



PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS



PERIOD ENDING: MARCH 31, 2019
Investment Performance Review for

Contra Costa County Employees' Retirement Association

Meeting Date
05/22/19
Agenda Item
#10a.

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Investment Landscape

TAB I

Investment Performance
Review

TAB II

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

2ND QUARTER 2019
Investment Landscape

Recent Verus research

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

Sound thinking

FOUR RULES OF OUTSOURCING

The choice to use the services of an Outsourced Chief Investment Officer (OCIO) provider is one of the most significant decisions that a board is likely to make. This piece is focused on the four most important rules that Verus believes investors should understand, and OCIO providers should deliver upon.

Annual outlooks

CAPITAL MARKET ASSUMPTIONS

Verus held the first Capital Market Assumptions Webinar. On the call, we discussed:

- How market shifts of 2018 have affected our long-term outlook
- Why the current environment continues to indicate modest long-term performance across most asset classes
- The important differences between shorter-term and longer-term forecasting exercises

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.

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1st quarter summary

THE ECONOMIC CLIMATE

- Real GDP growth continued at 3.0% YoY - on pace with the third quarter (2.2% quarterly annualized rate). Forecasts for 2019 U.S. growth have weakened. The U.S. economy is expected to grow at a 2.4% pace in 2019, according to the Survey of Professional Forecasters, while the Federal Reserve expects 2.1% growth this year. [p. 8](#)
- In March, negotiations resumed between U.S. and Chinese trade delegations. The dialogue was viewed as constructive, and optimism picked up for a trade resolution being reached in the near-to-intermediate future. The two sides have yet to agree on a formal timeline. [p. 16](#)

PORTFOLIO IMPACTS

- The Federal Open Market Committee reiterated its “patient” approach to policy, leaving rates unchanged, helping to push asset prices upward. Chairman Powell announced that starting in May the balance sheet runoff would slow from \$50 to \$30 billion a month, and would end in September. [p. 19](#)
- Risk assets exhibited strong performance over the quarter. U.S. equities delivered the greatest gains (S&P 500 +13.6%, MSCI ACWI +12.2%), reversing U.S. underperformance in Q4 2018 (S&P 500 -13.5%, MSCI ACWI -12.8%). This was followed by riskier credit with high single-digit returns, and safer credit and government bonds with low single-digit returns. [p. 46](#)

THE INVESTMENT CLIMATE

- The first quarter was nearly a mirror image of 2018 Q4, as many assets retraced losses of the prior quarter. [p. 38](#)
- Declining long-term Treasury yields following the Fed meeting in March briefly caused the yield curve to invert, meaning that short-term yields (3-month) were higher than long-term yields (10-year). Investors have expressed concerns that this may signal a near term recession. We believe these concerns are overblown. [p. 21](#)
- The House of Commons in the British Parliament briefly took control of their government’s legislative agenda, but failed to reach a majority vote on a path forward. On April 10th, British Prime Minister Theresa May and the European Council agreed to extend the Brexit deadline from April 12th to October 31st. [p. 17](#)

ASSET ALLOCATION ISSUES

- All major asset classes delivered positive performance in Q1, a refreshing change of pace from broad-based losses experienced in 2018. [p. 46](#)
- Economic conditions around the world have exhibited a weakening trend, leading to the question of whether a turn in the economic cycle is near. The first quarter was more mixed with strength in places, easing some concern. We remain watchful of this weakening trend, but believe the economy and market may have more room to run. [p. 17](#)

A neutral risk stance may be appropriate in today’s environment

What drove the market in Q1?

“Central banks take to stage as dovish outlooks spread”

MARKET EXPECTATIONS FOR 1-YEAR CHANGE IN FED FUNDS RATE (BPS)

	Oct	Nov	Dec	Jan	Feb	Mar
	62	48	10	-10	-5	-31

Article Source: Bloomberg, February 16th, 2019

“Slowing earnings growth, gloomy forecasts add to stock market’s woes”

S&P 500 INDEX 12-MONTH FORWARD EPS ESTIMATE (\$)

	Oct	Nov	Dec	Jan	Feb	Mar
	175	175	174	171	171	172

Article Source: Wall Street Journal, January 13th, 2019

“Part of the yield curve inverts as 3-month yield tops 10-year rate”

10-YEAR MINUS 3-MONTH TREASURY YIELD SPREAD (BPS)

	Oct	Nov	Dec	Jan	Feb	Mar
	82	65	33	25	28	2

Article Source: CNBC, March 22nd, 2019

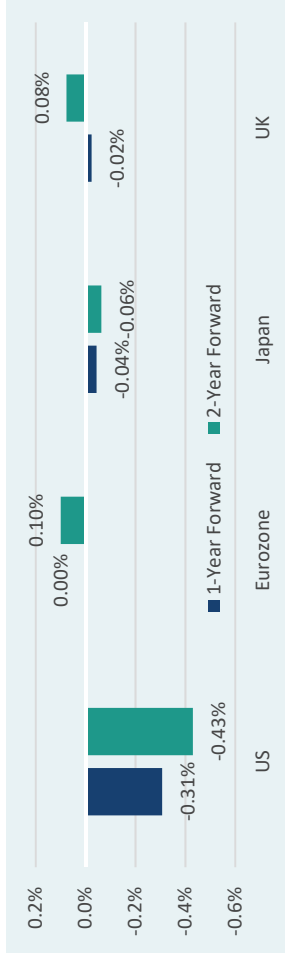
“World markets hit 2019 high amid trade war optimism”

NUMBER OF GOOGLE NEWS ARTICLES WITH ‘TRADE OPTIMISM’ IN TITLE

	Oct	Nov	Dec	Jan	Feb	Mar
	5	24	31	92	116	96

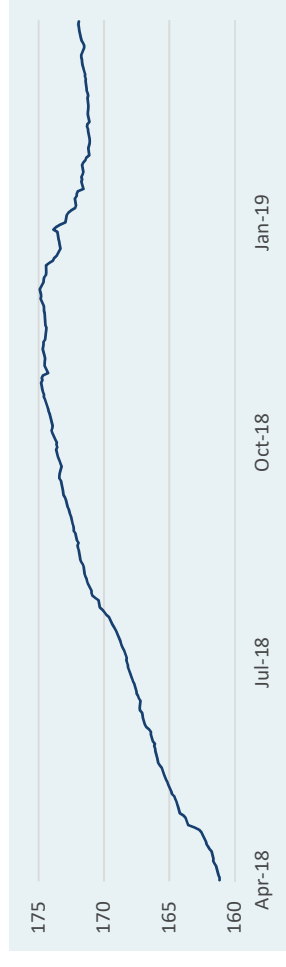
Article Source: The Guardian, February 18th, 2019

MARKET EXPECTATIONS FOR CHANGES IN SHORT-TERM RATES



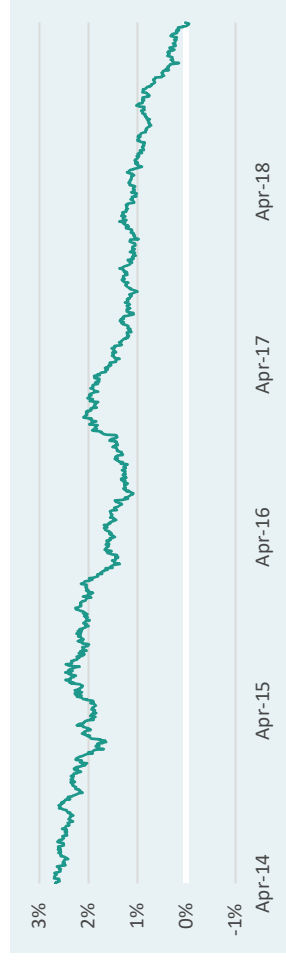
Source: Bloomberg, as of 4/2/19

S&P 500 INDEX 12-MONTH FORWARD EPS ESTIMATE



Source: Bloomberg, as of 3/31/19

10-YEAR MINUS 3-MONTH TREASURY YIELD SPREAD



Source: Bloomberg, as of 3/31/19

Economic environment

U.S. economics summary

- Real GDP growth continued at 3.0% YoY, on pace with the third quarter (2.2% on a quarterly annualized rate).
- Forecasts for 2019 U.S. growth have weakened. The U.S. economy is expected to grow at a 2.4% pace in 2019, according to the Survey of Professional Forecasters, while the Federal Reserve expects 2.1% growth this year.
- In March, negotiations resumed between U.S. and Chinese trade delegations. The dialogue was viewed as constructive, and optimism picked up for a formal trade resolution being reached in the near future.
- U.S. inflation remained near the 2.0% Fed target. After dipping to 1.5% YoY in February, headline inflation recovered to 1.9% in March, resulting in no change over the quarter.
- Average hourly earnings grew 3.2% YoY in March, missing expectations of 3.3%. A slight tick up in the average non-farm private workweek from 34.4 to 34.5 hours likely contributed to the cooler wage data.
- The labor market remained strong in Q1. U-3 unemployment fell to 3.8% from 3.9% in December, though the labor force participation rate weakened from 63.1% to 63.0% during the period.
- The Federal Open Market Committee reiterated its “patient” approach to policy, leaving rates unchanged. Expectations for 2019 GDP growth and rate hikes were cut, and markets rallied. Chairman Powell announced that starting in May the balance sheet runoff would slow from \$50 billion per month to \$30 billion, and would end in September.

	Most Recent	12 Months Prior
GDP (YoY)	3.0% 12/31/18	2.5% 12/31/17
Inflation (CPI YoY, Core)	2.0% 3/31/19	2.1% 3/31/18
Expected Inflation (5yr-5yr forward)	2.0% 3/31/19	2.2% 3/31/18
Fed Funds Target Range	2.25 – 2.50% 3/31/19	1.50 – 1.75% 3/31/18
10 Year Rate	2.4% 3/31/19	2.7% 3/31/18
U-3 Unemployment	3.8% 3/31/19	4.0% 3/31/18
U-6 Unemployment	7.3% 3/31/19	7.9% 3/31/18

GDP growth

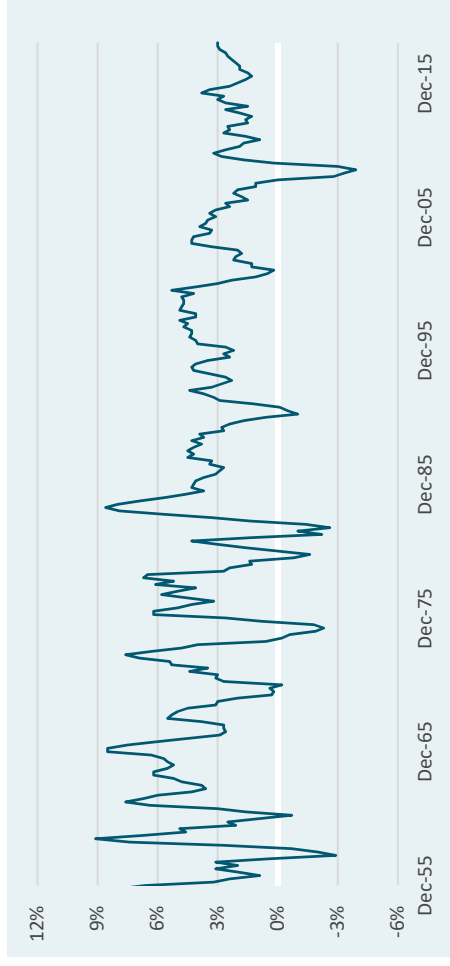
Real GDP growth continued at 3.0% YoY, on pace with growth in the third quarter (2.2% on a quarterly annualized rate). Consumption was the greatest contributor to real GDP growth.

The U.S. economy faces multiple headwinds, including the broad impacts of slowing global growth, fading of 2018 fiscal stimulus, and a tight labor market which constrains further upside from employment gains. While the U.S. is in a strong position relative to other developed nations, the economy is expected to grow at a 2.4% pace in 2019 according to a

survey of professional forecasters. The Federal Reserve expects 2.1% growth this year.

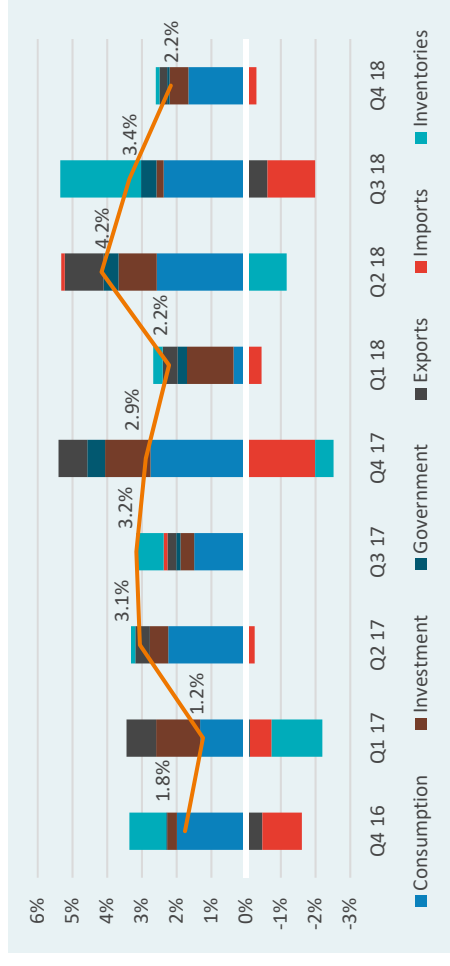
The Trump administration appears to have succeeded in reaching its 3% U.S. growth target during 2018. The Tax Cuts & Jobs Act helped stimulate the economy in the form of reduced taxes for individuals, which increased after-tax incomes and greatly reduced corporate tax burdens. These changes likely had positive impacts on worker wages and spurred recent capital investment.

U.S. REAL GDP GROWTH (YOY)



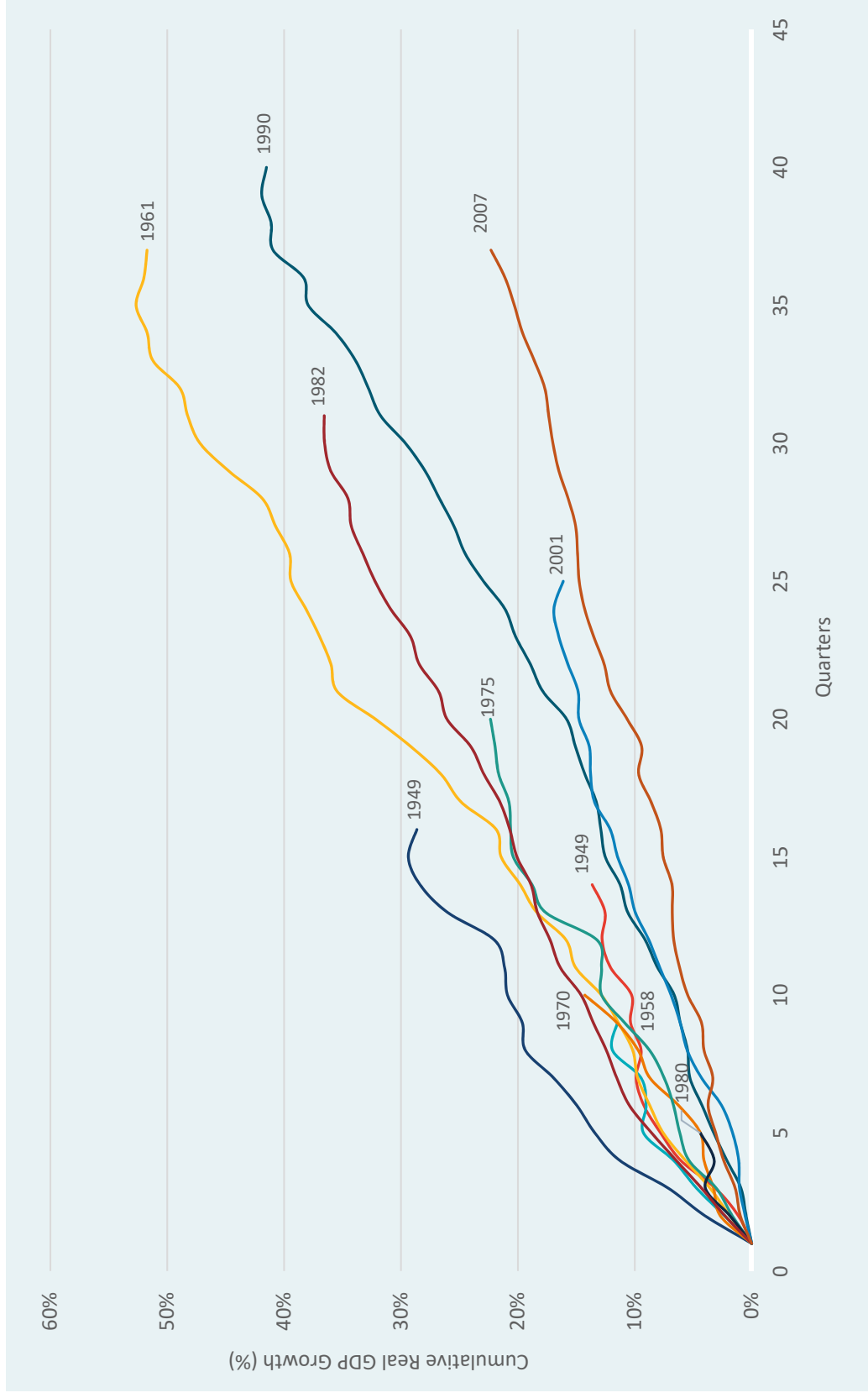
Source: Bloomberg, as of 12/31/18

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 12/31/18

A long but moderate expansion



The current economic cycle is just three quarters shy of matching the longest expansion on record

Source: FRED, Verus, as of 12/31/18 – each expansion is labeled with the starting year of expansion

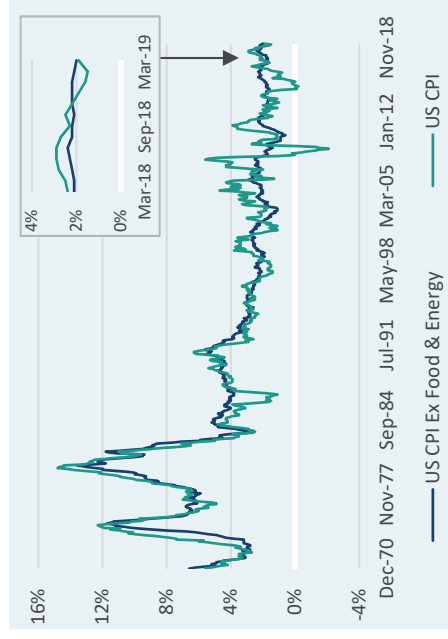
Inflation

U.S. inflation remained near the Federal Reserve's 2.0% target. After dipping to 1.5% YoY in February, headline CPI recovered to 1.9% in March, unchanged over the quarter. Core CPI, which removes the impact of energy and food prices, continued to ease, falling to 2.0% YoY at quarter-end. Moderate inflation around 2% has helped justify the Fed's recent pause in monetary tightening and has allowed for a patient approach. A material shift in either direction might place Fed officials in a difficult position, and should be watched closely.

Inflation in services was the sole contributor to the year-over-year growth in CPI as goods prices were unchanged during the period. Within services, shelter prices (+3.4% YoY) continued to be the main driver of inflation.

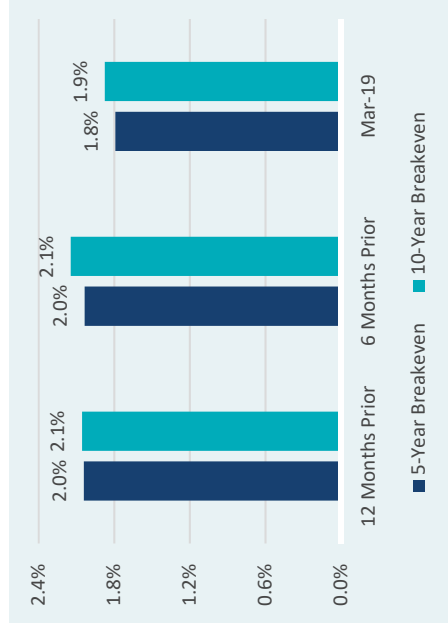
Market participants' expectations for future inflation recovered from depressed levels after falling sharply last quarter. The 10-year TIPS breakeven inflation rate rose 22 bps to 1.93%. Meanwhile, consumers' view of future inflation moderated from 2.7% to 2.5% as indicated by the University of Michigan survey.

U.S. CPI (YOY)



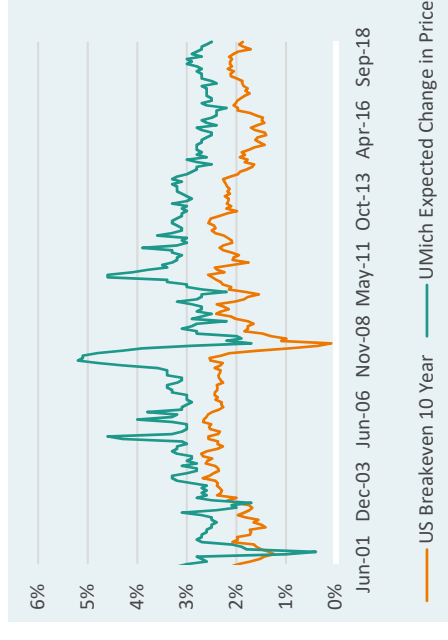
Source: Bloomberg, as of 3/31/19

BREAKEVEN INFLATION RATES



Source: FRED, as of 3/31/19

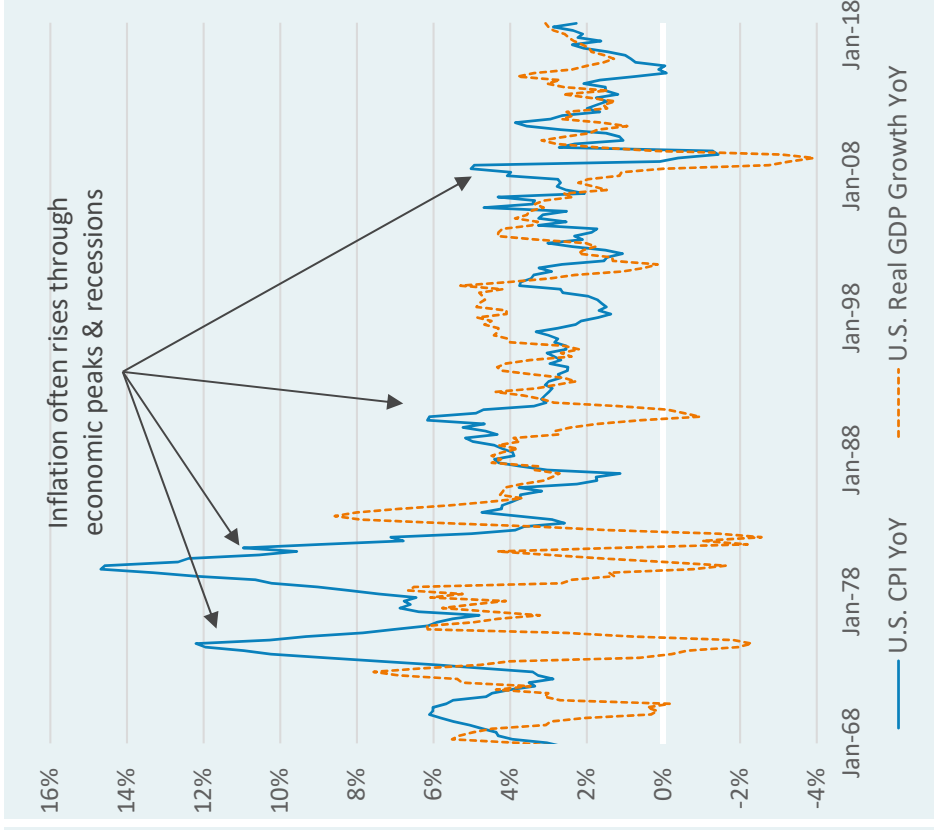
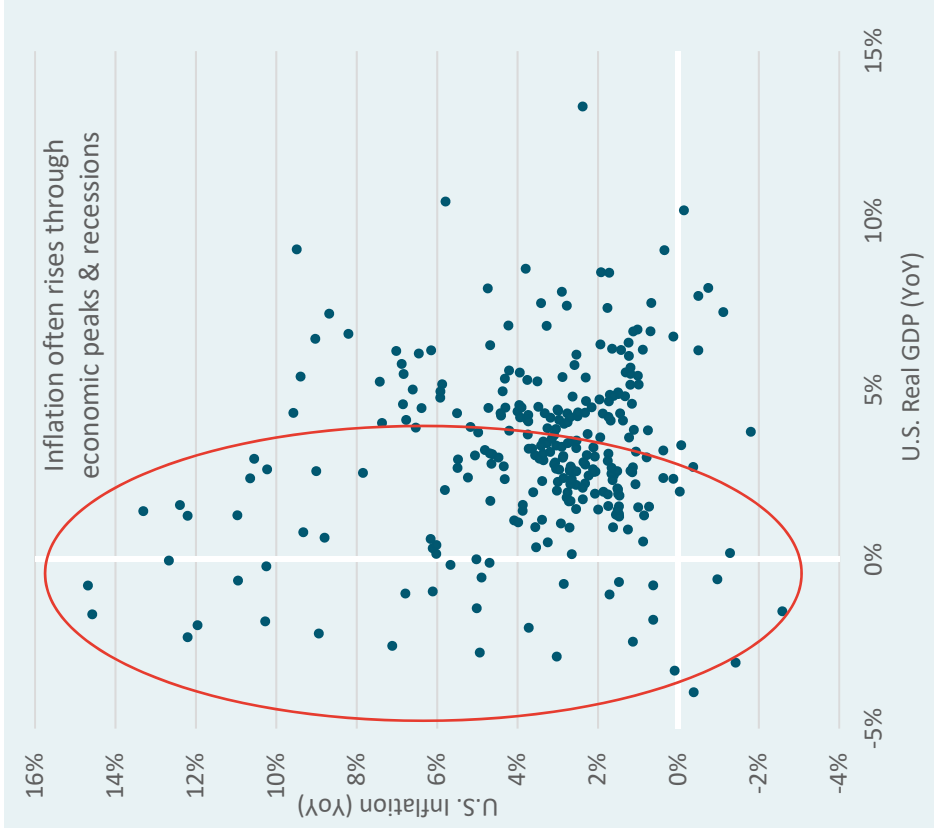
INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/19

Relationship – inflation & growth

Inflation risk has been more acute during late cycle & recession



History suggests inflation risks are still present at the later stage of the economic cycle

Source: FRED, Verus

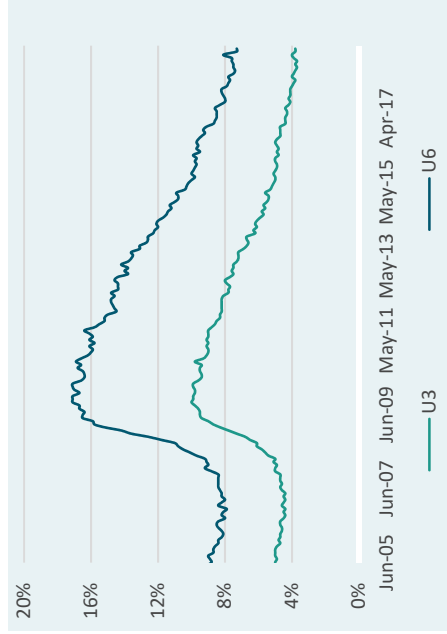
Labor market

Although there was some month-to-month volatility in job growth during the quarter, net additions to non-farm payrolls averaged 180,000 per month. Meanwhile, the U-3 unemployment rate fell slightly from 3.9% to 3.8%, just above the cycle low of 3.7%. The U-6 unemployment rate, which includes underemployed and discouraged workers, fell to a cycle low of 7.3%. The spread between the U-6 and U-3 unemployment rates compressed from 3.7% to 3.5%, the smallest difference since 2006. The decline in underemployed and discouraged workers indicates a further tightening of the labor market.

Wages continued to grow at a modest pace, but not fast enough to warrant concern over corporate margin deterioration or a flow through to general price inflation. In March, average hourly earnings rose 3.2% from 12 months ago.

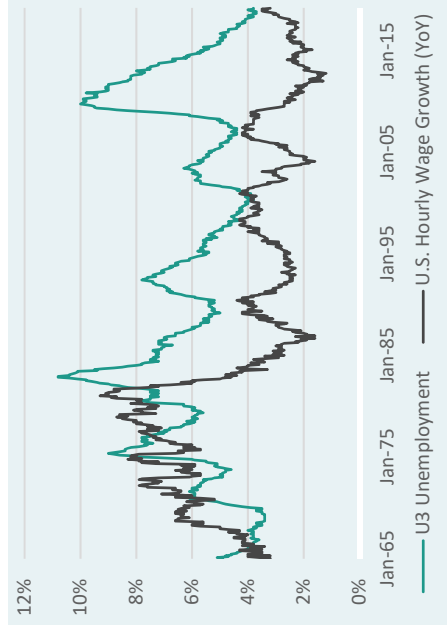
Given the relatively few number of unemployed persons and high percentage of companies reporting that jobs are hard to fill, we believe it may be difficult for job growth to continue at its recent strong rate.

UNEMPLOYMENT RATE



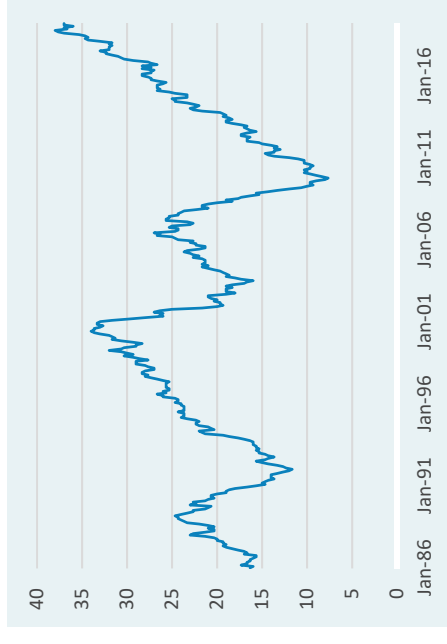
Source: FRED, as of 3/31/19

LONG-TERM EMPLOYMENT & WAGE GROWTH



Source: Bloomberg, as 3/31/19

NFIB: JOBS HARD TO FILL (3-MONTH AVG)



Source: NFIB, as of 3/31/19, net % of small businesses reporting that open positions are hard to fill

The consumer

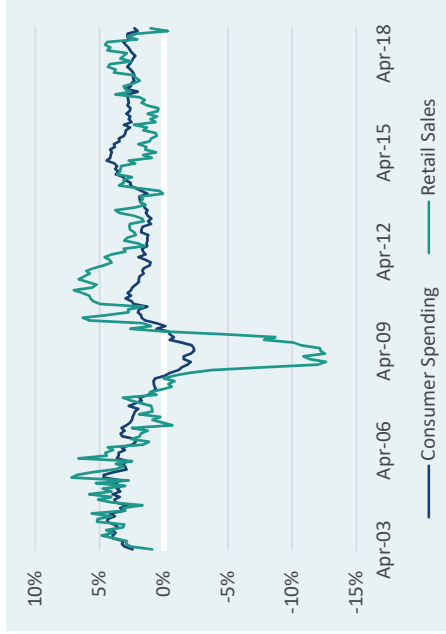
February retail sales grew 2.2% year-over-year, rebounding from a sharp slowdown in the fourth quarter. Real consumer spending continued along at a modest 1.8% pace from the previous year.

Further labor market strength, wage gains, and low interest rates would likely provide support for spending. Consumer behavior remains conservative relative to past cycles, as indicated by broad spending and borrowing patterns. While consumer credit growth has been fairly muted, other specific spending areas such as auto sales were very strong in recent

years – perhaps as consumers played catch-up from restrained purchases during the global financial crisis.

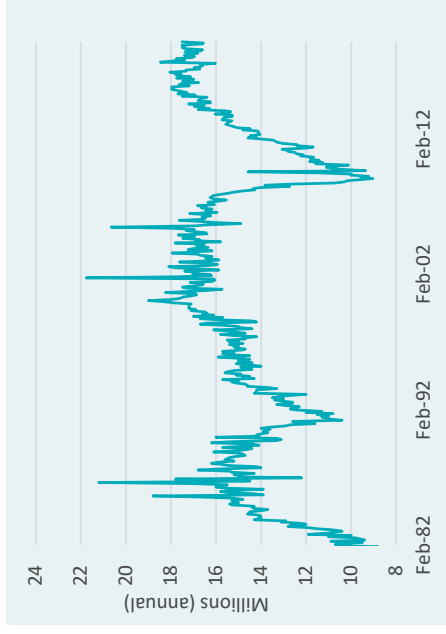
In 2018, there were rising concerns that higher interest rates would squeeze budgets and lead to a slowdown in spending and business activity. These fears have subsided as interest rates have fallen back to previous levels and the Federal Reserve is not expected to raise rates in the near future.

REAL CONSUMER SPENDING & RETAIL SALES GROWTH (YOY)



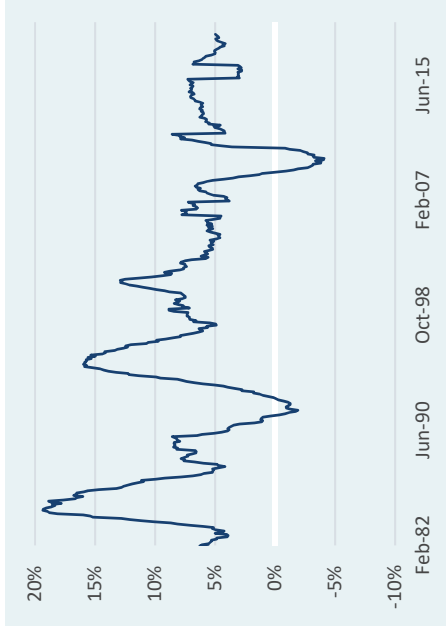
Source: Bloomberg, as of 1/31/19

AUTO SALES



Source: FRED, as of 3/31/19

CONSUMER CREDIT OUTSTANDING (YOY)



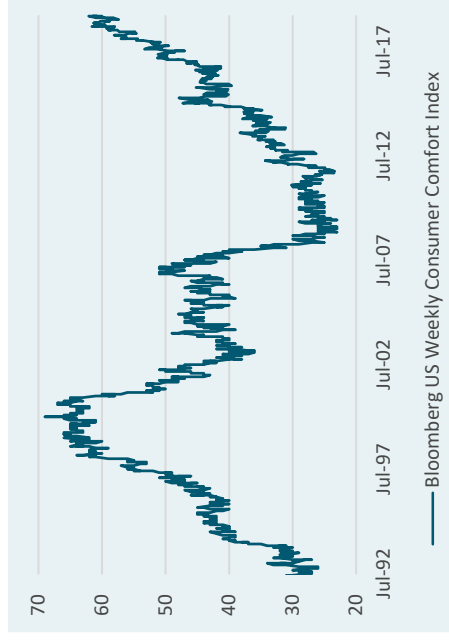
Source: Federal Reserve, as of 2/28/19

Sentiment

Consumer sentiment indicators fell sharply in January before rebounding in February and March. The fall in sentiment early in the year was driven by more muted consumer expectations of future growth, influenced by the sell-off in global equity markets and the extended U.S. government shutdown. However, the University of Michigan Consumer Sentiment Index finished the quarter at 98.4, slightly above its December reading and the Bloomberg Consumer Comfort Index was at a cycle high.

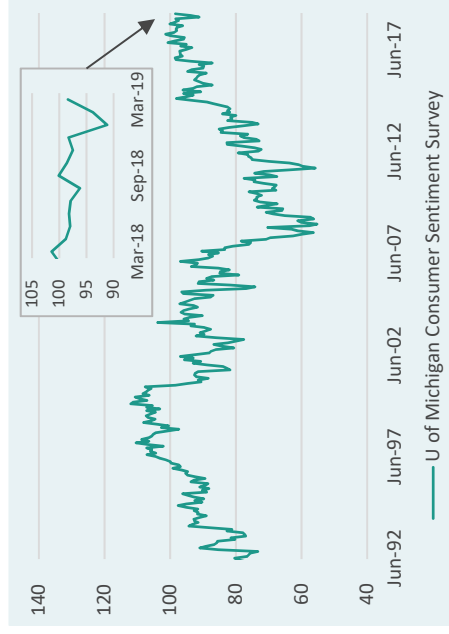
Small business sentiment continued to trend lower from historically strong levels. The NFIB Small Business Optimism Index dipped from 104.4 in December to 101.8 in March. The March reading of 101.8 ranked in the 79th percentile based on 45 years of history. Small business owners' expectations of future economic conditions moderated further in the first quarter. A net 11% of small businesses expected the economy to improve, down from 16% at the end of last year and 50% at the end of 2016.

CONSUMER COMFORT INDEX



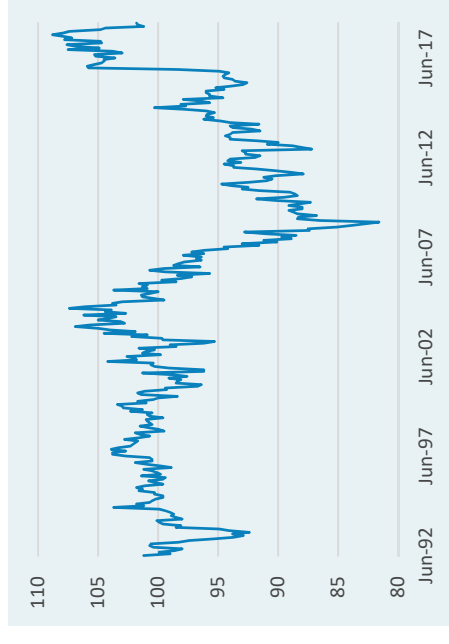
Source: Bloomberg, as of 3/24/19 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 3/31/19 (see Appendix)

NFIB SMALL BUSINESS OPTIMISM INDEX



Source: NFIB, as of 3/31/19 (see Appendix)

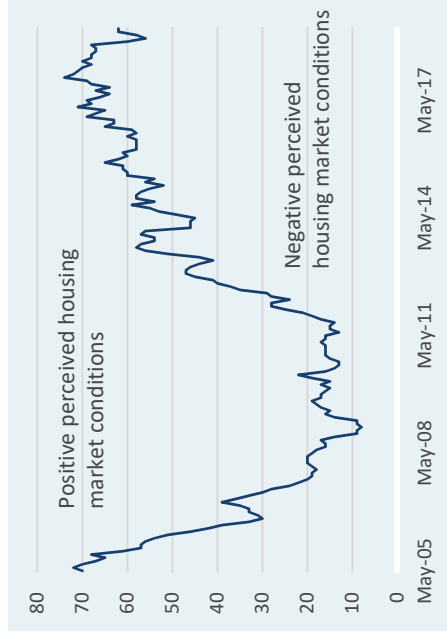
Housing

The U.S. housing market remains strong, though higher prices have dampened affordability and led to less demand. Rising interest rates in the fourth quarter generated fear of a housing slowdown, as borrowing costs have a large impact on home purchase activity. However, a reversal of monetary policy from expected tightening to expected neutrality (or easing) has placed downward pressure on the 30-year fixed mortgage rate. Given the importance of borrowing costs on housing demand, the move from 4.95% borrowing rates (peak reached in Q4) to 4.05% at the end of Q1 should ease concerns of a slowdown and bolster buying activity.

The National Association of Homebuilders (NAHB) Housing Market Index, based on a monthly survey of NAHB members designed to take the pulse of the single-family housing market, improved from 56 to 62 – above the neutral level of 50.

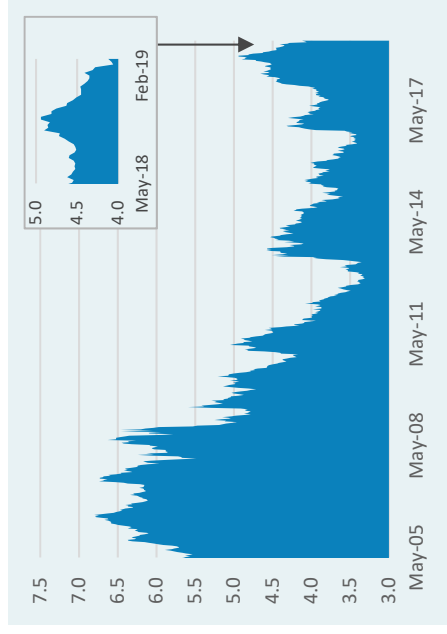
Home prices have faltered a bit, with the median U.S. home sales price falling -6.1% year-over-year in Q4. As is often the case, home price trends can vary significantly from city to city, which makes annual summary statistics difficult to interpret on a local level.

NAHB HOUSING MARKET INDEX



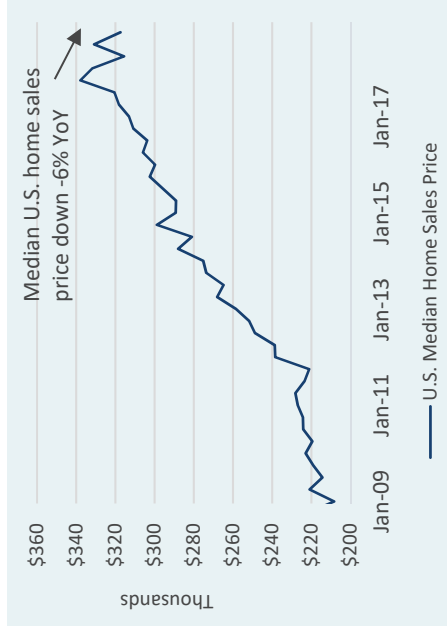
Source: Bloomberg, NAHB, as of 3/31/19 (see appendix)

30-YEAR FIXED MORTGAGE RATE



Source: FRED, as of 3/31/19

MEDIAN U.S. HOME SALES PRICE



Source: FRED, as of 12/31/18

International economics summary

- Global growth expectations for the next two years were revised materially lower in Q1. The OECD's global GDP growth forecast for 2019 and 2020 fell from 3.5% to 3.3%, and from 3.5% to 3.4%, respectively.
- In March, negotiations resumed between high-level U.S. and Chinese trade delegations. The dialogue was viewed as constructive, and optimism picked up for some sort of formal trade resolution being reached in the near-to-intermediate future, although the two sides have yet to agree on a formal timeline.
- The German Manufacturing PMI fell from 47.6 to 44.1 in March, falling further into the contractionary territory below 50. New orders and export sales data came in weaker than expected which contributed to a more pessimistic outlook for German manufacturing activity.
- The House of Commons in the British Parliament briefly took control of their government's legislative agenda, but failed to reach a majority vote on a path forward. On April 10th, British Prime Minister Theresa May and the European Council agreed to extend the Brexit deadline from April 12th to October 31st.
- The spread between the JP Morgan Global Services and Manufacturing PMIs rose to 3.1 in March. Last March, the spread was at 0.0, indicating that over the past year the outlook for global manufacturing activity has weakened relative to the outlook for global services activity. Typically, services activity is more resilient to a worsening economic backdrop.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.0% 12/31/18	1.5% 2/28/19	3.8% 3/31/19
Eurozone	1.1% 12/31/18	1.4% 3/31/19	7.8% 2/28/19
Japan	0.3% 12/31/18	0.2% 2/28/19	2.3% 2/28/19
BRICS Nations	5.8% 12/31/18	2.4% 3/31/19	5.3% 12/31/18
Brazil	1.1% 12/31/18	3.9% 2/28/19	12.2% 3/31/19
Russia	2.7% 12/31/18	5.3% 3/31/19	4.9% 2/28/19
India	7.2% 12/31/18	2.6% 2/28/19	8.5% 12/31/17
China	6.4% 12/31/18	1.5% 2/28/19	3.8% 12/31/18

International economics

Global economic growth trended lower over the past quarter. Most of the world experienced a deceleration in inflation, while labor markets showed moderate improvement. Global central banks took a more dovish stance in response to these conditions, which contributed to a sharp decline in global sovereign yields in March.

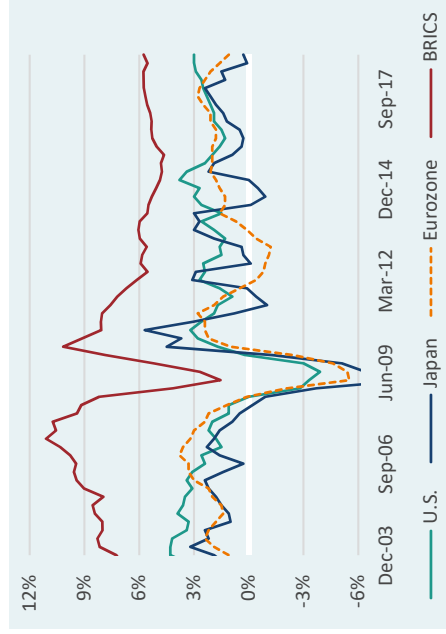
structural issues which are important to monitor, though perhaps not immediate in nature. As the ECB begins to discuss a tiered, sub-zero interest rate regime, the inability of EU members to pursue their own fiscal and monetary policies could prolong economic slowdowns and undermine subsequent recoveries.

Global growth forecasts were revised lower

Real GDP in the Eurozone decelerated in Q4 from 1.6% to 1.1% YoY as the region continued to show weakness. Uncertainty surrounding Brexit, and the dependence of European economies on China likely factored into the regional outlook. Additionally, Europe faces significant

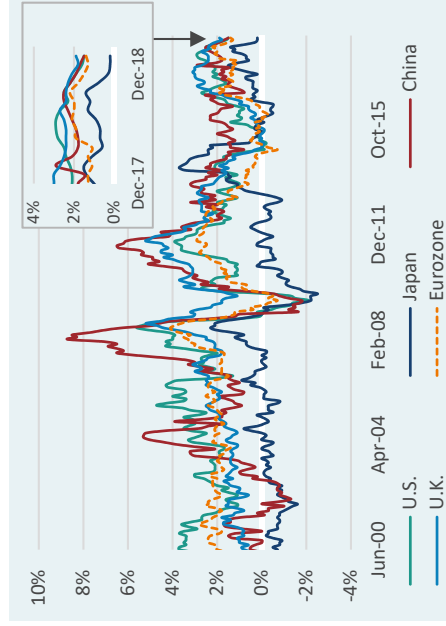
Following the failure of the House of Commons in British Parliament to agree on a Brexit strategy through “indicative votes”, Prime Minister Theresa May negotiated an extension of the Brexit deadline from April 12th to October 31st.

REAL GDP GROWTH (YOY)



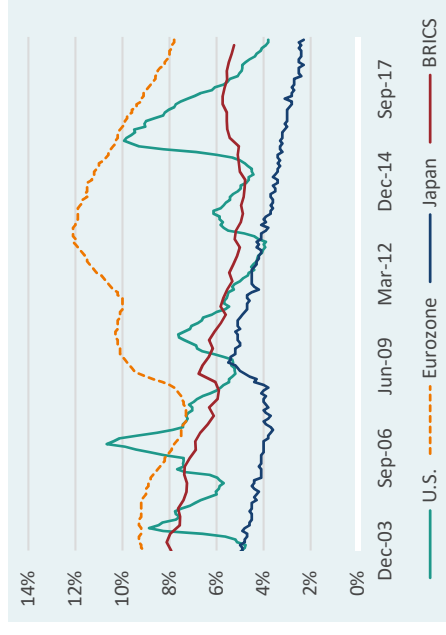
Source: Bloomberg, as of 12/31/18

INFLATION (CPI YOY)



Source: Bloomberg, as of 2/28/19

UNEMPLOYMENT RATE



Source: Bloomberg, as of 2/28/19 or most recent release

Fixed income rates & credit

Interest rate environment

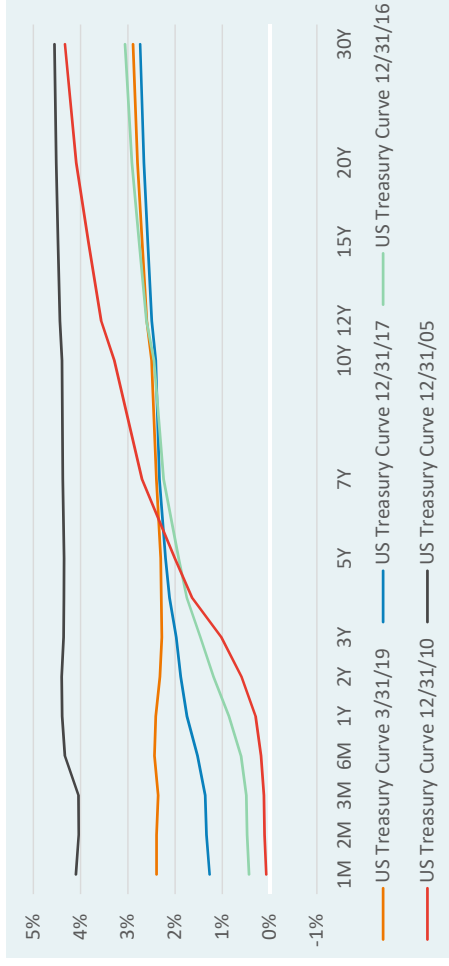
- The Federal Reserve held the fed funds rate unchanged over the quarter, and communicated a much more dovish stance on monetary policy amid slower growth expectations and stable inflation near 2%.
- Fed officials lowered their collective expectations for rate hikes in 2019 from two to zero, and announced that the balance sheet unwind would conclude in September, much earlier than previously anticipated.
- More dovish expectations for monetary policy and concerns over economic growth likely helped push long-term Treasury yields lower. The 10-year yield fell 28 bps to just above 2.4%.
- Falling long-term yields and stable short-term yields led to a brief inversion of the Treasury curve between the 10-year and 3-month yields.
- While widely considered a bearish signal for the economy and risk markets, the timing between curve inversion and bearish economic and market environments has varied widely. Additionally, Fed asset purchases of long-term Treasuries has artificially lowered yields and muddled the information conveyed by the yield curve.
- The ECB also pivoted to a more dovish stance as officials announced that deposit rates will be on hold through at least the end of the year.
- The 10-year German bund yield dipped back into negative territory for the first time since late 2016.
- Emerging market local bonds offer attractive yields relative to developed markets, even after adjusting for inflation. The JPM GBI-EM Index yielded 7% at the end of March.

Area	Short Term (3M)	10-Year
United States	2.39%	2.41%
Germany	(0.53%)	(0.07%)
France	(0.54%)	0.32%
Spain	(0.40%)	1.10%
Italy	(0.20%)	2.49%
Greece	0.87%	3.73%
U.K.	0.80%	1.00%
Japan	(0.17%)	0.08%
Australia	1.68%	1.77%
China	2.08%	3.07%
Brazil	6.31%	8.97%
Russia	7.35%	8.41%

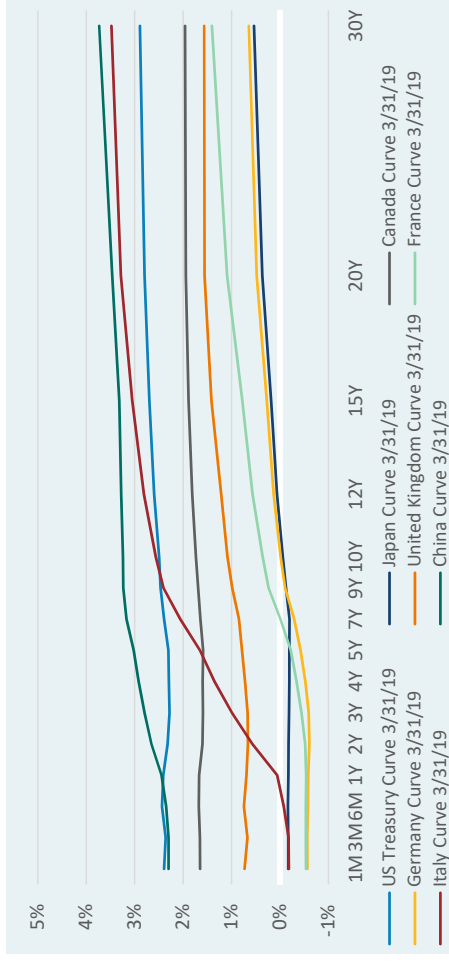
Source: Bloomberg, as of 3/31/19

Yield environment

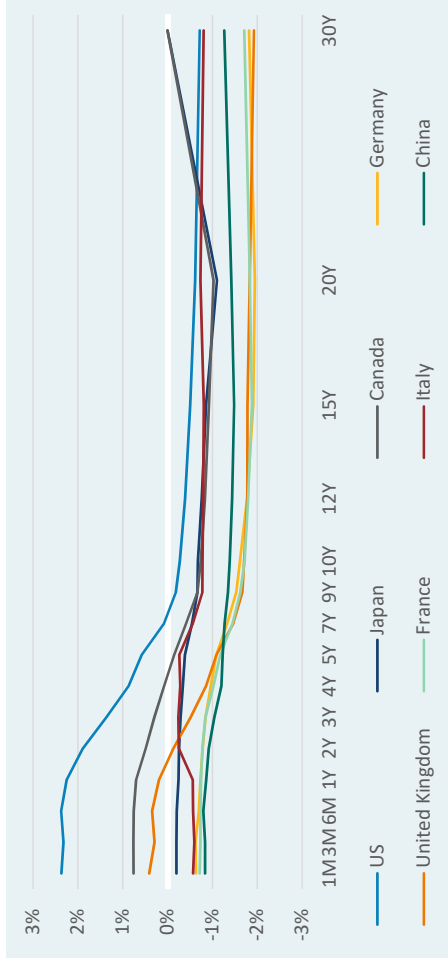
U.S. YIELD CURVE



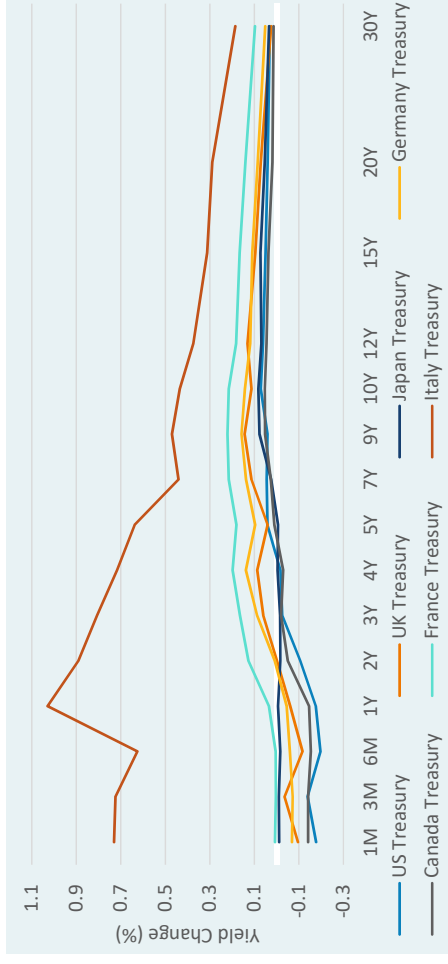
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/19

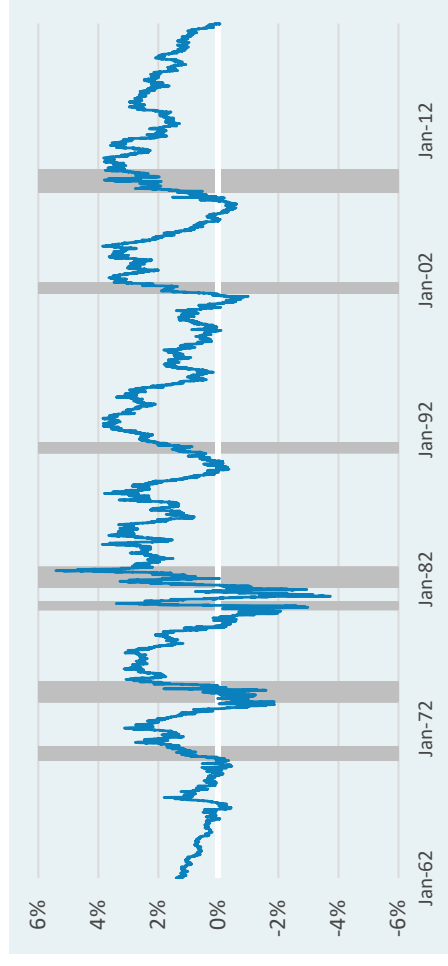
Yield curve inversion

The drop in long-term Treasury yields following the Fed meeting in March briefly caused the yield curve to invert, meaning that short-term yields (3-month) were higher than long-term yields (10-year). Investors have widely considered yield curve inversion as a sign that the economic cycle is coming to an end. At a high level, the shape of the yield curve tells investors something about what the market is expecting. All else equal, when the curve is steep, markets are expecting a positive growth environment and when the curve is flat or inverted, markets are expecting a negative growth environment.

While we have previously noted that the wide range of timing between curve inversion and recession has made the signal less useful, it is also important to note that the Fed's purchases of Treasuries has artificially lowered long-term yields. Therefore, Fed policy has obscured the market's expectation of future growth that is embedded in the shape of the yield curve. Although we are always wary of "this time is different" arguments, we believe that the recent yield curve inversion is not signaling an imminent recession.

The information conveyed by the shape of the yield curve has been obscured by Fed asset purchases

10-YEAR MINUS 3-MONTH TREASURY YIELD CURVE



Source: Bloomberg, as of 3/31/19, recessions are shaded with the dates defined by NBER

TIME FROM CURVE INVERSION TO THE NEXT RECESSION

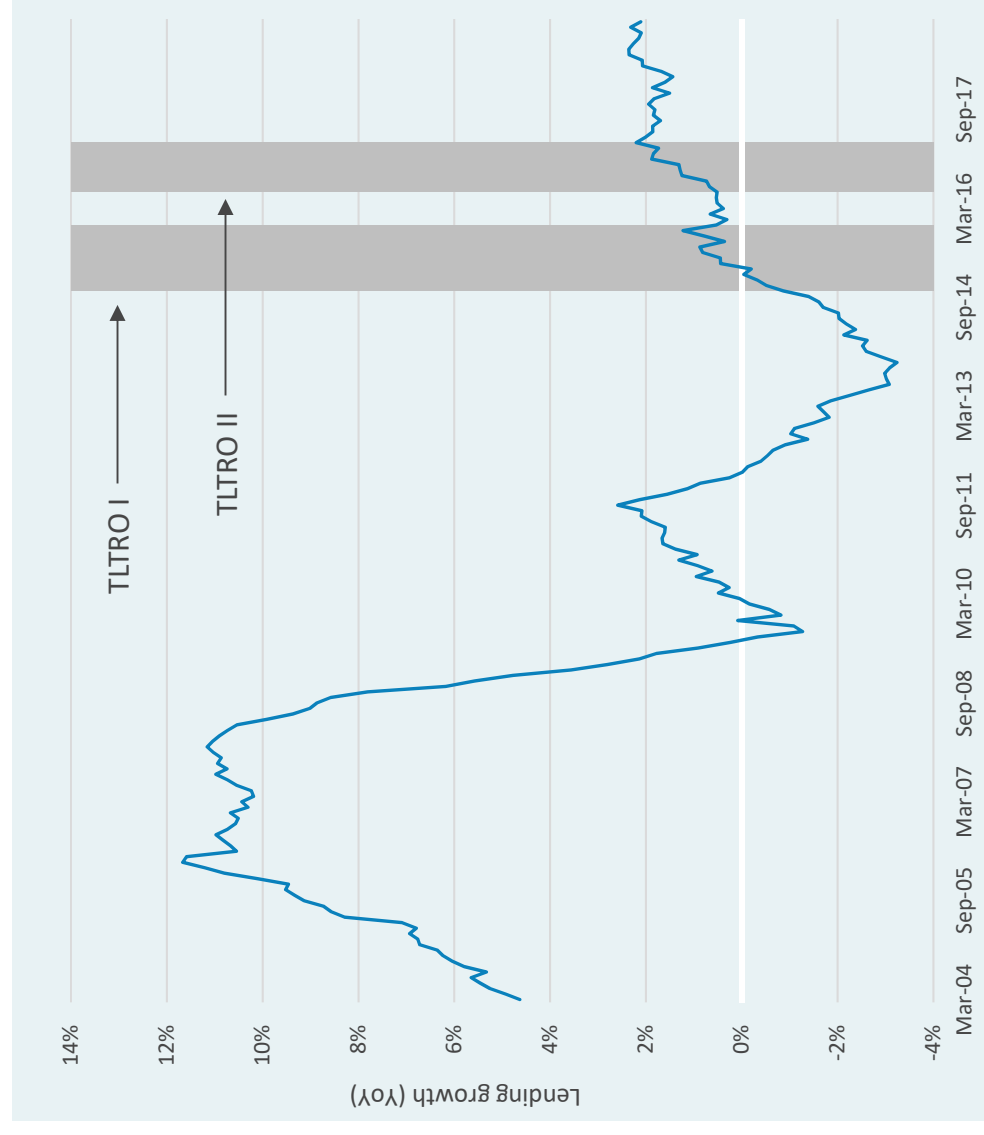
Start of Curve Inversion	Beginning of Next Recession	Months From Inversion to Recession
Jan-66	Dec-69	23
Dec-68	Dec-69	12
Jun-73	Nov-73	5
Nov-78	Jan-80	14
Oct-80	Jul-81	9
Mar-89	Jul-90	15
Jul-00	Mar-01	8
Jan-06	Dec-07	23
Average		13.6

Source: Bloomberg, recession dates defined by NBER

Eurozone monetary policy

- The European Central Bank (ECB) followed the Fed by pivoting to a more dovish monetary policy stance amid expectations of slower economic growth and muted inflation. ECB officials' latest growth forecasts show they expect only 1.1% real GDP growth in 2019.
- To counteract a potential growth slowdown, the ECB announced a third round of targeted long-term refinancing operations (TLTRO) and that it will keep deposit rates on hold through at least the end of the year. In the TLTRO program, the ECB gives out cheap short-term financing to banks with incentives for them to lend this money out to corporations and households.
- A total of €739 billion were lent out in the first two rounds of TLTROs, which helped lead to a modest pick up in bank lending growth. While this round of TLTROs may lead to banks rolling over previous loans, it is not likely to result in a significant increase in lending as the Eurozone already has ample liquidity and credit demand remains weak.
- Despite these recent steps, the ECB has limited ability to effectively ease. This puts the region at risk of a self-reinforcing downturn if conditions were to worsen, particularly since countries also have little room to provide fiscal stimulus.

EUROZONE BANK LENDING TO HOUSEHOLDS & CORPORATES



Source: Bloomberg, as of 1/31/19

Credit environment

High yield bond yields fell in March, impacted by the Fed's pause in the hiking cycle. Anticipation of an easier policy, which could potentially lengthen the credit cycle, has strengthened sentiment for risk assets. BB-rated bonds outperformed both CCC- and B-rated bonds in March. High yield bonds returned 7.3% YTD which is the strongest start to a calendar year on record for the asset class since 2003.

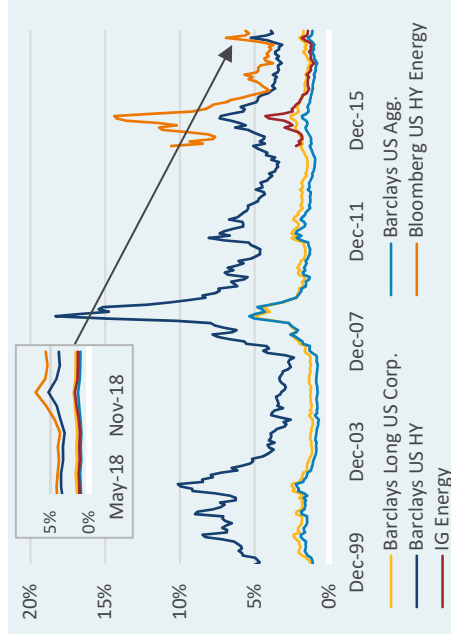
Leveraged loan prices declined during March as the asset class deals with outflows and a pause in the Fed's hiking cycle. The outflows have exceeded \$30 billion over the past two quarters

which represents 20% of assets under management, according to J.P. Morgan. Leveraged loans have returned 3.8% YTD, underperforming both high yield and investment grade bonds.

Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with a jump in credit spreads and steep credit losses. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted. Within credit, higher quality and more liquid assets appear most attractive.

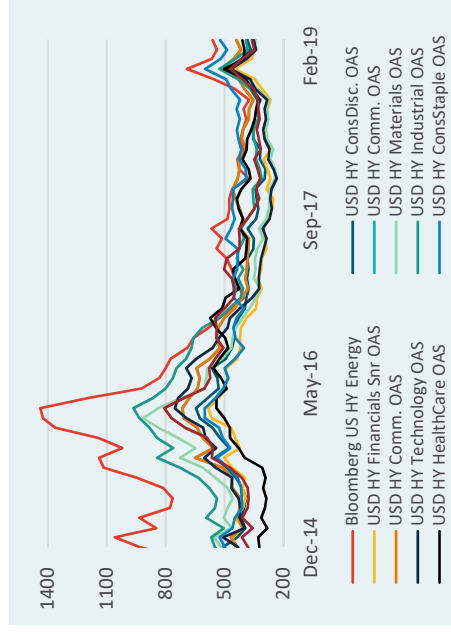
Credit spreads widened due to concerns over slowing global growth and broader risk-off behavior

SPREADS



Source: Barclays, Bloomberg, as of 3/31/19

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 3/31/19

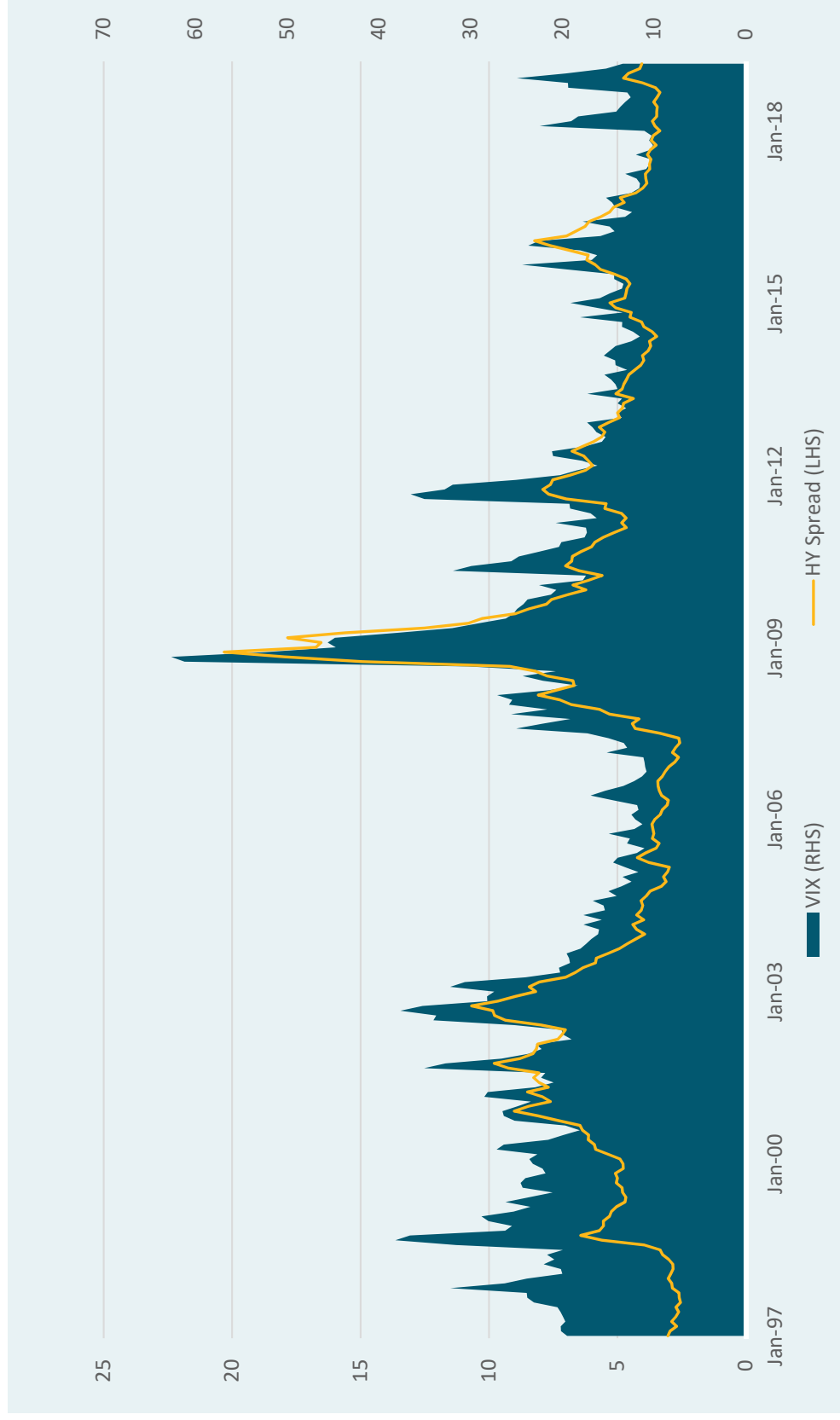
Market	3/31/19	3/31/18
Long U.S. Corp	1.7%	1.5%
U.S. Agg Corp	1.2%	1.1%
U.S. High Yield	3.9%	3.5%
U.S. Bank Loans*	4.4%	3.9%

Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/19

*Discount margin (4-year life)

Credit is sensitive to equity volatility

HIGH YIELD BOND SPREADS & VOLATILITY



When volatility rises, higher risk credit typically experiences losses

Source: Cboe, FRED, as of 3/31/19

Default & issuance

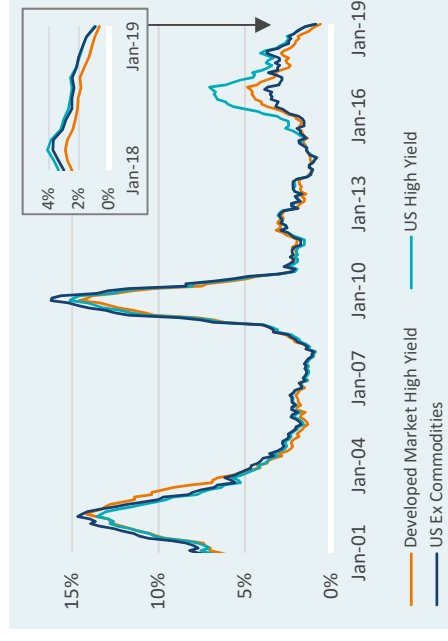
Default activity has been low and stable in the U.S. credit market, despite volatility in spreads. The par-weighted default rate declined to 0.9% and remains below its long-term average range of 3.0-3.5%. For loans, the par-weighted default rate at the end of March was 1.0%, its lowest level since April 2012 (0.8%), according to data from JPMorgan. Sectors that have been more prone to defaults include: consumer, retail, telecom, and automotive. The 2018 loan par-weighted default rate was 1.6%.

Senior loan and high yield markets have essentially

recovered from a wave of defaults seen in 2015-2016 that were generated from the energy and metals/mining sectors. High yield bond recovery rates have improved significantly since that time.

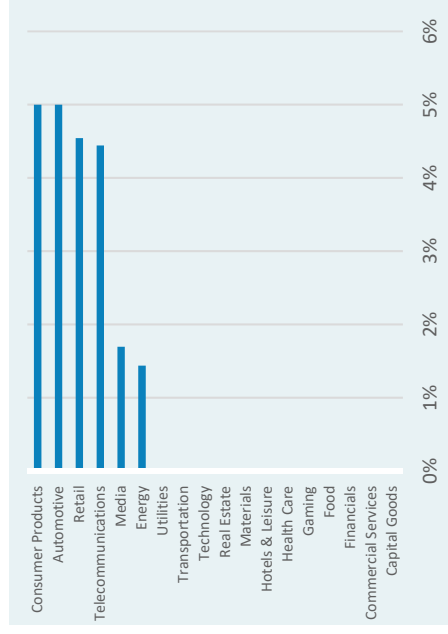
Gross high yield issue activity increased in March to the highest level seen since March of 2018. Loan market issuance is significantly behind last year's pace, likely influenced by a lower demand for floating rate securities now that the Fed has paused monetary tightening.

HY DEFAULT RATE (ROLLING 1-YEAR)



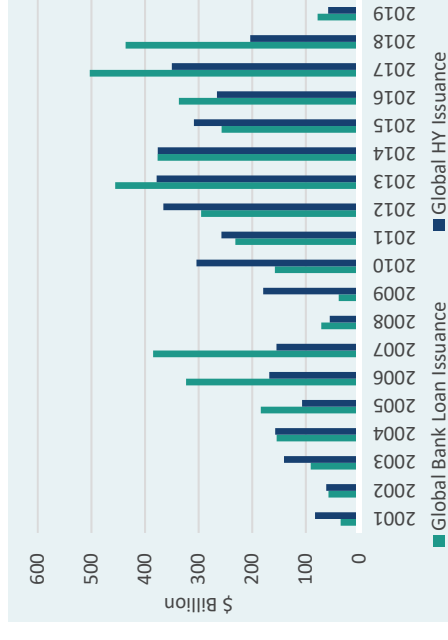
Source: BofA Merrill Lynch, as of 3/31/19

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



Source: BofA Merrill Lynch, as of 3/31/19 – par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 3/31/19

Private credit

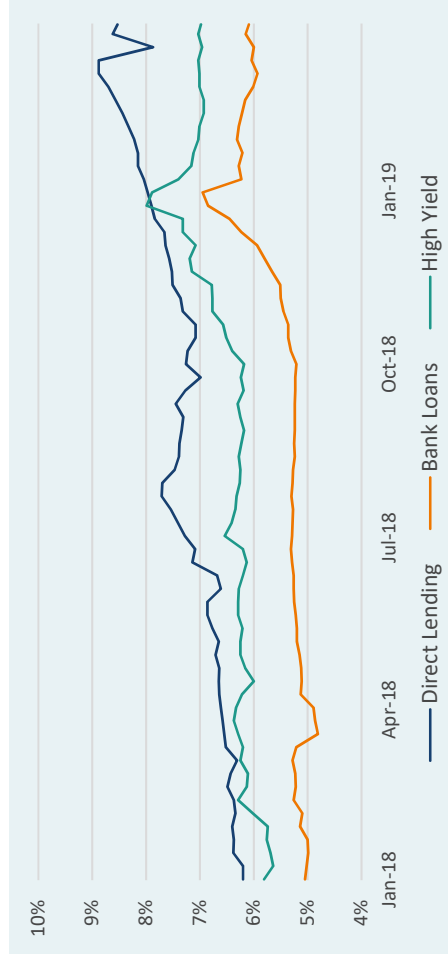
Fundraising in the private credit market slowed through year-end 2018. A total of 163 funds closed on \$110 billion during the year, which was down from 189 funds and \$129 billion in 2017. Direct lending, mezzanine, and distressed debt were the most active strategies, raising \$45 billion, \$31 billion, and \$21 billion, respectively. Even with slower fundraising, dry powder in private credit is at record levels. Private debt dry powder at the end of 2018 was \$280 billion, which beat the 2017 record of \$246 billion.

Yields for loans made by direct lending funds finished March at 8.5%. While yields have been aided by slightly higher LIBOR rates, which grew from 2.3% to 2.6% year-to-date, spreads increased from 4.3% to 5.9% year-to-date.

Credit spreads expanded in the first quarter, along with the debt multiples for borrowers. Borrowers now average debt totaling 5.9x EBITDA at the end of March, a 0.4x increase from one year prior.

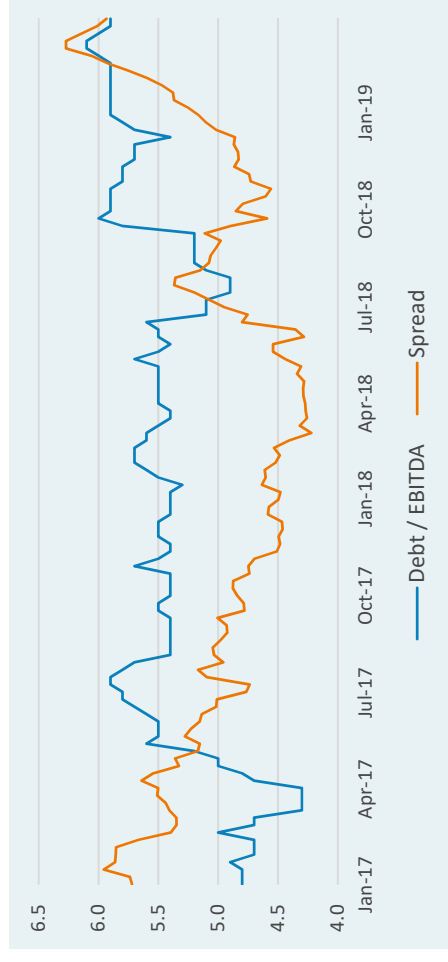
Fundraising slowed in private credit last year

YIELDS FOR DIRECT LENDING, BANK LOANS & HIGH YIELD



Source: The Lead Left, Middle Market, EBITDA < \$50MM; S&P LSTA US Leveraged Loan Index; ICE BofAML US High Yield Master II, as of 3/31/19

DIRECT LENDING LEVERAGE MULTIPLES (DEBT / EBITDA) & SPREAD



Source: The Lead Left, Middle Market Credit Stats, as of 3/31/19

Equity

Equity environment

- U.S. equities experienced a 13.6% total return (S&P 500 Index) in Q1, nearly a mirror image of Q4 2018. The first quarter has indeed been one of the strongest quarters recently, but was simply a bounce back in lost performance from the prior quarter. At the end of March, the S&P 500 price index was just 3.2% below its high watermark that was reached in September.
- Currency movement had little impact on unhedged international equity over the quarter, though currencies on a 1-year basis have had a substantially negative effect. An unhedged investment in international developed equities (MSCI EAFE) lost 8.9% of portfolio value due to currency movement.
- First quarter earnings growth for S&P 500 companies is expected to be negative for the first time since Q2 2016. If corporate earnings expectations continue to be downgraded, this will likely hold back markets around the world. The greatest determinant of medium and long-term equity performance is typically the underlying trend of corporate earnings.
- The risk-on quarter drove small cap equities forward. The Russell 2000 Index posted a 14.6% return, compared to the 13.8% return of the Russell 1000 Index.
- Value equities underperformed growth equities over the quarter (Russell 1000 Value +11.7%, Russell 1000 Growth +16.0%). Performance over the quarter reversed value's gains from Q4 2018.
- After spiking in the fourth quarter, U.S. equity volatility returned to muted levels.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	13.8%		8.7%	
US Small Cap (Russell 2000)	14.6%		2.1%	
US Large Value (Russell 1000 Value)	11.7%		4.9%	
US Large Growth (Russell 1000 Growth)	16.0%		12.3%	
International Large (MSCI EAFE)	10.0%	11.3%	(3.7%)	5.2%
Eurozone (Euro Stoxx 50)	10.6%	12.9%	(6.3%)	5.8%
U.K. (FTSE 100)	9.5%	10.1%	(0.2%)	9.6%
Japan (NIKKEI 225)	6.8%	7.6%	(3.4%)	2.9%
Emerging Markets (MSCI Emerging Markets)	9.9%	9.8%	(7.4%)	(2.1%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/19

Domestic equity

U.S. equities experienced a 13.6% total return (S&P 500 Index) in the first quarter, rebounding from the sharp sell-off in the prior quarter. At the end of March, the S&P 500 price index was just 3.2% below its high watermark that was reached in September. The bounce back in equity prices was driven by better than expected/feared Q1 corporate earnings, improving sentiment toward a U.S.-China trade deal, and the Fed's pivot to a more patient approach to monetary policy. The fall and subsequent rise in equities was primarily reflected in valuation changes. After dropping to a low of 13.6 in December, the forward 12-month P/E ratio on the S&P 500 finished the

quarter at 16.7, essentially unchanged over the past six months.

Now 10 years removed from the bottom of the financial crisis, it is worth noting that U.S. equities have experienced one of their best decades of performance ever. The S&P 500 had a compound price return of 14.2% per year, and over 75% of this was due to profit margin and valuation expansion. With both of these measures at above average levels, we do not think that it is reasonable to expect this level of performance to continue moving forward.

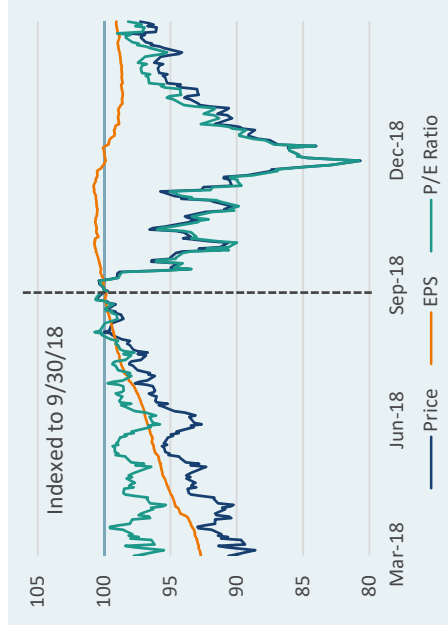
We maintain a neutral view on U.S. equities

U.S. EQUITIES



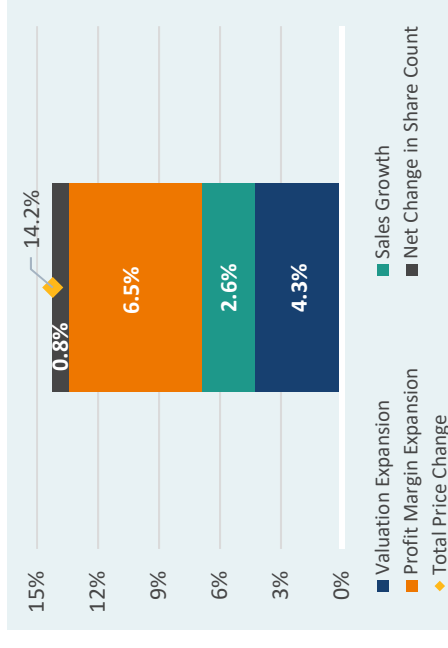
Source: Russell Investments, as of 3/31/19

S&P 500 PRICE MOVEMENT ATTRIBUTION



Source: Bloomberg, as of 3/31/19

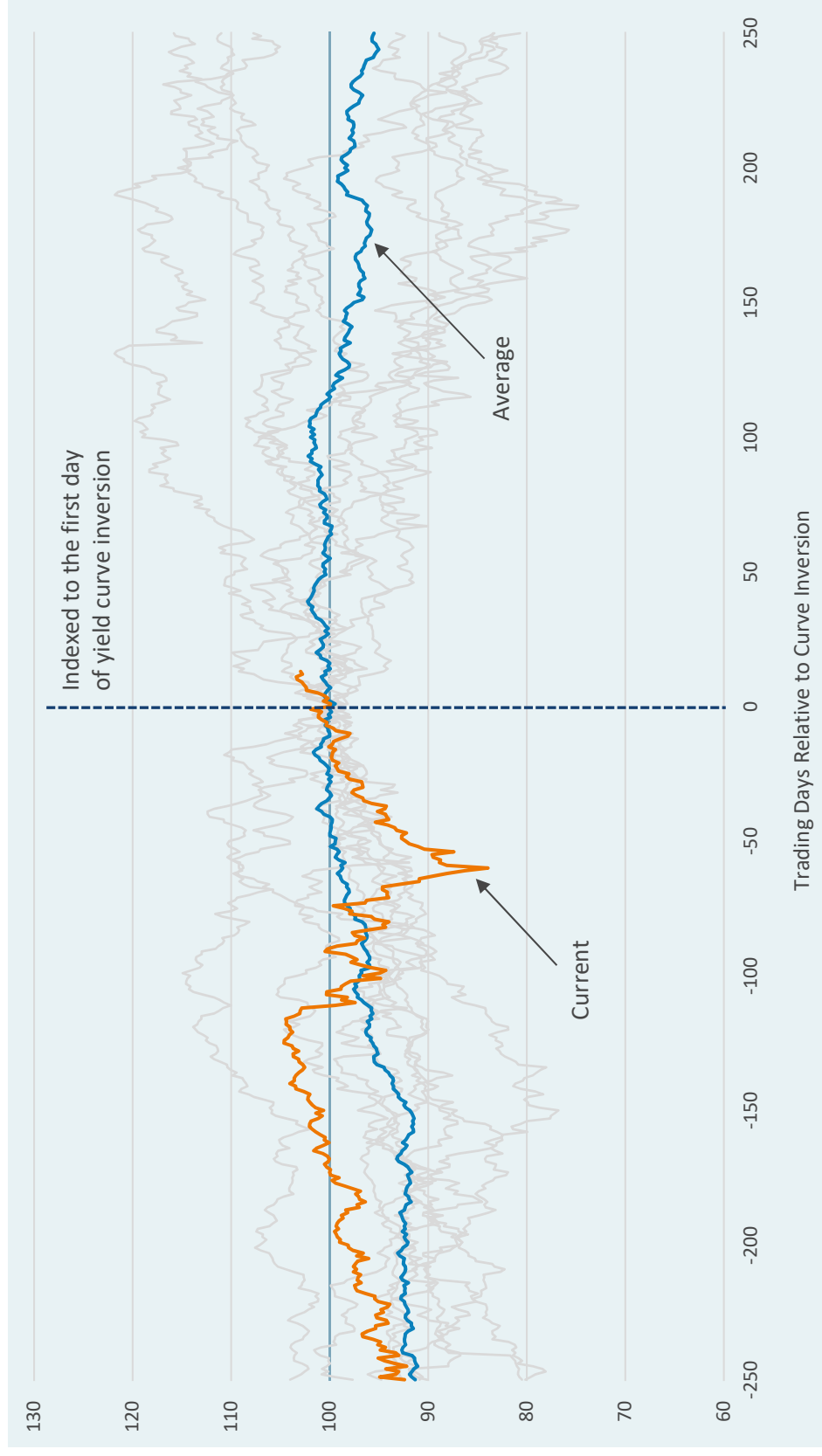
S&P 500 10-YR PRICE RETURN ATTRIBUTION



Source: Verus, Bloomberg, as of 3/31/19

Equity markets and yield curve inversions

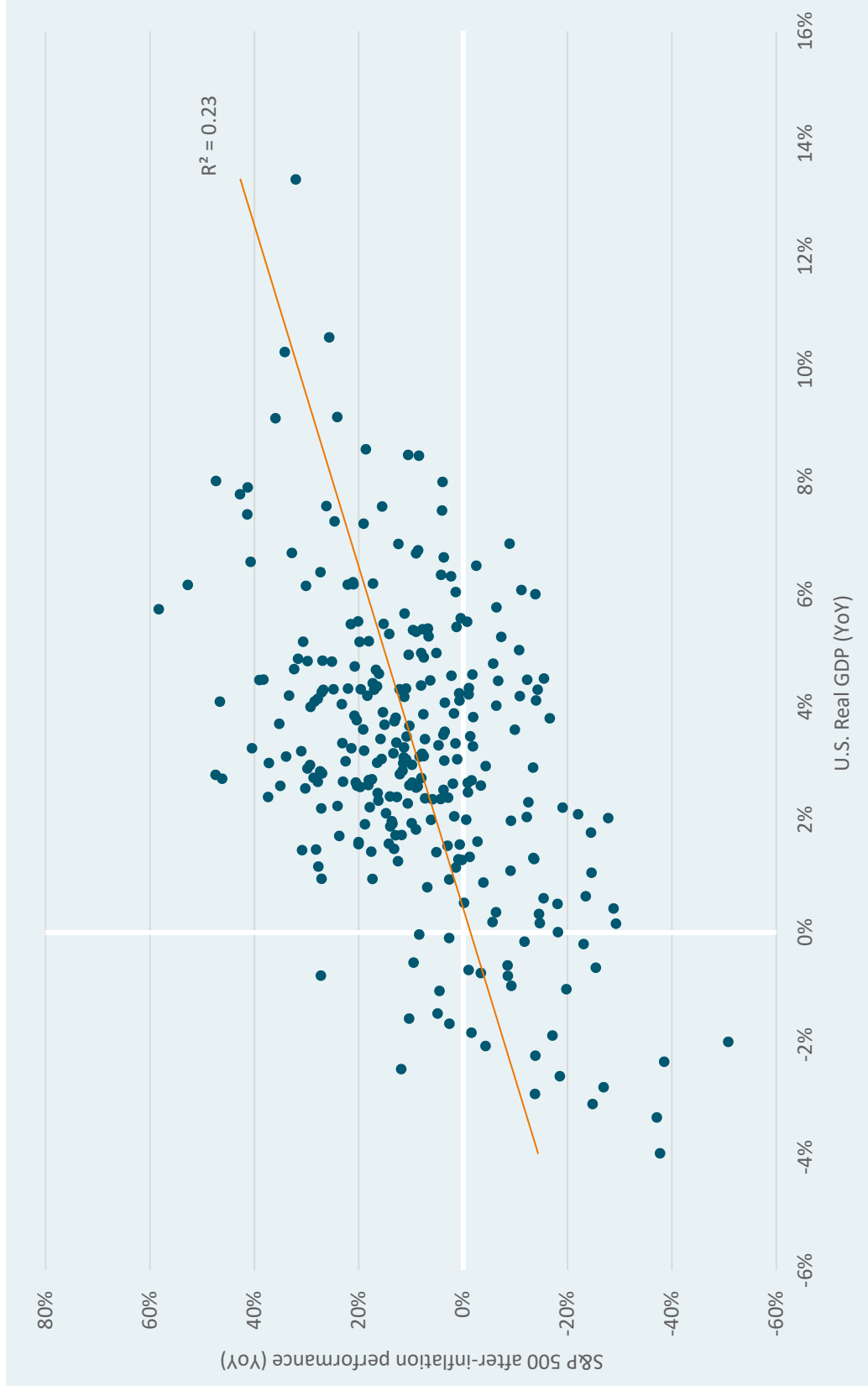
EQUITY PERFORMANCE AROUND CURVE INVERSIONS



Equity performance has varied widely following yield curve inversion

Source: Bloomberg, Verus, as of 3/31/19 – equities are represented by the S&P 500 Index and the yield curve is defined as the difference between the 10-year and 3-month Treasury yield; see page 23 for the dates of yield curve inversion

U.S. equity & the economic cycle



Source: Standard & Poor's, data since 1948

A material short-term relationship exists between equity performance and economic growth

An investor's views on the economy cycle should therefore impact equity positioning

Domestic equity size & style

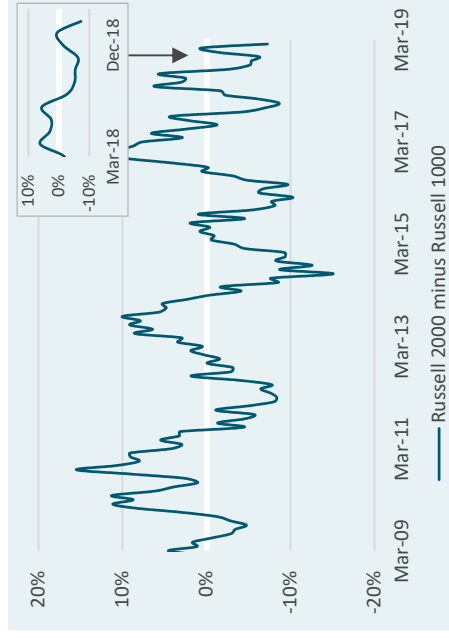
Small cap equities (Russell 2000 +14.6%) slightly outperformed large cap equities (Russell 1000 +14.0%) during the quarter. Meanwhile, growth stocks outperformed value stocks by a wide margin (Russell 1000 Growth +16.1% vs. Russell 1000 Value +11.9%).

the top performing sector, continued to deliver outsized returns (+19.9%).

Both the small cap premium and value premium have struggled to deliver positive risk premiums over the past 10 years. It can be difficult to endure longer periods of factor underperformance, but similar to the equity premium in general, these periods do exist and investors should expect this on occasion.

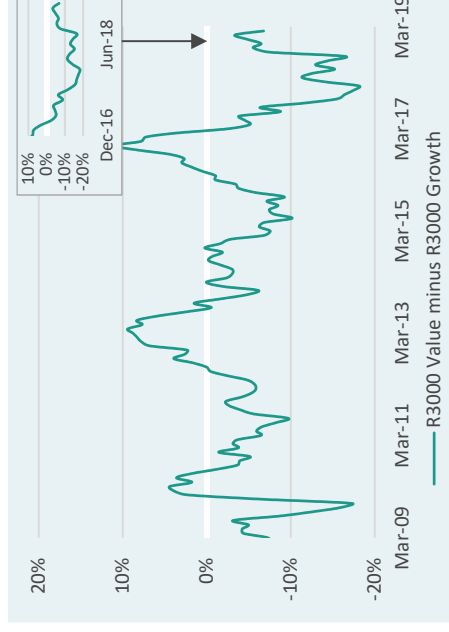
The impact of sector performance on the value premium was more nuanced in Q1, as Materials (+10.3%) and Financials (+8.6%) underperformed the overall index (S&P 500 +13.6%), but Energy (+16.4%) outperformed. Information Technology,

SMALL CAP VS LARGE CAP (YOY)



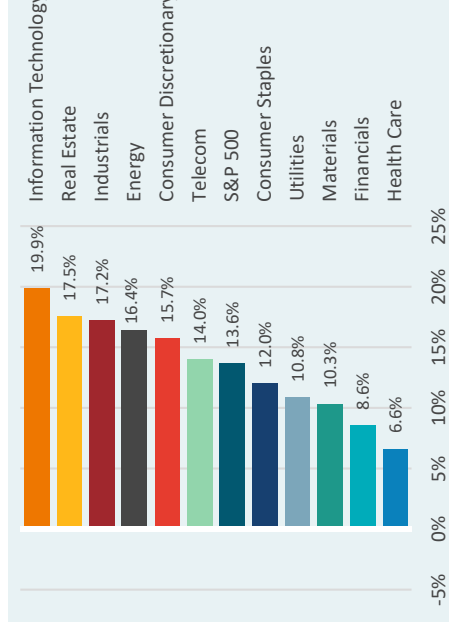
Source: FTSE, as of 3/31/19

VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/19

Q1 S&P 500 SECTOR RETURNS



Source: Morningstar, as of 3/31/19

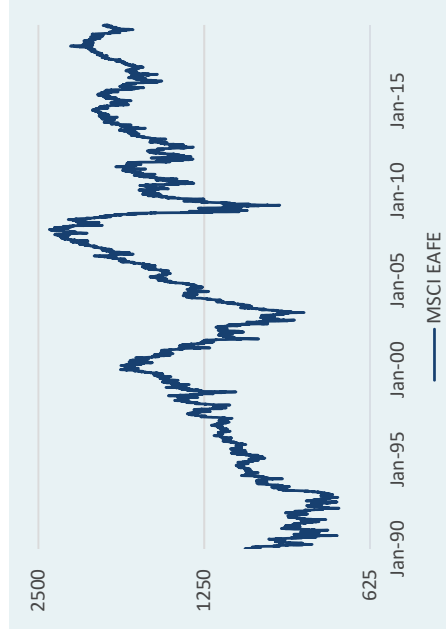
International developed equity

Like U.S. equities, international developed equities erased most of the losses they suffered in the prior quarter. After posting a return of -12.5% in Q4, the MSCI EAFE Index returned +10.2% in Q1. Currency losses were a mild detractor from unhedged U.S. dollar performance. On a currency hedged basis, EAFE equities returned 11.3%. From a country perspective, Swiss, French and UK equities outperformed, while Japanese and German equities lagged the overall index. While most markets are back near record highs, German equities (MSCI Germany) finished the quarter 17% below the previous high watermark. Underperformance in German equities has likely been influenced by a greater

sensitivity to global growth and trade as well as concerns over a slowing domestic economy.

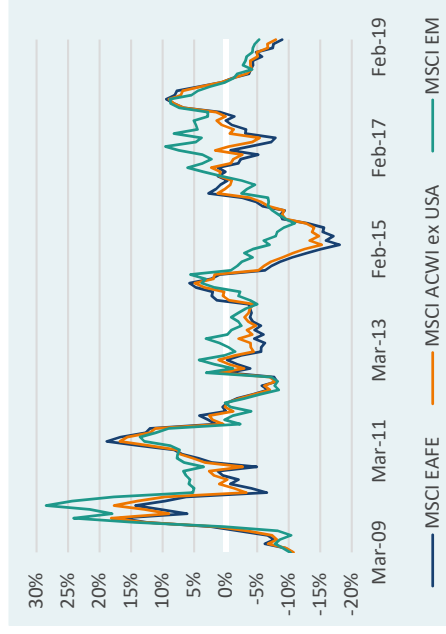
International developed equity markets are still cheap on both an absolute and relative basis at 13.3x forward earnings, but we believe there are good reasons for this pricing in certain markets. Within equity allocations, we are pessimistic on EAFE equities primarily due to a negative view on the Eurozone. We believe slowing economic growth, rising political risks, and the lacking ability of the ECB to meaningfully ease policy presents material headwinds to equity performance.

INTERNATIONAL DEVELOPED EQUITIES



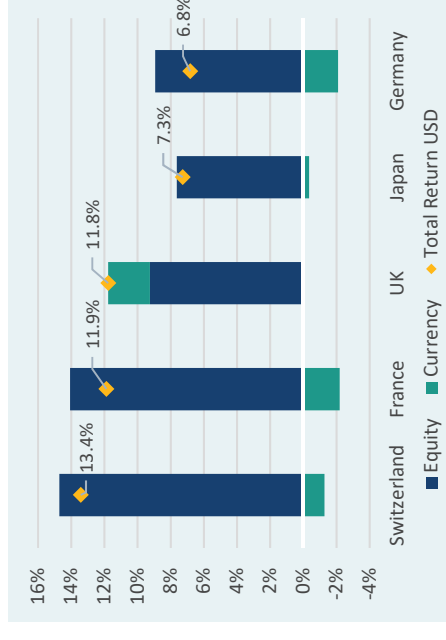
Source: MSCI, as of 3/31/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/19

Q1 COUNTRY PERFORMANCE



Source: MSCI, largest five country exposures shown above

Emerging market equity

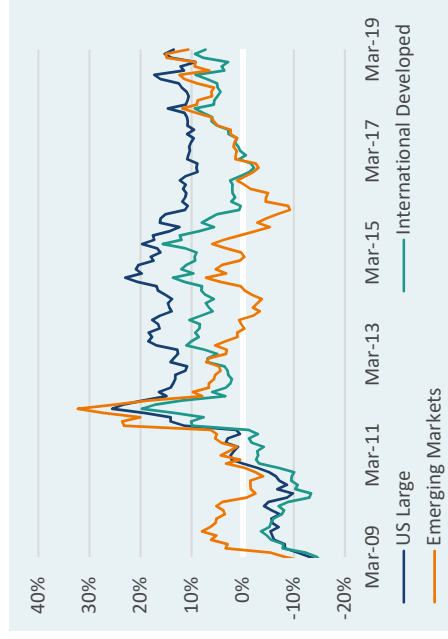
Emerging market equity performance was in-line with international developed markets in the first quarter, while U.S. equities outperformed. Currencies in these markets continued to show stability (MSCI EM +9.9%, MSCI EM Hedged +9.8%). Business sentiment across emerging market economies indicates expanding conditions, and fears of a sharp China slowdown have subsided. Moderating conditions may bolster emerging market returns throughout the year.

Equity multiples rebounded in the first quarter and are near

the long-term average. The divide between domestic and emerging equities remains wide.

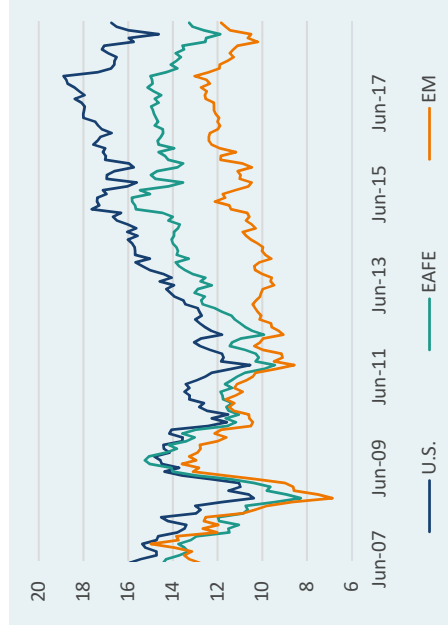
Decelerating global growth and rising probability of recession do present unique risks to emerging markets, as these markets typically exhibit a higher beta during market downside and upside moves. However, emerging markets can also deliver robust performance in times of moderate growth and easy monetary policy when investors seek growth and higher yields.

EQUITY PERFORMANCE (3-YR ROLLING)



Source: Standard & Poor's, MSCI, as of 3/31/19

FORWARD P/E



Source: MSCI, as of 3/31/19

PURCHASING MANAGERS' INDEX (PMI)

	18-Dec	19-Jan	19-Feb	19-Mar
Manufacturing				
Global	51.4	50.8	50.6	50.6
Developed	52.3	51.8	50.4	50.0
US	54.3	56.6	54.2	55.3
EM	50.3	49.5	50.6	51.0
Services				
Global	53.0	52.6	53.3	53.7
Developed	52.8	52.5	53.7	53.7
US	58.0	56.7	59.7	56.1
EM	53.6	52.9	52.1	53.6

Source: Markit, Institute for Supply Management (ISM)

Equity valuations

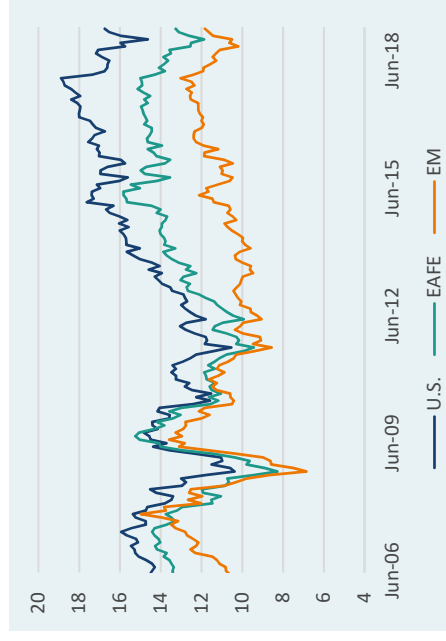
The fall and subsequent rise in global equity prices was primarily driven by changes in valuations. The recovery in Q1 brought most broad equity market valuations back to September 2018 levels, but below recent cycle highs. In the U.S., equities commanded a forward P/E multiple of 16.7x after hitting a multi-year low in December at 14.6x.

International equity valuations also recovered, but are still cheap on a relative basis, particularly when compared to the U.S. At the end of March, the MSCI EAFE and EM Indexes had forward P/E multiples of 13.3x and 11.8x, respectively. U.S. equities currently trade at a 25% forward premium to EAFE

equities, which is the largest gap over the past 15 years. While we believe there are reasons that EAFE equity markets command cheap valuations, particularly in Europe, it is worth noting that barring a significant change in the earnings environment, these markets should have a strong valuation support.

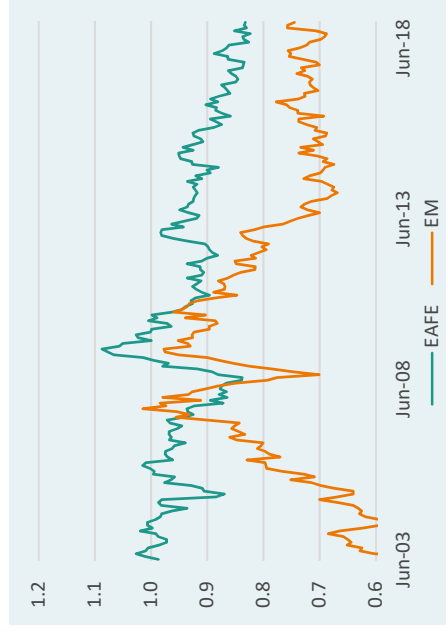
Over the long-term, valuations have had a material relationship with forward equity returns. Given this relationship, we are wary of extrapolating out the recent strong outperformance in U.S. equities.

FORWARD P/E RATIOS



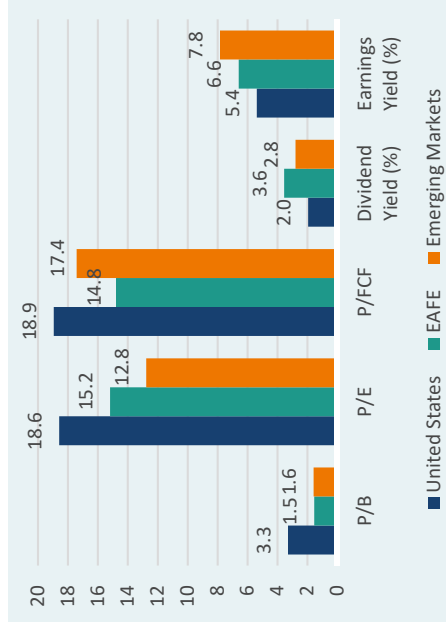
Source: MSCI, as of 3/31/19

P/E MULTIPLES RELATIVE TO U.S. EQUITIES



Source: Verus, MSCI, as of 3/31/19

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 3/31/19 - trailing P/E

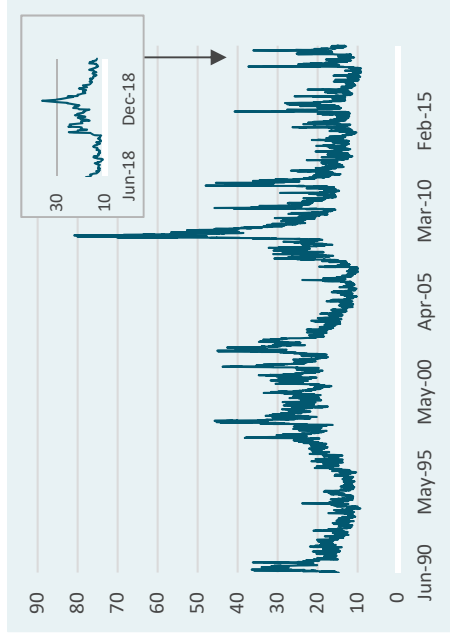
Equity volatility

Equity volatility spiked in the fourth quarter of 2018 but returned to low levels in Q1. The VIX Index ended March at 13.7, which ranked in the 26th percentile dating back to 1990 (volatility was this low 26% of the time). Low volatility is somewhat normal during later stages of the market cycle as the economy expands and business conditions hold steady. However, some investors have questioned the lack of price movement, given seemingly heightened geopolitical and economic risks present around the world today.

One-year volatility picked up after a tumultuous fourth quarter. U.S. markets have shown higher volatility than international markets for the first time since 2008, with a trailing 1 year volatility of 16%.

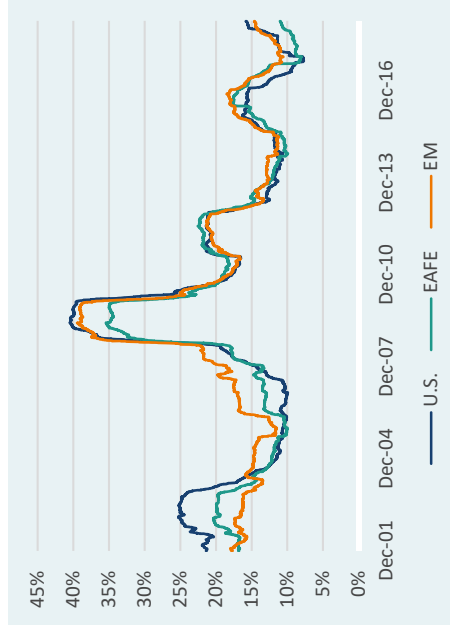
Equity performance around the world in Q1 was nearly a mirror image of 2018 Q4. The first quarter has indeed been one of the strongest quarters of recent decades, but this was mostly a bounceback in lost performance from the prior quarter.

U.S. IMPLIED VOLATILITY (VIX)



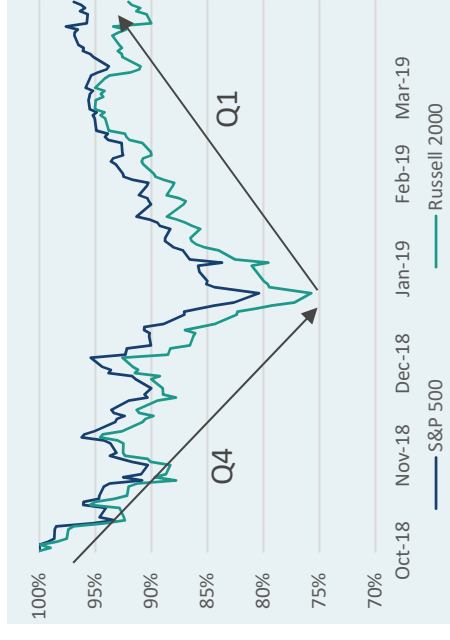
Source: CBOE, as of 3/31/19

REALIZED 1-YEAR ROLLING VOLATILITY



Source: Bloomberg, as of 3/31/19

2019 Q1 PERFORMANCE BOUNCE BACK



Source: Bloomberg, as of 3/31/19

Private equity

Venture capital fundraising and deal volumes continued to set records. \$55 billion of venture capital was raised in the U.S. in 2018, an increase of 63% over the previous year. Similarly, the amount of venture deals were up 58%. Venture deal volume in 2018 of \$131 billion exceeded the record of \$82 billion that was set in 2017.

Buyout activity continued to increase in 2018. Through the fourth quarter, buyouts were up 29% and 5% when measured by dollar value and number of transactions, respectively. The size of the average buyout, \$155 million, increased from \$133 million in 2017. Unlike deal flow, fund capital raising has slowed from the peaks of 2017. Only 186

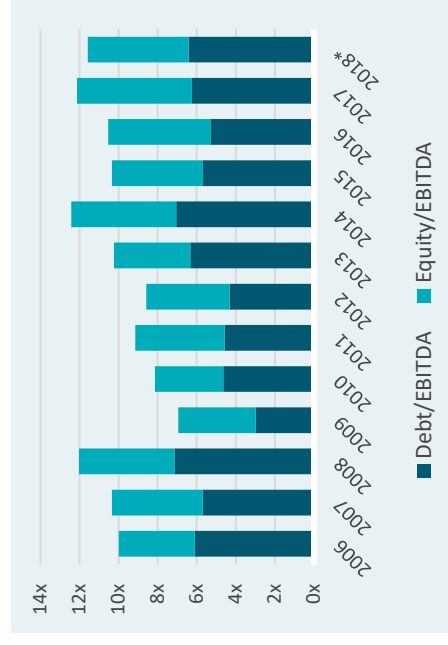
buyout funds representing \$166 billion closed in 2018, down from 235 funds representing a record \$225 billion in 2017.

Buyout multiples decreased slightly from 2017. Average EV/EBITDA was 11.6x through December 31, 2018 (down from 11.9x in 2017) with debt multiples averaging 6.2x through the fourth quarter. Debt as a percentage of transaction value hovered around 54%.

Balancing high deal multiples and a growing number of deals against a slowdown in fundraising, we advocate selectivity in fund investments.

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

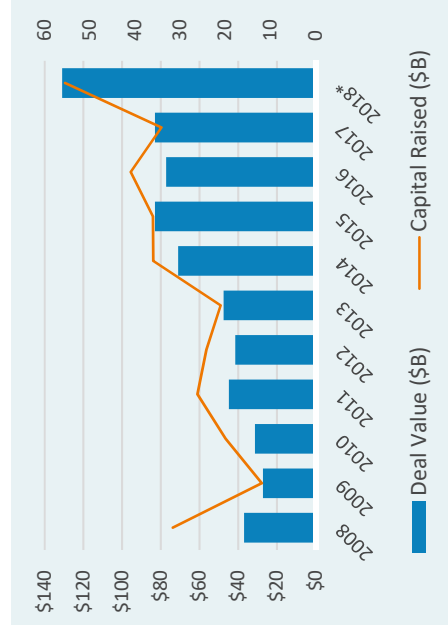
TRANSACTION MULTIPLES



Source: PitchBook, as of 12/31/18

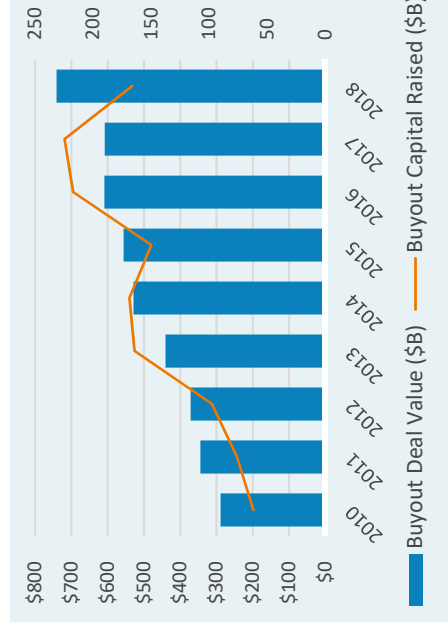
*2018 figures are estimates and are subject to change

VENTURE DEAL VOLUME & FUNDRAISING



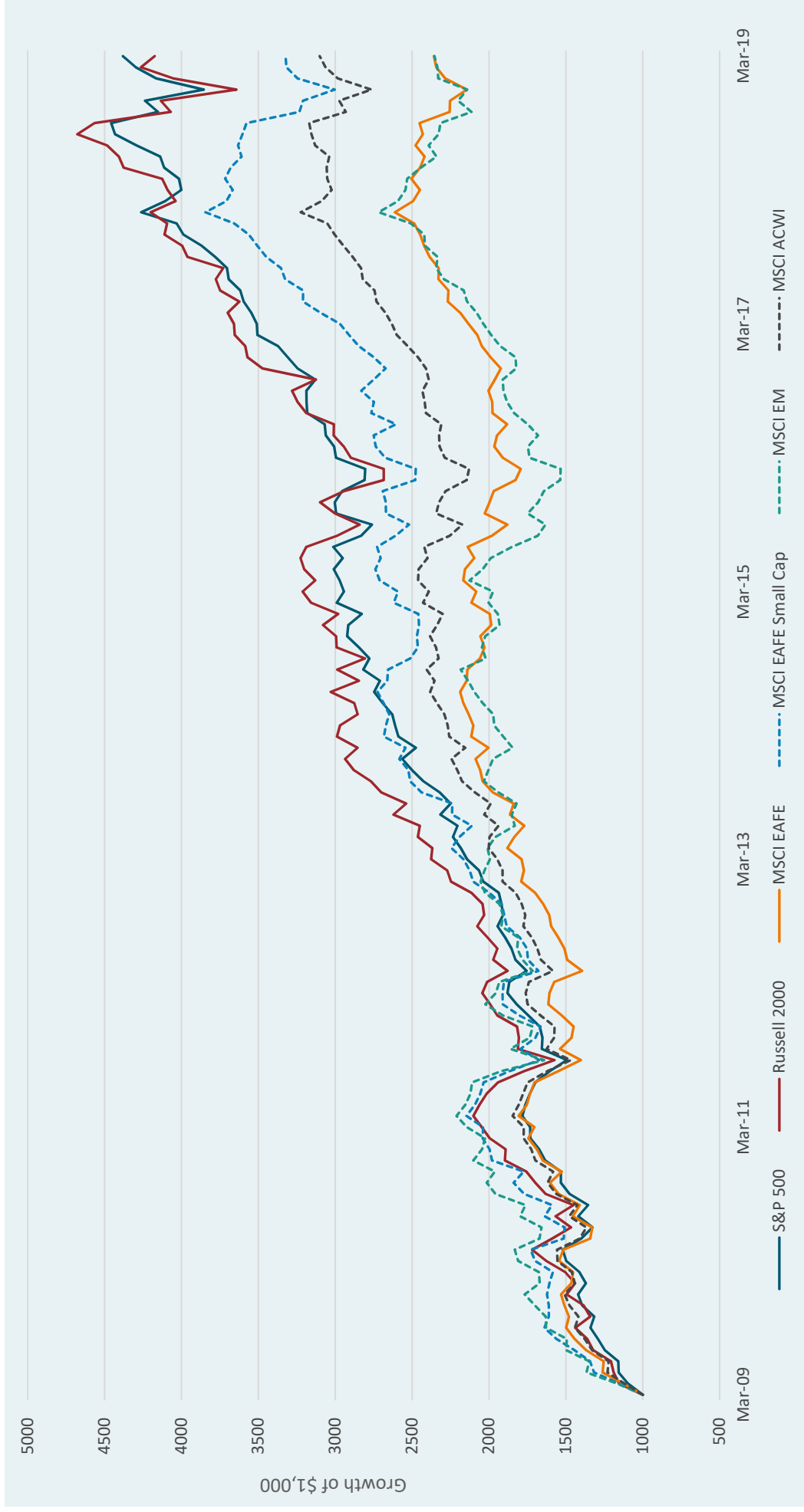
Source: PitchBook, as of 12/31/18

BUYOUTS DEAL VOLUME & CAPITAL RAISED



Source: PitchBook, as of 12/31/18

Long-term equity performance



Source: Morningstar, as of 3/31/19

Other assets

Currency

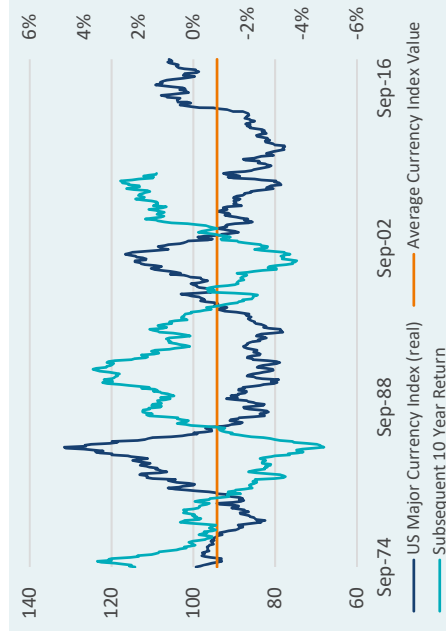
The U.S. dollar failed to gain traction in either direction during the first quarter, and remained near cycle highs. The Major Trade Weighted U.S. Dollar Index fell 0.3% over the period, but was 12.5% above its long-term average dating back to 1974 at the end of March. Expectations for a more accommodative Fed and weaker relative U.S. economic growth (from strong levels in 2018) has led many investors to call for U.S. dollar depreciation, but this has not occurred thus far. This may in part be because other developed central banks have followed the Fed's lead in moving away from monetary tightening.

Emerging market currencies were relatively stable versus the dollar for a second consecutive quarter. The JPMorgan Emerging Market Currency Index gained 0.4%. EM currencies have yet to stage a major comeback after falling more than 15% in the middle of last year.

Despite some high-profile Brexit related volatility in the British pound, the global FX market has been relatively quiet. The trailing 1-year volatility of the Bloomberg Dollar Spot Index was 5.2% at the end of the quarter, the lowest level since 2014.

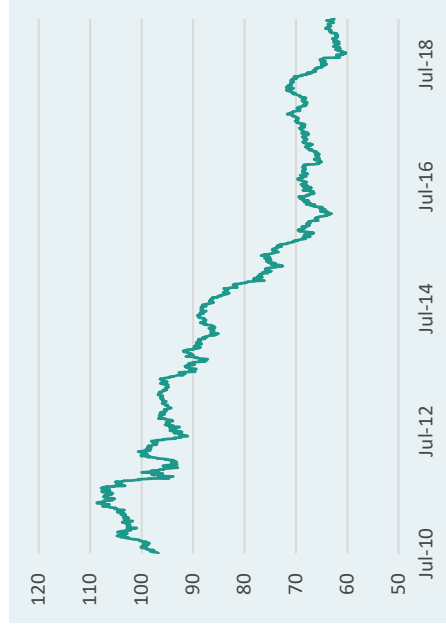
The U.S. dollar remained near a cycle high

U.S. DOLLAR TRADE WEIGHTED INDEX



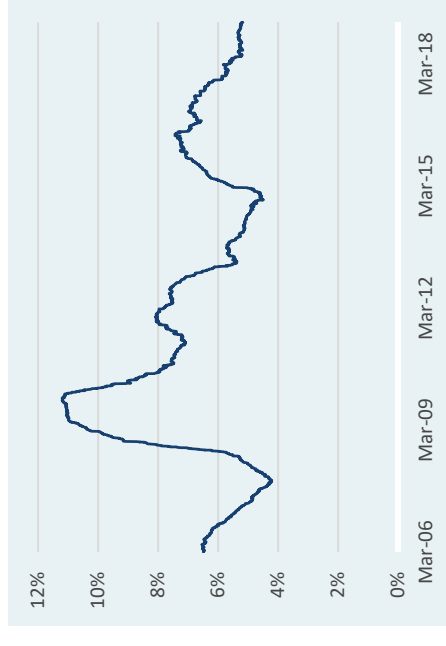
Source: Federal Reserve, Verus, as of 3/31/19

JPM EMERGING MARKET CURRENCY INDEX



Source: Bloomberg, JPMorgan, as of 3/31/19

BLOOMBERG DOLLAR SPOT INDEX VOLATILITY



Source: Bloomberg, as of 3/31/19, trailing 12-month vol shown

Hedge funds

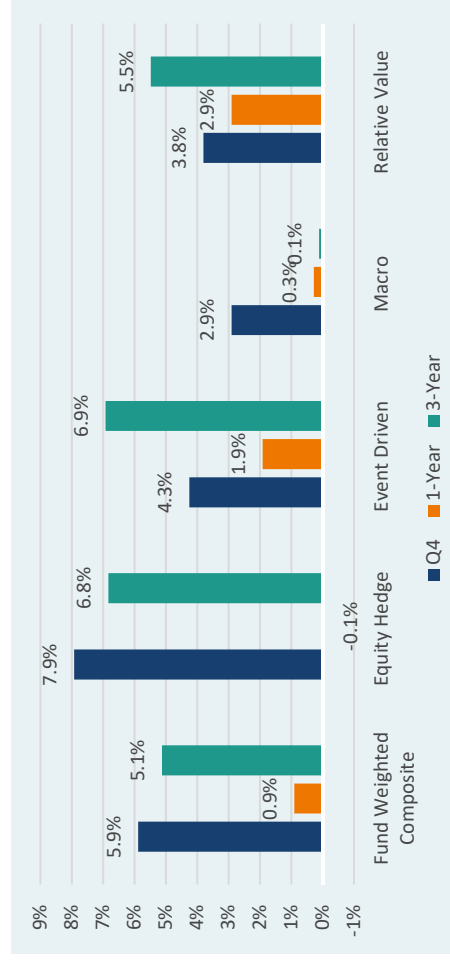
Hedge funds consistently advanced alongside the broad markets and enjoyed the best first calendar quarter result since 2006 (Hedge Fund Weighted Composite (FWC) +5.9% in 2019Q1; +0.9% trailing 12-months). While gains were broad based across strategy types, funds with greater equity market sensitivity earned the highest results. Within the equity hedge strategy set, funds with higher beta exposure rallied strongly.

According to Hedge Fund Research, growth-oriented managers (+9.3%) narrowly outperformed value-oriented (9%) peers. Healthcare focused funds (+13.2%) also stood out as winners. Activists (+8.3%) largely rebounded from a dismal Q4 last year.

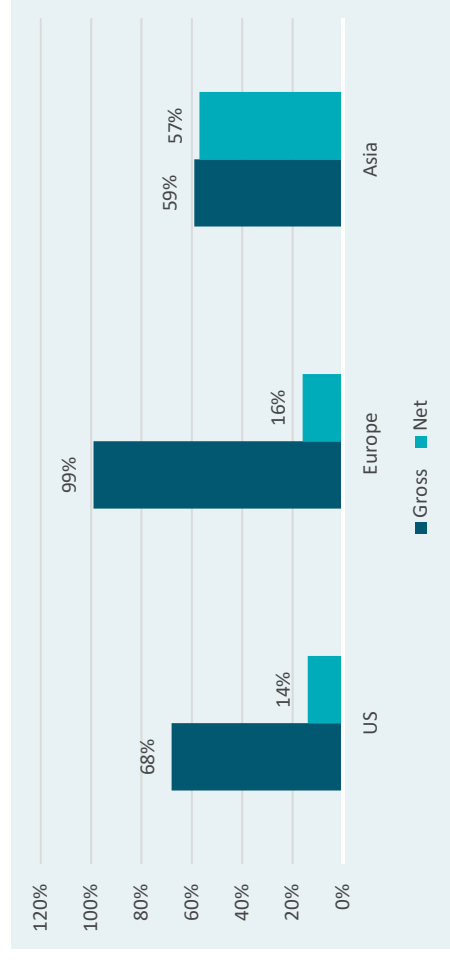
For managers trading fixed income securities, funds focused on convertible arbitrage (+5.5%) and credit arbitrage (+5.1%) fared well as those markets bounced back this quarter. Asset backed (+1.7%) and fixed income multi-strategy managers (+2%) posted more muted gains.

Hedge funds responded to the Q4 sell-off last year by cutting gross and net exposure levels to relatively low levels by year end. Gross leverage has since largely rebounded while net exposure, with the exception of Asia, remains below pre-sell off levels.

HFRI HEDGE FUND STYLE PERFORMANCE



HEDGE FUND LEVERAGE LEVELS BY REGION



Source: HFRI, as of 3/31/19

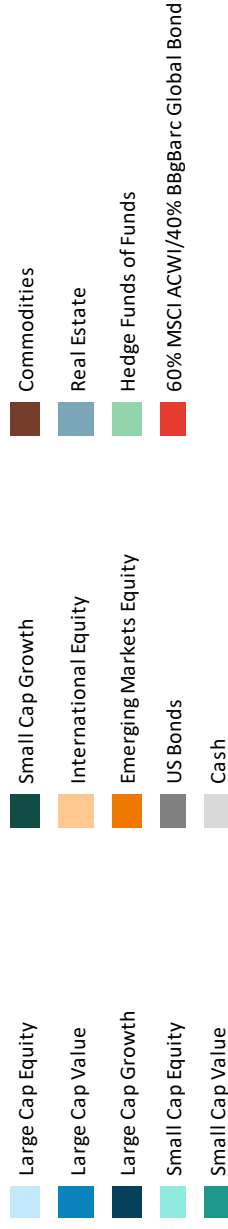
Source: Morgan Stanley, as of 3/31/19

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	YTD	5-Year 10-Year	
Small Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	17.1	13.5	17.5
Large Cap Growth	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	16.1	10.6	16.5
Small Cap Equity	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	14.6	8.7	16.0
Large Cap Equity	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	14.0	8.4	15.4
Large Cap Value	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	11.9	7.7	14.5
Small Cap Value	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	11.9	7.1	14.1
International Equity	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	10.0	5.6	9.0
Emerging Markets 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	9.9	4.4	8.9
60/40 Global Portfolio	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	8.1	3.7	8.5
Commodities	-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	6.3	2.7	8.3
Hedge Funds of Funds	-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	5.0	2.3	3.8
US Bonds	-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	2.9	2.3	3.6
Cash	-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	0.6	0.8	0.4
Real Estate	-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	0.0	-8.9	-2.6

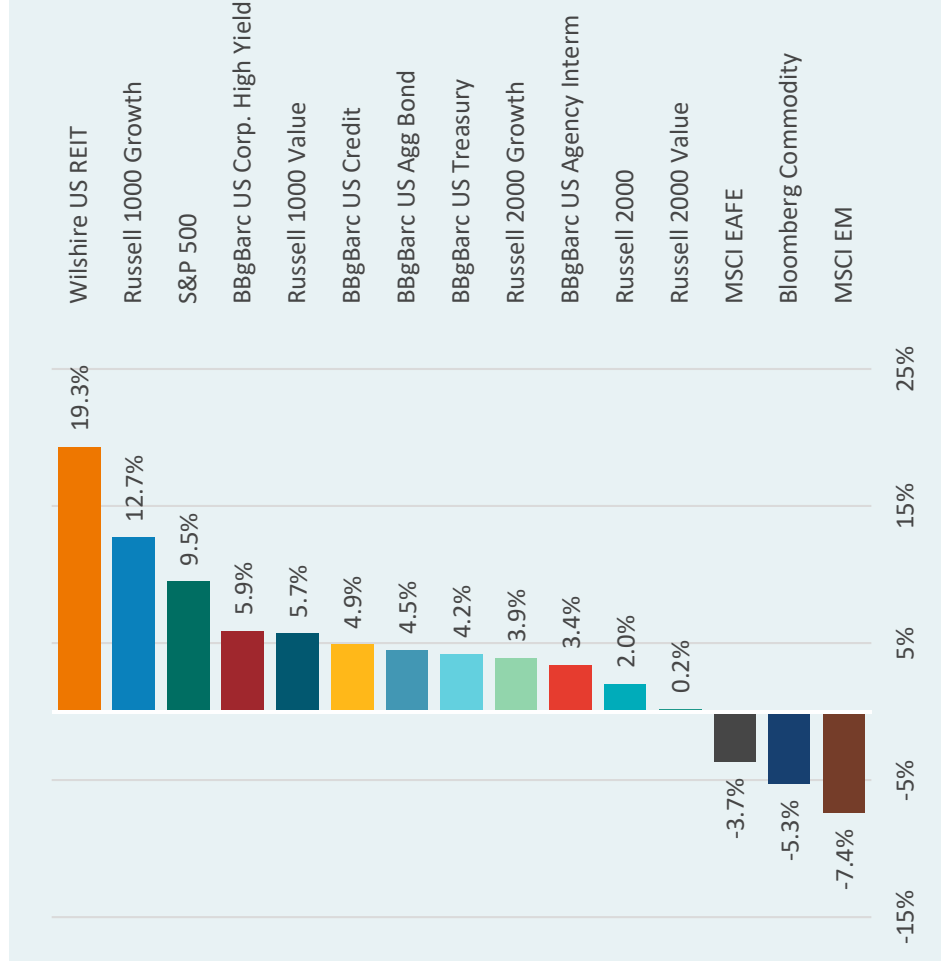
WORST



Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BbgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFR FOF, MSCI ACWI, BbgBarc Global Bond. NCREIF Property Index performance data as of 12/31/18.

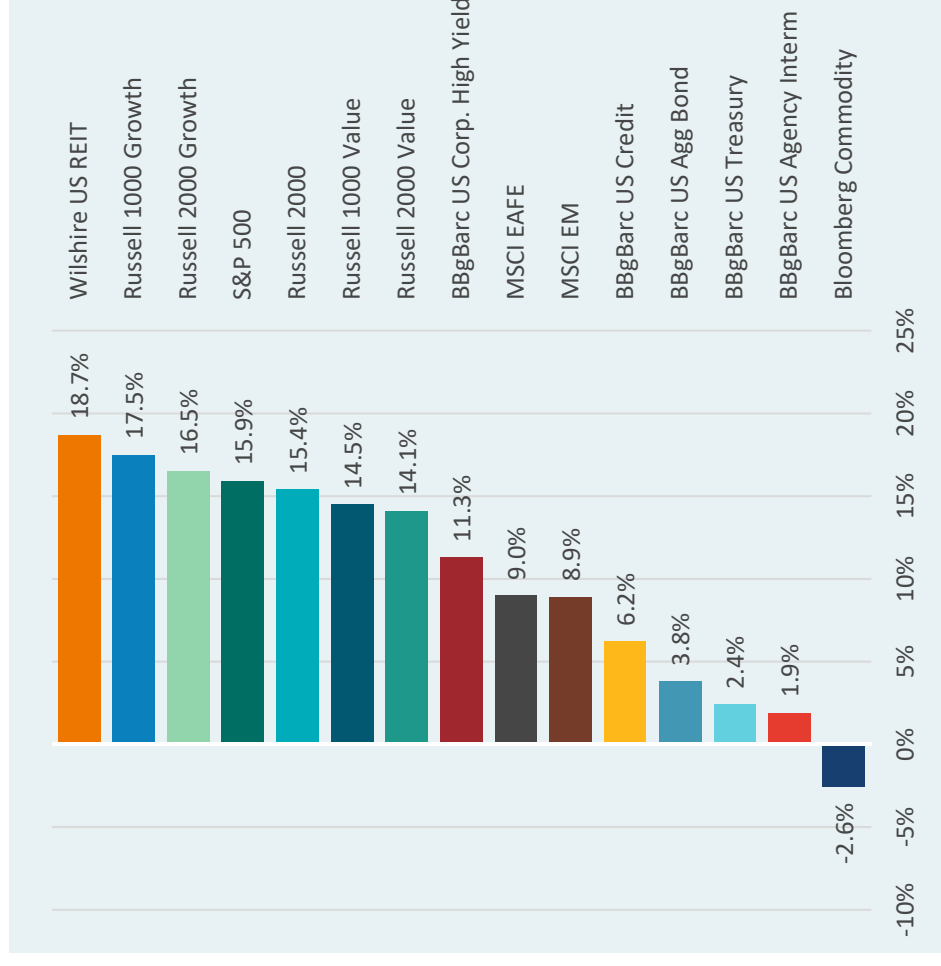
Major asset class returns

ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/19

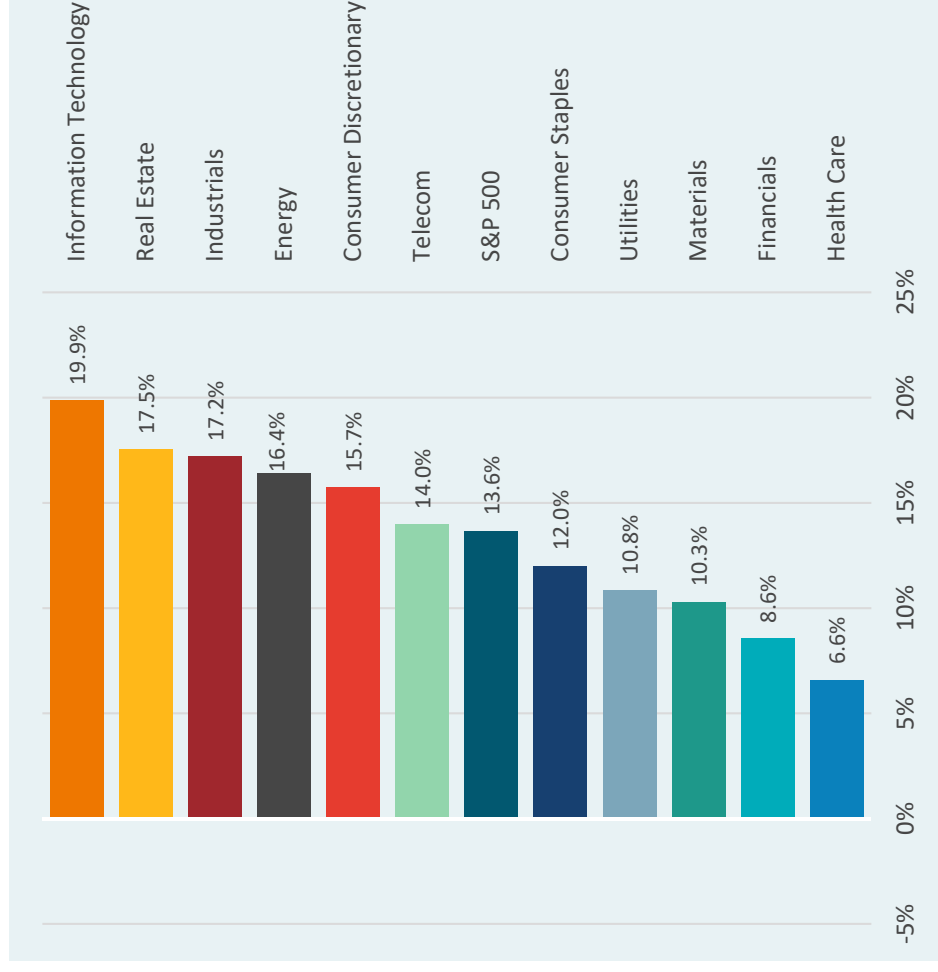
TEN YEARS ENDING MARCH



Source: Morningstar, as of 3/31/19

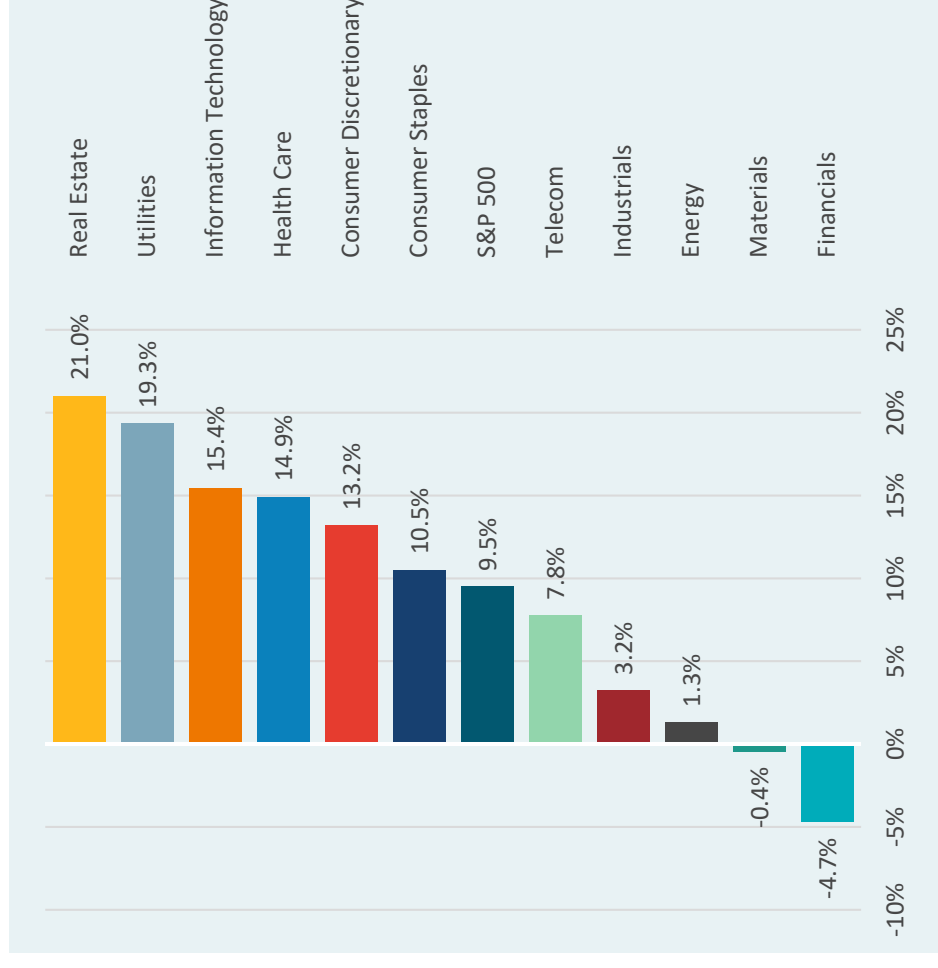
S&P 500 sector returns

QTD



Source: Morningstar, as of 3/31/19

ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/19

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	1.9	13.6	13.6	9.5	13.5	10.9	15.9
S&P 500 Equal Weighted	0.9	14.9	14.9	7.2	12.0	9.5	17.8
DJ Industrial Average	0.2	11.8	11.8	10.1	16.4	12.2	16.0
Russell Top 200	2.1	13.1	13.1	10.4	14.2	11.4	15.7
Russell 1000	1.7	14.0	14.0	9.3	13.5	10.6	16.0
Russell 2000	(2.1)	14.6	14.6	2.0	12.9	7.1	15.4
Russell 3000	1.5	14.0	14.0	8.8	13.5	10.4	16.0
Russell Mid Cap	0.9	16.5	16.5	6.5	11.8	8.8	16.9
Style Index							
Russell 1000 Growth	2.8	16.1	16.1	12.7	16.5	13.5	17.5
Russell 1000 Value	0.6	11.9	11.9	5.7	10.5	7.7	14.5
Russell 2000 Growth	(1.4)	17.1	17.1	3.9	14.9	8.4	16.5
Russell 2000 Value	(2.9)	11.9	11.9	0.2	10.9	5.6	14.1

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BbgBarc US TIPS	1.8	3.2	3.2	2.7	1.7	1.9	3.4
BbgBarc US Treasury Bills	0.2	0.6	0.6	2.2	1.2	0.8	0.5
BbgBarc US Agg Bond	1.9	2.9	2.9	4.5	2.0	2.7	3.8
Duration							
BbgBarc US Treasury 1-3 Yr	0.6	1.0	1.0	2.7	1.0	1.0	1.0
BbgBarc US Treasury Long	5.3	4.7	4.7	6.2	1.5	5.4	5.1
BbgBarc US Treasury	1.9	2.1	2.1	4.2	1.0	2.2	2.4
Issuer							
BbgBarc US MBS	1.5	2.2	2.2	4.4	1.8	2.6	3.1
BbgBarc US Corp. High Yield	0.9	7.3	7.3	5.9	8.6	4.7	11.3
BbgBarc US Agency Interm	0.9	1.4	1.4	3.4	1.2	1.6	1.9
BbgBarc US Credit	2.4	4.9	4.9	4.9	3.5	3.6	6.2

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	1.3	12.2	12.2	2.6	10.7	6.5	12.0
MSCI ACWI ex US	0.6	10.3	10.3	(4.2)	8.1	2.6	8.8
MSCI EAFE	0.6	10.0	10.0	(3.7)	7.3	2.3	9.0
MSCI EM	0.8	9.9	9.9	(7.4)	10.7	3.7	8.9
MSCI EAFE Small Cap	0.2	10.7	10.7	(9.4)	7.5	4.5	12.8
Style Index							
MSCI EAFE Growth	1.8	12.0	12.0	(1.3)	7.6	3.9	9.7
MSCI EAFE Value	(0.5)	7.9	7.9	(6.1)	6.9	0.7	8.1
Regional Index							
MSCI UK	1.1	11.9	11.9	(0.1)	6.3	0.7	9.3
MSCI Japan	0.6	6.7	6.7	(7.8)	8.1	5.6	8.0
MSCI Euro	0.0	9.8	9.8	(7.8)	6.5	0.6	7.5
MSCI EM Asia	1.8	11.1	11.1	(6.8)	11.8	6.2	10.8
MSCI EM Latin American	(2.5)	7.9	7.9	(6.7)	11.1	(0.3)	5.3

OTHER

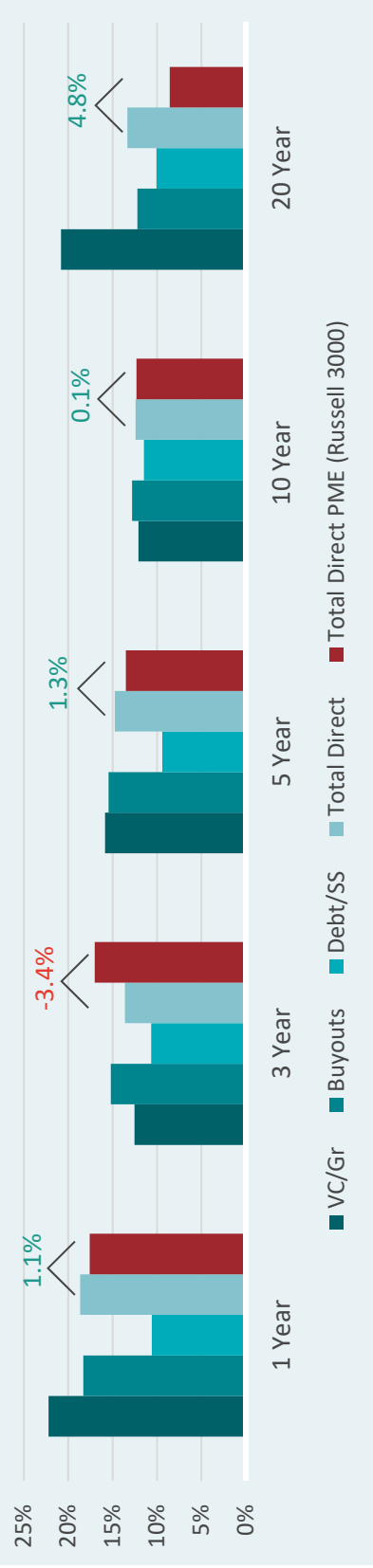
	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(0.2)	6.3	6.3	(5.3)	2.2	(8.9)	(2.6)
Wilshire US REIT	3.2	16.0	16.0	19.3	5.5	9.0	18.7
CS Leveraged Loans	(0.1)	3.8	3.8	3.3	5.9	3.8	8.0
Alerian MLP	3.8	17.4	17.4	16.8	5.9	(4.2)	11.1
Regional Index							
JPM EMBI Global Div	1.4	7.0	7.0	4.2	5.8	5.4	8.5
JPM GBI-EM Global Div	(1.3)	2.9	2.9	(7.6)	3.3	(0.8)	4.4
Hedge Funds							
HFRI Composite	1.0	5.9	5.9	0.9	5.1	3.1	5.5
HFRI FOF Composite	1.3	5.0	5.0	0.5	4.1	2.3	3.6
Currency (Spot)							
Euro	(1.4)	(1.8)	(1.8)	(8.7)	(0.5)	(4.0)	(1.7)
Pound	(2.0)	2.3	2.3	(7.1)	(3.2)	(4.8)	(0.9)
Yen	0.6	(0.9)	(0.9)	(3.9)	0.5	(1.4)	(1.1)

Source: Morningstar, HFR, as of 3/31/19

Private equity vs. public performance

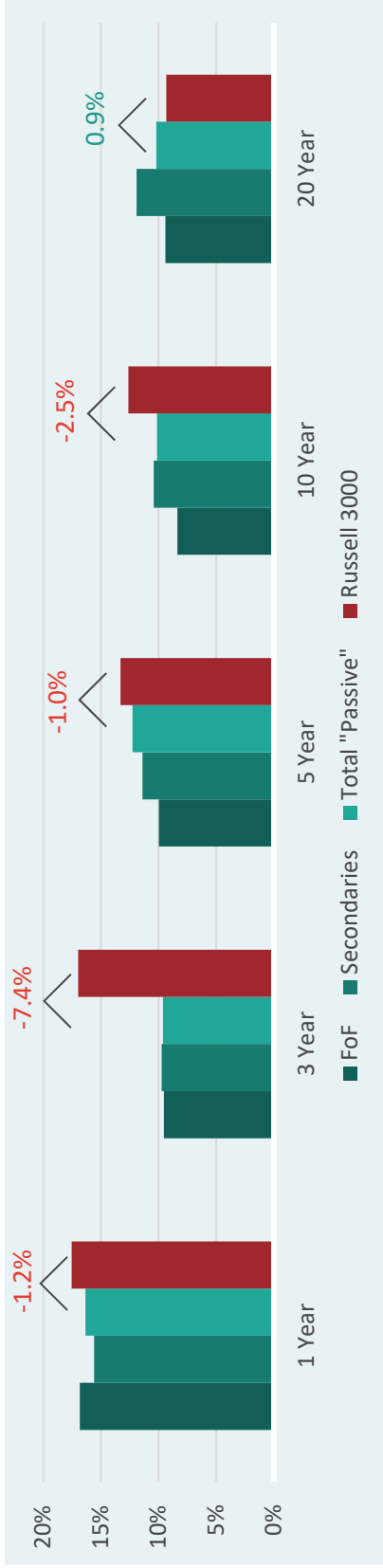
As of 9/30/2018

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - DIRECT PRIVATE EQUITY



Public market equivalent (PME) analysis shows that direct private equity has outperformed public equity over most periods

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - "PASSIVE" PRIVATE EQUITY



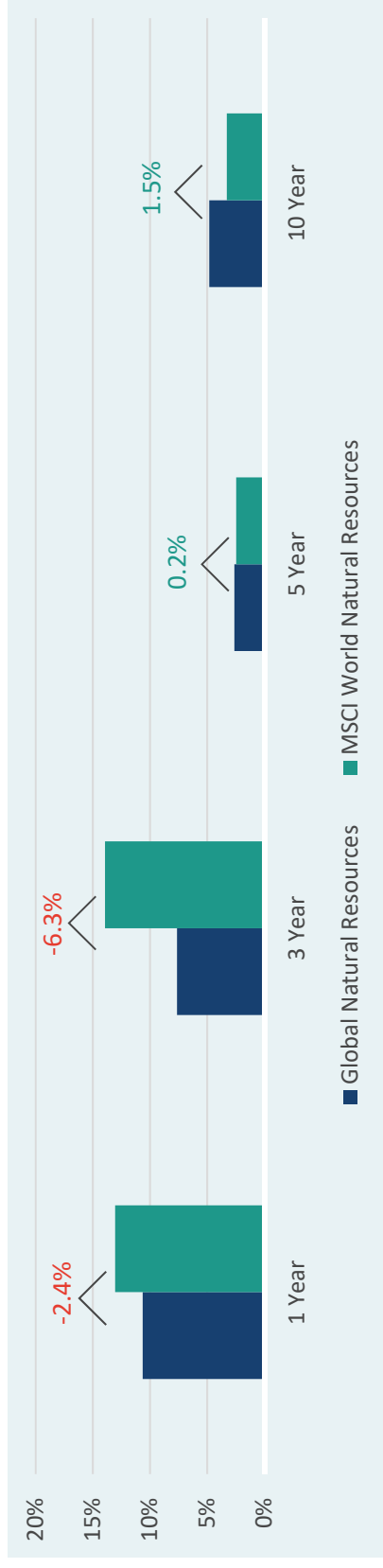
Fund-of-fund & secondary private equity investments have lagged public equities

Sources: Thomson Reuters Cambridge Universe's PME Module; U.S. Private Equity Funds sub asset classes as of September 30, 2018. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

Private vs. liquid real assets performance

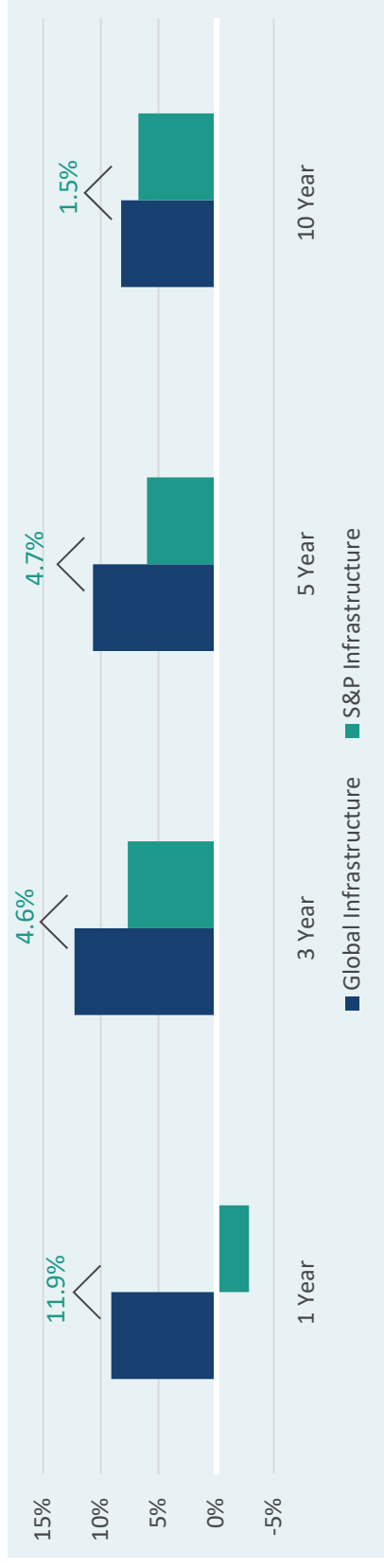
As of 9/30/2018

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - GLOBAL NATURAL RESOURCES FUNDS



Public market equivalent (PME) analysis shows that private infrastructure has recently underperformed publicly listed infrastructure

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - GLOBAL INFRASTRUCTURE FUNDS



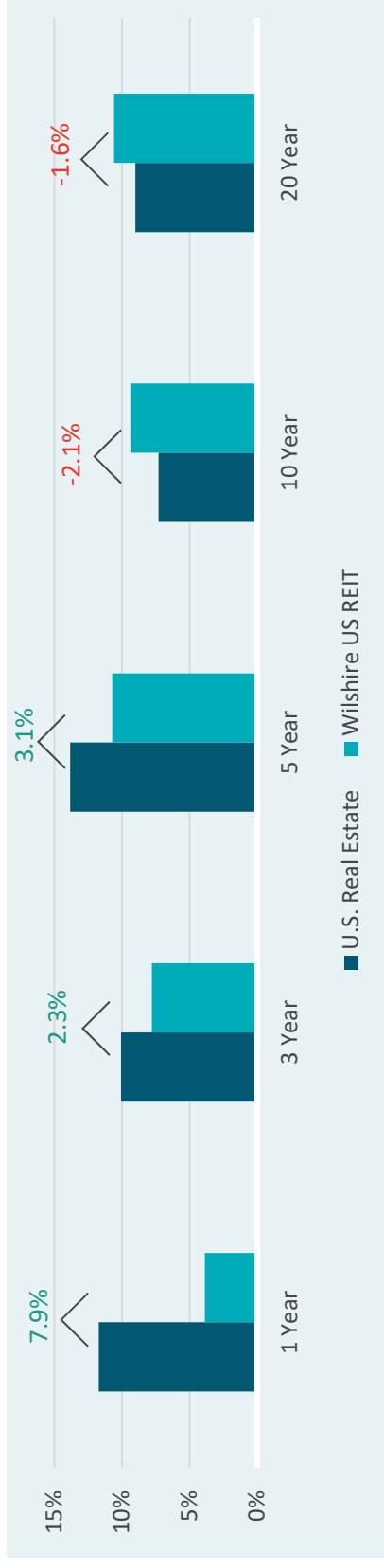
Private infrastructure has materially outperformed publicly listed infrastructure

Sources: Thomson Reuters CJA PME: Global Natural Resources (vintage 1996 and later, inception of MSCI ACWI Energy benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of September 30, 2018. 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

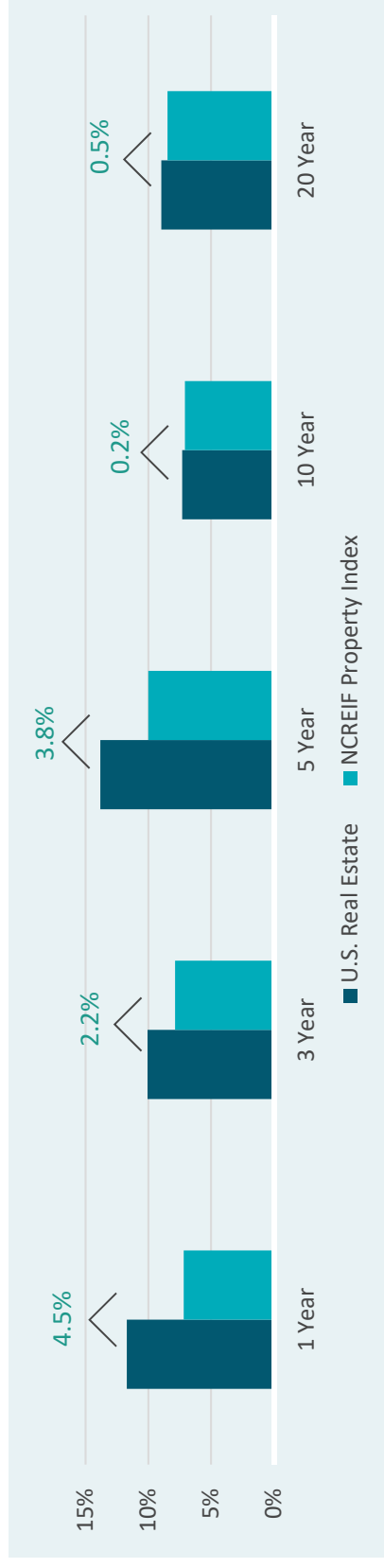
As of 9/30/2018

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - U.S. PRIVATE REAL ESTATE VS. LIQUID UNIVERSE



Public market equivalent (PME) analysis shows that U.S. private R.E. has underperformed liquid real estate over the long-term

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. private R.E. has outperformed the NCREIF Property Index over each time period

Sources: Thomson Reuters C/IA PME: Global and U.S. Real Estate universes as of September 30, 2018. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Definitions

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

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

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

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

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Contra Costa County Employees' Retirement Association

Investment Performance Review

Period Ending: March 31, 2019



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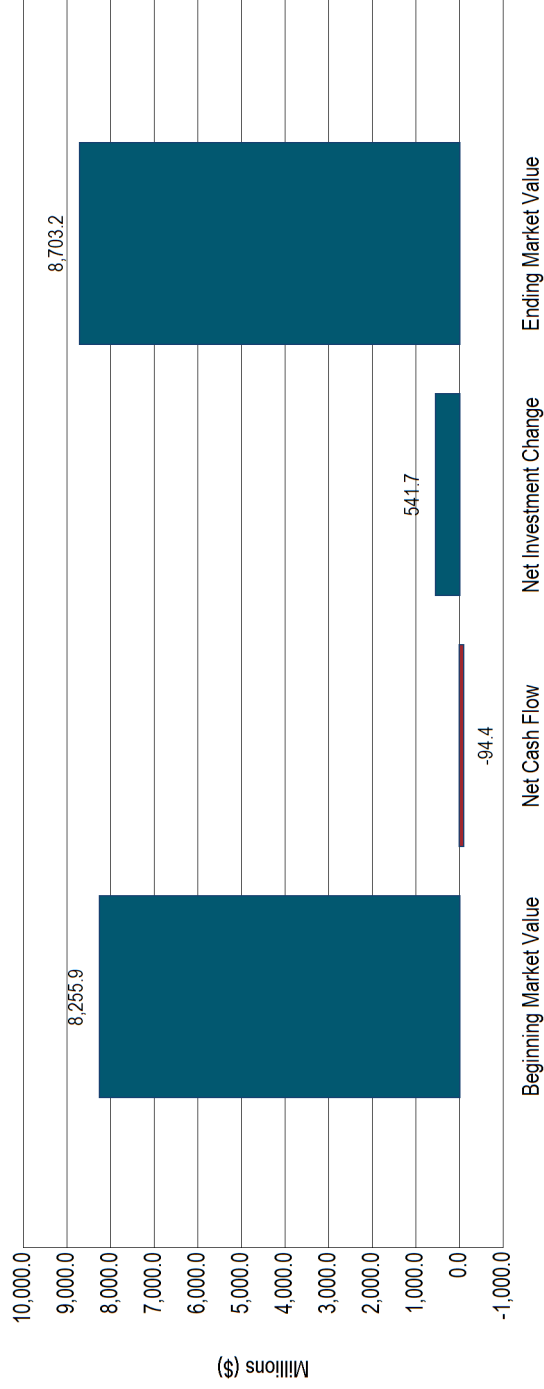
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

	Last Three Months	Year-To-Date
Beginning Market Value	\$8,255,873,307	\$8,255,873,307
Net Cash Flow	-\$94,428,769	-\$94,428,769
Net Investment Change	\$541,706,043	\$541,706,043
Ending Market Value	\$8,703,150,580	\$8,703,150,580

Change in Market Value
Last Three Months



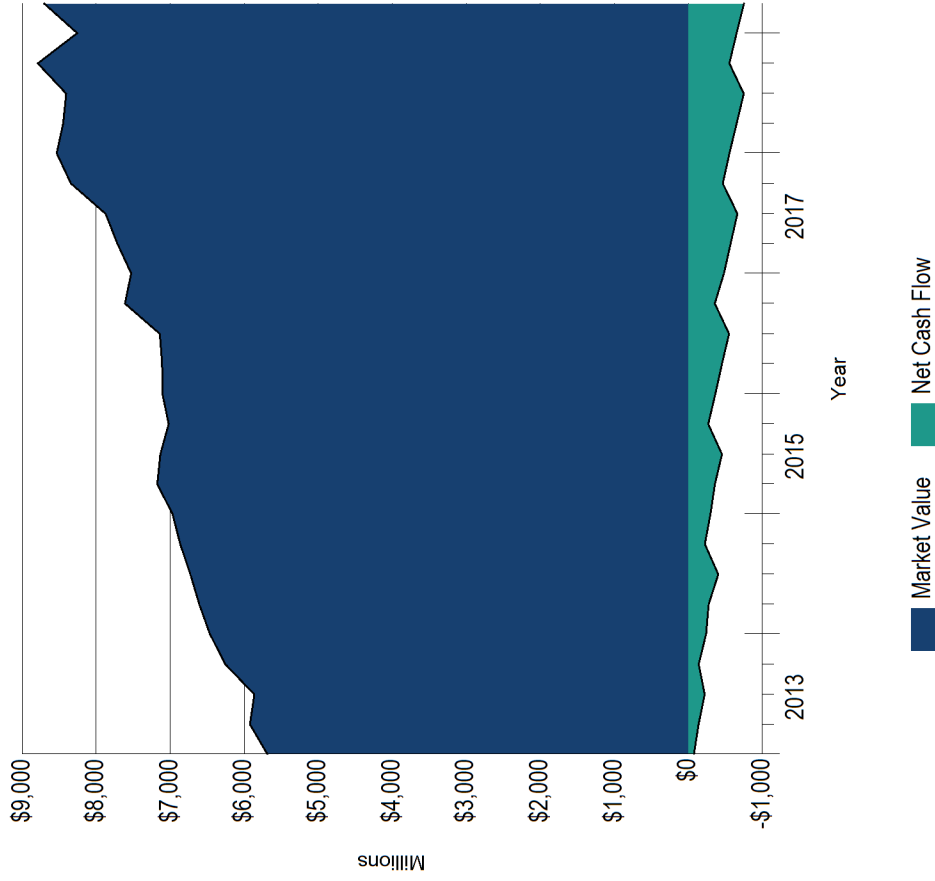
Contributions and withdrawals may include intra-account transfers between managers/funds.

Total Fund

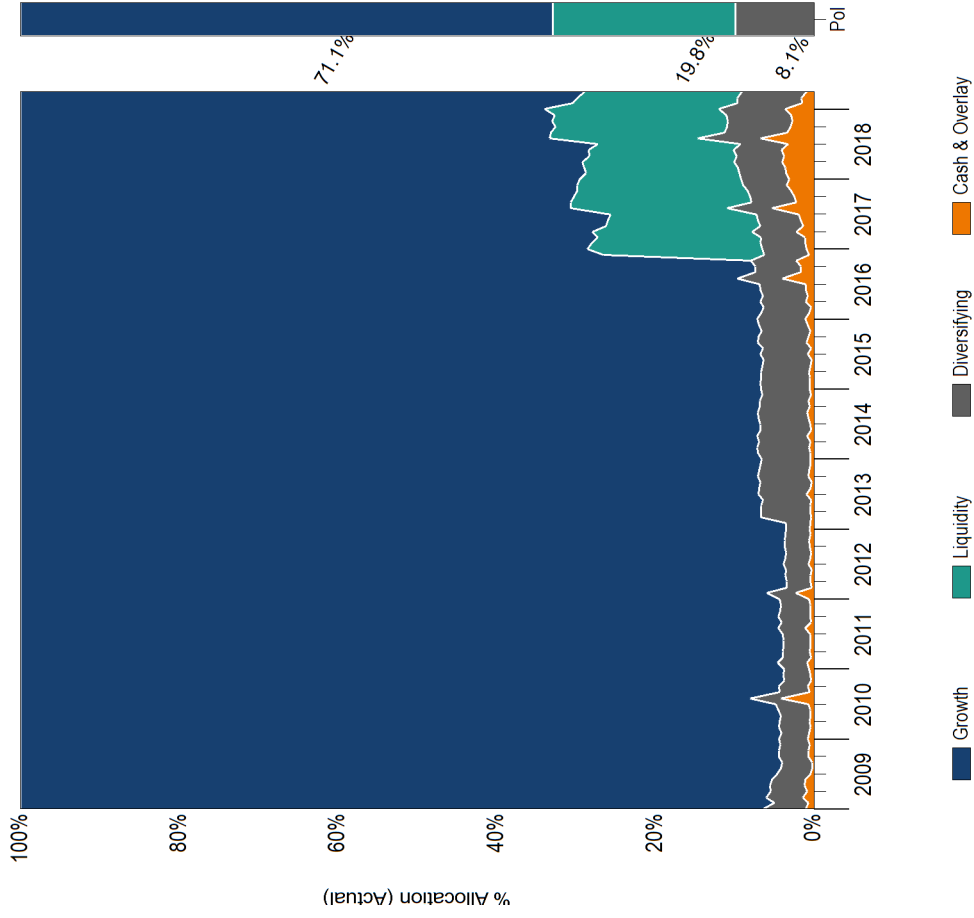
Asset Allocation History

Period Ending: March 31, 2019

Market Value History
Cumulative Cash Flows

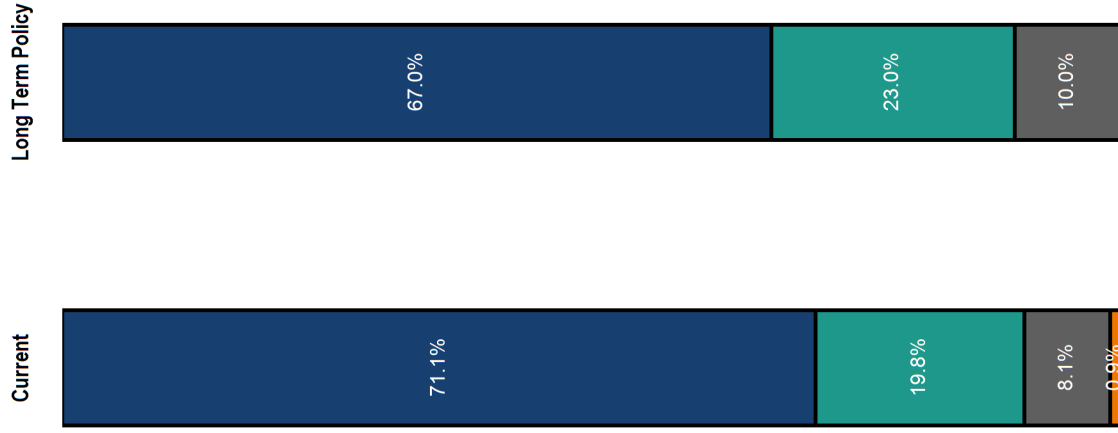


Asset Allocation History



Policy reflects FFP 4-Yr allocations approved in March 2018.

Total Fund
 Asset Allocation vs. Long Term Target Policy Period Ending: March 31, 2019



Allocation vs. Long Term Target

	Current Balance	Current Allocation	Long Term Target	Difference
Growth	\$6,192,023,062	71.1%	67.0%	\$360,912,173
Liquidity	\$1,721,560,470	19.8%	23.0%	-\$280,164,163
Diversifying	\$707,538,680	8.1%	10.0%	-\$162,776,378
Cash & Overlay	\$82,028,368	0.9%	--	\$82,028,368
Total	\$8,703,150,580	100.0%	100.0%	

Allocation vs. Current Targets

	Current Balance	Current Allocation	Current Target	Difference
Growth	\$6,192,023,062	71.1%	69.0%	\$186,849,162
Liquidity	\$1,721,560,470	19.8%	23.0%	-\$280,164,163
Diversifying	\$707,538,680	8.1%	8.0%	\$11,286,634
Cash & Overlay	\$82,028,368	0.9%	--	\$82,028,368
Total	\$8,703,150,580	100.0%	100.0%	

Long Term Targets reflect FFP 4-Yr allocations approved in March 2018.
 Current Targets reflect Phase 3 Targets approved in June 2018.



Total Fund
Executive Summary (Net of Fees) **Period Ending: March 31, 2019**

	% of Portfolio	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	100.0	6.5	3.6	7.6	6.3	10.6	-2.7	13.9	6.9	2.1	7.7
Policy Index		4.7	3.3	7.8	6.5	--	-0.9	13.7	8.9	0.6	9.0
Growth	71.1	8.3	3.9	9.5	7.5	--	-3.9	18.7	7.6	2.3	8.1
Custom Growth Benchmark		6.2	3.3	10.0	7.7	--	-2.1	19.3	10.1	0.3	8.4
Diversifying	8.1	2.5	1.0	1.7	0.3	2.3	-2.3	2.6	0.8	-1.8	1.7
Custom Diversifying Benchmark		2.3	3.6	3.3	3.6	4.3	1.4	4.7	4.1	2.5	5.4
Liquidity	19.8	1.7	3.7	--	--	--	1.7	1.4	--	--	--
BBgBarc US Govt/Credit 1-3 Yr: TR		1.2	3.0	--	--	--	1.6	0.8	--	--	--

**Correlation between the Growth and Diversifying composites is .48, .32 and .33 over the previous 1, 3 and 5 year periods respectively.*

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

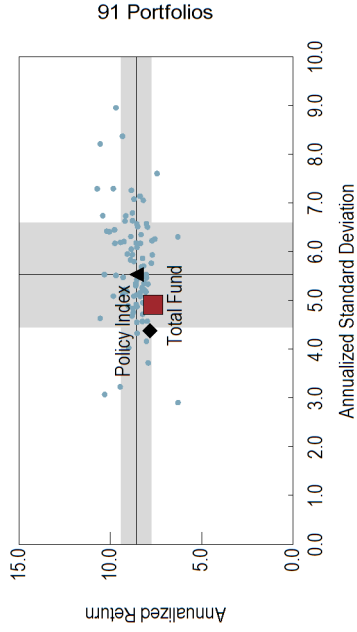
Total Fund
Executive Summary (Net of Fees)

Period Ending: March 31, 2019

3 Years

Total Fund	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
	7.64%	-0.20%	4.91%	-0.72%	1.07	1.56%	0.90	1.31	-0.13	101.62%	110.41%

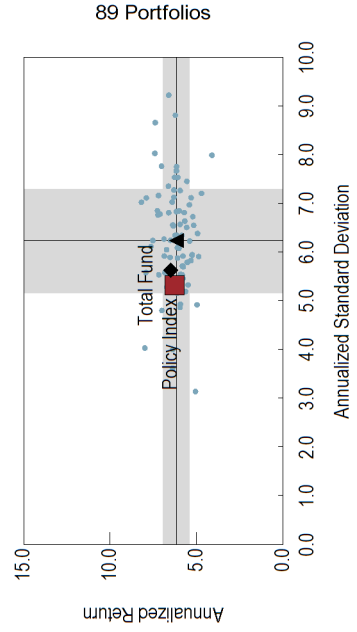
Risk vs. Return



5 Years

Total Fund	Anlzd Return	Ann Excess BM Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
	6.26%	-0.24%	5.32%	0.42%	0.90	1.74%	0.90	1.03	-0.14	90.23%	88.24%

Risk vs. Return



**Total Fund
Performance Summary (Gross of Fees)** Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	8,703,150,580	100.0	6.6	3.9	8.0	6.7	11.2	-2.5	14.2	7.4	2.7	8.4
<i>Policy Index</i>			4.7	3.3	7.8	6.5	--	-0.9	13.7	8.9	0.6	9.0
<i>InvestorForce Public DB > \$1B Gross Rank</i>			79	37	87	22	14	25	83	74	5	6
Total Fund ex Overlay & Cash	8,621,122,212	99.1	6.4	4.1	8.1	6.8	11.2	-2.1	14.1	7.4	2.7	8.4
<i>Policy Index</i>			4.7	3.3	7.8	6.5	--	-0.9	13.7	8.9	0.6	9.0
<i>InvestorForce Public DB > \$1B Gross Rank</i>			82	31	80	21	13	20	84	74	5	6
Growth	6,192,023,062	71.1	8.4	4.2	9.9	8.0	--	-3.6	19.1	8.1	3.0	8.8
<i>Custom Growth Benchmark</i>			6.2	3.3	10.0	7.7	--	-2.1	19.3	10.1	0.3	8.4
Total Domestic Equity	1,042,049,087	12.0	13.2	6.1	13.4	9.9	16.3	-7.2	23.9	11.5	1.1	11.4
<i>Russell 3000</i>			14.0	8.8	13.5	10.4	16.0	-5.2	21.1	12.7	0.5	12.6
<i>InvestorForce Public DB US Eq Gross Rank</i>			91	86	40	51	21	78	6	77	21	50
<i>BlackRock Russell 1000 Index</i>			14.0	9.3	--	--	--	-4.8	--	--	--	--
<i>Russell 1000</i>			14.0	9.3	--	--	--	-4.8	--	--	--	--
<i>eV US Large Cap Equity Gross Rank</i>			36	40	--	--	--	47	--	--	--	--
<i>Jackson Square Partners</i>			11.9	8.0	13.0	10.3	16.6	-2.0	29.3	-4.4	6.1	13.9
<i>Russell 1000 Growth</i>			16.1	12.7	16.5	13.5	17.5	-1.5	30.2	7.1	5.7	13.0
<i>eV US Large Cap Growth Equity Gross Rank</i>			95	85	89	87	60	59	47	98	37	31
<i>Boston Partners</i>			9.6	1.6	11.4	7.6	15.2	-8.7	20.1	15.1	-3.9	12.0
<i>Russell 1000 Value</i>			11.9	5.7	10.5	7.7	14.5	-8.3	13.7	17.3	-3.8	13.5
<i>eV US Large Cap Value Equity Gross Rank</i>			93	77	39	63	39	55	23	50	65	55
<i>Emerald Advisers</i>			21.3	10.8	18.1	10.8	19.2	-10.1	28.8	10.1	4.1	7.3
<i>Russell 2000 Growth</i>			17.1	3.9	14.9	8.4	16.5	-9.3	22.2	11.3	-1.4	5.6
<i>eV US Small Cap Growth Equity Gross Rank</i>			23	46	47	36	27	85	26	54	19	21
<i>Ceredex</i>			11.4	2.5	9.7	6.9	--	-11.3	11.4	29.8	-4.4	3.3
<i>Russell 2000 Value</i>			11.9	0.2	10.9	5.6	--	-12.9	7.8	31.7	-7.5	4.2
<i>eV US Small Cap Value Equity Gross Rank</i>			79	22	51	33	--	25	48	32	52	74

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

**Total Fund
Performance Summary (Gross of Fees)** Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total International Equity	1,599,619,955	18.4	10.9	-5.4	6.5	3.7	8.6	-14.3	25.5	1.2	-1.2	0.3
MSCI ACWI ex USA Gross			10.4	-3.7	8.6	3.0	9.3	-13.8	27.8	5.0	-5.3	-3.4
MSCI EAFE Gross			10.1	-3.2	7.8	2.8	9.5	-13.4	25.6	1.5	-0.4	-4.5
InvestorForce Public DB ex-US Eq Gross Rank			35	53	94	33	78	44	90	89	28	5
International Equity	924,309,392	10.6	11.7	-2.8	7.0	3.9	8.8	-13.6	25.3	1.2	-1.2	0.3
MSCI ACWI ex USA Gross			10.4	-3.7	8.6	3.0	9.3	-13.8	27.8	5.0	-5.3	-3.4
InvestorForce Public DB ex-US Eq Gross Rank			17	13	87	23	75	21	93	89	28	5
Pyrford	454,787,198	5.2	9.5	0.3	5.9	--	--	-10.1	19.8	3.4	-2.9	--
MSCI ACWI ex USA Value			8.3	-5.4	7.7	--	--	-14.0	22.7	8.9	-10.1	--
eV ACWI ex-US Value Equity Gross Rank			35	1	68	--	--	5	84	74	59	--
William Blair	469,522,194	5.4	13.9	-5.6	8.0	4.0	--	-16.8	30.9	-1.4	0.5	-1.2
MSCI ACWI ex USA Growth			12.3	-3.0	8.4	4.0	--	-14.4	32.0	0.1	-1.3	-2.6
eV ACWI ex-US Growth Equity Gross Rank			43	60	77	77	--	69	81	55	69	37
Emerging Markets Equity	675,310,563	7.8	10.0	-8.8	--	--	--	-15.3	--	--	--	--
MSCI Emerging Markets			9.9	-7.4	--	--	--	-14.6	--	--	--	--
InvestorForce Public DB Emg Mkt Eq Gross Rank			44	60	--	--	--	51	--	--	--	--
PIMCO RAE Emerging Markets	343,874,286	4.0	6.3	-9.7	--	--	--	-12.3	--	--	--	--
MSCI Emerging Markets			9.9	-7.4	--	--	--	-14.6	--	--	--	--
eV Emg Mkts Equity Gross Rank			96	75	--	--	--	19	--	--	--	--
TT Emerging Markets	331,436,277	3.8	14.0	-7.9	--	--	--	-18.4	--	--	--	--
MSCI Emerging Markets			9.9	-7.4	--	--	--	-14.6	--	--	--	--
eV Emg Mkts Equity Gross Rank			12	52	--	--	--	83	--	--	--	--
Total Global Equity	729,010,474	8.4	13.3	3.4	11.5	8.2	10.5	-7.8	23.7	7.6	2.2	5.2
MSCI ACWI			12.2	2.6	10.7	6.5	12.0	-9.4	24.0	7.9	-2.4	4.2
InvestorForce Public DB Gbl Eq Gross Rank			3	49	30	43	13	60	79	40	16	41
Artisan Partners	364,329,832	4.2	16.6	4.0	14.8	11.3	--	-7.9	32.9	5.6	9.2	3.9
MSCI ACWI			12.2	2.6	10.7	6.5	--	-9.4	24.0	7.9	-2.4	4.2
eV All Global Equity Gross Rank			9	43	11	8	--	40	11	61	4	56
First Eagle	364,525,432	4.2	10.0	2.9	8.0	5.8	--	-7.6	15.1	11.7	0.2	4.5
MSCI ACWI			12.2	2.6	10.7	6.5	--	-9.4	24.0	7.9	-2.4	4.2
eV All Global Equity Gross Rank			85	52	81	73	--	38	89	19	49	51

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

**Total Fund
Performance Summary (Gross of Fees)** Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Private Credit	332,187,982	3.8	-0.4	4.6	8.5	10.3	16.2	8.3	10.4	8.2	12.9	15.4
ICE BofAML High Yield Master II + 2%			7.9	8.1	10.9	6.8	13.4	-0.3	9.6	19.8	-2.7	4.5
Total High Yield	350,887,176	4.0	8.4	6.3	7.8	4.0	10.0	-3.2	6.5	14.3	-3.5	1.2
ICE BofAML High Yield Master II			7.4	5.9	8.7	4.7	11.2	-2.3	7.5	17.5	-4.6	2.5
eV US High Yield Fixed Inc Gross Rank			2	25	53	77	64	88	74	47	68	83
Allianz Global Investors	350,887,176	4.0	8.4	6.3	7.8	4.0	10.0	-3.2	6.5	14.3	-3.5	1.2
ICE BofAML High Yield Master II			7.4	5.9	8.7	4.7	11.2	-2.3	7.5	17.5	-4.6	2.5
eV US High Yield Fixed Inc Gross Rank			2	25	53	77	64	88	74	47	68	83
Total Real Estate	758,503,763	8.7	4.3	9.9	8.8	10.8	14.6	7.4	11.1	5.5	13.5	20.6
Real Estate Benchmark			3.1	8.8	6.6	9.0	11.4	6.7	7.1	6.7	8.3	18.8
NCREIF-ODCE			1.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index			1.8	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
Adelante	73,518,175	0.8	17.5	19.4	6.5	9.8	19.1	-5.0	7.8	4.1	5.1	33.4
Wilshire REIT			16.0	19.3	5.4	9.0	18.7	-4.8	4.2	7.2	4.2	31.8
Private Equity	962,522,748	11.1	1.5	13.5	10.8	11.3	11.8	12.1	11.9	9.4	11.6	17.3
S&P 500 Index +4% (Lagged)			-12.6	-0.5	13.6	12.8	17.6	22.6	23.3	20.0	3.4	24.5
Risk Parity	417,241,877	4.8	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			--	--	--	--	--	--	--	--	--	--
AQR Global Risk Premium-EL	213,625,425	2.5	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			--	--	--	--	--	--	--	--	--	--
PanAgora Risk Parity Multi Asset	203,616,452	2.3	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Parity funded 3/15/2019. PanAgora Risk Parity funded 1/18/2019. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

**Total Fund
Performance Summary (Gross of Fees)** Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Diversifying	707,538,680	8.1	2.5	1.2	2.1	0.7	2.7	-2.0	2.8	1.3	-1.4	2.2
Custom Diversifying Benchmark			2.3	3.6	3.3	3.6	4.3	1.4	4.7	4.1	2.5	5.4
Diversifying Fixed Income	507,921,464	5.8	3.2	2.2	1.4	2.6	3.6	-1.7	2.8	2.8	1.6	6.6
eV US Core Fixed Inc Gross Rank			56	99	99	96	95	99	96	72	15	25
AFL-CIO	324,590,940	3.7	2.8	4.6	2.2	3.1	3.9	0.6	3.6	2.4	1.6	6.6
BBgBarc US Aggregate TR			2.9	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
eV US Core Fixed Inc Gross Rank			88	61	81	45	89	16	76	87	15	25
Wellington Real Total Return	183,330,524	2.1	4.0	-1.7	2.5	-1.8	--	-5.6	1.9	-0.1	-4.9	-2.5
CPI + 4%			2.2	5.9	6.3	5.5	--	6.0	6.2	6.2	4.8	4.8
Diversifying Equity	199,617,216	2.3	0.8	--	--	--	--	--	--	--	--	--
Parametric Defensive Equity	199,617,216	2.3	0.8	--	--	--	--	--	--	--	--	--
91 Day T-Bill +4%			1.6	--	--	--	--	--	--	--	--	--
Liquidity	1,721,560,470	19.8	1.7	3.8	--	--	--	1.8	1.5	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			1.2	3.0	--	--	--	1.6	0.8	--	--	--
eV US Short Duration Fixed Inc Gross Rank			25	19	--	--	--	24	50	--	--	--
DFA Short Credit	375,055,643	4.3	2.0	4.0	--	--	--	1.2	1.9	--	--	--
ICE BofAML 1-5 Yrs US Corp & Govt TR			1.6	3.6	--	--	--	1.4	1.3	--	--	--
eV US Short Duration Fixed Inc Gross Rank			11	8	--	--	--	93	26	--	--	--
Insight Short Duration	811,554,864	9.3	1.5	3.4	--	--	--	1.7	1.5	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			1.2	3.0	--	--	--	1.6	0.8	--	--	--
eV US Short Duration Fixed Inc Gross Rank			50	49	--	--	--	38	50	--	--	--
Sit Short Duration	534,949,963	6.1	1.9	4.4	--	--	--	2.5	1.3	--	--	--
BBgBarc US Govt 1-3 Yr TR			1.0	2.7	--	--	--	1.6	0.4	--	--	--
eV US Short Duration Fixed Inc Gross Rank			16	2	--	--	--	1	68	--	--	--
Total Cash	61,335,201	0.7	0.7	2.1	1.4	0.1	--	1.7	0.9	0.9	0.1	-3.0
91 Day T-Bills			0.6	2.1	1.2	0.8	--	1.9	0.9	0.3	0.0	0.0
Cash	60,308,465	0.7	0.7	2.1	1.3	1.0	3.1	1.7	0.9	0.9	0.1	1.4
State Street Cash/Tax Reclaims	667,189	0.0	--	--	--	--	--	--	--	--	--	--
Northern Trust Transition	359,547	0.0	--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. State Street Cash/Tax Reclaims reflects \$214,780 in cash and \$452,409 in potential tax reclaims at State Street after assets were transferred to Northern Trust. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

Total Fund Performance Summary (Net of Fees)

Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	8,703,150,580	100.0	6.5	3.6	7.6	6.3	10.6	-2.7	13.9	6.9	2.1	7.7
Policy Index			4.7	3.3	7.8	6.5	--	-0.9	13.7	8.9	0.6	9.0
Total Fund ex Overlay & Cash	8,621,122,212	99.1	6.4	3.8	7.7	6.3	10.6	-2.4	13.8	6.9	2.1	7.7
Policy Index			4.7	3.3	7.8	6.5	--	-0.9	13.7	8.9	0.6	9.0
Growth	6,192,023,062	71.1	8.3	3.9	9.5	7.5	--	-3.9	18.7	7.6	2.3	8.1
Custom Growth Benchmark			6.2	3.3	10.0	7.7	--	-2.1	19.3	10.1	0.3	8.4
Total Domestic Equity	1,042,049,087	12.0	13.1	5.7	12.9	9.5	15.9	-7.6	23.5	11.1	0.6	11.0
Russell 3000			14.0	8.8	13.5	10.4	16.0	-5.2	21.1	12.7	0.5	12.6
BlackRock Russell 1000 Index		1.5	14.0	9.3	--	--	--	4.8	--	--	--	--
Russell 1000			14.0	9.3	--	--	--	4.8	--	--	--	--
Jackson Square Partners		3.1	11.8	7.5	12.5	9.8	16.2	-2.4	28.7	4.8	5.6	13.4
Russell 1000 Growth			16.1	12.7	16.5	13.5	17.5	-1.5	30.2	7.1	5.7	13.0
Boston Partners		3.0	9.5	1.3	11.1	7.3	14.8	-8.9	19.7	14.7	4.2	11.6
Russell 1000 Value			11.9	5.7	10.5	7.7	14.5	-8.3	13.7	17.3	-3.8	13.5
Emerald Advisers		2.5	21.2	10.1	17.4	10.1	18.5	-10.7	28.0	9.4	3.5	6.6
Russell 2000 Growth			17.1	3.9	14.9	8.4	16.5	-9.3	22.2	11.3	-1.4	5.6
Ceredex		2.0	11.2	1.9	9.1	6.3	--	-11.8	10.7	29.1	-5.0	2.7
Russell 2000 Value			11.9	0.2	10.9	5.6	--	-12.9	7.8	31.7	-7.5	4.2
Total International Equity	1,599,619,955	18.4	10.8	-5.9	6.0	3.2	8.2	-14.7	25.0	0.8	-1.6	0.0
MSCI ACWI ex USA Gross			10.4	-3.7	8.6	3.0	9.3	-13.8	27.8	5.0	-5.3	-3.4
MSCI EAFE Gross			10.1	-3.2	7.8	2.8	9.5	-13.4	25.6	1.5	-0.4	-4.5
International Equity	924,309,392	10.6	11.6	-3.2	6.5	3.5	8.4	-13.9	24.8	0.8	-1.6	0.0
MSCI ACWI ex USA Gross			10.4	-3.7	8.6	3.0	9.3	-13.8	27.8	5.0	-5.3	-3.4
Plyford		5.2	9.3	-0.1	5.5	--	--	-10.5	19.3	3.0	-3.3	--
MSCI ACWI ex USA Value			8.3	-5.4	7.7	--	--	-14.0	22.7	8.9	-10.1	--
William Blair		5.4	13.8	-6.0	7.6	3.6	--	-17.1	30.4	-1.8	0.0	-1.7
MSCI ACWI ex USA Growth			12.3	-3.0	8.4	4.0	--	-14.4	32.0	0.1	-1.3	-2.6
Emerging Markets Equity	675,310,563	7.8	9.8	-9.3	--	--	--	-15.7	--	--	--	--
MSCI Emerging Markets			9.9	-7.4	--	--	--	-14.6	--	--	--	--
PIMCO RAE Emerging Markets		4.0	6.2	-10.2	--	--	--	-12.6	--	--	--	--
MSCI Emerging Markets			9.9	-7.4	--	--	--	-14.6	--	--	--	--
TT Emerging Markets		3.8	13.9	-8.5	--	--	--	-18.9	--	--	--	--
MSCI Emerging Markets			9.9	-7.4	--	--	--	-14.6	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 7/1/2018. Private Credit and Private Equity data provided by StepStone Group.

Total Fund
Performance Summary (Net of Fees)

Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Global Equity	729,010,474	8.4	13.1	2.7	10.7	7.4	9.9	-8.5	22.8	6.9	1.6	4.5
MSCI ACWI			12.2	2.6	10.7	6.5	12.0	-9.4	24.0	7.9	-2.4	4.2
Artisan Partners	364,329,832	4.2	16.4	3.3	14.0	10.4	--	-8.6	31.9	4.8	8.4	3.1
MSCI ACWI			12.2	2.6	10.7	6.5	--	-9.4	24.0	7.9	-2.4	4.2
First Eagle	364,525,432	4.2	9.8	2.1	7.2	5.0	--	-8.3	14.3	10.9	-0.6	3.7
MSCI ACWI			12.2	2.6	10.7	6.5	--	-9.4	24.0	7.9	-2.4	4.2
Private Credit	332,187,982	3.8	-0.4	4.6	8.1	9.4	14.0	8.3	10.4	6.9	11.6	12.3
ICE BofAML High Yield Master II + 2%			7.9	8.1	10.9	6.8	13.4	-0.3	9.6	19.8	-2.7	4.5
Total High Yield	350,887,176	4.0	8.3	5.9	7.4	3.6	9.7	-3.6	6.1	13.9	-3.9	0.8
ICE BofAML High Yield Master II			7.4	5.9	8.7	4.7	11.2	-2.3	7.5	17.5	-4.6	2.5
Allianz Global Investors	350,887,176	4.0	8.3	5.9	7.4	3.6	9.5	-3.6	6.1	13.9	-3.9	0.8
ICE BofAML High Yield Master II			7.4	5.9	8.7	4.7	11.2	-2.3	7.5	17.5	-4.6	2.5
Total Real Estate	758,503,763	8.7	4.3	9.8	8.6	10.3	13.7	7.4	11.0	4.8	12.4	19.1
Real Estate Benchmark			3.1	8.8	6.6	9.0	11.4	6.7	7.1	6.7	8.3	18.8
NCREIF-ODCE			1.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index			1.8	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
Adelante	73,518,175	0.8	17.4	18.8	5.9	9.2	18.6	-5.5	7.2	3.6	4.6	32.7
Wilshire REIT			16.0	19.3	5.4	9.0	18.7	-4.8	4.2	7.2	4.2	31.8
Private Equity	962,522,748	11.1	1.5	13.5	10.7	10.5	10.1	12.1	11.9	8.9	9.9	15.2
S&P 500 Index +4% (Lagged)			-12.6	-0.5	13.6	12.8	17.6	22.6	23.3	20.0	3.4	24.5
Risk Parity	417,241,877	4.8	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBGBarc Global Aggregate			--	--	--	--	--	--	--	--	--	--
AQR Global Risk Premium-EL	213,625,425	2.5	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBGBarc Global Aggregate			--	--	--	--	--	--	--	--	--	--
PanAgora Risk Parity Multi Asset	203,616,452	2.3	--	--	--	--	--	--	--	--	--	--
60% MSCI ACWI Net/40% BBGBarc Global Aggregate			--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 7/1/2018. Private Credit and Private Equity data provided by StepStone Group.

Total Fund Performance Summary (Net of Fees)

Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Diversifying	707,538,680	8.1	2.5	1.0	1.7	0.3	2.3	-2.3	2.6	0.8	-1.8	1.7
Custom Diversifying Benchmark			2.3	3.6	3.3	3.6	4.3	1.4	4.7	4.1	2.5	5.4
Diversifying Fixed Income	507,921,464	5.8	3.1	2.0	1.1	2.3	3.2	-2.0	2.6	2.3	1.1	6.1
AFL-CIO	324,590,940	3.7	2.7	4.2	1.7	2.7	3.4	0.2	3.2	1.9	1.1	6.1
BBgBarc US Aggregate TR			2.9	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
Wellington Real Total Return	183,330,524	2.1	4.0	-1.7	2.3	-2.1	--	-5.6	1.9	-0.6	-5.4	-3.1
CPI + 4%			2.2	5.9	6.3	5.5	--	6.0	6.2	6.2	4.8	4.8
Diversifying Equity	199,617,216	2.3	0.8	--	--	--	--	--	--	--	--	--
Parametric Defensive Equity	199,617,216	2.3	0.8	--	--	--	--	--	--	--	--	--
91 Day T-Bill+4%			1.6	--	--	--	--	--	--	--	--	--
Liquidity	1,721,560,470	19.8	1.7	3.7	--	--	--	1.7	1.4	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			1.2	3.0	--	--	--	1.6	0.8	--	--	--
DFA Short Credit	375,055,643	4.3	2.0	3.9	--	--	--	1.1	1.8	--	--	--
ICE BofAML 1-5 Yrs US Corp & Govt TR			1.6	3.6	--	--	--	1.4	1.3	--	--	--
Insight Short Duration	811,554,864	9.3	1.5	3.4	--	--	--	1.7	1.5	--	--	--
BBgBarc US Govt/Credit 1-3 Yr. TR			1.2	3.0	--	--	--	1.6	0.8	--	--	--
Sit Short Duration	534,949,963	6.1	1.9	4.3	--	--	--	2.3	1.1	--	--	--
BBgBarc US Govt 1-3 Yr TR			1.0	2.7	--	--	--	1.6	0.4	--	--	--
Total Cash	61,335,201	0.7	0.7	2.1	1.4	0.1	--	1.7	0.9	0.9	0.1	-3.0
91 Day T-Bills			0.6	2.1	1.2	0.8	--	1.9	0.9	0.3	0.0	0.0
Cash	60,308,465	0.7	0.7	2.1	1.3	1.0	2.9	1.7	0.9	0.9	0.1	1.4
State Street Cash/Tax Reclaims	667,189	0.0	--	--	--	--	--	--	--	--	--	--
Northern Trust Transition	359,547	0.0	--	--	--	--	--	--	--	--	--	--

Individual closed end funds are not shown in performance summary table. AQR Global Risk Premium funded 1/18/2019. PanAgora Risk Parity funded 3/15/2019. Effective 3/1/2019 the custodian of record switched from State Street to Northern Trust. State Street Cash/Tax Reclaims reflects \$214,780 in cash and \$452,409 in potential tax reclaims at State Street after assets were transferred to Northern Trust. Effective 7/1/2018, Private Credit and Private Equity data provided by StepStone Group.

**Total Fund
Closed End Funds - Investment Summary** **Period Ending: March 31, 2019**

StepStone Group Analysis (*)												
Closing Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/19 ¹	Total Commitment	% Called	Contributed Capital	Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./Paid-In (DPI) ²	Tot. Value/Paid-In (TVPI) ³	Latest Valuation
Private Credit												
8/31/2015	Angelo Gordon Energy Credit Opp.	\$5,052,964	\$16,500,000	114%	\$18,750,000	\$0	\$701,250	\$18,829,566	\$2,319,783	1.00	1.27	12/31/2018
12/18/2017	Stepstone CC Opportunities Fund	\$247,166,908	\$650,000,000	39%	\$250,275,660	\$27,703,974	\$0	\$4,531,899	\$404,248,804	0.02	1.01	9/30/2018
7/1/2006	Torchlight II	\$1,145,418	\$128,000,000	171%	\$218,263,562	\$25,270	\$3,470,868	\$207,716,693	\$0	0.95	0.96	3/31/2019
12/12/2008	Torchlight III	\$0	\$75,000,000	112%	\$83,825,058	\$0	\$0	\$124,835,174	\$0	1.49	1.49	12/31/2018
8/1/2012	Torchlight IV	\$20,965,022	\$60,000,000	141%	\$84,578,688	\$109,256	\$2,983,869	\$93,610,460	\$0	1.11	1.35	3/31/2019
3/12/2015	Torchlight V	\$57,857,670	\$75,000,000	70%	\$52,500,000	\$7,500,000	\$2,746,783	\$7,486,557	\$22,500,000	0.14	1.24	12/31/2018
		Total Private Credit	\$332,187,982									
		% of Portfolio (Market Value)										3.8%

*All Data provided by StepStone Group
¹Latest valuation + capital calls - distributions
²(DPI) is equal to (capital returned / capital called)
³(TVPI) is equal to (market value + capital returned) / capital called

Total Fund
Closed End Funds - Investment Summary **Period Ending: March 31, 2019**

Verus Internal Analysis

Inception Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/2019 ³	Total Commitment	Total % Called	Capital Called	Current Qtr. Capital Called	Current Qtr. Distributions	Total Distributions ⁵	Remaining Commitment	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Latest Valuation
Real Estate												
1/23/2012	Angelo Gordon Realty Fund VIII	\$25,163,270	\$80,000,000	94%	\$75,401,855	\$0	\$800,000	\$96,167,757	\$12,334,302	1.28	1.61	12/31/2018
12/8/2014	Angelo Gordon Realty Fund IX	\$59,726,864	\$65,000,000	86%	\$55,575,000	\$0	\$0	\$8,775,000	\$12,122,500	0.16	1.23	12/31/2018
6/23/2005	DLJ RECP III	\$21,349,088	\$75,000,000	95%	\$70,968,662	\$0	\$0	\$72,565,242	\$4,031,338	1.02	1.32	12/31/2018
2/11/2008	DLJ RECP IV	\$93,647,227	\$100,000,000	95%	\$95,460,264	\$0	\$0	\$67,629,710	\$4,539,736	0.71	1.69	12/31/2018
7/1/2014	DLJ RECP V	\$62,861,651	\$75,000,000	119%	\$89,111,208	\$9,179,523	\$0	\$50,780,984	\$15,764,044	0.57	1.28	12/31/2018
3/19/2019	DLJ RECP VI	\$16,344,040	\$50,000,000	33%	\$16,344,040	\$16,344,040	\$0	\$0	\$33,655,960	0.00	1.00	---
6/17/1998	Hearststone II ⁴	\$1,186	\$25,000,000	80%	\$19,932,386	\$0	\$0	\$19,952,734	\$2,520,348	1.00	1.00	12/31/2018
11/26/2007	Invesco Real Estate II	\$425,482	\$85,000,000	92%	\$78,202,813	\$0	\$0	\$100,620,489	\$6,797,187	1.29	1.29	3/31/2019
6/30/2013	Invesco Real Estate III	\$8,705,832	\$35,000,000	93%	\$32,386,423	\$0	\$3,054,723	\$36,041,941	\$2,613,577	1.11	1.38	3/31/2019
6/30/2014	Invesco Real Estate IV	\$25,023,593	\$35,000,000	85%	\$29,808,739	\$0	\$2,811,512	\$12,188,039	\$5,191,261	0.41	1.25	3/31/2019
6/30/2013	Invesco Real Estate V	\$10,129,046	\$75,000,000	14%	\$10,634,714	\$10,634,714	\$0	\$0	\$64,365,286	0.00	0.95	12/31/2018
7/16/2013	LaSalle Income & Growth VI	\$28,322,599	\$75,000,000	95%	\$71,428,571	\$0	\$27,120	\$78,332,171	\$3,571,429	1.10	1.49	12/31/2018
2/28/2017	LaSalle Income & Growth VII	\$7,476,021	\$75,000,000	77%	\$58,042,603	\$3,817,741	\$0	\$12,113,858	\$16,957,397	0.21	1.20	12/31/2018
7/3/2013	Long Wharf Fund IV	\$10,870,744	\$25,000,000	100%	\$25,000,000	\$0	\$1,578,221	\$25,064,115	\$0	1.00	1.44	12/31/2018
9/30/2016	Long Wharf Fund V	\$50,541,552	\$50,000,000	100%	\$50,000,000	\$0	\$571,233	\$7,540,272	\$0	0.15	1.16	12/31/2018
12/31/2011	Oaktree REOF V	\$5,049,657	\$50,000,000	100%	\$50,000,000	\$0	\$0	\$80,116,587	\$25,750,000	1.60	1.70	3/31/2019
9/30/2013	Oaktree REOF VI	\$36,361,998	\$80,000,000	100%	\$80,000,000	\$0	\$0	\$77,100,872	\$18,400,000	0.96	1.42	3/31/2019
4/1/2015	Oaktree REOF VII	\$35,511,736	\$65,000,000	47%	\$30,745,000	\$0	\$0	\$4,615,000	\$38,870,000	0.15	1.31	3/31/2019
11/10/2013	Paulson Real Estate Fund II	\$25,594,598	\$20,000,000	97%	\$19,345,623	\$0	\$878,850	\$5,664,954	\$654,377	0.29	1.62	12/31/2018
1/25/2012	Siguler Guff DREOF ⁶	\$34,279,108	\$75,000,000	94%	\$70,725,000	\$1,350,000	\$23,680	\$89,729,348	\$4,275,000	1.27	1.75	12/31/2018
8/31/2013	Siguler Guff DREOF II ⁶	\$52,497,455	\$70,000,000	84%	\$59,045,000	\$1,925,000	\$775,000	\$30,383,106	\$10,955,000	0.51	1.40	12/31/2018
1/27/2016	Siguler Guff DREOF II Co-Inv ⁶	\$25,102,841	\$25,000,000	82%	\$20,537,862	\$0	\$0	\$972,301	\$4,462,138	0.05	1.27	12/31/2018
Total Closed End Real Estate		\$684,985,588	\$1,310,000,000	85%	\$1,108,695,764	\$43,251,018	\$13,942,805	\$876,354,481	\$287,830,879	0.79	1.41	

7.9%

% of Portfolio (Market Value)

¹(DPI) is equal to (capital returned / capital called)
²(TVPI) is equal to (market value + capital returned) / capital called
³Latest valuation + capital calls - distributions
⁴No further capital to be called
⁵Total distributions may include recallable distributions
⁶12/31/2018 valuation is based on a capital account estimate provided by the manager.

Total Fund Closed End Funds - Investment Summary

Period Ending: March 31, 2019

StepStone Group Analysis (*)

Closing Date	Manager Name/Fund Name	Estimated Market Value as of 3/31/19 ¹	Total Commitment	Total % Called	Contributed Capital	Current Qtr. Change in Contributed Capital	Current Qtr. Change in Distributed Capital	Total Distributions	Remaining Commitment	Distrib./Paid-In (DPI) ²	Tot. Value/Paid-In (TVPI) ³	Latest Valuation
Private Equity & Venture Capital												
2/11/2004	Adams Street Partners	\$146,394,890	\$210,000,000	87%	\$183,283,125	\$1,500,000	\$3,641,393	\$186,761,448	\$26,716,875	0.75	1.54	12/31/2018
12/31/2008	Adams Street Partners II	\$8,387,565	\$30,000,000	95%	\$28,365,000	\$0	\$0	\$39,234,007	\$1,635,000	1.38	1.68	12/31/2018
12/31/2008	Adams Street Partners - Fund 5	\$22,486,488	\$40,000,000	77%	\$30,611,900	\$0	\$0	\$14,184,722	\$9,388,100	0.46	1.20	12/31/2018
1/18/1996	Adams Street Partners - BPF	\$1,944,353	\$59,565,614	97%	\$7,517,409	\$0	\$328,493	\$102,566,990	\$2,048,205	1.78	1.82	12/31/2018
3/31/2016	Adams Street Venture Innovation	\$30,925,603	\$75,000,000	39%	\$28,912,500	\$3,750,000	\$0	\$0	\$46,087,500	0.00	1.07	12/31/2018
5/18/2018	AE Industrial Partners Fund II, L.P.	-\$61,035	\$35,000,000	0%	\$0	\$0	\$0	\$0	\$35,000,000	-	-	12/31/2018
11/27/2013	Aether Real Assets III	\$21,830,643	\$25,000,000	85%	\$21,237,873	\$261,709	\$1,218,486	\$3,321,762	\$5,585,822	0.16	1.18	9/30/2018
11/30/2013	Aether Real Assets III Surplus	\$52,566,176	\$50,000,000	95%	\$47,252,294	\$360,973	\$3,868,893	\$7,754,397	\$5,442,210	0.16	1.28	9/30/2018
1/30/2016	Aether Real Assets IV	\$30,325,423	\$50,000,000	54%	\$27,030,209	\$1,840,944	\$157,497	\$1,687,478	\$24,644,611	0.06	1.18	9/30/2018
11/26/2003	Bay Area Equity Fund I	\$3,112,874	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$37,018,019	\$0	3.70	4.01	12/31/2018
11/26/2003	Bay Area Equity Fund II	\$10,928,292	\$10,000,000	100%	\$10,000,000	\$0	\$0	\$2,026,313	\$0	0.20	1.30	12/31/2018
1/16/2008	Carpentier Bancfund	\$0	\$30,000,000	98%	\$29,314,657	\$0	\$0	\$49,128,304	\$0	1.68	1.68	9/30/2018
6/30/2013	Commonfund	\$48,560,389	\$50,000,000	87%	\$43,324,995	\$550,000	\$0	\$0	\$6,675,005	0.16	1.28	9/30/2018
11/26/2003	EIF US Power Fund I	\$0	\$30,000,000	130%	\$38,960,280	\$0	\$0	\$64,468,378	\$0	1.65	1.65	12/27/2018
7/15/2005	EIF US Power Fund II	\$10,058,567	\$50,000,000	130%	\$65,029,556	\$0	\$10,162,530	\$71,810,826	\$1	1.10	1.26	9/30/2018
5/31/2007	EIF US Power Fund III	\$22,371,720	\$65,000,000	110%	\$71,430,128	\$0	\$836,342	\$72,613,115	\$0	1.02	1.33	9/30/2018
8/31/2010	EIF US Power Fund IV	\$45,822,897	\$50,000,000	125%	\$62,289,277	\$2,663,689	\$0	\$25,225,856	\$1,457,015	0.40	1.14	12/31/2018
11/28/2016	EIF US Power Fund V	\$39,896,759	\$50,000,000	89%	\$44,311,703	\$0	\$12,500	\$6,044,713	\$9,878,568	0.14	1.04	12/31/2018
2/21/2019	Genstar Capital Partners IX, L.P.	\$0	\$50,000,000	0%	\$0	\$0	\$0	\$0	\$50,000,000	-	-	-
2/12/2004	Nogales	\$0	\$15,000,000	120%	\$18,026,408	\$0	\$0	\$13,866,249	\$0	0.77	0.77	12/22/2017
2/28/2010	Oaktree PIF 2009	\$7,199,120	\$40,000,000	87%	\$34,816,108	\$3,660	\$1,599,506	\$40,787,270	\$6,308,961	1.17	1.38	12/31/2018
8/15/2013	Ocean Avenue Fund II	\$29,190,818	\$30,000,000	87%	\$26,100,000	\$900,000	\$900,000	\$10,940,744	\$3,900,000	0.42	1.54	12/31/2018
4/15/2016	Ocean Avenue Fund III	\$39,599,071	\$50,000,000	66%	\$33,000,000	\$5,000,000	\$500,000	\$6,000,000	\$17,000,000	0.18	1.38	12/31/2018
11/30/2007	Paladin III	\$27,628,653	\$25,000,000	132%	\$33,058,868	\$0	\$0	\$23,594,952	\$654,827	0.71	1.55	12/31/2018
8/22/2011	Pathway 6	\$37,077,862	\$40,000,000	93%	\$37,331,798	\$400,951	\$1,010,869	\$19,689,412	\$4,748,704	0.53	1.52	9/30/2018
7/10/2013	Pathway 7	\$65,262,643	\$70,000,000	89%	\$62,513,255	\$1,849,810	\$2,622,047	\$16,570,317	\$10,060,049	0.27	1.31	9/30/2018
11/23/2015	Pathway 8	\$39,020,947	\$50,000,000	68%	\$33,857,982	\$1,774,259	\$303,732	\$3,962,372	\$17,523,923	0.12	1.27	9/30/2018
1/19/1999	Pathway	\$20,713,141	\$125,000,000	100%	\$124,584,452	\$70,951	\$1,432,618	\$168,399,240	\$11,151,176	1.35	1.52	9/30/2018
7/31/2009	Pathway 2008	\$21,080,276	\$30,000,000	96%	\$28,758,434	\$94,139	\$951,312	\$25,650,530	\$3,521,080	0.89	1.62	9/30/2018
6/3/2014	Siguler Gulf CCCERA Opportunities	\$153,874,269	\$200,000,000	71%	\$141,405,741	\$2,253,241	\$0	\$41,905,281	\$68,181,254	0.30	1.38	12/31/2018
8/31/2013	Siguler Gulf Secondary Opportunities	\$6,031,997	\$50,000,000	60%	\$29,999,802	\$0	\$4,347,076	\$42,638,494	\$51,812,494	1.42	1.62	9/30/2018
5/18/2018	Siris Partners IV, L.P.	\$4,694,447	\$35,000,000	15%	\$5,340,331	\$5,340,331	\$0	\$0	\$29,659,669	0.00	0.88	12/31/2018
12/8/2015	Wastewater Opportunity Fund	\$15,597,901	\$25,000,000	73%	\$18,184,010	\$1,808,053	\$0	\$2,031,922	\$6,838,217	0.11	0.97	12/31/2018
Total Private Equity and Venture Capital		\$962,522,748	\$1,754,565,614	81%	\$1,425,847,894	\$30,422,712	\$34,580,069	\$1,056,980,690	\$455,919,065	0.74	1.42	

% of Portfolio (Market Value) 11.1%

* All Data provided by StepStone Group
¹ Latest valuation + capital calls - distributions
² (DPI) is equal to (capital returned / capital called)
³ (TVPI) is equal to (market value + capital returned) / capital called

Total Fund
Closed End Funds - IRR Summary

Period Ending: March 31, 2019

Private Credit	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon Energy Cred Opp.	09/24/2015	-	-	-	12.1%	12/31/2018
Stepstone CC Opportunities Fund ¹	02/02/2018	-	-	-	-	-
Torchlight II	07/01/2006	0.0%	0.2%	-1.2%	-1.0%	03/31/2019
Torchlight III	12/12/2008	18.3%	16.3%	13.7%	13.8%	06/30/2018
Torchlight IV	08/01/2012	13.5%	13.8%	10.5%	11.1%	03/31/2019
Torchlight V	03/12/2015	20.8%	20.8%	13.5%	13.4%	12/31/2018
Real Estate	Inception	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Angelo Gordon VIII	01/23/2012	-	-	-	15.6%	12/31/2018
Angelo Gordon IX	12/08/2014	-	-	-	12.2%	12/31/2018
DLJ RECP III	06/23/2005	0.0%	0.0%	-2.0%	-2.0%	12/31/2018
DLJ RECP IV	02/11/2008	7.0%	7.0%	4.0%	5.0%	12/31/2018
DLJ RECP V	07/01/2014	26.0%	26.0%	15.0%	15.0%	12/31/2018
DLJ RECP VI ¹	03/19/2019	-	-	-	-	-
Hearthstone II	06/17/1998	-	30.1%	-	30.1%	12/31/2018
Invesco Fund III	06/30/2013	17.2%	-	13.6%	-	12/31/2018
Invesco Fund IV	06/30/2014	17.9%	-	13.1%	-	12/31/2018
Invesco Fund V ¹	02/20/2019	-	-	-	-	-
LaSalle Income & Growth VI	07/16/2013	15.4%	15.4%	12.8%	12.8%	12/31/2018
LaSalle Income & Growth VII	02/28/2017	14.6%	15.0%	11.8%	12.0%	12/31/2018
Long Wharf IV	07/03/2013	17.2%	17.3%	12.4%	12.4%	03/31/2019
Long Wharf V	09/30/2016	16.8%	18.7%	10.8%	11.9%	03/31/2019
Oaktree REOF V	12/31/2011	17.0%	-	12.5%	-	03/31/2019
Oaktree REOF VI	09/30/2013	14.8%	-	9.9%	-	03/31/2019
Oaktree REOF VII	04/01/2015	62.5%	-	34.8%	-	03/31/2019
Paulson	11/10/2013	14.6%	-	13.1%	-	12/31/2018
Siguler Guff I ⁴	01/25/2012	14.8%	17.3%	13.2%	14.1%	12/31/2018
Siguler Guff II ⁴	08/31/2013	13.6%	13.3%	12.2%	11.0%	12/31/2018
Siguler Guff DREOF II Co-Inv ⁴	01/27/2016	17.0%	17.1%	15.9%	13.5%	12/31/2018

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

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

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

⁴Manager has provided estimated IRR data since Q4 reporting has not been finalized.

Total Fund

Closed End Funds - IRR Summary

Period Ending: March 31, 2019

Private Equity & Venture Capital	Closing Date	Fund Level (G)	CCCERA (G)	Fund Level (N)	CCCERA (N)	IRR Date
Adams Street Partners	2/11/2004	11.5%	12.6%	-	10.1%	12/31/2018
Adams Street Partners II	12/31/2008	16.6%	17.0%	-	14.5%	12/31/2018
Adams Street Partners - Fund 5	12/31/2008	8.9%	8.8%	-	6.4%	12/31/2018
Adams Street Partners Venture	1/18/1996	23.4%	23.3%	-	13.0%	12/31/2018
Adams Street Partners - BPF	3/31/2016	14.3%	14.3%	-	11.6%	12/31/2018
AE Industrial Partners Fund II, LP ¹	5/18/2018	-	-	-	-	-
Aether Real Assets III	11/27/2013	10.4%	-	7.6%	-	9/30/2018
Aether Real Assets III Surplus	11/30/2013	11.5%	-	9.8%	-	9/30/2018
Aether Real Assets IV	1/30/2016	23.5%	-	17.3%	-	9/30/2018
Bay Area Equity Fund I	11/26/2003	25.8%	25.8%	23.2%	23.2%	12/31/2018
Bay Area Equity Fund II	11/26/2003	5.4%	5.4%	4.5%	4.5%	12/31/2018
CommonFund	6/30/2013	-	-	-	10.3%	9/30/2018
EIF US Power Fund I	11/26/2003	33.5%	34.7%	28.5%	28.3%	12/31/2018
EIF US Power Fund II	7/15/2005	6.7%	6.2%	4.1%	3.6%	12/31/2018
EIF US Power Fund III	5/31/2007	7.4%	7.4%	5.0%	5.0%	12/31/2018
EIF US Power Fund IV	8/31/2010	9.3%	9.5%	5.3%	5.1%	12/31/2018
EIF US Power Fund V	11/28/2016	15.6%	14.0%	6.4%	5.5%	12/31/2018
Genstar Capital Partners IX, L.P. ¹	2/21/2019	-	-	-	-	-
Oaktree PIF 2009	2/28/2010	7.0%	-	6.9%	-	3/31/2019
Ocean Avenue Fund II	8/15/2013	-	-	15.9%	-	12/31/2018
Ocean Avenue Fund III	4/15/2016	-	-	35.9%	-	12/31/2018
Paladin III	11/30/2007	16.9%	-	9.2%	-	12/31/2018
Pathway 6	8/22/2011	15.7%	15.7%	13.0%	13.0%	12/31/2018
Pathway 7	7/10/2013	14.8%	14.8%	11.9%	11.9%	9/30/2018
Pathway 8	11/23/2015	20.5%	20.8%	18.2%	19.1%	12/31/2018
Pathway Private Equity Fund	1/19/1999	10.2%	10.2%	8.4%	8.4%	12/31/2018
Pathway Private Equity Fund 2008	7/31/2009	14.6%	14.6%	12.0%	12.0%	12/31/2018
Siguler Guff CCCERA Opportunities	6/3/2014	20.5%	21.1%	19.9%	17.8%	12/31/2018
Siguler Guff Secondary Opportunities	8/31/2013	55.7%	413.2%	50.0%	202.6%	9/30/2018
Siris Partners IV, L.P. ¹	5/18/2018	-	-	-	-	-
Wastewater Opportunity Fund	12/8/2015	8.7%	-	-1.5%	-	12/31/2018

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

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

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

Total Fund

Performance Analysis - 3 Years (Net of Fees)

Period Ending: March 31, 2019

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	12.55%	-3.99%	12.63%	-3.29%	0.96	4.83%	0.86	0.90	-0.82	87.06%	110.33%
Boston Partners	11.08%	0.63%	11.84%	-0.16%	1.08	3.18%	0.93	0.83	0.20	102.59%	97.96%
Emerald Advisers	17.37%	2.50%	17.56%	1.81%	1.05	4.33%	0.94	0.92	0.58	102.99%	90.14%
Ceredex	9.13%	-1.73%	14.16%	0.14%	0.83	5.47%	0.89	0.56	-0.32	81.26%	89.43%
Pyrford	5.47%	-2.26%	8.75%	0.13%	0.69	5.60%	0.74	0.48	-0.40	59.00%	66.04%
William Blair	7.58%	-0.84%	11.72%	-1.06%	1.03	2.88%	0.94	0.54	-0.29	95.67%	101.09%
Artisan Partners	13.99%	3.32%	12.56%	2.02%	1.12	5.76%	0.80	1.02	0.58	132.54%	114.19%
First Eagle	7.22%	-3.45%	7.44%	-0.32%	0.71	3.74%	0.90	0.81	-0.92	60.62%	67.23%
Allianz Global Investors	7.37%	-1.31%	4.44%	-0.64%	0.92	1.33%	0.92	1.38	-0.99	88.65%	106.17%
Adelante	5.93%	0.48%	13.08%	0.81%	0.94	1.92%	0.98	0.36	0.25	91.11%	90.44%
AFL-CIO	1.71%	-0.32%	2.63%	-0.02%	0.85	0.80%	0.93	0.18	-0.40	81.54%	81.92%
Wellington Real Total Return	2.32%	-3.96%	4.10%	-1.53%	0.61	4.08%	0.02	0.27	-0.97	44.99%	23,204.41%

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

Total Fund Performance Analysis - 5 Years (Net of Fees) Period Ending: March 31, 2019

5 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Jackson Square Partners	9.84%	-3.66%	12.52%	-2.85%	0.94	4.90%	0.85	0.73	-0.75	84.13%	106.79%
Boston Partners	7.31%	-0.41%	12.28%	-1.00%	1.08	3.10%	0.94	0.53	-0.13	101.34%	103.72%
Emerald Advisers	10.13%	1.72%	18.33%	1.43%	1.03	5.03%	0.93	0.51	0.34	109.59%	99.34%
Ceredex	6.33%	0.74%	14.32%	1.58%	0.85	5.49%	0.88	0.39	0.13	84.67%	89.29%
William Blair	3.61%	-0.40%	11.78%	-0.26%	0.96	2.76%	0.95	0.24	-0.15	90.22%	95.93%
Artisan Partners	10.43%	3.98%	12.76%	3.66%	1.05	5.32%	0.83	0.76	0.75	123.78%	92.87%
First Eagle	4.97%	-1.48%	8.07%	0.55%	0.69	4.44%	0.88	0.52	-0.33	56.44%	67.12%
Allianz Global Investors	3.58%	-1.12%	5.26%	-0.84%	0.94	1.18%	0.95	0.54	-0.95	87.11%	100.75%
Adelante	9.23%	0.23%	14.02%	0.70%	0.95	1.81%	0.99	0.60	0.13	91.72%	93.88%
AFL-CIO	2.66%	-0.08%	2.57%	0.27%	0.87	0.74%	0.94	0.74	-0.11	87.42%	81.08%
Wellington Real Total Return	-2.12%	-7.65%	5.49%	-9.98%	1.42	5.32%	0.07	-0.52	-1.44	-11.89%	1,080.85%

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

Total Fund Investment Fund Fee Analysis **Period Ending: March 31, 2019**

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
BlackRock Russell 1000 Index	Growth	0.03% of Assets	\$130,255,255	\$39,077	0.03%
Jackson Square Partners	Growth	0.50% of First 100.0 Mil, 0.40% of Next 150.0 Mil, 0.35% Thereafter	\$267,467,206	\$1,161,135	0.43%
Boston Partners	Growth	0.50% of First 25.0 Mil, 0.30% Thereafter	\$259,192,532	\$827,578	0.32%
Emerald Advisers	Growth	0.75% of First 10.0 Mil, 0.60% Thereafter	\$214,991,467	\$1,304,949	0.61%
Ceredex	Growth	0.85% of First 10.0 Mil, 0.68% of Next 40.0 Mil, 0.51% Thereafter	\$170,142,627	\$969,727	0.57%
Pyrford	Growth	0.70% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.35% Thereafter	\$454,787,198	\$1,841,755	0.40%
William Blair	Growth	0.80% of First 20.0 Mil, 0.60% of Next 30.0 Mil, 0.50% of Next 50.0 Mil, 0.45% of Next 50.0 Mil, 0.40% of Next 50.0 Mil, 0.30% Thereafter	\$469,522,194	\$1,823,567	0.39%
PIMCO RAE Emerging Markets	Growth	0.75% of First 50.0 Mil, 0.68% of Next 50.0 Mil, 0.50% of Next 100.0 Mil, 0.45% Thereafter	\$343,874,286	\$1,859,934	0.54%
TT Emerging Markets	Growth	0.70% of First 100.0 Mil, 0.65% of Next 100.0 Mil, 0.60% Thereafter	\$331,436,277	\$2,138,618	0.65%
Artisan Partners	Growth	0.75% of Assets	\$364,329,832	\$2,732,474	0.75%
First Eagle	Growth	0.75% of Assets	\$364,525,432	\$2,733,941	0.75%
Allianz Global Investors	Growth	0.50% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$350,887,176	\$1,328,105	0.38%
AQR Global Risk Premium-EL	Growth	0.38% of Assets	\$213,625,425	\$811,777	0.38%

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

**Total Fund
Investment Fund Fee Analysis** **Period Ending: March 31, 2019**

Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
PanAgora Risk Parity Multi Asset	Growth	0.35% of Assets	\$203,616,452	\$712,658	0.35%
AFL-CIO	Diversifying	0.43% of Assets	\$324,590,940	\$1,395,741	0.43%
Wellington Real Total Return	Diversifying	0.35% of Assets	\$183,330,524	\$641,657	0.35%
Parametric Defensive Equity	Diversifying	0.42% of First 200.0 Mil, 0.39% Thereafter	\$199,617,216	\$838,392	0.42%
DFA Short Credit	Liquidity	0.20% of First 25.0 Mil, 0.10% Thereafter	\$375,055,643	\$400,056	0.11%
Insight Short Duration	Liquidity	0.06% of First 500.0 Mil, 0.05% of Next 500.0 Mil, 0.04% Thereafter	\$811,554,864	\$455,777	0.06%
Sit Short Duration	Liquidity	0.15% of Assets	\$534,949,963	\$802,425	0.15%

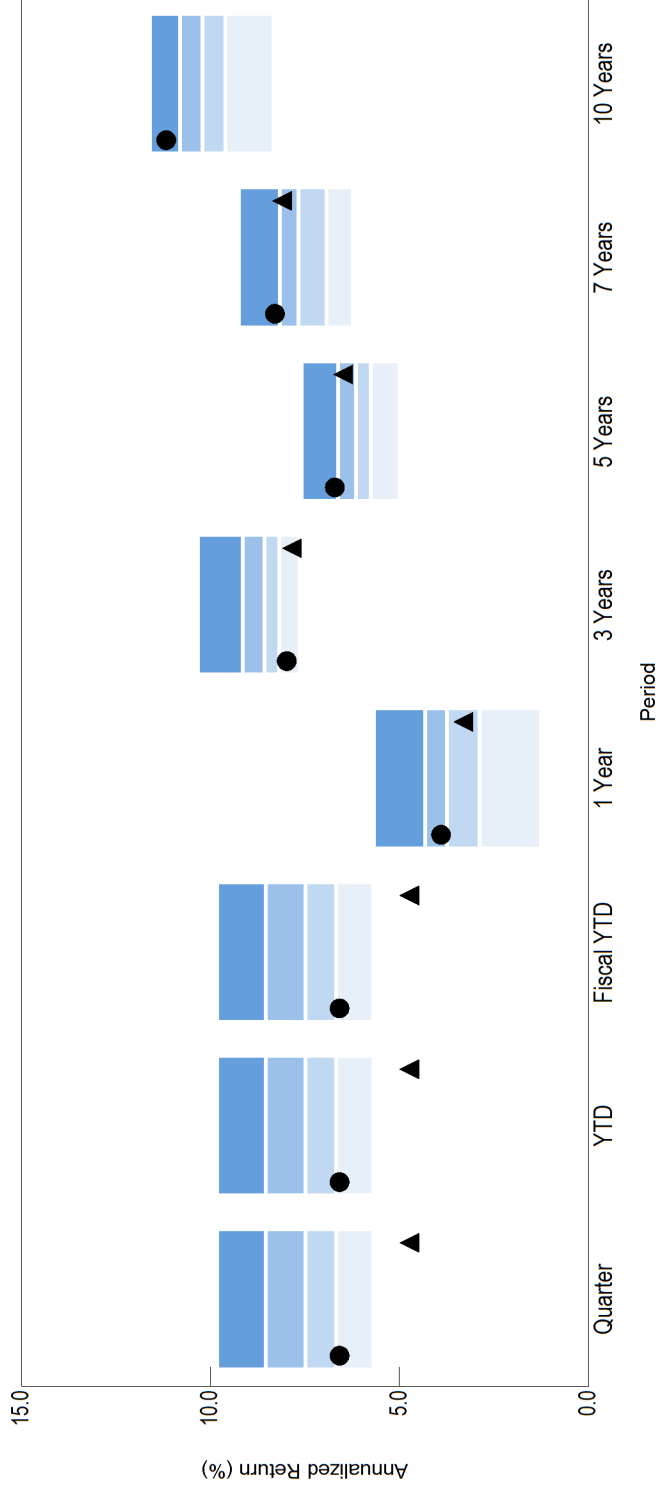
Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: March 31, 2019

Total Fund Cumulative Performance vs. InvestorForce Public DB > \$1B Gross



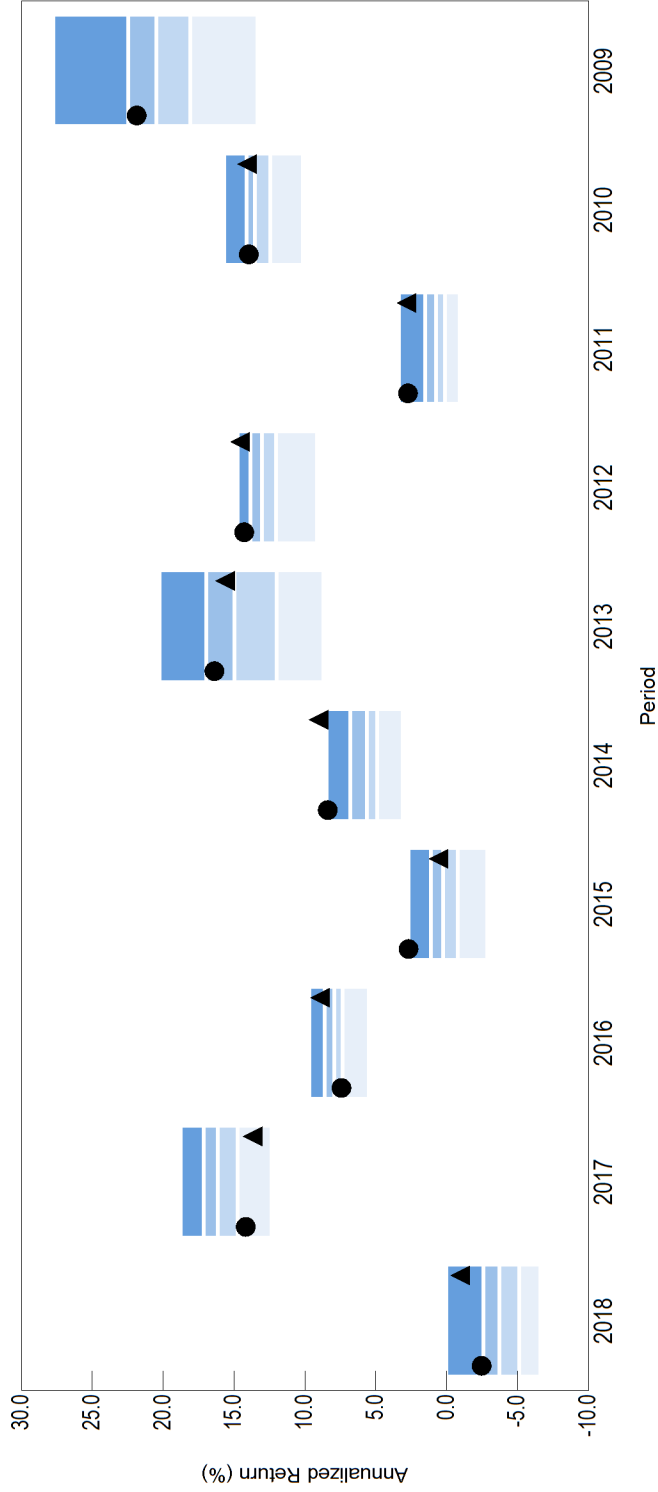
Return (Rank)

5th Percentile	9.8	9.8	9.8	5.7	10.3	7.6	9.2	11.6
25th Percentile	8.5	8.5	8.5	4.3	9.2	6.6	8.2	10.8
Median	7.5	7.5	7.5	3.7	8.6	6.2	7.7	10.2
75th Percentile	6.7	6.7	6.7	2.9	8.2	5.8	6.9	9.6
95th Percentile	5.7	5.7	5.7	1.3	7.6	5.0	6.3	8.3
# of Portfolios	92	92	92	91	91	89	87	83
● Total Fund	6.6 (79)	6.6 (79)	6.6 (79)	3.9 (37)	8.0 (87)	6.7 (22)	8.3 (20)	11.2 (14)
▲ Policy Index	4.7 (99)	4.7 (99)	4.7 (99)	3.3 (67)	7.8 (91)	6.5 (31)	8.1 (28)	--

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

Total Fund
Peer Universe Comparison: Consecutive Periods (Gross of Fees) **Period Ending: March 31, 2019**

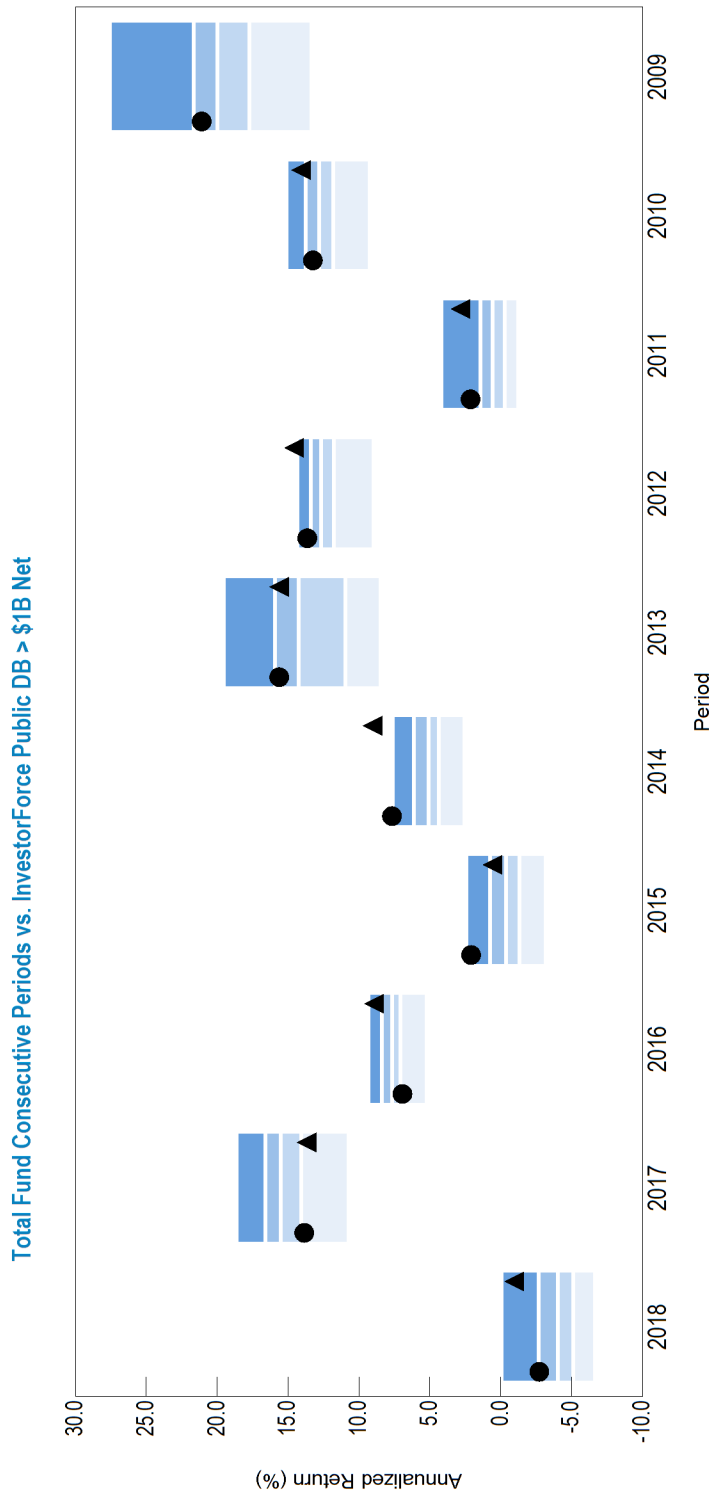
Total Fund Consecutive Periods vs. InvestorForce Public DB > \$1B Gross



	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Return (Rank)										
5th Percentile	0.0	18.8	9.7	2.7	8.5	20.2	14.7	3.3	15.7	27.7
25th Percentile	-2.6	17.2	8.6	1.1	6.8	17.0	13.9	1.6	14.2	22.5
Median	-3.7	16.2	8.0	0.3	5.7	15.0	13.0	0.8	13.5	20.5
75th Percentile	-5.1	14.8	7.4	-0.7	4.9	12.0	12.1	0.1	12.5	18.1
95th Percentile	-6.6	12.4	5.5	-2.8	3.1	8.7	9.2	-0.9	10.2	13.4
# of Portfolios	71	98	92	98	79	67	74	68	66	66
● Total Fund	-2.5 (25)	14.2 (83)	7.4 (74)	2.7 (5)	8.4 (6)	16.4 (33)	14.3 (13)	2.7 (9)	14.0 (29)	21.9 (34)
▲ Policy Index	-0.9 (8)	13.7 (89)	8.9 (15)	0.6 (40)	9.0 (2)	15.6 (43)	14.6 (8)	2.8 (9)	14.1 (27)	-- (-)

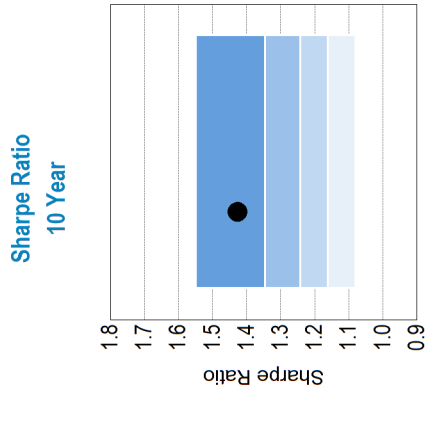
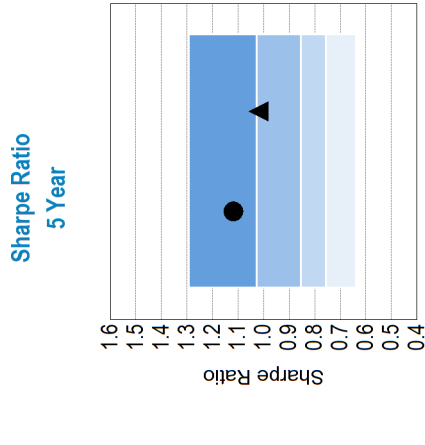
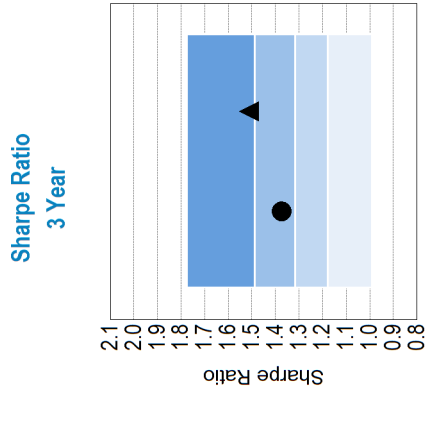
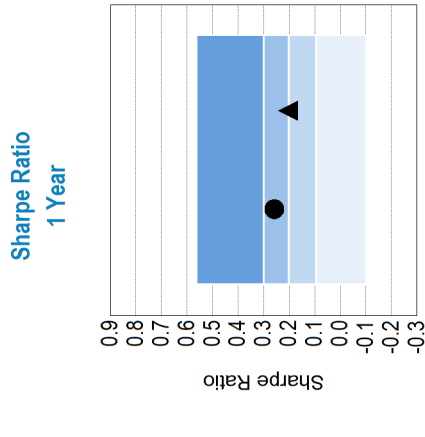
Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund
Peer Universe Comparison: Consecutive Periods (Net of Fees) Period Ending: March 31, 2019



Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios	Total Fund	Policy Index
2018	-0.1	-2.7	-4.0	-5.1	-6.6	63	-3.2	-2.7 (27)
2017	18.6	16.6	15.6	14.1	10.7	61	10.7	13.7 (85)
2016	9.3	8.4	7.7	7.1	5.3	62	5.3	8.9 (13)
2015	2.4	0.8	-0.4	-1.3	-3.2	57	-3.2	0.6 (29)
2014	7.6	6.1	5.1	4.4	2.6	55	2.6	9.0 (2)
2013	19.5	16.0	14.3	11.0	8.5	48	8.5	15.6 (33)
2012	14.3	13.4	12.7	11.8	9.0	44	9.0	14.6 (1)
2011	4.2	1.5	0.6	-0.3	-1.2	42	-1.2	2.8 (11)
2010	15.1	13.8	12.8	11.8	9.3	41	9.3	14.1 (15)
2009	27.5	21.7	20.0	17.7	13.4	40	13.4	21.1 (33)

Total Fund
 Sharpe Ratio Ranking (Gross of Fees) Period Ending: March 31, 2019



● Total Fund Value Rank
 ▲ Policy Index Value Rank

● Total Fund Value Rank
 ▲ Policy Index Value Rank

● Total Fund Value Rank
 ▲ Policy Index Value Rank

● Total Fund Value Rank
 ▲ Policy Index Value Rank

Universe 5th %tile 25th %tile Median 75th %tile 95th %tile

Universe 5th %tile 25th %tile Median 75th %tile 95th %tile

Universe 5th %tile 25th %tile Median 75th %tile 95th %tile

Universe 5th %tile 25th %tile Median 75th %tile 95th %tile

Domestic Equity Managers

Jackson Square Partners Manager Portfolio Overview

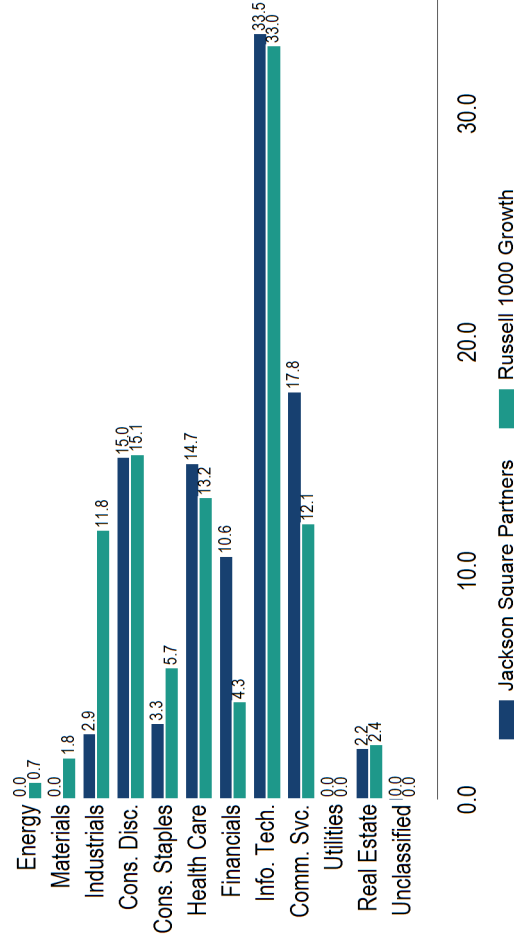
Period Ending: March 31, 2019

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

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	29	545
Weighted Avg. Market Cap. (\$B)	169.68	262.28
Median Market Cap. (\$B)	46.08	11.70
Price To Earnings	25.84	24.26
Price To Book	4.74	6.92
Price To Sales	2.87	2.84
Return on Equity (%)	22.10	38.85
Yield (%)	0.91	1.28
Beta	0.85	1.00

Sector Allocation (%) vs Russell 1000 Growth



Top Contributors

	End Weight	Return	Avg Wgt	Return	Contribution	Avg Wgt	Return	Contribution
MICROSOFT	9.93	16.62	9.07	16.62	1.51	3.84	-21.45	-0.82
IQVIA HOLDINGS	6.16	23.83	2.85	49.25	1.41	2.67	-12.13	-0.32
KKR AND A	5.09	20.31	5.56	23.83	1.32	3.53	-8.33	-0.29
DOLLAR TREE	4.62	16.30	4.68	20.31	0.95	3.75	-4.62	-0.17
DOLLAR GENERAL	4.39	10.66	3.57	25.02	0.89	3.92	-0.37	-0.01
PAYPAL HOLDINGS	4.19	23.49	3.78	23.49	0.89	2.46	1.45	0.04
HASBRO	4.13	5.37	3.83	21.16	0.81	2.59	3.59	0.09
MASTERCARD	4.08	25.02	3.33	21.76	0.72	0.61	16.78	0.10
AUTODESK	4.06	21.16	3.55	18.59	0.66	3.38	3.34	0.11
VISA 'A'	3.95	18.59	3.90	16.30	0.64	0.92	13.30	0.12

Largest Holdings

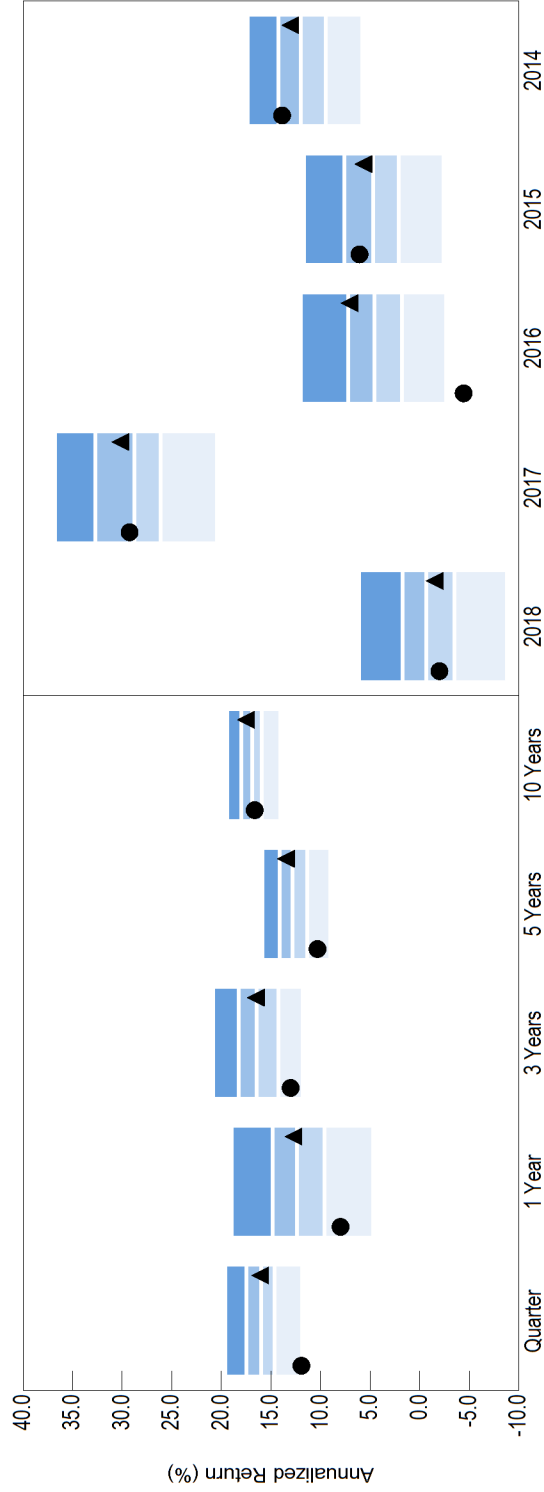
	End Weight	Return	Avg Wgt	Return	Contribution	Avg Wgt	Return	Contribution
MICROSOFT	9.93	16.62	9.07	16.62	1.51	3.84	-21.45	-0.82
IQVIA HOLDINGS	6.16	23.83	2.85	49.25	1.41	2.67	-12.13	-0.32
KKR AND A	5.09	20.31	5.56	23.83	1.32	3.53	-8.33	-0.29
DOLLAR TREE	4.62	16.30	4.68	20.31	0.95	3.75	-4.62	-0.17
DOLLAR GENERAL	4.39	10.66	3.57	25.02	0.89	3.92	-0.37	-0.01
PAYPAL HOLDINGS	4.19	23.49	3.78	23.49	0.89	2.46	1.45	0.04
HASBRO	4.13	5.37	3.83	21.16	0.81	2.59	3.59	0.09
MASTERCARD	4.08	25.02	3.33	21.76	0.72	0.61	16.78	0.10
AUTODESK	4.06	21.16	3.55	18.59	0.66	3.38	3.34	0.11
VISA 'A'	3.95	18.59	3.90	16.30	0.64	0.92	13.30	0.12

Unclassified sector allocation includes cash allocations.

Jackson Square Partners
 Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2019

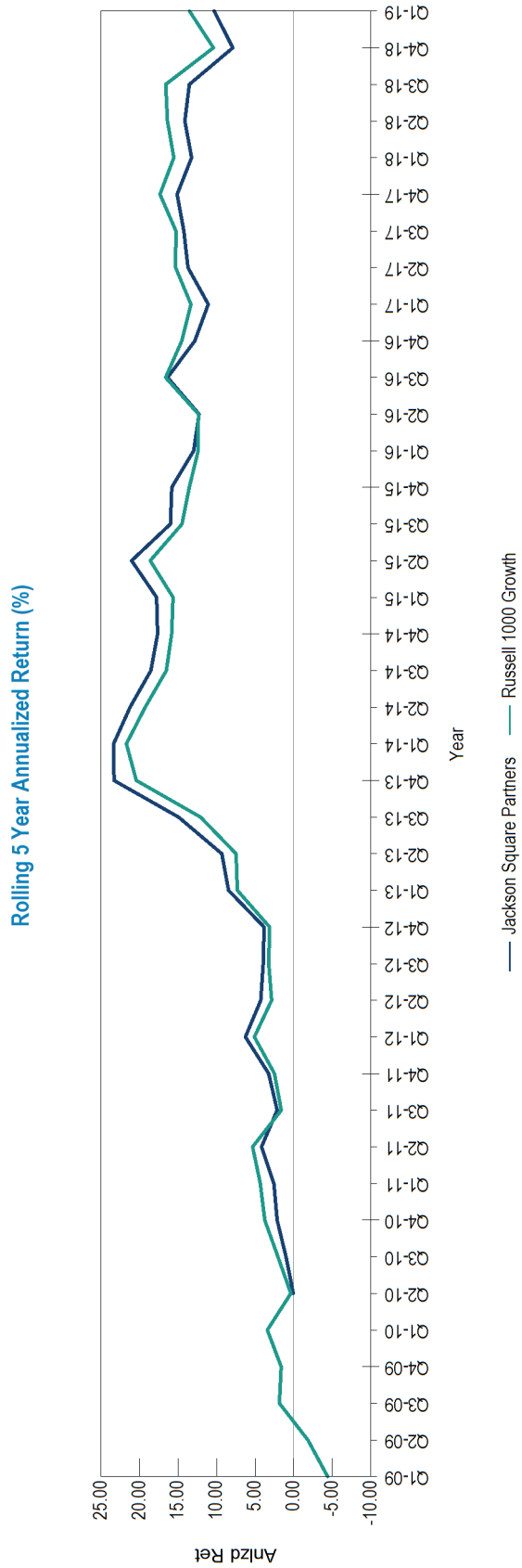
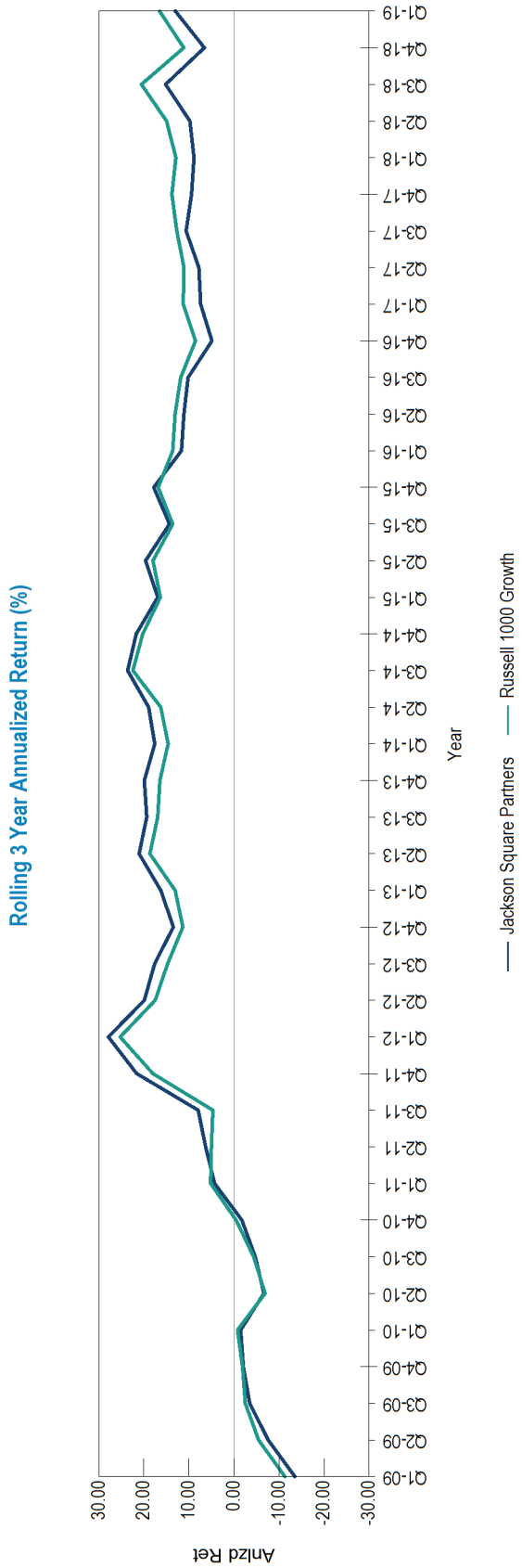
Jackson Square Partners vs. eV US Large Cap Growth Equity Gross Universe



Return (Rank)

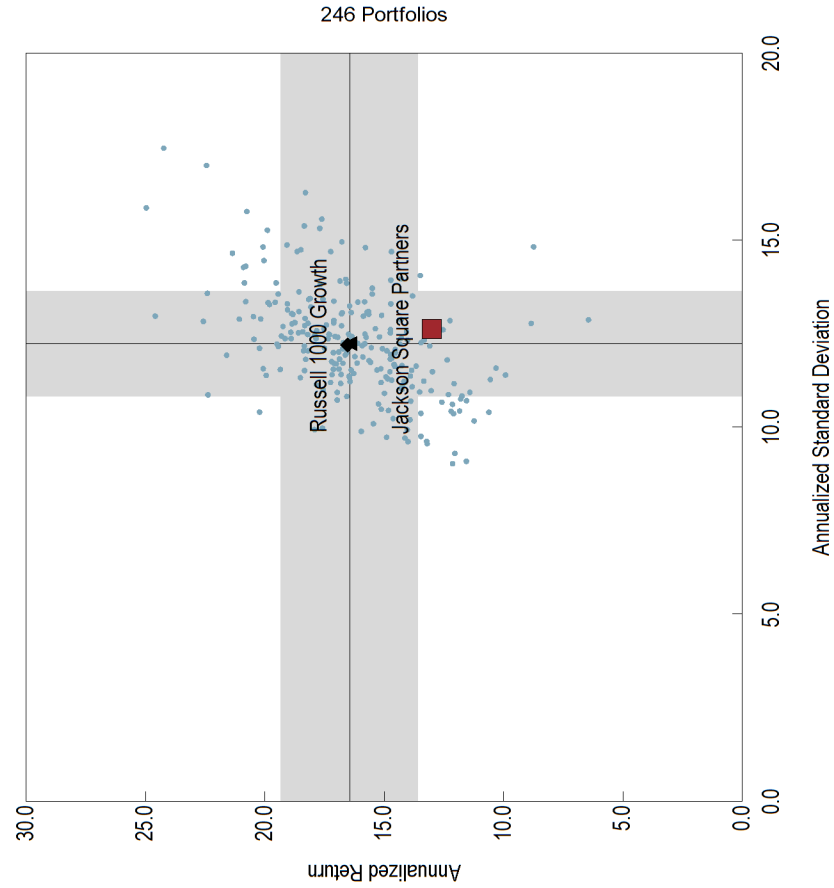
5th Percentile	19.6	20.8	15.8	19.4	36.7	12.0	11.6	17.3
25th Percentile	17.5	18.3	14.1	18.0	32.7	7.3	7.6	14.3
Median	16.1	16.4	12.9	17.0	28.8	4.6	4.7	12.0
75th Percentile	14.6	14.3	11.4	16.0	26.2	1.8	2.1	9.5
95th Percentile	11.9	11.8	9.0	14.1	20.5	-2.7	-2.4	5.8
# of Portfolios	253	246	242	216	265	282	270	291
● Jackson Square Partners	11.9 (95)	13.0 (89)	10.3 (87)	16.6 (60)	29.3 (47)	-4.4 (98)	6.1 (37)	13.9 (31)
▲ Russell 1000 Growth	16.1 (49)	16.5 (49)	13.5 (38)	17.5 (34)	30.2 (42)	7.1 (26)	5.7 (42)	13.0 (38)

Jackson Square Partners
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

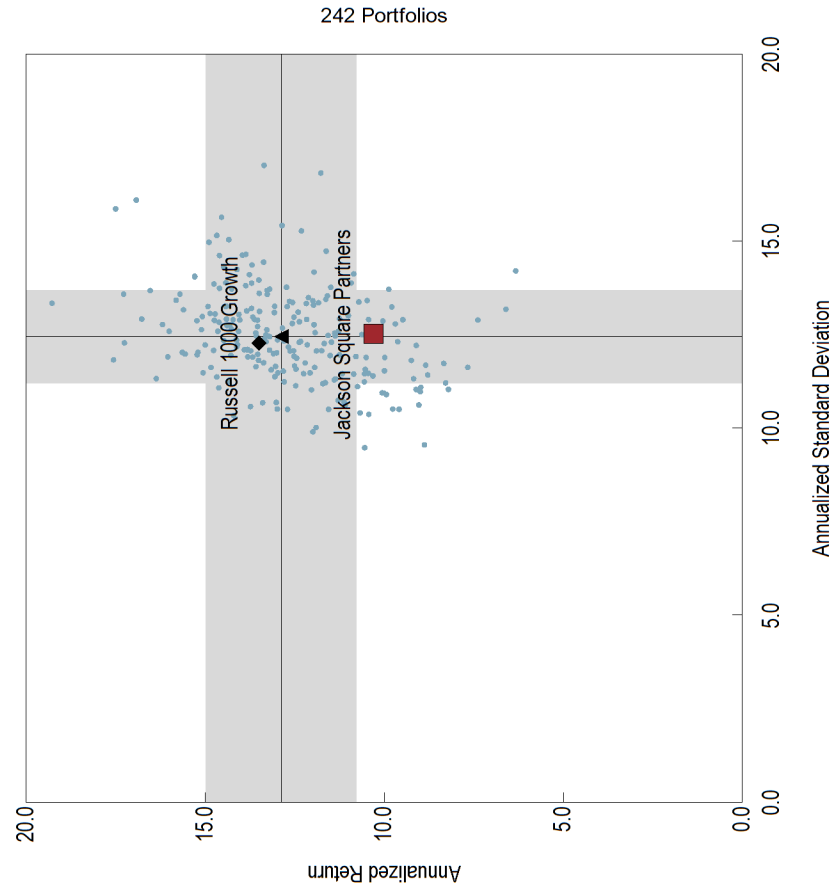


Jackson Square Partners
 Risk vs. Return 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Jackson Square Partners	13.0%	12.6%	0.9
Russell 1000 Growth	16.5%	12.2%	1.3
eV US Large Cap Growth Equity Gross Median	16.4%	12.2%	1.2

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Jackson Square Partners	10.3%	12.5%	0.8
Russell 1000 Growth	13.5%	12.3%	1.0
eV US Large Cap Growth Equity Gross Median	12.9%	12.4%	1.0

Boston Partners Manager Portfolio Overview

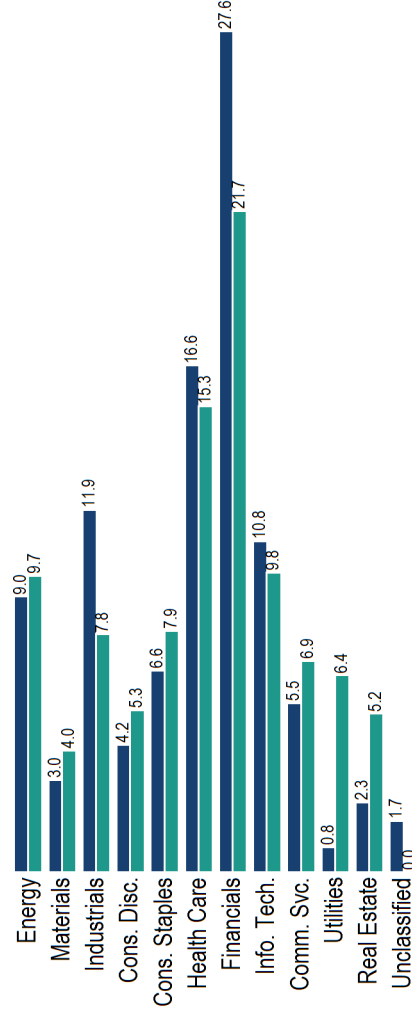
Period Ending: March 31, 2019

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

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	75	722
Weighted Avg. Market Cap. (\$B)	148.36	119.91
Median Market Cap. (\$B)	37.44	8.86
Price To Earnings	16.07	17.33
Price To Book	2.21	2.21
Price To Sales	1.46	1.53
Return on Equity (%)	16.23	14.19
Yield (%)	2.46	2.63
Beta	1.04	1.00

Sector Allocation (%) vs Russell 1000 Value



Largest Holdings

	End Weight	Return
JOHNSON & JOHNSON	4.67	9.04
CISCO SYSTEMS	4.48	25.60
BERKSHIRE HATHAWAY 'B'	4.25	-1.61
BANK OF AMERICA	3.49	12.55
COMCAST A	3.48	17.42
JP MORGAN CHASE & CO.	3.08	4.55
PROCTER & GAMBLE	3.05	14.09
CHEVRON	2.91	14.37
CITIGROUP	2.77	20.36
BOEING	2.41	18.87

Top Contributors

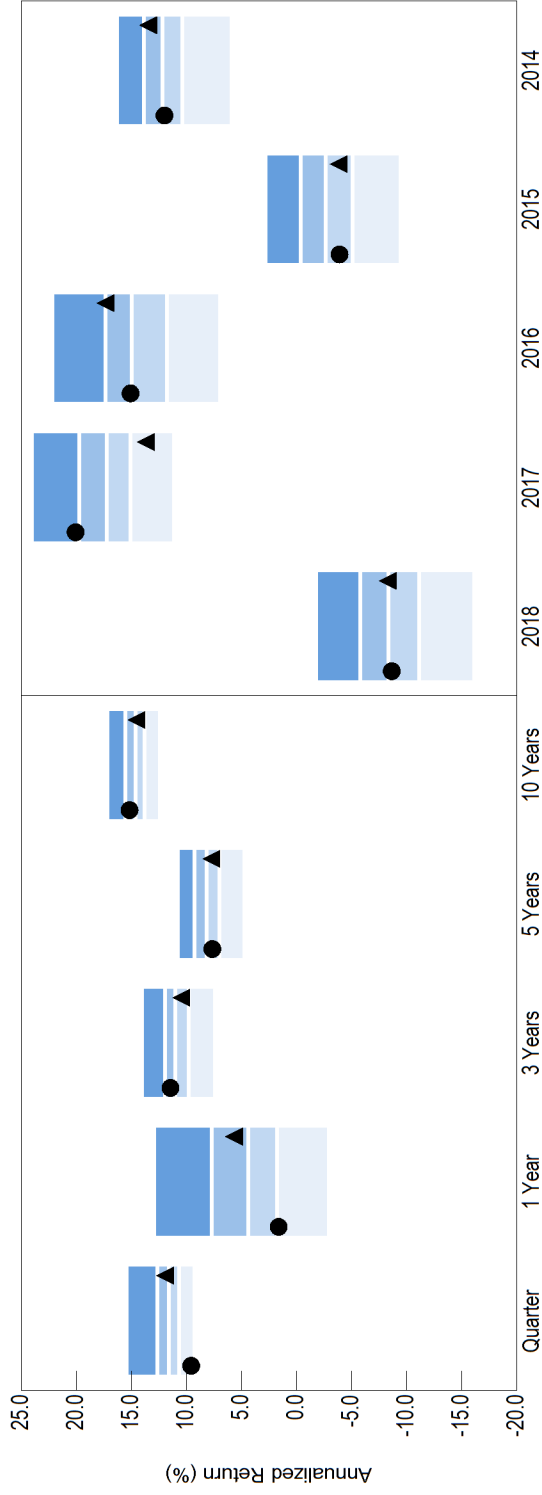
	Avg Wgt	Return	Contribution
CISCO SYSTEMS	3.74	25.60	0.96
CITIGROUP	2.68	20.36	0.55
COMCAST A	3.11	17.42	0.54
BOEING	2.44	18.87	0.46
BANK OF AMERICA	3.25	12.55	0.41
UNITED TECHNOLOGIES	1.84	21.76	0.40
JOHNSON & JOHNSON	4.43	9.04	0.40
PROCTER & GAMBLE	2.80	14.09	0.39
CHEVRON	2.70	14.37	0.39
DXC TECHNOLOGY	1.40	21.31	0.30

Bottom Contributors

	Avg Wgt	Return	Contribution
CVS HEALTH	1.91	-17.06	-0.33
CIGNA	1.91	-15.30	-0.29
HP	1.66	-4.24	-0.07
BERKSHIRE HATHAWAY 'B'	4.31	-1.61	-0.07
WALGREENS BOOTS	0.92	-6.84	-0.06
ALLIANCE	2.61	-1.88	-0.05
PFIZER	0.49	-6.42	-0.03
MOSAIC	0.36	-3.73	-0.01
CEMEX ADR 1:10	0.09	-3.98	0.00
NORDSTROM	0.61	-0.37	0.00
UNITEDHEALTH GROUP	0.61	-0.37	0.00

Unclassified sector allocation includes cash allocations.

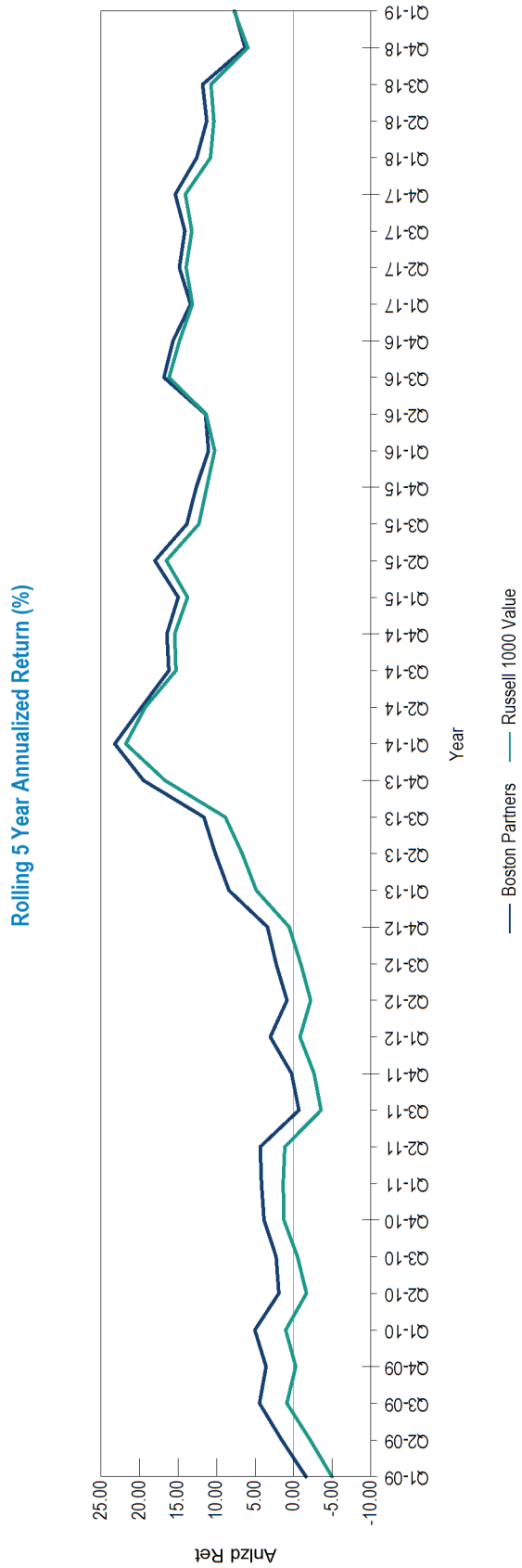
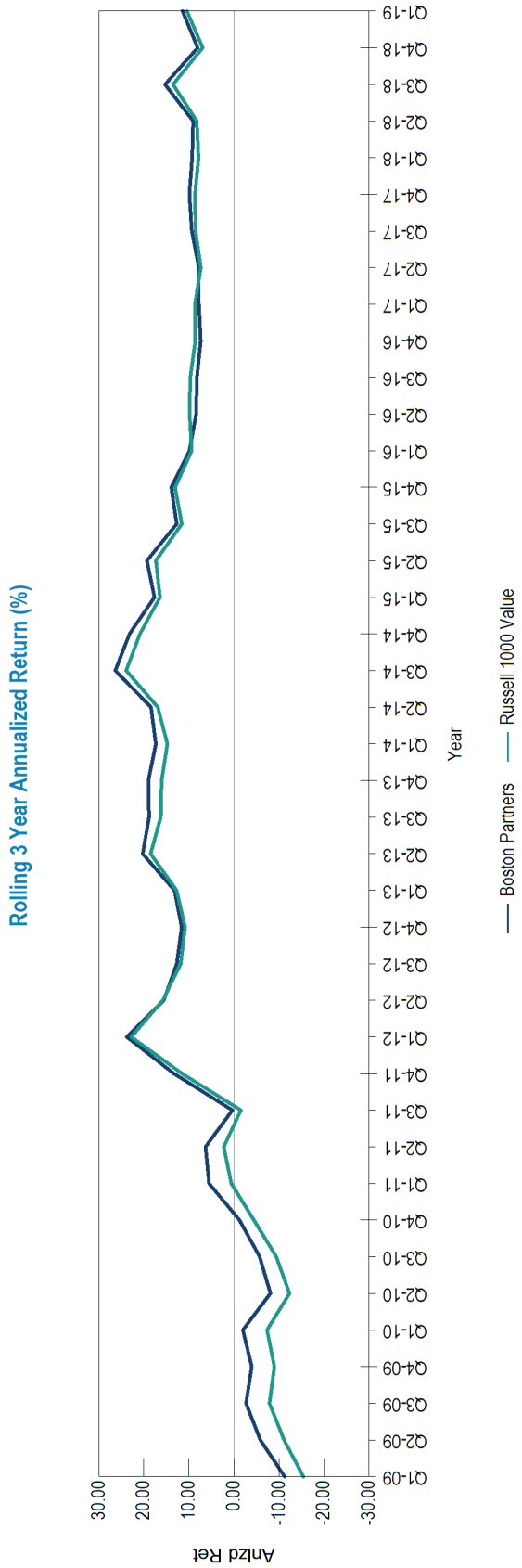
Boston Partners vs. eV US Large Cap Value Equity Gross Universe



Return (Rank)

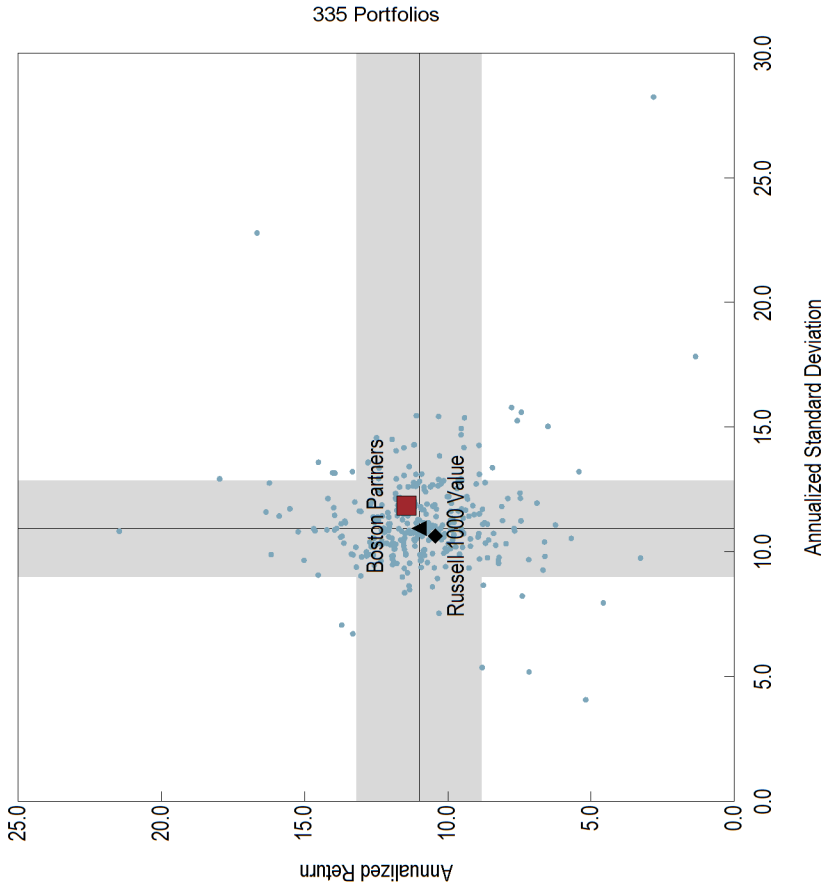
Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios	Boston Partners	Russell 1000 Value
Quarter	15.4	12.7	11.6	10.7	9.3	337	9.6 (93)	11.9 (43)
1 Year	12.9	7.7	4.4	1.8	-2.9	337	1.6 (77)	5.7 (36)
3 Years	14.0	11.9	11.0	9.8	7.4	335	11.4 (39)	10.5 (65)
5 Years	10.7	9.3	8.2	7.0	4.7	326	7.6 (63)	7.7 (60)
10 Years	17.1	15.5	14.7	13.8	12.4	274	15.2 (39)	14.5 (55)
2014	16.3	13.9	12.2	10.4	5.9	307	12.0 (55)	13.5 (33)
2015	2.8	-0.4	-2.6	-5.1	-9.4	312	-3.9 (65)	-3.8 (64)
2016	22.1	17.4	15.0	11.8	7.0	346	15.1 (50)	17.3 (26)
2017	24.0	19.8	17.2	15.1	11.2	342	20.1 (23)	13.7 (87)
2018	-1.8	-5.8	-8.3	-11.1	-16.1	336	-8.7 (55)	-8.3 (50)

Boston Partners
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019



Boston Partners
 Risk vs. Return 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

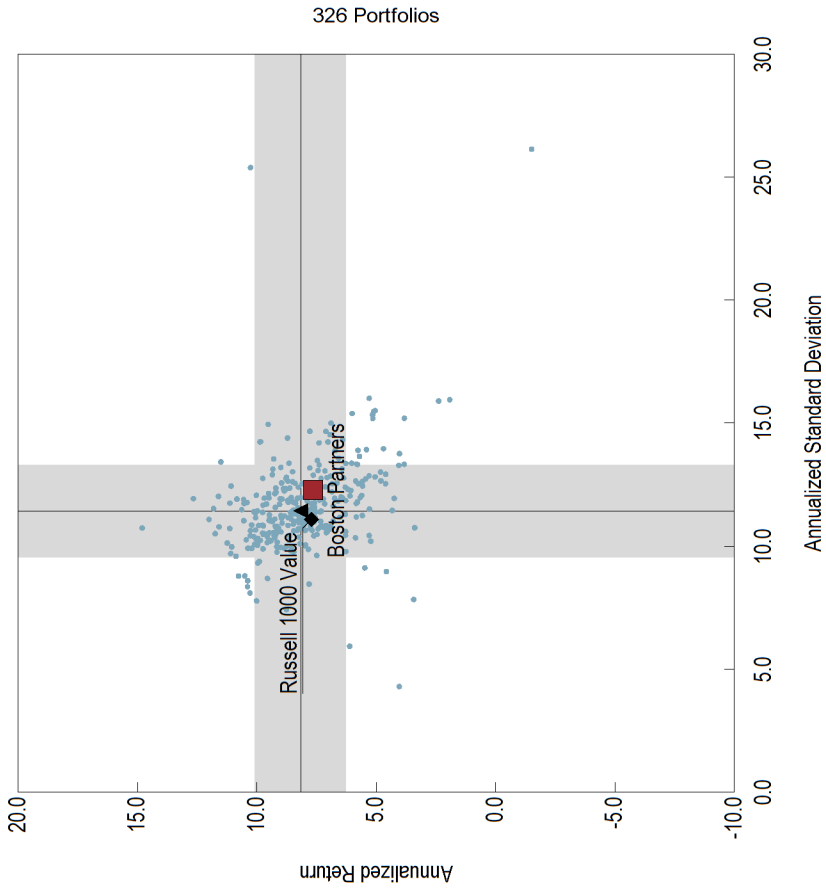
3 Years



3 Years

Boston Partners	11.4%	11.8%	0.9
Russell 1000 Value	10.5%	10.6%	0.9
eV US Large Cap Value Equity Gross Median	11.0%	10.9%	0.9

5 Years



5 Years

Boston Partners	7.6%	12.3%	0.6
Russell 1000 Value	7.7%	11.1%	0.6
eV US Large Cap Value Equity Gross Median	8.2%	11.4%	0.6

Emerald Advisers Manager Portfolio Overview

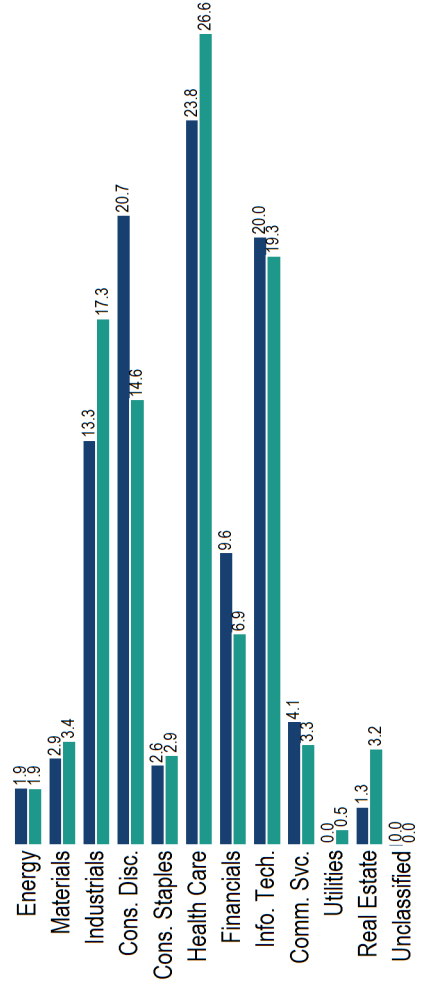
Period Ending: March 31, 2019

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

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	122	1,239
Weighted Avg. Market Cap. (\$B)	2.96	2.62
Median Market Cap. (\$B)	2.09	0.87
Price To Earnings	25.63	22.70
Price To Book	4.55	4.00
Price To Sales	2.30	1.53
Return on Equity (%)	-16.86	0.05
Yield (%)	0.51	0.70
Beta	1.11	1.00

Sector Allocation (%) vs Russell 2000 Growth



Largest Holdings

	End Weight	Return	Avg Wgt	Return	Contribution	Avg Wgt	Return	Contribution
CHEGG	3.02	34.13	1.65	67.24	1.11	1.02	-23.73	-0.24
PLANET FITNESS CLA	2.34	28.16	3.07	34.13	1.05	1.13	-19.62	-0.22
FIVE BELOW	2.21	21.43	1.57	62.42	0.98	0.51	-37.67	-0.19
TANDEM DIABETES CARE	2.12	67.24	0.80	121.57	0.97	0.71	-14.99	-0.11
FORESCOUT TECHNOLOGIES	1.92	61.25	1.52	61.25	0.93	0.71	-12.45	-0.09
RAPID7	1.92	62.42	1.44	62.25	0.89	0.63	-12.56	-0.08
TREX	1.86	3.64	1.40	60.11	0.84	0.34	-23.19	-0.08
CIENA	1.78	10.12	1.77	45.79	0.81	0.94	-6.56	-0.06
LENDINGTREE	1.73	60.11	1.37	52.35	0.72	0.35	-16.74	-0.06
NEOGENOMICS	1.68	62.25	1.35	44.89	0.60			

Top Contributors

	Avg Wgt	Return	Contribution
TANDEM DIABETES CARE	1.65	67.24	1.11
CHEGG	3.07	34.13	1.05
RAPID7	1.57	62.42	0.98
INSMED	0.80	121.57	0.97
FORESCOUT TECHNOLOGIES	1.52	61.25	0.93
NEOGENOMICS	1.44	62.25	0.89
LENDINGTREE	1.40	60.11	0.84
EPAM SYSTEMS	1.77	45.79	0.81
REATA PHARMS.CLA	1.37	52.35	0.72
PROOFPOINT	1.35	44.89	0.60

Bottom Contributors

	Avg Wgt	Return	Contribution
GREEN DOT CLASS A	1.02	-23.73	-0.24
VOCERA COMMUNICATIONS	1.13	-19.62	-0.22
KARYOPHARM THERAPEUTICS	0.51	-37.67	-0.19
DYCOM INDS.	0.71	-14.99	-0.11
ATRICURE	0.71	-12.45	-0.09
HAEMONETICS	0.63	-12.56	-0.08
INOGEN	0.34	-23.19	-0.08
AIMMUNE THERAPEUTICS	0.94	-6.56	-0.06
ADAMAS PHARMACEUTICALS	0.35	-16.74	-0.06

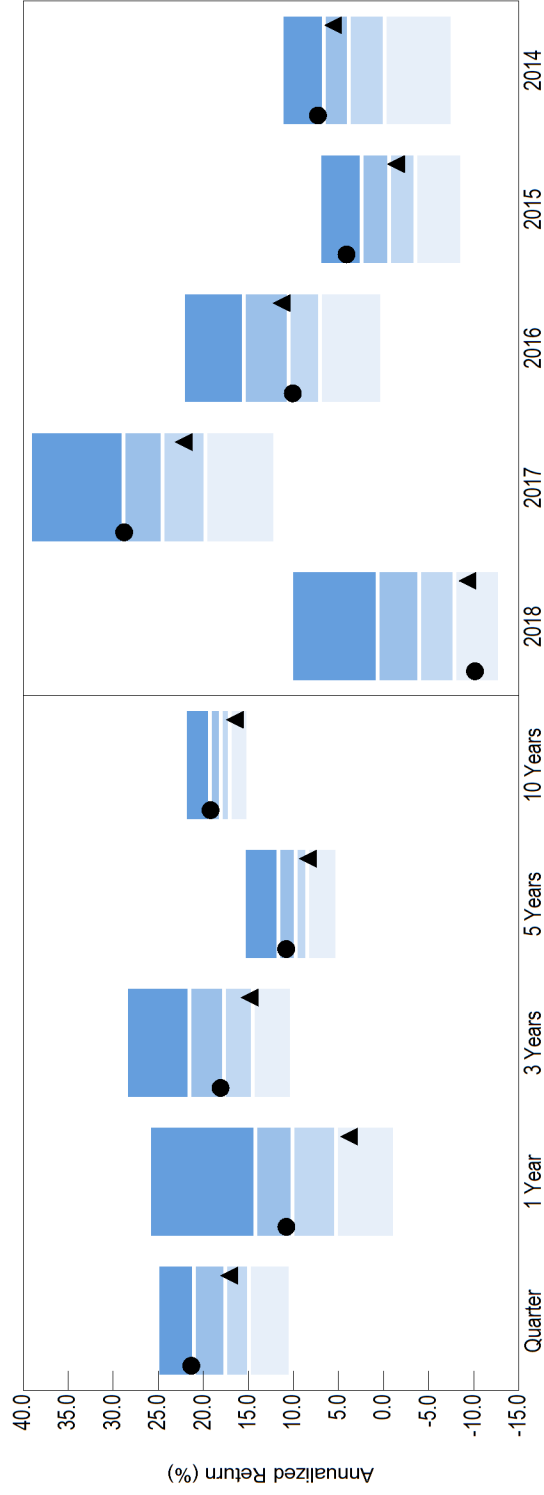
Unclassified sector allocation includes cash allocations.

Emerald Advisers

Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2019

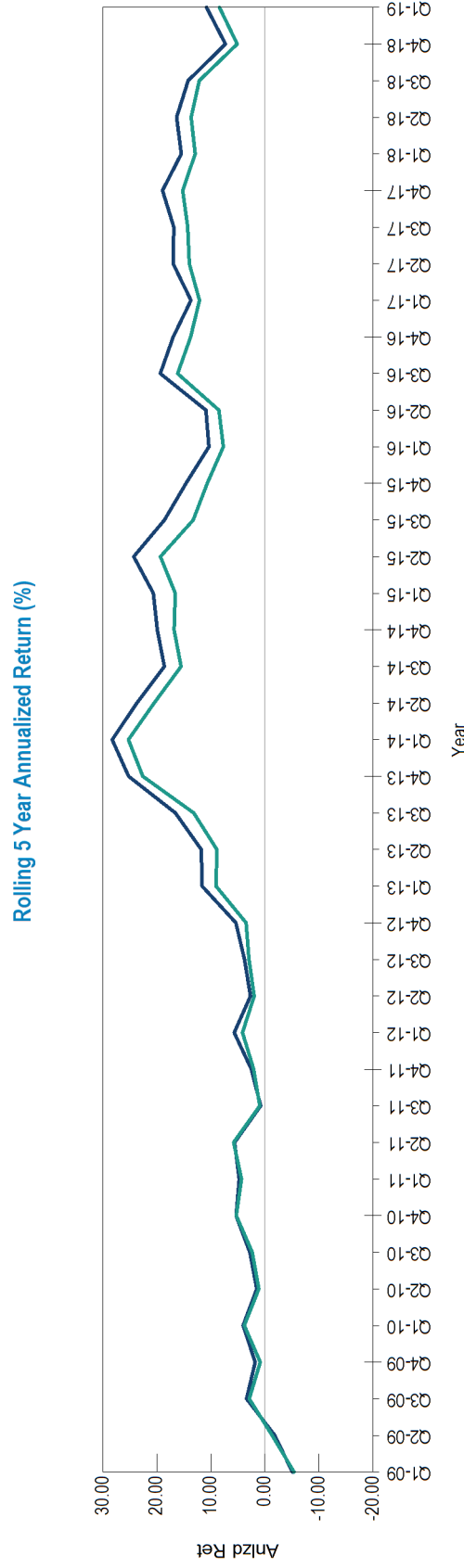
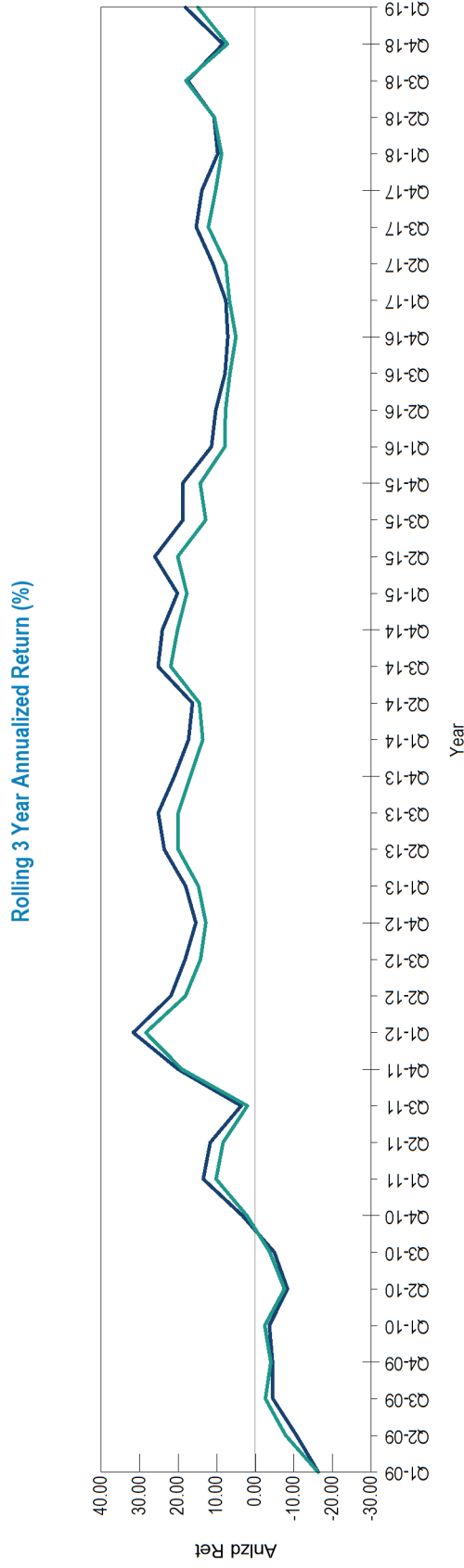
Emerald Advisers vs. eV US Small Cap Growth Equity Gross Universe



Return (Rank)

5th Percentile	25.0	26.0	28.6	15.5	22.0	10.2	39.2	22.2	7.1	11.3
25th Percentile	21.1	14.3	21.6	11.7	19.3	0.7	28.9	15.5	2.5	6.7
Median	17.6	10.2	17.7	9.8	18.1	-3.9	24.6	10.6	-0.6	3.9
75th Percentile	15.0	5.3	14.5	8.5	17.1	-7.9	19.8	7.1	-3.5	-0.1
95th Percentile	10.3	-1.2	10.2	5.1	15.0	-12.8	12.1	0.2	-8.7	-7.6
# of Portfolios	158	158	154	148	135	164	174	170	154	161
● Emerald Advisers	21.3 (23)	10.8 (46)	18.1 (47)	10.8 (36)	19.2 (27)	-10.1 (85)	28.8 (26)	10.1 (54)	4.1 (19)	7.3 (21)
▲ Russell 2000 Growth	17.1 (56)	3.9 (82)	14.9 (75)	8.4 (77)	16.5 (83)	-9.3 (80)	22.2 (62)	11.3 (49)	-1.4 (59)	5.6 (32)

Emerald Advisers
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

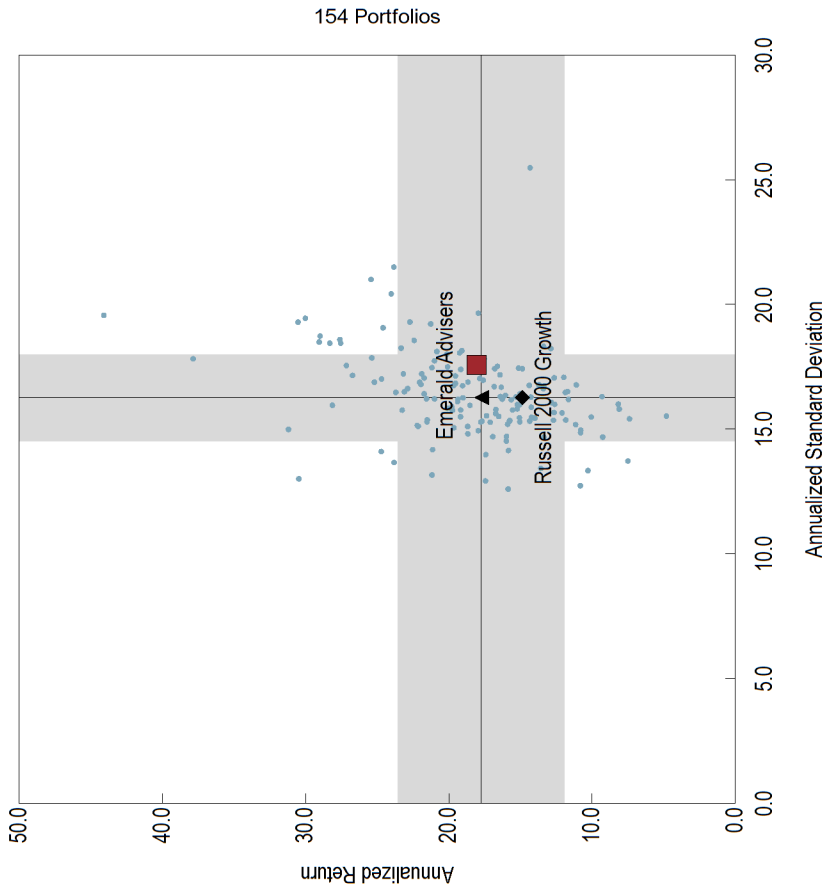


Emerald Advisers

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

Period Ending: March 31, 2019

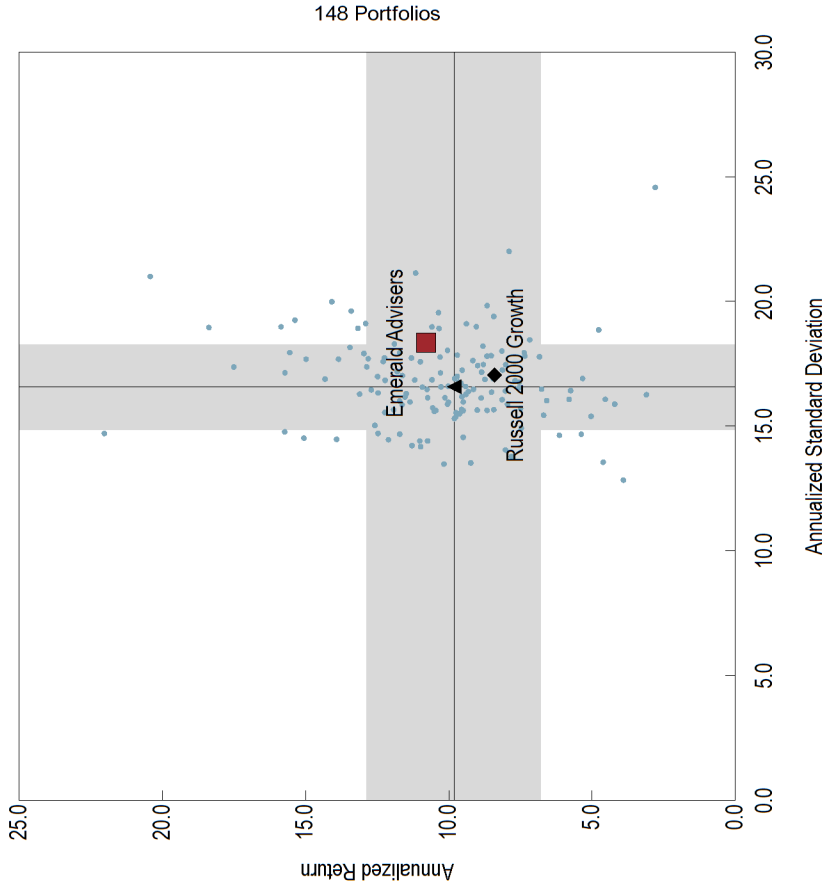
3 Years



3 Years

Emerald Advisers	Russell 2000 Growth	eV US Small Cap Growth Equity Gross Median
10.8%	8.4%	9.8%
18.3%	17.0%	16.6%
0.5	0.4	0.6

5 Years



5 Years

Emerald Advisers	Russell 2000 Growth	eV US Small Cap Growth Equity Gross Median
10.8%	8.4%	9.8%
18.3%	17.0%	16.6%
0.5	0.4	0.6

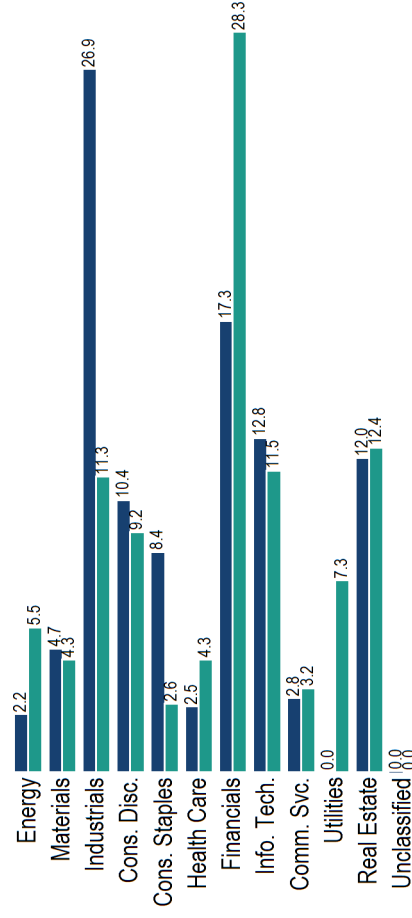
Ceredex Period Ending: March 31, 2019
 Manager Portfolio Overview

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

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	83	1,366
Weighted Avg. Market Cap. (\$B)	2.52	2.06
Median Market Cap. (\$B)	1.97	0.68
Price To Earnings	18.85	15.60
Price To Book	2.32	1.61
Price To Sales	1.05	0.92
Return on Equity (%)	17.39	6.04
Yield (%)	2.68	2.22
Beta	0.82	1.00

Sector Allocation (%) vs Russell 2000 Value



Largest Holdings

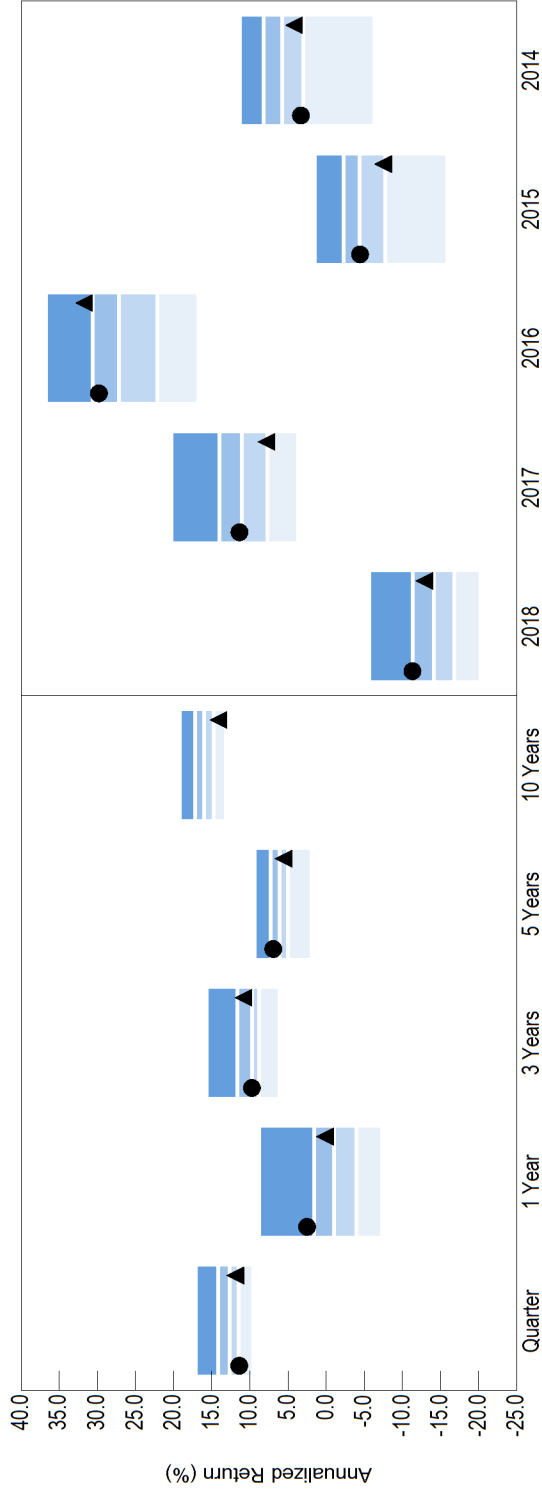
	End Weight	Return			Return	Contribution
POWER INTEGRATIONS	5.11	14.96	OUTFRONT MEDIA	2.93	31.22	0.91
ENERGIZER HOLDINGS	4.27	0.16	US SILICA HOLDINGS	1.09	71.22	0.78
KEMPER	4.25	15.06	EVERCORE A	2.78	27.86	0.77
B & G FOODS	3.77	-13.88	POWER INTEGRATIONS	4.90	14.96	0.73
PHYSICIANS REALTY TST.	3.68	19.07	PHYSICIANS REALTY TST.	3.35	19.07	0.64
OUTFRONT MEDIA	3.39	31.22	KEMPER	4.17	15.06	0.63
EVERCORE A	3.01	27.86	COVANTA HOLDING	1.87	30.85	0.58
CHILDRENS PLACE	2.78	7.98	HILL-ROM HOLDINGS	2.45	19.78	0.48
TANGER FAC.OUTLET CNTRS.	2.71	5.35	LITHIA MOTORS 'A'	2.00	21.92	0.44
HERMAN MILLER	2.35	16.92	TETRA TECH	2.76	15.35	0.42
			B & G FOODS	4.09	-13.88	-0.57
			GREENBRIER COS.	0.84	-18.00	-0.15
			TUPPERWARE BRANDS	0.43	-18.14	-0.08
			ENERSYS	0.35	-15.82	-0.06
			HORACE MANN EDUCATORS	1.01	-5.26	-0.05
			COHU	0.51	-7.92	-0.04
			MATTHEWS INTL.'A'	0.46	-8.55	-0.04
			COMTECH TELECOM.	0.71	-4.22	-0.03
			HECLA MINING	0.49	-2.44	-0.01
			RESIDEO TECHNOLOGIES	0.19	-6.13	-0.01

Top Contributors

Bottom Contributors

Unclassified sector allocation includes cash allocations.

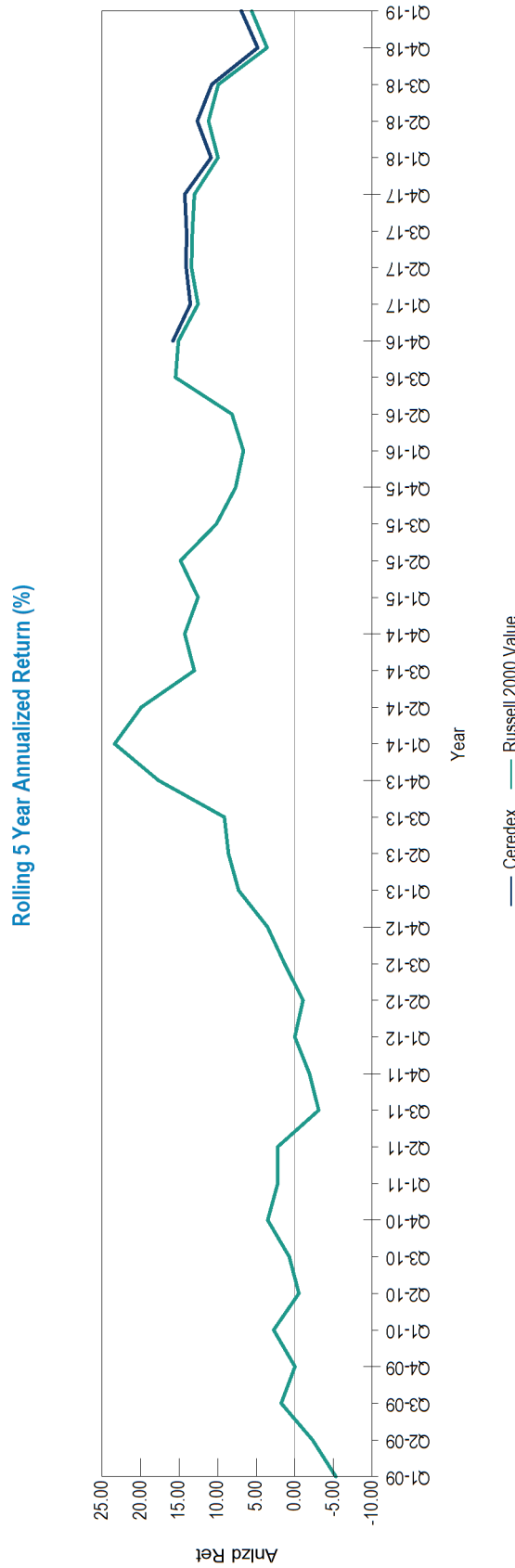
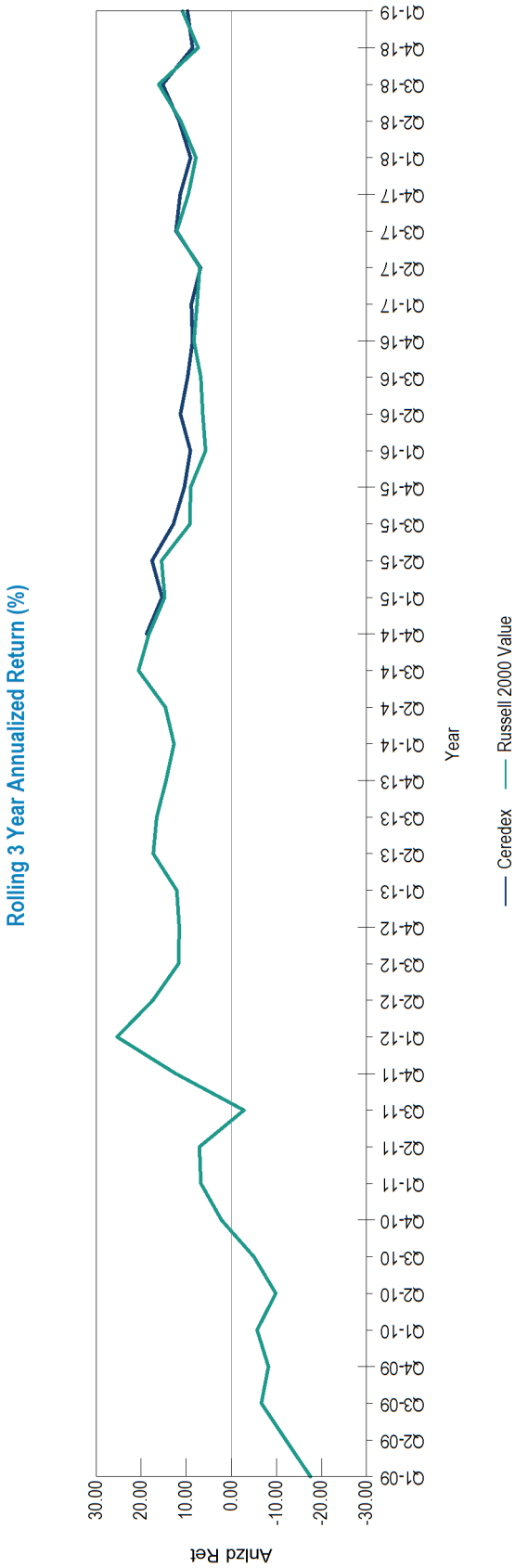
Ceredex vs. eV US Small Cap Value Equity Gross Universe



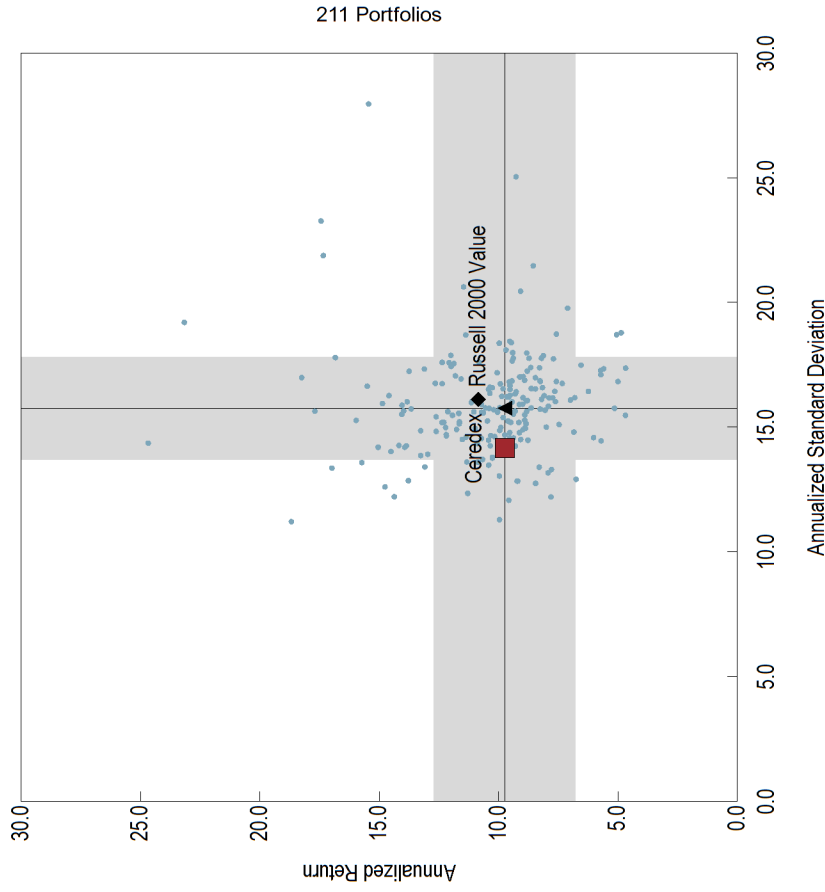
Return (Rank)

5th Percentile	17.0	15.6	9.3	19.1	-5.7	20.2	36.7	1.5	11.2
25th Percentile	14.2	11.7	7.3	17.2	-11.4	14.1	30.7	-2.2	8.2
Median	12.7	9.7	6.2	16.1	-14.0	11.1	27.2	-4.3	5.8
75th Percentile	11.5	8.8	5.1	14.8	-16.7	7.8	22.2	-7.7	3.1
95th Percentile	9.6	6.1	2.0	13.2	-20.2	3.7	16.8	-15.8	-6.3
# of Portfolios	216	211	202	176	220	224	222	212	206
● Ceredex	11.4 (79)	9.7 (51)	6.9 (33)	--	-11.3 (25)	11.4 (48)	29.8 (32)	-4.4 (52)	3.3 (74)
▲ Russell 2000 Value	11.9 (69)	10.9 (33)	5.6 (66)	14.1 (88)	-12.9 (39)	7.8 (75)	31.7 (17)	-7.5 (74)	4.2 (68)

Ceredex
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019



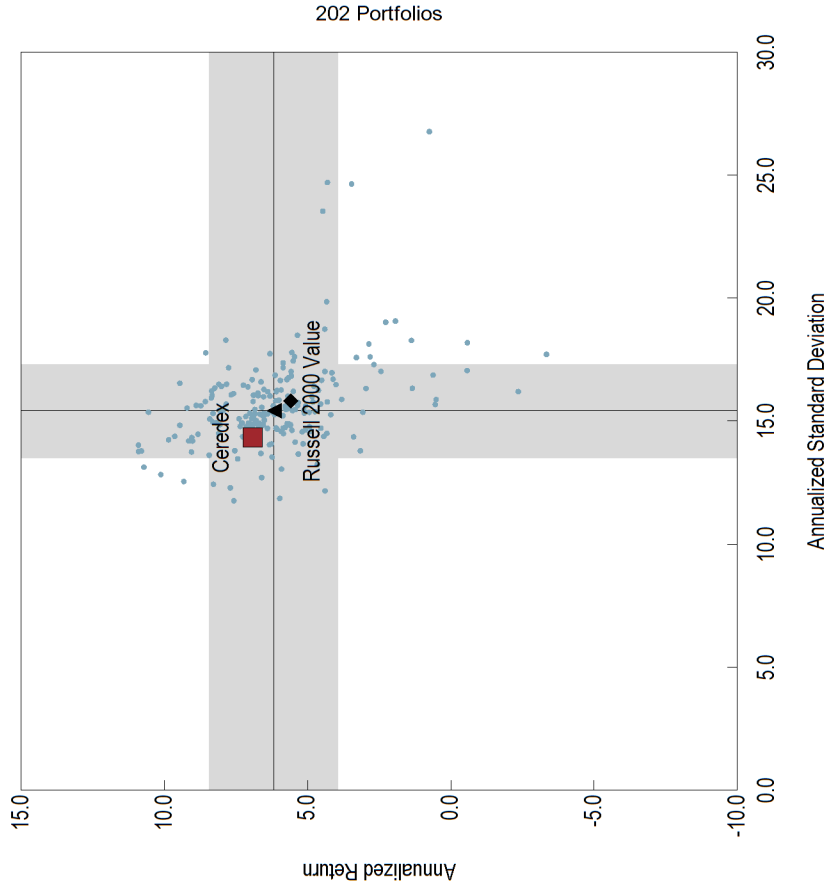
3 Years



3 Years

Ceredex	9.7%	14.2%	0.6
Russell 2000 Value	10.9%	16.1%	0.6
eV US Small Cap Value Equity Gross Median	9.7%	15.8%	0.6

5 Years



5 Years

Ceredex	6.9%	14.3%	0.4
Russell 2000 Value	5.6%	15.8%	0.3
eV US Small Cap Value Equity Gross Median	6.2%	15.4%	0.4

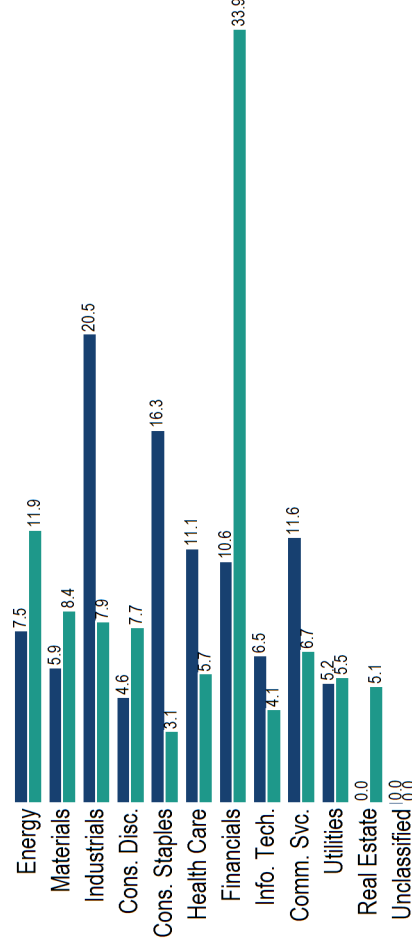
International Equity Managers

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

Characteristics

	Portfolio	MSCI ACWI ex USA Value
Number of Holdings	74	1,280
Weighted Avg. Market Cap. (\$B)	64.04	51.28
Median Market Cap. (\$B)	23.02	7.15
Price To Earnings	17.53	11.62
Price To Book	2.46	1.62
Price To Sales	1.47	0.89
Return on Equity (%)	16.50	11.72
Yield (%)	3.83	4.40
Beta	0.80	1.00

Sector Allocation (%) vs MSCI ACWI ex USA Value



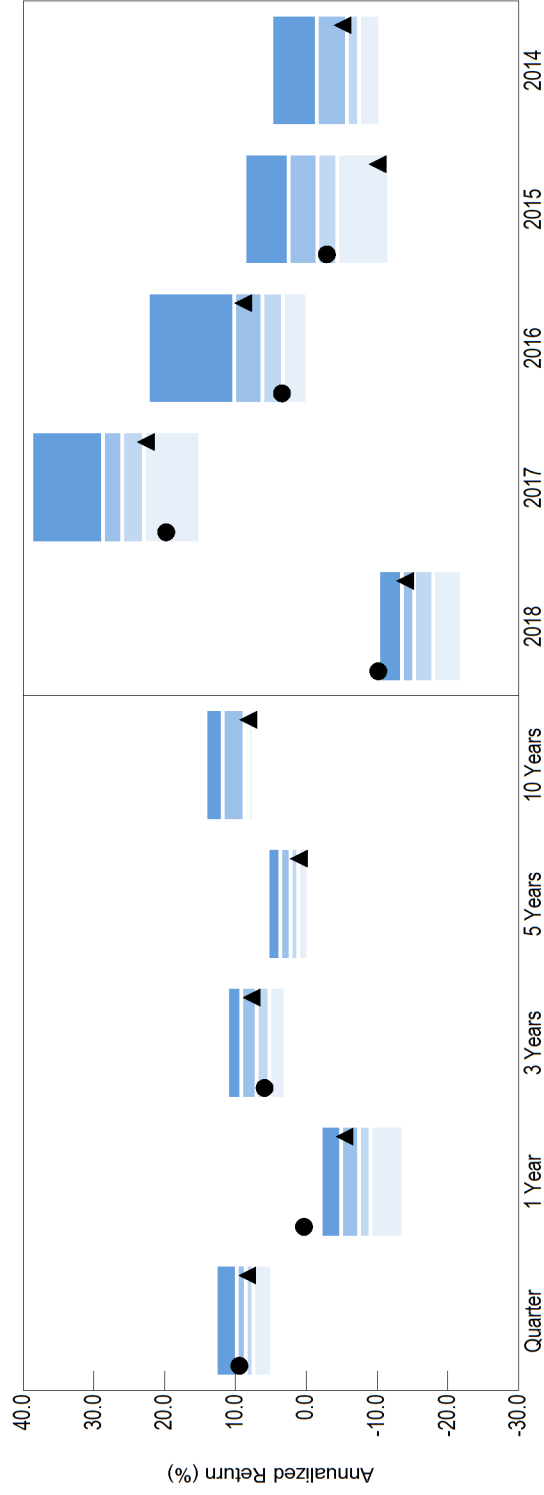
Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	92.7%	73.9%
Emerging*	7.3%	26.1%
Cash	0.0%	
Top 10 Largest Countries		
Switzerland	14.7%	3.2%
United Kingdom	13.6%	15.6%
Australia	11.3%	4.8%
Japan	10.4%	16.2%
France	8.6%	7.0%
Germany	8.5%	5.6%
Hong Kong	5.2%	2.7%
Singapore	5.1%	0.9%
Sweden	4.9%	1.4%
Netherlands	4.6%	1.2%
Total-Top 10 Largest Countries	87.0%	58.6%

	Pyrford			MSCI ACWI ex USA Value		
	Avg Wgt	Return	Contribution	Avg Wgt	Return	Contribution
Top Contributors						
NESTLE 'R'	3.49	17.72	0.62	1.18	-28.04	-0.33
ROCHE HOLDING	3.34	15.14	0.51			
NOVARTIS 'R'	2.90	16.42	0.48	1.90	-8.04	-0.15
BRAMBLES	2.32	18.34	0.43	1.67	-8.17	-0.14
BRITISH AMERICAN TOBACCO	1.20	32.80	0.39	1.45	-6.45	-0.09
RIO TINTO	1.08	33.97	0.37	1.62	-3.36	-0.05
ESSITY B	1.90	17.77	0.34	2.04	-1.23	-0.03
QBE INSURANCE GROUP	1.30	25.72	0.33	1.27	-0.35	0.00
LEGAL & GENERAL	1.46	21.93	0.32	0.44	3.83	0.02
BRENNTAG	1.63	18.46	0.30	1.35	1.26	0.02
GEA GROUP	1.00	2.05	0.02			
Bottom Contributors						
BEZEQ ISRAELI TELECOMMUNICATION						
KDDI						
NIHON KOHDEN						
VODAFONE GROUP						
CHUNGHWA TELECOM						
MALAYAN BANKING						
POWER ASSETS HOLDINGS						
IMI						
SUMITOMO RUBBER INDS.						

Unclassified sector allocation includes cash allocations.

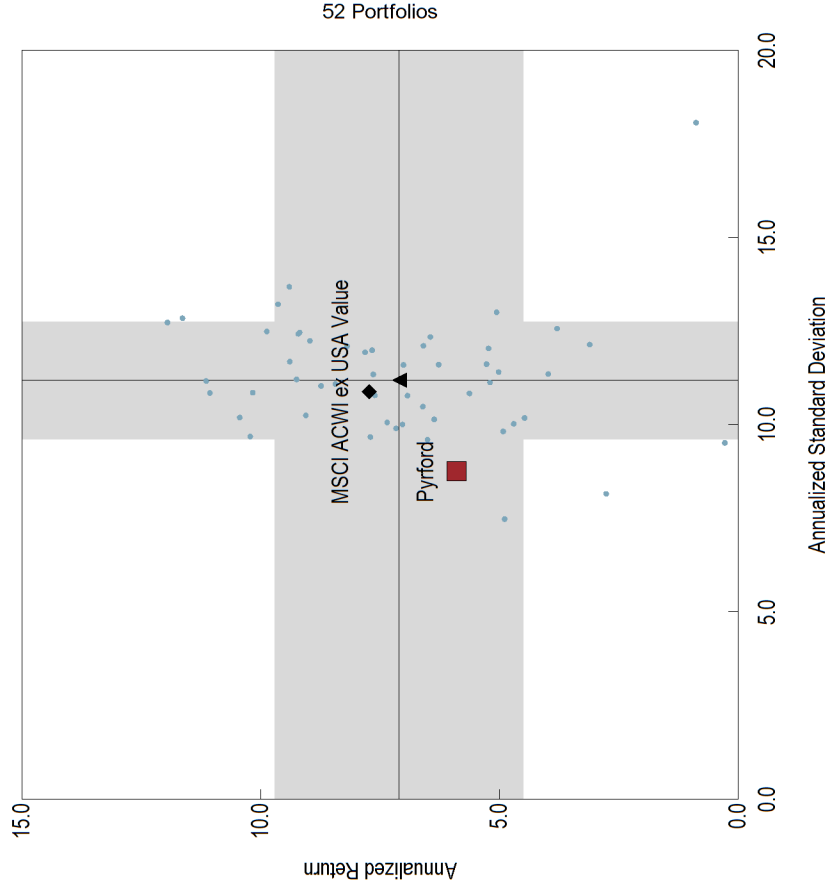
Pyrford vs. eV ACWI ex-US Value Equity Gross Universe



Return (Rank)

5th Percentile	12.8	-2.0	11.1	5.4	14.2	-10.2	38.8	22.3	8.7	4.9
25th Percentile	9.9	-4.8	9.2	3.7	11.9	-13.4	28.8	10.2	2.5	-1.4
Median	8.6	-7.4	7.1	2.3	8.8	-15.2	26.0	6.2	-1.6	-5.7
75th Percentile	7.5	-9.0	5.2	1.2	8.3	-17.9	23.0	3.3	-4.3	-7.4
95th Percentile	4.9	-13.7	3.0	-0.3	7.5	-21.9	15.0	-0.1	-11.6	-10.4
# of Portfolios	53	53	52	44	27	54	56	55	45	37
● Pyrford	9.5 (35)	0.3 (1)	5.9 (68)	-- (-)	-- (-)	-10.1 (5)	19.8 (84)	3.4 (74)	-2.9 (59)	-- (-)
▲ MSCI ACWI ex USA Value	8.3 (59)	-5.4 (34)	7.7 (39)	1.1 (77)	8.2 (80)	-14.0 (32)	22.7 (77)	8.9 (35)	-10.1 (93)	-5.1 (49)

3 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Pyrford	5.9%	8.7%	0.5
MSCI ACWI ex USA Value	7.7%	10.9%	0.6
eV ACWI ex-US Value Equity Gross Median	7.1%	11.2%	0.6

William Blair Manager Portfolio Overview

Period Ending: March 31, 2019

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

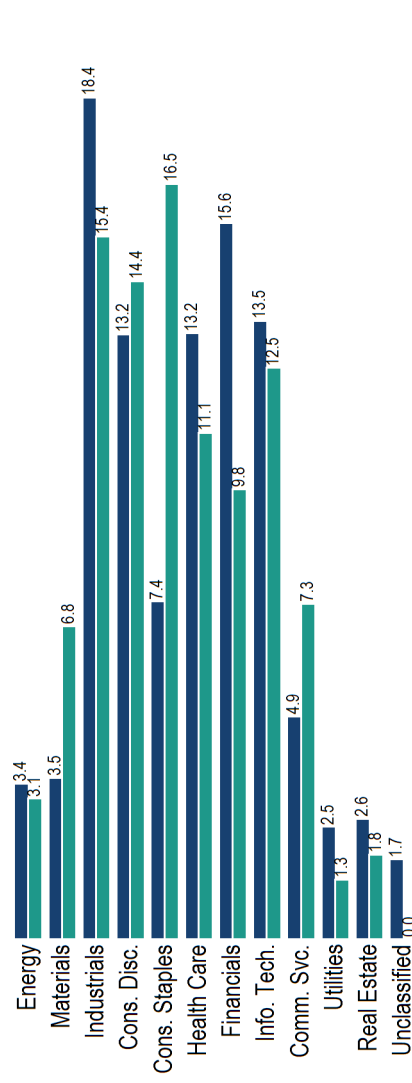
Characteristics

	Portfolio	MSCI ACWI ex USA Growth
Number of Holdings	179	1,141
Weighted Avg. Market Cap. (\$B)	66.32	77.14
Median Market Cap. (\$B)	11.12	8.23
Price To Earnings	23.27	19.37
Price To Book	3.93	3.04
Price To Sales	2.25	1.71
Return on Equity (%)	22.15	19.48
Yield (%)	1.80	2.06
Beta	1.09	1.00

Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	84.0%	74.2%
Emerging*	14.3%	25.8%
Top 10 Largest Countries		
United Kingdom	15.0%	7.6%
France	13.3%	8.1%
Japan	10.4%	16.1%
Canada	6.5%	6.8%
Switzerland	5.8%	8.7%
Hong Kong	5.7%	2.8%
China*	5.4%	8.5%
Germany	4.8%	5.9%
Australia	4.0%	4.5%
Netherlands	4.0%	3.6%
Total-Top 10 Largest Countries	74.9%	72.4%

Sector Allocation (%) vs MSCI ACWI ex USA Growth



	Avg Wgt	Return	Contribution	Avg Wgt	Return	Contribution
Top Contributors				Bottom Contributors		
ALIBABA GROUP HLDG.SPN. ADR 1:1	1.53	33.11	0.51	WIRECARD	0.64	-17.61
AIRBUS	1.31	37.93	0.50	MR PRICE GROUP	0.31	-23.20
AIA GROUP	2.04	19.91	0.41	COSTA GROUP HOLDINGS	0.15	-29.43
PING AN INSURANCE (GROUP) OF CHINA 'H'	1.30	26.78	0.35	MARUTI SUZUKI INDIA	0.40	-9.92
KEYENCE	1.32	22.97	0.30	WELCIA HOLDINGS	0.16	-24.57
NOVARTIS 'R'	1.76	16.42	0.29	ASTRA INTERNATIONAL	0.30	-10.07
NESTE	0.74	38.53	0.29	NMC HEALTH	0.17	-14.59
LONZA GROUP	1.41	20.01	0.28	MONOTARO	0.24	-10.25
BHP GROUP	1.35	20.77	0.28	HINDUSTAN UNILEVER	0.40	-5.47
CHINA MERCHANTS BANK 'H'	0.76	32.58	0.25	TOPCON	0.19	-10.73

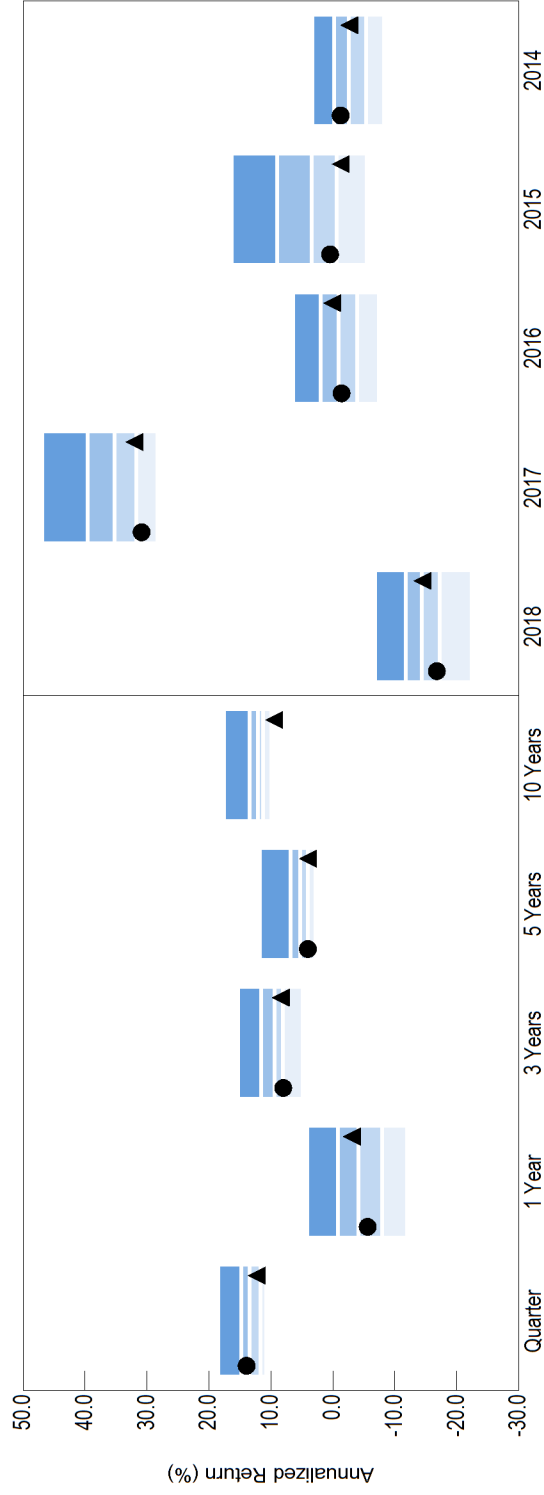
Unclassified sector allocation includes cash allocations.

William Blair

Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2019

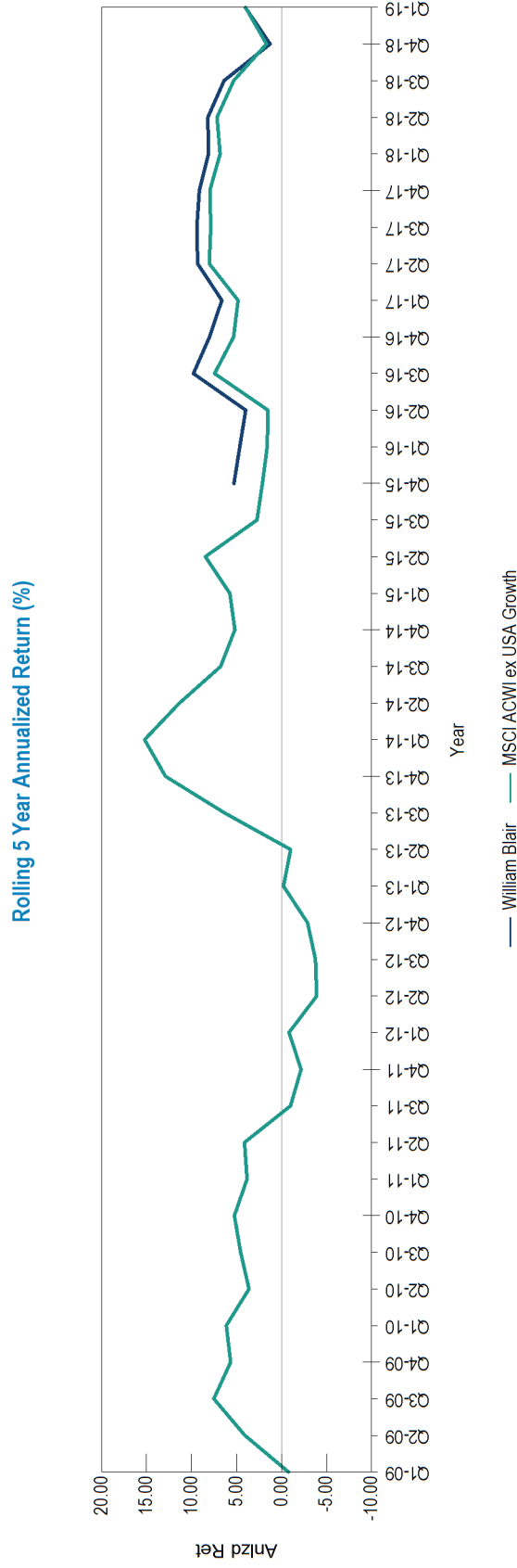
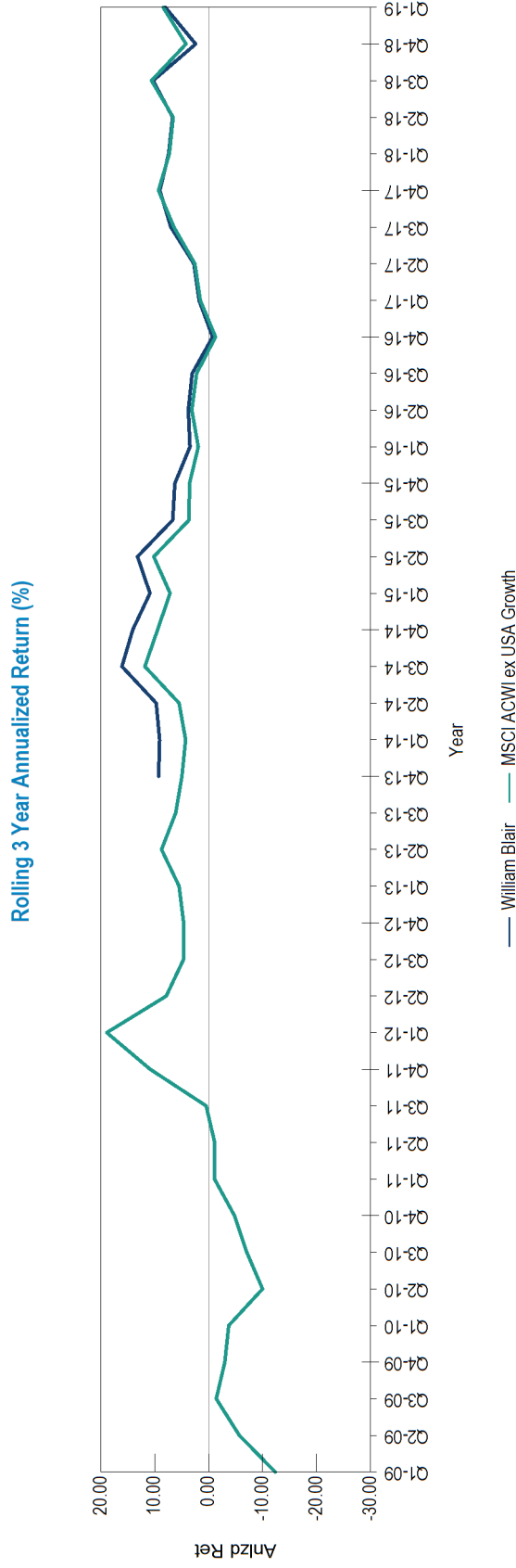
William Blair vs. eV ACWI ex-US Growth Equity Gross Universe



Return (Rank)

5th Percentile	18.4	4.1	15.3	11.8	17.5	46.8	6.3	16.3	3.2
25th Percentile	14.8	-0.7	11.7	6.8	13.5	39.6	2.0	9.0	-0.1
Median	13.5	-4.0	9.5	5.3	12.1	35.3	-0.9	3.5	-2.5
75th Percentile	11.8	-7.9	8.2	4.1	11.4	31.8	-3.9	-0.5	-5.3
95th Percentile	10.8	-11.9	4.9	2.8	10.0	28.3	-7.4	-5.4	-8.2
# of Portfolios	84	84	82	73	54	94	90	70	50
● William Blair	13.9 (43)	-5.6 (60)	8.0 (77)	4.0 (77)	--	30.9 (81)	-1.4 (55)	0.5 (69)	-1.2 (37)
▲ MSCI ACWI ex USA Growth	12.3 (69)	-3.0 (41)	8.4 (72)	4.0 (78)	9.5 (98)	32.0 (75)	0.1 (45)	-1.3 (83)	-2.6 (53)

William Blair
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019



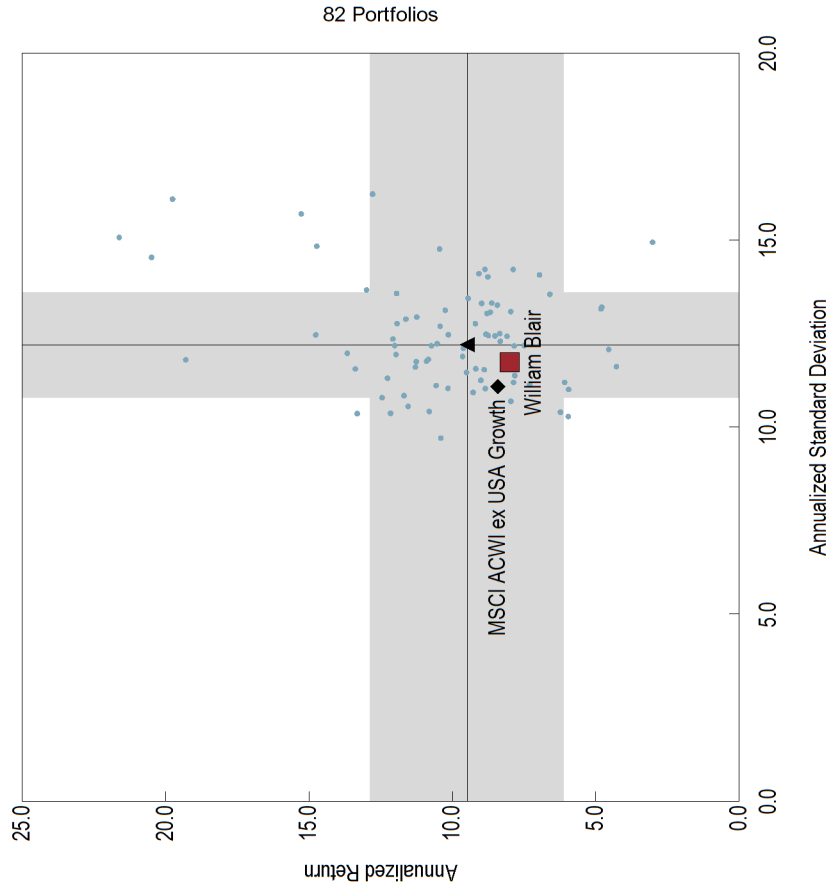
William Blair

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

Period Ending: March 31, 2019

3 Years

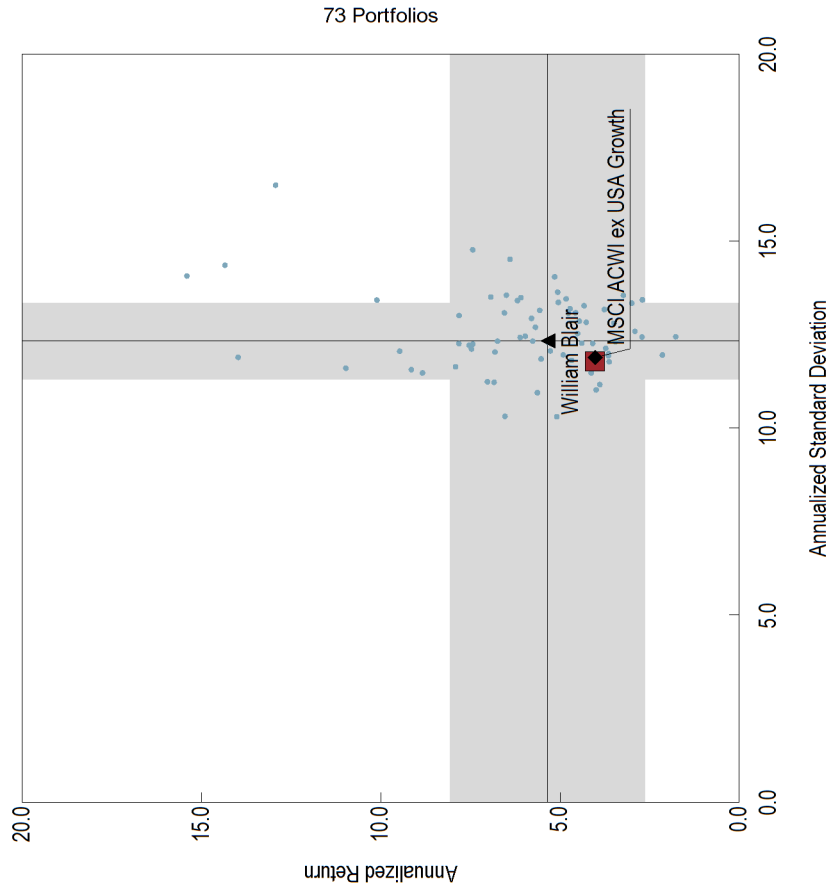
5 Years



3 Years

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	8.0%	11.7%	0.6
MSCI ACWI ex USA Growth	8.4%	11.1%	0.6
eV ACWI ex-US Growth Equity Gross Median	9.5%	12.2%	0.7



	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
William Blair	4.0%	11.8%	0.3
MSCI ACWI ex USA Growth	4.0%	11.9%	0.3
eV ACWI ex-US Growth Equity Gross Median	5.3%	12.3%	0.4

PIMCO RAE Emerging Markets Manager Portfolio Overview

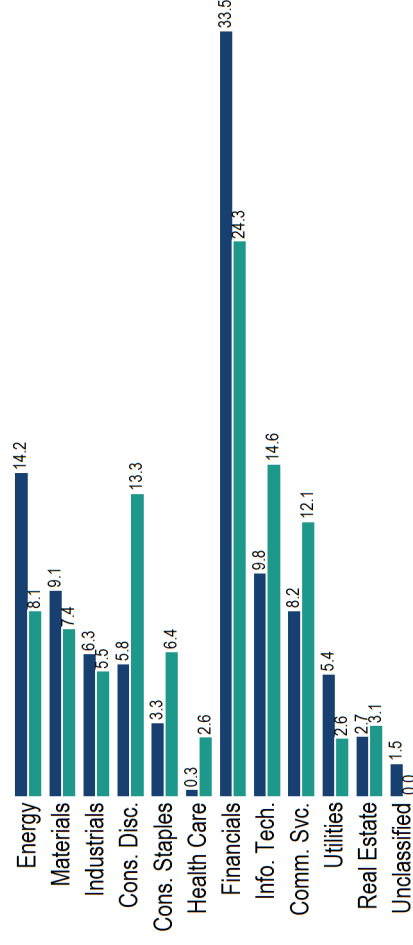
Period Ending: March 31, 2019

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

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	562	1,133
Weighted Avg. Market Cap. (\$B)	37.93	84.88
Median Market Cap. (\$B)	3.59	5.81
Price To Earnings	8.63	13.30
Price To Book	1.58	2.41
Price To Sales	0.52	1.25
Return on Equity (%)	10.95	17.82
Yield (%)	3.94	2.68
Beta		1.00

Sector Allocation (%) vs MSCI Emerging Markets



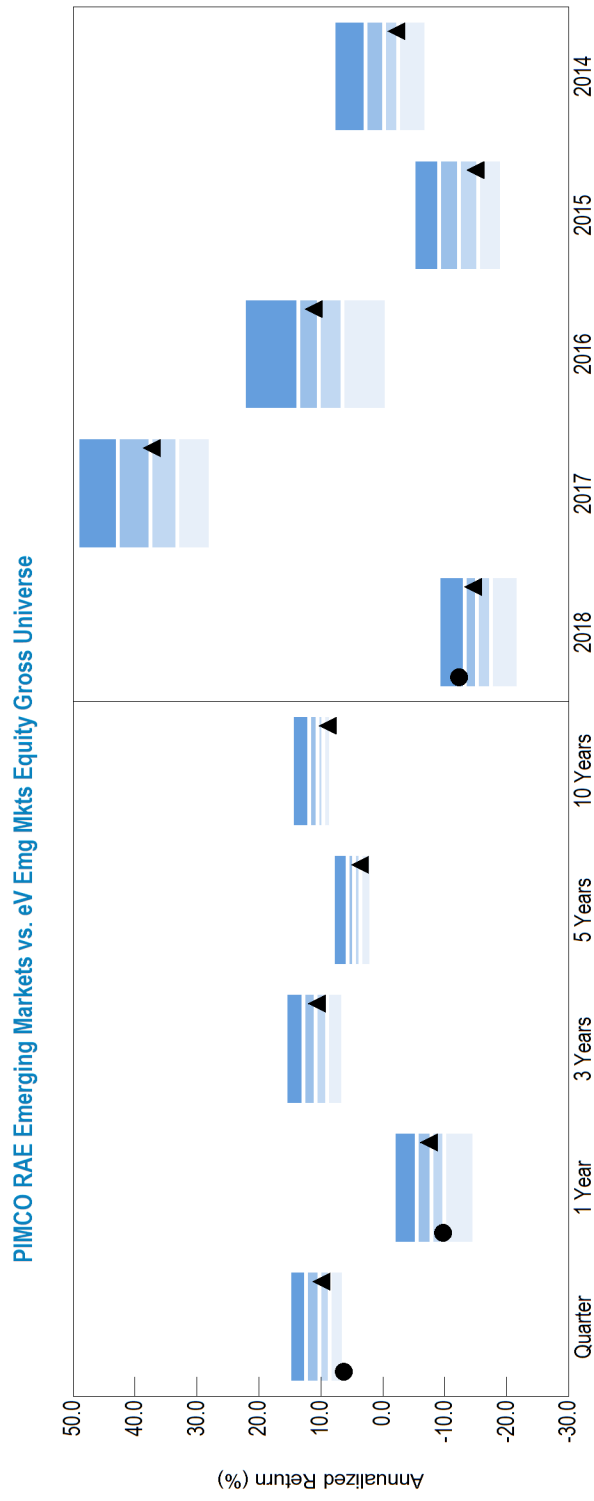
Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	10.2%	0.0%
Emerging*	88.4%	100.0%
Top 10 Largest Countries		
China*	21.0%	32.8%
Korea*	18.5%	13.1%
Russia*	9.9%	3.8%
Taiwan*	9.8%	11.4%
Hong Kong	9.8%	0.0%
Brazil*	5.8%	7.1%
South Africa*	4.7%	5.8%
India*	4.7%	9.2%
Turkey*	3.0%	0.6%
Thailand*	2.8%	2.4%
Total-Top 10 Largest Countries	90.0%	86.2%

	PIMCO RAE Emerging Markets			MSCI Emerging Markets		
	End Weight	Return	Contribution	End Weight	Return	Contribution
PJSC LUKOIL SPON (LON) ADR	2.08	25.35	0.53	1.16	-11.20	-0.13
SAMSUNG ELECTRONICS	3.05	13.41	0.41	0.14	-70.96	-0.10
CNOOC	1.30	21.17	0.27	0.71	-12.52	-0.09
LENOVO GROUP	0.74	33.11	0.25	0.38	-21.85	-0.08
IMPALA PLATINUM	0.30	65.89	0.20	0.34	-17.07	-0.06
PETROLEO BRASILEIRO ADR 1:2	0.84	22.37	0.19	0.40	-13.95	-0.06
PING AN INSURANCE (GROUP) OF CHINA 'H'	0.67	26.78	0.18	0.37	-14.42	-0.05
JBS ON	0.43	36.80	0.16	0.62	-8.62	-0.05
CHINA CON.BANK 'H'	3.96	3.91	0.15	0.16	-23.01	-0.04
CHINA MERCHANTS BANK 'H'	0.46	32.58	0.15	0.31	-11.53	-0.04

Unclassified sector allocation includes cash allocations.

PIMCO RAE Emerging Markets
 Manager Performance Comparisons (Gross of Fees) Period Ending: March 31, 2019



	Quarter	1 Year	3 Years	5 Years	10 Years	2014	2015	2016	2017	2018
Return (Rank)										
5th Percentile	15.1	-1.8	15.6	8.0	14.7	-9.0	-5.0	22.4	49.2	355
25th Percentile	12.5	-5.4	12.9	5.7	11.9	-13.2	-9.0	13.7	42.8	-9.0
Median	10.3	-7.7	10.9	4.7	10.6	-15.2	-12.2	10.4	37.6	-17.4
75th Percentile	8.6	-9.8	9.1	3.6	9.7	-17.4	-15.3	6.6	33.2	-21.8
95th Percentile	6.4	-14.7	6.5	1.9	8.5	-21.8	-19.2	-0.6	27.8	-7.0
# of Portfolios	361	360	337	297	150	343	337	337	343	251
● PIMCO RAE Emerging Markets	6.3 (96)	-9.7 (75)	-- (-)	-- (-)	-- (-)	-12.3 (19)	-- (-)	-- (-)	-- (-)	-19.2 (74)
▲ MSCI Emerging Markets	9.9 (56)	-7.4 (46)	10.7 (54)	3.7 (74)	8.9 (91)	-14.6 (43)	-14.9 (70)	11.2 (45)	37.3 (53)	-2.2 (74)

TT Emerging Markets Manager Portfolio Overview

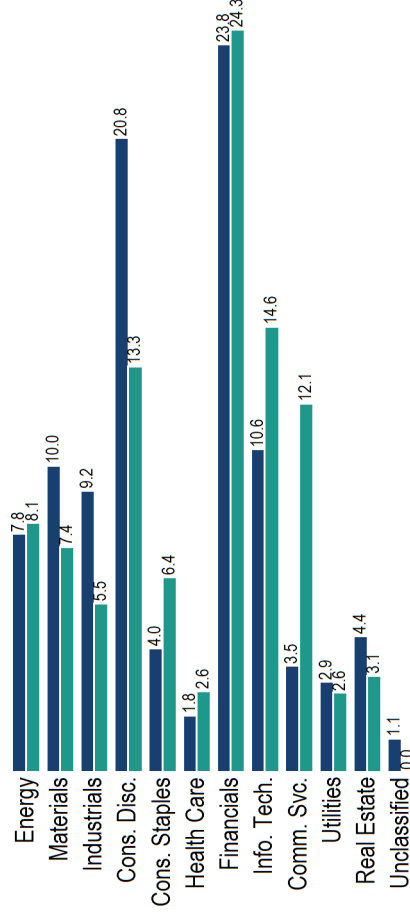
Period Ending: March 31, 2019

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

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	78	1,133
Weighted Avg. Market Cap. (\$B)	59.79	84.88
Median Market Cap. (\$B)	10.24	5.81
Price To Earnings	11.86	13.30
Price To Book	2.40	2.41
Price To Sales	1.42	1.25
Return on Equity (%)	21.31	17.82
Yield (%)	2.37	2.68
Beta		1.00

Sector Allocation (%) vs MSCI Emerging Markets



Country Allocation

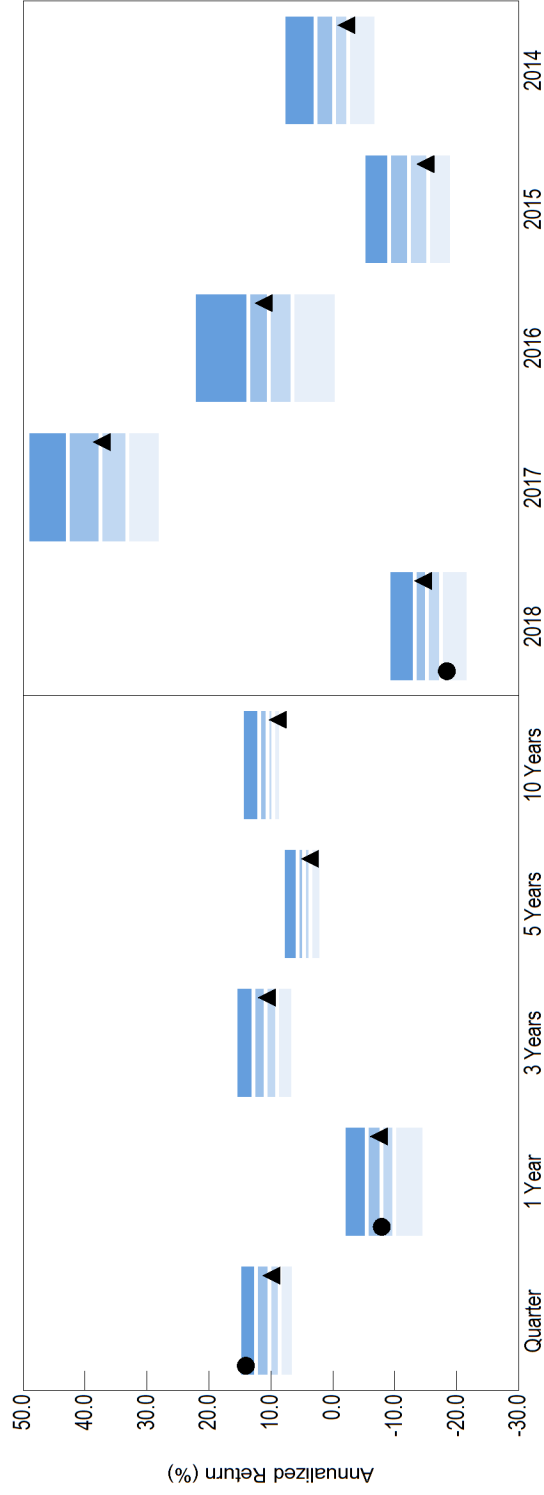
	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	19.4%	0.0%
Emerging*	81.2%	100.0%
Frontier**	1.8%	0.0%
Top 10 Largest Countries		
China*	21.7%	32.8%
India*	15.8%	9.2%
Korea*	11.6%	13.1%
Hong Kong	10.8%	0.0%
South Africa*	10.1%	5.8%
Brazil*	9.2%	7.1%
Russia*	6.1%	3.8%
United Kingdom	4.1%	0.0%
United States	2.1%	0.0%
Malaysia*	1.6%	2.2%
Total-Top 10 Largest Countries	93.0%	74.1%

Country Allocation

	TT Emerging Markets	MSCI Emerging Markets	
Top Contributors			
	End Weight	Return	Contribution
ALIBABA GROUP HLDG.SPN. ADR 1:1	5.82	33.11	1.93
NASPERS	6.25	18.52	1.16
WULIANGYE YIBIN 'A'	1.00	90.76	0.91
CNOOC	2.72	21.17	0.58
CHINA PACIFIC INSURANCE (GROUP) 'H'	2.68	21.18	0.57
HCL TECHNOLOGIES	3.72	13.86	0.52
LEXINFINTech HDG. ADR 1:2	1.10	44.83	0.49
PETROLEO BRASILEIRO PN	2.11	23.21	0.49
OCI	1.34	35.12	0.47
FIRST QUANTUM MRLS.	1.13	40.30	0.46
Bottom Contributors			
	End Weight	Return	Contribution
TURK HAVA YOLLARI	1.09	-24.42	-0.27
FUTURE RETAIL	1.40	-8.87	-0.12
PAMPA ENERGIA	0.60	-11.12	-0.07
HANA FINANCIAL GROUP	2.74	-1.29	-0.04
DP WORLD	1.31	-2.60	-0.03
MEDICLINIC INTERNATIONAL	1.01	-3.30	-0.03
BB SEGURIDADE ON	1.67	-1.93	-0.03
ARVIND	0.49	-6.28	-0.03
SIAM COML. BANK FB	1.07	-1.91	-0.02
CHINA GAS HOLDINGS	1.87	-1.03	-0.02

Unclassified sector allocation includes cash allocations.

TT Emerging Markets vs. eV Emg Mkts Equity Gross Universe



Return (Rank)

5th Percentile	15.1	15.6	8.0	14.7	49.2	22.4	-5.0	8.0
25th Percentile	12.5	12.9	5.7	11.9	42.8	13.7	-9.0	2.9
Median	10.3	10.9	4.7	10.6	37.6	10.4	-12.2	-0.1
75th Percentile	8.6	9.1	3.6	9.7	33.2	6.6	-15.3	-2.4
95th Percentile	6.4	6.5	1.9	8.5	27.8	-0.6	-19.2	-7.0
# of Portfolios	361	337	297	150	343	337	273	251
● TT Emerging Markets	14.0 (12)	-- (52)	-- (54)	-- (91)	-- (53)	-- (45)	-- (70)	-- (74)
▲ MSCI Emerging Markets	9.9 (56)	10.7 (46)	3.7 (74)	8.9 (91)	37.3 (43)	11.2 (45)	-14.9 (70)	-2.2 (74)

Global Equity Managers

Artisan Partners Manager Portfolio Overview

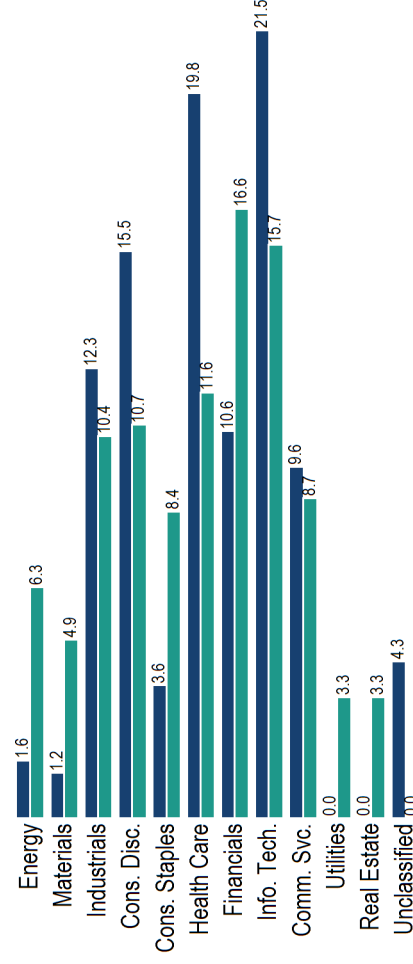
Period Ending: March 31, 2019

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

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	46	2,768
Weighted Avg. Market Cap. (\$B)	106.47	140.13
Median Market Cap. (\$B)	28.07	9.41
Price To Earnings	31.44	17.12
Price To Book	4.60	2.82
Price To Sales	2.96	1.54
Return on Equity (%)	22.24	20.08
Yield (%)	0.96	2.53
Beta	1.27	1.00

Sector Allocation (%) vs MSCI ACWI



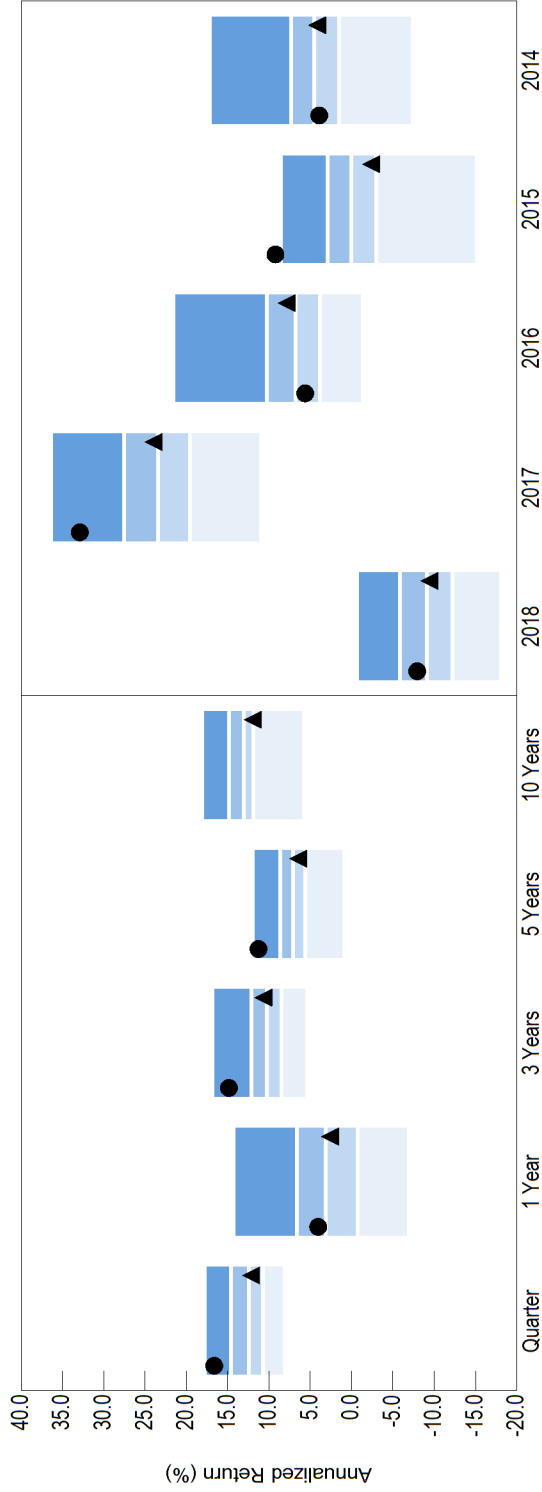
Country Allocation

	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	93.2%	88.3%
Emerging*	2.5%	11.7%
Top 10 Largest Countries		
United States	54.7%	55.1%
United Kingdom	9.2%	5.2%
Hong Kong	8.1%	1.2%
Switzerland	5.3%	2.7%
Cash	4.3%	0.0%
Denmark	4.1%	0.5%
Japan	3.0%	7.3%
India*	2.5%	1.1%
Germany	1.6%	2.6%
France	1.6%	3.4%
Total-Top 10 Largest Countries	94.6%	79.0%

	Avg Wgt	Return	Contribution	Avg Wgt	Return	Contribution
Top Contributors						
WORLDPAY A	2.11	48.50	1.02	1.53	-1.44	-0.02
VISA 'A'	5.50	18.59	1.02	1.44	1.31	0.02
TECHTRONIC INDS.	3.55	26.47	0.94	0.19	12.57	0.02
IHS MARKIT	6.98	13.36	0.93	1.89	2.95	0.06
FEVERTREE DRINKS	1.77	40.46	0.71	0.48	11.73	0.06
APTIV	2.14	29.47	0.63	1.01	11.55	0.12
ATLASSIAN 'A'	2.25	26.31	0.59	0.48	31.84	0.15
PROGRESSIVE OHIO	2.46	24.06	0.59	1.04	14.83	0.15
TEMENOS N	2.32	23.25	0.54	0.84	18.56	0.16
PAGSEGURO DIGITAL A	0.89	59.37	0.53	2.51	6.23	0.16
Bottom Contributors						
ACTIVISION BLIZZARD	1.02	1.02	1.02	1.53	-1.44	-0.02
BOOKING HOLDINGS	1.02	1.02	1.02	1.44	1.31	0.02
ING GROEP	0.94	0.94	0.94	0.19	12.57	0.02
TREASURY WINE ESTATES	0.93	0.93	0.93	1.89	2.95	0.06
VESTAS WINDSYSTEMS	0.71	0.71	0.71	0.48	11.73	0.06
UMICORE	0.63	0.63	0.63	1.01	11.55	0.12
TIFFANY & CO	0.59	0.59	0.59	0.48	31.84	0.15
DAIFUKU	0.54	0.54	0.54	1.04	14.83	0.15
AMAZON.COM	0.53	0.53	0.53	0.84	18.56	0.16
GENMAB	0.53	0.53	0.53	2.51	6.23	0.16

Unclassified sector allocation includes cash allocations.

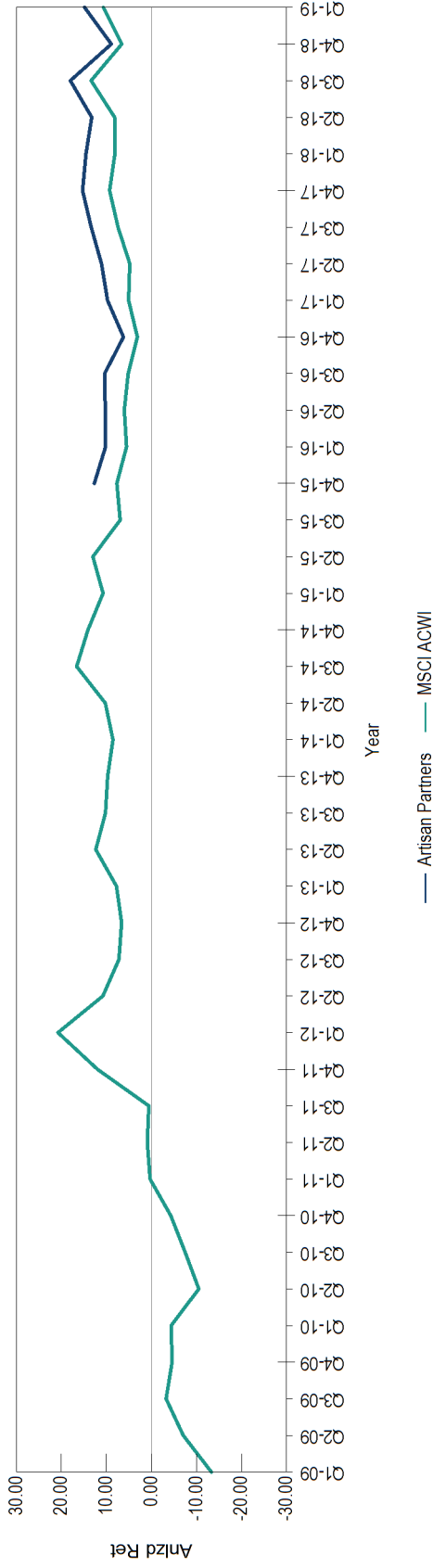
Artisan Partners vs. eV All Global Equity Gross Universe



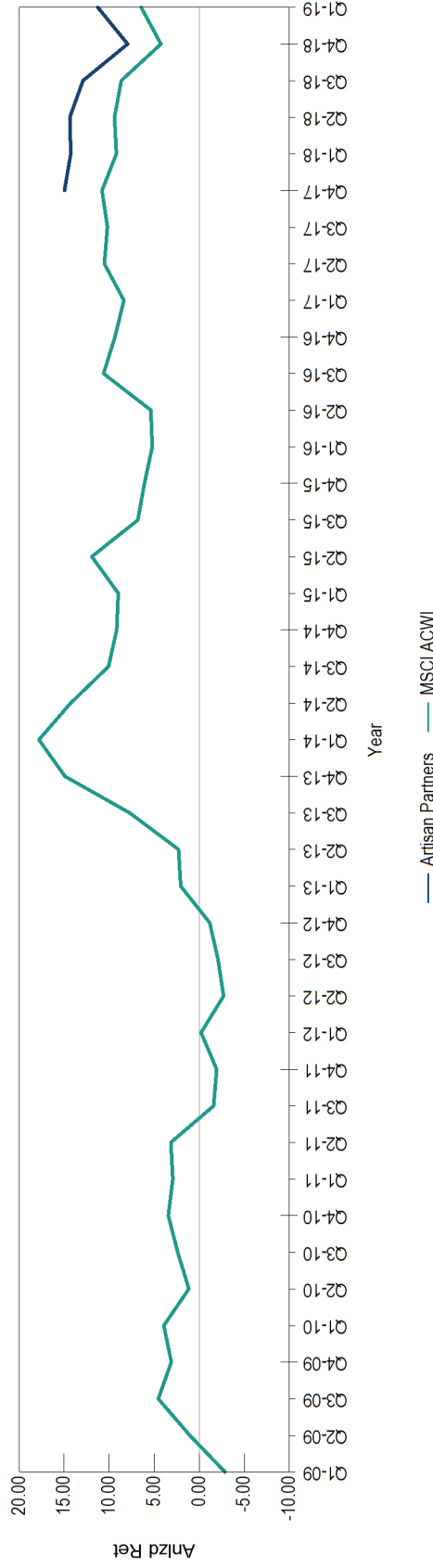
Return (Rank)

5th Percentile	17.8	14.3	16.8	11.9	18.0	-0.7	880	8.5	17.1
25th Percentile	14.6	6.7	12.1	8.7	14.8	-5.8	27.6	3.0	7.4
Median	12.5	3.1	10.3	7.1	13.1	-9.1	23.5	0.1	4.6
75th Percentile	10.8	-0.7	8.5	5.6	11.9	-12.2	19.6	-2.9	1.5
95th Percentile	8.2	-6.9	5.4	0.9	5.8	-18.1	11.0	-15.1	-7.4
# of Portfolios	936	936	870	757	496	920	842	692	609
● Artisan Partners	16.6 (9)	4.0 (43)	14.8 (11)	11.3 (8)	--	-7.9 (40)	32.9 (11)	5.6 (61)	9.2 (4)
▲ MSCI ACWI	12.2 (56)	2.6 (54)	10.7 (45)	6.5 (64)	12.0 (75)	-9.4 (53)	24.0 (47)	7.9 (42)	-2.4 (73)

Rolling 3 Year Annualized Return (%)

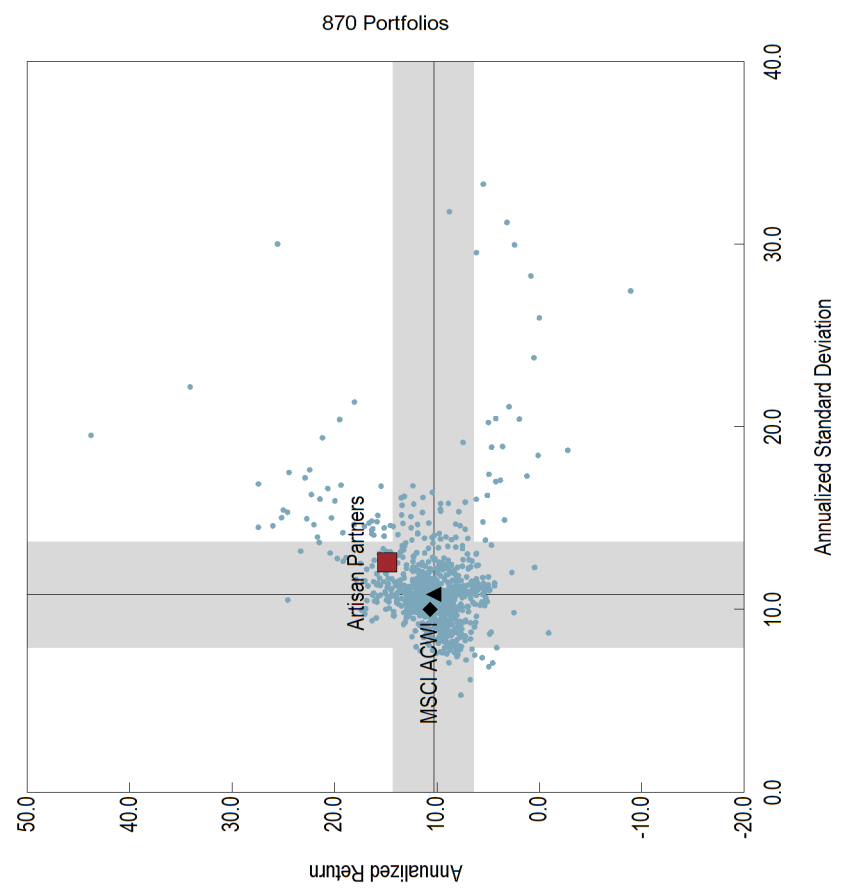


Rolling 5 Year Annualized Return (%)



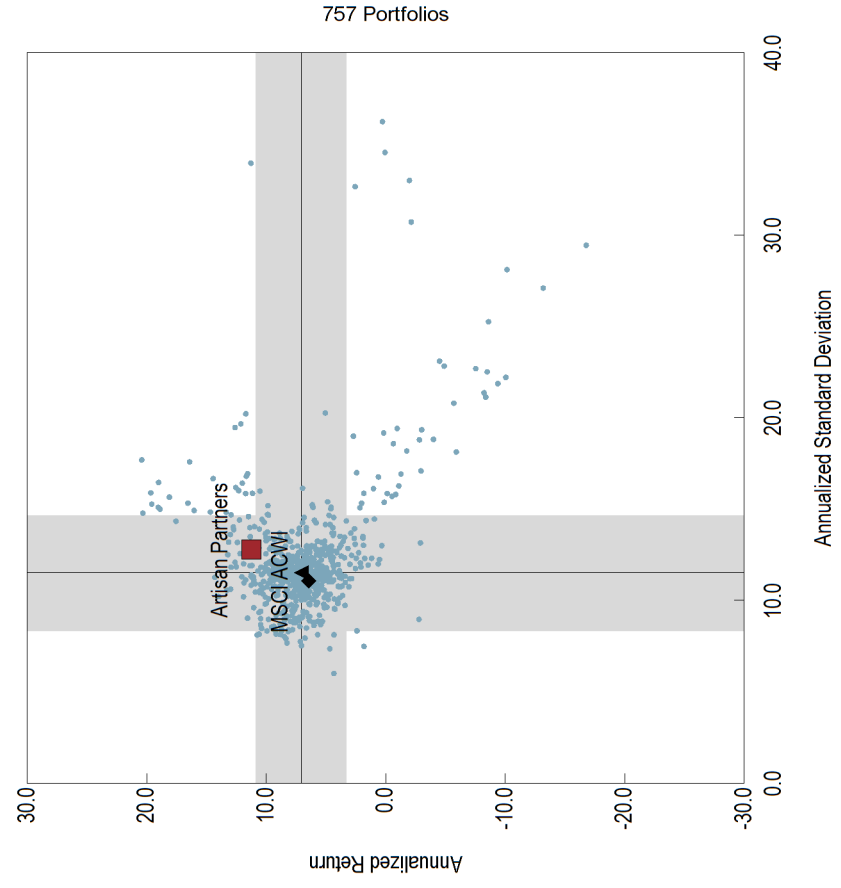
Artisan Partners
 Risk vs. Return 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

3 Years



	Artisan Partners	MSCI ACWI	eV All Global Equity Gross Median
Annualized Return	14.8%	10.7%	10.3%
Annualized Standard Deviation	12.6%	10.0%	10.8%
Sharpe Ratio	1.1	0.9	0.9

5 Years



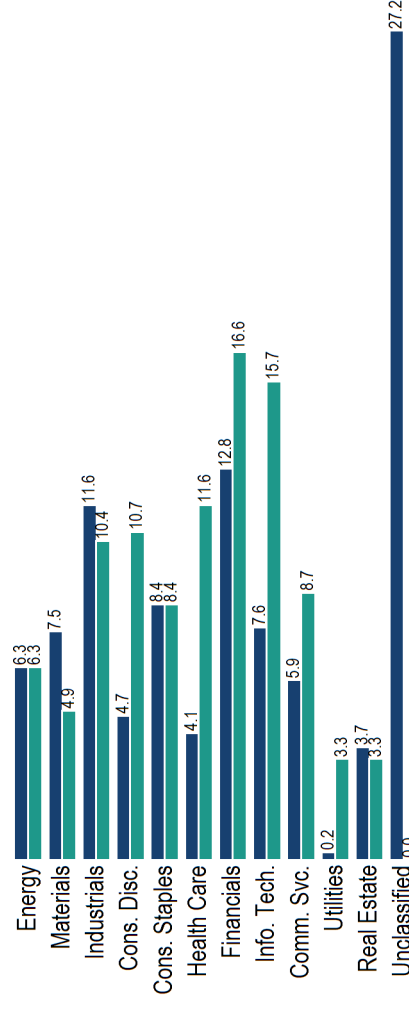
	Artisan Partners	MSCI ACWI	eV All Global Equity Gross Median
Annualized Return	11.3%	6.5%	7.1%
Annualized Standard Deviation	12.8%	11.1%	11.5%
Sharpe Ratio	0.8	0.5	0.6

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

Characteristics

	Portfolio	MSCI ACWI
Number of Holdings	135	2,768
Weighted Avg. Market Cap. (\$B)	70.78	140.13
Median Market Cap. (\$B)	17.97	9.41
Price To Earnings	16.78	17.12
Price To Book	2.26	2.82
Price To Sales	1.46	1.54
Return on Equity (%)	14.47	20.08
Yield (%)	2.39	2.53
Beta	0.70	1.00

Sector Allocation (%) vs MSCI ACWI



Country Allocation

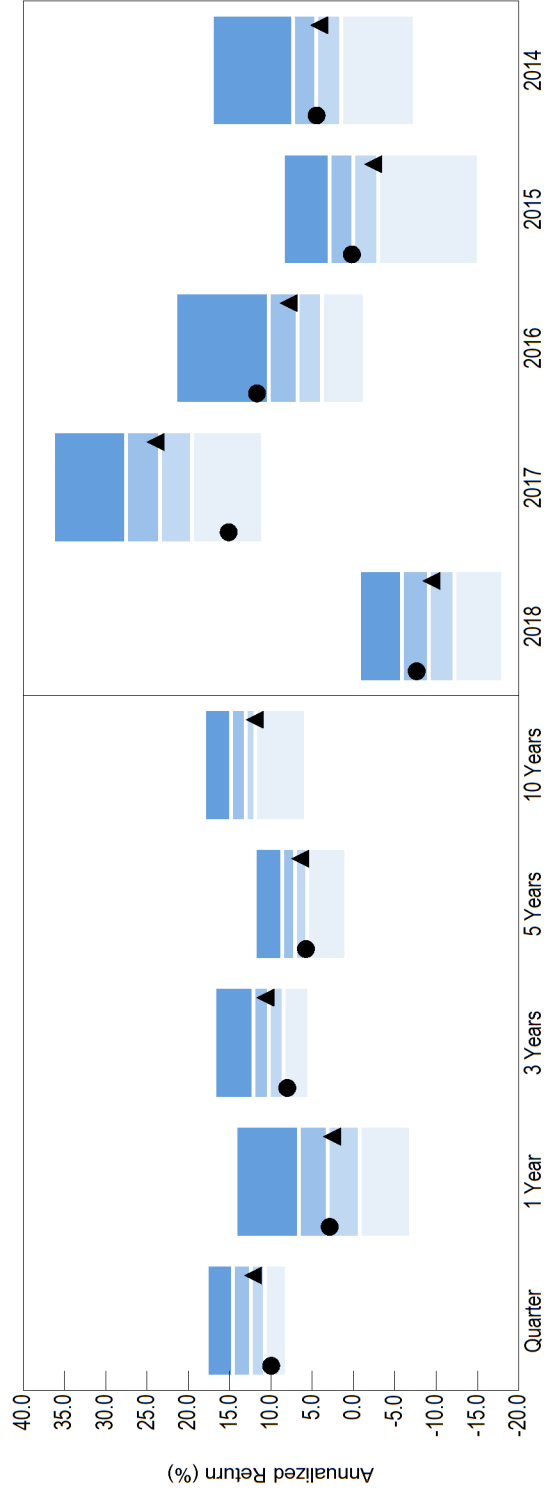
	Manager Ending Allocation (USD)	Index Ending Allocation (USD)
Totals		
Developed	78.3%	88.3%
Emerging*	3.6%	11.7%
Cash	18.1%	
Top 10 Largest Countries		
United States	44.5%	55.1%
Cash	18.1%	0.0%
Japan	11.1%	7.3%
United Kingdom	5.8%	5.2%
France	5.4%	3.4%
Canada	3.0%	3.1%
Switzerland	2.2%	2.7%
Korea*	1.9%	1.5%
Hong Kong	1.3%	1.2%
Singapore	1.3%	0.4%
Total-Top 10 Largest Countries	94.7%	79.8%

Top Contributors				Bottom Contributors			
	Avg Wgt	Return	Contribution		End Weight	Return	Contribution
ORACLE	2.28	19.43	0.44	KDDI	1.30	-8.04	-0.10
BRITISH AMERICAN TOBACCO	1.33	32.80	0.44	JARDINE MATHESON HDG.	0.91	-8.61	-0.08
PHILIP MORRIS INTL.	1.14	34.11	0.39	VISTA OUTDOOR	0.05	-29.43	-0.01
SCHLUMBERGER	1.72	22.13	0.38	H&R BLOCK	0.23	-4.67	-0.01
EXXON MOBIL	1.54	19.81	0.30	BT GROUP	0.25	-4.20	-0.01
COMCAST A	1.72	17.42	0.30	BERKSHIRE HATHAWAY 'B'	0.51	-1.61	-0.01
WEYERHAEUSER	1.35	22.14	0.30	ALLEGHANY	0.47	-1.75	-0.01
UNION PACIFIC	0.93	21.59	0.20	LOTTE	0.07	-7.86	-0.01
LLOYDS BANKING GROUP	0.87	22.62	0.20	WPP	0.19	-2.01	0.00
NESTLE R'	1.05	17.72	0.19	ORKLA	0.16	-2.17	0.00

Unclassified sector allocation includes cash allocations and Gold allocations (8.4% as of 3/31/2019).

First Eagle
 Manager Performance Comparisons (Gross of Fees) Period Ending: March 31, 2019

First Eagle vs. eV All Global Equity Gross Universe



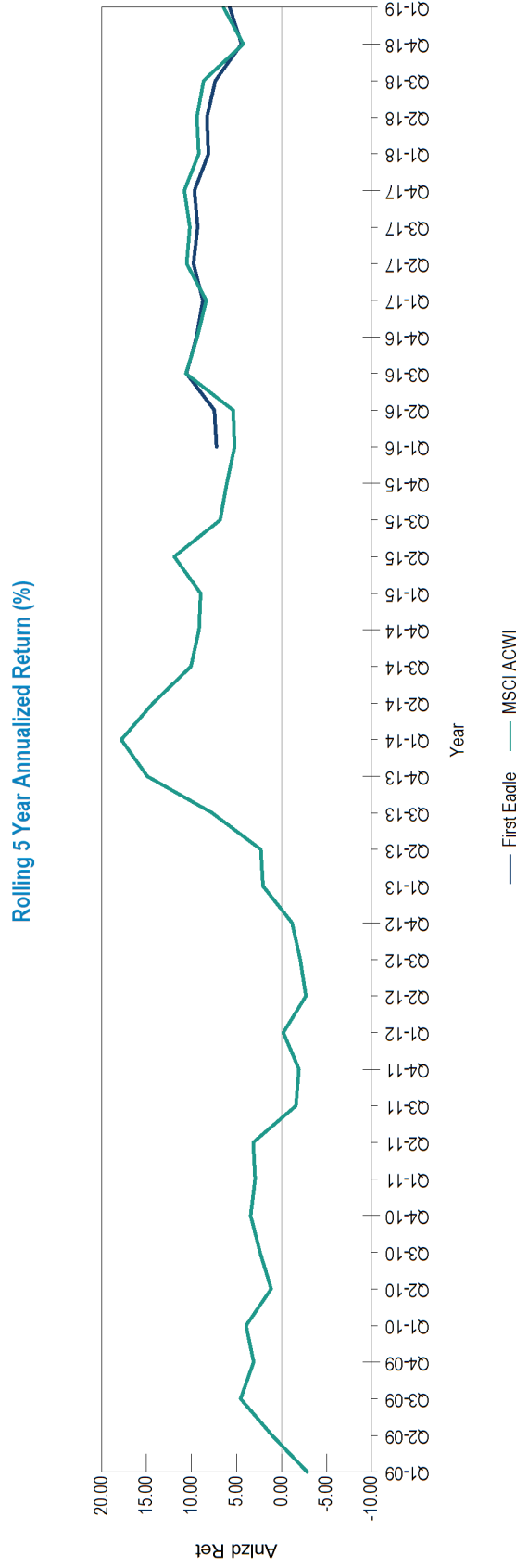
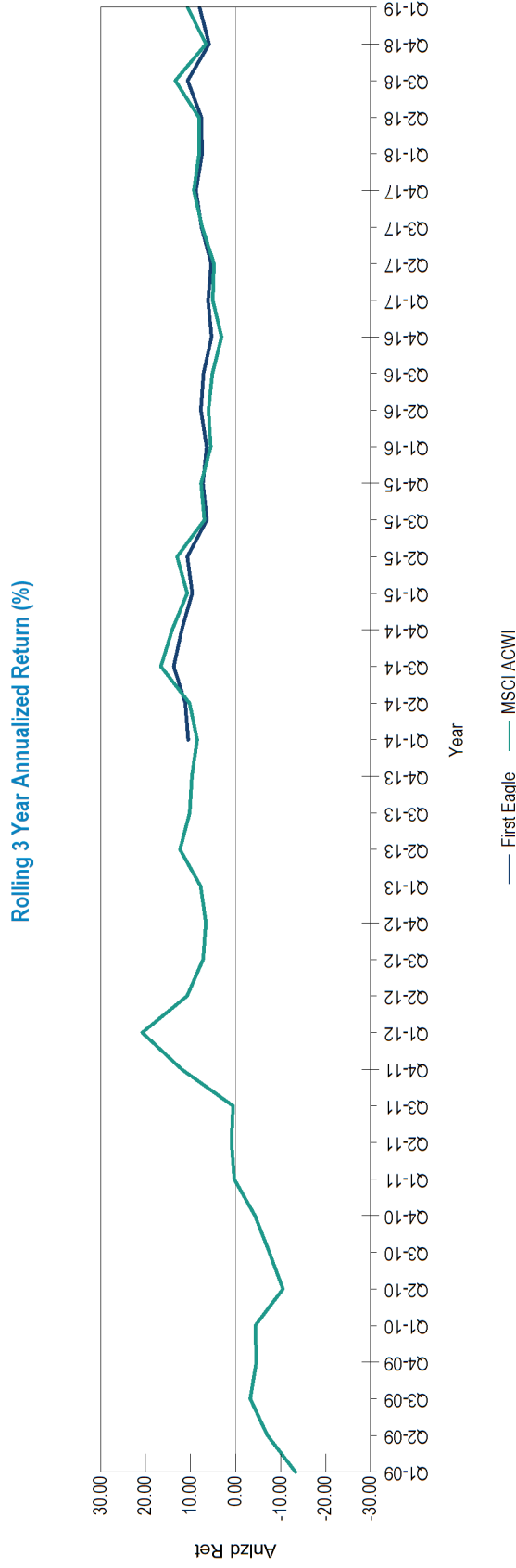
Return (Rank)

Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
Quarter	17.8	14.6	12.5	10.8	8.2	936
1 Year	14.3	6.7	3.1	-0.7	-6.9	936
3 Years	16.8	12.1	10.3	8.5	5.4	870
5 Years	11.9	8.7	7.1	5.6	0.9	757
10 Years	18.0	14.8	13.1	11.9	5.8	496
2014	17.1	7.4	4.6	1.5	-7.4	609
2015	8.5	3.0	0.1	-2.9	-15.1	692
2016	21.5	10.3	6.8	3.9	-1.4	842
2017	36.3	27.6	23.5	19.6	11.0	880
2018	-0.7	-5.8	-9.1	-12.2	-18.1	920
First Eagle	10.0 (85)	2.9 (52)	8.0 (81)	5.8 (73)	-7.6 (38)	15.1 (89)
MSCI ACWI	12.2 (56)	2.6 (54)	10.7 (45)	6.5 (64)	-9.4 (53)	24.0 (47)
10 Year Avg	--	--	--	--	--	--
2019 YTD	4.5 (51)	0.2 (49)	0.2 (49)	0.2 (49)	-2.4 (73)	4.2 (54)

● First Eagle

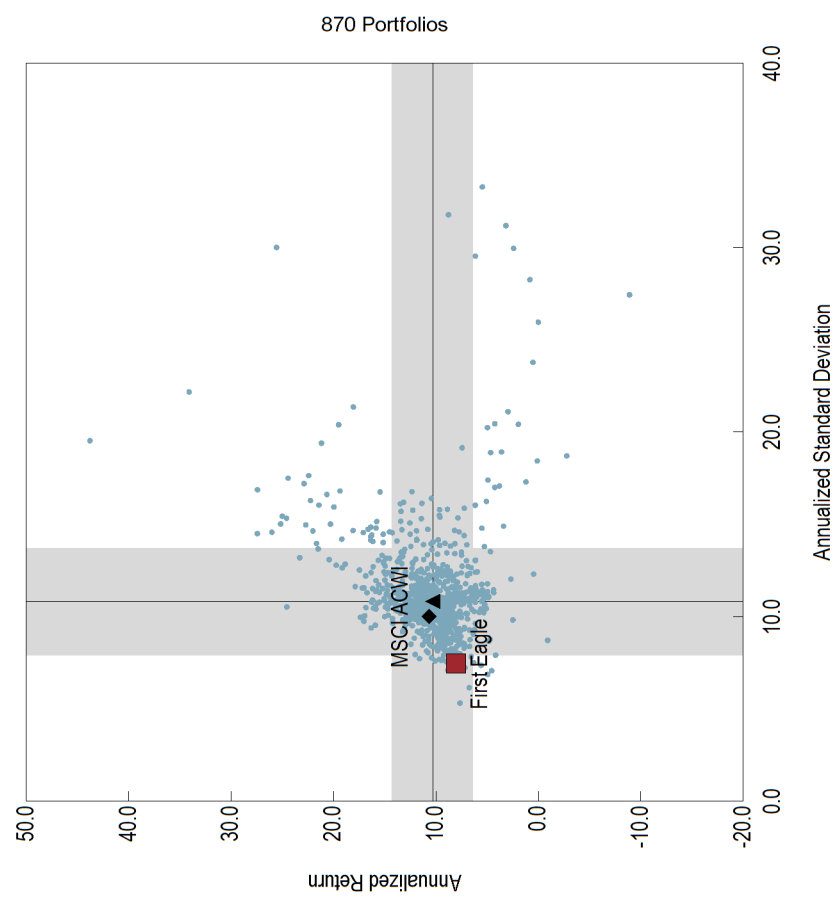
▲ MSCI ACWI

First Eagle
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019



First Eagle
 Risk vs. Return 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

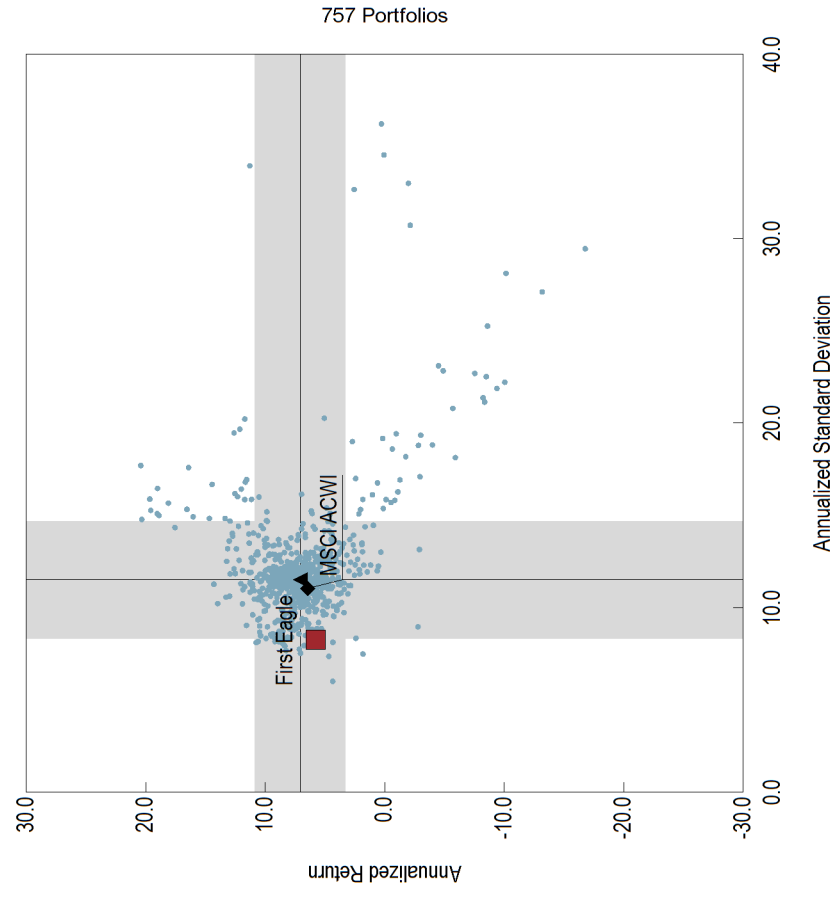
3 Years



3 Years

	Annualized Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	10.3%	10.8%	0.9
MSCI ACWI	10.7%	10.0%	0.9
eV All Global Equity Gross Median	8.0%	7.4%	0.9

5 Years



5 Years

	Annualized Return	Anlzd Standard Deviation	Sharpe Ratio
First Eagle	7.1%	11.5%	0.5
MSCI ACWI	6.5%	11.1%	0.5
eV All Global Equity Gross Median	5.8%	8.1%	0.6

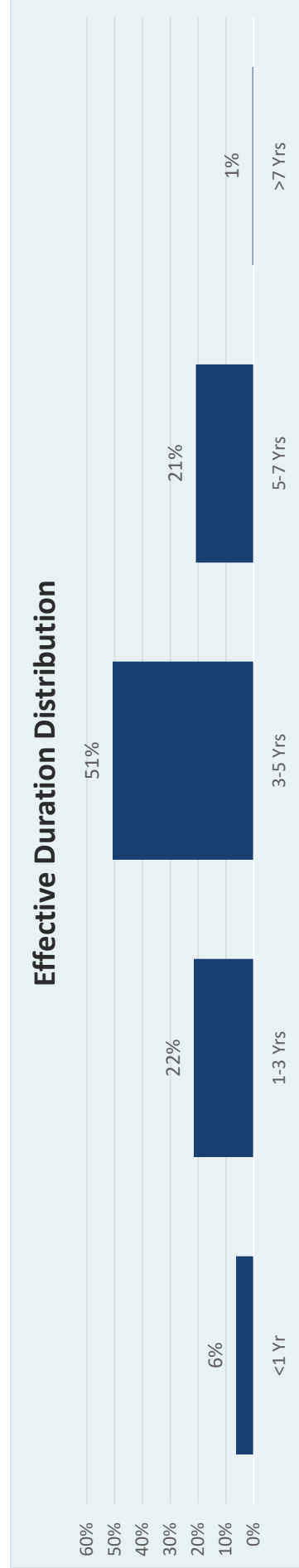
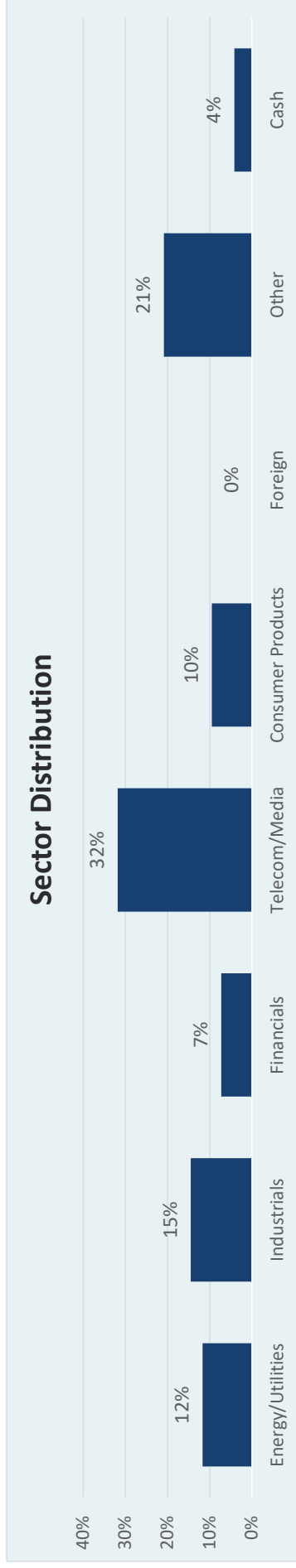
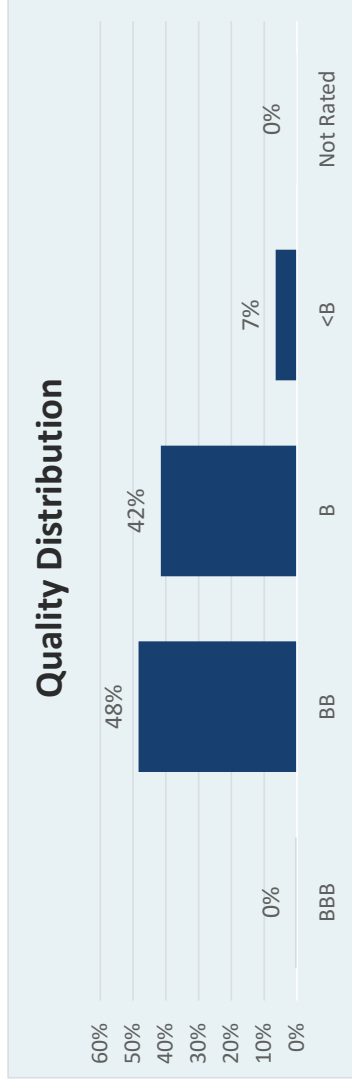
High Yield Managers

Allianz Global Investors Manager Portfolio Overview

Period Ending: March 31, 2019

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

	Allianz	ICE BofAML HY Master II
Effective Duration	3.80	3.70
Yield to Maturity	6.10	6.70
Average Quality	B1	B1
Average Coupon	6.4%	6.4%

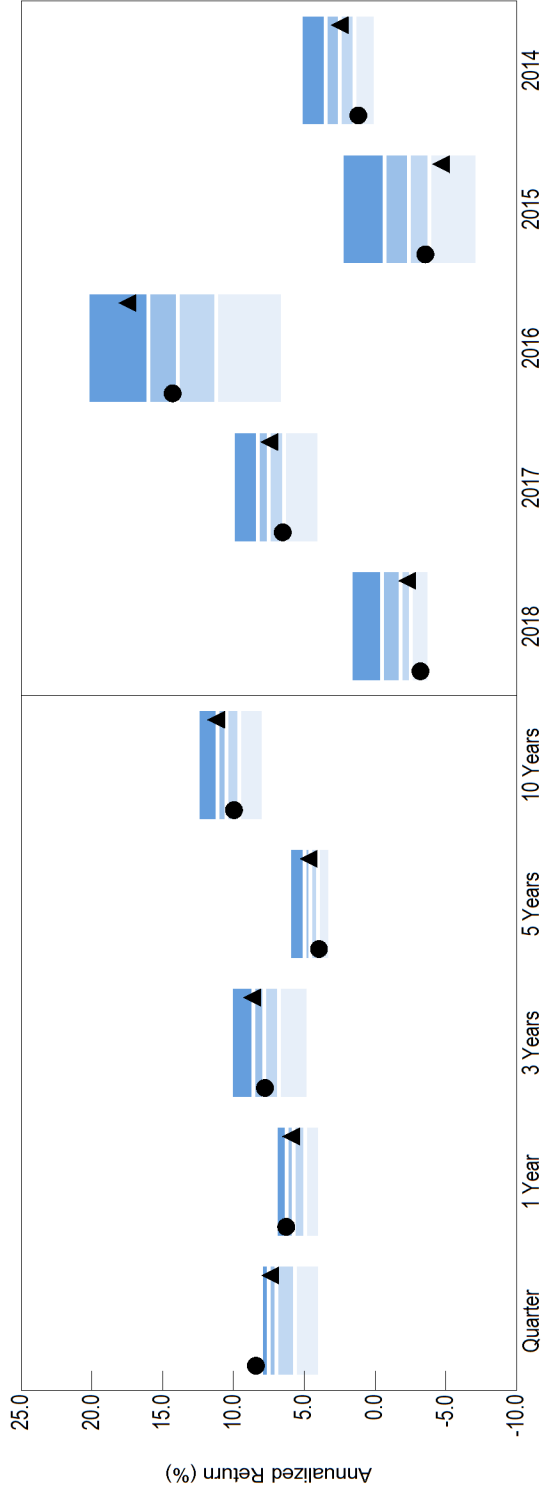


Quality distribution excludes cash.



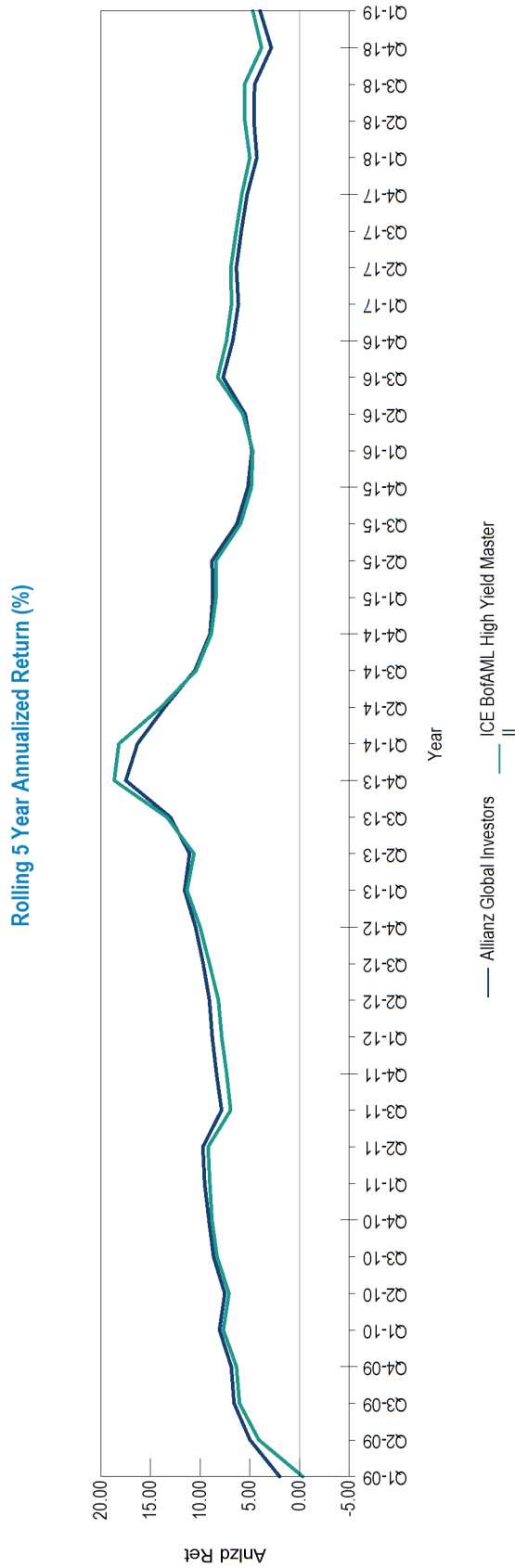
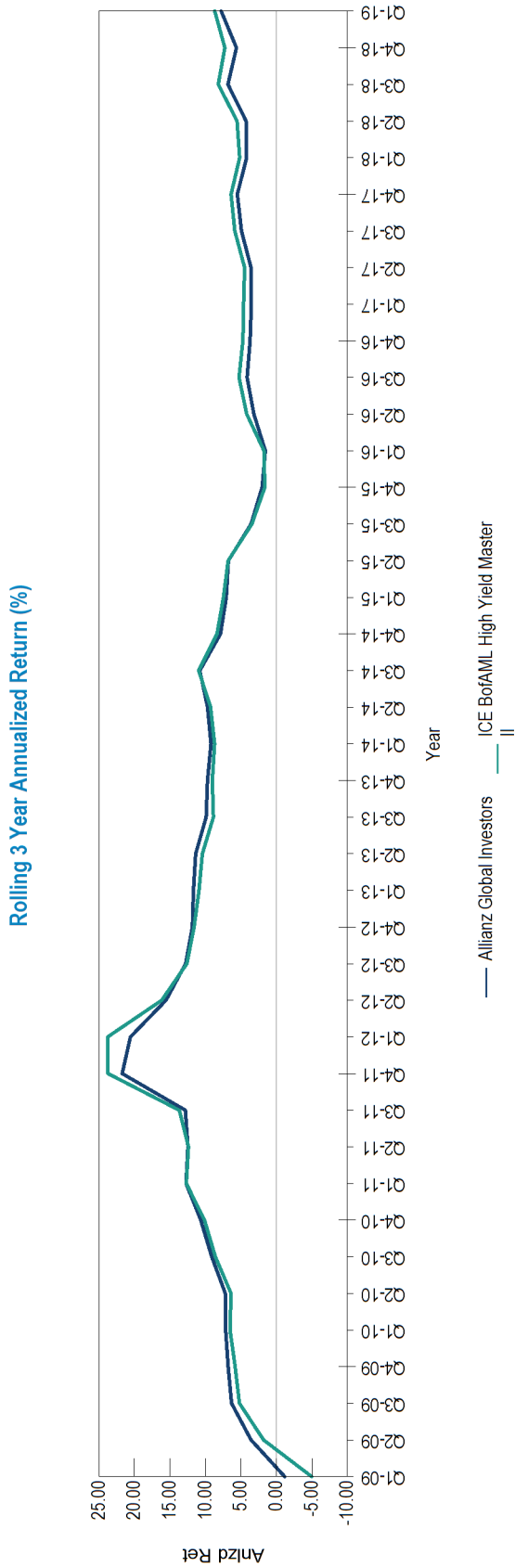
Allianz Global Investors
 Manager Performance Comparisons (Gross of Fees) Period Ending: March 31, 2019

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



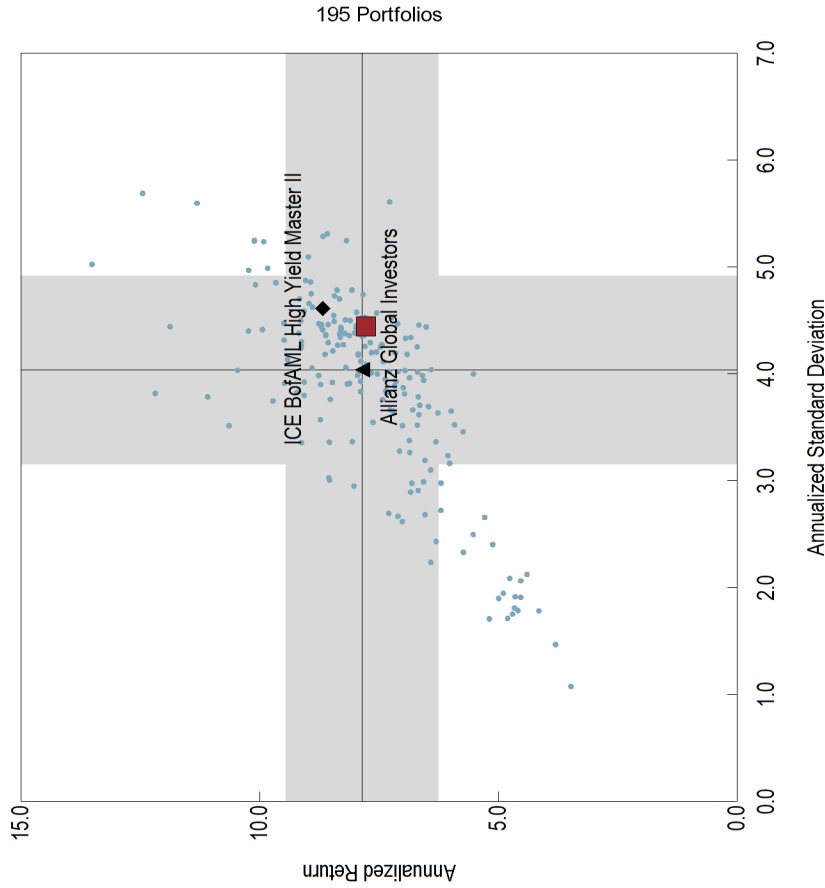
	Quarter	1 Year	3 Years	5 Years	10 Years	2014	2015	2016	2017	2018
5th Percentile	8.0	7.0	10.2	6.0	12.5	1.7	10.0	20.3	2.3	5.2
25th Percentile	7.5	6.3	8.6	5.0	11.2	-0.5	8.3	16.0	8.3	3.5
Median	7.0	5.8	7.9	4.6	10.5	-1.8	7.5	14.0	7.5	2.5
75th Percentile	5.7	5.0	6.8	4.1	9.6	-2.5	6.5	11.3	6.5	1.5
95th Percentile	3.9	3.9	4.8	3.2	7.9	-3.8	4.0	6.6	4.0	0.0
# of Portfolios	208	208	195	182	125	210	198	183	155	141
Allianz Global Investors	8.4 (2)	6.3 (25)	7.8 (53)	4.0 (77)	10.0 (64)	-3.2 (88)	6.5 (74)	14.3 (47)	-3.5 (68)	1.2 (83)
ICE BofAML High Yield Master II	7.4 (33)	5.9 (43)	8.7 (24)	4.7 (42)	11.2 (20)	-2.3 (69)	7.5 (53)	17.5 (14)	-4.6 (83)	2.5 (50)

Allianz Global Investors
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019



Allianz Global Investors
 Risk vs. Return 3 & 5 Year (Gross of Fees) Period Ending: March 31, 2019

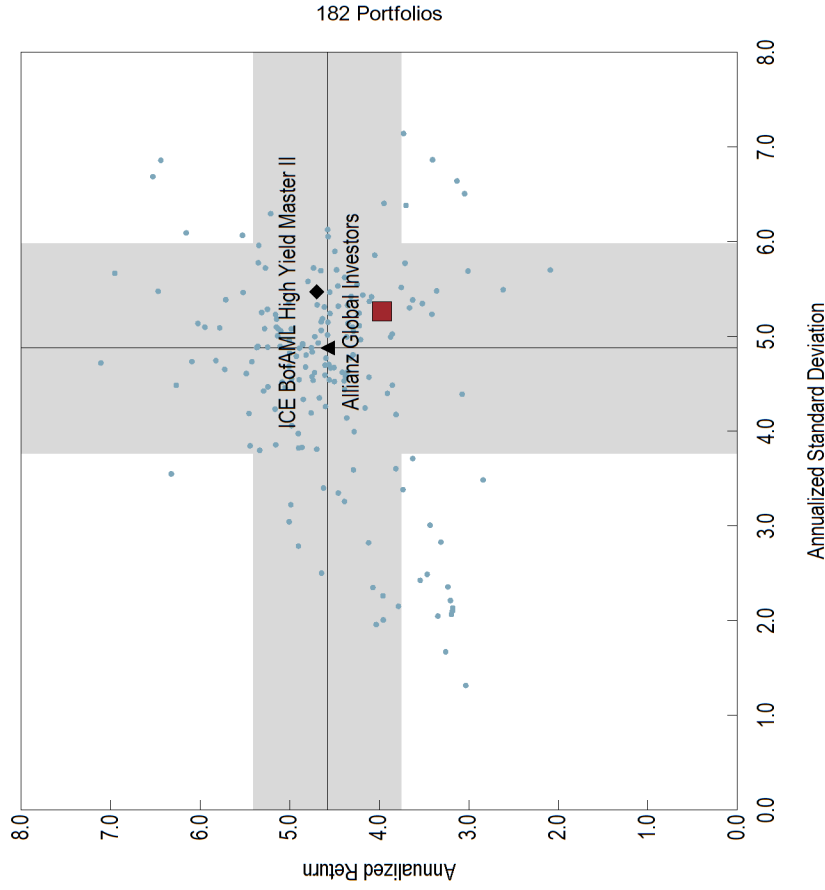
3 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	7.8%	4.4%	1.5
ICE BofAML High Yield Master II	8.7%	4.6%	1.6
eV US High Yield Fixed Inc Gross Median	7.9%	4.0%	1.6

5 Years



5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Allianz Global Investors	4.0%	5.3%	0.6
ICE BofAML High Yield Master II	4.7%	5.5%	0.7
eV US High Yield Fixed Inc Gross Median	4.6%	4.9%	0.8

Real Estate Managers

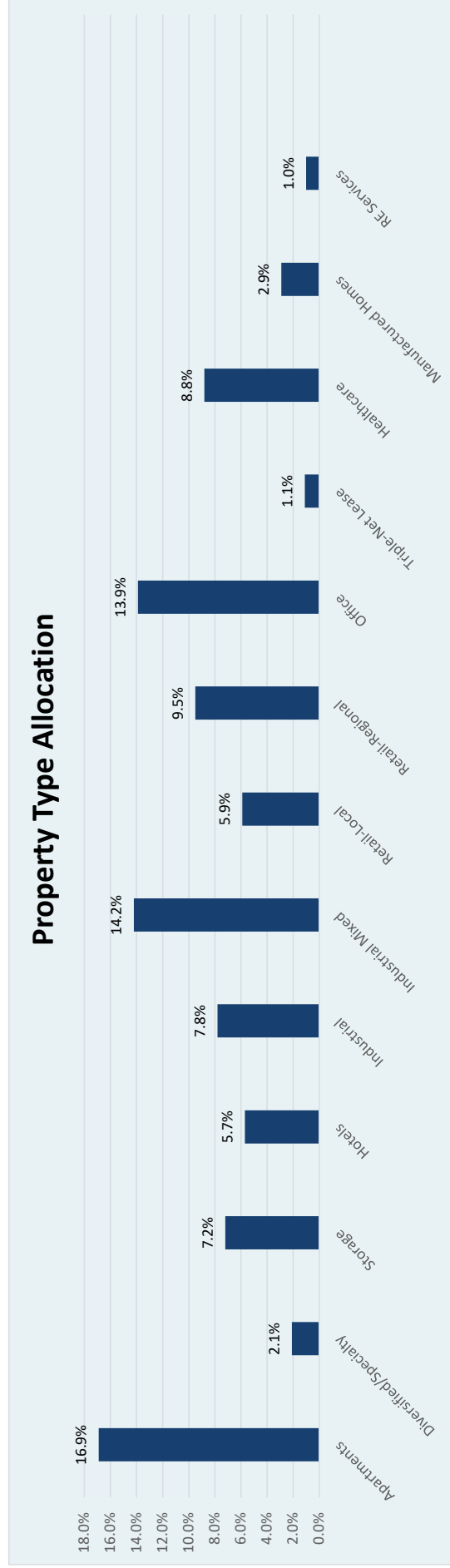
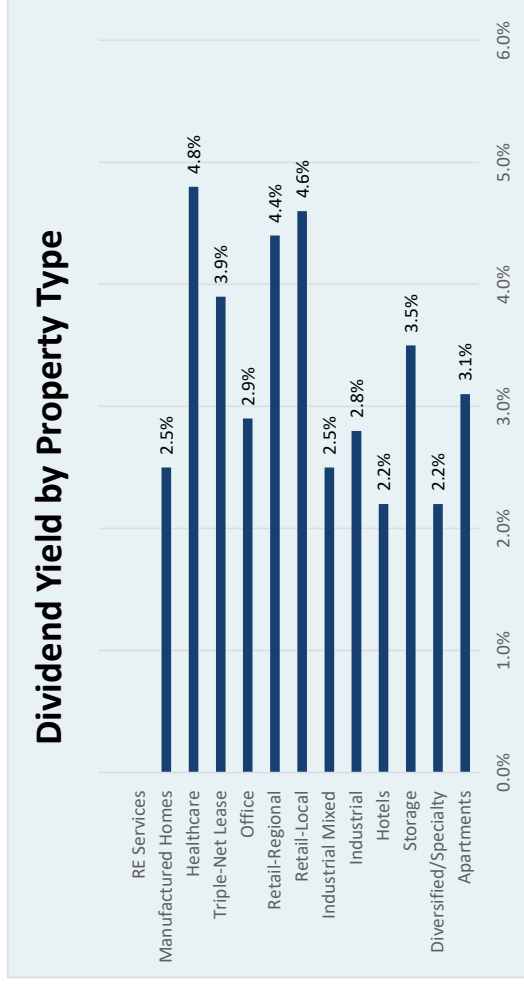
Adelante Manager Portfolio Overview

Period Ending: March 31, 2019

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

Top Five Holdings

Company	Property Type	Allocation
Simon Property Group	Retail-Regional	9.5%
Equinix Inc	Industrial Mixed	7.1%
PoLogis Inc.	Industrial	6.4%
Equity Residential	Apartments	5.8%
Essex Property Trust	Apartments	4.4%



3% is allocated to Cash and Cash Equivalents.



Diversifying Fixed Income Managers

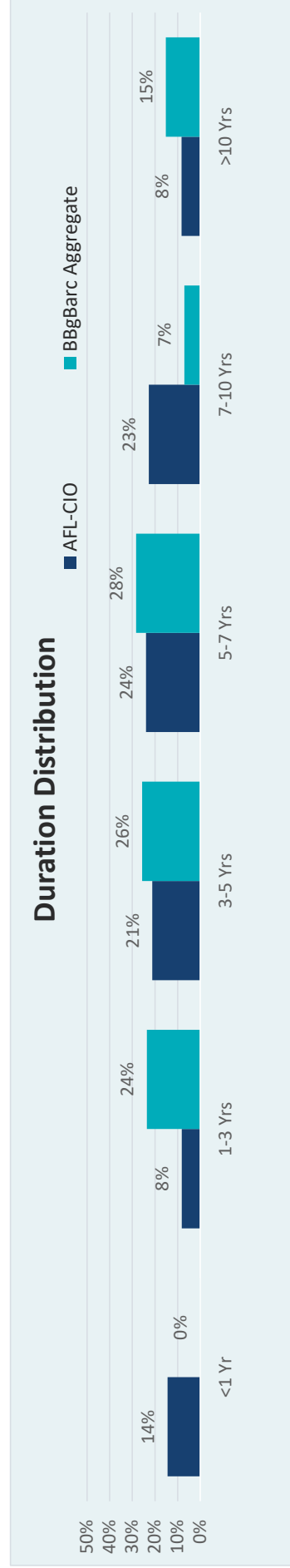
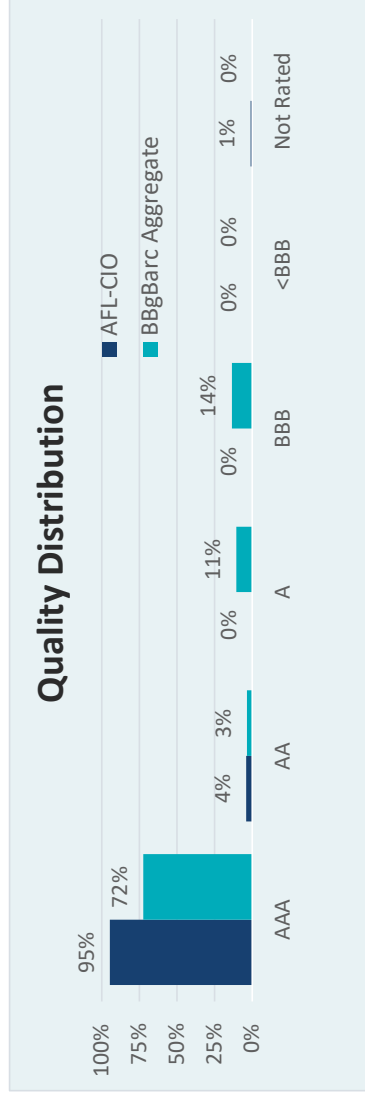
AFL-CIO

Manager Portfolio Overview

Period Ending: March 31, 2019

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

	AFL-CIO	BBgBarc Aggregate
Effective Duration	5.59	5.95
Yield to Maturity	3.38	3.15
Average Quality	AAA	AA
Average Coupon	3.4%	3.3%



Duration and Quality distributions exclude cash.

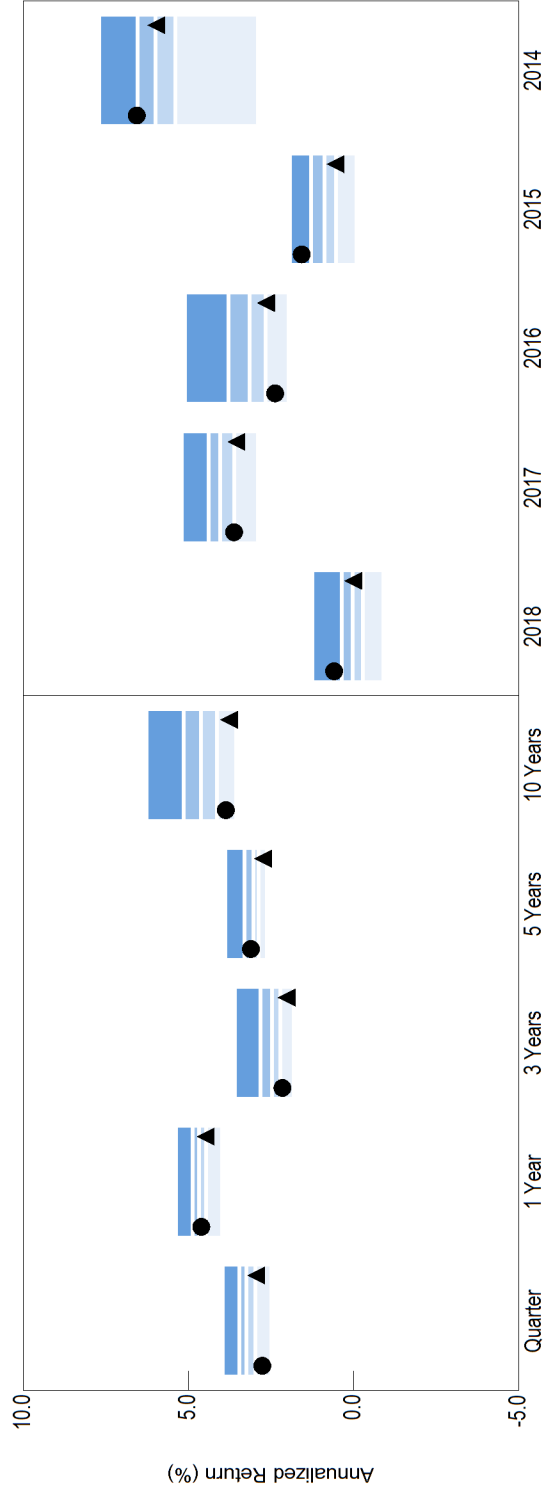


AFL-CIO

Manager Performance Comparisons (Gross of Fees)

Period Ending: March 31, 2019

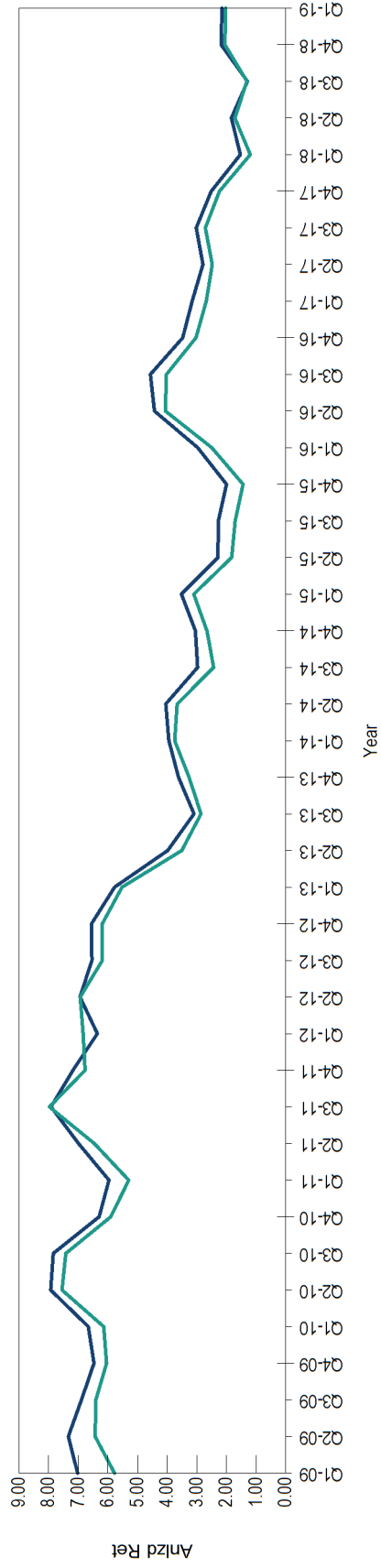
AFL-CIO vs. eV US Core Fixed Inc Gross Universe



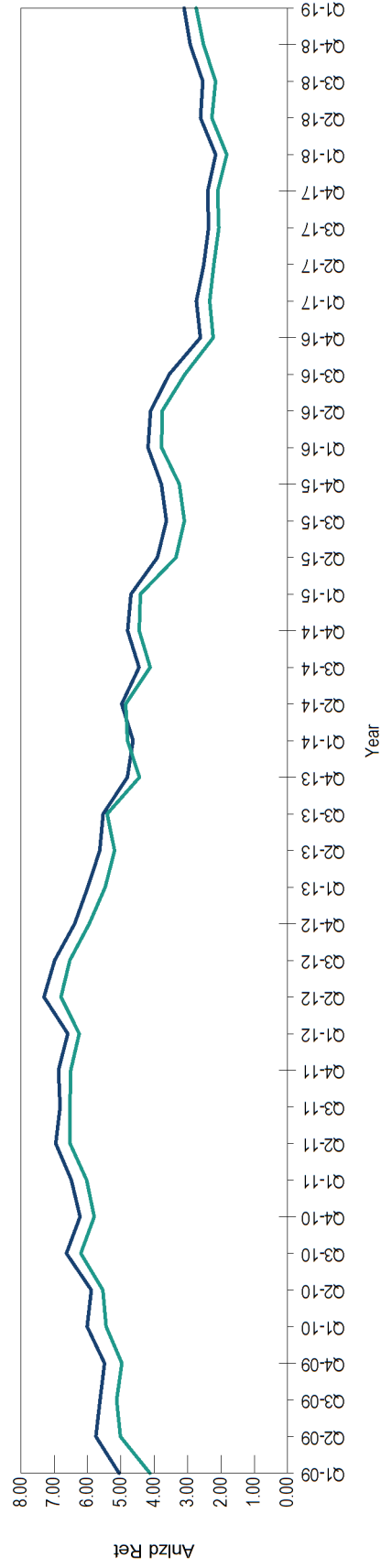
Return (Rank)

5th Percentile	4.0	5.4	3.6	3.9	6.3	1.2	5.2	5.1	1.9	7.7
25th Percentile	3.5	4.9	2.8	3.3	5.1	0.4	4.4	3.8	1.3	6.5
Median	3.2	4.7	2.5	3.0	4.6	0.0	4.0	3.2	0.9	6.0
75th Percentile	3.0	4.5	2.2	2.9	4.1	-0.3	3.6	2.7	0.5	5.4
95th Percentile	2.5	4.0	1.8	2.6	3.6	-0.9	2.9	2.0	-0.1	2.9
# of Portfolios	232	231	228	224	205	240	233	223	196	213
● AFL-CIO	2.8 (88)	4.6 (61)	2.2 (81)	3.1 (45)	3.9 (89)	0.6 (16)	3.6 (76)	2.4 (87)	1.6 (15)	6.6 (25)
▲ BbgBarc US Aggregate TR	2.9 (79)	4.5 (75)	2.0 (86)	2.7 (89)	3.8 (93)	0.0 (54)	3.5 (79)	2.6 (77)	0.6 (75)	6.0 (52)

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)

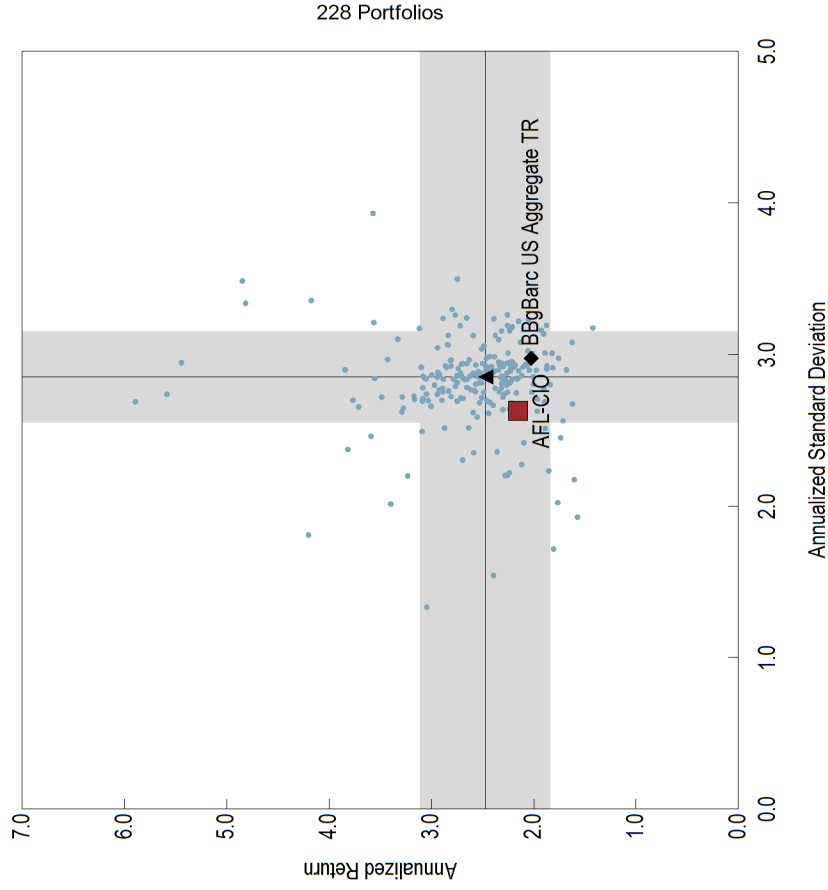


AFL-CIO

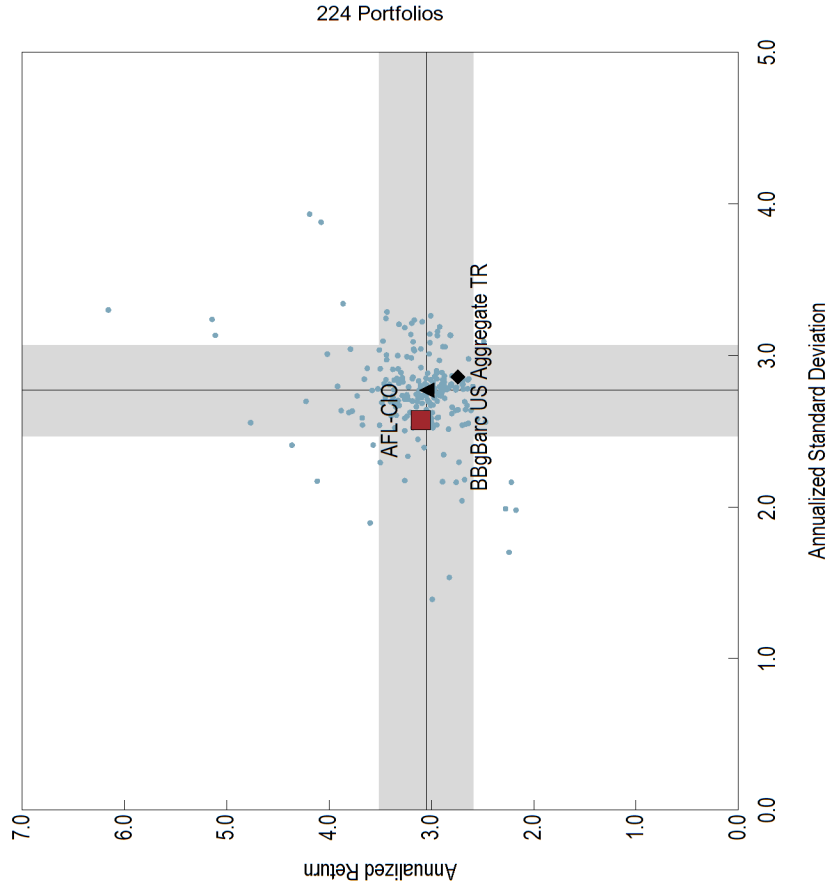
Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: March 31, 2019

3 Years



5 Years



3 Years

5 Years

AFL-CIO
BbgBarc US Aggregate TR
eV US Core Fixed Inc Gross Median

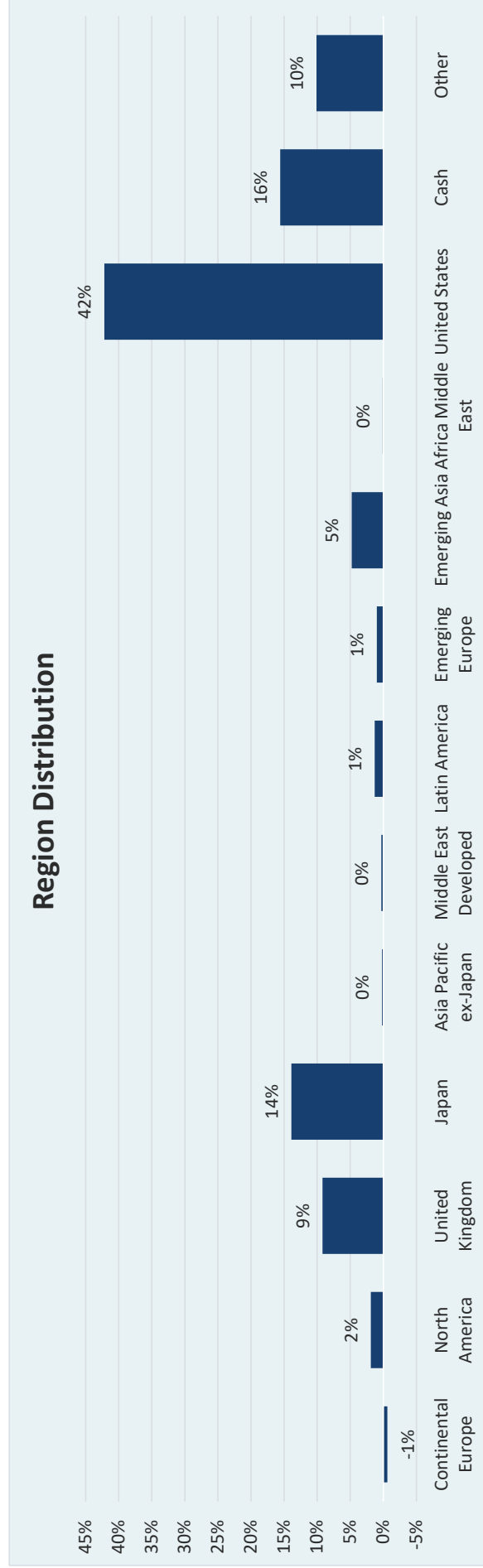
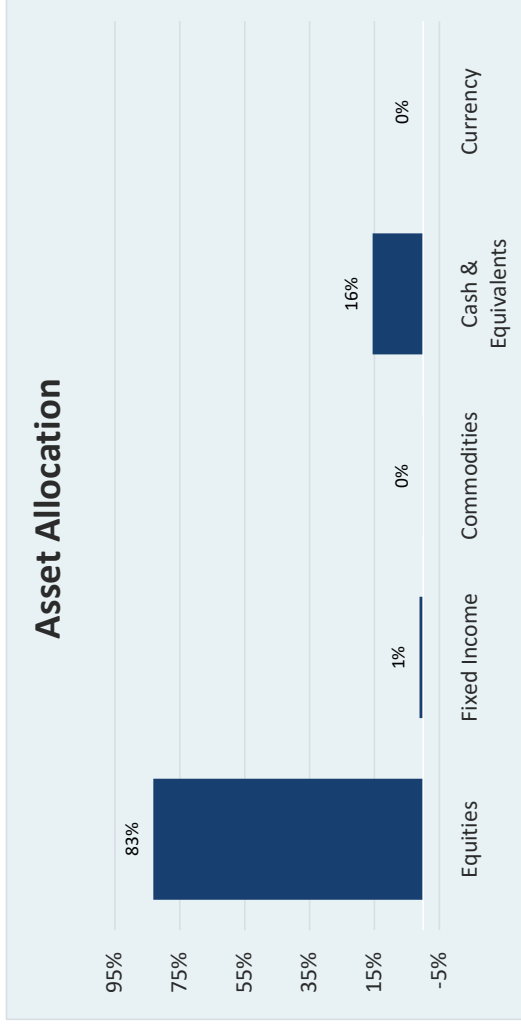
AFL-CIO
BbgBarc US Aggregate TR
eV US Core Fixed Inc Gross Median

Wellington Total Return Manager Portfolio Overview

Period Ending: March 31, 2019

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

Wellington Total Return	
Number of Equity Holdings	1123
Number of Commodity Holdings	139
Effective Duration (Years)	2.80
Average Quality	D



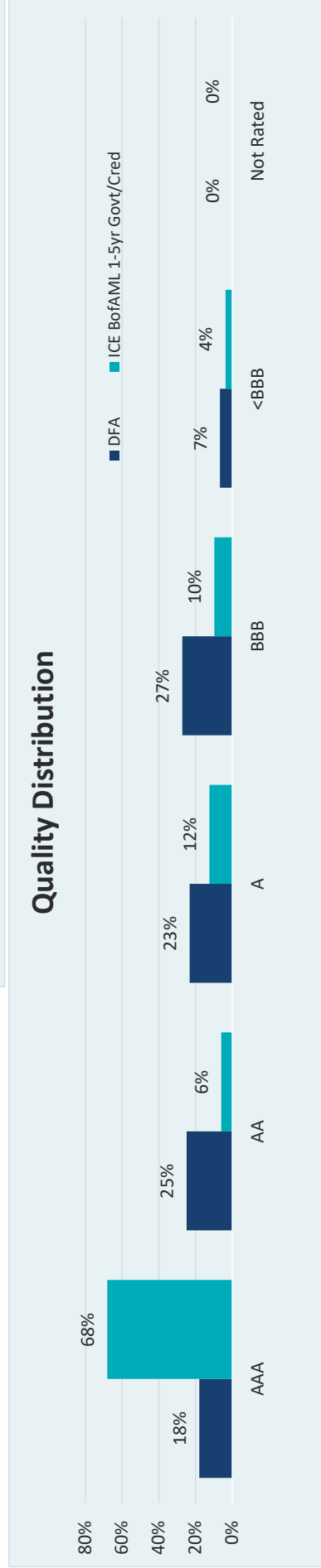
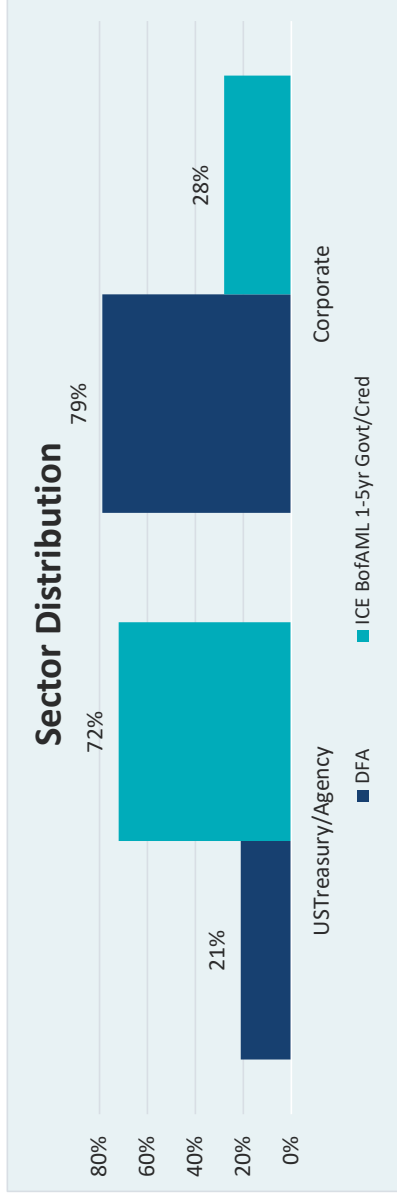
Liquidity Managers

DFA Short Credit Manager Portfolio Overview

Period Ending: March 31, 2019

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

	DFA	ICE BofAML 1-5yr Govt/Cred
Effective Duration	2.31	2.63
Yield to Maturity	2.73	2.54
Average Quality	A	Aa1
Average Coupon	2.78%	2.66%

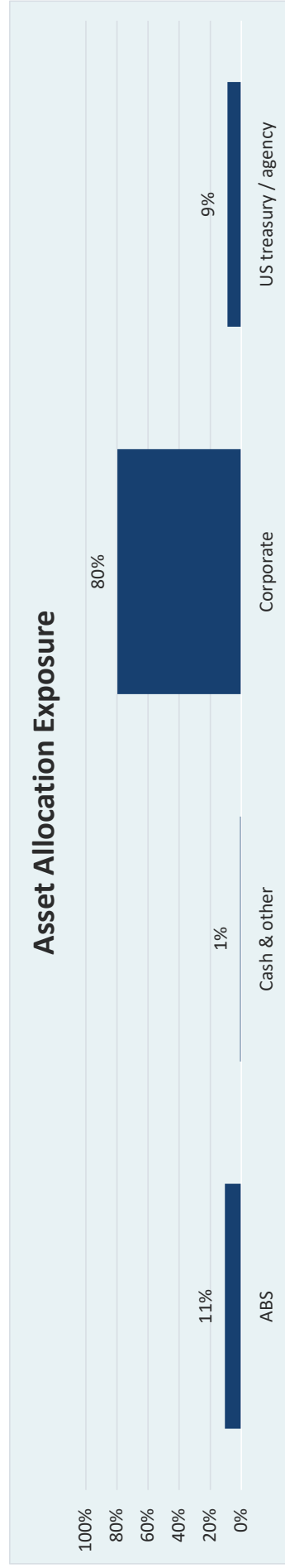
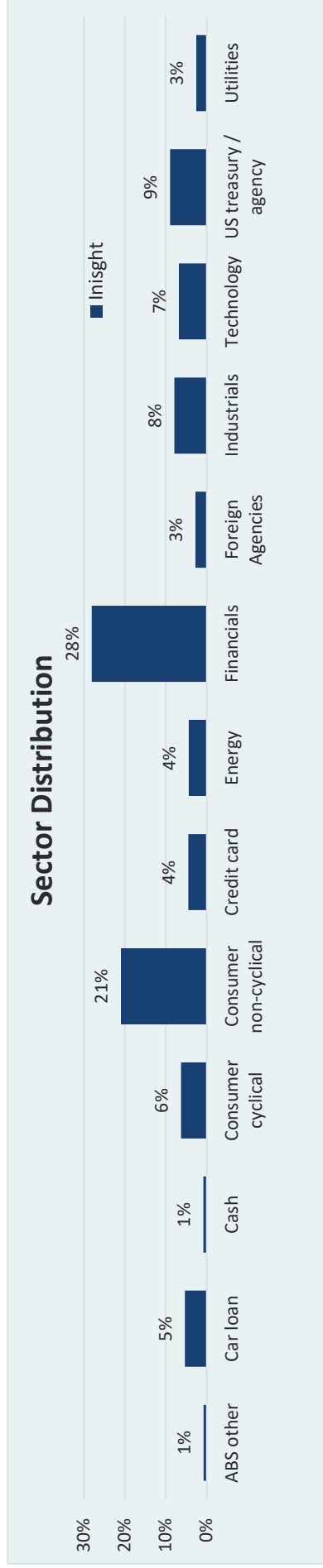
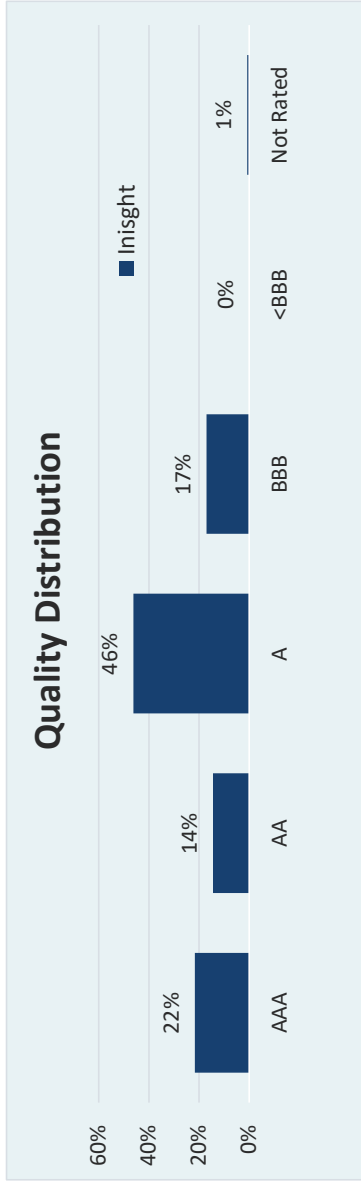


Insight Short Duration Manager Portfolio Overview

Period Ending: March 31, 2019

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

	Insight	BBgBarc 1-3yr Govt
Effective Duration	1.48	1.91
Yield to Maturity	2.78	2.31
Average Quality	A+	AAA
Average Coupon	2.4%	2.1%

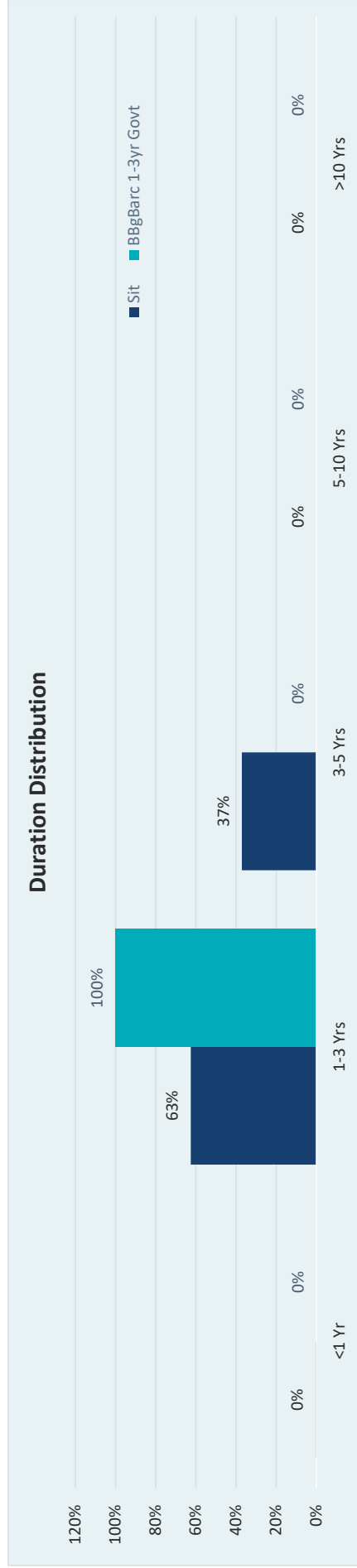
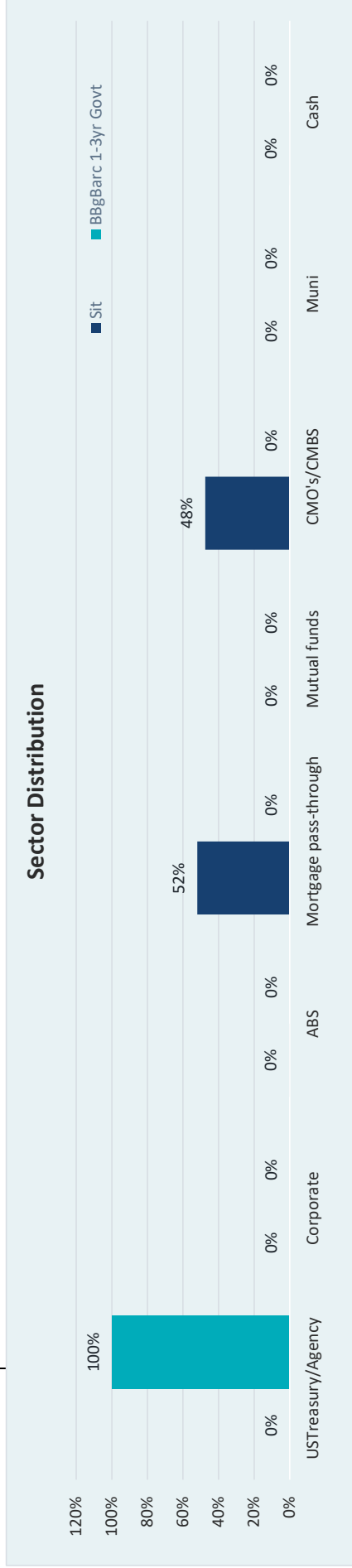
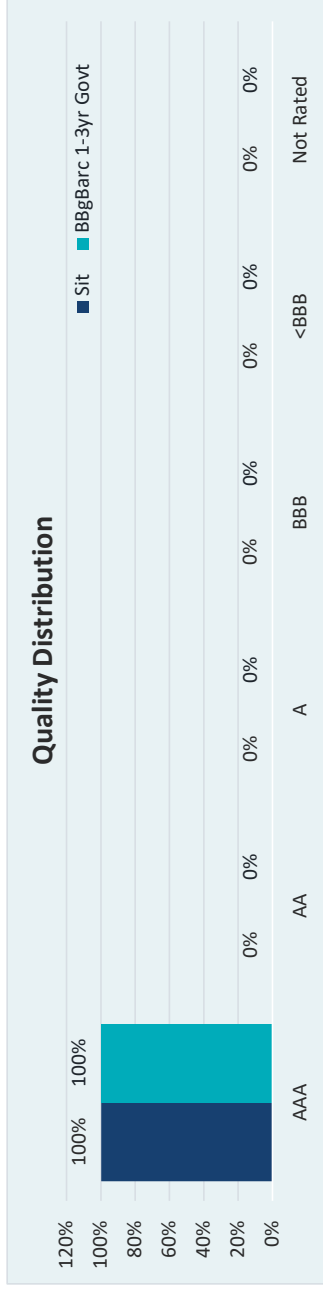


Sit Short Duration Manager Portfolio Overview

Period Ending: March 31, 2019

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

	Sit	BBgBarc 1-3yr Govt
Adjusted Duration	2.70	1.9
Yield to Maturity	2.80	2.3
Average Quality	AAA	AAA
Average Coupon	6.8%	2.1%



Performance Return Calculations

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

Data Source

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

Illiquid Alternatives

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

Policy & Custom Index Composition

Policy Index (7/1/2018 - present)	11% Russell 3000, 19% MSCI ACWI ex-US (Gross), 11% MSCI ACWI (Net), 1% Wilshire REIT, 1.8% NCREIF Property Index, 7.2% NCREIF ODCE Index, 2% CPI + 4%, 10% S&P 500 +4% (Lagged), 4% ICE BofAML High Yield Master II +2%, 2% ICE BofAML High Yield Master II, 23% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate, 2% BBgBarc Global Aggregate, 2.5% HFRI EH Equity Market Neutral.
Policy Index (10/1/2017 - 6/30/2018)	16.3% Russell 3000, 18.8% MSCI ACWI ex-US (Gross), 8.6% MSCI ACWI (Net), 1% Wilshire REIT, 1.6% NCREIF Property Index, 6.4% NCREIF ODCE Index, 2.5% CPI + 4%, 10.1% S&P 500 +4% (Lagged), 1.9% ICE BofAML High Yield Master II +2%, 4.3% ICE BofAML High Yield Master II, 25% BBgBarc 1-3 Yr Gov/Credit, 3.5% BBgBarc US Aggregate.
Policy Index (1/1/2017 - 9/30/2017)	22.9% Russell 3000, 11% MSCI ACWI ex-US (Gross), 10.9% MSCI ACWI (Net), 1% Wilshire REIT, 1.7% NCREIF Property Index, 6.8% NCREIF ODCE Index, 3.6% CPI + 4%, 8.1% S&P 500 +4% (Lagged), 1.7% ICE BofAML High Yield Master II +2%, 5.1% ICE BofAML High Yield Master II, 22.4% BBgBarc 1-3 Yr Gov/Credit, 3.2% BBgBarc US Aggregate, 1.6% 91-Day T-Bills.
Policy Index (4/1/2012-12/31/2016)	27.7% Russell 3000, 10.6% MSCI ACWI ex-US (Gross), 12.3% MSCI ACWI (Net), 19.6% BBgBarc U.S. Aggregate, 5% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 13.5% Real Estate Benchmark, 6.8% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2011-3/31/2012)	31% Russell 3000, 10.4% MSCI EAFE (Gross), 9.6% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (4/1/2010-3/31/2011)	35.6% Russell 3000, 10.4% MSCI EAFE (Gross), 5% MSCI ACWI (Net), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Policy Index (7/1/2009-3/31/2010)	40.6% Russell 3000, 10.4% MSCI EAFE (Gross), 25% BBgBarc U.S. Aggregate, 3% ICE BofAML High Yield Master II, 4% BBgBarc Global Aggregate, 8.4% DJ Wilshire REIT, 3.1% NCREIF, 5% S&P 500 +4% (Lagged), 0.5% 91-Day T-Bills.
Custom Growth Benchmark (7/1/2018 - present)	16.0% Russell 3000, 27.5% MSCI ACWI ex-US (Gross), 15.9% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.6% NCREIF Property Index, 10.4% NCREIF ODCE Index, 14.5% S&P 500 +4% (Lagged), 5.8% ICE BofAML High Yield Master II +2%, 2.9% ICE BofAML High Yield Master II, 2.9% BBgBarc Global Bond
Custom Growth Benchmark (9/30/2017-6/30/2018)	23.6% Russell 3000, 27.2% MSCI ACWI ex-US (Gross), 12.5% MSCI ACWI (Net), 1.5% Wilshire REIT, 2.3% NCREIF Property Index, 9.3% NCREIF ODCE Index, 14.6% S&P 500 +4% (Lagged), 2.8% ICE BofAML High Yield Master II +2%, 6.2% ICE BofAML High Yield Master II
Custom Growth Benchmark (1/1/2017-9/30/2017)	32.6% Russell 3000, 15.7% MSCI ACWI ex-US (Gross), 15.5% MSCI ACWI (Net), 1.4% Wilshire REIT, 2.4% NCREIF Property Index, 9.6% NCREIF ODCE Index, 1.6% CPI +4%, 11.5% S&P 500 +4% (Lagged), 2.4% ICE BofAML High Yield Master II +2%, 7.3% ICE BofAML High Yield Master II
Custom Growth Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Custom Diversifying Benchmark (7/1/2018 - present)	43.75% BBgBarc US Aggregate, 25% CPI + 4%, 31.25% HFRI EH Equity Market Neutral.
Custom Diversifying Benchmark (10/1/2017 - 6/30/2018)	58.33% BBgBarc US Aggregate, 41.67% CPI + 4%.
Custom Diversifying Benchmark (1/1/2017 - 9/30/2017)	56.1% BBgBarc US Aggregate, 43.9% CPI + 4%.
Custom Diversifying Benchmark (Prior to 1/1/2017)	Weighted-average of the benchmarks of the sub-composites that make up the composite.
Real Estate Benchmark (current)	11% Wilshire REIT, 18% NCREIF Property Index, 71% NCREIF ODCE Index.
Real Estate Benchmark (4/1/2012-11/30/2016)	40% Wilshire REIT, 50% NCREIF Property Index, 10% FTSE/EPR/NAREIT Developed ex-US.

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

Other Disclosures

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

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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