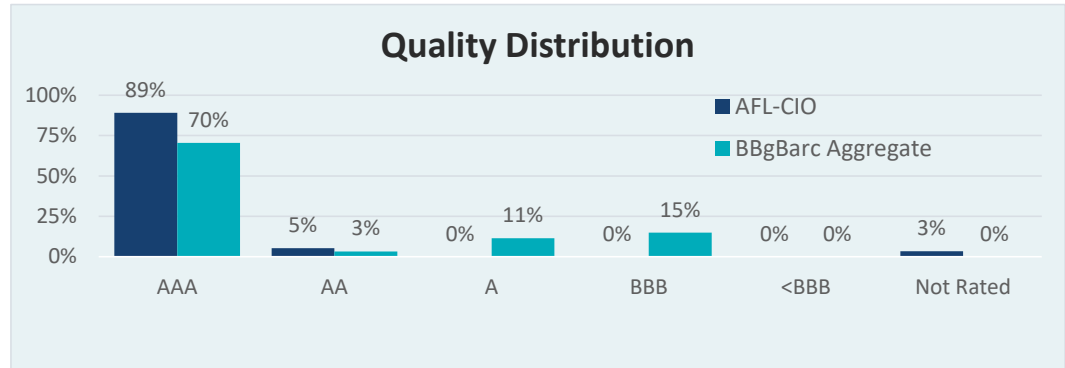


# AFL-CIO Manager Portfolio Overview

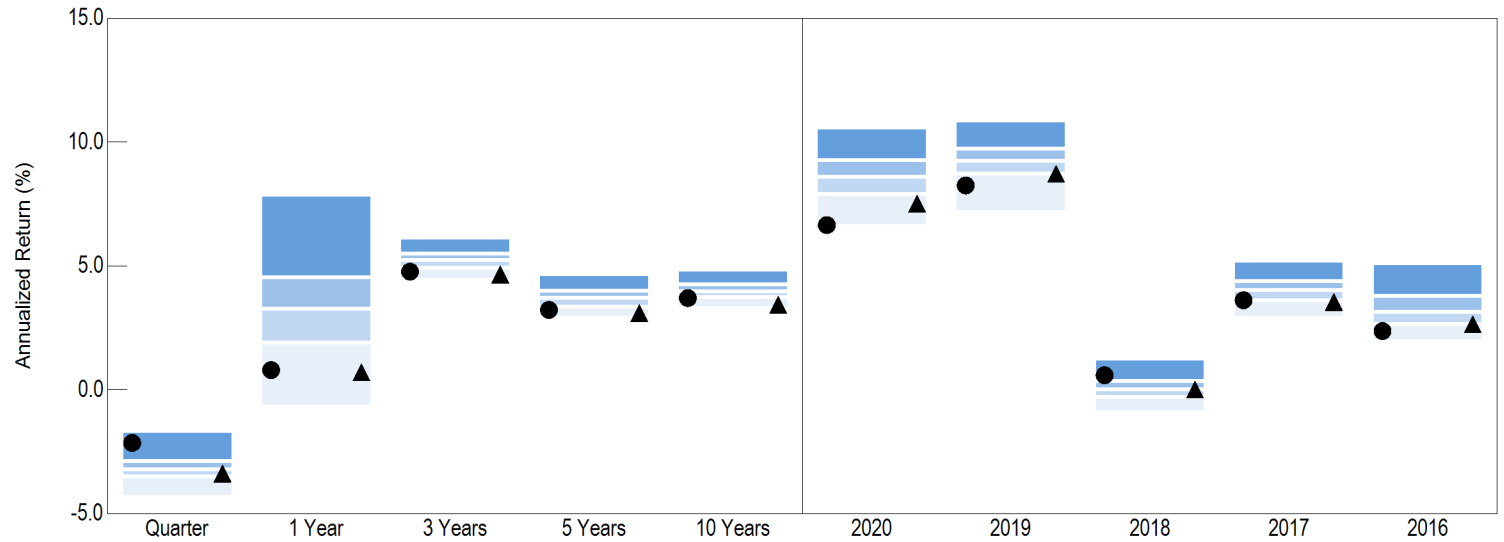
Period Ending: March 31, 2021

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	5.90	6.40
Yield to Maturity	2.63	1.61
Average Quality	AAA	AA/AA+
Average Coupon	2.7%	2.6%

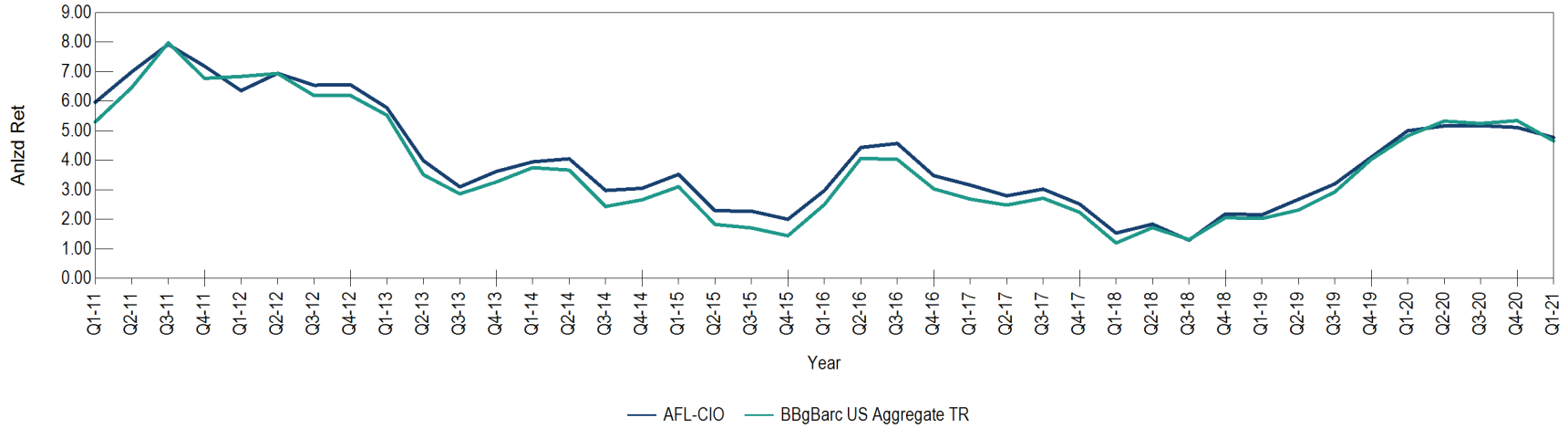


AFL-CIO vs. eV US Core Fixed Inc Gross Universe

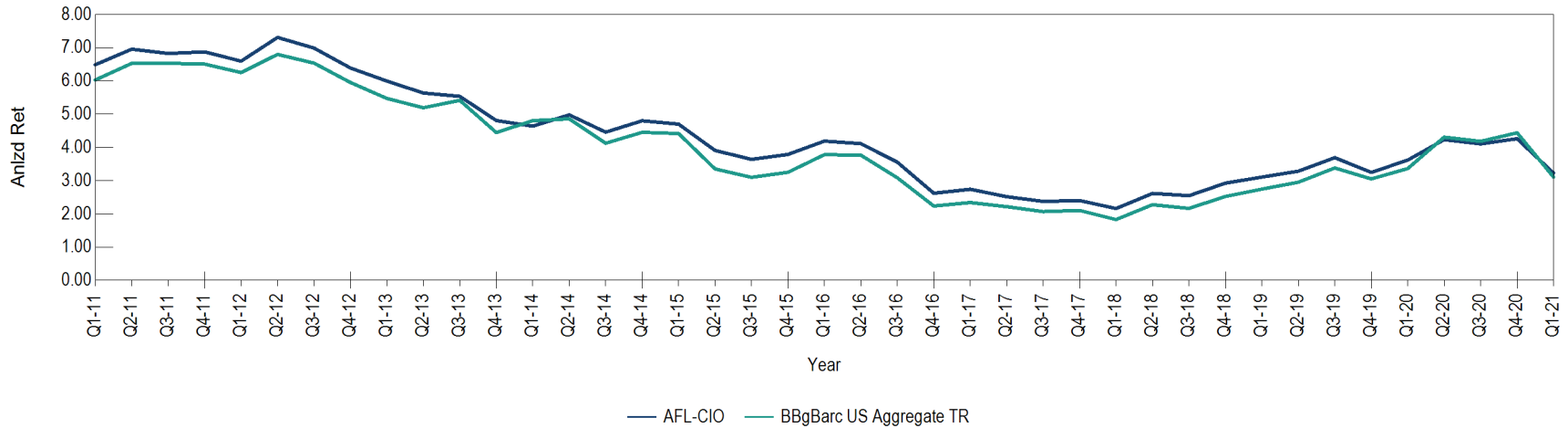


	Return (Rank)										
	Quarter	1 Year	3 Years	5 Years	10 Years	2020	2019	2018	2017	2016	
5th Percentile	-1.7	7.9	6.1	4.7	4.8	10.6	10.9	1.2	5.2	5.1	
25th Percentile	-2.9	4.6	5.5	4.0	4.3	9.3	9.8	0.4	4.4	3.8	
Median	-3.2	3.3	5.2	3.7	4.0	8.6	9.3	0.0	4.0	3.2	
75th Percentile	-3.5	1.9	4.9	3.4	3.8	7.9	8.7	-0.3	3.6	2.7	
95th Percentile	-4.3	-0.7	4.5	2.9	3.3	6.6	7.2	-0.9	2.9	2.0	
# of Portfolios	217	217	213	210	200	225	228	240	233	223	
● AFL-CIO	-2.1 (8)	0.8 (90)	4.8 (84)	3.2 (87)	3.7 (82)	6.6 (95)	8.2 (88)	0.6 (16)	3.6 (76)	2.4 (87)	
▲ BBgBarc US Aggregate TR	-3.4 (66)	0.7 (91)	4.7 (90)	3.1 (91)	3.4 (93)	7.5 (85)	8.7 (77)	0.0 (54)	3.5 (79)	2.6 (77)	

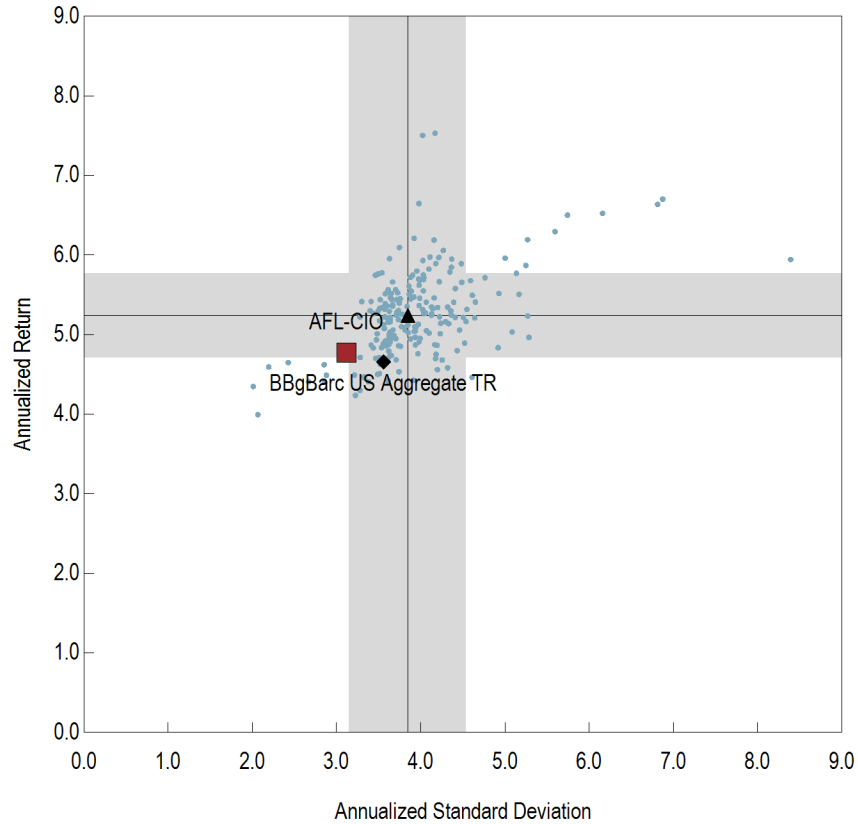
Rolling 3 Year Annualized Return (%)



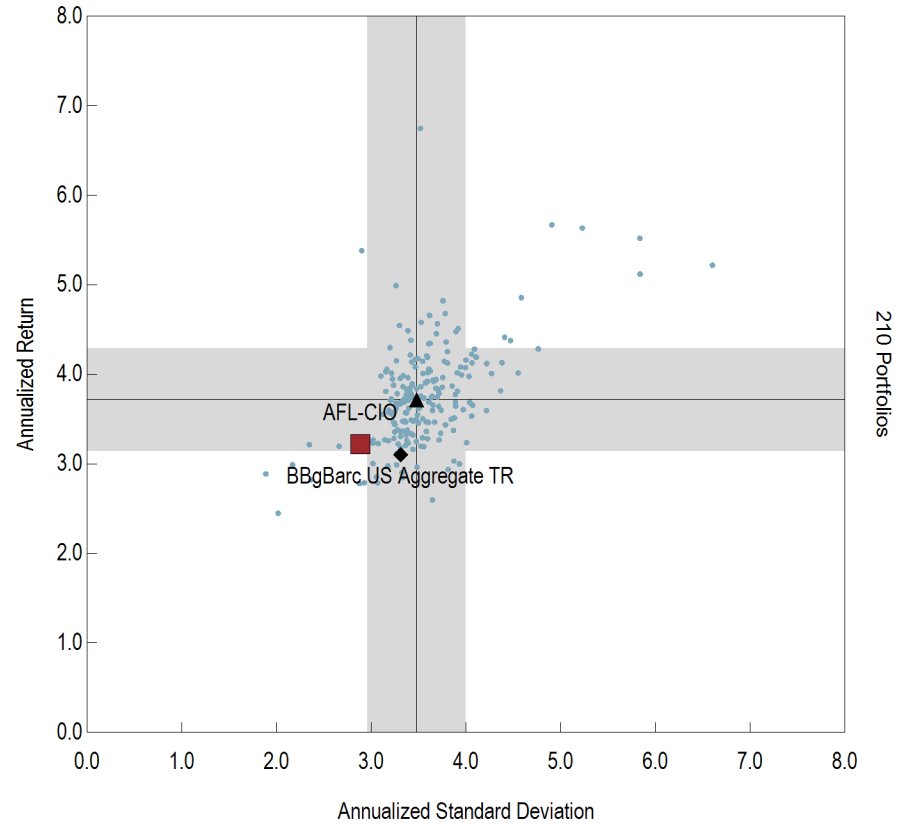
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	4.8%	3.1%	1.1
BBgBarc US Aggregate TR	4.7%	3.6%	0.9
eV US Core Fixed Inc Gross Median	5.2%	3.8%	1.0

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	3.2%	2.9%	0.7
BBgBarc US Aggregate TR	3.1%	3.3%	0.6
eV US Core Fixed Inc Gross Median	3.7%	3.5%	0.7

## Liquidity Managers

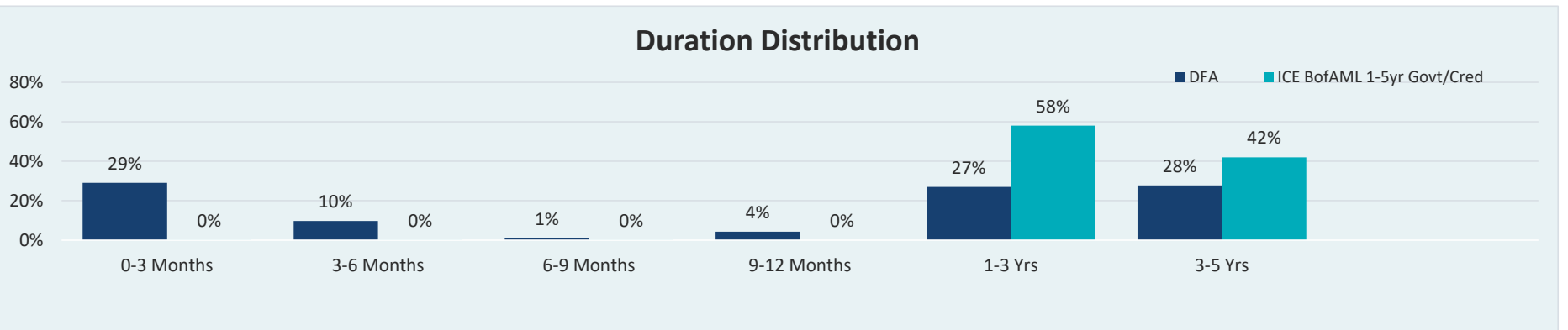
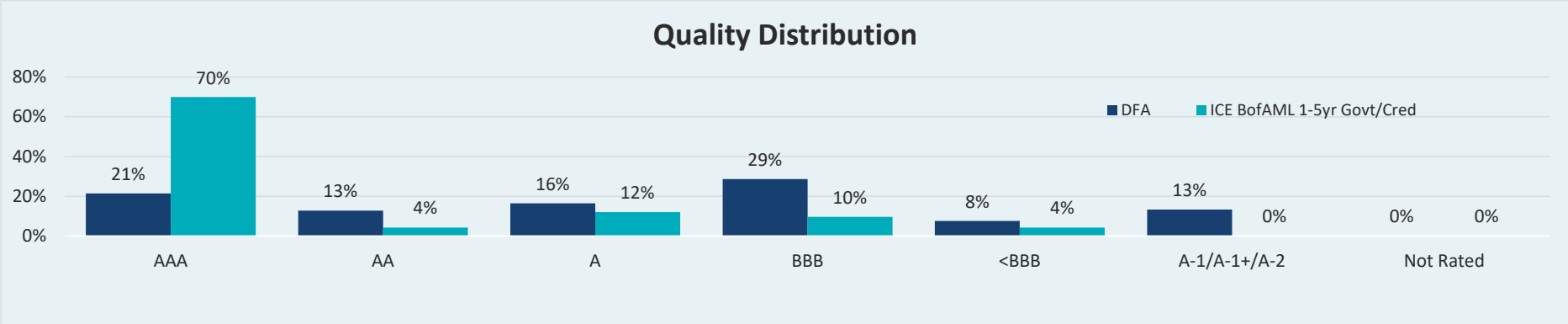
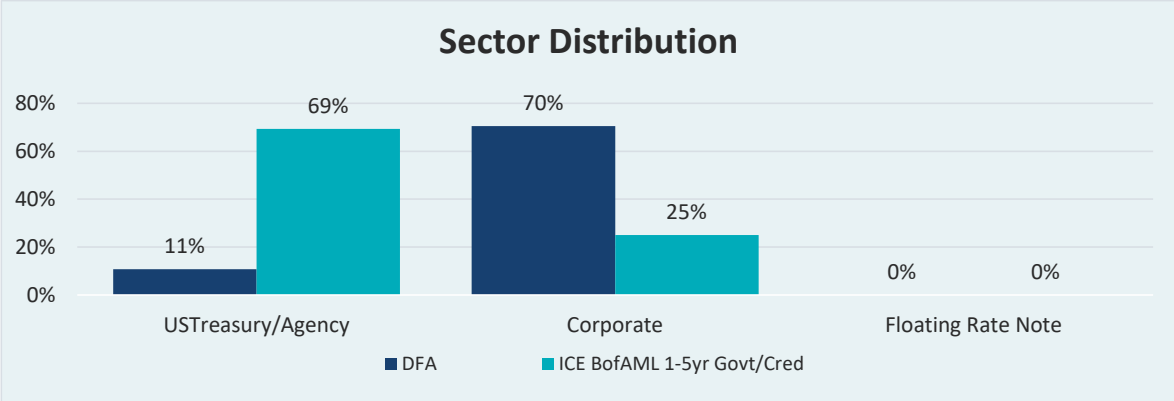
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# DFA Short Credit Manager Portfolio Overview

Period Ending: March 31, 2021

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	1.67	2.71
Yield to Maturity	0.81	0.60
Average Quality	A+	AA+
Average Coupon	1.84%	2.05%

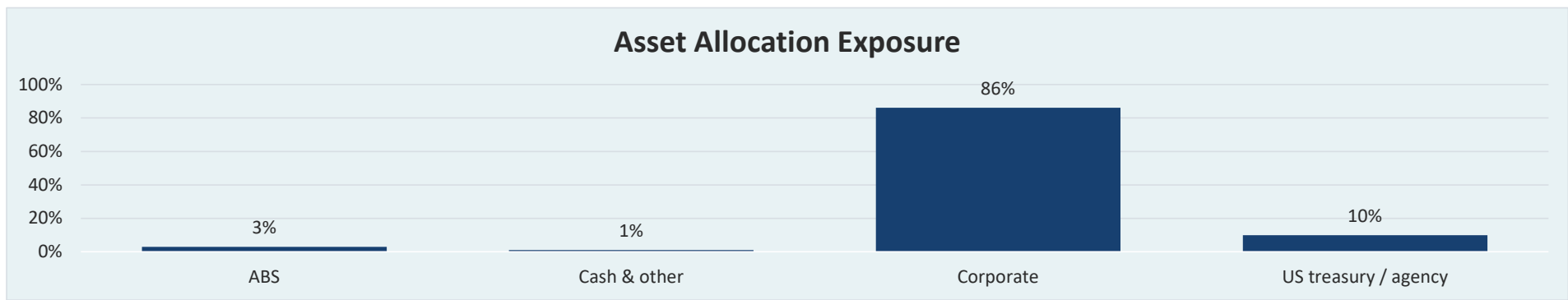
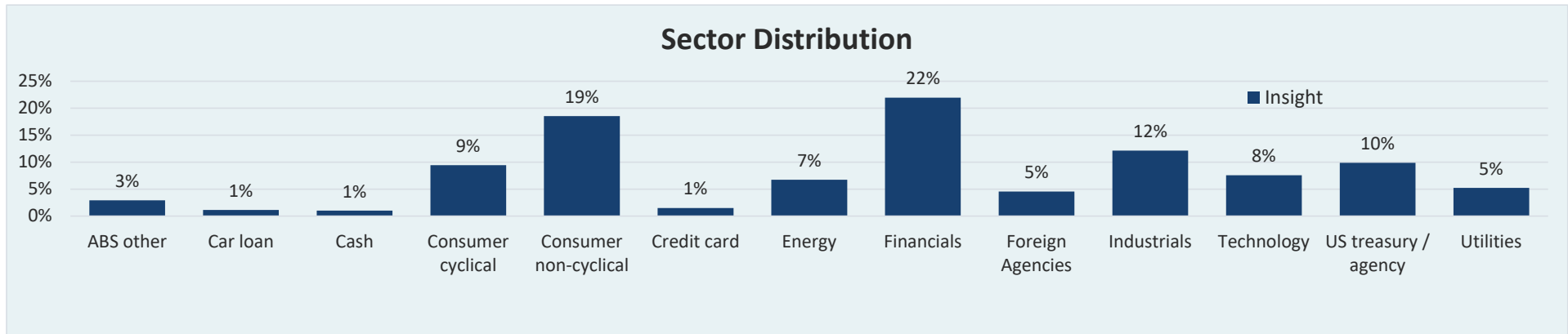
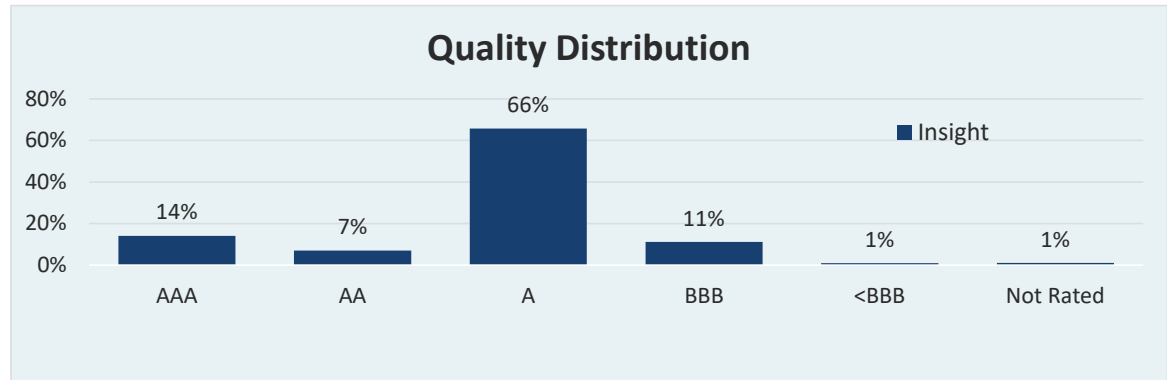


# Insight Short Duration Manager Portfolio Overview

Period Ending: March 31, 2021

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.

	Insight	BBgBarc 1-3yr Govt
Effective Duration	1.47	1.97
Yield to Maturity	0.69	0.19
Average Quality	A	AAA
Average Coupon	2.76%	1.35%

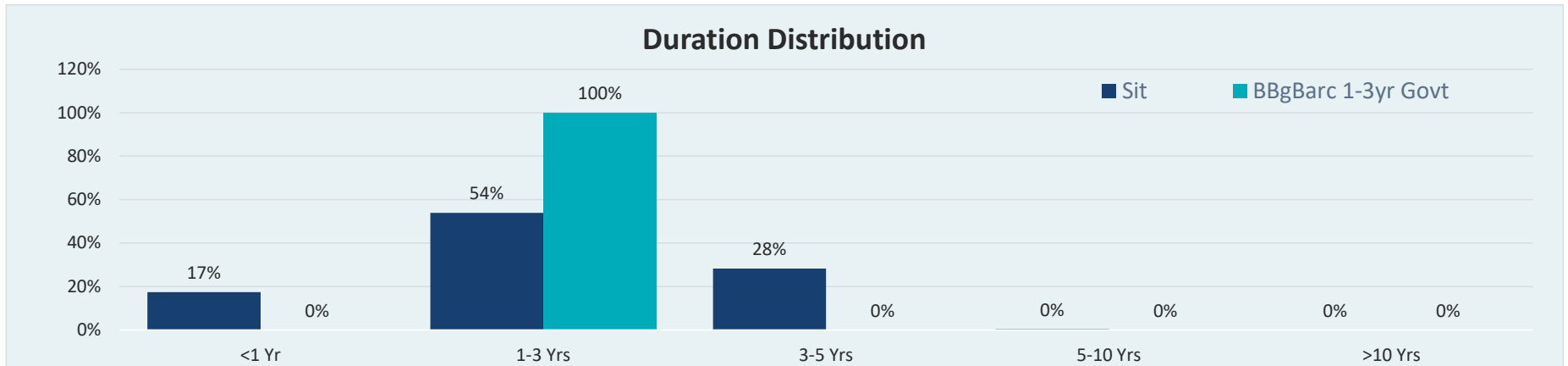
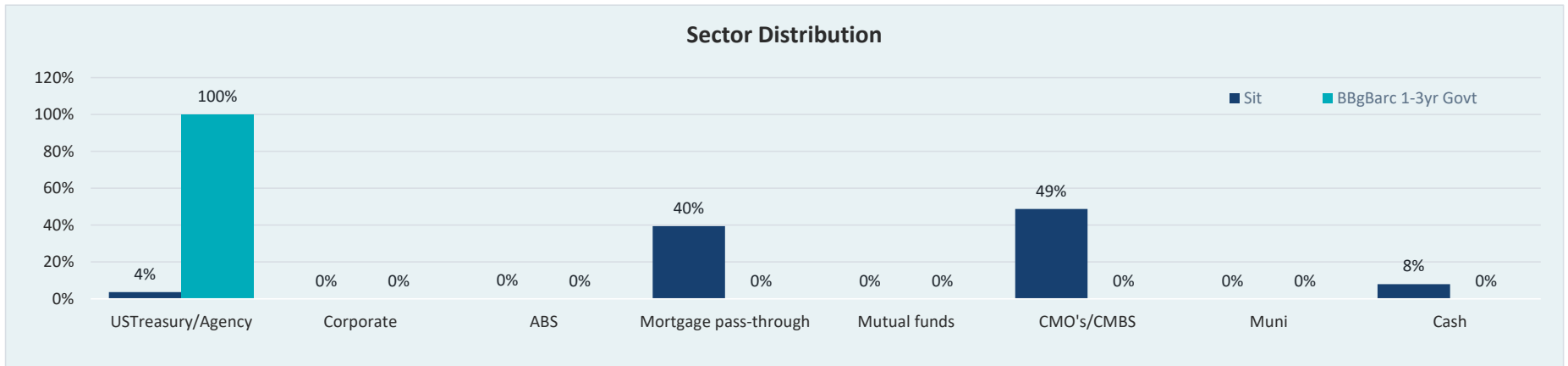
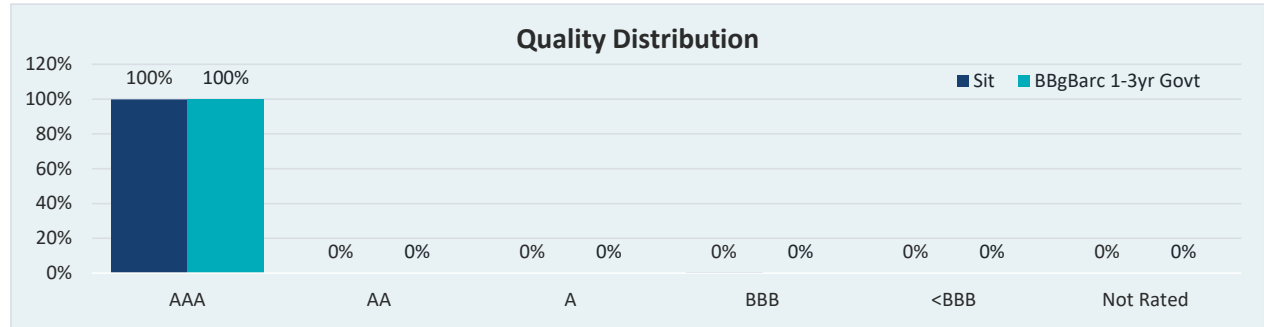


# Sit Short Duration Manager Portfolio Overview

Period Ending: March 31, 2021

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
<b>Modified Duration</b>	<b>2.10</b>	<b>2.00</b>
<b>Yield to Maturity</b>	<b>1.40</b>	<b>0.20</b>
<b>Average Quality</b>	<b>AAA</b>	<b>AAA</b>
<b>Average Coupon</b>	<b>5.60%</b>	<b>1.30%</b>





**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 (1/1/2021 - present)	9% Russell 3000, 18% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 8% Private Real Estate composite returns, 1.5% CPI + 4%, 11% Private Equity composite returns, 7% Private Credit composite returns, 1.5% ICE BofAML High Yield Master II, 25% BBgBarc 1-3 Yr Gov/Credit, 3% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 2% HFRI EH Equity Market Neutral.
Policy Index (7/1/2020 - 12/31/2020)	9% 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, 1.5% CPI + 4%, 11% S&P 500 +4% (Lagged), 7% ICE BofAML High Yield Master II +2%, 1.5% ICE BofAML High Yield Master II, 25% BBgBarc 1-3 Yr Gov/Credit, 3% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 2% HFRI EH Equity Market Neutral.
Policy Index (7/1/2019 - 6/30/2020)	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%, 10.1% 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 & Custom Index Composition (continued)

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 (12/31/2020 - present)	13.14% Russell 3000, 26.28% MSCI ACWI ex-US (Gross), 16.06% MSCI ACWI (Net), 1.46% Wilshire REIT, 11.68 Private Real Estate composite returns%, 16.06% Private Equity composite returns, 10.22% Private Credit composite returns, 2.19% ICE BofAML High Yield Master II, 2.92% BBgBarc Global Bond
Custom Growth Benchmark (7/1/2020 - 12/31/2020)	13.14% Russell 3000, 26.28% MSCI ACWI ex-US (Gross), 16.06% MSCI ACWI (Net), 1.46% Wilshire REIT, 2.34% NCREIF Property Index, 9.33% NCREIF ODCE Index, 16.06% S&P 500 +4% (Lagged), 10.22% ICE BofAML High Yield Master II +2%, 2.19% ICE BofAML High Yield Master II, 2.92% BBgBarc Global Bond
Custom Growth Benchmark (7/1/2019 - 6/30/2020)	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 (8/1/2020 - present)	46.15% BBgBarc US Aggregate, 30.77 FTSE 3-Month T-bill +4%, 23.08 FTSE 3-Month T-bill +5%.
Custom Diversifying Benchmark (7/1/2018 - 7/31/2020)	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, 89% Private Real Estate composite returns.

**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 (in Liquidation)	2/26/2013	Wellington	Aether Real Assets III	11/27/2013	StepStone Group
Acadian Multi-Asset Absolute Return Fund	8/4/2020	Northern Trust	Aether Real Assets III Surplus	11/30/2013	StepStone Group
Parametric Defensive Equity	7/23/2018	Northern Trust	Bay Area Equity Fund	6/14/2004	StepStone Group
Sit Short Duration	11/2/2016	Northern Trust	Bay Area Equity Fund II	12/7/2009	StepStone Group
DFA Short Credit	11/21/2016	Northern Trust	Commonfund	6/28/2013	StepStone Group
Insight Short Duration	11/18/2016	Northern Trust	EIF US Power Fund II	8/16/2005	StepStone Group
Parametric Overlay	3/29/2017	Northern Trust	EIF US Power Fund III	5/30/2007	StepStone Group
Cash	-	Northern Trust	EIF US Power Fund IV	11/28/2011	StepStone Group
Angelo Gordon Energy Credit Opp	9/24/2015	StepStone Group	EIF US Power Fund V	11/28/2016	StepStone Group
StepStone CC Opportunities Fund	2/1/2018	StepStone Group	Genstar Capital Partners IX, L.P.	2/21/2019	StepStone Group
Torchlight II	9/30/2006	StepStone Group	Oaktree PIF 2009	2/28/2010	StepStone Group
Torchlight IV	7/1/2012	StepStone Group	Paladin III	11/30/2007	StepStone Group
Torchlight V	7/1/2012	StepStone Group	Ocean Avenue Fund II	6/11/2014	StepStone Group
Angelo Gordon Realty Fund VIII	1/23/2012	Angelo Gordon	Ocean Avenue Fund III	4/15/2016	StepStone Group
Angelo Gordon Realty Fund IX	12/8/2014	Angelo Gordon	Pathway 6	5/24/2011	StepStone Group
DLJ RECP III	6/23/2005	DLJ	Pathway 7	2/7/2013	StepStone Group
DLJ RECP IV	2/11/2008	DLJ	Pathway 8	11/23/2015	StepStone Group
DLJ RECP V	7/1/2014	DLJ	Pathway	11/9/1998	StepStone Group
DLJ RECP VI	3/19/2019	DLJ	Pathway 2008	12/26/2008	StepStone Group
LaSalle Income & Growth VI	7/16/2013	LaSalle	Siguler Guff CCCERA Opps	6/3/2014	StepStone Group
LaSalle Income & Growth VII	2/28/2017	LaSalle	Siguler Guff Secondary Opps	11/30/2016	StepStone Group
Hearthstone II	6/17/1998	Hearthstone	Siris Partners IV	3/15/2019	StepStone Group
Long Wharf Fund IV	7/3/2013	Long Wharf	TPG Healthcare Partners, L.P.	6/28/2019	StepStone Group
Long Wharf Fund V	9/30/2016	Long Wharf	Trident VIII, L.P.	5/24/2019	StepStone Group
Long Wharf Fund VI	2/5/2020	Long Wharf	Wastewater Opp. Fund	12/8/2015	StepStone Group
Invesco Real Estate III	6/30/2013	Invesco			

**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

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**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.

## Disclaimer

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Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.





Meeting Date  
**05/26/2021**  
Agenda Item  
**#6**

**Memorandum**

Date: May 26, 2021  
To: CCCERA Board of Retirement Trustees  
From: Timothy Price, Chief Investment Officer  
Subject: Investment Staff Report – Q1 2021

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**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 68.5% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 6.5% 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 ten 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.

### **1) Liquidity**

The purpose of the liquidity program is to match four years of benefit payments with high credit quality, low duration assets. We will transition to targeting three years of benefit payments in the liquidity program over the second and third quarters of 2021. 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 2021, 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.

For the trailing five-year period ending March 31, 2021, the Growth portfolio returned 10.8% relative to the index return of 13.2%, for a relative underperformance of 2.4%. During the first quarter of 2021, the public markets remained strong, with the MSCI ACWI Index returning 4.6% relative to CCCERA's Growth sub-portfolio return of 4%. The relative underperformance of CCCERA's sub-portfolio in 2021 is largely due to a lower risk profile, a significant allocation to private markets (in particular real estate) and the sharp underperformance of value strategies relative to growth and momentum strategies, though this latter factor began to reverse itself in late 2020 and continues into 2021.

### **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 two of these goals. The entire mandate can be liquidated within 90 days, meeting the requirement of high liquidity. The correlation of the mandate to growth markets is 0.7, which shows elevated, but not increasing, diversification compared to 0.7 correlation as of December 2020. However, trailing real (net of inflation) returns over the past five years is -0.7%, an improvement from -0.8% and -1.1% from the two previous quarters, but remains below expectations. We continue to actively underwrite a number of strategies to further build out this allocation.

The Liquidity and Growth sub-portfolios are largely functioning well and within expectations. We are in the midst of restructuring the Risk Diversifying sub-portfolio to address performance concerns. By and large, the product teams and asset managers across all managers are stable, and we have no significant organizational concerns with our investment managers. CCCERA's Total Fund in aggregate is performing in line with expectations, having a similar or higher risk-adjusted return but 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	38 Months	Meeting Expectations

#### Growth

Objective	Measurement	Current Period Data	Status
Growth of Plan Assets	Absolute Returns	Trailing 5 yr return: 10.8%	Meeting Expectations
	Benchmark Relative Returns	-2.4% relative to ACWI over trailing 5 years	Below Expectations
Efficient Capital Deployment	Sharpe Ratio	CCCERA: 0.9 MSCI ACWI: 0.7 (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 -0.7%	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	-3%	16%	N
Sit	Good	14%	17%	N
DFA	Good	13%	40%	N

**Performance**

	Portfolio Average Credit Quality	Portfolio Average Duration	Portfolio Average Yield	1 Year Total Return
Insight	A	1.5	0.7	1.3%
Sit	AAA	2.1	1.4	1.5%
DFA	A+	1.7	0.8	3.3%

**Manager Notes:**

All three Liquidity managers performed in line with expectations over the prior year, with DFA in particular showing a sharp rebound in its composite performance.

**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	27%	47%	N
Jackson Square	Good	-20%	13%	N
BlackRock Index Fund	Good	43%	39%	N
Emerald Advisors	Good	69%	69%	N
Ceredex	Good	59%	16%	N
Pyrford (BMO)	Good	38%	24%	N
William Blair	Good	28%	49%	N
First Eagle	Good	20%	16%	N
Artisan Global	Good	54%	71%	N
PIMCO/RAE EM	Good	-13%	21%	N
TT EM	Good	122%	55%	N
Adelante	Good	-13%	2%	N
Allianz	Good	26%	26%	N
AQR	Good	19%	-2%	N
PanAgora	Good	46%	30%	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	66%	13%	Y
Jackson Square	61%	18%	Y
BlackRock Index Fund	61%	17%	Y
Emerald Advisors	85%	19%	Y
Ceredex	76%	11%	Y
Pyrford (BMO)	32%	7%	Y
William Blair	62%	13%	Y
First Eagle	40%	9%	Y
Artisan Global	58%	19%	Y
PIMCO/RAE EM	68%	11%	Y
TT EM	74%	16%	Y
Adelante	35%	6%	N
Allianz	17%	6%	Y
AQR	16%	7%	Y
PanAgora	22%	8%	Y
	1Yr Premium	5 Year Premium	
Private Equity	-37%	-1%	N
Private Credit	-51%	-6%	N
Real Estate	-56%	-8%	N

#### Manager Notes:

The relative underperformance of small capitalization, non-US and value strategies that I highlighted during 2020 has reversed and these strategies outperformed significantly in the first quarter of 2021. With this recovery in value-oriented strategies, most managers have performed exceedingly well over the past year. The value strategies will need continued outperformance in order to close the gap with growth strategies experienced over the past five years. All private markets strategies lagged their public market counterparts for the one and five-year periods ending March 31, 2021. Much of this is due to the valuation lag on these strategies, but we will continue to closely monitor the public vs. private performance differential in the coming year.

Jackson Square showed a 20% decline in strategy assets over the past year due to Vanguard removing the firm as a sub-advisor to their mutual fund lineup.

#### 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?
AFL-CIO	Good	8%	8%	N
Parametric	Good	-37%	40%	N
Acadian	Good	250%	40%	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
AFL-CIO	0.8	-0.3	0%	3%	100%
Parametric	-0.8	---	8%	N/A	100%
Acadian	-0.6	-0.4	-2%	N/A	100%

### Manager Notes:

Parametric is owned by Eaton Vance, which is being acquired by Morgan Stanley. In conjunction with this transaction, the firm announced that Jay Strohmaier, Portfolio Manager of the strategy employed by CCCERA, would retire on March 31, 2021. He has been succeeded by Alex Zweber. The decline in Parametric's VRP strategy assets over the past year reflects our partial redemption in late 2020.

During the first quarter, the Board approved a defensive strategy with Sit Fixed Income. This strategy was funded in early April and will be shown in the second quarter report.

### 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.

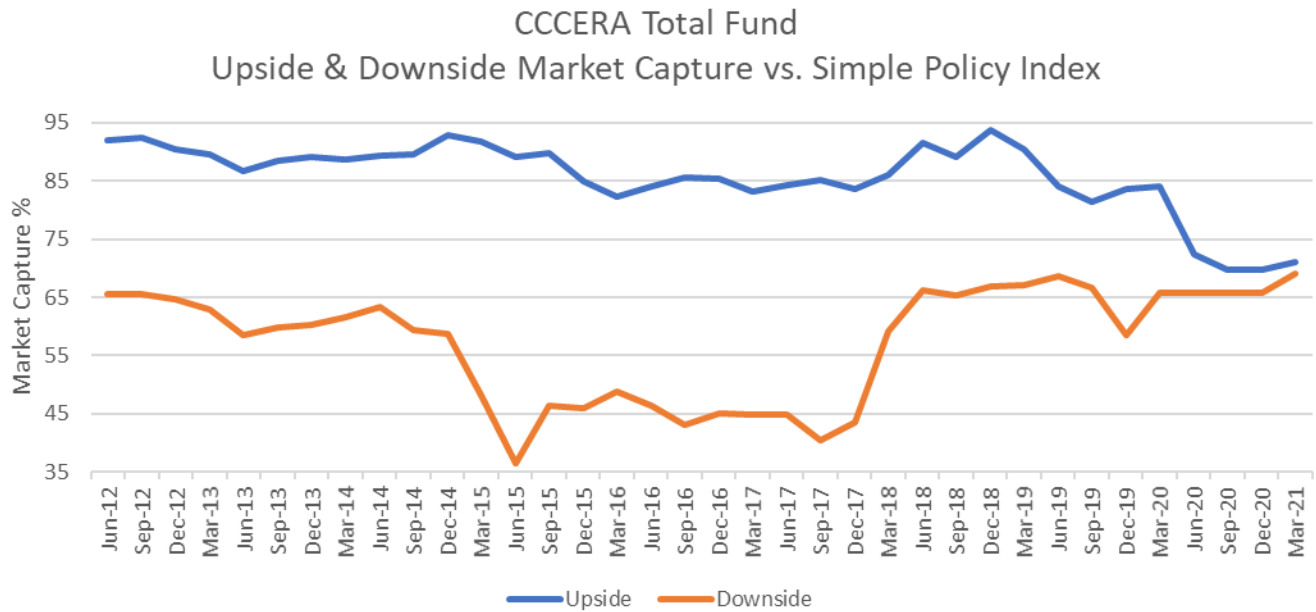
**AFL-CIO:** Portfolio of domestic, high quality fixed income securities which are backed by commercial and residential mortgages.

**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.

**Acadian:** Quantitatively managed multi-asset absolute return strategy that uses various models to capture pricing dislocations.

## 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 September 2018 the composition was 61% MSCI ACWI, 27% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from July 2018 to September 2019 the composition is 69% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills, from July 2019 to September 2020 the composition is 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills, and from July 2020 to the present the composition is 68.5% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 6.5% 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	23.9%	-0.1%	0.0%	25.0%	0.0%	0.0%	-1.1%	0.0%	0.0%
Growth	71.1%	4.0%	2.8%	68.5%	4.6%	3.1%	2.6%	-0.6%	-0.3%
Risk Diversifying	5.0%	-0.4%	0.0%	6.5%	0.0%	0.0%	-1.5%	-0.5%	0.0%
Total Fund	100%		2.8%	100%		3.1%	-0.1%		-0.3%

## 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	24.1	36.0	7.8	9.6	8.6	9.5	8.0	6.8
Volatility	5.3	9.1	10.2	15.3	8.0	11.8	7.7	10.8
Sharpe	<b>4.5</b>	<b>3.9</b>	<b>0.6</b>	<b>0.5</b>	<b>0.9</b>	<b>0.7</b>	<b>1.0</b>	<b>0.6</b>

The Simple Target Index is made up of 68.5% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 6.5% 3-Month Treasury Bill. This 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 and absolute returns over the trailing five and ten-year periods. Additionally, the CCCERA Portfolio has exceeded the STI over the trailing ten-year period, though it has lagged in more recent periods. This would indicate that CCCERA has been rewarded over time for engaging in more complex investments which target outperformance versus investing passively in the publicly traded market even though these more complex structures have lagged the public markets sharply in the past year which is a drag on short and medium-term performance.

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. The Total Fund has exceeded the Sharpe ratio of the Simple Target Index over all trailing time periods, indicating that CCCERA is being favorably rewarded for the level of risk taken in the portfolio.



# Memorandum

**To:** Board of Trustees, Contra Costa County Employees' Retirement Association  
**From:** Scott J. Whalen, CFA, CAIA, Executive Managing Director | Senior Consultant  
**Date:** May 26, 2021  
**Re:** Amendments to Investment Policy Statement

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At the March 24 Board Meeting, we presented a red-lined Investment Policy Statement to the Board for review that included several recommended changes, including those related to the Liquidity Sub-Portfolio allocation, Staff investment authority, and general improvement opportunities.

At that time, the Board approved the changes related to the Liquidity Sub-Portfolio allocation and chose to consider the other recommended changes further at a future Board meeting. Of particular interest was the recommendation to increase Staff investment authority and the language addressing Trustee involvement in CCCERA's investment manager due diligence and review processes.

These items were brought back to the Board the following month at the April 28<sup>th</sup> Board meeting, at which time we presented detailed analysis and an updated recommendation on the Staff investment authority issue. We also participated in a thorough discussion with the Board, along with Fiduciary Counsel, on the subject of Trustee involvement in manager due diligence and review. During these discussions, the Board provided clear direction on both topics, which is reflected in revised language in the updated red-line version of the IPS included in today's Board packet.

The remaining edits submitted for Board consideration and approval include the following:

1. Investment Staff authority for new investments: this now reflects our approved recommendation to simplify the approach by which the authority limit is applied and raise the limit from \$100MM to \$150MM (IPS Section 2.i., p. 5-6 of red-line version);
2. Trustee involvement in CCCERA's investment manager due diligence and review processes: this now reflects Board direction on emphasizing Trustee oversight of the process, while

acknowledging observation of, rather than participation in, due diligence and review activities (IPS Section 2.i., p. 6 and Section 8, p. 14 of red-line version); and

3. Multiple edits throughout the document, reflecting identified improvement opportunities with relatively little impact.

# Contra Costa County Employees' Retirement Association Investment Policy Statement

Adopted: January 14, 1986

Restated: September 28, 2016

Amended: ~~March 24~~May 26, 2021

# CCCERA INVESTMENT POLICY STATEMENT

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# CCCERA INVESTMENT POLICY STATEMENT

## Contra Costa County Employees' Retirement Association Investment Policy Statement

Adopted: January 14, 1986

Restated: September 28, 2016

Amended: ~~March 24~~ May 26, 2021

AMENDED: 1/14/86, 2/27/86, 10/13/87, 8/9/88, 6/13/89, 8/8/89, 1/8/91, 10/13/92, 2/9/93, 5/2/94, 10/14/97, 5/4/99, 1/9/01, 2/12/02, 06/11/02, 11/06/02, 1/28/04, 5/26/04, 7/28/04, 12/14/05, 10/24/07, 4/08/09, 10/30/13, 9/28/16, 4/24/19, 3/24/21, 5/26/21

The Contra Costa County Employees' Retirement Association (CCCERA) is a public employee retirement system that was established by the County of Contra Costa on July 1, 1945. CCCERA is administered by the CCCERA Board of Retirement (Board) to provide service retirement, disability, death, and survivor benefits for county employees and sixteen other participating agencies under the County Employees Retirement Law of 1937, California Government Code Section 31450 *et. seq.* (CERL), the California Public Employees' Pension Reform Act of 2013, California Government Code Section 7522 *et. seq.* (PEPRA) and other applicable laws.

### 1. PURPOSE

CCCERA has established an investment program (Investment Program) designed to provide sufficient assets in a timely manner to pay the benefits due to participants today and in the future, over the long-term. The purpose of this Investment Policy Statement (IPS) is to establish the policies that will guide the Investment Program. This IPS is intended to provide guidance to the Board and to its delegates, the Staff, and third-party professionals. This IPS is supported by the Board's Investment Resolutions, the Investment Procedures (Procedures), and Board policies that reflect the needs of the defined benefit plan (Plan) that the Board administers. The Investment Resolutions, policies and other Board documents identified in Appendix 1 hereto are incorporated into this IPS and made a part hereof by this reference.

### 2. AUTHORITY

The Investment Program shall be managed in accordance with applicable law, including but not limited to the following:

- The assets of the Plan are trust funds and shall be held for the exclusive purposes of providing benefits to the participants in the Plan and their beneficiaries and defraying reasonable expenses of administering the Plan (Cal. Const. art. XVI, sec. 17(b); Cal. Govt. Code sec. 31595).

## CCCERA INVESTMENT POLICY STATEMENT

- The board and its officers and employees shall discharge their duties with respect to the system:
    - (a) Solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system.
    - (b) With the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims.
    - (c) Shall diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly prudent not to do so.
- (Cal. Const. art. XVI sec. 17(b), (c) and (d); Cal. Gov. Code Sec. 31595 (a), (b) and (c)).

### 3. GOVERNANCE

The Board hereby adopts a governance model whereby specific authority, responsibility, and accountability are either retained by the Board or delegated to others based on areas of expertise and appropriate oversight. The Board retains sole responsibility governing the Plan, setting investment policy, and monitoring the Investment Program. It may choose to delegate specific areas of responsibility provided it retains appropriate oversight of the delegated activity.

#### A. Roles and Responsibilities

##### 1. BOARD OF RETIREMENT

The Board maintains the sole and plenary authority and fiduciary responsibility for the Investment Program. The Board also understands it may delegate certain responsibilities under the Investment Program for purposes of administrative efficiency and expertise. The areas of the Investment Program the Board may not delegate include:

- The governance model of the Investment Program
- Establishing and maintaining investment policy, including:
  - Investment philosophy
  - This IPS
  - Investment objectives
  - Strategic asset allocation
  - Allocation-level performance benchmarks
  - Risk philosophy
- Engaging Board consultants and service providers
- Monitoring the Investment Program

## CCCERA INVESTMENT POLICY STATEMENT

### 2. STAFF

CCCERA Staff (Staff), including the Chief Executive Officer (CEO) and Chief Investment Officer (CIO), is broadly responsible for supporting the Board in the effective execution of the Investment Program. The CEO provides general direction and supervision to the CIO. The CEO and the CIO have been delegated authority to execute specific elements of the Investment Program as outlined herein, ~~including as well as in~~ the Investment Resolutions. The CEO has the authority to execute and terminate contracts between CCCERA and investment managers or other service providers as approved by the Board. The CIO has the authority to rebalance the portfolio under Section 3.B.1. of this IPS. The CIO also has the authority to manage the investment managers within the Plan under Section 3.B.2 of this IPS.

### 3. GENERAL INVESTMENT CONSULTANT

The General Investment Consultant (Consultant) is engaged by the Board to provide independent, objective investment advice. The Consultant is and shall agree to be a fiduciary to the Plan under California law. The Consultant works with Staff in the development of recommendations while recognizing its fiduciary duty is to provide prudent investment advice to the Board. The Consultant provides advice without discretionary authority to execute on its advice. The specific duties of the Consultant are contained in an Agreement for Professional Investment Consulting Services, and generally include providing advice with respect to:

- Investment strategy development and implementation
- Investment policy development
- Asset allocation among classes and subclasses
- Investment manager selection, evaluation, and termination
- Investment performance monitoring
- Investment risk monitoring
- Capital markets projections
- Coordination with the Plan's actuary in conducting periodic asset/liability studies and other required reporting
- Board education

### 4. SPECIALTY INVESTMENT CONSULTANTS

Specialty consultants may be hired by the Board to work with Staff, the Consultant, and/or the Board. These will typically be asset class consultants (e.g., real estate, private equity, hedge funds) that may operate on a discretionary or non-discretionary basis, as directed by the Board, to meet the objectives of the Investment Program.

## CCCERA INVESTMENT POLICY STATEMENT

### 5. INVESTMENT MANAGERS

CCCERA engages Investment Managers to invest and manage CCCERA's assets; in accordance with this IPS, the manager's mandate, governing contractual documents and applicable state and federal laws and regulations. The Board has delegated the authority to CCCERA's Chief Investment Officer, on the advice of legal counsel, to negotiate terms of engagement with Investment Managers so as to assure that CCCERA's interests are appropriately furthered and Investment Managers observe a fiduciary standard of care. At a minimum, Investment Managers (and any affiliated General Partners) will be required to comply with all applicable state and federal laws and regulations. Investment Managers shall be registered investment advisors under the federal Investment Advisors Act of 1940, unless expressly exempted from registration.

Subject to this IPS and any specific contractual obligations to the Plan, Investment Managers are responsible for making all investment decisions on a discretionary basis regarding assets placed under their jurisdiction and will be accountable for achieving their investment objectives. Such discretion shall include decisions to buy, hold, and sell assets in amounts and proportions that are reflective of the agreed-upon investment mandate.

### 6. CUSTODIAN BANK

The Custodian Bank, selected by the Board to act as the principal custodian of assets of the trust, is delegated the responsibility of holding the assets and evidence of interests owned by CCCERA in investment vehicles and cash (and equivalents). The Board may authorize the Custodian Bank to invest in temporary short-term fixed income investments both for the investment strategies and as a part of the cash portion of Plan assets. Such investments will be managed in general accordance with short-term fixed income investment guidelines as detailed in the Custodial Agreement. Cash managed for investment strategies shall be considered to be sub-portions of the assets managed by the directing Investment Managers.

The Custodian Bank shall be authorized to conduct a securities lending program within liquidity and risk constraints as established by the Board.

### **B. Delegation of Authority**

The Board has delegated authority to the CIO for certain functions as detailed below. Delegation of authority will be coordinated with workflow, compliance and reporting procedures that are clearly defined, reviewed, and approved. This IPS is used to describe the delegation of authority generally with the Investment Resolutions providing additional requirements and processes. The Board shall be notified in a timely manner of all investment decisions made by the CIO and their implications to the Plan.



# CCCERA INVESTMENT POLICY STATEMENT

## 1. REBALANCING

The Board recognizes there may be a cost to maintaining strict adherence to a target asset allocation in terms of both transaction costs and opportunity costs. The Board also recognizes that the benefit of cost minimization must be balanced against the assumption of active risk associated with allowing variances to asset allocation targets.

The CIO is delegated the authority to conduct portfolio rebalancing in order to meet two distinct objectives. The first is to maintain the long-term strategic asset allocation targets approved by the Board. The second is to capture valuation-based opportunities by deviating from the long-term strategic asset allocation targets within Zones 1 and 2 as follows:

### i. Zone 1

The CIO may periodically rebalance the portfolio within Zone 1 ranges as set forth in the Investment Resolutions. When such rebalancing activity occurs, the CIO shall notify the Board at the next regularly scheduled meeting.

### ii. Zone 2

With prior approval of the Board, the CIO may rebalance the portfolio within Zone 2 ranges as set forth in the Investment Resolutions. When such rebalancing activity occurs, the CIO shall notify the Board at the next regularly scheduled meeting.

For each of the zones listed above, special consideration will be given to illiquid asset classes recognizing that their funding and redemption processes are different than those of the liquid asset classes. As such, each illiquid asset class is assigned a liquid asset class to function as a holding place while the corresponding illiquid strategies are being invested.

Portfolio rebalancing may occur by adjusting allocations to individual investment strategies or managers or through the use of an overlay provider using derivatives.

## 2. INVESTMENT PORTFOLIO MANAGEMENT

While the Board believes the vast majority of investment return over the long term is dependent on the asset allocation decision and ongoing due diligence, it recognizes additional risk and return may be generated by how the asset allocation is implemented. These implementation decisions will largely be delegated to the CIO to be executed within the parameters established in the Investment Resolutions.

### i. Hiring a new manager

The CIO shall have the authority to hire new managers (i.e., purchase interests in new investment vehicles) ~~in accordance with the Plan's active risk budget and~~ up to an investment amount of \$~~15000~~ million per fund, subject to the remaining

## CCCERA INVESTMENT POLICY STATEMENT

~~terms of this IPS. The \$100 million shall represent the cumulative total amount of originally committed capital under the management of a single investment manager and its affiliates. (By way of example, two vintage year funds under one manager with a commitment of \$50 million each would reach the total of \$100 million.) The CEO shall have authority to execute the contracts, consistent with the delegation of authority outlined in this IPS. Any cumulative commitment above \$100 million shall require explicit Board approval.~~

~~In all cases, the hiring process must be consistent with the requirements for vendor selection detailed in the Procedures and other Plan policy documents, including but not limited to the Code of Fiduciary Conduct and Ethics, Conflict of Interest Code, Placement Agent Disclosure Policy and Procurement of Products and Services Policy.~~

Subject to the foregoing limitations, the CIO, with the assistance of Staff, the Consultant, and Specialty Consultants, shall be responsible for conducting all due diligence activities in connection with hiring new managers. Since the Board encourages trustee oversight, the CIO shall query Board members as to their interest in observing the due diligence process and shall include any Board member(s) expressing such interest.~~The CIO shall invite the involvement of one or more Board members in the due diligence process.~~

Quiet period. During the process of hiring a new manager, a quiet period will apply during the evaluation process, during which time no Board member may knowingly have any communication with any actual or potential candidate for the mandate, unless authorized by the Board in connection with the due diligence process in selecting managers. The quiet period shall cease upon the Board entering into a contract with the Investment Manager(s) selected for the mandate. The CIO is responsible for alerting the candidates and the Board to the commencement and duration of the quiet period and its restrictions. A violation of the quiet period rule may result in disqualification of the candidate or other appropriate Board action.

~~In the case of closed end funds with a limited investment lifecycle, additional investments are periodically required to maintain asset allocation targets. For such follow on investments, Staff shall have the authority to make additional investments in an amount necessary to maintain the intended exposure, as estimated by a detailed funding analysis. Any additional investment beyond that which is required to maintain the intended exposure must be pre-approved by the Board.~~

~~In all cases, the hiring process must be consistent with the requirements for vendor selection detailed in the Procedures and other Plan policy documents (e.g., Procurement of Products and Services Policy, Placement Agent Disclosure Policy,~~

## CCCERA INVESTMENT POLICY STATEMENT

### ~~Conflict of Interest Code).~~

In all cases, the hiring process must be consistent with the requirements for vendor selection detailed in the Procedures and other Plan policy documents, including but not limited to the Code of Fiduciary Conduct and Ethics, Conflict of Interest Code, Placement Agent Disclosure Policy and Procurement of Products and Services Policy.

### ii. Terminating existing managers

The Board recognizes investments may need to be adjusted or removed from the Plan portfolio from time to time for a variety of reasons, including:

- Organizational changes including those to the people and processes in place
- A manager's style has deviated from the initial investment thesis
- A manager's style, strategy, ethics, or philosophy is no longer appropriate for the Investment Program
- Underperformance relative to benchmark or other expectations
- Uncompetitive pricing compared to available alternatives

The CIO shall have the authority to terminate investment managers. Absent emergency circumstances (described below), prior to terminating a manager, the CIO shall present a detailed termination memo to the Board that includes:

- Purpose of the mandate
- Reason(s) for termination
- Specific plan to replace or temporarily invest the assets

Although the Board's explicit approval is not required, it shall maintain veto authority should a majority of the Board decide the planned termination is not in the best interest of the Plan.

Emergency termination. An emergency will be deemed to exist when an investment strategy suffers the resignation or other loss of its portfolio manager(s) and no appropriate replacement is available; when an investment management firm dissolves, ceases to exist, or is otherwise incapable of carrying out its activities in the ordinary course of its business; when an investment management firm is actually or effectively shut down by a regulatory agency of a state or the Federal government or is accused of theft or fraud by a regulatory agency or other government body; when the Plan's investment is in jeopardy of material loss; or when such other developments with the investment management firm give concern to the CIO that the investment is no longer prudent for the Investment Program. Staff shall take action to transfer management of the affected investment strategy as soon as possible after CCCERA learns of the emergency. In the case of an emergency, the CEO, or in the CEO's absence, the Deputy CEO or the CIO will

## **CCCERA INVESTMENT POLICY STATEMENT**

attempt to notify the Chair and Vice Chair of the Board immediately; notify the Custodian Bank that the Investment Manager's Managed Account is to be frozen and, except for those trades which are pending, no further trading is authorized; and may call a special meeting of the Board to take further action.

# CCCERA INVESTMENT POLICY STATEMENT

## 4. INVESTMENT PHILOSOPHY

The Investment Philosophy represents the foundational principles on which the Investment Program is based. Every investment decision should be made with these foundational principles in mind to promote the fulfillment of the fiduciary obligations. The statements below set forth the Board's Investment Philosophy:

### **Plan objectives should guide all decision making**

The Investment Program is designed to provide benefits to participants over a long term without accepting undue risks that could be detrimental to the participants or Plan sponsors. The Investment Program, therefore, must be managed in a prudent manner recognizing the relationships between the benefits promised to participants and their beneficiaries, the financial health of the Plan sponsors, and the exposures within the Investment Program.

### **Asset allocation drives portfolio volatility and returns**

It is impossible to accurately and consistently predict the future; therefore, the Plan is required to be prudently diversified across and within asset classes in anticipation of various economic conditions. In a well-diversified portfolio, the overall volatility of investment returns is principally driven by the asset allocation and secondarily driven by the individual investment strategies. As such, asset allocation is the primary tool by which the Board can manage the expected risk/return profile of the Plan.

### **Short-term investing**

Over shorter investment periods of up to five (5) years, volatility can be more detrimental to the success of the Investment Program. Because paying benefits to participants and their beneficiaries occurs continuously, the forced selling of assets during broad market corrections to meet these payments could result in the long-term impairment of investable capital. By maintaining a portion of the portfolio invested in low-volatility, highly liquid securities and investment strategies, the Investment Program will be able to mitigate or avoid the forced selling of assets during broad market corrections.

### **Long-term investing**

Over longer investment periods, volatility can be managed more effectively to produce beneficial results for the Investment Program. Market corrections will occur and when they do, patient and well-capitalized investors are able to wait until the market recovery takes place. Additionally, broad market corrections have historically provided investment opportunities for those with available capital and the foresight to make additional investments.

### **Fees**

Fees directly impact the investment results of the Investment Program but are necessary to appropriately compensate the investment management of the Investment Program. Fees

## CCERA INVESTMENT POLICY STATEMENT

must, therefore, be measured closely against the value the Investment Program expects to earn and aligned to ensure incentives are consistent with the objectives of the Plan.

### 5. INVESTMENT OBJECTIVES

The investment objectives of the Investment Program are:

- To provide liquidity to meet retiree benefit payments in a timely manner;
- To produce long-term real growth to meet future retiree benefit payments and maintain a funding surplus or closing a funding gap over time; and
- To protect the assets against the adverse impacts of ~~rising inflation and~~ investment market volatility.

Investment objectives specific to the individual investment strategies are further defined in the Board's Investment Strategy portion of this IPS.

### 6. INVESTMENT STRATEGY

The Board has chosen to employ an investment strategy that seeks to align the Investment Program with the investment objectives listed in Section 5 of this IPS. The strategy divides the portfolio into three functional sub-portfolios—Liquidity, Growth, and Diversifying—to address each investment objective highlighted in Section 5. The Liquidity Sub-portfolio is dedicated to funding near-term benefit payments. It is joined with the longer-term Growth Sub-portfolio, as well as the Diversifying Sub-portfolio, which is intended to offset some of the investment risks embedded in the Growth Sub-portfolio. While the three sub-portfolios are aligned with the investment objectives individually, collectively they allow the Investment Program to provide appropriate risk and return characteristics.

#### A. Asset Allocation

The Board has adopted a strategic asset allocation based on the Plan's projected actuarial liabilities, liquidity needs, risk tolerance and the risk/return expectations for various asset classes. This asset allocation seeks to optimize long-term returns for the level of risk the Board considers appropriate. The current asset allocation table may be found in the Asset Allocation Investment Resolution.

Since projected liability and risk/return expectations will change over time, the Board will conduct a periodic review of the strategic asset allocation to maintain an expected optimal allocation. The Board may also revise the asset allocation in response to significantly changing conditions that have affected valuations and forward-looking expected returns of asset classes. The Board will review capital market expectations annually. The result of this review will be used to update the Investment Resolutions as needed.

# CCCERA INVESTMENT POLICY STATEMENT

## B. Functional Sub-portfolios

As noted previously, the investment strategy for the Investment Program employs three functional sub-portfolios to construct the comprehensive asset allocation. The allocation to the Liquidity Sub-portfolio is assessed annually and is based on the projected benefit payments and expenses of the Plan. The remaining assets are invested in the Growth and Diversifying sub-portfolios. Annually the Board shall review the relative size and composition of these sub-portfolios and revise them as necessary through Investment Resolutions. The functional sub-portfolios are set forth below:

### 1. LIQUIDITY SUB-PORTFOLIO

The purpose of the Liquidity Sub-portfolio is to ensure adequate assets are available to pay benefits over an extended timeframe as outlined in the Investment Resolutions. The Board has established a target allocation amount of 36 months' worth of projected benefit payments in the Liquidity Sub-portfolio, which will be drawn down and replenished annually. The assets will be invested in highly liquid, low volatility securities expected to generate modest levels of return while preserving capital throughout a market cycle. This portfolio ~~will~~may contain assets such as cash, short-term bonds, laddered government bonds, derivatives, and other investments that provide fixed, contractual cash flows with ~~an appropriate minimum~~ level of credit risk. As a secondary purpose, a portion of the Liquidity Sub-portfolio may be allocated to the Growth Sub-portfolio during broad market corrections so long as at least 18 months of projected benefit payments and expenses are maintained in the Liquidity Sub-portfolio.

The success of the Liquidity Sub-portfolio will be measured by its ability to directly fund benefit payments through low-risk, cash flowing investments, as well as providing a stable offset to the rest of the portfolio during periods of severe market stress.

### 2. GROWTH SUB-PORTFOLIO

The purpose of the Growth Sub-portfolio is to grow invested assets over the long term in order to pay future benefits. ~~Assets from the Growth Sub-portfolio may be sold over time and transferred to the Liquidity Sub-portfolio as needed.~~ This portfolio is characterized by a long investment horizon and can, therefore, accept a higher level of volatility. Assets in this portfolio may be volatile, have reduced liquidity, and derive the bulk of their return from capital appreciation. These assets include public and private equity, corporate and other debt with credit risk premiums, private real estate, and other private assets.

The success of this portfolio will be measured primarily by compounded annual growth rates in conjunction with the annualized standard deviation of returns as the

## CCCERA INVESTMENT POLICY STATEMENT

primary measure of risk. Performance evaluation will, therefore, focus on the long-term total risk-adjusted return of the portfolio.

### 3. DIVERSIFYING SUB-PORTFOLIO

The purpose of the Diversifying Sub-portfolio is to offset the investment risk of the Growth Sub-portfolio. Investment strategies in the Diversifying Sub-portfolio are expected to have return profiles that have a low correlation to those in the Growth Sub-portfolio. This is expected to effectively dampen the market volatility across the entire portfolio. As a secondary objective, the investment strategies in the Diversifying Sub-portfolio will offer additional sources of return to those in the Liquidity and Growth sub-portfolios. ~~Assets in the Diversifying Sub-portfolio may be sold during times of market stress or when the assets in the Growth Sub-portfolio are impaired in order to fund the Liquidity Sub-portfolio.~~

The success of the Diversifying Sub-portfolio will be measured by its ability to offset declines in value in the Growth Sub-portfolio, as well as its ability to provide liquidity during times of market stress.

### 4. INTERACTION BETWEEN THE FUNCTIONAL SUB-PORTFOLIOS

The allocations to the Liquidity, Growth, and Diversifying sub-portfolios will vary over time. The Liquidity Sub-portfolio will operate as a drawdown vehicle to pay benefits and expenses. The Growth and Diversifying sub-portfolios will be subject to the volatility of the markets in which each functional sub-portfolio invests. In order to reallocate between the functional sub-portfolios, the Board will conduct two annual reviews: an annual capital review to assess the relative value and risks associated with each asset class; and an annual funding plan to determine how to replenish the Liquidity Sub-portfolio.

Annually the CIO and Consultant jointly shall deliver a review of the capital markets to the Board. The Consultant will provide the Board current forward-looking risk and return assumptions for all major asset classes. In conjunction with this review, the CIO will provide a recommendation of how best to allocate assets within each functional sub-portfolio. If necessary, the CIO will recommend changes in target allocations to the underlying asset classes in order to deploy the Investment Program's assets effectively in the upcoming year.

Additionally and subsequent to the capital markets review, the CIO will present an annual funding plan, which will provide a recommendation of how best to replenish the Liquidity Sub-portfolio for the next projected 36 months of benefits payments and expenses. The CIO will provide a monthly report to the Board on the progress of funding the Liquidity Sub-portfolio through a combination of harvesting income from the Growth and Diversifying sub-portfolios, asset sales in the Growth and/or



## CCCERA INVESTMENT POLICY STATEMENT

Diversifying sub-portfolios or the use of contributions. Under normal market conditions, the balance in the Liquidity Sub-portfolio is expected to vary between 24 and 36 months of projected benefit payments and expenses.

### C. Investment Strategy Attributes

All investment strategies, whether currently used by the Investment Program or being considered for inclusion in the Investment Program, will be evaluated on their own unique risk and return characteristics, as well as their contribution to the overall Investment Program's risk and return characteristics. Other risks pertaining to the individual investment strategies and/or the firm managing the strategy will also be considered.

Fees and expenses of the investment strategies will be closely evaluated against competitive strategies and the value provided for the services rendered. While lower fees are clearly preferred over higher fees, the Plan seeks to identify investment strategies capable of providing value for participants by generating net-of-fee investment returns in excess of benchmark returns ~~plus fees~~. Fee structures will be evaluated to ensure appropriate incentives are provided to achieve the desired outcomes for the Investment Program.

## 7. RISK PHILOSOPHY

The Board recognizes ~~that~~ the assumption of investment risk is necessary to meet the Plan's objectives. Investment risk is viewed as both the annualized standard deviation of investment returns (volatility) and drawdown exposure. Drawdown exposure measures the expected investment loss during a market correction. Additional sources of risk include regulatory, governmental, counterparty, environmental, social and currency. Investment risk, in and of itself, is intrinsically neither good nor bad; it is a condition accepted in the pursuit of investment returns. The goal in managing investment risk is to ensure ~~that~~ an acceptable level of risk is being taken at the total Plan portfolio level. To accomplish this goal, the Plan invests in broad asset classes, via specific investment strategies within those asset classes, which have desirable expected return, risk, and correlation characteristics. While the individual strategies have a wide range of risk and return characteristics, the correlations between the strategies allows for effective portfolio diversification.

The approach used in constructing the portfolio further focuses on the risk characteristics by ensuring the preservation of the Liquidity Sub-portfolio assets as detailed previously in this IPS. Because these assets are invested in lower risk and lower return investments, the assets are well protected. This then allows for the Growth Sub-portfolio to assume greater investment risk in pursuit of higher expected returns. The Diversifying Sub-portfolio then offsets a portion of the investment risk embedded in the Growth Sub-portfolio to protect against drawdown risks.

## CCCERA INVESTMENT POLICY STATEMENT

### 8. PORTFOLIO MONITORING

In discharging its fiduciary duty to prudently manage the Investment Program, the Board has developed the following structure for ongoing monitoring of existing investment managers. Reporting processes are, therefore, designed to provide the Board with the information needed to execute this oversight function. Accurate, timely, and clear reporting to the Board of the Plan's assets, investment risks and returns, portfolio costs, and investment decisions are essential to assisting the Board in discharging its fiduciary duties.

The CIO and General Investment Consultant will monitor individual investment managers' performance quarterly and annually. The managers' organizations and operations will be qualitatively monitored on a continual basis.

The General Investment Consultant will present a portfolio investment performance report to the Board on a quarterly basis. Performance will be measured for the total portfolio as well as sub-portfolios and individual portfolios. Each investment manager shall have a clear role within the total fund. The quarterly report will highlight any variance from that role.

The CIO, with the assistance of the General Investment Consultant and Specialty Consultants, shall conduct periodic on-site ~~due diligence~~ review activities in connection with evaluating managers. Since the Board encourages member oversight, the CIO shall query Board members as to their interest in observing the review process and shall include any Board member(s) expressing such interest. ~~The CIO shall invite the involvement of one or more Board members in the due diligence process.~~ Additionally, the Board may from time to time determine that it is in the best interest of the participants and beneficiaries for one or more Board members to visit the offices of an investment manager, in order to further the Board members' understanding of the manager's strategy and its role in the CCCERA portfolio.

# CCCERA INVESTMENT POLICY STATEMENT

## APPENDIX 1: REFERENCED INCORPORATED DOCUMENTS

The documents referenced in the Investment Policy Statement are listed below and incorporated by reference into this IPS:

- CCCERA Board Investment Resolutions
- Placement Agent Disclosure Policy
- Code of Fiduciary Conduct and Ethics
- Conflict of Interest Code
- Procurement of Products and Services Policy
- Other Investment-Related Board Actions

Meeting Date  
**05/26/2021**  
Agenda Item  
**#7**

# Contra Costa County Employees' Retirement Association Investment Policy Statement

Adopted: January 14, 1986

Restated: September 28, 2016

Amended: May 26, 2021

# CCCERA INVESTMENT POLICY STATEMENT

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# CCCERA INVESTMENT POLICY STATEMENT

## Contra Costa County Employees' Retirement Association Investment Policy Statement

Adopted: January 14, 1986

Restated: September 28, 2016

Amended: May 26, 2021

AMENDED: 1/14/86, 2/27/86, 10/13/87, 8/9/88, 6/13/89, 8/8/89, 1/8/91, 10/13/92, 2/9/93, 5/2/94, 10/14/97, 5/4/99, 1/9/01, 2/12/02, 06/11/02, 11/06/02, 1/28/04, 5/26/04, 7/28/04, 12/14/05, 10/24/07, 4/08/09, 10/30/13, 9/28/16, 4/24/19, 3/24/21, 5/26/21

The Contra Costa County Employees' Retirement Association (CCCERA) is a public employee retirement system that was established by the County of Contra Costa on July 1, 1945. CCCERA is administered by the CCCERA Board of Retirement (Board) to provide service retirement, disability, death, and survivor benefits for county employees and sixteen other participating agencies under the County Employees Retirement Law of 1937, California Government Code Section 31450 *et. seq.* (CERL), the California Public Employees' Pension Reform Act of 2013, California Government Code Section 7522 *et. seq.* (PEPRA) and other applicable laws.

### 1. PURPOSE

CCCERA has established an investment program (Investment Program) designed to provide sufficient assets in a timely manner to pay the benefits due to participants today and in the future, over the long-term. The purpose of this Investment Policy Statement (IPS) is to establish the policies that will guide the Investment Program. This IPS is intended to provide guidance to the Board and to its delegates, the Staff, and third-party professionals. This IPS is supported by the Board's Investment Resolutions, the Investment Procedures (Procedures), and Board policies that reflect the needs of the defined benefit plan (Plan) that the Board administers. The Investment Resolutions, policies and other Board documents identified in Appendix 1 hereto are incorporated into this IPS and made a part hereof by this reference.

### 2. AUTHORITY

The Investment Program shall be managed in accordance with applicable law, including but not limited to the following:

- The assets of the Plan are trust funds and shall be held for the exclusive purposes of providing benefits to the participants in the Plan and their beneficiaries and defraying reasonable expenses of administering the Plan (Cal. Const. art. XVI, sec. 17(b); Cal. Govt. Code sec. 31595).

## CCCERA INVESTMENT POLICY STATEMENT

- The board and its officers and employees shall discharge their duties with respect to the system:
    - (a) Solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the system.
    - (b) With the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims.
    - (c) Shall diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly prudent not to do so.
- (Cal. Const. art. XVI sec. 17(b), (c) and (d); Cal. Gov. Code Sec. 31595 (a), (b) and (c)).

### 3. GOVERNANCE

The Board hereby adopts a governance model whereby specific authority, responsibility, and accountability are either retained by the Board or delegated to others based on areas of expertise and appropriate oversight. The Board retains sole responsibility governing the Plan, setting investment policy, and monitoring the Investment Program. It may choose to delegate specific areas of responsibility provided it retains appropriate oversight of the delegated activity.

#### A. Roles and Responsibilities

##### 1. BOARD OF RETIREMENT

The Board maintains the sole and plenary authority and fiduciary responsibility for the Investment Program. The Board also understands it may delegate certain responsibilities under the Investment Program for purposes of administrative efficiency and expertise. The areas of the Investment Program the Board may not delegate include:

- The governance model of the Investment Program
- Establishing and maintaining investment policy, including:
  - Investment philosophy
  - This IPS
  - Investment objectives
  - Strategic asset allocation
  - Allocation-level performance benchmarks
  - Risk philosophy
- Engaging Board consultants and service providers
- Monitoring the Investment Program

## CCCERA INVESTMENT POLICY STATEMENT

### 2. STAFF

CCCERA Staff (Staff), including the Chief Executive Officer (CEO) and Chief Investment Officer (CIO), is broadly responsible for supporting the Board in the effective execution of the Investment Program. The CEO provides general direction and supervision to the CIO. The CEO and the CIO have been delegated authority to execute specific elements of the Investment Program as outlined herein, including the Investment Resolutions. The CEO has the authority to execute and terminate contracts between CCCERA and investment managers or other service providers as approved by the Board. The CIO has the authority to rebalance the portfolio under Section 3.B.1. of this IPS. The CIO also has the authority to manage the investment managers within the Plan under Section 3.B.2 of this IPS.

### 3. GENERAL INVESTMENT CONSULTANT

The General Investment Consultant (Consultant) is engaged by the Board to provide independent, objective investment advice. The Consultant is and shall agree to be a fiduciary to the Plan under California law. The Consultant works with Staff in the development of recommendations while recognizing its fiduciary duty is to provide prudent investment advice to the Board. The Consultant provides advice without discretionary authority to execute on its advice. The specific duties of the Consultant are contained in an Agreement for Professional Investment Consulting Services, and generally include providing advice with respect to:

- Investment strategy development and implementation
- Investment policy development
- Asset allocation among classes and subclasses
- Investment manager selection, evaluation, and termination
- Investment performance monitoring
- Investment risk monitoring
- Capital markets projections
- Coordination with the Plan's actuary in conducting periodic asset/liability studies and other required reporting
- Board education

### 4. SPECIALTY INVESTMENT CONSULTANTS

Specialty consultants may be hired by the Board to work with Staff, the Consultant, and/or the Board. These will typically be asset class consultants (e.g., real estate, private equity, hedge funds) that may operate on a discretionary or non-discretionary basis, as directed by the Board, to meet the objectives of the Investment Program.



## CCCERA INVESTMENT POLICY STATEMENT

### 5. INVESTMENT MANAGERS

CCCERA engages Investment Managers to invest and manage CCCERA's assets in accordance with this IPS, the manager's mandate, governing contractual documents and applicable state and federal laws and regulations. The Board has delegated the authority to CCCERA's Chief Investment Officer, on the advice of legal counsel, to negotiate terms of engagement with Investment Managers so as to assure that CCCERA's interests are appropriately furthered and Investment Managers observe a fiduciary standard of care. At a minimum, Investment Managers (and any affiliated General Partners) will be required to comply with all applicable state and federal laws and regulations. Investment Managers shall be registered investment advisors under the federal Investment Advisors Act of 1940, unless expressly exempted from registration.

Subject to this IPS and any specific contractual obligations to the Plan, Investment Managers are responsible for making all investment decisions on a discretionary basis regarding assets placed under their jurisdiction and will be accountable for achieving their investment objectives. Such discretion shall include decisions to buy, hold, and sell assets in amounts and proportions that are reflective of the agreed-upon investment mandate.

### 6. CUSTODIAN BANK

The Custodian Bank, selected by the Board to act as the principal custodian of assets of the trust, is delegated the responsibility of holding the assets and evidence of interests owned by CCCERA in investment vehicles and cash (and equivalents). The Board may authorize the Custodian Bank to invest in temporary short-term fixed income investments both for the investment strategies and as a part of the cash portion of Plan assets. Such investments will be managed in general accordance with short-term fixed income investment guidelines as detailed in the Custodial Agreement. Cash managed for investment strategies shall be considered to be sub-portions of the assets managed by the directing Investment Managers.

The Custodian Bank shall be authorized to conduct a securities lending program within liquidity and risk constraints as established by the Board.

### **B. Delegation of Authority**

The Board has delegated authority to the CIO for certain functions as detailed below. Delegation of authority will be coordinated with workflow, compliance and reporting procedures that are clearly defined, reviewed, and approved. This IPS is used to describe the delegation of authority generally with the Investment Resolutions providing additional requirements and processes. The Board shall be notified in a timely manner of all investment decisions made by the CIO and their implications to the Plan.

# CCCERA INVESTMENT POLICY STATEMENT

## 1. REBALANCING

The Board recognizes there may be a cost to maintaining strict adherence to a target asset allocation in terms of both transaction costs and opportunity costs. The Board also recognizes that the benefit of cost minimization must be balanced against the assumption of active risk associated with allowing variances to asset allocation targets.

The CIO is delegated the authority to conduct portfolio rebalancing in order to meet two distinct objectives. The first is to maintain the long-term strategic asset allocation targets approved by the Board. The second is to capture valuation-based opportunities by deviating from the long-term strategic asset allocation targets within Zones 1 and 2 as follows:

### **i. Zone 1**

The CIO may periodically rebalance the portfolio within Zone 1 ranges as set forth in the Investment Resolutions. When such rebalancing activity occurs, the CIO shall notify the Board at the next regularly scheduled meeting.

### **ii. Zone 2**

With prior approval of the Board, the CIO may rebalance the portfolio within Zone 2 ranges as set forth in the Investment Resolutions. When such rebalancing activity occurs, the CIO shall notify the Board at the next regularly scheduled meeting.

For each of the zones listed above, special consideration will be given to illiquid asset classes recognizing that their funding and redemption processes are different than those of the liquid asset classes. As such, each illiquid asset class is assigned a liquid asset class to function as a holding place while the corresponding illiquid strategies are being invested.

Portfolio rebalancing may occur by adjusting allocations to individual investment strategies or managers or through the use of an overlay provider using derivatives.

## 2. INVESTMENT PORTFOLIO MANAGEMENT

While the Board believes the vast majority of investment return over the long term is dependent on the asset allocation decision and ongoing due diligence, it recognizes additional risk and return may be generated by how the asset allocation is implemented. These implementation decisions will largely be delegated to the CIO to be executed within the parameters established in the Investment Resolutions.

### **i. Hiring a new manager**

The CIO shall have the authority to hire new managers (i.e., purchase interests in new investment vehicles) upto an investment amount of \$150 million per fund, subject to the remaining terms of this IPS.

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Subject to the foregoing limitations, the CIO, with the assistance of Staff, the Consultant, and Specialty Consultants, shall be responsible for conducting all due diligence activities in connection with hiring new managers. Since the Board encourages trustee oversight, the CIO shall query Board members as to their interest in observing the due diligence process and shall include any Board member(s) expressing such interest.

Quiet period. During the process of hiring a new manager, a quiet period will apply during the evaluation process, during which time no Board member may knowingly have any communication with any actual or potential candidate for the mandate, unless authorized by the Board in connection with the due diligence process in selecting managers. The quiet period shall cease upon the Board entering into a contract with the Investment Manager(s) selected for the mandate. The CIO is responsible for alerting the candidates and the Board to the commencement and duration of the quiet period and its restrictions. A violation of the quiet period rule may result in disqualification of the candidate or other appropriate Board action.

In all cases, the hiring process must be consistent with the requirements for vendor selection detailed in the Procedures and other Plan policy documents, including but not limited to the Code of Fiduciary Conduct and Ethics, Conflict of Interest Code, Placement Agent Disclosure Policy and Procurement of Products and Services Policy.

### **ii. Terminating existing managers**

The Board recognizes investments may need to be adjusted or removed from the Plan portfolio from time to time for a variety of reasons, including:

- Organizational changes including those to the people and processes in place
- A manager's style has deviated from the initial investment thesis
- A manager's style, strategy, ethics, or philosophy is no longer appropriate for the Investment Program
- Underperformance relative to benchmark or other expectations
- Uncompetitive pricing compared to available alternatives

The CIO shall have the authority to terminate investment managers. Absent emergency circumstances (described below), prior to terminating a manager, the CIO shall present a detailed termination memo to the Board that includes:

- Purpose of the mandate
- Reason(s) for termination
- Specific plan to replace or temporarily invest the assets

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Although the Board's explicit approval is not required, it shall maintain veto authority should a majority of the Board decide the planned termination is not in the best interest of the Plan.

Emergency termination. An emergency will be deemed to exist when an investment strategy suffers the resignation or other loss of its portfolio manager(s) and no appropriate replacement is available; when an investment management firm dissolves, ceases to exist, or is otherwise incapable of carrying out its activities in the ordinary course of its business; when an investment management firm is actually or effectively shut down by a regulatory agency of a state or the Federal government or is accused of theft or fraud by a regulatory agency or other government body; when the Plan's investment is in jeopardy of material loss; or when such other developments with the investment management firm give concern to the CIO that the investment is no longer prudent for the Investment Program. Staff shall take action to transfer management of the affected investment strategy as soon as possible after CCCERA learns of the emergency. In the case of an emergency, the CEO, or in the CEO's absence, the Deputy CEO or the CIO will attempt to notify the Chair and Vice Chair of the Board immediately; notify the Custodian Bank that the Investment Manager's Managed Account is to be frozen and, except for those trades which are pending, no further trading is authorized; and may call a special meeting of the Board to take further action.

# CCERA INVESTMENT POLICY STATEMENT

## 4. INVESTMENT PHILOSOPHY

The Investment Philosophy represents the foundational principles on which the Investment Program is based. Every investment decision should be made with these foundational principles in mind to promote the fulfillment of the fiduciary obligations. The statements below set forth the Board's Investment Philosophy:

### **Plan objectives should guide all decision making**

The Investment Program is designed to provide benefits to participants over a long term without accepting undue risks that could be detrimental to the participants or Plan sponsors. The Investment Program, therefore, must be managed in a prudent manner recognizing the relationships between the benefits promised to participants and their beneficiaries, the financial health of the Plan sponsors, and the exposures within the Investment Program.

### **Asset allocation drives portfolio volatility and returns**

It is impossible to accurately and consistently predict the future; therefore, the Plan is required to be prudently diversified across and within asset classes in anticipation of various economic conditions. In a well-diversified portfolio, the overall volatility of investment returns is principally driven by the asset allocation and secondarily driven by the individual investment strategies. As such, asset allocation is the primary tool by which the Board can manage the expected risk/return profile of the Plan.

### **Short-term investing**

Over shorter investment periods of up to five (5) years, volatility can be more detrimental to the success of the Investment Program. Because paying benefits to participants and their beneficiaries occurs continuously, the forced selling of assets during broad market corrections to meet these payments could result in the long-term impairment of investable capital. By maintaining a portion of the portfolio invested in low-volatility, highly liquid securities and investment strategies, the Investment Program will be able to mitigate or avoid the forced selling of assets during broad market corrections.

### **Long-term investing**

Over longer investment periods, volatility can be managed more effectively to produce beneficial results for the Investment Program. Market corrections will occur and when they do, patient and well-capitalized investors are able to wait until the market recovery takes place. Additionally, broad market corrections have historically provided investment opportunities for those with available capital and the foresight to make additional investments.

### **Fees**

Fees directly impact the investment results of the Investment Program but are necessary to appropriately compensate the investment management of the Investment Program. Fees

## CCCERA INVESTMENT POLICY STATEMENT

must, therefore, be measured closely against the value the Investment Program expects to earn and aligned to ensure incentives are consistent with the objectives of the Plan.

### 5. INVESTMENT OBJECTIVES

The investment objectives of the Investment Program are:

- To provide liquidity to meet retiree benefit payments in a timely manner;
- To produce long-term real growth to meet future retiree benefit payments and maintain a funding surplus or closing a funding gap over time; and
- To protect the assets against the adverse impacts of investment market volatility.

Investment objectives specific to the individual investment strategies are further defined in the Board's Investment Strategy portion of this IPS.

### 6. INVESTMENT STRATEGY

The Board has chosen to employ an investment strategy that seeks to align the Investment Program with the investment objectives listed in Section 5 of this IPS. The strategy divides the portfolio into three functional sub-portfolios—Liquidity, Growth, and Diversifying—to address each investment objective highlighted in Section 5. The Liquidity Sub-portfolio is dedicated to funding near-term benefit payments. It is joined with the longer-term Growth Sub-portfolio, as well as the Diversifying Sub-portfolio, which is intended to offset some of the investment risks embedded in the Growth Sub-portfolio. While the three sub-portfolios are aligned with the investment objectives individually, collectively they allow the Investment Program to provide appropriate risk and return characteristics.

#### A. Asset Allocation

The Board has adopted a strategic asset allocation based on the Plan's projected actuarial liabilities, liquidity needs, risk tolerance and the risk/return expectations for various asset classes. This asset allocation seeks to optimize long-term returns for the level of risk the Board considers appropriate. The current asset allocation table may be found in the Asset Allocation Investment Resolution.

Since projected liability and risk/return expectations will change over time, the Board will conduct a periodic review of the strategic asset allocation to maintain an expected optimal allocation. The Board may also revise the asset allocation in response to significantly changing conditions that have affected valuations and forward-looking expected returns of asset classes. The Board will review capital market expectations annually. The result of this review will be used to update the Investment Resolutions as needed.

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### B. Functional Sub-portfolios

As noted previously, the investment strategy for the Investment Program employs three functional sub-portfolios to construct the comprehensive asset allocation. The allocation to the Liquidity Sub-portfolio is assessed annually and is based on the projected benefit payments and expenses of the Plan. The remaining assets are invested in the Growth and Diversifying sub-portfolios. Annually the Board shall review the relative size and composition of these sub-portfolios and revise them as necessary through Investment Resolutions. The functional sub-portfolios are set forth below:

#### 1. LIQUIDITY SUB-PORTFOLIO

The purpose of the Liquidity Sub-portfolio is to ensure adequate assets are available to pay benefits over an extended timeframe as outlined in the Investment Resolutions. The Board has established a target allocation amount of 36 months' worth of projected benefit payments in the Liquidity Sub-portfolio, which will be drawn down and replenished annually. The assets will be invested in highly liquid, low volatility securities expected to generate modest levels of return while preserving capital throughout a market cycle. This portfolio may contain assets such as cash, short-term bonds, laddered government bonds, derivatives, and other investments that provide fixed, contractual cash flows with an appropriate level of credit risk. As a secondary purpose, a portion of the Liquidity Sub-portfolio may be allocated to the Growth Sub-portfolio during broad market corrections so long as at least 18 months of projected benefit payments and expenses are maintained in the Liquidity Sub-portfolio.

The success of the Liquidity Sub-portfolio will be measured by its ability to directly fund benefit payments through low-risk, cash flowing investments, as well as providing a stable offset to the rest of the portfolio during periods of severe market stress.

#### 2. GROWTH SUB-PORTFOLIO

The purpose of the Growth Sub-portfolio is to grow invested assets over the long term in order to pay future benefits. This portfolio is characterized by a long investment horizon and can, therefore, accept a higher level of volatility. Assets in this portfolio may be volatile, have reduced liquidity, and derive the bulk of their return from capital appreciation. These assets include public and private equity, corporate and other debt with credit risk premiums, private real estate, and other private assets.

The success of this portfolio will be measured primarily by compounded annual growth rates in conjunction with the annualized standard deviation of returns as the

## CCCERA INVESTMENT POLICY STATEMENT

primary measure of risk. Performance evaluation will, therefore, focus on the long-term total risk-adjusted return of the portfolio.

### 3. DIVERSIFYING SUB-PORTFOLIO

The purpose of the Diversifying Sub-portfolio is to offset the investment risk of the Growth Sub-portfolio. Investment strategies in the Diversifying Sub-portfolio are expected to have return profiles that have a low correlation to those in the Growth Sub-portfolio. This is expected to effectively dampen the market volatility across the entire portfolio. As a secondary objective, the investment strategies in the Diversifying Sub-portfolio will offer additional sources of return to those in the Liquidity and Growth sub-portfolios.

The success of the Diversifying Sub-portfolio will be measured by its ability to offset declines in value in the Growth Sub-portfolio, as well as its ability to provide liquidity during times of market stress.

### 4. INTERACTION BETWEEN THE FUNCTIONAL SUB-PORTFOLIOS

The allocations to the Liquidity, Growth, and Diversifying sub-portfolios will vary over time. The Liquidity Sub-portfolio will operate as a drawdown vehicle to pay benefits and expenses. The Growth and Diversifying sub-portfolios will be subject to the volatility of the markets in which each functional sub-portfolio invests. In order to reallocate between the functional sub-portfolios, the Board will conduct two annual reviews: an annual capital review to assess the relative value and risks associated with each asset class; and an annual funding plan to determine how to replenish the Liquidity Sub-portfolio.

Annually the CIO and Consultant jointly shall deliver a review of the capital markets to the Board. The Consultant will provide the Board current forward-looking risk and return assumptions for all major asset classes. In conjunction with this review, the CIO will provide a recommendation of how best to allocate assets within each functional sub-portfolio. If necessary, the CIO will recommend changes in target allocations to the underlying asset classes in order to deploy the Investment Program's assets effectively in the upcoming year.

Additionally and subsequent to the capital markets review, the CIO will present an annual funding plan, which will provide a recommendation of how best to replenish the Liquidity Sub-portfolio for the next projected 36 months of benefits payments and expenses. The CIO will provide a monthly report to the Board on the progress of funding the Liquidity Sub-portfolio through a combination of harvesting income from the Growth and Diversifying sub-portfolios, asset sales in the Growth and/or



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Diversifying sub-portfolios or the use of contributions. Under normal market conditions, the balance in the Liquidity Sub-portfolio is expected to vary between 24 and 36 months of projected benefit payments and expenses.

### C. Investment Strategy Attributes

All investment strategies, whether currently used by the Investment Program or being considered for inclusion in the Investment Program, will be evaluated on their own unique risk and return characteristics, as well as their contribution to the overall Investment Program's risk and return characteristics. Other risks pertaining to the individual investment strategies and/or the firm managing the strategy will also be considered.

Fees and expenses of the investment strategies will be closely evaluated against competitive strategies and the value provided for the services rendered. While lower fees are clearly preferred over higher fees, the Plan seeks to identify investment strategies capable of providing value for participants by generating net-of-fee investment returns in excess of benchmark returns. Fee structures will be evaluated to ensure appropriate incentives are provided to achieve the desired outcomes for the Investment Program.

## 7. RISK PHILOSOPHY

The Board recognizes the assumption of investment risk is necessary to meet the Plan's objectives. Investment risk is viewed as both the annualized standard deviation of investment returns (volatility) and drawdown exposure. Drawdown exposure measures the expected investment loss during a market correction. Additional sources of risk include regulatory, governmental, counterparty, environmental, social and currency. Investment risk, in and of itself, is intrinsically neither good nor bad; it is a condition accepted in the pursuit of investment returns. The goal in managing investment risk is to ensure an acceptable level of risk is being taken at the total Plan portfolio level. To accomplish this goal, the Plan invests in broad asset classes, via specific investment strategies within those asset classes, which have desirable expected return, risk, and correlation characteristics. While the individual strategies have a wide range of risk and return characteristics, the correlations between the strategies allows for effective portfolio diversification.

The approach used in constructing the portfolio further focuses on the risk characteristics by ensuring the preservation of the Liquidity Sub-portfolio assets as detailed previously in this IPS. Because these assets are invested in lower risk and lower return investments, the assets are well protected. This then allows for the Growth Sub-portfolio to assume greater investment risk in pursuit of higher expected returns. The Diversifying Sub-portfolio then offsets a portion of the investment risk embedded in the Growth Sub-portfolio to protect against drawdown risks.

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### 8. PORTFOLIO MONITORING

In discharging its fiduciary duty to prudently manage the Investment Program, the Board has developed the following structure for ongoing monitoring of existing investment managers. Reporting processes are, therefore, designed to provide the Board with the information needed to execute this oversight function. Accurate, timely, and clear reporting to the Board of the Plan's assets, investment risks and returns, portfolio costs, and investment decisions are essential to assisting the Board in discharging its fiduciary duties.

The CIO and General Investment Consultant will monitor individual investment managers' performance quarterly and annually. The managers' organizations and operations will be qualitatively monitored on a continual basis.

The General Investment Consultant will present a portfolio investment performance report to the Board on a quarterly basis. Performance will be measured for the total portfolio as well as sub-portfolios and individual portfolios. Each investment manager shall have a clear role within the total fund. The quarterly report will highlight any variance from that role.

The CIO, with the assistance of the General Investment Consultant and Specialty Consultants, shall conduct periodic on-site review activities in connection with evaluating managers. Since the Board encourages member oversight, the CIO shall query Board members as to their interest in observing the review process and shall include any Board member(s) expressing such interest. Additionally, the Board may from time to time determine that it is in the best interest of the participants and beneficiaries for one or more Board members to visit the offices of an investment manager, in order to further the Board members' understanding of the manager's strategy and its role in the CCCERA portfolio.

# CCCERA INVESTMENT POLICY STATEMENT

## APPENDIX 1: REFERENCED INCORPORATED DOCUMENTS

The documents referenced in the Investment Policy Statement are listed below and incorporated by reference into this IPS:

- CCCERA Board Investment Resolutions
- Placement Agent Disclosure Policy
- Code of Fiduciary Conduct and Ethics
- Conflict of Interest Code
- Procurement of Products and Services Policy
- Other Investment-Related Board Actions