AGENDA

RETIREMENT BOARD MEETING

REGULAR MEETING
November 18, 2020, 9:00 a.m.

The Board of Retirement meeting will be accessible telephonically at +1 (872) 240-3412, access code 604-252-085 due to the Contra Costa County and State of California Coronavirus (COVID-19) Shelter In Place Orders, and as permitted by Executive Order N-29-20 issued on March 17, 2020.

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

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

1. Pledge of Allegiance.

2. Roll Call.

3. Accept comments from the public.

4. Approve minutes from the October 28, 2020 meeting.

5. Review of total portfolio performance for period ending September 30, 2020.
   a. Presentation from Verus
   b. Presentation from staff

6. Private Equity Review
   a. Presentation from staff
   b. Presentation from StepStone

7. Presentation of alternative investment fees and expense report.

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.

8. Update on Private Equity Commitment.

9. Consider and take possible action to adopt the 2021 CCCERA budget.

10. Consider and take possible action to authorize issuance of a Request for Proposal for Other Post-Employment Benefits (OPEB) Trust Actuarial Services.

11. Consider and take possible action to authorize the CEO to execute an agreement with San Ramon Valley Fire Protection District for contribution and reporting deadlines.

12. Consider authorizing the attendance of Board:
    a. Public Employee Benefits Institute, IFEBP, December 8-10, 2020, Virtual. (Note: Conflict with Meeting)
    b. Roundtable for Public Pension Funds, Institutional Investor, February 18, 2021, Virtual.

13. Miscellaneous
    a. Staff Report
    b. Outside Professionals' Report
    c. Trustees' comments

Meeting Date
11/18/20
Agenda Item
#4

Contra Costa County Employees' Retirement Association

RETIREMENT BOARD MEETING MINUTES

REGULAR MEETING
October 28, 2020
9:00 a.m.

The Board of Retirement meeting will be accessible telephonically at (224) 501-3412, access code 194-140-493 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 audience 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, William Pigeon, Mike Sloan, Todd Smithey 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:
Scott Whalen	Verus Investments
Paul Angelo	Segal Consulting
Andy Yeung	Segal Consulting

3. **Accept comments from the public**

No member of the public offered comment.

4. Approval of Minutes

It was **M/S/C** to approve the minutes from the September 23, 2020 meeting. (Yes: Andersen, Finley, Holcombe, Kroll, Kwon, MacDonald, Phillips, Smithey and Watts)

5. Presentation of the CCCERA Asset Liability Study from Verus Investments

Whalen presented the results of the Asset Liability Study. The Board provided direction to Verus to return with additional asset mixes focusing on three years of expected benefit payments in the Liquidity sub-portfolio.

Gordon and Pigeon were present for subsequent discussion and voting.

6. Consider and take possible accept the GASB 68 report from Segal Consulting

Yeung presented the GASB 68 Actuarial Valuation based on a December 31, 2019 measurement date for employer reporting as of June 30, 2020.

It was **M/S/C** to accept the GASB 68 report from Segal Consulting. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Smithey and Watts)

7. Consider and take possible action to authorize the CEO to execute an agreement with the Housing Authority of Contra Costa County for contribution and reporting deadlines

Dunn reviewed her memo.

It was **M/S/C** to authorize the CEO to execute an agreement with the Housing Authority of Contra Costa County for contribution and reporting deadlines which provides an additional ten days to the report submission deadline outlined in the Board of Retirement Regulations. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Smithey and Watts)

8. Miscellaneous

(a) Staff Report –

None

(b) Outside Professionals' Report -

None

(c) Trustees' comments –

Watts reported on the CALAPRS Trustees' Roundtable and the Global Arc Interactive conference that he attended.

Gordon reported he also attended the CALAPRS Trustees' Roundtable.

Kroll reported he also attended the CALAPRS Trustees' Roundtable.

It was **M/S/C** to adjourn the meeting. (Yes: Andersen, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, Smithey and Watts)

Todd Smithey, Chairman

David MacDonald, Secretary

Meeting Date
11/18/20
Agenda Item
#5a.

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: SEPTEMBER 30, 2020

Investment Performance Review for

Contra Costa County Employees’ Retirement Association

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Verus
VERUSINVESTMENTS.COM
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LOS ANGELES 300-297-1777
SAN FRANCISCO 415-362-3484
PITTSBURGH 412-784-6678

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

4TH QUARTER 2020

Investment Landscape

Recent Verus research

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

Annual outlooks

2020 PRIVATE OUTLOOK

In the 2020 Private Equity Outlook, we focus attention on General Partner-led (GP-led) secondary transactions that have evolved and are no longer just associated with general partners trying to dispose of lingering assets that have become hard to sell. The outlook also addresses:

— The significant pull back in private equity in 2020
— Our expectations for a decline in both capital calls and distributions from buyout funds likely leading to negative net cash flows for the coming quarters
— Headwinds for perspective IPO's
— Impacts from Covid-19 on many portfolios
— Our view on how the secondary market is very different than it was during the last economic downturn

Topics of interest

BROADENING DIVERSITY CONSIDERATION

CIO Ian Toner, CFA, and Public Markets Managing Director Marianne Feeley, CFA, outline broader elements of diversity – beyond ownership – that may be used to characterize the demographic qualities of an investment firm. It frames the broader approach to understanding diversity that we are adapting at Verus, which is an integral part of our process of collecting and using information about investment managers.

AEIOU > PPPPP

Manager research and selection have long been described in the language of Ps – people, process, etc. Verus believes the familiar Ps approach, while useful, leaves out important aspects of manager assessment and their products because of its focus on inputs. We outline a vowel-based approach that concentrates research on factors that are more likely to drive investment outcomes.

Webinar replays

BROADENING DIVERSITY CONSIDERATION

AEIOU > PPPPP

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Verus

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3rd quarter summary

THE ECONOMIC CLIMATE

— Real GDP contracted at a -9.0% rate year-over-year in Q2 (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history. *p. 10*

— Europe is experiencing a drastic second wave of COVID-19 which has been sweeping across the continent. The seven-day average daily case growth of the EU and the U.K. combined rose from 4,699 to 48,807 during Q3. *p. 9*

— Election polls and the betting markets are indicating that Joe Biden is leading President Trump materially as we move into the final weeks pre-election. In 2016, the story was largely the same, as Clinton was expected to win up until the day before the election. *p. 18*

PORTFOLIO IMPACTS

— U.S. and emerging markets have recovered most losses year-to-date, while international remain negative. Global equities are now positive for 2020 despite an earnings recession and considerable economic uncertainty. *p. 29*

— U.S. core inflation increased to a more normal level, rising 1.7% year-over-year in August from 1.2% in June. Inflation expectations also normalized. The 10yr U.S. TIPS inflation breakeven rate recovered to 1.6%, from a low of 0.5% on March 19th. The breakeven rate of inflation is now on par with actual year-over-year inflation. *p. 11*

THE INVESTMENT CLIMATE

— The Federal Reserve announced a notable change to its inflation targeting approach, now aiming to achieve "inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%." This was a reversal from the prior goal of achieving 2% inflation. *p. 22*

— The Federal Reserve maintained an accommodative tone, and most members of the FOMC held their view that short rates are likely to stay near-zero through 2023—eventually moving to 2.50% over the longer-term. *p. 22*

— According to FactSet, S&P 500 Q3 earnings are expected to be down -20.5%. However, earnings in Q2 beat expectations by 12.5% (-31.6% YoY vs. -44.1%). Another large positive surprise in Q3 would be welcome news to investors. *p. 28*

ASSET ALLOCATION ISSUES

— U.S. equities delivered +8.9% over the quarter, reaching a new high in September before giving back some gains. The S&P 500 is up +5.6% year-to-date, despite an earnings recession and considerable economic uncertainty. *p. 30*

— The U.S. dollar fell -3.5% in Q3, continuing a downward trend since a sudden jump in March on safe-haven buying. The dollar has now completely unwound the gains experienced during the market sell-off. *p. 38*

A more neutral risk positioning may be warranted in the current environment

There seems to be a high degree of uncertainty regarding the future market path

What drove the market in Q3?

"Europeans face prospect of 2nd lockdowns as COVID cases surge"

DAILY NEW CONFIRMED CASES IN THE EU27 AND THE U.K. COMBINED

4/30	5/31	6/30	7/31	8/31	9/30
14,261	5,985	4,699	9,127	22,225	48,807

Article Source: CBS News, September 21st, 2020

"Second $1,200 stimulus checks had bipartisan support. Now they could be a longshot"

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

Mar	Apr	May	Jun	Jul	Aug
1.8%	14.1%	9.3%	7.8%	8.1%	4.7%

Article Source: CNBC, September 9th, 2020

"The US job market is gradually recovering from the pandemic lockdown shock"

U-3 UNEMPLOYMENT RATE

Apr	May	Jun	Jul	Aug	Sep
14.7%	13.3%	11.1%	10.2%	8.4%	7.9%

Article Source: CNN Business, September 3rd, 2020

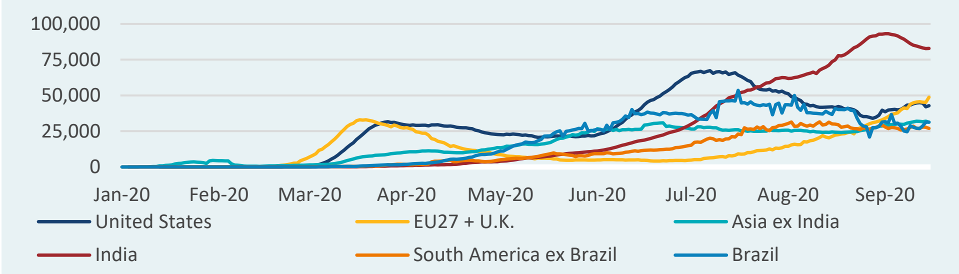
"The market isn't convinced the Federal Reserve can achieve its inflation objective"

TEN-YEAR BREAKEVEN INFLATION RATES

4/30	5/31	6/30	7/31	8/31	9/30
1.1%	1.1%	1.3%	1.6%	1.8%	1.6%

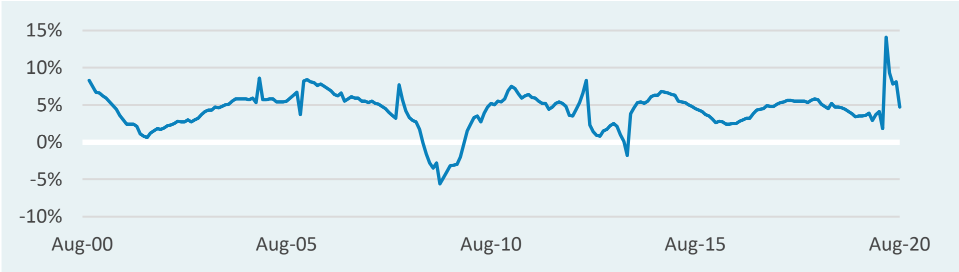
Article Source: CNBC, September 17th, 2020

SEVEN-DAY TRAILING AVERAGE DAILY CASE GROWTH BY REGION



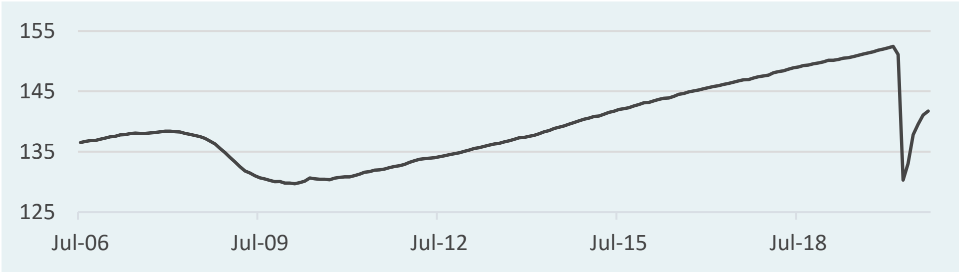
Source: Bloomberg, as of 9/30/20

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



Source: Bureau of Economic Analysis, Bloomberg, as of 8/31/20

NON-FARM EMPLOYEES ON U.S. PAYROLLS (MILLIONS)



Source: Bureau of Labor Statistics, Bloomberg, as of 9/30/20

Economic environment

U.S. economics summary

— Real GDP contracted at a -9.0% rate year-over-year in the second quarter (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history.

— The Atlanta Fed's forecast for third quarter growth is -10.7% year-over-year (+33.8% quarterly annualized rate). This projection was based on the expectations that consumption rebounds materially, household investment picks up, businesses begin re-stocking shelves that were allowed to run empty, and supporting fiscal policy.

— The U.S. labor market partially recovered from the recent shock. Unemployment fell from 14.7% in April to 7.9% in September. A report released in September indicated 60% of temporary business closures during the pandemic were now permanent.

— Correlation between election results and market performance has been weak, and the outcome depends greatly on how the data is sliced and the timing of economic events. The S&P 500 has experienced stronger gains with a Democrat in power, though the results are skewed by extreme events such as the Great Depression.

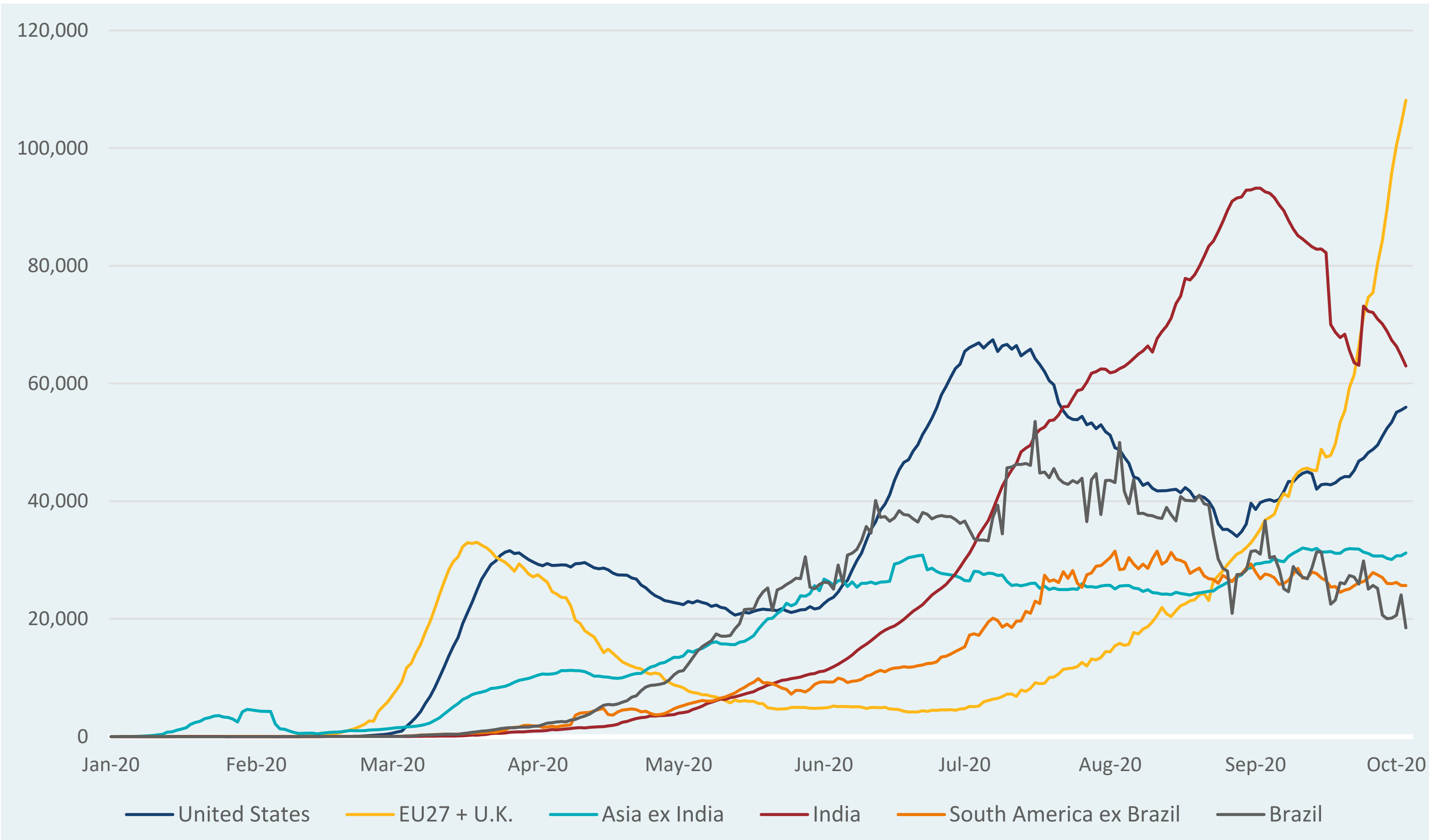
— The NFIB Small Business Optimism Index recovered to 104.0 in Q3, which was in line with pre-pandemic levels. The survey concluded that half of the jobs lost in March and April have been recouped, but that the pace of recovery has slowed.

— The median home price increased 11.1% year-over-year in September, according to Realtor.com. U.S. housing supply has reached record tightness. In August, 3.3 months worth of homes were on the market, which was the lowest inventory ever recorded since the government began tracking this data in 1963.

	Most Recent	**12 Months Prior**
GDP *(YoY)*	(9.0%) *6/30/20*	2.0% *6/30/19*
Inflation *(CPI YoY, Core)*	1.7% *8/31/20*	2.4% *8/31/19*
Expected Inflation *(5yr-5yr forward)*	1.7% *9/30/20*	1.7% *9/30/19*
Fed Funds Target Range	0% – 0.25% *9/30/20*	1.75% – 2.00% *9/30/19*
10-Year Rate	0.7% *9/30/20*	1.7% *9/30/19*
U-3 Unemployment	7.9% *9/30/20*	3.5% *9/30/19*
U-6 Unemployment	12.8% *9/30/20*	6.9% *9/30/19*

COVID-19 update

Seven-day trailing daily average case growth by region



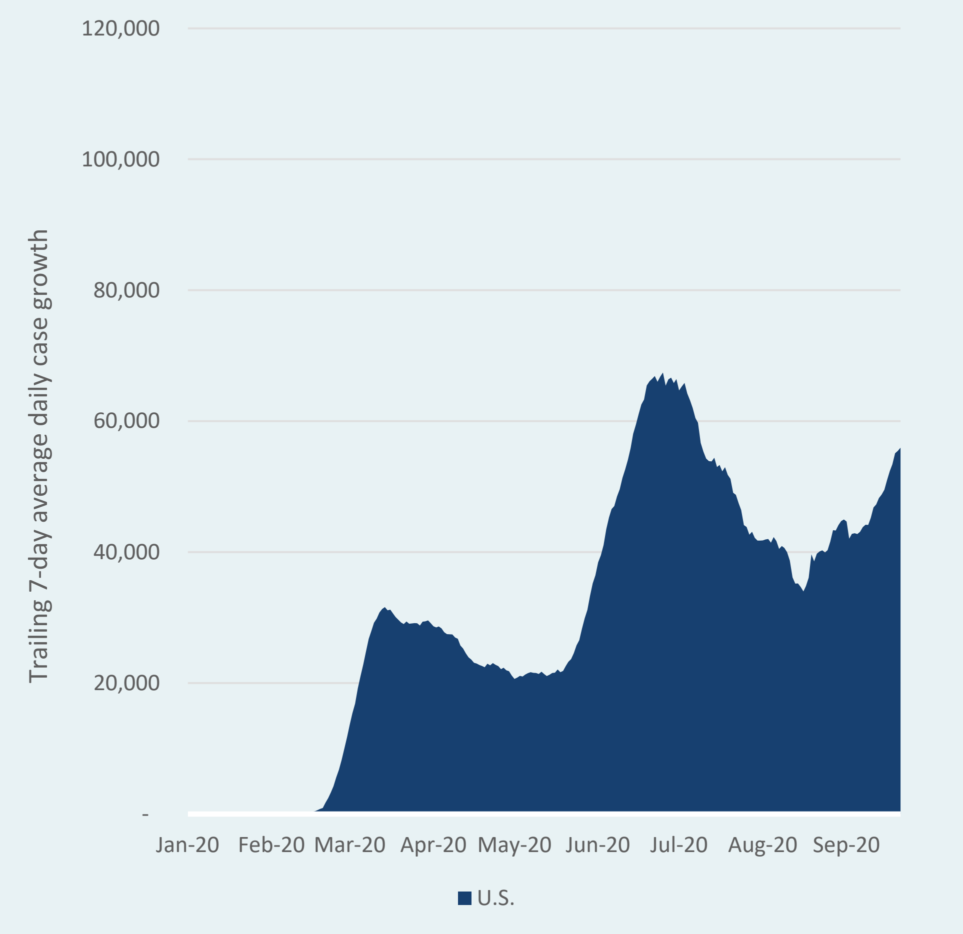
Source: Bloomberg, as of 10/18/20

Case growth has increased exponentially across Europe over the past month, resulting in broad reimplementation of economically-restrictive social distancing controls

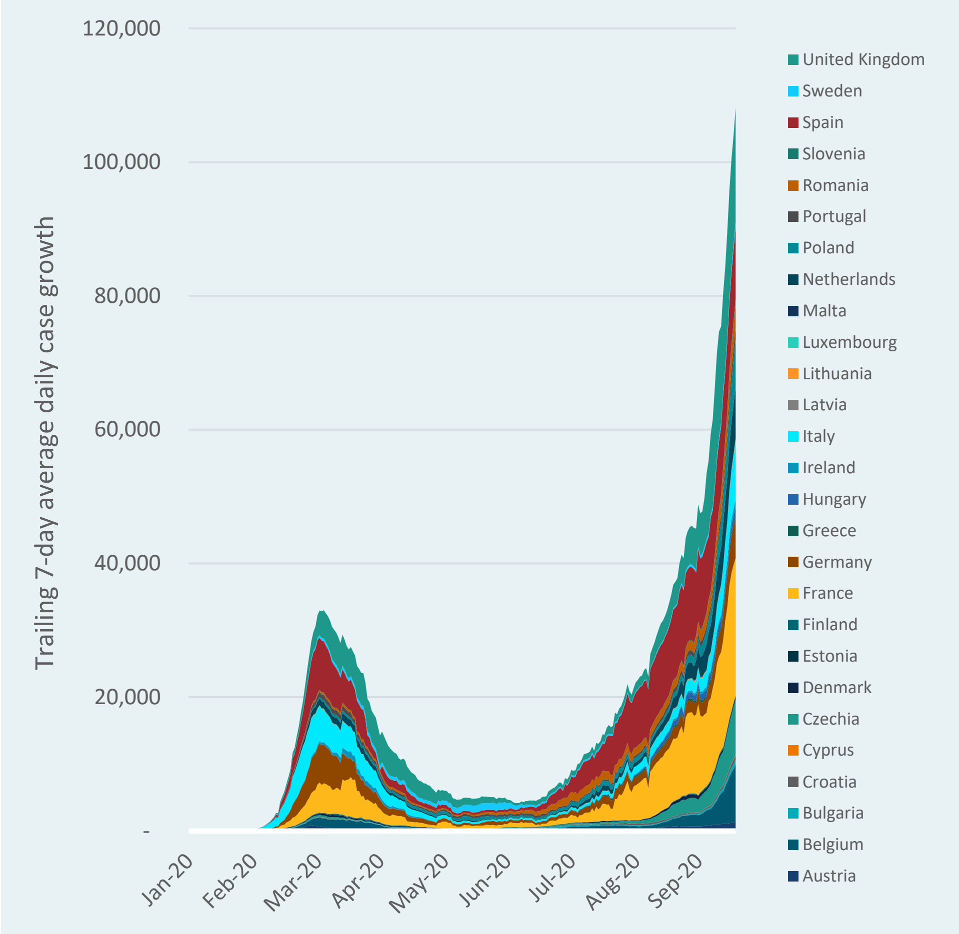
Deaths have begun to increase on a several-week lag to local case growth, as expected, but remain at lower levels than those seen earlier this year

COVID-19 update

UNITED STATES



EU27 + UNITED KINGDOM



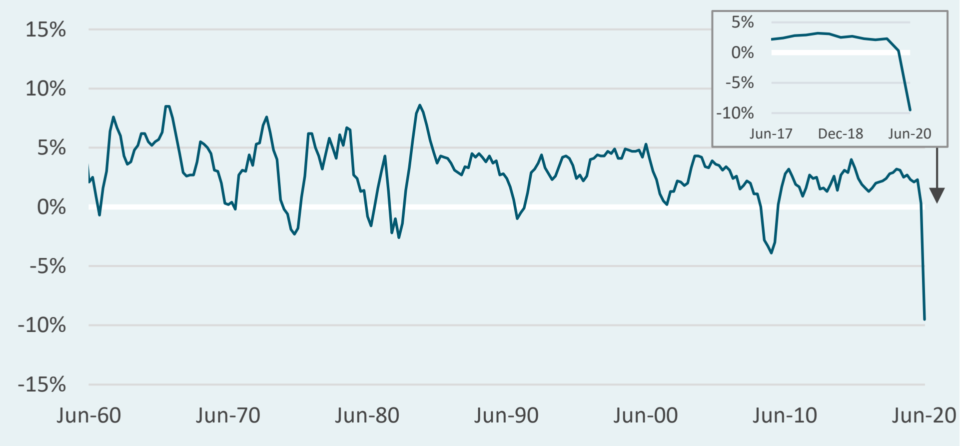
Source: Bloomberg, as of 10/18/20

GDP growth

Real GDP contracted -9.0% year-over-year in Q2 (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history. Personal consumption expenditures shrunk at a quarterly annualized pace of -24%. The decline was driven by a significant pullback in spending on services (-22%) as economic activity remained constrained. U.S. households and businesses exhibited conservatism in the face of an uncertain outlook on both the virus and policy response fronts. Fixed investment slumped -5.3% and private inventories fell -3.5% as companies appeared unwilling to proactively restock their shelves. Trade remained a tailwind to GDP as the value of imported goods declined more than the value of exported goods.

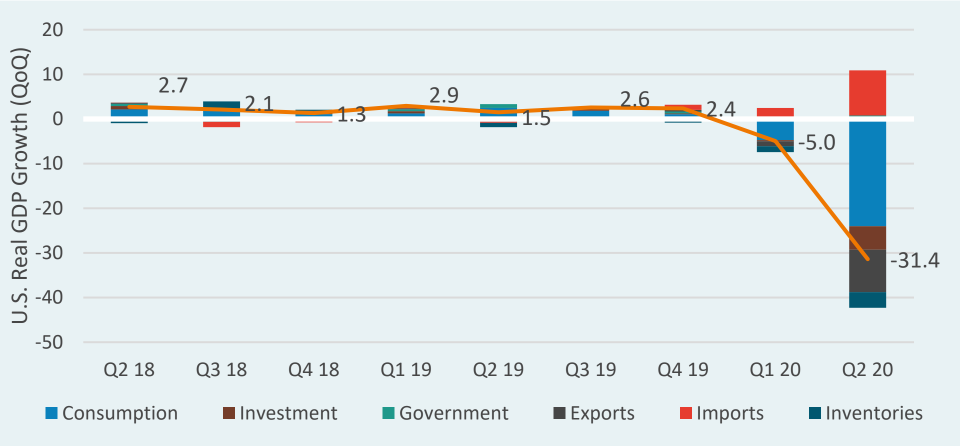
The Atlanta Fed's forecast for third quarter-growth was +33.8% on a quarter-over-quarter annualized basis (-10.7% year-over-year), as of September 30th. This projection was based on an expectation for consumption to rebound materially, household investment to pick up, businesses to begin re-stocking shelves which were allowed to run empty in the second quarter, and a continuation of supportive fiscal policy. Looking ahead, the strength of the economic recovery will likely remain predicated on the willingness and ability of consumers to spend, the willingness of businesses to supply that demand, and the magnitude of fiscal support.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 6/30/20

U.S. GDP GROWTH ATTRIBUTION



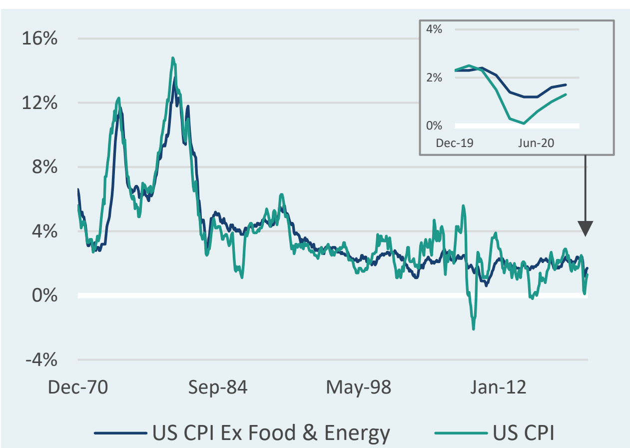
Source: BEA, annualized quarterly rate, as of 6/30/20

Inflation

Growth in headline inflation continued to rebound toward more normal levels in Q3, reaching 1.4% year-over-year in September after bottoming at 0.1% in May. Food items—specifically meats, poultry, fish, eggs, and dairy-related products—continued to drive the recovery in demand for groceries due to COVID-driven restaurant closures. Core inflation, which excludes the more volatile food and energy components, picked up from 1.2% to 1.7% as price increases for used cars and trucks (+10.3%) and medical care services (+4.9%) outweighed a dip in airline fares (-25.0%).

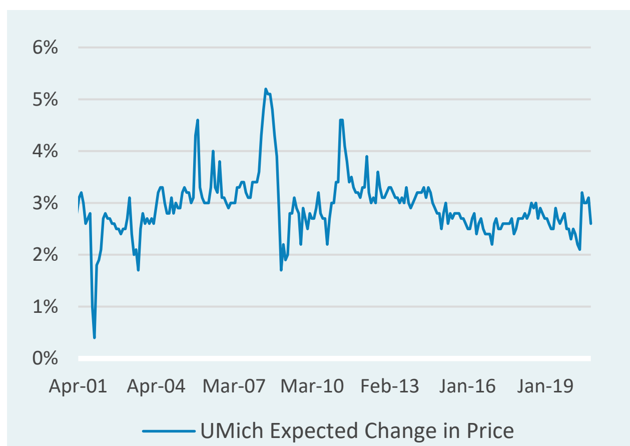
Ten- and 30-year breakeven inflation rates recovered from 1.3% to 1.6% and from 1.6% to 1.8%, respectively, as market participants likely became slightly more bullish on longer-term growth and inflation outlooks. Still, there remains skepticism around the Fed's ability to sustainably achieve its inflation target average of 2.0%. Year-over-year growth in core PCE inflation recovered to 1.6% in August but remained below the Fed's target. Officials have stated that in the future they will be less likely to clamp down on rising inflation with restrictive policy and will be more likely to let inflation run above 2.0% for some time.

U.S. CPI (YOY)



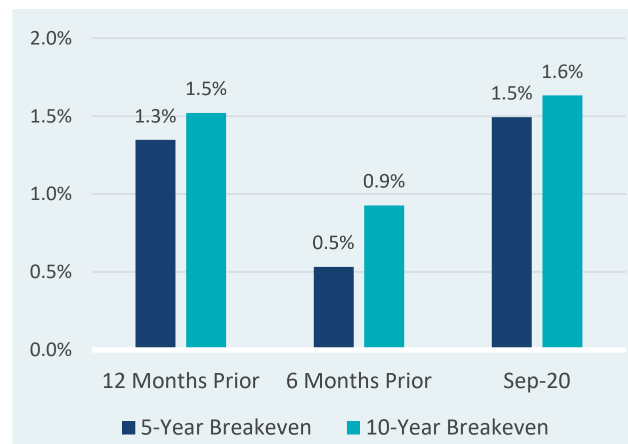
Source: Bloomberg, as of 8/31/20

CONSUMER INFLATION EXPECTATIONS



Source: University of Michigan, as of 9/30/20

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 9/30/20

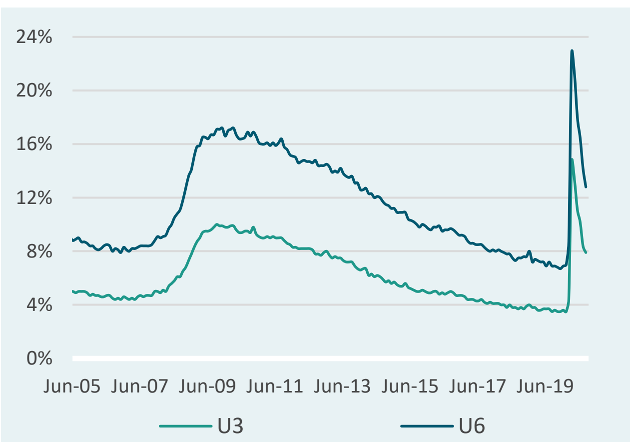
Labor market

The U.S. labor market has partially recovered from the shock sustained in Q1 and Q2. Unemployment fell from 14.7% in April to 7.9% in September. During the economic contraction, the labor participation rate also fell rather dramatically. Most job losses during the pandemic were described by workers as temporary in nature. Most "temporary" job losses have in fact turned out to be temporary, as indicated below. A smaller portion of temporary job losses have unfortunately been reclassified as permanent. We remain watchful regarding how many temporary job losses transition into the "permanent" category in the coming months.

A report released by Yelp in September indicated 60% of businesses that had temporarily closed during the COVID-19 pandemic are now permanently closed. The businesses hit the hardest included: restaurants, bars, retail, fitness, and beauty services. It will be important to monitor whether workers come back to the labor force and once again search for employment as the U.S. economy recovers, or whether these trends result in longer-term unemployment.

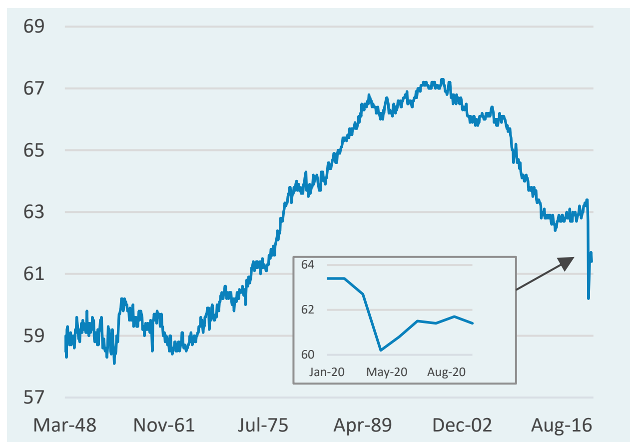
U.S. workers continue to come back to the labor force

U.S. UNEMPLOYMENT



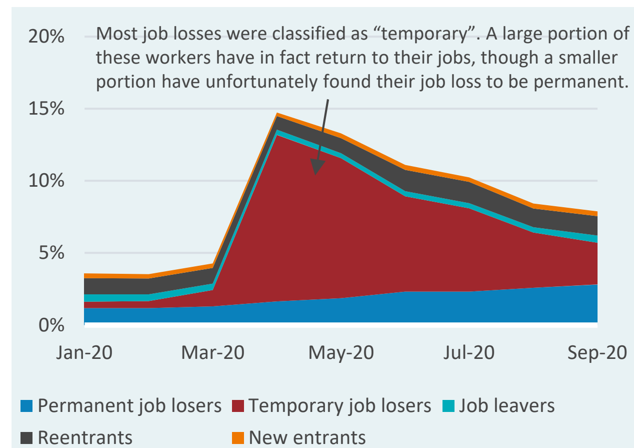
Source: FRED, as of 9/30/20

LABOR PARTICIPATION RATE



Source: FRED, as of 9/30/20

UNEMPLOYMENT DECOMPOSITION BY REASON

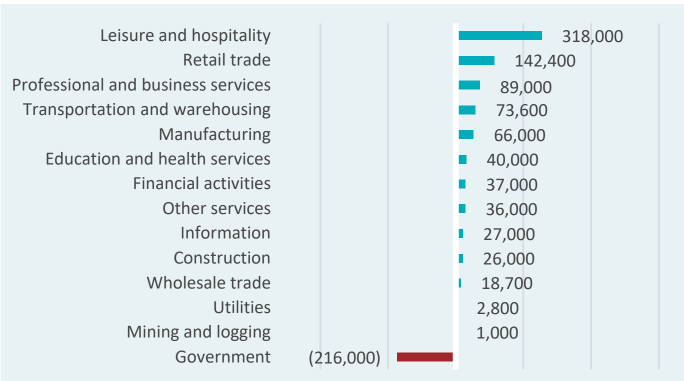


Source: BLS, as of 9/30/20

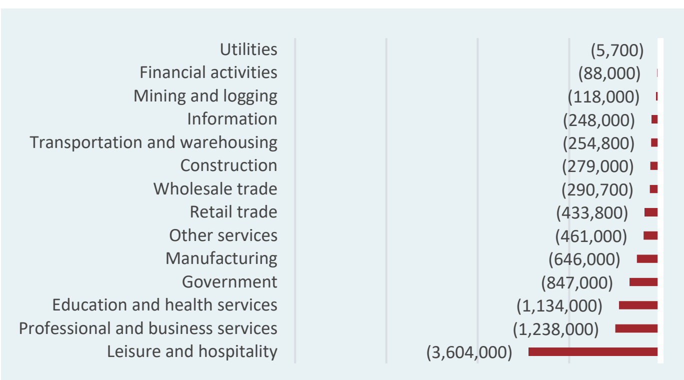
September 2020 jobs report

+661,000 (exp. +859,000) - net revisions to prior two months = +145k

1-MONTH CHANGE



12-MONTH CHANGE



TRAILING % CHANGE

Payrolls continued to recover in the harder-hit services sectors in the third quarter, but payrolls remain well below pre-pandemic levels

All major sectors still have lower payrolls relative to September 2019

Source: BLS, as of 9/30/20

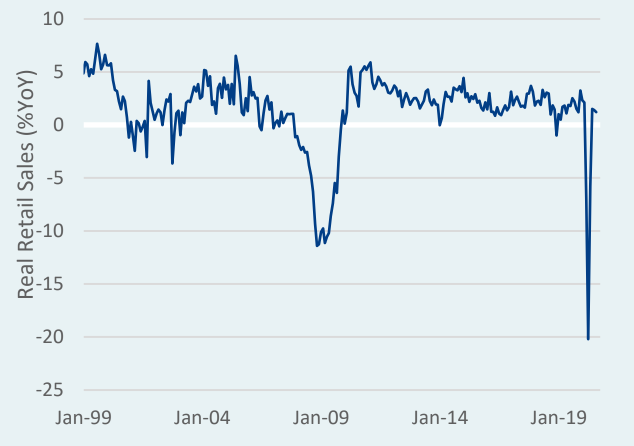
The consumer

After collapsing -20% year-over-year in April, U.S. real retail sales have now fully recovered and were positive +1.2% in August. Larger purchases, such as automobiles and homes, also slowed considerably earlier in the year but have since rebounded.

The current combination of ultra-low interest rates and vast government fiscal stimulus appears to be supporting many parts of the economy. Despite the inability of households to spend on some traditional discretionary items, other types of purchases have swelled. Recent consumption patterns seem to indicate that government support is having the intended effect and that the economy is stabilizing.

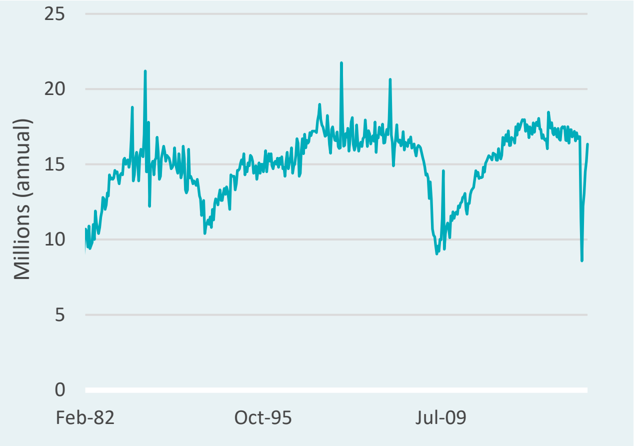
The U.S. personal savings rate fell to 14% in August, largely due to the ending of special unemployment benefits, which expired on July 31st. Broad economic uncertainty typically increases the desire for saving, which is likely the case in today's environment. But perhaps an even greater effect is the overall inability or unwillingness of households to spend on certain items such as vacations and restaurant dining.

REAL RETAIL SALES GROWTH (YOY)



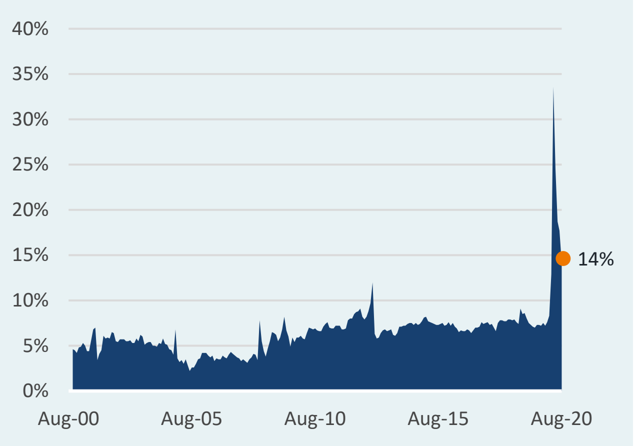
Source: FRED, as of 8/31/20

AUTO SALES



Source: Federal Reserve, as of 9/30/20

PERSONAL SAVINGS RATE



Source: FRED, as of 8/31/20

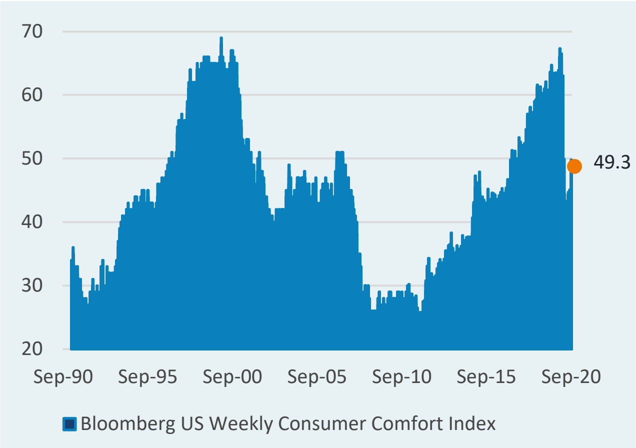
Sentiment

Despite the more optimistic picture painted by a recovery in consumer spending, auto sales, and the housing market, consumer sentiment remains far below the near record-highs of early 2020.

The Bloomberg Consumer Comfort Index attempts to gauge Americans' views on the economy, their personal financial situation, and buying conditions. The index sits at 49.3, compared to a high of 67.3 in January. The University of Michigan Consumer Sentiment Survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. The index currently sits at 80.4, down from 101.0 in February.

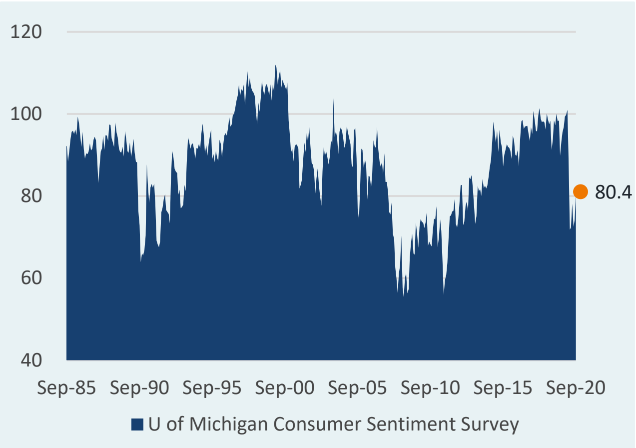
The NFIB Small Business Optimism Index recovered to 104.0 in Q3, which is in line with pre-pandemic levels. The survey concluded that half of the jobs lost in March and April have been recouped, but that the pace of recovery has slowed. Businesses generally expect the economy to continue growing, and hiring plans are now on track with pre-COVID levels.

CONSUMER COMFORT



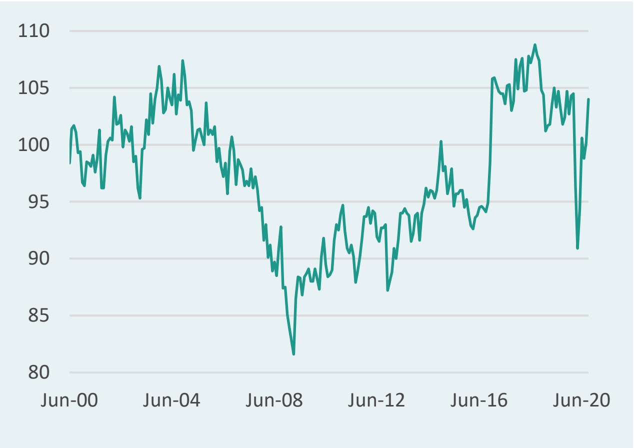
Source: Bloomberg, as of 9/30/20

CONSUMER SENTIMENT



Source: University of Michigan, as of 9/30/20

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 9/30/20

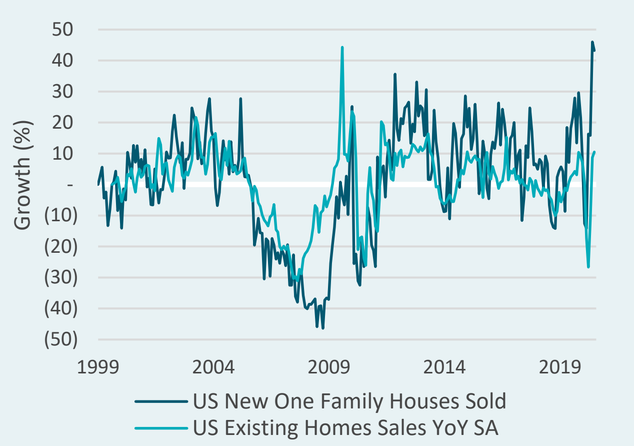
Housing

Existing home sales increased intensely over the summer, with existing home purchase activity up 10.5% year-over-year and new home sales higher by a whopping 43.2%. A variety of forces have likely aligned to deliver recent strength, including record-low mortgage interest rates, the desire of many Americans to increase their living space due to the new working-from-home environment, and a record-thin supply of homes on the market.

The portion of U.S. mortgages in the COVID-19 government forbearance program dropped significantly to 5.6% during the first week of October. This compared to 6.8% the previous week and a high of 8.6% earlier in the year, according to mortgage data firm Black Knight. This positive news eases concerns that the COVID-19 slowdown might lead to another housing crisis.

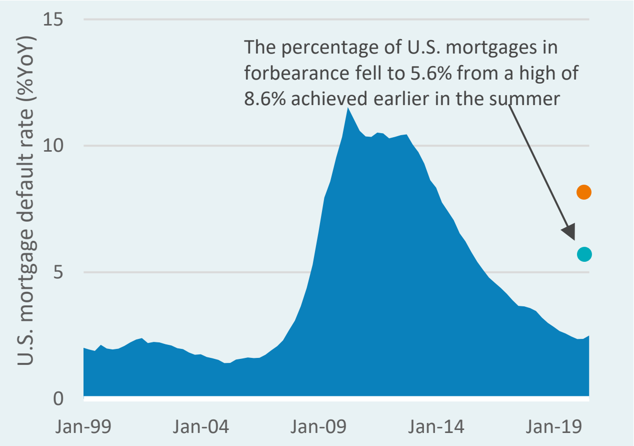
The extremely tight supply of homes has been a major contributor to the recent housing boom. In August, 3.3 months worth of homes were available on the market, which was the lowest inventory level ever recorded since the U.S. government began tracking this data in 1963.

U.S. HOME SALES (YOY)



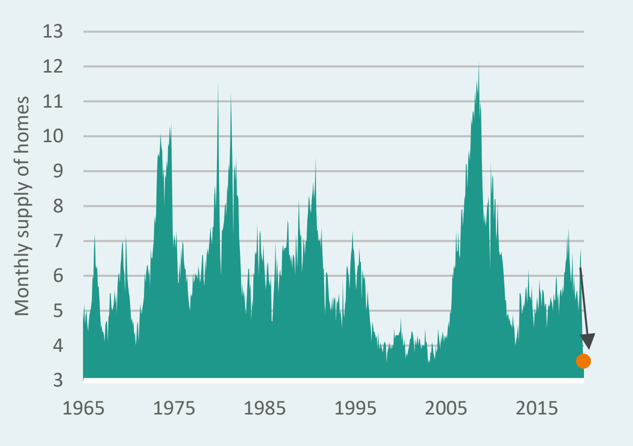
Source: FRED, as of 8/31/20

MORTGAGE DEFAULT RATE (%)



Source: FRED, as of 6/30/20, Black Knight as of 10/9/20

U.S. HOME SUPPLY



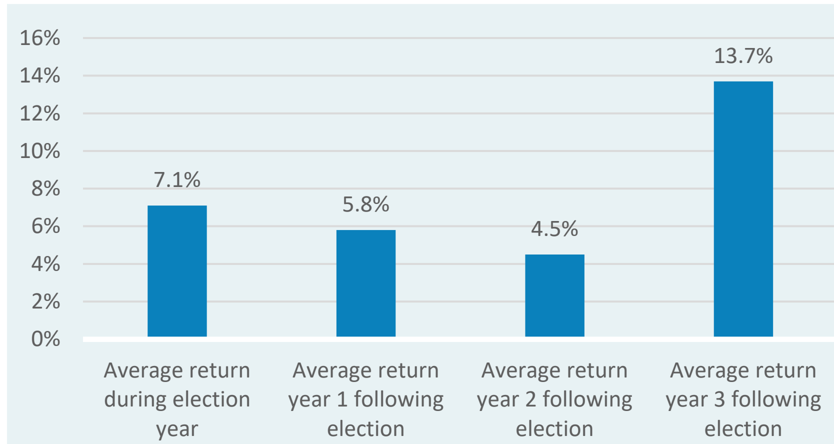
Source: FRED, as of 8/31/20

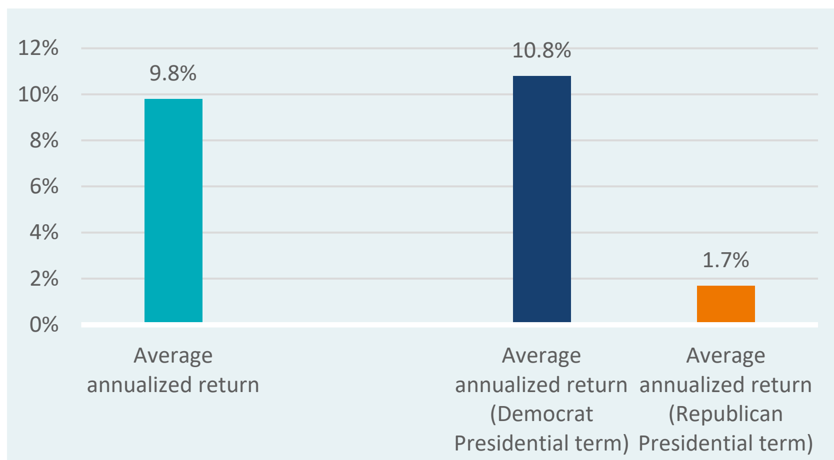
U.S. presidential election

Correlation between election results and long-term market performance has generally been weak, and the outcome depends greatly on how the data is sliced, as well as the timing of economic and geopolitical events which are often unrelated to elections. The S&P 500 has experienced stronger gains with a Democrat in power, though the results are skewed by extreme events such as the Great Depression (Herbert Hoover saw a -77.1% total return during his presidency, followed by a +205.5% total return in Franklin D. Roosevelt's first term). These events have had a significant impact on the "average" market performance of Democrat and Republican Presidencies.

Markets seem to view a Donald Trump reelection as a positive for markets. But recently investors have also warmed to the idea of a Joe Biden victory, due to expectations for greater fiscal support to the economy which may counteract negative effects of Democratic Party proposals for higher corporate taxes and tax hikes on wealthier households.

PRESIDENTIAL ELECTION & U.S. EQUITY PERFORMANCE (1928 – 2016)





The relationship between election years and market performance has been muddy

Source: Schwab, Bloomberg – S&P 500 Index
Note: Stronger equity performance during one party or the other does not necessarily imply that the party's leadership led to that market performance. The timing of large and significant shocks to the economy such as the Great Depression, natural disasters, and geopolitical turmoil have influenced the performance figures above.

How are we viewing the polling data?

The polls and the betting markets indicate that Biden is leading President Trump materially as we move into the final weeks pre-election. In 2016, the story was largely the same, as Clinton was expected to win up until the day before the election.

"Clinton has 90 percent chance of winning" – Reuters, 11/7/2016

"Election 2016: Hillary Clinton looks poised to lock it up" – Politico, 11/7/2016

"Odds of Clinton win jump on prediction markets" – Financial Times, 11/7/2016

"Polls: Hillary Clinton in position to win the election" – Business Insider, 11/7/2016

Several factors are likely to distort the picture painted by the polling data, including, but not limited to, the following:

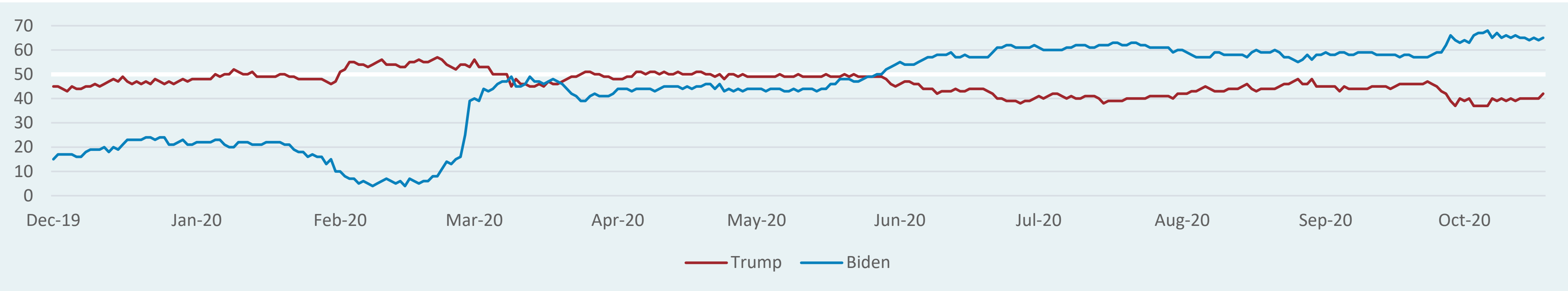
Shy Trump factor: Voters in certain parts of the country may be less willing to express that they would vote for Trump, and this dynamic may be even more prevalent than it was in 2016.

Oversampling: Pollsters do their best to build population samples representative of likely actual voter turnout, but these samples are often flawed. Back in 2016, Democrats were often over-represented in poll samples, which may have incorrectly skewed polling averages in favor of Hillary Clinton. There appears to be some evidence of this effect influencing polling averages this year as well.

Mail-in voting: The increase in reliance on mail-in ballots could delay the distribution of final election results and provide both candidates the opportunity to contest the election results in key swing states.

Late deciding: Voters may break for Trump or Biden in the final few days pre-election, but this is more likely to be a smaller factor than it was in 2016.

PREDICTIT ODDS – WHO WILL WIN THE 2020 U.S. PRESIDENTIAL ELECTION?



Source: PredictIt, as of 10/21/20

International economics summary

— Growth contracted sharply in international developed economies in Q2. Gross domestic product in the Eurozone contracted -14.7% from the prior year, and Japanese GDP sank -9.9% over the same period, despite the deployment of fiscal support to the tune of roughly 40% of Japan's GDP.

— European officials implemented stricter social distancing controls with hopes of stymying the second wave of COVID-19 sweeping across the continent. The seven-day average daily case growth of the EU27 and the United Kingdom combined rose from 4,699 to 48,807 over the third quarter.

— The IMF revised its global growth projections for 2020 and 2021 from -4.9% and 5.4% to -4.4% and 5.2%, respectively. The IMF's model assumes social distancing controls will continue to act as a drag on growth into 2021, and that local transmission of the virus will be falling everywhere by 2023.

— Inflation remained muted globally in the third quarter, supporting arguments that the pandemic's impact has been more disinflationary than inflationary over the short term. The Eurozone's consumer price index ended the quarter -0.3% below its level from September 2019, though most of the deflationary pressures were supplied by an -8.2% decline in energy prices.

— Eurozone retail sales volumes grew 3.7% from the prior year in August (exp. 2.2%), driven by a sharp surge in online purchases and clothing sales. The vigorous rebound in consumer spending has been attributed to pent-up demand and incomes, which have been largely stable due to furlough schemes. Many analysts expect a "normalization" of retail sales in the fourth quarter, under the assumption that current spending levels are unlikely to be sustainable.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(9.0%) *6/30/20*	1.3% *8/31/20*	7.9% *9/30/20*
Eurozone	(14.7%) *6/30/20*	(0.3%) *9/30/20*	8.1% *8/31/20*
Japan	(9.9%) *6/30/20*	0.2% *9/30/20*	3.0% *8/31/20*
BRICS Nations	(3.1%) *6/30/20*	3.3% *6/30/20*	5.3% *6/30/20*
Brazil	(11.4%) *6/30/20*	2.4% *8/31/20*	13.8% *7/31/20*
Russia	(8.0%) *6/30/20*	3.3% *9/30/20*	6.4% *8/31/20*
India	(23.9%) *6/30/20*	6.7% *8/31/20*	8.5% *12/31/17*
China	4.9% *9/30/20*	2.4% *8/31/20*	3.8% *6/30/20*

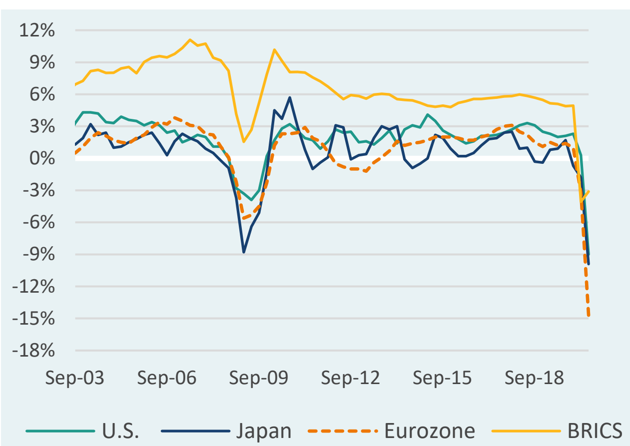
International economics

As expected, growth contracted sharply in international developed economies around the world in Q2. Eurozone gross domestic product contracted -14.7% from the prior year, and Japanese growth sank -9.9% over the same period, despite the deployment of fiscal support to the tune of roughly 40% of Japanese GDP.

Growth in most of the emerging markets complex also took a major hit. GDP contracted -11.4% in Brazil, -8.0% in Russia, and -23.9% in India which has been especially hard hit by the coronavirus. China stood out as an exception, and reportedly mustered year-over-year GDP growth of +4.9% in Q3. China's growth was supported by the People's Bank of China, which cut its 1-year medium-term lending facility rate from 3.15% to 2.95%. Many emerging economies are in a better position to provide monetary stimulus, given higher interest rates.

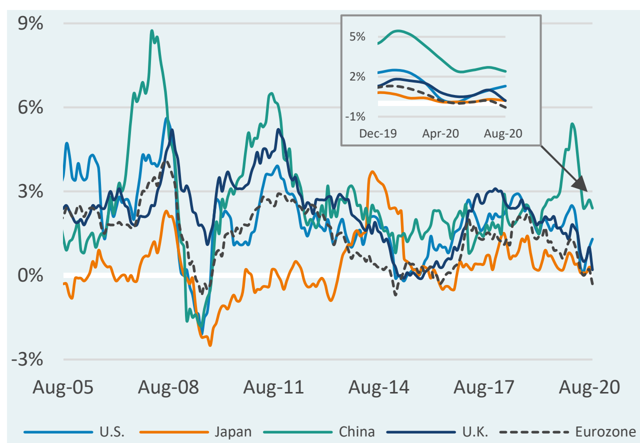
Unemployment in the Eurozone rose from 7.8% to 8.1%, just 0.2% above the quarter-end rate in the United States, as Europe contends with disinflationary pressures. Year-over-year growth of the harmonized consumer price index fell from +0.3% into negative territory at -0.3%. The Union's harmonized measure, however, does not include rents and house prices—a key distinction from the U.S. CPI basket.

REAL GDP GROWTH (YOY)



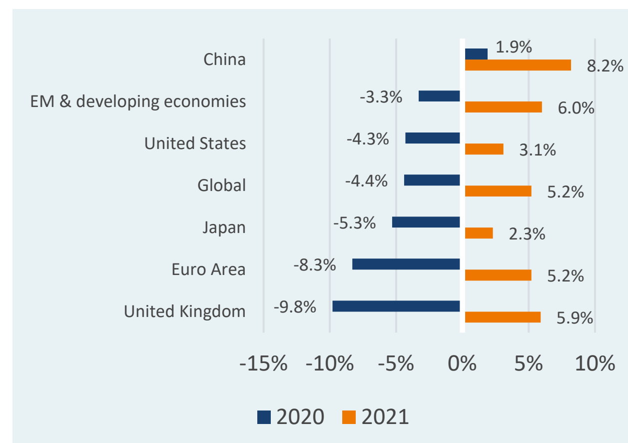
Source: Bloomberg, as of 6/30/20

INFLATION (CPI YOY)



Source: Bloomberg, as of 8/31/20

IMF GLOBAL OUTLOOK GROWTH PROJECTIONS



Source: International Monetary Fund, as of 10/13/20

Fixed income rates & credit

Interest rate environment

— Global interest rate levels remained extremely depressed relative to long-term averages in Q3, and the 10-year U.S. Treasury yield traded in a relatively narrow range between 0.50%-0.75%.

— The Federal Reserve maintained an accommodative tone, and most members of the Federal Open Market Committee remained of the view that short rates are likely to stay near-zero through 2023, and eventually move toward 2.50% over the longer-term. The Fed repeated that while it has the power to lend, it does not hold the power to spend, and additional fiscal support will likely be required from Congress.

— The U.S. Fed made an adjustment to its policy approach related to its inflation target. Instead of targeting stable prices, defined as 2% annual growth in personal consumption expenditures (PCE), the Fed will now implement an average inflation targeting approach aimed at achieving "inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%."

— Officials at the Bank of England (BOE) reportedly warmed to the idea of pursuing a negative interest rate policy, and markets are now pricing in negative overnight rates by May 2021. Many analysts have stated that the BOE is likely to remain extremely supportive and may provide additional monetary accommodation in the form of quantitative easing before year-end.

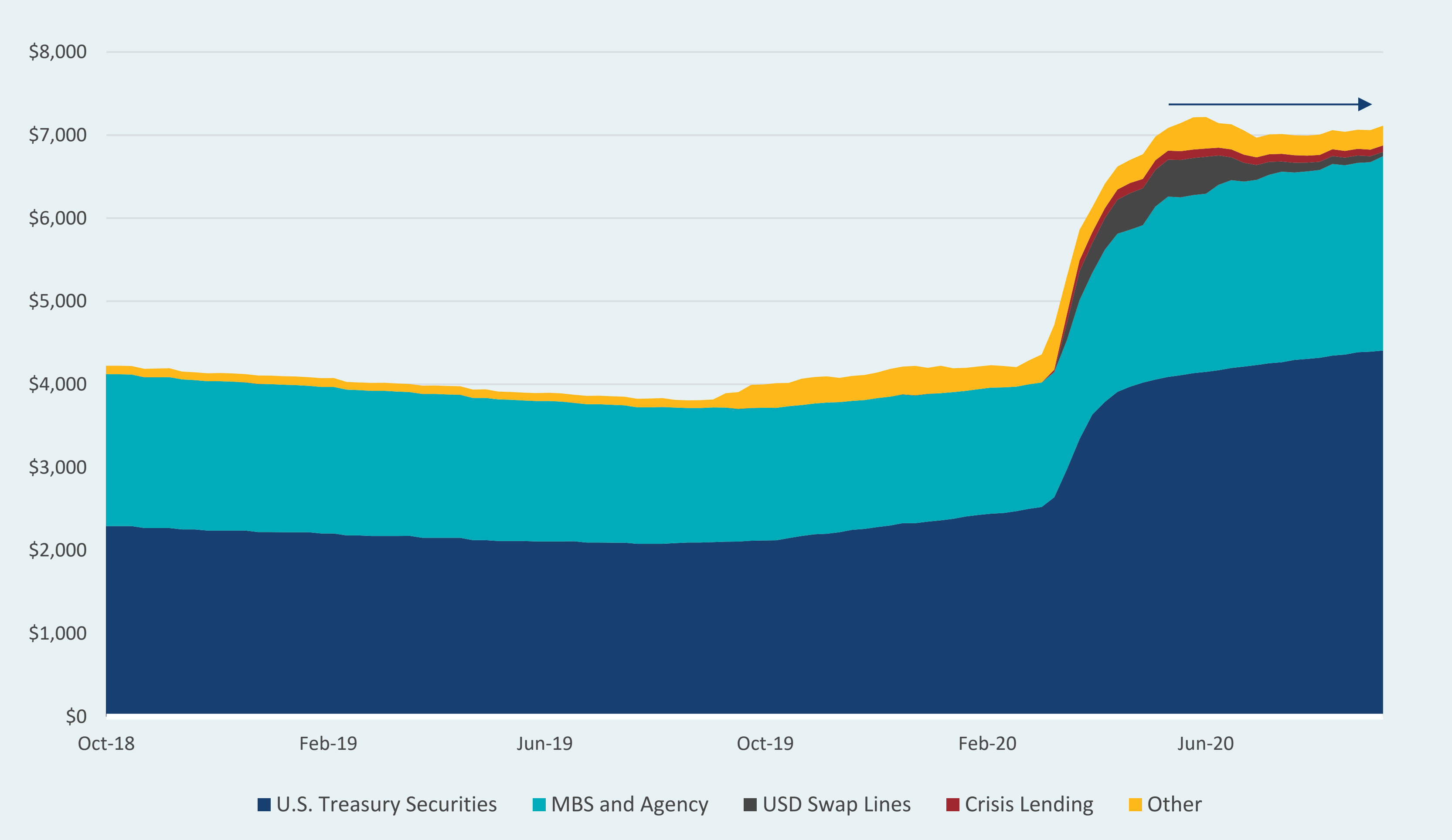
— Investors were paid for betting on longer-term reflation of growth and inflation, likely due to their expectations for further fiscal and monetary accommodation moving forward. Ten-year breakeven inflation rates recovered from 1.3% to 1.6%, and key term spreads indicated a moderate steepening in the U.S. yield curve.

Area	Short Term (3M)	10-Year
United States	0.09%	0.68%
Germany	(0.63%)	(0.52%)
France	(0.64%)	(0.24%)
Spain	(0.54%)	0.25%
Italy	(0.48%)	0.87%
Greece	(0.08%)	1.02%
U.K.	0.01%	0.23%
Japan	(0.15%)	0.01%
Australia	0.12%	0.79%
China	2.29%	3.13%
Brazil	1.93%	7.45%
Russia	4.09%	6.29%

Source: Bloomberg, as of 9/30/20

Monetary stimulus

FED BALANCE SHEET, MILLIONS



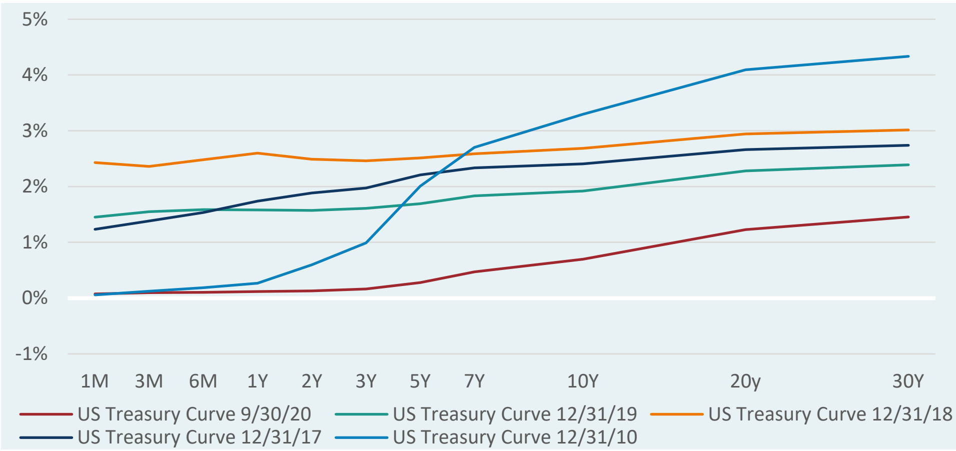
Source: FRED, Bloomberg, as of 9/16/20

Fed balance sheet levels have remained flat

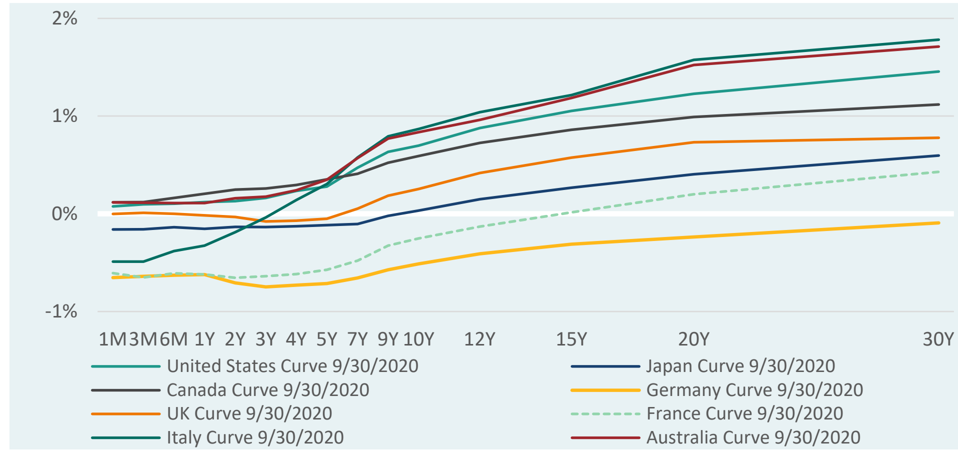
The Fed provided significant monetary accommodation in Q2. Officials have implied that further stimulus will likely need to come in the form of fiscal support

Yield environment

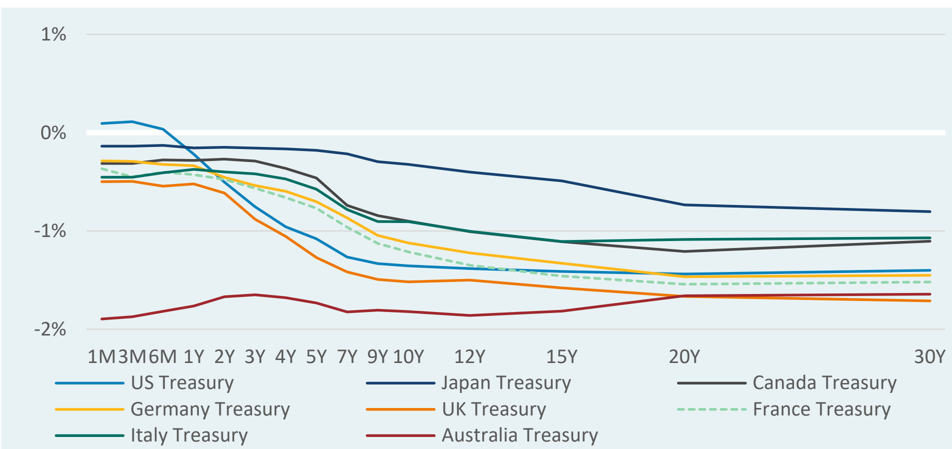
U.S. YIELD CURVE



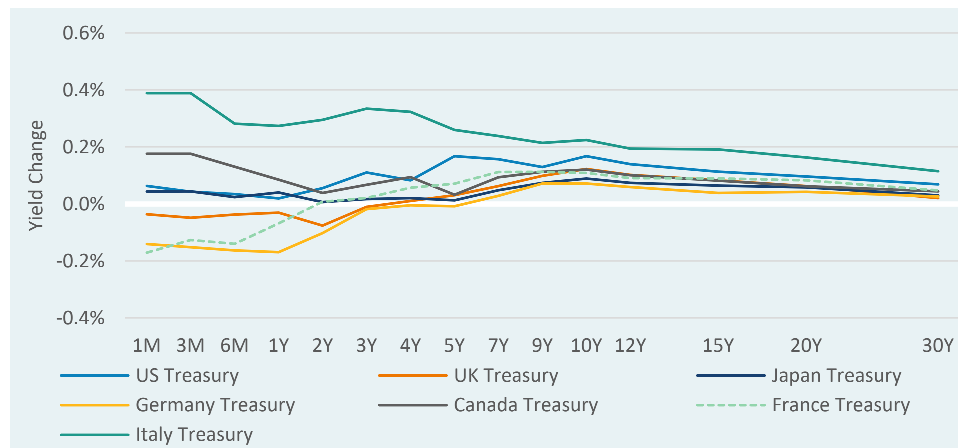
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/20

Credit environment

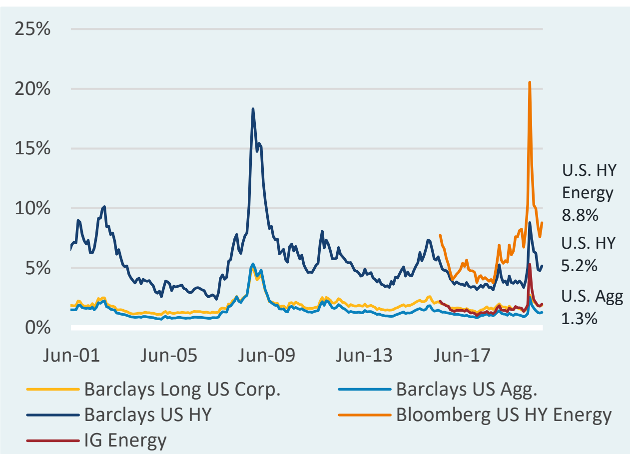
Credit markets performed positively in the third quarter as yields continued to fall from March highs. Buoyed by ongoing support from the Fed as well as increased investor demand for yield, investment grade credit returned 1.5% over the quarter while high yield and leveraged loans returned +4.6% and +4.1%, respectively. Within high yield, lower quality issues outperformed higher quality.

Investment-grade credit has now returned +6.4% year-to-date through September, while high yield performance turned positive at +0.6% and leveraged loans remained negative at -0.8% year-to-date.

Credit spreads fell across the board in Q3 but high yield led the way. Corporate investment grade spreads fell 14 bps through the quarter to 136 bps while high yield spreads fell 109 bps to 517 bps.

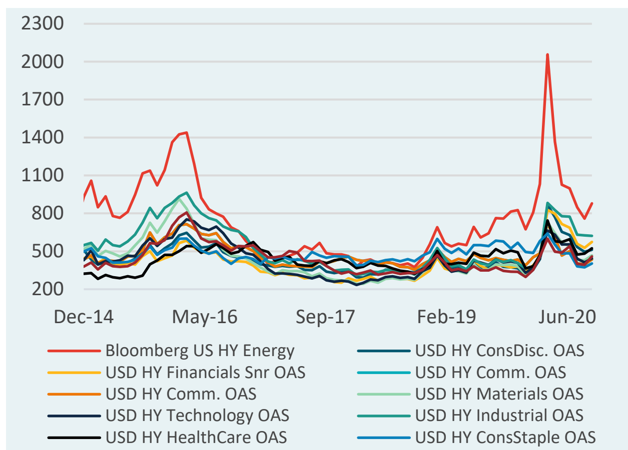
As a result of the post-March recovery, approximately two-thirds of global investment grade debt is now yielding less than 1%, and more debt is currently trading at a negative yield than at above the 2% level. While yields in the U.S. are still modestly higher than pre-pandemic levels, credit markets are priced similarly to how they were in January, despite a very different fundamental picture.

SPREADS



Source: Barclays, Bloomberg, as of 9/30/20

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/20

	Credit Spread (OAS)	
Market	**9/30/20**	**9/30/19**
Long U.S. Corp	1.9%	1.7%
U.S. Inv Grade Corp	1.4%	1.2%
U.S. High Yield	5.2%	3.7%
U.S. Bank Loans*	5.3%	4.5%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/20
**Discount margin (4-year life)*

Default & issuance

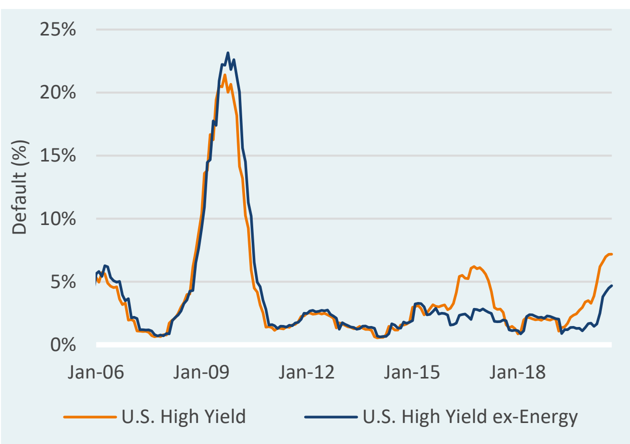
Default activity over the quarter slowed considerably from record numbers in Q2 but remained elevated relative to history. In the third quarter, 26 companies defaulted on $19.3 billion, bringing the year-to-date default total to $123.4 billion. This year-to-date figure would rank as the second highest annual default total on record.

The U.S. high yield default rate fell -0.4% in the quarter to 5.8% but remains 3.2% higher than the start of the year. Conversely, the U.S. leveraged loan default rate rose and hit a five-year-high at 4.3%, 2.6% higher year-to-date.

Certain high yield bond issuers took advantage of the low rate environment throughout Q3 and continued to come to market at a record pace. Gross issuance was $131.9 billion over the quarter, which was second only to $145.5 billion in Q2, the highest on record. Total gross issuance year-to-date has been $350.3 billion.

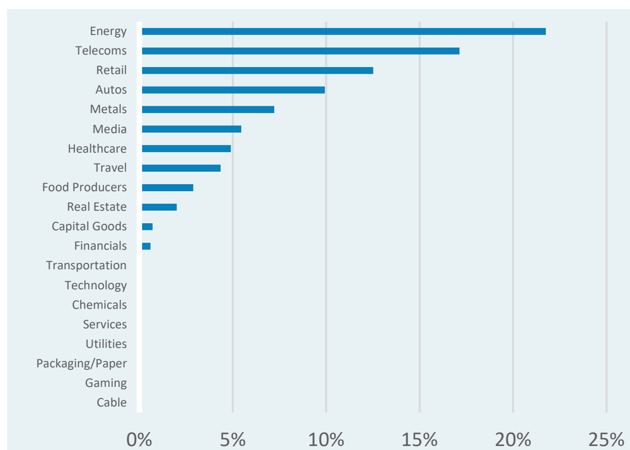
Investment grade issuance fell to nearly half the rate of the second quarter but remains elevated. New investment grade issuance totaled $371 billion. A year-to-date $1.54 trillion worth of new investment grade debt was nearly 70% higher than during the same period of 2019.

HY DEFAULT RATE (ROLLING 1-YEAR)



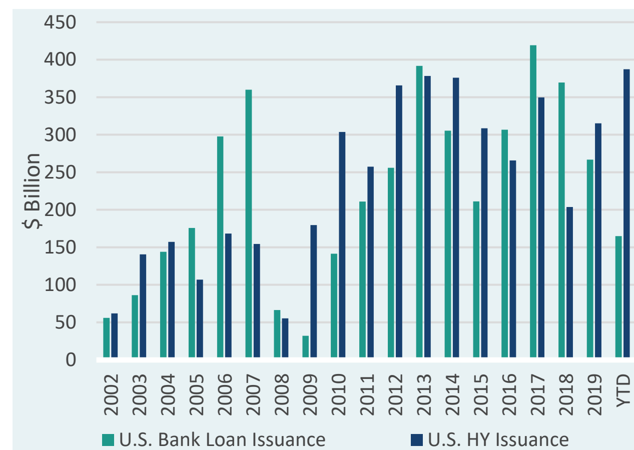
Source: BofA Merrill Lynch, as of 9/30/20

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



Source: BofA Merrill Lynch, as of 9/30/20 – par weighted

U.S. ISSUANCE ($ BILLIONS)



Source: BofA Merrill Lynch, as of 9/30/20

Equity

Equity environment

— U.S. equities reached a new high in September before pulling back later in the month. U.S. and emerging markets have recovered most losses year-to-date, while international developed equities remain more negative. Global equities are now positive for 2020 despite an earnings recession and considerable economic uncertainty.

— Emerging market equities outperformed during the quarter (MSCI Emerging Markets +9.6%) followed by domestic equities (S&P 500 +8.9%) and international developed (MSCI EAFE +4.8%).

— According to FactSet, S&P 500 Q3 earnings are expected to be down -20.5%. However, earnings in Q2 beat expectations by 12.5% (-31.6% YoY vs. -44.1%). Another large positive surprise in Q3 would be welcome news to investors. The Cboe VIX Index moderated in June from heightened levels and remained generally rangebound during the third quarter. The VIX ended the month of September at 26, higher than the long-term average of 19.

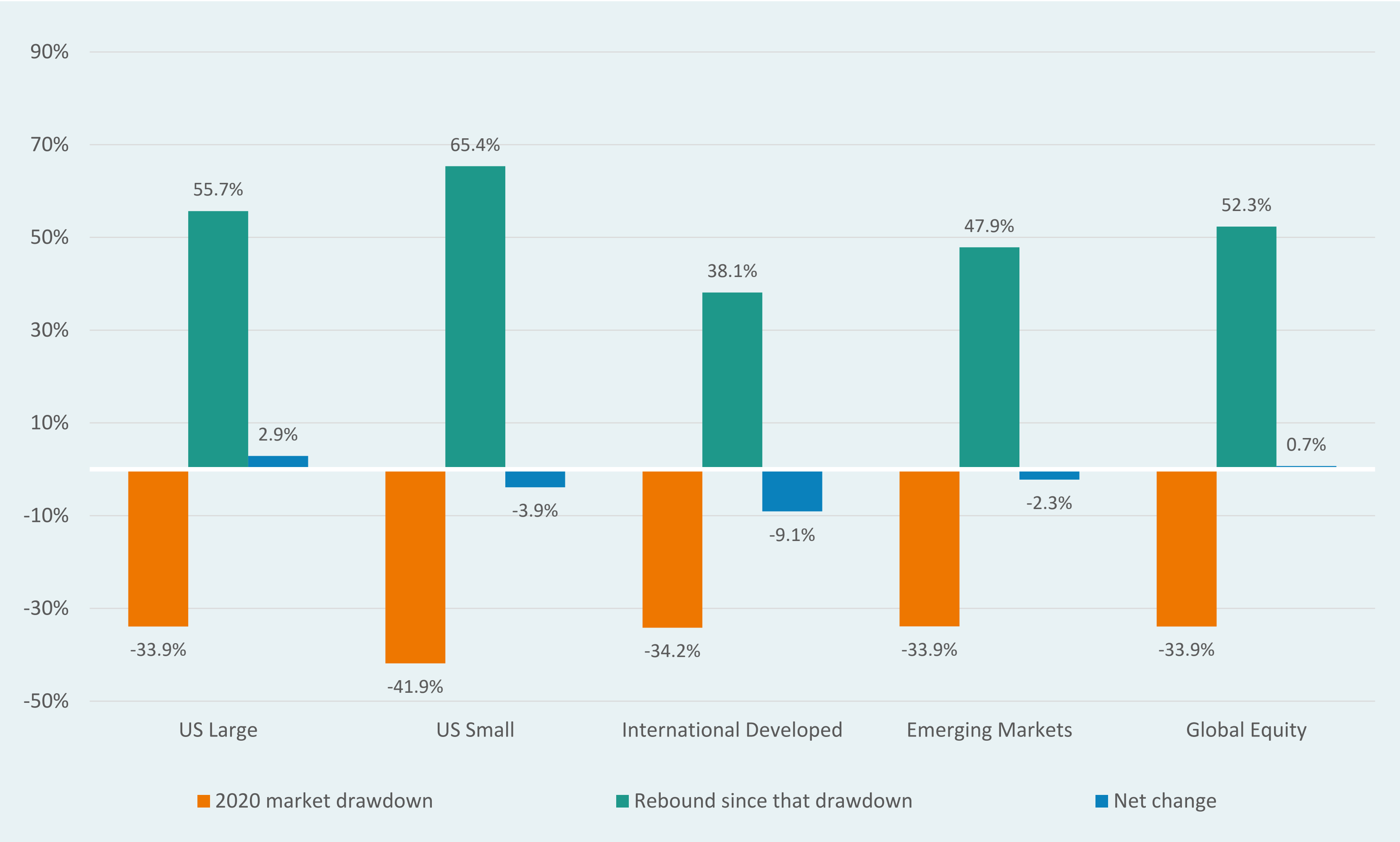
— The U.S. dollar fell -3.5% in the third quarter, continuing a downward trend since a sudden jump in March on safe-haven buying. The dollar has now completely unwound the gains experienced during the market sell-off.

— U.S. growth stocks beat value stocks in the third quarter, continuing an incredible run of market leadership (Russell 1000 Growth +13.2%, Russell 1000 Value +5.6%), while large cap stocks outperformed small cap stocks (Russell 1000 +9.5%, Russell 2000 +4.9%).

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	8.9%		15.1%	
US Small Cap (Russell 2000)	4.9%		0.4%	
US Large Value (Russell 1000 Value)	5.6%		(5.0%)	
US Large Growth (Russell 1000 Growth)	13.2%		37.5%	
International Large (MSCI EAFE)	4.8%	1.3%	0.5%	(3.1%)
Eurozone (Euro Stoxx 50)	3.5%	(0.6%)	(1.7%)	(6.8%)
U.K. (FTSE 100)	0.1%	(4.1%)	(13.9%)	(17.0%)
Japan (NIKKEI 225)	6.8%	4.7%	10.9%	10.2%
Emerging Markets (MSCI Emerging Markets)	9.6%	8.5%	10.5%	12.8%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/20

Equity market peak-to-trough



Equity markets around the world have recovered most of their losses

As of 10/15/20 - "Peak-to-trough" is defined as the total loss from the highest value achieved in 2020 to the lowest value achieved following the COVID-19 market drawdown. "Net change" is the difference between the market price on October 15th and the highest value achieved in 2020. Indexes include: S&P 500, Russell 2000, MSCI EAFE, MSCI Emerging Markets, MSCI ACWI.

Domestic equity

U.S. equities delivered +8.9% in Q3, reaching a new high in September before pulling back later in the month. The S&P 500 is up +5.6% year-to-date, despite an earnings recession and considerable economic uncertainty.

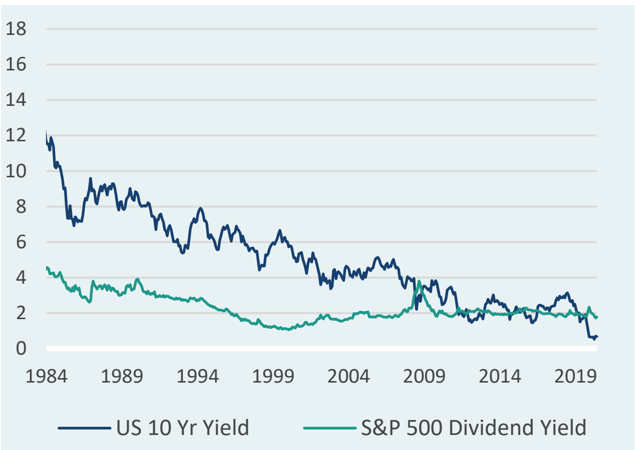
Consumer Discretionary (+15.1%) and Materials (+13.3%) sectors led in Q3, with Energy (-19.7%) delivering further underperformance. Information Technology stocks have shown impressive performance year-to-date (+27.5%) and have captured headlines as some company valuations have reached lofty levels. Large technology names have seen greater volatility recently, and exhibited a quick pullback during the first week of September. Growth stocks continue to be in vogue in the current low-growth environment.

Many investors are justifiably questioning the rationale for such strong risk asset performance, at a time when so much uncertainty exists around public health and the economy, and at a time when some business models may no longer be viable due to COVID-19.

S&P 500

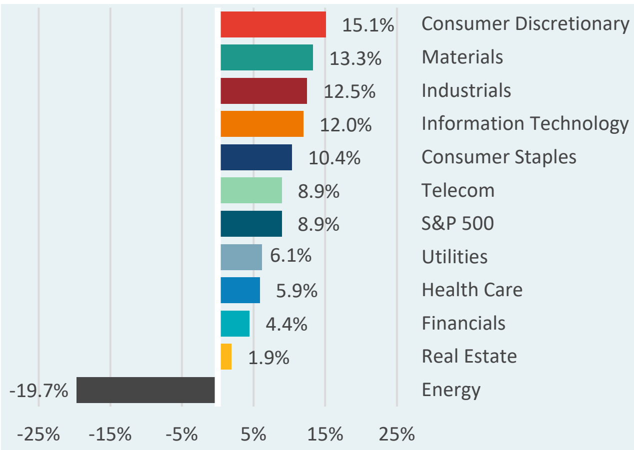
Source: Standard & Poor's, as of 9/30/20

DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 9/30/20

Q3 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 9/30/20

Domestic equity size & style

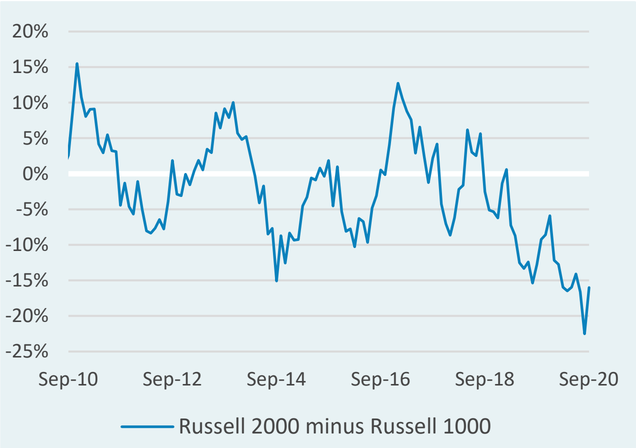
U.S. growth stocks beat value stocks during Q3, continuing an incredible run of market leadership (Russell 1000 Growth +13.2%, Russell 1000 Value +5.6%), while large cap stocks outperformed small cap stocks (Russell 1000 +9.5%, Russell 2000 +4.9%).

It seems that 2020 has been the perfect storm for value stocks. Commodities sectors were experiencing oversupply leading up to the onset of COVID-19, and the virus greatly accelerated these problems, resulting in a historic crash to prices (the Energy sector contains many value stocks). The Energy sector has delivered -45.2% over the past year. At the same time, the world has been rapidly changing in terms of technological progress, and COVID-19 appears to have accelerated these trends, contributing to extreme outperformance of the growth-tilted Information Technology sector at +47.2% over the past year.

We recognize that recent value underperformance is anomalous, but we also recognize that much of this price action has been due to global trends that may not necessarily reverse over the short-term. It is very difficult to successfully make short-term bets on style factors, as factors can be incredibly noisy and vulnerable to sector randomness. Value is historically cheap, but a catalyst for a value turnaround is not yet evident. We continue to believe that a buy-and-hold approach to style investing is the best course of action, most of the time, but we are closely watching this space.

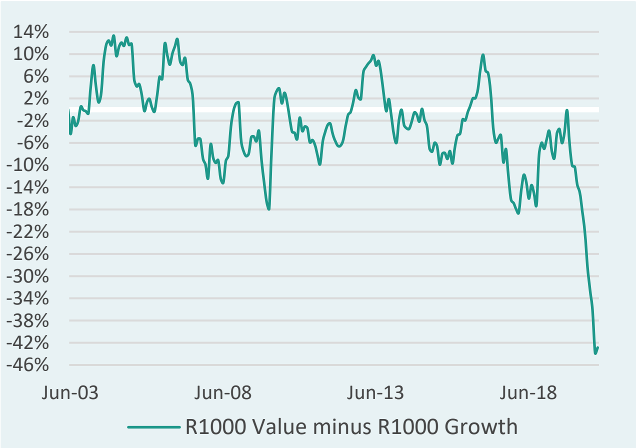
Sector performance has fueled dramatic negative performance of the value premium

SMALL CAP VS LARGE CAP (YOY)



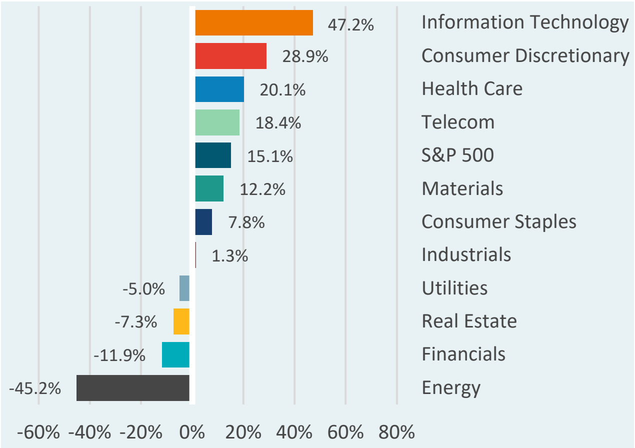
Source: FTSE, as of 9/30/20

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/20

S&P 500 SECTOR PERFORMANCE (1-YEAR)



Source: Standard & Poor's, as of 9/30/20

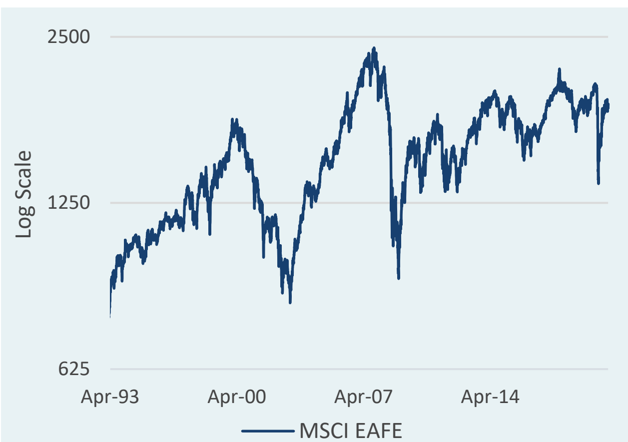
International developed equity

International equities continued to recover through Q3, though the MSCI EAFE Index (+4.8%) materially lagged the MSCI Emerging Markets Index (+9.6%) and the S&P 500 Index (+8.9%). Dollar weakness coinciding with the risk recovery through the summer was a major theme and dampened the underperformance of international developed equities relative to U.S. equities in U.S. dollar terms. The three largest currency exposures embedded in the MSCI EAFE Index—the euro (32%), the yen (26%), and the pound sterling (13%)—appreciated +4.4%, +2.2%, and +4.6% relative to the greenback over the course of the quarter.

In the second quarter, MSCI EAFE Index revenues dropped nearly -20%, and earnings dropped nearly -60%, pushing certain valuation metrics including price/earnings ratios to historic highs. Moving into Q3 earnings season, analysts are anticipating a historic turnaround in corporate profits, which could help bring valuations back to more normal levels.

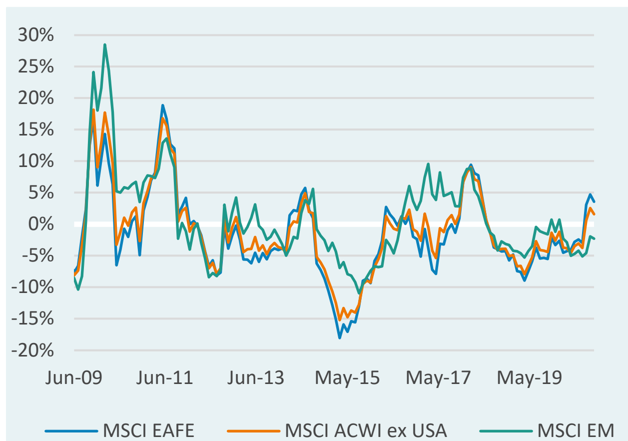
The MSCI EAFE Growth Index returned +8.4% over the third quarter, outpacing the MSCI EAFE Value Index (+1.2%) in U.S. dollar terms, extending its outperformance over the year-to-date to a staggering +23.6%.

INTERNATIONAL DEVELOPED EQUITIES



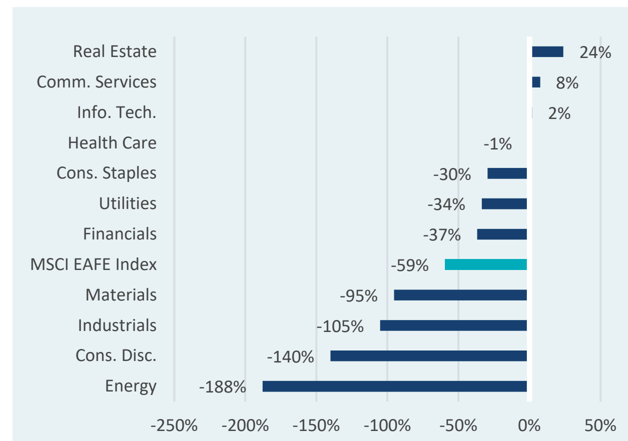
Source: MSCI, as of 9/30/20

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/20

Q2 2020 EARNINGS GROWTH – MSCI EAFE INDEX



Source: MSCI, Bloomberg, as of 9/30/20

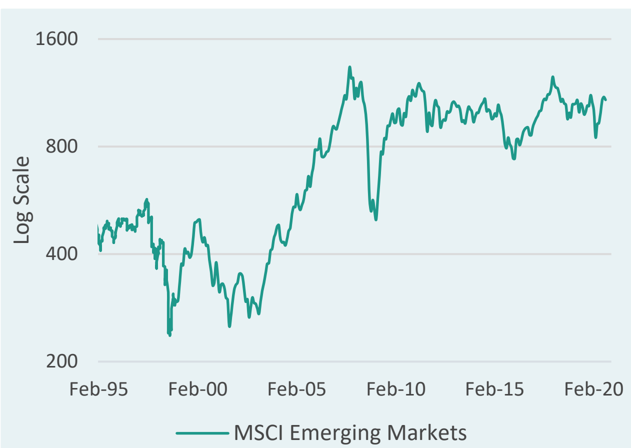
Emerging market equity

Emerging market equities (MSCI EM +9.6%) outperformed U.S. (S&P 500 +8.9%) and international developed equities (MSCI EAFE +4.8%) over the quarter. Looking across the emerging market complex, Latin American equities underperformed (MSCI EM Latin American -1.3%) which was a continuation of a longer-term trend. Latin American stocks have drastically underperformed over the previous 10-year period (MSCI EM Latin America -5.7%, MSCI EM +2.5%).

Inflation remained subdued relative to longer-term averages, due in large part to energy prices remaining under pressure. The Emerging Markets Citi Inflation Surprise Index rose from -28.8 to -6.6 over the quarter, implying that the magnitude of inflation data misses lessened between June and September.

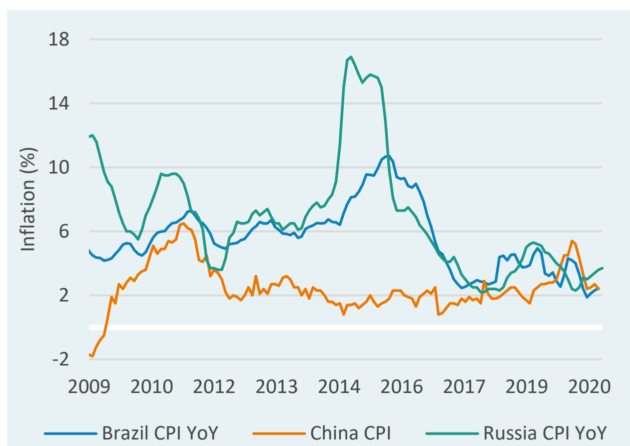
Emerging market currencies broadly appreciated relative to the U.S. dollar, and Asian currencies outperformed. The offshore Chinese renminbi rallied 4.2% versus the greenback to ¥6.78, its strongest level since mid-2019. Part of the rally in the yuan has been attributed to FTSE Russell's recent decision to add Chinese government bonds to its World Government Bond Index. This change would take effect in 2021, and would likely result in increased foreign capital inflows.

EMERGING MARKET EQUITY



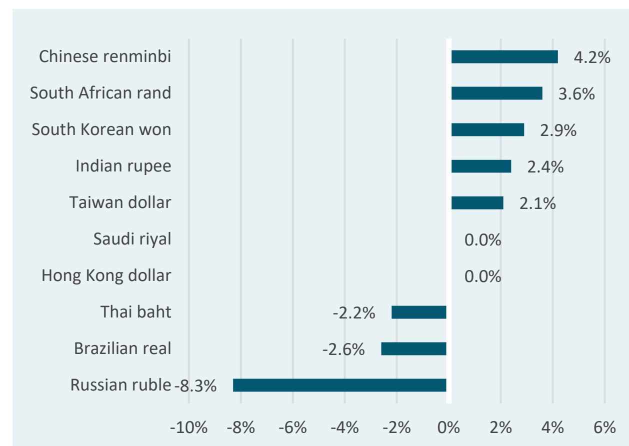
Source: MSCI, as of 9/30/20

INFLATION (YOY)



Source: Bloomberg, as of 9/30/20

Q3 CURRENCY PERFORMANCE – MSCI EM INDEX



Source: Bloomberg, as of 9/30/20

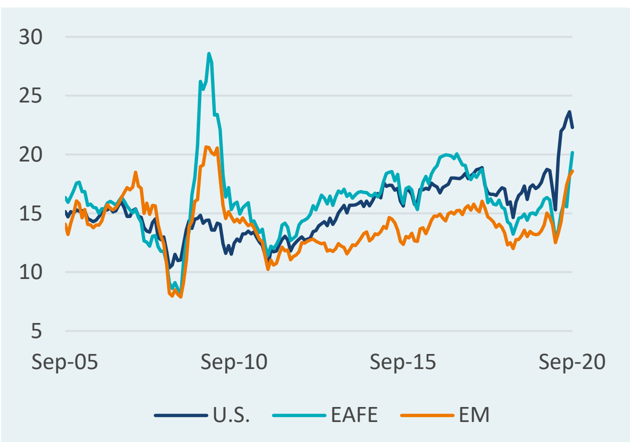
Equity valuations

U.S. equity valuation levels moderated in September after continuing to rise through July and August. Prices ended the quarter little changed relative to 12-month earnings forecasts (22.3 Price/Earnings). The moderation of U.S. equity valuations was driven in part by a tech-driven sell-off across U.S. large-caps, and in part by improvement in the earnings growth and outlook.

The blended net profit margin for the S&P 500 Index in Q3, which combines actual reported results and estimated results for companies which have yet to report, is 9.7%. If the blended net profit margin were to materialize, it would mark the first quarterly improvement in the profitability metric since the second quarter of 2019, and could provide further fundamental backing for current price levels. Analysts are expecting net profit margins to continue to improve. Estimated profit margins for Q4 2020, Q1 2021, and Q2 2021 ended the quarter at 9.8%, 10.4%, and 11.0%, respectively.

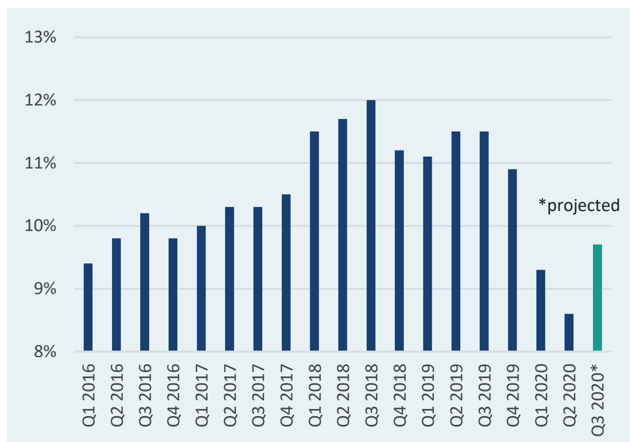
Equity dividend yields remain attractive relative to nominal government bond yields, especially in Europe, and could further entice investors to reach for yield through risk assets.

FORWARD P/E RATIOS



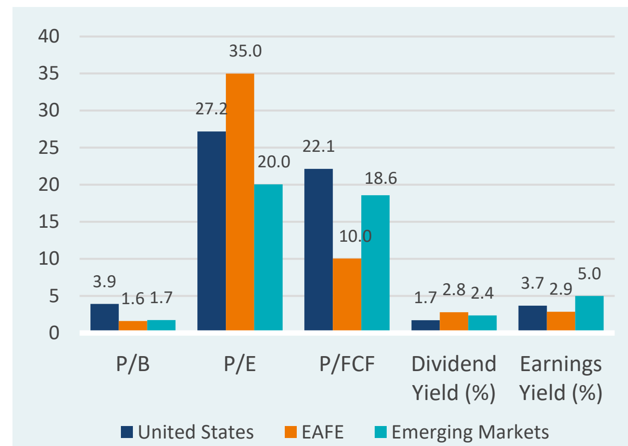
Source: MSCI, 12m forward P/E, as of 9/30/20

S&P 500 NET PROFIT MARGINS



Source: FactSet, as of 9/30/20

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 9/30/20 - trailing P/E

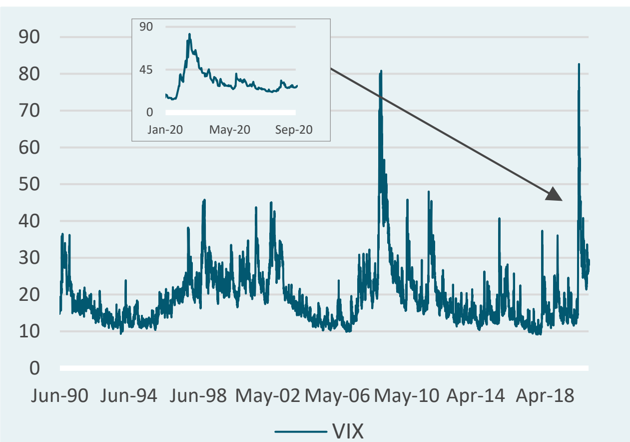
Equity volatility

The Cboe VIX Index moderated in June from heightened levels, and remained generally rangebound during the third quarter. The VIX ended September at 26, but remains elevated relative to the long-term average of 19.

U.S. equities have historically exhibited the lowest risk among developed and emerging markets. In recent years, this relationship has flipped, with U.S. stocks showing higher volatility than developed market stocks, and nearly on par with emerging market equities.

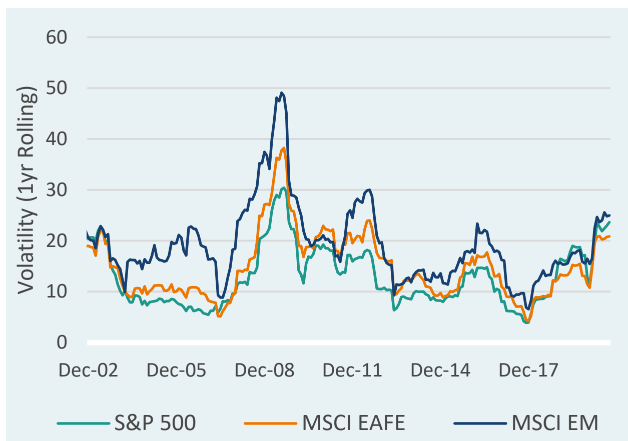
Expectations for short-term equity volatility faded through the summer. The VIX term structure continued to indicate an expectation for heightened volatility around the Presidential election in the beginning of November. Toward the end of the quarter, concerns over the impact of mail-in voting on the timeliness of electoral results reporting led some market participants to position around the prospect of a contested election and its consequences for equity markets. Polling data indicates a widening lead for Biden. The prospect of a "Blue Wave" appears to have emboldened some traders to sell longer-dated VIX futures contracts.

U.S. IMPLIED VOLATILITY (VIX)



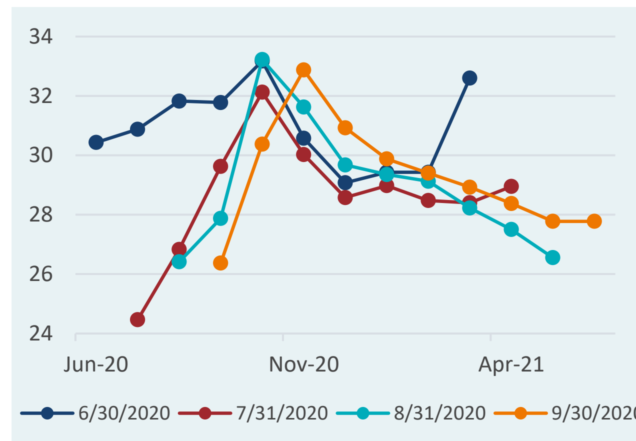
Source: Cboe, as of 9/30/20

REALIZED VOLATILITY



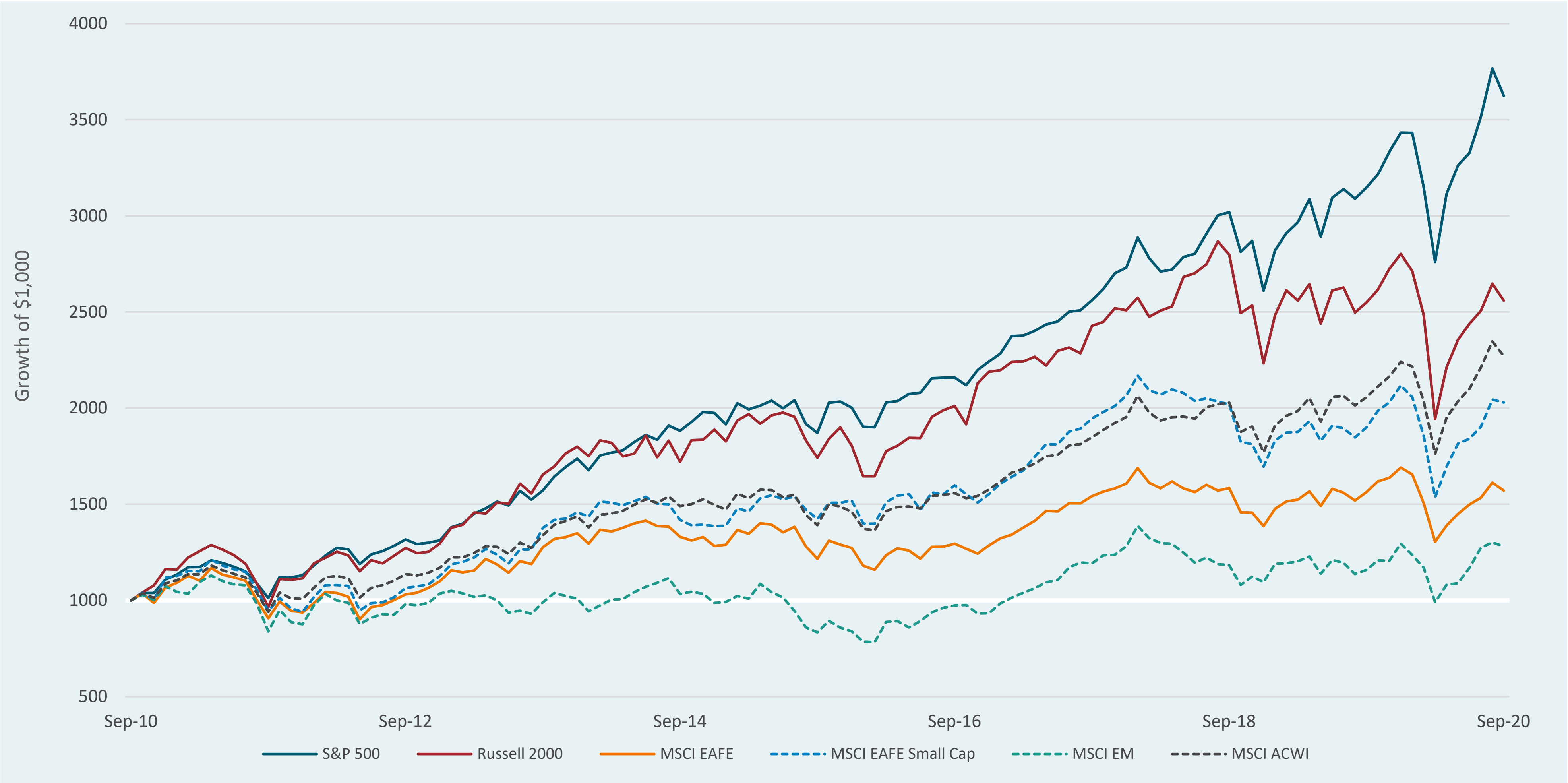
Source: Standard & Poor's, MSCI, as of 9/30/20

HISTORICAL VIX TERM STRUCTURES



Source: Bloomberg, as of 9/30/20

Long-term equity performance



Source: Morningstar, as of 9/30/20

Other assets

Currency

The U.S. dollar fell -3.5% in the third quarter, continuing a downward trend since a sudden jump in March on safe-haven buying. Though the dollar did show some signs of stabilization in September as equities took a step back, the Bloomberg Dollar Spot Index has now completely unwound the gains experienced during the market sell-off.

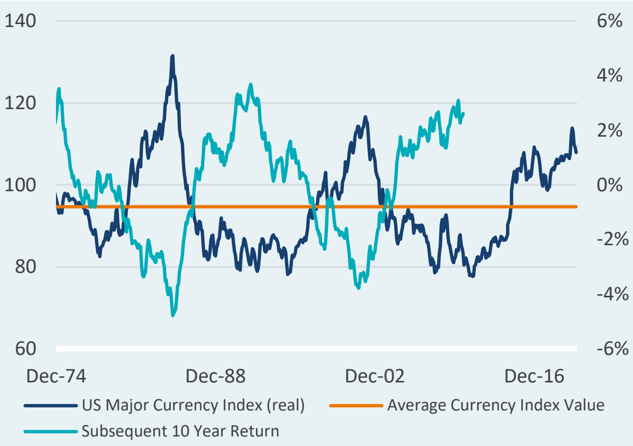
Interest rate differentials between U.S. Treasury bonds and international developed sovereign bonds have begun to separate once again. U.S. Treasury yields traded in a relatively narrow range while European yields drifted lower, perhaps as a result of speculation on further quantitative easing from the European Central Bank. A continuation of this trend could be supportive of the dollar bull case, looking ahead.

Despite the significant rally of the euro (+4.4%) relative to the greenback in Q3, the common currency remains cheap according to the OECD's purchasing power parity data. At quarter-end, the euro was -20.8% cheap relative to the U.S. dollar, which was significant but still at its least undervalued level since September 2018.

BLOOMBERG DOLLAR SPOT INDEX

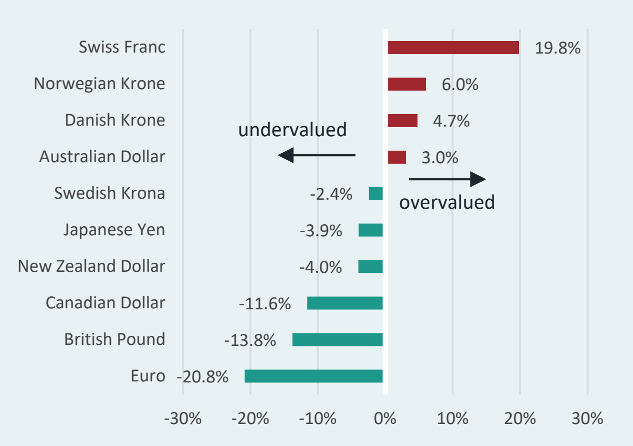
Source: Bloomberg, as of 9/30/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



Source: Federal Reserve, as of 9/30/20

G10 FX VALUATIONS – OECD PPP (VS USD)



Source: OECD, Bloomberg, as of 9/30/20

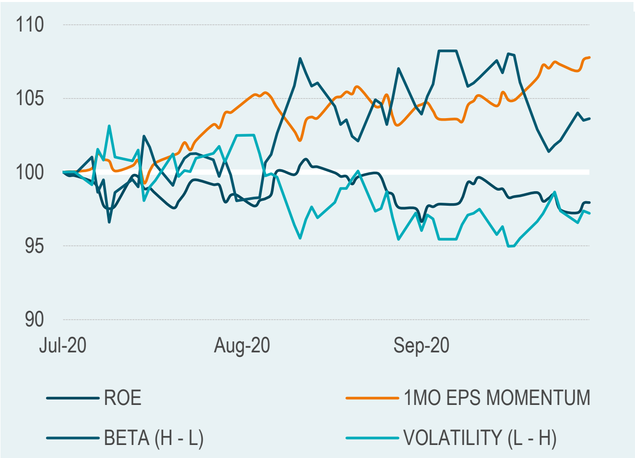
Equity factors: A closer look

Investors rewarded stocks with improving earnings prospects during the third quarter as one-month earnings momentum (long/short, sector neutral, S&P 500) was the top performing factor for the period. Stocks with higher beta and higher historic volatility also continued to rally during most of the quarter. In contrast, higher quality stocks sold off during the period.

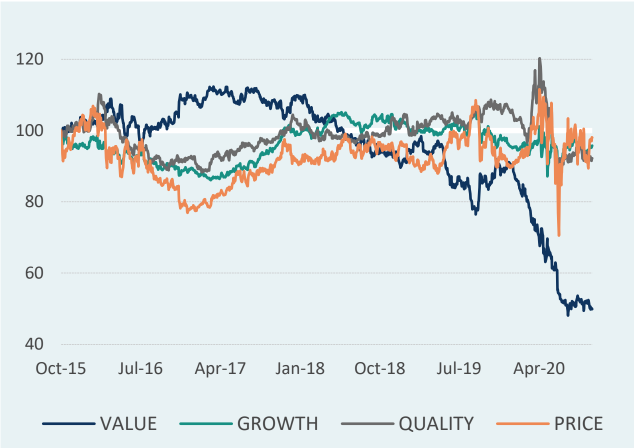
Over the trailing 5-year period, the respective growth, quality and price momentum factors finished with modestly negative results. These factors also showed some recent sensitivity to the dramatic market movements caused by the pandemic. In contrast, the value factor remains mired in a long-term drawdown.

The pandemic has caused significant dispersion as investors rushed into stocks perceived to benefit from the crisis. In contrast, the stocks thought to gain most from a potential recovery back to normalcy continue to lag both the beneficiaries and the broad market. The structural risk to the recovery theme is a potential permanent change in behavior as certain activities, such as travel and tourism, remain depressed relative to pre-COVID norms.

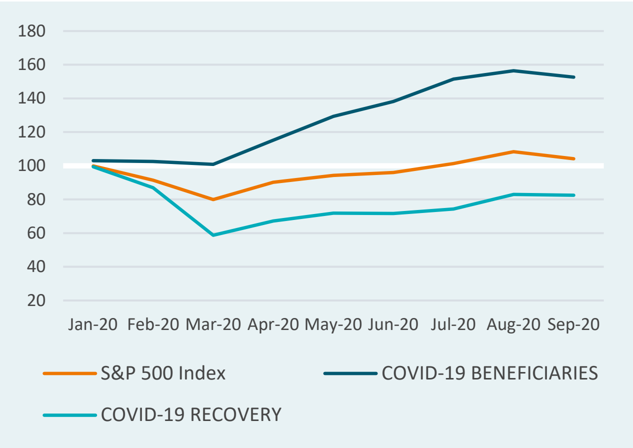
2020 Q3 FACTOR PERFORMANCE



2015Q4 – 2020Q3 FACTOR PERFORMANCE



COVID-19 BASKETS



Source: JP Morgan US Equity Strategy

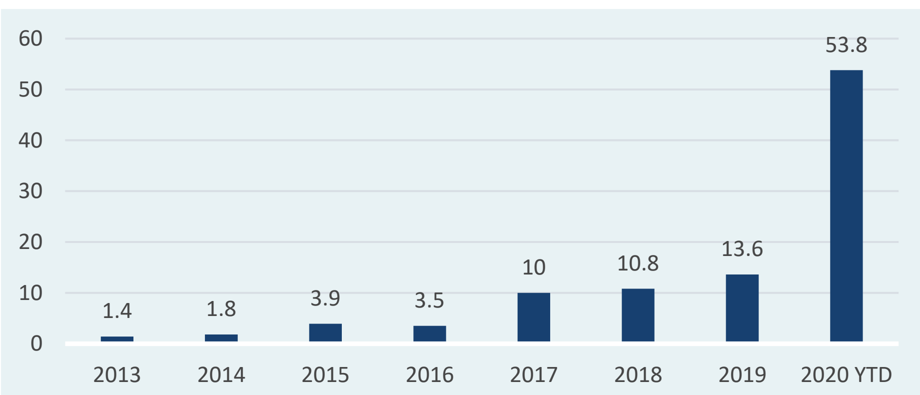
SPACs at a glance

Special Purpose Acquisition Companies, commonly abbreviated as SPACs, have proliferated substantially in 2020, especially in the third quarter. This has been driven by recent market volatility, increasing initial public offering (IPO) risks and inefficiencies, coupled with record retail investor trading volume. The reputation of SPACs is improving as notable investors and operators continue to enter the space.

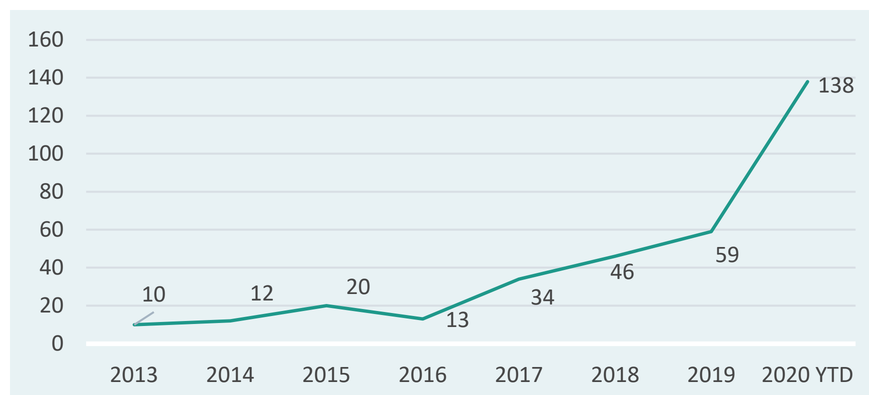
— A SPAC is a "blank check" shell company formed specifically to acquire a late-stage private company target. From the SPAC sponsor's point of view, it is analogous to creating a Private Equity fund that renders only one investment, which becomes publicly traded upon the merger process known as "de-SPAC".

— SPACs allow private companies to undergo public listing quicker, bypassing a traditional IPO process.

TOTAL SPACS CAPITAL RAISED ($BN)



NUMBER OF SPAC IPOS



Source: SPAC Research, as of 10/9/20

Implications for institutional investors

— SPACs have experienced significant volatility around a historic negative return level.

SPAC RETURNS % POST-MERGER COMPLETION

Sample of SPAC transactions completed since January 2018

— We believe the rise of SPACs will continue to disrupt different asset classes in various ways.

- In Venture Capital and Leveraged Buyouts, SPAC serves as a new potential exit channel for companies that pre-empts a traditional IPO, generating earlier liquidity for GPs and LPs.
- SPACs have become a deal source for mutual funds, private markets and hedge fund managers to invest via a PIPE.
- In SPACs, milestone-based compensation for the management team are more acceptable and normalized as compared to a traditional IPO. This could potentially lead to better alignment of company and GP incentives and interests.

SPACs have yet to be proven as an attractive asset class for prudent investors

We are currently assessing the longer-term impact of SPACs on the private & public markets

Source: Goldman Sachs Global Investment Research, Dealogic, UBS, as of 7/30/20.

Appendix

Periodic table of returns

BEST

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	YTD	5-Year	10-Year
Large Cap Growth	38.7	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	24.3	20.1	17.3
US Bonds	27.0	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	6.8	14.1	13.8
Large Cap Equity	20.3	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	6.4	11.4	12.3
Small Cap Growth	19.3	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	3.9	9.0	9.9
60/40 Global Portfolio	16.2	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	3.6	8.0	9.9
Hedge Funds of Funds	8.7	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	2.5	8.0	9.3
Cash	15.6	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	0.4	7.7	7.1
Real Estate	4.9	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	-0.3	6.1	6.2
Emerging Markets Equity	1.2	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	-1.2	5.3	4.6
International Equity	-2.5	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	-7.1	4.2	3.6
Small Cap Equity	-5.1	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	-8.7	4.1	2.9
Large Cap Value	-6.5	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	-11.6	3.1	2.5
Commodities	-25.3	-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	-12.1	1.1	0.6
Small Cap Value	-27.0	-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	-21.5	-3.1	-6.0

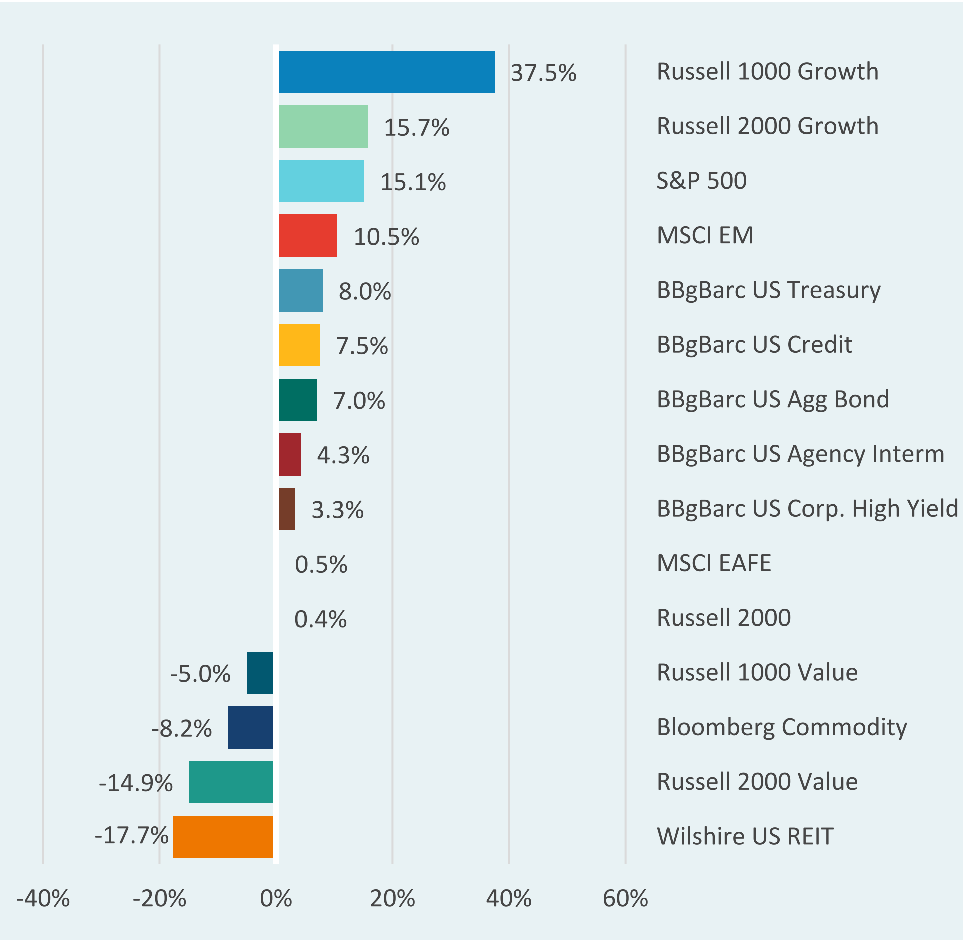
WORST

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

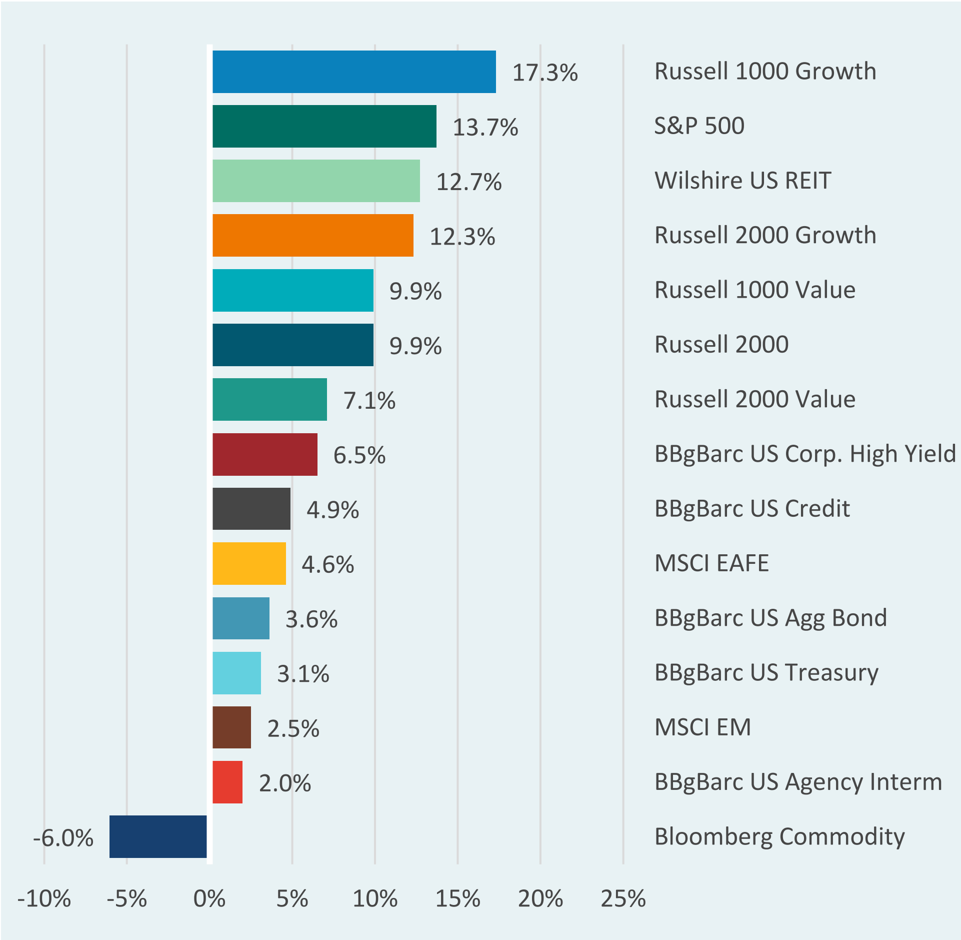
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/20.

Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



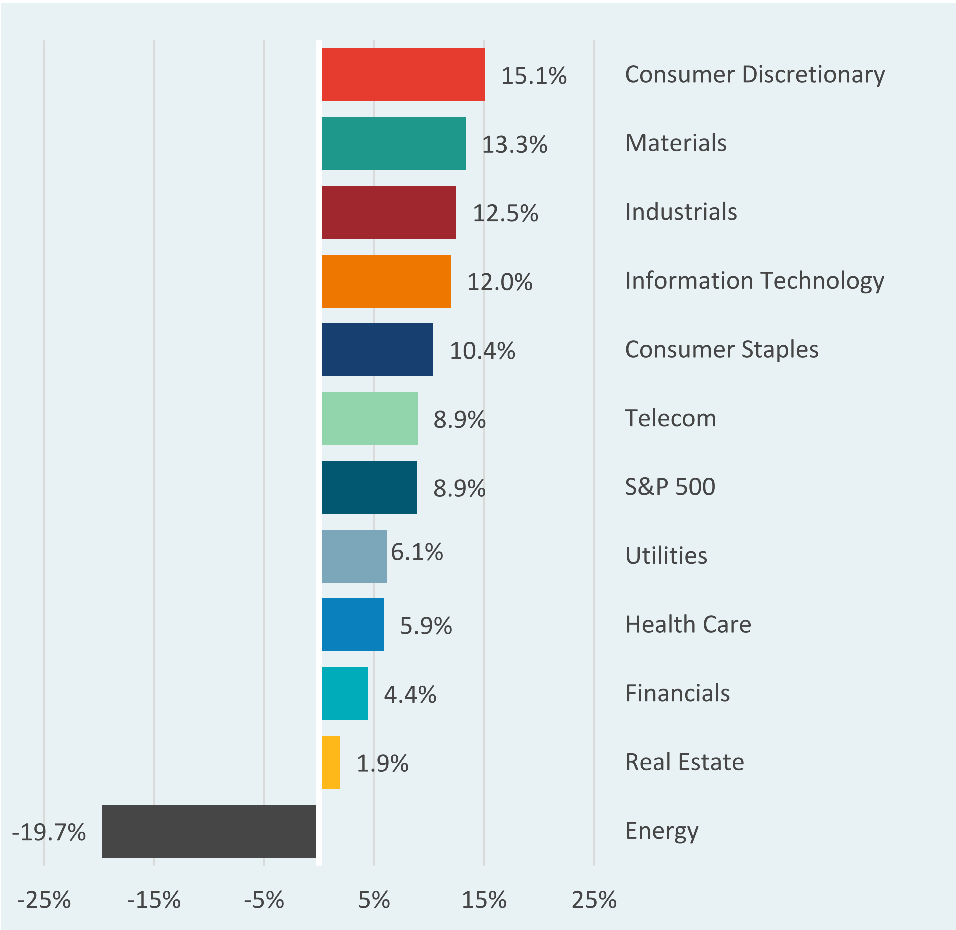
**Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.*

Source: Morningstar, as of 9/30/20

Source: Morningstar, as of 9/30/20

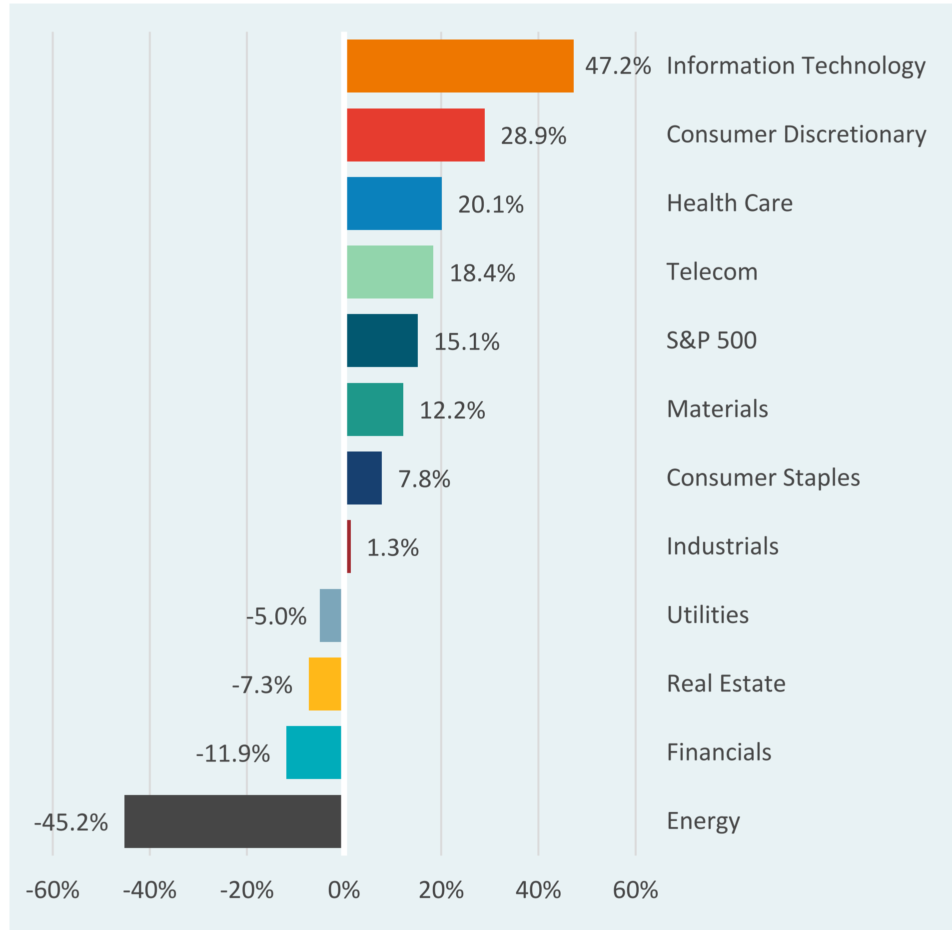
S&P 500 sector returns

Q3 2020



Source: Morningstar, as of 9/30/20

ONE YEAR ENDING SEPTEMBER

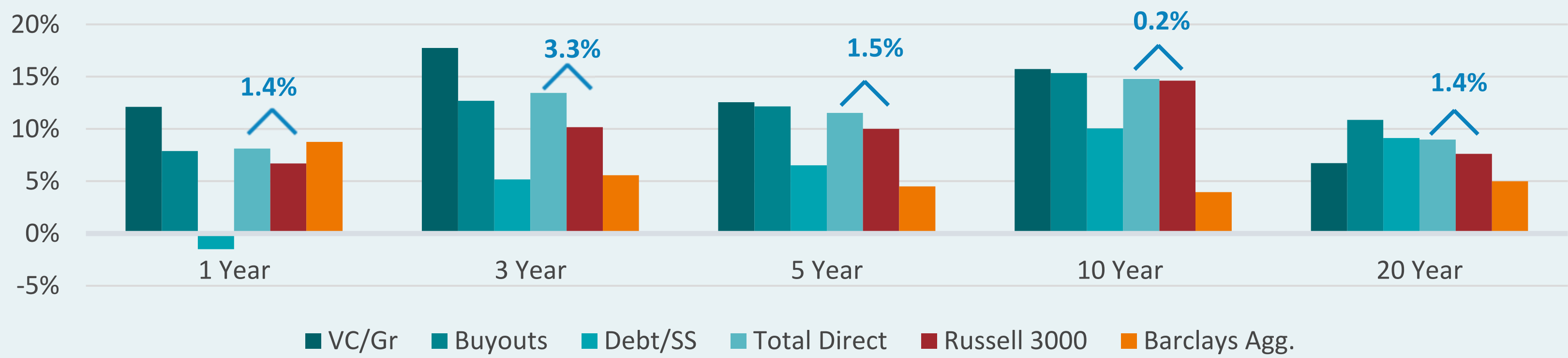


Source: Morningstar, as of 9/30/20

Private equity vs. public performance

As of 6/30/2020

DIRECT PRIVATE EQUITY FUND INVESTMENTS

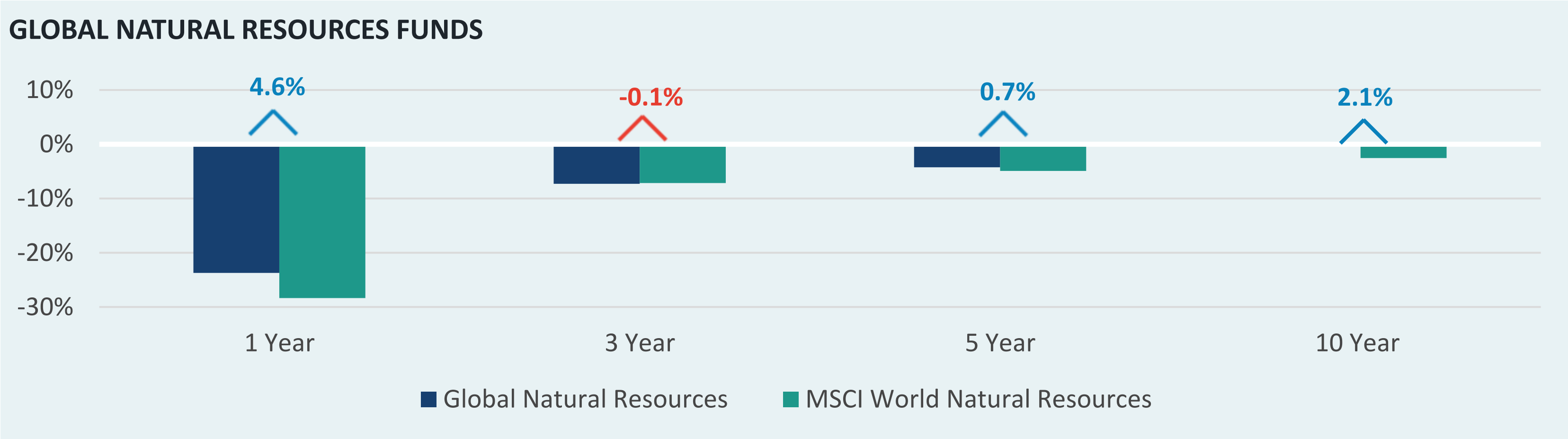


Direct P.E Fund Investments outperformed comparable public equites across all time periods.

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

Private equity vs. liquid real assets performance

As of 6/30/2020



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods, except on a 3 year basis

Sources: Thomson Reuters C|A PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) universes as of June 30, 2020. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(3.8)	8.9	5.6	15.1	12.3	14.1	13.7
S&P 500 Equal Weighted	(2.5)	6.7	(4.7)	2.5	6.5	10.3	12.0
DJ Industrial Average	(2.2)	8.2	(0.9)	5.7	10.0	14.0	12.7
Russell Top 200	(4.2)	10.2	9.6	20.3	14.3	15.6	14.5
Russell 1000	(3.7)	9.5	6.4	16.0	12.4	14.1	13.8
Russell 2000	(3.3)	4.9	(8.7)	0.4	1.8	8.0	9.9
Russell 3000	(3.6)	9.2	5.4	15.0	11.6	13.7	13.5
Russell Mid Cap	(1.9)	7.5	(2.3)	4.6	7.1	10.1	11.8
Style Index							
Russell 1000 Growth	(4.7)	13.2	24.3	37.5	21.7	20.1	17.3
Russell 1000 Value	(2.5)	5.6	(11.6)	(5.0)	2.6	7.7	9.9
Russell 2000 Growth	(2.1)	7.2	3.9	15.7	8.2	11.4	12.3
Russell 2000 Value	(4.7)	2.6	(21.5)	(14.9)	(5.1)	4.1	7.1

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(3.2)	8.1	1.4	10.4	7.1	10.3	8.5
MSCI ACWI ex US	(2.5)	6.3	(5.4)	3.0	1.2	6.2	4.0
MSCI EAFE	(2.6)	4.8	(7.1)	0.5	0.6	5.3	4.6
MSCI EM	(1.6)	9.6	(1.2)	10.5	2.4	9.0	2.5
MSCI EAFE Small Cap	(0.7)	10.3	(4.2)	6.8	1.4	7.4	7.3
Style Index							
MSCI EAFE Growth	(0.7)	8.4	4.6	13.4	7.1	9.2	7.0
MSCI EAFE Value	(4.6)	1.2	(18.3)	(11.9)	(5.9)	1.1	2.1
Regional Index							
MSCI UK	(5.0)	(0.2)	(23.4)	(15.8)	(5.6)	(0.4)	2.0
MSCI Japan	1.0	6.9	(0.7)	6.9	3.9	7.5	6.2
MSCI Euro	(3.8)	4.2	(9.1)	(1.9)	(2.1)	4.4	3.5
MSCI EM Asia	(1.1)	11.9	8.0	21.5	5.7	11.3	5.5
MSCI EM Latin American	(5.1)	(1.3)	(36.1)	(29.4)	(11.8)	2.1	(5.7)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(0.4)	3.0	9.2	10.1	5.8	4.6	3.6
BBgBarc US Treasury Bills	0.0	0.0	0.7	1.2	1.7	1.2	0.7
BBgBarc US Agg Bond	(0.1)	0.6	6.8	7.0	5.2	4.2	3.6
Duration							
BBgBarc US Treasury 1-3 Yr	0.0	0.1	3.1	3.6	2.7	1.8	1.3
BBgBarc US Treasury Long	0.4	0.1	21.3	16.3	11.9	8.2	7.2
BBgBarc US Treasury	0.1	0.2	8.9	8.0	5.5	3.7	3.1
Issuer							
BBgBarc US MBS	(0.1)	0.1	3.6	4.4	3.7	3.0	3.0
BBgBarc US Corp. High Yield	(1.0)	4.6	0.6	3.3	4.2	6.8	6.5
BBgBarc US Agency Interm	0.1	0.3	4.0	4.3	3.3	2.4	2.0
BBgBarc US Credit	(0.3)	1.5	6.4	7.5	6.2	5.7	4.9

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(3.4)	9.1	(12.1)	(8.2)	(4.2)	(3.1)	(6.0)
Wilshire US REIT	(3.4)	1.3	(16.7)	(17.7)	0.4	5.7	12.7
CS Leveraged Loans	0.7	4.1	(0.8)	0.8	3.2	4.6	5.0
Alerian MLP	(13.6)	(16.3)	(48.3)	(50.7)	(21.9)	(12.4)	(4.0)
Regional Index							
JPM EMBI Global Div	(1.9)	2.3	(0.5)	1.3	3.5	6.1	5.4
JPM GBI-EM Global Div	(2.0)	0.6	(6.3)	(1.4)	0.2	4.8	0.5
Hedge Funds							
HFRI Composite	(1.2)	4.1	0.5	4.0	2.7	4.0	3.6
HFRI FOF Composite	(0.4)	4.2	2.5	5.6	2.9	3.1	2.9
Currency (Spot)							
Euro	(1.9)	4.4	4.5	7.6	(0.3)	1.0	(1.5)
Pound	(3.4)	4.6	(2.4)	4.9	(1.2)	(3.1)	(2.0)
Yen	0.5	2.2	3.0	2.4	2.2	2.6	(2.3)

Source: Morningstar, HFR, as of 9/30/20

Definitions

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

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

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

NAHB Housing Market Index – *the housing market index is a weighted average of separate diffusion induces 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 "(Good-Poor + 100)/2" to the present and future sales series and "(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

Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: September 30, 2020

Verus

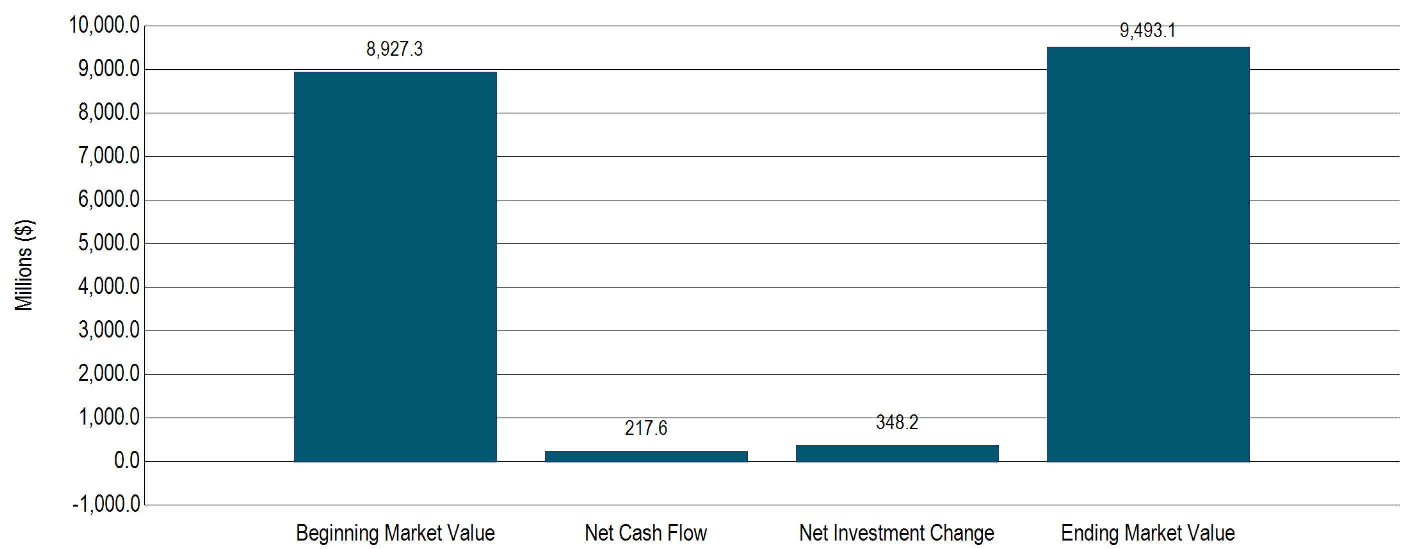
VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
LOS ANGELES 310-297-1777
SAN FRANCISCO 415-362-3484
PITTSBURGH 412-784-6678

Portfolio Reconciliation

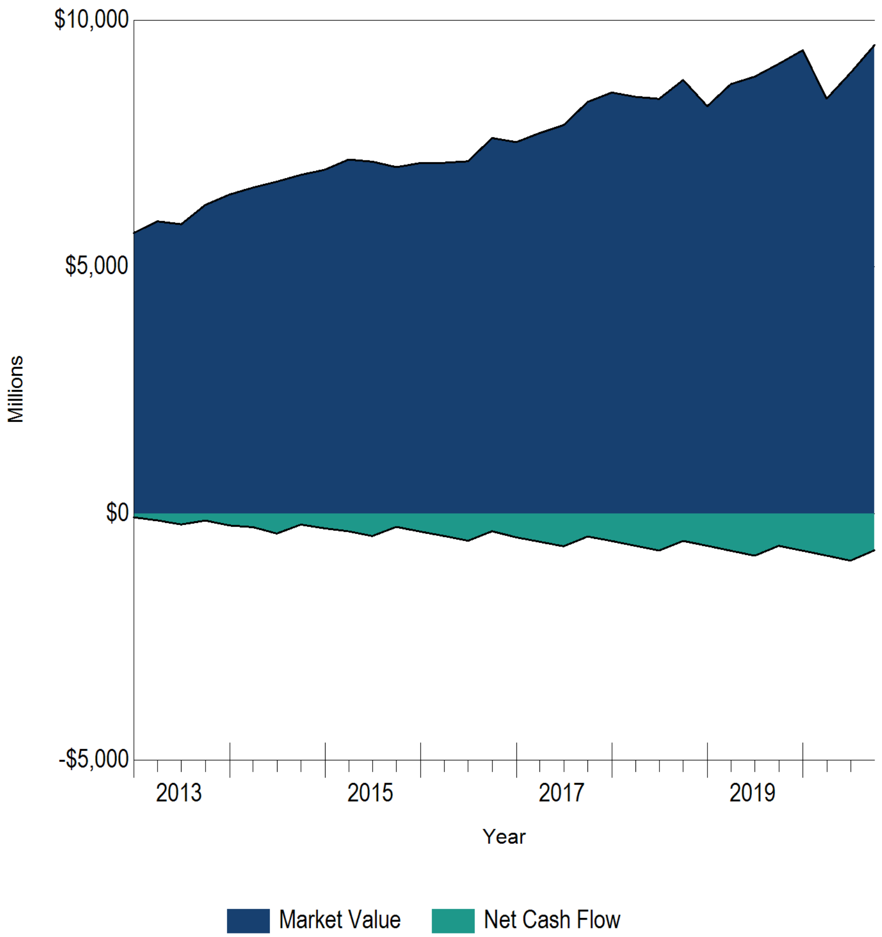
	Last Three Months	Year-To-Date
Beginning Market Value	$8,927,337,198	$9,390,188,036
Net Cash Flow	$217,605,896	$27,111,518
Net Investment Change	$348,181,454	$75,824,994
Ending Market Value	$9,493,124,547	$9,493,124,547

Change in Market Value
Last Three Months

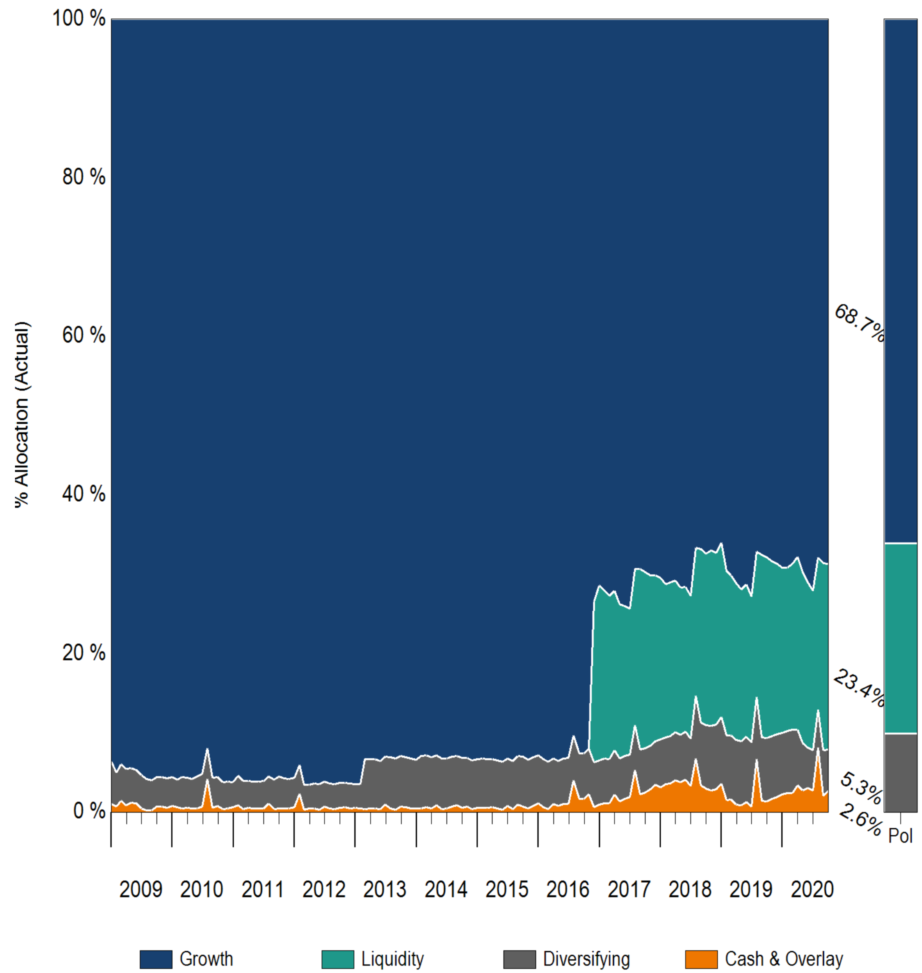


Contributions and withdrawals may include intra-account transfers between managers/funds.

Market Value History
Cumulative Cash Flows



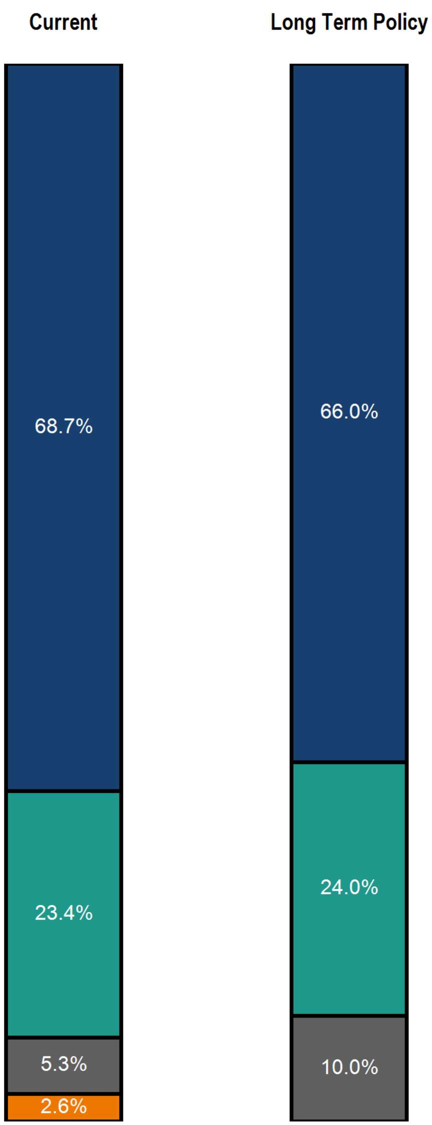
Asset Allocation History



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

Total Fund
Asset Allocation vs. Long Term Target Policy

Period Ending: September 30, 2020



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	$6,524,983,966	68.7%	66.0%	$259,521,765
Liquidity	$2,217,187,141	23.4%	24.0%	-$61,162,750
Diversifying	$502,570,151	5.3%	10.0%	-$446,742,303
Cash & Overlay	$248,383,288	2.6%	--	$248,383,288
Total	**$9,493,124,547**	**100.0%**	**100.0%**	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	$6,524,983,966	68.7%	68.0%	$69,659,274
Liquidity	$2,217,187,141	23.4%	24.0%	-$61,162,750
Diversifying	$502,570,151	5.3%	8.0%	-$256,879,812
Cash & Overlay	$248,383,288	2.6%	--	$248,383,288
Total	**$9,493,124,547**	**100.0%**	**100.0%**	

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

Total Fund
Executive Summary (Net of Fees)

Period Ending: September 30, 2020

	% of Portfolio	QTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Fund	**100.0**	**3.9**	**0.9**	**5.1**	**5.1**	**7.0**	**7.9**	**14.6**	**-2.7**	**13.9**	**6.9**	**2.1**
Policy Index		*5.9*	*2.5*	*6.9*	*6.3*	*8.2*	*8.6*	*14.6*	*-0.9*	*13.7*	*8.9*	*0.6*
Growth	**68.7**	**5.2**	**0.6**	**6.2**	**6.1**	**8.4**	**--**	**18.4**	**-3.9**	**18.7**	**7.6**	**2.3**
Custom Growth Benchmark		*8.5*	*1.9*	*8.1*	*7.6*	*9.8*	*--*	*19.3*	*-2.1*	*19.3*	*10.1*	*0.3*
Diversifying	**5.3**	**0.8**	**-2.8**	**-2.3**	**0.6**	**0.7**	**1.3**	**6.8**	**-2.3**	**2.6**	**0.8**	**-1.8**
Custom Diversifying Benchmark		*1.3*	*3.8*	*4.3*	*3.9*	*4.0*	*3.7*	*6.1*	*1.4*	*4.7*	*4.1*	*2.5*
Liquidity	**23.4**	**0.4**	**2.9**	**3.5**	**3.1**	**--**	**--**	**4.8**	**1.7**	**1.4**	**--**	**--**
BBgBarc US Govt/Credit 1-3 Yr. TR		*0.2*	*3.1*	*3.7*	*2.8*	*--*	*--*	*4.0*	*1.6*	*0.8*	*--*	*--*

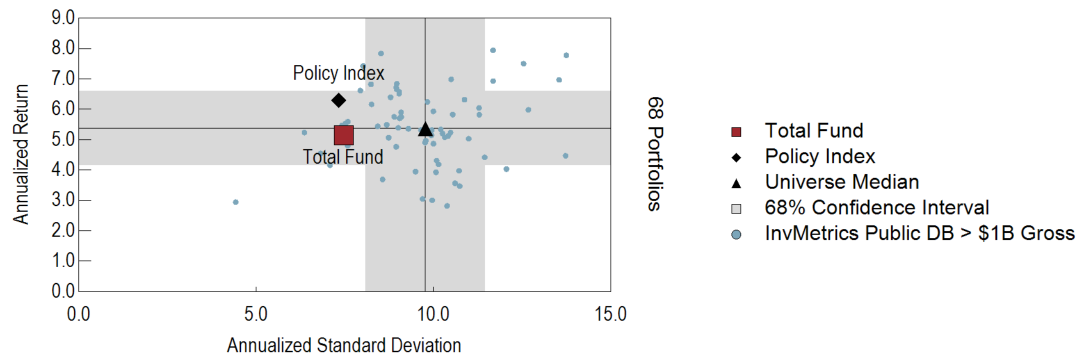
**Correlation between the Growth and Diversifying composites is .88, .61 and .48 over the previous 1, 3 and 5 year periods respectively.*

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

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	5.15%	-1.16%	7.47%	-1.01%	0.98	2.14%	0.92	0.48	-0.54	95.30%	107.41%

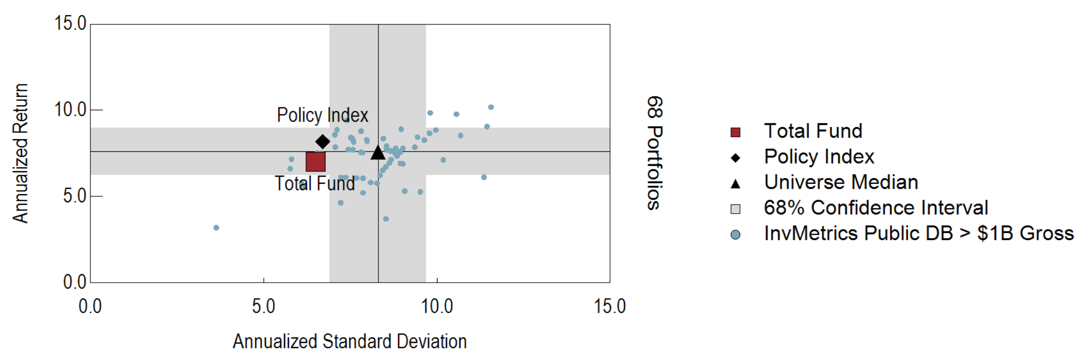
Risk vs. Return



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	7.01%	-1.15%	6.49%	-0.53%	0.92	2.02%	0.91	0.91	-0.57	90.35%	101.90%

Risk vs. Return



	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	**9,493,124,547**	**100.0**	**3.9**	**1.1**	**5.3**	**5.4**	**7.4**	**8.4**	**15.0**	**-2.5**	**14.2**	**7.4**	**2.7**		
Policy Index			*5.9*	*2.5*	*6.9*	*6.3*	*8.2*	*8.6*	*14.6*	*-0.9*	*13.7*	*8.9*	*0.6*		
InvMetrics Public DB > $1B Gross Rank			*91*	*50*	*62*	*48*	*60*	*10*	*83*	*25*	*83*	*74*	*5*		
Total Fund ex Overlay & Cash	**9,244,741,259**	**97.4**	**4.0**	**1.3**	**5.5**	**5.5**	**7.4**	**8.5**	**14.7**	**-2.1**	**14.1**	**7.4**	**2.7**		
Policy Index			*5.9*	*2.5*	*6.9*	*6.3*	*8.2*	*8.6*	*14.6*	*-0.9*	*13.7*	*8.9*	*0.6*		
InvMetrics Public DB > $1B Gross Rank			*91*	*46*	*62*	*43*	*60*	*10*	*84*	*20*	*84*	*74*	*5*		
Growth	**6,524,983,966**	**68.7**	**5.3**	**0.9**	**6.5**	**6.5**	**8.8**	**--**	**18.8**	**-3.6**	**19.1**	**8.1**	**3.0**		
Custom Growth Benchmark			*8.5*	*1.9*	*8.1*	*7.6*	*9.8*	*--*	*19.3*	*-2.1*	*19.3*	*10.1*	*0.3*		
Total Domestic Equity	**893,128,393**	**9.4**	**7.3**	**2.3**	**9.7**	**8.5**	**11.7**	**13.1**	**26.7**	**-7.2**	**23.9**	**11.5**	**1.1**		
Russell 3000			*9.2*	*5.4*	*15.0*	*11.6*	*13.7*	*13.5*	*31.0*	*-5.2*	*21.1*	*12.7*	*0.5*		
InvMetrics Public DB US Eq Gross Rank			*81*	*42*	*57*	*70*	*61*	*33*	*87*	*78*	*6*	*77*	*21*		
BlackRock Russell 1000 Index	202,103,346	2.1	9.5	6.4	16.0	12.4	--	--	31.4	-4.8	--	--	--	12.9	Apr-17
Russell 1000			*9.5*	*6.4*	*16.0*	*12.4*	*--*	*--*	*31.4*	*-4.8*	*--*	*--*	*--*	*12.9*	*Apr-17*
eV US Large Cap Equity Gross Rank			*35*	*39*	*38*	*40*	*--*	*--*	*39*	*47*	*--*	*--*	*--*		
Jackson Square Partners	209,673,177	2.2	9.6	24.7	31.9	17.4	16.0	16.0	27.9	-2.0	29.3	-4.4	6.1	11.7	May-05
Russell 1000 Growth			*13.2*	*24.3*	*37.5*	*21.7*	*20.1*	*17.3*	*36.4*	*-1.5*	*30.2*	*7.1*	*5.7*	*12.2*	*May-05*
eV US Large Cap Growth Equity Gross Rank			*79*	*31*	*59*	*71*	*78*	*59*	*93*	*59*	*47*	*98*	*37*		
Boston Partners	197,682,430	2.1	4.1	-13.3	-6.3	1.8	7.3	10.5	24.3	-8.7	20.1	15.1	-3.9	9.8	Jun-95
Russell 1000 Value			*5.6*	*-11.6*	*-5.0*	*2.6*	*7.7*	*9.9*	*26.5*	*-8.3*	*13.7*	*17.3*	*-3.8*	*8.7*	*Jun-95*
eV US Large Cap Value Equity Gross Rank			*71*	*77*	*73*	*73*	*67*	*48*	*77*	*55*	*23*	*50*	*65*		
Emerald Advisers	154,524,877	1.6	9.8	10.2	22.4	11.6	12.6	15.6	30.3	-10.1	28.8	10.1	4.1	13.6	Apr-03
Russell 2000 Growth			*7.2*	*3.9*	*15.7*	*8.2*	*11.4*	*12.3*	*28.5*	*-9.3*	*22.2*	*11.3*	*-1.4*	*11.3*	*Apr-03*
eV US Small Cap Growth Equity Gross Rank			*40*	*54*	*50*	*63*	*70*	*37*	*45*	*85*	*26*	*54*	*19*		
Ceredex	129,144,563	1.4	2.4	-19.6	-17.5	-3.2	4.0	--	18.4	-11.3	11.4	29.8	-4.4	7.7	Nov-11
Russell 2000 Value			*2.6*	*-21.5*	*-14.9*	*-5.1*	*4.1*	*--*	*22.4*	*-12.9*	*7.8*	*31.7*	*-7.5*	*7.1*	*Nov-11*
eV US Small Cap Value Equity Gross Rank			*54*	*49*	*79*	*46*	*63*	*--*	*87*	*25*	*48*	*32*	*52*		

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

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total International Equity	**1,638,310,659**	**17.3**	**8.1**	**-2.3**	**8.3**	**3.2**	**6.6**	**5.5**	**23.7**	**-14.3**	**25.5**	**1.2**	**-1.2**		
MSCI ACWI ex USA Gross			*6.4*	*-5.1*	*3.4*	*1.6*	*6.7*	*4.5*	*22.1*	*-13.8*	*27.8*	*5.0*	*-5.3*		
MSCI EAFE Gross			*4.9*	*-6.7*	*0.9*	*1.1*	*5.8*	*5.1*	*22.7*	*-13.4*	*25.6*	*1.5*	*-0.4*		
InvMetrics Public DB ex-US Eq Gross Rank			*31*	*33*	*27*	*17*	*55*	*34*	*28*	*44*	*90*	*89*	*28*		
International Equity	**991,942,855**	**10.4**	**8.5**	**4.2**	**14.3**	**6.1**	**8.6**	**6.5**	**27.0**	**-13.6**	**25.3**	**1.2**	**-1.2**		
MSCI ACWI ex USA Gross			*6.4*	*-5.1*	*3.4*	*1.6*	*6.7*	*4.5*	*22.1*	*-13.8*	*27.8*	*5.0*	*-5.3*		
InvMetrics Public DB ex-US Eq Gross Rank			*18*	*8*	*5*	*7*	*16*	*11*	*7*	*21*	*93*	*89*	*28*		
Pyrford	456,590,623	4.8	3.3	-6.0	1.9	2.3	5.8	--	22.1	-10.1	19.8	3.4	-2.9	2.9	May-14
MSCI ACWI ex USA Value			*2.3*	*-17.6*	*-10.8*	*-5.1*	*2.1*	*--*	*15.7*	*-14.0*	*22.7*	*8.9*	*-10.1*	*-1.4*	*May-14*
eV ACWI ex-US Value Equity Gross Rank			*61*	*13*	*17*	*10*	*17*	*--*	*35*	*5*	*84*	*74*	*59*		
William Blair	535,352,232	5.6	13.3	14.3	26.8	9.6	11.2	--	32.0	-16.8	30.9	-1.4	0.5	8.1	Oct-10
MSCI ACWI ex USA Growth			*10.2*	*7.3*	*17.5*	*7.3*	*10.2*	*--*	*27.3*	*-14.4*	*32.0*	*0.1*	*-1.3*	*6.1*	*Oct-10*
eV ACWI ex-US Growth Equity Gross Rank			*23*	*30*	*31*	*44*	*60*	*--*	*39*	*69*	*81*	*55*	*69*		
Emerging Markets Equity	**646,367,805**	**6.8**	**7.4**	**-11.1**	**0.1**	**-0.8**	**--**	**--**	**19.4**	**-15.3**	**--**	**--**	**--**		
MSCI Emerging Markets			*9.6*	*-1.2*	*10.5*	*2.4*	*--*	*--*	*18.4*	*-14.6*	*--*	*--*	*--*		
InvMetrics Public DB Emg Mkt Eq Gross Rank			*72*	*87*	*85*	*82*	*--*	*--*	*31*	*51*	*--*	*--*	*--*		
PIMCO RAE Emerging Markets	296,888,358	3.1	3.2	-19.3	-10.2	-4.6	--	--	14.6	-12.3	--	--	--	-1.5	Feb-17
MSCI Emerging Markets Value NR			*4.7*	*-14.2*	*-5.7*	*-2.9*	*--*	*--*	*12.0*	*-10.7*	*--*	*--*	*--*	*0.4*	*Feb-17*
eV Emg Mkts All Cap Value Equity Gross Rank			*83*	*89*	*87*	*85*	*--*	*--*	*72*	*44*	*--*	*--*	*--*		
TT Emerging Markets	349,479,447	3.7	11.2	-2.7	10.8	3.0	--	--	24.8	-18.4	--	--	--	3.4	Jul-17
MSCI Emerging Markets			*9.6*	*-1.2*	*10.5*	*2.4*	*--*	*--*	*18.4*	*-14.6*	*--*	*--*	*--*	*2.9*	*Jul-17*
eV Emg Mkts Equity Gross Rank			*29*	*59*	*47*	*45*	*--*	*--*	*24*	*83*	*--*	*--*	*--*		
Total Global Equity	**979,134,572**	**10.3**	**10.4**	**13.0**	**21.3**	**11.9**	**13.7**	**10.4**	**28.9**	**-7.8**	**23.7**	**7.6**	**2.2**		
MSCI ACWI			*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*8.5*	*26.6*	*-9.4*	*24.0*	*7.9*	*-2.4*		
InvMetrics Public DB Glbl Eq Gross Rank			*4*	*1*	*1*	*1*	*1*	*1*	*3*	*60*	*79*	*40*	*16*		
Artisan Partners	541,609,682	5.7	14.4	27.9	40.3	19.1	19.5	--	37.0	-7.9	32.9	5.6	9.2	16.0	Oct-12
MSCI ACWI			*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*--*	*26.6*	*-9.4*	*24.0*	*7.9*	*-2.4*	*9.0*	*Oct-12*
eV All Global Equity Gross Rank			*6*	*5*	*6*	*7*	*6*	*--*	*7*	*40*	*11*	*61*	*4*		
First Eagle	437,391,104	4.6	5.6	-2.2	2.6	4.3	8.1	--	21.0	-7.6	15.1	11.7	0.2	7.4	Jan-11
MSCI ACWI			*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*--*	*26.6*	*-9.4*	*24.0*	*7.9*	*-2.4*	*7.8*	*Jan-11*
eV All Global Equity Gross Rank			*72*	*59*	*67*	*66*	*67*	*--*	*82*	*38*	*89*	*19*	*49*		

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

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Private Credit	**679,401,095**	**7.2**	**4.4**	**1.2**	**2.9**	**6.5**	**7.8**	**11.6**	**7.7**	**8.3**	**10.4**	**8.2**	**12.9**		
ICE BofAML High Yield Master II+2%			*5.2*	*1.2*	*4.3*	*5.9*	*8.7*	*8.4*	*16.7*	*-0.3*	*9.6*	*19.8*	*-2.7*		
Total High Yield	**167,943,516**	**1.8**	**5.2**	**-0.3**	**2.4**	**3.9**	**6.1**	**6.2**	**16.0**	**-3.2**	**6.5**	**14.3**	**-3.5**		
ICE BofAML High Yield Master II			*4.7*	*-0.3*	*2.3*	*3.8*	*6.6*	*6.3*	*14.4*	*-2.3*	*7.5*	*17.5*	*-4.6*		
eV US High Yield Fixed Inc Gross Rank			*20*	*74*	*71*	*68*	*68*	*74*	*15*	*88*	*74*	*47*	*68*		
Allianz Global Investors	167,943,516	1.8	5.2	-0.3	2.4	3.9	6.1	6.2	16.0	-3.2	6.5	14.3	-3.5	6.9	Apr-00
ICE BofAML High Yield Master II			*4.7*	*-0.3*	*2.3*	*3.8*	*6.6*	*6.3*	*14.4*	*-2.3*	*7.5*	*17.5*	*-4.6*	*6.9*	*Apr-00*
eV US High Yield Fixed Inc Gross Rank			*20*	*74*	*71*	*68*	*68*	*74*	*15*	*88*	*74*	*47*	*68*		
Total Real Estate	**665,321,015**	**7.0**	**-4.2**	**-8.1**	**-7.2**	**3.0**	**5.3**	**9.8**	**8.1**	**7.4**	**11.1**	**5.5**	**13.5**		
Real Estate Benchmark			*0.6*	*-1.7*	*-0.5*	*4.8*	*6.2*	*9.3*	*7.7*	*6.7*	*7.1*	*6.7*	*8.3*		
NCREIF-ODCE			*0.5*	*-0.1*	*1.4*	*5.2*	*6.6*	*10.3*	*5.3*	*8.3*	*7.6*	*8.8*	*15.0*		
NCREIF Property Index			*0.7*	*0.5*	*2.0*	*5.1*	*6.3*	*9.4*	*6.4*	*6.7*	*7.0*	*8.0*	*13.3*		
Adelante	68,911,573	0.7	1.2	-14.1	-14.7	2.3	4.5	8.9	28.2	-5.0	7.8	4.1	5.1	9.4	Sep-01
Wilshire REIT			*1.3*	*-16.7*	*-17.7*	*0.4*	*3.7*	*8.0*	*25.8*	*-4.8*	*4.2*	*7.2*	*4.2*	*8.9*	*Sep-01*
Private Equity	**1,037,446,201**	**10.9**	**1.9**	**1.1**	**3.8**	**8.2**	**8.6**	**11.4**	**8.4**	**12.1**	**11.9**	**9.4**	**11.6**		
S&P 500 Index +4% (Lagged)			*21.7*	*8.9*	*11.8*	*15.1*	*15.1*	*18.5*	*8.4*	*22.6*	*23.3*	*20.0*	*3.4*		
Risk Parity	**464,300,792**	**4.9**	**4.6**	**1.3**	**3.0**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**		
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*6.0*	*3.6*	*9.3*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*		
AQR Global Risk Premium-EL	233,024,231	2.5	4.2	-1.2	2.3	--	--	--	--	--	--	--	--	9.5	Jan-19
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*6.0*	*3.6*	*9.3*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*12.4*	*Jan-19*
PanAgora Risk Parity Multi Asset	231,276,561	2.4	5.0	3.9	3.8	--	--	--	--	--	--	--	--	11.0	Feb-19
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*6.0*	*3.6*	*9.3*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*9.2*	*Feb-19*

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

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Diversifying	**502,570,151**	**5.3**	**0.9**	**-2.5**	**-1.9**	**0.9**	**1.0**	**1.7**	**7.1**	**-2.0**	**2.8**	**1.3**	**-1.4**		
Custom Diversifying Benchmark			*1.3*	*3.8*	*4.3*	*3.9*	*4.0*	*3.7*	*6.1*	*1.4*	*4.7*	*4.1*	*2.5*		
Diversifying Fixed Income	**272,642,292**	**2.9**	**0.9**	**1.5**	**2.0**	**2.8**	**2.6**	**3.1**	**8.6**	**-1.7**	**2.8**	**2.8**	**1.6**		
eV US Core Fixed Inc Gross Rank			*67*	*99*	*99*	*99*	*99*	*99*	*80*	*99*	*96*	*72*	*15*		
AFL-CIO	272,418,857	2.9	0.9	6.5	6.1	5.2	4.1	3.9	8.2	0.6	3.6	2.4	1.6	6.3	Jun-91
BBgBarc US Aggregate TR			*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*8.7*	*0.0*	*3.5*	*2.6*	*0.6*	*5.8*	*Jun-91*
eV US Core Fixed Inc Gross Rank			*67*	*79*	*92*	*89*	*92*	*82*	*88*	*16*	*76*	*87*	*15*		
Diversifying Equity	**105,472,202**	**1.1**	**1.7**	**-11.2**	**-10.6**	**--**	**--**	**--**	**3.3**	**--**	**--**	**--**	**--**		
Parametric Defensive Equity	105,472,202	1.1	1.7	-11.2	-10.6	--	--	--	3.3	--	--	--	--	-4.9	Jul-18
91 Day T-Bill +4%			*1.0*	*3.5*	*4.8*	*--*	*--*	*--*	*6.1*	*--*	*--*	*--*	*--*	*5.6*	*Jul-18*
Diversifying Multi-Asset	**124,455,657**	**1.3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**		
FTSE 3-Month T-bill +5%			*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*		
Acadian Multi-Asset Absolute Return Fund	124,455,657	1.3	--	--	--	--	--	--	--	--	--	--	--	-0.7	Aug-20
FTSE 3-Month T-bill +5%			*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*0.8*	*Aug-20*
Liquidity	**2,217,187,141**	**23.4**	**0.4**	**3.0**	**3.6**	**3.2**	**--**	**--**	**4.9**	**1.8**	**1.5**	**--**	**--**		
BBgBarc US Govt/Credit 1-3 Yr. TR			*0.2*	*3.1*	*3.7*	*2.8*	*--*	*--*	*4.0*	*1.6*	*0.8*	*--*	*--*		
eV US Short Duration Fixed Inc Gross Rank			*66*	*74*	*79*	*54*	*--*	*--*	*34*	*24*	*50*	*--*	*--*		
DFA Short Credit	469,043,159	4.9	0.5	2.4	3.2	2.9	--	--	5.2	1.2	1.9	--	--	2.8	Nov-16
ICE BofA 1-5 Yrs US Corp & Govt TR			*0.4*	*4.3*	*4.8*	*3.5*	*--*	*--*	*5.1*	*1.4*	*1.3*	*--*	*--*	*3.1*	*Nov-16*
eV US Short Duration Fixed Inc Gross Rank			*58*	*89*	*89*	*81*	*--*	*--*	*21*	*93*	*26*	*--*	*--*		
Insight Short Duration	1,145,047,708	12.1	0.3	2.5	3.3	3.0	--	--	4.7	1.7	1.5	--	--	2.7	Nov-16
BBgBarc US Govt/Credit 1-3 Yr. TR			*0.2*	*3.1*	*3.7*	*2.8*	*--*	*--*	*4.0*	*1.6*	*0.8*	*--*	*--*	*2.5*	*Nov-16*
eV US Short Duration Fixed Inc Gross Rank			*79*	*88*	*88*	*75*	*--*	*--*	*45*	*38*	*50*	*--*	*--*		
Sit Short Duration	603,096,275	6.4	0.6	4.6	4.6	3.9	--	--	4.9	2.5	1.3	--	--	3.4	Nov-16
BBgBarc US Govt 1-3 Yr TR			*0.1*	*3.1*	*3.6*	*2.7*	*--*	*--*	*3.6*	*1.6*	*0.4*	*--*	*--*	*2.3*	*Nov-16*
eV US Short Duration Fixed Inc Gross Rank			*46*	*7*	*25*	*5*	*--*	*--*	*35*	*1*	*68*	*--*	*--*		
Total Cash	**141,332,694**	**1.5**	**0.2**	**1.1**	**1.8**	**2.1**	**1.6**	**3.1**	**3.3**	**1.7**	**0.9**	**0.9**	**0.1**		
91 Day T-Bills			*0.0*	*0.4*	*0.8*	*1.6*	*1.1*	*0.6*	*2.1*	*1.9*	*0.9*	*0.3*	*0.0*		
Cash	141,312,387	1.5	0.2	1.1	1.8	2.2	1.6	3.1	3.4	1.7	0.9	0.9	0.1		
Northern Trust Transition	20,307	0.0	90.1	96.7	102.1	--	--	--	--	--	--	--	--		

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. $223,434.91 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. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Net of Fees) — Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	**9,493,124,547**	**100.0**	**3.9**	**0.9**	**5.1**	**5.1**	**7.0**	**7.9**	**14.6**	**-2.7**	**13.9**	**6.9**	**2.1**		
Policy Index			*5.9*	*2.5*	*6.9*	*6.3*	*8.2*	*8.6*	*14.6*	*-0.9*	*13.7*	*8.9*	*0.6*		
Total Fund ex Overlay & Cash	**9,244,741,259**	**97.4**	**3.9**	**1.1**	**5.2**	**5.2**	**7.1**	**8.0**	**14.4**	**-2.4**	**13.8**	**6.9**	**2.1**		
Policy Index			*5.9*	*2.5*	*6.9*	*6.3*	*8.2*	*8.6*	*14.6*	*-0.9*	*13.7*	*8.9*	*0.6*		
Growth	**6,524,983,966**	**68.7**	**5.2**	**0.6**	**6.2**	**6.1**	**8.4**	**--**	**18.4**	**-3.9**	**18.7**	**7.6**	**2.3**		
Custom Growth Benchmark			*8.5*	*1.9*	*8.1*	*7.6*	*9.8*	*--*	*19.3*	*-2.1*	*19.3*	*10.1*	*0.3*		
Total Domestic Equity	**893,128,393**	**9.4**	**7.2**	**2.0**	**9.3**	**8.0**	**11.3**	**12.6**	**26.1**	**-7.6**	**23.5**	**11.1**	**0.6**		
Russell 3000			*9.2*	*5.4*	*15.0*	*11.6*	*13.7*	*13.5*	*31.0*	*-5.2*	*21.1*	*12.7*	*0.5*		
BlackRock Russell 1000 Index	202,103,346	2.1	9.5	6.4	16.0	12.3	--	--	31.4	-4.8	--	--	--	12.8	Apr-17
Russell 1000			*9.5*	*6.4*	*16.0*	*12.4*	*--*	*--*	*31.4*	*-4.8*	*--*	*--*	*--*	*12.9*	*Apr-17*
Jackson Square Partners	209,673,177	2.2	9.5	24.3	31.3	16.8	15.5	15.5	27.3	-2.4	28.7	-4.8	5.6	11.2	May-05
Russell 1000 Growth			*13.2*	*24.3*	*37.5*	*21.7*	*20.1*	*17.3*	*36.4*	*-1.5*	*30.2*	*7.1*	*5.7*	*12.2*	*May-05*
Boston Partners	197,682,430	2.1	4.0	-13.5	-6.6	1.5	7.0	10.2	23.8	-8.9	19.7	14.7	-4.2	9.5	Jun-95
Russell 1000 Value			*5.6*	*-11.6*	*-5.0*	*2.6*	*7.7*	*9.9*	*26.5*	*-8.3*	*13.7*	*17.3*	*-3.8*	*8.7*	*Jun-95*
Emerald Advisers	154,524,877	1.6	9.6	9.7	21.6	10.9	11.9	14.9	29.4	-10.7	28.0	9.4	3.5	13.0	Apr-03
Russell 2000 Growth			*7.2*	*3.9*	*15.7*	*8.2*	*11.4*	*12.3*	*28.5*	*-9.3*	*22.2*	*11.3*	*-1.4*	*11.3*	*Apr-03*
Ceredex	129,144,563	1.4	2.2	-19.9	-17.9	-3.8	3.4	--	17.7	-11.8	10.7	29.1	-5.0	7.1	Nov-11
Russell 2000 Value			*2.6*	*-21.5*	*-14.9*	*-5.1*	*4.1*	*--*	*22.4*	*-12.9*	*7.8*	*31.7*	*-7.5*	*7.1*	*Nov-11*
Total International Equity	**1,638,310,659**	**17.3**	**7.9**	**-2.7**	**7.8**	**2.7**	**6.1**	**5.0**	**23.2**	**-14.7**	**25.0**	**0.8**	**-1.6**		
MSCI ACWI ex USA Gross			*6.4*	*-5.1*	*3.4*	*1.6*	*6.7*	*4.5*	*22.1*	*-13.8*	*27.8*	*5.0*	*-5.3*		
MSCI EAFE Gross			*4.9*	*-6.7*	*0.9*	*1.1*	*5.8*	*5.1*	*22.7*	*-13.4*	*25.6*	*1.5*	*-0.4*		
International Equity	**991,942,855**	**10.4**	**8.4**	**3.9**	**13.8**	**5.6**	**8.2**	**6.1**	**26.5**	**-13.9**	**24.8**	**0.8**	**-1.6**		
MSCI ACWI ex USA Gross			*6.4*	*-5.1*	*3.4*	*1.6*	*6.7*	*4.5*	*22.1*	*-13.8*	*27.8*	*5.0*	*-5.3*		
Pyrford	456,590,623	4.8	3.2	-6.3	1.5	1.9	5.4	--	21.6	-10.5	19.3	3.0	-3.3	2.5	May-14
MSCI ACWI ex USA Value			*2.3*	*-17.6*	*-10.8*	*-5.1*	*2.1*	*--*	*15.7*	*-14.0*	*22.7*	*8.9*	*-10.1*	*-1.4*	*May-14*
William Blair	535,352,232	5.6	13.2	13.9	26.3	9.2	10.8	--	31.5	-17.1	30.4	-1.8	0.0	7.6	Oct-10
MSCI ACWI ex USA Growth			*10.2*	*7.3*	*17.5*	*7.3*	*10.2*	*--*	*27.3*	*-14.4*	*32.0*	*0.1*	*-1.3*	*6.1*	*Oct-10*
Emerging Markets Equity	**646,367,805**	**6.8**	**7.2**	**-11.5**	**-0.5**	**-1.4**	**--**	**--**	**18.7**	**-15.7**	**--**	**--**	**--**		
MSCI Emerging Markets			*9.6*	*-1.2*	*10.5*	*2.4*	*--*	*--*	*18.4*	*-14.6*	*--*	*--*	*--*		
PIMCO RAE Emerging Markets	296,888,358	3.1	3.1	-19.6	-10.7	-5.1	--	--	14.0	-12.6	--	--	--	-2.0	Feb-17
MSCI Emerging Markets Value NR			*4.7*	*-14.2*	*-5.7*	*-2.9*	*--*	*--*	*12.0*	*-10.7*	*--*	*--*	*--*	*0.4*	*Feb-17*
TT Emerging Markets	349,479,447	3.7	11.0	-3.2	10.1	2.3	--	--	24.0	-18.9	--	--	--	2.7	Jul-17
MSCI Emerging Markets			*9.6*	*-1.2*	*10.5*	*2.4*	*--*	*--*	*18.4*	*-14.6*	*--*	*--*	*--*	*2.9*	*Jul-17*

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

Performance Summary (Net of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Global Equity	**979,134,572**	**10.3**	**10.2**	**12.4**	**20.4**	**11.1**	**12.9**	**9.7**	**27.9**	**-8.5**	**22.8**	**6.9**	**1.6**		
MSCI ACWI			*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*8.5*	*26.6*	*-9.4*	*24.0*	*7.9*	*-2.4*		
Artisan Partners	541,609,682	5.7	14.2	27.2	39.3	18.2	18.7	--	36.0	-8.6	31.9	4.8	8.4	15.1	Oct-12
MSCI ACWI			*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*--*	*26.6*	*-9.4*	*24.0*	*7.9*	*-2.4*	*9.0*	*Oct-12*
First Eagle	437,391,104	4.6	5.4	-2.7	1.9	3.6	7.3	--	20.1	-8.3	14.3	10.9	-0.6	6.7	Jan-11
MSCI ACWI			*8.1*	*1.4*	*10.4*	*7.1*	*10.3*	*--*	*26.6*	*-9.4*	*24.0*	*7.9*	*-2.4*	*7.8*	*Jan-11*
Private Credit	**679,401,095**	**7.2**	**4.4**	**1.2**	**2.9**	**6.5**	**7.5**	**10.5**	**7.7**	**8.3**	**10.4**	**6.9**	**11.6**		
ICE BofAML High Yield Master II +2%			*5.2*	*1.2*	*4.3*	*5.9*	*8.7*	*8.4*	*16.7*	*-0.3*	*9.6*	*19.8*	*-2.7*		
Total High Yield	**167,943,516**	**1.8**	**5.1**	**-0.6**	**1.9**	**3.5**	**5.6**	**5.8**	**15.4**	**-3.6**	**6.1**	**13.9**	**-3.9**		
ICE BofAML High Yield Master II			*4.7*	*-0.3*	*2.3*	*3.8*	*6.6*	*6.3*	*14.4*	*-2.3*	*7.5*	*17.5*	*-4.6*		
Allianz Global Investors	167,943,516	1.8	5.1	-0.6	1.9	3.5	5.6	5.8	15.4	-3.6	6.1	13.9	-3.9	6.4	Apr-00
ICE BofAML High Yield Master II			*4.7*	*-0.3*	*2.3*	*3.8*	*6.6*	*6.3*	*14.4*	*-2.3*	*7.5*	*17.5*	*-4.6*	*6.9*	*Apr-00*
Total Real Estate	**665,321,015**	**7.0**	**-4.2**	**-8.2**	**-7.3**	**3.0**	**5.1**	**9.1**	**8.1**	**7.4**	**11.0**	**4.8**	**12.4**		
Real Estate Benchmark			*0.6*	*-1.7*	*-0.5*	*4.8*	*6.2*	*9.3*	*7.7*	*6.7*	*7.1*	*6.7*	*8.3*		
NCREIF-ODCE			*0.5*	*-0.1*	*1.4*	*5.2*	*6.6*	*10.3*	*5.3*	*8.3*	*7.6*	*8.8*	*15.0*		
NCREIF Property Index			*0.7*	*0.5*	*2.0*	*5.1*	*6.3*	*9.4*	*6.4*	*6.7*	*7.0*	*8.0*	*13.3*		
Adelante	68,911,573	0.7	1.1	-14.5	-15.2	1.7	3.9	8.3	27.5	-5.5	7.2	3.6	4.6	8.9	Sep-01
Wilshire REIT			*1.3*	*-16.7*	*-17.7*	*0.4*	*3.7*	*8.0*	*25.8*	*-4.8*	*4.2*	*7.2*	*4.2*	*8.9*	*Sep-01*
Private Equity	**1,037,446,201**	**10.9**	**1.9**	**1.1**	**3.8**	**8.2**	**8.4**	**10.2**	**8.4**	**12.1**	**11.9**	**8.9**	**9.9**		
S&P 500 Index +4% (Lagged)			*21.7*	*8.9*	*11.8*	*15.1*	*15.1*	*18.5*	*8.4*	*22.6*	*23.3*	*20.0*	*3.4*		
Risk Parity	**464,300,792**	**4.9**	**4.5**	**1.0**	**2.6**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**		
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*6.0*	*3.6*	*9.3*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*		
AQR Global Risk Premium-EL	233,024,231	2.5	4.1	-1.5	1.9	--	--	--	--	--	--	--	--	9.1	Jan-19
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*6.0*	*3.6*	*9.3*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*12.4*	*Jan-19*
PanAgora Risk Parity Multi Asset	231,276,561	2.4	4.9	3.6	3.4	--	--	--	--	--	--	--	--	10.6	Feb-19
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			*6.0*	*3.6*	*9.3*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*9.2*	*Feb-19*

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

Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Diversifying	**502,570,151**	**5.3**	**0.8**	**-2.8**	**-2.3**	**0.6**	**0.7**	**1.3**	**6.8**	**-2.3**	**2.6**	**0.8**	**-1.8**		
Custom Diversifying Benchmark			*1.3*	*3.8*	*4.3*	*3.9*	*4.0*	*3.7*	*6.1*	*1.4*	*4.7*	*4.1*	*2.5*		
Diversifying Fixed Income	**272,642,292**	**2.9**	**0.8**	**1.2**	**1.7**	**2.5**	**2.3**	**2.7**	**8.3**	**-2.0**	**2.6**	**2.3**	**1.1**		
AFL-CIO	272,418,857	2.9	0.8	6.1	5.7	4.7	3.7	3.4	7.8	0.2	3.2	1.9	1.1	5.9	Jun-91
BBgBarc US Aggregate TR			*0.6*	*6.8*	*7.0*	*5.2*	*4.2*	*3.6*	*8.7*	*0.0*	*3.5*	*2.6*	*0.6*	*5.8*	*Jun-91*
Diversifying Equity	**105,472,202**	**1.1**	**1.7**	**-11.5**	**-10.9**	**--**	**--**	**--**	**3.0**	**--**	**--**	**--**	**--**		
Parametric Defensive Equity	105,472,202	1.1	1.7	-11.5	-10.9	--	--	--	3.0	--	--	--	--	-5.2	Jul-18
91 Day T-Bill +4%			*1.0*	*3.5*	*4.8*	--	--	--	*6.1*	--	--	--	--	*5.6*	*Jul-18*
Diversifying Multi-Asset	**124,455,657**	**1.3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**		
FTSE 3-Month T-bill +5%			--	--	--	--	--	--	--	--	--	--	--		
Acadian Multi-Asset Absolute Return Fund	124,455,657	1.3	--	--	--	--	--	--	--	--	--	--	--	-0.8	Aug-20
FTSE 3-Month T-bill +5%			--	--	--	--	--	--	--	--	--	--	--	*0.8*	*Aug-20*
Liquidity	**2,217,187,141**	**23.4**	**0.4**	**2.9**	**3.5**	**3.1**	**--**	**--**	**4.8**	**1.7**	**1.4**	**--**	**--**		
BBgBarc US Govt/Credit 1-3 Yr. TR			*0.2*	*3.1*	*3.7*	*2.8*	--	--	*4.0*	*1.6*	*0.8*	--	--		
DFA Short Credit	469,043,159	4.9	0.4	2.3	3.0	2.8	--	--	5.2	1.1	1.8	--	--	2.7	Nov-16
ICE BofA 1-5 Yrs US Corp & Govt TR			*0.4*	*4.3*	*4.8*	*3.5*	--	--	*5.1*	*1.4*	*1.3*	--	--	*3.1*	*Nov-16*
Insight Short Duration	1,145,047,708	12.1	0.3	2.5	3.2	2.9	--	--	4.6	1.7	1.5	--	--	2.7	Nov-16
BBgBarc US Govt/Credit 1-3 Yr. TR			*0.2*	*3.1*	*3.7*	*2.8*	--	--	*4.0*	*1.6*	*0.8*	--	--	*2.5*	*Nov-16*
Sit Short Duration	603,096,275	6.4	0.5	4.5	4.5	3.8	--	--	4.7	2.3	1.1	--	--	3.3	Nov-16
BBgBarc US Govt 1-3 Yr TR			*0.1*	*3.1*	*3.6*	*2.7*	--	--	*3.6*	*1.6*	*0.4*	--	--	*2.3*	*Nov-16*
Total Cash	**141,332,694**	**1.5**	**0.2**	**1.1**	**1.8**	**2.1**	**1.6**	**3.1**	**3.3**	**1.7**	**0.9**	**0.9**	**0.1**		
91 Day T-Bills			*0.0*	*0.4*	*0.8*	*1.6*	*1.1*	*0.6*	*2.1*	*1.9*	*0.9*	*0.3*	*0.0*		
Cash	141,312,387	1.5	0.2	1.1	1.8	2.2	1.6	3.1	3.4	1.7	0.9	0.9	0.1		
Northern Trust Transition	20,307	0.0	90.1	96.7	102.1	--	--	--	--	--	--	--	--		

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. $223,434.91 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. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Closing Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/20[1]	StepStone Group Analysis (*) Total Commitment	% Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI)[2]	Tot. Value/ Paid-In (TVPI)[3]	Latest Valuation
Private Credit												
8/31/2015	Angelo Gordon Energy Credit Opp.[4]	$2,692,511	$16,500,000	114%	$18,750,000	$0	$0	$18,829,566	$2,319,783	*1.00*	*1.15*	*6/30/2020*
12/18/2017	Stepstone CC Opportunities Fund	$646,399,320	$1,020,000,000	63%	$643,667,830	$14,827,494	$46	$41,561,904	$417,797,071	*0.06*	*1.07*	*6/30/2020*
8/1/2012	Torchlight IV	$9,699,890	$60,000,000	141%	$84,866,971	$0	$0	$104,809,507	$0	*1.23*	*1.35*	*6/30/2020*
3/12/2015	Torchlight V	$20,609,374	$75,000,000	80%	$60,000,000	$0	$0	$55,039,262	$15,000,000	*0.92*	*1.26*	*6/30/2020*
	Total Private Credit	**$679,401,095**										
	% of Portfolio (Market Value)	*7.2%*										

*All Data provided by StepStone Group
[1]Latest valuation + capital calls - distributions
[2](DPI) is equal to (capital returned / capital called)
[3](TVPI) is equal to (market value + capital returned) / capital called
[4]Capital has been fully called and fund is in redemption.

			Verus Internal Analysis									
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/2020[1]	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions[8]	Remaining Commitment	Distrib./ Paid-In (DPI)[2]	Tot. Value/ Paid-In (TVPI)[3]	Latest Valuation
Real Estate												
1/23/2012	Angelo Gordon Realty Fund VIII[7]	$20,153,035	$80,000,000	94%	$75,401,855	$0	$0	$98,433,174	$12,334,302	1.31	1.57	6/30/2020
12/8/2014	Angelo Gordon Realty Fund IX	$62,123,148	$65,000,000	93%	$60,125,000	$0	$0	$15,275,000	$7,572,500	0.25	1.29	6/30/2020
6/23/2005	DLJ RECP III	$15,981,396	$75,000,000	134%	$100,709,313 [4]	$0	$0	$69,364,915	$4,031,338	0.69	0.85	6/30/2020
2/11/2008	DLJ RECP IV	$58,979,443	$100,000,000	130%	$129,892,605 [5]	$0	$0	$89,287,687	$3,162,610	0.69	1.14	6/30/2020
7/1/2014	DLJ RECP V	$41,912,494	$75,000,000	114%	$85,612,038 [6]	$0	$0	$58,913,882	$20,556,753	0.69	1.18	6/30/2020
3/19/2019	DLJ RECP VI	$15,987,603	$50,000,000	51%	$25,335,866	$0	$0	$220,742	$25,050,462	0.01	0.64	6/30/2020
6/17/1998	Hearthstone II[7]	$26	$25,000,000	80%	$19,932,386	$0	$0	$27,473,662	$0	1.38	1.38	6/30/2020
6/30/2013	Invesco Real Estate III[7]	$3,671,526	$35,000,000	93%	$32,386,423	$0	$0	$42,502,805	$2,613,577	1.31	1.43	9/30/2020
6/30/2014	Invesco Real Estate IV[7]	$17,217,722	$35,000,000	87%	$30,546,401	$0	$0	$22,353,948	$4,453,599	0.73	1.30	9/30/2020
6/30/2013	Invesco Real Estate V	$36,960,896	$75,000,000	55%	$41,528,775	$5,431,923	$0	$4,723,439	$37,212,728 [9]	0.11	1.00	9/30/2020
7/16/2013	LaSalle Income & Growth VI[7]	$24,114,835	$75,000,000	95%	$71,428,571	$0	$0	$81,401,001	$3,571,429	1.14	1.48	6/30/2020
2/28/2017	LaSalle Income & Growth VII	$53,214,856	$75,000,000	96%	$72,154,315	$2,055,707	$0	$33,471,843	$2,845,685	0.46	1.20	6/30/2020
7/3/2013	Long Wharf Fund IV[7]	$2,858,108	$25,000,000	100%	$25,000,000	$0	$0	$33,793,648	$0	1.35	1.47	9/30/2020
9/30/2016	Long Wharf Fund V[7]	$0	$50,000,000	100%	$50,000,000	$0	$0	$22,049,583	$0	0.44	0.44	9/30/2020
6/27/2019	Long Wharf Fund VI	$5,839,184	$50,000,000	14%	$7,066,402	$297,324	$0	$0	$42,933,598	0.00	0.83	9/30/2020
12/31/2011	Oaktree REOF V[7]	$3,869,790	$50,000,000	100%	$50,000,000	$0	$311,778	$75,380,955	$5,000,000 [9]	1.51	1.59	9/30/2020
9/30/2013	Oaktree REOF VI[7]	$27,820,910	$80,000,000	100%	$80,000,000	$0	$0	$84,010,175	$18,400,000 [9]	1.05	1.40	9/30/2020
4/1/2015	Oaktree REOF VII	$51,527,936	$65,000,000	96%	$62,400,000	$1,300,000	$0	$27,040,000	$21,515,000 [9]	0.43	1.26	9/30/2020
11/10/2013	Paulson Real Estate Fund II[7]	$25,265,952	$20,000,000	97%	$19,345,623	$0	$963,185	$7,759,375	$654,377	0.40	1.71	6/30/2020
1/25/2012	Siguler Guff DREOF	$27,833,882	$75,000,000	93%	$69,375,000	$0	$466,350	$94,584,596	$5,625,000	1.36	1.76	6/30/2020
8/31/2013	Siguler Guff DREOF II	$45,400,812	$70,000,000	89%	$61,985,000	$0	$773,424	$39,297,843	$8,015,000	0.63	1.37	6/30/2020
1/27/2016	Siguler Guff DREOF II Co-Inv	$16,883,712	$25,000,000	82%	$20,537,862	$0	$825,000	$9,773,350	$4,462,138	0.48	1.30	6/30/2020
	Total Closed End Real Estate	**$557,617,265**	$1,275,000,000	93%	$1,190,763,437	$9,084,954	$3,339,737	$937,111,623	$230,010,095	0.79	1.26	
	% of Portfolio (Market Value)	5.9%										

[1]Latest valuation + capital calls - distributions

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

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

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

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

[6]Includes $986,559 in management fees charged outside the fund.

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

[8]Total distributions may include recallable distributions

[9]Remianing commitment includes recallable distributions

			StepStone Group Analysis (*)										
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/20[1]	Total Commitment	Total % Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./ Paid-In (DPI)[2]	Tot. Value/ Paid-In (TVPI)[3]	Latest Valuation
Private Equity & Venture Capital												
2/11/2004	Adams Street Partners	$141,787,250	$210,000,000	89%	$186,850,625	$0	$3,170,309	$169,420,359	$23,149,375	0.91	1.67	6/30/2020
1/15/2009	Adams Street Partners II	$5,702,364	$30,000,000	95%	$28,365,000	$0	$0	$42,440,681	$1,635,000	1.50	1.70	6/30/2020
9/21/2012	Adams Street Partners - Fund 5	$18,137,889	$40,000,000	77%	$30,845,875	$0	$0	$18,066,140	$9,154,125	0.59	1.17	6/30/2020
1/18/1996	Adams Street Partners - BPF	$1,752,256	$59,565,614	97%	$57,517,409	$0	$0	$102,731,103	$2,048,205	1.79	1.82	6/30/2020
3/31/2016	Adams Street Venture Innovation	$74,639,439	$75,000,000	74%	$55,537,500	$4,500,000	$0	$0	$19,462,500	0.00	1.34	6/30/2020
5/18/2018	AE Industrial Partners Fund II, LP	$14,324,255	$35,000,000	42%	$14,853,697	$3,406,489	$0	$0	$20,146,303	0.00	0.96	6/30/2020
11/27/2013	Aether Real Assets III	$18,046,842	$25,000,000	97%	$24,320,995	$331,087	$6,761	$3,913,883	$2,904,645	0.16	0.90	3/31/2020
11/30/2013	Aether Real Assets III Surplus	$45,141,684	$50,000,000	102%	$51,191,893	$280,863	$0	$8,973,151	$2,073,602	0.18	1.06	3/31/2020
1/30/2016	Aether Real Assets IV	$40,444,344	$50,000,000	82%	$41,102,289	$2,011,537	$1,178,937	$3,450,640	$11,476,522	0.08	1.07	3/31/2020
4/30/2004	Bay Area Equity Fund I[4]	$2,396,776	$10,000,000	100%	$10,000,000	$0	$0	$37,018,019	$0	3.70	3.94	3/31/2020
6/29/2009	Bay Area Equity Fund II[4]	$9,662,956	$10,000,000	100%	$10,000,000	$0	$0	$3,684,910	$0	0.37	1.33	3/31/2020
6/30/2013	Commonfund	$31,629,613	$50,000,000	90%	$45,024,995	$0	$345,181	$12,505,952	$4,975,005	0.28	0.98	3/31/2020
7/15/2005	EIF US Power Fund II[4]	$5,148,477	$50,000,000	130%	$65,029,556	$0	$0	$74,001,371	$0	1.14	1.22	6/30/2020
5/31/2007	EIF US Power Fund III[4]	$13,462,498	$65,000,000	110%	$71,409,097	$0	$0	$73,638,258	$0	1.03	1.22	6/30/2020
11/28/2011	EIF US Power Fund IV	$37,748,776	$50,000,000	128%	$64,155,474	$367,773	$367,773	$31,740,306	$4	0.49	1.08	6/30/2020
11/28/2016	EIF US Power Fund V	$43,925,720	$50,000,000	99%	$49,657,265	$568,278	$5,632,747	$14,862,368	$8,860,664	0.30	1.18	6/30/2020
2/21/2019	Genstar Capital Partners IX, L.P.	$19,245,461	$50,000,000	38%	$19,070,192	$6,764,154	$0	$980,160	$31,909,968	0.05	1.06	6/30/2020
11/18/2009	Oaktree PIF 2009	$1,148,734	$40,000,000	87%	$34,816,729	$0	$0	$45,799,610	$6,308,961	1.32	1.35	6/30/2020
5/2/2013	Ocean Avenue Fund II	$25,208,390	$30,000,000	90%	$27,000,000	$0	$0	$16,039,096	$3,000,000	0.59	1.53	6/30/2020
4/15/2016	Ocean Avenue Fund III	$53,224,819	$50,000,000	87%	$43,500,000	$0	$0	$10,000,000	$6,500,000	0.23	1.45	6/30/2020
11/30/2007	Paladin III	$29,856,372	$25,000,000	137%	$34,229,048	$192,671	$11,667,637	$49,563,483	$305,677	1.45	2.32	6/30/2020
8/22/2011	Pathway 6	$31,582,836	$40,000,000	97%	$38,603,323	$72,000	$707,788	$29,951,046	$3,827,436	0.78	1.59	3/31/2020
7/10/2013	Pathway 7	$66,535,542	$70,000,000	96%	$67,165,188	$214,365	$1,902,487	$33,216,736	$6,289,507	0.49	1.49	3/31/2020
11/23/2015	Pathway 8	$49,653,559	$50,000,000	85%	$42,415,771	$2,333,706	$1,619,308	$7,367,541	$10,091,928	0.17	1.34	3/31/2020
1/19/1999	Pathway	$11,007,132	$125,000,000	100%	$125,341,672	$68,972	$829,866	$178,099,677	$10,647,601	1.42	1.51	6/30/2020
7/31/2009	Pathway 2008	$18,096,724	$30,000,000	98%	$29,369,748	$72,009	$952,535	$31,998,235	$3,127,913	1.09	1.71	6/30/2020
6/3/2014	Siguler Guff CCCERA Opportunities	$182,552,821	$200,000,000	83%	$165,583,208	$0	$0	$66,430,997	$38,097,500	0.40	1.50	6/30/2020
11/30/2016	Siguler Guff Secondary Opportunities[4]	$61,965	$50,000,000	60%	$29,999,802	$0	$0	$42,724,959	$20,000,198	1.42	1.43	6/30/2020
5/18/2018	Siris Partners IV, L.P.	$16,652,501	$35,000,000	54%	$18,842,410	$0	$0	$0	$16,157,590	0.00	0.88	6/30/2020
6/28/2019	TPG Healthcare Partners, L.P.	$3,169,639	$24,000,000	18%	$4,281,652	$1,320,933	$0	$0	$19,718,348	-	-	6/30/2020
5/24/2019	Trident VIII, L.P.	$5,889,704	$40,000,000	17%	$6,994,869	$4,126,318	$565,951	$565,951	$33,467,151	-	-	-
12/8/2015	Wastewater Opportunity Fund	$19,608,864	$25,000,000	100%	$25,022,227	$1,252,529	$0	$2,031,922	$0	0.08	0.86	6/30/2020
	Total Private Equity and Venture Capital	**$1,037,446,201**	$1,743,565,614	87%	$1,518,097,509	$27,883,685	$28,947,279	$1,111,216,556	$315,335,728	0.73	1.42	
	% of Portfolio (Market Value)	10.9%										

* All Data provided by StepStone Group
[1]Latest valuation + capital calls - distributions
[2](DPI) is equal to (capital returned / capital called)
[3](TVPI) is equal to (market value + capital returned) / capital called
[4]Capital has been fully called and fund is in redemption.

Private Credit	Inception	Fund Level (G)[2]	CCCERA (G)	Fund Level (N)[2 3]	CCCERA (N)[3]	IRR Date
Angelo Gordon Energy Cred Opp.[4]	09/24/2015	-	-	-	6.4%	06/30/2020
Stepstone CC Opportunities Fund	02/02/2018	-	4.0%	-	3.1%	03/31/2020
Torchlight IV	08/01/2012	12.5%	12.9%	9.9%	10.6%	03/31/2020
Torchlight V	03/12/2015	16.1%	16.2%	10.9%	10.9%	03/31/2020

Real Estate	Inception	Fund Level (G)[2]	CCCERA (G)	Fund Level (N)[2 3]	CCCERA (N)[3]	IRR Date
Angelo Gordon VIII[4]	01/23/2012	-	-	-	14.1%	06/30/2020
Angelo Gordon IX	12/08/2014	-	-	-	9.2%	06/30/2020
DLJ RECP III	06/23/2005	-1.0%	-1.0%	-4.0%	-3.0%	06/30/2020
DLJ RECP IV	02/11/2008	4.0%	4.0%	2.0%	2.0%	06/30/2020
DLJ RECP V	07/01/2014	15.0%	15.0%	8.0%	8.0%	06/30/2020
DLJ RECP VI[1]	03/19/2019	-	-	-	-	-
Hearthstone II[4]	06/17/1998	-	30.1%	-	30.1%	03/31/2020
Invesco Fund III[4]	06/30/2013	15.9%	-	12.0%	-	06/30/2020
Invesco Fund IV[4]	06/30/2014	16.1%	-	12.2%	-	06/30/2020
Invesco Fund V	02/20/2019	11.1%	-	2.5%	-	06/30/2020
LaSalle Income & Growth VI[4]	07/16/2013	13.8%	13.8%	11.4%	11.5%	06/30/2020
LaSalle Income & Growth VII	02/28/2017	9.4%	9.4%	7.5%	7.4%	06/30/2020
Long Wharf IV[4]	07/03/2013	16.6%	16.7%	12.2%	12.2%	09/30/2020
Long Wharf V[4]	09/30/2016	11.2%	11.9%	8.1%	8.6%	09/30/2020
Long Wharf VI	06/27/2019	-0.8%	-0.2%	-19.2%	-4.8%	09/30/2020
Oaktree REOF V[4]	12/31/2011	16.7%	-	12.3%	-	09/30/2020
Oaktree REOF VI[4]	09/30/2013	12.9%	-	8.7%	-	09/30/2020
Oaktree REOF VII	04/01/2015	27.5%	-	16.6%	-	09/30/2020
Paulson[4]	11/10/2013	-	-	13.8%	-	12/31/2019
Siguler Guff I	01/25/2012	13.4%	16.2%	11.9%	13.1%	06/30/2020
Siguler Guff II	08/31/2013	10.9%	10.9%	9.5%	8.7%	06/30/2020
Siguler Guff DREOF II Co-Inv	01/27/2016	10.5%	10.9%	9.5%	8.1%	06/30/2020

[1]Manager has yet to report IRR figure.
[2]Fund level data includes CCCERA and all other fund investors.
[3]Net IRR calculated after deductions of management fees and carried interest to the General Partner.
[4]Capital has been fully called and fund is in redemption.

Private Equity & Venture Capital	Closing Date	Fund Level (G)[2]	CCCERA (G)	Fund Level (N)[2 3]	CCCERA (N)[3]	IRR Date
Adams Street Partners	2/11/2004	-	12.6%	-	10.3%	6/30/2020
Adams Street Partners II	12/31/2008	-	17.8%	-	14.1%	6/30/2020
Adams Street Partners - Fund 5	12/31/2008	-	7.0%	-	4.5%	6/30/2020
Adams Street Partners Venture	1/18/1996	-	26.5%	-	22.6%	6/30/2020
Adams Street Partners - BPF	3/31/2016	-	14.3%	-	11.6%	6/30/2020
AE Industrial Partners Fund II, LP[1]	5/18/2018	-	-	-	-	-
Aether Real Assets III	11/27/2013	0.5%	0.5%	-2.9%	-2.9%	6/30/2020
Aether Real Assets III Surplus	11/30/2013	3.4%	3.4%	1.5%	1.5%	6/30/2020
Aether Real Assets IV	1/30/2016	8.1%	8.1%	3.5%	3.5%	6/30/2020
Bay Area Equity Fund I[9]	11/26/2003	31.4%	31.4%	23.1%	23.1%	6/30/2020
Bay Area Equity Fund II[9]	11/26/2003	8.7%	8.7%	4.2%	4.2%	6/30/2020
CommonFund	6/30/2013	-	-	-	1.1%	6/30/2020
Energy Investor Fund II[9]	7/15/2005	6.2%	5.8%	3.5%	3.2%	6/30/2020
Energy Investor Fund III[9]	5/31/2007	5.9%	5.9%	3.3%	3.3%	6/30/2020
Energy Investor Fund IV	8/31/2010	5.9%	6.0%	2.4%	2.2%	6/30/2020
Energy Investor Fund V	11/28/2016	16.7%	14.0%	12.3%	9.7%	6/30/2020
Genstar Capital Partners IX, L.P.[1]	2/21/2019	-	-	-	-	-
Oaktree PIF 2009	2/28/2010	6.7%	-	6.4%	-	6/30/2020
Ocean Avenue II	8/15/2013	-	-	12.0%	-	6/30/2020
Ocean Avenue III	4/15/2016	-	-	20.6%	-	6/30/2020
Paladin III	11/30/2007	21.6%	-	14.3%	-	6/30/2020
Pathway 6	8/22/2011	16.3%	16.3%	14.0%	14.0%	6/30/2020
Benchmark[4]		13.3%	-	-	-	6/30/2020
Pathway 7	7/10/2013	17.1%	17.1%	14.8%	14.8%	6/30/2020
Benchmark[5]		12.9%	-	-	-	6/30/2020
Pathway 8	11/23/2015	19.4%	19.7%	17.6%	18.1%	6/30/2020
Benchmark[6]		11.4%	-	-	-	6/30/2020
Pathway Private Equity Fund	1/19/1999	10.2%	10.2%	8.3%	8.3%	6/30/2020
Benchmark[7]		10.2%	-	-	-	6/30/2020
Pathway Private Equity Fund 2008	7/31/2009	14.5%	14.5%	12.0%	12.0%	6/30/2020
Benchmark[8]		12.5%	-	-	-	6/30/2020
Siguler Guff CCCERA Opportunities	6/3/2014	17.0%	17.6%	16.4%	14.9%	6/30/2020
Siguler Guff Secondary Opportunities[9]	8/31/2013	55.3%	118.5%	49.5%	69.1%	6/30/2020
Siris Partners IV, L.P.[1]	5/18/2018	-	-	-	-	-
TPG Healthcare Partners, L.P.[1]	6/28/2019	-	-	-	-	-
Trident VIII, L.P.[1]	5/24/2019	-	-	-	-	-
Wastewater Opportunity Fund	12/8/2015	-2.2%	-	-8.3%	-	6/30/2020

[1]Manager has yet to report IRR figure.
[2]Fund level data includes CCCERA and all other fund investors.
[3]Net IRR calculated after deductions of management fees and carried interest to the General Partner.
[4]Private iQ global all private equity median pooled return for vintage years 2011-2014, as of June 30, 2020.
[5]Private iQ global all private equity median pooled return for vintage years 2012-2016, as of June 30, 2020.
[6]Private iQ global all private equity median pooled return for vintage years 2015-2018, as of June 30, 2020.
[7]Private iQ global all private equity median pooled return for vintage years 1999-2011, as of June 30, 2020.
[8]Private iQ global all private equity median pooled return for vintage years 2008-2014, as of June 30, 2020.
[9]Capital has been fully called and fund is in redemption.

	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	12.34%	-0.03%	18.18%	-0.03%	1.00	0.02%	1.00	0.59	-1.98	99.86%	100.00%
Jackson Square Partners	16.85%	-4.83%	18.40%	-3.45%	0.94	4.66%	0.94	0.83	-1.04	81.20%	97.98%
Boston Partners	1.45%	-1.18%	19.34%	-1.30%	1.05	2.75%	0.98	-0.01	-0.43	102.73%	105.10%
Emerald Advisers	10.93%	2.75%	23.92%	2.64%	1.01	4.93%	0.96	0.39	0.56	108.99%	98.30%
Ceredex	-3.78%	1.35%	22.95%	1.08%	0.95	5.48%	0.95	-0.23	0.25	93.49%	94.96%
Pyrford	1.86%	6.95%	13.24%	5.49%	0.71	6.47%	0.91	0.02	1.07	82.22%	71.20%
William Blair	9.16%	1.84%	17.08%	1.27%	1.08	3.49%	0.96	0.44	0.53	112.88%	102.04%
PIMCO RAE Emerging Markets	-5.06%	-2.17%	20.96%	-1.90%	1.09	3.67%	0.98	-0.32	-0.59	99.08%	104.93%
Artisan Partners	18.19%	11.08%	16.75%	11.57%	0.93	5.90%	0.88	0.99	1.88	129.58%	79.97%
First Eagle	3.57%	-3.55%	13.03%	-1.82%	0.76	4.83%	0.96	0.15	-0.73	60.39%	80.59%
Allianz Global Investors	3.46%	-0.37%	8.19%	0.14%	0.87	2.06%	0.96	0.23	-0.18	90.31%	93.07%
Adelante	1.75%	1.30%	17.24%	1.33%	0.93	1.93%	0.99	0.01	0.67	95.87%	93.24%
AFL-CIO	4.72%	-0.52%	3.04%	0.18%	0.87	0.96%	0.92	1.04	-0.54	83.80%	74.21%

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

	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	15.55%	-4.55%	15.76%	-3.12%	0.93	5.38%	0.89	0.91	-0.85	79.48%	101.74%
Boston Partners	6.98%	-0.67%	16.54%	-1.07%	1.05	2.90%	0.97	0.35	-0.23	101.14%	103.26%
Emerald Advisers	11.91%	0.49%	20.65%	0.51%	1.00	4.79%	0.95	0.52	0.10	97.52%	97.62%
Ceredex	3.39%	-0.72%	19.44%	-0.30%	0.90	5.96%	0.92	0.12	-0.12	79.65%	93.91%
Pyrford	5.37%	3.23%	11.86%	3.88%	0.70	6.51%	0.86	0.36	0.50	67.82%	71.57%
William Blair	10.78%	0.62%	14.96%	0.16%	1.05	3.28%	0.95	0.64	0.19	106.77%	101.72%
Total Global Equity	12.86%	2.56%	12.84%	3.92%	0.87	3.44%	0.95	0.91	0.74	94.57%	83.63%
Artisan Partners	18.66%	8.35%	15.12%	8.76%	0.96	6.07%	0.84	1.16	1.38	139.58%	87.15%
First Eagle	7.25%	-3.05%	11.12%	-0.43%	0.75	4.60%	0.94	0.55	-0.66	56.50%	75.61%
Allianz Global Investors	5.63%	-0.98%	7.15%	-0.11%	0.87	1.86%	0.95	0.63	-0.53	86.08%	94.20%
Adelante	3.92%	0.26%	15.38%	0.50%	0.94	1.94%	0.99	0.18	0.14	91.02%	94.68%
AFL-CIO	3.65%	-0.52%	2.84%	0.05%	0.86	0.92%	0.92	0.89	-0.57	81.90%	78.49%

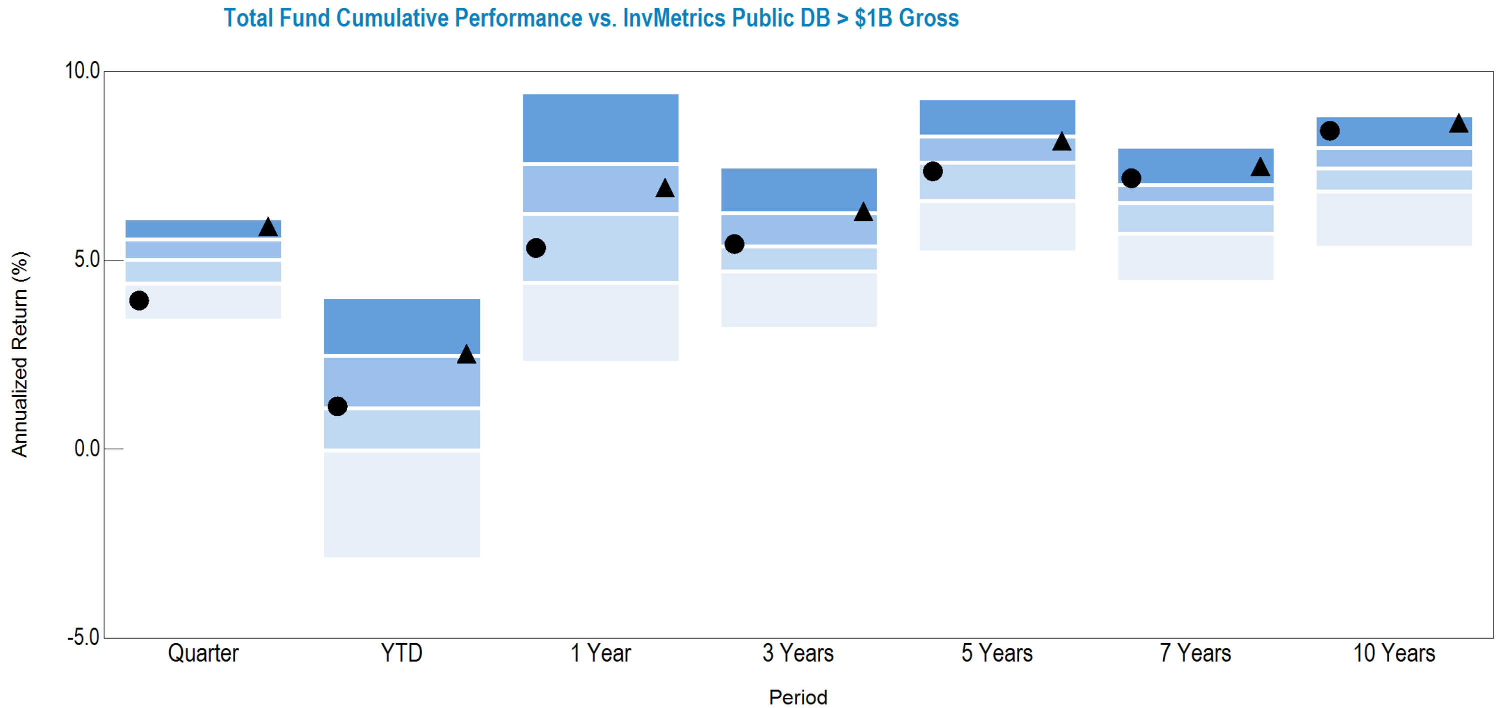
Performance Analysis excludes closed end funds and those funds without 5 years of performance.

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	$202,103,346	$60,631	0.03%
Jackson Square Partners	Growth	0.50% of First 100.0 Mil, 0.40% of Next 150.0 Mil, 0.35% Thereafter	$209,673,177	$938,693	0.45%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	$197,682,430	$643,047	0.33%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	$154,524,877	$942,149	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	$129,144,563	$760,637	0.59%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	$456,590,623	$1,848,067	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	$535,352,232	$2,021,057	0.38%
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	$296,888,358	$1,648,498	0.56%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	$349,479,447	$2,246,877	0.64%
Artisan Partners	Growth	0.75% of Assets	$541,609,682	$4,062,073	0.75%
First Eagle	Growth	0.75% of Assets	$437,391,104	$3,280,433	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	$167,943,516	$687,802	0.41%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	$233,024,231	$885,492	0.38%

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

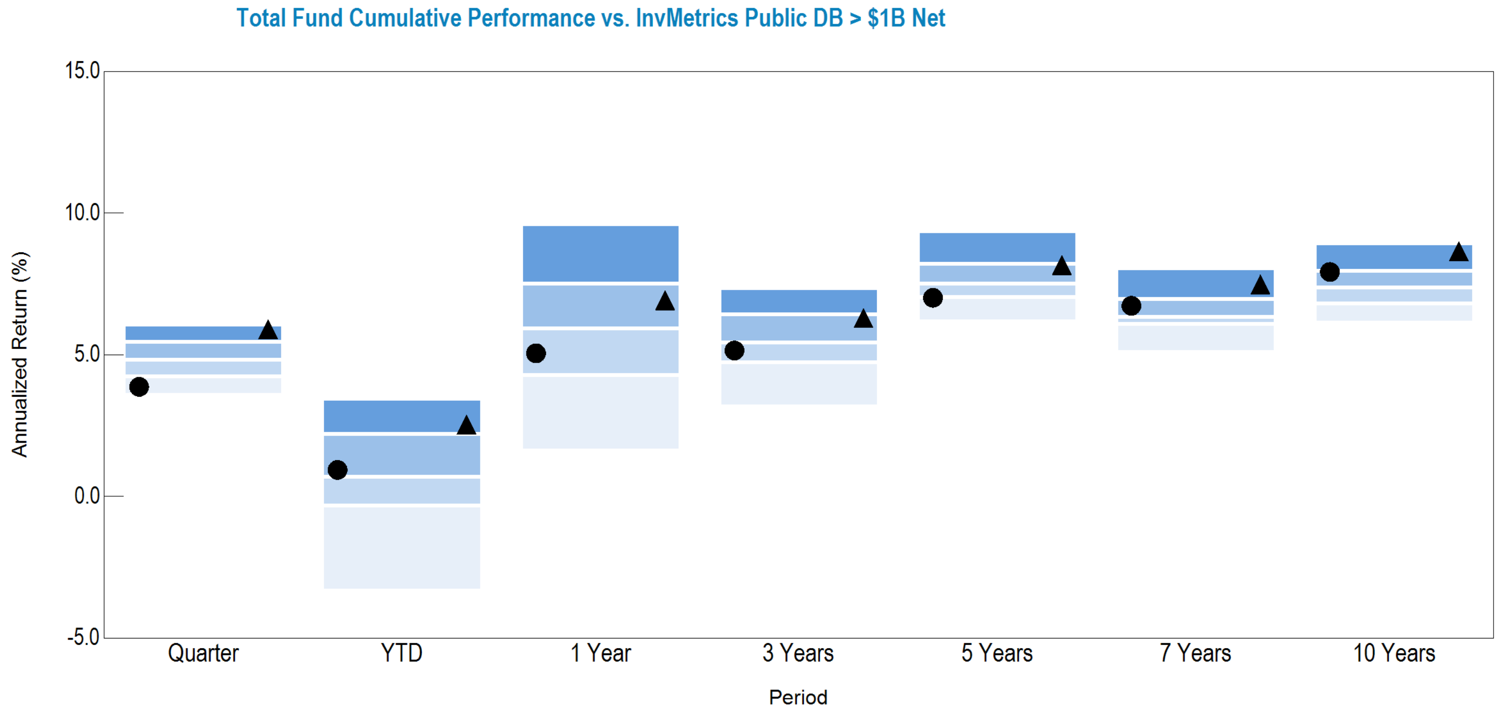
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	$231,276,561	$809,468	0.35%
AFL-CIO	Diversifying	0.43% of Assets	$272,418,857	$1,171,401	0.43%
Parametric Defensive Equity	Diversifying	0.42% of First 200.0 Mil, 0.39% Thereafter	$105,472,202	$442,983	0.42%
Acadian Multi-Asset Absolute Return Fund	Diversifying	0.50% of Assets	$124,455,657	$622,278	0.50%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	$469,043,159	$494,043	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	$1,145,047,708	$608,019	0.05%

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

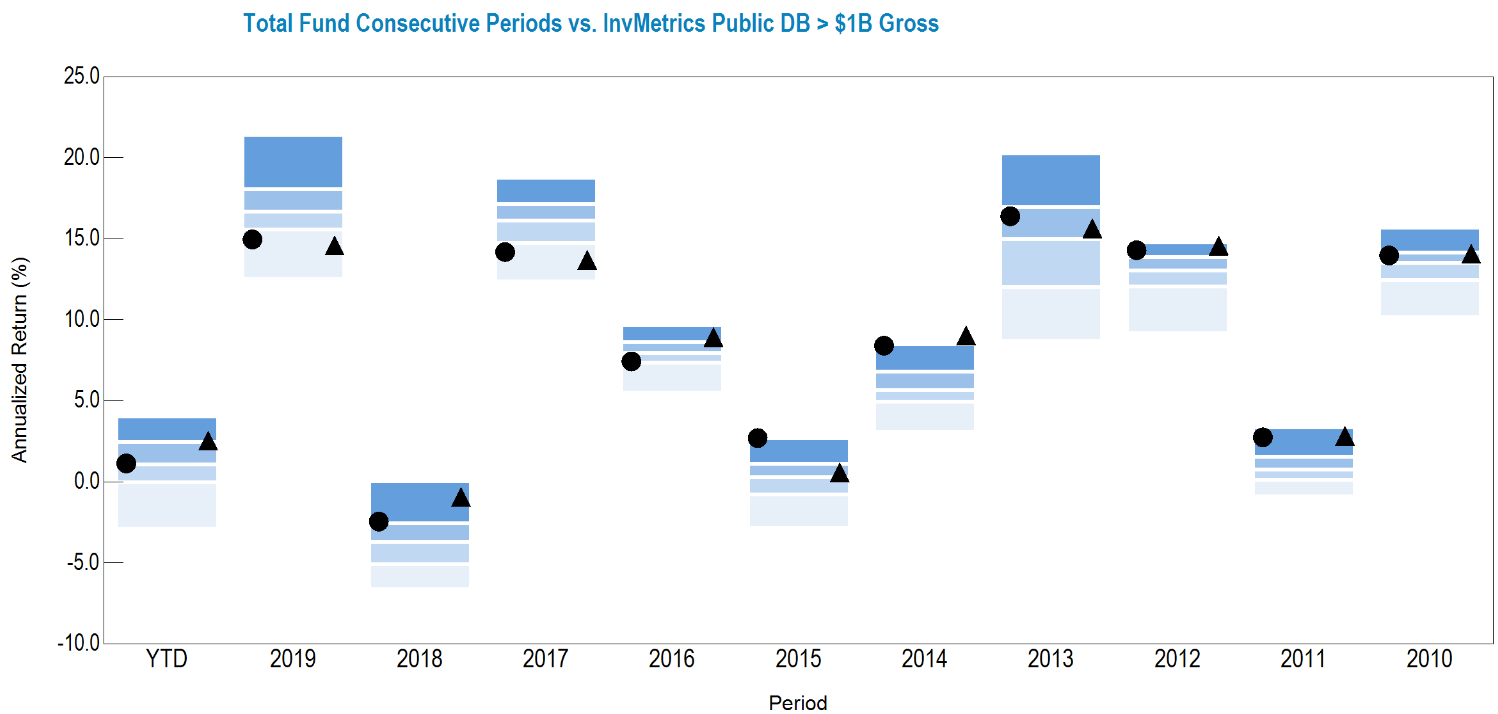


	Return (Rank)													
5th Percentile	6.1		4.0		9.4		7.5		9.3		8.0		8.8	
25th Percentile	5.6		2.5		7.5		6.3		8.3		7.0		8.0	
Median	5.0		1.1		6.2		5.4		7.6		6.5		7.4	
75th Percentile	4.4		0.0		4.4		4.7		6.6		5.7		6.8	
95th Percentile	3.4		-2.9		2.3		3.2		5.2		4.4		5.3	
# of Portfolios	68		68		68		68		68		68		66	
● Total Fund	3.9	(91)	1.1	(50)	5.3	(62)	5.4	(48)	7.4	(60)	7.2	(22)	8.4	(10)
▲ Policy Index	5.9	(16)	2.5	(23)	6.9	(36)	6.3	(25)	8.2	(33)	7.5	(11)	8.6	(7)

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.

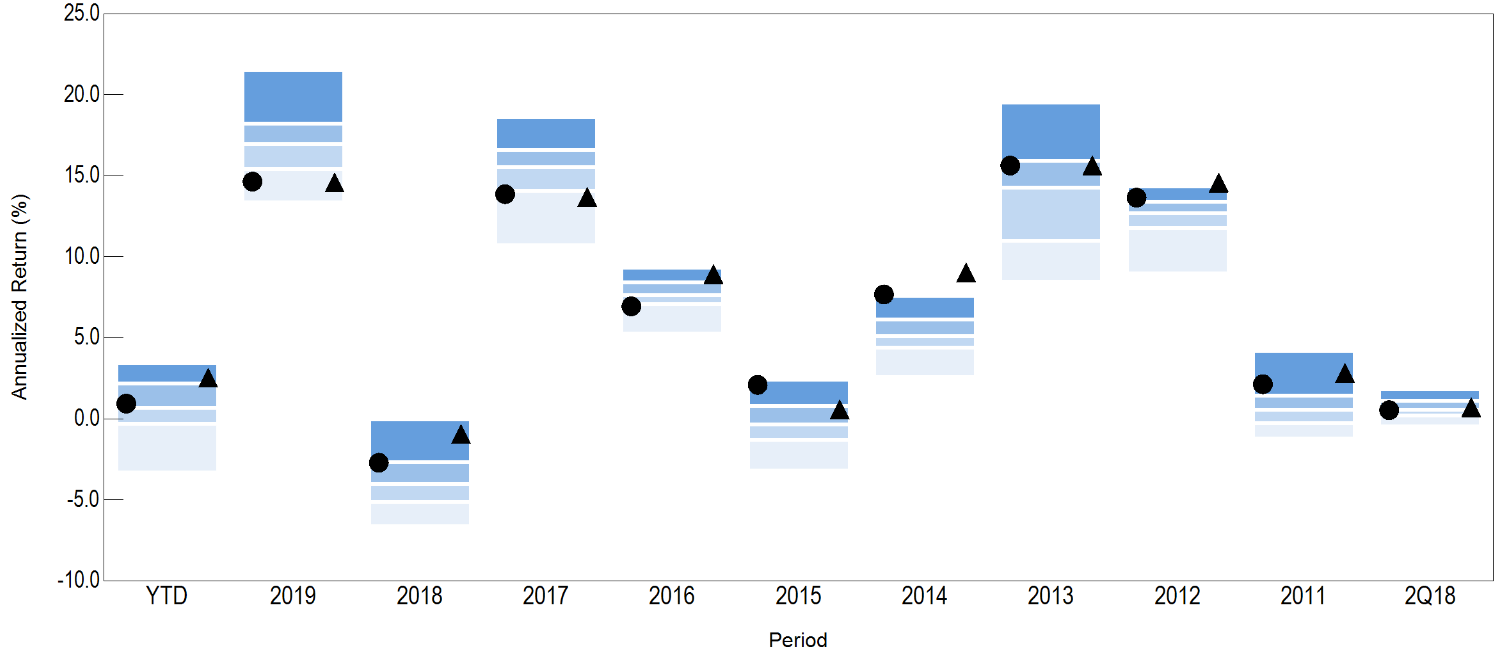


	Return (Rank)													
5th Percentile	6.1		3.4		9.6		7.3		9.4		8.0		8.9	
25th Percentile	5.5		2.2		7.5		6.4		8.2		7.0		8.0	
Median	4.8		0.7		5.9		5.5		7.5		6.3		7.4	
75th Percentile	4.2		-0.3		4.3		4.7		7.1		6.1		6.8	
95th Percentile	3.6		-3.3		1.6		3.2		6.2		5.1		6.1	
# of Portfolios	58		58		58		58		58		57		54	
● Total Fund	3.9	(89)	0.9	(42)	5.1	(62)	5.1	(60)	7.0	(78)	6.7	(32)	7.9	(28)
▲ Policy Index	5.9	(7)	2.5	(19)	6.9	(33)	6.3	(30)	8.2	(27)	7.5	(11)	8.6	(11)



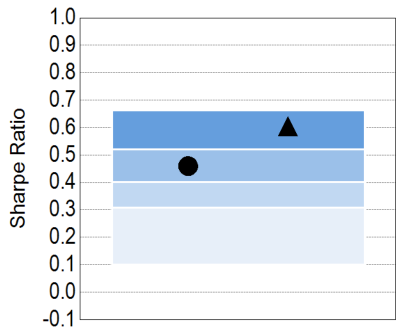
Return (Rank)	YTD		2019		2018		2017		2016		2015		2014		2013		2012		2011		2010	
5th Percentile	4.0		21.4		0.0		18.8		9.7		2.7		8.5		20.2		14.7		3.3		15.7	
25th Percentile	2.5		18.1		-2.6		17.2		8.6		1.1		6.8		17.0		13.9		1.6		14.2	
Median	1.1		16.7		-3.7		16.2		8.0		0.3		5.7		15.0		13.0		0.8		13.5	
75th Percentile	0.0		15.6		-5.1		14.8		7.4		-0.7		4.9		12.0		12.1		0.1		12.5	
95th Percentile	-2.9		12.5		-6.6		12.4		5.5		-2.8		3.1		8.7		9.2		-0.9		10.2	
# of Portfolios	68		81		71		98		92		98		79		67		74		68		66	
● Total Fund	1.1	(50)	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)	14.0	(29)
▲ Policy Index	2.5	(23)	14.6	(87)	-0.9	(8)	13.7	(89)	8.9	(15)	0.6	(40)	9.0	(2)	15.6	(43)	14.6	(8)	2.8	(9)	14.1	(27)

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



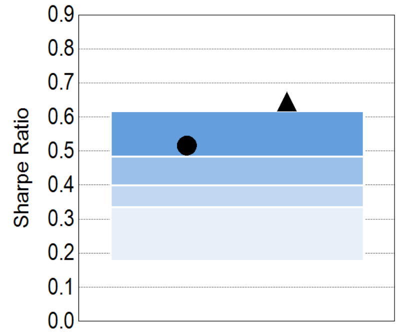
Return (Rank)	YTD	2019	2018	2017	2016	2015	2014	2013	2012	2011	2Q18
5th Percentile	3.4	21.5	-0.1	18.6	9.3	2.4	7.6	19.5	14.3	4.2	1.8
25th Percentile	2.2	18.2	-2.7	16.6	8.4	0.8	6.1	16.0	13.4	1.5	1.1
Median	0.7	17.0	-4.0	15.6	7.7	-0.4	5.1	14.3	12.7	0.6	0.6
75th Percentile	-0.3	15.4	-5.1	14.1	7.1	-1.3	4.4	11.0	11.8	-0.3	0.2
95th Percentile	-3.3	13.4	-6.6	10.7	5.3	-3.2	2.6	8.5	9.0	-1.2	-0.4
# of Portfolios	58	69	63	61	62	57	55	48	44	42	52
● **Total Fund**	0.9 (42)	14.6 (92)	-2.7 (27)	13.9 (81)	6.9 (78)	2.1 (12)	7.7 (5)	15.6 (33)	13.6 (21)	2.1 (12)	0.5 (55)
▲ **Policy Index**	2.5 (19)	14.6 (92)	-0.9 (8)	13.7 (85)	8.9 (13)	0.6 (29)	9.0 (2)	15.6 (33)	14.6 (1)	2.8 (11)	0.7 (45)

Sharpe Ratio
1 Year



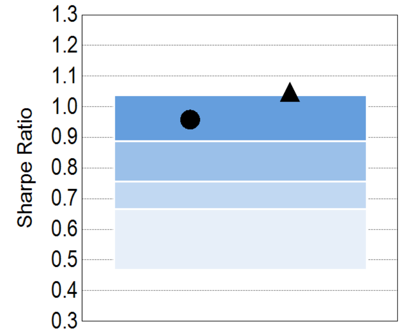
● Total Fund	
Value	0.5
Rank	38
▲ Policy Index	
Value	0.6
Rank	15
Universe	
5th %tile	0.7
25th %tile	0.5
Median	0.4
75th %tile	0.3
95th %tile	0.1

Sharpe Ratio
3 Year



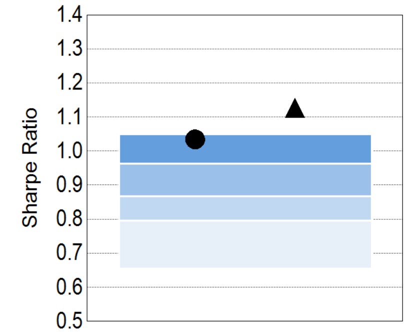
● Total Fund	
Value	0.5
Rank	24
▲ Policy Index	
Value	0.6
Rank	3
Universe	
5th %tile	0.6
25th %tile	0.5
Median	0.4
75th %tile	0.3
95th %tile	0.2

Sharpe Ratio
5 Year



● Total Fund	
Value	1.0
Rank	12
▲ Policy Index	
Value	1.0
Rank	4
Universe	
5th %tile	1.0
25th %tile	0.9
Median	0.8
75th %tile	0.7
95th %tile	0.5

Sharpe Ratio
10 Year



● Total Fund	
Value	1.0
Rank	8
▲ Policy Index	
Value	1.1
Rank	2
Universe	
5th %tile	1.1
25th %tile	1.0
Median	0.9
75th %tile	0.8
95th %tile	0.7

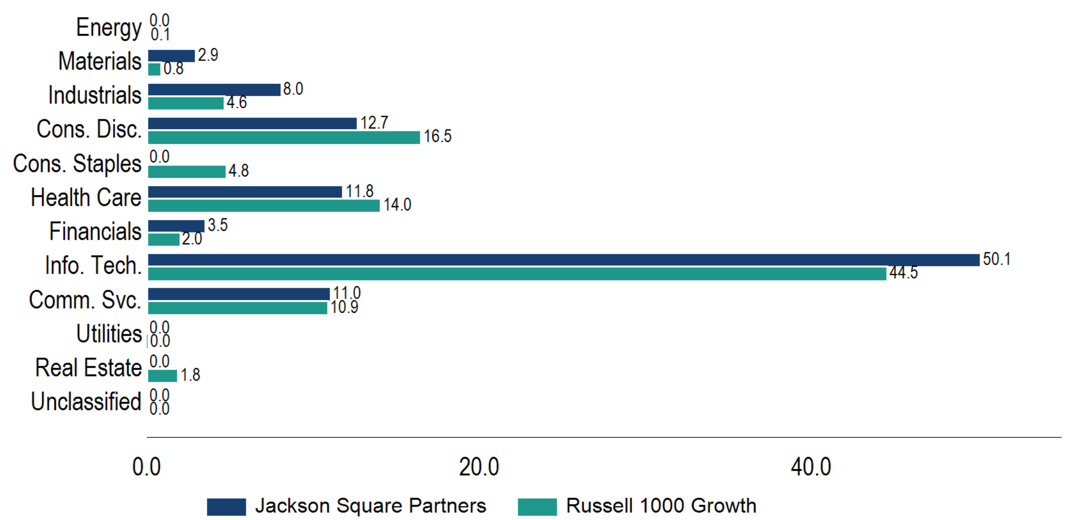
Domestic Equity Managers

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

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	27	447
Weighted Avg. Market Cap. ($B)	380.19	652.32
Median Market Cap. ($B)	73.49	13.78
Price To Earnings	52.06	33.38
Price To Book	10.35	9.62
Price To Sales	6.69	4.24
Return on Equity (%)	8.87	6.47
Yield (%)	0.38	0.84
Beta	0.91	1.00

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT CORP	8.80	3.60
AMAZON.COM INC	6.58	14.13
VISA INC	5.93	3.68
CHARTER COMMUNICATIONS INC	4.79	22.41
UBER TECHNOLOGIES INC	4.78	17.38
MASTERCARD INC	4.75	14.52
SERVICENOW INC	4.63	19.74
PAYPAL HOLDINGS INC	4.45	13.09
TWILIO INC	4.40	12.61
NIKE INC	3.71	28.32

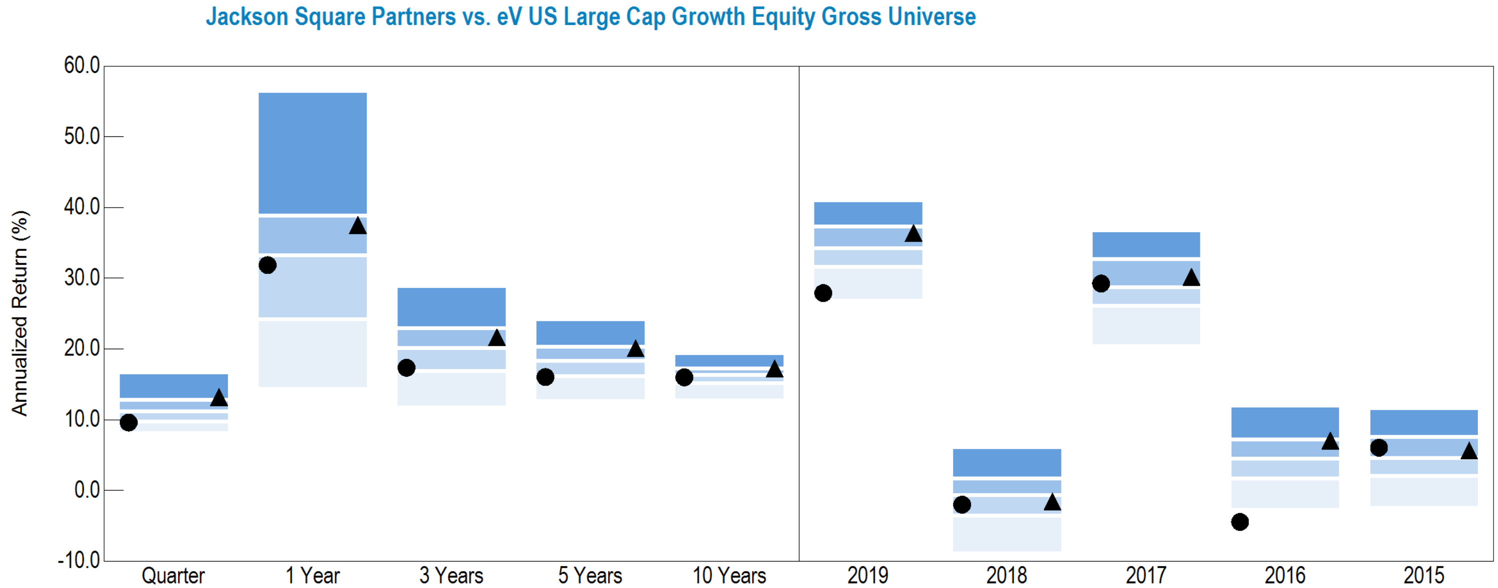
Top Contributors

	Avg Wgt	Return	Contribution
CHARTER COMMUNICATIONS INC	1.46	22.41	0.33
AMAZON.COM INC	2.15	14.13	0.30
NIKE INC	1.06	28.32	0.30
SERVICENOW INC	1.44	19.74	0.28
BALL CORP	1.20	19.84	0.24
INTUITIVE SURGICAL INC	0.96	24.52	0.23
UBER TECHNOLOGIES INC	1.27	17.38	0.22
MASTERCARD INC	1.52	14.52	0.22
PAYPAL HOLDINGS INC	1.58	13.09	0.21
IQVIA HOLDINGS INC	1.29	11.10	0.14

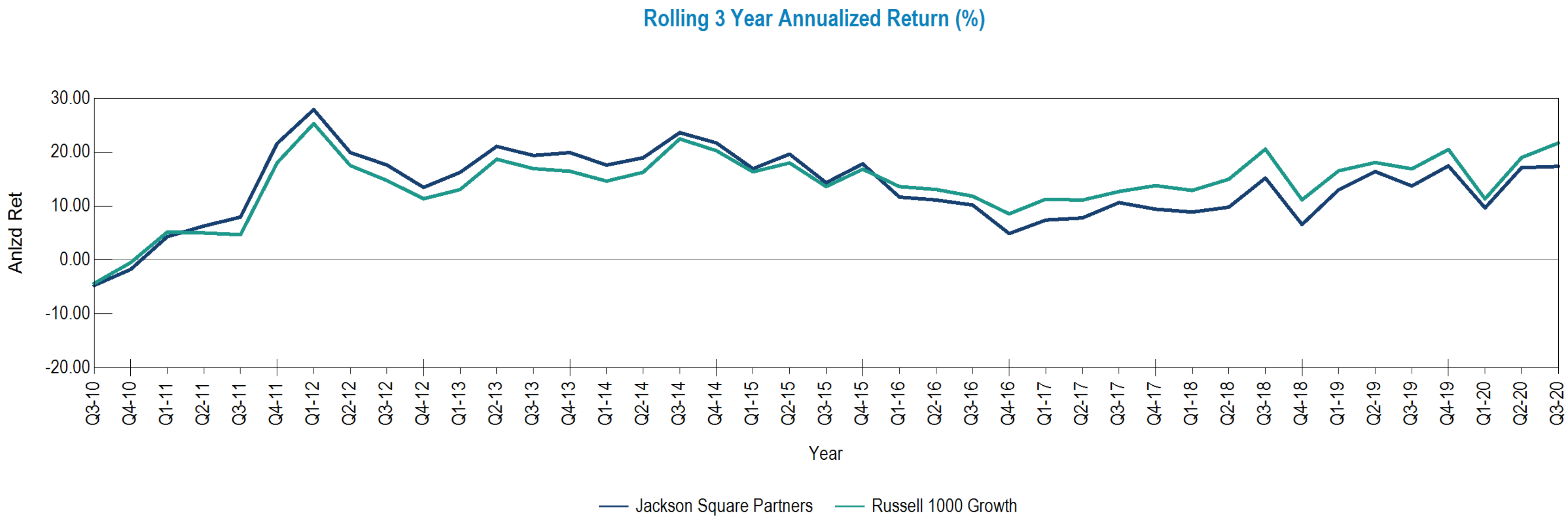
Bottom Contributors

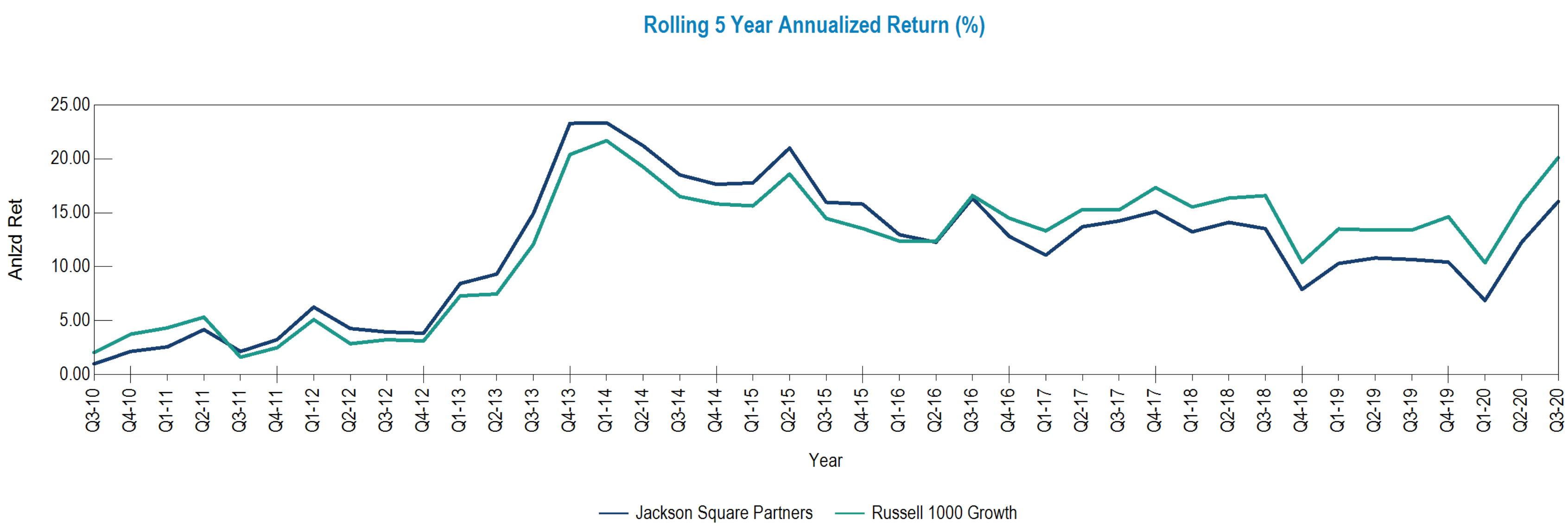
	Avg Wgt	Return	Contribution
ILLUMINA INC	1.11	-16.54	-0.18
AUTODESK INC.	1.22	-3.42	-0.04
COUPA SOFTWARE INC	1.09	-1.01	-0.01
PAYCOM SOFTWARE INC	0.80	0.51	0.00
CME GROUP INC	0.32	3.45	0.01
ALPHABET INC	1.30	3.35	0.04
VISA INC	1.78	3.68	0.07
UNITEDHEALTH GROUP INC	1.13	6.14	0.07
WASTE MANAGEMENT INC.	1.12	7.38	0.08
ADOBE INC	0.80	12.66	0.10

Unclassified sector allocation includes cash allocations.



	Return (Rank)																			
5th Percentile	16.7		56.5		28.8		24.1		19.4		41.0		6.1		36.7		12.0		11.6	
25th Percentile	12.9		38.9		22.9		20.3		17.3		37.3		1.7		32.7		7.3		7.6	
Median	11.2		33.3		20.2		18.4		16.4		34.2		-0.6		28.8		4.6		4.7	
75th Percentile	9.8		24.3		16.9		16.2		15.2		31.7		-3.5		26.2		1.8		2.1	
95th Percentile	8.1		14.4		11.8		12.7		12.8		26.9		-8.8		20.5		-2.7		-2.4	
# of Portfolios	248		248		242		228		206		253		255		265		282		270	
● Jackson Square Partners	9.6	(79)	31.9	(59)	17.4	(71)	16.0	(78)	16.0	(59)	27.9	(93)	-2.0	(59)	29.3	(47)	-4.4	(98)	6.1	(37)
▲ Russell 1000 Growth	13.2	(22)	37.5	(30)	21.7	(39)	20.1	(27)	17.3	(27)	36.4	(32)	-1.5	(57)	30.2	(42)	7.1	(26)	5.7	(42)

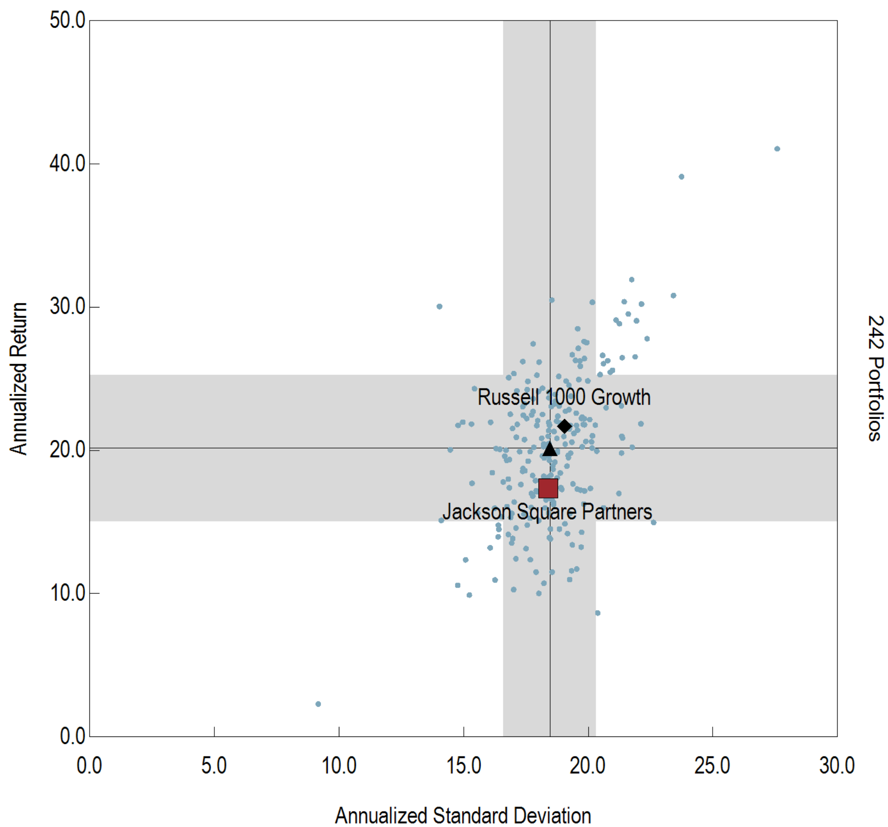

Rolling 3 Year Annualized Return (%)
Anlzd Ret
30.00
20.00
10.00
0.00
-10.00
-20.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Jackson Square Partners
Russell 1000 Growth


Rolling 5 Year Annualized Return (%)
Anlzd Ret
25.00
20.00
15.00
10.00
5.00
0.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Jackson Square Partners
Russell 1000 Growth

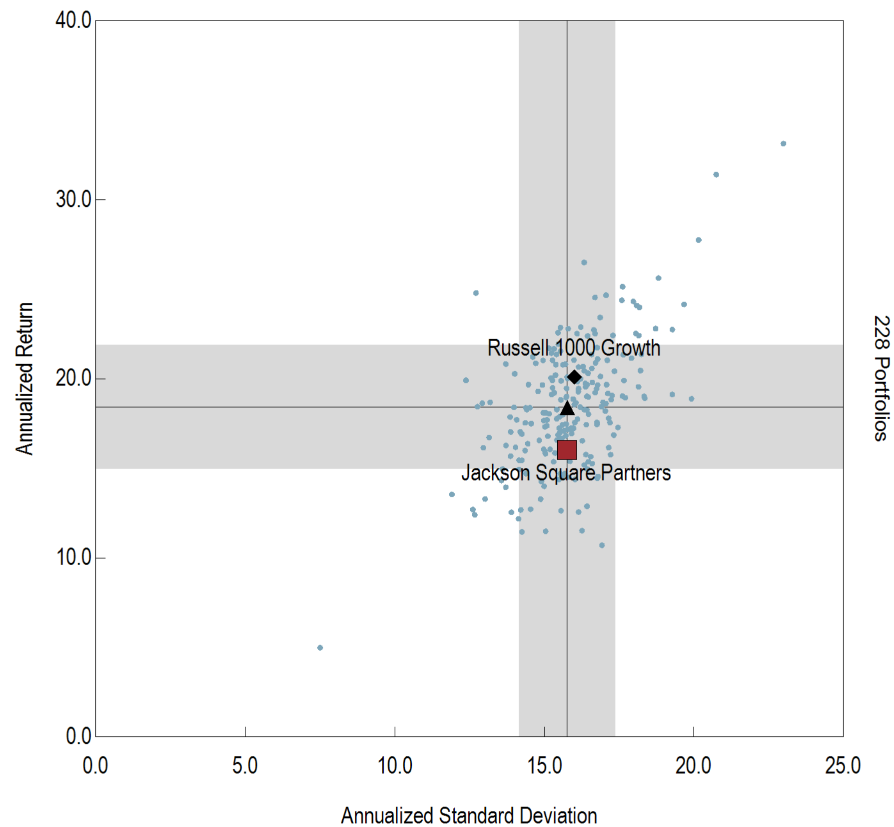
Jackson Square Partners
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2020

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	17.4%	18.4%	0.9
Russell 1000 Growth	21.7%	19.0%	1.1
eV US Large Cap Growth Equity Gross Median	20.2%	18.5%	1.0

5 Years

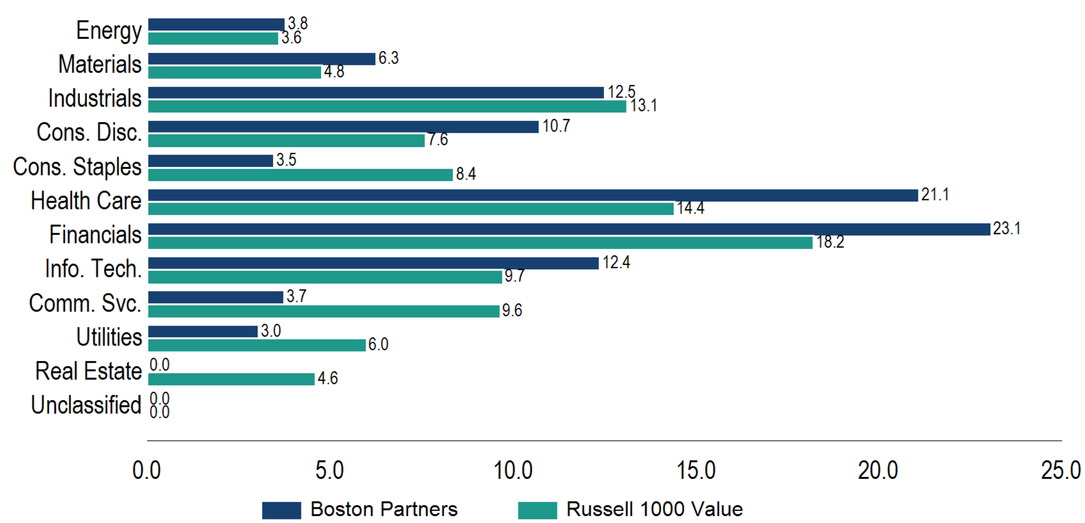
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Jackson Square Partners	16.0%	15.8%	0.9
Russell 1000 Growth	20.1%	16.0%	1.2
eV US Large Cap Growth Equity Gross Median	18.4%	15.8%	1.1

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	89	850
Weighted Avg. Market Cap. ($B)	124.67	115.36
Median Market Cap. ($B)	28.81	9.09
Price To Earnings	16.96	18.71
Price To Book	2.75	2.63
Price To Sales	1.16	1.66
Return on Equity (%)	1.86	1.65
Yield (%)	2.10	2.46
Beta	1.07	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
JPMORGAN CHASE & CO	3.88	3.34
JOHNSON & JOHNSON	3.81	6.57
BERKSHIRE HATHAWAY INC	3.76	19.29
BANK OF AMERICA CORP	2.56	2.14
CISCO SYSTEMS INC	2.47	-14.88
PFIZER INC	2.45	13.33
CIGNA CORP	2.34	-9.72
AUTOZONE INC	2.11	4.39
EATON CORP PLC	1.96	17.47
ANTHEM INC	1.93	2.50

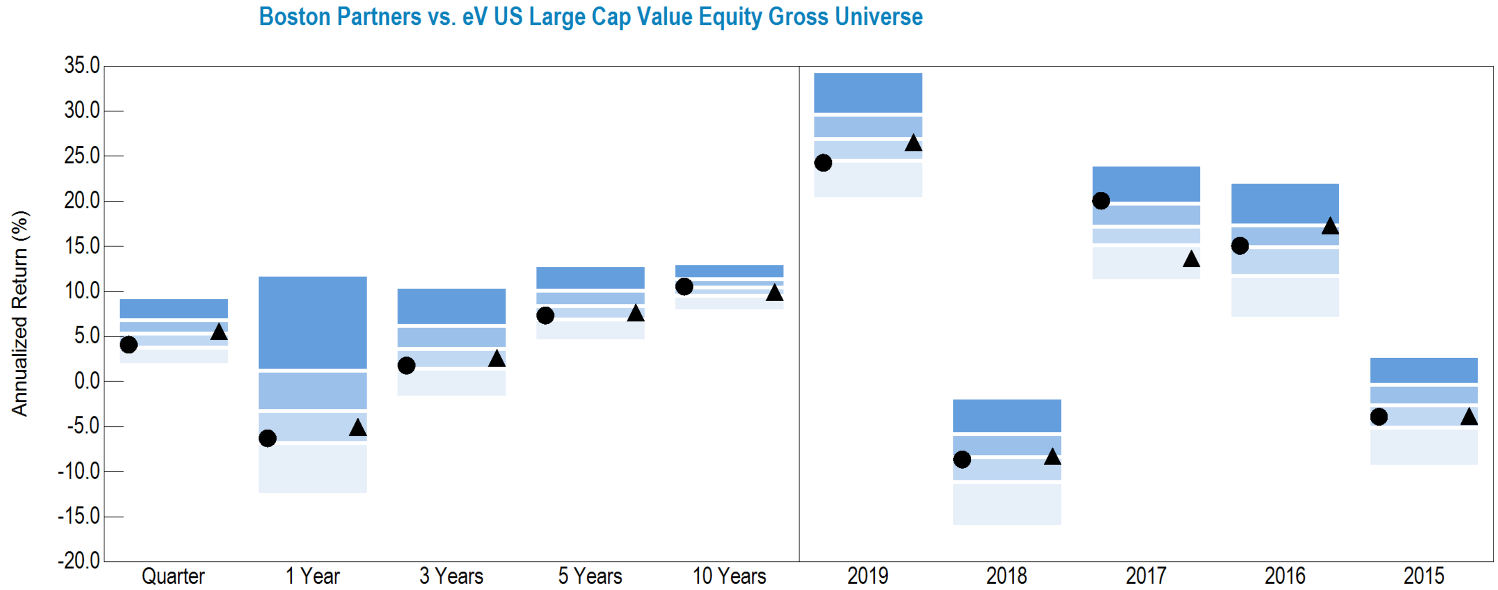
Top Contributors

	Avg Wgt	Return	Contribution
BERKSHIRE HATHAWAY INC	1.14	19.29	0.22
BEST BUY CO INC	0.48	28.18	0.13
DEERE & CO	0.31	41.52	0.13
PROGRESSIVE CORP (THE)	0.55	18.32	0.10
EATON CORP PLC	0.57	17.47	0.10
PFIZER INC	0.74	13.33	0.10
LENNAR CORP	0.25	32.82	0.08
OWENS CORNING	0.33	23.91	0.08
MEDTRONIC PLC	0.47	13.98	0.07
LOWE'S COS INC	0.28	23.22	0.06

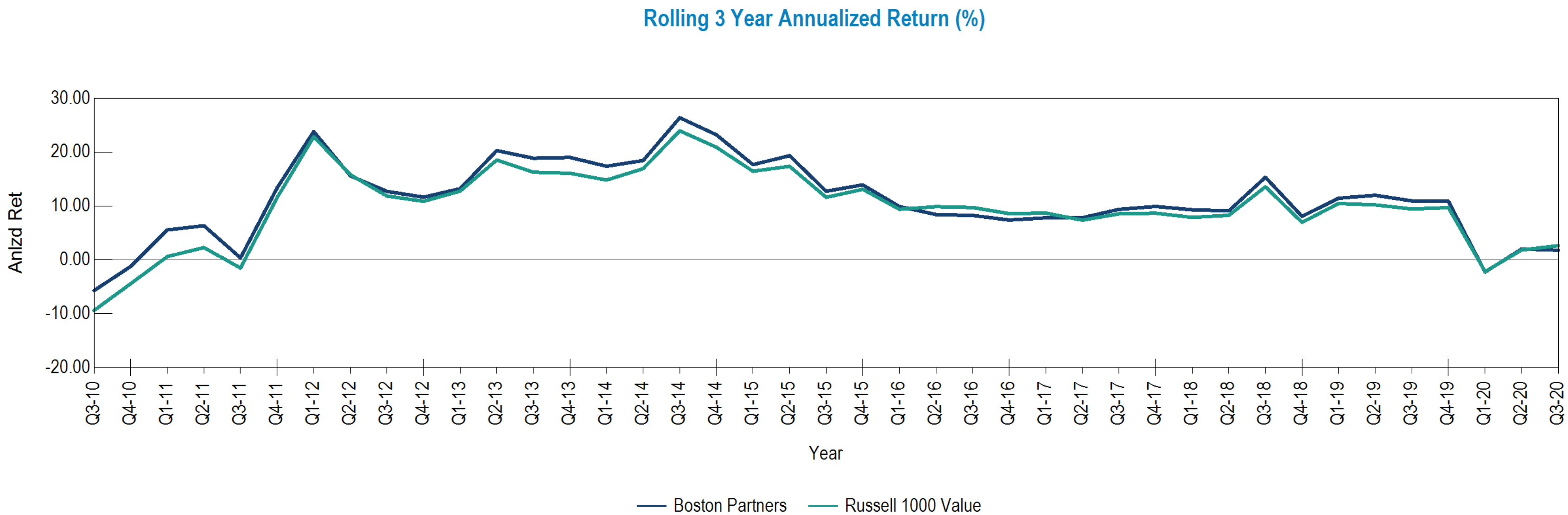
Bottom Contributors

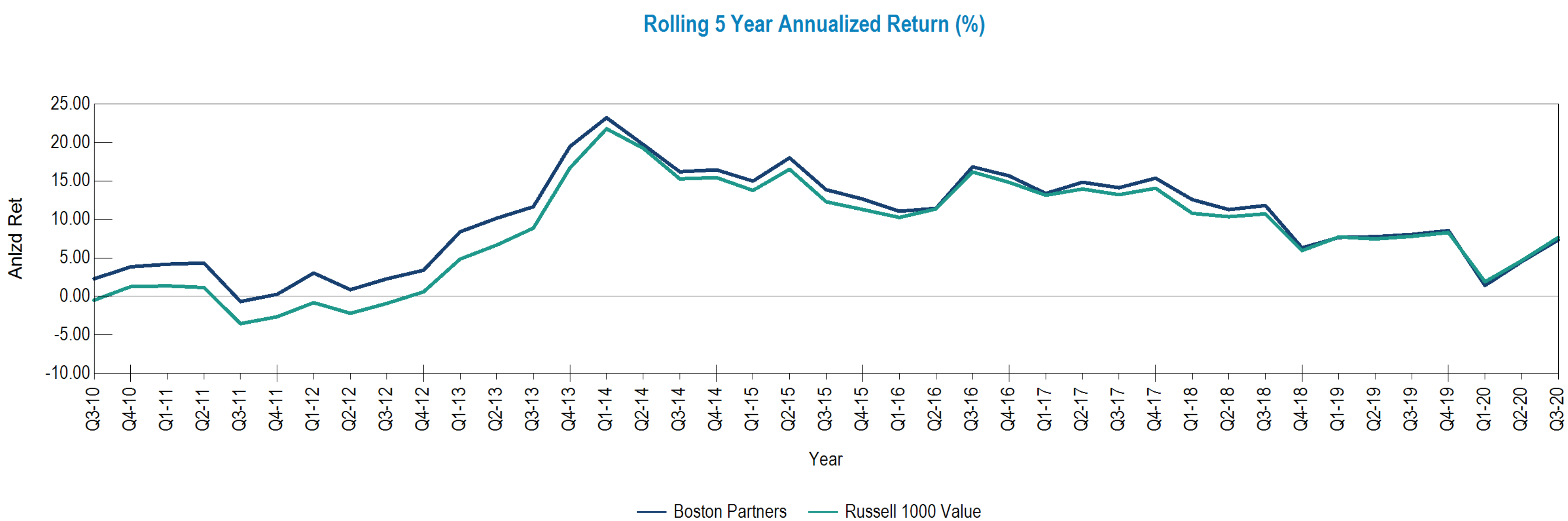
	Avg Wgt	Return	Contribution
CISCO SYSTEMS INC	0.99	-14.88	-0.15
MARATHON PETROLEUM CORP	0.46	-20.29	-0.09
CIGNA CORP	0.88	-9.72	-0.09
VALERO ENERGY CORP	0.32	-25.01	-0.08
CONOCOPHILLIPS	0.36	-21.03	-0.08
CITIGROUP INC	0.38	-14.78	-0.06
AMERICAN INTERNATIONAL GROUP INC	0.50	-10.76	-0.05
CHUBB LTD	0.69	-7.68	-0.05
MICRON TECHNOLOGY INC.	0.50	-8.85	-0.04

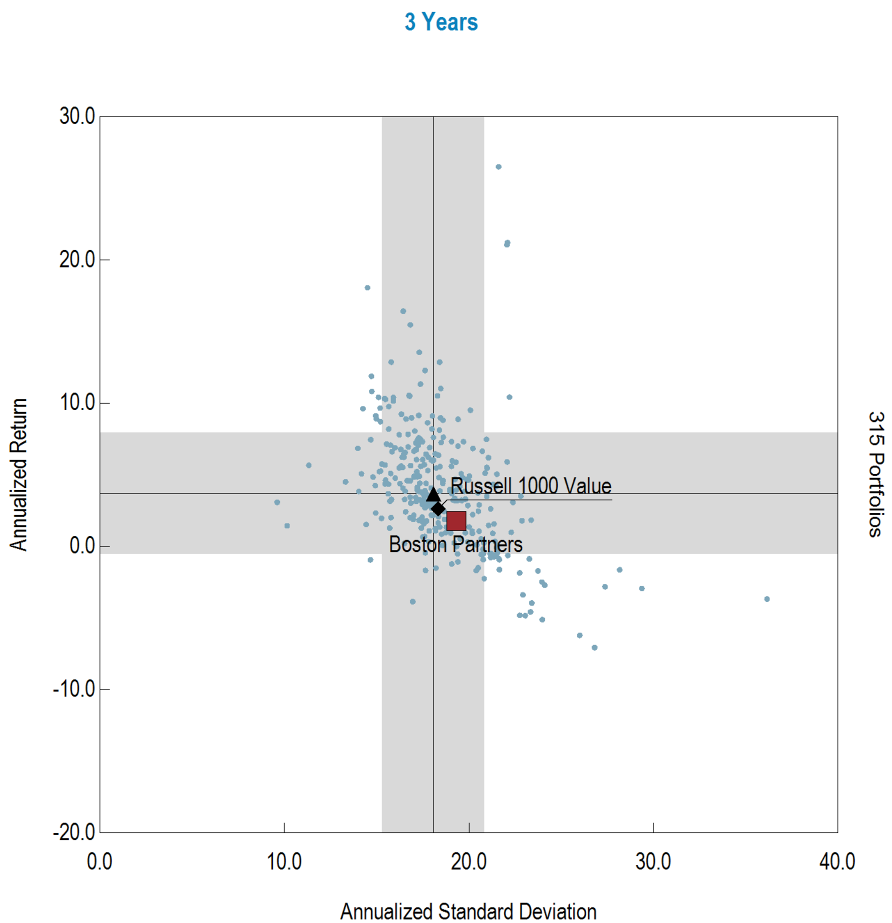
Unclassified sector allocation includes cash allocations.

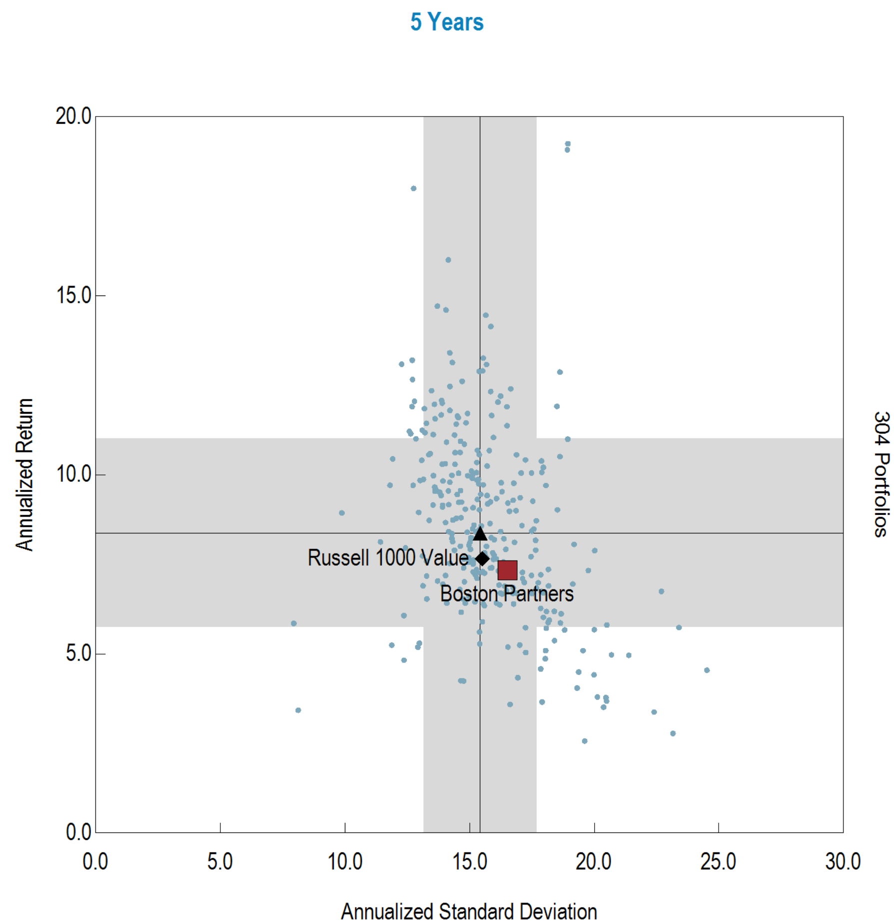


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	9.3		11.8		10.5		12.9		13.1		34.4		-1.8		24.0		22.1		2.8	
25th Percentile	6.9		1.2		6.2		10.1		11.4		29.6		-5.8		19.8		17.4		-0.4	
Median	5.3		-3.3		3.7		8.4		10.5		26.9		-8.3		17.2		15.0		-2.6	
75th Percentile	3.8		-6.8		1.5		6.9		9.5		24.5		-11.1		15.1		11.8		-5.1	
95th Percentile	1.9		-12.5		-1.7		4.5		7.8		20.3		-16.1		11.2		7.0		-9.4	
# of Portfolios	321		321		315		304		260		331		336		342		346		312	
● Boston Partners	4.1	(71)	-6.3	(73)	1.8	(73)	7.3	(67)	10.5	(48)	24.3	(77)	-8.7	(55)	20.1	(23)	15.1	(50)	-3.9	(65)
▲ Russell 1000 Value	5.6	(44)	-5.0	(67)	2.6	(66)	7.7	(62)	9.9	(66)	26.5	(54)	-8.3	(50)	13.7	(87)	17.3	(26)	-3.8	(64)


Rolling 3 Year Annualized Return (%)
Anlzd Ret
30.00
20.00
10.00
0.00
-10.00
-20.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Boston Partners
Russell 1000 Value


Rolling 5 Year Annualized Return (%)
Anlzd Ret
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Boston Partners
Russell 1000 Value





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	1.8%	19.3%	0.0
Russell 1000 Value	2.6%	18.3%	0.1
eV US Large Cap Value Equity Gross Median	3.7%	18.1%	0.1

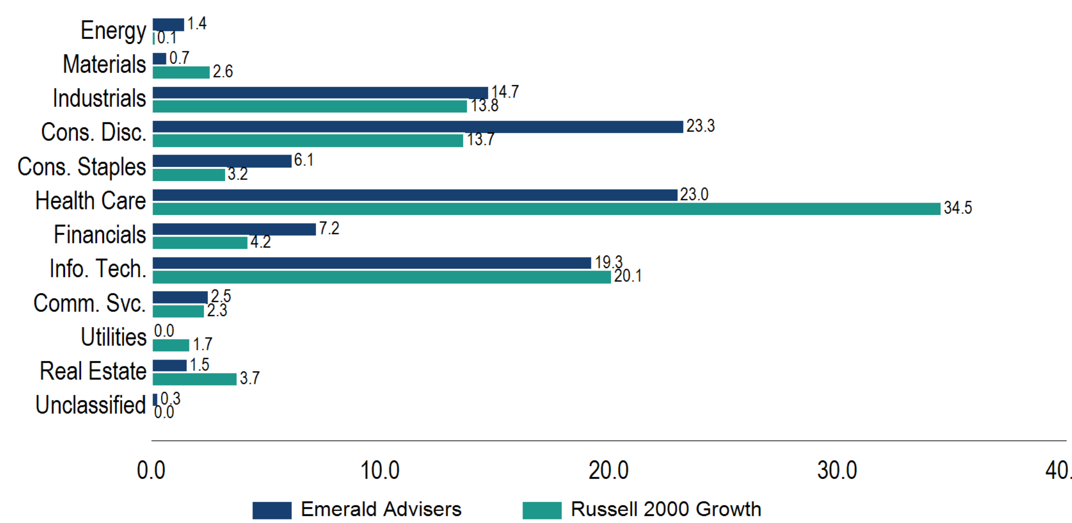
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Boston Partners	7.3%	16.5%	0.4
Russell 1000 Value	7.7%	15.5%	0.4
eV US Large Cap Value Equity Gross Median	8.4%	15.4%	0.5

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	119	1,099
Weighted Avg. Market Cap. ($B)	3.53	2.96
Median Market Cap. ($B)	2.39	0.90
Price To Earnings	30.58	25.87
Price To Book	4.47	4.66
Price To Sales	2.51	2.23
Return on Equity (%)	-1.49	-1.59
Yield (%)	0.40	0.49
Beta	1.05	1.00



Largest Holdings

	End Weight	Return
FRESHPET INC	3.04	33.46
CHEGG INC	2.63	6.22
CHURCHILL DOWNS INC	2.19	23.03
NEOGENOMICS INC	2.17	19.08
VARONIS SYSTEMS INC	2.12	30.45
PALOMAR HOLDINGS INC	1.95	21.55
MERITAGE HOMES CORP	1.92	45.02
HORIZON THERAPEUTICS PUBLIC LTD CO	1.88	39.76
RAPID7 INC	1.86	20.03
KRATOS DEFENSE & SECURITY SOLUTIONS INC	1.85	23.35

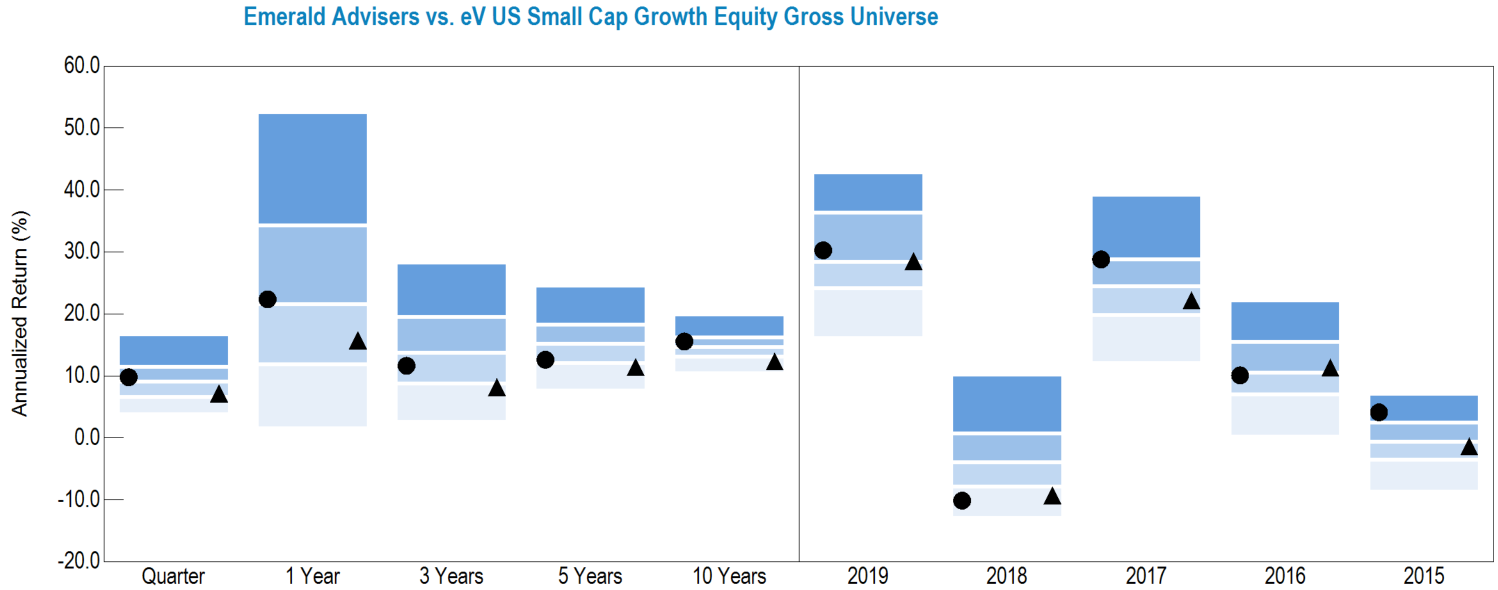
Top Contributors

	Avg Wgt	Return	Contribution
NEW FORTRESS ENERGY INC	0.14	239.58	0.34
FRESHPET INC	0.93	33.46	0.31
HORIZON THERAPEUTICS PUBLIC LTD CO	0.66	39.76	0.26
BOSTON BEER CO INC. (THE)	0.36	64.60	0.23
TWIST BIOSCIENCE CORP	0.32	67.70	0.22
MERITAGE HOMES CORP	0.48	45.02	0.22
VARONIS SYSTEMS INC	0.57	30.45	0.17
TOPBUILD CORP	0.34	50.03	0.17

Bottom Contributors

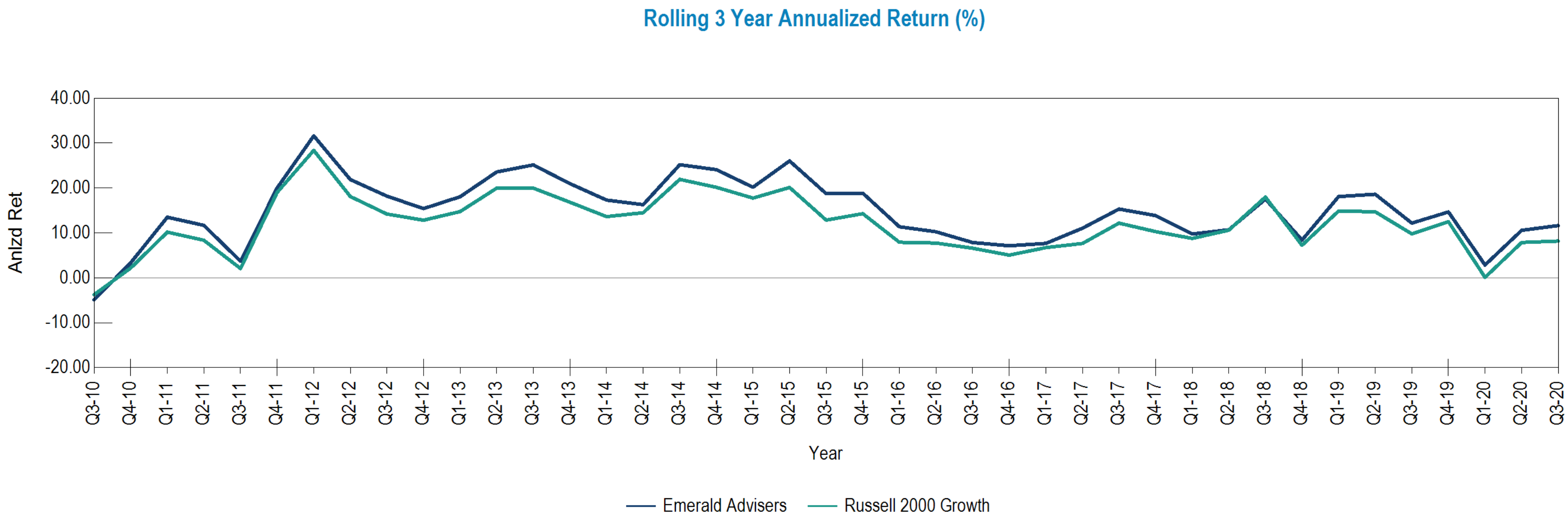
	Avg Wgt	Return	Contribution
EVERQUOTE INC	0.28	-33.56	-0.09
TABULA RASA HEALTHCARE INC	0.35	-25.51	-0.09
APPLIED THERAPEUTICS INC	0.21	-42.57	-0.09
ZOGENIX INC	0.26	-33.62	-0.09
COGENT COMMUNICATIONS HOLDINGS INC	0.40	-21.56	-0.09
GLU MOBILE INC	0.46	-17.21	-0.08
KARYOPHARM THERAPEUTICS INC	0.34	-22.92	-0.08
PASSAGE BIO INC	0.14	-52.03	-0.07

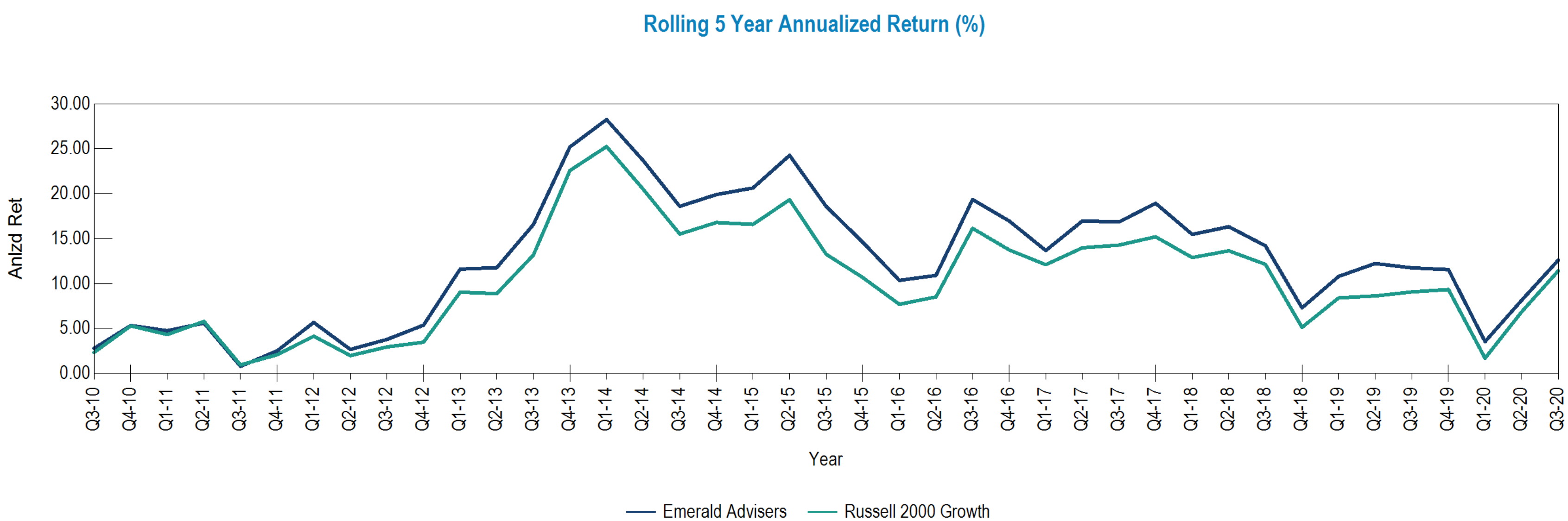
Unclassified sector allocation includes cash allocations.



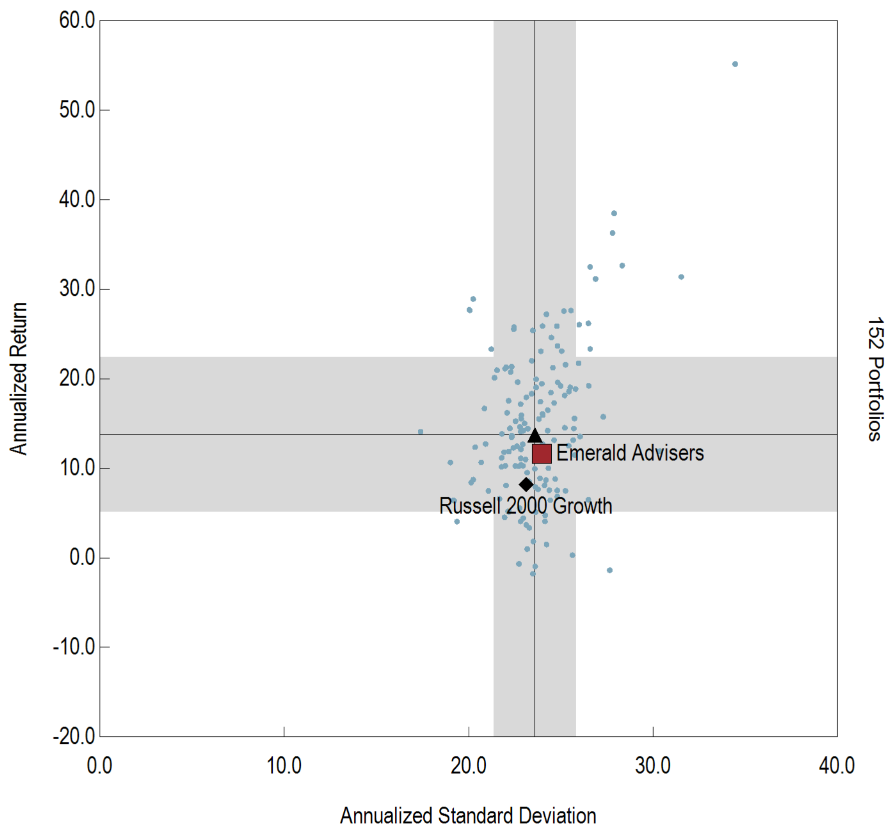
Return (Rank)

	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	16.6		52.5		28.3		24.5		19.9		42.8		10.2		39.2		22.2		7.1	
25th Percentile	11.5		34.3		19.6		18.3		16.3		36.4		0.7		28.9		15.5		2.5	
Median	9.1		21.7		13.7		15.2		14.8		28.5		-3.9		24.6		10.6		-0.6	
75th Percentile	6.6		11.9		8.8		12.1		13.2		24.2		-7.9		19.8		7.1		-3.5	
95th Percentile	3.8		1.6		2.7		7.7		10.5		16.2		-12.8		12.1		0.2		-8.7	
# of Portfolios	152		152		152		146		134		157		164		174		170		154	
● Emerald Advisers	9.8	(40)	22.4	(50)	11.6	(63)	12.6	(70)	15.6	(37)	30.3	(45)	-10.1	(85)	28.8	(26)	10.1	(54)	4.1	(19)
▲ Russell 2000 Growth	7.2	(68)	15.7	(66)	8.2	(78)	11.4	(79)	12.3	(89)	28.5	(51)	-9.3	(80)	22.2	(62)	11.3	(49)	-1.4	(59)

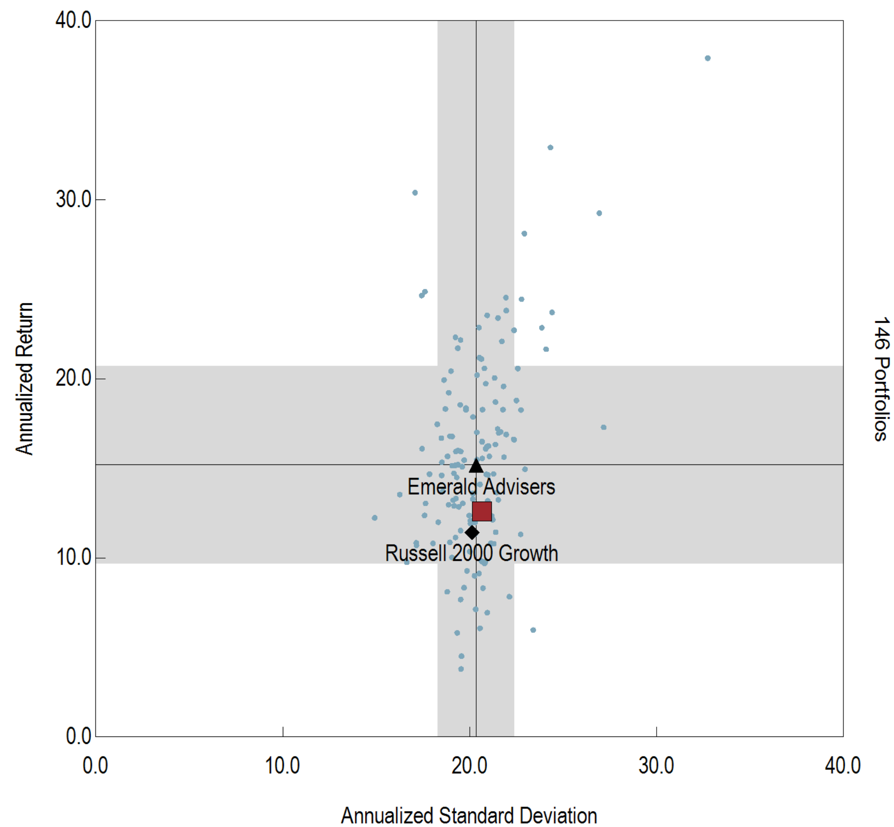

Rolling 3 Year Annualized Return (%)
Anlzd Ret
Year
Emerald Advisers
Russell 2000 Growth


Rolling 5 Year Annualized Return (%)
Anlzd Ret
Year
Emerald Advisers
Russell 2000 Growth

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	11.6%	24.0%	0.4
Russell 2000 Growth	8.2%	23.1%	0.3
eV US Small Cap Growth Equity Gross Median	13.7%	23.6%	0.5

5 Years

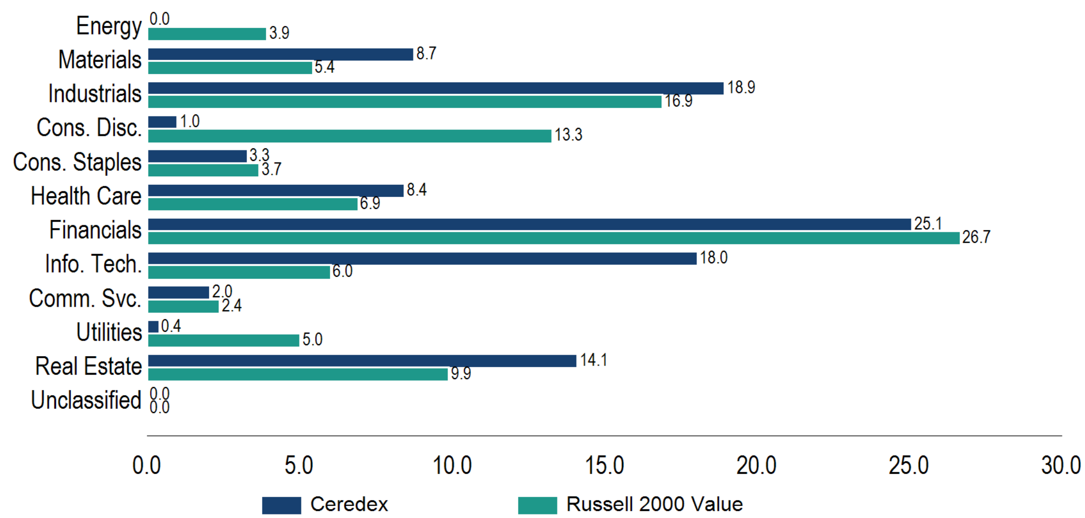
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Emerald Advisers	12.6%	20.7%	0.6
Russell 2000 Growth	11.4%	20.1%	0.5
eV US Small Cap Growth Equity Gross Median	15.2%	20.4%	0.7

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	51	1,459
Weighted Avg. Market Cap. ($B)	4.85	1.89
Median Market Cap. ($B)	4.03	0.55
Price To Earnings	18.67	13.91
Price To Book	2.10	1.75
Price To Sales	1.63	0.74
Return on Equity (%)	4.32	-0.20
Yield (%)	2.48	2.23
Beta	0.92	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

	End Weight	Return
QUANTA SERVICES INC.	5.14	34.87
PHYSICIANS REALTY TRUST	4.67	3.56
HEALTHCARE TRUST OF AMERICA INC	4.45	-0.82
POWER INTEGRATIONS INC	4.34	-6.02
APTARGROUP INC.	4.33	1.40
KEMPER CORP	4.25	-7.51
PENTAIR PLC	4.18	21.02
FIRST AMERICAN FINANCIAL CORP	4.16	6.91
SLM CORP	3.85	15.53
HILL-ROM HOLDINGS INC	3.84	-23.73

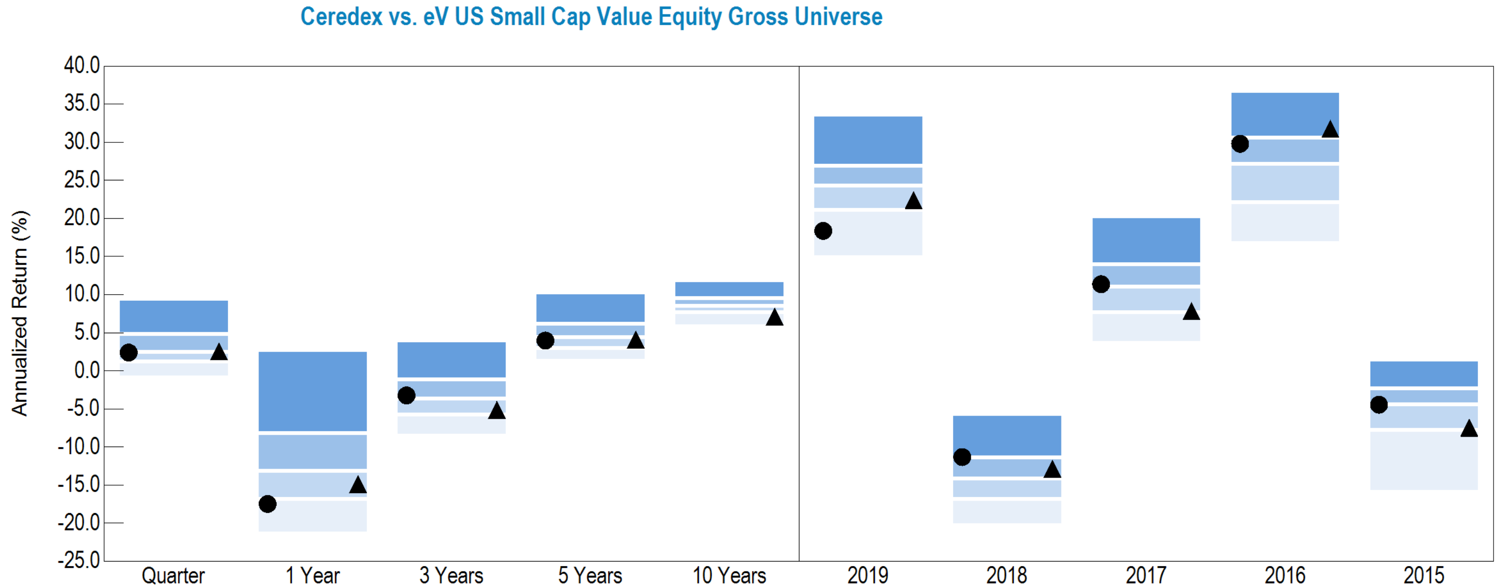
Top Contributors

	Avg Wgt	Return	Contribution
QUANTA SERVICES INC.	1.49	34.87	0.52
PENTAIR PLC	1.21	21.02	0.26
RITCHIE BROS AUCTIONEERS INC	0.42	45.57	0.19
MONOLITHIC POWER SYSTEMS INC	0.89	18.19	0.16
SLM CORP	0.97	15.53	0.15
ENTEGRIS INC	0.38	26.04	0.10
FIRST AMERICAN FINANCIAL CORP	1.31	6.91	0.09
EVERCORE INC	0.75	12.13	0.09
TETRA TECH INC	0.38	20.92	0.08
PERKINELMER INC.	0.28	28.04	0.08

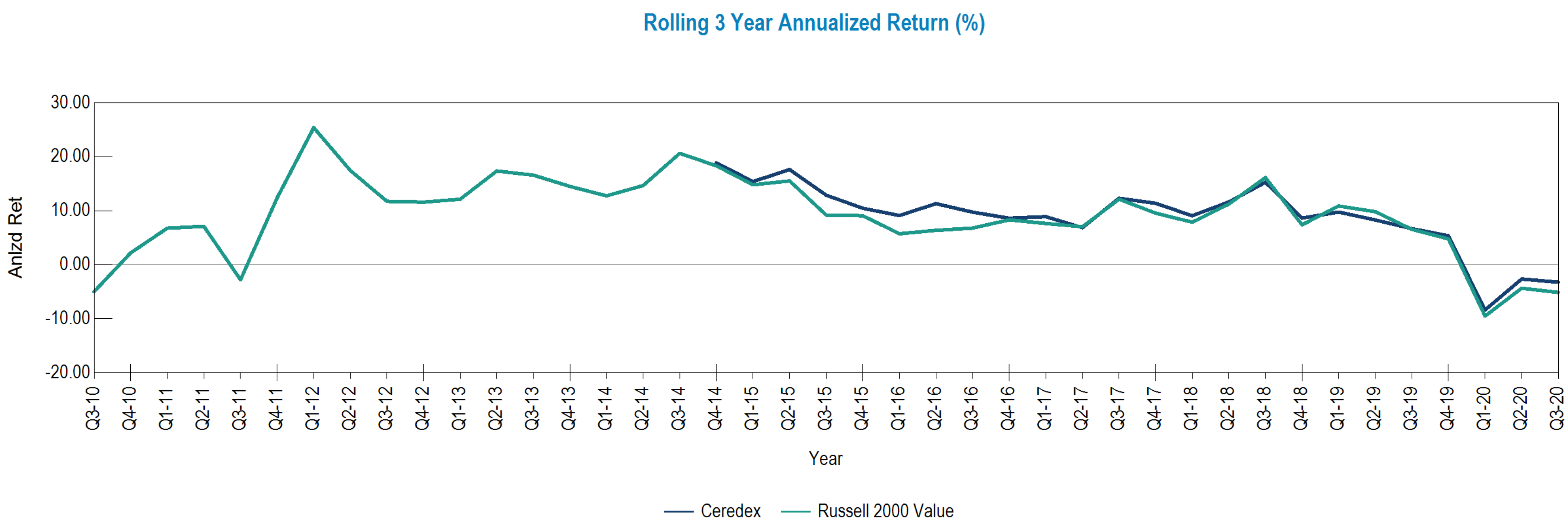
Bottom Contributors

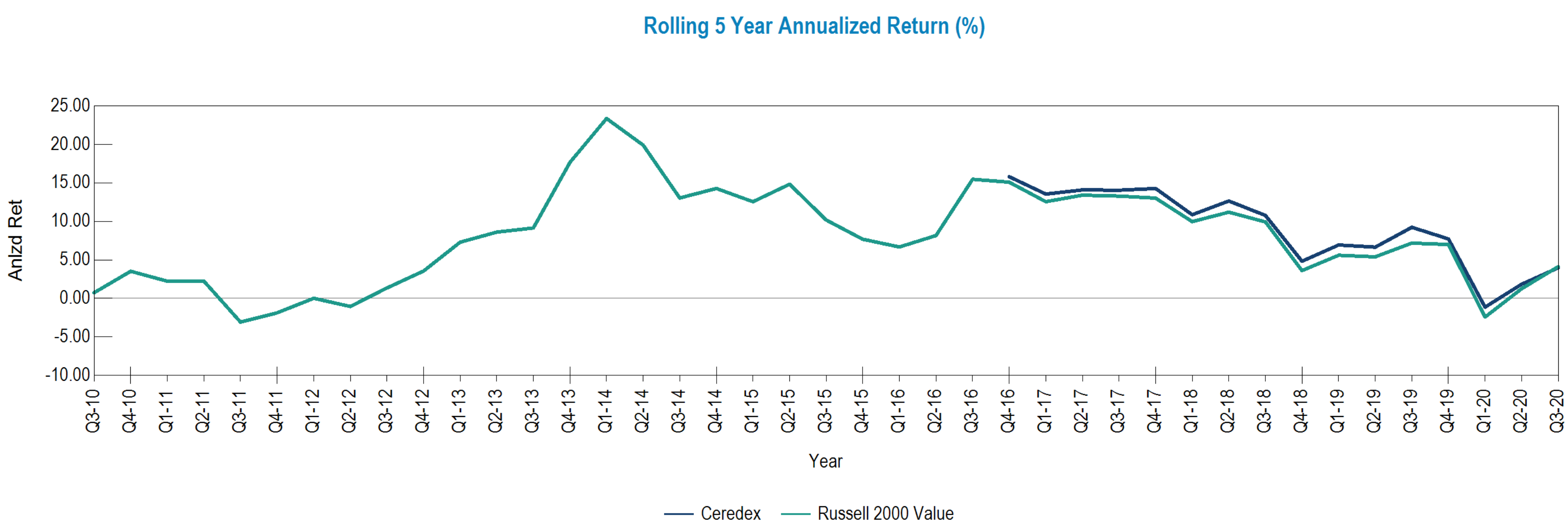
	Avg Wgt	Return	Contribution
HILL-ROM HOLDINGS INC	1.61	-23.73	-0.38
GRACE (W R) & CO	0.82	-20.15	-0.17
KEMPER CORP	1.64	-7.51	-0.12
FIRST HAWAIIAN INC	0.76	-14.72	-0.11
POWER INTEGRATIONS INC	1.64	-6.02	-0.10
BANK OF HAWAII CORP	0.57	-16.75	-0.10
FLIR SYSTEMS INC	0.77	-11.22	-0.09
CATHAY GENERAL BANCORP	0.32	-16.53	-0.05
ENERGIZER HOLDINGS INC	0.29	-17.05	-0.05
REYNOLDS CONSUMER PRODUCTS INC	0.43	-11.27	-0.05

Unclassified sector allocation includes cash allocations.



Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	9.4		2.7		4.0		10.3		11.8		33.6		-5.7		20.2		36.7		1.5	
25th Percentile	4.9		-8.2		-1.1		6.2		9.6		27.0		-11.4		14.1		30.7		-2.2	
Median	2.5		-13.1		-3.6		4.5		8.6		24.4		-14.0		11.1		27.2		-4.3	
75th Percentile	1.3		-16.8		-5.7		3.0		7.8		21.2		-16.7		7.8		22.2		-7.7	
95th Percentile	-0.8		-21.3		-8.5		1.4		5.9		15.0		-20.2		3.7		16.8		-15.8	
# of Portfolios	220		220		213		207		185		217		220		224		222		212	
● Ceredex	2.4	(54)	-17.5	(79)	-3.2	(46)	4.0	(63)	--	(--)	18.4	(87)	-11.3	(25)	11.4	(48)	29.8	(32)	-4.4	(52)
▲ Russell 2000 Value	2.6	(50)	-14.9	(63)	-5.1	(70)	4.1	(60)	7.1	(89)	22.4	(69)	-12.9	(39)	7.8	(75)	31.7	(17)	-7.5	(74)


Rolling 3 Year Annualized Return (%)
30.00
20.00
10.00
0.00
-10.00
-20.00
Anlzd Ret
Q3-10
Q4-10
Q1-11
Q2-11
Q3-11
Q4-11
Q1-12
Q2-12
Q3-12
Q4-12
Q1-13
Q2-13
Q3-13
Q4-13
Q1-14
Q2-14
Q3-14
Q4-14
Q1-15
Q2-15
Q3-15
Q4-15
Q1-16
Q2-16
Q3-16
Q4-16
Q1-17
Q2-17
Q3-17
Q4-17
Q1-18
Q2-18
Q3-18
Q4-18
Q1-19
Q2-19
Q3-19
Q4-19
Q1-20
Q2-20
Q3-20
Year
Ceredex
Russell 2000 Value


Rolling 5 Year Annualized Return (%)
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Anlzd Ret
Q3-10
Q4-10
Q1-11
Q2-11
Q3-11
Q4-11
Q1-12
Q2-12
Q3-12
Q4-12
Q1-13
Q2-13
Q3-13
Q4-13
Q1-14
Q2-14
Q3-14
Q4-14
Q1-15
Q2-15
Q3-15
Q4-15
Q1-16
Q2-16
Q3-16
Q4-16
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Q2-17
Q3-17
Q4-17
Q1-18
Q2-18
Q3-18
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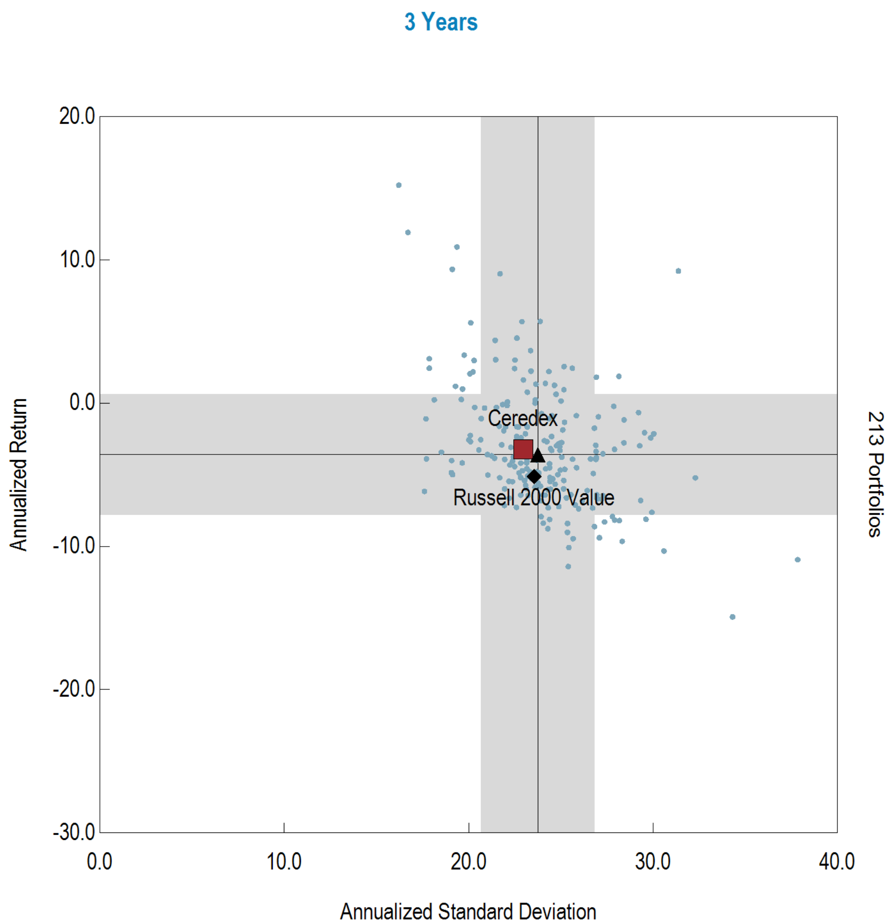
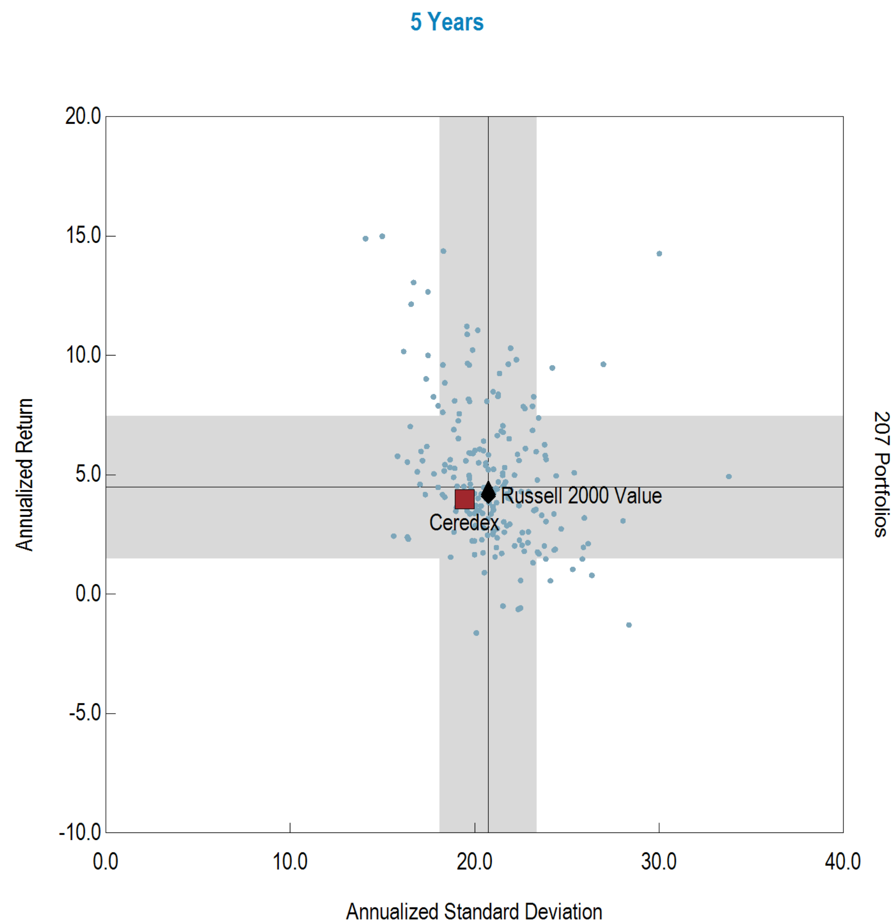
Q1-20
Q2-20
Q3-20
Year
Ceredex
Russell 2000 Value





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	-3.2%	23.0%	-0.2
Russell 2000 Value	-5.1%	23.6%	-0.3
eV US Small Cap Value Equity Gross Median	-3.6%	23.8%	-0.2

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Ceredex	4.0%	19.5%	0.1
Russell 2000 Value	4.1%	20.7%	0.1
eV US Small Cap Value Equity Gross Median	4.5%	20.7%	0.2

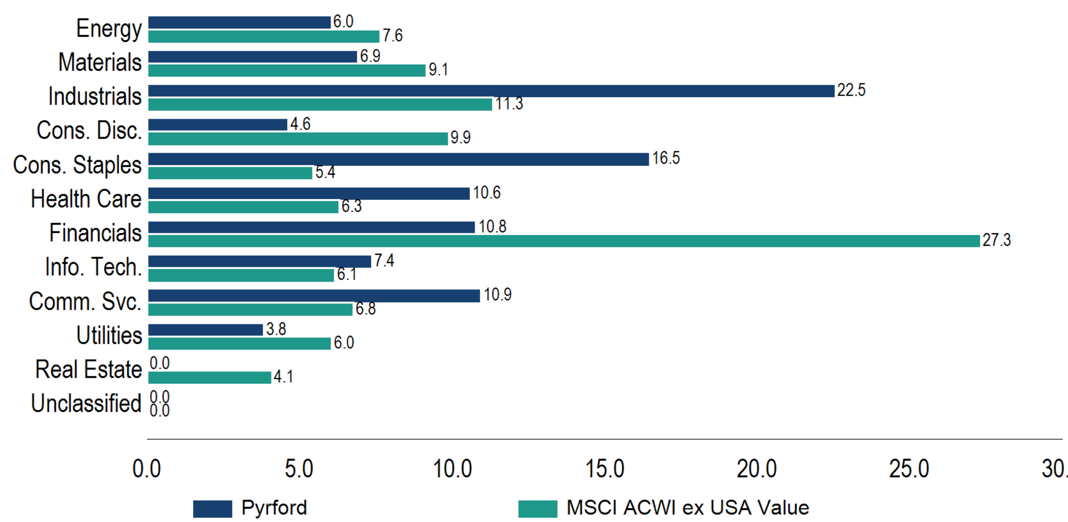
International Equity Managers

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

	Portfolio	MSCI ACWI ex USA Value
Number of Holdings	70	1,602
Weighted Avg. Market Cap. ($B)	66.65	48.27
Median Market Cap. ($B)	24.26	6.24
Price To Earnings	17.82	12.79
Price To Book	2.64	1.84
Price To Sales	1.52	0.68
Return on Equity (%)	13.27	7.17
Yield (%)	4.22	3.93
Beta	0.79	1.00

Sector Allocation (%) vs MSCI ACWI ex USA Value



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	92.1%	71.5%
Emerging*	7.9%	28.5%
Top 10 Largest Countries		
United Kingdom	15.8%	11.1%
Japan	14.0%	16.5%
Switzerland	12.3%	4.9%
Australia	10.8%	4.5%
Germany	10.5%	8.0%
France	7.5%	6.9%
Singapore	5.0%	0.7%
Hong Kong	4.8%	1.9%
Netherlands	4.6%	0.9%
Taiwan*	4.3%	3.5%
Total-Top 10 Largest Countries	**89.4%**	**59.0%**

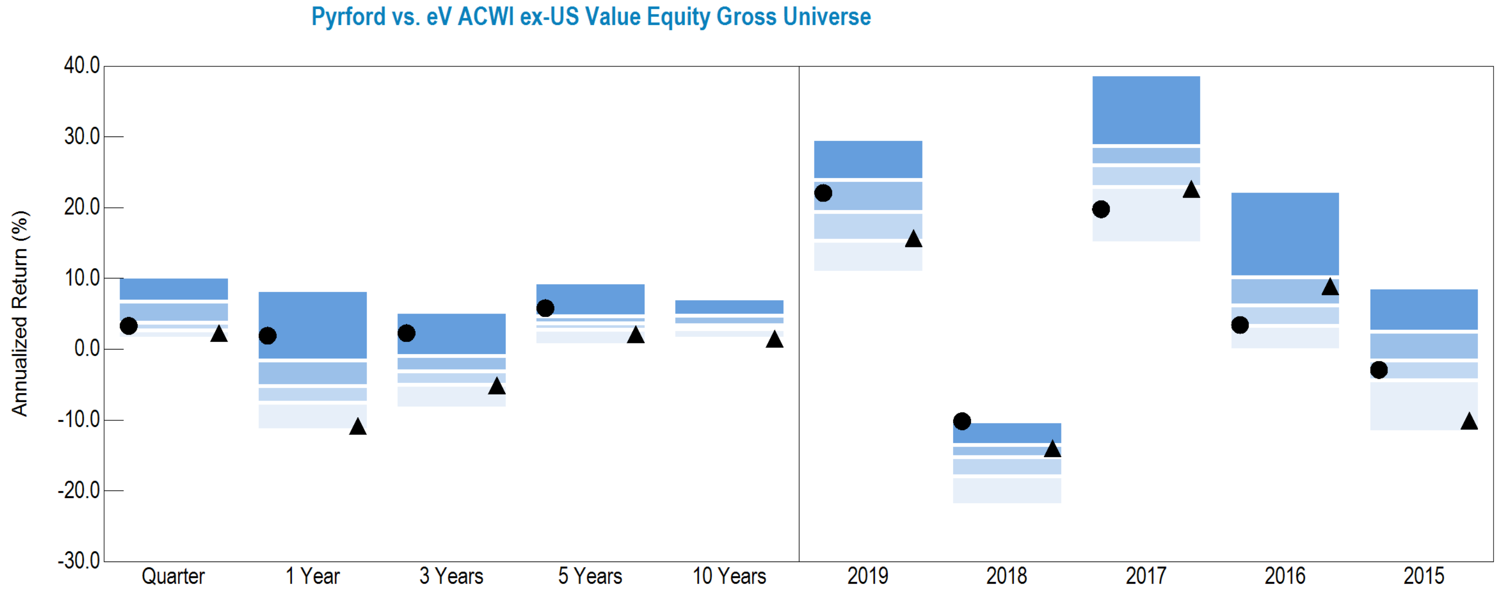
Top Contributors

	Avg Wgt	Return	Contribution
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.37	41.41	0.57
DEUTSCHE POST AG	1.72	28.44	0.49
KONE OYJ	1.56	27.93	0.43
BRENNTAG AG	1.78	21.14	0.38
THE UNILEVER GROUP	1.95	14.66	0.29
TELENOR ASA	1.80	15.14	0.27
SAP SE	2.14	11.42	0.24
NESTLE SA, CHAM UND VEVEY	2.87	7.78	0.22
FIELMANN AG, HAMBURG	1.15	19.32	0.22
L'AIR LIQUIDE SA	2.15	10.11	0.22

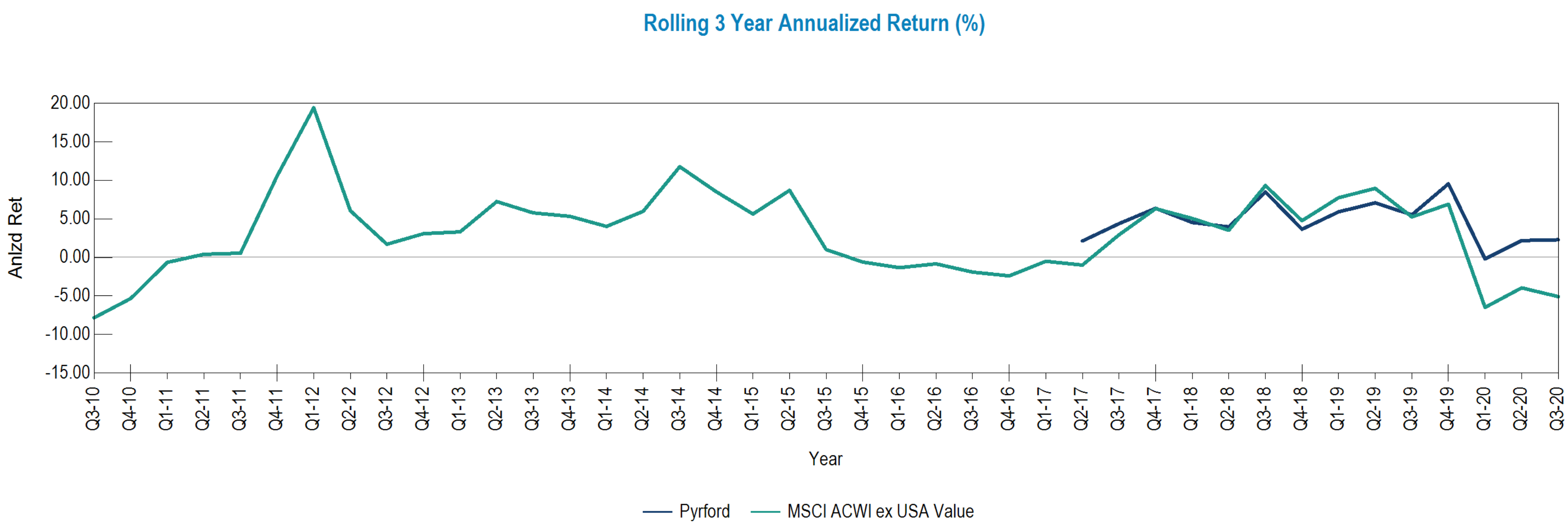
Bottom Contributors

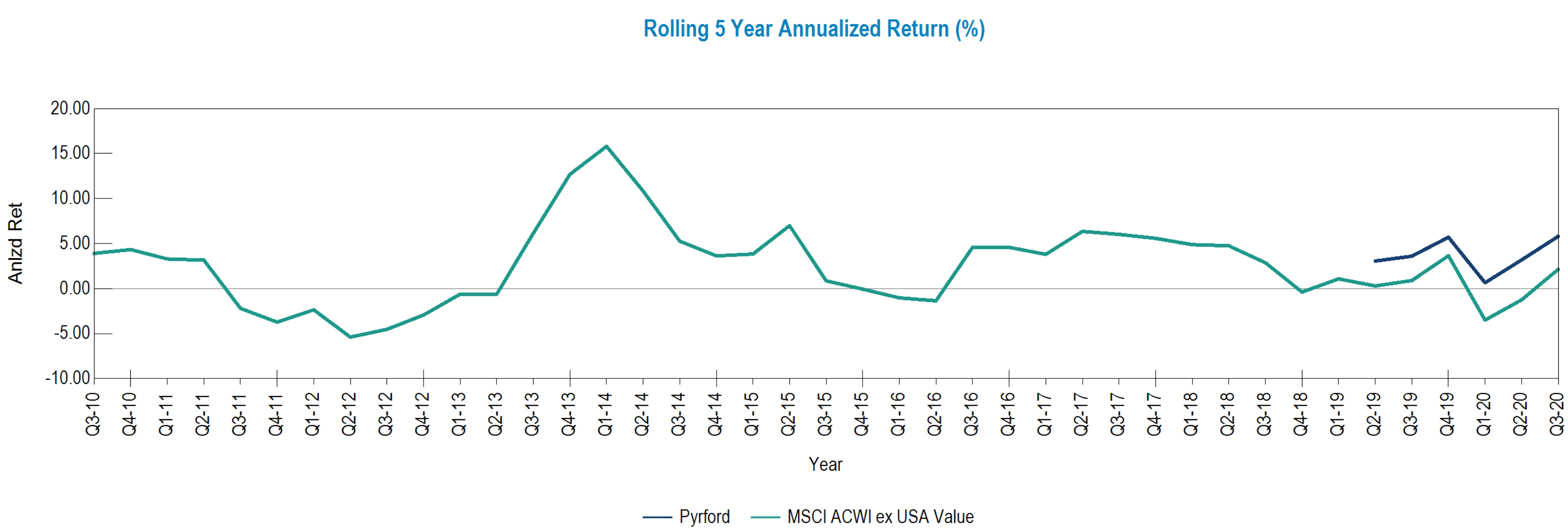
	Avg Wgt	Return	Contribution
KDDI CORP	2.09	-14.17	-0.30
WOODSIDE PETROLEUM LTD	1.76	-14.15	-0.25
ROYAL DUTCH SHELL PLC	1.15	-21.11	-0.24
VODAFONE GROUP PLC	1.42	-16.78	-0.24
RUBIS SA, PARIS	1.24	-16.49	-0.21
LEGAL & GENERAL GROUP PLC	2.16	-9.03	-0.19
BP PLC	0.80	-22.42	-0.18
ROYAL DUTCH SHELL PLC	0.76	-18.93	-0.14
ABC-MART INC	1.39	-10.04	-0.14
GLAXOSMITHKLINE PLC	1.88	-6.22	-0.12

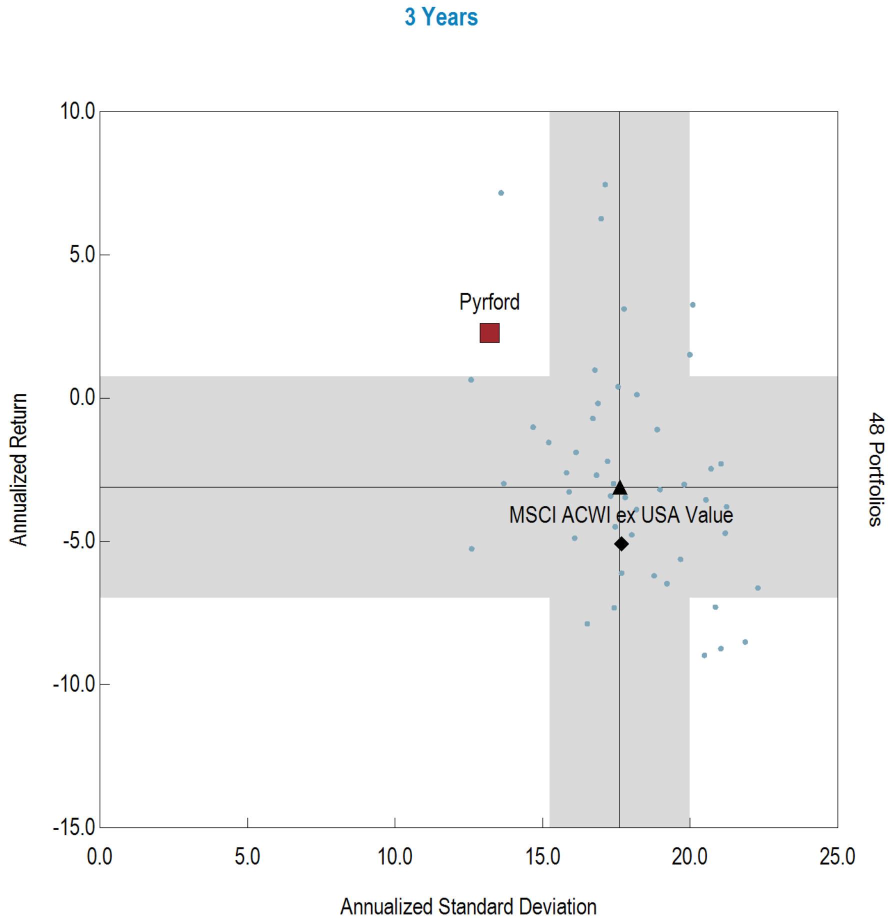
Unclassified sector allocation includes cash allocations.

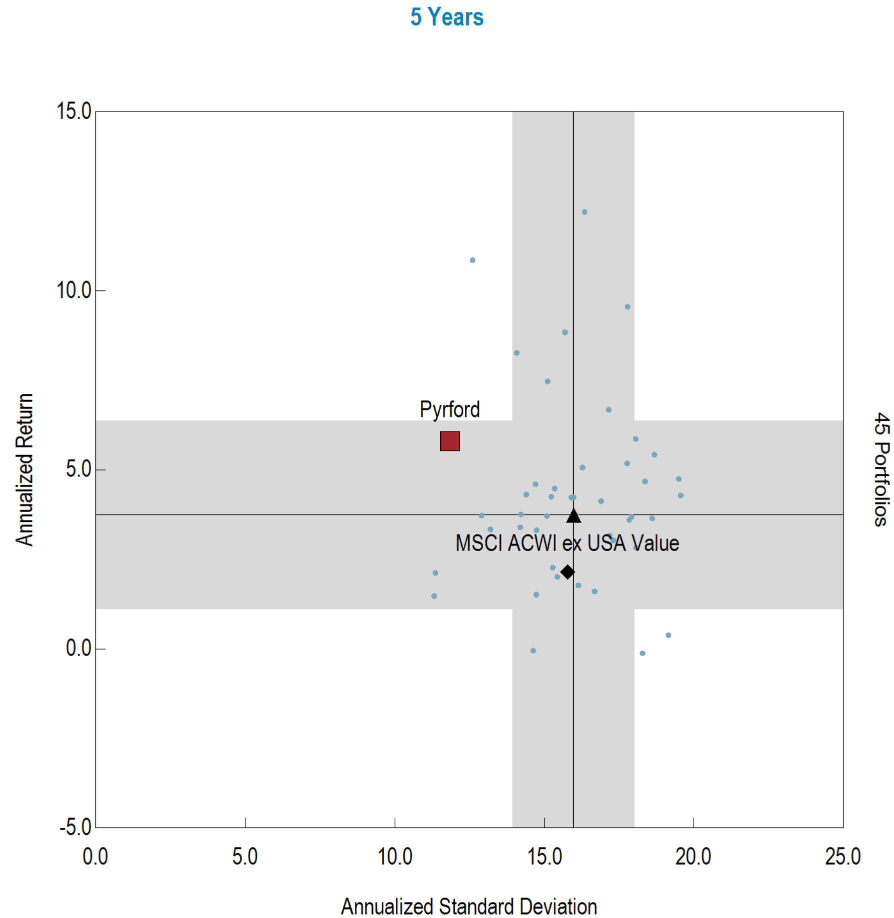


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	10.2		8.3		5.2		9.4		7.1		29.6		-10.2		38.8		22.3		8.7	
25th Percentile	6.8		-1.5		-0.9		4.7		4.8		24.0		-13.4		28.8		10.2		2.5	
Median	3.8		-5.1		-3.1		3.7		3.5		19.5		-15.2		26.0		6.2		-1.6	
75th Percentile	2.7		-7.5		-5.0		2.8		2.9		15.4		-17.9		23.0		3.3		-4.3	
95th Percentile	1.5		-11.4		-8.3		0.6		1.6		10.8		-21.9		15.0		-0.1		-11.6	
# of Portfolios	50		50		48		45		30		52		54		56		55		45	
● Pyrford	3.3	(61)	1.9	(17)	2.3	(10)	5.8	(17)	--	(--)	22.1	(35)	-10.1	(5)	19.8	(84)	3.4	(74)	-2.9	(59)
▲ MSCI ACWI ex USA Value	2.3	(87)	-10.8	(95)	-5.1	(76)	2.1	(80)	1.5	(96)	15.7	(74)	-14.0	(32)	22.7	(77)	8.9	(35)	-10.1	(93)


Rolling 3 Year Annualized Return (%)
Anlzd Ret
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Pyrford
MSCI ACWI ex USA Value


Rolling 5 Year Annualized Return (%)
Anlzd Ret
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Pyrford
MSCI ACWI ex USA Value





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	2.3%	13.2%	0.1
MSCI ACWI ex USA Value	-5.1%	17.7%	-0.4
eV ACWI ex-US Value Equity Gross Median	-3.1%	17.6%	-0.3

5 Years

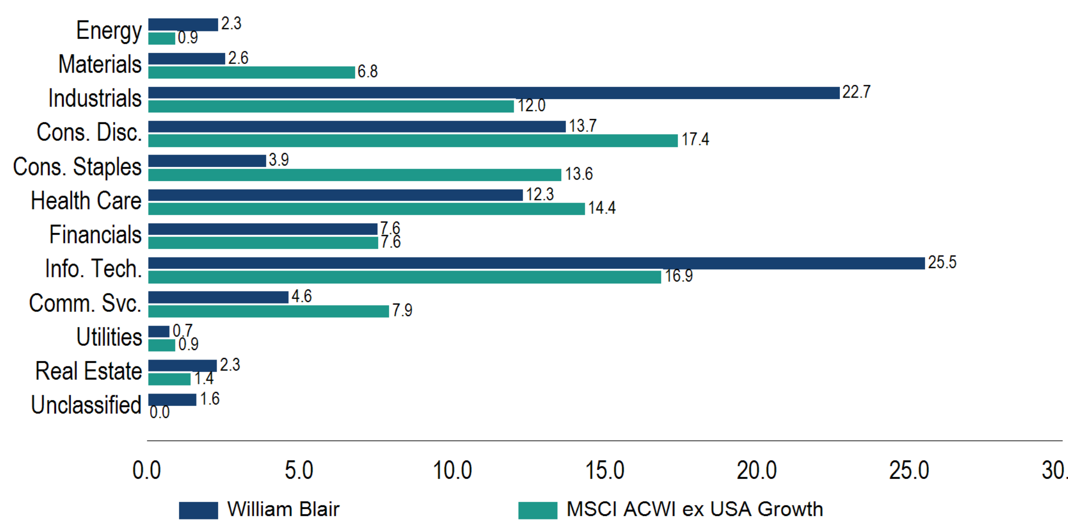
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	5.8%	11.8%	0.4
MSCI ACWI ex USA Value	2.1%	15.8%	0.1
eV ACWI ex-US Value Equity Gross Median	3.7%	16.0%	0.2

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

Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	182	1,050
Weighted Avg. Market Cap. ($B)	69.13	141.53
Median Market Cap. ($B)	12.04	8.80
Price To Earnings	37.40	24.46
Price To Book	5.52	4.09
Price To Sales	3.79	2.59
Return on Equity (%)	14.80	13.57
Yield (%)	0.89	1.45
Beta	1.17	1.00

Sector Allocation (%) vs MSCI ACWI ex USA Growth



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	84.8%	69.5%
Emerging*	15.2%	30.5%
Top 10 Largest Countries		
Japan	12.2%	16.6%
United Kingdom	10.5%	6.2%
France	10.0%	6.8%
Hong Kong	8.6%	2.3%
Switzerland	6.5%	8.3%
China*	5.8%	13.7%
Germany	5.8%	4.4%
Denmark	5.5%	2.9%
United States	5.4%	0.0%
Sweden	5.4%	2.7%
Total-Top 10 Largest Countries	**77.0%**	**63.7%**

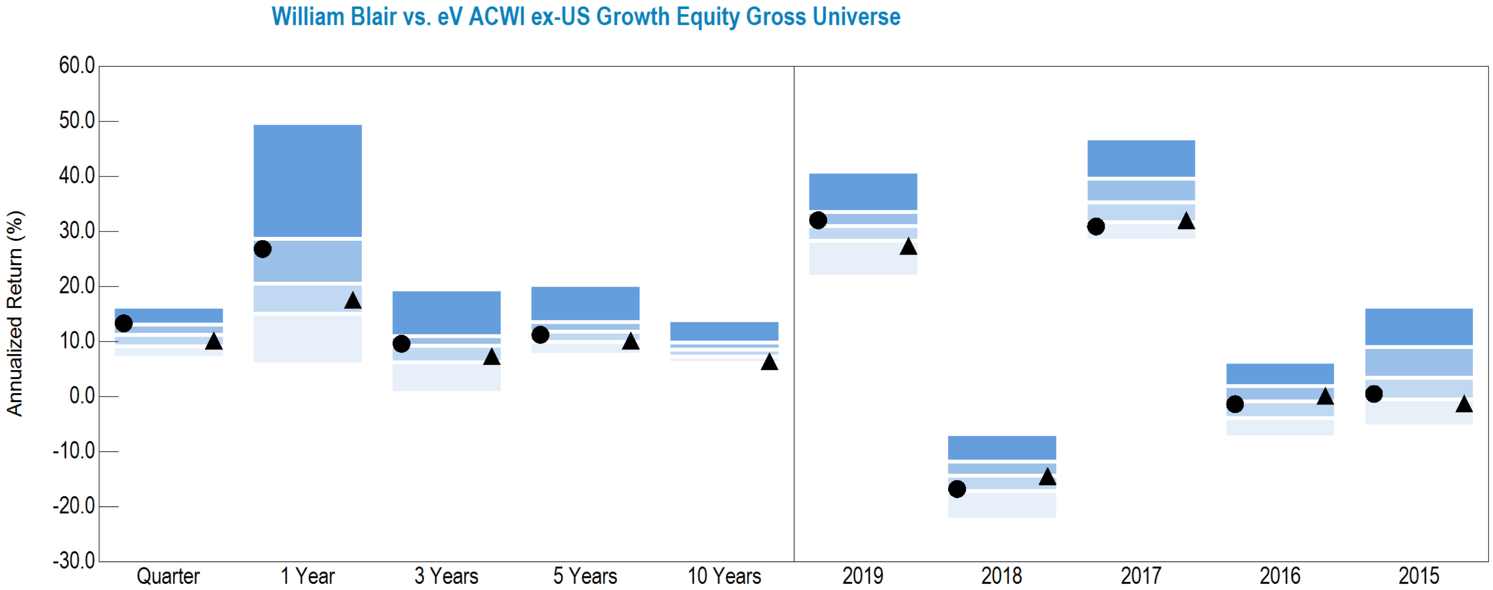
Top Contributors

	Avg Wgt	Return	Contribution
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.61	43.55	0.70
BABA-SW ORD	2.10	31.50	0.66
DSV PANALPINA A/S	1.47	33.90	0.50
SEA LTD	0.83	43.64	0.36
SIKA AG, BAAR	1.19	28.13	0.34
HEXAGON AB	1.14	29.37	0.33
ADYEN N.V	1.12	26.65	0.30
NESTE OYJ	0.84	34.79	0.29
KINGSPAN GROUP PLC	0.70	41.36	0.29
RELIANCE INDUSTRIES LTD	0.80	35.20	0.28

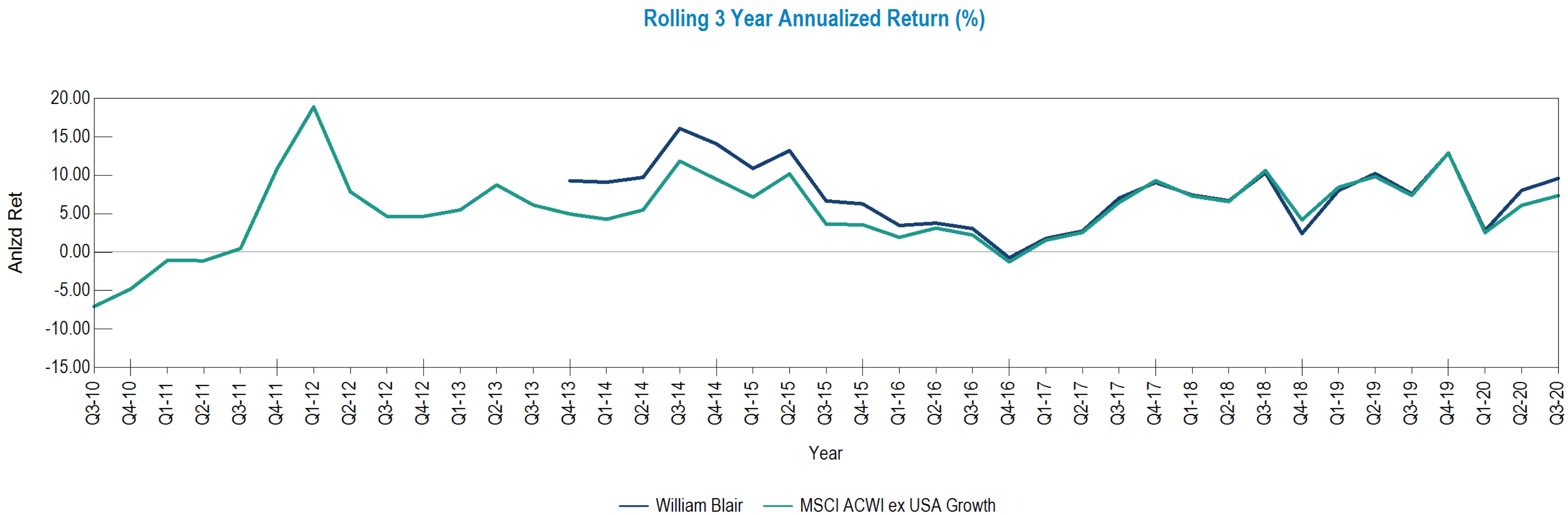
Bottom Contributors

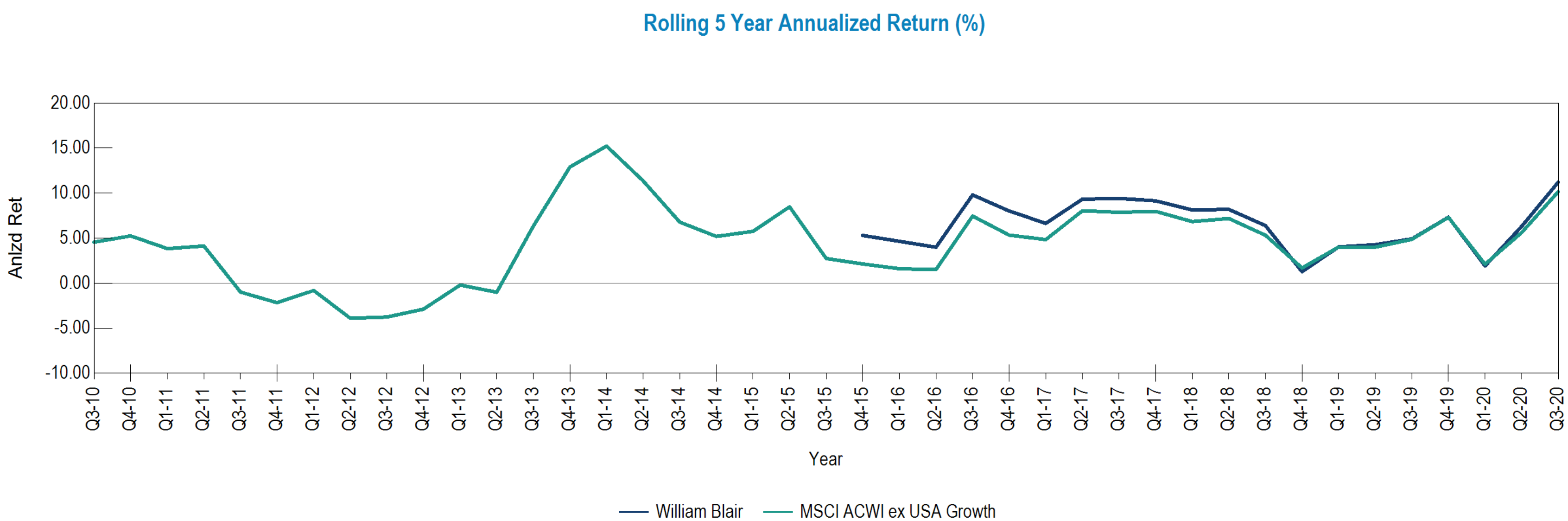
	Avg Wgt	Return	Contribution
SHISEIDO CO LTD	0.78	-9.75	-0.08
TEMENOS AG	0.58	-12.96	-0.08
PT BANK CENTRAL ASIA TBK	0.96	-7.54	-0.07
GREGGS PLC	0.26	-24.25	-0.06
TEAMVIEWER AG	0.54	-9.57	-0.05
SILERGY CORP	0.54	-9.35	-0.05
MTU AERO ENGINES AG	1.10	-3.86	-0.04
WORLDLINE	0.73	-5.08	-0.04
AK MEDICAL ORD	0.15	-19.75	-0.03
RUBIS SA, PARIS	0.14	-16.49	-0.02

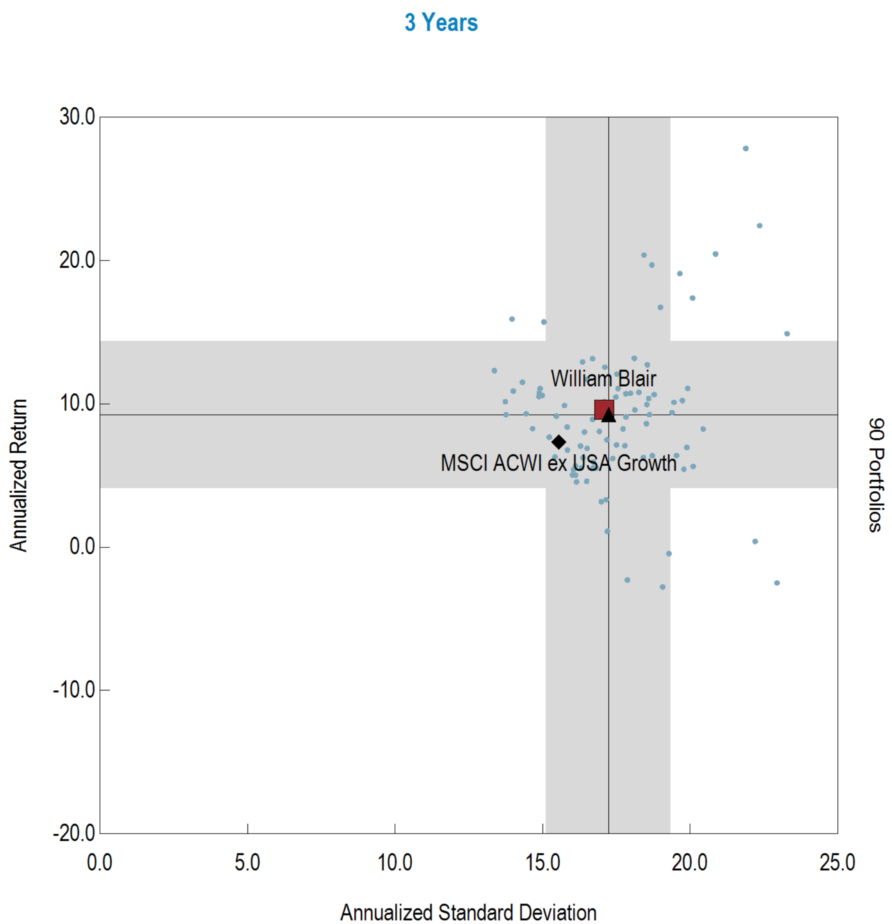
Unclassified sector allocation includes cash allocations.

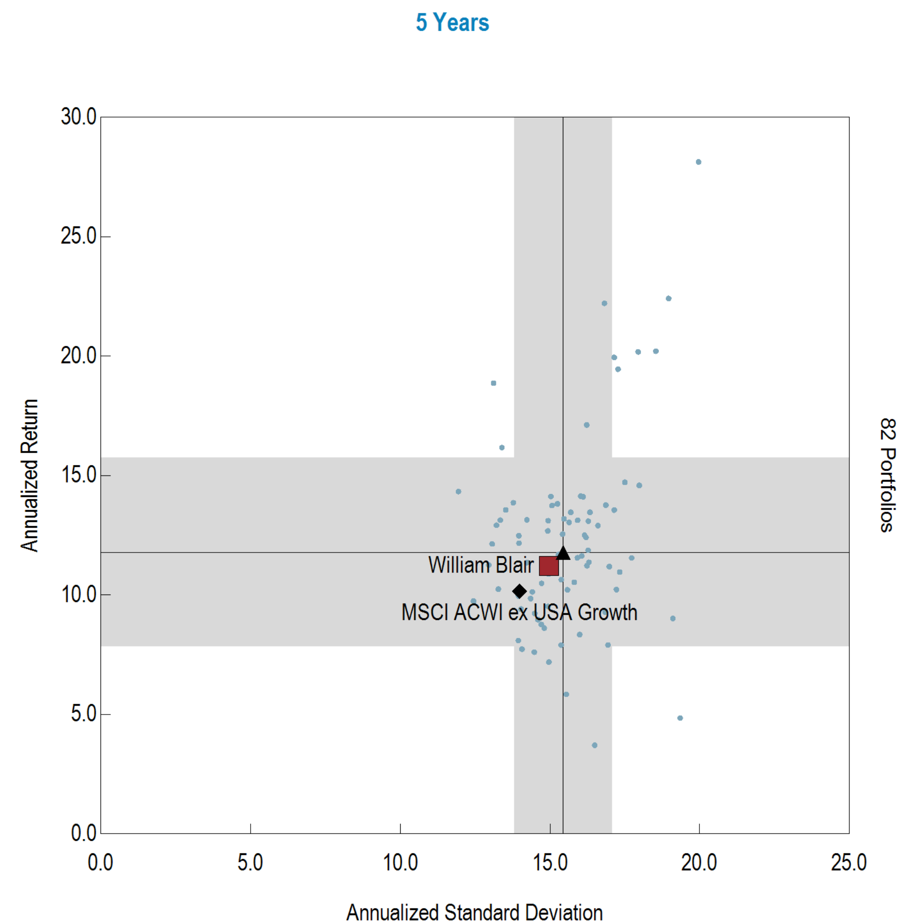


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	16.3		49.6		19.4		20.2		13.9		40.8		-6.8		46.8		6.3		16.3	
25th Percentile	13.2		28.6		11.0		13.6		9.9		33.6		-11.7		39.6		2.0		9.0	
Median	11.2		20.6		9.3		11.8		8.6		31.0		-14.3		35.3		-0.9		3.5	
75th Percentile	9.2		15.1		6.3		10.0		7.3		28.3		-17.2		31.8		-3.9		-0.5	
95th Percentile	7.1		5.9		0.7		7.6		6.2		21.8		-22.3		28.3		-7.4		-5.4	
# of Portfolios	93		93		90		82		57		93		82		94		90		70	
● William Blair	13.3	(23)	26.8	(31)	9.6	(44)	11.2	(60)	--	(--)	32.0	(39)	-16.8	(69)	30.9	(81)	-1.4	(55)	0.5	(69)
▲ MSCI ACWI ex USA Growth	10.2	(67)	17.5	(64)	7.3	(65)	10.2	(74)	6.4	(93)	27.3	(80)	-14.4	(51)	32.0	(75)	0.1	(45)	-1.3	(83)


Rolling 3 Year Annualized Return (%)
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
Anlzd Ret
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
William Blair
MSCI ACWI ex USA Growth


Rolling 5 Year Annualized Return (%)
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Anlzd Ret
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
William Blair
MSCI ACWI ex USA Growth





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	9.6%	17.1%	0.5
MSCI ACWI ex USA Growth	7.3%	15.5%	0.4
eV ACWI ex-US Growth Equity Gross Median	9.3%	17.2%	0.4

5 Years

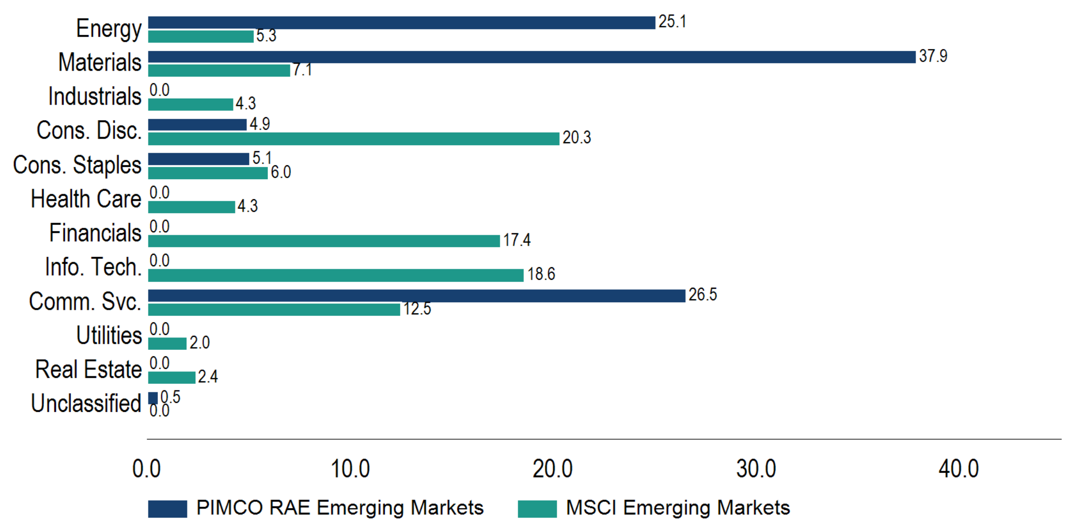
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	11.2%	15.0%	0.7
MSCI ACWI ex USA Growth	10.2%	14.0%	0.6
eV ACWI ex-US Growth Equity Gross Median	11.8%	15.4%	0.7

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	10	1,387
Weighted Avg. Market Cap. ($B)	19.46	178.51
Median Market Cap. ($B)	12.14	5.57
Price To Earnings	11.80	12.55
Price To Book	3.75	3.07
Price To Sales	0.42	1.15
Return on Equity (%)	1.11	9.69
Yield (%)	6.66	2.32
Beta	1.10	1.00

Sector Allocation (%) vs MSCI Emerging Markets



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	5.5%	0.0%
Emerging*	94.5%	100.0%
Top 10 Largest Countries		
Russia*	37.7%	2.5%
South Africa*	25.2%	3.6%
Korea*	21.5%	12.2%
United States	5.5%	0.0%
Mexico*	5.1%	1.6%
China*	4.9%	42.2%
Total-Top 10 Largest Countries	**100.0%**	**62.0%**

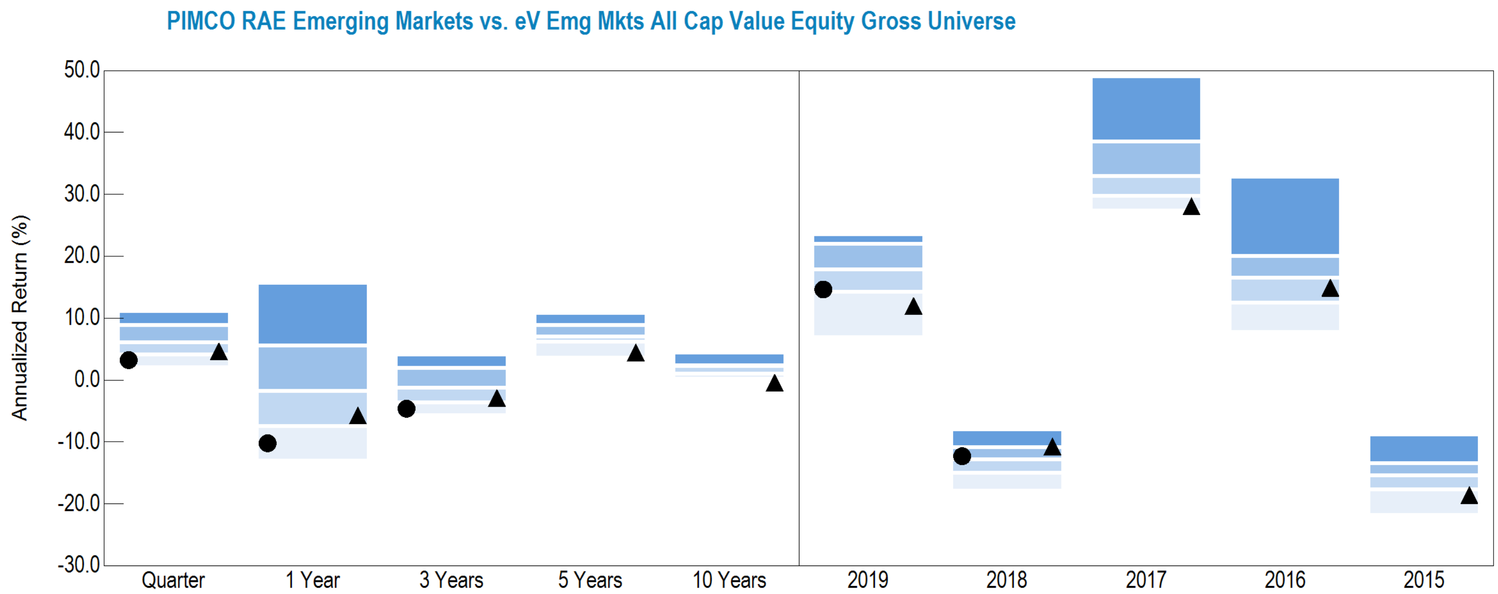
Top Contributors

	End Weight	Return	Contribution
GOLD FIELDS LTD	25.22	31.70	8.00
SOHU.COM LTD	5.01	115.64	5.79
TELEFONICA BRASIL SA	0.00	-11.60	0.00
AMERICA MOVIL SA DE CV, MEXICO	0.00	-1.58	0.00
COCA-COLA FEMSA SAB DE CV	2.37	-7.14	-0.17
GAZPROM NEFT PJSC	1.05	-18.59	-0.20
FOMENTO ECONOMICO MEXICAN SAB DE CV	2.69	-8.32	-0.22
KT CORP	21.52	-1.33	-0.29
MINING AND METALLURGIAL CO NORILSK NICKEL PJSC	12.64	-7.65	-0.97
VIPSHOP HOLDINGS LIMITED	4.94	-21.45	-1.06

Bottom Contributors

	End Weight	Return	Contribution
OIL CO LUKOIL PJSC	24.01	-16.76	-4.02
VIPSHOP HOLDINGS LIMITED	4.94	-21.45	-1.06
MINING AND METALLURGIAL CO NORILSK NICKEL PJSC	12.64	-7.65	-0.97
KT CORP	21.52	-1.33	-0.29
FOMENTO ECONOMICO MEXICAN SAB DE CV	2.69	-8.32	-0.22
GAZPROM NEFT PJSC	1.05	-18.59	-0.20
COCA-COLA FEMSA SAB DE CV	2.37	-7.14	-0.17
TELEFONICA BRASIL SA	0.00	-11.60	0.00
AMERICA MOVIL SA DE CV, MEXICO	0.00	-1.58	0.00

Unclassified sector allocation includes cash allocations.



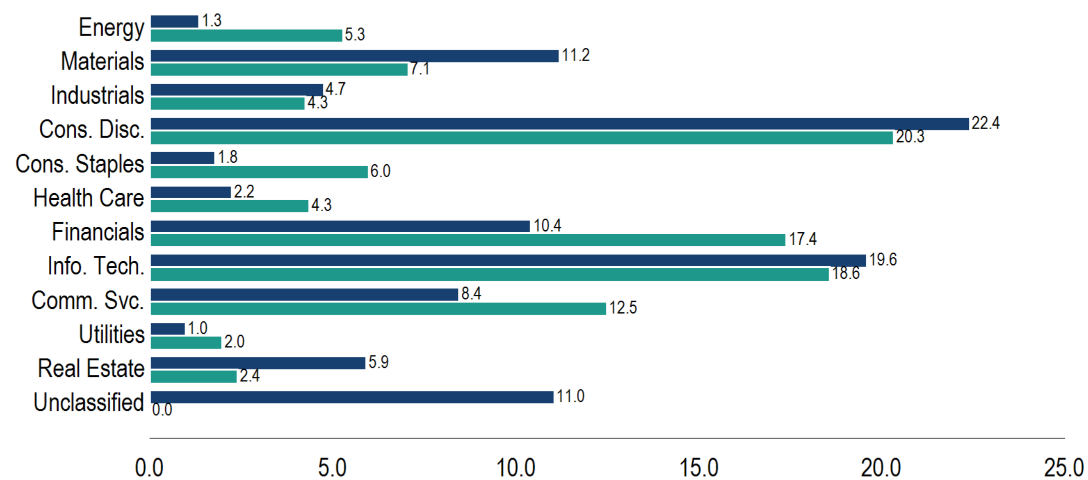
	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
	Return (Rank)																			
5th Percentile	11.1		15.7		4.1		10.8		4.4		23.5		-7.9		49.0		32.8		-8.8	
25th Percentile	9.0		5.7		2.0		9.0		2.5		22.1		-10.8		38.6		20.1		-13.4	
Median	6.2		-1.7		-1.2		7.1		2.3		18.0		-12.7		33.0		16.6		-15.3	
75th Percentile	4.2		-7.4		-3.6		6.2		1.1		14.4		-14.9		29.8		12.6		-17.6	
95th Percentile	2.1		-13.0		-5.6		3.7		0.2		7.0		-17.8		27.4		7.8		-21.7	
# of Portfolios	37		37		33		30		15		33		36		37		38		35	
● **PIMCO RAE Emerging Markets**	3.2	(83)	-10.2	(87)	-4.6	(85)	--	(--)	--	(--)	14.6	(72)	-12.3	(44)	--	(--)	--	(--)	--	(--)
▲ **MSCI Emerging Markets Value NR**	4.7	(69)	-5.7	(71)	-2.9	(71)	4.4	(95)	-0.4	(99)	12.0	(86)	-10.7	(25)	28.1	(90)	14.9	(59)	-18.6	(85)

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

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	70	1,387
Weighted Avg. Market Cap. ($B)	200.56	178.51
Median Market Cap. ($B)	10.31	5.57
Price To Earnings	11.58	12.55
Price To Book	3.32	3.07
Price To Sales	0.98	1.15
Return on Equity (%)	7.83	9.69
Yield (%)	1.68	2.32
Beta	1.17	1.00

Sector Allocation (%) vs MSCI Emerging Markets



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	34.7%	0.0%
Emerging*	64.7%	100.0%
Frontier**	0.6%	0.0%
Top 10 Largest Countries		
Korea*	15.4%	12.2%
Hong Kong	14.7%	0.0%
China*	12.0%	42.2%
India*	10.0%	8.3%
Taiwan*	8.5%	12.9%
United States	8.0%	0.0%
South Africa*	7.6%	3.6%
Brazil*	7.0%	4.6%
Netherlands	6.8%	0.0%
United Kingdom	2.9%	0.0%
Total-Top 10 Largest Countries	**94.9%**	**83.6%**

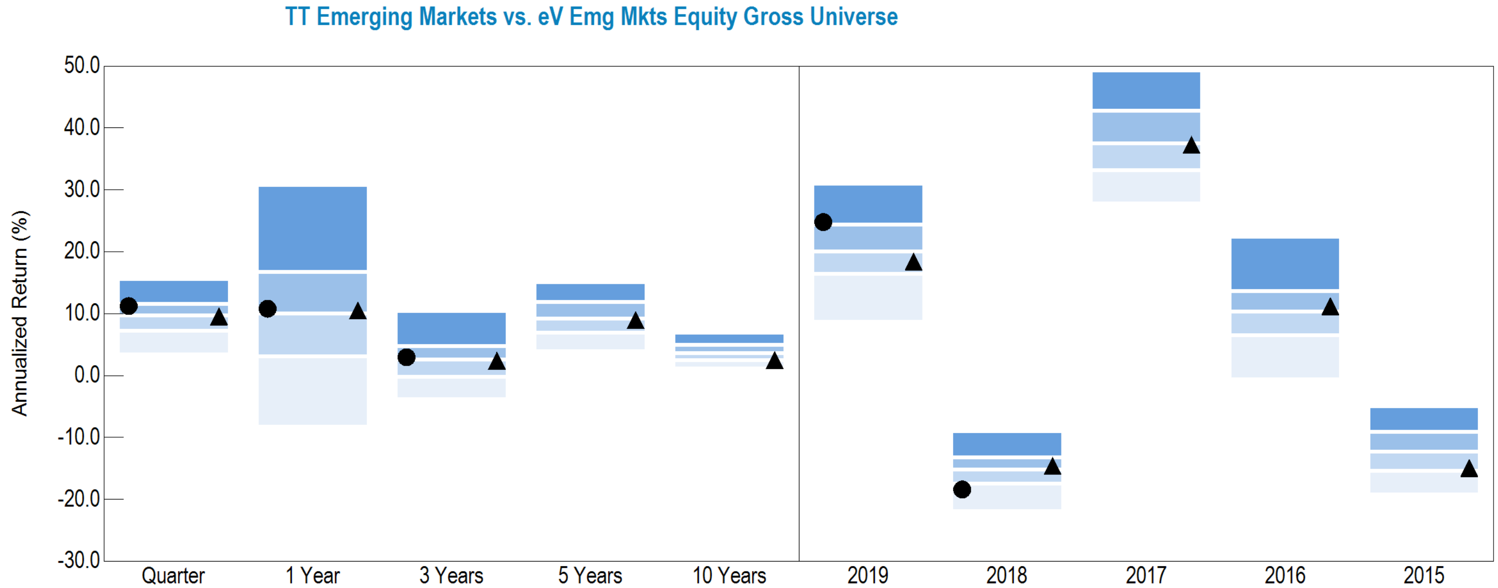
Top Contributors

	End Weight	Return	Contribution
ALIBABA GROUP HOLDING LTD	10.28	36.29	3.73
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.43	41.41	2.25
HYUNDAI MOTOR CO	1.20	88.23	1.06
RELIANCE INDUSTRIES LTD	1.34	73.34	0.98
SAMSUNG ELECTRONICS CO LTD	7.36	12.67	0.93
SIBANYE STILLWATER ORD	1.68	29.02	0.49

Bottom Contributors

	End Weight	Return	Contribution
VEON LTD	0.96	-30.00	-0.29
PING AN HEALTHCARE AND TECHNOLOGY COMPANY LIMITED	1.27	-15.81	-0.20
YDUQS PARTICIPACOES SA	0.92	-20.55	-0.19
SUNAC CHINA HOLDINGS LTD	2.71	-6.93	-0.19
LOJAS AMERICANAS SA	1.29	-13.95	-0.18
ALIBABA HEALTH INFORMATION TECHNOLOGY LTD	0.97	-16.45	-0.16
NASPERS LTD	5.88	-2.65	-0.16
ZTO EXPRESS (CAYMAN) INC	0.82	-18.50	-0.15

Unclassified sector allocation includes cash allocations.



Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	15.6		30.8		10.4		15.0		6.8		30.9		-9.0		49.2		22.4		-5.0	
25th Percentile	11.7		16.8		4.8		12.0		5.1		24.4		-13.2		42.8		13.7		-9.0	
Median	9.7		10.1		2.6		9.2		3.7		20.1		-15.2		37.6		10.4		-12.2	
75th Percentile	7.3		3.1		-0.1		7.0		2.5		16.5		-17.4		33.2		6.6		-15.3	
95th Percentile	3.4		-8.2		-3.7		4.0		1.2		8.8		-21.8		27.8		-0.6		-19.2	
# of Portfolios	374		374		341		308		163		386		355		343		337		273	
● TT Emerging Markets	11.2	(29)	10.8	(47)	3.0	(45)	--	(--)	--	(--)	24.8	(24)	-18.4	(83)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets	9.6	(53)	10.5	(48)	2.4	(54)	9.0	(54)	2.5	(75)	18.4	(63)	-14.6	(43)	37.3	(53)	11.2	(45)	-14.9	(70)

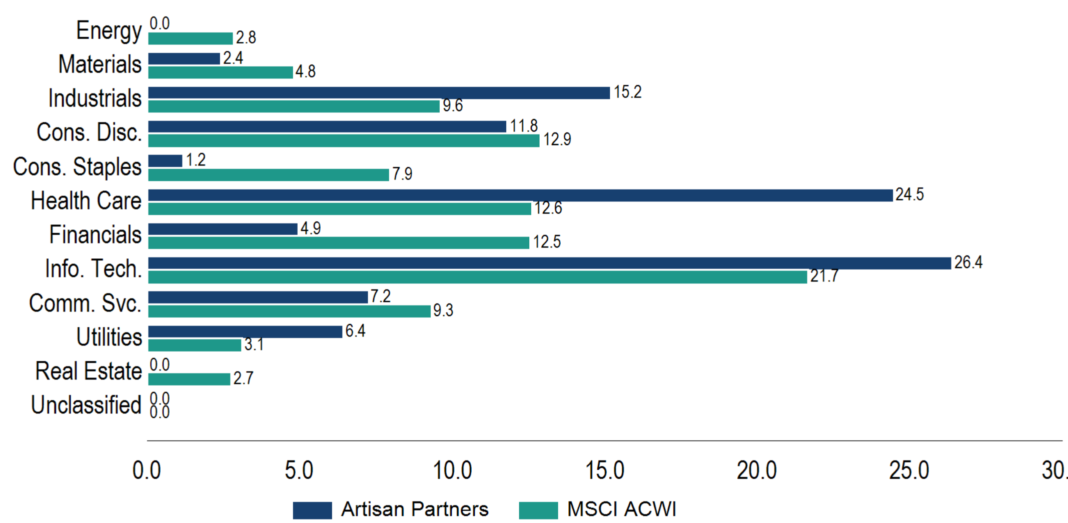
Global Equity Managers

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

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	45	2,993
Weighted Avg. Market Cap. ($B)	141.19	287.63
Median Market Cap. ($B)	54.67	9.12
Price To Earnings	37.96	20.73
Price To Book	5.70	3.73
Price To Sales	5.01	1.66
Return on Equity (%)	7.05	6.87
Yield (%)	0.84	2.04
Beta	1.04	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	99.0%	87.7%
Emerging*	1.0%	12.3%
Top 10 Largest Countries		
United States	55.6%	58.3%
United Kingdom	8.9%	3.5%
Hong Kong	7.6%	0.9%
Denmark	7.3%	0.7%
Netherlands	5.0%	1.2%
Sweden	3.9%	0.9%
Switzerland	3.8%	2.8%
Japan	3.1%	6.9%
Spain	2.4%	0.6%
Germany	1.3%	2.5%
Total-Top 10 Largest Countries	**99.0%**	**78.3%**

Top Contributors

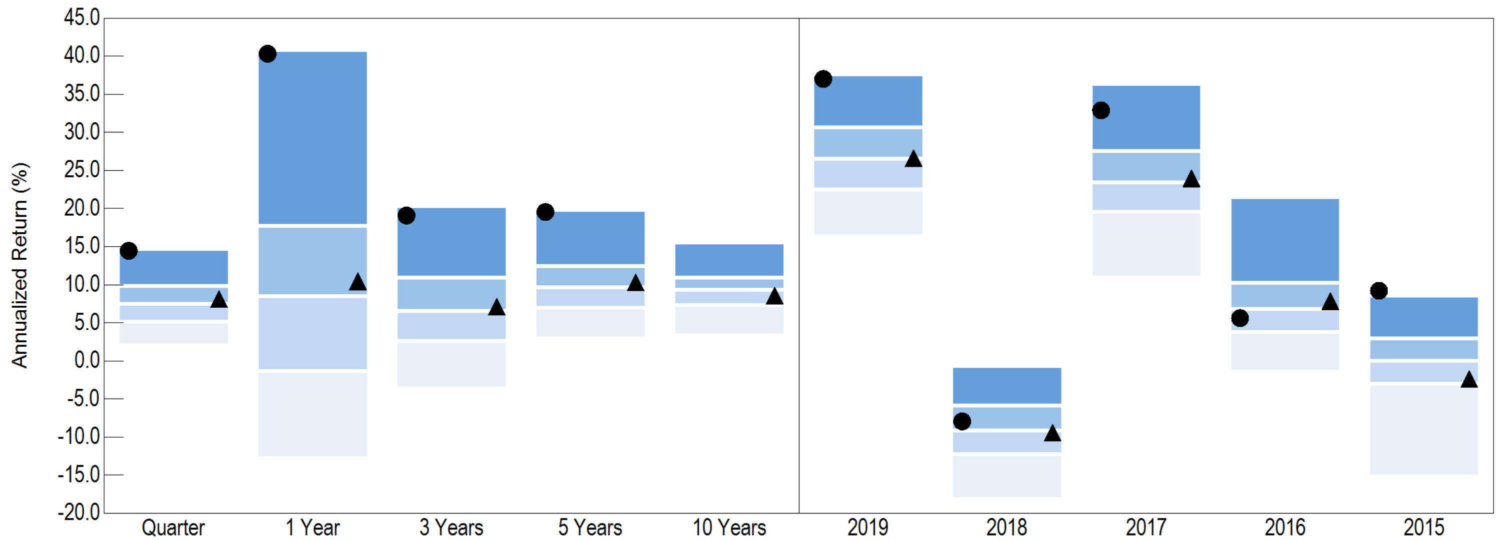
	Avg Wgt	Return	Contribution
ZOOM VIDEO COMMUNICATIONS INC	3.15	85.42	2.69
TECHTRONIC INDUSTRIES CO LTD	4.48	34.77	1.56
VESTAS WIND SYSTEMS A/S	2.10	59.39	1.25
ADVANCED MICRO DEVICES INC	2.15	55.84	1.20
LOWE'S COS INC	4.67	23.22	1.09
LONZA GROUP AG, ZUERICH	4.68	17.36	0.81
VEEVA SYSTEMS INC	3.12	19.95	0.62

Bottom Contributors

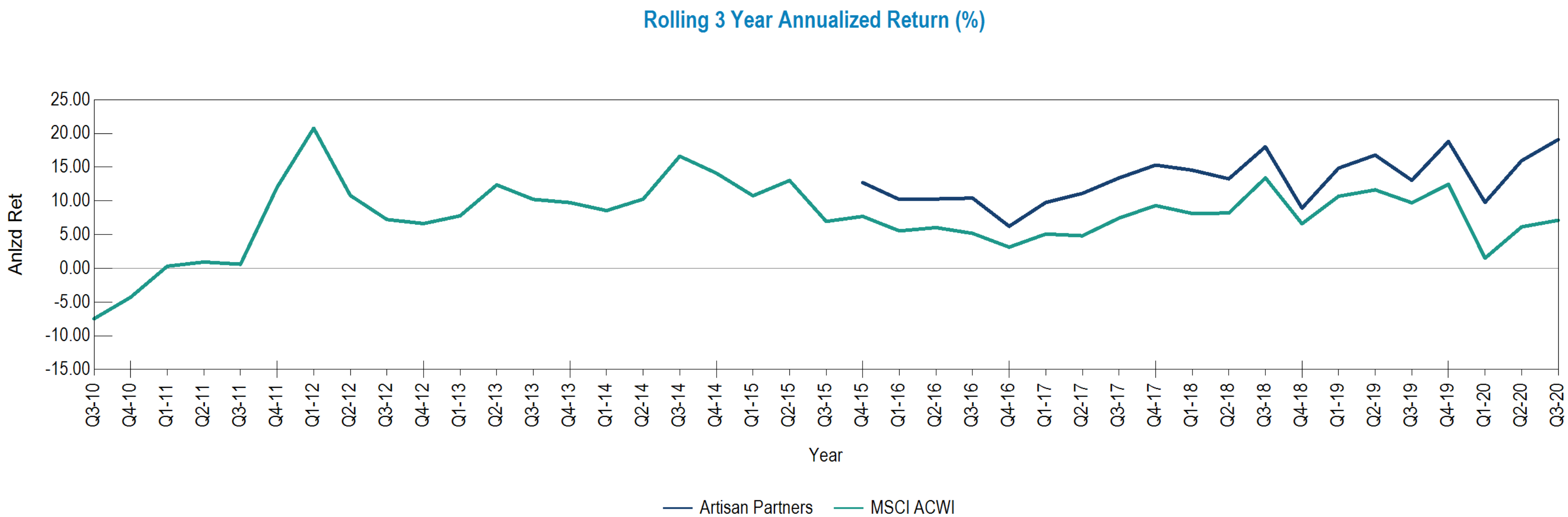
	Avg Wgt	Return	Contribution
ILLUMINA INC	1.80	-16.54	-0.30
SPOTIFY TECHNOLOGY S.A	1.37	-6.05	-0.08
NOTRE DAME INTERMEDICA PARTICIPACOES SA	1.06	-6.69	-0.07
ARISTA NETWORKS INC	1.87	-1.48	-0.03
ATLASSIAN CORP PLC	1.04	0.84	0.01
KONINKLIJKE PHILIPS NV	1.38	1.02	0.01
L3HARRIS TECHNOLOGIES INC	2.60	0.57	0.01
BURBERRY GROUP	1.23	1.47	0.02
BANK OF AMERICA CORP	1.61	2.14	0.03
TENCENT HOLDINGS LTD	1.66	2.59	0.04

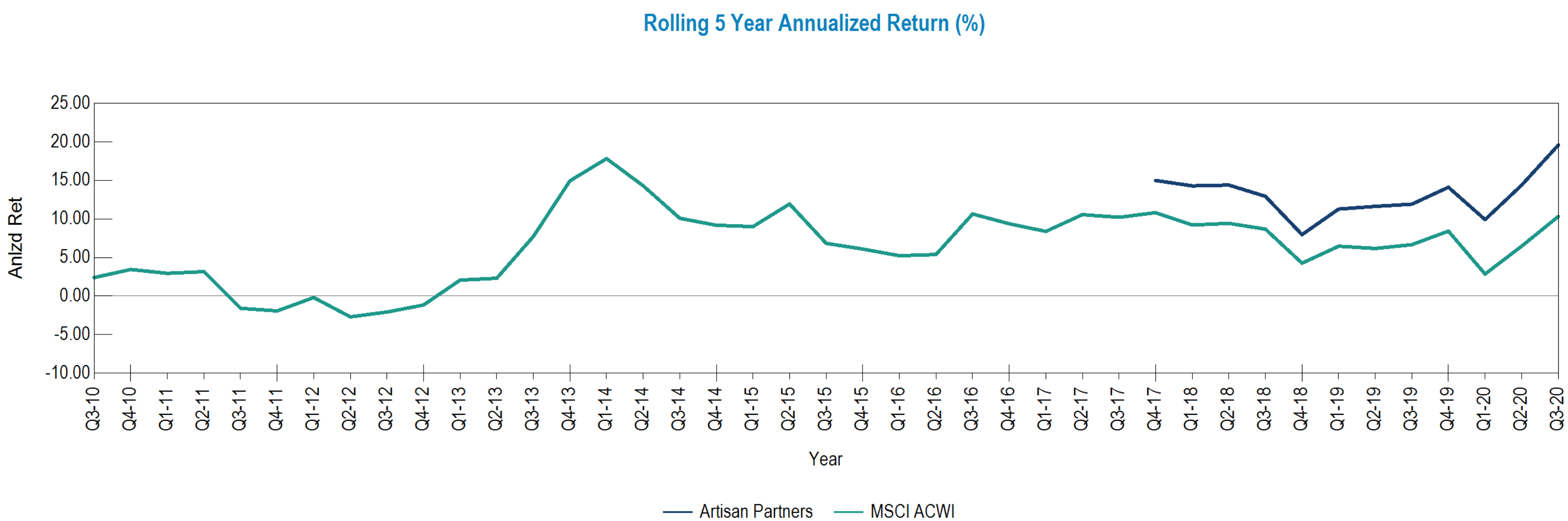
Unclassified sector allocation includes cash allocations.

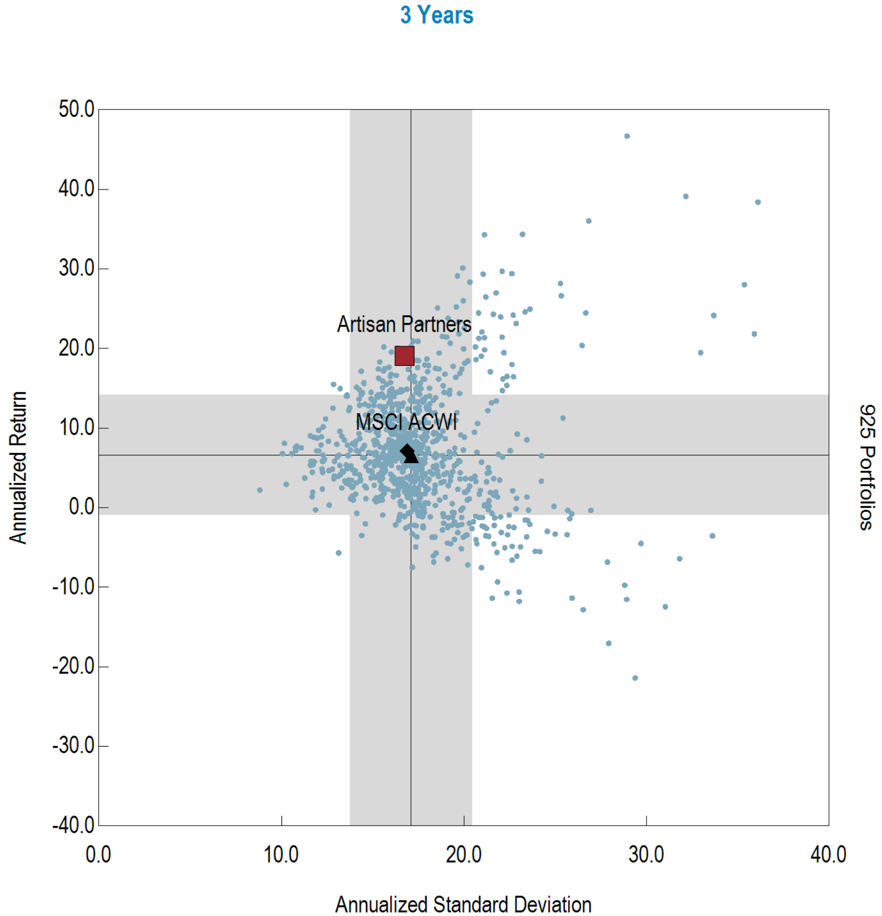
Artisan Partners vs. eV All Global Equity Gross Universe

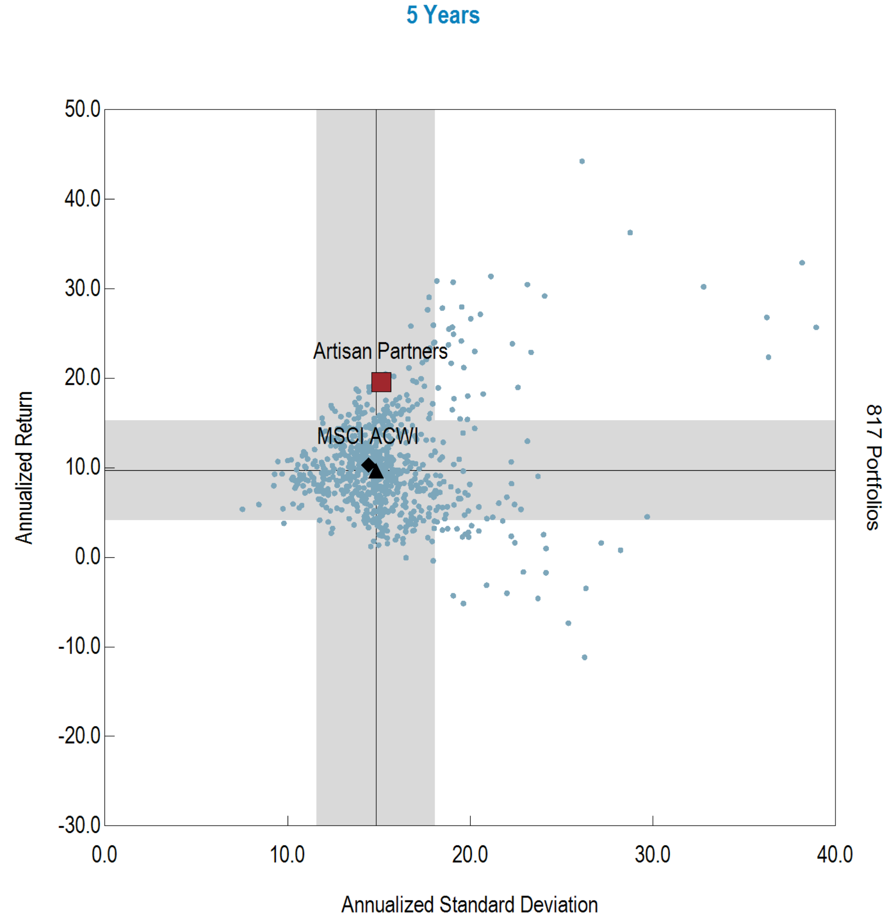


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	14.6		40.7		20.3		19.8		15.5		37.6		-0.7		36.3		21.5		8.5	
25th Percentile	9.9		17.8		11.0		12.4		11.0		30.7		-5.8		27.6		10.3		3.0	
Median	7.6		8.5		6.6		9.7		9.4		26.6		-9.1		23.5		6.8		0.1	
75th Percentile	5.2		-1.3		2.6		7.1		7.4		22.6		-12.2		19.6		3.9		-2.9	
95th Percentile	2.1		-12.7		-3.6		3.0		3.4		16.5		-18.1		11.0		-1.4		-15.1	
# of Portfolios	1,004		1,003		925		817		519		989		920		880		842		692	
● Artisan Partners	14.4	(6)	40.3	(6)	19.1	(7)	19.5	(6)	--	(--)	37.0	(7)	-7.9	(40)	32.9	(11)	5.6	(61)	9.2	(4)
▲ MSCI ACWI	8.1	(43)	10.4	(46)	7.1	(47)	10.3	(45)	8.5	(65)	26.6	(50)	-9.4	(53)	24.0	(47)	7.9	(42)	-2.4	(73)


Rolling 3 Year Annualized Return (%)
Anlzd Ret
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Artisan Partners
MSCI ACWI


Rolling 5 Year Annualized Return (%)
Anlzd Ret
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Artisan Partners
MSCI ACWI





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	19.1%	16.8%	1.0
MSCI ACWI	7.1%	16.9%	0.3
eV All Global Equity Gross Median	6.6%	17.1%	0.3

5 Years

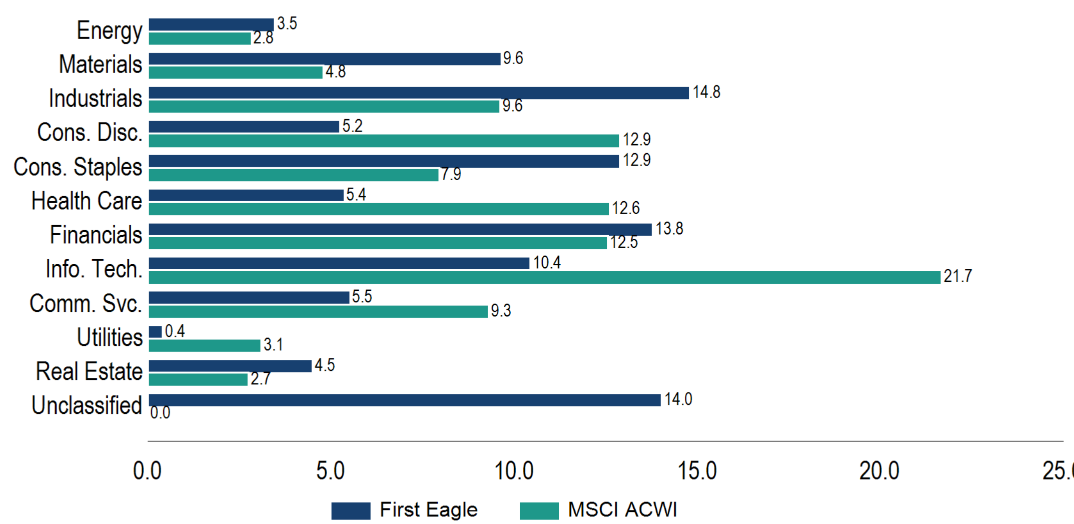
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Artisan Partners	19.5%	15.1%	1.2
MSCI ACWI	10.3%	14.4%	0.6
eV All Global Equity Gross Median	9.7%	14.8%	0.6

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	135	2,993
Weighted Avg. Market Cap. ($B)	104.80	287.63
Median Market Cap. ($B)	22.00	9.12
Price To Earnings	19.46	20.73
Price To Book	2.94	3.73
Price To Sales	1.49	1.66
Return on Equity (%)	6.65	6.87
Yield (%)	2.22	2.04
Beta	0.76	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.9%	87.7%
Emerging*	6.1%	12.3%
Top 10 Largest Countries		
United States	58.2%	58.3%
Japan	11.1%	6.9%
France	5.1%	2.8%
United Kingdom	4.7%	3.5%
Canada	4.0%	2.7%
Korea*	2.5%	1.5%
Switzerland	2.3%	2.8%
Belgium	1.6%	0.3%
Singapore	1.5%	0.3%
Sweden	1.3%	0.9%
Total-Top 10 Largest Countries	**92.3%**	**80.0%**

Top Contributors

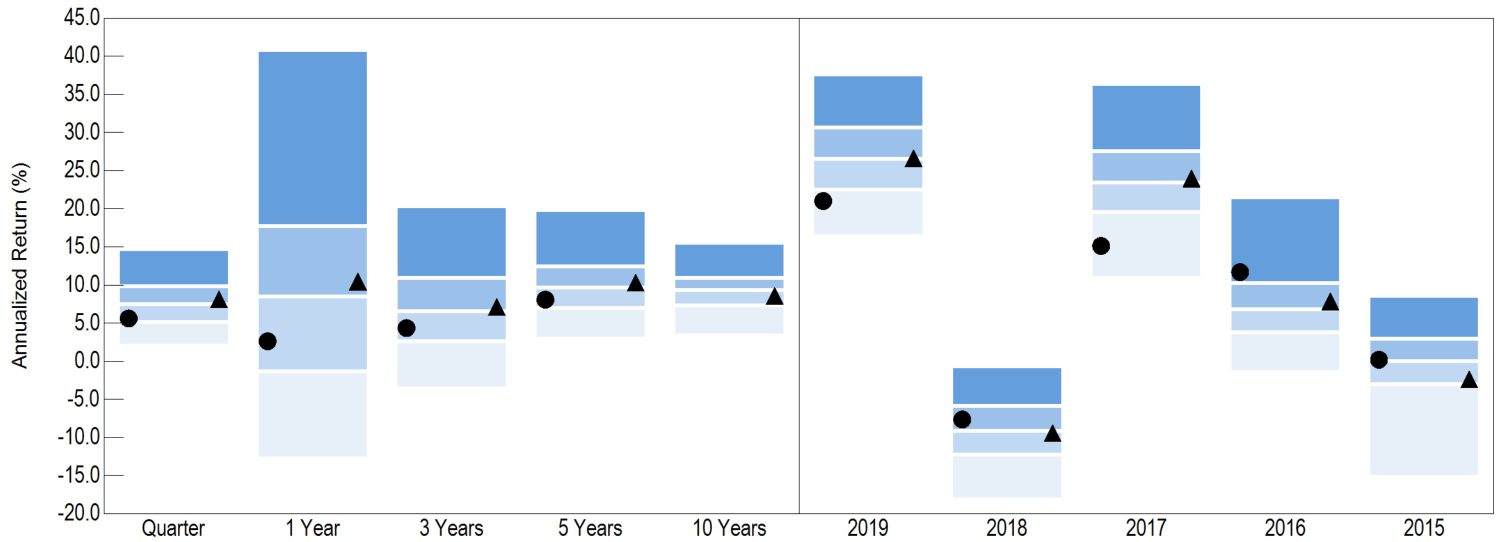
	End Weight	Return	Contribution
SPDR GOLD TRUST	12.81	5.82	0.75
DEERE & CO	1.61	41.52	0.67
C.H. ROBINSON WORLDWIDE INC.	1.89	29.93	0.57
COMCAST CORP	2.68	18.68	0.50
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.12	43.55	0.49
WEYERHAEUSER CO	1.34	26.98	0.36
NUTRIEN LTD	1.19	23.64	0.28
ORACLE CORP	3.13	8.47	0.27
SALESFORCE.COM INC	0.77	34.16	0.26
FRESNILLO PLC	0.50	48.78	0.25

Bottom Contributors

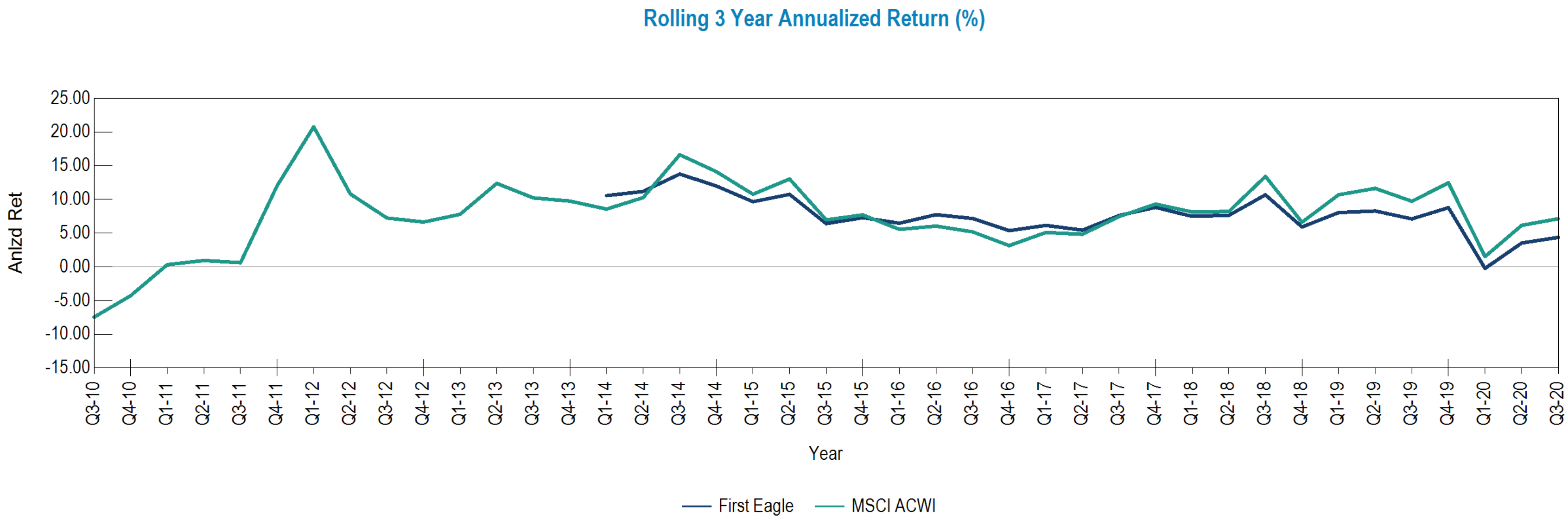
	End Weight	Return	Contribution
EXXON MOBIL CORP	1.62	-21.72	-0.35
NATIONAL OILWELL VARCO INC	0.57	-26.04	-0.15
SCHLUMBERGER LTD	0.87	-14.82	-0.13
BANK OF NEW YORK MELLON CORP (THE)	1.16	-10.39	-0.12
AMBEV SA	0.66	-14.39	-0.10
IMPERIAL OIL LTD	0.37	-24.70	-0.09
BRITISH AMERICAN TOBACCO PLC	1.76	-4.88	-0.09
CK ASSET HOLDINGS	0.38	-17.61	-0.07
EQUITY RESIDENTIAL	0.54	-11.69	-0.06
DANONE	1.76	-3.13	-0.06

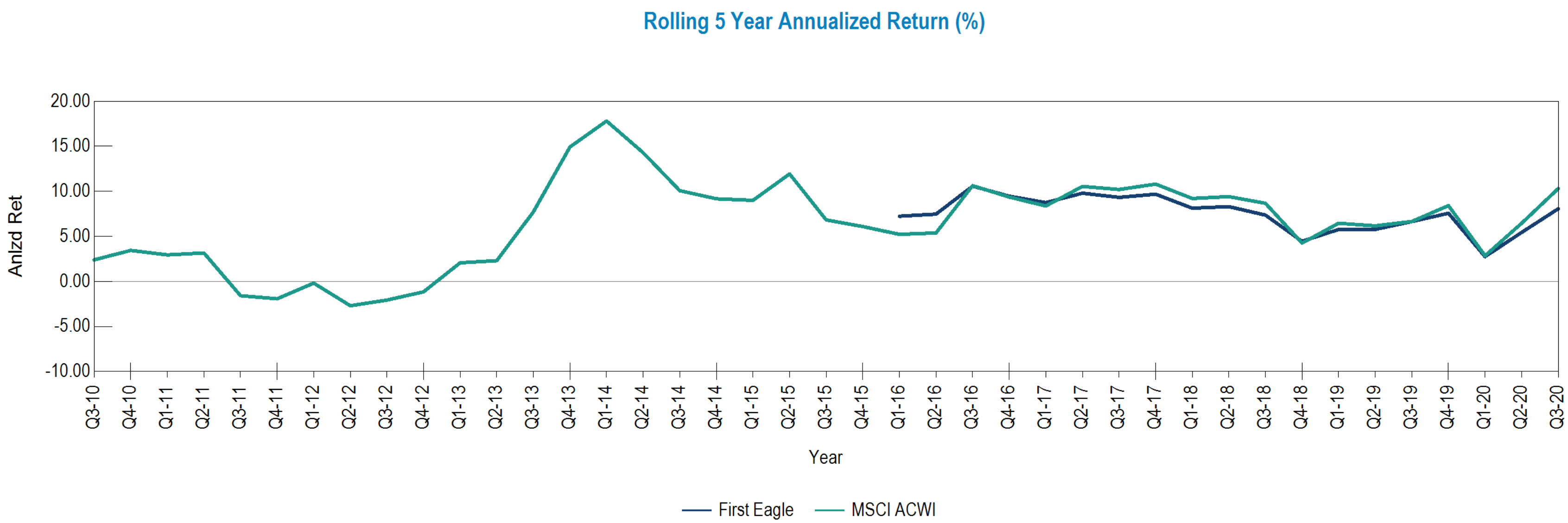
Unclassified sector allocation includes cash allocations and Gold allocations (12.8% as of 9/30/2020).

First Eagle vs. eV All Global Equity Gross Universe

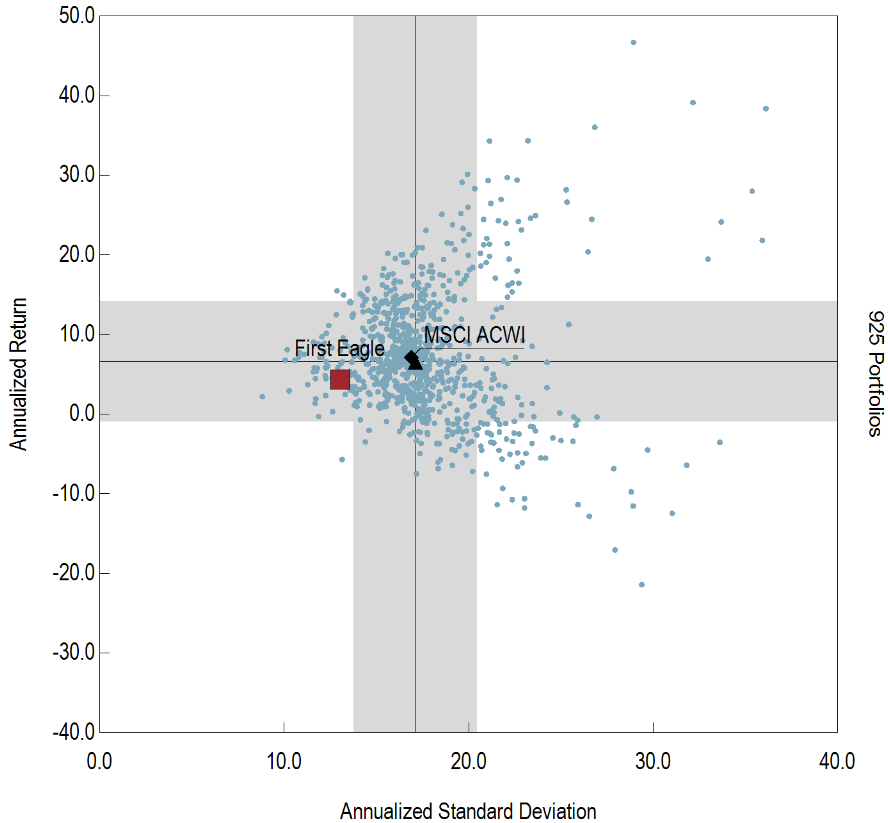


Return (Rank)	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
5th Percentile	14.6		40.7		20.3		19.8		15.5		37.6		-0.7		36.3		21.5		8.5	
25th Percentile	9.9		17.8		11.0		12.4		11.0		30.7		-5.8		27.6		10.3		3.0	
Median	7.6		8.5		6.6		9.7		9.4		26.6		-9.1		23.5		6.8		0.1	
75th Percentile	5.2		-1.3		2.6		7.1		7.4		22.6		-12.2		19.6		3.9		-2.9	
95th Percentile	2.1		-12.7		-3.6		3.0		3.4		16.5		-18.1		11.0		-1.4		-15.1	
# of Portfolios	1,004		1,003		925		817		519		989		920		880		842		692	
● First Eagle	5.6	(72)	2.6	(67)	4.3	(66)	8.1	(67)	--	(--)	21.0	(82)	-7.6	(38)	15.1	(89)	11.7	(19)	0.2	(49)
▲ MSCI ACWI	8.1	(43)	10.4	(46)	7.1	(47)	10.3	(45)	8.5	(65)	26.6	(50)	-9.4	(53)	24.0	(47)	7.9	(42)	-2.4	(73)

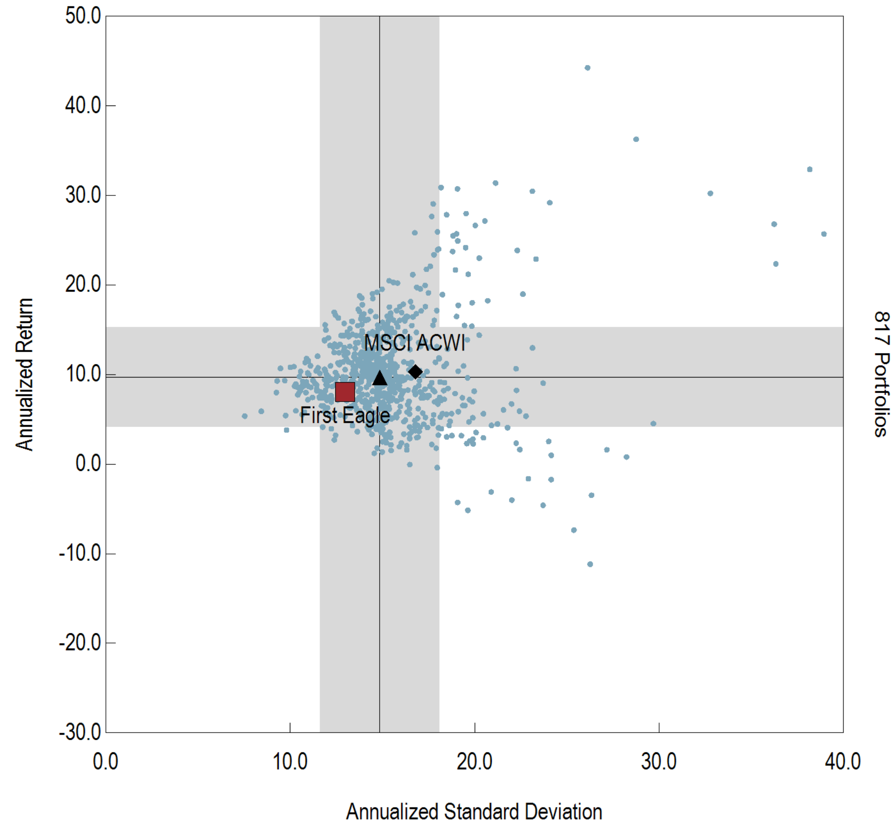

Rolling 3 Year Annualized Return (%)
Anlzd Ret
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
First Eagle
MSCI ACWI


Rolling 5 Year Annualized Return (%)
Anlzd Ret
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
First Eagle
MSCI ACWI

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	4.3%	13.0%	0.2
MSCI ACWI	7.1%	16.9%	0.3
eV All Global Equity Gross Median	6.6%	17.1%	0.3

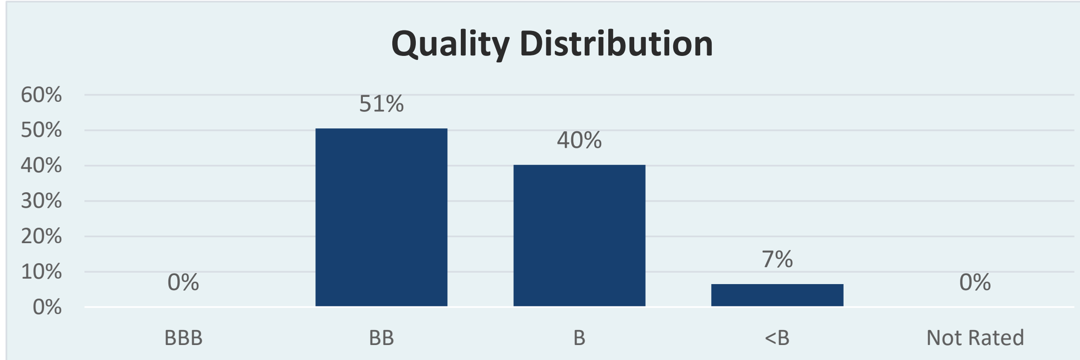
5 Years

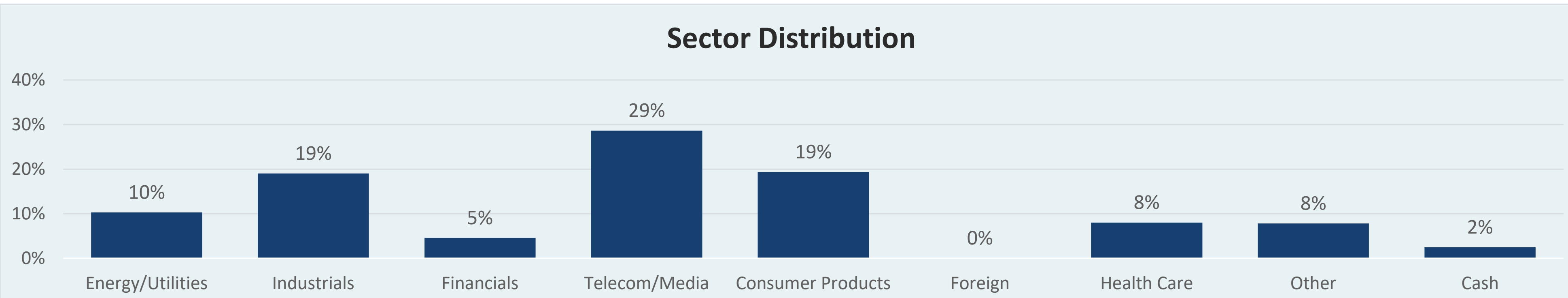
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
ırst Eagle	8.1%	11.1%	0.6
ISCI ACWI	10.3%	14.4%	0.6
√ All Global Equity Gross Median	9.7%	14.8%	0.6

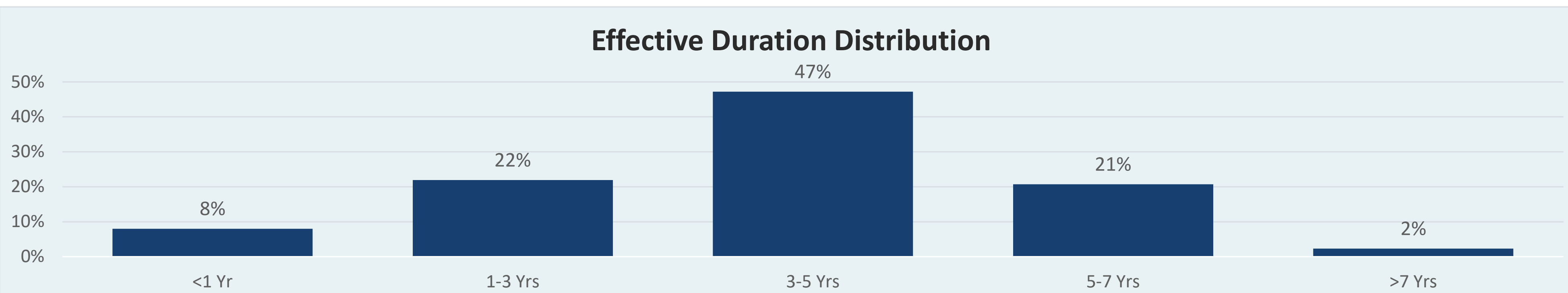
High Yield Managers

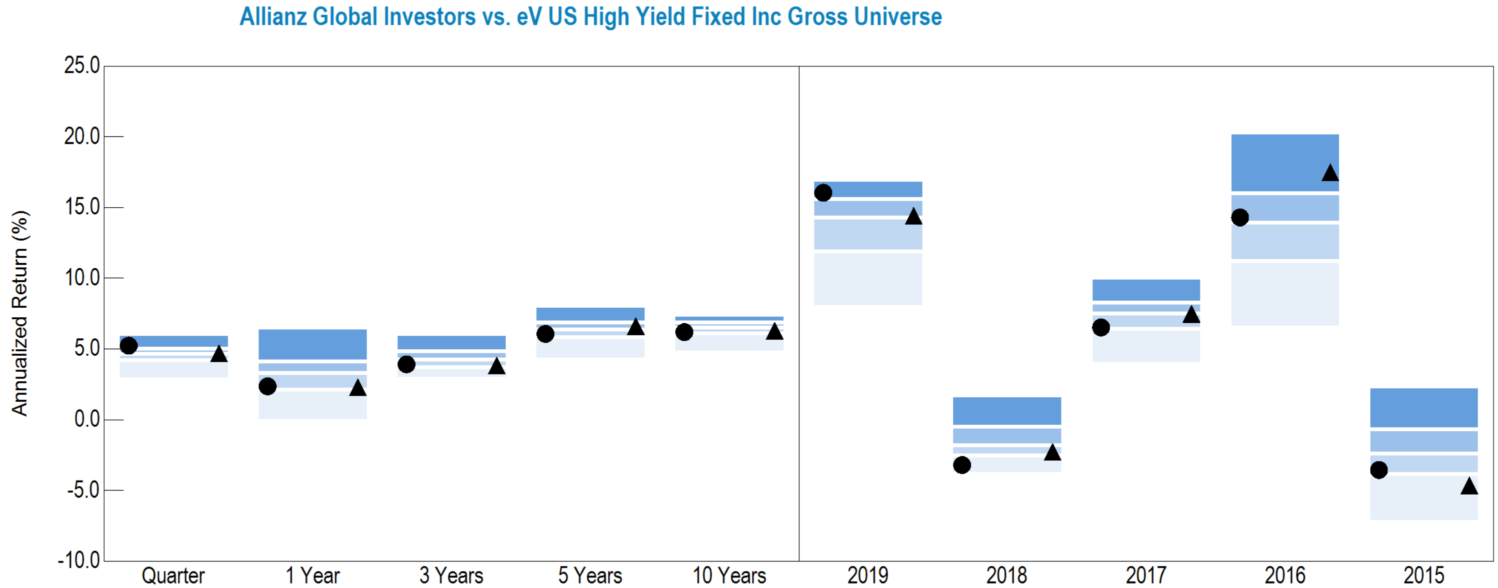
Domestic high yield fixed income portfolio with a focus on security selection. Primary personnel include Douglas Forsyth, Justin Kass, William Stickney, and Michael Yee.

	Allianz	ICE BofAML HY Master II
Effective Duration	3.20	3.90
Yield to Maturity	5.90	6.10
Average Quality	B1	B1
Average Coupon	6.6%	6.0%

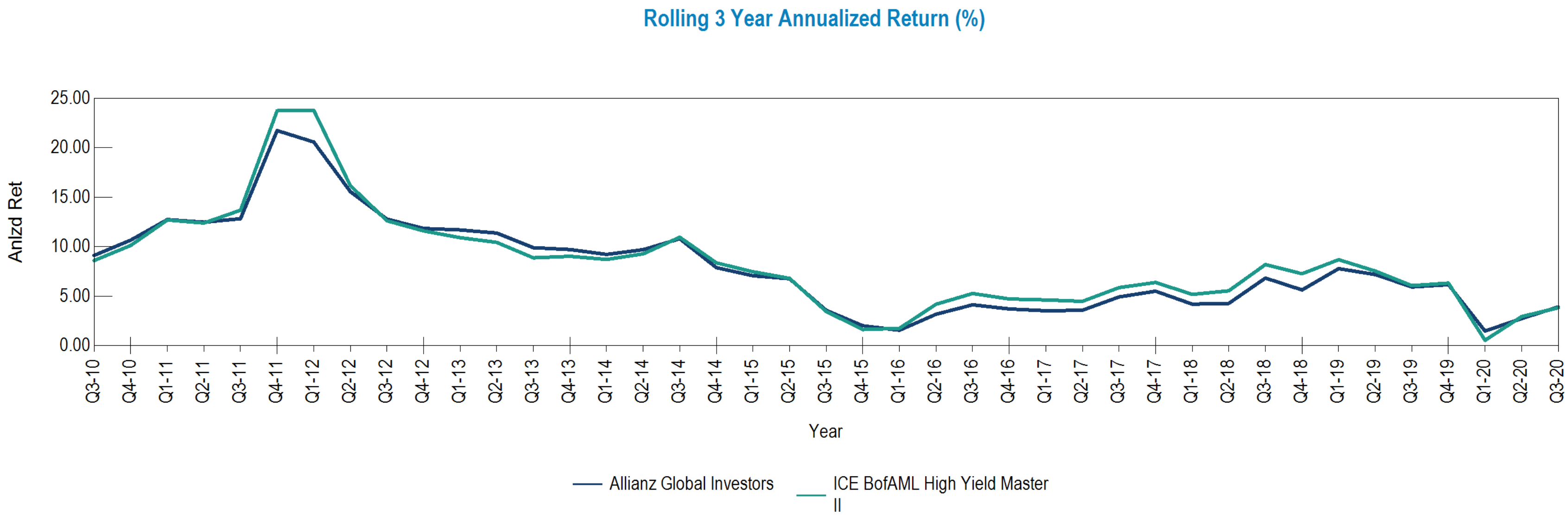


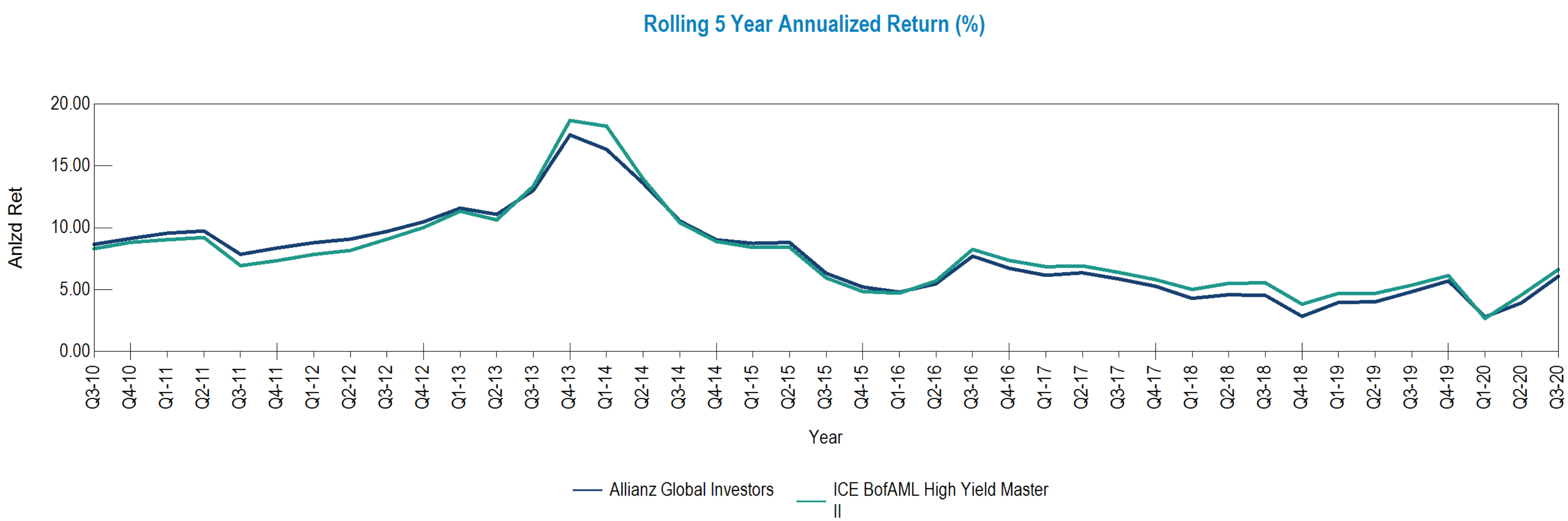




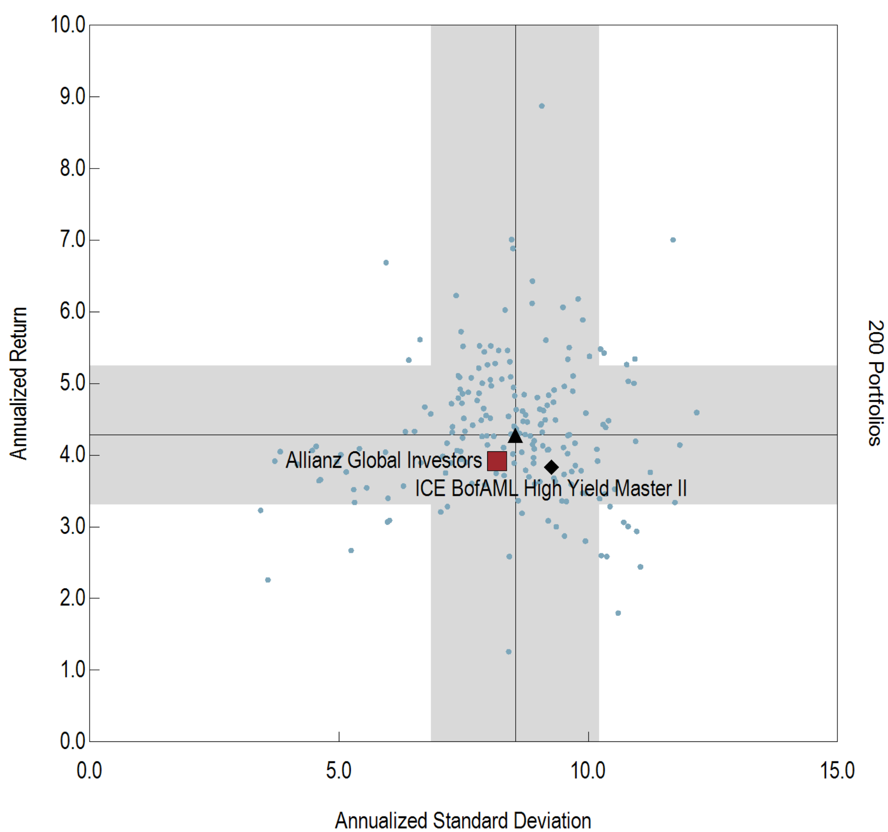


	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
	Return (Rank)																			
5th Percentile	6.1		6.5		6.0		8.0		7.4		16.9		1.7		10.0		20.3		2.3	
25th Percentile	5.0		4.1		4.9		6.9		6.9		15.6		-0.5		8.3		16.0		-0.7	
Median	4.7		3.3		4.3		6.4		6.6		14.3		-1.8		7.5		14.0		-2.4	
75th Percentile	4.2		2.1		3.8		5.9		6.1		11.9		-2.5		6.5		11.3		-3.8	
95th Percentile	2.9		-0.1		2.9		4.3		4.8		8.0		-3.8		4.0		6.6		-7.2	
# of Portfolios	205		205		200		182		135		226		210		198		183		155	
● **Allianz Global Investors**	5.2	(20)	2.4	(71)	3.9	(68)	6.1	(68)	6.2	(74)	16.0	(15)	-3.2	(88)	6.5	(74)	14.3	(47)	-3.5	(68)
▲ **ICE BofAML High Yield Master II**	4.7	(51)	2.3	(73)	3.8	(73)	6.6	(43)	6.3	(71)	14.4	(49)	-2.3	(69)	7.5	(53)	17.5	(14)	-4.6	(83)

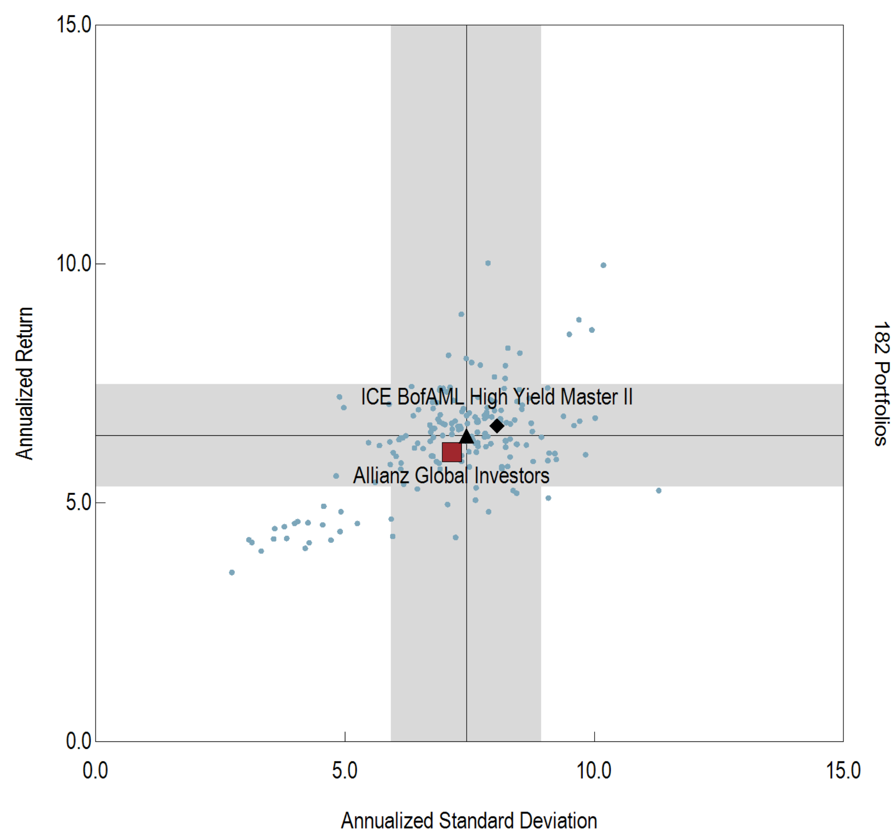

Rolling 3 Year Annualized Return (%)
25.00
20.00
15.00
10.00
5.00
0.00
Anlzd Ret
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Allianz Global Investors
ICE BofAML High Yield Master II


Rolling 5 Year Annualized Return (%)
20.00
15.00
10.00
5.00
0.00
Anlzd Ret
Q3-10 Q4-10 Q1-11 Q2-11 Q3-11 Q4-11 Q1-12 Q2-12 Q3-12 Q4-12 Q1-13 Q2-13 Q3-13 Q4-13 Q1-14 Q2-14 Q3-14 Q4-14 Q1-15 Q2-15 Q3-15 Q4-15 Q1-16 Q2-16 Q3-16 Q4-16 Q1-17 Q2-17 Q3-17 Q4-17 Q1-18 Q2-18 Q3-18 Q4-18 Q1-19 Q2-19 Q3-19 Q4-19 Q1-20 Q2-20 Q3-20
Year
Allianz Global Investors
ICE BofAML High Yield Master II

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	3.9%	8.2%	0.3
ICE BofAML High Yield Master II	3.8%	9.3%	0.2
eV US High Yield Fixed Inc Gross Median	4.3%	8.5%	0.3

5 Years

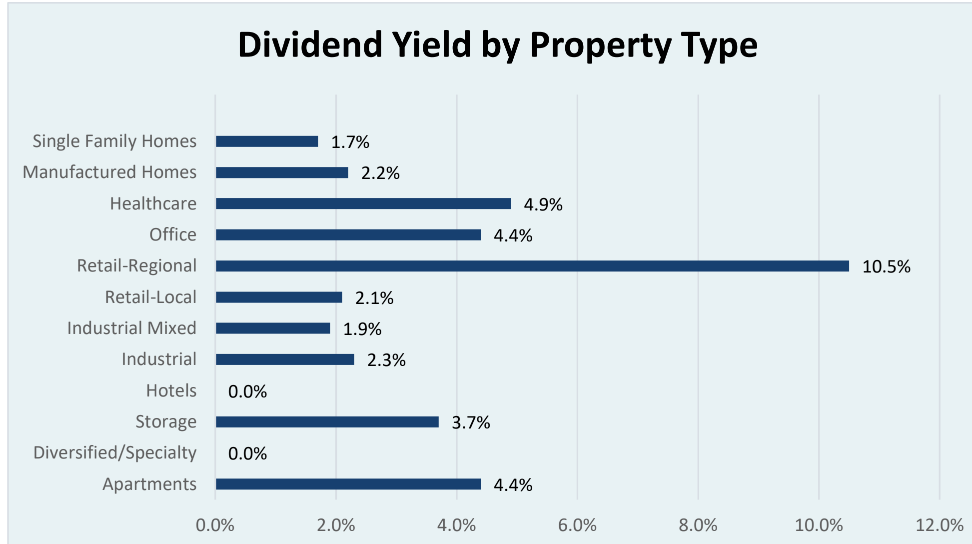
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	6.1%	7.1%	0.7
ICE BofAML High Yield Master II	6.6%	8.1%	0.7
eV US High Yield Fixed Inc Gross Median	6.4%	7.4%	0.7

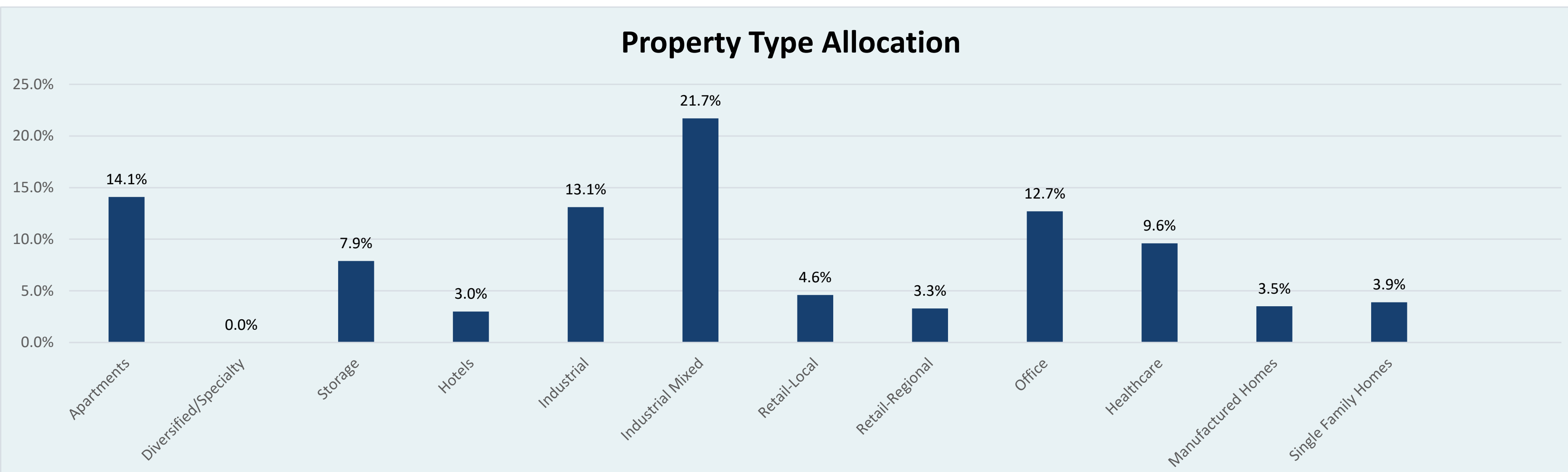
Real Estate Managers

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	12.0%
ProLogis Inc.	Industrial	11.1%
Extra Space Storage, Inc.	Storage	4.6%
Duke Realty Corporation	Industrial Mixed	4.5%
Equity Residential	Apartments	4.1%

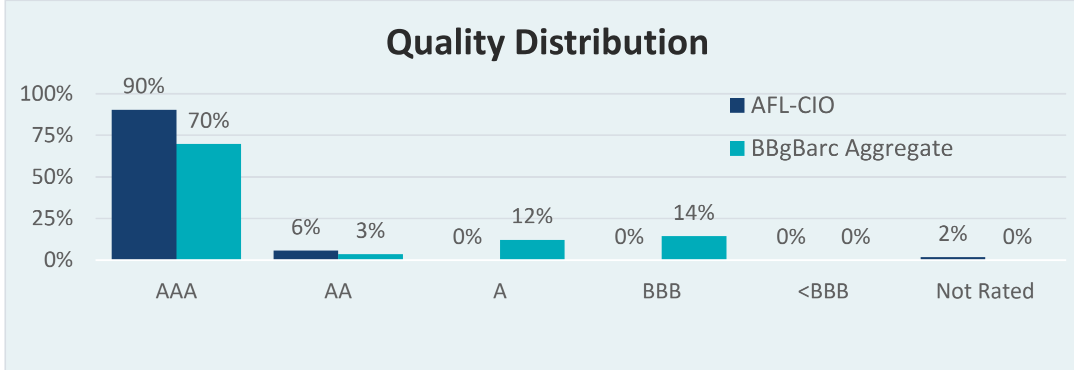


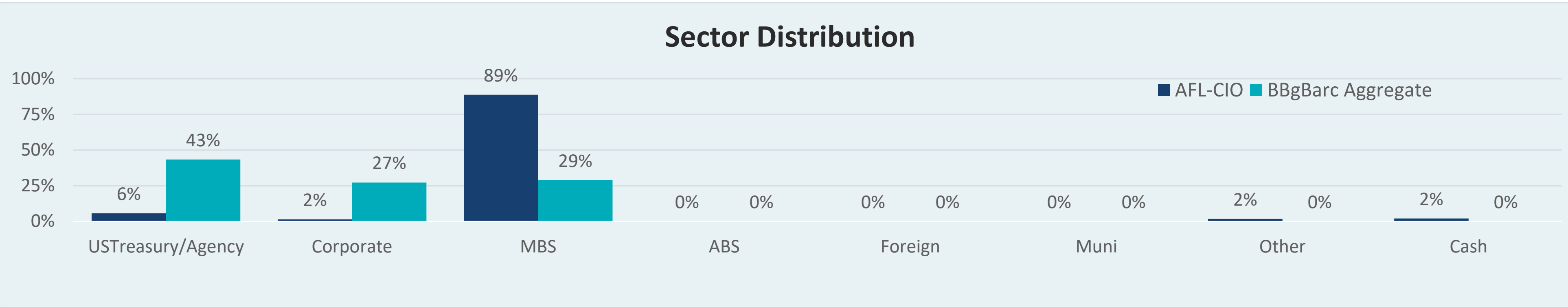


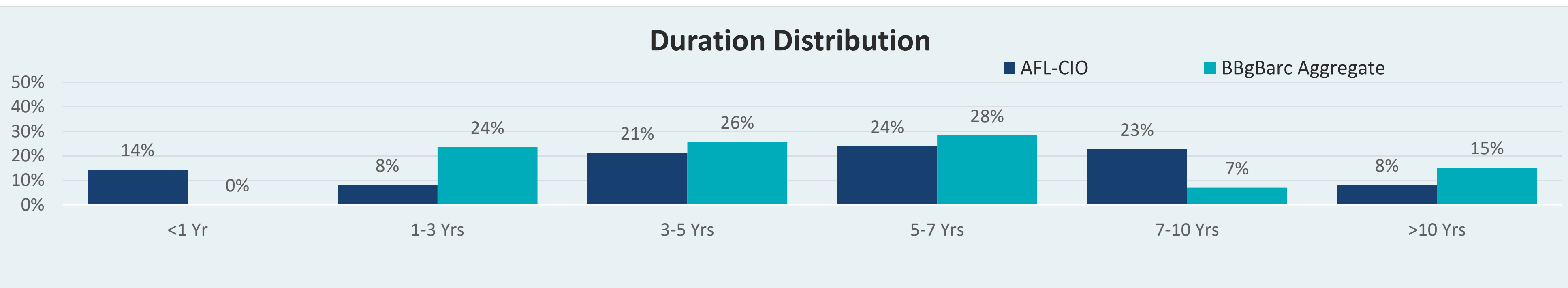
Diversifying Fixed Income Managers

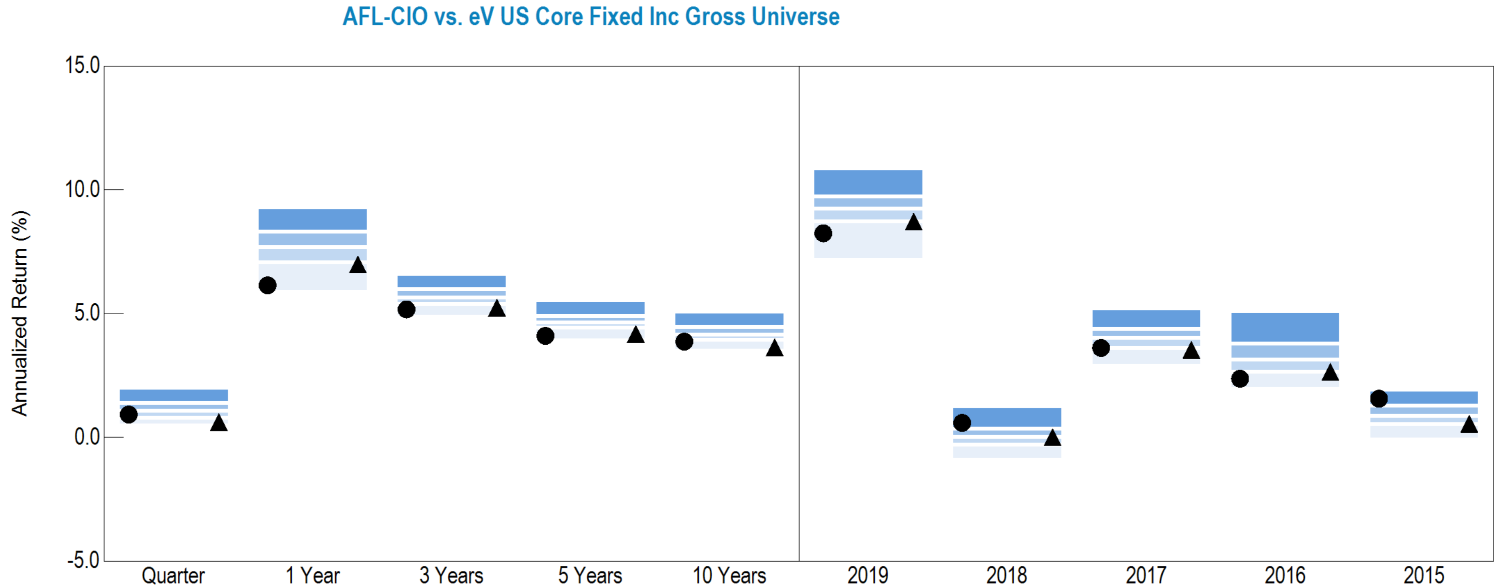
Domestic core fixed income portfolio with an exclusive focus on mortgage-related securities. Primary personnel include Stephen Coyle and Chang Su.

	AFL-CIO	BBgBarc Aggregate
Effective Duration	5.91	6.12
Yield to Maturity	2.74	1.20
Average Quality	AAA	AA/AA+
Average Coupon	2.9%	2.9%

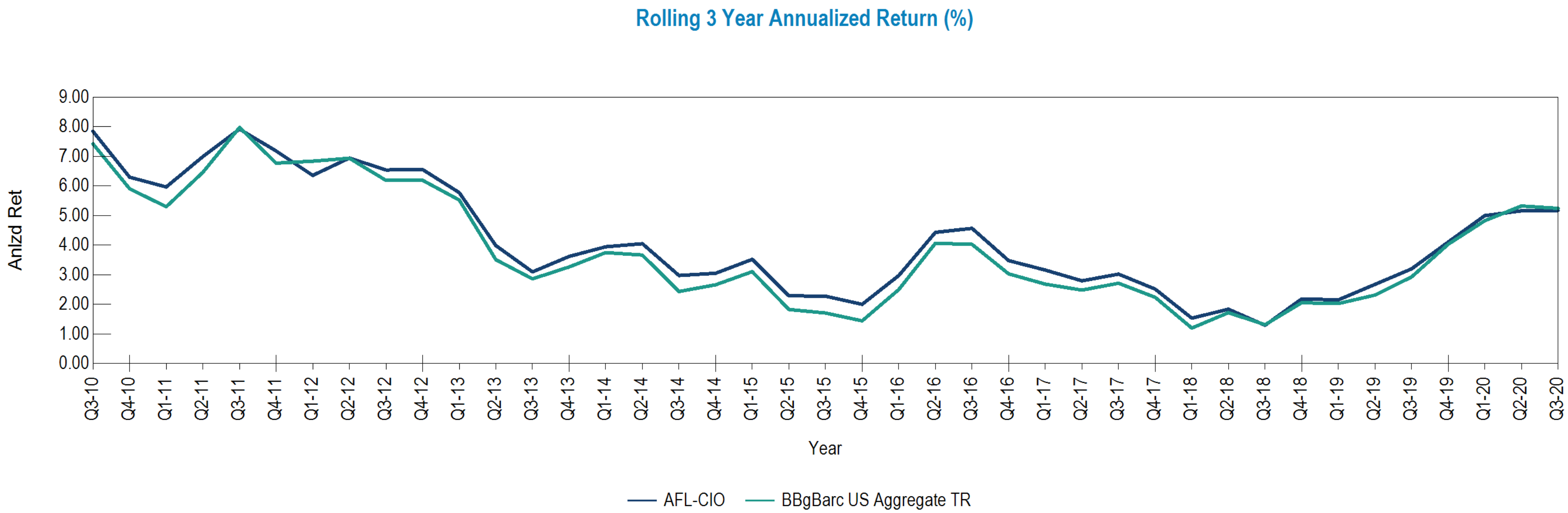


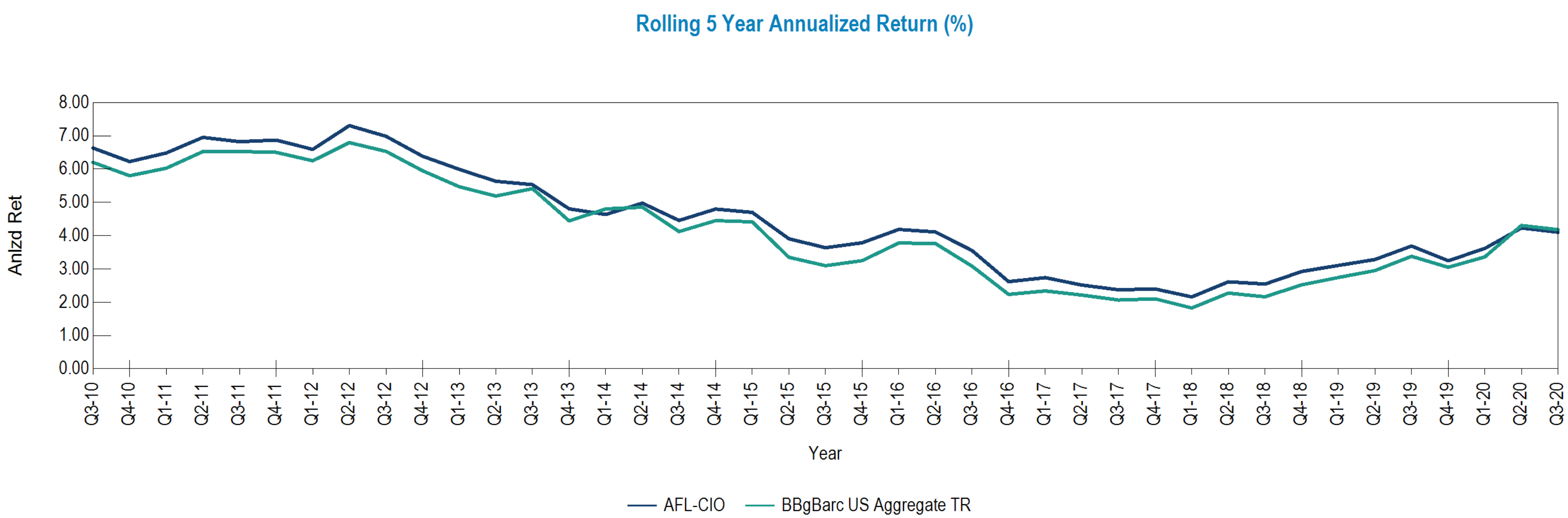


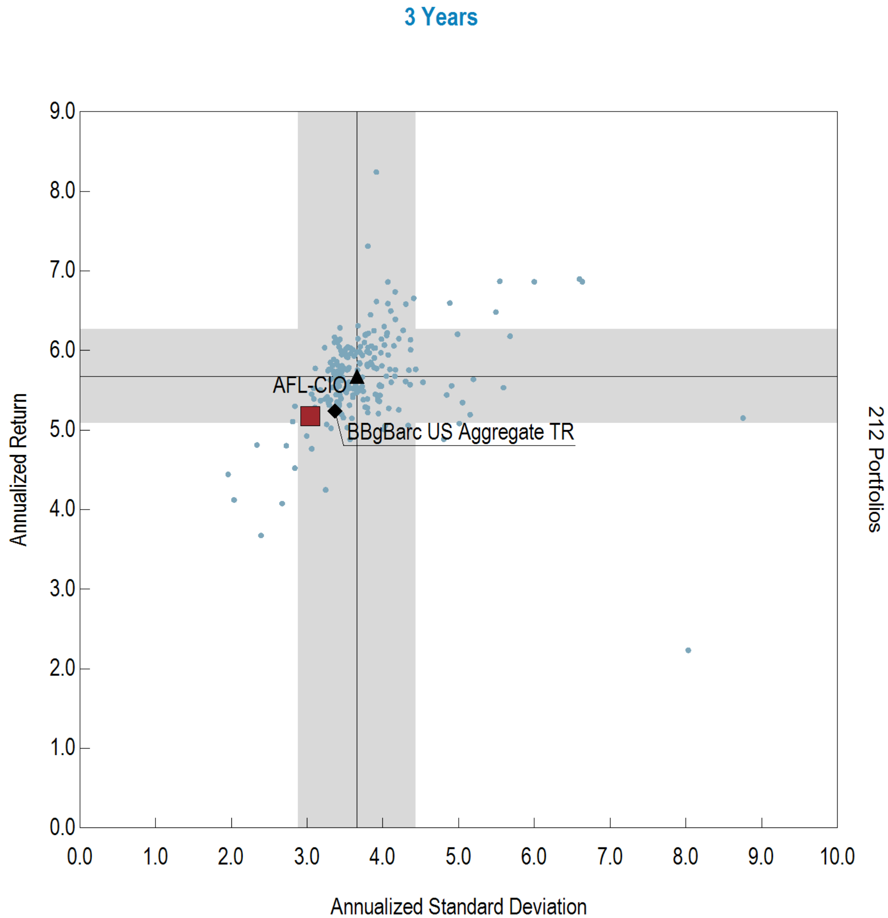


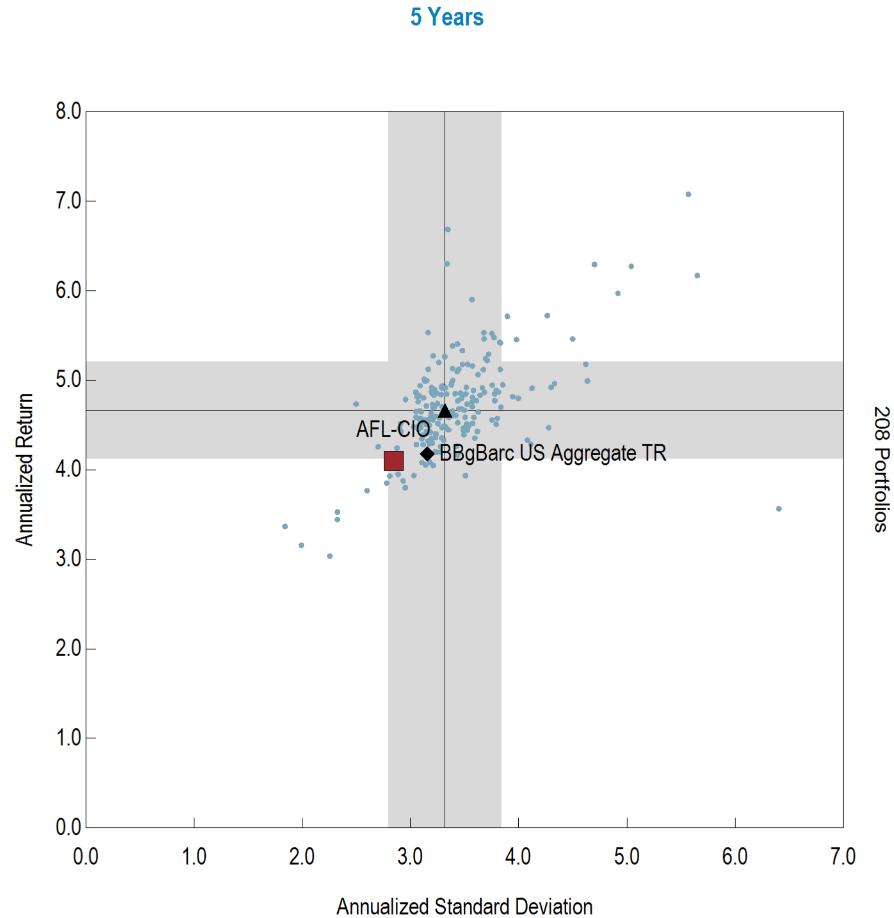


	Quarter		1 Year		3 Years		5 Years		10 Years		2019		2018		2017		2016		2015	
Return (Rank)																				
5th Percentile	2.0		9.3		6.6		5.5		5.1		10.9		1.2		5.2		5.1		1.9	
25th Percentile	1.4		8.3		6.0		4.9		4.5		9.8		0.4		4.4		3.8		1.3	
Median	1.1		7.7		5.7		4.7		4.2		9.3		0.0		4.0		3.2		0.9	
75th Percentile	0.8		7.1		5.4		4.5		4.0		8.7		-0.3		3.6		2.7		0.5	
95th Percentile	0.5		5.9		4.9		3.9		3.5		7.2		-0.9		2.9		2.0		-0.1	
# of Portfolios	215		215		212		208		201		228		240		233		223		196	
● **AFL-CIO**	0.9	(66)	6.1	(92)	5.2	(89)	4.1	(92)	3.9	(82)	8.2	(88)	0.6	(16)	3.6	(76)	2.4	(87)	1.6	(15)
▲ **BBgBarc US Aggregate TR**	0.6	(90)	7.0	(77)	5.2	(87)	4.2	(91)	3.6	(94)	8.7	(77)	0.0	(54)	3.5	(79)	2.6	(77)	0.6	(75)


Rolling 3 Year Annualized Return (%)
Anlzd Ret
Year
AFL-CIO
BBgBarc US Aggregate TR


Rolling 5 Year Annualized Return (%)
Anlzd Ret
Year
AFL-CIO
BBgBarc US Aggregate TR





3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	5.2%	3.0%	1.2
BBgBarc US Aggregate TR	5.2%	3.4%	1.1
eV US Core Fixed Inc Gross Median	5.7%	3.7%	1.1

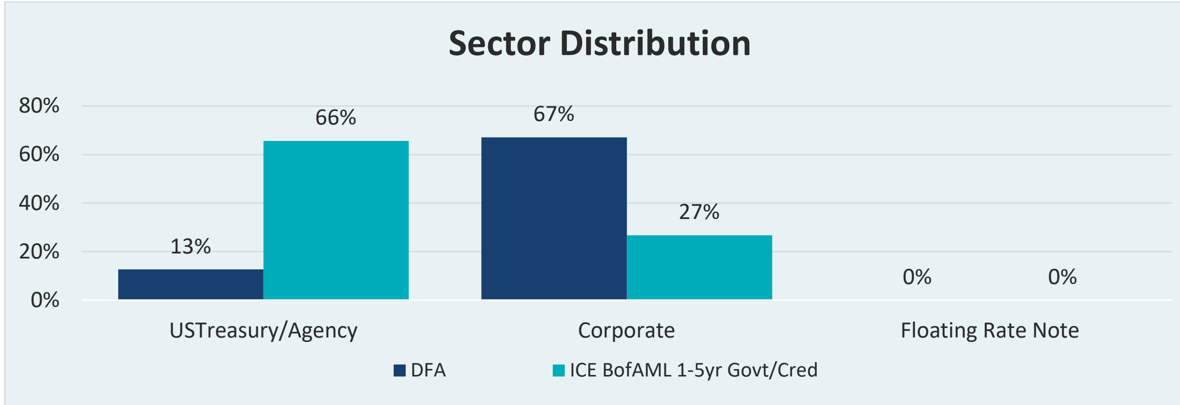
5 Years

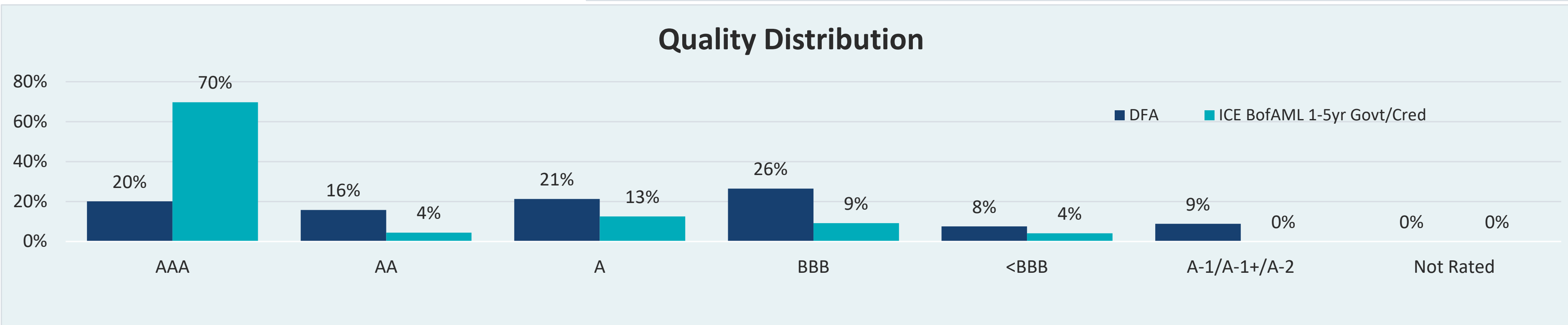
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
AFL-CIO	4.1%	2.8%	1.0
BBgBarc US Aggregate TR	4.2%	3.2%	1.0
eV US Core Fixed Inc Gross Median	4.7%	3.3%	1.1

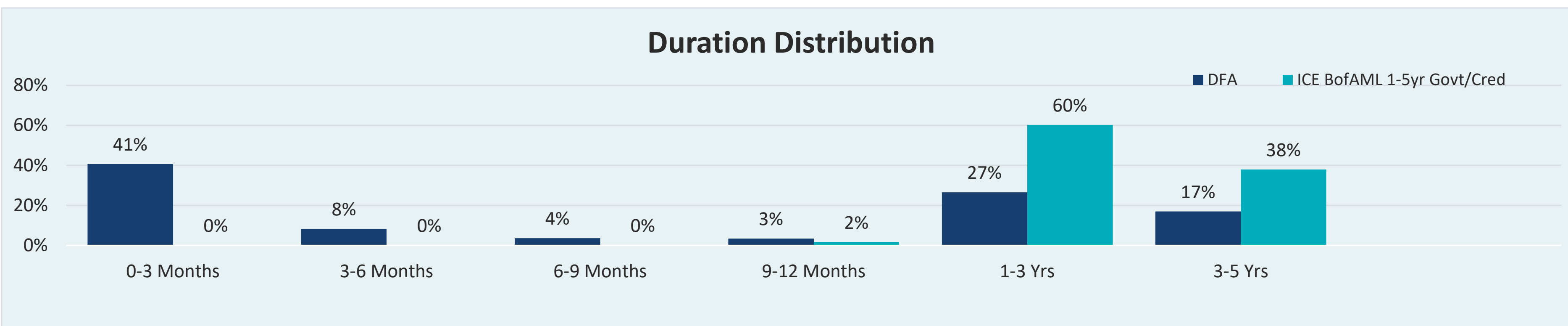
Liquidity Managers

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	1.21	2.69
Yield to Maturity	0.77	0.46
Average Quality	A+	AA+
Average Coupon	2.11%	2.29%

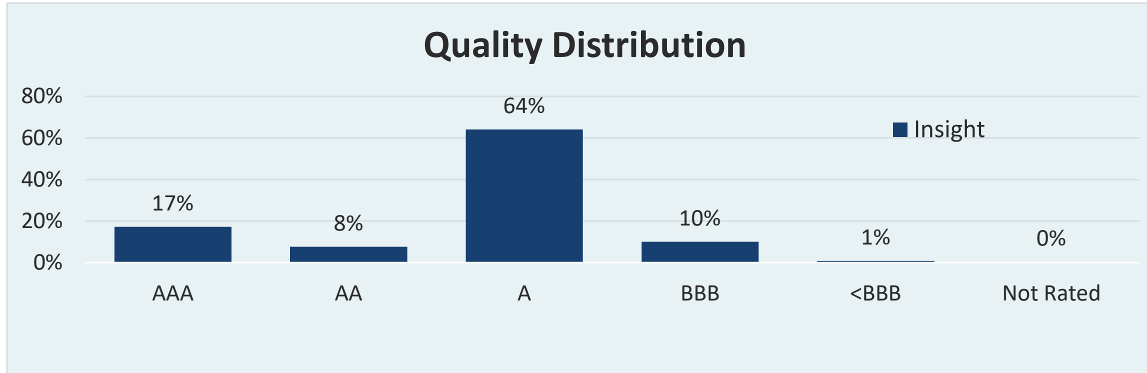


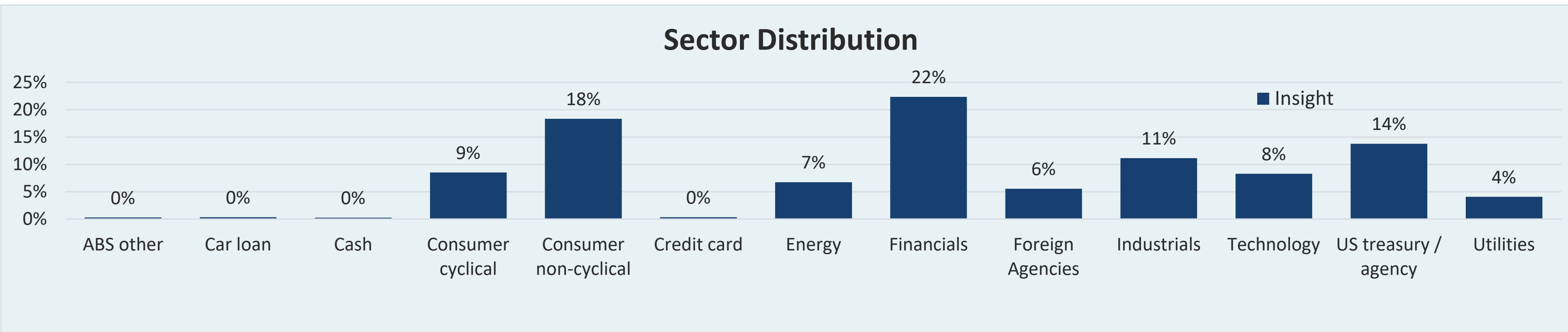


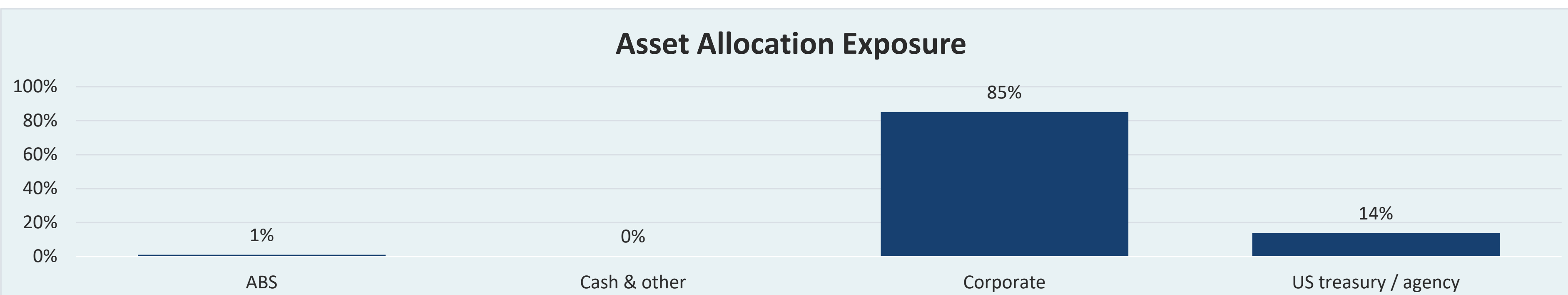


High quality, short duration multi-sector fixed income portfolio comprised of Treasuries, Agencies, investment grade corporates, and ABS designed specifically to meet CCCERA's liabilities. Key personnel include Gerard Berrigan and Jesse Fogarty.

	Insight	BBgBarc 1-3yr Govt
Effective Duration	1.73	1.95
Yield to Maturity	0.75	0.14
Average Quality	A+	AAA
Average Coupon	2.67%	1.60%

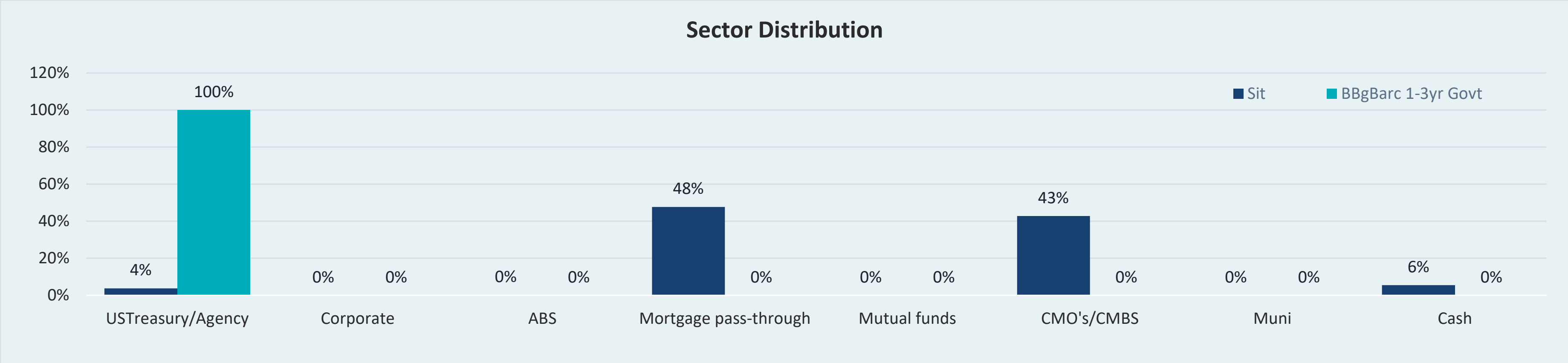


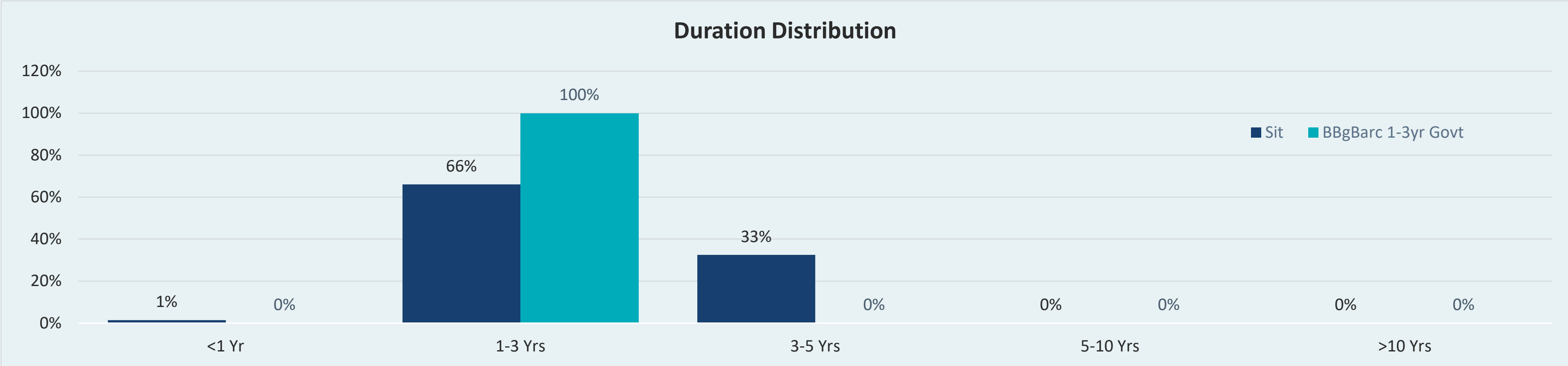




Short duration fixed income portfolio with a focus on earning high levels of interest income. Primary personnel include Bryce Doty, Paul Jungquist and Michael Brilley.

	Sit	BBgBarc 1-3yr Govt
Modified Duration	2.90	1.90
Yield to Maturity	1.30	0.10
Average Quality	AAA	AAA
Average Coupon	5.60%	1.60%





Performance Return Calculations

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

Data Source

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

Illiquid Alternatives

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

Policy & Custom Index Composition

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

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 1000 Index	4/20/2017	BlackRock	Invesco Real Estate IV	6/30/2014	Invesco
Jackson Square Partners	5/1/2005	Northern Trust	Invesco Real Estate V	2/20/2019	Invesco
Boston Partners	6/1/1995	Northern Trust	Oaktree REOF V	12/31/2011	Oaktree
Emerald Advisors	4/7/2003	Northern Trust	Oaktree REOF VI	9/30/2013	Oaktree
Ceredex	11/6/2011	Northern Trust	Oaktree REOF VII	4/1/2015	Oaktree
Pyrford	4/25/2014	State Street	Siguler Guff DREOF	1/25/2012	Siguler Guff
William Blair	10/29/2010	William Blair	Siguler Guff DREOF II	8/31/2013	Siguler Guff
PIMCO RAE Emerging Markets	2/28/2017	State Street	Siguler Guff DREOF II Co-Inv	1/27/2016	Siguler Guff
TT Emerging Markets	7/27/2017	TT	Paulson Real Estate Fund II	11/10/2013	Paulson
Artisan Partners	10/1/2012	SEI Trust	AE Industrial Partners Fund II	4/8/2019	StepStone Group
First Eagle	1/18/2011	Northern Trust	Adams Street Partners	3/18/1996	StepStone Group
Allianz Global Investors	4/25/2000	Northern Trust	Adams Street Partners II	1/16/2009	StepStone Group
Adelante	9/30/2001	Northern Trust	Adams Street Partners Venture	4/28/2017	StepStone Group
AQR Global Risk Premium - EL	1/18/2019	AQR	Adams Street Partners - BFP	1/18/1996	StepStone Group
Panagora Risk Parity Multi Asset	3/15/2019	Panagora	Adams Street Partners - Fund 5	9/21/2012	StepStone Group
AFL-CIO	6/30/1991	AFL-CIO	Aether Real Assets IV	3/16/2016	StepStone Group
Wellington Real Total Return (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

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: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - 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: Portfolio Excess Return / Portfolio Standard Deviation.

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

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

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

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

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Meeting Date
11/18/20
Agenda Item
#5b.

MEMORANDUM

Date: November 18, 2020

To: CCCERA Board of Retirement Trustees

From: Timothy Price, Chief Investment Officer

Subject: Investment Staff Report – Q3 2020

Overview

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

Summary

CCCERA's Total Fund is performing as expected, exhibiting returns above expectations for the amount of risk taken. This is measured by the Sharpe Ratio (risk-adjusted return), and a comparison to the Simple Target Index. The Simple Target Index is the most basic index which could replicate CCCERA's Total Fund, and is made up of 68.5% 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 five years, while experiencing less risk (volatility). Details on performance relative to this index are included in the appendix. It is worth noting that CCCERA's Total Fund return is an aggregate of the performance of the Liquidity, Growth, and Risk Diversifying sub-portfolios.

We conducted our annual rebalancing during the third quarter, funding additional liquidity investments and generally reducing global equity allocations, which hurt performance in a quarter with a strong equity performance.

1) **Liquidity**
   The purpose of the liquidity program is to match four years of benefit payments with high credit quality, low duration assets. The liquidity sub-portfolio is made up of three fixed income managers, all of whom pursue a high quality, low duration investment approach. In the third quarter of 2020, all managers held high quality (as measured by credit ratings), low duration portfolios. The average credit quality for the entire liquidity program is AA- (AAA is the highest rating), and the duration is 1.9 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 September 30, 2020, the Growth portfolio returned 8.4% relative to the index return of 10.3%, for a relative underperformance of 1.9%. During the third quarter of 2020, the public markets remained strong, with the MSCI ACWI Index returning 8.1%, after having lost 21.4% in the first quarter and gaining 19.2% in the second quarter. In comparison, CCCERA's Growth sub-portfolio was less volatile, losing 12.6% in the first quarter, gaining 9.5% in the second, and gaining 5.2% in the third quarter.

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 June 2020. However, trailing real (net of inflation) returns over the past five years is -1.1%, an improvement from -1.4% from the previous quarter, but remains below expectations. We have begun to reposition this portfolio with the liquidation of the Wellington strategy in May and the funding of the Acadian MAARS strategy in August.

The Liquidity and Growth sub-portfolios are largely functioning well and within expectations. We have begun to restructure 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 organizational concerns with our investment managers. CCCERA's Total Fund in aggregate is performing in line with expectations, having a higher return and a lower level of volatility compared to the Simple Target Index. Enclosed are additional details on CCCERA's Total Fund, sub-portfolios, and individual investment strategies.

CCCERA Portfolio Report Card

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

Liquidity

Objective	Measurement	Current Period Data	Status
High Quality	Credit Quality	AA-	Meeting Expectations
Low Risk	Duration	1.9 years	Meeting Expectations
Appropriately Sized	Months of Benefit Payments Invested	46 Months	Meeting Expectations

Growth

Objective	Measurement	Current Period Data	Status
Growth of Plan Assets	Absolute Returns	Trailing 5 yr return of 8.4%	Meeting Expectations
	Benchmark Relative Returns	-1.9% relative to ACWI over trailing 5 years	Below Expectations
Efficient Capital Deployment	Sharpe Ratio	CCCERA: 0.7 MSCI ACWI: 0.5 (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 -1.1%	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	25%	8%	N
Sit	Good	7%	4%	N
DFA	Good	-4%	-9%	N

Performance

	Portfolio Average Credit Quality	Portfolio Average Duration	Portfolio Average Yield	1 Year Total Return
Insight	A+	1.7	0.8	3.7%
Sit	AAA	2.9	1.3	4.6%
DFA	A+	1.2	0.8	2.5%

Manager Notes:

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

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

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

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

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

Appendix – Growth Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Boston Partners	Good	-24%	-24%	N
Jackson Square	Good	11%	16%	N
BlackRock Index Fund	Good	15%	12%	N
Emerald Advisors	Good	10%	6%	N
Ceredex	Good	-34%	-20%	N
Pyrford (BMO)	Good	5%	2%	N
William Blair	Good	8%	14%	N
First Eagle	Good	-14%	9%	N
Artisan Global	Good	38%	19%	N
PIMCO/RAE EM	Good	-54%	8%	N
TT EM	Good	42%	11%	N
Adelante	Good	-15%	-15%	N
Allianz	Good	-9%	5%	N
AQR	Good	-2%	-25%	N
PanAgora	Good	10%	-17%	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	-7%	7%	Y
Jackson Square	32%	16%	Y
BlackRock Index Fund	16%	14%	Y
Emerald Advisors	21%	11%	Y
Ceredex	-18%	4%	N
Pyrford (BMO)	1%	5%	N
William Blair	26%	10%	Y
First Eagle	2%	7%	Y
Artisan Global	39%	19%	Y
PIMCO/RAE EM	-11%	6%	N
TT EM	10%	12%	Y
Adelante	-15%	4%	Y
Allianz	0%	5%	N
AQR	2%	6%	Y
PanAgora	4%	10%	Y
	1Yr Premium	5 Year Premium	
Private Equity	-7%	-2%	N
Private Credit	-8%	-3%	N
Real Estate	-18%	-5%	N

Manager Notes:

In the recent quarters, I have highlighted the fact that value-oriented strategies suffered even more than their growth or core peers in the initial COVID-19 related selloff without participating as much in the recovery. Boston Partners (large cap value), Ceredex (small cap value) and PIMCO (emerging market value), all suffered considerable short-term underperformance relative to the MSCI ACWI index and have not rebounded as strongly in the third quarter. Value strategies remain out of favor and we continue to re-underwrite these strategies in collaboration with Verus, but we note that the value factor is extremely cheap at the moment and we have not yet found a reason to believe that this should persist over the long term.

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	2%	2%	N
Parametric	Good	-48%	22%	N
Acadian	Good	528%	0%	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	-0.7	-0.3	6%	4%	100%
Parametric	0.9	---	-11%	N/A	100%
Acadian	-0.8	---	-5%	N/A	100%

Manager Notes:

The Acadian MAARS strategy was funded in early August. We also reduced our exposure to the Parametric strategy late in the quarter.

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.

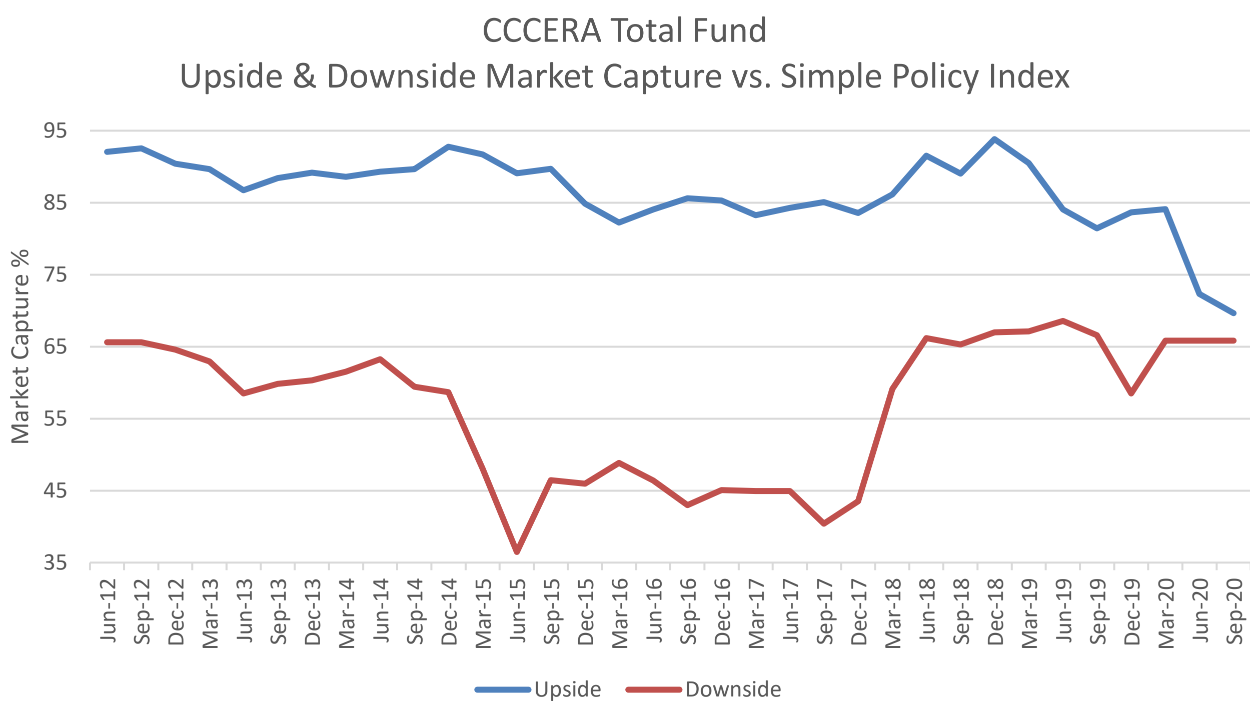
AFL-CIO: Portfolio of domestic, high quality fixed income securities which are backed by commercial and residential mortgages.

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	22.9%	0.4%	0.1%	25.0%	0.2%	0.1%	-2.1%	0.1%	0.0%
Growth	72.0%	5.2%	3.7%	68.5%	8.1%	5.6%	3.5%	-2.9%	-1.8%
Risk Diversifying	5.1%	0.8%	0.0%	6.5%	0.0%	0.0%	-1.4%	0.8%	0.0%
Total Fund	100%		3.9%	100%		5.6%	-0.1%		-1.8%

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	5.1	9.3	5.1	6.1	7.0	7.6	7.9	6.5
Volatility	14.9	23.6	9.5	14.6	7.4	11.3	7.6	10.6
Sharpe	**0.3**	**0.4**	**0.4**	**0.3**	**0.8**	**0.6**	**1.0**	**0.6**

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 five and ten-year 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.

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. While the CCCERA portfolio lagged the STI over the past three years, the Total Fund has exceeded the Sharpe ratio relative to the Simple Target Index over all periods three years and longer, indicating that CCCERA is being favorably rewarded for the risk taken in the portfolio.

Meeting Date
11/18/20
Agenda Item
#6a.

Contra Costa County Employees' Retirement Association

Rishi Garbharran

Investment Officer

Private Equity Review

November 18, 2020

Overview

- CCCERA Private Equity Program
- CCCERA Private Equity Strategy
- Recent Pivot in CCCERA Private Equity Strategy

CCCERA Private Equity Program

Role of Private Equity in CCCERA Portfolio

CCCERA Total Portfolio (100%)

Growth (68%) Range = 60-80%	Liquidity (24%) Range = 16-28%	Risk Diversifying (6%) Range = 0-10%	Cash & Overlay (2%)
Public Equity (36%)	**Public Debt (24%)**	**Low Beta Strategies (6%)**	**Cash (1%)**
Private Equity (11%)			**Overlay (1%)**
Real Estate (7%)			
Private Credit (7%)			
Risk Parity (5%)			
Public Debt (2%)			

- Current target = 11% of CCCERA portfolio
- Current program size = ~$1 billion

CCCERA Private Equity Program – Key Participants

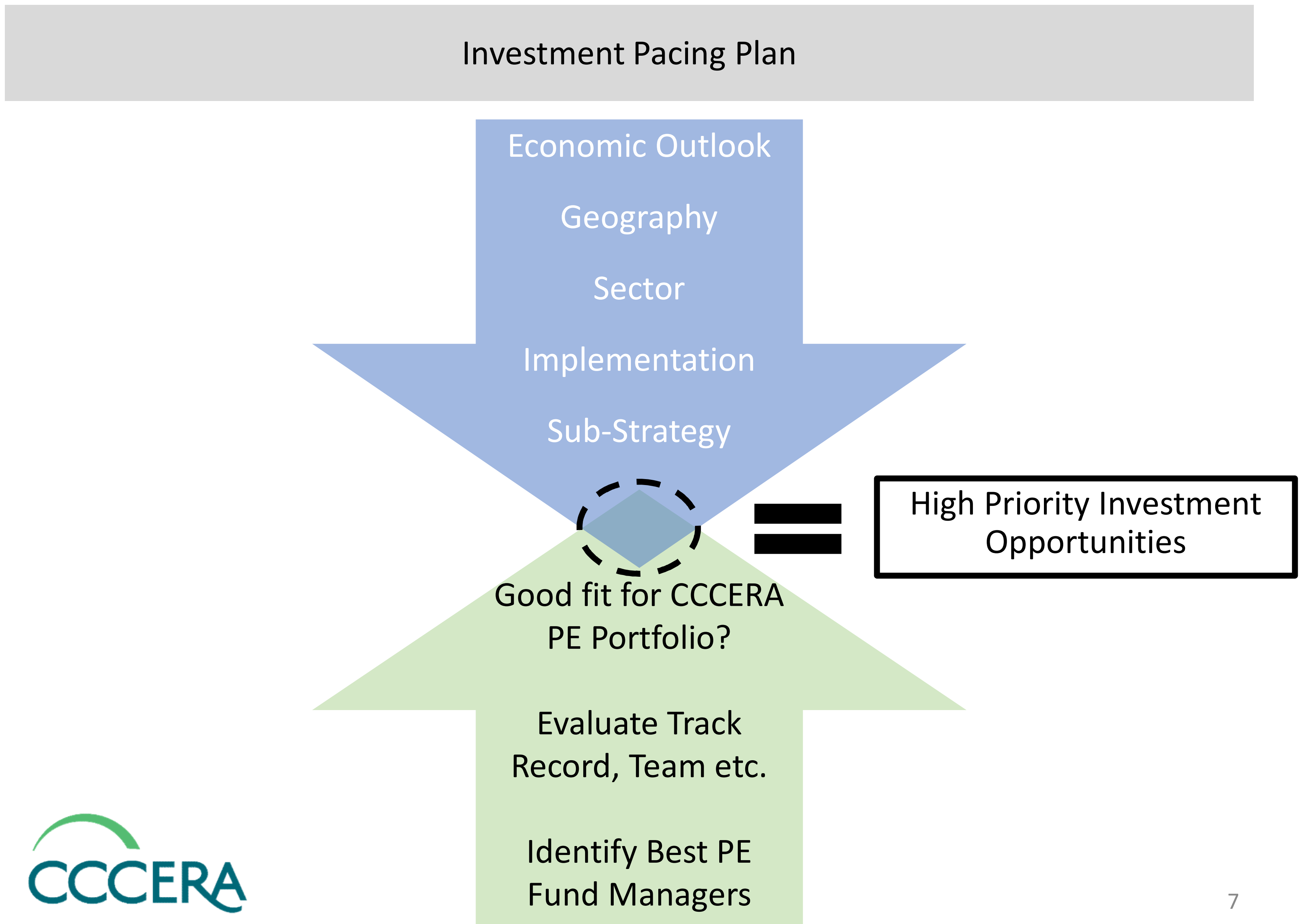
CCCERA	**Manages the Private Equity Program – including portfolio management, top-down strategy selection, and bottom-up investment manager evaluation**
Investment Managers	**Source, evaluate, execute, and monitor private equity investments primarily within commingled drawdown funds**
Stepstone	**Provides advice to CCCERA and is also responsible for pacing analysis, portfolio monitoring, and reporting**

CCCERA

CCCERA Private Equity Strategy

CCCERA

CCCERA Approach to Private Equity Investing



CCCERA

Top-Down Considerations

Geography	North America	Europe	Asia	Rest of World
Sector	IT	Healthcare	Financial Services	
	Industrials	Business Services	Consumer etc.	
Implementation	Fund of Funds	Primary Funds	Secondaries	
	Co-investments	Direct Investments		
Sub-Strategy	Buyouts	Growth Equity	Venture	Other

Represents current areas of focus for CCCERA's Private Equity Program

Private Equity Implementation

Investment Vehicle	Implementation	Fund Level Mgt Fee / Carry*	Investment Staff Resources Needed
Fund of Funds	Fund of Funds	0.5% - 1% / 0% - 10%	Least
Primary Funds	Primary Funds	1.5% - 2% / 20%	
Target Company	Co-investments	0% - 1% / 0% - 10%	
	Direct investments	None	Most

CCCERA

* In addition to any fund level fees and expenses, all implementation strategies shown bear transaction expenses at the portfolio company level (e.g. debt financing fees, advisory fees, consulting fees, etc.)

Bottom-Up Considerations

	Established PE Fund Manager
Length of Track Record	15-40 years
Institutional Resources	Robust / fully scaled
Stability of Team	15 years+ working together
Historical Performance	Predominantly first and second quartile PE returns
Diversification	15-30 mature companies, one or several sectors, several sub-sectors
Range of Outcomes	1.5x / 10% - 2.5x / 20% net returns

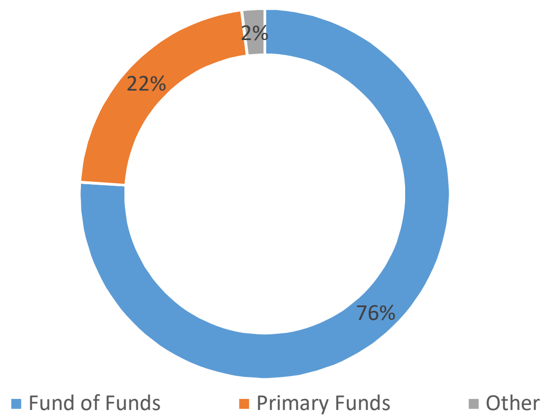
CCCERA

Recent Pivot in CCCERA PE Strategy

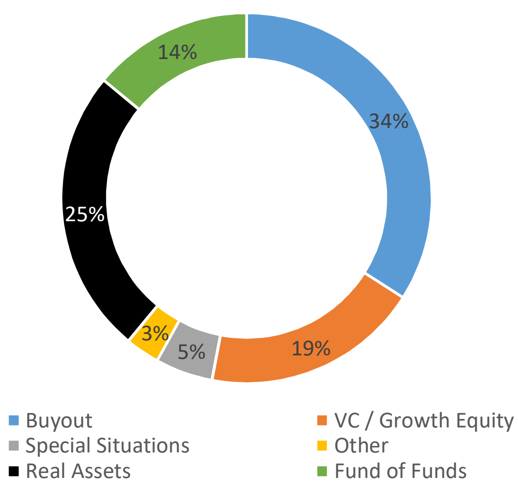
Pivot in CCCERA PE Strategy

Current PE Portfolio

Current Portfolio Exposure by Fund Type

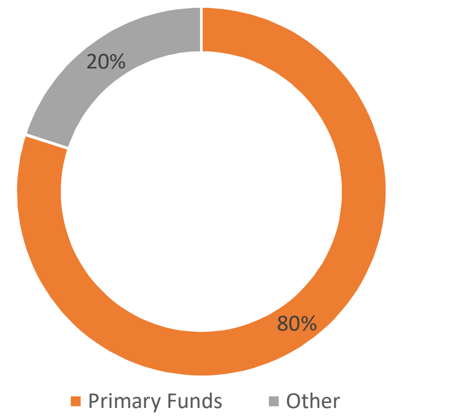


Current Portfolio Exposure by Strategy

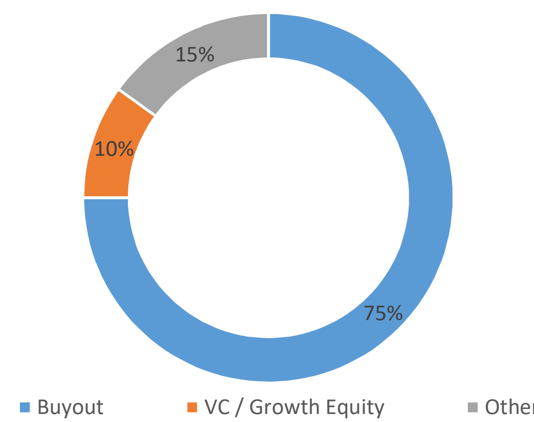


Current PE Strategy

Targeted Portfolio Exposure by Fund Type



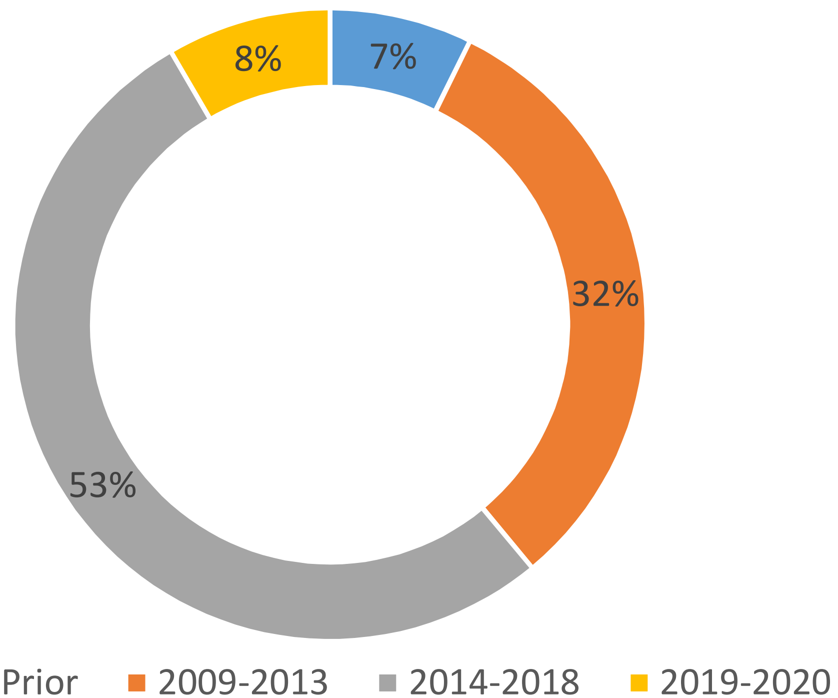
Targeted Portfolio Exposure by Strategy



It will take time to see the impact of the current PE strategy…

Legacy investments will take time to cycle out of the portfolio

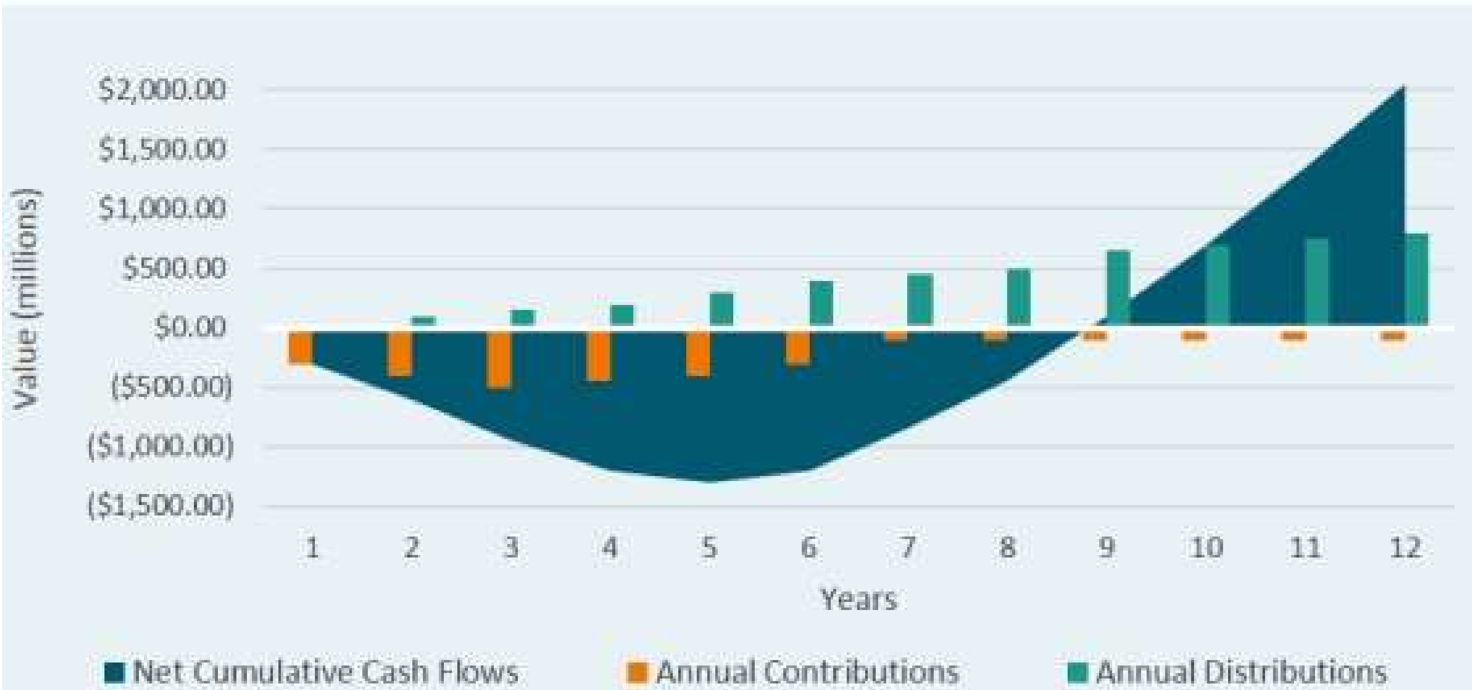
Current Portfolio Exposure by Vintage Year



CCCERA

It will take time to see the impact of the current PE strategy…

New investments will take time to ramp up



Source: Verus.

2019-2020 CCCERA PE Review

- Fine tuned private equity strategy and due diligence process
- Committed $164 million to four primary buyout funds:
  - All new relationships for CCCERA
  - Funds were oversubscribed
  - Received requested allocation in all funds
- Forward plan
  - Invest according to private equity strategy & pacing plan
  - Maintain robust and efficient due diligence and investment decision making process
  - Continue proactive approach to building relationships with the best private equity managers

CCCERA

Meeting Date
11/18/20
Agenda Item
#6b.

STEPSTONE
inside private markets

CCCERA Board Presentation

Private Equity Update

NOVEMBER 2020

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An investment involves a number of risks and there are conflicts of interest. Please refer to the risks and conflicts disclosed herein.

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All data is as of September 2020 unless otherwise noted.

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. ACTUAL PERFORMANCE MAY VARY.

TOM KECK, PARTNER, LA JOLLA

Mr. Keck leads StepStone's global research activities and the development of SPI. He is also involved in the Firm's ESG and risk management initiatives.

Prior to co-founding StepStone, Mr. Keck was a managing director at Pacific Corporate Group, a private equity investment firm that oversaw over US$15 billion of private equity commitments for institutional investors. Before that he was a principal with Blue Capital, a middle-market buyout firm.

Mr. Keck graduated cum laude with a BA from the George Washington University and received his MBA with high honors from the University of Chicago Booth School of Business. He served in the US Navy as a Naval Flight Officer, receiving numerous decorations flying EA-6Bs off the USS Nimitz (CVN-68).

JOSE FERNANDEZ, PARTNER AND CO-COO, LA JOLLA

Mr. Fernandez is the Co-COO of StepStone Group and a member of the private equity team where he focuses on US-based small-market managers and Latin American investments. He is also involved in the Firm's ESG and diversity initiatives, as well as various investment activities.

Prior to co-founding StepStone, Mr. Fernandez was a managing director of Pacific Corporate Group, a private equity investment firm for institutional investors. Mr. Fernandez previously worked with Latham and Watkins LLP's private equity/investment fund group, a practice focused on joint ventures and the structuring, negotiation and operation of pooled investment vehicles such as private equity funds.

Mr. Fernandez received his BA from the University of Michigan, Ann Arbor and JD from Stanford Law School.

Overview

I. Private Equity Market Update

II. Review of Private Equity Program

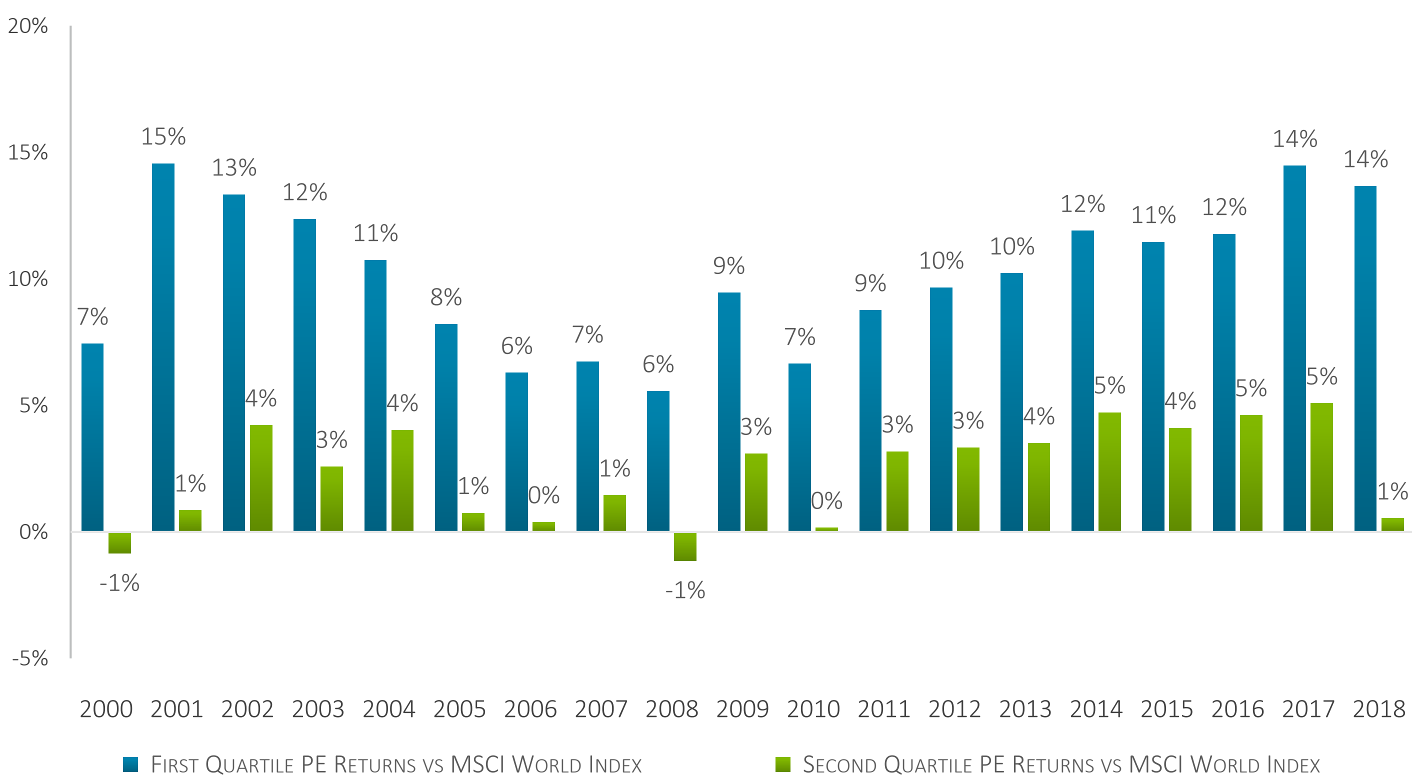
III. Private Equity Portfolio Performance

I. PRIVATE EQUITY MARKET UPDATE

Market Overview

PRIVATE EQUITY HAS DELIVERED ALPHA RELATIVE TO THE PUBLIC MARKETS

PRIVATE EQUITY DIRECT ALPHA



2010-15 ARITHMETIC AVERAGE		
AS OF	TOP Q	MEDIAN Q
2Q20	9.8%	3.2%
2Q19	9.2%	2.6%
Change in bps:	60 bps	52 bps

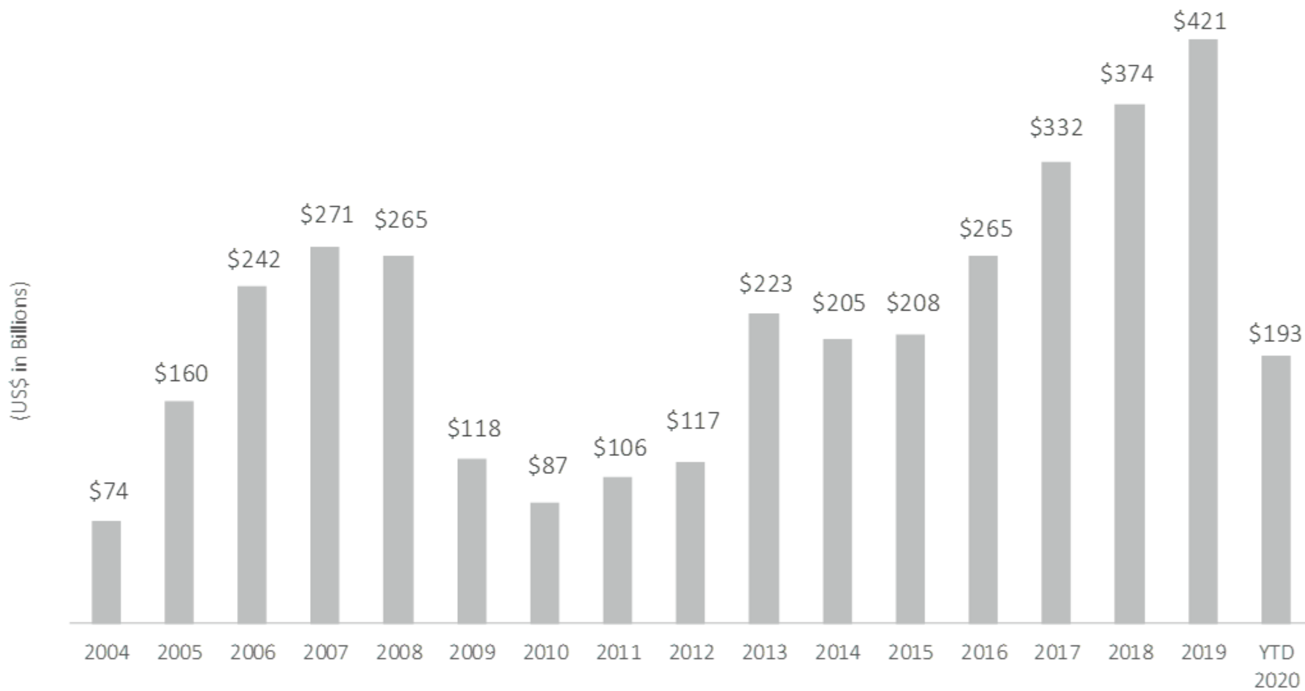
- Historically, Top Quartile private equity has outperformed public equities in each of the past 19 vintage years for which returns are meaningful.
- Median private equity returns from 2010-2015 have performed well relative to public markets averaging 52 bps above the public market.
- Institutional investors continue to include private markets as part of their allocation to diversify as well as to enhance overall returns.

Private IQ, as of 6/30/20; PE Returns includes Generalists, Equity, and Distressed Funds. The Direct Alpha method formalizes the calculation of the exact alpha (in a continuous time log-return sense) that a PE portfolio has generated relative to the chosen reference benchmark; Data for 2019-2020 not considered relevant given early nature of those vintage years; The referenced indices are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented.

Market Overview

PE BUYOUT FUNDRAISING TOPPED $300 BILLION FOR THREE STRAIGHT YEARS BUT 2020 IS ON PACE TO END THAT STREAK

GLOBAL PRIVATE EQUITY BUYOUT FUNDRAISING



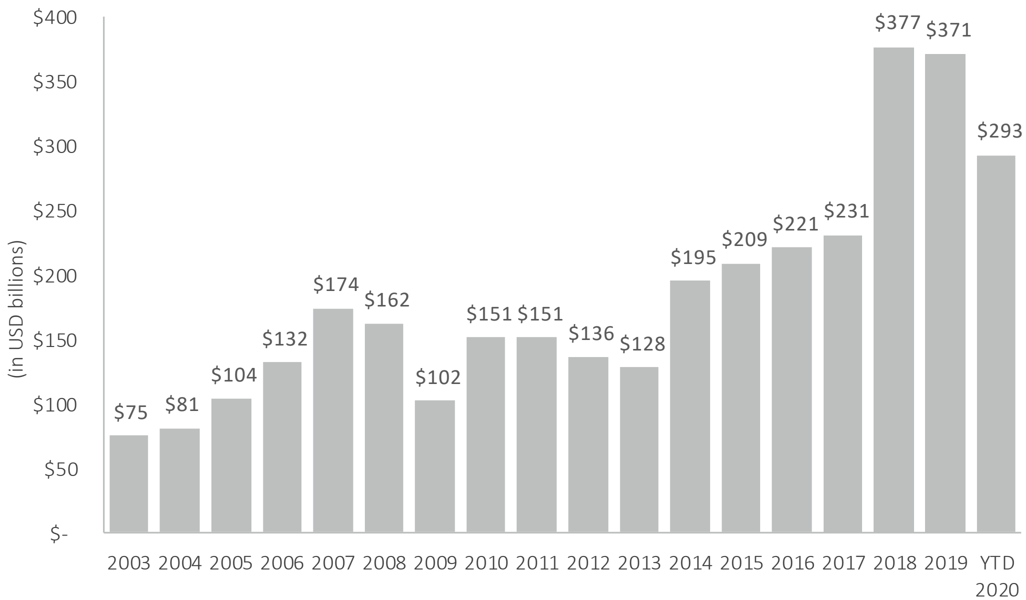
- Global PE Buyout has raised nearly $193 billion through late October, on pace for ~$230 billion.
- Despite the turmoil in the economy, sponsors have continued to push GP-favorable fund terms.
- This trend has also been apparent in other private market sub-sectors.

Preqin, StepStone analysis. Data subject to change as Preqin's database is continuously updated. Data is for funds labeled as Buyout, Balanced, Co-Investment, Co-Investment Multi-Manager, and Distressed Debt. Data is as of October 2020.

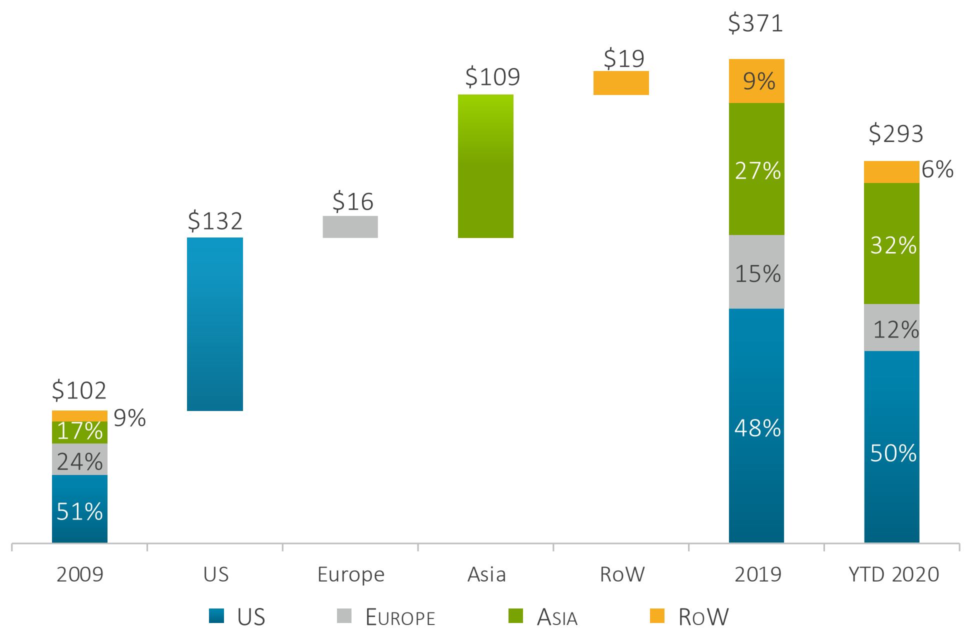
Market Overview

2018 & 2019 WERE RECORD YEARS AND 2020 IS ON PACE TO SURPASS $300 BILLION AS WELL

GLOBAL EQUITY INVESTED BY YEAR



EQUITY INVESTED BY REGION BRIDGE

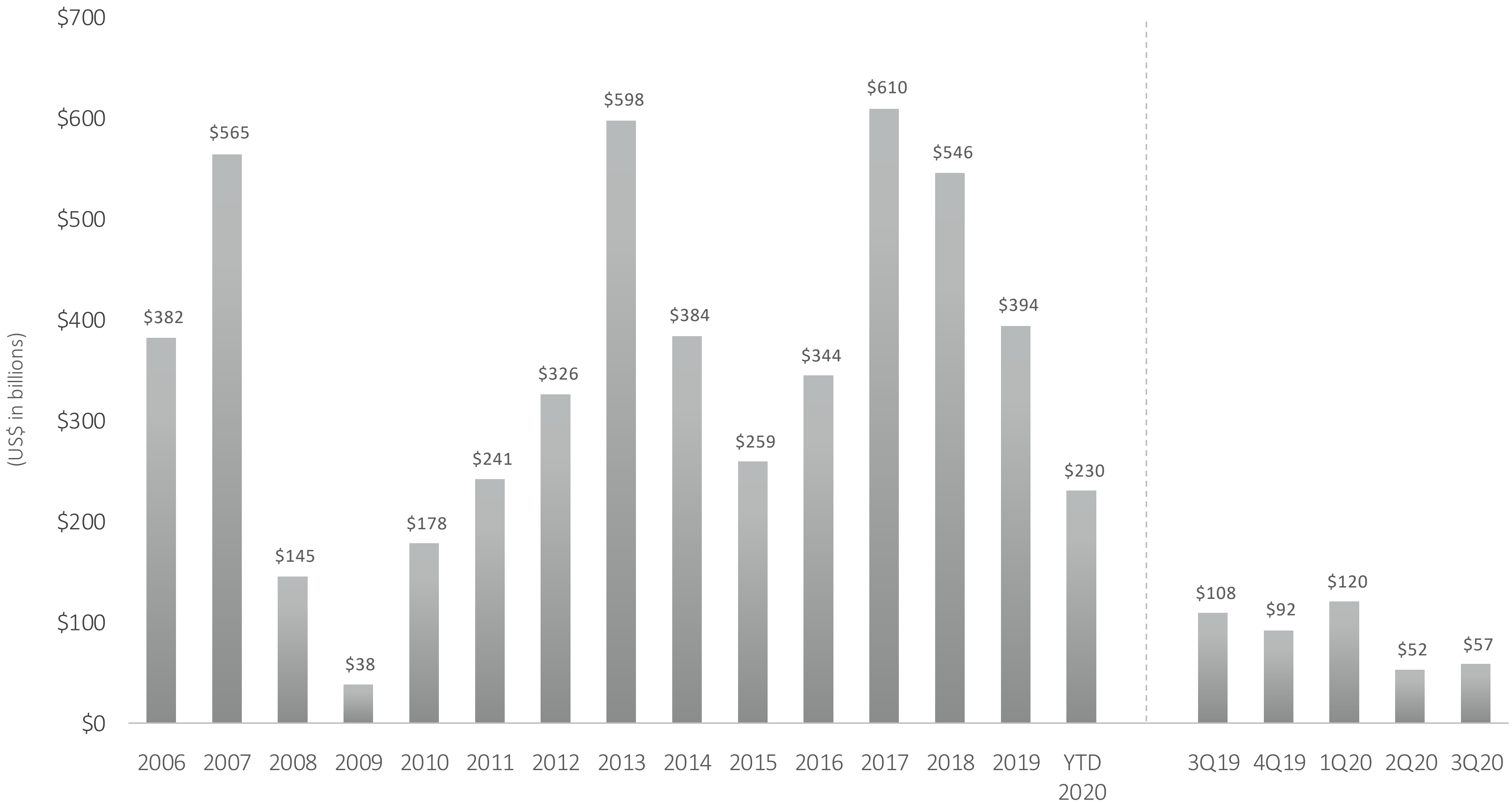


ThomsonOne; data as of 9/30/20; Geography determined by company's headquarters.

Transaction Volume

U.S. TRANSACTION VOLUME HAS COME DOWN MEANINGFULLY SINCE 2017-2018

U.S. SPONSORED TRANSACTION VOLUME BY YEAR

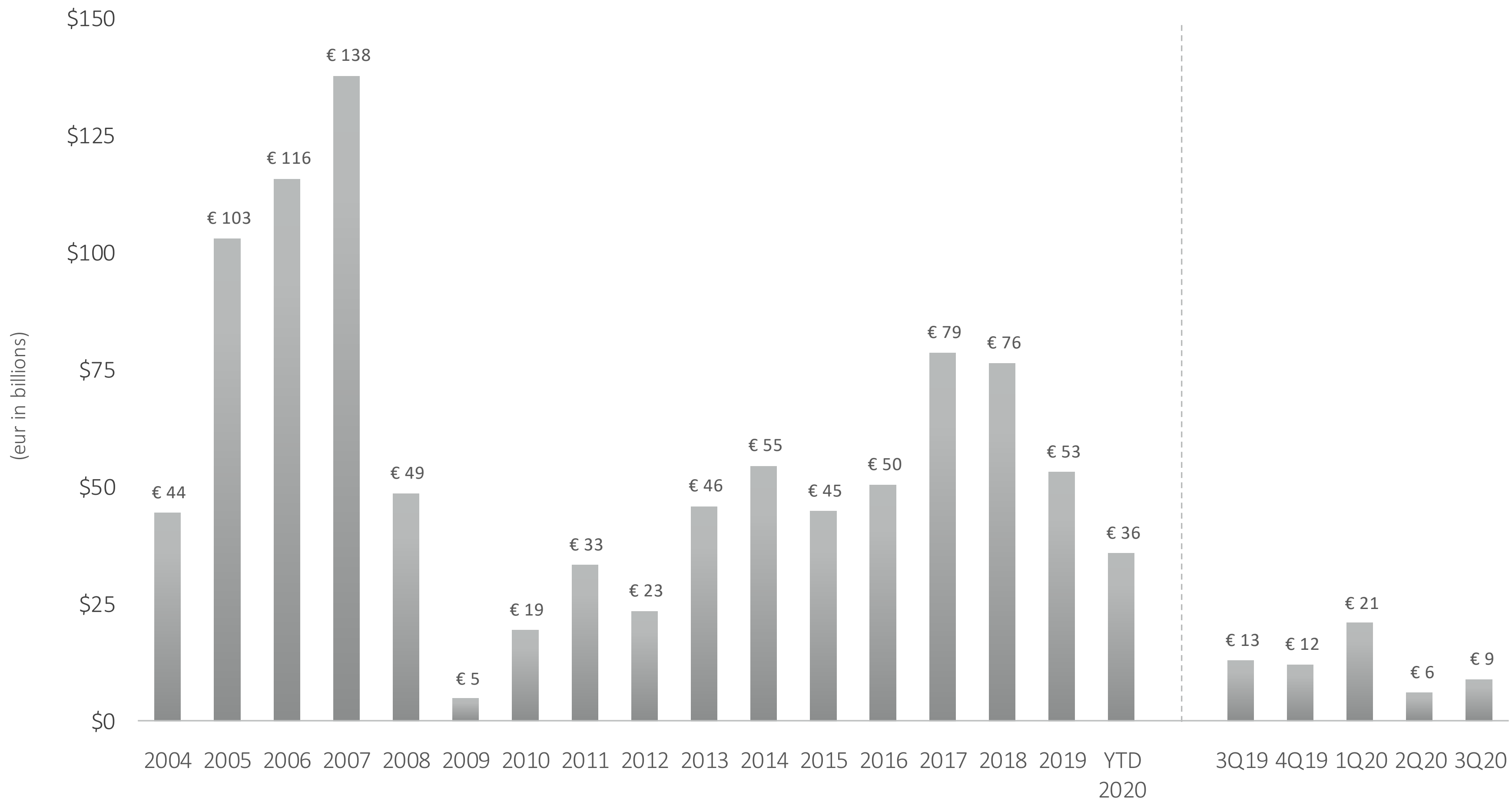


Q3 2020 S&P LBO Review; S&P updates data and historical amounts are subject to change; Volume on this page includes all Total Sources (loans, secured debt, unsecured debt, sub debt, and equity) involved in any sponsored transaction, regardless of purpose.

Transaction Volume

EUROPEAN TRANSACTION VOLUME WAS GROWING, BUT 2019 CAME IN WELL BELOW 2017-2018 AND STEPSTONE EXPECTS 2020 TO ALSO COME IN LOWER THAN 2017-2018

EUROPEAN SPONSORED TRANSACTION VOLUME BY YEAR



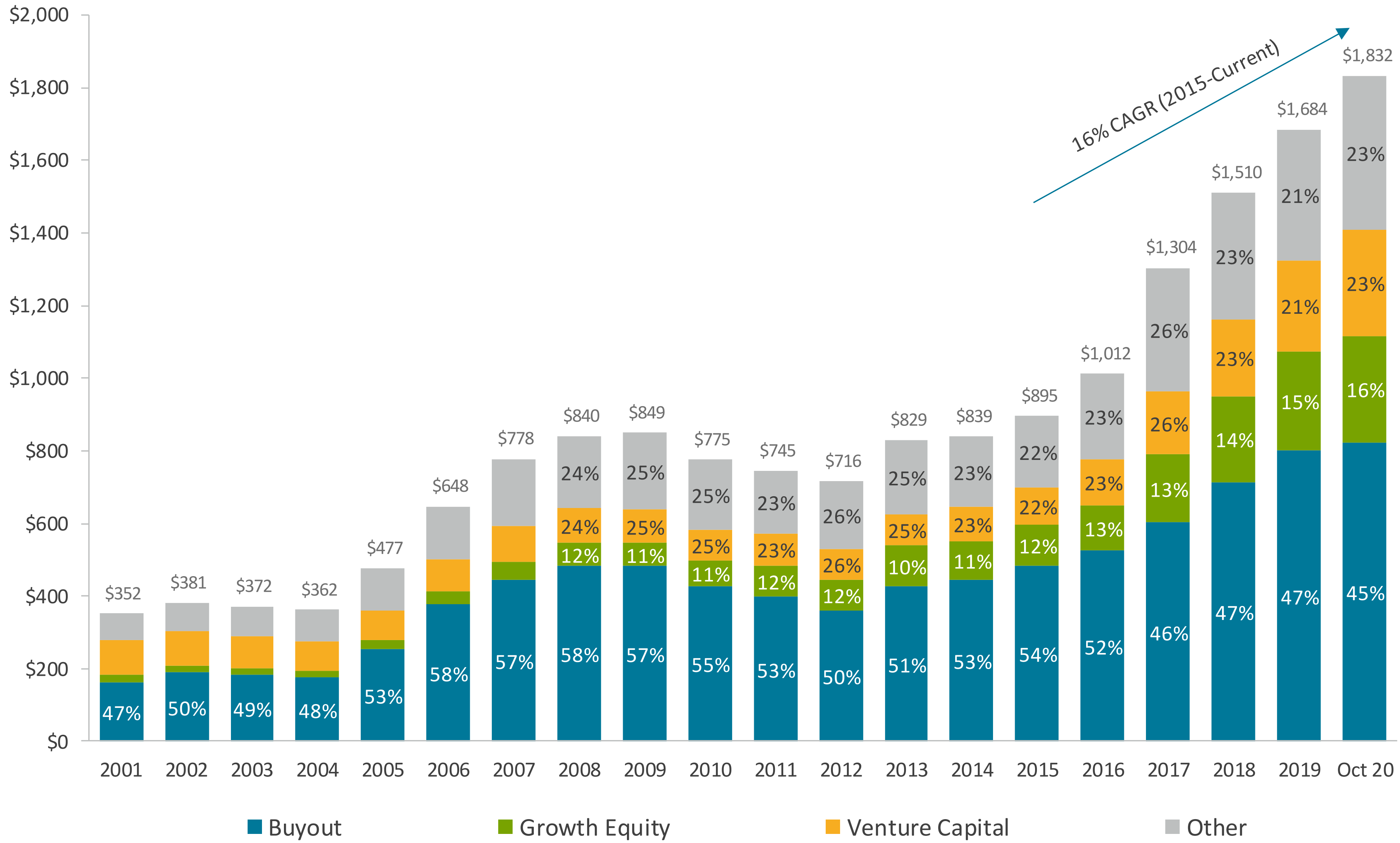
- Low growth expectations are making it hard for LBO firms to identify attractive opportunities, thereby increasing competition – and prices – for quality assets.

The volume on this page reflects all sponsor-related activity, including buyouts, refinancing, and recaps. Q3 2020 S&P LBO Review

Dry Powder

DRY POWDER HAS INCREASED OVER 100% SINCE YEAR-END 2015

PRIVATE EQUITY DRY POWDER – BY STRATEGY

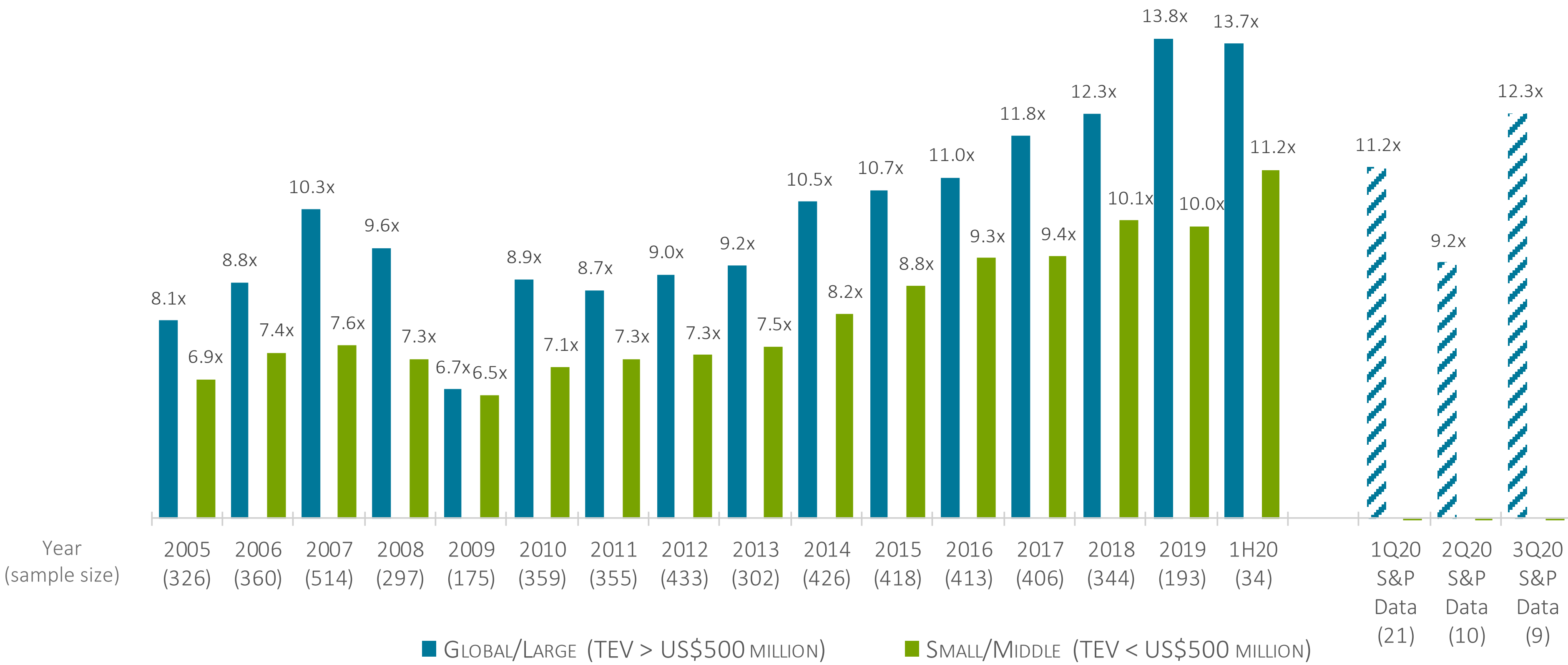


Preqin Private Equity Online. Data as of October 2020 and in USD billions.

Purchase Price Multiples

IN THE U.S., PRICES REMAINED NEAR HISTORICALLY HIGH LEVELS IN Q2 2020, AND S&P DATA SHOWS Q3 MULTIPLES HAVE INCREASED FROM Q2

U.S. PURCHASE PRICE MULTIPLES



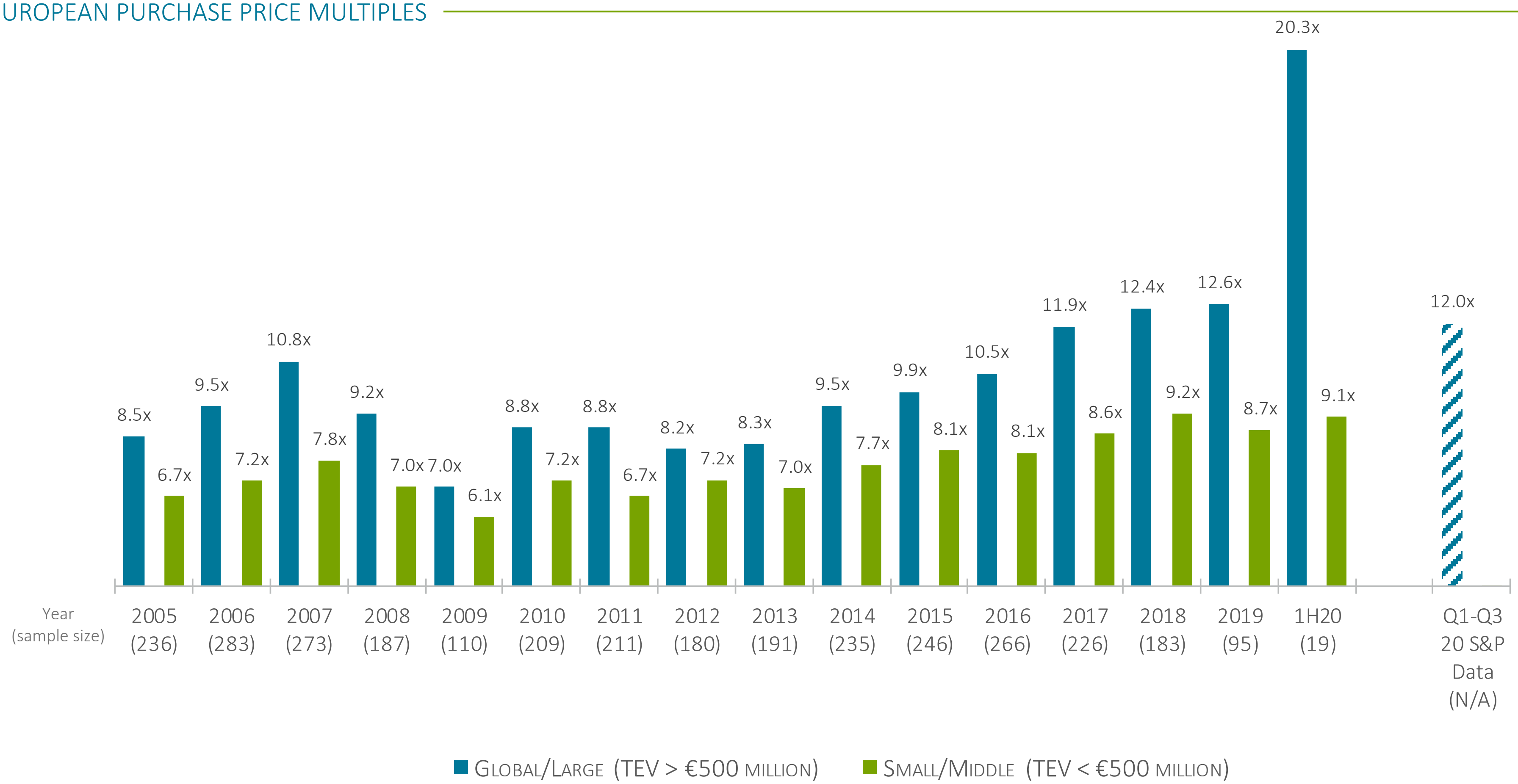
- Low interest rates and high growth expectations explain the high prices.

SPI, StepStone analysis; latest available data in SPI as of Q2 2020; SPI data is continuously updated, and historical values are subject to change. Q3 2020 S&P LBO Review.

Purchase Price Multiples

PURCHASE PRICES IN EUROPE HAVE EXHIBITED THE SAME BEHAVIOR AS IN NORTH AMERICA

EUROPEAN PURCHASE PRICE MULTIPLES



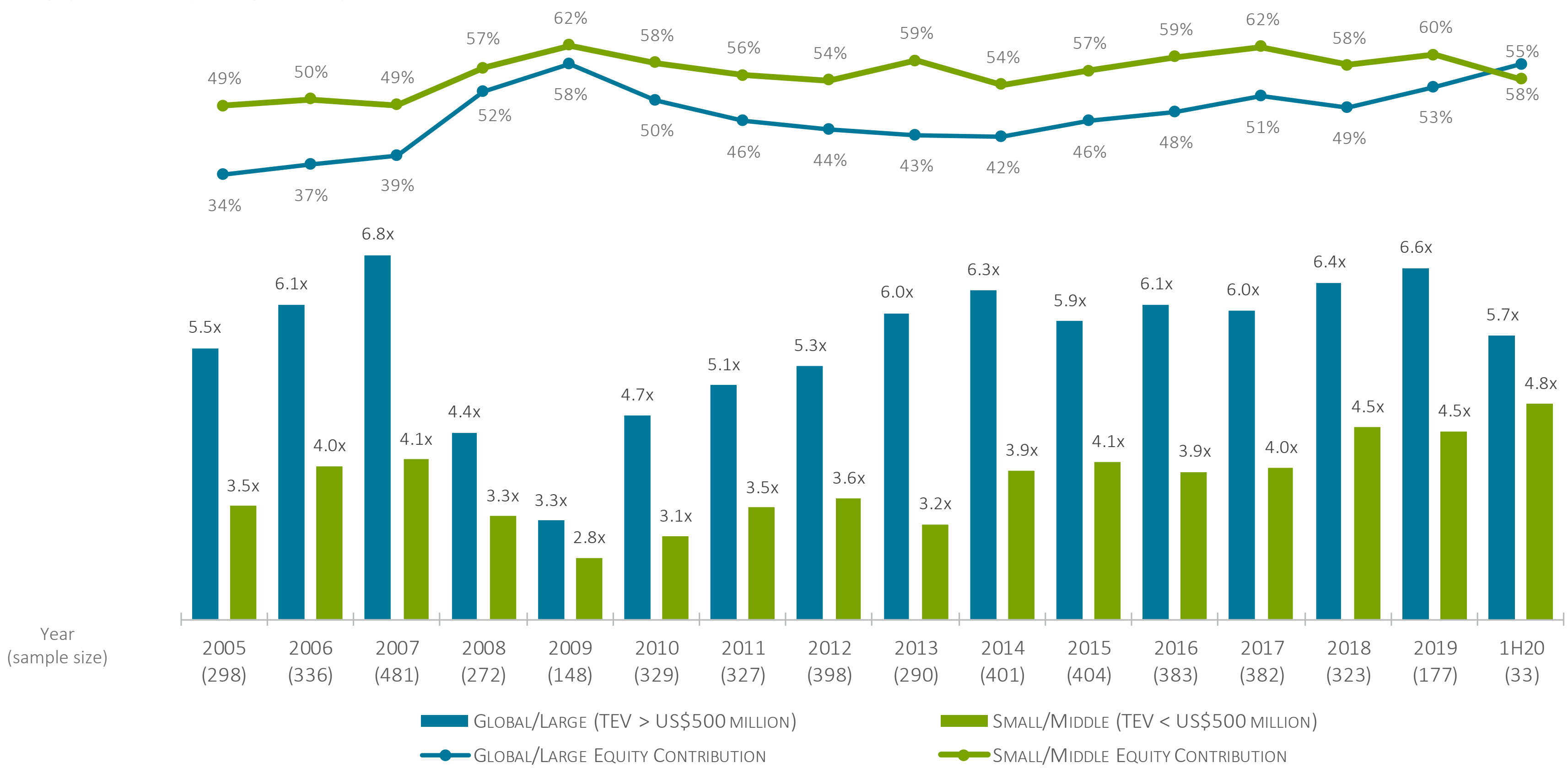
- The spike in prices for 1H 2020 (per StepStone's data) could be due to the small sample size of 19.
- S&P has a multiple of 12.0x for Q1-Q3 2020, which is more in-line with StepStone's expectations.

SPI, StepStone analysis; latest available data in SPI as of Q2 2020; SPI data is continuously updated, and historical values are subject to change.

Leverage Multiples

EQUITY CONTRIBUTIONS HAVE REMAINED WELL ABOVE PRE-GFC LEVELS AS PRICES HAVE INCREASED

U.S. LEVERAGE MULTIPLES



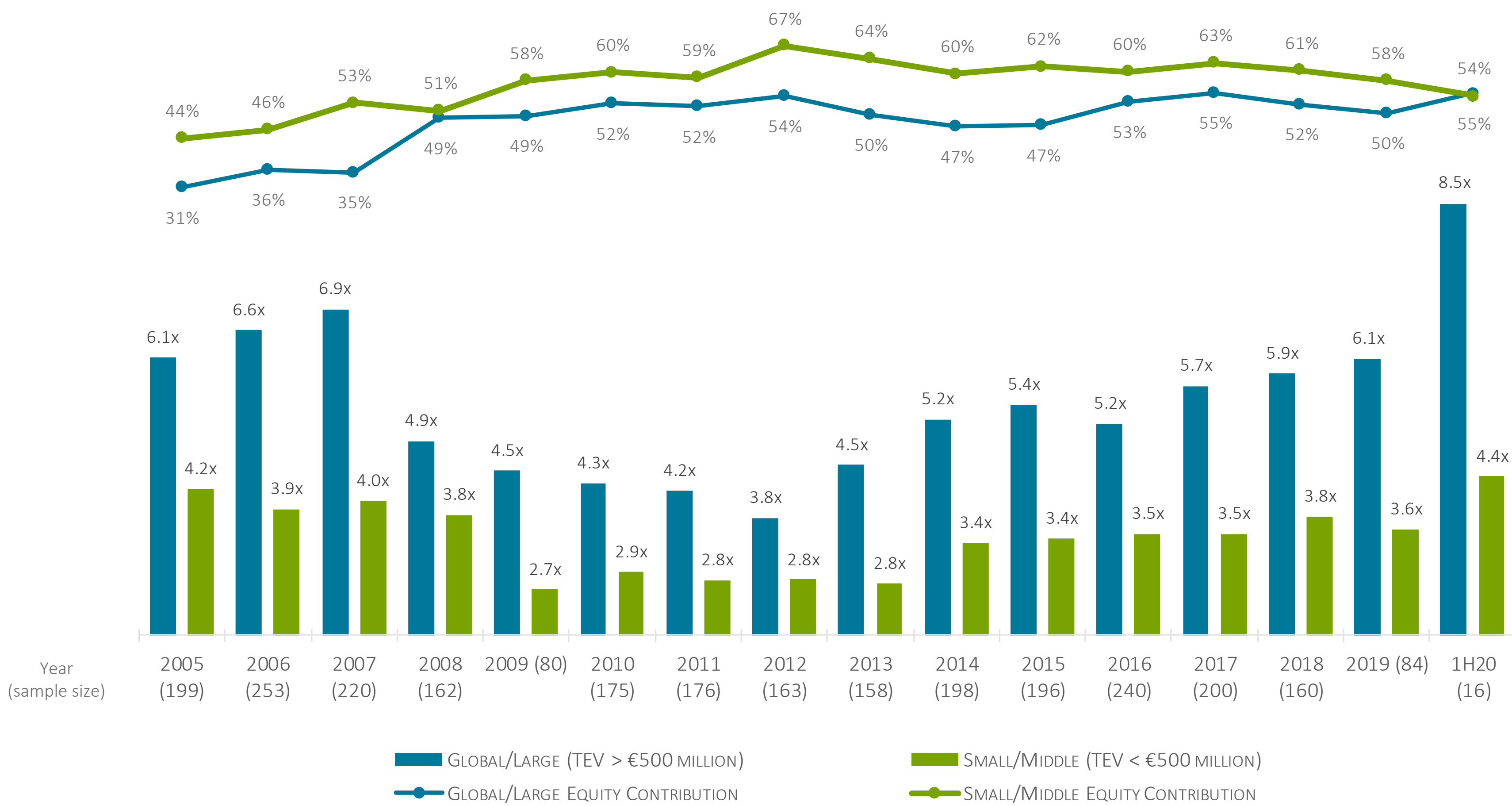
- Leverage multiples in the Global/Large market dipped below 6x in 1H20.
- Prices are high, but capital structures should be more durable as the equity contributions continue to remain at a healthier level than pre-GFC.

SPI, StepStone analysis; SPI data as of Q2 2020 and is continuously updated and historical values are subject to change.

Leverage Multiples

IN EUROPE, LEVERAGE MULTIPLES REMAINED BELOW 2005-2007 THROUGH 2019; THE LARGE SPIKE IN 1H20 IS CONCERNING BUT COULD BE ATTRIBUTED TO THE SMALL SAMPLE SIZE OF 16.

EUROPEAN LEVERAGE MULTIPLES



SPI, StepStone analysis; SPI data as of Q2 2020 is continuously updated and historical values are subject to change.

Debt Markets

INTEREST COVERAGE DIPPED TO A 10+ YEAR LOW IN 2019; BUT FOR YTD 2020, IT'S AT AN ALL-TIME HIGH

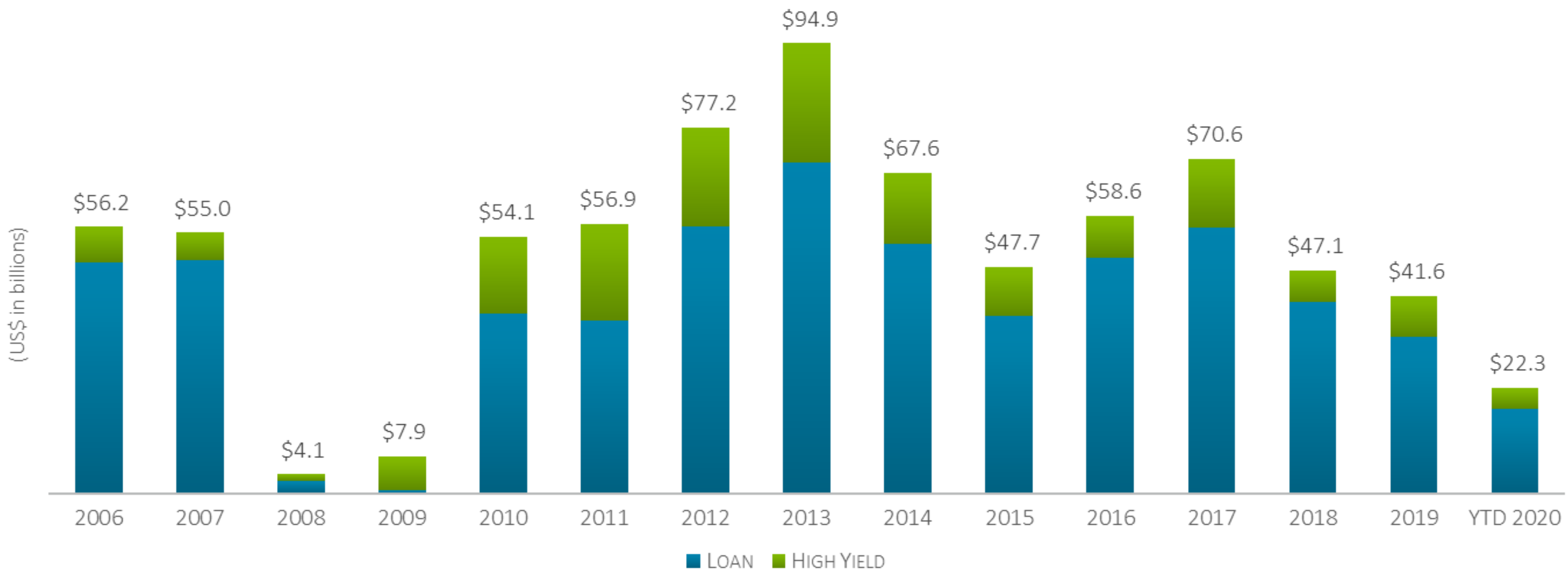
INTEREST COVERAGE RATIO FOR U.S. LARGE CORPORATE LBOs

- There has been a pullback in credit markets, with smaller sample sizes and higher quality deals getting done.

Source: Q3 2020 S&P LBO Review; StepStone Analysis
Interest Coverage Ratio defined as (Adjusted EBITDA – CapEx)/Interest

DIVIDEND ACTIVITY HAS BEEN MUTED BUT PICKED UP SUBSTANTIALLY IN Q3 2020 WITH $20.2 BILLION IN VOLUME

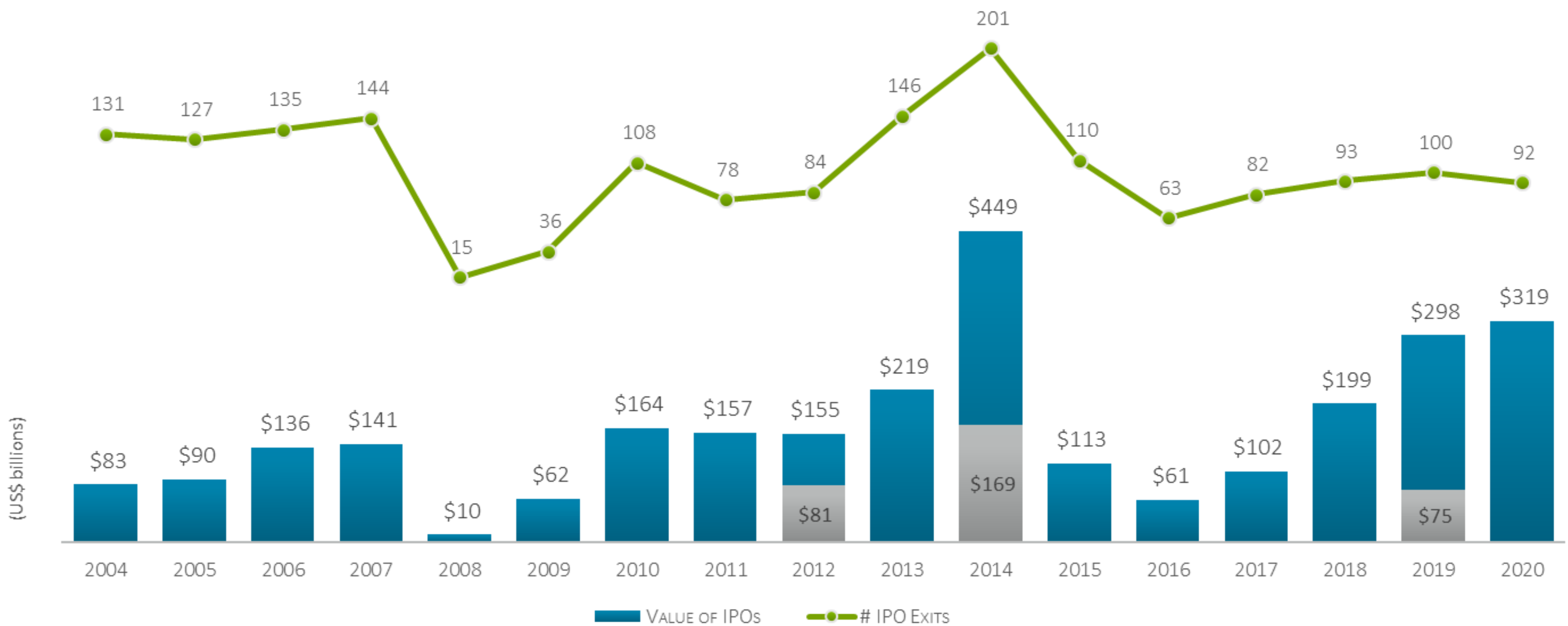
DIVIDEND/STOCK REPURCHASE VOLUME



IPO Market

2019 WAS A STRONG YEAR FOR IPOs – AND Q3 2020 WAS NEARLY FOUR TIMES AS LARGE AS Q2

NYSE AND NASDAQ
IPO ACTIVITY BY YEAR

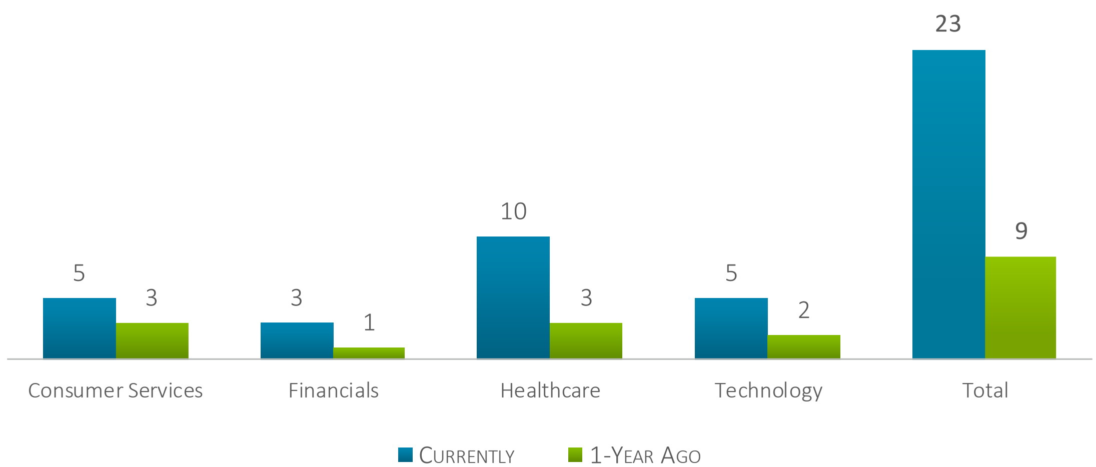


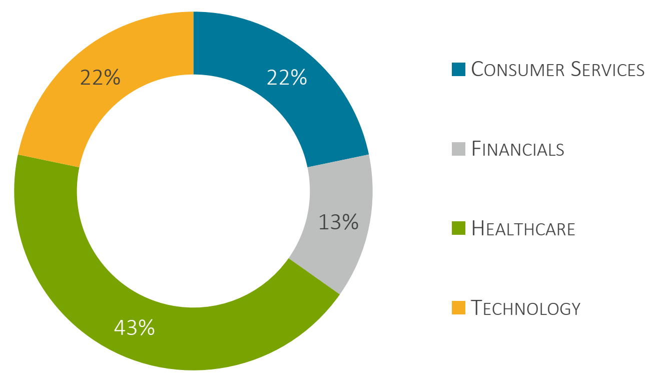
- The largest IPOs during Q3 2020 were KE Holdings ($69.8b), Snowflake ($33.5b), and Li Auto ($20.3b).
- Q1 had 16 IPOs and a total value of $33b. Q2 had 25 IPOs with a total value of $62b. Q3 had 51 IPOs with a total value of $224b.

Source: ThomsonOne as of Q3 2020; StepStone Analysis
In 2012, the grey bar represents the IPO of Facebook (NASDAQ: FB)
In 2014, the grey bar represents the IPO of Alibaba (NYSE: BABA)
In 2019, the grey bar represents the IPO of Uber (NYSE: UBER)

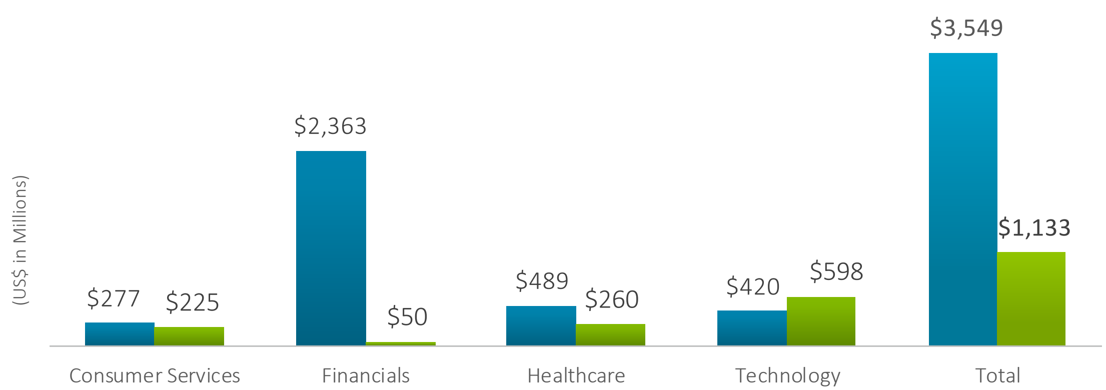
IPO BACKLOG

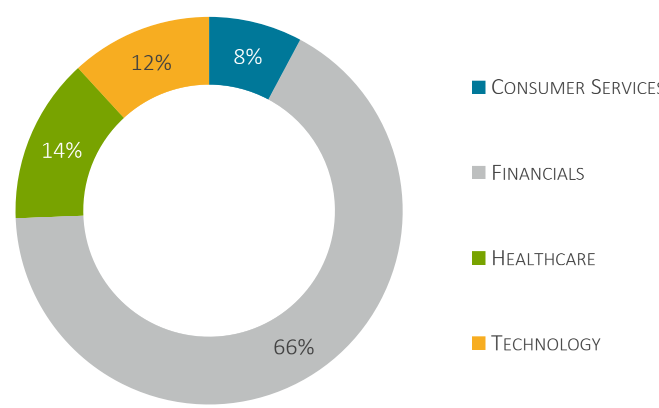
NUMBER OF PROPOSED DEALS BY SECTOR





VALUE OF PROPOSED DEALS BY SECTOR





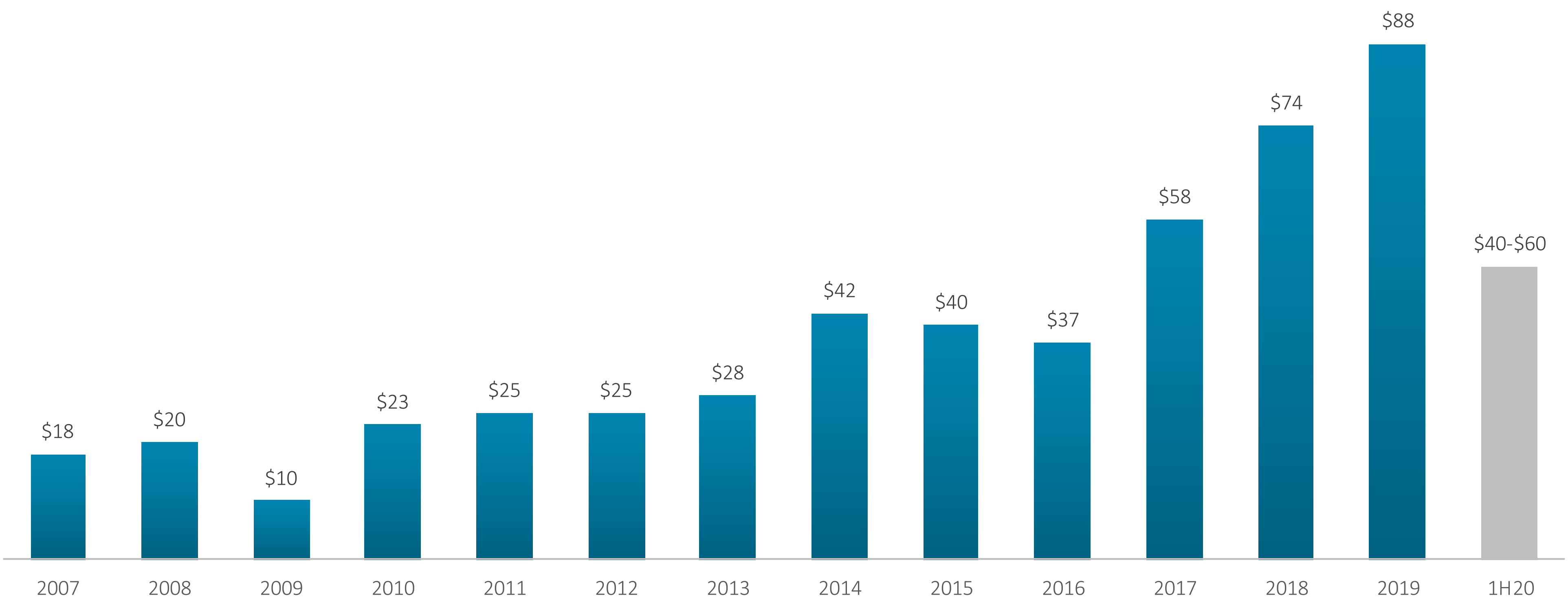
Source: NYSE Euronext, as of October 2020.

Secondary Market Overview

CURRENT INVESTMENT ENVIROMENT

- Secondary market activity has decreased as buyers are focused on their own portfolios and the bid-ask spread is beginning to widen.
- Greenhill is projecting $40-$60 billion volume in 2020, roughly half of the 2019's record volume. Evercore recorded $18 billion of secondary volume in H1 2020.
- Evercore estimates that current dry powder in secondary market is $115 billion, with 50% of that belonging to the six largest secondary buyers in the market.

MARKET TRANSACTION VOLUME



Evercore, Greenhill; August 2020.

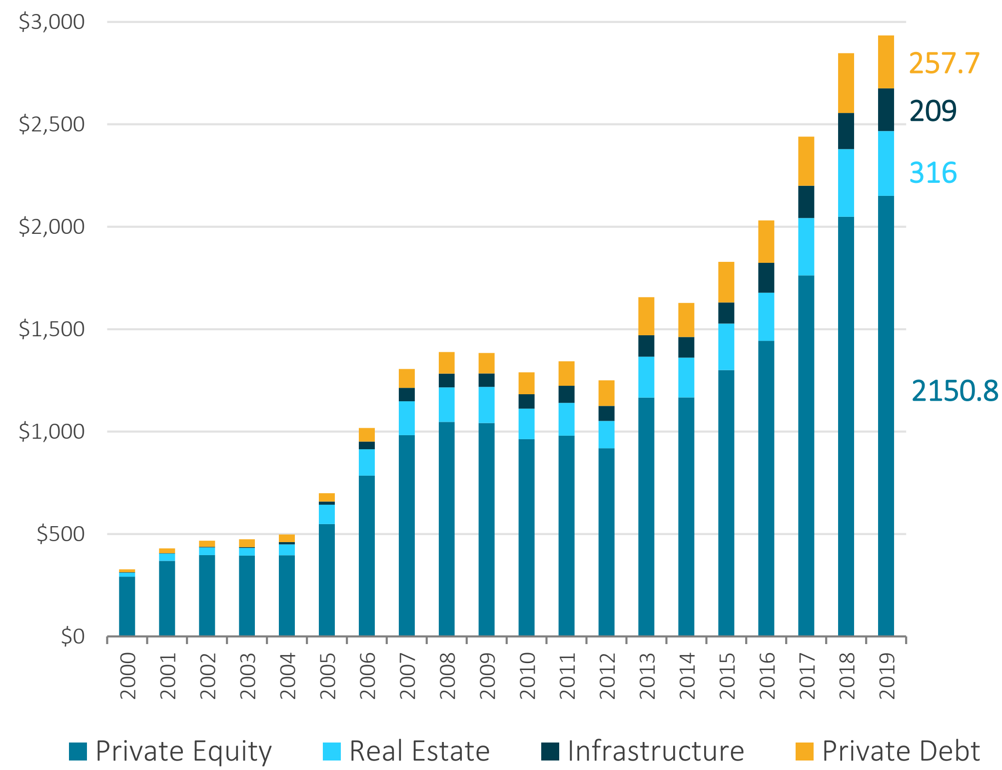
COVID PRIVATE MARKETS OUTLOOK EXCERPT

Dry Powder & Market Resilience

The nature of this dislocation is likely to show Private Markets in their best light

- General partners are sitting on more than US$2.9 trillion of dry powder—enabling them to provide support to sound investments needing capital to get through this massive stop in economic activity
- Direct Lending funds have flexibility to renegotiate and support borrowers because they are not levered the way banks are
- Patient capital creates flexibility for more investments to survive the downturn
- **However**, many funds won't have the capital to support their investments; GPs will need to get creative

PRIVATE MARKETS DRY POWDER ($B)



Source: Preqin, as of October 2019; Preqin data is continuously updated, and historical values are subject to change

Potential Impact On Existing Assets

LIQUIDITY / PRICING

- Plenty of companies and asset managers will seek to boost liquidity (draw revolvers, switch to PIK interest, owners putting in equity, lenders providing more debt, a combination of these, etc.)
- Compared to the GFC, both private lenders and traditional banks are in a better position to provide liquidity today
- Price of debt liquidity will reflect the situation and may range from almost no incremental pricing to 1,000bp+ all-in costs, while equity infusions will be substantially more expensive
- Equity owners are moving aggressively to negotiate deferrals with lenders, landlords/tenants; defer capex; take advantage of government programs; and cut costs to preserve liquidity

COVENANT BREACHES

- Likely to be plentiful; borrowers are in close contact with lenders. So far everybody is interested in finding solutions and addressing them early.
- Lenders that are in control of the facilities (sole or majority lender) will generally have better negotiating position than members of clubs, but the businesses situation will be primary determinant of split of pain between equity and debt
- Equity owners will want to provide support to keep good assets through an unprecedented crisis

DEFAULTS & LOSS RATES

- Loss rates are expected to spike beyond the long-term average
- Lenders will likely mark down loans early to indicate the increased number of covenant breaches and defaults
- Borrowers will work to preserve equity value, but may need to triage portfolios in older funds, driving opportunity for rescue financing

Possible Actions to Address the Crisis

1. MILD UNDERPERFORMANCE

- In a case of mild borrower underperformance leading to an eventual **covenant breach** without any concerns as to the borrower's liquidity or the viability of its business model going forward, the process usually **focuses on a covenant reset** in return for an amendment/ waiver fee.
- These are typically negotiated between the lender, sponsor and/or borrower/ non-sponsored owner.
- In the 3-Month V Scenario, this situation will be the most common, and many assets will avoid even this

2. LIQUIDITY ISSUES

- Lenders asking the sponsor or non-sponsored owner to **inject fresh cash equity**
- Asset owners are already enacting most of the following measures to reduce potential equity needs:
  - **Reduce capex** to the minimum required
  - **Optimize working capital**: reduce inventories, extend payables, collect receivables
  - Take out **flexible costs**
  - Reduce certain **fixed costs** like e.g. re-negotiating lease agreements
  - Access **government support** programs for smaller businesses, e.g. the SBA

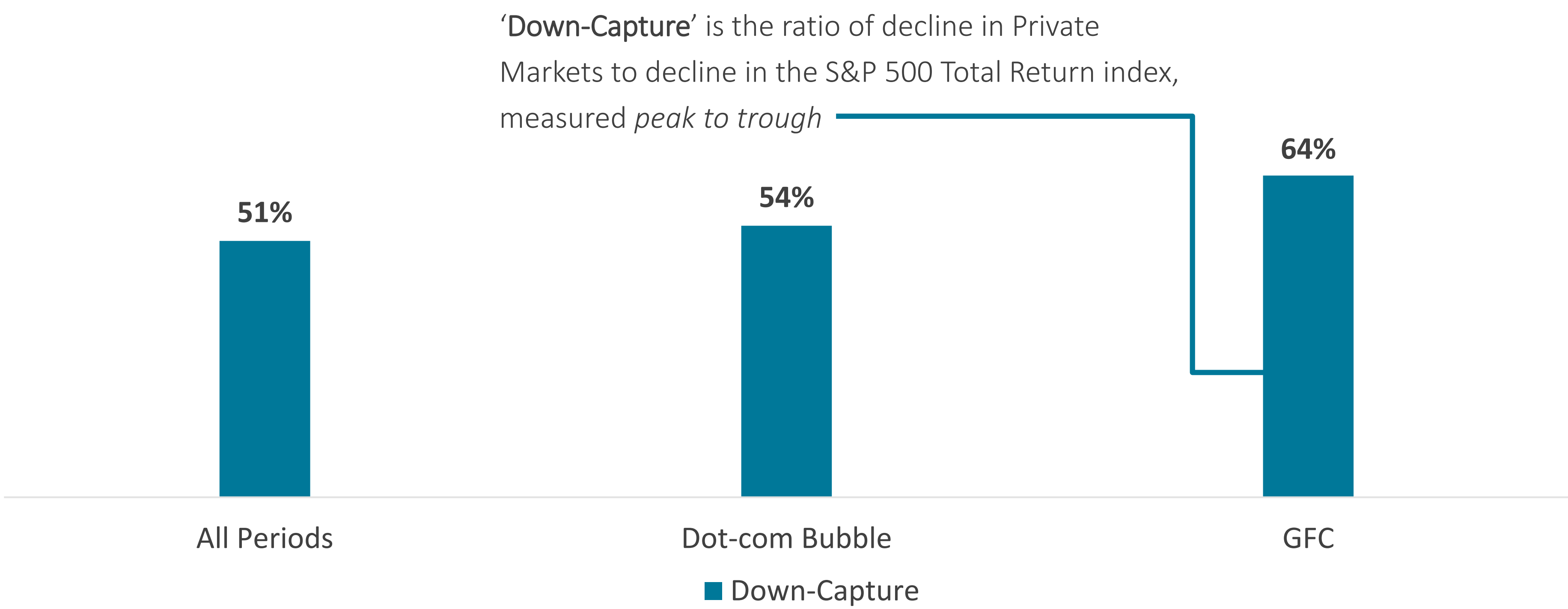
3. FULL RESTRUCTURING

- Senior lenders shut off/defer
  - Any **distributions** e.g., management fees to the equity sponsor/owner
  - Any **contractual cash interest** to subordinated debt providers
- Borrowers ask for/lenders provide:
  - **Deferral/ holiday** of contractual first lien **amortization** payments, **extension** of **maturities,** or conversion into "payment-in-kind"
- Senior lenders provide **RCF availability** past a borrower default , or business seeks out debtor-in-possession to inject **additional debt**
- In return for leniency, lenders will demand lender friendly amendments to **credit documentation** to reduce possible cash leakage
- New equity or debt/equity swap with debtholders
- Discounted payoffs negotiated with lenders

Potential Valuation Impact: Private Equity

Capital market dislocations demonstrate an underappreciated role of Private Markets in an investment portfolio

PRIVATE EQUITY MARKET CAPTURE vs S&P 500TR



- Data from Omni[1] demonstrates Private Markets captured about 60% of the downside during the GFC
- Historically, GPs are not forced to sell at the bottom, and do not capture all the volatility in a market in turmoil

Source: StepStone Portfolio Analytics & Reporting, as of April 2020; SPAR data are updated continuously; values are subject to change.

1. Omni is StepStone's proprietary portfolio monitoring dashboard. Market capture measures the relative performance of an investment manager or managers relative to an index.

Past performance is not necessarily indicative of future results. Actual performance may vary.

What To Do?

StepStone's advice during the crisis is similar to the advice we gave at the top of the cycle: it is difficult to time markets, especially private markets; but pockets of relative value do exist

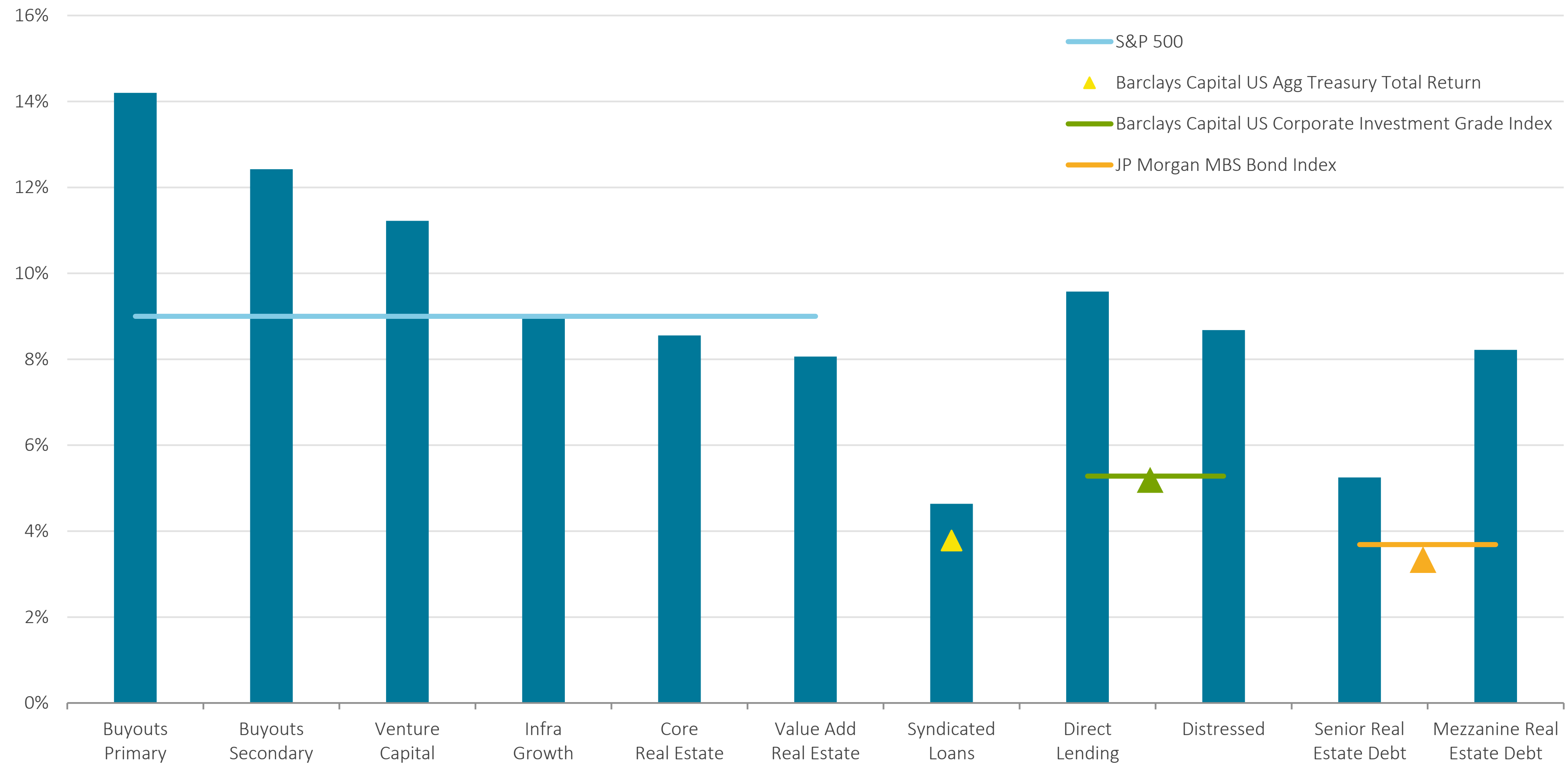
- Stay the course—situations like this are why you invest in private markets in the first place
  - Private markets lend stability to a portfolio in an otherwise volatile time
  - GPs have dry powder ready to take advantage of attractive opportunities, in existing assets as well as in new investments
- Lean into the dislocation—seek out opportunities in each phase of the crisis
  - Syndicated loans / CLOs
  - LP Secondaries
  - Asset recapitalizations
  - Distressed / deep value opportunities as cycle progresses
- There will be opportunities in both private and public markets during this crisis; maintain flexibility, and leverage the relationships you have been building through the cycle

Stay the Course

Private Markets have outperformed through the cycle—maintain disciplined exposure

HISTORICAL PRIVATE vs PUBLIC MARKET RETURNS

ANNUALIZED RETURNS 9/30/2004–9/30/2019)



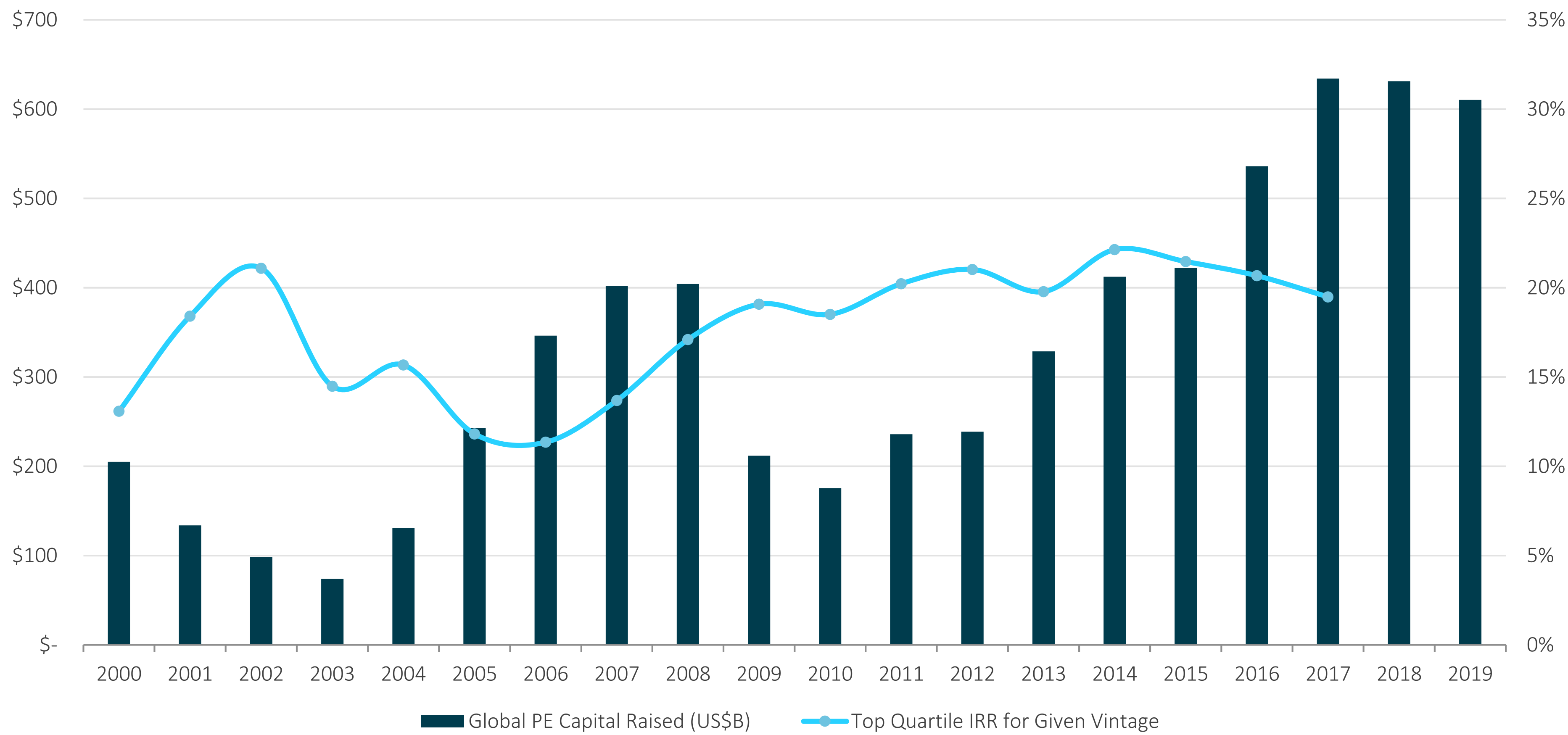
Source: StepStone, Burgiss Private IQ. Note: As of September 30, 2019. The referenced indices/benchmarks are shown for general market comparisons and are not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented **Past performance is not indicative of future results and there can be no assurance that the investment will achieve comparable results or avoid substantial losses**. For illustrative purposes only. Historic annualized returns from September 30, 2004 – September 30, 2019.

Resist the Temptation to Time Private Markets

Every asset class will tout its returns coming out of recession; Private Markets perform best when fundraising is low—but so do other assets

- Fully invested funds may see returns moderate in the near term and will not be able to capitalize on the current dislocation

NEGATIVE CORRELATION BETWEEN LP COMMITMENTS & VINTAGE YEAR RETURNS



Source: IRRs are based on the StepStone Portfolio Analytics & Reporting (SPAR) Universe Global All Private Equity benchmark as of September 30, 2019. Post-2017 vintages are deemed to be too immature for the benchmark to provide meaningful Results; Fundraising from Preqin as of April 2020. Data are continuously updated; historical values subject to change.

Phases of the Downturn

The timing of opportunities will potentially shift through 3 broad phases, but the transitions between phases will be different for each sector

	PHASE 1	PHASE 2	PHASE 3
TIME FROM START OF DISLOCATION	1–6 months	3–12 months	9–24 months
MARKET ENVIRONMENT	• High uncertainty drives spike in listed market volatility • Liquidity flows out of markets generally • Wide bid-ask spread leads to significant decline in transaction volume • Markets uncertain about magnitude & length of dislocation	• Listed market volatility moderates, but is still elevated due to lingering uncertainty • Markets develop understanding of magnitude & length of dislocation • Most impacted assets start to capitulate • Bid-ask spread persists for good assets	• Visibility to recovery starts to emerge, further reducing public market volatility • Sellers holding out for tranquil market multiples/cap rates begin to adjust price expectations • Liquidity begins to flow back into risk assets
SAMPLE OPPORTUNITIES	• Focus on high-quality assets • Formerly liquid assets being abandoned by flight to quality • Senior CLO/CMBS tranches • Performing Senior Syndicated loans • Long/short credit	• LP Secondaries: distressed sellers raising capital by selling high-quality assets • Rescue financing/opportunistic credit • Distressed non-control • Junior CLO tranches • Recaps: help Real Estate vehicles restructure balance sheets	• LP Secondaries: broad based rebalancing leads to increased volume of wide variety of assets • Distressed control & restructuring • Recaps for good assets with tired investors/bad capital structure • Turnaround restructuring of mismanaged, deep value assets

The opinions expressed herein reflect the current opinions of Stepstone as of the date appearing in this material only. There can be no assurance that views and opinions expressed in this document will come to pass.

II. REVIEW OF PRIVATE EQUITY PROGRAM

Private Equity Team

CCCERA BOARD

PORTFOLIO MANAGERS / INVESTOR RELATIONS

Tom Keck, Partner, Head of Research
La Jolla
23 yrs. investment experience
PCG, Blue Capital, McKinsey

Natalie Walker, Managing Director
La Jolla
14 yrs. investment experience
Oppenheimer & Co.

Chris Barnes, Associate
La Jolla
4 yrs. investment experience
Bainbridge, Coast Edge Partners

Jose Fernandez, Partner, Co-COO
La Jolla
23 yrs. investment experience
PCG, Latham & Watkins LLP

LEGAL/STRUCTURING

Andrew Bratt, General Counsel
La Jolla
16yrs. relevant experience
PCA, Covington & Burling, O'Nelveny & Myers

- 150+ investment professionals cover 12 sectors across primaries, secondaries and co-investments
- Sought after allocator of $40 bn annually[1]
- Highly networked team attends 4,020+ GP meetings annually[2]
- Senior team averages 16 yrs. investment experience

- 90+ professionals provide monitoring and reporting and investor relations services
- Monitor and analyze 4,600+ investments comprising 40,000+ companies across 1,290+ GPs
- Senior team averages 21 yrs. relevant experience

- 15+ professionals negotiate transaction documents and execute fund structuring solutions
- Senior team averages 14 yrs. relevant experience
- 6 additional legal and compliance professionals focus on private debt and real estate activities

RESEARCH CAPABILITIES

- Strategic Advice
- Manager Selection
- Market Research
- Portfolio Planning

CUSTOMIZED SEPARATE ACCOUNTS

- Separate Accounts
- Targeted Commingled Funds
  - Co-Investments
  - Secondaries
  - Real Estate
  - Venture Capital
  - Private Debt

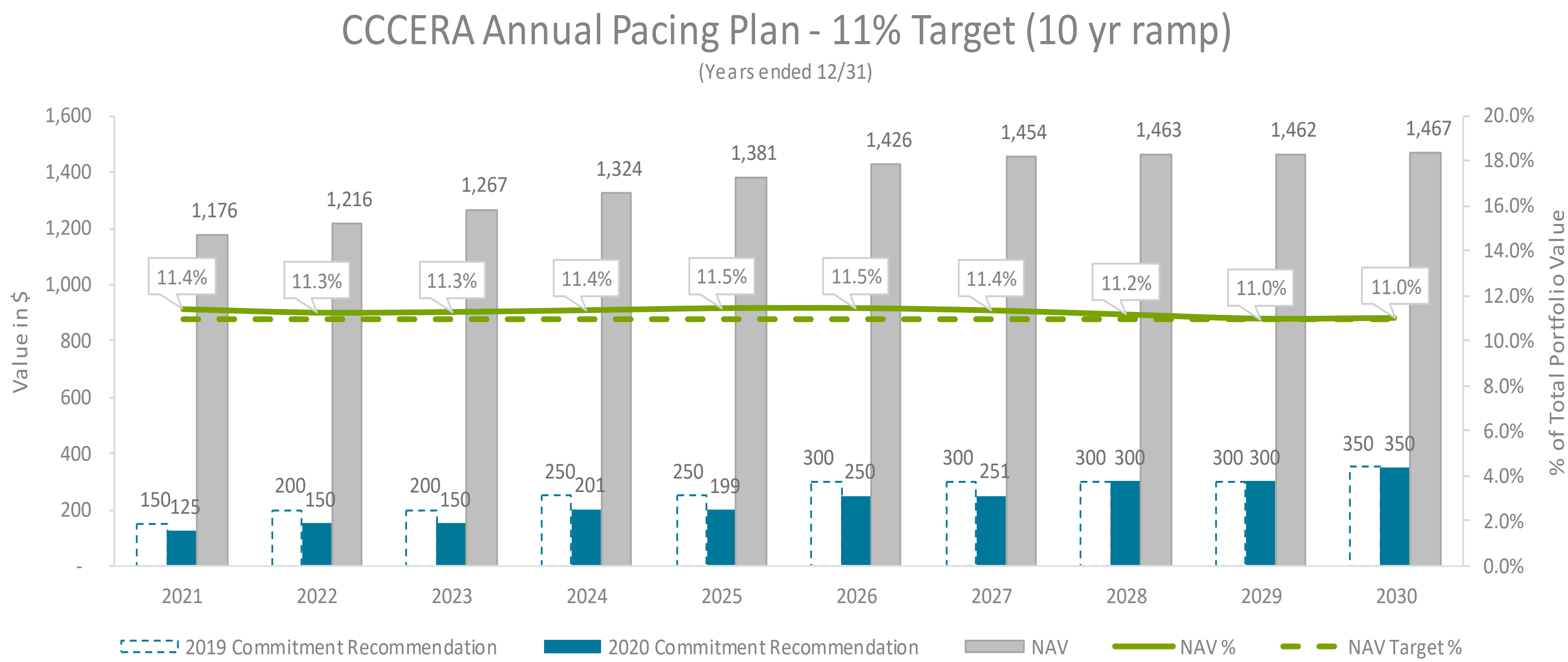
THOROUGH ACCOUNT ADMINISTRATION

- Investment Monitoring
- Performance & Analytics
- Fund Administration
- Replacement Manager Capabilities
- Portfolio & Risk Management

1. StepStone deployed US$40 billion in 2020
2. LTM ended June 30, 2020.

CCCERA Pacing Analysis

- StepStone updated its pacing analysis for CCCERA's private equity and real assets portfolio based on a starting total portfolio FMV of $9.3 billion and a private equity and real assets FMV of $1.1 billion, as of December 31, 2019
- To maintain a 11.0% target allocation over 10 years, StepStone recommends:
  - Committing $125-$350 million per annum



Note: While Stepstone currently believes that the assumptions on which the analysis are based are reasonable under the circumstances, there is no guarantee that the conditions on which such assumptions are based will materialize or otherwise be applicable. Plan level projections provided by CCCERA.

III. PRIVATE EQUITY PORTFOLIO PERFORMANCE

Performance Summary

- CCCERA private equity and real asset portfolio includes $1.8 billion in commitments to 59 primary and fund-of-funds investments.
    - The market value of CCCERA's private equity and real asset portfolio was ~$1.1 billion as of June 30, 2020.
- Over the twelve-month period ended June 30, 2020, the portfolio drew $121.6 million and received $127.8 million in distributions.
- The portfolio generated a net gain of $44.3 million year-over-year, leading to a 1-year IRR of 4.3%.
- The portfolio generated since-inception[1] IRR of 9.1% as of June 30, 2020.

US$ in millions

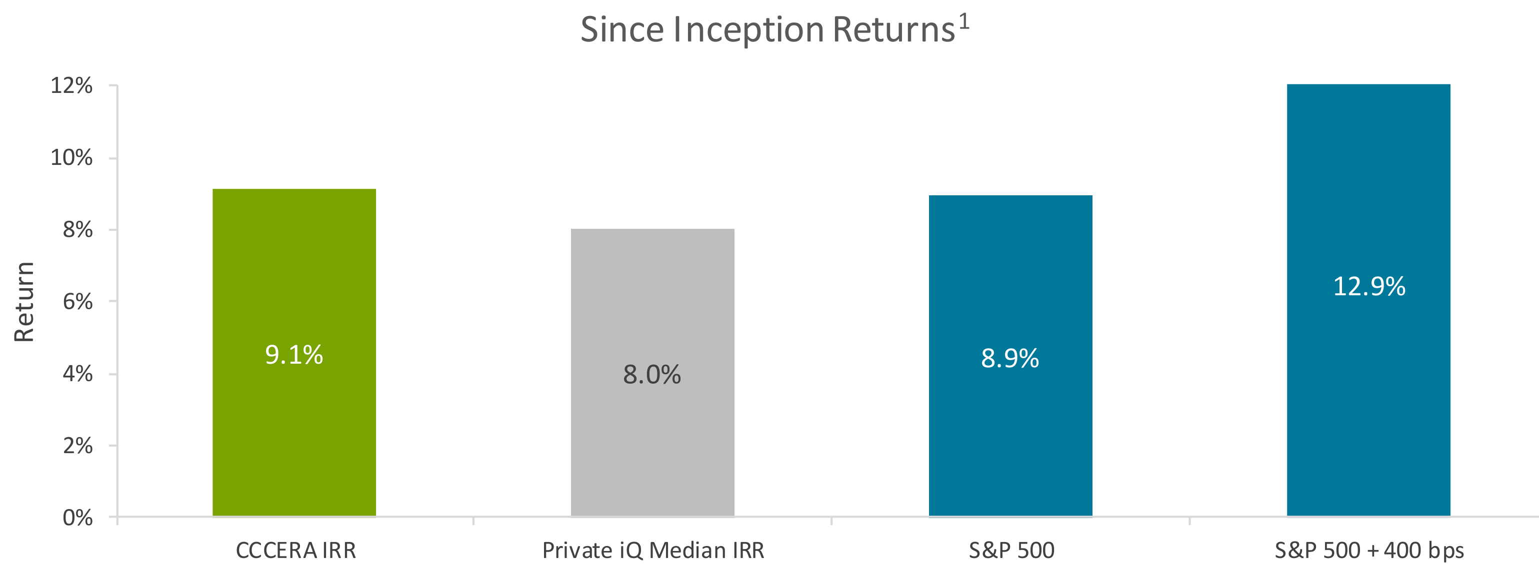
	INCEPTION TO JUNE 30, 2020	INCEPTION TO MARCH 31, 2020	INCEPTION TO JUNE 30, 2019	QUARTERLY CHANGE	ANNUAL CHANGE
Number of Managers	19	19	19	-	0
Number of Investments	59	59	59	-	0
Committed Capital	$1,833.6	$1,833.6	$1,833.6	$0.0	$0.0
Contributed Capital[2]	1,598.5	1,577.1	1,476.9	21.3	121.6
Distributed Capital	1,230.7	1,195.6	1,102.9	35.1	127.8
Market Value	1,060.4	1,001.9	1,022.3	58.5	38.0
Total Value	**$2,291.1**	**$2,197.4**	**$2,125.2**	**$93.6**	**$165.8**
Total Gain/(Loss)	692.6	620.3	648.4	72.3	44.3
Unfunded Commitment	340.4	360.2	483.3	(19.8)	(142.9)
Total Exposure	1,400.8	1,362.1	1,505.7	38.7	(104.9)
DPI[3]	0.77x	0.76x	0.75x	0.01x	0.02x
TVPI[4]	1.43x	1.39x	1.44x	(0.04)x	(0.01)x
IRR[5]	9.1%	8.7%	9.5%	+40 bps	-40 bps

1. Inception represents date of first capital call on 1/25/1996.
2. Total Gross Contributed represents total contributions to underlying investments including capitalized legal and other transaction fees and expenses.
3. Distributions to Paid-in Capital (DPI) represents total gross distributions received by the Fund from underlying investments (including distributions used to offset drawdowns for investments) divided by total gross contributions.
4. Total Value to Paid in Multiple (TVPI) is net of management fees and expenses related to the underlying investments, and represent the aggregate net asset value of underlying investments plus gross distributions received by the Fund from those investments, divided by total gross contributions.
5. Internal Rate of Return (IRR) is calculated based on the Portfolio's daily cash flows and market value as of quarter-end. IRR is net of manager's fees, expenses and carried interest, but not net of StepStone Advisory fees. IRR net of StepStone fees is 9.4% since inception.
6. IRR and TVPI for certain vehicles may have been impacted by Stepstone's or the underlying GPs' use of subscription-backed credit facilities by such vehicles. Reinvested/recycled amounts increase contributed capital.

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve its objectives or avoid substantial losses

Performance versus Benchmarks

- Portfolio performance is measured against three benchmarks: (i) Burgiss Private iQ, (ii) the S&P 500 index, and (iii) the S&P 500 index + 400 basis points ("bps") as a liquidity premium.
- The Portfolio's overall since inception IRR of 9.1% is outperforming the median private market benchmark.



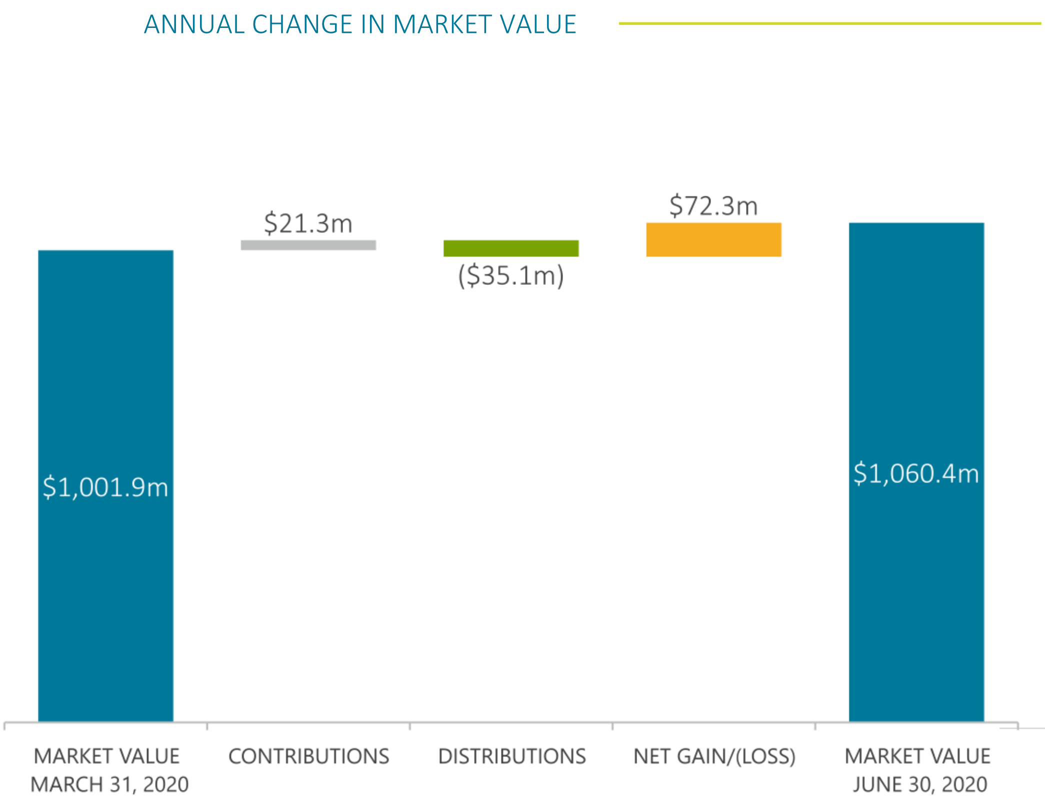
Period ending June 30, 2020	QTD	1-Year	3-Year	5-Year	10-Year	Since Inception
CCCERA Portfolio IRR[2]	7.2%	4.3%	9.4%	9.1%	10.1%	9.1%
Private iQ Median IRR Benchmark[1,3]	2.4%	-0.3%	5.8%	6.2%	8.5%	8.0%
S&P 500 Index[4]	20.5%	7.5%	10.7%	10.7%	14.0%	8.9%
S&P 500 Index + 400 bps[4]	21.5%	11.5%	14.7%	14.7%	18.0%	12.9%

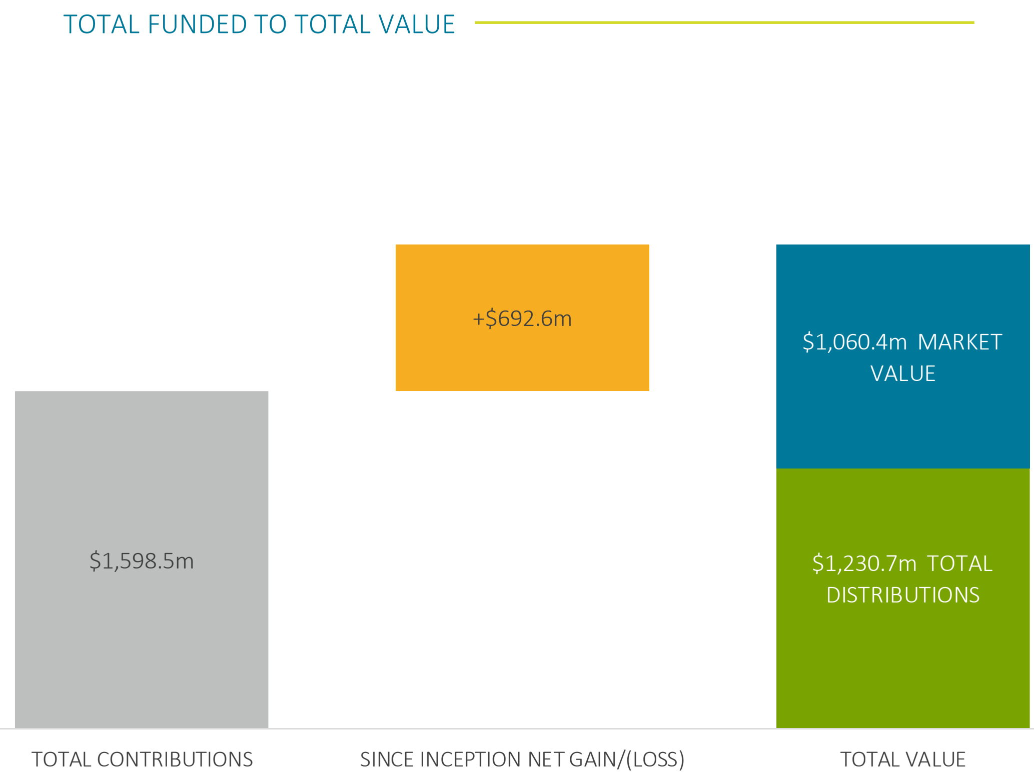
1. Primary fund benchmark data includes CCCERA specific vintage years and strategies. Please note that CCCERA's Fund-of-Funds include a double layer of fees and compose a majority of commitments CCCERA has made to date.
2. IRR Performance is net of underlying partnership fees, but not net of StepStone Advisory fees.
3. Published by Burgiss Private iQ, All Private Equity Median IRRs, for Vintages 1996 - 2005, 2007- 2009, & 2011-2020, as of June 30, 2020. This benchmark data is continuously updated and therefore subject to change.
4. S&P 500 Total Return (TR) index is shown for general market comparison and is not meant to represent any particular fund. An investor cannot directly invest in an index. Moreover, indices do not reflect commissions or fees that may be charged to an investment product based on the index, which may materially affect the performance data presented. Returns under one year are unannualized. QTD includes +100 bps premium (400 bps / 4).

Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

Valuation Bridge

- The Portfolio experienced a gain of $44.3 million year-over-year, generating a 1-year IRR of 4.3%.
- Since-inception net gain through June 30, 2019 is $692.6 million.

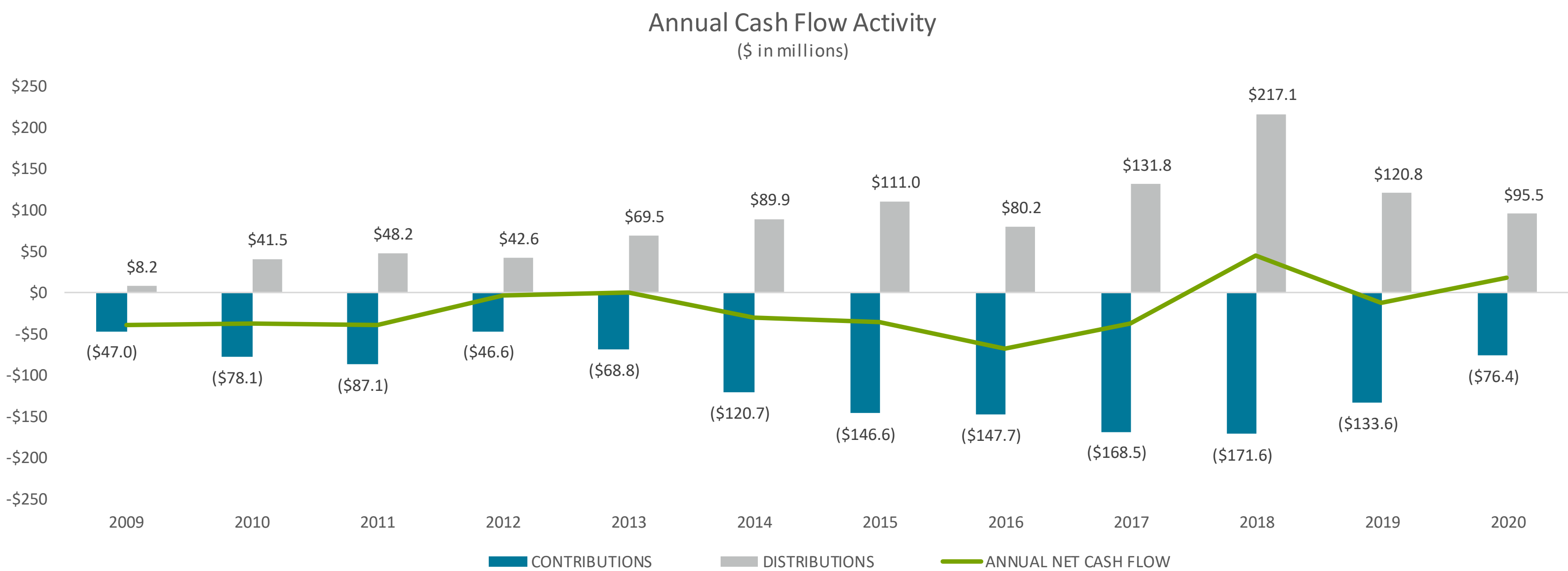




Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

Cash Flow Analysis

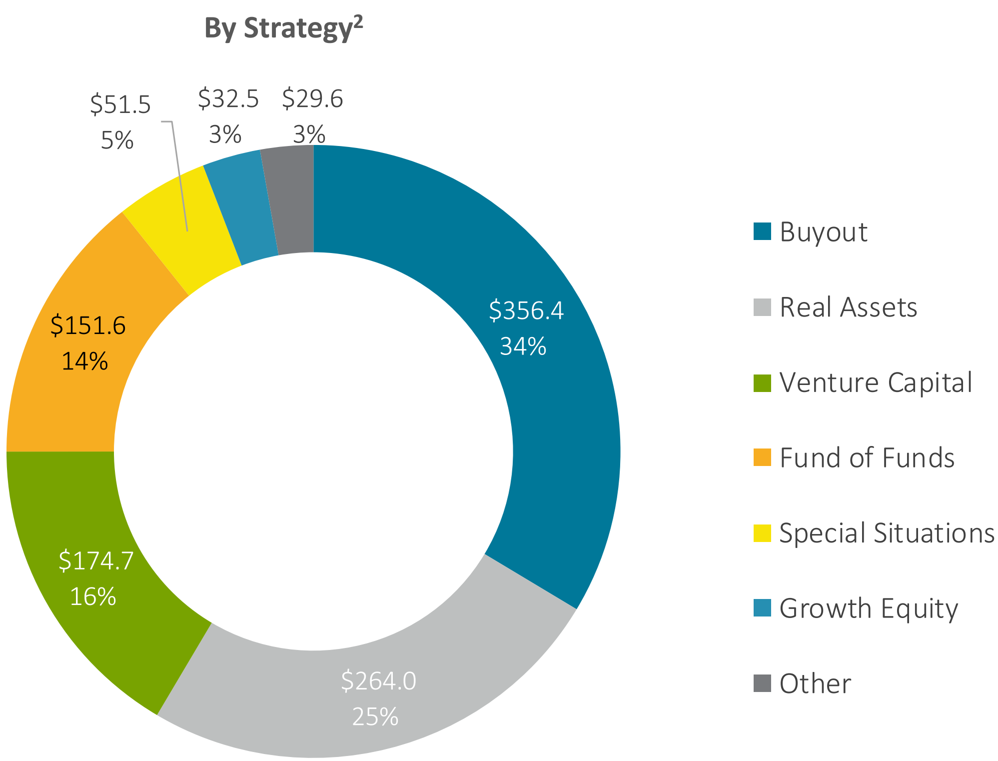
- Portfolio is on pace to be cash flow positive for 2020, as CCCERA has received $95.5 million in distributions and made $76.4 million in contributions YTD through Q3 2020

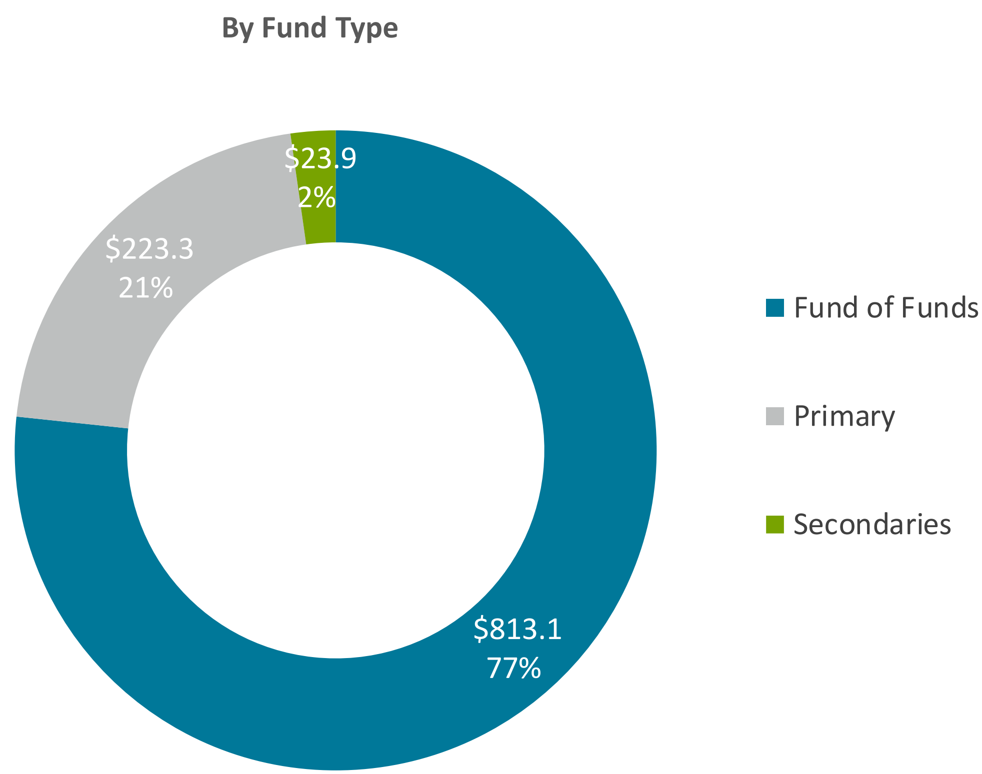


Past performance is not necessarily indicative of future results and there can be no assurance that the fund will achieve comparable results or avoid substantial losses.

Diversification[1]

- Portfolio has broad exposure by strategy with the largest exposure to Buyout funds (34%)
- Portfolio has a relatively high concentration to FOF managers, but is expected to be more diversified as CCCERA makes primary commitments



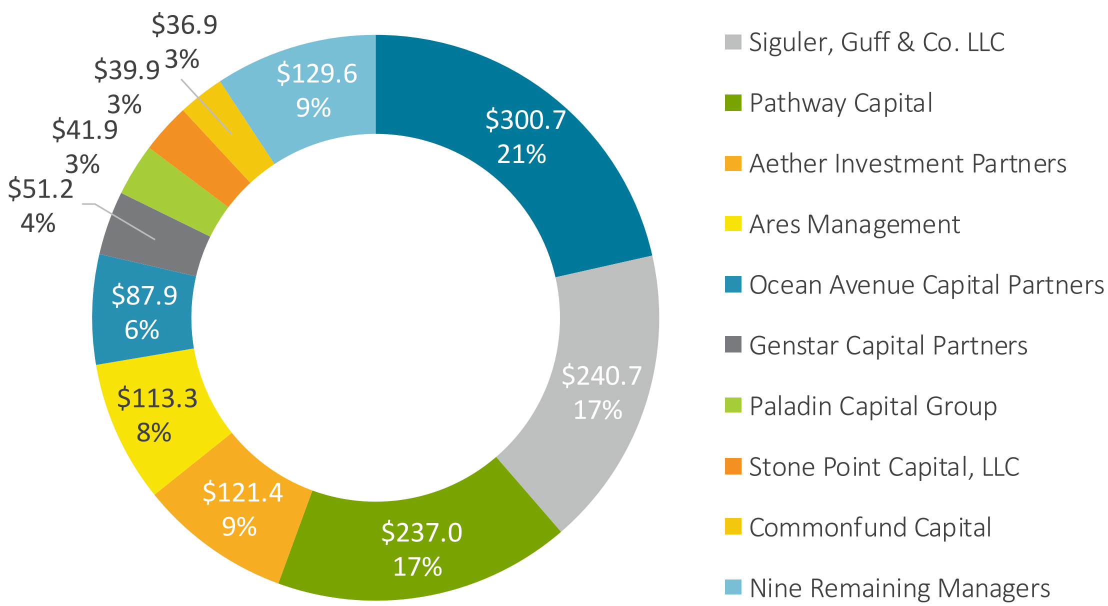


1. Breakdown calculated off market value.
2. Strategy includes look through of Fund of Funds to underlying strategies. Other includes Co-investment, Private Debt and Real Estate strategies.

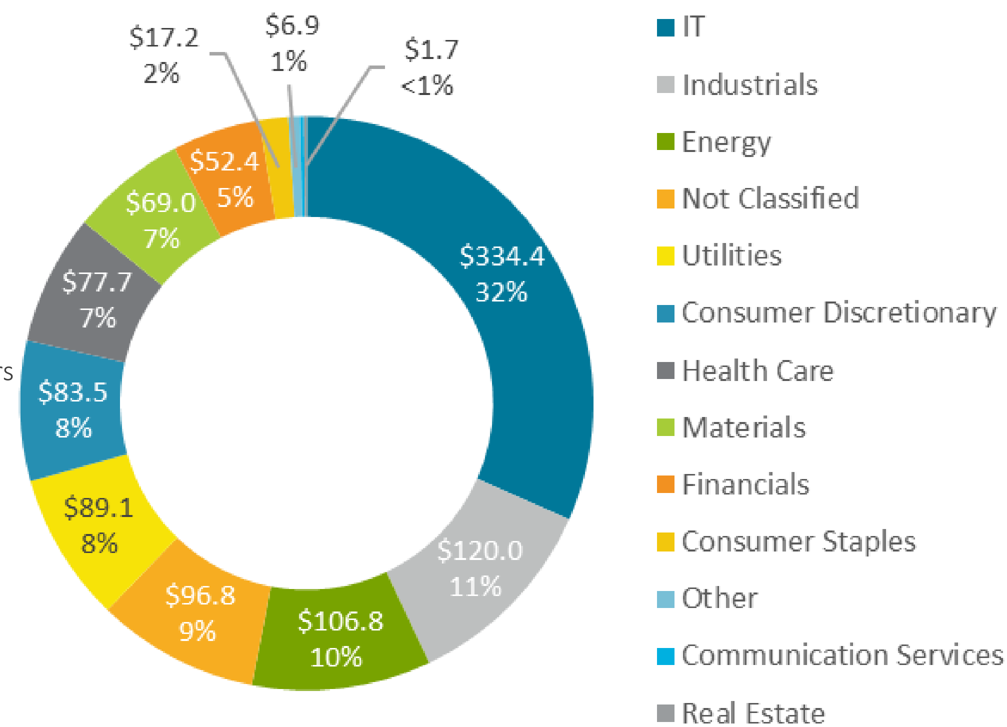
Diversification

- By Investment Manager, over half of the Portfolio's exposure still resides with three fund-of-fund managers
- By Industry, the Portfolio is well balanced with the largest exposure to IT at 32%

By Investment Manager[1]



By Industry[2,3]



1. Breakdown based on exposure, calculated as market value plus unfunded commitment.
2. Not Classified includes Siguler Guff CCCERA Opportunities Fund and Siguler Guff Secondary Opportunities Fund. Other includes undisclosed industry designation by the managers.
3. Industry graph represents CCCERA's exposed market value to underlying asset level holdings.
4. Graphs above are presented in millions.

Risks and Other Considerations

Risks Associated with Investments. Identifying attractive investment opportunities and the right underlying fund managers is difficult and involves a high degree of uncertainty. There is no assurance that the investments will be profitable and there is a substantial risk that losses and expenses will exceed income and gains.

Restrictions on Transfer and Withdrawal; Illiquidity of Interests; Interests Not Registered. The investment is highly illiquid and subject to transfer restrictions and should only be acquired by an investor able to commit its funds for a significant period of time and to bear the risk inherent in such investment, with no certainty of return. Interests in the investment have not been and will not be registered under the laws of any jurisdiction. Investment has not been recommended by any securities commission or regulatory authority. Furthermore, the aforementioned authorities have not confirmed the accuracy or determined the adequacy of this document.

Limited Diversification of Investments. The investment opportunity does not have fixed guidelines for diversification and may make a limited number of investments.

Reliance on Third Parties. StepStone will require, and rely upon, the services of a variety of third parties, including but not limited to attorneys, accountants, brokers, custodians, consultants and other agents and failure by any of these third parties to perform their duties could have a material adverse effect on the investment.

Reliance on Managers. The investment will be highly dependent on the capabilities of the managers.

Risk Associated with Portfolio Companies. The environment in which the investors directly or indirectly invests will sometimes involve a high degree of business and financial risk. StepStone generally will not seek control over the management of the portfolio companies in which investments are made, and the success of each investment generally will depend on the ability and success of the management of the portfolio company.

Uncertainty Due to Public Health Crisis. A public health crisis, such as the recent outbreak of the COVID-19 global pandemic, can have unpredictable and adverse impacts on global, national and local economies, which can, in turn, negatively impact StepStone and its investment performance. Disruptions to commercial activity (such as the imposition of quarantines or travel restrictions) or, more generally, a failure to contain or effectively manage a public health crisis, have the ability to adversely impact the businesses of StepStone's investments. In addition, such disruptions can negatively impact the ability of StepStone's personnel to effectively identify, monitor, operate and dispose of investments. Finally, the outbreak of COVID-19 has contributed to, and could continue to contribute to, extreme volatility in financial markets. Such volatility could adversely affect StepStone's ability to raise funds, find financing or identify potential purchasers of its investments, all of which could have material and adverse impact on StepStone's performance. The impact of a public health crisis such as COVID-19 (or any future pandemic, epidemic or outbreak of a contagious disease) is difficult to predict and presents material uncertainty and risk with respect to StepStone's performance.

Taxation. An investment involves numerous tax risks. Please consult with your independent tax advisor.

Conflicts of Interest. Conflicts of interest may arise between StepStone and investors. Certain potential conflicts of interest are described below; however, they are by no means exhaustive. There can be no assurance that any particular conflict of interest will be resolved in favor of an investor.

Allocation of Investment Opportunities. StepStone currently makes investments, and in the future will make investments, for separate accounts having overlapping investment objectives. In making investments for separate accounts, these accounts may be in competition for investment opportunities.

Existing Relationships. StepStone and its principals have long-term relationships with many private equity managers. StepStone clients may seek to invest in the pooled investment vehicles and/or the portfolio companies managed by those managers.

Carried Interest. In those instances where StepStone and/or the underlying portfolio fund managers receive carried interest over and above their basic management fees, receipt of carried interest could create an incentive for StepStone and the portfolio fund managers to make investments that are riskier or more speculative than would otherwise be the case. StepStone does not receive any carried interest with respect to advice provided to, or investments made on behalf, of its advisory clients.

Other Activities. Employees of StepStone are not required to devote all of their time to the investment and may spend a substantial portion of their time on matters other than the investment.

Material, Non-Public Information. From time to time, StepStone may come into possession of material, non-public information that would limit their ability to buy and sell investments.

Global Offices

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Av Jorge Basadre 607
San Isidro, Lima, Peru

ROME
Via Crescenzio, 14
00193 Rome, Italy

TOKYO
Level 1 Yusen Building
2-3-2 Marunouchi
Chiyoda-ku, Tokyo 100-0005, Japan

CLEVELAND
127 Public Square, Suite 5050
Cleveland, Ohio 44114

LONDON
2 St James's Market
London SW1Y 4AH

SAN FRANCISCO
Two Embarcadero Center, Suite 480
San Francisco, CA 94111

TORONTO
130 King Street West, Suite 1205
Exchange Tower
Toronto, ON Canada M5X 1A9

DUBLIN
Newmount House
22-24 Lower Mount Street
Dublin 2, Ireland

LUXEMBOURG
124 Boulevard de la Pétrusse
L-2330 Luxembourg

SÃO PAULO
Av. Brigadeiro Faria Lima 3355, 8th Floor
Itaim Bibi - São Paulo SP,
Brazil 04538-133

ZURICH
Klausstrasse 4
CH-8008 Zurich, Switzerland

HONG KONG
Level 15 Nexxus Building
41 Connaught Road Central
Central, Hong Kong

NEW YORK
450 Lexington Ave, 31st Floor
New York, NY 10017

SEOUL
Three IFC Level 43
10 Gukjegeumyung-ro
Yeoungdeungpo-gu,
Seoul 07326 Korea

Meeting Date
11/18/20
Agenda Item
#7

Contra Costa County Employees' Retirement Association

MEMORANDUM

Date: November 18, 2020

To: CCCERA Board of Retirement

From: Rishi Garbharran, Investment Officer; Chih-chi Chu, Investment Analyst

Subject: Alternative Investment Fees and Expense Report

Overview

California public pension plans are required by law to obtain and publicly disclose certain fee and expense data and information on an annual basis in a public meeting (Government Code Section 7514.7, effective January 1, 2017). The law applies to any private fund that is an alternative investment vehicle whose contract with the pension plan was entered into on or after January 1, 2017, and for any existing contract as of December 31, 2016 for which an additional capital commitment is made on or after January 1, 2017. The law also requires the pension plan to use best efforts to obtain this information from funds entered into prior to January 2017. The intent of the legislation was to increase transparency of the cost of private investment vehicles that are used by public funds.

Code Section 7514.7 Disclosure Requirements

1. The fees and expenses that the California plan pays directly to the alternative investment vehicle, the fund manager, or related parties.
   (See Columns E, G, H on the following pages)

2. The California plan's pro rata share of fees and expenses not included in paragraph (1) that are paid from the alternative investment vehicle to the fund manager or related parties. The California plan may independently calculate this information based on information contractually required to be provided by the alternative investment vehicle to the public investment fund. If the California plan independently calculates this information, then the alternative investment vehicle shall not be required to provide the information identified in this paragraph.
   (Column I)

3. The California plan's pro rata share of carried interest distributed to the fund manager or related parties.
   (Column F)

4. The California plan's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held within the alternative investment vehicle to the fund manager or related parties.
   (Column J)

5. Any additional information described in subdivision (b) of Section 6254.26 of the Code.
   (Columns K-V)

Methodology
Beginning in early 2017, we asked all Alternative Investment Managers to use the Institutional Limited Partners Association (ILPA) template to report fees and expenses to CCCERA on a quarterly basis. Though not required for funds where a contract was entered into prior to January 1, 2017, most managers voluntarily provided information using the ILPA template.

This report displays the available data for alternative investment vehicles in which CCCERA was invested as of December 31, 2019. CCCERA Investment Staff will issue a similar report in 2021 when complete data for 2020 is available.

Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Equity
Calendar Year 2019

A	B	C	D	E	F	G	H	I	J
Private Equity Fund	Address	Funding Commitment	Remaining Value as of 12/31/2019	Management Fees	Carried Interest Paid	Partnership Expenses	2019 Offsets	Other Expenses	Fees Paid by Portfolio Companies
Adams Street Partners (CCCERA)	Chicago, IL	$ 210,000,000	$ 152,435,271	$ 1,288,917	$ 184,082	$ 69,524	$ 1,632	$ 370	N/A
Adams Street Partners - Brinson Partnership Fund	Chicago, IL	$ 59,565,614	$ 1,759,115	$ -	$ -	$ 5,212	$ -	$ -	N/A
Adams Street Global Opportunities Secondary Fund II, L.P.	Chicago, IL	$ 30,000,000	$ 6,839,445	$ 180,000	$ 207,005	$ 11,918	$ -	$ -	N/A
Adams Street Global Opportunities Secondary Fund V LP	Chicago, IL	$ 40,000,000	$ 20,959,676	$ 273,000	$ -	$ 9,159	$ -	$ -	N/A
Adams Street Venture Innovation Fund LP	Chicago, IL	$ 75,000,000	$ 57,452,688	$ 742,500	$ -	$ 34,070	$ -	$ 217,397	N/A
AE Industrial Partners Fund II, LP	Boca Raton, FL	$ 35,000,000	$ 5,009,638	$ 665,000	$ -	$ 50,428	$ 494,532	$ 152,732	N/A
Bay Area Equity Fund	San Francisco, CA	$ 10,000,000	$ 2,403,851	$ -	$ -	$ -	$ -	$ 11,612	N/A
Bay Area Equity Fund II	San Francisco, CA	$ 10,000,000	$ 11,376,815	$ 132,134	$ -	$ -	$ -	$ 9,837	N/A
Genstar Capital Partners IX, L.P.	San Francisco, CA	$ 50,000,000	$ 11,895,890	$ 527,431	$ -	$ 140,285	$ 28,358	$ 210,338	N/A
Oaktree Private Investment Fund 2009, L.P.	Los Angeles, CA	$ 40,000,000	$ 2,081,025	$ -	$ -	$ 39,563	$ -	$ -	N/A
Ocean Avenue Fund II	Santa Monica, CA	$ 30,000,000	$ 29,734,471	$ 255,000	$ -	$ 41,179	$ -	$ 98,993	N/A
Ocean Avenue Fund III	Santa Monica, CA	$ 50,000,000	$ 56,618,468	$ 375,000	$ -	$ 107,908	$ -	$ 106,996	N/A
Paladin III, L.P.	Washington, DC	$ 25,000,000	$ 48,793,097	$ 383,245	$ -	$ 49,222	$ -	$ -	N/A
Pathway Private Equity Fund, LLC	Irvine, CA	$ 125,000,000	$ 15,257,739	$ 279,023	$ -	$ 140,464	$ -	$ -	N/A
Pathway Private Equity Fund 2008	Irvine, CA	$ 30,000,000	$ 19,659,572	$ 188,560	$ -	$ 16,813	$ -	$ -	N/A
Pathway Private Equity Fund 6	Irvine, CA	$ 40,000,000	$ 38,609,651	$ 338,242	$ -	$ 26,051	$ -	$ -	N/A
Pathway Private Equity Fund 7	Irvine, CA	$ 70,000,000	$ 77,482,210	$ 630,000	$ -	$ 39,776	$ -	$ -	N/A
Pathway Private Equity Fund 8	Irvine, CA	$ 50,000,000	$ 49,531,304	$ 394,440	$ -	$ 40,008	$ -	$ 22,584	N/A
Siguler Guff CCCERA Opportunities Fund, LP	New York, NY	$ 200,000,000	$ 190,877,838	$ 860,366	$ -	$ -	$ 49,956	$ -	N/A
Siguler Guff Secondary Opportunities Fund	New York, NY	$ 50,000,000	$ 66,766	$ 105,055	$ -	$ 144,886	$ -	$ 123,643	N/A
Siris Partners IV, L.P.	New York, NY	$ 35,000,000	$ 18,790,695	$ 456,862	$ -	$ -	$ -	$ 327	N/A
TPG Healthcare Partners, L.P.	San Francisco, CA	$ 24,000,000	$ 43,107	$ 360,000	$ -	$ 157,177	$ -	$ -	N/A
USPF II Institutional Fund, L.P.	Los Angeles, CA	$ 50,000,000	$ 7,274,161	$ 122,592	$ -	$ 23,047	$ -	$ 171	N/A
United States Power Fund III, L.P.	Los Angeles, CA	$ 65,000,000	$ 14,958,655	$ 183,093	$ -	$ 6,249	$ -	$ 20,701	N/A
Energy Investor Funds USPF IV	Los Angeles, CA	$ 50,000,000	$ 40,172,052	$ 607,057	$ -	$ 93,135	$ -	$ 1,572,304	N/A
Ares EIF V	Los Angeles, CA	$ 50,000,000	$ 45,869,415	$ 700,000	$ -	$ 467,209	$ -	$ 12,441	N/A
Real Assets									
Aether III	Denver, CO	$ 25,000,000	$ 19,566,342	$ 178,129	$ -	$ 27,691	$ -	$ 10,455	N/A
Aether III Surplus	Denver, CO	$ 50,000,000	$ 48,405,092	$ 251,475	$ -	$ 53,342	$ -	$ 12,598	N/A
Aether IV	Denver, CO	$ 50,000,000	$ 37,095,158	$ 424,966	$ -	$ 59,810	$ -	$ 80,892	N/A
Commonfund Capital Natural Resources IX	Wilton, CT	$ 50,000,000	$ 40,085,928	$ 315,260	$ -	$ 86,648	$ -	$ -	N/A
Wastewater Opportunity Fund	Portland, OR	$ 25,000,000	$ 20,705,398	$ 445,862	$ -	$ 260,535	$ -	$ 21,472	N/A

N/A: This information was not available or not provided by the manager.

Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Equity
Calendar Year 2019

K	L	M	N	O	P	Q	R	S	T	U	V
Private Equity Fund	**Address**	**Inception Date**	**Funding Commitment**	**Since Inception Contributions**	**Since Inception Distributions**	**Value as of 12/31/2019**	**Total Value as of 12/31/2019**	**Distributed/ Paid in**	**Total Value/ Paid in**	**Since Inception Gross IRR**	**Since Inception Net IRR**
Adams Street Partners (CCCERA)	Chicago, IL	12/22/1995	$ 210,000,000	$ 186,793,125	$ 155,716,619	$ 152,435,271	$ 308,151,890	0.83x	1.65x	12.8%	10.5%
Adams Street Partners - Brinson Partnership Fund	Chicago, IL	1/18/1996	$ 59,565,614	$ 57,517,409	$ 102,731,103	$ 1,759,115	$ 104,490,218	1.79x	1.82x	14.3%	11.6%
Adams Street Global Opportunities Secondary Fund II, L.P.	Chicago, IL	1/15/2009	$ 30,000,000	$ 28,365,000	$ 41,534,562	$ 6,839,445	$ 48,374,007	1.46x	1.71x	18.0%	14.4%
Adams Street Global Opportunities Secondary Fund V LP	Chicago, IL	9/21/2012	$ 40,000,000	$ 30,611,900	$ 17,181,437	$ 20,959,676	$ 38,141,113	0.56x	1.25x	9.1%	6.5%
Adams Street Venture Innovation Fund LP	Chicago, IL	3/31/2016	$ 75,000,000	$ 45,412,500	$ -	$ 57,452,688	$ 57,452,688	0.00x	1.27x	26.8%	21.8%
AE Industrial Partners Fund II, LP	Boca Raton, FL	5/18/2018	$ 35,000,000	$ 5,103,684	$ -	$ 5,009,638	$ 5,009,638	0.00x	0.98x	NM	-3.4%
Bay Area Equity Fund	San Francisco, CA	4/30/2004	$ 10,000,000	$ 10,000,000	$ 37,018,019	$ 2,403,851	$ 39,421,870	3.70x	3.94x	31.5%	23.3%
Bay Area Equity Fund II	San Francisco, CA	6/29/2009	$ 10,000,000	$ 10,000,000	$ 2,026,313	$ 11,376,815	$ 13,403,128	0.20x	1.34x	9.2%	4.3%
Genstar Capital Partners IX, L.P.	San Francisco, CA	2/21/2019	$ 50,000,000	$ 11,588,302	$ -	$ 11,895,890	$ 11,895,890	0.00x	1.03x	16.2%	14.7%
Oaktree Private Investment Fund 2009, L.P.	Los Angeles, CA	11/18/2009	$ 40,000,000	$ 34,816,729	$ 45,239,703	$ 2,081,025	$ 47,320,728	1.30x	1.36x	6.8%	6.6%
Ocean Avenue Fund II	Santa Monica, CA	5/2/2013	$ 30,000,000	$ 26,100,000	$ 12,440,759	$ 29,734,471	$ 42,175,229	0.48x	1.62x	16.3%	14.3%
Ocean Avenue Fund III	Santa Monica, CA	4/15/2016	$ 50,000,000	$ 43,500,000	$ 10,000,000	$ 56,618,468	$ 66,618,468	0.23x	1.53x	32.5%	29.1%
Paladin III, L.P.	Washington, DC	11/30/2007	$ 25,000,000	$ 33,767,853	$ 24,922,119	$ 48,793,097	$ 73,715,216	0.74x	2.18x	22.5%	13.8%
Pathway Private Equity Fund, LLC	Irvine, CA	1/19/1999	$ 125,000,000	$ 124,872,985	$ 173,694,350	$ 15,257,739	$ 188,952,089	1.39x	1.51x	10.2%	8.4%
Pathway Private Equity Fund 2008	Irvine, CA	7/31/2009	$ 30,000,000	$ 29,176,161	$ 29,432,721	$ 19,659,572	$ 49,092,293	1.01x	1.68x	14.6%	12.1%
Pathway Private Equity Fund 6	Irvine, CA	8/22/2011	$ 40,000,000	$ 37,949,925	$ 26,171,659	$ 38,609,651	$ 64,781,310	0.69x	1.71x	16.9%	14.5%
Pathway Private Equity Fund 7	Irvine, CA	7/10/2013	$ 70,000,000	$ 64,259,537	$ 24,984,769	$ 77,482,210	$ 102,466,979	0.39x	1.59x	17.9%	15.4%
Pathway Private Equity Fund 8	Irvine, CA	11/23/2015	$ 50,000,000	$ 36,878,846	$ 5,587,274	$ 49,531,304	$ 55,118,578	0.15x	1.49x	21.3%	19.6%
Siguler Guff CCCERA Opportunities Fund, LP	New York, NY	6/3/2014	$ 200,000,000	$ 155,705,741	$ 51,219,831	$ 190,877,838	$ 242,097,669	0.33x	1.55x	20.5%	17.4%
Siguler Guff Secondary Opportunities Fund	New York, NY	11/30/2016	$ 50,000,000	$ 29,999,802	$ 42,724,959	$ 66,766	$ 42,791,725	1.42x	1.43x	118.5%	74.9%
Siris Partners IV, L.P.	New York, NY	5/18/2018	$ 35,000,000	$ 16,204,485	$ -	$ 18,790,695	$ 18,790,695	0.00x	1.16x	72.8%	40.2%
TPG Healthcare Partners, L.P.	San Francisco, CA	6/28/2019	$ 24,000,000	$ 617,686	$ -	$ 43,107	$ 43,107	0.00x	NM	NM	NM
USPF II Institutional Fund, L.P.	Los Angeles, CA	7/15/2005	$ 50,000,000	$ 65,029,556	$ 72,650,020	$ 7,274,161	$ 79,924,181	1.12x	1.23x	5.9%	3.3%
United States Power Fund III, L.P.	Los Angeles, CA	5/31/2007	$ 65,000,000	$ 71,409,097	$ 73,638,258	$ 14,958,655	$ 88,596,913	1.03x	1.24x	6.2%	3.6%
Energy Investor Funds USPF IV	Los Angeles, CA	11/28/2011	$ 50,000,000	$ 63,087,754	$ 30,672,586	$ 40,172,052	$ 70,844,638	0.49x	1.12x	7.3%	3.4%
Ares EIF V	Los Angeles, CA	11/28/2016	$ 50,000,000	$ 47,434,111	$ 9,204,621	$ 45,869,415	$ 55,074,036	0.19x	1.16x	15.6%	10.6%
Real Assets											
Aether III	Denver, CO	11/27/2013	$ 25,000,000	$ 23,183,517	$ 3,758,603	$ 19,566,342	$ 23,324,945	0.16x	1.01x	3.7%	0.2%
Aether III Surplus	Denver, CO	11/30/2013	$ 50,000,000	$ 49,696,370	$ 8,516,717	$ 48,405,092	$ 56,921,809	0.17x	1.15x	5.8%	3.9%
Aether IV	Denver, CO	1/30/2016	$ 50,000,000	$ 36,955,325	$ 2,149,276	$ 37,095,158	$ 39,244,434	0.06x	1.06x	8.7%	3.4%
Commonfund Capital Natural Resources IX	Wilton, CT	6/30/2013	$ 50,000,000	$ 43,324,995	$ 10,460,771	$ 40,085,928	$ 50,546,699	0.24x	1.17x	6.2%	4.2%
Wastewater Opportunity Fund	Portland, OR	12/8/2015	$ 25,000,000	$ 22,288,924	$ 2,031,922	$ 20,705,398	$ 22,737,320	0.09x	1.02x	7.6%	1.3%

NM: This data is not yet meaningful.

Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Credit
Calendar Year 2019

A	B	C	D	E	F	G	H	I	J
Private Credit Fund	**Address**	**Funding Commitment**	**Remaining Value as of 12/31/2019**	**Management Fees**	**Carried Interest Paid**	**Partnership Expenses**	**2019 Offsets**	**Other Expenses**	**Fees Paid by Portfolio Companies**
Angelo Gordon Energy Credit Opportunities Fund	New York, NY	$ 16,500,000	$ 4,138,549	$ 108,204	$ 195,622	$ 57,009	$ -	$ -	N/A
StepStone CC Opportunities Fund, LLC - All Series	La Jolla, CA	$ 920,000,000	$ 510,247,072	$ 1,500,000	$ -	$ 646,970	$ -	$ -	N/A
Torchlight Debt Opportunity Fund II	New York, NY	$ 128,000,000	$ -	$ -	$ -	$ 81,281	$ -	$ -	N/A
Torchlight Debt Opportunity Fund IV	New York, NY	$ 60,000,000	$ 10,150,950	$ 191,967	$ -	$ 142,719	$ -	$ -	N/A
Torchlight Debt Opportunity Fund V	New York, NY	$ 75,000,000	$ 26,431,783	$ 709,691	$ -	$ 264,165	$ -	$ -	N/A

N/A: This information was not available or not provided by the manager.

Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Private Credit
Calendar Year 2019

K	L	M	N	O	P	Q	R	S	T	U	V
Private Credit Fund	**Address**	**Inception Date**	**Funding Commitment**	**Since Inception Contributions**	**Since Inception Distributions**	**Value as of 12/31/2019**	**Total Value as of 12/31/2019**	**Distributed/ Paid in**	**Total Value/ Paid in**	**Since Inception Gross IRR**	**Since Inception Net IRR**
Angelo Gordon Energy Credit Opportunities Fund	New York, NY	8/14/2015	$ 16,500,000	$ 18,750,000	$ 18,829,566	$ 4,138,549	$ 22,968,115	1.00x	1.22x	14.5%	9.4%
StepStone CC Opportunities Fund, LLC - All Series	La Jolla, CA	12/18/2017	$ 920,000,000	$ 489,208,462	$ 21,489,403	$ 510,247,072	$ 531,736,475	0.04x	1.09x	11.2%	9.8%
Torchlight Debt Opportunity Fund II	New York, NY	7/1/2006	$ 128,000,000	$ 218,263,562	$ 208,563,775	$ -	$ 208,563,775	0.96x	0.96x	0.2%	-1.0%
Torchlight Debt Opportunity Fund IV	New York, NY	8/1/2012	$ 60,000,000	$ 84,866,971	$ 104,809,507	$ 10,150,950	$ 114,960,457	1.23x	1.35x	13.3%	10.8%
Torchlight Debt Opportunity Fund V	New York, NY	3/12/2015	$ 75,000,000	$ 60,000,000	$ 50,184,746	$ 26,431,783	$ 76,616,529	0.84x	1.28x	17.9%	11.8%

Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Real Estate
Calendar Year 2019

A	B	C	D	E	F	G	H	I	J
Real Estate Fund	**Address**	**Funding Commitment**	**Remaining Value as of 12/31/2019**	**Management Fees**	**Carried Interest Paid**	**Partnership Expenses**	**2019 Offsets**	**Other Expenses**	**Fees Paid by Portfolio Companies**
AG Realty Fund VIII, L.P.	New York, NY	$ 80,000,000	$ 21,842,935	$ 269,620	$ 175,587	$ 93,940	$ 8,230	$ -	N/A
AG Realty Fund IX (A), L.P.	New York, NY	$ 65,000,000	$ 65,265,041	$ 791,271	$ -	$ 198,036	$ 17,924	$ -	N/A
DLJ RECP Fund III, L.P.	New York, NY	$ 75,000,000	$ 20,221,158	$ 258,216	$ -	$ 93,478	$ -	$ 1,395	N/A
DLJ RECP Fund IV, L.P.	New York, NY	$ 100,000,000	$ 78,333,601	$ 606,835	$ -	$ 182,687	$ -	$ 27,448	N/A
DLJ RECP Fund V, L.P.	New York, NY	$ 75,000,000	$ 50,033,992	$ 589,383	$ -	$ 573,767	$ 3,907	$ 272,939	N/A
DLJ RECP Fund VI, L.P.	New York, NY	$ 50,000,000	$ 26,377,494	$ 515,929	$ -	$ 912,969	$ 4,902	$ 386,587	N/A
Invesco Real Estate Fund II	Dallas, TX	$ 85,000,000	$ -	-	-	$ 18,932	-	-	N/A
Invesco U.S. Value-Add Fund III	Dallas, TX	$ 35,000,000	$ 2,054,977	$ 104,985	-	$ 33,416	-	-	N/A
Invesco U.S. Value-Add Fund IV	Dallas, TX	$ 35,000,000	$ 16,901,831	$ 318,341	-	$ 104,697	-	-	N/A
Invesco U.S. Value-Add Fund V	Dallas, TX	$ 75,000,000	$ 19,496,203	$ 186,192	-	$ 450,166	-	-	N/A
LaSalle Income & Growth Fund VI	Chicago, IL	$ 75,000,000	$ 25,492,558	$ 236,700	$ -	$ 80,613	$ -	$ -	N/A
LaSalle Income & Growth Fund VII	Chicago, IL	$ 75,000,000	$ 51,569,338	$ 853,953	$ -	$ 69,688	$ -	$ -	N/A
Long Wharf Real Estate Partners IV L.P.	Boston, MA	$ 25,000,000	$ 7,024,191	$ 145,746	$ -	$ 47,947	$ -	$ -	N/A
Long Wharf Real Estate Partners V L.P.	Boston, MA	$ 50,000,000	$ 42,060,312	$ 650,321	$ -	$ 97,240	$ -	$ -	N/A
Oaktree Real Estate Opportunities Fund V, LP	Los Angeles, CA	$ 50,000,000	$ 4,241,993	$ 59,866	$ 178,000	$ 78,726	$ 5,453	$ -	N/A
Oaktree Real Estate Opportunities Fund VI, LP	Los Angeles, CA	$ 80,000,000	$ 28,718,003	$ 508,784	$ 451,185	$ 534,326	$ -	$ -	N/A
Oaktree Real Estate Opportunities Fund VII, LP	Los Angeles, CA	$ 65,000,000	$ 56,048,590	$ 975,000	$ -	$ 552,185	$ 3,826	$ 532,321	N/A
Paulson Real Estate Fund II LP	New York, NY	$ 20,000,000	$ 27,027,926	$ 234,810	$ 257,614	$ 71,269	$ -	$ -	N/A
Siguler Guff Distressed Real Estate Opportunities Fund, LP	New York, NY	$ 75,000,000	$ 34,145,096	$ 264,911	$ 1,928,738	$ 51,793	$ -	$ -	N/A
Siguler Guff Distressed Real Estate Opportunities Fund II, LP	New York, NY	$ 70,000,000	$ 50,319,321	$ 503,609	$ 115,752	$ 97,768	$ -	$ -	N/A
Siguler Guff DREOF II Co-Investment Fund	New York, NY	$ 25,000,000	$ 20,266,816	$ 186,822	$ 373,182	$ 36,090	$ -	$ -	N/A

N/A: This information was not available or not provided by the manager.

Contra Costa County Employees' Retirement Association
Government Code Section 7514.7 Disclosure: Real Estate
Calendar Year 2019

K	L	M	N	O	P	Q	R	S	T	U	V
Real Estate Fund	**Address**	**Inception Date**	**Funding Commitment**	**Since Inception Contributions**	**Since Inception Distributions**	**Remaining Value as of 12/31/2019**	**Total Value as of 12/31/2019**	**Distributed/ Paid in**	**Total Value/ Paid in**	**Since Inception Gross IRR**	**Since Inception Net IRR**
AG Realty Fund VIII, L.P.	New York, NY	12/13/2010	$ 80,000,000	$ 75,401,855	$ 98,433,174	$ 21,842,935	$ 120,276,109	1.31x	1.60x	19.8%	14.7%
AG Realty Fund IX (A), L.P.	New York, NY	12/8/2014	$ 65,000,000	$ 55,575,000	$ 8,775,000	$ 65,265,041	$ 74,040,041	0.16x	1.33x	16.9%	11.3%
DLJ RECP Fund III, L.P.	New York, NY	6/6/2005	$ 75,000,000	$ 100,580,205	$ 69,903,257	$ 20,221,158	$ 90,124,415	0.70x	0.90x	0.0%	-2.1%
DLJ RECP Fund IV, L.P.	New York, NY	12/26/2007	$ 100,000,000	$ 126,533,735	$ 86,400,155	$ 78,333,601	$ 164,733,756	0.68x	1.30x	6.3%	3.8%
DLJ RECP Fund V, L.P.	New York, NY	7/18/2013	$ 75,000,000	$ 85,456,882	$ 58,913,882	$ 50,033,992	$ 108,947,874	0.69x	1.27x	22.1%	12.1%
DLJ RECP Fund VI, L.P.	New York, NY	11/20/2018	$ 50,000,000	$ 25,335,866	$ -	$ 26,377,494	$ 26,377,494	0.00x	1.04x	20.8%	5.3%
Invesco Real Estate Fund II	Dallas, TX	5/17/2007	$ 85,000,000	$ 78,202,813	$ 101,028,308	$ -	$ 101,028,308	1.29x	1.29x	8.2%	6.8%
Invesco U.S. Value-Add Fund III	Dallas, TX	12/2/2011	$ 35,000,000	$ 32,386,424	$ 42,502,806	$ 2,054,977	$ 44,557,783	1.31x	1.38x	15.3%	12.0%
Invesco U.S. Value-Add Fund IV	Dallas, TX	6/30/2014	$ 35,000,000	$ 29,808,739	$ 22,353,948	$ 16,901,831	$ 39,255,779	0.75x	1.32x	14.7%	12.2%
Invesco U.S. Value-Add Fund V	Dallas, TX	7/28/2017	$ 75,000,000	$ 22,517,045	$ 4,723,439	$ 19,496,203	$ 24,219,642	0.21x	1.08x	13.9%	11.3%
LaSalle Income & Growth Fund VI	Chicago, IL	1/20/2012	$ 75,000,000	$ 71,428,571	$ 81,382,065	$ 25,492,558	$ 106,874,623	1.14x	1.50x	17.8%	13.2%
LaSalle Income & Growth Fund VII	Chicago, IL	10/30/2015	$ 75,000,000	$ 67,455,556	$ 31,765,322	$ 51,569,338	$ 83,334,660	0.47x	1.24x	16.4%	11.0%
Long Wharf Real Estate Partners IV L.P.	Boston, MA	11/13/2012	$ 25,000,000	$ 25,000,000	$ 30,587,887	$ 7,024,191	$ 37,612,078	1.22x	1.50x	17.3%	14.1%
Long Wharf Real Estate Partners V L.P.	Boston, MA	11/20/2015	$ 50,000,000	$ 50,000,000	$ 19,764,652	$ 42,060,312	$ 61,824,964	0.40x	1.24x	13.3%	10.9%
Oaktree Real Estate Opportunities Fund V, LP	Los Angeles, CA	2/23/2011	$ 50,000,000	$ 50,000,000	$ 75,380,955	$ 4,241,993	$ 79,622,948	1.51x	1.59x	16.8%	12.4%
Oaktree Real Estate Opportunities Fund VI, LP	Los Angeles, CA	9/20/2012	$ 80,000,000	$ 80,000,000	$ 84,010,175	$ 28,718,003	$ 112,728,178	1.05x	1.41x	14.0%	9.2%
Oaktree Real Estate Opportunities Fund VII, LP	Los Angeles, CA	4/1/2015	$ 65,000,000	$ 59,995,000	$ 18,915,000	$ 56,048,590	$ 74,963,590	0.32x	1.25x	41.9%	24.8%
Paulson Real Estate Fund II LP	New York, NY	12/31/2013	$ 20,000,000	$ 19,345,623	$ 6,796,190	$ 27,027,926	$ 33,824,116	0.35x	1.75x	18.0%	12.0%
Siguler Guff Distressed Real Estate Opportunities Fund, LP	New York, NY	9/2/2010	$ 75,000,000	$ 69,375,000	$ 90,282,563	$ 34,145,096	$ 124,427,659	1.30x	1.79x	17.4%	13.0%
Siguler Guff Distressed Real Estate Opportunities Fund II, LP	New York, NY	7/5/2013	$ 70,000,000	$ 61,985,000	$ 36,732,005	$ 50,319,321	$ 87,051,326	0.59x	1.40x	13.1%	10.0%
Siguler Guff DREOF II Co-Investment Fund	New York, NY	7/7/2015	$ 25,000,000	$ 20,537,862	$ 8,321,475	$ 20,266,816	$ 28,588,291	0.41x	1.39x	14.9%	11.9%

MEMORANDUM

Date: November 18, 2020

To: CCCERA Board of Retirement

From: Timothy Price, Chief Investment Officer

Subject: Update on Private Equity Commitment

Overview

CCCERA recently made a commitment to a private equity fund using the delegated authority granted in the Investment Policy Statement. A commitment of $50 million was made to GTCR Fund XIII. An overview of the manager underwriting process as well as a brief description of the fund is included below. This memo is for informational purposes only and no action is required from the Board at this time.

Investment Policy Statement

The CCCERA Investment Policy Statement adopted by the Board on September 28, 2016 (amended on April 24, 2019) outlines the hiring process for new investment mandates. Mandates up to a $100 million threshold are approved via a staff review process, while mandates above this threshold require approval by the Board.

GTCR Fund XIII

GTCR is one of the oldest private equity firms in the U.S. with 40 years of operating history. GTCR Fund XIII (the "Fund") is an upper middle market private equity fund focused primarily on control buyouts of companies across four sectors: 1) Technology, Media & Telecommunications, 2) Healthcare, 3) Financial Services & Technology, and 4) Growth Business Services. The Fund will invest primarily in North America and will target control positions with equity check sizes of $100-$500 million. GTCR Fund XIII is a $7.5 billion fund (which includes a $50 million commitment from CCCERA).

GTCR has a team of ~100 employees - ~50 on the investment team and ~50 administrative staff in Legal & Compliance, Finance & Accounting, Talent & Human Capital, and Information Services. The senior investment team is stable and experienced. There are 11 investment team Managing Directors with an average tenure at GTCR of ~15 years. GTCR is headquartered in Chicago, IL.

Meeting Date
11/18/20
Agenda Item
#9

2021
ANNUAL BUDGET

CCCERA
Contra Costa County Employees' Retirement Association

BUDGET SUMMARY

November 18, 2020

Dear Board Members,

It is with pleasure to present the 2021 Proposed Operating Budget for Contra Costa County Employees' Retirement Association (CCCERA).

CCCERA strives towards efficient and effective administration of the plan, safeguarding plan assets wherever possible, providing prompt delivery of earned benefits, and ensuring that members can expect to receive the best customer service. The activities funded by this proposed budget support the strategic initiatives of CCCERA's strategic plan.

Included in the 2021 Proposed Budget, there are estimated expenses for the following:

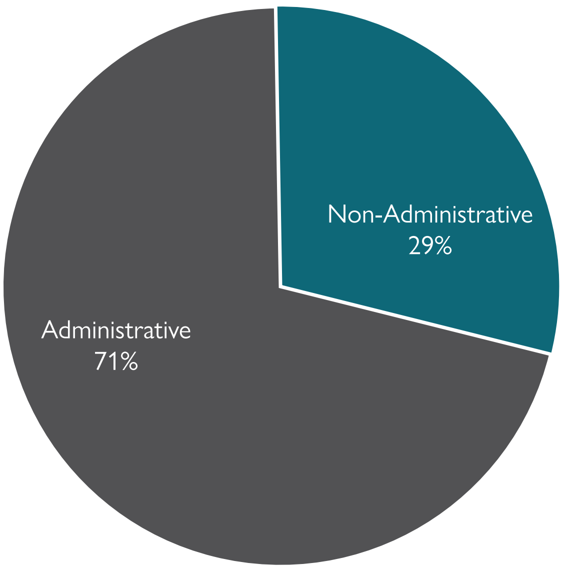
- Anticipated recruitments for internal auditor and investment officer, combined with filling vacancies for a disability specialist and a member service specialist
- Increased overtime and temporary costs supporting first phase of ICON data services work
- Project consulting for Segal assistance with pension administration system
- Additional professional services for disability medical reviews and member benefit statements
- Anticipated office viral-related cleansing services
- Capital asset costs for Data Services and Pension Administration System which will be depreciated over a 10-year life upon completion of the project

The presentation format of the budget is summarized into major expense line items which match the same presentation in the Comprehensive Annual Financial Report (CAFR). In addition to a 2021 Proposed Budget, also included is a FY2020 budget versus year-end estimate. The FY2020 estimate was based on actual expenses through third quarter September 30 rolled forward to December 31, 2020.

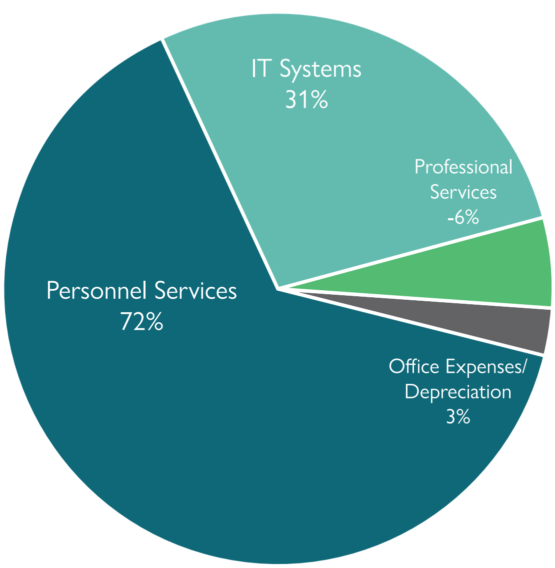
The 2021 Proposed Operating Budget is divided into three sections:

- *2021 Proposed Total Budget*—this section summarizes and combines all expenses from the *2021 Proposed Administrative* and *2021 Proposed Non-Administrative Budget*.
- *2021 Proposed Administrative Budget*—this section is comprised of expenses from administrative departments including Executive, Administration/HR, Accounting, Information Technology, Retirement Services, and Member Services. Administrative expenses are capped by a statutory limit of 21 basis points against the latest Actuarial Accrued Liability prepared as of December 31, 2019.
- *2021 Proposed Non-Administrative Budget*—this section includes expenses for the Investment and Legal departments, and Disaster Recovery Program. These expenses are not subject to the statutory limit on administrative expenses and are excluded. Legal fees relating to general and fiduciary counsel, tax, investments, employment, and disabilities are presented as Non-Administrative. Additionally, presented with the 2021 Non-Administrative budget are Investment Consulting and Actuarial Services fees.

Total 2021 Proposed Budget $17.6M



The *2021 Proposed Total Budget* is $17.6 Million, an overall increase of $888 thousand or 5%, compared to the 2020 budget. The chart below illustrates where the budget increases occur from.



The *2021 Proposed Administrative Budget* is $12.5 million, an increase of $696 thousand or 6%, compared to the 2020 budget. Most of the increase in Administrative budget are for same staff costs mentioned earlier. Additional overtime and temporary staff budgets in Retirement Services and Member Services departments are increased to work closely with the Data Services Project. Phase 2 of the PAS project consulting to provide more project oversight contributed an increase. These increases were offset with various decreases in other professional services and office related expenses including completions of the Subledger/CPAS data audit and imaging project, less anticipated staff travel, and cost reductions in office equipment leases and supplies.

> *Section 31580.2 of the California Government Code limits administrative expenses to 0.21% of the current Actuarial Accrued Liability (AAL). As of December 31, 2019, the AAL is $10,075,722,222 which results in a limit of $21.2 million. The proposed 2021 administrative expenses of $12.5 million are 0.124% of the AAL and well under the capped amount.*

The *2021 Proposed Non-Administrative Budget* is $5.1 million, an increase of $192 thousand or 4%, as compared to the 2020 budget. The majority of the increase is related to investment officer recruitment, additional software data provider services relating to real estate due diligence reviews. These increases were offset with decreases in travel related costs and less anticipated legal fees.

Recommendation:

Consider and take possible action to adopt the *2021 Proposed Total Budget.*

Thank you for your consideration.

Respectfully submitted,

Henry Gudino, CPA
Accounting Manager

2021

PROPOSED TOTAL BUDGET

2021 PROPOSED TOTAL BUDGET

2021 Proposed Total Budget
Including Administrative and Non-Administrative Departments

	2020 Budget	2020 Estimate	$ Budget Remaining	% Budget Remaining	2021 Proposed Total Budget	$ Change 2020 Budget	% Change 2020 Budget
Personnel Services:							
Salaries & Wages	$6,901,700	$6,467,126	$434,574	6%	$7,269,800	$368,100	5%
Employee Benefits	4,974,700	4,759,354	215,346	4%	5,245,400	270,700	5%
Total Personnel Services	11,876,400	11,226,480	649,920	5%	12,515,200	638,800	5%
Operational Expenses:							
Professional Services							
Investment Consulting	925,000	977,406	(52,406)	(6%)	931,600	6,600	1%
Actuarial Services	215,000	225,892	(10,892)	(5%)	215,000	-	-
Outside Legal Counsel Services	530,000	198,636	331,364	63%	495,000	(35,000)	(7%)
Audit Services	101,000	69,566	31,434	31%	55,000	(46,000)	(46%)
Benefit Statements	72,000	76,000	(4,000)	(6%)	80,000	8,000	11%
Disability Hearing/Medical Reviews	136,900	77,575	59,325	43%	171,200	34,300	25%
Other Professional Services	46,500	16,172	30,328	65%	23,700	(22,800)	(49%)
Total Professional Services	2,026,400	1,641,247	385,153	19%	1,971,500	(54,900)	(3%)
Office Expenses:							
Office Lease	546,500	532,385	14,115	3%	559,700	13,200	2%
Telephone & Internet Services	61,800	85,824	(24,024)	(39%)	64,600	2,800	5%
Equipment Lease & Maintenance	48,000	20,003	27,997	58%	27,400	(20,600)	(43%)
Furniture & Equipment	14,500	5,466	9,034	62%	12,000	(2,500)	(17%)
Office Supplies & Maintenance	115,600	58,856	56,744	49%	157,400	41,800	36%
Printing & Postage	140,700	145,960	(5,260)	(4%)	143,100	2,400	2%
Training & Education	156,950	46,132	110,818	71%	163,800	6,850	4%
Travel & Transportation	234,750	25,520	209,230	89%	192,900	(41,850)	(18%)
Insurance	285,100	284,516	584	-	304,900	19,800	7%
Total Office Expenses	1,603,900	1,204,662	399,238	25%	1,625,800	21,900	1%
Information Technology Systems:							
Support Service & Software Contracts	623,900	449,083	174,817	28%	639,900	16,000	3%
Hardware & Equipment Maintenance	57,600	25,638	31,962	55%	54,400	(3,200)	(6%)
Project Consulting	265,000	257,255	7,745	3%	525,000	260,000	98%
Total IT Systems	946,500	731,976	214,524	23%	1,219,300	272,800	29%
Assets Depreciation	279,900	206,750	73,150	26%	289,100	9,200	3%
Total CCCERA Expenses	***$16,733,100***	***$15,011,115***	***$1,721,985***	***10%***	***$17,620,900***	***$887,800***	***5%***

2021
PROPOSED ADMINISTRATIVE BUDGET

2021 PROPOSED ADMINISTRATIVE BUDGET

2021 Proposed Administrative Budget

	2020 Budget	2020 Estimate	$ Budget Remaining	% Budget Remaining	2021 Proposed Total Budget	$ Change 2020 Budget	% Change 2020 Budget
Personnel Services:							
Salaries & Wages	$5,148,000	$4,814,448	$333,552	6%	$5,429,600	$281,600	5%
Employee Benefits	3,945,200	3,815,554	129,646	3%	4,212,400	267,200	7%
Total Personnel Services	9,093,200	8,630,002	463,198	5%	9,642,000	548,800	6%
Operational Expenses:							
Professional Services							
Audit Services	101,000	69,566	31,434	31%	55,000	(46,000)	(46%)
Benefit Statements	72,000	76,000	(4,000)	(6%)	80,000	8,000	11%
Disability Hearing/ Medical Reviews	136,900	77,575	59,325	43%	171,200	34,300	25%
Other Professional Services	45,500	16,172	29,328	64%	22,700	(22,800)	(50%)
Total Professional Services	355,400	239,313	116,087	33%	328,900	(26,500)	(7%)
Office Expenses:							
Office Lease	475,400	463,405	11,995	3%	486,900	11,500	2%
Telephone & Internet Services	49,800	75,313	(25,513)	(51%)	52,600	2,800	6%
Equipment Lease & Maintenance	38,000	20,003	17,997	47%	17,400	(20,600)	(54%)
Furniture & Equipment	14,500	5,163	9,337	64%	12,000	(2,500)	(17%)
Office Supplies & Maintenance	105,800	49,674	56,126	53%	146,400	40,600	38%
Printing & Postage	139,500	145,867	(6,367)	(5%)	141,900	2,400	2%
Training & Education	136,450	37,958	98,492	72%	138,300	1,850	1%
Travel & Transportation	120,550	13,507	107,043	89%	94,000	(26,550)	(22%)
Insurance	285,100	284,516	584	-	304,900	19,800	7%
Total Office Expenses	1,365,100	1,095,406	269,694	20%	1,394,400	29,300	2%
Information Technology Systems:							
Support Service & Software Contracts	449,200	333,627	115,573	26%	337,000	(112,200)	(25%)
Hardware & Equipment Maintenance	39,600	22,651	16,949	43%	36,400	(3,200)	(8%)
Project Consulting	260,000	257,255	2,745	1%	520,000	260,000	100%
Total IT Systems	748,800	613,533	135,267	18%	893,400	144,600	19%
Assets Depreciation	245,500	186,725	58,775	24%	245,500	-	-
Total Administrative Expenses	***$11,808,000***	***$10,764,979***	***$1,043,021***	***9%***	***$12,504,200***	***$696,200***	***6%***

2021
PROPOSED NON-ADMINISTRATIVE BUDGET

Investments, Legal, and
Disaster Recovery Program

2021 PROPOSED NON-ADMINISTRATIVE BUDGET

2021 Proposed Non-Administrative Budget
Investments, Legal, and Disaster Recovery Program

	2020 Budget	2020 Estimate	$ Budget Remaining	% Budget Remaining	2021 Proposed Total Budget	$ Change 2020 Budget	% Change 2020 Budget
Personnel Services:							
Salaries & Wages	$1,753,700	$1,652,678	$101,022	6%	$1,840,200	$86,500	5%
Employee Benefits	1,029,500	943,800	85,700	8%	1,033,000	3,500	-
Total Personnel Services	2,783,200	2,596,478	186,722	7%	2,873,200	90,000	3%
Operational Expenses:							
Professional Services							
Investment Consulting	925,000	977,406	(52,406)	(6%)	931,600	6,600	1%
Actuarial Services	215,000	225,892	(10,892)	(5%)	215,000	-	-
General & Fiduciary Legal Counsel	355,000	108,134	246,866	70%	320,000	(35,000)	(10%)
Investment Legal Counsel	115,000	39,096	75,904	66%	115,000	-	-
Disability Legal Services	60,000	51,406	8,594	14%	60,000	-	-
Other Professional Services	1,000	-	1,000	100%	1,000	-	-
Total Professional Services	1,671,000	1,401,934	269,066	16%	1,642,600	(28,400)	(2%)
Office Expenses:							
Office Lease	71,100	68,980	2,120	3%	72,800	1,700	2%
Telephone & Internet Services	12,000	10,511	1,489	12%	12,000	-	-
Equipment Lease & Maintenance	10,000	-	10,000	100%	10,000	-	-
Furniture & Equipment	-	303	(303)	-	-	-	-
Office Supplies & Maintenance	9,800	9,182	618	6%	11,000	1,200	12%
Printing & Postage	1,200	93	1,107	92%	1,200	-	-
Training & Education	20,500	8,174	12,326	60%	25,500	5,000	24%
Travel & Transportation	114,200	12,013	102,187	89%	98,900	(15,300)	(13%)
Total Office Expenses	238,800	109,256	129,544	54%	231,400	(7,400)	(3%)
Information Technology Systems:							
Support Service & Software Contracts	174,700	115,456	59,244	34%	302,900	128,200	73%
Hardware & Equipment Maintenance	18,000	2,987	15,013	83%	18,000	-	-
Project Consulting	5,000	-	5,000	100%	5,000	-	-
Total IT Systems	197,700	118,443	79,257	40%	325,900	128,200	65%
Assets Depreciation	34,400	20,025	14,375	42%	43,600	9,200	27%
Total Non-Administrative Expenses	***$4,925,100***	***$4,246,136***	***$678,964***	***14%***	***$5,116,700***	***$191,600***	***4%***

2021
PROPOSED CAPITAL BUDGET

2021 PROPOSED CAPITAL BUDGET

2020 Proposed Capital Budget

	Asset Purchase Cost	2021 Depreciation
2021 Capital Purchases		
Pension Data Conditioning Project	846,000*	-
Pension Administration System	4,350,000*	-
Total 2021 Capital Purchases	5,196,000	-
**Pension Admin System Is In-Progress. Depreciation Over 10 Years Begins Upon Completion*		
Prior Years Capital Purchases		
Leasehold Improvements	139,938	14,000
Office Furniture/Workstations	537,822	107,600
Communication & Network Equipment	119,964	18,000
Audio Visual Equipment	188,821	37,800
Security Equipment	101,947	20,400
IT Hardware & Software	418,254	91,300
Total Prior Years Capital Budget	1,506,746	289,100
Total Capital Budget	***$6,702,746***	***$289,100***

Meeting Date
11/18/20
Agenda Item
#10

MEMORANDUM

Date: November 18, 2020

To: CCCERA Board of Retirement

From: Henry Gudino, Accounting Manager

Subject: Consider and take possible action to authorize issuance of a Request for Proposal for Other Post-Employment Benefits (OPEB) Trust Actuarial Services

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Background

As an employer, CCCERA is responsible for the cost of retiree health benefits for CCCERA employees who retired on or after January 1, 2015, the date CCCERA became an independent employer. The funding set aside to fund the OPEB liability is being accumulated in an OPEB Irrevocable Trust and reported as part of CCCERA's audited Comprehensive Annual Financial Report (CAFR). The OPEB Trust should obtain, at a minimum, an actuarial valuation every two years along with a roll-forward valuation for the in-between year. The most recent OPEB Trust valuation was as of December 31, 2018 and a biannual valuation is due as of December 31, 2020. It is timely for CCCERA to issue an RFP for OPEB Trust actuarial services to determine the best value of service for CCCERA.

Recommendation

Consider and take possible action to authorize issuance of a Request for Proposal for OPEB Trust Actuarial Services.

Meeting Date
11/18/20
Agenda Item
#11

MEMORANDUM

Date: November 18, 2020

To: CCCERA Board of Retirement

From: Christina Dunn, Deputy Chief Executive Officer

Subject: Consider and take possible action to authorize CEO to execute an agreement with San Ramon Valley Fire Protection District for contribution payment and reporting deadlines.

Background

Employer and member contributions into CCCERA are mandatory. The Retirement Board Regulations set the due dates for retirement contribution payments as well as required payroll and demographic reports. These regulations apply to all participating employers, including Contra Costa County and special districts. Section IV.2. of the Regulations states:

- Each employer shall report to the Association in a manner and frequency as determined by the Board sufficient for the Board to credit contributions and service to each member's record.

- Unless otherwise specified, reports shall be due no later than the tenth of each month for the previous month's payroll and shall be accompanied by member and employer contributions. If the tenth of the month falls on a weekend or holiday, the due date shall be the last working day before the tenth. Reports, which are unreadable or incorrect, shall not be accepted and shall be returned to the employer.

- Reports and contributions received after the due date shall be considered late and subject to a late reporting penalty equal to: the prime rate in effect on the due date computed on a daily, non-compounding basis and applied to the contributions due.

CCCERA has received a request from San Ramon Valley Fire Protection District to provide an additional five days to the due date schedule to submit contribution reports, demographic reports and retirement contributions. In the enclosed letter, the San Ramon Valley Fire Protection District has set forth the reasons why it needs the additional five days in order to submit the required contribution payments and reports. This adjustment in due date is not currently memorialized in a written agreement. In order to provide for clear contribution payment and reporting due dates, a written agreement is recommended.

Recommendation

Consider and take possible action to authorize CEO to execute an agreement with the San Ramon Valley Fire Protection District for contribution payment and reporting deadlines which provides an additional five days to the contribution payment and reporting submission deadline outlined in the Board of Retirement Regulations.

San Ramon Valley Fire Protection District
1500 Bollinger Canyon Road, San Ramon, CA 94583
Phone (925) 838-6600 | Fax (925) 838-6629
www.firedepartment.org | info@firedepartment.org

Contra Costa County Employees' Retirement Association
1200 Concord Avenue, Suite 300
Concord, CA 94520

Board of Retirement,

The San Ramon Valley Fire Protection District (District) would like to request an accommodation from the Board Regulations due to our operational considerations.

Section IV.2 Contributions and reporting, Due dates; requires reports, member and employer contributions be received no later than the tenth of each month. The District issues paychecks on the tenth of each month for the previous month. This affords a short amount of time to process payroll then submit reports and payment to CCCERA.

We would like to request an additional 5 days to prepare and submit reports and contributions to CCCERA to eliminate late reporting and corresponding penalties, making our due date the fifteenth of each month.

Your consideration is greatly appreciated in this matter.

Sincerely,

Davina Hatfield

Davina Hatfield
Controller

Meeting Date
11/18/20
Agenda Item
#12a.

VIRTUAL CONFERENCE

Public Employee Benefits Institute

IFEBP > Education > Virtual Conferences > Public Employee Benefits Institute

Virtual Conference

December 8-10, 2020, Beginning at 10:30 a.m. ET Daily

Things are changing all around us, but the public sector's responsibility to plan members and constituents remains the same. Join our first-ever Public Employee Benefits Institute virtual conference to get the necessary information you need to maintain the health and financial security of your plans and plan members. This conference is for public sector trustees and staff responsible for both health and retirement and pension plans.

Sponsorship opportunities are available! Click here to learn more or contact Diane Mahler for details.

Virtual Conference

Register Now

Opening Soon

VIP/Access Virtual Conference

VIP Member Access—Join or renew International Foundation membership for 2021 by October 31, 2020 receive FREE ACCESS to all

Sessions

Gather in a virtual environment to hear best practices and the latest issues in public sector benefit plans. The conference will include 16 sessions on the important issues in health care, retirement and general employee benefits.

Schedule

Tuesday, December 8

10:30-11:30 a.m. ET

- Economic Impact on Public Sector Budgets *(Live)*

12:00-1:00 p.m. ET

- Health Session Using Evolving Health Care Strategies to Cut Costs in Public Plans
- Retirement Session Public Sector Legislative and Regulatory Update *(Live)*

1:30-2:30 p.m. ET

- Health Session Addressing Mental Health in the Public Sector *(Live)*
- Retirement Session Building Resilience in Public Pension Plans (Part I)

Wednesday, December 9

10:30-11:30 a.m. ET

- A COVID-19 Update *(Live)*

12:00-1:00 p.m. ET

- Health Session *TBD*
- Retirement Session Reviewing and Reforming Pension Plans

1:30-2:30 p.m. ET

- Health Session Cost Savings From Member Benefit Election Decision Support, Sponsored by ConsiliumChoice *(Live)*
- Retirement Session Building Resilience in Public Pension Plans (Part II) A Case Study

Thursday, December 10

10:30-11:30 a.m. ET

- A Policy Outlook *(Live)*

12:00-1:00 p.m. ET

- Health Session Challenges in Prescription Drug Coalitions in the Public Sector
- Retirement Session Risk Assessments in Public Sector Plans *(Live)*

1:30-2:30 p.m. ET

- Health Session Health Plans and Medicare
- Retirement Session Workforce Management Considerations for Pension Funds *(Live)*

3:00-4:00 p.m. ET

- Open Forum Panel *(Live)*

Session Details

Who Should Attend

This conference is designed for public sector trustees, administrators and staff who work with health and welfare or pension plans.

Features

Ignite your learning experience by attending sessions whenever it is convenient for you.

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US $495.00	US $645.00	Register

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Agenda Item
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Institutional Investor

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Virtual Roundtable for Public Pension Funds - February 2021

Feb 18th 2021

1:00 p.m. EST

Virtual Event

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ABOUT

Join the Alternative Investor Institute & Institutional Investor institute's **Virtual Roundtable for Public Pension Funds** in February 2021 as we bring the institutional investing community together when they need it most – for the most essential intelligence for consultants, allocators, and managers alike.

Agenda and registration will be available soon.

REGISTER

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