





PERIOD ENDING: MARCH 31, 2020

Investment Performance Review for

Alameda County Employees' Retirement Association - Public

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Verus ⁷⁷⁷

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Recent Verus research

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

Annual outlooks

ACTIVE MANAGEMENT ENVIRONMENT

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

Sound thinking

TEN THOUGHTS FOR 2020

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

THE JUDGMENTAL WAITER

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

COVID-19

MARKET UPDATE 3/17/20

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

MARKET UPDATE 4/9/20

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

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1st quarter summary

THE ECONOMIC CLIMATE

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

PORTFOLIO IMPACTS

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

THE INVESTMENT CLIMATE

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

ASSET ALLOCATION ISSUES

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

An underweight risk stance appears appropriate in today's environment

We remain watchful for investment opportunities

What drove the market in Q1?

"World Health Organization declares the coronavirus outbreak a global pandemic"

GLOBAL CONFIRMED COVID-19 CASES

1/31	2/15	2/29	3/15	3/31	4/15
11,374	69,267	86,351	164,403	857,778	2,077,469
Article Source	: CNBC, March	11 th , 2020			

"Vix Hits Highest Level Since the Financial Crisis as Volatility Soars"

CBOE VIX INDEX

Oct	Nov	Dec	Jan	Feb	Mar
13.22	12.62	13.78	18.84	40.11	53.54
Article Source	· Barron's Mar	-h 0 th 2020			

"Fed announces unlimited QE and sets up several new lending programs"

FEDERAL RESERVE BALANCE SHEET (USD TRILLIONS)

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

Article Source: MarketWatch, March 23rd, 2020

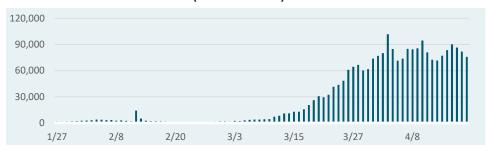
"Coronavirus job losses could total 47 million, unemployment rate may hit 32 percent, Fed estimates"

INITIAL WEEKLY JOBLESS CLAIMS

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

Article Source: NBC News, March 30th, 2020

DAILY NEW COVID-19 CASES (WORLDWIDE)



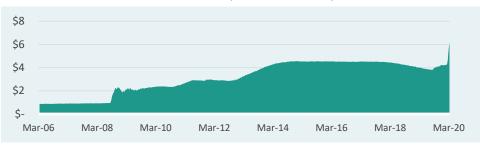
Source: Worldometer, as of 4/19/20

S&P 500 INDEX 1-DAY PERCENTAGE PRICE MOVE



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

FEDERAL RESERVE BALANCE SHEET (USD TRILLIONS)



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



Economic environment



U.S. economics summary

- Real GDP grew at a 2.3% rate year-over-year in the fourth quarter (2.1% quarterly annualized rate).
 Companies drew down inventories, which detracted -1% from growth. Investors appear to be bracing for an unprecedented slowdown of the economy during the first half of 2020, due to COVID-19. Forecasts of Q2 GDP growth have varied between -15% to -35%.
- The U.S. government quickly crafted and implemented historic stimulus measures to combat the economic impacts of the virus.
 Support of this magnitude has not been seen since the Great Depression of the 1930s.
- U.S. core inflation rose 2.1% YoY in March. Headline inflation slowed to 1.5%, pushed lower by a sharp decline in energy prices which will likely have persistent effects in the coming months. This downward pressure could be compounded as households slow spending due to loss of income and show a greater

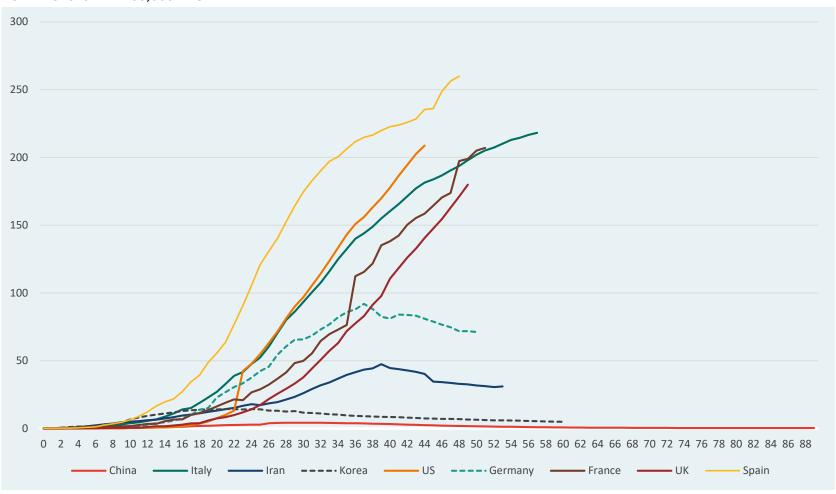
- propensity to save.
- The U.S. labor market exhibited a sharp weakening in March, as unemployment jumped to 4.4%.
 Some have estimated the true unemployment rate in April to be above 10%.
- March economic data should not be expected to fully reflect the extent of COVID-19. We are watching daily data releases to gain a better understanding of how conditions are evolving.
- The Bloomberg Consumer Comfort Index exhibited its sharpest two week drop since 1985, from 63.0 to 56.3, dipping from a 20-year high of 67.3 that was achieved in January.
- Existing homes sales increased +7.2% in February YoY, and new homes sales were up +14.3%. The 30-year fixed mortgage interest rate has continued to fall, finishing Q1 at 3.33%.

Most Recent	12 Months Prior
2.3% 12/31/19	2.5% 12/31/18
2.1% 3/31/20	2.0% 3/31/19
1.3% 3/31/20	2.4% 3/31/19
0% – 0.25% 3/31/20	2.25% – 2.50% 3/31/19
0.7% 3/31/20	2.4% 3/31/19
4.4% 3/31/20	3.8% 3/31/19
8.7% 3/31/20	7.4% 3/31/19
	2.3% 12/31/19 2.1% 3/31/20 1.3% 3/31/20 0% - 0.25% 3/31/20 0.7% 3/31/20 4.4% 3/31/20 8.7%



COVID-19 update

ACTIVE CASES PER 100,000 PEOPLE



The COVID-19 crisis has quickly become a global pandemic

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



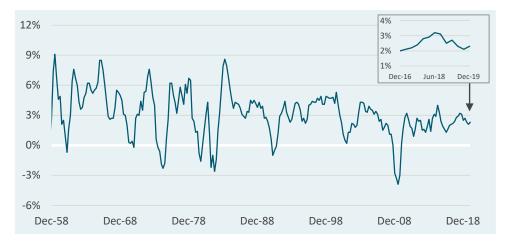
GDP growth

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

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

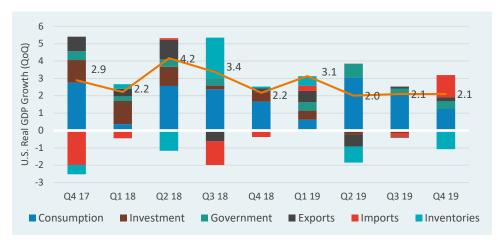
Coronavirus Response Act, which guaranteed sick days to full-time workers, prorated for part-time workers. Next was an expansion of the Family and Medical Leave Act, which provided paid leave for employees of businesses with fewer than 500 staff. For workers requiring more than two weeks of leave, the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

U.S. REAL GDP GROWTH (YOY)



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

U.S. GDP GROWTH ATTRIBUTION





U.S. fiscal response

Families First Coronavirus Response Act:

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

Family and Medical Leave Act:

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

\$2.2 Trillion Coronavirus Relief Package

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



Inflation

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

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

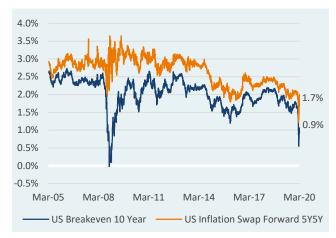
We believe these moves may partially reflect the illiquidity of TIPS in volatile environments, rather than falling inflation expectations. This draws into question the usefulness of TIPS breakeven rates as a pure indication of investors' inflation forecasts. Inflation swaps, such as the 5-year Inflation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

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

U.S. CPI (YOY)



U.S. INFLATION INDICATORS



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

INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/20



Source: Bloomberg, as of 3/31/20

Labor market

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

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

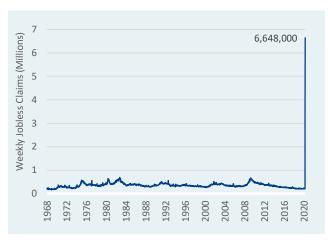
The NFIB Small Business Optimism Index decreased by 8.1 in March to 96.4, which was the largest drop of the series' history. Survey respondents indicated greater uncertainty on the horizon, contracting business conditions, falling sales in the coming six months, and fewer job openings. NFIB stated that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

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

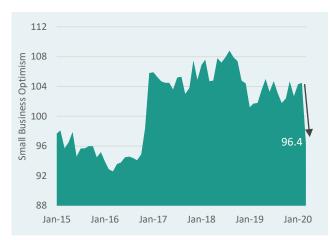
U.S. UNEMPLOYMENT



WEEKLY JOBLESS CLAIMS



SMALL BUSINESS OPTIMISM



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



Source: FRED, as of 3/31/20

The consumer

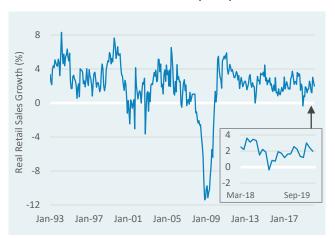
The U.S. consumer has been the greatest support to moderate domestic economic growth of recent years. At the same time, spending and use of credit has been conservative, and household balance sheets have remained robust. The relatively strong position of households at the onset of the crisis may help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

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

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

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

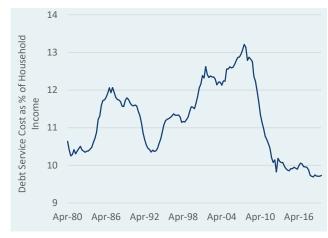
REAL RETAIL SALES GROWTH (YOY)



U.S. AUTO SALES



HOUSEHOLD DEBT BURDEN



Source: Bloomberg, as of 3/31/20

Source: FRED, as of 12/31/19



Source: FRED, as of 2/29/20

Sentiment

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

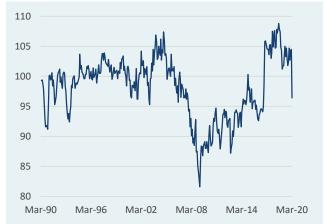
Small business owners have been among the hardest hit by the COVID-19 economic disruptions. The NFIB Small Business Optimism Index registered its largest ever single month drop in March, falling -8.1 points to 96.4. Plummeting expectations for real sales over the next six months drove the decline in the overall index, and it appears Main Street business owners are anticipating and bracing themselves for continued economic disruptions moving forward.

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

CONSUMER COMFORT



SMALL BUSINESS OPTIMISM



Source: NFIB, as of 3/31/20

SMALL BUSINESS HIRING PLANS INDEX



Source: NFIB, as of 3/31/20



Source: Bloomberg, as of 3/31/20

Housing

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

It is difficult to forecast the effect that COVID-19 will have on the housing market, as there are perhaps two opposing forces at work. The first effect is falling mortgage rates, which should be supportive of home values and purchase activity, assuming U.S. interest rates remain lower as they typically do during market strain. The second effect – a slowing U.S. economy – is of course negative on housing values and demand. Millions of job losses have occurred in the first few weeks of the COVID-19 nationwide shutdown, and many Americans will soon struggle to meet mortgage payments. Under the new CARES Act, homeowners with Federally-backed mortgages who have been affected by COVID-19 can request forbearance on mortgage payments for up 180 days, with an option to extend for an additional 180 days. This intervention will hopefully ease some of the strains and mitigate some downside risk during a time of historically unprecedented spikes in unemployment.

U.S. HOME SALES (YOY)



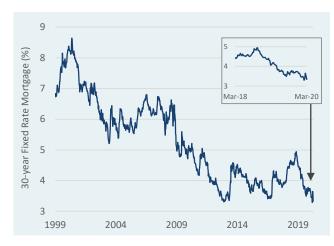
Source: FRED, as of 2/29/20

HOUSING AFFORDABILITY INDEX



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

30YR FIXED RATE MORTGAGE



Source: FRED, as of 3/31/20



International economics summary

- Most international developed economies grew at a rate of 0.5% to 2.5% in Q4. The low and stable expansion of recent years has changed suddenly with the onset of COVID-19. Many global economies will enter recession in 2020. On April 14th the IMF revised their 2020 global growth forecast from +3.3% to -3.0%.
- Governments are using monetary and fiscal policies to fill the large hole in spending and lending that the slowdown may cause. These policies vary in their characteristics and aggressiveness.
- Governments with limited ability to implement stimulus policies may face tougher economic fallout.
 Specifically, European Union member nations that cannot exercise independent actions may see greater difficulties ahead as income gaps cannot be supplemented with fiscal spending.

- The World Trade Organization (WTO) forecast a 13%-32% fall in global trade in 2020 – a larger decrease than witnessed during the global financial crisis. This forecast was paired with the expectation of a 21%-24% rebound in trade throughout 2021.
- While not yet reflected in the most recent economic data, unemployment rates around the world are certain to rise considerably.
- The COVID-19 virus breakout originated in China, and many investors have pointed to China as a testcase for how the virus might play out economically. Although the data released by China suggests the outbreak has been defeated, there is increasing evidence that the severity of virus has been underreported – perhaps severely.

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



International economics

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

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

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

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

REAL GDP GROWTH (YOY)

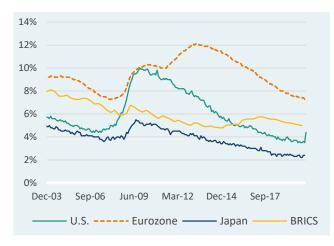


INFLATION (CPI YOY)



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

UNEMPLOYMENT RATE



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



Source: Bloomberg, as of 12/31/19

Fixed income rates & credit



Interest rate environment

- In mid-March, the Federal Open
 Market Committee cut interest rates
 by a full 1.00% to a new range of 0 –
 0.25%. This surprise action was
 taken on a Sunday with the intent to
 get out ahead of the economic
 impacts of COVID-19.
- On April 9th, the Federal Reserve announced an additional \$2.3
 Trillion program aimed towards providing financing to small businesses and municipalities. The program included \$1M-\$25M sized loans at an interest rate of 2.5%-4.0% with a four-year maturity. This move involved Fed purchases of certain types of low-grade speculative debt, a reversal from comments just weeks earlier that the Federal Reserve would stick to investment-grade debt purchases.
- The European Central Bank (ECB) announced a €750B asset purchase program in March to address effects of the virus. ECB President Christine Lagarde claimed that there are "no limits to our commitment to the

- euro". Bond yields of Euro member countries fell on the news.
- Central banks are now facing a unique problem – an immediate economic slowdown and need for monetary policy support, but very little room to cut interest rates to provide that support. This is a risk that has been discussed by investors for years, only now becoming reality. We believe fiscal policies will play a much larger role in addressing the inevitable economic slowdown.
- The Federal Reserve rolled out several liquidity programs which were components of its Global Financial Crisis playbook and are aimed at ensuring the flow of credit to U.S. households and businesses, as well as financial market stability. The New York Fed began offering up to \$500B in overnight liquidity through repurchase agreements and has expanded dollar swap lines to alleviate any possible strains in global U.S. dollar funding markets.

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

Source: Bloomberg, as of 3/31/20

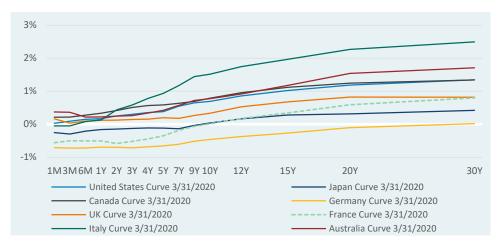


Yield environment

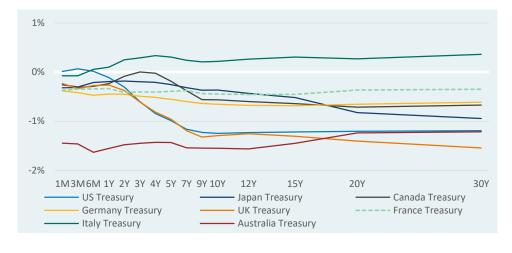
U.S. YIELD CURVE



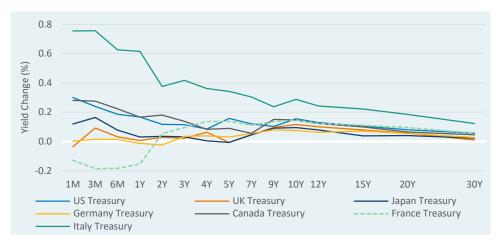
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/20



Credit environment

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

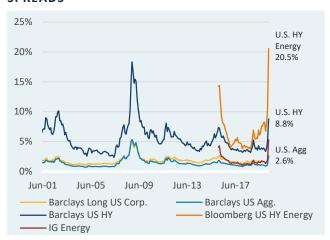
U.S. investment grade credit spreads widened from 93 bps at the end of 2019 to 272 bps at the end of the quarter after reaching highs of 373 bps in March. Similarly, high yield credit spreads spiked from 336 bps to 880 bps over the quarter, after March highs of 1100 bps. High yield ex-

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

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

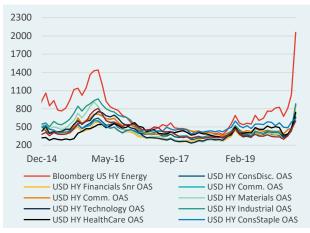
While the energy sector within high yield was the top performer in Q4 2019, the sector was faced with both a supply and demand shock with the Saudi Arabia-Russia production conflict and COVID-19 outbreak, causing it to decline by -38.94% in Q1 2020. The utility and technology sectors held up relatively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

SPREADS



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

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 3/31/20

CREDIT SPREADS MOVING WITH VOLATILITY



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



Default & issuance

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

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

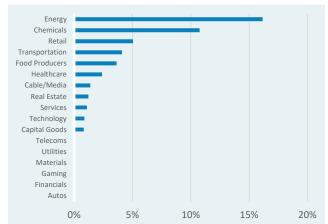
Energy has driven around 45% of total defaults over the last 12 months, and in Q1 the full year 2020 outlook for the sector worsened dramatically. The trailing 12-month energy default rate in high yield ended the quarter at 9.8% (high yield ex-energy was 2.2%) while the trailing 12-month energy default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

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

HY DEFAULT RATE (ROLLING 1-YEAR)

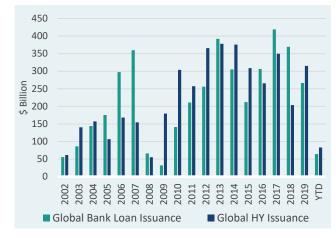


U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



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

GLOBAL ISSUANCE (\$ BILLIONS)



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



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

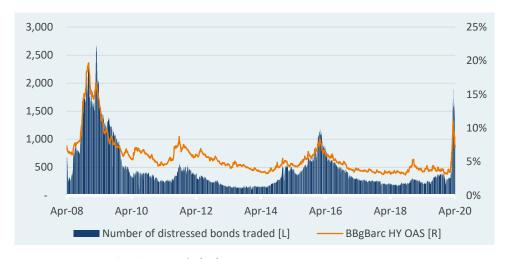
High yield – what happened?

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

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

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

VOLUME AND SPREADS



FALLEN ANGELS



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



Equity

Equity environment

- U.S. equities experienced an unusually sudden and significant sell-off in March as investors grew fearful of the health and economic impacts of COVID-19 spread.
 During Q1 the S&P 500 fell -19.6%, international developed equities (MSCI EAFE) fell -22.8% and emerging markets (MSCI EM) fell -23.6%.
- The greatest influence on equity performance in 2020 will perhaps be the path of corporate earnings.
 The degree to which corporate earnings will fall is largely unknown with few reliable estimates.
- Implied volatility spiked in March to a record daily close of 82.7%, surpassing the high of 80.9% in November 2008 during the depths of the global financial crisis.
- In March, a squabble between
 OPEC+ members led to a historic
 drop in energy prices. The energy
 sector faces sharply falling demand

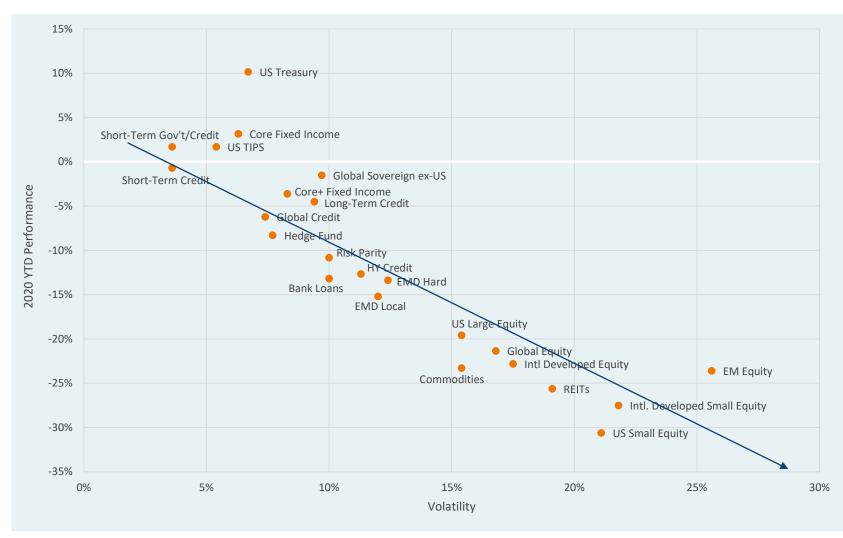
- and potentially significant oversupply due to oil producers' decision to ramp up production in an oil war. The energy sector experienced a loss of -50.5% in Q1.
- The U.S. dollar appreciated significantly in the first quarter, rising 7.1% on a trade-weighted basis, resulting in large losses for investors with unhedged currency exposure. As is often the case during higher risk market environments, demand for safehaven currencies positively impacted the dollar.
- Value stocks severely underperformed growth stocks during the first quarter (Russell 1000 Value -26.7%, Russell 1000 Growth -14.1%). Small cap stocks underperformed large cap stocks by a similar magnitude (Russell 2000 -30.6%, Russell 1000 -20.2%). Value and size factors continue to experience an extended period of relative underperformance.

	QTD TOTA	L RETURN	1 YEAR TOT	AL RETURN
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	(19.6%)		(7.0%)	
US Small Cap (Russell 2000)	(30.	6%)	(24.0%)	
US Large Value (Russell 1000 Value)	(26.	7%)	(17.	2%)
US Large Growth (Russell 1000 Growth)	(14.1%)		(0.9%)	
International Large (MSCI EAFE)	(22.8%)	(19.9%)	(14.4%)	(10.3%)
Eurozone (Euro Stoxx 50)	(27.0%)	(24.8%)	(16.6%)	(12.0%)
U.K. (FTSE 100)	(28.8%)	(23.0%)	(22.0%)	(16.4%)
Japan (NIKKEI 225)	(18.6%)	(18.8%)	(6.7%)	(6.8%)
Emerging Markets (MSCI Emerging Markets)	(23.6%)	(18.5%)	(17.7%)	(12.7%)

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



Q1 performance



Riskier assets performed the worst in Q1...

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

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



Domestic equity

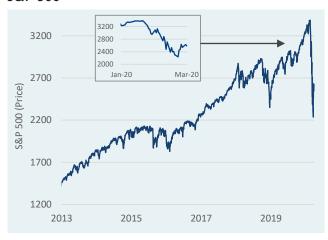
U.S. equities experienced an unusually sudden and significant sell-off in March as investors grew fearful of the health and economic impacts of COVID-19 spread. During Q1 the S&P 500 fell -19.6%, international developed equities (MSCI EAFE) fell -22.8% and emerging markets (MSCI EM) fell -23.6%.

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

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

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

S&P 500

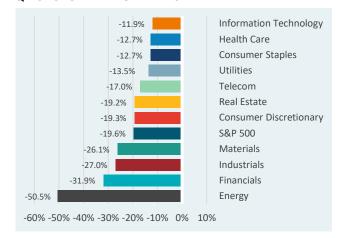


WORST S&P 500 MAX MONTHLY DRAWDOWNS



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

Q1 SECTOR PERFORMANCE



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



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

Domestic equity size & style

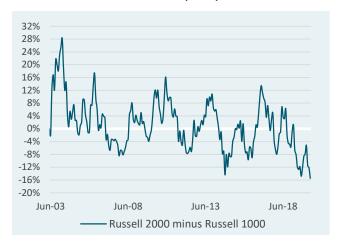
Value stocks severely underperformed growth stocks during the first quarter (Russell 1000 Value -26.7%, Russell 1000 Growth -14.1%). Small cap stocks underperformed large cap stocks by a similar magnitude (Russell 2000 -30.6%, Russell 1000 -20.2%). Value and size factors continue to experience a surprisingly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

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

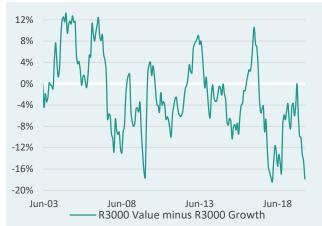
falling interest rates hurt profitability. Information Technology (-11.9%), a sector that tends to contain more growth stocks, was the best performer.

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

SMALL CAP VS LARGE CAP (YOY)



VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/20

VALUE HISTORICALLY CHEAP



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



Source: FTSE, as of 3/31/20

International developed equity

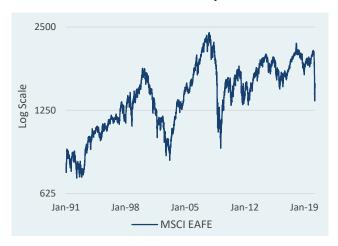
Equity markets around the world sold off broadly in the first quarter, down between -16% to -29%. Japanese equities were among the best performing (MSCI Japan -17%) while the U.K. was one of the worst performing (MSCI U.K. -29%).

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

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

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

INTERNATIONAL DEVELOPED EQUITIES



EFFECT OF CURRENCY (1-YEAR ROLLING)



3M/3M CROSS CURRENCY BASIS SWAPS



Source: MSCI, as of 3/31/20

Source: Bloomberg, as of 3/31/20



Source: MSCI, as of 3/31/20

Emerging market equity

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

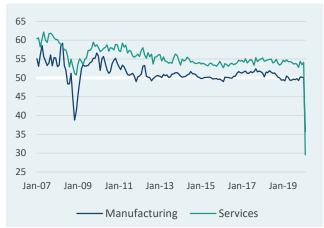
Inflation remains low in emerging economies and may face downward pressure in the coming months as energy prices have fallen. Central banks may have more room to maneuver relative to developed economies with regard to monetary policy, as interest rates are closer to average levels.

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

EMERGING MARKET EQUITY



CHINA PURCHASING MANAGERS' INDICES



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

INFLATION (CPI YOY)



Source: Bloomberg, as of 2/29/20



Source: MSCI, as of 3/31/20

Equity valuations

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

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

FORWARD P/E RATIOS



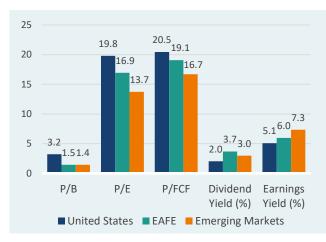
Source: MSCI, 12m forward P/E, as of 3/31/20

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



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

VALUATION METRICS (3-MONTH AVERAGE)



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



Equity volatility

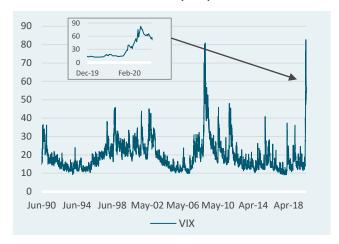
Risk markets experienced one of the most sudden corrections on record, amidst extreme volatility. The S&P 500 showed its largest one-day drop since 1987 (March 16 -11.9%) and its largest one-day gain since 2008 (March 24 +9.4%). The transition from a very low- to a very high-volatility environment likely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

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

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

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

U.S. IMPLIED VOLATILITY (VIX)



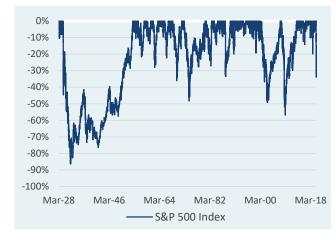
Source: CBOE, as of 3/31/20

ROLLING 1-YEAR REALIZED VOLATILITY



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

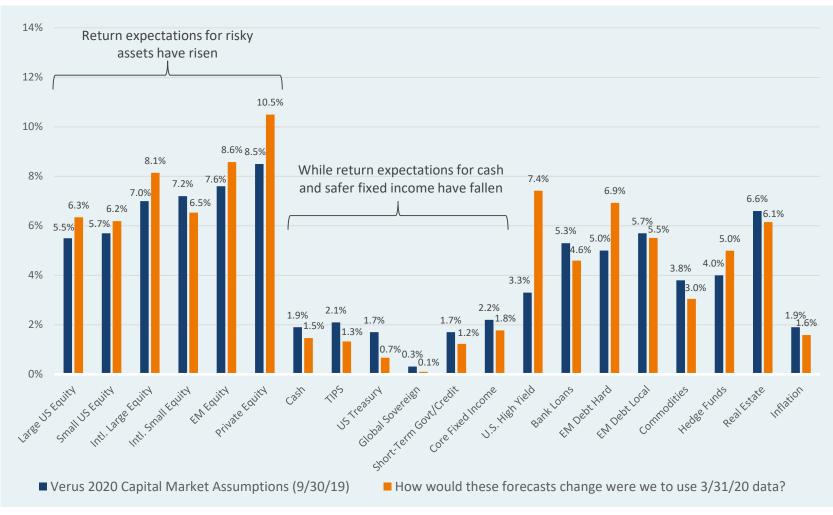
MAX DRAWDOWN FROM PRIOR PEAKS



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



How have return expectations changed?

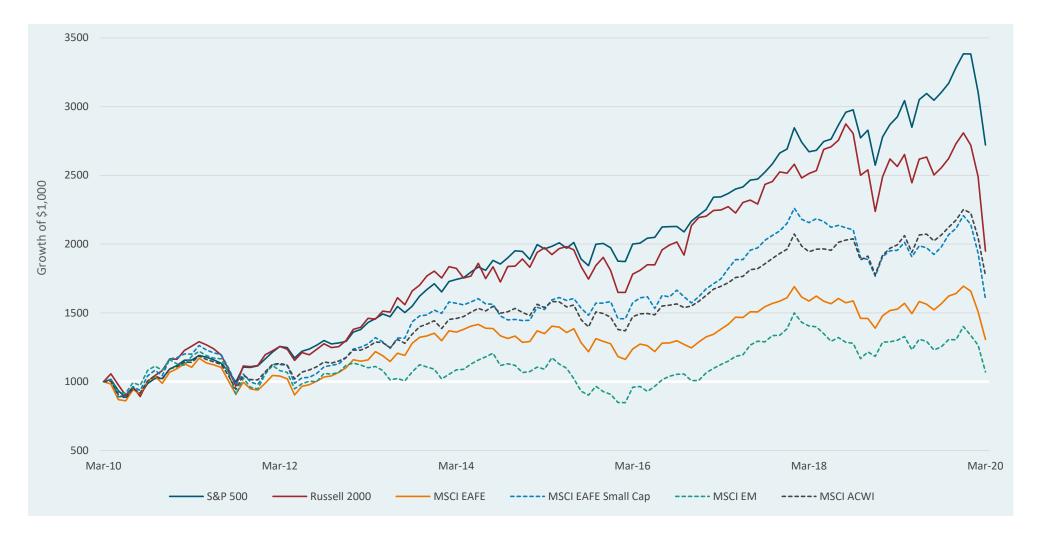


The overall portfolio's expected return may have risen or fallen during Q1, depending on the asset allocation & risk level

Source: Verus



Long-term equity performance



Source: Morningstar, as of 3/31/20



Other assets



Currency

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

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

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

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

BLOOMBERG DOLLAR SPOT INDEX



Source: Bloomberg, as of 3/31/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



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

EMBEDDED CURRENCY VS CURRENCY BETA



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



Oil crisis

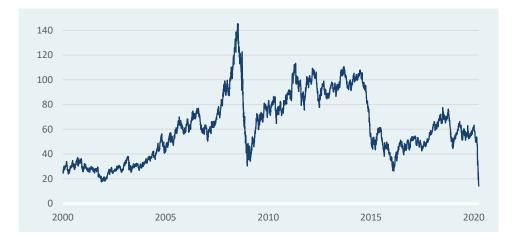
In mid-March, the price of oil experienced a sudden drop as Russia refused to join the OPEC recommended production cuts. In retribution, Saudi Arabia signaled that they would increase production drastically in April upon expiration of the OPEC pact. These events led to a 30% one-day drop in price, and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

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

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

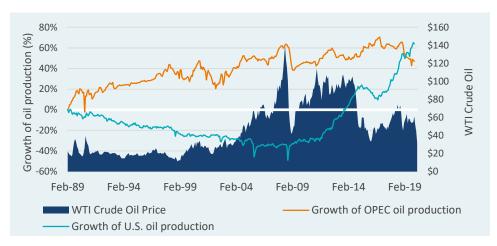
A similar dynamic occurred during the oil crash of 2014 as OPEC let oil plummet, arguably with the intent to put U.S. oil producers out of business. American oil production has been ramped up drastically over the last decade, at a time when OPEC producers were working to minimize their own production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

WTI OIL PRICE



Source: FRED, as of 3/31/20

GLOBAL OIL PRODUCER CONFLICT



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

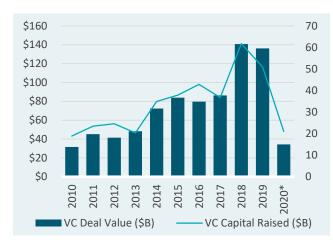


Private markets

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

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

VENTURE DEAL VOLUME & FUNDRAISING



*2020 figures through 3/31/20 Source: PitchBook

TRANSACTION MULTIPLES



*2020 figures through 3/31/20

Source: PitchBook

BUYOUTS DEAL VOLUME & CAPITAL RAISED



*2020 figures through 3/31/20

Source: PitchBook

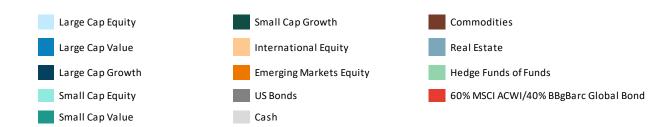


Appendix



Periodic table of returns

		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
i	US Bonds	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	3.1	10.4	13.0
	Cash	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	0.4	7.5	10.4
	Real Estate	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	0.0	6.2	10.1
	Hedge Funds of Funds	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	-6.0	3.4	8.9
	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	-13.3	3.0	7.7
	Large Cap Growth	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	-14.1	1.9	6.9
	Large Cap Equity	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	-20.2	1.7	4.8
	International Equity	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	-22.8	1.1	4.7
	Commodities	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	-23.3	0.6	3.9
	Emerging Markets 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	-23.6	-0.2	2.7
	Small Cap Growth	-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	-25.8	-0.4	2.1
	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	-26.7	-0.6	0.7
	Small Cap Equity	-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	-30.6	-2.4	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	-35.7	-7.8	-6.7

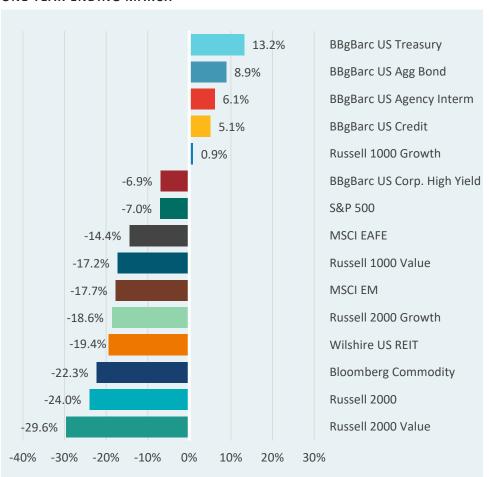


Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF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

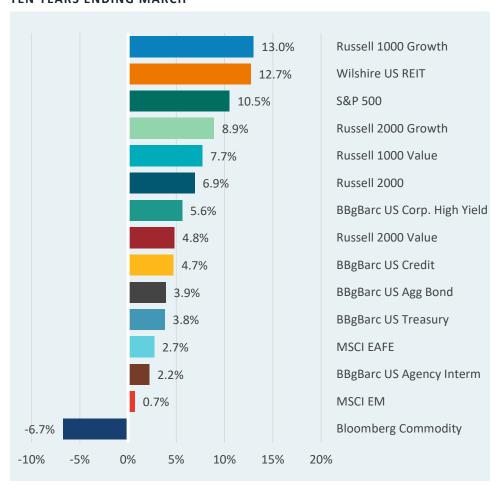


Major asset class returns

ONE YEAR ENDING MARCH



TEN YEARS ENDING MARCH



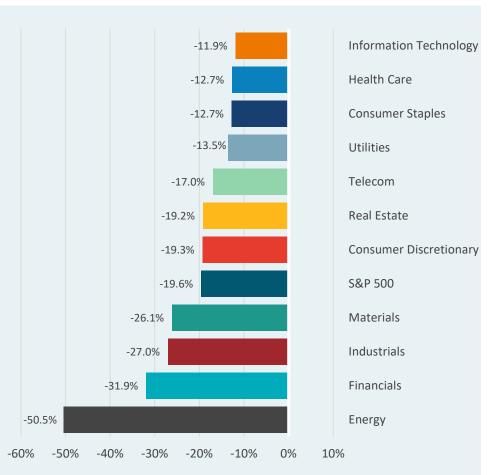
Source: Morningstar, as of 3/31/20

Source: Morningstar, as of 3/31/20

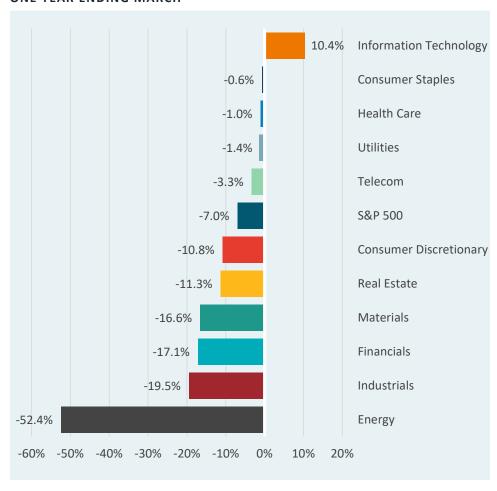


S&P 500 sector returns

Q1 2020



ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/20

Source: Morningstar, as of 3/31/20



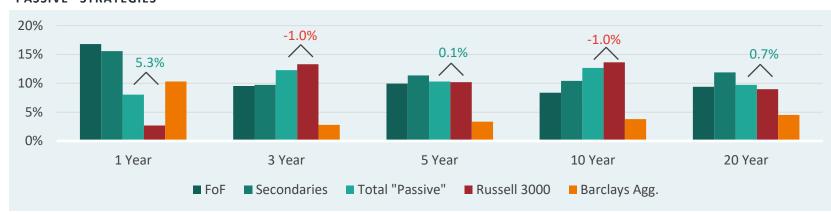
Private equity vs. public performance

As of 9/30/2019

DIRECT PRIVATE EQUITY FUND INVESTMENTS



"PASSIVE" STRATEGIES



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

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

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



Private equity vs. liquid real assets performance

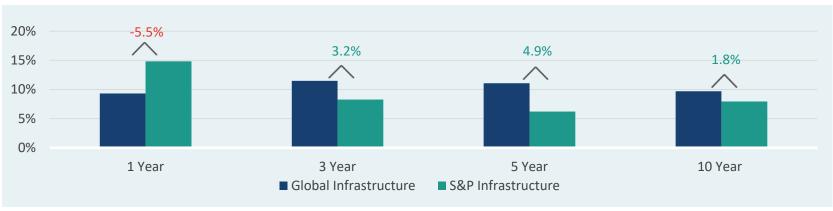
As of 9/30/2019

GLOBAL NATURAL RESOURCES FUNDS



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

GLOBAL INFRASTRUCTURE FUNDS



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

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



Private vs. liquid & core real estate performance

As of 9/30/2019

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



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

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



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

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



Detailed index returns

DOMESTIC EQUITY								FIXED INCOME							
	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year		Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index								Broad Index							
S&P 500	(12.4)	(19.6)	(19.6)	(7.0)	5.1	6.7	10.5	BBgBarc US TIPS	(1.8)	1.7	1.7	6.8	3.5	2.7	3.5
S&P 500 Equal Weighted	(18.0)	(26.7)	(26.7)	(17.6)	(0.4)	2.8	9.2	BBgBarc US Treasury Bills	0.3	0.6	0.6	2.4	1.8	1.2	0.7
DJ Industrial Average	(13.6)	(22.7)	(22.7)	(13.4)	4.4	6.9	10.0	BBgBarc US Agg Bond	(0.6)	3.1	3.1	8.9	4.8	3.4	3.9
Russell Top 200	(11.0)	(17.7)	(17.7)	(4.1)	6.7	7.9	11.0	Duration							
Russell 1000	(13.2)	(20.2)	(20.2)	(8.0)	4.6	6.2	10.4	BBgBarc US Treasury 1-3 Yr	1.3	2.8	2.8	5.4	2.7	1.8	1.4
Russell 2000	(21.7)	(30.6)	(30.6)	(24.0)	(4.6)	(0.2)	6.9	BBgBarc US Treasury Long	6.1	20.9	20.9	32.6	13.4	7.3	9.0
Russell 3000	(13.8)	(20.9)	(20.9)	(9.1)	4.0	5.8	10.1	BBgBarc US Treasury	2.9	8.2	8.2	13.2	5.8	3.6	3.8
Russell Mid Cap	(19.5)	(27.1)	(27.1)	(18.3)	(8.0)	1.8	8.8	Issuer							
Style Index								BBgBarc US MBS	1.1	2.8	2.8	7.0	4.0	2.9	3.3
Russell 1000 Growth	(9.8)	(14.1)	(14.1)	0.9	11.3	10.4	13.0	BBgBarc US Corp. High Yield	(11.5)	(12.7)	(12.7)	(6.9)	0.8	2.8	5.6
Russell 1000 Value	(17.1)	(26.7)	(26.7)	(17.2)	(2.2)	1.9	7.7	BBgBarc US Agency Interm	0.9	2.9	2.9	6.1	3.2	2.3	2.2
Russell 2000 Growth	(19.1)	(25.8)	(25.8)	(18.6)	0.1	1.7	8.9	BBgBarc US Credit	(6.6)	(3.1)	(3.1)	5.1	4.2	3.3	4.7
Russell 2000 Value	(24.7)	(35.7)	(35.7)	(29.6)	(9.5)	(2.4)	4.8								
INTERNATIONAL EQUITY	<i>'</i>							OTHER							
Broad Index								Index							
MSCI ACWI	(13.5)	(21.4)	(21.4)	(11.3)	1.5	2.8	5.9	Bloomberg Commodity	(12.8)	(23.3)	(23.3)	(22.3)	(8.6)	(7.8)	(6.7)
MSCI ACWI ex US	(14.5)	(23.4)	(23.4)	(15.6)	(2.0)	(0.6)	2.1	Wilshire US REIT	(20.0)	(25.6)	(25.6)	(19.4)	(2.5)	5.7	12.7
MSCI EAFE	(13.3)	(22.8)	(22.8)	(14.4)	(1.8)	(0.6)	2.7	CS Leveraged Loans	(12.5)	(13.2)	(13.2)	(9.5)	(0.7)	4.6	5.0
MSCI EM	(15.4)	(23.6)	(23.6)	(17.7)	(1.6)	(0.4)	0.7	Alerian MLP	(48.1)	(58.1)	(58.1)	(61.9)	(29.9)	(21.1)	(4.7)
MSCI EAFE Small Cap	(17.2)	(27.5)	(27.5)	(18.1)	(2.9)	1.0	4.8	Regional Index							
Style Index								JPM EMBI Global Div	(13.8)	(13.4)	(13.4)	(6.8)	0.4	2.8	4.9
MSCI EAFE Growth	(9.2)	(17.5)	(17.5)	(5.8)	3.0	2.5	4.7	JPM GBI-EM Global Div	(11.1)	(15.2)	(15.2)	(6.5)	(8.0)	0.3	0.5
MSCI EAFE Value	(17.7)	(28.2)	(28.2)	(22.8)	(6.7)	(3.8)	0.6	Hedge Funds							
Regional Index								HFRI Composite	(5.9)	(8.3)	(8.3)	(4.0)	0.7	1.3	2.9
MSCI UK	(16.0)	(28.8)	(28.8)	(23.0)	(4.9)	(3.3)	1.6	HFRI FOF Composite	(4.9)	(6.0)	(6.0)	(2.6)	1.0	0.6	2.1
MSCI Japan	(7.1)	(16.8)	(16.8)	(6.7)	1.0	1.8	3.8	Currency (Spot)							
MSCI Euro	(17.2)	(27.0)	(27.0)	(18.3)	(4.4)	(2.3)	1.1	Euro	(0.1)	(2.3)	(2.3)	(2.3)	0.9	0.4	(2.1)
MSCI EM Asia	(11.7)	(18.1)	(18.1)	(12.1)	1.3	1.4	3.5	Pound	(2.9)	(6.4)	(6.4)	(4.8)	(0.3)	(3.5)	(2.0)
MSCI EM Latin American	(34.5)	(45.6)	(45.6)	(40.8)	(13.0)	(5.9)	(6.7)	Yen	(0.1)	0.7	0.7	2.5	1.1	2.1	(1.4)

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



Definitions

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

University of Michigan Consumer Sentiment Index - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic 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.

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PERIOD ENDING: MARCH 31, 2020Investment Performance Review for

Alameda County Employees' Retirement Association

1st quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 0.3% rate year-over-year in the first quarter (-4.8% quarterly annualized rate). Personal consumption expenditures shrunk -7.6%, resulting in a -5.3% hit to headline growth. Forecasts of Q2 GDP growth have varied between -15% to -35%.
- The U.S. government quickly crafted and implemented historic stimulus measures to combat the economic impact of the virus. Support of this magnitude has not been seen since the Great Depression of the 1930s.

PORTFOLIO IMPACTS

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

THE INVESTMENT CLIMATE

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

ASSET ALLOCATION ISSUES

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

An underweight risk stance appears appropriate in today's environment

We remain watchful for investment opportunities

The Federal Reserve also cut interest rates 50 basis points on March 3 following the impacts of COVID-19



U.S. economics summary

- Real GDP grew at a 0.3% rate year-over-year in the first quarter (-4.8% quarterly annualized rate). Personal consumption expenditures shrunk -7.6%, resulting in a -5.3% hit to headline growth. Forecasts of Q2 GDP growth have varied between -15% to -35%.
- The U.S. government quickly crafted and implemented historic stimulus measures to combat the economic impacts of the virus. Support of this magnitude has not been seen since the Great Depression of the 1930s.
- U.S. core inflation rose 2.1% YoY in March. Headline inflation slowed to 1.5%, pushed lower by a sharp decline in energy prices which will likely have persistent effects in the coming months. This downward pressure could be compounded as households slow spending due to loss of income and show a greater propensity to save.

- The U.S. labor market exhibited a sharp weakening in March, as unemployment jumped to 4.4%. Some have estimated the true unemployment rate in April to be above 10%.
- March economic data should not be expected to fully reflect the extent of COVID-19. We are watching daily data releases to gain a better understanding of how conditions are evolving.
- The Bloomberg Consumer Comfort Index exhibited its sharpest two week drop since 1985, from 63.0 to 56.3, dipping from a 20-year high of 67.3 that was achieved in January.
- Existing homes sales increased +7.2% in February YoY, and new homes sales were up +14.3%. The 30-year fixed mortgage interest rate has continued to fall, finishing Q1 at 3.33%.

	Most Recent	12 Months Prior
GDP (YoY)	0.3% 3/31/20	2.7% 3/31/19
Inflation (CPI YoY, Core)	2.1% 3/31/20	2.0% 3/31/19
Expected Inflation (5yr-5yr forward)	1.3% 3/31/20	2.4% 3/31/19
Fed Funds Target Range	0% – 0.25% 3/31/20	2.25% – 2.50% 3/31/19
10 Year Rate	0.7% 3/31/20	2.4% 3/31/19
U-3 Unemployment	4.4% 3/31/20	3.8% 3/31/19
U-6 Unemployment	8.7% 3/31/20	7.4% 3/31/19



International economics summary

- Most international developed economies grew at a rate of 0.5% to 2.5% in Q4. The low and stable expansion of recent years has changed suddenly with the onset of COVID-19. Many global economies will enter recession in 2020. On April 14th the IMF revised their 2020 global growth forecast from +3.3% to -3.0%.
- Governments are using monetary and fiscal policies to fill the large hole in spending and lending that the slowdown may cause. These policies vary in their characteristics and aggressiveness.
- Governments with limited ability to implement stimulus policies may face tougher economic fallout.
 Specifically, European Union member nations that cannot exercise independent actions may see greater difficulties ahead as income gaps cannot be supplemented with fiscal spending.

- The World Trade Organization (WTO) forecast a 13%-32% fall in global trade in 2020 – a larger decrease than witnessed during the global financial crisis. This forecast was paired with the expectation of a 21%-24% rebound in trade throughout 2021.
- While not yet reflected in the most recent economic data, unemployment rates around the world are certain to rise considerably.
- The COVID-19 virus breakout originated in China, and many investors have pointed to China as a testcase for how the virus might play out economically. Although the data released by China suggests the outbreak has been defeated, there is increasing evidence that the severity of virus has been underreported – perhaps severely.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	0.3% 3/31/20	1.5% 3/31/20	4.4% 3/31/20
Eurozone	1.0% 12/31/19	0.7% 3/31/20	7.3% 2/29/20
Japan	(0.7%) 12/31/19	0.4% 3/31/20	2.3% 2/29/20
BRICS Nations	5.0% 12/31/19	4.9 % <i>3/31/20</i>	5.0% 12/31/19
Brazil	1.7% 12/31/19	3.3% 3/31/20	11.6% 2/29/20
Russia	2.1% 12/31/19	2.6% 3/31/20	4.6 % <i>2/29/20</i>
India	4.7 % 12/31/19	5.9% 3/31/20	8.5% 12/31/17
China	6.0% 12/31/19	4.3 % <i>3/31/20</i>	3.6% 12/31/19

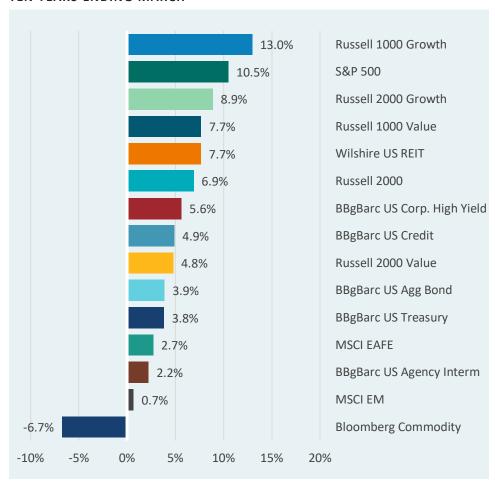


Major asset class returns

SIX MONTHS ENDING MARCH



TEN YEARS ENDING MARCH



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



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- The composite fund returned -15.0% for the first quarter of 2020 and ranked in the 79th percentile among public funds greater than \$1 billion (median of -12.6%). The fund underperformed its policy index return of -13.9% during this time period. Longer term, the five (4.0%), and tenyear (7.1%) returns ranked in the 36th and 23rd percentile of large public plans, respectively.
- First quarter results were enhanced by the following factors:
 - 1. TCW beat the Russell 1000 Growth (-11.4% vs -14.1%). Positive stock selection within the real estate, information technology and consumer discretionary sectors contributed to the relative outperformance.
 - 2. Newton Emerging Markets lost -17.88% beating the MSCI EM Index -23.6.
- First quarter results were hindered by the following factors:
 - 1. Pzena lost -40.2% trailing the Russell 1000 Value which lost -26.7%. Pzena's deep value tilts caused significant underperformance during the quarter.
 - 2. Brandywine trailed the Bloomberg Barclays Global Aggregate (-11.3% vs -0.3%.) The portfolio's exposure to investment grade credit hurt as spreads widened during the quarter.
 - 3. The Real Asset composite lost -23.0%, which while better than the custom index (-30.1%) contributed to the Plan's negative absolute return.



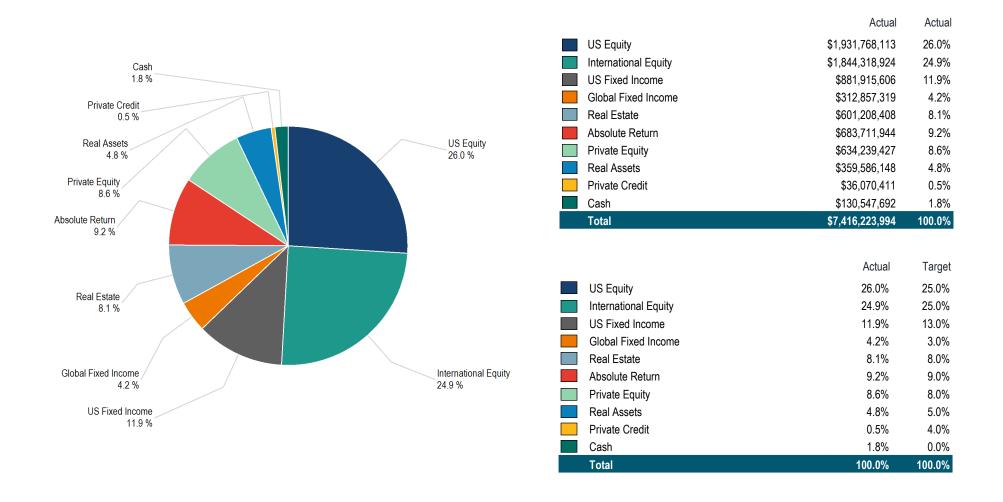
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return ¹	\$802,442,579	-\$45,895,552	-\$72,835,082	\$683,711,944
Alta	\$4,213	\$0	\$0	\$4,213
Applied Research Investments	\$18,796,014	\$0	-\$3,262,743	\$15,533,272
AQR	\$448,279,351	\$0	-\$115,169,209	\$333,110,143
Arga Investment Management	\$19,477,565	\$0	-\$6,246,677	\$13,230,889
Baird Advisors	\$670,622,189	-\$95,000,000	\$11,147,645	\$586,769,834
Bivium Cash	\$1	\$0	\$0	\$1
BlackRock MSCI World ex-US Index Fd A	\$467,286,432	\$0	-\$108,430,892	\$358,855,540
BlackRock Russell 1000 Index Fund	\$1,959,342,594	-\$72,082	-\$395,867,621	\$1,563,402,891
Brandywine	\$352,806,510	-\$241,385	-\$39,707,806	\$312,857,319
Capital Group	\$479,629,688	-\$162,918	-\$98,490,690	\$380,976,080
Cash Account	\$49,385,622	\$80,895,911	\$266,159	\$130,547,692
Denali Advisors	\$17,361,129	\$0	-\$4,947,642	\$12,413,487
Dundas Partners	\$18,899,103	\$0	-\$2,849,920	\$16,049,183
Global Alpha Capital Management	\$6,869,471	\$0	-\$1,963,111	\$4,906,359
Huber	\$1,764	\$0	\$0	\$1,764
Kennedy	\$123,226,482	-\$237,299	-\$43,575,998	\$79,413,186
Loomis Sayles	\$365,095,638	-\$55,291,828	-\$14,658,038	\$295,145,772
Mondrian	\$461,905,331	-\$396,798	-\$124,892,681	\$336,615,852
Newton Emerging Mkt	\$237,181,368	\$0	-\$42,407,691	\$194,773,677
Next Century-SCG	-\$199,745	\$205,177	\$1	\$5,434
Owl Rock First Lien Fund	\$32,661,096	\$7,498,677	-\$4,089,362	\$36,070,411
Private Equity	\$585,504,313	\$26,588,591	\$22,146,524	\$634,239,427
Pzena	\$134,295,502	\$0	-\$54,046,126	\$80,249,376
Radin Capital Partners	\$6,481,772	\$0	-\$2,017,086	\$4,464,686
RVX Asset Management	\$4,372,814	\$0	-\$1,253,965	\$3,118,849
Real Assets	\$439,889,065	\$22,996,773	-\$103,299,690	\$359,586,148
Real Estate	\$593,799,561	\$2,798,199	\$4,610,651	\$601,208,408
Sec. Lending	\$0	-\$142,060	\$142,060	\$0
TCW	\$130,705,867	\$0	-\$14,945,808	\$115,760,060
Templeton	\$246,230,429	\$0	-\$76,232,968	\$169,997,461
Transition Account (Macquarie Capital)	\$276,156	\$0	\$0	\$273,448
Willliam Blair Small Cap Growth	\$123,192,003	\$0	-\$30,260,813	\$92,931,190
Total	\$8,795,821,877	-\$56,456,594	-\$1,323,138,581	\$7,416,223,996

1 Preliminary ending market value



	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$4,213	\$0	\$0	\$4,213
Bivium Cash	\$1	\$0	\$0	\$1
Huber	\$1,764	\$0	\$0	\$1,764
Total	\$5,978	\$0	\$0	\$5,978
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Applied Research Investments	\$18,796,014	\$0	-\$3,262,743	\$15,533,272
Arga Investment Management	\$19,477,565	\$0	-\$6,246,677	\$13,230,889
Denali Advisors	\$17,361,129	\$0	-\$4,947,642	\$12,413,487
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Global Alpha Capital Management	\$6,869,471	\$0	-\$1,963,111	\$4,906,359
Radin Capital Partners	\$6,481,772	\$0	-\$2,017,086	\$4,464,686
RVX Asset Management	\$4,372,814	\$0	-\$1,253,965	\$3,118,849
Total	\$92,257,868	\$0	-\$22,541,144	\$69,716,724





Bivium Portfolio Liquidated U.S. Equities and invested in International Equities



	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Fund (Gross)	-15.01	79	-9.90	74	-6.72	74	2.98	39	4.02	36	5.74	30	7.08	23	9.06	Sep-85
Total Fund (Net)	-15.03	79	-9.95	74	-6.87	74	2.79	44	3.78	40	5.46	35	6.79	29	8.86	
Policy Index	-13.90	66	-9.21	65	-6.33	69	2.78	44	4.13	32	6.10	19	7.20	20	9.34	Sep-85
Allocation Index	-14.44	74	-9.40	69	-6.34	69	2.72	45	3.96	38	5.83	27	6.91	27		Sep-85
InvMetrics Public DB > \$1B Gross Median	-12.56		-8.41		-4.85		2.59		3.42		5.03		6.23		8.35	Sep-85
US Equity (Gross)	-21.80	42	-14.63	33	-10.00	30	4.44	15	5.74	21	8.93	23	10.15	24	10.92	Sep-85
US Equity (Net)	-21.82	42	-14.68	34	-10.14	33	4.23	17	5.47	29	8.63	34	9.84	35		
Russell 3000	-20.90	24	-13.70	19	-9.13	18	4.00	21	5.77	19	8.96	20	10.15	24	10.48	Sep-85
InvMetrics All DB US Eq Gross Median	-22.22		-15.62		-11.26		2.77		4.74		8.12		9.40		10.13	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	-20.20	56	-12.99	43	-7.99	50									0.14	Apr-18
BlackRock Russell 1000 Index Fund (Net)	-20.21	56	-13.00	43	-8.00	50									0.14	
Russell 1000	-20.22	56	-13.01	43	-8.03	50	4.64	43	6.22	42	9.32	42	10.39	43	0.10	Apr-18
Large Cap Active Equity (Gross)	-26.03		-18.34		-15.53		1.79	-	4.43		7.71	-	9.22		6.47	Mar-00
Large Cap Active Equity (Net)	-26.03	-	-18.44	-	-16.02		1.34		4.00	-	7.29	-	8.80		6.04	
Russell 1000	-20.22		-13.01		-8.03		4.64		6.22		9.32		10.39		4.88	Mar-00
Pzena (Gross)	-40.24	99	-33.81	99	-32.03	99	-9.90	99	-2.23	96	2.81	97	4.73	97	2.12	Jan-06
Pzena (Net)	-40.24	99	-33.89	99	-32.39	99	-10.34	99	-2.68	97	2.35	98	4.28	99	1.69	
Russell 1000 Value	-26.73	58	-21.30	61	-17.17	60	-2.18	65	1.90	63	5.56	65	7.67	63	4.96	Jan-06
TCW (Gross)	-11.43	17	-2.55	21	1.52	29	13.73	20	10.87	25	12.33	49	13.04	31	7.22	Jun-99
TCW (Net)	-11.43	17	-2.66	22	0.90	34	13.27	24	10.48	32	11.96	59	12.68	43		
Russell 1000 Growth	-14.10	48	-4.98	40	0.91	34	11.32	42	10.36	34	12.93	35	12.97	34	5.16	Jun-99

¹ See Policy Index and Benchmark History.



	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Small Cap Equity (Gross)	-35.41		-29.32		-26.00		-2.98		-0.16		5.09		7.45		12.01	Jul-85
Small Cap Equity (Net)	-35.55	-	-29.75		-26.85		-3.90		-1.06		4.18	-	6.55			
Russell 2000	-30.61		-23.72		-23.99		-4.64		-0.25		4.21		6.90		8.32	Jul-85
Kennedy (Gross)	-35.41	55	-29.32	47	-28.26	48	-9.71	63	-2.63	65	3.37	37			6.78	Sep-10
Kennedy (Net)	-35.56	57	-29.60	49	-28.98	54	-10.51	73	-3.46	76	2.52	58			5.92	
Russell 2000 Value	-35.66	58	-30.20	53	-29.64	61	-9.51	60	-2.42	62	1.80	73	4.79	84	5.26	Sep-10
Willliam Blair Small Cap Growth (Gross)	-24.56	22													-19.93	Oct-19
Willliam Blair Small Cap Growth (Net)	-24.56	22													-19.93	
Russell 2000 Growth	-25.77	27	-17.31	20	-18.58	29	0.10	29	1.70	38	6.47	35	8.89	37	-19.59	Oct-19
eV US Small Cap Equity Gross	-30.95		-25.26		-24.29		-4.70		0.13		4.73		7.79		-26.77	Oct-19
Median	00.00		20.20		21.20		0		0.70		0		70		20.77	000.70
International Equity (Gross)	-24.18	49	-16.49	43	-16.07	51	-0.75	23	0.86	19	2.55	22	3.61	23	7.25	Dec-90
International Equity (Net)	-24.21	49	-16.58	43	-16.35	55	-1.04	26	0.51	25	2.18	30	3.23	34		
MSCI ACWI ex USA IMI Gross	-24.02	47	-16.98	50	-15.89	48	-1.88	39	-0.20	41	1.52	52	2.52	58	5.35	Dec-90
InvMetrics All DB ex-US Eq Gross Median	-24.26		-16.98		-15.99		-2.43		-0.55		1.57		2.67		5.98	Dec-90
Bivium Intl Equity (Gross)	-24.43	64	-15.54	56	-13.50	48									-6.50	Oct-18
Bivium Intl Equity (Net)	-24.52	65	-15.72	57	-13.77	49									-6.76	
MSCI ACWI ex USA Gross	-23.26	52	-16.37	62	-15.14	60	-1.48	64	-0.17	69	1.53	73	2.52	87	-6.90	Oct-18
AQR (Gross)	-25.69	87	-18.53	81	-20.30	97	-4.65	96	-1.39	83	1.03	79	2.64	82	-0.10	Oct-07
AQR (Net)	-25.69	87	-18.63	83	-20.60	97	-5.06	98	-1.84	95	0.55	94	2.16	97	-0.57	
MSCI ACWI ex USA Gross	-23.26	48	-16.37	56	-15.14	55	-1.48	46	-0.17	54	1.53	68	2.52	84	-0.37	Oct-07
BlackRock MSCI World ex-US Index Fd A (Gross)	-23.20	44	-17.11	53											-12.94	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	-23.20	44	-17.11	53								-			-12.94	
MSCI World ex US Gross	-23.15	43	-17.06	52	-14.42	43	-1.56	47	-0.25	57	1.95	69	2.94	78	-12.85	May-19
eV All EAFE Equity Gross Median	-23.98		-16.98		-15.20		-1.68		0.03		2.76		4.12		-13.26	<i>May-</i> 19

1 See Policy Index and Benchmark History.



	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Capital Group (Gross) Capital Group (Net)	-20.54 -20.57	28 29	-11.41 -11.44	23 23	-9.54 -9.89	28 29	4.42 4.24	13 14	4.09 3.85	14 16	4.64 4.36	23 27	4.85 4.53	40 47	7.91 	Dec-90
MSCI ACWI ex USA Gross MSCI ACWI ex USA Growth Gross	-23.26 -18.16	49 14	-16.37 -10.28	54 17	-15.14 -6.94	55 18	-1.48 2.91	55 23	-0.17 2.48	62 28	1.53 3.63	68 39	2.52 4.28	82 51	5.39 	Dec-90 Dec-90
Mondrian (Gross) Mondrian (Net)	-27.05 -27.12	53 58	-19.07 -19.21	48 55	-20.19 -20.57	57 64	-4.24 -4.62	45 51	-1.67 -2.05	51 55	0.79 0.42	58 75	2.31 1.97	53 62	5.15 4.83	Nov-03
MSCI ACWI ex USA Gross MSCI ACWI ex USA Value Gross	-23.26 -28.45	14 69	-16.37 -22.52	24 82	-15.14 -23.18	18 80	-1.48 -5.92	10 68	-0.17 -2.92	10 82	1.53 -0.67	19 91	2.52 0.68	<i>44</i> 93	5.27 4.43	Nov-03 Nov-03
Newton Emerging Mkt (Gross) Newton Emerging Mkt (Net)	-17.88 -17.88	2 2	-7.63 -7.68	2 2	 		 	 	 	 	 				-5.22 -5.31	May-19
MSCI Emerging Markets Gross eV Emg Mkts Equity Gross Median	-23.57 -24.83	35	-14.45 -16.31	33	-17.36 -18.52	41	-1.25 -2.00	38	0.01 0.08	52	-0.04 0.25	56	1.04 2.10	76	-12.78 -14.50	Мау-19 Мау-19
Templeton (Gross) Templeton (Net)	-30.96 -31.07	91 91	-24.19 -24.42	95 95	-24.21 -24.77	86 91	-4.76 -5.35	71 75	-1.32 -1.96	84 85	1.42 0.74	79 85	 		2.16 1.48	Apr-11
MSCI ACWI ex US Small Cap Gross	-28.94	71	-21.07	75	-20.84	69	-4.52	69	-0.44	71	1.43	78	3.16	99	0.78	Apr-11
Total Fixed Income (Gross) Total Fixed Income (Net)	-2.72 -2.76	68 68	-1.02 -1.10	58 60	3.17 2.97	62 64	3.51 3.32	51 59	3.17 2.98	44 52	3.37 3.17	31 38	5.26 5.05	16 19	7.17 	Sep-86
Fixed Income Blend	0.56	39	0.94	41	6.01	38	4.13	31	3.16	45	2.82	54	3.70	68	6.38	Sep-86
InvMetrics All DB Total Fix Inc Gross Median	-0.96		-0.08		4.32		3.51		3.03		2.84		4.20		6.46	Sep-86
US Fixed Income (Gross)	0.23	55	0.95	52	6.31	41	4.62	29	3.88	25	4.16	21	5.69	16	7.17	Sep-86
US Fixed Income (Net)	0.20	56	0.88	53	6.15	44	4.45	33	3.72	29	3.99	22	5.52	17		
BBgBarc US Aggregate TR	3.15	19	3.33	18	8.93	21	4.82	25	3.36	41	3.19	43	3.88	59	6.23	Sep-86
InvMetrics All DB US Fix Inc Gross Median	0.67		0.98		5.87		3.87		3.05		2.96		4.09		6.38	Sep-86
Baird Advisors (Gross)	2.05	45	2.48	38	8.30	36	5.01	25	3.94	9	4.00	4	5.12	6	5.22	Oct-01
Baird Advisors (Net)	2.05	45	2.46	39	8.24	38	4.93	31	3.86	12	3.91	6	5.04	7	5.13	
BBgBarc US Aggregate TR	3.15	20	3.33	18	8.93	20	4.82	39	3.36	66	3.19	77	3.88	88	4.45	Oct-01

¹ See Policy Index and Benchmark History.



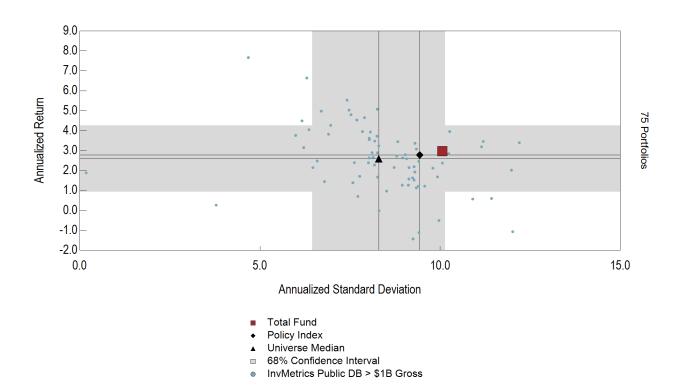
	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Loomis Sayles (Gross)	-3.13	99	-1.90	96	2.62	99	3.88	92	3.75	21	4.45	2	6.64	1	7.89	Dec-00
Loomis Sayles (Net)	-3.20	99	-2.05	97	2.30	99	3.55	96	3.43	60	4.12	3	6.30	1	7.55	
BBgBarc US Credit BAA TR	-7.39	99	-5.82	99	1.92	99	3.42	98	2.90	95	3.30	61	5.02	7	6.01	Dec-00
Global Fixed Income (Gross)	-11.26	67	-6.90	57	-5.88	57	0.08	53	0.91	72	0.97	71	3.93	49	6.52	Nov-01
Global Fixed Income (Net)	-11.32	67	-7.01	58	-6.19	59	-0.19	57	0.63	77	0.69	77	3.61	63	6.21	
FTSE WGBI TR	2.00	9	1.64	9	6.17	10	4.27	9	2.96	21	1.48	59	2.19	88	4.54	Nov-01
InvMetrics All DB Glbl Fix Inc Gross Median	-7.50		-5.89		-5.05		0.90		2.32		1.98		3.82			Nov-01
Brandywine (Gross)	-11.26	71	-6.90	66	-5.88	73	0.08	81	0.91	83	0.97	81	3.93	39	6.52	Nov-01
Brandywine (Net)	-11.32	71	-7.01	67	-6.19	75	-0.19	84	0.63	86	0.69	83	3.61	43	6.21	
BBgBarc Global Aggregate TR	-0.33	16	0.16	13	4.20	18	3.55	24	2.64	46	1.60	68	2.47	75	4.47	Nov-01
FTSE WGBI TR	2.00	5	1.64	6	6.17	8	4.27	11	2.96	31	1.48	71	2.19	80	4.54	Nov-01
Absolute Return (Gross)	-9.63	54	-9.84	69	-8.79	72	-2.45	78	-0.99	75	1.45	70			1.77	Sep-11
Absolute Return (Net)	-9.63	54	-9.84	69	-8.79	72	-2.45	78	-0.99	75	1.45	70			1.77	
HFRI Fund of Funds Composite Index	-8.79	49	-5.98	49	-5.48	51	-0.04	62	0.00	60	1.60	69	1.75	77	2.21	Sep-11
InvMetrics All DB Hedge Funds Gross Median	-9.01		-6.12		-5.29		0.88		0.81		2.61		3.20		3.84	Sep-11
Private Equity (Gross)	3.78		4.20		18.18		13.50		13.90		15.09		14.16		4.35	Nov-08
Private Equity (Net)	3.78	-	4.20		18.18		13.50		13.90		15.09		14.16		4.35	
Thomson Reuters C A Global All PE 1 Qtr Lag	4.38		4.29	-	10.54		9.83		8.47		9.28	-	9.86		7.75	Nov-08
Real Assets (Gross)	-23.01		-18.22		-20.54		-9.10		-6.81		-8.60				-7.08	Sep-11
Real Assets (Net)	-23.01	-	-18.23		-20.55		-9.10		-6.81		-8.60	-	-		-7.09	
Real Asset Blend	-30.07		-25.02		-25.60		-5.43		-0.14		0.99				1.68	Sep-11



	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Private Credit (Gross)	-12.51														-12.64	Oct-19
Private Credit (Net)	-12.51														-12.64	
S&P/LSTA Leveraged Loan Index +175	-12.65		-10.75		-7.56		0.96		2.91		3.57		4.88		-10.48	Oct-19
Owl Rock First Lien Fund (Gross)	-12.51	65													-12.64	Oct-19
Owl Rock First Lien Fund (Net)	-12.51	65													-12.64	
S&P/LSTA Leveraged Loan Index +175	-12.65	65	-10.75	64	-7.56	59	0.96	49	2.91	36	3.57	35	4.88	39	-10.48	Oct-19
eV Alt All Credit Median	-8.18		-6.79		-5.02		0.83		1.89		2.66		4.18		-7.38	Oct-19
Cash (Gross)	0.36		0.75		1.57		1.60		1.08		0.78		0.59		3.13	Sep-85
Cash (Net)	0.36		0.75		1.57		1.60		1.08		0.78		0.59		3.13	
91 Day T-Bills	0.37		0.77		1.85		1.72		1.13		0.81		0.59		3.23	Sep-85
Real Estate (Gross)	0.75	46	2.27	46	5.58	30	7.54	26	9.41	18	10.59	20	11.57	29	7.07	Mar-86
Real Estate (Net)	0.75	46	2.27	46	5.58	30	7.54	26	9.05	22	10.03	31	10.87	52	6.03	
NCREIF-ODCE	0.97	39	2.49	39	4.88	40	6.81	39	8.45	33	9.90	33	11.45	33	7.25	Mar-86
InvMetrics All DB Real Estate Pub+Priv Gross Median	0.60		2.01		4.50		6.46		8.04		9.50		10.91			Mar-86

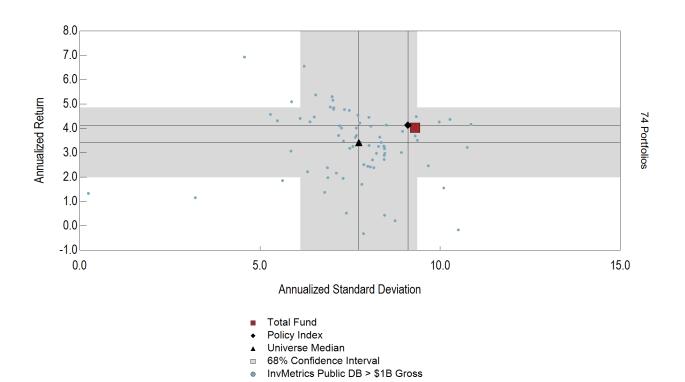
¹ See Policy Index and Benchmark History.





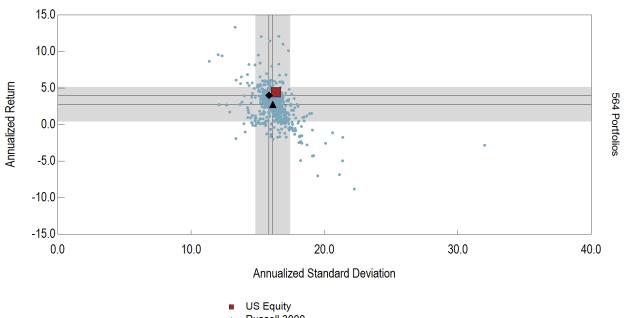
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	2.98%	39	10.06%	88	0.12	43	0.15	49	1.26%	58
Policy Index	2.78%	44	9.43%	82	0.11	49			0.00%	1
Allocation Index	2.72%	45	9.86%	85	0.10	52	-0.10	59	0.61%	6
InvMetrics Public DB > \$1B Gross Median	2.59%		8.30%		0.11		0.09		1.21%	





	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	4.02%	36	9.30%	88	0.31	45	-0.08	63	1.32%	59
Policy Index	4.13%	32	9.11%	87	0.33	40		-	0.00%	1
Allocation Index	3.96%	38	9.32%	89	0.30	46	-0.33	79	0.50%	5
InvMetrics Public DB > \$1B Gross Median	3.42%		7.74%	-	0.28		0.09		1.20%	





Russell 3000

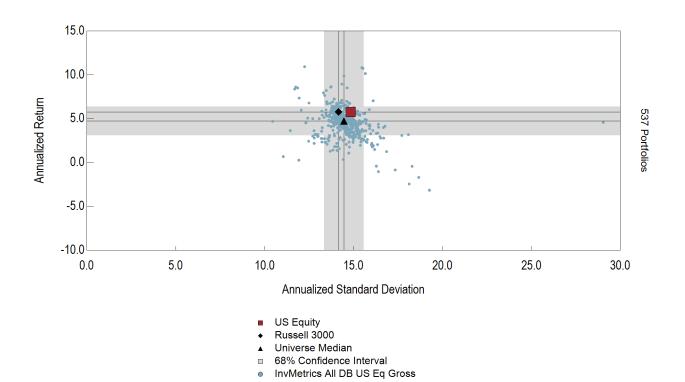
Universe Median

68% Confidence Interval

InvMetrics All DB US Eq Gross

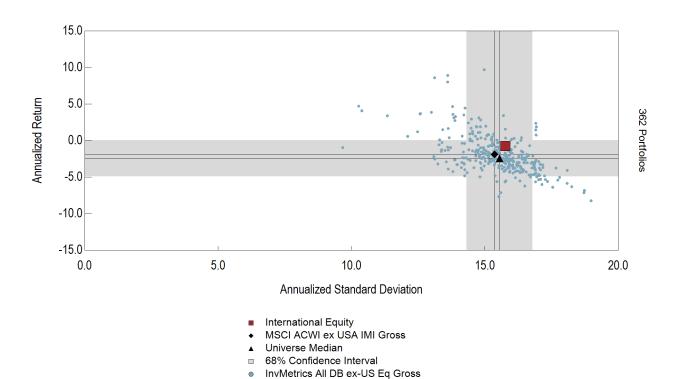
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	4.44%	15	16.36%	61	0.17	16	0.33	20	1.33%	28
Russell 3000	4.00%	21	15.83%	37	0.14	23			0.00%	1
InvMetrics All DB US Eq Gross Median	2.77%		16.12%		0.07		-0.61		1.91%	





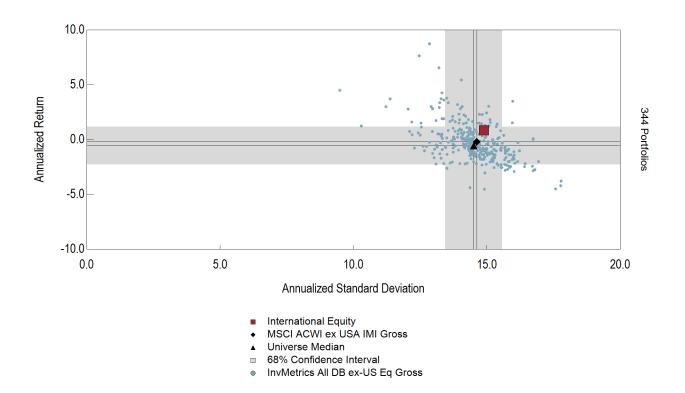
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	5.74%	21	14.85%	71	0.31	26	-0.02	25	1.93%	47
Russell 3000	5.77%	19	14.16%	34	0.33	21			0.00%	1
InvMetrics All DB US Eq Gross Median	4.74%		14.46%		0.25		-0.50		1.98%	





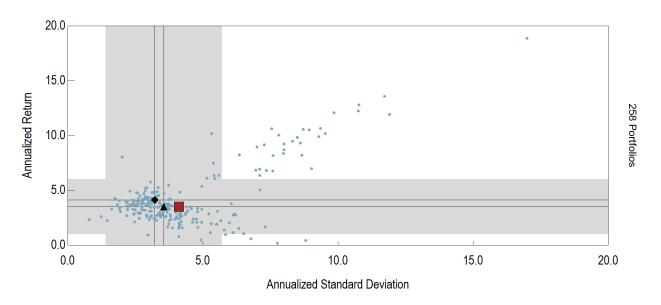
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	-0.75%	23	15.77%	60	-0.16	22	0.82	12	1.38%	5
MSCI ACWI ex USA IMI Gross	-1.88%	39	15.37%	45	-0.23	40		-	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	-2.43%		15.55%		-0.27		-0.20	-	2.83%	





	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	0.86%	19	14.88%	65	-0.02	19	0.75	10	1.40%	4
MSCI ACWI ex USA IMI Gross	-0.20%	41	14.62%	55	-0.09	42		-	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	-0.55%		14.51%		-0.12		0.00	-	3.06%	

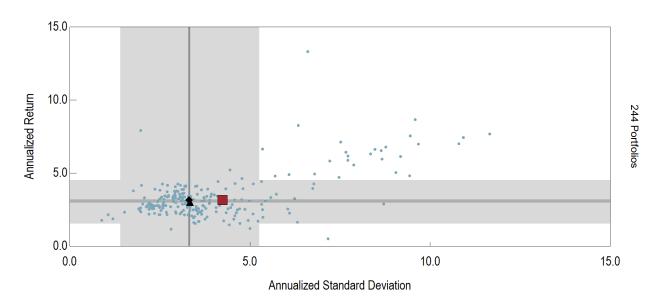




- Total Fixed Income
- Fixed Income Blend
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics All DB Total Fix Inc Gross

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.51%	51	4.11%	64	0.44	63	-0.29	33	2.16%	50
Fixed Income Blend	4.13%	31	3.22%	41	0.75	40		-	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	3.51%		3.55%		0.59		-0.41		2.16%	





- Total Fixed Income
- Fixed Income Blend
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics All DB Total Fix Inc Gross

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.17%	44	4.24%	73	0.48	66	0.00	42	2.12%	52
Fixed Income Blend	3.16%	45	3.31%	49	0.61	50			0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	3.03%		3.33%		0.61		-0.07		2.05%	



Equity environment

- U.S. equities experienced an unusually sudden and significant sell-off in March as investors grew fearful of the health and economic impacts of COVID-19 spread.
 During Q1 the S&P 500 fell -19.6%, international developed equities (MSCI EAFE) fell -22.8% and emerging markets (MSCI EM) fell -23.6%.
- The greatest influence on equity performance in 2020 will perhaps be the path of corporate earnings.
 The degree to which corporate earnings will fall is largely unknown with few reliable estimates.
- Implied volatility spiked in March to a record daily close of 82.7%, surpassing the high of 80.9% in November 2008 during the depths of the global financial crisis.
- In March, a squabble between
 OPEC+ members led to a historic drop in energy prices. The energy sector faces sharply falling demand

- and potentially significant oversupply due to oil producers' decision to ramp up production in an oil war. The energy sector experienced a loss of -50.5% in Q1.
- The U.S. dollar appreciated significantly in the first quarter, rising 7.1% on a trade-weighted basis, resulting in large losses for investors with unhedged currency exposure. As is often the case during higher risk market environments, demand for safehaven currencies positively impacted the dollar.
- Value stocks severely underperformed growth stocks during the first quarter (Russell 1000 Value -26.7%, Russell 1000 Growth -14.1%). Small cap stocks underperformed large cap stocks by a similar magnitude (Russell 2000 -30.6%, Russell 1000 -20.2%). Value and size factors continue to experience an extended period of relative underperformance.

	QTD TOTA	L RETURN	1 YEAR TOTAL RETURN				
	(unhedged)	(hedged)	(unhedged)	(hedged)			
US Large Cap (S&P 500)	(19.	6%)	(7.0	(7.0%)			
US Small Cap (Russell 2000)	(30.	6%)	(24.	(24.0%)			
US Large Value (Russell 1000 Value)	(26.	7%)	(17.2%)				
US Large Growth (Russell 1000 Growth)	(14.	1%)	(0.9%)				
International Large (MSCI EAFE)	(22.8%)	(19.9%)	(14.4%)	(10.3%)			
Eurozone (Euro Stoxx 50)	(27.0%)	(24.8%)	(16.6%)	(12.0%)			
U.K. (FTSE 100)	(28.8%)	(23.0%)	(22.0%)	(16.4%)			
Japan (NIKKEI 225)	(18.6%)	(18.8%)	(6.7%)	(6.8%)			
Emerging Markets (MSCI Emerging Markets)	(23.6%)	(18.5%)	(17.7%)	(12.7%)			

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



Domestic equity

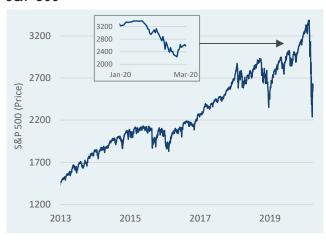
U.S. equities experienced an unusually sudden and significant sell-off in March as investors grew fearful of the health and economic impacts of COVID-19 spread. During Q1 the S&P 500 fell -19.6%, international developed equities (MSCI EAFE) fell -22.8% and emerging markets (MSCI EM) fell -23.6%.

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

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

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

S&P 500

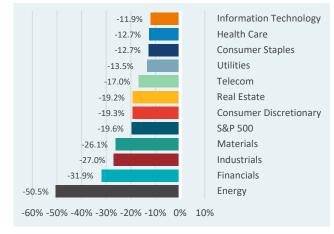


WORST S&P 500 MAX MONTHLY DRAWDOWNS



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

Q1 SECTOR PERFORMANCE



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



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

Domestic equity size & style

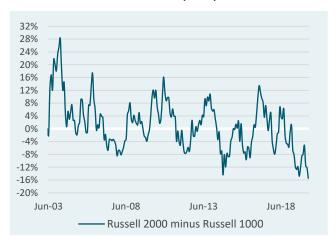
Value stocks severely underperformed growth stocks during the first quarter (Russell 1000 Value -26.7%, Russell 1000 Growth -14.1%). Small cap stocks underperformed large cap stocks by a similar magnitude (Russell 2000 -30.6%, Russell 1000 -20.2%). Value and size factors continue to experience a surprisingly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

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

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

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

SMALL CAP VS LARGE CAP (YOY)



VALUE VS GROWTH (YOY)



VALUE HISTORICALLY CHEAP



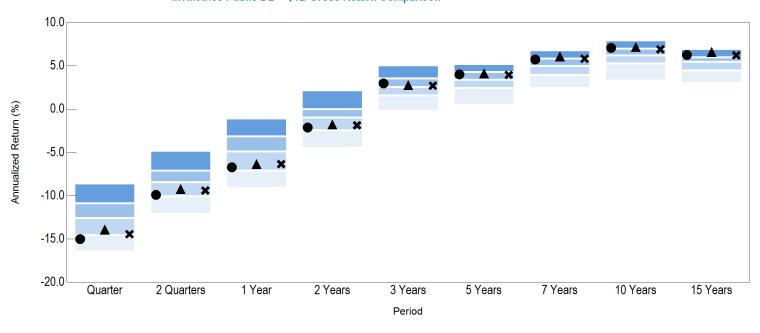
Source: FTSE, as of 3/31/20

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



Source: FTSE, as of 3/31/20

InvMetrics Public DB > \$1B Gross Return Comparison



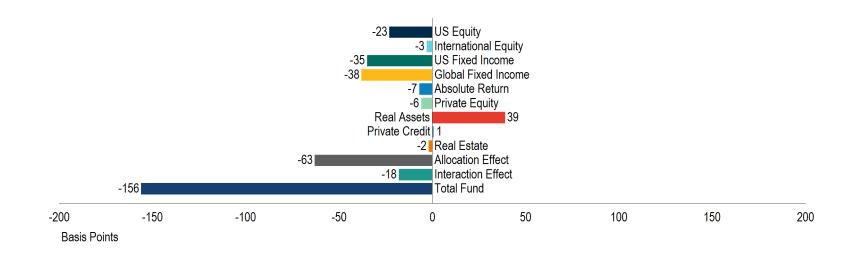
5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios

Total Fund

▲ Policy IndexX Allocation Index

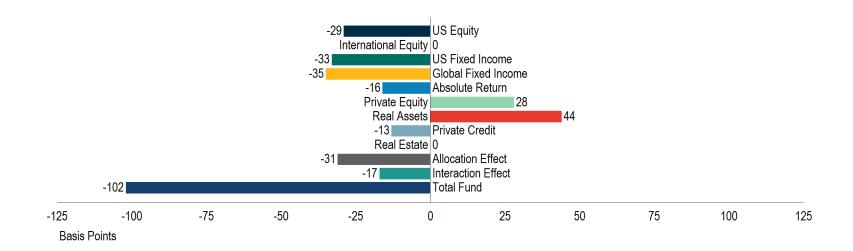
Return (Rank)																
-8.59		-4.80		-1.07		2.18		5.04		5.21		6.79		7.94		6.94	
-10.87		-7.07		-3.10		0.01		3.59		4.30		5.87		7.00		6.03	
-12.56		-8.41		-4.85		-0.94		2.59		3.42		5.03		6.23		5.48	
-14.52		-10.02		-7.07		-2.43		1.60		2.45		4.00		5.31		4.49	
-16.41		-12.06		-9.07		-4.45		-0.17		0.49		2.47		3.31		3.07	
75		75		75		75		75		74		72		69		64	
-15.01	(79)	-9.90	(74)	-6.72	(74)	-2.12	(72)	2.98	(39)	4.02	(36)	5.74	(30)	7.08	(23)	6.26	(16)
-13.90	(66)	-9.21	(65)	-6.33	(69)	-1.75	(63)	2.78	(44)	4.13	(32)	6.10	(19)	7.20	(20)	6.60	(10)
-14.44	(74)	-9.40	(69)	-6.34	(69)	-1.86	(66)	2.72	(45)	3.96	(38)	5.83	(27)	6.91	(27)	6.22	(16)





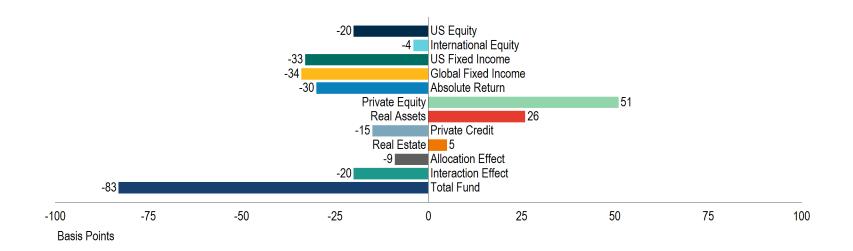
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-21.80%	-20.90%	-0.90%	-0.23%	-0.21%	-0.02%	-0.47%
International Equity	-24.18%	-24.02%	-0.16%	-0.03%	-0.22%	0.00%	-0.25%
US Fixed Income	0.23%	3.15%	-2.92%	-0.35%	-0.07%	0.00%	-0.42%
Global Fixed Income	-11.26%	2.00%	-13.26%	-0.38%	0.16%	-0.14%	-0.35%
Absolute Return	-9.63%	-8.79%	-0.84%	-0.07%	0.00%	0.00%	-0.08%
Private Equity	3.78%	4.38%	-0.59%	-0.06%	-0.13%	-0.02%	-0.21%
Real Assets	-23.01%	-30.07%	7.06%	0.39%	0.01%	-0.01%	0.40%
Private Credit	-12.51%	-12.65%	0.13%	0.01%	-0.04%	-0.01%	-0.04%
Real Estate	0.75%	0.97%	-0.22%	-0.02%	-0.13%	0.00%	-0.14%
Total	-15.12%	-13.56%	-1.56%	-0.75%	-0.63%	-0.18%	-1.56%





	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-13.88%	-12.70%	-1.18%	-0.29%	-0.07%	-0.03%	-0.39%
International Equity	-18.35%	-18.32%	-0.02%	0.00%	-0.18%	0.01%	-0.16%
US Fixed Income	3.04%	5.68%	-2.64%	-0.33%	-0.06%	0.00%	-0.39%
Global Fixed Income	-9.36%	2.51%	-11.87%	-0.35%	0.12%	-0.13%	-0.36%
Absolute Return	-8.69%	-6.87%	-1.82%	-0.16%	0.00%	0.00%	-0.16%
Private Equity	11.60%	6.85%	4.75%	0.28%	-0.10%	-0.11%	0.08%
Real Assets	-19.27%	-27.34%	8.07%	0.44%	0.04%	-0.03%	0.45%
Private Credit	-12.64%	-9.47%	-3.16%	-0.13%	0.03%	0.12%	0.02%
Real Estate	3.81%	3.84%	-0.02%	0.00%	-0.10%	0.00%	-0.11%
Total	-9.60%	-8.58%	-1.02%	-0.54%	-0.31%	-0.17%	-1.02%





	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-10.00%	-9.13%	-0.87%	-0.20%	0.02%	-0.02%	-0.20%
International Equity	-16.07%	-15.89%	-0.18%	-0.04%	-0.18%	0.01%	-0.21%
US Fixed Income	6.31%	8.93%	-2.63%	-0.33%	-0.08%	0.00%	-0.41%
Global Fixed Income	-5.88%	6.17%	-12.04%	-0.34%	0.14%	-0.14%	-0.34%
Absolute Return	-8.79%	-5.48%	-3.30%	-0.30%	-0.01%	0.00%	-0.31%
Private Equity	18.18%	10.54%	7.63%	0.51%	-0.12%	-0.21%	0.18%
Real Assets	-20.54%	-25.60%	5.06%	0.26%	0.04%	0.02%	0.32%
Private Credit	-12.64%	-7.56%	-5.08%	-0.15%	0.18%	0.14%	0.17%
Real Estate	5.58%	4.88%	0.71%	0.05%	-0.10%	-0.01%	-0.05%
Total	-6.79%	-5.96%	-0.83%	-0.54%	-0.09%	-0.20%	-0.83%



US Effective Style Map





eV US Large Cap Core Equity Gross Return Comparison



	Return (R	ank)														
5th Percentile	-14.88		-7.14		-1.37		5.45		8.76		8.61		11.44		12.27	
25th Percentile	-18.03		-11.42		-5.49		2.09		5.98		6.86		9.91		10.81	
Median	-19.76		-13.69		-8.08		-0.53		4.23		5.84		9.03		10.27	
75th Percentile	-21.91		-15.91		-11.02		-3.08		2.14		4.48		8.21		9.59	
95th Percentile	-26.42		-19.86		-16.81		-6.99		-0.39		2.17		6.13		7.89	
# of Portfolios	324		324		324		321		308		289		266		220	
● BlackRock Russell 1000 Index Fund ▲ Russell 1000	-20.20 -20.22	(56) (56)	-12.99 -13.01	(43) (43)	-7.99 -8.03	(50) (50)	0.26	() (44)	 4.64	() (43)	6.22	() (42)	9.32	() (42)	 10.39	() (43)



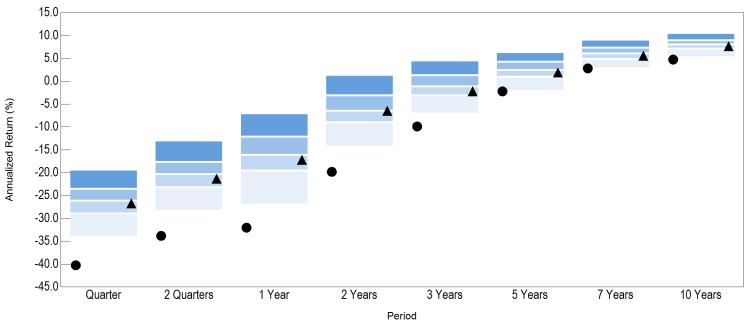
	Portfolio	Russell 1000
Number of Holdings	996	997
Weighted Avg. Market Cap. (\$B)	241.0	241.0
Median Market Cap. (\$B)	7.4	7.4
Price To Earnings	17.1	17.1
Price To Book	3.7	3.7
Price To Sales	2.6	2.7
Return on Equity (%)	25.1	25.1
Yield (%)	2.3	2.3
Beta (holdings; domestic)	1.0	1.0

Top Holdings								
MICROSOFT	5.1%							
APPLE	4.5%							
AMAZON.COM	3.5%							
FACEBOOK CLASS A	1.7%							
BERKSHIRE HATHAWAY 'B'	1.5%							
ALPHABET 'C'	1.5%							
JOHNSON & JOHNSON	1.5%							
ALPHABET A	1.5%							
JP MORGAN CHASE & CO.	1.2%							
VISA 'A'	1 2%							

Best Performers		Worst Performers					
	Return %		Return %				
SPRINT (S)	65.5%	CENTENNIAL RSO.DEV.CL.A (CDEV)	-94.3%				
MODERNA (MRNA)	53.1%	KOSMOS ENERGY (BER) (D:KOS1)	-85.3%				
LEGG MASON (LM)	37.2%	KOSMOS ENERGY (KOS)	-84.0%				
TAUBMAN CENTERS (TCO)	36.6%	APACHE (APA)	-83.5%				
VIRTU FINANCIAL CL.A (VIRT)	31.9%	TRANSOCEAN (RIG)	-83.1%				
ZSCALER (ZS)	30.9%	APERGY (APY)	-83.0%				
REGENERON PHARMS. (REGN)	30.0%	TARGA RESOURCES (TRGP)	-82.7%				
CITRIX SYS. (CTXS)	28.0%	NORWEGIAN CRUISE LINE HDG. (NCLH)	-81.2%				
NORTONLIFELOCK (NLOK)	27.7%	MFA FINANCIAL (MFA)	-79.7%				
RINGCENTRAL (RNG)	25.6%	CHESAPEAKE ENERGY (CHK)	-79.1%				



eV US Large Cap Value Equity Gross Return Comparison



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios

PzenaRussell 1000 Value

Return (R	ank)															
-19.38		-12.99		-7.01		1.39		4.51		6.33		9.07		10.50		
-23.47		-17.61		-12.06		-3.05		1.35		4.28		7.39		9.02		
-26.05		-20.25		-16.08		-6.43		-1.09		2.49		6.14		8.08		
-28.90		-23.12		-19.50		-8.96		-3.05		1.03		4.90		7.15		
-34.01		-28.26		-26.91		-14.23		-7.07		-2.05		2.94		5.31		
332		332		332		330		327		316		307		272		
-40.24 -26.73	(99) (58)	-33.81 -21.30	(99) (61)	-32.03 -17.17	(99) (60)	-19.81 -6.44	(99) (51)	-9.90 -2.18	(99) (65)	-2.23 1.90	(96) (63)	2.81 5.56	(97) (65)	4.73 7.67	(97) (63)	



	Portfolio	Russell 1000 Value
Number of Holdings	39	765
Weighted Avg. Market Cap. (\$B)	39.8	98.9
Median Market Cap. (\$B)	14.7	6.3
Price To Earnings	9.1	12.6
Price To Book	1.9	2.2
Price To Sales	0.7	1.9
Return on Equity (%)	3.2	15.0
Yield (%)	4.1	3.5
Beta (holdings; domestic)	1.5	1.0

Top Holdings	Best Performers	Worst Performers
1 op Holdings	Dest Performers	Worst renormers

GENERAL ELECTRIC	5.3%
LEAR	3.8%
AMERICAN INTL.GP.	3.7%
MCKESSON	3.7%
CITIGROUP	3.7%
AMGEN	3.5%
NEWELL BRANDS (XSC)	3.5%
CAPITAL ONE FINL.	3.5%
FORD MOTOR	3.4%
HEWLETT PACKARD ENTER.	3.3%

Best Performers						
	Return %					
MCKESSON (MCK)	-1.9%					
CARDINAL HEALTH (CAH)	-4.3%					
ORACLE (ORCL)	-8.4%					
AMGEN (AMGN)	-15.3%					
KKR AND (KKR)	-19.2%					
COGNIZANT TECH.SLTN.'A' (CTSH)	-24.8%					
MYLAN (MYL)	-25.8%					
UBS GROUP (NYS) (UBS)	-26.4%					
EDISON INTL. (EIX)	-26.5%					
GENERAL ELECTRIC (GE)	-28.8%					

Worst Performers	
	Return %
CENOVUS ENERGY (NYS) (CVE)	-79.8%
CARNIVAL (CCL)	-73.8%
HALLIBURTON (HAL)	-71.7%
PVH (PVH)	-64.2%
NATIONAL OILWELL VARCO (NOV)	-60.5%
BAKER HUGHES A (BKR)	-58.7%
GILDAN ACTIVEWEAR SBVTG. 'A' (NYS) (GIL)	-56.4%
AMERICAN INTL.GP. (AIG)	-52.2%
CAPITAL ONE FINL. (COF)	-50.8%
FORD MOTOR (F)	-47.2%

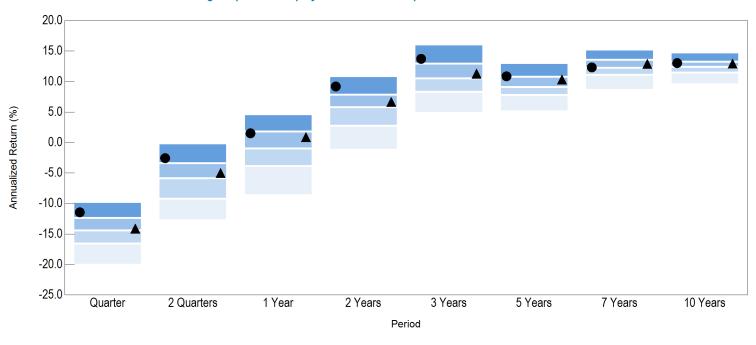


Pzena Performance Attribution vs. Russell 1000 Value

			Attribution Effect	s	Re	eturns	Secto	r Weights
	Total	Selection	Allocation	Interaction				
	Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-3.10%	-1.00%	-1.41%	-0.69%	-63.46%	-51.29%	13.92%	8.22%
Materials	0.11%		0.11%			-29.09%	0.00%	4.31%
Industrials	-0.78%	-0.71%	-0.01%	-0.07%	-34.68%	-27.36%	10.60%	9.69%
Consumer Discretionary	-2.93%	-0.64%	-1.03%	-1.26%	-46.47%	-35.51%	17.35%	5.88%
Consumer Staples	-1.25%		-1.25%			-12.45%	0.00%	8.88%
Health Care	-0.66%	0.16%	-0.76%	-0.07%	-11.23%	-12.48%	7.58%	12.95%
Financials	-3.33%	-1.43%	-1.08%	-0.83%	-40.29%	-34.32%	37.75%	23.90%
Information Technology	-0.69%	-0.70%	-0.02%	0.02%	-30.24%	-19.08%	6.07%	6.28%
Communication Services	-0.44%	-0.58%	-0.18%	0.32%	-29.68%	-22.57%	3.65%	8.16%
Utilities	-0.89%	-0.88%	-0.71%	0.70%	-26.52%	-13.18%	1.34%	6.62%
Real Estate	0.15%		0.15%			-29.55%	0.00%	5.11%
Cash	0.47%	0.00%	0.47%	0.00%	0.37%		1.73%	0.00%
Portfolio	-13.35%	= -5.78%	+ -5.70%	+ -1.86%	-39.90%	-26.55%	100.00%	100.00%



eV US Large Cap Growth Equity Gross Return Comparison



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios

■ TCW▲ Russell 1000 Growth

ank)															
	-0.16		4.61		10.86		16.07		13.04		15.22		14.75		_
	-3.33		1.84		7.90		12.98		10.81		13.59		13.30		
	-5.84		-0.93		5.84		10.59		9.16		12.32		12.43		
	-9.16		-3.83		2.78		8.36		7.83		11.16		11.53		
	-12.71		-8.58		-1.14		4.91		5.16		8.69		9.55		
	247		247		246		240		234		228		209		
(17) (48)	-2.55 -4.98	(21) (40)	1.52 0.91	(29) (34)	9.21 6.67	(14) (37)	13.73 11.32	(20) (42)	10.87 10.36	(25) (34)	12.33 12.93	(49) (35)	13.04 12.97	(31) (34)	
	(17)	-0.16 -3.33 -5.84 -9.16 -12.71 247 (17) -2.55	-0.16 -3.33 -5.84 -9.16 -12.71 247 (17) -2.55 (21)	-0.16 4.61 -3.33 1.84 -5.84 -0.93 -9.16 -3.83 -12.71 -8.58 247 247 (17) -2.55 (21) 1.52	-0.16	-0.16 4.61 10.86 -3.33 1.84 7.90 -5.84 -0.93 5.84 -9.16 -3.83 2.78 -12.71 -8.58 -1.14 247 247 246 (17) -2.55 (21) 1.52 (29) 9.21	-0.16 4.61 10.86 -3.33 1.84 7.90 -5.84 -0.93 5.84 -9.16 -3.83 2.78 -12.71 -8.58 -1.14 247 247 246 (17) -2.55 (21) 1.52 (29) 9.21 (14)	-0.16 4.61 10.86 16.07 -3.33 1.84 7.90 12.98 -5.84 -0.93 5.84 10.59 -9.16 -3.83 2.78 8.36 -12.71 -8.58 -1.14 4.91 247 247 246 240 (17) -2.55 (21) 1.52 (29) 9.21 (14) 13.73	-0.16 4.61 10.86 16.07 -3.33 1.84 7.90 12.98 -5.84 -0.93 5.84 10.59 -9.16 -3.83 2.78 8.36 -12.71 -8.58 -1.14 4.91 247 247 246 240 (17) -2.55 (21) 1.52 (29) 9.21 (14) 13.73 (20)	-0.16 4.61 10.86 16.07 13.04 -3.33 1.84 7.90 12.98 10.81 -5.84 -0.93 5.84 10.59 9.16 -9.16 -3.83 2.78 8.36 7.83 -12.71 -8.58 -1.14 4.91 5.16 247 247 246 240 234 (17) -2.55 (21) 1.52 (29) 9.21 (14) 13.73 (20) 10.87	-0.16	-0.16 4.61 10.86 16.07 13.04 15.22 -3.33 1.84 7.90 12.98 10.81 13.59 -5.84 -0.93 5.84 10.59 9.16 12.32 -9.16 -3.83 2.78 8.36 7.83 11.16 -12.71 -8.58 -1.14 4.91 5.16 8.69 247 247 246 240 234 228 (17) -2.55 (21) 1.52 (29) 9.21 (14) 13.73 (20) 10.87 (25) 12.33	-0.16	-0.16 4.61 10.86 16.07 13.04 15.22 14.75 -3.33 1.84 7.90 12.98 10.81 13.59 13.30 -5.84 -0.93 5.84 10.59 9.16 12.32 12.43 -9.16 -3.83 2.78 8.36 7.83 11.16 11.53 -12.71 -8.58 -1.14 4.91 5.16 8.69 9.55 247 247 246 240 234 228 209 (17) -2.55 (21) 1.52 (29) 9.21 (14) 13.73 (20) 10.87 (25) 12.33 (49) 13.04	-0.16



	Portfolio	Russell 1000 Growth
Number of Holdings	32	532
Weighted Avg. Market Cap. (\$B)	193.9	355.2
Median Market Cap. (\$B)	54.4	9.8
Price To Earnings	32.0	23.8
Price To Book	7.3	6.7
Price To Sales	6.3	4.0
Return on Equity (%)	33.6	35.4
Yield (%)	0.6	1.3
Beta (holdings; domestic)	1.0	1.0

Top Holdings	
AMAZON.COM	7.2%
VISA 'A'	6.7%
ADOBE (NAS)	6.5%
AMERICAN TOWER	5.9%
ALPHABET 'C'	5.8%
SERVICENOW	5.6%
FACEBOOK CLASS A	4.6%
SALESFORCE.COM	4.4%
PAYPAL HOLDINGS	3.6%
EQUINIX REIT	3.5%

Best Performers						
	Return %					
NVIDIA (NVDA)	12.1%					
EQUINIX REIT (EQIX)	7.5%					
AMAZON.COM (AMZN)	5.5%					
SERVICENOW (NOW)	1.5%					
BIOMARIN PHARM. (BMRN)	-0.1%					
COSTCO WHOLESALE (COST)	-2.8%					
ADOBE (NAS) (ADBE)	-3.5%					
AMERICAN TOWER (AMT)	-5.3%					
S&P GLOBAL (SPGI)	-10.0%					
ZOETIS A (ZTS)	-10.9%					

Worst Performers	
	Return %
ALIGN TECHNOLOGY (ALGN)	-37.7%
ULTA BEAUTY (ULTA)	-30.6%
CHARLES SCHWAB (SCHW)	-29.0%
BOSTON SCIENTIFIC (BSX)	-27.8%
CHUBB (CB)	-27.7%
TRADE DESK CL.A (TTD)	-25.7%
TRANSUNION (TRU)	-22.6%
IHS MARKIT (INFO)	-20.2%
MASTERCARD (MA)	-19.0%
FACEBOOK CLASS A (FB)	-18.7%



TCW Performance Attribution vs. Russell 1000 Growth

			Attribution Effect	ts	R	eturns	Secto	r Weights
	Total	Selection	Allocation	Interaction				
	Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.10%		0.10%	-		-52.95%	0.00%	0.26%
Materials	0.09%		0.09%			-20.59%	0.00%	1.34%
Industrials	0.64%	0.64%	0.01%	0.00%	-19.07%	-25.94%	9.24%	9.28%
Consumer Discretionary	0.79%	1.08%	-0.01%	-0.28%	-5.68%	-13.48%	10.22%	13.86%
Consumer Staples	0.03%	0.13%	-0.06%	-0.03%	-5.24%	-7.95%	3.54%	4.64%
Health Care	-0.85%	-0.99%	-0.04%	0.18%	-19.22%	-12.44%	11.96%	14.67%
Financials	-0.37%	-0.08%	-0.20%	-0.09%	-22.63%	-19.94%	6.35%	3.12%
Information Technology	0.79%	0.89%	-0.05%	-0.05%	-9.09%	-11.36%	36.86%	38.93%
Communication Services	-0.18%	-0.20%	0.00%	0.02%	-15.66%	-13.92%	10.62%	11.53%
Utilities	0.00%						0.00%	0.00%
Real Estate	0.96%	0.22%	0.21%	0.53%	-0.90%	-10.09%	8.17%	2.37%
Cash	0.43%	0.00%	0.43%	0.00%	0.37%		3.04%	0.00%
Portfolio	2.43%	= 1.67%	+ 0.48%	+ 0.28%	-11.34%	-13.77%	100.00%	100.00%



eV US Small Cap Value Equity Gross Return Comparison 10.0 5.0 0.0 -5.0 Annualized Return (%) -10.0 -15.0 -20.0 -25.0 -30.0 -35.0 -40.0 -45.0 Quarter 2 Quarters 1 Year 2 Years 3 Years 5 Years 7 Years 10 Years Period

5th Percentile 25th Percentile Median 75th Percentile 95th Percentile

of Portfolios

Kennedy

▲ Russell 2000 Value

Return (R	ank)															
-25.74		-20.67		-18.51		-8.01		-1.64		2.93		6.51		8.94		
-32.50		-26.97		-24.34		-12.88		-6.09		-0.38		3.90		6.98		
-34.96		-29.85		-28.58		-16.04		-8.64		-1.99		2.86		6.39		
-37.44		-32.74		-31.95		-18.31		-10.58		-3.39		1.69		5.57		
-42.04		-36.34		-37.07		-22.79		-13.86		-6.73		-0.89		3.41		
219		219		219		217		213		205		198		184		
-35.41 -35.66	(55) (58)	-29.32 -30.20	(47) (53)	-28.26 -29.64	(48) (61)	-17.27 -16.05	(64) (51)	-9.71 -9.51	(63) (60)	-2.63 -2.42	(65) (62)	3.37 1.80	(37) (73)	 4.79	() (84)	



	Portfolio	Russell 2000 Value
Number of Holdings	297	1,391
Weighted Avg. Market Cap. (\$B)	1.8	1.6
Median Market Cap. (\$B)	0.8	0.4
Price To Earnings	11.1	10.5
Price To Book	2.0	1.6
Price To Sales	1.4	1.1
Return on Equity (%)	5.6	5.5
Yield (%)	2.2	3.2
Beta (holdings; domestic)	1.3	1.3

Top Holdings	Best Performers	Worst Performers
1 op 1 oldingo	Dest Ferronners	1101361 61101111613

r op molalingo	
LUMENTUM HOLDINGS	1.4%
BLACK HILLS	1.1%
MERCURY SYSTEMS	1.0%
ALLETE	1.0%
SJW GROUP	1.0%
CASELLA WST.SYS.'A'	1.0%
SPIRE	1.0%
FIRST INDL.REALTY TST.	0.9%
AGREE REALTY	0.9%
COUSINS PROPERTIES INC	0.9%

Best Performers	
	Return %
OWENS & MINOR (OMI)	77.1%
ACM RESEARCH CL.A (ACMR)	60.5%
LIMELIGHT NETWORKS (LLNW)	39.7%
ADESTO TECHNOLOGIES (IOTS)	31.6%
LUMINEX (LMNX)	19.3%
FATE THERAPEUTICS (FATE)	13.5%
CERUS (CERS)	10.2%
INPHI (IPHI)	7.0%
GROCERY OUTLET HOLDING (GO)	5.8%
GLU MOBILE (GLUU)	4.0%

Worst Performers	
	Return %
CALLON PTL.DEL. (CPE)	-88.7%
NABORS INDUSTRIES (NBR)	-86.1%
NN (NNBR)	-81.3%
PARTY CITY HOLDINGS (PRTY)	-80.4%
INNERWORKINGS (INWK)	-78.8%
MACERICH (MAC)	-78.4%
PROPETRO HOLDING (PUMP)	-77.8%
CALERES (CAL)	-77.6%
PBF ENERGY CL.A (PBF)	-77.2%
G-III APPAREL GROUP (GIII)	-77.0%



Kennedy Performance Attribution vs. Russell 2000 Value

			Attribution Effect	S	R	Returns		r Weights
	Total	Selection	Allocation	Interaction				
	Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.10%	-0.06%	-0.03%	0.00%	-62.76%	-61.69%	5.86%	5.73%
Materials	-0.34%	-0.27%	-0.04%	-0.03%	-46.78%	-41.09%	5.32%	4.66%
Industrials	0.24%	0.22%	0.00%	0.03%	-34.25%	-36.01%	14.05%	12.57%
Consumer Discretionary	0.20%	-0.02%	0.22%	0.00%	-48.91%	-48.68%	8.09%	9.75%
Consumer Staples	-0.33%	-0.35%	0.09%	-0.06%	-31.07%	-18.15%	3.22%	2.73%
Health Care	0.10%	0.03%	0.06%	0.01%	-24.51%	-25.26%	5.51%	4.90%
Financials	-0.75%	-1.07%	0.08%	0.24%	-40.42%	-36.92%	23.82%	30.57%
Information Technology	0.18%	-0.17%	0.41%	-0.06%	-26.30%	-24.57%	13.46%	9.78%
Communication Services	0.05%	0.06%	0.00%	-0.01%	-34.02%	-36.80%	1.80%	2.22%
Utilities	-0.13%	-0.09%	-0.04%	0.00%	-15.97%	-14.40%	5.54%	5.75%
Real Estate	-0.10%	-0.10%	-0.02%	0.01%	-35.31%	-34.44%	9.94%	11.29%
Cash	1.14%	0.00%	1.14%	0.00%	0.37%		3.16%	0.00%
Unclassified	0.00%	0.00%	0.00%	0.00%	-33.94%	-35.68%	0.23%	0.05%
Portfolio	0.17%	= -1.82%	+ 1.87%	+ 0.12%	-35.53%	-35.70%	100.00%	100.00%



International developed equity

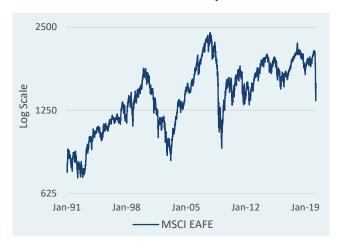
Equity markets around the world sold off broadly in the first quarter, down between -16% to -29%. Japanese equities were among the best performing (MSCI Japan -17%) while the U.K. was one of the worst performing (MSCI U.K. -29%).

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

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

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

INTERNATIONAL DEVELOPED EQUITIES



EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/20

3M/3M CROSS CURRENCY BASIS SWAPS



Source: Bloomberg, as of 3/31/20



Source: MSCI, as of 3/31/20

Emerging market equity

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

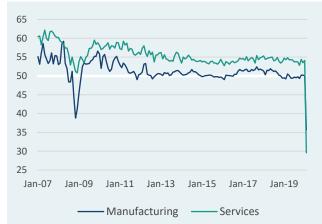
Inflation remains low in emerging economies and may face downward pressure in the coming months as energy prices have fallen. Central banks may have more room to maneuver relative to developed economies with regard to monetary policy, as interest rates are closer to average levels.

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

EMERGING MARKET EQUITY



CHINA PURCHASING MANAGERS' INDICES

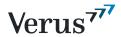


Source: China Federation of Logistics and Purchasing, as of 2/29/20

INFLATION (CPI YOY)



Source: Bloomberg, as of 2/29/20



Source: MSCI, as of 3/31/20

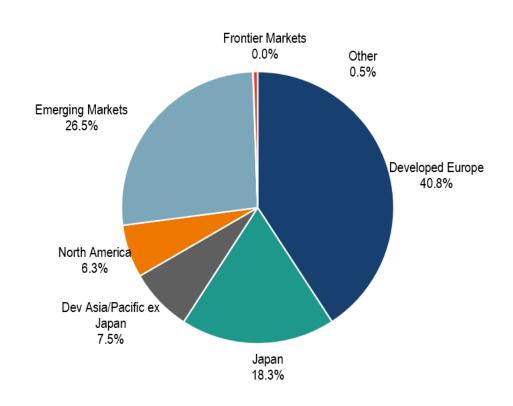
MSCI ACWI ex US IMI

Frontier Markets 0.0% Other 2.9% Emerging Markets 4.4% Developed Europe 26.2% Japan 9.8% North America 51.5%

Dev Asia/Pacific ex Japan

5.2%

International Equity



eV ACWI ex-US All Cap Core Eq Gross Return Comparison



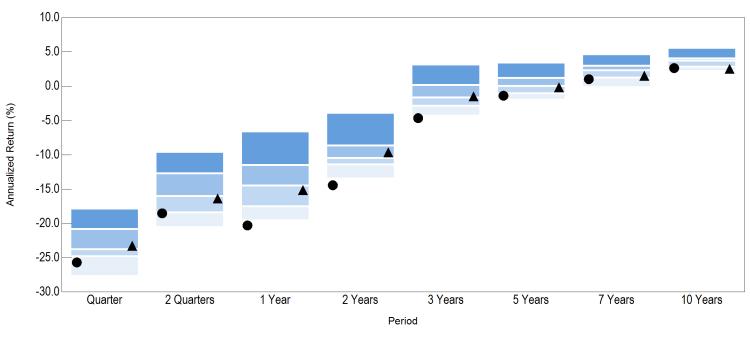
5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios
Distant 14 C

Bivium Intl EquityMSCI ACWI ex USA Gross

ank)														
	-9.80		-7.46		-5.10		2.37		2.83		6.36		7.02	
	-13.25		-11.34		-6.44		1.02		1.45		4.01		4.91	
	-15.03		-14.14		-9.59		-0.46		0.51		2.80		4.33	
	-18.41		-17.42		-11.92		-2.61		-0.43		1.37		3.04	
	-22.21		-22.45		-14.79		-4.98		-1.67		0.63		2.12	
	48		48		47		47		43		41		30	
(64) (52)	-15.54 -16.37	(56) (62)	-13.50 -15.14	(48) (60)	 -9.62	() (51)	 -1.48	() (64)	 -0.17	() (69)	1.53	() (73)	2.52	() (87)
	(64)	-9.80 -13.25 -15.03 -18.41 -22.21 48 (64) -15.54	-9.80 -13.25 -15.03 -18.41 -22.21 48 (64) -15.54 (56)	-9.80 -7.46 -13.25 -11.34 -15.03 -14.14 -18.41 -17.42 -22.21 -22.45 48 48 (64) -15.54 (56) -13.50	-9.80 -7.46 -13.25 -11.34 -15.03 -14.14 -18.41 -17.42 -22.21 -22.45 48 48 (64) -15.54 (56) -13.50 (48)	-9.80 -7.46 -5.10 -13.25 -11.34 -6.44 -15.03 -14.14 -9.59 -18.41 -17.42 -11.92 -22.21 -22.45 -14.79 48 48 47 (64) -15.54 (56) -13.50 (48)	-9.80	-9.80 -7.46 -5.10 2.37 -13.25 -11.34 -6.44 1.02 -15.03 -14.14 -9.59 -0.46 -18.41 -17.42 -11.92 -2.61 -22.21 -22.45 -14.79 -4.98 48 48 47 47 (64) -15.54 (56) -13.50 (48) ()	-9.80 -7.46 -5.10 2.37 -13.25 -11.34 -6.44 1.02 -15.03 -14.14 -9.59 -0.46 -18.41 -17.42 -11.92 -2.61 -22.21 -22.45 -14.79 -4.98 48 48 47 47 (64) -15.54 (56) -13.50 (48) () ()	-9.80 -7.46 -5.10 2.37 2.83 -13.25 -11.34 -6.44 1.02 1.45 -15.03 -14.14 -9.59 -0.46 0.51 -18.41 -17.42 -11.92 -2.61 -0.43 -22.21 -22.45 -14.79 -4.98 -1.67 48 48 47 47 43 (64) -15.54 (56) -13.50 (48) () ()	-9.80 -7.46 -5.10 2.37 2.83 -13.25 -11.34 -6.44 1.02 1.45 -15.03 -14.14 -9.59 -0.46 0.51 -18.41 -17.42 -11.92 -2.61 -0.43 -22.21 -22.45 -14.79 -4.98 -1.67 48 48 47 47 43 (64) -15.54 (56) -13.50 (48) () () ()	-9.80 -7.46 -5.10 2.37 2.83 6.36 -13.25 -11.34 -6.44 1.02 1.45 4.01 -15.03 -14.14 -9.59 -0.46 0.51 2.80 -18.41 -17.42 -11.92 -2.61 -0.43 1.37 -22.21 -22.45 -14.79 -4.98 -1.67 0.63 48 48 47 47 43 41 (64) -15.54 (56) -13.50 (48) () <td< td=""><td>-9.80 -7.46 -5.10 2.37 2.83 6.36 -13.25 -11.34 -6.44 1.02 1.45 4.01 -15.03 -14.14 -9.59 -0.46 0.51 2.80 -18.41 -17.42 -11.92 -2.61 -0.43 1.37 -22.21 -22.45 -14.79 -4.98 -1.67 0.63 48 48 47 47 43 41 (64) -15.54 (56) -13.50 (48) () () () ()</td><td>-9.80 -7.46 -5.10 2.37 2.83 6.36 7.02 -13.25 -11.34 -6.44 1.02 1.45 4.01 4.91 -15.03 -14.14 -9.59 -0.46 0.51 2.80 4.33 -18.41 -17.42 -11.92 -2.61 -0.43 1.37 3.04 -22.21 -22.45 -14.79 -4.98 -1.67 0.63 2.12 48 48 47 47 43 41 30 (64) -15.54 (56) -13.50 (48) () </td></td<>	-9.80 -7.46 -5.10 2.37 2.83 6.36 -13.25 -11.34 -6.44 1.02 1.45 4.01 -15.03 -14.14 -9.59 -0.46 0.51 2.80 -18.41 -17.42 -11.92 -2.61 -0.43 1.37 -22.21 -22.45 -14.79 -4.98 -1.67 0.63 48 48 47 47 43 41 (64) -15.54 (56) -13.50 (48) () () () ()	-9.80 -7.46 -5.10 2.37 2.83 6.36 7.02 -13.25 -11.34 -6.44 1.02 1.45 4.01 4.91 -15.03 -14.14 -9.59 -0.46 0.51 2.80 4.33 -18.41 -17.42 -11.92 -2.61 -0.43 1.37 3.04 -22.21 -22.45 -14.79 -4.98 -1.67 0.63 2.12 48 48 47 47 43 41 30 (64) -15.54 (56) -13.50 (48) ()



eV ACWI ex-US Large Cap Core Eq Gross Return Comparison



5th Percentile 25th Percentile Median 75th Percentile 95th Percentile
of Portfolios

• AQR

▲ MSCI ACWI ex USA Gross

Return (R	ank)															
-17.86		-9.58		-6.58		-3.90		3.15		3.44		4.66		5.56		
-20.79		-12.66		-11.45		-8.63		0.23		1.24		3.00		4.09		
-23.74		-15.99		-14.44		-10.42		-1.61		0.09		2.36		3.77		
-24.76		-18.37		-17.48		-11.37		-2.84		-1.01		1.27		2.88		
-27.67		-20.50		-19.55		-13.41		-4.28		-1.95		-0.10		2.24		
56		56		56		56		56		53		44		37		
-25.69 -23.26	(87) (48)	-18.53 -16.37	(81) (56)	-20.30 -15.14	(97) (55)	-14.43 -9.62	(97) (41)	-4.65 -1.48	(96) (46)	-1.39 -0.17	(83) (54)	1.03 1.53	(79) (68)	2.64 2.52	(82) (84)	



Number of Holdings 1,327 6,578 Weighted Avg. Market Cap. (\$B) 49.9 60.8 Median Market Cap. (\$B) 8.7 1.2 Price To Earnings 13.9 12.9 Price To Book 2.5 2.4 Price To Sales 1.3 1.3 Return on Equity (%) 15.0 14.8 Yield (%) 3.2 3.7 Beta (holdings: global) 1.0 0.9		Portfolio	MSCI ACWI ex USA IMI Gross
Median Market Cap. (\$B) 8.7 1.2 Price To Earnings 13.9 12.9 Price To Book 2.5 2.4 Price To Sales 1.3 1.3 Return on Equity (%) 15.0 14.8 Yield (%) 3.2 3.7	Number of Holdings	1,327	6,578
Price To Earnings 13.9 12.9 Price To Book 2.5 2.4 Price To Sales 1.3 1.3 Return on Equity (%) 15.0 14.8 Yield (%) 3.2 3.7	Weighted Avg. Market Cap. (\$B)	49.9	60.8
Price To Book 2.5 2.4 Price To Sales 1.3 1.3 Return on Equity (%) 15.0 14.8 Yield (%) 3.2 3.7	Median Market Cap. (\$B)	8.7	1.2
Price To Sales 1.3 1.3 Return on Equity (%) 15.0 14.8 Yield (%) 3.2 3.7	Price To Earnings	13.9	12.9
Return on Equity (%) 15.0 14.8 Yield (%) 3.2 3.7	Price To Book	2.5	2.4
Yield (%) 3.2 3.7	Price To Sales	1.3	1.3
	Return on Equity (%)	15.0	14.8
Reta (holdings: global)	Yield (%)	3.2	3.7
but (holdings, global)	Beta (holdings; global)	1.0	0.9

Top Holdings							
NESTLE 'N'	3.3%						
ROCHE HOLDING	3.2%						
NOVO NORDISK 'B'	2.2%						
NOVARTIS 'R'	2.1%						
BAYER	1.7%						
KONINKLIJKE AHOLD DELHAIZE	1.5%						
TOKYO ELECTRON	1.5%						
CONSTELLATION SOFTWARE	1.4%						
ASTELLAS PHARMA	1.4%						
NINTENDO	1 4%						

Best Performers	
	Return %
SARTORIUS STEDIM BIOTECH (F:DIM)	21.1%
YAMAZAKI BAKING (J:BV@N)	16.6%
NTT DOCOMO INC (J:TTMO)	13.8%
UCB (B:UCB)	8.9%
SYSMEX (J:TOAF)	6.5%
OTSUKA (J:OTSK)	6.3%
MEIJI HOLDINGS (J:MEJH)	5.7%
FUJIFILM HOLDINGS (J:FP@N)	5.6%
NOVO NORDISK 'B' (DK:NON)	5.0%
SHOPIFY SUBD.VTG.SHS.'A' (C:SHOP)	4.0%

Worst Performers	
	Return %
CENOVUS ENERGY (C:CVE)	-80.1%
CARNIVAL (UKIR:CCL)	-74.5%
AIR CANADA VOTING AND VARIABLE VOTING (C:AC)	-70.4%
METHANEX (C:MX)	-68.0%
MICRO FOCUS INTL. (UKIR:MCRO)	-64.8%
VICINITY CENTRES (A:VCXX)	-63.8%
SCENTRE GROUP UNIT (A:SCGX)	-63.4%
H&R RLST.IT.STAPLE UNIT (C:HR.UN)	-60.7%
CENTRICA (UKIR:CNA)	-60.1%
AURORA CANNABIS (C:ACB)	-58.9%



			Attribution Effects	5	Re	eturns	Sector Weights		
	Total	Selection	Allocation	on Interaction		action			
	Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.87%	0.15%	0.52%	0.19%	-31.61%	-37.23%	2.01%	6.53%	
Materials	-0.28%	-0.09%	-0.03%	-0.17%	-30.31%	-27.33%	8.66%	7.38%	
Industrials	-1.02%	-0.59%	-0.15%	-0.28%	-31.12%	-26.25%	15.96%	11.99%	
Consumer Discretionary	-1.13%	-1.32%	0.03%	0.15%	-35.88%	-24.22%	9.99%	11.81%	
Consumer Staples	0.11%	0.20%	-0.27%	0.18%	-10.20%	-14.70%	7.88%	9.41%	
Health Care	0.36%	-0.32%	0.91%	-0.24%	-11.40%	-8.88%	14.39%	8.83%	
Financials	0.20%	-1.00%	0.37%	0.83%	-33.50%	-30.98%	14.75%	21.51%	
Information Technology	0.04%	0.03%	0.14%	-0.13%	-17.95%	-17.69%	12.90%	9.32%	
Communication Services	-0.29%	-0.21%	-0.34%	0.26%	-17.11%	-14.21%	2.76%	6.64%	
Utilities	-0.39%	-0.28%	0.20%	-0.31%	-22.99%	-15.80%	6.04%	3.42%	
Real Estate	0.02%	0.03%	-0.03%	0.02%	-24.73%	-26.48%	4.31%	3.15%	
Cash	0.00%						0.00%	0.00%	
Unclassified	-0.03%	0.00%	-0.03%	0.00%	-29.75%		0.37%	0.00%	
Portfolio	-1.56%	= -3.38%	+ 1.33%	+ 0.49%	-24.80%	-23.25%	100.00%	100.00%	



		Returns and	Weights		Attribution Effects				
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects
Europe									
Austria	-	-42.88%	0.00%	0.15%		0.03%	0.00%		0.03%
Belgium	-16.94%	-32.59%	1.17%	0.66%	0.10%	-0.06%	-0.01%	0.08%	0.12%
Czech Republic*		-38.51%	0.00%	0.04%		0.00%	0.00%		0.01%
Denmark	-6.23%	-7.76%	2.47%	1.22%	0.02%	0.18%	-0.03%	0.02%	0.19%
Finland	-26.94%	-18.88%	0.85%	0.63%	-0.05%	0.01%	0.00%	-0.02%	-0.07%
France	-29.37%	-27.03%	8.16%	7.49%	-0.18%	-0.03%	-0.01%	-0.02%	-0.24%
Germany	-27.55%	-27.26%	7.83%	5.72%	-0.02%	-0.11%	-0.03%	-0.01%	-0.17%
Greece*		-45.10%	0.00%	0.08%		0.02%	0.00%		0.02%
Hungary*		-39.01%	0.00%	0.08%		0.01%	0.01%		0.02%
Ireland		-27.13%	0.00%	0.39%		0.02%	0.00%		0.03%
Italy	-31.22%	-29.15%	2.65%	1.56%	-0.03%	-0.08%	-0.02%	-0.02%	-0.15%
Luxembourg	-58.18%	-23.26%	0.15%	0.00%	0.00%	0.00%	0.00%	-0.05%	-0.06%
Netherlands	-16.34%	-20.54%	4.68%	2.64%	0.12%	0.03%	-0.06%	0.10%	0.19%
Norway		-33.29%	0.00%	0.41%		0.00%	0.05%		0.05%
Poland*		-36.47%	0.00%	0.25%		0.03%	0.02%		0.04%
Portugal		-13.11%	0.00%	0.11%		-0.01%	0.00%		-0.01%
Russia*		-36.52%	0.00%	1.07%		0.02%	0.15%		0.18%
Spain	-21.30%	-29.77%	2.64%	1.89%	0.16%	-0.06%	-0.02%	0.07%	0.15%
Sweden	-19.36%	-21.33%	2.69%	1.78%	0.04%	0.03%	-0.04%	0.02%	0.04%
Switzerland	-8.32%	-11.11%	8.73%	6.20%	0.17%	0.23%	0.00%	0.07%	0.47%
United Kingdom	-31.57%	-28.35%	11.47%	10.45%	-0.36%	-0.03%	-0.02%	-0.04%	-0.45%



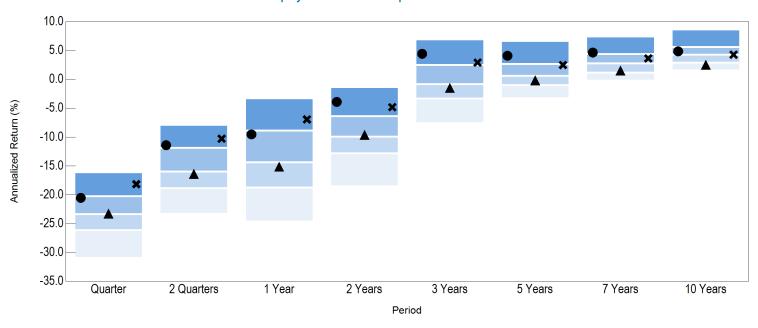
		Returns and	Weights			Attribution Effects					
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total		
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects		
AsiaPacific											
Australia	-33.83%	-33.16%	5.17%	4.52%	-0.03%	-0.02%	-0.06%	-0.01%	-0.12%		
China*		-10.46%	0.00%	9.24%		-0.88%	-0.01%		-0.90%		
Hong Kong	-18.62%	-17.33%	3.47%	2.32%	-0.03%	0.03%	0.01%	-0.02%	-0.01%		
India*		-31.18%	0.00%	2.40%		0.17%	0.10%		0.26%		
Indonesia*		-39.55%	0.00%	0.54%		0.05%	0.06%		0.10%		
Japan	-21.06%	-16.77%	19.20%	16.29%	-0.69%	0.08%	0.01%	-0.12%	-0.73%		
Korea*		-22.58%	0.00%	3.26%	-	-0.05%	0.13%		0.08%		
Malaysia*		-19.07%	0.00%	0.50%		-0.03%	0.02%		-0.01%		
New Zealand		-16.39%	0.00%	0.18%	-	-0.03%	0.02%		-0.01%		
Pakistan*		-39.57%	0.00%	0.01%		0.00%	0.00%		0.00%		
Philippines*		-31.98%	0.00%	0.26%		0.03%	0.00%		0.03%		
Singapore	-29.07%	-28.18%	0.91%	0.85%	-0.01%	0.00%	0.00%	0.00%	-0.01%		
Taiwan*		-19.00%	0.00%	3.25%		-0.06%	0.02%		-0.04%		
Thailand*		-34.01%	0.00%	0.72%		0.05%	0.05%		0.10%		
Americas											
Argentina*		-39.34%	0.00%	0.05%		0.01%	0.00%		0.01%		
Brazil*		-50.00%	0.00%	2.06%		0.32%	0.30%		0.62%		
Canada	-28.24%	-27.33%	7.66%	6.71%	-0.11%	0.00%	-0.01%	-0.02%	-0.14%		
Chile*		-33.90%	0.00%	0.21%		0.01%	0.02%		0.03%		
Colombia*		-49.62%	0.00%	0.10%		0.02%	0.01%		0.03%		
Mexico*		-35.46%	0.00%	0.63%	-	0.00%	0.10%		0.10%		
Peru*		-35.75%	0.00%	0.10%		0.01%	0.00%		0.01%		



	Returns and	Weights		Attribution Effects				
Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total
Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects
	-27.11%	0.00%	0.04%	-	0.00%	0.00%		0.00%
	-17.99%	0.00%	0.37%		-0.01%	0.00%		-0.01%
-	-17.30%	0.00%	0.26%		-0.01%	0.00%		-0.01%
	-24.04%	0.00%	0.72%		0.03%	0.00%		0.03%
	-39.64%	0.00%	1.32%	-	0.04%	0.22%		0.26%
	-30.01%	0.00%	0.14%		0.00%	0.01%		0.01%
	-27.36%	0.00%	0.17%	-	0.01%	0.00%		0.01%
-28.24%	-33.10%	7.66%	9.85%	0.20%	0.08%	0.42%	-0.04%	0.66%
-22.89%	-24.50%	53.48%	42.81%	0.46%	-0.17%	-0.01%	0.11%	0.40%
-23.32%	-19.42%	28.74%	44.33%	-1.84%	-0.39%	0.34%	0.65%	-1.24%
	-30.04%	0.00%	3.01%		0.06%	0.24%		0.30%
0.37%		10.12%	0.00%	0.00%	2.08%	0.00%	0.00%	2.08%
		0.00%	0.00%		0.00%	0.00%		0.00%
-21.07%	-23.26%	100.00%	100.00%	-1.18%	1.67%	0.99%	0.72%	2.19%
-23.48%	-23.06%	89.88%	72.53%	-0.50%	-0.05%	-0.21%	-0.12%	-0.89%
	-23.79%	0.00%	27.47%		-0.20%	1.20%		1.00%
0.37%		10.12%	0.00%	0.00%	2.08%	0.00%	0.00%	2.08%
	Return	Manager Return Return 27.11%17.99%17.30%24.04%39.64%30.01%27.36% -28.24% -33.10% -22.89% -24.50% -23.32% -19.42%30.04% 0.37%21.07% -23.26% -23.48% -23.06%23.79%	Return Return Weight -27.11% 0.00% -17.99% 0.00% -17.30% 0.00% -24.04% 0.00% -39.64% 0.00% -30.01% 0.00% -27.36% 0.00% -27.36% 0.00% -28.24% -33.10% 7.66% -28.24% -33.10% 7.66% -22.89% -24.50% 53.48% -23.32% -19.42% 28.74% -30.04% 0.00% 0.37% 10.12% -0.00% -21.07% -23.26% 100.00% -23.48% -23.06% 89.88% -23.79% 0.00%	Manager Return Index Weight Manager Weight Index Weight -27.11% 0.00% 0.04% -17.99% 0.00% 0.37% -17.30% 0.00% 0.26% -24.04% 0.00% 0.72% -39.64% 0.00% 1.32% -30.01% 0.00% 0.14% -27.36% 0.00% 0.17% -28.24% -33.10% 7.66% 9.85% -22.89% -24.50% 53.48% 42.81% -23.32% -19.42% 28.74% 44.33% - -30.04% 0.00% 3.01% 0.37% 10.12% 0.00% - - 0.00% 100.00% -21.07% -23.26% 100.00% 100.00% -23.48% -23.06% 89.88% 72.53% - -23.79% 0.00% 27.47%	Manager Return Index Return Manager Weight Index Weight Selection Effect -27.11% 0.00% 0.04% -17.99% 0.00% 0.37% -17.30% 0.00% 0.26% -24.04% 0.00% 0.72% -39.64% 0.00% 1.32% -30.01% 0.00% 0.14% -27.36% 0.00% 0.17% -28.24% -33.10% 7.66% 9.85% 0.20% -22.89% -24.50% 53.48% 42.81% 0.46% -23.32% -19.42% 28.74% 44.33% -1.84% -30.04% 0.00% 3.01% 0.37% 10.12% 0.00% 0.00% 0.00% 0.00% -21.07% -23.26% 100.00% 100.00% -1.18%	Manager Return Index Return Manager Weight Index Petern Selection Effect Allocation Effect -27.11% 0.00% 0.04% 0.00% -17.99% 0.00% 0.37% -0.01% -17.30% 0.00% 0.26% -0.01% -24.04% 0.00% 0.72% 0.03% -39.64% 0.00% 1.32% 0.04% -30.01% 0.00% 0.14% 0.00% -30.01% 0.00% 0.17% 0.01% -27.36% 0.00% 0.17% 0.01% -27.36% 0.00% 0.17% 0.01% -23.32% -19.42% 28.74% 44.33% -1.84% -0.39% -30.04% 0.00% 3.01% 0.06% 0.37% 10.12% 0.00% 0.00	Manager Return Index Return Manager Weight Index Weight Selection Effect Allocation Effect Currency Effect -27.11% 0.00% 0.04% 0.00% 0.00% -17.99% 0.00% 0.37% -0.01% 0.00% -17.30% 0.00% 0.26% -0.01% 0.00% -24.04% 0.00% 0.72% 0.03% 0.00% -39.64% 0.00% 1.32% 0.04% 0.22% -30.01% 0.00% 0.14% 0.00% 0.01% -27.36% 0.00% 0.17% 0.01% 0.00% -28.24% -33.10% 7.66% 9.85% 0.20% 0.08% 0.42% -22.89% -24.50% 53.48% 42.81% 0.46% -0.17% -0.01% -23.32% -19.42% 28.74% 44.33% -1.84% -0.39% 0.34% <	Manager Return Index Return Manager Weight Index Weight Selection Effect Allocation Effect Currency Effect Interaction Effect -27.11% 0.00% 0.04% 0.00% 0.00% -17.99% 0.00% 0.37% -0.01% 0.00% -17.30% 0.00% 0.26% -0.01% 0.00% -24.04% 0.00% 0.72% 0.03% 0.00% -39.64% 0.00% 1.32% 0.04% 0.22% -30.01% 0.00% 0.17% 0.00% 0.01% -28.24% -33.10% 7.66% 9.85% 0.20% 0.08% 0.42% -0.04% -22.89% -24.50% 53.48% 42.81% 0.46% -0.17% -0.01% 0.11% -23.32% -19.42% 28.74% 44.33% -1.84% -0.39% <td< td=""></td<>



eV All ACWI ex-US Equity Gross Return Comparison



	Return (R	ank)														
5th Percentile	-16.10		-7.91		-3.29		-1.37		6.91		6.63		7.41		8.63	
25th Percentile	-20.22		-11.82		-8.87		-6.36		2.53		2.71		4.42		5.63	
Median	-23.35		-15.95		-14.35		-9.93		-0.82		0.66		2.81		4.30	
75th Percentile	-26.12		-18.81		-18.74		-12.80		-3.32		-0.94		1.20		2.90	
95th Percentile	-30.93		-23.25		-24.58		-18.48		-7.55		-3.22		-0.20		1.59	
# of Portfolios	290		290		290		287		280		254		220		170	
Capital Group	-20.54	(28)	-11.41	(23)	-9.54	(28)	-3.91	(13)	4.42	(13)	4.09	(14)	4.64	(23)	4.85	(40)
▲ MSCI ACWI ex USA Gross	-23.26	(49)	-16.37	(54)	-15.14	(55)	-9.62	(48)	-1.48	(55)	-0.17	(62)	1.53	(68)	2.52	(82)
★ MSCI ACWI ex USA Growth Gross	-18.16	(14)	-10.28	(17)	-6.94	(18)	-4.83	(16)	2.91	(23)	2.48	(28)	3.63	(39)	4.28	(51)



	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	186	2,404
Weighted Avg. Market Cap. (\$B)	59.7	69.2
Median Market Cap. (\$B)	20.2	5.9
Price To Earnings	16.5	13.1
Price To Book	3.0	2.5
Price To Sales	2.4	1.3
Return on Equity (%)	15.6	15.5
Yield (%)	2.4	3.8
Beta (holdings; global)	1.0	0.9

AIA GROUP	2.8%
OCADO GROUP	2.7%
ASTRAZENECA	2.5%
ENEL	2.5%
PING AN INSURANCE (GROUP) OF CHINA 'H'	2.4%
ASML HOLDING	2.3%
LONGFOR GROUP HOLDINGS	2.1%
KEYENCE	1.9%

1.7% 1.6%

Top Holdings

Best Performers	
	Return %
SINCH (W:CLX)	29.3%
EVOLUTION GAMING GROUP (W:EVOG)	13.2%
TEAMVIEWER (D:TMV)	11.3%
UNI CHARM (J:UNRM)	10.2%
UBISOFT ENTERTAINMENT CAT A (F:UBI)	6.6%
NOVO NORDISK 'B' (DK:NON)	5.0%
NETEASE ADR 1:25 (NTES)	5.0%
DAIFUKU (J:DFUK)	4.2%
DAIICHI SANKYO (J:D@SA)	4.0%
LONGFOR GROUP HOLDINGS (K:LNGF)	4.0%

Worst Performers	
	Return %
TULLOW OIL (UKIR:TLW)	-84.3%
CAPITA (UKIR:CPI)	-81.3%
AA (UKIR:AA.)	-72.6%
AIB GROUP (UKIR:A5G)	-67.8%
PETROLEO BRASILEIRO ADR 1:2 (PBR)	-65.5%
MICRO FOCUS INTL. (UKIR:MCRO)	-64.8%
GERDAU PN SPN.ADR 1:1 (GGB)	-61.0%
AURELIUS SE & CO.KGAA (D:AR4)	-57.0%
AIRBUS (F:AIRS)	-55.5%
BANCO BRADESCO PN (BR:DC4)	-55.3%



LONDON STOCK EX.GROUP

TAIWAN SEMICON.MNFG.

			Attribution Effect	s	Re	eturns	Sector Weights		
	Total	Selection	Allocation	Interaction					
	Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.75%	-0.27%	0.54%	0.47%	-39.40%	-37.89%	1.72%	6.08%	
Materials	0.03%	-0.69%	0.08%	0.64%	-32.88%	-27.47%	4.05%	7.44%	
Industrials	-1.29%	-1.34%	-0.01%	0.06%	-36.57%	-26.27%	12.34%	12.02%	
Consumer Discretionary	0.45%	0.64%	-0.04%	-0.15%	-20.40%	-24.20%	14.02%	11.90%	
Consumer Staples	-0.42%	-0.46%	-0.15%	0.18%	-18.92%	-14.67%	7.85%	9.46%	
Health Care	-0.45%	-0.32%	-0.03%	-0.09%	-13.74%	-8.85%	8.66%	8.88%	
Financials	0.39%	0.02%	0.15%	0.22%	-30.33%	-31.14%	19.50%	21.61%	
Information Technology	0.43%	0.17%	0.15%	0.10%	-15.07%	-17.74%	12.89%	9.40%	
Communication Services	-0.39%	-0.40%	-0.11%	0.12%	-19.91%	-14.18%	5.41%	6.69%	
Utilities	0.25%	0.19%	0.01%	0.05%	-8.88%	-15.82%	3.55%	3.43%	
Real Estate	0.49%	0.31%	-0.09%	0.27%	-14.44%	-26.26%	5.28%	3.08%	
Cash	0.77%	0.00%	0.77%	0.00%	0.37%		3.74%	0.00%	
Unclassified	0.28%	0.00%	0.29%	-0.02%	7.27%		1.01%	0.00%	
Portfolio	1.28%	= -2.13%	+ 1.57%	+ 1.85%	-21.98%	-23.26%	100.00%	100.00%	



		Returns and	Weights		Attribution Effects					
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total	
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects	
Europe										
Austria		-42.88%	0.00%	0.15%		0.03%	0.00%		0.03%	
Belgium	-25.85%	-32.59%	0.97%	0.66%	0.05%	-0.03%	-0.01%	0.02%	0.03%	
Czech Republic*		-38.51%	0.00%	0.04%		0.00%	0.00%		0.01%	
Denmark	-12.30%	-7.76%	3.61%	1.22%	-0.06%	0.34%	-0.04%	-0.11%	0.13%	
Finland		-18.88%	0.00%	0.63%		-0.02%	0.01%		-0.01%	
France	-31.53%	-27.03%	11.21%	7.49%	-0.35%	-0.19%	-0.05%	-0.17%	-0.76%	
Germany	-28.43%	-27.26%	7.05%	5.72%	-0.07%	-0.07%	-0.02%	-0.02%	-0.18%	
Greece*		-45.10%	0.00%	0.08%		0.02%	0.00%		0.02%	
Hungary*		-39.01%	0.00%	0.08%		0.01%	0.01%		0.02%	
Ireland	-52.05%	-27.13%	0.42%	0.39%	-0.09%	0.00%	0.00%	-0.01%	-0.11%	
Italy	-10.55%	-29.15%	2.20%	1.56%	0.30%	-0.05%	-0.02%	0.12%	0.35%	
Netherlands	-18.28%	-20.54%	3.11%	2.64%	0.07%	0.01%	-0.02%	0.01%	0.07%	
Norway	-31.46%	-33.29%	0.89%	0.41%	0.01%	0.00%	-0.07%	0.01%	-0.05%	
Poland*		-36.47%	0.00%	0.25%		0.03%	0.02%		0.04%	
Portugal	-31.81%	-13.11%	0.13%	0.11%	-0.02%	0.00%	0.00%	-0.01%	-0.02%	
Russia*	-42.30%	-36.52%	1.22%	1.07%	-0.21%	0.00%	0.15%	-0.03%	-0.10%	
Spain	-4.80%	-29.77%	1.20%	1.89%	0.48%	0.05%	0.00%	-0.18%	0.37%	
Sweden	1.54%	-21.33%	1.30%	1.78%	0.43%	-0.02%	0.00%	-0.12%	0.30%	
Switzerland	-16.10%	-11.11%	2.68%	6.20%	-0.31%	-0.32%	0.00%	0.18%	-0.45%	
United Kingdom	-21.56%	-28.35%	13.01%	10.45%	0.75%	-0.08%	-0.17%	0.18%	0.67%	



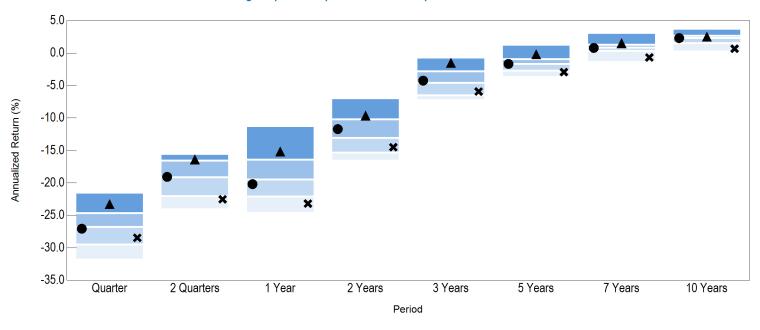
		Returns and	Weights			Attribution Effects					
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total		
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects		
AsiaPacific											
Australia	-26.22%	-33.16%	0.12%	4.52%	0.36%	0.14%	0.44%	-0.35%	0.58%		
China*	-15.60%	-10.46%	5.01%	9.24%	-0.49%	-0.40%	0.00%	0.22%	-0.67%		
Hong Kong	-15.61%	-17.33%	8.28%	2.32%	0.05%	0.14%	0.00%	0.12%	0.31%		
India*	-41.45%	-31.18%	4.54%	2.40%	-0.34%	-0.15%	0.10%	-0.31%	-0.70%		
Indonesia*	-34.54%	-39.55%	2.52%	0.54%	0.03%	-0.17%	-0.23%	0.12%	-0.26%		
Japan	-13.49%	-16.77%	11.01%	16.29%	0.53%	-0.15%	-0.03%	-0.17%	0.18%		
Korea*	-18.78%	-22.58%	1.49%	3.26%	0.13%	-0.03%	0.07%	-0.07%	0.10%		
Malaysia*		-19.07%	0.00%	0.50%		-0.03%	0.02%		-0.01%		
New Zealand	-31.83%	-16.39%	0.12%	0.18%	-0.03%	-0.01%	0.01%	0.01%	-0.02%		
Pakistan*		-39.57%	0.00%	0.01%		0.00%	0.00%		0.00%		
Philippines*	-44.77%	-31.98%	0.14%	0.26%	-0.03%	0.01%	0.00%	0.02%	0.00%		
Singapore	-7.61%	-28.18%	0.17%	0.85%	0.14%	0.03%	0.04%	-0.11%	0.09%		
Taiwan*	-19.08%	-19.00%	4.01%	3.25%	-0.01%	0.01%	0.00%	0.00%	0.01%		
Thailand*	-36.20%	-34.01%	0.16%	0.72%	-0.02%	0.04%	0.04%	0.01%	0.07%		
Americas											
Argentina*		-39.34%	0.00%	0.05%		0.01%	0.00%		0.01%		
Brazil*	-43.59%	-50.00%	3.83%	2.06%	-0.03%	-0.27%	0.04%	-0.02%	-0.28%		
Canada	-19.74%	-27.33%	1.12%	6.71%	0.56%	0.00%	0.39%	-0.47%	0.49%		
Chile*		-33.90%	0.00%	0.21%		0.01%	0.02%		0.03%		
Colombia*		-49.62%	0.00%	0.10%		0.02%	0.01%		0.03%		
Mexico*	-26.76%	-35.46%	0.62%	0.63%	-0.03%	0.00%	0.09%	0.00%	0.06%		
Peru*		-35.75%	0.00%	0.10%		0.01%	0.00%		0.01%		
United States	-22.30%	-19.77%	2.67%	0.00%	0.00%	0.01%	0.00%	-0.07%	-0.06%		



		Returns and	Weights		Attribution Effects					
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total	
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects	
Other										
Egypt*		-27.11%	0.00%	0.04%		0.00%	0.00%		0.00%	
Israel		-17.99%	0.00%	0.37%		-0.01%	0.00%		-0.01%	
Qatar*		-17.30%	0.00%	0.26%		-0.01%	0.00%		-0.01%	
Saudi Arabia*		-24.04%	0.00%	0.72%		0.03%	0.00%		0.03%	
South Africa*	-29.20%	-39.64%	0.98%	1.32%	0.18%	0.01%	0.03%	-0.05%	0.17%	
Turkey*	-37.65%	-30.01%	0.47%	0.14%	-0.01%	-0.01%	-0.02%	-0.03%	-0.07%	
United Arab Emirates*		-27.36%	0.00%	0.17%		0.01%	0.00%		0.01%	
Totals										
Americas	-32.19%	-33.10%	8.25%	9.85%	-0.38%	0.06%	0.54%	0.06%	0.28%	
Europe	-23.20%	-24.50%	49.00%	42.81%	0.59%	-0.10%	-0.21%	0.09%	0.37%	
Asia/Pacific	-20.12%	-19.42%	37.57%	44.33%	-0.71%	-0.17%	0.46%	0.11%	-0.31%	
Other	-31.93%	-30.04%	1.45%	3.01%	0.17%	0.03%	0.01%	-0.09%	0.13%	
Cash	0.37%		3.75%	0.00%	0.00%	0.77%	0.00%	0.00%	0.77%	
Unclassified			0.00%	0.00%		0.00%	0.00%		0.00%	
Total	-22.02%	-23.26%	100.00%	100.00%	-0.33%	0.60%	0.80%	0.17%	1.24%	
Totals										
Developed	-20.38%	-23.06%	71.27%	72.53%	1.50%	0.00%	0.46%	-0.03%	1.94%	
Emerging*	-30.07%	-23.79%	24.99%	27.47%	-1.97%	-0.02%	0.33%	0.18%	-1.48%	
Cash	0.37%		3.75%	0.00%	0.00%	0.77%	0.00%	0.00%	0.77%	



eV ACWI ex-US Large Cap Value Eq Gross Return Comparison



	Return (R	ank)														
5th Percentile	-21.50	-1	5.56		-11.26		-6.98		-0.71		1.24		3.08		3.75	
25th Percentile	-24.62	-1	6.52		-16.38		-10.18		-2.78		-0.92		1.32		2.71	
Median	-26.73	-1	9.08		-19.47		-13.03		-4.55		-1.66		0.85		2.36	
75th Percentile	-29.45	-2	2.01		-22.05		-15.32		-6.46		-2.67		0.40		1.54	
95th Percentile	-31.80	-2	4.03		-24.60		-16.53		-7.22		-3.66		-1.36		0.26	
# of Portfolios	22		22		22		22		21		20		16		13	
● Mondrian ▲ MSCI ACWI ex USA Gross	-27.05	` '	9.07	(48)	-20.19	(57)	-11.71	(39)	-4.24 4.49	(45)	-1.67	(51)	0.79	(58)	2.31	(53)
MSCI ACWI ex USA Value Gross	-23.26 -28.45	(/	6.37 2.52	(24) (82)	-15.14 -23.18	(18) (80)	-9.62 -14.49	(18) (66)	-1.48 -5.92	(10) (68)	-0.17 -2.92	(10) (82)	1.53 -0.67	(19) (91)	2.52 0.68	(44) (93)



	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	60	2,404
Weighted Avg. Market Cap. (\$B)	40.6	69.2
Median Market Cap. (\$B)	25.8	5.9
Price To Earnings	11.5	13.1
Price To Book	1.6	2.5
Price To Sales	0.7	1.3
Return on Equity (%)	8.7	15.5
Yield (%)	5.4	3.8
Beta (holdings; global)	1.0	0.9

Top Holdings	Rest Performers	Worst Performers
1 Op 1 Iolania	Desi Fellonneis	Worst renormers

FUJIFILM HOLDINGS	3.9%
SSE	3.7%
SANOFI	3.4%
KYOCERA	3.3%
TAKEDA PHARMACEUTICAL	3.3%
GLAXOSMITHKLINE	3.3%
CK HUTCHISON HOLDINGS	3.2%
HONDA MOTOR	3.2%
TESCO	3.1%
UNITED OVERSEAS BANK	3.1%

Best Performers	
	Return %
FUJIFILM HOLDINGS (J:FP@N)	5.6%
FUJITSU (J:FT@N)	-3.4%
NIPPON TELG. & TEL. (J:NTT)	-4.3%
NATIONAL GRID (UKIR:NG.)	-6.2%
KONINKLIJKE AHOLD DELHAIZE (H:AD)	-6.7%
SECOM (J:KP@N)	-6.7%
JARDINE MATHESON HDG. (T:JMTS)	-7.6%
MITSUBISHI ELECTRIC (J:UM@N)	-8.6%
NOVARTIS 'R' (S:NOVN)	-9.9%
ENEL (I:ENEL)	-10.5%

Worst Performers	
	Return %
WOOD GROUP (JOHN) (UKIR:WG.)	-63.4%
H&R RLST.IT.STAPLE UNIT (C:HR.UN)	-60.7%
G4S (UKIR:GFS)	-60.4%
LLOYDS BANKING GROUP (UKIR:LLOY)	-52.1%
SOCIETE GENERALE (F:SGE)	-51.6%
WPP (UKIR:WPP)	-51.6%
TRAVIS PERKINS (UKIR:TPK)	-48.4%
DAIMLER (D:DAI)	-46.2%
CONTINENTAL (D:CON)	-45.6%
ISUZU MOTORS (J:IM@N)	-43.2%



			Attribution Effect	s	Re	eturns	Secto	r Weights
	Total	Selection	Allocation	Interaction				
	Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.52%	-0.20%	-0.34%	0.01%	-37.42%	-37.23%	9.18%	6.53%
Materials	0.28%	-0.54%	0.13%	0.70%	-31.30%	-27.33%	2.21%	7.38%
Industrials	-1.29%	-1.06%	-0.11%	-0.13%	-33.69%	-26.25%	14.59%	11.99%
Consumer Discretionary	-1.57%	-1.47%	-0.03%	-0.07%	-35.14%	-24.22%	13.26%	11.81%
Consumer Staples	-0.29%	-0.23%	-0.34%	0.28%	-16.40%	-14.70%	5.51%	9.41%
Health Care	-0.40%	-0.62%	0.48%	-0.26%	-15.67%	-8.88%	13.04%	8.83%
Financials	-0.78%	-1.57%	0.21%	0.59%	-36.94%	-30.98%	18.56%	21.51%
Information Technology	0.98%	1.06%	-0.08%	-0.01%	-2.86%	-17.69%	6.95%	9.32%
Communication Services	-0.91%	-0.71%	0.16%	-0.36%	-25.95%	-14.21%	9.11%	6.64%
Utilities	0.34%	0.13%	0.22%	-0.01%	-12.76%	-15.80%	6.26%	3.42%
Real Estate	-0.33%	-0.93%	0.07%	0.53%	-60.69%	-26.48%	1.32%	3.15%
Cash	0.00%						0.00%	0.00%
Unclassified	0.00%						0.00%	0.00%
Portfolio	-4.49%	= -6.14%	+ 0.38%	+ 1.27%	-27.74%	-23.25%	100.00%	100.00%



		Returns and	Weights			Attri	bution Effects		
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects
Europe									
Austria		-42.88%	0.00%	0.15%		0.03%	0.00%		0.03%
Belgium		-32.59%	0.00%	0.66%		0.07%	0.01%		0.08%
Czech Republic*		-38.51%	0.00%	0.04%		0.00%	0.00%		0.01%
Denmark	-42.76%	-7.76%	1.69%	1.22%	-0.44%	0.07%	0.00%	-0.17%	-0.53%
Finland		-18.88%	0.00%	0.63%		-0.02%	0.01%		-0.01%
France	-33.19%	-27.03%	7.84%	7.49%	-0.47%	-0.02%	0.01%	-0.02%	-0.51%
Germany	-36.15%	-27.26%	11.62%	5.72%	-0.52%	-0.32%	-0.08%	-0.54%	-1.45%
Greece*		-45.10%	0.00%	0.08%		0.02%	0.00%		0.02%
Hungary*		-39.01%	0.00%	0.08%		0.01%	0.01%		0.02%
Ireland		-27.13%	0.00%	0.39%		0.02%	0.00%		0.03%
Italy	-23.29%	-29.15%	4.77%	1.56%	0.09%	-0.24%	-0.06%	0.19%	-0.01%
Netherlands	-31.82%	-20.54%	3.66%	2.64%	-0.30%	0.01%	-0.01%	-0.12%	-0.42%
Norway		-33.29%	0.00%	0.41%		0.00%	0.05%		0.05%
Poland*		-36.47%	0.00%	0.25%		0.03%	0.02%		0.04%
Portugal		-13.11%	0.00%	0.11%		-0.01%	0.00%		-0.01%
Russia*		-36.52%	0.00%	1.07%		0.02%	0.15%		0.18%
Spain	-41.88%	-29.77%	2.94%	1.89%	-0.23%	-0.08%	-0.01%	-0.13%	-0.46%
Sweden	-16.20%	-21.33%	2.63%	1.78%	0.10%	0.03%	-0.05%	0.05%	0.13%
Switzerland	-16.67%	-11.11%	6.13%	6.20%	-0.34%	-0.01%	0.00%	0.00%	-0.35%
United Kingdom	-34.25%	-28.35%	22.95%	10.45%	-0.66%	-0.41%	-0.52%	-0.79%	-2.38%



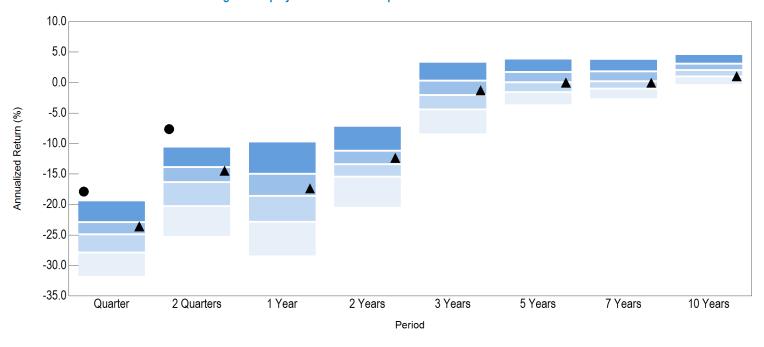
		Returns and	Weights			Attri	bution Effects	i	
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects
AsiaPacific									
Australia	-40.62%	-33.16%	1.26%	4.52%	-0.39%	0.10%	0.34%	0.28%	0.33%
China*		-10.46%	0.00%	9.24%		-0.88%	-0.01%		-0.90%
Hong Kong	-29.24%	-17.33%	3.01%	2.32%	-0.28%	0.02%	0.00%	-0.08%	-0.34%
India*		-31.18%	0.00%	2.40%		0.17%	0.10%		0.26%
Indonesia*		-39.55%	0.00%	0.54%		0.05%	0.06%		0.10%
Japan	-14.58%	-16.77%	25.45%	16.29%	0.35%	0.26%	0.05%	0.20%	0.87%
Korea*		-22.58%	0.00%	3.26%		-0.05%	0.13%		0.08%
Malaysia*		-19.07%	0.00%	0.50%		-0.03%	0.02%		-0.01%
New Zealand		-16.39%	0.00%	0.18%		-0.03%	0.02%		-0.01%
Pakistan*		-39.57%	0.00%	0.01%		0.00%	0.00%		0.00%
Philippines*		-31.98%	0.00%	0.26%		0.03%	0.00%		0.03%
Singapore	-29.81%	-28.18%	4.50%	0.85%	-0.01%	-0.14%	-0.15%	-0.06%	-0.37%
Taiwan*		-19.00%	0.00%	3.25%		-0.06%	0.02%		-0.04%
Thailand*		-34.01%	0.00%	0.72%		0.05%	0.05%		0.10%
Americas									
Argentina*		-39.34%	0.00%	0.05%		0.01%	0.00%		0.01%
Brazil*		-50.00%	0.00%	2.06%		0.32%	0.30%		0.62%
Canada	-60.69%	-27.33%	1.32%	6.71%	-2.46%	0.00%	0.43%	1.97%	-0.06%
Chile*		-33.90%	0.00%	0.21%		0.01%	0.02%		0.03%
Colombia*		-49.62%	0.00%	0.10%		0.02%	0.01%		0.03%
Mexico*		-35.46%	0.00%	0.63%		0.00%	0.10%		0.10%
Peru*		-35.75%	0.00%	0.10%		0.01%	0.00%		0.01%



		Returns and	Weights		Attribution Effects							
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total			
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects			
Other												
Egypt*		-27.11%	0.00%	0.04%	-	0.00%	0.00%		0.00%			
Israel		-17.99%	0.00%	0.37%		-0.01%	0.00%		-0.01%			
Qatar*		-17.30%	0.00%	0.26%		-0.01%	0.00%		-0.01%			
Saudi Arabia*		-24.04%	0.00%	0.72%		0.03%	0.00%		0.03%			
South Africa*		-39.64%	0.00%	1.32%		0.04%	0.22%		0.26%			
Turkey*		-30.01%	0.00%	0.14%		0.00%	0.01%		0.01%			
United Arab Emirates*	-	-27.36%	0.00%	0.17%	-	0.01%	0.00%		0.01%			
Totals												
Americas	-60.69%	-33.10%	1.32%	9.85%	-3.24%	0.32%	0.85%	2.81%	0.74%			
Europe	-31.67%	-24.50%	64.24%	42.81%	-3.16%	-0.33%	-0.46%	-1.58%	-5.54%			
Asia/Pacific	-18.83%	-19.42%	34.23%	44.33%	-0.33%	-0.25%	0.63%	0.08%	0.13%			
Other		-30.04%	0.00%	3.01%		0.06%	0.24%		0.30%			
Cash	0.37%		0.21%	0.00%	0.00%	0.04%	0.00%	0.00%	0.04%			
Total	-27.59%	-23.26%	100.00%	100.00%	-6.74%	-0.16%	1.26%	1.30%	-4.33%			
Totals												
Developed	-27.65%	-23.06%	99.79%	72.53%	-3.90%	-0.08%	0.06%	-1.46%	-5.38%			
Emerging*		-23.79%	0.00%	27.47%		-0.20%	1.20%		1.00%			
Cash	0.37%		0.21%	0.00%	0.00%	0.04%	0.00%	0.00%	0.04%			



eV Emg Mkts Equity Gross Return Comparison



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios
Newton Emerging

Return (R	Rank)														
-19.34		-10.49		-9.67		-7.11		3.40		3.91		3.87		4.65	
-22.84		-13.82		-14.91		-11.16		0.35		1.77		1.89		3.14	
-24.83		-16.31		-18.52		-13.35		-2.00		0.08		0.25		2.10	
-27.85		-20.24		-22.78		-15.40		-4.39		-1.51		-0.97		1.05	
-31.86		-25.26		-28.46		-20.47		-8.46		-3.67		-2.71		-0.38	
399		399		395		377		361		319		266		160	
-17.88	(2)	-7.63	(2)	 47.00	()	 40.00	()	 4 0E	()		()		()		()
-23.57	(35)	-14.45	(33)	-17.36	(41)	-12.36	(38)	-1.25	(38)	0.01	(52)	-0.04	(56)	1.04	(76)

Newton Emerging MktMSCI Emerging Markets Gross

Characteristics

Weighted Avg. Market Cap. (\$B) 89.7 109.8 Median Market Cap. (\$B) 6.6 4.4 Price To Earnings 24.1 12.2 Price To Book 3.8 2.6 Price To Sales 3.8 1.5		Portfolio	MSCI Emerging Markets Gross
Median Market Cap. (\$B) 6.6 4.4 Price To Earnings 24.1 12.2 Price To Book 3.8 2.6 Price To Sales 3.8 1.5	Number of Holdings	45	1,397
Price To Earnings 24.1 12.2 Price To Book 3.8 2.6 Price To Sales 3.8 1.5	Weighted Avg. Market Cap. (\$B)	89.7	109.8
Price To Book 3.8 2.6 Price To Sales 3.8 1.5	Median Market Cap. (\$B)	6.6	4.4
Price To Sales 3.8 1.5	Price To Earnings	24.1	12.2
	Price To Book	3.8	2.6
Return on Equity (%) 18.9 17.6	Price To Sales	3.8	1.5
	Return on Equity (%)	18.9	17.6
Yield (%) 0.9 3.4	Yield (%)	0.9	3.4
Beta (holdings; global) 1.0 1.0	Beta (holdings; global)	1.0	1.0

Top Holdings

ALIBABA GROUP HOLDING ADR 1:8	5.9%
TAIWAN SEMICON.MNFG.	5.6%
SAMSUNG SDI	5.4%
NEW ORIENTAL ED.& TECH. GP.ADS 1:1 ADR	5.2%
AIA GROUP	5.0%
TENCENT HOLDINGS	4.9%
HOUSING DEVELOPMENT FINANCE CORPORATION	4.3%
MEITUAN DIANPING	3.9%
PROSUS ORD	3.5%
GLOBANT	3.2%



Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

		Attribution Effect	S	R	eturns	Secto	or Weights
Total	Selection	Allocation	Interaction				
Effects	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark
1.53%	-	0.93%	-	-	-40.00%	0.00%	7.43%
2.75%	4.33%	0.11%	-1.69%	8.62%	-30.54%	3.71%	7.34%
-0.19%	-2.15%	0.26%	1.70%	-15.02%	-28.41%	1.84%	5.31%
7.10%	2.84%	0.84%	3.42%	1.42%	-18.10%	35.05%	14.26%
0.32%	0.52%	0.21%	-0.41%	-2.23%	-19.89%	8.69%	6.20%
0.63%	1.37%	-0.18%	-0.57%	12.25%	-8.71%	1.29%	2.68%
2.88%	2.20%	0.73%	-0.05%	-3.79%	-31.00%	14.21%	24.53%
6.97%	4.94%	0.62%	1.42%	4.71%	-18.13%	22.41%	15.64%
2.12%	1.44%	0.18%	0.51%	2.30%	-9.74%	12.80%	10.95%
0.02%		-0.18%			-26.01%	0.00%	2.64%
0.94%		0.86%	-		-26.87%	0.00%	3.02%
0.00%						0.00%	0.00%
0.00%						0.00%	0.00%
25.07%	= 15.48%	+ 4.39%	+ 5.20%	1.32%	-23.76%	100.00%	100.00%
	Effects 1.53% 2.75% -0.19% 7.10% 0.32% 0.63% 2.88% 6.97% 2.12% 0.02% 0.94% 0.00%	Effects Effect 1.53% 2.75% 4.33% -0.19% -2.15% 7.10% 2.84% 0.32% 0.52% 0.63% 1.37% 2.88% 2.20% 6.97% 4.94% 2.12% 1.44% 0.02% 0.94% 0.00% 0.00% 0.00%	Total Selection Allocation Effects Effect Effect 1.53% 0.93% 2.75% 4.33% 0.11% -0.19% -2.15% 0.26% 7.10% 2.84% 0.84% 0.32% 0.52% 0.21% 0.63% 1.37% -0.18% 2.88% 2.20% 0.73% 6.97% 4.94% 0.62% 2.12% 1.44% 0.18% 0.02% -0.18% 0.94% 0.86% 0.00% 0.00% 0.00%	Effects Effect Effect Effects 1.53% 0.93% 2.75% 4.33% 0.11% -1.69% -0.19% -2.15% 0.26% 1.70% 7.10% 2.84% 0.84% 3.42% 0.32% 0.52% 0.21% -0.41% 0.63% 1.37% -0.18% -0.57% 2.88% 2.20% 0.73% -0.05% 6.97% 4.94% 0.62% 1.42% 2.12% 1.44% 0.18% 0.51% 0.02% -0.18% 0.94% 0.86% 0.00% 0.00% 0.00%	Total Effects Selection Effect Allocation Effect Interaction Effects Portfolio 1.53% 0.93% 2.75% 4.33% 0.11% -1.69% 8.62% -0.19% -2.15% 0.26% 1.70% -15.02% 7.10% 2.84% 0.84% 3.42% 1.42% 0.32% 0.52% 0.21% -0.41% -2.23% 0.63% 1.37% -0.18% -0.57% 12.25% 2.88% 2.20% 0.73% -0.05% -3.79% 6.97% 4.94% 0.62% 1.42% 4.71% 2.12% 1.44% 0.18% 0.51% 2.30% 0.02% -0.18% 0.94% 0.86% 0.00% 0.00% 0.18% 0.00%	Total Effects Selection Effect Allocation Effects Interaction Effects Portfolio Benchmark 1.53% 0.93% -40.00% 2.75% 4.33% 0.11% -1.69% 8.62% -30.54% -0.19% -2.15% 0.26% 1.70% -15.02% -28.41% 7.10% 2.84% 0.84% 3.42% 1.42% -18.10% 0.32% 0.52% 0.21% -0.41% -2.23% -19.89% 0.63% 1.37% -0.18% -0.57% 12.25% -8.71% 2.88% 2.20% 0.73% -0.05% -3.79% -31.00% 6.97% 4.94% 0.62% 1.42% 4.71% -18.13% 2.12% 1.44% 0.18% 0.51% 2.30% -9.74% 0.02% -0.18% -26.01% 0.94% 0.86% -26.87% 0.00%	Total Selection Allocation Interaction Effects Effect Effects Portfolio Benchmark Portfolio 1.53% 0.93% -40.00% 0.00% 2.75% 4.33% 0.11% -1.69% 8.62% -30.54% 3.71% -0.19% -2.15% 0.26% 1.70% -15.02% -28.41% 1.84% 7.10% 2.84% 0.84% 3.42% 1.42% -18.10% 35.05% 0.32% 0.52% 0.21% -0.41% -2.23% -19.89% 8.69% 0.63% 1.37% -0.18% -0.57% 12.25% -8.71% 1.29% 2.88% 2.20% 0.73% -0.05% -3.79% -31.00% 14.21% 6.97% 4.94% 0.62% 1.42% 4.71% -18.13% 22.41% 2.12% 1.44% 0.18% 0.51% 2.30% -9.74% 12.80% 0.02% -0.18%

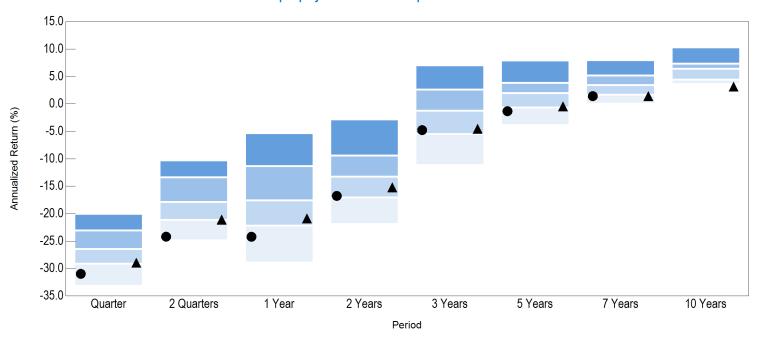


Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

						33							
		Returns and	Weights		Attribution Effects								
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total				
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects				
Europe													
Czech Republic*		-38.51%	0.00%	0.14%		0.02%	0.01%		0.03%				
Germany	-6.31%	-27.14%	2.47%	0.00%	0.00%	-0.15%	-0.05%	0.53%	0.32%				
Greece*		-45.10%	0.00%	0.30%		0.07%	0.00%		0.08%				
Hungary*		-39.01%	0.00%	0.31%		0.04%	0.02%		0.06%				
Netherlands	-9.52%	-20.65%	3.39%	0.00%	0.00%	0.02%	-0.07%	0.39%	0.34%				
Poland*		-36.47%	0.00%	0.90%		0.10%	0.06%		0.15%				
Russia*		-36.52%	0.00%	3.90%		0.12%	0.55%		0.67%				
United Kingdom	-19.87%	-28.35%	0.84%	0.00%	0.00%	-0.03%	-0.19%	0.22%	0.00%				



eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Return (R	lank)														
5th Percentile	-20.06		-10.33		-5.34		-2.86		7.01		7.87		7.96		10.29	
25th Percentile	-23.00		-13.36		-11.32		-9.39		2.63		3.86		5.21		7.35	
Median	-26.40		-17.82		-17.54		-13.25		-1.23		2.02		3.48		6.44	
75th Percentile	-29.12		-21.09		-22.13		-17.03		-5.46		-0.59		1.71		4.46	
95th Percentile	-33.13		-24.81		-28.88		-21.87		-11.11		-3.85		0.09		3.64	
# of Portfolios	53		53		53		51		48		42		32		22	
■ Templeton▲ MSCI ACWI ex US Small Cap Gross	-30.96 -28.94	(91) (71)	-24.19 -21.07	(95) (75)	-24.21 -20.84	(86) (69)	-16.76 -15.19	(74) (63)	-4.76 -4.52	(71) (69)	-1.32 -0.44	(84) (71)	1.42 1.43	(79) (78)	3.16	() (99)



Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	102	4,174
Weighted Avg. Market Cap. (\$B)	1.9	1.9
Median Market Cap. (\$B)	1.0	0.6
Price To Earnings	12.9	11.9
Price To Book	2.0	2.1
Price To Sales	1.1	1.0
Return on Equity (%)	14.4	11.9
Yield (%)	3.0	3.3
Beta (holdings; global)	1.1	0.9

Top Holdings	Best Performers	Worst Performers
l op Holdings	Best Performers	Worst Performers

1 op 11 old 11 go	
TSUMURA	2.4%
FUJI OIL HOLDINGS	2.1%
GERRESHEIMER	2.0%
THULE GROUP	2.0%
TECHTRONIC INDS.	2.0%
HUHTAMAKI	1.9%
MEITEC	1.9%
ANICOM HOLDINGS	1.9%
FLOW TRADERS	1.9%
BUCHER INDUSTRIES	1.9%

Best Performers							
	Return %						
ZOOPLUS (D:ZO1)	27.6%						
FLOW TRADERS (H:FLOW)	23.7%						
KOBAYASHI PHARMACEUTICAL (J:KOBS)	8.6%						
SERIA (J:SERI)	6.9%						
TECAN 'R' (S:TECN)	6.9%						
HOSOKAWA MICRON (J:HOSO)	3.8%						
ANICOM HOLDINGS (J:ANIC)	-2.1%						
NIHON PARKERIZING (J:NPPA)	-3.1%						
TAIYO HOLDINGS (J:TAIG)	-6.6%						
MORITA HOLDINGS (J:MOFP)	-7.2%						

Return %
-82.3%
-79.2%
-75.8%
-75.1%
-58.8%
-56.9%
-56.2%
-55.6%
-55.6%
-55.2%



		•	Attribut	tion Effects		Re	eturns	Secto	r Weights
	Total	Selection	Allocation	Currency	Interaction				
	Effects	Effect	Effect	Effect	Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.56%	-0.06%	0.52%	0.06%	0.04%	-56.44%	-53.83%	1.23%	3.33%
Materials	0.06%	-0.45%	0.00%	0.37%	0.13%	-31.11%	-30.10%	7.00%	9.96%
Industrials	-0.85%	-0.70%	-0.25%	0.35%	-0.25%	-33.40%	-31.82%	26.77%	19.69%
Consumer Discretionary	-3.74%	-1.12%	-1.03%	-0.33%	-1.27%	-44.62%	-35.84%	26.51%	12.46%
Consumer Staples	-0.10%	-0.06%	0.29%	-0.31%	-0.02%	-19.94%	-16.10%	8.19%	5.98%
Health Care	-0.34%	-0.30%	-0.39%	0.23%	0.11%	-16.05%	-15.06%	4.64%	7.38%
Financials	0.60%	0.55%	0.03%	0.07%	-0.05%	-26.67%	-32.26%	9.53%	10.56%
Information Technology	-0.28%	-0.40%	0.06%	0.11%	-0.05%	-25.96%	-23.43%	12.22%	10.89%
Communication Services	0.10%	0.14%	-0.03%	0.08%	-0.09%	-25.04%	-27.82%	1.63%	4.26%
Utilities	-0.13%		-0.34%	0.20%			-21.68%	0.00%	3.22%
Real Estate	0.19%	-1.12%	-0.06%	0.39%	0.97%	-33.93%	-28.40%	1.56%	12.18%
Cash	0.00%							0.00%	0.00%
Unclassified	-0.01%	0.00%	0.00%	0.00%	-0.01%	-28.02%	-28.89%	0.73%	0.10%
Portfolio	-3.95%	= -3.51%	+ -1.18%	+ 1.23%	+ -0.49%	-32.87%	-28.92%	100.00%	100.00%



		Returns and	Weights			Attribution Effects				
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total	
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects	
Europe										
Austria		-31.45%	0.00%	0.67%	-	0.03%	0.01%		0.04%	
Belgium	-30.62%	-17.91%	3.05%	1.52%	-0.20%	0.15%	-0.02%	-0.20%	-0.27%	
Czech Republic*		-25.39%	0.00%	0.02%		0.00%	0.00%		0.00%	
Denmark	-24.23%	-19.11%	0.41%	1.26%	-0.07%	-0.07%	0.02%	0.04%	-0.08%	
Finland	-32.73%	-28.05%	2.41%	0.86%	-0.04%	-0.01%	-0.02%	-0.07%	-0.15%	
France	-41.95%	-35.76%	1.78%	2.56%	-0.16%	0.07%	0.01%	0.05%	-0.03%	
Germany	-31.75%	-27.31%	6.70%	4.42%	-0.20%	0.00%	-0.03%	-0.10%	-0.33%	
Greece*		-35.41%	0.00%	0.17%		0.01%	0.00%		0.02%	
Hungary*	-	-32.80%	0.00%	0.03%		0.00%	0.00%		0.00%	
Ireland	-	-31.01%	0.00%	0.19%		0.01%	0.00%		0.01%	
Italy	-38.22%	-29.49%	3.83%	2.53%	-0.23%	-0.03%	-0.01%	-0.12%	-0.38%	
Netherlands	-32.45%	-32.08%	5.35%	1.71%	-0.01%	-0.17%	-0.06%	-0.01%	-0.25%	
Norway	-	-41.94%	0.00%	1.61%		0.08%	0.18%		0.26%	
Poland*	-75.15%	-33.05%	0.41%	0.23%	-0.11%	0.00%	0.01%	-0.08%	-0.19%	
Portugal	-	-37.03%	0.00%	0.24%		0.02%	0.00%		0.03%	
Russia*	-	-32.20%	0.00%	0.23%		-0.02%	0.03%		0.01%	
Spain	-32.65%	-29.92%	0.96%	1.53%	-0.04%	0.01%	0.01%	0.02%	0.00%	
Sweden	-40.76%	-25.77%	5.34%	4.45%	-0.71%	0.04%	0.01%	-0.14%	-0.80%	
Switzerland	-18.23%	-18.72%	3.99%	3.66%	0.02%	0.02%	0.00%	0.00%	0.04%	
United Kingdom	-43.75%	-36.16%	7.28%	13.17%	-1.07%	0.35%	0.30%	0.48%	0.06%	



	Returns and Weights					Attribution Effects					
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total		
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects		
AsiaPacific											
Australia		-36.54%	0.00%	5.45%	-	0.07%	0.51%		0.59%		
China*	-37.89%	-14.40%	0.57%	2.03%	-0.48%	-0.16%	-0.01%	0.34%	-0.30%		
Hong Kong	-31.43%	-20.53%	7.32%	1.38%	-0.15%	0.29%	0.02%	-0.64%	-0.49%		
India*	-51.31%	-35.00%	0.92%	2.76%	-0.48%	0.10%	0.08%	0.32%	0.02%		
Indonesia*	-45.96%	-53.40%	0.68%	0.44%	0.04%	-0.05%	-0.03%	0.02%	-0.02%		
Japan	-23.13%	-20.13%	25.26%	22.20%	-0.66%	0.16%	0.01%	-0.09%	-0.58%		
Korea*	-41.49%	-23.03%	1.85%	3.25%	-0.63%	-0.10%	0.07%	0.27%	-0.38%		
Malaysia*		-31.61%	0.00%	0.69%		0.01%	0.03%		0.04%		
New Zealand		-35.04%	0.00%	0.63%	-	0.00%	0.06%		0.06%		
Pakistan*		-31.69%	0.00%	0.12%		0.00%	0.01%		0.01%		
Philippines*		-39.80%	0.00%	0.20%		0.03%	0.00%		0.03%		
Singapore		-28.17%	0.00%	1.20%		-0.02%	0.05%		0.03%		
Taiwan*	-26.30%	-21.96%	6.97%	4.28%	-0.19%	0.12%	-0.02%	-0.12%	-0.20%		
Thailand*		-40.28%	0.00%	0.84%		0.07%	0.05%		0.12%		
Americas											
Argentina*		-50.37%	0.00%	0.18%		0.04%	0.00%		0.04%		
Brazil*	-42.03%	-54.38%	4.37%	2.21%	0.35%	-0.33%	-0.44%	0.35%	-0.08%		
Canada	-39.65%	-37.70%	5.04%	6.79%	-0.14%	0.10%	0.12%	0.04%	0.11%		
Chile*		-37.75%	0.00%	0.21%		0.01%	0.02%		0.03%		
Colombia*		-50.47%	0.00%	0.06%		0.01%	0.01%		0.02%		
Mexico*		-40.83%	0.00%	0.58%		0.00%	0.08%		0.09%		
United States	-48.76%	-19.77%	5.52%	0.00%	0.00%	0.33%	0.00%	-1.60%	-1.27%		



		Returns and	Weights			Attribution Effects				
	Manager	Index	Manager	Index	Selection	Allocation	Currency	Interaction	Total	
	Return	Return	Weight	Weight	Effect	Effect	Effect	Effect	Effects	
Other										
Egypt*		-34.56%	0.00%	0.09%		0.01%	0.00%		0.01%	
Israel		-25.18%	0.00%	1.30%		-0.03%	0.02%		-0.01%	
Qatar*		-21.54%	0.00%	0.21%		-0.01%	0.00%		-0.01%	
Saudi Arabia*		-18.35%	0.00%	0.52%		-0.04%	0.00%		-0.04%	
South Africa*		-51.52%	0.00%	0.93%		0.11%	0.13%		0.24%	
Turkey*		-28.05%	0.00%	0.27%		-0.01%	0.02%		0.01%	
United Arab Emirates*		-33.65%	0.00%	0.13%		0.01%	0.00%		0.01%	
Totals										
Americas	-43.71%	-41.86%	14.93%	10.03%	-0.30%	-0.39%	-0.22%	-0.15%	-1.06%	
Europe	-35.19%	-30.40%	41.51%	41.04%	-2.42%	-0.01%	0.44%	-0.03%	-2.01%	
Asia/Pacific	-26.95%	-24.54%	43.56%	45.46%	-1.93%	-0.06%	0.84%	0.08%	-1.07%	
Other		-31.80%	0.00%	3.46%		0.04%	0.17%		0.21%	
Total	-32.87%	-28.93%	100.00%	100.00%	-4.65%	-0.42%	1.23%	-0.10%	-3.94%	
Totals										
Developed	-32.21%	-28.29%	84.23%	79.31%	-4.35%	0.01%	1.19%	-0.27%	-3.42%	
Emerging*	-36.43%	-31.39%	15.77%	20.69%	-0.79%	0.04%	0.04%	0.19%	-0.52%	



Interest rate environment

- In mid-March, the Federal Open
 Market Committee cut interest rates
 by a full 1.00% to a new range of 0 –
 0.25%. This surprise action was
 taken on a Sunday with the intent to
 get out ahead of the economic
 impacts of COVID-19.
- On April 9th, the Federal Reserve announced an additional \$2.3 Trillion program aimed towards providing financing to small businesses and municipalities. The program included \$1M-\$25M sized loans at an interest rate of 2.5%-4.0% with a four-year maturity. This move involved Fed purchases of certain types of low-grade speculative debt, a reversal from comments just weeks earlier that the Federal Reserve would stick to investment-grade debt purchases.
- The European Central Bank (ECB) announced a €750B asset purchase program in March to address effects of the virus. ECB President Christine Lagarde claimed that there are "no limits to our commitment to the

- euro". Bond yields of Euro member countries fell on the news.
- Central banks are now facing a unique problem – an immediate economic slowdown and need for monetary policy support, but very little room to cut interest rates to provide that support. This is a risk that has been discussed by investors for years, only now becoming reality. We believe fiscal policies will play a much larger role in addressing the inevitable economic slowdown.
- The Federal Reserve rolled out several liquidity programs which were components of its Global Financial Crisis playbook and are aimed at ensuring the flow of credit to U.S. households and businesses, as well as financial market stability. The New York Fed began offering up to \$500B in overnight liquidity through repurchase agreements and has expanded dollar swap lines to alleviate any possible strains in global U.S. dollar funding markets.

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

The Federal Reserve also cut interest rates 50 basis points on March 3 following impacts of COVID-19

Source: Bloomberg, as of 3/31/20

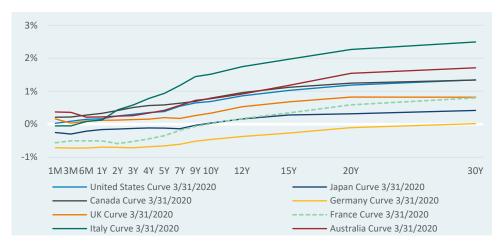


Yield environment

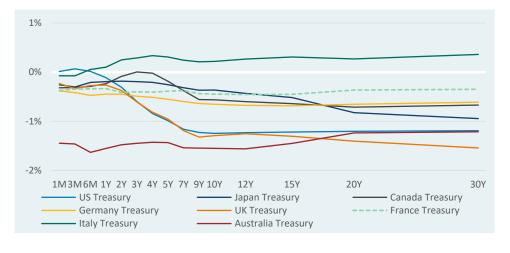
U.S. YIELD CURVE



GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/20



Currency

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

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

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

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

BLOOMBERG DOLLAR SPOT INDEX



Source: Bloomberg, as of 3/31/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



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

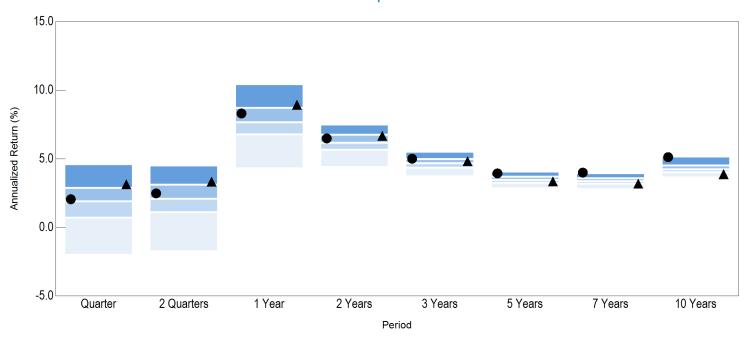
EMBEDDED CURRENCY VS CURRENCY BETA



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



eV US Core Fixed Inc Gross Return Comparison

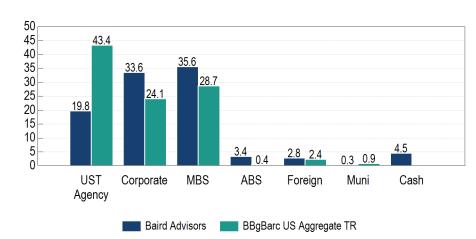


5th Percentile	
25th Percentile	
Median	
75th Percentile	
95th Percentile	
# of Portfolios	
Baird Advisors	

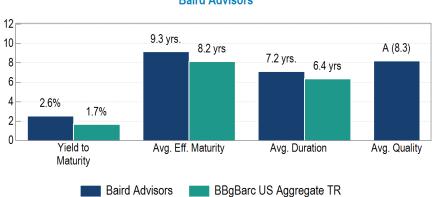
Return (R	ank)														
4.61	,	4.51		10.42		7.49		5.50		4.06		3.94		5.15	
2.89		3.13		8.72		6.77		5.00		3.70		3.59		4.53	
1.92		2.10		7.69		6.19		4.69		3.49		3.38		4.24	
0.73		1.12		6.79		5.68		4.36		3.28		3.21		4.04	
-1.98		-1.72		4.32		4.40		3.74		2.88		2.80		3.66	
225		225		225		222		221		217		215		205	
2.05	(45)	2.48	(38)	8.30	(36)	6.49	(37)	5.01	(25)	3.94	(9)	4.00	(4)	5.12	(6)
3.15	(20)	3.33	(18)	8.93	(20)	6.68	(29)	4.82	(39)	3.36	(66)	3.19	(77)	3.88	(88)

▲ BBgBarc US Aggregate TR

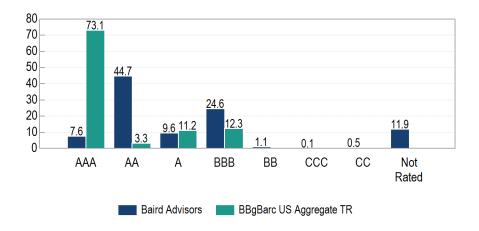
US Sector Allocation Baird Advisors



Characteristics Baird Advisors

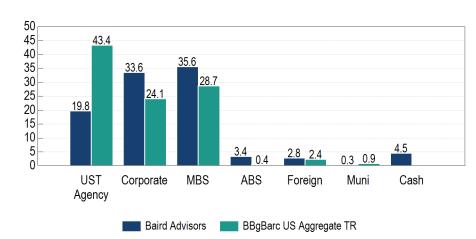


Credit Quality Allocation Baird Advisors

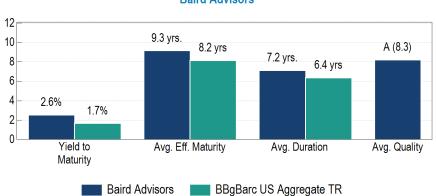




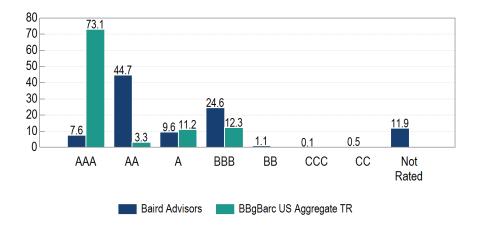
US Sector Allocation Baird Advisors



Characteristics Baird Advisors



Credit Quality Allocation Baird Advisors





PERFORMANCE BY QUALITY

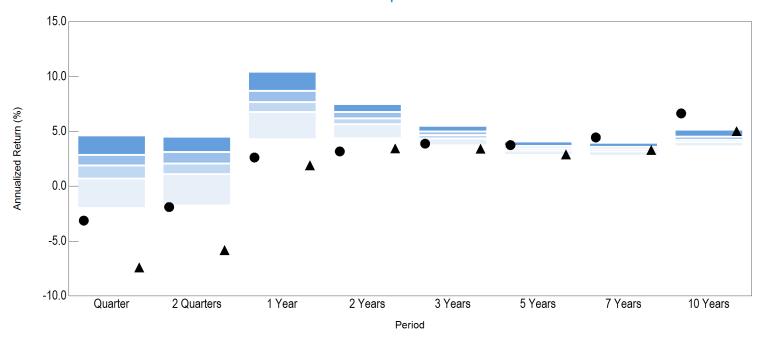
	NUMBER OF ISSUES	FINAL MARKET VALUE (\$000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Cash & Equiv	1	26,405	4.5	0.37	0.02
Govt & Agency	111	288,104	49.1	7.23	3.55
AAA	23	49,875	8.5	2.10	0.18
AA	5	3,521	0.6	-0.42	0.00
Α	35	73,933	12.6	-1.80	-0.23
BAA	58	127,916	21.8	-5.60	-1.22
Below BAA	17	17,016	2.9	-8.10	-0.23
Other	0	-	0.0	0.00	0.00
Total Account	250	\$586,770	100.0	2.06	2.06

PERFORMANCE BY DURATION

	NUMBER OF ISSUES	FINAL MARKET VALUE (\$000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Under 1 Year	28	55,743	9.5	-1.40	-0.13
1 - 3 Years	88	211,824	36.1	1.56	0.56
3 - 6 Years	72	140,825	24.0	1.25	0.30
Over 6 Years	62	178,378	30.4	30.40	1.33
Total Account	250	\$586,770	100.0	2.06	2.06



eV US Core Fixed Inc Gross Return Comparison

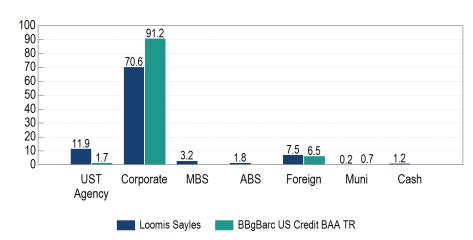


• • • • •	ercentile
25tn Medi	Percentile an
	Percentile
95th	Percentile
# of I	Portfolios
	omis Sayles gBarc US Credit BAA TR

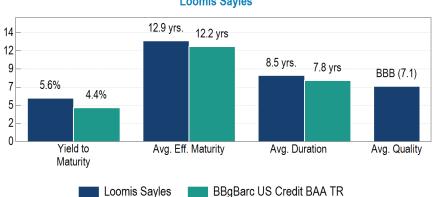
Return (R	ank)															
4.61		4.51		10.42		7.49		5.50		4.06		3.94		5.15		
2.89		3.13		8.72		6.77		5.00		3.70		3.59		4.53		
1.92		2.10		7.69		6.19		4.69		3.49		3.38		4.24		
0.73		1.12		6.79		5.68		4.36		3.28		3.21		4.04		
-1.98		-1.72		4.32		4.40		3.74		2.88		2.80		3.66		
225		225		225		222		221		217		215		205		
-3.13 -7.39	(99) (99)	-1.90 -5.82	(96) (99)	2.62 1.92	(99) (99)	3.18 3.44	(99) (99)	3.88 3.42	(92) (98)	3.75 2.90	(21) (95)	4.45 3.30	(2) (61)	6.64 5.02	(1) (7)	



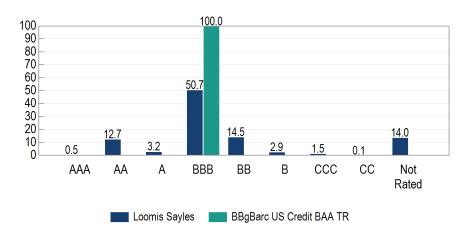
US Sector Allocation Loomis Sayles



Characteristics Loomis Sayles



Credit Quality Allocation Loomis Sayles





Summary	
Account Return	-3.20
Benchmark Return	-7.38
Excess Return	4.19
Sector Allocation	0.00
Security Selection	4.03
Trading	0.16
Pricing Differences	-0.01
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	-3.36	-7.39	-3.36	-7.39	0.00	4.03	4.03	4.03
Argentine Peso	0.24	0.00	-5.17	-7.39	0.00	0.00	0.00	0.01	0.01	0.01
Brazilian Real	0.16	0.00	-4.67	-7.39	-0.02	0.00	0.00	-0.03	-0.03	-0.03
Malaysian Ringgit	0.32	0.00	-0.88	-7.39	-0.01	0.00	0.00	-0.02	-0.02	-0.02
Norwegian Krone	0.32	0.00	-5.02	-7.39	-0.04	0.00	0.00	-0.05	-0.05	-0.05
US Dollar	98.44	100.00	-3.20	-7.39	-3.26	-7.39	0.00	4.20	4.20	4.20
Australian Dollar	0.13	0.00	-3.02	-7.39	-0.01	0.00	0.00	-0.02	-0.02	-0.02
Canadian Dollar	0.13	0.00	-1.60	-7.39	-0.01	0.00	0.00	-0.02	-0.02	-0.02
Euro	0.06	0.00	-1.84	-7.39	0.00	0.00	0.00	-0.01	-0.01	-0.01
Mexican Peso	0.07	0.00	0.89	-7.39	0.00	0.00	0.00	0.00	0.00	0.00
New Zealand Dollar	0.06	0.00	-3.73	-7.39	-0.01	0.00	0.00	-0.01	-0.01	-0.01
Swedish Krona	0.06	0.00	-1.86	-7.39	0.00	0.00	0.00	-0.01	-0.01	-0.01



Summary	
Account Return	-3.20
Benchmark Return	-7.38
Excess Return	4.19
Sector Allocation	0.00
Security Selection	4.03
Trading	0.16
Pricing Differences	-0.01
Compounding	0.00

Details

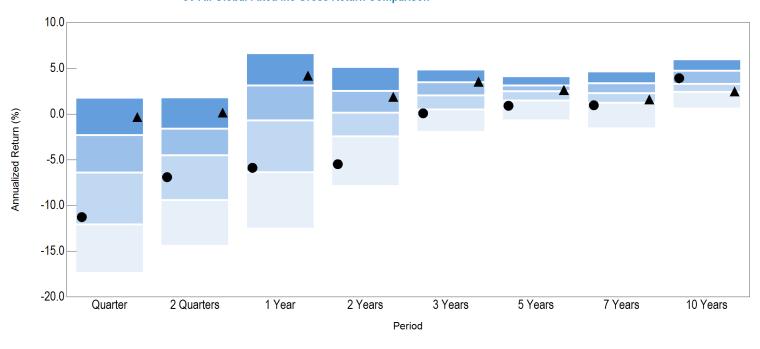
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	-3.36	-7.39	-3.36	-7.39	0.87	3.16	4.03	4.03
Less than 1.0	11.63	0.89	-0.57	-3.03	-0.19	-0.03	0.66	0.50	1.16	1.16
1.0 - 2.0	10.32	6.81	-5.40	-3.13	-0.54	-0.23	0.12	-0.25	-0.12	-0.12
2.0 - 3.0	5.55	8.37	-9.17	-4.42	-0.44	-0.38	-0.16	-0.26	-0.41	-0.41
3.0 - 4.0	9.32	7.67	-12.56	-5.48	-1.28	-0.43	0.02	-0.74	-0.72	-0.72
4.0 - 5.0	9.03	8.32	-11.49	-6.56	-0.84	-0.59	-0.04	-0.40	-0.44	-0.44
5.0 - 6.0	6.07	7.20	-12.97	-6.28	-0.69	-0.44	-0.02	-0.38	-0.40	-0.40
6.0 - 7.0	5.37	6.77	-6.00	-7.49	-0.27	-0.51	-0.01	0.09	0.07	0.07
7.0 - 8.0	5.38	6.13	-15.28	-7.89	-0.69	-0.50	-0.01	-0.36	-0.38	-0.38
8.0 - 9.0	5.17	5.45	-4.80	-7.39	-0.21	-0.39	0.02	0.18	0.20	0.20
9.0 - 10.0	9.68	5.35	4.03	-8.59	0.24	-0.49	-0.03	1.26	1.23	1.23
10.0 - 11.0	0.29	1.07	-3.37	-5.64	-0.01	-0.06	-0.01	0.01	0.00	0.00
11.0 - 12.0	0.00	0.90	12.97	-19.30	0.00	-0.16	0.10	0.00	0.10	0.10
12.0 - 13.0	0.00	0.52	0.00	-11.44	0.00	-0.06	0.02	0.00	0.02	0.02
13.0 - 14.0	0.80	0.71	-18.97	-7.02	-0.15	-0.05	0.00	-0.09	-0.09	-0.09
14.0 - 15.0	0.30	1.12	-0.31	-7.61	0.01	-0.09	0.01	0.02	0.02	0.02
15.0 - 16.0	0.30	1.69	-10.19	-7.41	-0.02	-0.12	0.01	-0.03	-0.02	-0.02
16.0 - 17.0	1.29	1.10	-4.16	-11.77	-0.01	-0.15	0.00	0.12	0.12	0.12
17.0 - 18.0	0.48	2.13	-12.84	-8.02	-0.04	-0.16	0.01	-0.03	-0.01	-0.01
18.0 - 19.0	0.55	1.55	-5.38	-10.05	-0.07	-0.14	0.01	0.03	0.04	0.04
19.0 - 20.0	0.67	1.32	-0.73	-11.76	0.01	-0.16	-0.02	0.26	0.23	0.23



Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
20.0 - 21.0	0.99	1.55	-2.46	-13.74	0.06	-0.23	0.08	0.10	0.18	0.18
21.0 - 22.0	0.40	1.31	12.75	-9.38	0.04	-0.10	0.03	0.01	0.04	0.04
22.0 - 23.0	0.79	1.81	-15.87	-8.74	-0.15	-0.15	0.01	-0.08	-0.06	-0.06
23.0 - 24.0	0.31	2.04	-12.54	-10.90	0.00	-0.22	0.08	0.00	0.08	0.08
24.0 - 25.0	0.09	2.67	-7.25	-10.49	0.01	-0.28	0.09	0.01	0.10	0.10
25.0 - 26.0	0.97	3.11	-11.87	-9.84	-0.07	-0.27	0.07	-0.03	0.04	0.04
26.0 - 27.0	0.08	2.37	-2.05	-8.99	0.04	-0.22	0.05	0.03	0.07	0.07
27.0 - 28.0	2.23	2.97	0.56	-10.37	-0.20	-0.30	-0.19	0.58	0.39	0.39
28.0 - 29.0	3.23	3.24	3.31	-6.68	0.44	-0.18	0.04	0.32	0.36	0.36
29.0 - 30.0	8.70	2.15	21.14	-9.76	1.65	-0.20	-0.04	2.29	2.25	2.25
30.0 - 31.0	0.00	0.37	0.00	0.34	0.00	0.00	-0.03	0.00	-0.03	-0.03
31.0 - 32.0	0.00	0.04	0.00	-0.23	0.00	0.00	0.00	0.00	0.00	0.00
32.0 - 33.0	0.00	0.08	0.00	-5.95	0.00	0.00	0.00	0.00	0.00	0.00
34.0 - 35.0	0.00	0.27	0.00	-5.23	0.00	-0.01	-0.01	0.00	-0.01	-0.01
35.0 - 36.0	0.00	0.10	0.00	2.13	0.00	0.00	-0.01	0.00	-0.01	-0.01
36.0 - 37.0	0.00	0.04	0.00	-2.73	0.00	0.00	0.00	0.00	0.00	0.00
37.0 - 38.0	0.00	0.10	0.00	-9.56	0.00	-0.01	0.00	0.00	0.00	0.00
38.0 - 39.0	0.00	0.13	0.00	-7.26	0.00	-0.01	0.00	0.00	0.00	0.00
39.0 - 40.0	0.00	0.19	0.00	-13.73	0.00	-0.04	0.02	0.00	0.02	0.02
43.0 - 44.0	0.00	0.02	0.00	-3.46	0.00	0.00	0.00	0.00	0.00	0.00
44.0 - 45.0	0.00	0.01	0.00	-6.12	0.00	0.00	0.00	0.00	0.00	0.00
45.0 - 46.0	0.00	0.02	0.00	-7.84	0.00	0.00	0.00	0.00	0.00	0.00
46.0 - 47.0	0.00	0.02	0.00	-6.98	0.00	0.00	0.00	0.00	0.00	0.00
47.0 - 48.0	0.00	0.03	0.00	-2.58	0.00	0.00	0.00	0.00	0.00	0.00
48.0 - 49.0	0.00	0.01	0.00	-5.78	0.00	0.00	0.00	0.00	0.00	0.00
49.0 - 50.0	0.00	0.03	0.00	-1.08	0.00	0.00	0.00	0.00	0.00	0.00
59.0 - 60.0	0.00	0.04	0.00	-5.55	0.00	0.00	0.00	0.00	0.00	0.00
90.0 - 91.0	0.00	0.10	0.00	-10.82	0.00	-0.01	0.00	0.00	0.00	0.00
95.0 - 96.0	0.00	0.04	0.00	-5.54	0.00	0.00	0.00	0.00	0.00	0.00
Greater than 98.0	0.00	0.01	0.00	7.32	0.00	0.00	0.00	0.00	0.00	0.00
33.0 - 34.0	0.00	0.01	0.00	-6.02	0.00	0.00	0.00	0.00	0.00	0.00
97.0 - 98.0	0.00	0.02	0.00	-10.25	0.00	0.00	0.00	0.00	0.00	0.00



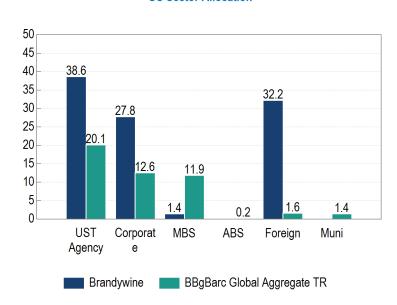
eV All Global Fixed Inc Gross Return Comparison



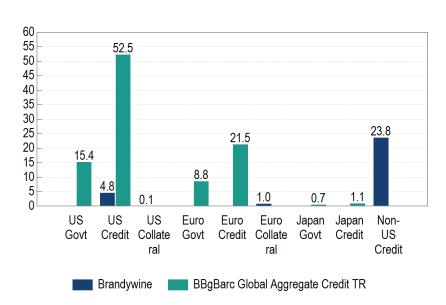
	Return (R	ank)														
5th Percentile	1.79		1.80		6.66		5.16		4.85		4.13		4.65		5.99	
25th Percentile	-2.28		-1.58		3.15		2.54		3.50		3.14		3.38		4.77	
Median	-6.37		-4.49		-0.68		0.19		2.06		2.53		2.30		3.33	
75th Percentile	-12.06		-9.40		-6.35		-2.43		0.52		1.50		1.26		2.45	
95th Percentile	-17.36		-14.41		-12.49		-7.86		-1.92		-0.68		-1.56		0.63	
# of Portfolios	506		506		506		492		475		432		366		260	
BrandywineBBgBarc Global Aggregate TR	-11.26 -0.33	(71) (16)	-6.90 0.16	(66) (13)	-5.88 4.20	(73) (18)	-5.48 1.88	(90) (32)	0.08 3.55	(81) (24)	0.91 2.64	(83) (46)	0.97 1.60	(81) (68)	3.93 2.47	(39) (75)



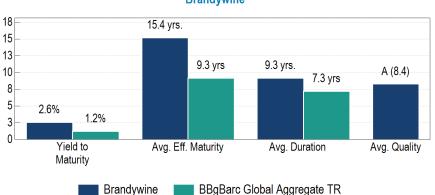
US Sector Allocation



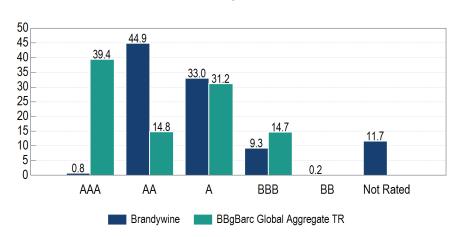
Global Sector Allocation



Characteristics Brandywine



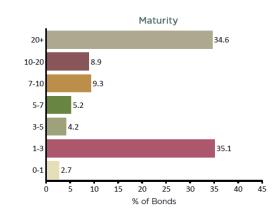
Credit Quality Allocation Brandywine





Portfolio Characteristics

Viold to Maturity (9/)	4.30	
Yield to Maturity (%)	4.30	0.49
Yield to Worst (%)	4.32	0.49
Modified Duration	7.20	8.47
Effective Duration	7.10	8.60
Average Maturity	13.25	9.34
Average Market Price	104.01	-
Average Coupon (%)	4.64	2.23
Current Yield (%)	4.32	-
# of Issues	211	1,042





Sector Breakdown

	Market Value (%)	Duration Contribution (in Years)
Government Sovereign	60.98	4.48
Corporate Bond - Investment Grade	20.34	2.22
Corporate Bond - High Yield	7.89	0.27
Government Owned - No Guarantee	2.05	0.17
Government Regional Agencies	2.45	0.03
Mortgage Backed Securities	0.62	0.03
Cash	8.96	-
Derivatives	(3.30)	-
Total:	100.00	7.20



	•	-	
Combined Rating	%	Cumulative %	
AAA	35.2	35.2	AAA CCC
AA	3.4	38.6	— ВВ
Α	22.7	61.3	
BBB	22.9	84.1	
BB	10.8	94.9	
В	4.2	99.0	
CCC	1.0	100.0	
Average Q	uality: A		AA
			A——BBB

'RIMARY BENCHMARK is FTSE WGBI (USD)

All Averages are US DOLLAR - weighted by the net market value. Average Market Price includes accrued interest. The "Blended Weighted Average Rating" is determined as follows: in line with the methodology used by 3arclays Global indices, the middle rating from the three major NRSROs (S & P, Moody's, and Fitch) will be assigned to each security. In the event that ratings are provided by only two agencies, the lowest rating will be issigned. If only one agency assigns a rating, that rating will be applied. If the security is not rated by one of the three major agencies, U.S. treasuries and certain U.S. agencies are given the U.S. issuer rating. Sovereign reasuries are given the sovereign issuer rating. All other unrated security based on the Security Levels scale. A Portfolio Level scale is applied on the weighted average calculation to round for fractional numerical ratings and then converted to an alpha weighted average rating. Cash is included and received the highest rating.

Data included on this page show the aggregate holdings of the Brandywine Emerging Markets Debt Fund ("EMD Fund"), in which the portfolio is invested. Holdings in the EMD Fund are not subject to ACERA's nvestment Guidelines. Please note that ACERA owns units of the EMD Fund, not the underlying holdings. Data and characteristics shown are for illustrative purposes only.

Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.



Global Opportunistic Fixed Income March 31, 2020

Country	3/31/2020		12/31	/2019	Currency		3/31/202	12/31	/2019		
Allocation	Portfolio	Index	Active	Portfolio	Change	Allocation	Portfolio	Index	Active	Portfolio	Change
United States	54.88	41.20	13.68	46.52	8.36	Euro	0.93	29.63	(28.70)	0.96	(0.03)
*Mexico	12.08	0.59	11.49	14.28	(2.20)	US Dollar	14.70	41.20	(26.50)	2.46	12.24
France	0.07	7.79	(7.72)	-	0.07	Japanese Yen	3.50	18.18	(14.67)	-	3.50
*Brazil	5.18	_	5.18	6.24	(1.06)	*Mexican Peso	10.07	0.59	9.48	10.38	(0.32)
United Kingdom	0.22	5.14	(4.92)	0.25	(0.03)	British Pound Sterling	14.23	5.14	9.09	16.63	(2.40)
Spain	0.55	4.37	(3.82)	0.57	(0.02)	Australian Dollar	9.86	1.46	8.40	10.08	(0.22)
Australia	4.65	1.46	3.20	4.77	(0.11)	South Korean Won	8.04	-	8.04	5.84	2.20
*Colombia	3.19	_	3.19	3.67	(0.47)	*Chilean Peso	6.26	_	6.26	6.67	(0.40)
*Indonesia	3.05	_	3.05	3.29	(0.24)	Norwegian Krone	5.78	0.18	5.60	6.13	(0.35)
*Malaysia	3.16	0.37	2.79	2.95	0.20	New Zealand Dollar	3.91	-	3.91	3.95	(0.04)
Canada	3.76	1.50	2.26	1.69	2.06	*Malaysian Ringgit	3.54	0.37	3.17	3.31	0.23
*South Africa	2.57	0.35	2.22	3.08	(0.52)	*Brazilian Real	3.03	-	3.03	5.38	(2.36)
*Chile	2.12	-	2.12	2.34	(0.22)	*Indonesian Rupiah	2.92	-	2.92	4.44	(1.53)
*Russian Federation	1.55	_	1.55	0.72	0.83	*Colombian Peso	2.70	-	2.70	4.03	(1.33)
*Peru	1.36	_	1.36	0.14	1.22	*Russian Ruble	2.19	-	2.19	3.33	(1.15)
*Poland	1.56	0.46	1.10	1.72	(0.16)	*Polish Zloty	2.44	0.46	1.98	3.13	(0.69)
*Costa Rica	0.65	-	0.65	0.72	(0.07)	Canadian Dollar	-	1.50	(1.50)	-	-
*Argentina	0.62	_	0.62	1.41	(0.79)	*Peruvian Nuevo Sol	1.29	-	1.29	0.15	1.15
*Panama	0.39	_	0.39	-	0.39	*New Turkish Lira	1.22	-	1.22	0.14	1.08
*Zambia	0.37	_	0.37	0.34	0.03	*Czech Koruna	1.17	-	1.17	1.96	(0.79)
Israel	0.35	_	0.35	0.36	(0.01)	*Hungarian Forint	0.86	-	0.86	0.85	0.01
*Egypt	0.27	_	0.27	2.70	(2.43)	*Argentine Peso	0.57	-	0.57	0.52	0.04
*China	0.18	_	0.18	-	0.18	*South African Rand	0.92	0.35	0.56	1.79	(0.88)
*Kuwait	0.15	_	0.15	0.22	(0.07)	Danish Krone	-	0.39	(0.39)	-	-
Macao	0.11	_	0.11	0.10	0.01	*Thai Baht	(0.39)	-	(0.39)	-	(0.39)
*Vietnam	0.09	_	0.09	0.09	-	Singapore Dollar	-	0.34	(0.34)	-	-
*Uruguay	0.07	_	0.07	0.07	-	*Egyptian Pound	0.27	-	0.27	2.70	(2.43)
Luxembourg	0.06	_	0.06	0.07	0.06	Swedish Krona	-	0.22	(0.22)	5.18	(5.18)
Other Countries	0.03	36.78	(36.76)	0.58	(0.55)						
Derivative P/L	(3.30)	-	(3.30)	1.16	(4.46)	Total:	100.00	100.00	-	100.00	-
Total:	100.00	100.00	_	100.00	_						



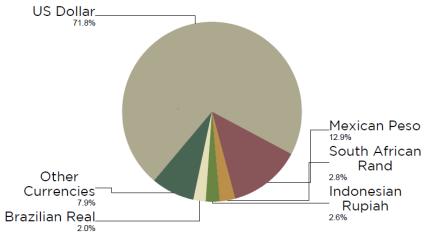
12/31/2019 Total

Source of Portfolio Duration by Currency Denomination

Modified Duration Contribution by Country vs. FTSE WGBI (USD)

(In Years)

3/31/2020



n Peso	
African nd	
sian	
ah	

Total

Modified Duration Contribution by Currency (In Years)

	3/31/	/2020			1	2/31/2019	*
						Total	*
Currency	0-3	>3-10	>10-20	>20+	Total	Change	
US Dollar	0.05	0.26	0.25	4.61	5.17	3.20	*
*Mexican Peso	-	0.08	0.29	0.55	0.93	(0.23)	*
*South African Rand	-	-	-	0.20	0.20	(0.08)	A
*Indonesian Rupiah	-	0.19	-	-	0.19	(0.02)	*
*Brazilian Real	0.05	0.09	-	-	0.14	0.05	- 1
*Colombian Peso	0.00	0.13	-	-	0.14	(0.03)	*
*Peruvian Nuevo Sol	-	0.01	0.10	-	0.11	0.10	*
*Malaysian Ringgit	0.02	0.07	-	-	0.09	(0.00)	L
*Russian Ruble	-	0.03	0.06	-	0.08	0.05	*
Australian Dollar	0.08	-	-	-	0.08	(0.01)	*
*Chilean Peso	0.03	-	-	-	0.03	(0.01)	*
Euro	-	0.00	-	0.02	0.03	(0.00)	1
*Argentine Peso	0.01	-	-	-	0.01	(0.00)	*
*Polish Zloty	0.00	-	-	-	0.00	(0.02)	(
*Egyptian Pound	-	-	-	-	-	(0.01)	

0.24

0.86

0.70

5.39

7.20

2.99

Country	0-3	>3-10	>10-20	>20+	Total	Index	Active	Change
Japan	_	_	_	_	_	2.06	(2.06)	_
United States	0.02	0.18	0.21	4.33	4.74	2.84	1.90	3.32
*Mexico	0.00	0.08	0.29	0.74	1.12	0.03	1.09	(0.37)
United Kingdom	_	0.01	_	-	0.01	0.75	(0.75)	(0.00)
France	-	0.00	-	-	0.00	0.69	(0.68)	0.00
Italy	_	_	_	-	-	0.49	(0.49)	-
Spain	_	-	_	0.02	0.02	0.34	(0.32)	(0.01)
*South Africa	_	0.00	_	0.21	0.22	0.02	0.19	(0.07)
*Indonesia	_	0.19	_	-	0.19	-	0.19	(0.02)
*Brazil	0.07	0.11	_	0.00	0.17	-	0.17	0.05
*Colombia	0.00	0.14	_	_	0.14	_	0.14	(0.03)
*Peru	_	0.01	0.10	_	0.11	-	0.11	0.10
- Canada	0.00	0.00	_	_	0.01	0.11	(0.10)	(0.00)
*Russian Federation	_	0.04	0.06	-	0.10	_	0.10	0.05
*Panama	-	-	_	0.07	0.07	-	0.07	0.07
*Malaysia	0.02	0.07	-	-	0.09	0.02	0.07	(0.00)
*Chile	0.03	_	_	0.01	0.05	_	0.05	0.00
*Costa Rica	-	-	0.04	-	0.04	-	0.05	(0.01)
Australia	0.08	-	-	-	0.08	0.10	(0.03)	(0.01)
*Poland	0.00	-	-	-	0.00	0.02	(0.01)	(0.02)
Israel	0.00	0.01	_	_	0.01	_	0.01	0.00
*Zambia	0.01	0.00	-	-	0.01	-	0.01	0.00
*Argentina	0.01	0.00	-	-	0.01	-	0.01	(0.04)
Luxembourg	-	0.00	-	-	0.00	-	0.00	0.00
*Vietnam	-	0.00	-	-	0.00	-	0.00	(0.00)
*Kuwait	0.00	-	-	-	0.00	-	0.00	(0.01)
*China	0.00	-	-	-	0.00	-	0.00	0.00
Macao	0.00	-	-	-	0.00	-	0.00	0.00
*Uruguay	0.00	-	-	-	0.00	-	0.00	(0.00)
Other Countries	_	-	-	-	-	1.00	(1.00)	(0.03)



Total

0.70 5.39

7.20

8.47

0.24

0.86

(1.27)

2.99

		IND	DATABASE E							
MANAGER	AFTER FE	E VS. INDEX	BEFORE F	EE VS. INDEX	RISK ADJUSTED (SHARPE RATIO)		MEDIAN		MANAGER TO BE PLACED ON WATCH LIST	
	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR		
AQR (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO	NO	YES	
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	NO	YES	YES	YES	NO	
BRANDYWINE FIXED INCOME (FTSE WGBI)	NO	NO	NO	NO	NO	NO	NO	NO	YES	
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	NO	
KENNEDY (RUSSELL 2000 VALUE)	NO	NO	NO	NO	NO	NO	NO	NO	YES	
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	YES	YES	YES	YES	YES	YES	NO	YES	YES	
MONDRIAN (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	YES	NO	YES	
PZENA (RUSSELL 1000 VALUE)	NO	NO	NO	NO	NO	NO	NO	NO	YES	
TCW (RUSSELL 1000 GROWTH)	YES	YES	YES	YES	YES	NO	YES	YES	YES	
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	NO	NO	NO	NO	NO	NO	NO	NO	YES	
1 Next Century will be replaced by William Plain	_						1			

¹ Next Century will be replaced by William Blair



Total Plan Policy Index	As of: 6/1/19	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day US T-Bill	0/1/13	10/1/1/	7/1/10	1/1/13	10/1/11	4/1/11	1/1/09	1/1/00	4/1/03	0/1/01	1%	1/1/90	10/1/94	1/1/92	2%
BBgBarc Aggregate	11.40%	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
BBgBarc High Yield	1.60%	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%	33 /6	29 /0	J2 /0	31 /0	30 /6
Bloomberg Commodity	0.75%	0.75%	0.75%	1.50 /6	2.070	2.4 /0	270	370	370	370					
FTSE WGBI	3.00%	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)	3.00%	2.25%	2.25%	5.00%	5%	3.0%	3.0%	470	470	3%					
MSCI ACWI ex US				5.00%	3%		23%	22%	22%	22%					
	OF 000/	26.000/	06.000/	07.000/	050/	020/	23%	22%	22%	2270					
MSCI ACWI ex US IMI	25.00%	26.00%	26.00%	27.00%	25%	23%					100/	100/	100/	100/	
MSCI EAFE											10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia											3%				100/
MSCI World net						221	201								10%
NCREIF						6%	6%	9%	9%	9%					
NCREIF ODCE	8.00%	8.00%	8.00%	6.00%	6%										
Russell 3000	25.00%	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoF Composite	9.00%	9.00%													
Thomson Reuters C A Global All PE	8.00%	9.00%													
Russell 3000 +1% (PE)			18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)						10%	10%								
Russell 3000 +4% (Al)											2%				
S&P 500															55%
S&P Global Infrastructure	1.75%	1.75%	1.75%												
S&P Global Natural Resources	2.50%	2.50%	2.50%												
S&P/LSTA Leveraged Loan	4.00%														
V =															



ACERA

US Equity Benchmark	As of: 1/1/92	1/1/80			
Russell 3000	100%	0%			
S&P 500	0%	100%			
	100.0%	100.0%			
International Equity Benchmark	As of:				
	4/1/11	6/1/01	10/1/97	1/1/92	1/1/80
MSCI ACWI ex US		100%			
MSCI ACWI ex US IMI	100%				
MSCI EAFE			77%	100%	
MSCI Emg Mkts Free ex Malaysia			23%		
MSCI World net					100%
	100.0%	100.0%	100.0%	100.0%	100.0%
Fixed Income Benchmark	As of:				
	6/1/19	6/1/01	1/1/80		
BBgBarc Aggregate	71.25%	75%	100%		
BBgBarc High Yield	10.00%	10%			
FTSE WGBI	18.75%	15%			
	100.0%	100.0%	100.0%		
Real Estate Benchmark	As of:				
	1/1/80				
NCREIF ODCE	100%				
	100.0%				
Real Assets Benchmark	As of:				
	7/1/16	10/1/11			
CPI-U +3%		100%			
Bloomberg Commodity	15%				
S&P Global Infrastructure	35%				
S&P Global Natural Resources	50%				
	100.00%	100.0%			



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)].

Beachmark 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.









PERIOD ENDING: MARCH 31, 2020

Absolute Return Performance Report

Alameda County Employees' Retirement Association

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Hedge Fund Environment



Another test for alternatives

Observations after the first few months of 2020:

- Short volatility funds crushed again Short vol exposure was one of the best performing risk premia from 2009-2017, but twice in the last three years (Q1 2018 and now Q1 2020) these funds have suffered outsized losses due to a variety of reasons, including basis risk, forced selling, and ETF liquidations.
- Yield curve dispersion (or lack thereof) With interest rates back to zero or near zero, many alternative strategies could struggle again. Interest rates are a huge part of the global securities markets, and without any movement up or down it becomes harder for traders to generate profits. Any strategies that seek to profit by shorting unattractive companies may experience an environment that is conducive to allowing these companies (that should be punished by lower prices or even insolvency) to put off that punishment for much longer than should be.
- Man vs. Machine Due to the COVID-19 crisis many governments, including the Fed, took emergency action and cut interest rates to extreme levels. While many discretionary managers were able to take advantage by being long rates in anticipation of these moves due to observable non-market, non-economic factors (i.e. COVID-19), systematic and quantitative strategies that use historical market data to position portfolios were largely caught off guard, resulting in poor results. This event highlights a significant difference in potential strategy drawbacks of relying upon backwards-looking data.
- **The next distressed cycle** Even with the significant fiscal and monetary policy support in place, there is a tremendous amount of stress in the corporate world expected to play out over the next few years.



Despite recent experience, factors additive over the long term



Fama French 5-Factor model factors are mostly positive over the last 20 years, as has been global trend following, also a key component of most premia strategies, across global markets and asset classes.

Quality and Investment factors have been shown to explain the bulk of the traditional Value factor and may be included as part of an appropriate depiction of "Value".

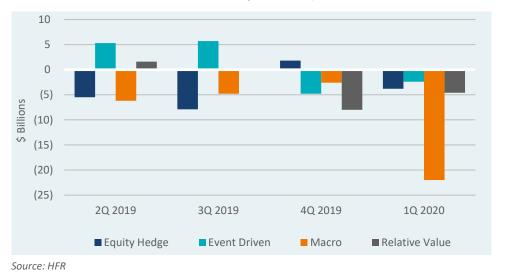
Factor detail: Quality = Fama French Robust Minus Weak, Small Cap = FF Small Minus Big, Investment = FF Conservative Minus Aggressive, Momentum = FF-Carrhart Momentum, LT Reversion = FF Long Term Reversal, ST Reversion = FF Short Term Reversal, Global Trend Following = SocGen Trend Index (representing momentum in equity + non equity assets), Value = FF High Minus Low

Hedge fund trends & flows

Outflows spike

- Investors redeemed a net \$33 billion from hedge funds in the first quarter of 2020, the largest quarterly outflow since the second quarter of 2009. Outflows were concentrated by size, coming from the largest firms (managing >\$5 billion) as well as by strategy type, with \$19 billion coming out of trend following and quantitative macro strategies.
- Inflows were limited to distressed credit funds (\$1.5 billion) and quantitative directional equity strategies (\$3.2 billion).
- In terms of a percentage of total industry assets, the quarterly net outflows in Q1 2020 (~1% of total industry) were much smaller than those experienced during the 2008 financial crisis (~9% of total industry in 4Q 2008).
- There is likely some overlap between the struggling quantitative macro/CTA strategies and the alternative beta/liquid alternative universe, at least in terms of general model types (Trend + Macro). However, while most alternative beta strategies struggled in Q1, HFRI Macro composite was slightly positive (+0.1%) for the quarter.

NET FLOWS TO HFR SUB-STRATEGIES, LAST 4 QUARTERS



QUARTERLY NET FLOWS TO HEDGE FUNDS

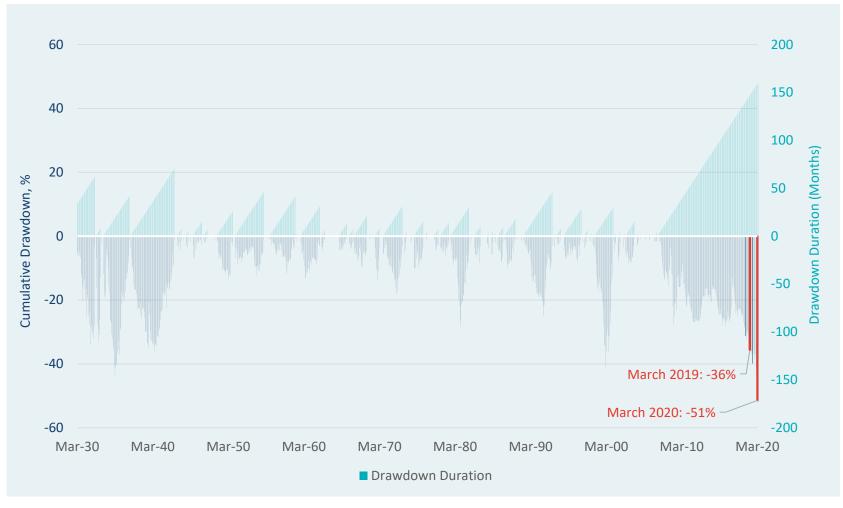


Source: HFR



Long-term perspective on value





One year ago, the magnitude of the Value drawdown was still less than multiple historical drawdowns.

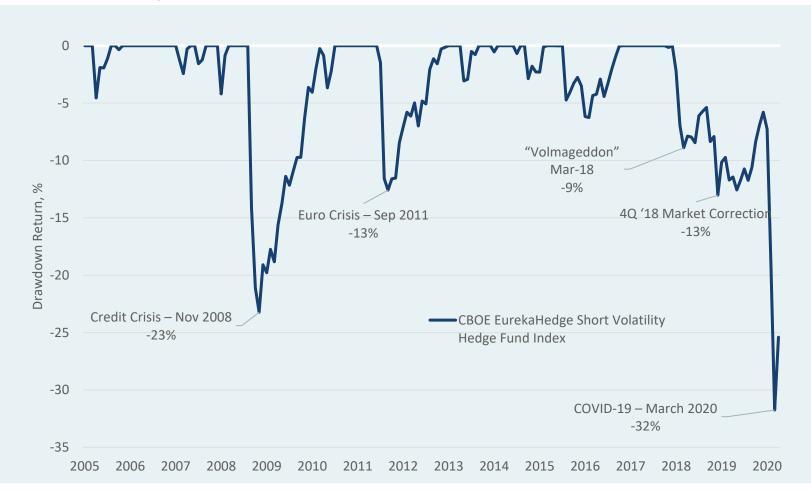
Now, through March 2020, its magnitude is unmatched going back almost a century.

Source: MPI



Short volatility strategies taking hits





After December 2019, short vol strategies were only 6% under their high watermark, in a drawdown that began in January 2018.

In Q1 2020, these strategies declined almost 28%, far worse than their previous worst quarter ever (down 13% in 3Q 2011)

Source: MPI, S&P DowJones



ACERA Performance



Allocations

Target

Sub	-categories	Target Allocations	Min./Max. Ranges
AR	Portfolio	9.0%	5% to 10.5%
•	Alternative Premia Strategies	4.5%	2% to 6%
•	Fund of Funds	3.6%	2% to 6%
•	Other Alternatives/Opportunistic	0.9%	0% to 4.5%

Current (as of 3/31/2020)

Sub	-categories	Current Allocations	Min./Max. Ranges		
AR	Portfolio	9.2%	5% to 10.5%		
•	Alternative Premia Strategies	2.6%	2% to 6%		
•	Fund of Funds	3.6%	2% to 6%		
•	Other Alternatives/Opportunistic	3.1%	0% to 4.5%		



Performance Summary

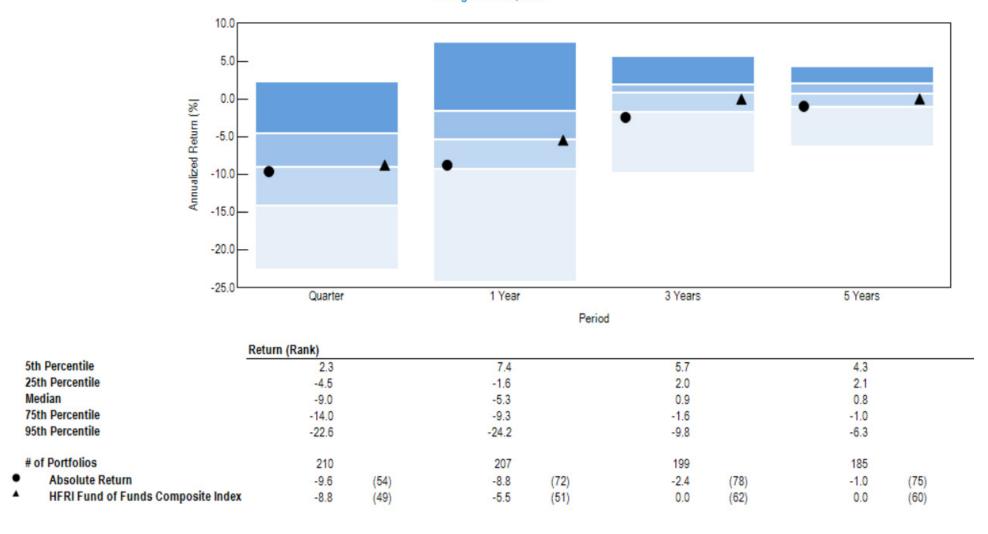
	End						
rs	2019	2018	2017	2016	2015	Inception	Inceptio
/ ₆)	(%)	(%)	(%)	(%)	(%)	(%)	Dat

Absolute Return*	683,711,944	100.0	-9.6	-9.6	-9.6	-8.8	-2.4	-1.0		1.8	-2.2	3.3	5.4	0.7	1.8	Sep-11
	Market Value (\$)	Portfolio	(%)	(%)	YTD (%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
		% of	3 Mo	VTD	Fiscal	4 Vr	2 Vro	5 Vre	10 Vre	2010	2018	2017	2016	2015	Incontion	ncontion



Relative Performance

InvMetrics All DB Hedge Funds Gross Return Comparison Ending March 31, 2020





Portfolio Statistics* (as of 3/31/20)

	Benchmark HFRI FoF Composite	Absolute Return Portfolio	MSCI ACWI
Max Drawdown	-9.0	-10.6	-21.26
Sharpe Ratio	0.27	0.17	0.17
Beta	0.29	0.18	1.00
Correlation to MSCI ACWI	0.85	0.38	1.00
Annualized StDev	4.6	4.2	13.4
*Since inception of AR Portfolio (9/2011)			

Portfolio performance and risk targets are:

AR portfolio returns to exceed benchmark

Correlation to global equities less than or equal to 0.5



Appendix

Glossary

Beta - A measure of systematic (undiversifiable) 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.

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 optimize the benefits of diversification when constructing an investment portfolio.

Internal Rate of Return (IRR) – the interest rate which is the net present value of all the cash flows (both positive and negative) of an investment.

Maximum Drawdown – the maximum loss from a peak to a trough of a portfolio before a new peak attained. Maximum drawdown measures the downside risk over a specified time period.

Standard Deviation - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. 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%.

Glossary

Sharpe Ratio - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

Time Weighted Return – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.

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







PERIOD ENDING: DECEMBER 31, 2019

Private Equity Performance Review

Alameda County Employees' Retirement Association

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DEBT RELATED

- HY issuance was up and leveraged loan issuance was down. 2019 US high yield issuance of \$267 billion¹ was up 58.9% compared 2018. At \$808 billion¹, leveraged lending declined for the second consecutive year to the lowest volume in four years. Issuance was down 35% YoY and \$594 billion lower compared to 2017's record year.
- Spreads tightened across the board except for CCC index. US HY Credit Index tightened by 167 bps or 31.0%² versus the same period last year.
 BB and B index tightened by 152 bps and 98 bps, a 36.7%² and 17.3%² decreases versus the same period last year. However, in 2019 CCC index increased by 17.3%² from 2018.
- Slight increase in LBO debt, with deterioration in interest coverage. US total leverage (Debt / EBITDA) for 2019 at 5.9x³ up 5.8% from the same time last year. Interest coverage (EBITDA / Cash Interest) of 2019 was 2.7x³, down 1.5% from 2018.

GLOBAL

- PE dry powder keeps surging globally except for Europe. For 2019, global total PE dry powder was at \$1.57 trillion⁴, up 6.7% from 2018. US total PE was up by 6.0% to \$857.0 billion⁴; Europe total PE was down by 1.1% to \$2991.9 billion⁴; Asia total PE was up by 13.5% to \$361.4 billion⁴; and the rest of world total PE was up by 20.3% to \$52.8 billion⁴.
- Investment activity was down. During 2019, global PE firms invested in \$667.6 billion⁶ worth of deals, down 17.2% from the same time prior year and closed on 21,892 transactions⁶, down 15.2% from 2018.

US BUYOUTS

- Dry powder was up. For 2019, US buyout was \$449.6 billion⁴, up by 10.0% from the same time in 2018.
- More fundraising activity with significantly larger fund sizes. In 2019, US buyout firms across all buyout strategies raised \$240.3 billion⁵, up by 84.6% from same time prior year.
- Investment activity was down. During 2019, US buyout firms invested in \$213.8 billion⁶ worth of deals, down 25.1% from the same time last year and closed on 2,882 transactions⁶, down 17.4% versus the same time in 2018.



- LBO price multiples were up. As of December 31, 2019, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 11.5x⁷, an 8.6% increase from 2018.
- Exit activity slowed down but large transactions. During 2019, US buyout firms exited 898 companies¹², representing \$186.2 billion¹² in total transaction value. This represented a 20.3% decrease in the number of exits and a 7.6% decrease in total transaction value compared to the same time last year. However, the average exit size increased 16.0% to \$207.2 million in 2019 from \$178.6 million in 2018.

US VENTURE CAPITAL

- Dry powder increased. For 2019, US VC dry powder was at \$123.8 billion⁴, up 10.0% from the last year.
- Fundraising activity slowed down, but average fund size increased. US VC firms raised \$49.9 billion⁵ during 2019, a 13.7% increase from the same period last year. 449 funds⁵ closed in 2019, a 12.5% decrease from the same period last year. The average US VC fund size increased to \$111.1 million⁵ by 29.9% versus the same period last year.
- Investment activities was up. US VC firms deployed \$129.0 billion⁶ in capital in 2019, an 1.4% increase from 2018. The number of rounds closed at 5,835⁶, a 15.5% decrease from the same time last year. The average investment per deal increased to \$26.8 million⁶, a 18.1% increase from prior year.
- All stages valuations were up. Compared to 2018, the average pre-money valuations increased across all stages in 2019: up 14.3% at \$8.0 million⁸ for Seed stage, 17.6% at \$29.4 million⁸ for early stage VC, and 15.8% at \$88.0 million⁸ for late stage VC. Over the past 3 years, the average pre-money valuations of Seed stage, early stage and late stage investments were up 33.3%, 55.3%, and 60.7%, respectively⁹.
- Exit activity decreased with less transactions. US VC firms exited 611 companies⁶ in 2019, down by 10.8% from last year, representing \$70.0 billion⁶ in transaction value down by 11.0% from the same period last year.



EX US

- Ex US dry powder grew but less than dry powder in the US. PE dry powder outside the US grew to \$708.2 billion⁴ for 2019, a 7.5% increase versus last year. However, dry powder outside the US was still 17.4% less than dry powder in the US (\$857.0 billion⁴).
 - Europe buyout and VC dry powders were up. For 2019, Europe buyout dry power was \$198.0 billion⁴, up by 1.5% from last year. Same time, VC dry powder in Europe grew to \$31.7 billion⁴, a 17.0% increase from prior year.
 - In Asia, dry powder of VC and growth equity kept increasing, but buyouts decreased. At the end of 2019, Asia buyout dry power was \$88.9 billion⁴, down by 3.9% from last year. VC dry powder in Asia increased to \$103.4 billion⁴, up by 10.7% from prior year. Growth equity dry powder grew to \$147.0 billion⁴, a 29.4% increase from 2018.
- Fundraising outside of US was down. In 2019, ex-US fundraising was down 8.4% to \$264.7 billion⁵ compared to same time prior year. The decrease was led by Asian funds which raised \$124.2 billion⁵, down 12.0% from same time last year. Fundraising was down in Europe as well, down by 0.9% from \$125.4 billion in 2018 to \$124.3 billion⁵ in 2019. Fundraising in the rest of the world was down 27.7% to \$16.2 billion⁵ compared to 2018.
- Investments activity was down except Europe VC and Asia buyout with large deal value. Both Europe buyout and Asia venture capital firms
 decreased the number of deals and aggregate deal volume in 2019. Europe venture capital and Asia buyout firms decreased the number of deals
 but increased aggregate deal volume in 2019.
 - Europe buyout activities decreased, but VC investment increased. In 2019, Europe buyout firms transacted on \$115.3 billion⁶ in aggregate value, down by 23.0% from 2018. VC investment activity was up from \$26 billion in 2018 to \$34.6 billion⁶ in 2019, an increase of 33.1%.
 - Asia buyout activity was up, while VC investment activities was down significantly. During 2019, Asia buyout firms closed on \$51.5 billion⁶ in aggregate value, up by 20.6% from the same time of last year's \$42.7 billion⁶. VC investment activity was down from \$141.8 billion during 2018 to \$86.2 billion⁶, a decrease of 39.2%.
- Global purchase price multiples increased. As of December 31, 2019, global median purchase price multiples (Enterprise Value / EBITDA) was $13.3x^1$, a 23.1% increase from the same time last year. This was driven by an 8.6% increase in US purchase multiples at $11.5x^7$, a 34.3% increase in the rest of the world at $12.3x^{11}$, and a 9.4% decrease in purchase price multiples in Europe at $8.9x^{11}$.
- Leverage multiples in Europe moved down. European LBO leverage multiples (Debt / EBITDA) have averaged 5.5x¹⁰ during 2019, a decrease of 3.1% from the same time last year and an 10.5% decrease from the peak (6.1x¹¹) in 2007. European LBO Loan volume at \$53.1 billion¹¹ is down 30.5% versus 2018, a decrease of 50.5% versus the peak of \$107.3 billion¹¹ in the first half of 2007.
- Exit activity weaker in both Europe and Asia. During 2019, Europe PE firms aggregate exit value amounted to \$110.9 billion⁶, a 9.9% decrease from the same time last year, while Asia PE firms' exits were down 14.0% from to \$112.9⁶ billion in 2018 to \$97.1⁶ billion in 2019.



Outlook

- PE allocations likely to increase slightly. A recent survey of institutional investors conducted on December 31, 2019 indicated that 41%¹² intend to increase their allocation for private equity compared to 31%¹² during the same period last year. 45%¹² intend to maintain their allocation for private equity compared to 57%¹² during the same period last year. 14%¹² intend to commit less capital to private equity compared to 12%¹² during the same period last year.
- Institutional investors most interested in investing in North America and like small- to mid-market buyouts. Based on the survey conducted on December 31, 2019, institutional investors view North America as the most attractive location to invest in the current economic climate with 88%¹² choosing it as their preferred developed market investment destination. This compares favorably versus West Europe (43%¹²) and Asia (21%¹²). China (44%)¹² and India (21%)¹² are the top two desired countries in the emerging markets for investors. In the same survey, 65%¹² of institutional investors also cited the venture capital strategy as presenting the best opportunities in the current financial climate. Small to midmarket buyout strategy was mentioned next with 60%¹² of institutional investors believing it presented the best opportunities.

Notes

- 1. Leveraged Loan Monthly Thomson Reuters LPC
- 2. Guggenheim High-Yield Bank Loan Outlook
- 3. LCD's Leveraged Buyout Review
- 4. Pregin Dry powder by Geography (Pregin Website) Dry powder includes Buyout, Distressed PE, Growth, Mezzanine, Co-investments, Balanced, and Venture Strategies.
- 5. Pregin Private Equity Historical Fundraising Statistics
- 6. Pregin Pro Buyout and Venture Deals and Exits
- 7. US LBO Review
- 8. PitchBook-NVCA Venture Monitor
- 9. PitchBook's VC Valuations
- 10. LCD European Leveraged Buyout Review
- 11. European Leveraged Lending Review
 - a. Ex US Multiples were estimated utilizing a number of sources including Pregin Private Equity-Backed Buyout Deals and Exits Factsheet, LCD's Leveraged
 - b. Buyout Review, Pitchbook Europe M&A and Leveraged Loan Monthly Thomson Reuters LPC.
- 12. Pregin Investor Update: Alternative Assets



					Unfunded	
	Policy	Policy	Market	Market Value	Commitment	Market Value +
	Target	Range	Value %	\$(000)	\$(000)	Unfunded \$(000)
ACERA Plan Assets - Total				\$8,757,428		
Private Equity:	8.0%	0-13%	6.9%	\$602,046	\$532,660	\$1,134,706
Buyouts	60.0%	30-80%	56.1%	\$337,518	\$329,615	\$667,133
Venture Capital	20.0%	0-40%	28.9%	\$174,176	\$46,146	\$220,322
Debt-Related/Special Situations	20.0%	0-70%	15.0%	\$90,352	\$156,899	\$247,251

Portfolio Summary

- As of December31, 2019, the Private Equity portfolio had a total market value of \$602.0M, with \$337.5M million in Buyouts, \$174.2M in Venture Capital, and \$90.4M in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed \$842.6M towards its Private Equity commitments, with \$456.9M to Buyouts, \$162.4M to Venture Capital, and \$223.4M in Debt-Related / Special Situations. Unfunded commitments total \$532.7M.
- In the second half of 2019, ACERA reduced the allocation to Private Equity from 9.0% to 8.0%; and approved a 4.0% allocation to Private Credit.

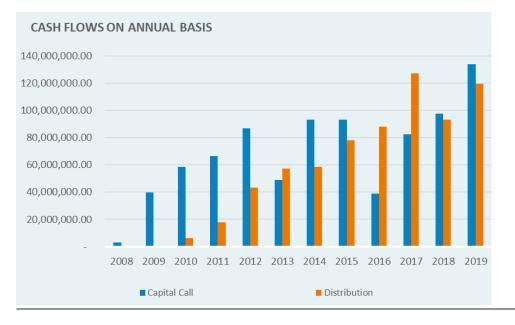
Portfolio Activity

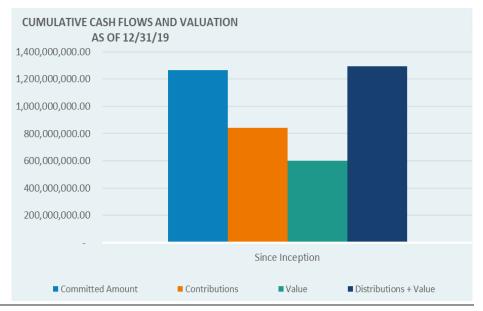
 ACERA made two new commitments to Private Equity in the second half of 2019: \$5.0M to KPS Special Situations Mid-Cap Fund, L.P and \$20.0M to KPS Special Situations Fund V, L.P.

Performance

- Current Private Equity portfolio is valued at \$602.0. Portfolio investments have a capital-weighted average life of 4.6 years.
 - Since inception, the portfolio has produced +14.65% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 13.27% by 138 basis points. Portfolio returns rank above Median on net IRR, Total Value Multiple (TVPI); and Distribution Multiple (DPI).
 - Relative to same Vintage global benchmark peers since inception (2008), the net IRR, TVPI, and DPI of all sub-asset classes rank above Median; except for Venture Capital ranks which above Top-Quartile on TVPI and DPI.
- Together with \$689.7M in realized distributions (0.82x cost), Private Equity's Total Value at \$1,291.8M is approximately \$449.1M above \$842.6M cost (1.53x cost), net of fees. Return drivers include:
 - Venture Capital up \$181.0M/+111.5% versus cost (Third Rock Venture II & III, General Catalyst VI, Great Hill IV, Khosla Ventures IV & Seed B, and NEA 13, 14, and 15 leading), with 104.2% of called capital realized and distributed. Since inception, this portfolio produced 20.14% net IRR versus its peer global benchmark of 16.57% pooled IRR.

- Buyouts up \$203.12M/+44.5% versus cost (Sycamore Partners I, Great Hill V, Warburg XI, Avista Capital Partners II, and ABRY Partners VII leading) with 70.6% of called capital realized and distributed. Since inception, the Buyouts portfolio produced 13.85% net IRR versus its peer global benchmark of 14.81% pooled IRR.
- Debt-Related / Special Situations was up \$65.02M/+29.1% versus cost (Centerbridge Special Credit Partners, ABRY Senior Equity IV & Advanced Securities II, and OHA Strategic Credit IB leading), with 88.7% of called capital realized and distributed. Since inception, this portfolio produced 10.22% net IRR versus its peer global benchmark of 10.54% pooled IRR.
- Within Private Equity, the current allocation of invested capital is 56.1% to Buyouts, 28.9% to Venture Capital and 15% to Debt / Special Situations. Of \$689.7M in cash distributions, 47% were from Buyouts, 29% from Debt-Related/Special Situations, and 25% from Venture Capital.







	1-Year	3-Year	5-Year	10-Year	Since Inception ²
Buyout	12.70%	10.84%	11.83%	14.13%	13.85%
Thomson Reuters C/A Global Buyout Benchmark ¹	10.57%	17.39%	15.63%	15.62%	14.81%
Venture Capital	16.24%	21.34%	18.46%	20.41%	20.14%
Thomson Reuters C/A Global Venture Capital & Growth Equity Benchmark ¹	14.47%	16.95%	16.10%	16.93%	16.57%
Debt-Related / Special Situation	6.61%	0.76%	6.56%	10.11%	10.22%
Thomson Reuters C/A Global Mezzanine & Distressed Benchmark ¹	3.53%	8.95%	7.63%	9.96%	10.54%
Total Private Equity	13.02%	12.84%	13.26%	14.83%	14.65%
Thomson Reuters C/A Global All Private Equity Benchmark ¹	8.60%	14.58%	12.68%	13.65%	13.27%

Identical cash flows from the portfolio inception through 12/31/19 invested in the Russell 3000 Total Return index would yield a 13.89% (Long Nickels). The result is an over performance of the portfolio of 0.76% relative to the index. Analysis provided by Solovis



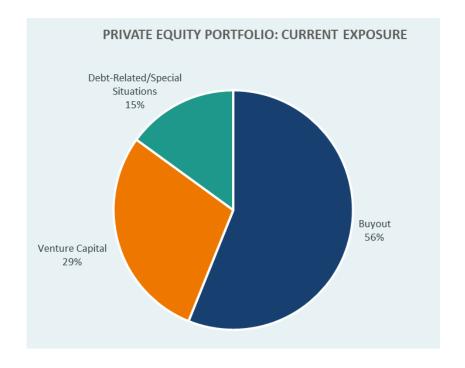
 $^{^{1}}$ Benchmarks: Thomson Reuters C/A as of 9/30/19, vintage 2008 through present.

² ACERA's inception date of November 21, 2008 vs. Thomson Reuters C/A's inception date of January 1, 2008.

Portfolio Diversification

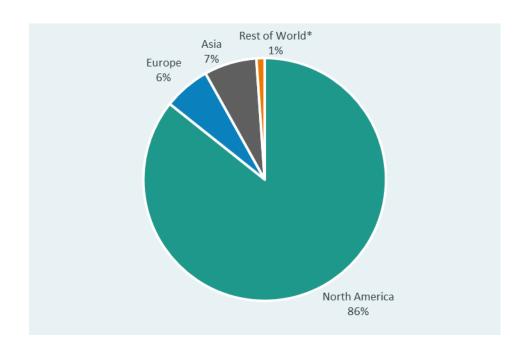
			Current Exposure as %
Investment Type	Commitment	Current Exposure	of Private Equity
Buyout	739,630,298	337,518,014	56.1%
Venture Capital	208,100,000	174,176,203	28.9%
Debt-Related/Special Situations	336,870,930	90,352,082	15.0%
Total Private Equity	1,284,601,228	602,046,299	100.0%

		C	urrent Exposure as	%
Investment Type	Target Range	Target Exposure	of Target	Difference
Buyout	4%-8%	5.4%	4.5%	-0.9%
Venture Capital	0%-3%	1.8%	2.2%	0.4%
Debt-Related/Special Situations	1%-3%	1.8%	1.2%	-0.6%
Total Private Equity	0%-13%	9.0%	7.9%	-1.1%



Private Equity Portfolio Diversification

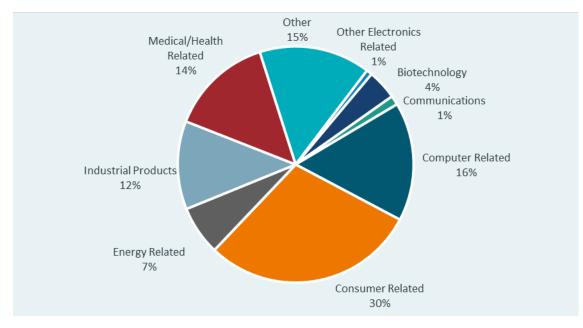
Geography	Current Exposure
North America	500,691,075
Europe	36,201,064
Asia	40,674,076
Rest of World*	6,677,184
Total Private Equity	584,243,399



Based on the value of private equity portfolio companies as of December 31, 2019, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

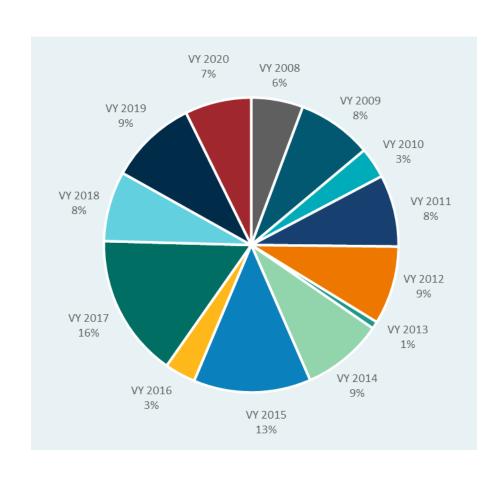
* Rest of World includes: Brazil, New Zealand, Kenya, Israel, United Arab Emirates, Australia, and Turkey.

Industry	Current Exposure
Biotechnology	23,954,131
Communications	7,396,922
Computer Related	95,007,886
Consumer Related	171,525,421
Energy Related	39,483,050
Industrial Products	70,657,375
Medical/Health Related	82,566,311
Other	89,195,713
Other Electronics Related	4,456,590
Total Private Equity	584,243,399



Based on the value of private equity portfolio companies as of December 31, 2019, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

Vintage Year	Commitment as of 12/31/2019	% of Portfolio	Reported Value as of 12/31/2019
2008	72,710,518	5.7%	6,821,724
2009	103,500,000	8.1%	33,622,639
2010		3.3%	6,997,408
	42,500,000		
2011	99,280,742	7.7%	62,614,520
2012	108,500,000	8.4%	100,583,399
2013	10,000,000	0.8%	10,948,515
2014	112,080,000	8.7%	93,655,363
2015	163,250,000	12.7%	142,450,551
2016	43,250,000	3.4%	17,380,619
2017	198,004,670	15.4%	93,804,432
2018	98,000,000	7.6%	11,563,633
2019	121,000,000	9.4%	21,603,497
2020	112,525,298	8.8%	0
Total Private Equity	1,284,601,228	100%	602,046,299



As of December 31, 2019, the Private Equity Portfolio is below its neutral target allocation of 8.0%, but within its target range. In the second half of 2019, ACERA reduced the allocation to Private Equity from 9.0% to 8.0%.

Appendix

					Unfunded	
	Policy	Policy	Market	Market Value	Commitment	Market Value +
	Target	Range	Value %	\$(000)	\$(000)	Unfunded \$(000)
ACERA Plan Assets - Total				\$8,757,428		
Private Credit:	4.0%	3-5%	0.4%	\$32,661	\$48,000	\$80,661

Portfolio Summary

- As of December 31, 2019, the Private Credit portfolio had a total market value of \$32.7M. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Credit in Q1 2019, ACERA has contributed \$33.1M towards its Private Credit commitments. Unfunded commitments total \$48.0M.

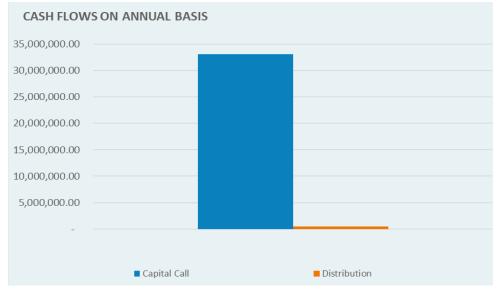
Portfolio Activity

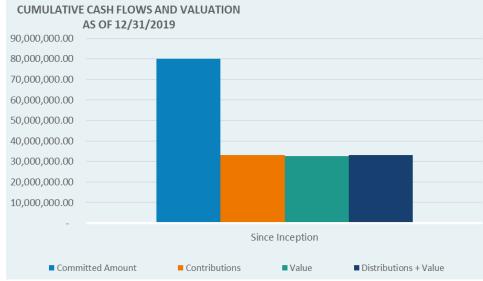
ACERA made a new commitment to Private Credit in 2019: \$80.0M to Owl Rock First Lien, L.P.

Performance

- The Private Credit's performance, as measured by net IRR, is -0.80%, 1,430 bps below the same cash flow invested in the S&P LSTA U.S. Leveraged Loan 100 Index of 13.50%. With a capital-weighted average life of investments at 0.2 years, portfolio IRR and its comparison to the benchmark are not meaningful.
- The portfolio is currently valued at \$31.7M. Together with \$422.5 thousand in realized distributions (0.01x cost), Private Credit's Total Value at \$33.1M is approximately \$16.0 thousand below \$33.1M cost (1.00x cost), net of fees.

 Capital calls dominated the portfolio's cash-flow activity as new investments are made to reach the target exposure.











PERIOD ENDING: DECEMBER 31, 2019

Real Assets Review

Alameda County Employees' Retirement Association

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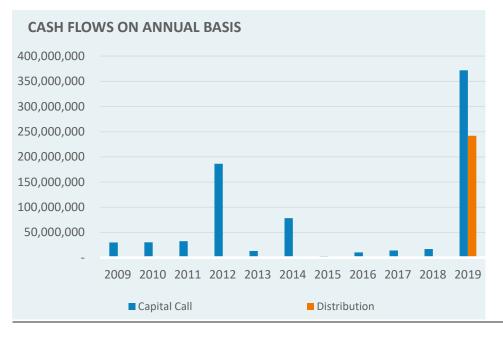
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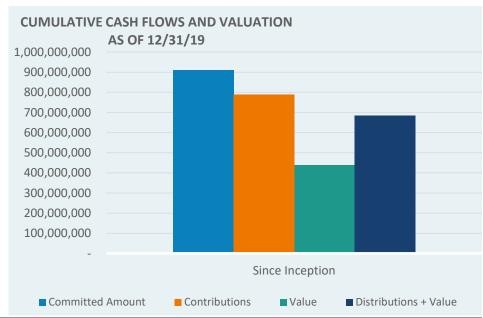
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Performance

- ACERA's Real Asset Pool has produced a -3.94% IRR since inception. The portfolios poor performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and from earlier investments in energy (Sheridan). More recent investments in CIM Infrastructure, Quantum Energy, and ISQ Global Infrastructure have emerged from their j-curve but are still too early in their fund life to gauge performance.
- The commitment to Taurus Mining Finance II is ACERA's first mining investment. Taurus' strategy also helps to mitigate the broader portfolio's j-curve due the unique cash flow structure within project finance loans.





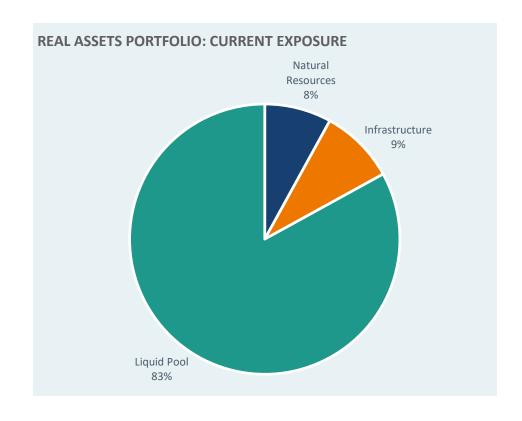


					Since
	1-Year	3-Year	5-Year	10-Year	Inception
Natural Resources Funds	-9.70%	-18.67%	-10.90%		-14.21%
S&P Global Natural Resources Index ¹	16.17%	6.25%	5.13%	2.64%	2.64%
Infrastructure Funds	15.63%	10.52%			9.76%
S&P Global Infrastructure Index ¹	18.68%	9.48%	7.07%	7.07%	7.07%
Liquid Pool Funds	8.00%	0.52%	-1.79%	-3.89%	-3.60%
Bloomberg Commodity Index ¹	3.14%	-2.00%	-4.43%	-6.57%	-6.30%
Total Real Assets	6.97%	-0.76%	-1.94%	-4.20%	-3.94%
Blended Real Assets Benchmark ²	19.22%	7.91%	4.32%	2.96%	5.75%

¹ Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 12/31/2019. Analysis provided by Solovis.

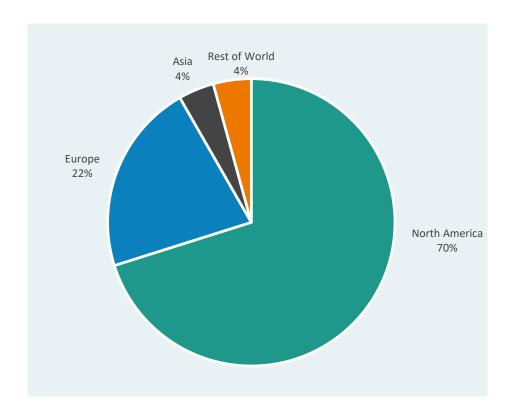
² Blendeed Real Assets Benchmark calculated on a time-weighted return basis

		Current	Current Exposure as %
Investment Type	Commitment	Exposure	of Portfolio
Natural Resources	104,000,000	34,878,344	8.0%
Infrastructure	115,000,000	40,810,448	9.3%
Liquid Pool	689,235,893	362,495,593	82.7%
Total Portfolio	908,235,893	438,184,385	100.0%

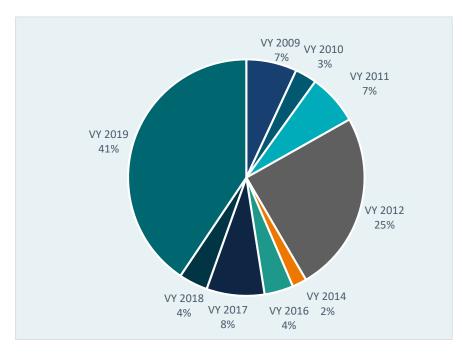


Geography	Reported Fair Value
North America	53,084,296
Europe	16,331,855
Asia	3,040,729
Rest of World	3,231,912
Total Portfolio*	75,688,792

^{*} Excludes Liquid assets.



Commitment as	% of Portfolio	Reported Value as
of 12/31/19	Commitment	of 12/31/19
62,900,000	6.9%	0
24,000,000	2.6%	0
60,800,000	6.7%	0
223,979,858	24.7%	0
15,000,000	1.7%	12,059,205
35,000,000	3.9%	14,729,784
75,000,000	8.3%	34,229,655
40,000,000	4.4%	7,795,070
371,556,035	40.9%	369,370,671
908,235,893	100%	438,184,385
	of 12/31/19 62,900,000 24,000,000 60,800,000 223,979,858 15,000,000 35,000,000 75,000,000 40,000,000 371,556,035	of 12/31/19 Commitment 62,900,000 6.9% 24,000,000 2.6% 60,800,000 6.7% 223,979,858 24.7% 15,000,000 1.7% 35,000,000 3.9% 75,000,000 4.4% 371,556,035 40.9%



Real Assets Program Update

- With ongoing ESG Policy discussions at ACERA, we are holding off on new commitments until we have direction from the Board around any investment restrictions.
- We have a number of potential re-ups with existing ACERA real asset managers in 2020 so we are prioritizing those opportunities. We also have a Core Infrastructure Fund which we may present to ACERA depending on its fit within the new ESG framework.
- As mentioned previously, we plan to increase the allocation to infrastructure investments at the expense of natural resource strategies as we move away from investments in the oil & gas industry.



June 2020

Semi-Annual Real Estate Performance Measurement Report

Callan

PUBLIC VERSION

Avery Robinson, CAIASenior Vice President

Alameda County Employees' Retirement Association Performance Measurement Report Summary

Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") half-year ending December 31, 2019 ("Quarter").

Funding Status as of December 31, 2019

	(\$) Millions	(%)
ACERA Plan Assets	8,757,429	100.00%
Real Estate Target ⁽¹⁾	700,594	8.00%
Plan's Real Estate Market Value	593,819	7.04%
Net Unfunded Commitments	68,729	0.67%
RE Market Value & Unfunded Commitments	662,548	7.71%
Remaining Allocation	38,046	0.29%

	Target	Funded	Funded & Committed
Core	70.00%	80.53%	72.17%
Non-Core	30.00%	19.46%	27.82%



Real Estate Market Update – COVID-19

Prior to the COVID-19 pandemic, the overall real estate market was relatively healthy from a fundamental standpoint, albeit there were indications of the market being late in the cycle. Positive indicators included strong occupancy, upward rent growth and steady transaction volumes. However, moderating total returns and the flattening of property value appreciation, particularly in the retail sector, was cause for some cautiousness.

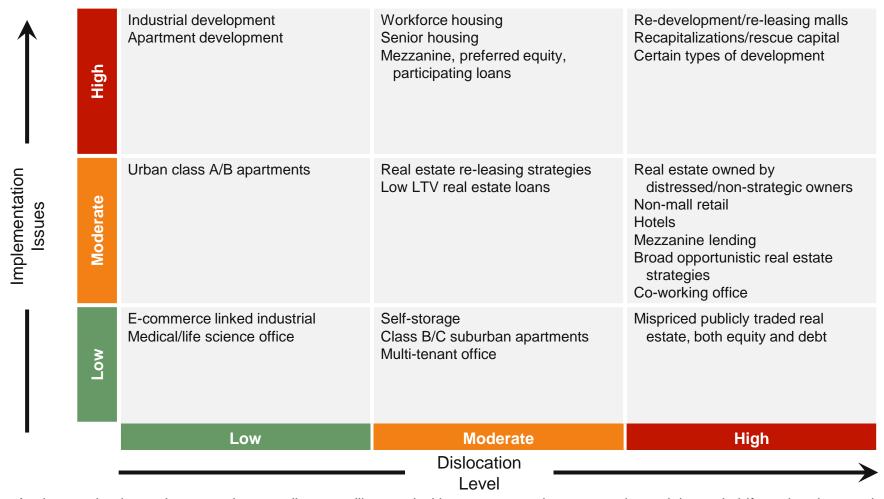
While the impact of the pandemic on real estate will continue to play out over time, it is clear that all property types have and will be negatively impacted by the crisis, to varying degrees. The market consensus suggests that retail properties will be the most negatively impacted out of the four main property types. This will be followed by office and industrial, with apartments remaining the most resilient. This outlook has been supported by April and May rent collection figures, with retail by far the lowest, and apartments the strongest.

Given that U.S. stay-at-home measures began in mid to late March, the impact of COVID-19 on realized returns has been limited, with the private market benchmark still delivering a positive 1.0% return for 1Q. However, it fully anticipated that 2Q returns will be negative.

Although the transactions market has come to a halt, the crisis will eventually bring about some buying opportunities for managers poised to take advantage. This will be dictated by capital availability by newer funds with dry powder and limited existing exposure.

COVID-19 Impact Heat Map

Real Estate Assets



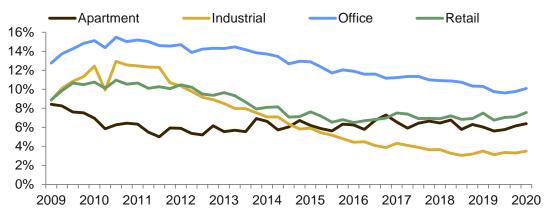
As the pandemic continues, real estate distress will spread with more severe impact causing a rightward shift on the chart and more opportunities.



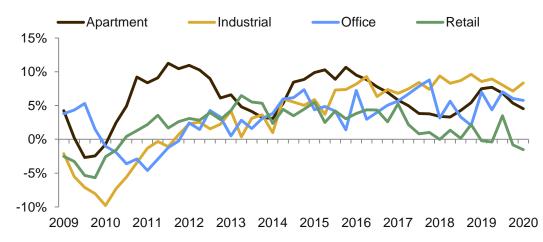
U.S. Private Real Estate Market Trends

- U.S. real estate fundamentals
 - Vacancy rates for all property types are or will be impacted.
 - Limited change in net operating income but the second quarter will show declines.
 - April/May rent collections show malls severely impacted followed by other types of retail. Class A/B urban apartments are relatively strong, followed by certain types of Industrial and Office.
 - Supply was in check prior to the pandemic.
 - Construction is limited to finishing up existing projects but has been hampered by shelter in place and material shortages.
 - New construction will be basically halted in future quarters except for pre-leased properties.

Vacancy by Property Type



4-Quarter Rolling NOI Growth by Property Type



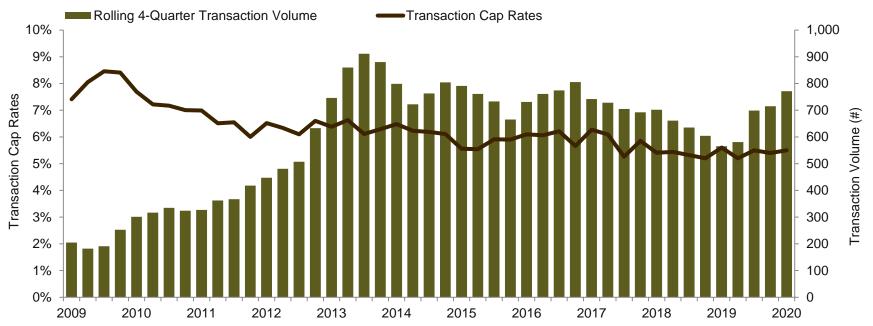


Source: NCREIF

U.S. Private Real Estate Market Trends

Pricing and transaction volumes in first guarter did not fully reflect the impact of COVID-19

NCREIF Rolling 4-Quarter Transaction Totals vs. Cap Rates



- -Transaction volumes were healthy in the early part of the first quarter, but dropped off at quarter-end and ground to a halt thereafter, with transactions being cancelled even where there were material non-refundable deposits.
- -Cap rates remained steady during the guarter. The spread between cap rates and 10-year treasuries is relatively high, leading some market participants to speculate that cap rates will not adjust much. Price discovery is happening and there are limited transactions.
- -The pandemic may cause a permanent re-pricing of risk across property types. Property types with more reliable cash flows will experience less of a change in cap rates; however, those with less reliable cash flows will see greater adjustments.

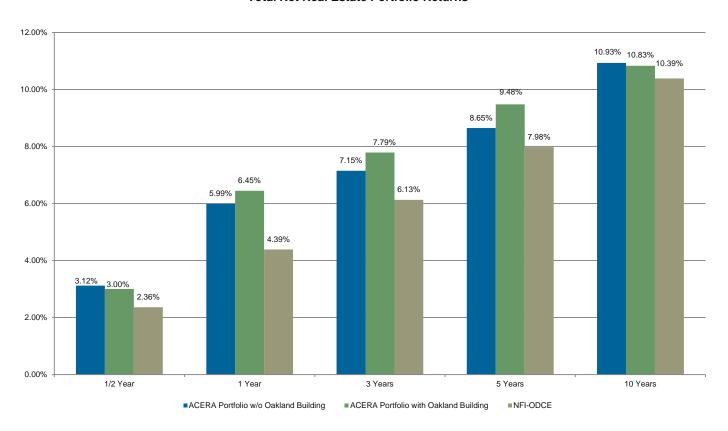


Source: NCREIF

Portfolio Net Returns

For Period Ended December 31, 2019

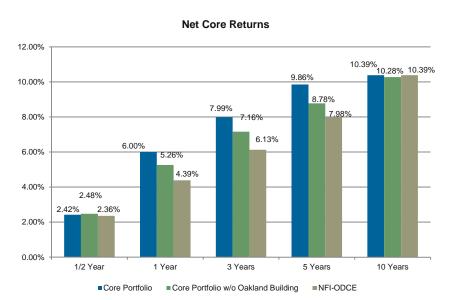
Total Net Real Estate Portfolio Returns

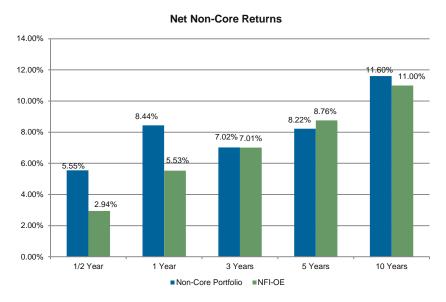




Portfolio Returns by Style

For Period Ended December 31, 2019



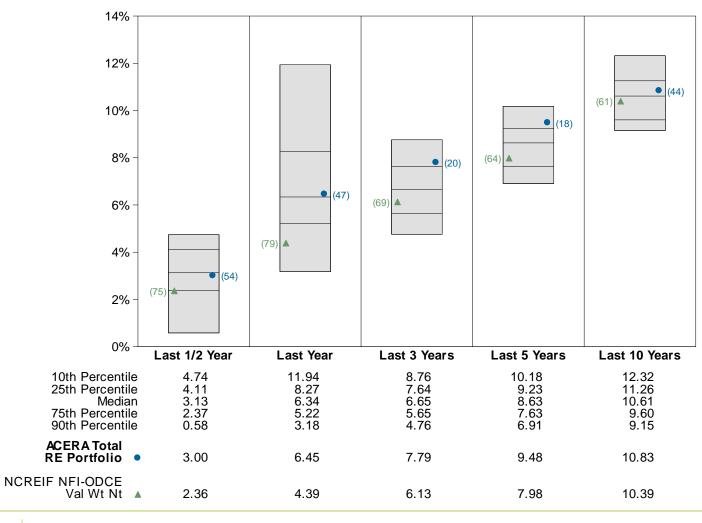


Net Portfolio w/o Oakland Building	½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	2.48%	5.26%	7.16%	8.78%	10.28%
Non-Core Portfolio	5.55%	8.44%	7.02%	8.22%	11.60%
Total Portfolio w/o Oakland Building	3.12%	5.99%	7.15%	8.65%	10.93%
Net Total Portfolio	½ Year	1 Year	3 Years	5 Years	10 Years
Net Total Portfolio Core Portfolio	½ Year 2.42%	1 Year 6.00%	3 Years 7.99%	5 Years 9.86%	10 Years 10.39%
	,				

Performance vs. Peer Group

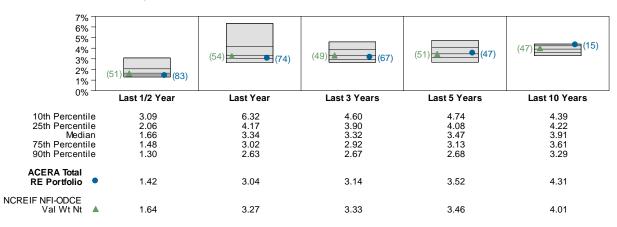
For Period Ended December 31, 2019

Performance vs Callan Open End Core Cmmingled Real Est

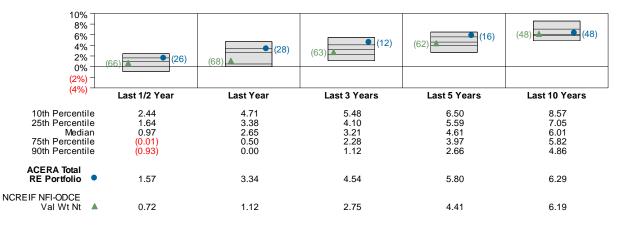


Performance vs. Peer Group

Income Rankings vs Callan OE Core Cmngld RE Periods ended December 31, 2019



Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended December 31, 2019

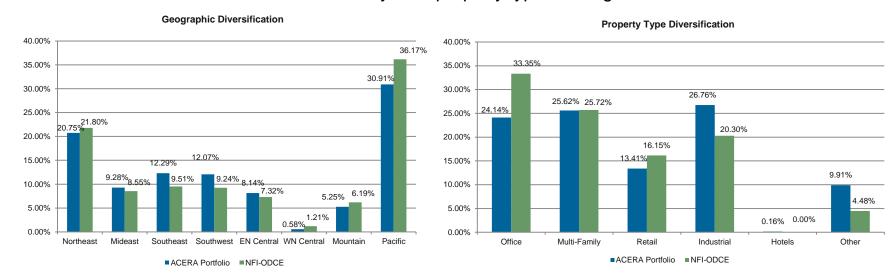




Diversification & Debt

Diversification – Total Portfolio (excluding Oakland Building)

- The ACERA Portfolio is well diversified by both property type and region.



Debt Compliance

- The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of December 31, 2019, the loan-to-value ("LTV") ratio of the Portfolio was 26.20%.

Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. Cap rate = Net operating income / Current market value (Sale price) of the asset.

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property, taking into account all income collected from operations, and deducting all expenses incurred from operations.

Real Estate Appraisal: The act of estimating the value of a property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

Income Return ("INC"): Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

Appreciation Return ("APP"): Increase or decrease in an investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value, uncollectible accrued income, or realized gain or loss from sales.

Total Gross Return ("TGRS"): The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

Total Net Return ("TNET"): Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.

Inception Returns: The total net return for an investment or portfolio over the period of time the client has had funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.

Net IRR: IRR after advisory fees, incentive, and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

Equity Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.



Knowledge. Experience. Integrity.

Style Groups

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

Indices

Stylized Index: Weights the various style group participants so as to be comparable to the investor's portfolio holdings for each period.

Open-End Diversified Core Equity Index ("ODCE"): A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (24 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.

NCREIF Fund Index Open-End Index ("OE"): NFI-OE is an aggregate of open-end, commingled equity real estate funds with diverse investment strategies. Funds comprising NFI-OE have varied concentrations of sector and region, core and non-core, leverage, and life cycle.

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.



Cash Flow Statements

Beginning Market Value: Value of real estate, cash, and other holdings from prior period end.

Contributions: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Distributions: Actual cash returned from the investment, representing distributions of income from operations.

Withdrawals: Cash returned from the investment, representing returns of capital or net sales proceeds.

Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Unfunded Commitments: Capital allocated to managers which has not yet been called for investment. Amounts are as reported by managers.

Remaining Allocation: The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.



NCREIF Region Map

