

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: MARCH 31, 2019

Investment Performance Review for

Tulare County Employees' Retirement Association

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VERUSINVESTMENTS.COM

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Investment Landscape

TAB II

Investment Performance

Review



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

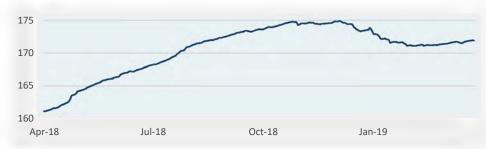
Article Source: The Guardian, February 18th, 2019

MARKET EXPECTATIONS FOR CHANGES IN SHORT-TERM RATES



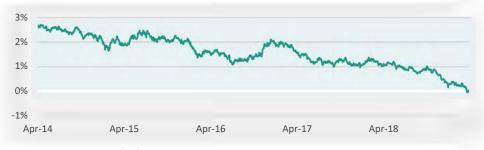
Source: Bloomberg, as of 4/2/19

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

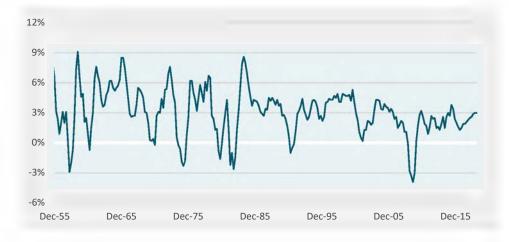
Real GDP growth continued at 3.0% YoY, on pace with growth in the third quarter (2.2% on a quarterly annualized rate). Consumption was the greatest contributor to real GDP growth.

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

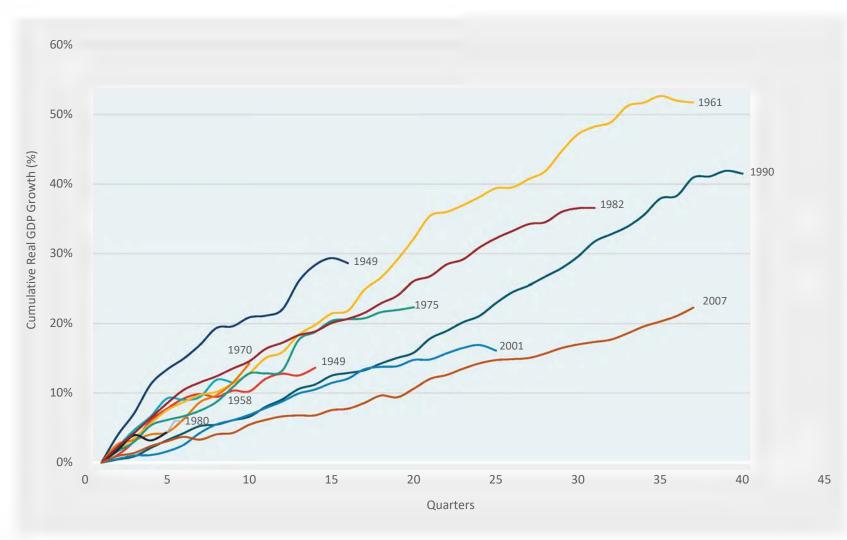
U.S. GDP GROWTH ATTRIBUTION



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



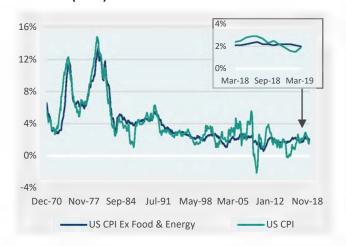
Inflation

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 yearover-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)



BREAKEVEN INFLATION RATES



Source: FRED, as of 3/31/19

INFLATION EXPECTATIONS



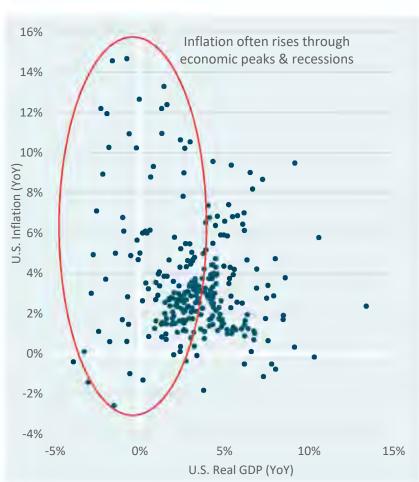
Source: Bloomberg, as of 3/31/19

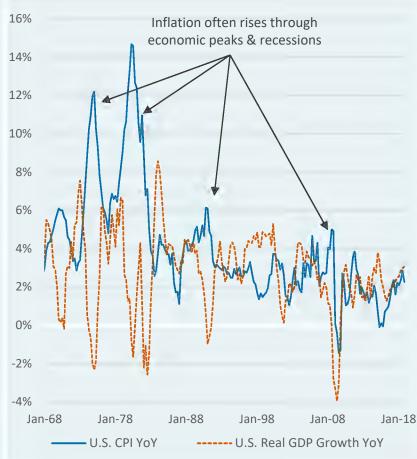


Source: Bloomberg, as of 3/31/19

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



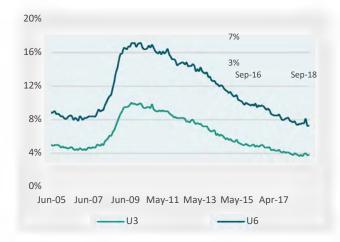
Labor market

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.

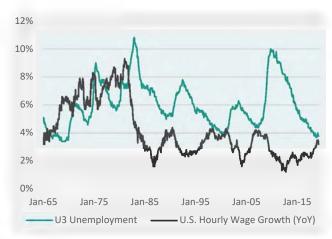
Given the relatively few number of unemployed persons and high percentage of companies reporting that jobs are hard to fill, we believe it may be difficult for job growth to continue at its recent strong rate.

UNEMPLOYMENT RATE



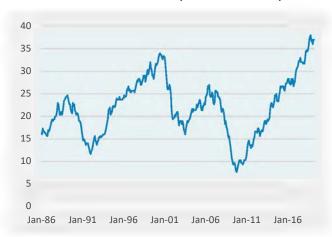
Source: FRED, as of 3/31/19

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

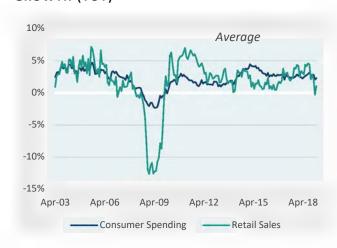
February retail sales grew 2.2% year-over-year, rebounding from a sharp slowdown in the fourth quarter. Real consumer spending continued along at a modest 1.8% pace from the previous year.

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

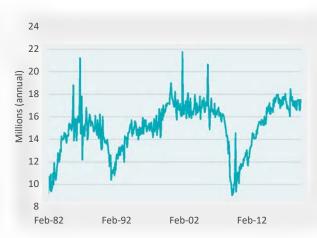
years – perhaps as consumers played catch-up from restrained purchases during the global financial crisis.

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)

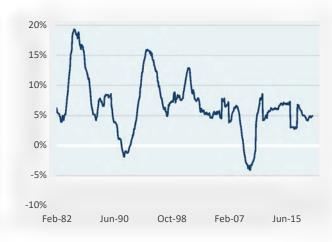


AUTO SALES



Source: FRED, as of 3/31/19

CONSUMER CREDIT OUTSTANDING (YOY)



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



Source: Bloomberg, as of 1/31/19

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.

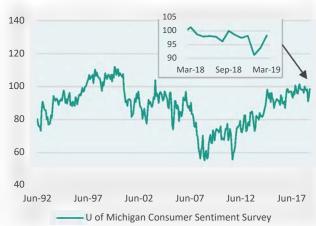
Small business sentiment continued to trend lower from historically strong levels. The NFIB Small Business Optimism Index dipped from 104.4 in December to 101.8 in March. The March reading of 101.8 ranked in the 79th percentile based on 45 years of history. Small business owners' expectations of future 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



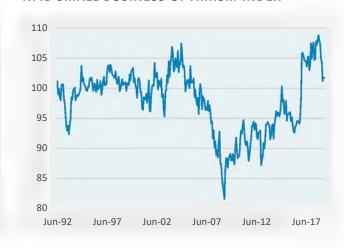
Source: Bloomberg, as of 3/24/19 (see Appendix)

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)



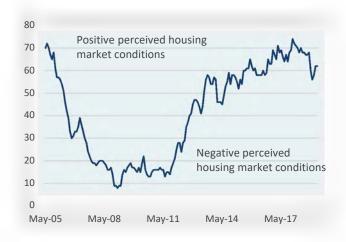
Housing

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.

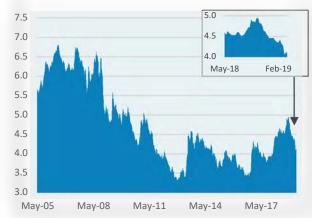
Home prices have faltered a bit, with the median U.S. home sales price falling -6.1% year-over-year in Q4. As is often the case, home price trends can vary significantly from city to city, which makes annual summary statistics difficult to interpret on a local level.

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%	1.5%	3.8%
	12/31/18	2/28/19	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	5.8%	2.4%	5.3%
Nations	12/31/18	3/31/19	12/31/18
Brazil	1.1%	3.9%	12.2%
	12/31/18	2/28/19	3/31/19
Russia	2.7% 12/31/18	5.3% 3/31/19	4.9% 2/28/19
India	7.2%	2.6%	8.5%
	12/31/18	2/28/19	12/31/17
China	6.4%	1.5%	3.8%
	12/31/18	2/28/19	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 muddied 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%
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Source: Bloomberg, as of 3/31/19

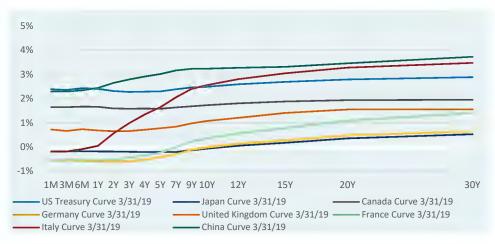


Yield environment

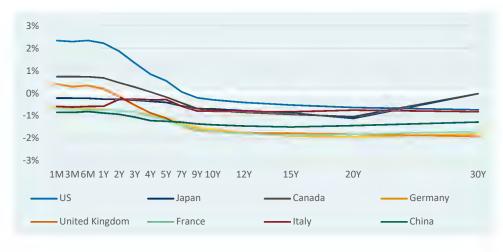
U.S. YIELD CURVE



GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/19



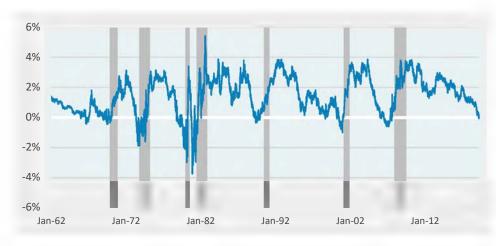
Yield curve inversion

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

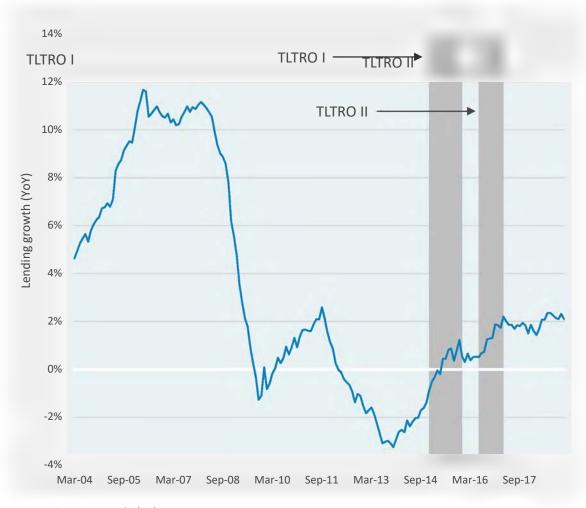
Source: Bloomberg, recession dates defined by NBER



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 selfreinforcing 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.

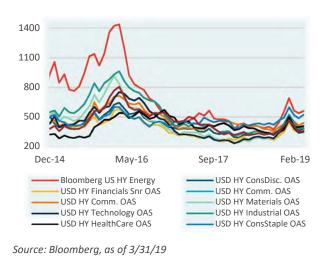
Credit spreads widened due to concerns over slowing global growth and broader riskoff behavior

SPREADS



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

HIGH YIELD SECTOR SPREADS (BPS)



	Credit Spread (OAS)		
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%	

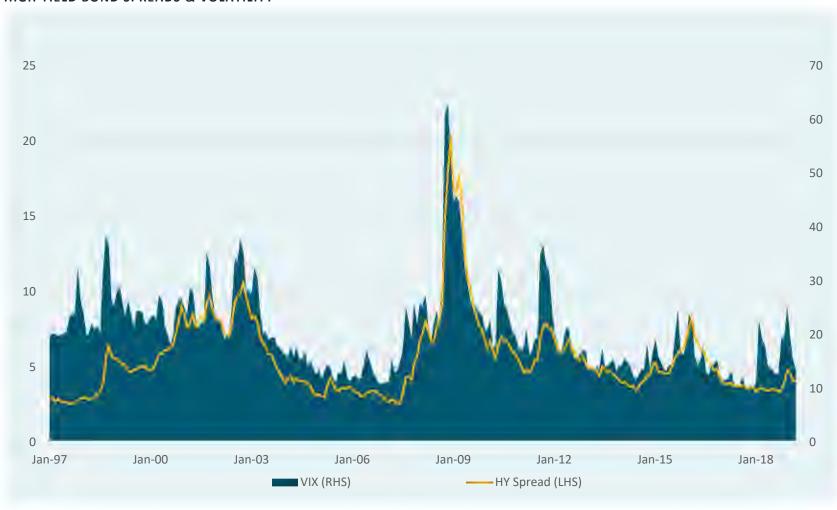
Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/19

*Discount margin (4-year life)



Credit is sensitive to equity volatility





When volatility rises, higher risk credit typically experiences losses

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



Default & issuance

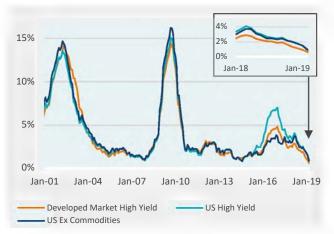
Default activity has been low and stable in the U.S. credit market, despite volatility in spreads. The par-weighted default rate declined to 0.9% and remains below its long-term average range of 3.0-3.5%. For loans, the par-weighted default rate at the end of March was 1.0%, its lowest level since April 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.

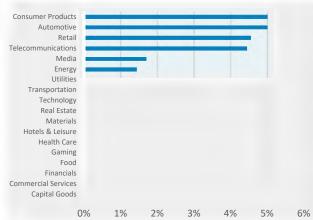
Gross high yield issue activity increased in March to the highest level seen since March of 2018. Loan market issuance is significantly behind last year's pace, likely influenced by a lower demand for floating rate securities now that the Fed has paused monetary tightening.

HY DEFAULT RATE (ROLLING 1-YEAR)



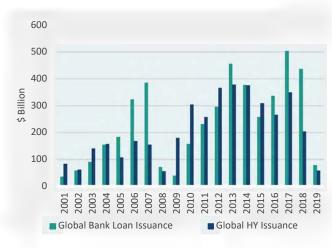
Source: BofA Merrill Lynch, as of 3/31/19

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

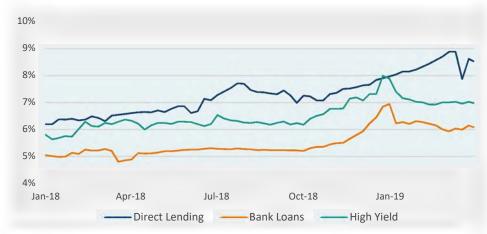
Fundraising in the private credit market slowed through year-end 2018. A total of 163 funds closed on \$110 billion during the year, which was down from 189 funds and \$129 billion in 2017. Direct lending, mezzanine, and distressed debt were the most active strategies, raising \$45 billion, \$31 billion, 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.

Fundraising slowed in private credit last year

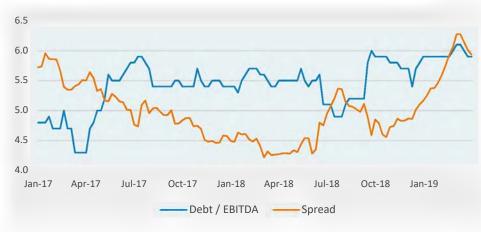
Credit spreads expanded in the first quarter, along with the debt multiples for borrowers. Borrowers now average debt totaling 5.9x EBITDA at the end of March, a 0.4x increase from one year prior.

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 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 TOT	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	13.	8%	8.7	7%
US Small Cap (Russell 2000)	14.	6%	2.1	%
US Large Value (Russell 1000 Value)	11.7%		4.9	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

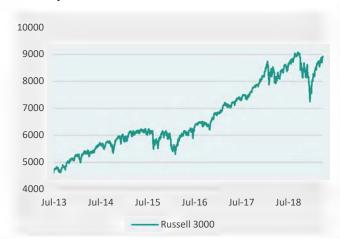
U.S. equities experienced a 13.6% total return (S&P 500 Index) in the first quarter, rebounding from the sharp sell-off in the prior quarter. At the end of March, the S&P 500 price index was just 3.2% below its high watermark that was reached in September. The bounce back in equity prices was driven 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

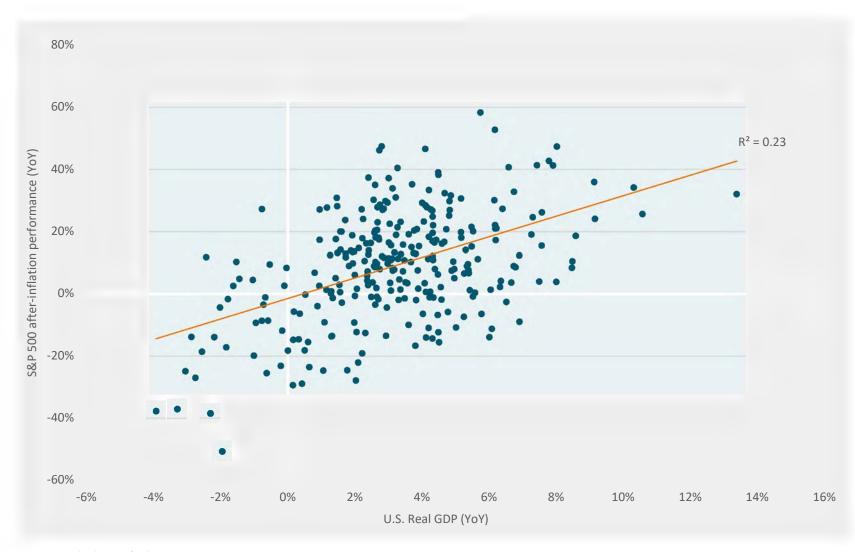


Equity
performance
has varied
widely
following yield
curve inversion

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



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

Source: Standard & Poor's, data since 1948



Domestic equity size & style

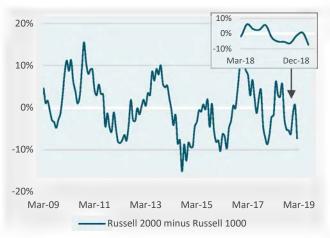
Small cap equities (Russell 2000 +14.6%) slightly outperformed large cap equities (Russell 1000 +14.0%) during the quarter. Meanwhile, growth stocks outperformed value stocks by a wide margin (Russell 1000 Growth +16.1% vs. Russell 1000 Value +11.9%).

The 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,

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.

SMALL CAP VS LARGE CAP (YOY)

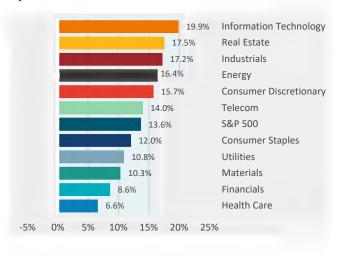


VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/19

Q1 S&P 500 SECTOR RETURNS



Source: Morningstar, as of 3/31/19



Source: FTSE, as of 3/31/19

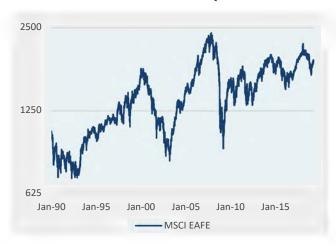
International developed equity

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



EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/19

Q1 COUNTRY PERFORMANCE



Source: MSCI, largest five country exposures shown above



Source: MSCI, as of 3/31/19

Emerging market equity

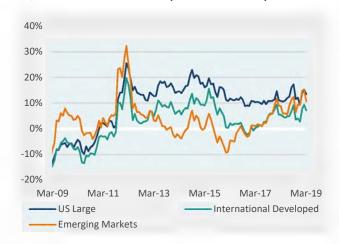
Emerging market equity performance was in-line with international developed markets in the first quarter, while U.S. equities outperformed. Currencies in these markets continued to show stability (MSCI EM +9.9%, MSCI EM Hedged +9.8%). Business sentiment across emerging market economies indicates expanding 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 MANGERS' 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.

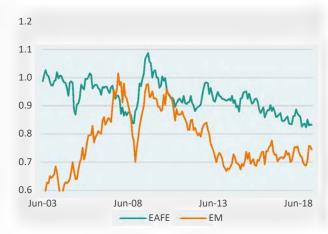
Over the long-term, valuations have had a material relationship with forward equity returns. Given this relationship, we are wary of extrapolating out the recent strong outperformance in U.S. equities.

FORWARD P/E RATIOS



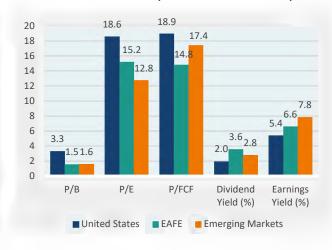
Source: MSCI, as of 3/31/19

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



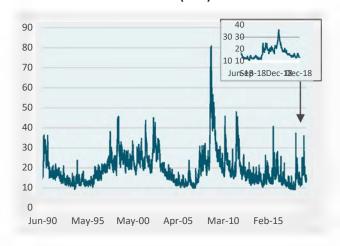
Equity volatility

Equity volatility spiked in the fourth guarter 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: Bloomberg, as of 3/31/19

REALIZED 1-YEAR ROLLING VOLATILITY



2019 O1 PERFORMANCE BOUNCE BACK



Source: Bloomberg, as of 3/31/19



Source: CBOE, 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

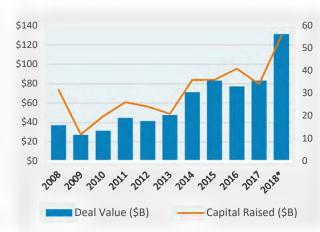
TRANSACTION MULTIPLES



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







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.

The U.S. dollar remained near a cycle high

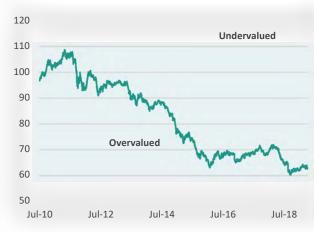
Despite some high-profile Brexit related volatility in the British pound, the global FX market has been relatively quiet. The trailing 1-year volatility of the Bloomberg Dollar Spot Index was 5.2% at the end of the quarter, the lowest level since 2014.

U.S. DOLLAR TRADE WEIGHTED INDEX



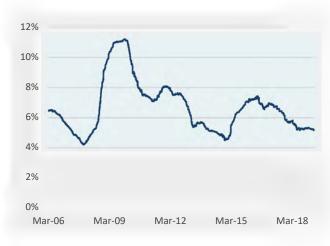
Source: Federal Reserve, Verus, as of 3/31/19

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

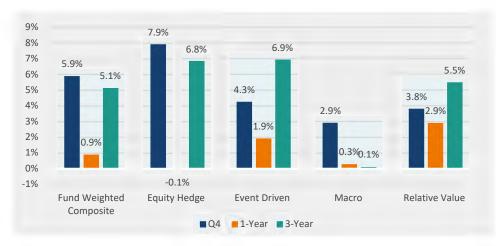
Hedge funds consistently advanced alongside the broad markets and enjoyed the best first calendar quarter result since 2006 (Hedge Fund Weighted Composite (FWC) +5.9% in 2019Q1; +0.9% trailing 12-months). While gains were broad based across strategy types, funds with greater equity market sensitivity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

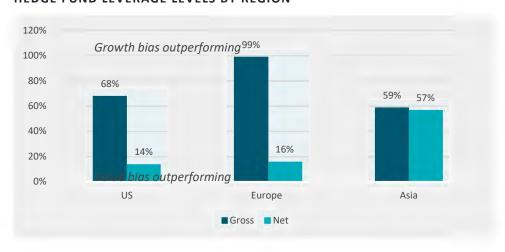
For managers trading fixed income securities, funds focused on convertible arbitrage (+5.5%) and credit arbitrage (+5.1%) fared well as those markets bounced back this quarter. Asset backed (+1.7%) and fixed income multi-strategy managers (+2%) posted more muted gains.

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: Morgan Stanley, as of 3/31/19









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



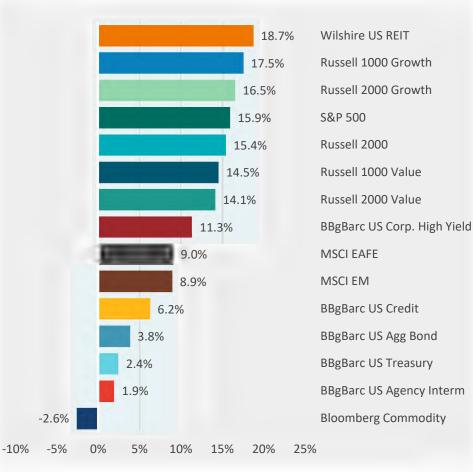
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF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



Major asset class returns

ONE YEAR ENDING MARCH 19.3% Wilshire US REIT 12.7% Russell 1000 Growth 9.5% S&P 500 5.9% BBgBarc US Corp. High Yield 5.7% Russell 1000 Value BBgBarc US Credit 4.9% 4.5% BBgBarc US Agg Bond 4.2% BBgBarc US Treasury 3.9% Russell 2000 Growth BBgBarc US Agency Interm 3.4% 2.0% Russell 2000 Russell 2000 Value 0.2% MSCI EAFE -5.3% **Bloomberg Commodity** -7.4% MSCI EM -15% -5% 5% 15% 25%



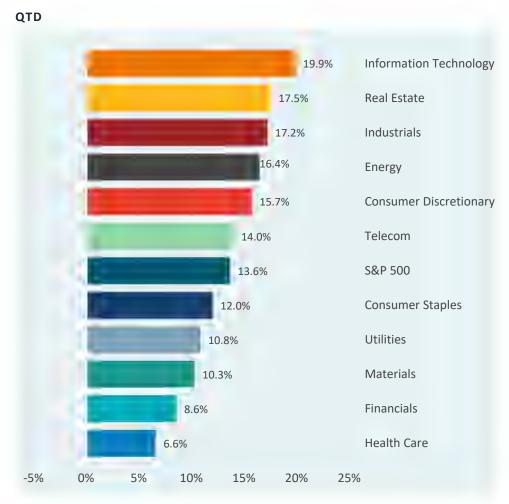


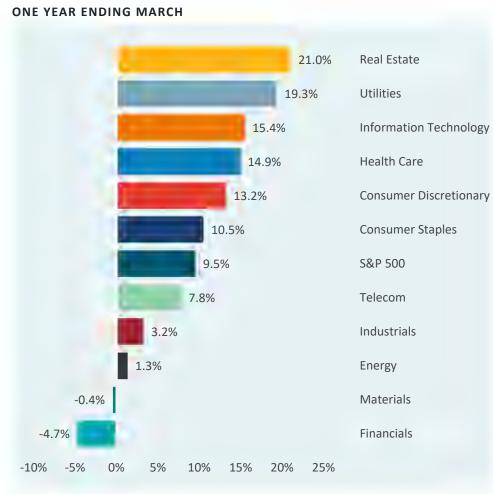
Source: Morningstar, as of 3/31/19



Source: Morningstar, as of 3/31/19

S&P 500 sector returns





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



Detailed index returns

DOMESTIC EQUITY								FIXED INCOME							
	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year		Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index								Broad Index							
S&P 500	1.9	13.6	13.6	9.5	13.5	10.9	15.9	BBgBarc US TIPS	1.8	3.2	3.2	2.7	1.7	1.9	3.4
S&P 500 Equal Weighted	0.9	14.9	14.9	7.2	12.0	9.5	17.8	BBgBarc US Treasury Bills	0.2	0.6	0.6	2.2	1.2	0.8	0.5
DJ Industrial Average	0.2	11.8	11.8	10.1	16.4	12.2	16.0	BBgBarc US Agg Bond	1.9	2.9	2.9	4.5	2.0	2.7	3.8
Russell Top 200	2.1	13.1	13.1	10.4	14.2	11.4	15.7	Duration							
Russell 1000	1.7	14.0	14.0	9.3	13.5	10.6	16.0	BBgBarc US Treasury 1-3 Yr	0.6	1.0	1.0	2.7	1.0	1.0	1.0
Russell 2000	(2.1)	14.6	14.6	2.0	12.9	7.1	15.4	BBgBarc US Treasury Long	5.3	4.7	4.7	6.2	1.5	5.4	5.1
Russell 3000	1.5	14.0	14.0	8.8	13.5	10.4	16.0	BBgBarc US Treasury	1.9	2.1	2.1	4.2	1.0	2.2	2.4
Russell Mid Cap	0.9	16.5	16.5	6.5	11.8	8.8	16.9	Issuer							
Style Index								BBgBarc US MBS	1.5	2.2	2.2	4.4	1.8	2.6	3.1
Russell 1000 Growth	2.8	16.1	16.1	12.7	16.5	13.5	17.5	BBgBarc US Corp. High Yield	0.9	7.3	7.3	5.9	8.6	4.7	11.3
Russell 1000 Value	0.6	11.9	11.9	5.7	10.5	7.7	14.5	BBgBarc US Agency Interm	0.9	1.4	1.4	3.4	1.2	1.6	1.9
Russell 2000 Growth	(1.4)	17.1	17.1	3.9	14.9	8.4	16.5	BBgBarc US Credit	2.4	4.9	4.9	4.9	3.5	3.6	6.2
Russell 2000 Value	(2.9)	11.9	11.9	0.2	10.9	5.6	14.1								
INTERNATIONAL EQUITY	,							OTHER							
Broad Index								Index							
MSCI ACWI	1.3	12.2	12.2	2.6	10.7	6.5	12.0	Bloomberg Commodity	(0.2)	6.3	6.3	(5.3)	2.2	(8.9)	(2.6)
MSCI ACWI ex US	0.6	10.3	10.3	(4.2)	8.1	2.6	8.8	Wilshire US REIT	3.2	16.0	16.0	19.3	5.5	9.0	18.7
MSCI EAFE	0.6	10.0	10.0	(3.7)	7.3	2.3	9.0	CS Leveraged Loans	(0.1)	3.8	3.8	3.3	5.9	3.8	8.0
MSCI EM	0.8	9.9	9.9	(7.4)	10.7	3.7	8.9	Alerian MLP	3.8	17.4	17.4	16.8	5.9	(4.2)	11.1
MSCI EAFE Small Cap	0.2	10.7	10.7	(9.4)	7.5	4.5	12.8	Regional Index							
Style Index								JPM EMBI Global Div	1.4	7.0	7.0	4.2	5.8	5.4	8.5
MSCI EAFE Growth	1.8	12.0	12.0	(1.3)	7.6	3.9	9.7	JPM GBI-EM Global Div	(1.3)	2.9	2.9	(7.6)	3.3	(0.8)	4.4
MSCI EAFE Value	(0.5)	7.9	7.9	(6.1)	6.9	0.7	8.1	Hedge Funds							
Regional Index								HFRI Composite	1.0	5.9	5.9	0.9	5.1	3.1	5.5
MSCI UK	1.1	11.9	11.9	(0.1)	6.3	0.7	9.3	HFRI FOF Composite	1.3	5.0	5.0	0.5	4.1	2.3	3.6
MSCI Japan	0.6	6.7	6.7	(7.8)	8.1	5.6	8.0	Currency (Spot)							
MSCI Euro	0.0	9.8	9.8	(7.8)	6.5	0.6	7.5	Euro	(1.4)	(1.8)	(1.8)	(8.7)	(0.5)	(4.0)	(1.7)
MSCI EM Asia	1.8	11.1	11.1	(6.8)	11.8	6.2	10.8	Pound	(2.0)	2.3	2.3	(7.1)	(3.2)	(4.8)	(0.9)
MSCI EM Latin American	(2.5)	7.9	7.9	(6.7)	11.1	(0.3)	5.3	Yen	0.6	(0.9)	(0.9)	(3.9)	0.5	(1.4)	(1.1)

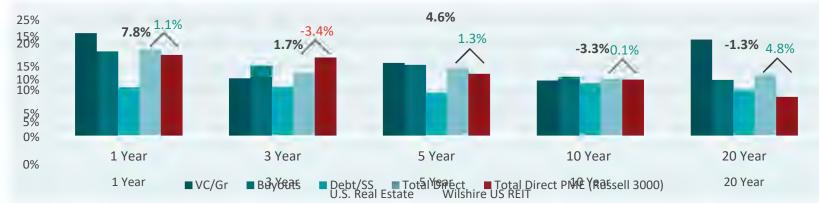
Source: Morningstar, HFR, as of 3/31/19



Private equity vs. public performance

As of 9/30/2018

PUBLIC MARKET EQUIVALENT (PME) ANALYSIS - DIRECT PRIVATE EQUITY



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



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

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

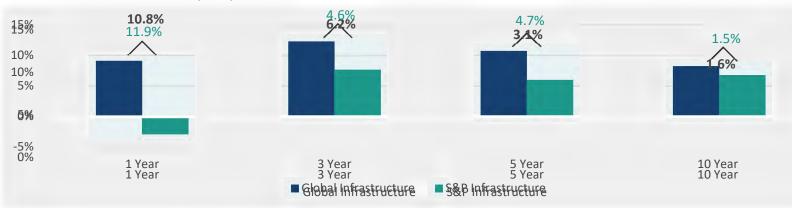
As of 9/30/2018

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 C/A 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/A 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.langerresearch.com)

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

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

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

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Tulare County Employees' Retirement Association

Investment Performance Review Period Ending: March 31, 2019

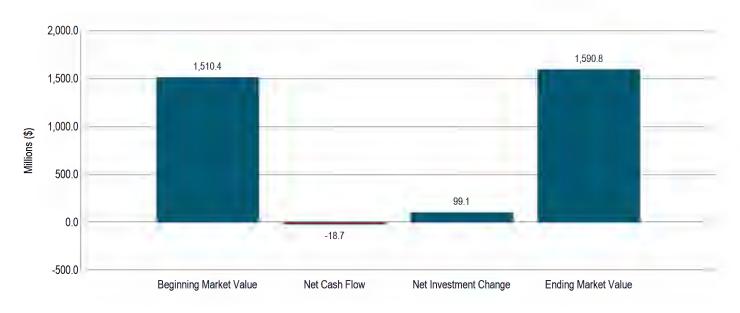


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	Fiscal Year-To-Date
Beginning Market Value	\$1,574,960,897
Net Cash Flow	-\$29,128,629
Net Investment Change	\$44,978,506
Ending Market Value	\$1,590,810,774

Change in Market Value Last Three Months



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



	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs
Total Fund	6.6	3.0	3.8	8.2	5.3	9.3	6.1	6.5
Policy Index	6.8	3.8	4.6	8.1	5.4	9.6	6.4	6.0
InvestorForce Public DB Gross Rank	93	48	59	58	82	65	73	19
Total Fund x Clifton	6.6	3.0	3.7	8.1	5.2			
Policy Index	6.8	3.8	4.6	8.1	5.4			
InvestorForce Public DB Gross Rank	93	51	63	60	85			
Total Domestic Equity	13.7	3.4	7.7	13.9	10.5	16.4	9.1	8.9
Russell 3000	14.0	4.7	8.8	13.5	10.4	16.0	8.7	6.5
InvestorForce Public DB US Eq Gross Rank	72	63	54	16	15	16	19	1
Total International Equity	11.5	-0.3	-3.8	8.9	2.8	9.0	5.0	4.7
MSCI ACWI ex USA Gross	10.4	-1.4	-3.7	8.6	3.0	9.3	6.1	5.0
InvestorForce Public DB ex- US Eq Gross Rank	23	11	20	26	70	68	80	86
Total Global Equity	13.3	1.7	0.3	11.9	-	-	-	-
MSCI ACWI Gross	12.3	2.4	3.2	11.3				
InvestorForce Public DB Glbl Eq Gross Rank	1	62	74	4				-
Total Fixed Income	2.8	4.5	4.1	3.4	3.0	6.0	4.6	5.2
BBgBarc US Aggregate TR	2.9	4.6	4.5	2.0	2.7	3.8	3.9	4.7
InvestorForce Public DB US Fix Inc Gross Rank	46	30	81	22	37	10	26	48
Total Domestic Fixed Income	3.3	4.6	4.6	3.3	3.1		-	
BBgBarc US Aggregate TR	2.9	4.6	4.5	2.0	2.7	-		_
Total Global Fixed Income	1.5	4.7	2.1	4.4	2.4		-	-
JPM GBI Global TR USD	1.8	2.1	-1.0	0.9	0.9			_



Rolling Annualized Excess Performance and Tracking Error
Total Fund vs. Policy Index



New Policy Index as of 10/1/2018: 20% Russell 3000, 20% MSCI ACWI ex US, 27% BBgBarc US Aggregate, 3% MSCI ACWI, 10% NCREIF Property, 5% Bloomberg Commodity, 5% CPI +500 bps, 5% Private Equity Returns, 5% Private Credit Returns. All return periods greater than 1-year are rolling annualized returns. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs
Total Real Assets	3.1	1.3	3.3	6.0	3.6	-	-	
Real Assets Composite Benchmark	3.3	1.4	2.8	5.6	3.0		-	-
Total Real Estate	0.9	5.3	7.6	7.0	9.8	7.2	8.0	8.4
NCREIF Property Index	1.8	4.9	6.8	7.1	9.1	8.5	8.8	
NCREIF-ODCE	1.4	5.4	7.5	8.0	10.2	8.7	8.2	8.5
Total Commodities	7.5	-7.1	-5.7	4.3	-7.1	-	-	
Bloomberg Commodity Index TR USD	6.3	-5.6	-5.3	2.2	-8.9			
Commodities Broad Basket MStar MF Rank	50	77	74	32	34			-
Total Alternatives	2.3	5.8	9.1	8.1	1.5	3.9	-	-
CPI + 5%	2.4	4.6	6.9	7.3	6.5	6.9		
Total Private Equity	3.0	11.5	18.0	12.7	11.2	11.8	-	-
Total Private Credit	-0.4	7.4	8.5		-			-
Total Liquid Alts/HFoF	3.4	0.4	2.7	4.7	2.9		-	
CPI + 5%	2.4	4.6	6.9	7.3	6.5			
Total Opportunistic	-7.7	-1.8	18.8	12.1	10.1	-	-	-



Rolling Annualized Excess Performance and Tracking Error Total Fund vs. Policy Index



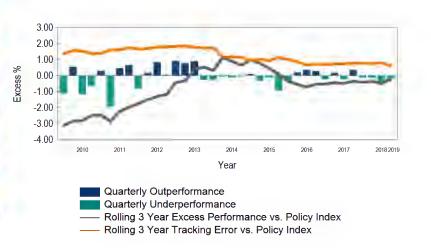
New Policy Index as of 10/1/2018: 20% Russell 3000, 20% MSCI ACWI ex US, 27% BBgBarc US Aggregate, 3% MSCI ACWI, 10% NCREIF Property, 5% Bloomberg Commodity, 5% CPI +500 bps, 5% Private Equity Returns, 5% Private Credit Returns. All return periods greater than 1-year are rolling annualized returns. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs
Total Fund	6.6	2.8	3.5	7.9	4.9	9.0	5.7	6.1
Policy Index	6.8	3.8	4.6	8.1	5.4	9.6	6.4	6.0
Total Fund x Clifton	6.5	2.8	3.5	7.8	4.8			
Policy Index	6.8	3.8	4.6	8.1	5.4			-
Total Domestic Equity	13.6	3.1	7.2	13.5	10.1	15.9	8.7	8.5
Russell 3000	14.0	4.7	8.8	13.5	10.4	16.0	8.7	6.5
Total International Equity	11.4	-0.5	-4.2	8.5	2.5	8.6	4.7	4.3
MSCI ACWI ex USA Gross	10.4	-1.4	-3.7	8.6	3.0	9.3	6.1	5.0
Total Global Equity	13.1	1.2	-0.5	11.0			-	
MSCI ACWI Gross	12.3	2.4	3.2	11.3				
Total Fixed Income	2.8	4.3	3.8	3.1	2.7	5.7	4.3	5.0
BBgBarc US Aggregate TR	2.9	4.6	4.5	2.0	2.7	3.8	3.9	4.7
Total Domestic Fixed Income	3.2	4.4	4.3	2.9	2.9	-	-	-
BBgBarc US Aggregate TR	2.9	4.6	4.5	2.0	2.7			
Total Global Fixed Income	1.5	4.4	1.8	3.9	1.9	-	-	-
JPM GBI Global TR USD	1.8	2.1	-1.0	0.9	0.9			
Total Real Assets	3.1	1.3	3.3	5.8	3.1	-	-	
Real Assets Composite Benchmark	3.3	1.4	2.8	5.6	3.0		-	-
Total Real Estate	0.9	5.3	7.6	6.7	9.3	6.9	7.2	7.6
NCREIF Property Index	1.8	4.9	6.8	7.1	9.1	8.5	8.8	
NCREIF-ODCE	1.4	5.4	7.5	8.0	10.2	8.7	8.2	8.5
Total Commodities	7.5	-7.1	-5.7	4.1	-7.4		-	-
Bloomberg Commodity Index TR USD	6.3	-5.6	-5.3	2.2	-8.9			
Total Alternatives	2.3	5.8	9.1	7.8	0.9	3.5		
CPI + 5%	2.4	4.6	6.9	7.3	6.5	6.9		
Total Private Equity	3.0	11.5	18.0	12.2	10.3	11.4	-	-
Total Private Credit	-0.4	7.4	8.5	-	-		-	
Total Liquid Alts/HFoF	3.4	0.4	2.7	4.5	2.5			
CPI + 5%	2.4	4.6	6.9	7.3	6.5			-
Total Opportunistic	-7.7	-1.8	18.8	11.6	9.1			



Rolling Annualized Excess Performance and Tracking Error Total Fund vs. Policy Index



New Policy Index as of 10/1/2018: 20% Russell 3000, 20% MSCI ACWI ex US, 27% BBgBarc US Aggregate, 3% MSCI ACWI, 10% NCREIF Property, 5% Bloomberg Commodity, 5% CPI +500 bps, 5% Private Equity Returns, 5% Private Credit Returns. All return periods greater than 1-year are rolling annualized returns. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



Attribution Effects 3 Months Ending March 31, 2019



Performance Attribution

Li	ast 3 Mo.
Wtd. Actual Return	6.4%
Wtd. Index Return *	6.8%
Excess Return	-0.3%
Selection Effect	0.1%
Allocation Effect	-0.4%
Interaction Effect	0.0%
*Coloulated from reliev benchmark not use and reliev weightings of each component of the reliev	

*Calculated from policy benchmark returns and policy weightings of each compenent of the policy benchmark.

Attribution Summary 3 Months Ending March 31, 2019

	Wtd.,	Wtd. Index	Excess	Selection	Allocation	Interaction	Total
	Actual Return	Return	Return	Effect	Effect	Effects	Effects
Total Domestic Equity	13.6%	14.0%	-0.4%	-0.1%	0.0%	0.0%	-0.1%
Total International Equity	11.4%	10.4%	1.0%	0.2%	-0.2%	0.0%	0.0%
Total Global Equity	13.1%	12.3%	0.8%	0.0%	0.0%	0.0%	0.0%
Total Fixed Income	2.8%	2.9%	-0.2%	0.0%	0.0%	0.0%	-0.1%
Total Real Estate	0.9%	1.8%	-0.9%	-0.1%	-0.1%	0.0%	-0.1%
Total Commodities	7.5%	6.3%	1.1%	0.1%	-0.1%	0.0%	0.0%
Total Private Equity	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Private Credit	-0.4%	-0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Liquid Alts/HFoF	3.4%	2.4%	1.0%	0.1%	0.0%	0.0%	0.1%
Total Opportunistic							
Total Cash							_
Total	6.4%	6.8%	-0.3%	0.1%	-0.4%	0.0%	-0.3%

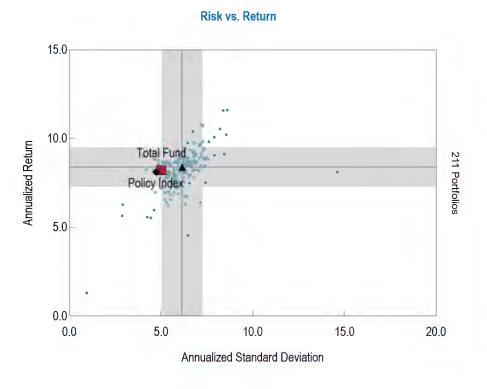
Weighted returns shown in attribution analysis may differ from actual returns. Wtd. Actual Return is the sum of the products of each group's return and its respective weight at the beginning of the period.

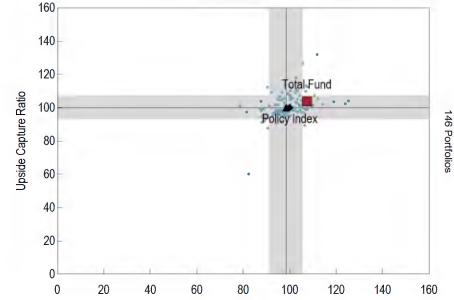


Total Fund

Risk Analysis - 3 Years (Gross of Fees)

	Anlzd Ret	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	3.78%	6.86%	-0.99%	1.04	1.03%	0.98	0.24	-0.80	98.46%	109.96%





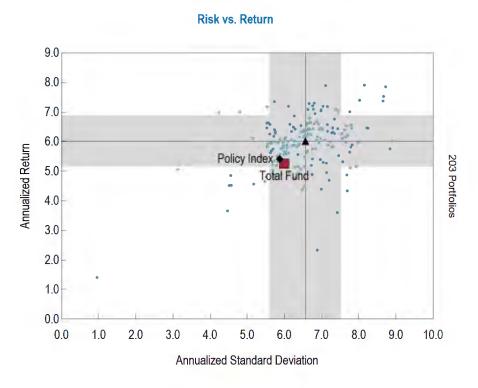
Up Markets vs. Down Markets

- Total Fund
- Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

- Total Fund
- Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

Downside Capture Ratio

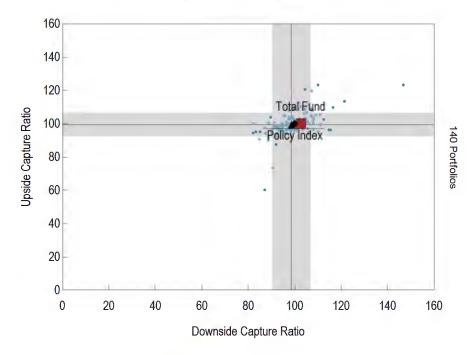
	Anlzd Ret	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	5.25%	5.99%	-0.22%	1.01	0.78%	0.98	0.76	-0.20	100.18%	102.58%





- Policy Index
- Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

Up Markets vs. Down Markets

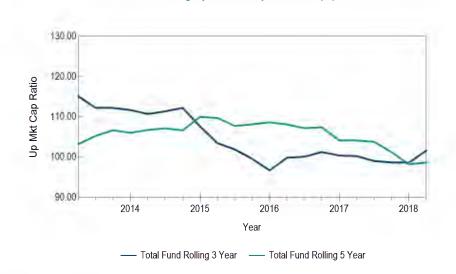


- Total Fund
- Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce Public DB Gross

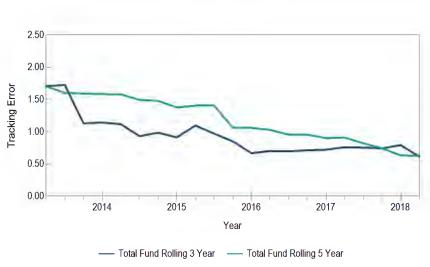
Rolling Information Ratio



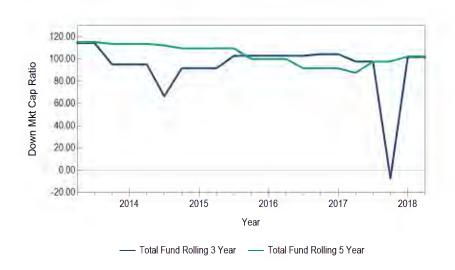
Rolling Up Market Capture Ratio (%)



Rolling Tracking Error



Rolling Down Market Capture Ratio (%)



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	1,590,810,774	100.0	6.6	3.0	3.8	8.2	5.3	9.3	-2.7	14.3	7.6	-1.2	4.2
Policy Index			6.8	3.8	4.6	8.1	5.4	9.6	-2.4	14.0	8.0	-1.1	4.6
InvestorForce Public DB Gross Rank			93	48	59	58	82	65	16	71	53	80	83
Total Fund x Clifton	1,582,443,642	99.5	6.6	3.0	3.7	8.1	5.2		-2.6	14.2	7.6	-1.1	4.1
Policy Index			6.8	3.8	4.6	8.1	5.4		-2.4	14.0	8.0	-1.1	4.6
InvestorForce Public DB Gross Rank			93	51	63	60	85		15	72	53	80	87
Total Domestic Equity	336,094,568	21.1	13.7	3.4	7.7	13.9	10.5	16.4	-5.0	22.3	11.5	1.6	12.4
Russell 3000			14.0	4.7	8.8	13.5	10.4	16.0	-5.2	21.1	12.7	0.5	12.6
InvestorForce Public DB US Eq Gross Rank			72	63	54	16	15	16	29	16	77	10	17
SSGA S&P 500 Flagship Fund	64,112,851	4.0	13.6	5.9	9.5	13.5	11.0		-4.4	21.9	12.0	1.5	13.7
S&P 500			13.6	5.9	9.5	13.5	10.9		-4.4	21.8	12.0	1.4	13.7
eV US Large Cap Core Equity Gross Rank			36	38	33	35	29		40	52	31	40	42
QMA Large Cap Core	60,971,161	3.8	13.0	3.2	7.1	12.8	10.8	16.4	-6.5	22.5	12.5	2.1	15.6
S&P 500			13.6	5.9	9.5	13.5	10.9	15.9	-4.4	21.8	12.0	1.4	13.7
eV US Large Cap Core Equity Gross Rank			56	70	60	53	34	21	70	42	25	31	20
Ivy Large Cap Growth	67,052,530	4.2	16.1	8.2	14.8	18.0	14.1		3.2	30.2	2.1	7.6	12.8
Russell 1000 Growth			16.1	6.6	12.7	16.5	13.5		-1.5	30.2	7.1	5.7	13.0
eV US Large Cap Growth Equity Gross Rank			50	27	26	28	27		15	42	72	26	40
Boston Partners Large Cap Value	61,464,627	3.9	9.6	1.9	1.7	11.4	7.6	15.1	-8.6	20.1	14.7	-3.9	11.8
Russell 1000 Value			11.9	4.4	5.7	10.5	7.7	14.5	-8.3	13.7	17.3	-3.8	13.5
eV US Large Cap Value Equity Gross Rank			93	61	76	39	65	40	55	22	54	65	58
SSGA Russell Small Cap Completeness Index	26,702,347	1.7	15.8	-0.8	5.1	13.4	8.0		-9.2	18.2	16.5	-3.5	7.4
Russell Small Cap Completeness			16.0	-0.8	5.1	13.5	8.0		-9.2	18.3	16.6	-3.4	7.4
eV US Small Cap Core Equity Gross Rank			22	20	31	31	43		37	23	84	68	37
William Blair SMID Cap Growth	30,210,910	1.9	17.4	4.2	10.1	18.9	13.5	19.3	-0.9	30.4	8.2	6.1	9.8
Russell 2500 Growth			19.0	1.9	7.5	15.6	9.7	17.5	-7.5	24.5	9.7	-0.2	7.1
eV US Mid Cap Growth Equity Gross Rank			77	77	65	18	9	10	29	16	22	7	33
Lee Munder Small Value	25,580,142	1.6	13.7	-6.2	0.9	8.9	7.1		-14.7	8.6	28.4	0.4	5.1
Russell 2000 Value			11.9	-7.5	0.2	10.9	5.6		-12.9	7.8	31.7	-7.5	4.2
eV US Small Cap Value Equity Gross Rank			34	42	31	70	30		56	68	38	9	60



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
otal International Equity	306,784,510	19.3	11.5	-0.3	-3.8	8.9	2.8	9.0	-14.3	26.9	6.2	-5.9	-4.8
MSCI ACWI ex USA Gross			10.4	-1.4	-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			23	11	20	26	70	68	43	80	13	85	83
SSGA MSCI ACWI Ex US Index Fund	101,789,584	6.4	10.4	-1.5	-4.0	8.4	2.8		-14.0	27.6	4.8	-5.5	-3.6
MSCI ACWI ex USA Gross			10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
eV All EAFE Equity Gross Rank			49	25	42	29	67		42	49	17	96	49
PIMCO RAE Fundamental Global Ex US Fund	100,323,053	6.3	7.9	-2.7	-7.6	9.2	1.8		-14.7	26.7	13.5	-10.9	-5.7
MSCI ACWI ex USA Gross			10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
eV All EAFE Equity Gross Rank			92	39	67	19	89		47	53	1	99	79
SGA Global Growth	104,671,873	6.6	16.3	3.5	-	-							
MSCI ACWI ex USA Gross			10.4	-1.4									
eV ACWI ex-US Core Equity Gross Rank			2	3									
otal Global Equity	55,438,544	3.5	13.3	1.7	0.3	11.9	-		-15.3	33.7	16.1	-11.5	-
MSCI ACWI Gross			12.3	2.4	3.2	11.3			-8.9	24.6	8.5	-1.8	
InvestorForce Public DB Glbl Eq Gross Rank			1	62	74	4			94	1	2	99	
Skellig DST Water Fund	55,438,544	3.5	13.3	1.7	0.3	11.9			-15.3	33.7	16.1	-11.5	
MSCI ACWI Gross			12.3	2.4	3.2	11.3			-8.9	24.6	8.5	-1.8	
eV Global All Cap Equity Gross Rank			38	44	68	31			91	9	6	96	
otal Fixed Income	435,628,172	27.4	2.8	4.5	4.1	3.4	3.0	6.0	0.5	4.3	5.5	-0.8	4.6
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
InvestorForce Public DB US Fix Inc Gross Rank			46	30	81	22	37	10	51	50	37	77	69
Total Domestic Fixed Income		_						_					-
BlackRock Fixed Income	167,671,095	10.5	3.0	5.0	4.9	2.4	3.1	4.5	0.4	3.9	3.1	1.1	6.2
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
eV All US Fixed Inc Gross Rank			55	27	35	56	49	50	54	54	53	39	29
Doubleline Core Plus	87,393,521	5.5	3.0	4.0	4.0	3.0			0.0	4.2	4.8		
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0			0.0	3.5	2.6		
eV US Core Plus Fixed Inc Gross Rank			93	95	92	76			33	86	52		
MacKay Shields Core Plus	88,536,134	5.6	3.5	4.6	4.4	3.3			-0.6	5.0	5.1		
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0			0.0	3.5	2.6		
eV US Core Plus Fixed Inc Gross Rank			63	81	80	54			67	52	46		



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Global Fixed Income													
Franklin Templeton Global Bond Plus	91,838,305	5.8	1.5	4.7	2.1	4.3	2.3		2.4	3.0	6.8	-3.5	2.4
JPM GBI Global TR USD			1.8	2.1	-1.0	0.9	0.9		-0.7	6.8	1.6	-2.6	0.7
eV Global Fixed Inc Unhedged Gross Rank			92	14	35	33	43	-	6	96	24	67	50
Total Real Assets	178,803,141	11.2	3.1	1.3	3.3	6.0	3.6		1.6	5.0	10.4	0.4	
Real Assets Composite Benchmark			3.3	1.4	2.8	5.6	3.0	-	0.5	5.2	9.4	-0.7	
Total Real Estate	114,444,971	7.2	0.9	5.3	7.6	7.0	9.8	7.2	8.8	4.3	9.0	16.0	13.1
NCREIF Property Index			1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE			1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
RREEF America II	114,367,873	7.2	0.9	5.2	7.4	7.0	9.9	9.6	8.6	4.4	9.3	16.7	13.0
NCREIF-ODCE			1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index			1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
TA Associates Realty	77,098	0.0	-5.6	4.0	7.4	6.0	9.4	3.7	16.2	5.2	4.6	16.7	15.1
NCREIF Property Index			1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE			1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Commodities	64,358,170	4.0	7.5	-7.1	-5.7	4.3	-7.1	-	-12.6	7.5	14.5	-26.3	-
Bloomberg Commodity Index TR USD			6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Commodities Broad Basket MStar MF Rank			50	77	74	32	34		64	15	27	80	
Gresham MTAP Commodity Builder	32,118,409	2.0	7.3	-7.7	-6.2	3.5	-7.8		-12.7	5.9	12.3	-25.4	-16.1
Bloomberg Commodity Index TR USD			6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	-17.0
Commodities Broad Basket MStar MF Rank			52	81	76	42	52		65	28	53	71	34
Wellington Commodity	32,239,761	2.0	7.6	-6.4	-5.2	4.8	-6.0		-12.6	9.1	15.8	-25.7	
Bloomberg Commodity Index TR USD			6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Commodities Broad Basket MStar MF Rank			48	58	50	25	20		64	7	13	73	
Total Liquid Alts/HFoF	86,664,006	5.4	3.4	0.4	2.7	4.7	2.9		0.9	5.4	0.3	0.7	5.4
CPI + 5%			2.4	4.6	6.9	7.3	6.5		7.0	7.2	7.2	5.8	5.8
Aetos Capital	43,396,503	2.7	4.0	0.9	2.0	5.0	3.2	5.4	-1.9	6.8	2.6	1.2	5.2
ICE BofAML 90 DAY T-BILLS + 400 bps			1.3	3.9	5.2	4.2	3.8	4.0	4.9	3.9	3.3	3.1	3.5
Titan Advisors	43,267,502	2.7	2.9	-0.1	3.4	4.5			3.8	4.0	0.6		
ICE BofAML 90 DAY T-BILLS + 400 bps			1.3	3.9	5.2	4.2			4.9	3.9	3.3		



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	1,590,810,774	100.0	6.6	2.8	3.5	7.9	4.9	9.0	-2.9	13.9	7.1	-1.6	3.8
Policy Index			6.8	3.8	4.6	8.1	5.4	9.6	-2.4	14.0	8.0	-1.1	4.6
Total Fund x Clifton	1,582,443,642	99.5	6.5	2.8	3.5	7.8	4.8		-2.9	13.8	7.0	-1.6	3.7
Policy Index			6.8	3.8	4.6	8.1	5.4		-2.4	14.0	8.0	-1.1	4.6
Total Domestic Equity	336,094,568	21.1	13.6	3.1	7.2	13.5	10.1	15.9	-5.4	21.9	11.1	1.2	12.0
Russell 3000			14.0	4.7	8.8	13.5	10.4	16.0	-5.2	21.1	12.7	0.5	12.6
SSGA S&P 500 Flagship Fund	64,112,851	4.0	13.6	5.9	9.5	13.5	10.9		-4.4	21.8	12.0	1.4	13.7
S&P 500			13.6	5.9	9.5	13.5	10.9		-4.4	21.8	12.0	1.4	13.7
QMA Large Cap Core	60,971,161	3.8	12.9	3.0	6.8	12.4	10.4	16.0	-6.8	22.1	12.1	1.8	15.2
S&P 500			13.6	5.9	9.5	13.5	10.9	15.9	-4.4	21.8	12.0	1.4	13.7
Ivy Large Cap Growth	67,052,530	4.2	15.9	7.8	14.2	17.4	13.5	-	2.7	29.5	1.6	7.1	12.3
Russell 1000 Growth			16.1	6.6	12.7	16.5	13.5		-1.5	30.2	7.1	5.7	13.0
Boston Partners Large Cap Value	61,464,627	3.9	9.5	1.5	1.3	11.0	7.1	14.6	-9.0	19.6	14.2	-4.4	11.4
Russell 1000 Value			11.9	4.4	5.7	10.5	7.7	14.5	-8.3	13.7	17.3	-3.8	13.5
SSGA Russell Small Cap Completeness Index	26,702,347	1.7	15.8	-0.8	5.0	13.4	7.9		-9.2	18.1	16.5	-3.5	7.3
Russell Small Cap Completeness			16.0	-0.8	5.1	13.5	8.0		-9.2	18.3	16.6	-3.4	7.4
William Blair SMID Cap Growth	30,210,910	1.9	17.1	3.5	9.2	17.9	12.5	18.3	-1.7	29.3	7.2	5.2	8.8
Russell 2500 Growth			19.0	1.9	7.5	15.6	9.7	17.5	-7.5	24.5	9.7	-0.2	7.1
Lee Munder Small Value	25,580,142	1.6	13.4	-6.8	0.0	8.0	6.1		-15.5	7.7	27.3	-0.5	4.1
Russell 2000 Value			11.9	-7.5	0.2	10.9	5.6	-	-12.9	7.8	31.7	-7.5	4.2
Total International Equity	306,784,510	19.3	11.4	-0.5	-4.2	8.5	2.5	8.6	-14.5	26.5	5.9	-6.2	-5.0
MSCI ACWI ex USA Gross			10.4	-1.4	-3.7	8.6	3.0	9.3	-13.8	27.8	5.0	-5.3	-3.4
SSGA MSCI ACWI Ex US Index Fund	101,789,584	6.4	10.4	-1.5	-4.0	8.3	2.8		-14.0	27.5	4.7	-5.5	-3.7
MSCI ACWI ex USA Gross			10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
PIMCO RAE Fundamental Global Ex US Fund	100,323,053	6.3	7.7	-3.1	-8.1	8.7	1.3		-15.1	26.0	13.0	-11.4	-5.9
MSCI ACWI ex USA Gross			10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
SGA Global Growth	104,671,873	6.6	16.2	3.2									
MSCI ACWI ex USA Gross			10.4	-1.4									
Total Global Equity	55,438,544	3.5	13.1	1.2	-0.5	11.0			-15.9	32.6	15.1	-12.3	-
MSCI ACWI Gross			12.3	2.4	3.2	11.3		-	-8.9	24.6	8.5	-1.8	
Skellig DST Water Fund	55,438,544	3.5	13.1	1.2	-0.5	11.0			-15.9	32.6	15.1	-12.3	
MSCI ACWI Gross			12.3	2.4	3.2	11.3			-8.9	24.6	8.5	-1.8	



Total Fund Performance Summary (Net of Fees)

Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fixed Income	435,628,172	27.4	2.8	4.3	3.8	3.1	2.7	5.7	0.1	3.9	5.1	-1.1	4.3
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
Total Domestic Fixed Income													
BlackRock Fixed Income	167,671,095	10.5	2.9	4.8	4.6	2.2	2.8	4.3	0.1	3.6	2.9	0.8	6.0
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
Doubleline Core Plus	87,393,521	5.5	3.0	3.8	3.7	2.7			-0.3	3.9	4.6		
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0			0.0	3.5	2.6		
MacKay Shields Core Plus	88,536,134	5.6	3.4	4.2	4.0	2.9			-1.0	4.5	4.7		
BBgBarc US Aggregate TR			2.9	4.6	4.5	2.0			0.0	3.5	2.6		
Total Global Fixed Income													
Franklin Templeton Global Bond Plus	91,838,305	5.8	1.5	4.4	1.8	3.8	1.8		1.9	2.4	6.1	-4.1	1.9
JPM GBI Global TR USD			1.8	2.1	-1.0	0.9	0.9		-0.7	6.8	1.6	-2.6	0.7
Total Real Assets	178,803,141	11.2	3.1	1.3	3.3	5.8	3.1	- 4	1.6	5.0	9.5	-0.4	-
Real Assets Composite Benchmark			3.3	1.4	2.8	5.6	3.0	-	0.5	5.2	9.4	-0.7	-
Total Real Estate	114,444,971	7.2	0.9	5.3	7.6	6.7	9.3	6.9	8.8	4.3	8.0	15.1	12.5
NCREIF Property Index			1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE			1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
RREEF America II	114,367,873	7.2	0.9	5.2	7.4	6.7	9.3	9.0	8.6	4.4	8.2	15.7	12.0
NCREIF-ODCE			1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index			1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
TA Associates Realty	77,098	0.0	-5.6	4.0	7.4	5.7	8.9	2.6	16.2	5.2	3.7	15.4	14.6
NCREIF Property Index			1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE			1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5

Total Fund Performance Summary (Net of Fees)

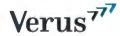
Period Ending: March 31, 2019

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Commodities	64,358,170	4.0	7.5	-7.1	-5.7	4.1	-7.4		-12.6	7.5	13.6	-26.8	
Bloomberg Commodity Index TR USD			6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Gresham MTAP Commodity Builder	32,118,409	2.0	7.3	-7.7	-6.2	3.4	-8.2		-12.7	5.9	11.5	-25.9	-16.8
Bloomberg Commodity Index TR USD			6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	-17.0
Wellington Commodity	32,239,761	2.0	7.6	-6.4	-5.2	4.7	-6.4		-12.6	9.1	14.9	-26.3	
Bloomberg Commodity Index TR USD			6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Total Liquid Alts/HFoF	86,664,006	5.4	3.4	0.4	2.7	4.5	2.5		0.9	5.4	-0.5	0.0	4.6
CPI + 5%			2.4	4.6	6.9	7.3	6.5		7.0	7.2	7.2	5.8	5.8
Aetos Capital	43,396,503	2.7	4.0	0.9	2.0	4.8	2.8	5.1	-1.9	6.8	1.8	0.5	4.5
ICE BofAML 90 DAY T-BILLS + 400 bps			1.3	3.9	5.2	4.2	3.8	4.0	4.9	3.9	3.3	3.1	3.5
Titan Advisors	43,267,502	2.7	2.9	-0.1	3.4	4.3			3.8	4.0	-0.1		
ICE BofAML 90 DAY T-BILLS + 400 bps			1.3	3.9	5.2	4.2			4.9	3.9	3.3		

	Anlzd Ret	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
SSGA S&P 500 Flagship Fund	10.96%	11.19%	0.05%	1.00	0.04%	1.00	0.92	1.28	100.32%	99.94%
QMA Large Cap Core	10.82%	11.69%	-0.49%	1.04	1.49%	0.98	0.86	-0.06	100.10%	100.69%
Ivy Large Cap Growth	14.06%	12.39%	0.84%	0.98	3.00%	0.94	1.08	0.19	100.72%	97.12%
Boston Partners Large Cap Value	7.58%	12.27%	-0.71%	1.07	3.08%	0.94	0.56	-0.04	102.65%	103.03%
SSGA Russell Small Cap Completeness Index	7.96%	14.22%	-0.02%	1.00	0.08%	1.00	0.51	-0.50	99.61%	99.93%
William Blair SMID Cap Growth	13.53%	13.70%	5.27%	0.85	4.10%	0.94	0.93	0.93	93.47%	80.13%
Lee Munder Small Value	7.07%	15.01%	1.86%	0.93	3.05%	0.96	0.42	0.48	91.38%	90.53%
SSGA MSCI ACWI Ex US Index Fund	2.84%	12.01%	-0.21%	1.00	0.06%	1.00	0.18	-3.62	99.02%	100.40%
PIMCO RAE Fundamental Global Ex US Fund	1.78%	12.95%	-1.40%	1.04	3.23%	0.94	0.08	-0.39	105.27%	108.02%
BlackRock Fixed Income	3.09%	2.77%	0.46%	0.96	0.38%	0.98	0.86	0.93	102.48%	91.83%
Shenkman High Yield	5.12%	4.45%	1.47%	0.78	1.79%	0.91	0.99	0.24	85.15%	72.56%
Franklin Templeton Global Bond Plus	2.31%	5.47%	2.47%	-0.17	7.99%	0.03	0.29	0.17	0.87%	-43.42%
RREEF America II	10.08%	4.29%	3.50%	0.65	3.60%	0.42	2.18	-0.02	59.57%	
TA Associates Realty	9.42%	6.37%	2.40%	0.77	5.70%	0.22	1.37	0.05	65.60%	
Gresham MTAP Commodity Builder	-7.86%	12.09%	0.84%	0.98	3.11%	0.93	-0.71	0.34	110.70%	99.34%
Aetos Capital	3.23%	3.15%	3.61%	-0.10	3.16%	0.00	0.80	-0.19	83.64%	

							IRR Analysis	as of IRR date				
Vintage Year	Manager Name/Fund Name	Estimated Market Value as of 3/31/2019 ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁶	IRR Date
Private E	quity											
2005	BlackRock Private Capital II ⁷	\$4,560,624	\$15,000,000	\$15,000,000	100%	\$0	\$19,860,522	\$5,396,014	132.4%	162.8%	7.1%	09/30/18
2016	Ocean Avenue Fund III	\$15,971,409	\$20,000,000	\$13,200,000	66%	\$6,800,000	\$2,400,000	\$14,171,409	18.2%	139.2%	35.9%	12/31/19
2004	Pantheon USA Fund VI	\$3,389,712	\$15,000,000	\$14,175,000	95%	\$825,000	\$19,003,425	\$3,479,711	134.1%	158.0%	7.2%	12/31/18
2016	Pathway Private Equity Fund Investors 8	\$15,664,855	\$20,000,000	\$12,069,571	60%	\$7,930,429	\$775,156	\$14,039,844	6.4%	136.2%	20.2%	09/30/18
2017	Pathway Private Equity Fund Investors 9	\$5,462,827	\$20,000,000	\$5,492,374	27%	\$14,507,626	\$75,744	\$0	1.4%	100.8%	N/A	N/A
2011	Stepstone Secondary Opportunities Fund II8	\$14,952,683	\$27,500,000	\$27,500,000	100%	\$0	\$21,123,108	\$17,236,233	76.8%	131.2%	13.6%	09/30/18
Private C	redit											
2016	TPG Diversified Credit	\$48,669,703	\$80,000,000	\$44,242,180	55%	\$35,757,820	\$485,608	\$48,669,703	1.1%	111.1%	8.2%	12/31/18
Private R	Real Estate											
2007	TA Associates VIII	\$77,098	\$30,000,000	\$30,000,000	100%	\$0	\$30,234,128	\$231,780	100.8%	101.0%	-0.1%	12/31/18
Opportur	nistic				_							
2010	KKR Mezzanine Partners	\$3,372,933	\$15,000,000	\$15,000,000	100%	\$0	\$17,819,791	\$3,372,933	118.8%	141.3%	8.5%	12/31/18
2011	PIMCO Bravo	\$338,884	\$15,000,000	\$15,000,000	100%	\$0	\$27,147,672	\$446,175	181.0%	183.2%	22.2%	12/31/18
***************************************	Total Private Markets % of Portfolio (Market Value)	\$112,460,728 7.1%	\$257,500,000	\$191,679,124	74%	\$65,820,876	\$138,925,155	\$107,043,802	72.5%	131.1%		

¹(DPI) is equal to (capital returned / capital called)



²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions

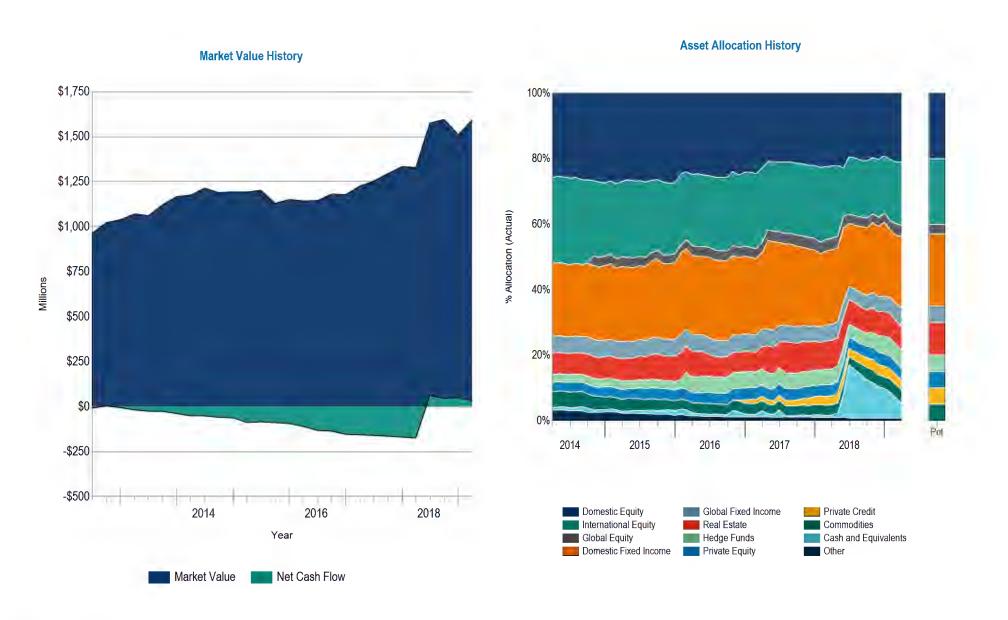
⁴IRR currently unavailable for these funds.

⁵Investment period ended, no further capital to be called.

⁶Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

⁷BlackRock: Total capital called is \$15,519,967 which includes recycled distributions.

⁸StepStone: \$8,782,174 in recallable distributions



Net Cash flow history prior to 4Q 2010 is not available due to lack of data from previous consultant.





3.8%

3.1%

4.0% 4.4%

0.8%

5.0%

5.0%

5.0%

0.0%

Account	Fee Schedule	Market Value As of 3/31/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Aetos Capital	0.70% of Assets	\$43,396,503	2.7%	\$303,776	0.70%
BlackRock Alternative Advisors	120,000 Annually	\$4,560,624	0.3%	\$120,000	2.63%
BlackRock Fixed Income	0.25% of First 100.0 Mil, 0.25% of Next 100.0 Mil	\$167,671,095	10.5%	\$419,178	0.25%
Boston Partners Large Cap Value	0.45% of First 50.0 Mil, 0.35% of Next 50.0 Mil, 0.30% Thereafter	\$61,464,627	3.9%	\$265,126	0.43%
Doubleline Core Plus	0.28% of First 100.0 Mil, 0.25% Thereafter	\$87,393,521	5.5%	\$244,702	0.28%
Franklin Templeton Global Bond Plus	0.62% of First 50.0 Mil, 0.51% of Next 50.0 Mil, 0.45% Thereafter	\$91,838,305	5.8%	\$523,375	0.57%
Gresham MTAP Commodity Builder	0.75% of Assets	\$32,118,409	2.0%	\$240,888	0.75%
Ivy Large Cap Growth	0.60% of First 25.0 Mil, 0.50% of Next 25.0 Mil, 0.40% Thereafter	\$67,052,530	4.2%	\$343,210	0.51%
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	0.38% of Assets	\$3,372,933	0.2%	\$12,648	0.38%
Lee Munder Small Value	0.90% of First 25.0 Mil, 0.85% of Next 75.0 Mil, 0.30% Thereafter	\$25,580,142	1.6%	\$229,931	0.90%
MacKay Shields Core Plus	0.40% of Assets	\$88,536,134	5.6%	\$354,145	0.40%
Mellon Capital Cash Account	No Fee	\$70,647,073	4.4%		
Ocean Avenue Fund III	0.85% of Assets	\$15,971,409	1.0%	\$135,757	0.85%
Pantheon Ventures	0.47% of Assets	\$3,389,712	0.2%	\$16,067	0.47%
Pathway Private Equity Fund Investors 8	0.61% of Assets	\$15,664,855	1.0%	\$95,556	0.61%
Pathway Private Equity Fund Investors 9	0.58% of Assets	\$5,462,827	0.3%	\$31,684	0.58%
PIMCO Bravo	1.60% of Assets	\$338,884	0.0%	\$21,689	6.40%
PIMCO RAE Fundamental Global Ex US Fund	0.78% of First 25.0 Mil, 0.43% of Next 75.0 Mil, 0.38% Thereafter	\$100,323,053	6.3%	\$518,728	0.52%
QMA Large Cap Core	0.35% of First 50.0 Mil, 0.30% of Next 50.0 Mil, 0.25% Thereafter	\$60,971,161	3.8%	\$207,913	0.34%
RREEF America II	0.95% of Assets	\$114,367,873	7.2%	\$1,086,495	0.95%

^{*}In addition to a management fee, Aetos charges a 10% incentive fee above a hurdle rate of the average three-month Treasury Bill rate in effect during the relevant incentive fee calculation. Fees shown for Pathway are estimated effective average fees over 15-year fund lifespan.

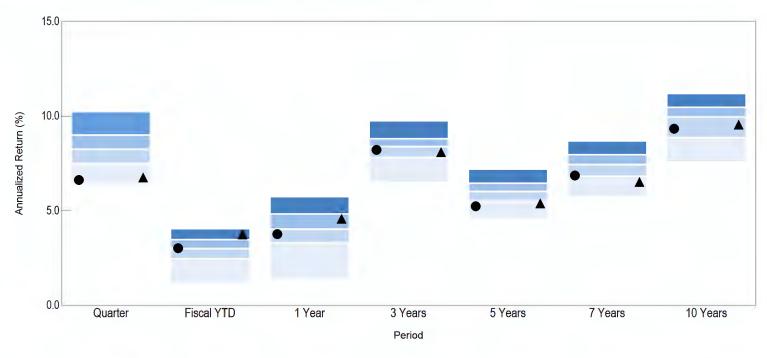


Account	Fee Schedule	Market Value As of 3/31/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
SGA Global Growth	0.45% of Assets	\$104,671,873	6.6%	\$471,023	0.45%
Skellig DST Water Fund	0.77% of Assets	\$55,438,544	3.5%	\$424,105	0.76%
SSGA MSCI ACWI Ex US Index Fund	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil,	\$101,789,584	6.4%	\$68,574	0.07%
	0.07 % of Next 25.0 Mill, 0.06% Thereafter				
SSGA Russell Small Cap Completeness Index	0.05% of First 25.0 Mil,	\$26,702,347	1.7%	\$13,351	0.05%
	0.05% of Next 25.0 Mil, 0.04% Thereafter				
SSGA S&P 500 Flagship Fund	0.03% of Assets	\$64,112,851	4.0%	\$19,234	0.03%
Stepstone Secondary Opportunities Fund II	343,750 Annually	\$14,952,683	0.9%	\$343,750	2.30%
TA Associates Realty	0.60% of Assets	\$77,098	0.0%	\$463	0.60%
The Clifton Group	Asset Based Fee: 0.0375% (Quarterly)	\$8,367,132	0.5%		
	Retainer Fee: \$4,500 (Quarterly) Minimum Expense: \$50,000 (Annual)				
Titan Advisors	.75% on AUM, 10% on performance, 5%	\$43,267,502	2.7%		
	hurdle rate.				
TPG Diversified Credit	No Fee	\$48,669,703	3.1%		
Wellington Commodity	0.75% of Assets	\$32,239,761	2.0%	\$241,798	0.75%
William Blair SMID Cap Growth	0.95% of First 10.0 Mil,	\$30,210,910	1.9%	\$256,582	0.85%
	0.80% of Next 20.0 Mil,				
	0.75% of Next 20.0 Mil,				
	0.70% of Next 50.0 Mil,				
	0.65% of Next 100.0 Mil, 0.60% Thereafter				
Investment Management Fee	0.00 /0 THE GARGI	\$1,590,621,659	100.0%	\$7,009,747	0.44%
mivestinent management i ce		ψ1,030,021,000	100.070	Ψ1,003,141	0.44 70

^{*}TPG fee schedule is as follows: No management fee at SMA level. Subject to the annual fees of each of the underlying TSSP funds. (1) TAO 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term investor designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions. Total MV does not include Shenkman HY Balance of \$189,116.







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

■ Total Fund▲ Policy Index

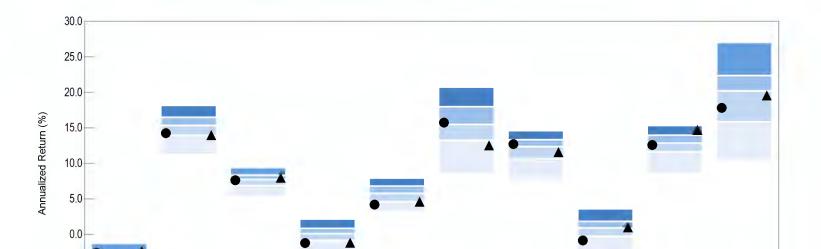
k)												
	4.1		5.8		9.8		7.2		8.7		11.2	
	3.5		4.8		8.8		6.5		8.0		10.5	
	3.0		4.0		8.4		6.0		7.4		10.0	
	2.4		3.3		7.8		5.5		6.8		8.9	
	1.2		1.4		6.5		4.6		5.7		7.6	
	220		220		211		203		195		172	
(93) (92)	3.0 3.8	(48) (12)	3.8 4.6	(59) (32)	8.2 8.1	(58) (63)	5.3 5.4	(82) (78)	6.9 6.5	(73) (84)	9.3 9.6	(65) (59)
	(93)	4.1 3.5 3.0 2.4 1.2 220 (93) 3.0	4.1 3.5 3.0 2.4 1.2 220 (93) 3.0 (48)	4.1 5.8 3.5 4.8 3.0 4.0 2.4 3.3 1.2 1.4 220 220 (93) 3.0 (48) 3.8	4.1 5.8 3.5 4.8 3.0 4.0 2.4 3.3 1.2 1.4 220 220 (93) 3.0 (48) 3.8 (59)	4.1 5.8 9.8 3.5 4.8 8.8 3.0 4.0 8.4 2.4 3.3 7.8 1.2 1.4 6.5 220 220 211 (93) 3.0 (48) 3.8 (59) 8.2	4.1 5.8 9.8 3.5 4.8 8.8 3.0 4.0 8.4 2.4 3.3 7.8 1.2 1.4 6.5 220 220 211 (93) 3.0 (48) 3.8 (59) 8.2 (58)	4.1 5.8 9.8 7.2 3.5 4.8 8.8 6.5 3.0 4.0 8.4 6.0 2.4 3.3 7.8 5.5 1.2 1.4 6.5 4.6 220 220 211 203 (93) 3.0 (48) 3.8 (59) 8.2 (58) 5.3	4.1 5.8 9.8 7.2 3.5 4.8 8.8 6.5 3.0 4.0 8.4 6.0 2.4 3.3 7.8 5.5 1.2 1.4 6.5 4.6 220 220 211 203 (93) 3.0 (48) 3.8 (59) 8.2 (58) 5.3 (82)	4.1 5.8 9.8 7.2 8.7 3.5 4.8 8.8 6.5 8.0 3.0 4.0 8.4 6.0 7.4 2.4 3.3 7.8 5.5 6.8 1.2 1.4 6.5 4.6 5.7 220 220 211 203 195 (93) 3.0 (48) 3.8 (59) 8.2 (58) 5.3 (82) 6.9	4.1 5.8 9.8 7.2 8.7 3.5 4.8 8.8 6.5 8.0 3.0 4.0 8.4 6.0 7.4 2.4 3.3 7.8 5.5 6.8 1.2 1.4 6.5 4.6 5.7 220 220 211 203 195 (93) 3.0 (48) 3.8 (59) 8.2 (58) 5.3 (82) 6.9 (73)	4.1 5.8 9.8 7.2 8.7 11.2 3.5 4.8 8.8 6.5 8.0 10.5 3.0 4.0 8.4 6.0 7.4 10.0 2.4 3.3 7.8 5.5 6.8 8.9 1.2 1.4 6.5 4.6 5.7 7.6 220 220 211 203 195 172 (93) 3.0 (48) 3.8 (59) 8.2 (58) 5.3 (82) 6.9 (73) 9.3

-10.0

2018

2017

2016



2014

Total Fund Consecutive Periods vs. InvestorForce Public DB Gross

2015

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

■ Total Fund▲ Policy Index

eturn (Ra	nk)								
-1.3	18.2	9.4	2.2	8.0	20.8	14.6	3.6	15.4	27.0
-3.1	16.5	8.4	0.9	6.8	18.0	13.4	1.9	14.0	22.4
-4.0	15.3	7.7	0.1	5.8	15.5	12.4	0.9	12.9	20.2
-4.9	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7	15.9
-6.3	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6	10.5
319	304	305	316	248	231	236	206	188	184
-2.7 (16 -2.4 (13	,	,	53) -1.2 (80 40) -1.1 (80	, ,	15.8 (49) 12.6 (80)	12.8 (43) 11.6 (67)	-0.8 (86) 1.0 (46)	12.6 (57 14.7 (13	17.8 (67) 19.6 (53)

Period

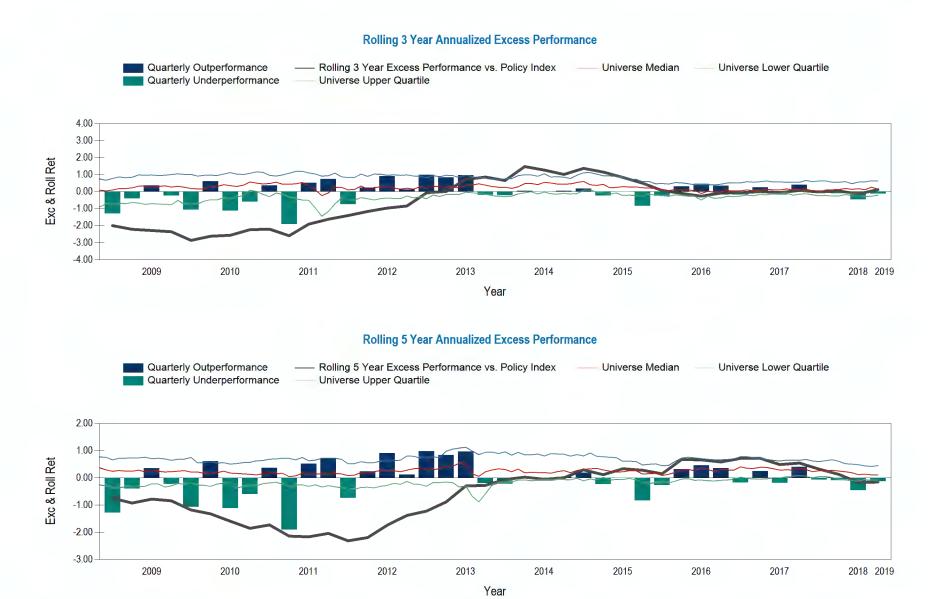
2013

2012

2011

2010

2009

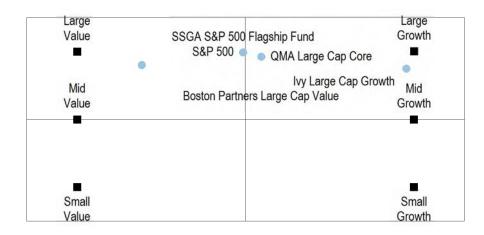


	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Domestic Equity	336,094,568	13.7	3.4	7.7	13.9	10.5	16.4	-5.0	22.3	11.5	1.6	12.4
Russell 3000		14.0	4.7	8.8	13.5	10.4	16.0	-5.2	21.1	12.7	0.5	12.6
InvestorForce Public DB US Eq Gross Rank		72	63	54	16	15	16	29	16	77	10	17
SSGA S&P 500 Flagship Fund	64,112,851	13.6	5.9	9.5	13.5	11.0		-4.4	21.9	12.0	1.5	13.7
S&P 500		13.6	5.9	9.5	13.5	10.9		-4.4	21.8	12.0	1.4	13.7
eV US Large Cap Core Equity Gross Rank		36	38	33	35	29		40	52	31	40	42
QMA Large Cap Core	60,971,161	13.0	3.2	7.1	12.8	10.8	16.4	-6.5	22.5	12.5	2.1	15.6
S&P 500		13.6	5.9	9.5	13.5	10.9	15.9	-4.4	21.8	12.0	1.4	13.7
eV US Large Cap Core Equity Gross Rank		56	70	60	53	34	21	70	42	25	31	20
Ivy Large Cap Growth	67,052,530	16.1	8.2	14.8	18.0	14.1		3.2	30.2	2.1	7.6	12.8
Russell 1000 Growth		16.1	6.6	12.7	16.5	13.5		-1.5	30.2	7.1	5.7	13.0
eV US Large Cap Growth Equity Gross Rank		50	27	26	28	27		15	42	72	26	40
Boston Partners Large Cap Value	61,464,627	9.6	1.9	1.7	11.4	7.6	15.1	-8.6	20.1	14.7	-3.9	11.8
Russell 1000 Value		11.9	4.4	5.7	10.5	7.7	14.5	-8.3	13.7	17.3	-3.8	13.5
eV US Large Cap Value Equity Gross Rank		93	61	76	39	65	40	55	22	54	65	58

U.S. Effective Style Map 3 Years

Large Large Value SSGA S&P 500 Flagship Fund Growth S&P 500 Ivy Large Cap Growth Boston Partners Large Cap Value QMA Large Cap Core Mid Mid Value Growth Small Small Value Growth

U.S. Effective Style Map 5 Years



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



	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
SSGA Russell Small Cap Completeness Index	26,702,347	15.8	-0.8	5.1	13.4	8.0		-9.2	18.2	16.5	-3.5	7.4
Russell Small Cap Completeness		16.0	-0.8	5.1	13.5	8.0		-9.2	18.3	16.6	-3.4	7.4
eV US Small Cap Core Equity Gross Rank		22	20	31	31	43		37	23	84	68	37
William Blair SMID Cap Growth	30,210,910	17.4	4.2	10.1	18.9	13.5	19.3	-0.9	30.4	8.2	6.1	9.8
Russell 2500 Growth		19.0	1.9	7.5	15.6	9.7	17.5	-7.5	24.5	9.7	-0.2	7.1
eV US Mid Cap Growth Equity Gross Rank		77	77	65	18	9	10	29	16	22	7	33
Lee Munder Small Value	25,580,142	13.7	-6.2	0.9	8.9	7.1		-14.7	8.6	28.4	0.4	5.1
Russell 2000 Value		11.9	-7.5	0.2	10.9	5.6		-12.9	7.8	31.7	-7.5	4.2
eV US Small Cap Value Equity Gross Rank		34	42	31	70	30		56	68	38	9	60

U.S. Effective Style Map 3 Years



U.S. Effective Style Map 5 Years



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



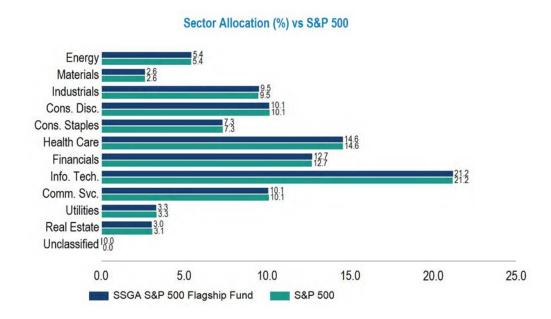
	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Domestic Equity	336,094,568	13.6	3.1	7.2	13.5	10.1	15.9	-5.4	21.9	11.1	1.2	12.0
Russell 3000		14.0	4.7	8.8	13.5	10.4	16.0	-5.2	21.1	12.7	0.5	12.6
SSGA S&P 500 Flagship Fund	64,112,851	13.6	5.9	9.5	13.5	10.9		-4.4	21.8	12.0	1.4	13.7
S&P 500		13.6	5.9	9.5	13.5	10.9		-4.4	21.8	12.0	1.4	13.7
QMA Large Cap Core	60,971,161	12.9	3.0	6.8	12.4	10.4	16.0	-6.8	22.1	12.1	1.8	15.2
S&P 500		13.6	5.9	9.5	13.5	10.9	15.9	-4.4	21.8	12.0	1.4	13.7
Ivy Large Cap Growth	67,052,530	15.9	7.8	14.2	17.4	13.5		2.7	29.5	1.6	7.1	12.3
Russell 1000 Growth		16.1	6.6	12.7	16.5	13.5		-1.5	30.2	7.1	5.7	13.0
Boston Partners Large Cap Value	61,464,627	9.5	1.5	1.3	11.0	7.1	14.6	-9.0	19.6	14.2	-4.4	11.4
Russell 1000 Value		11.9	4.4	5.7	10.5	7.7	14.5	-8.3	13.7	17.3	-3.8	13.5
SSGA Russell Small Cap Completeness Index	26,702,347	15.8	-0.8	5.0	13.4	7.9		-9.2	18.1	16.5	-3.5	7.3
Russell Small Cap Completeness		16.0	-0.8	5.1	13.5	8.0		-9.2	18.3	16.6	-3.4	7.4
William Blair SMID Cap Growth	30,210,910	17.1	3.5	9.2	17.9	12.5	18.3	-1.7	29.3	7.2	5.2	8.8
Russell 2500 Growth		19.0	1.9	7.5	15.6	9.7	17.5	-7.5	24.5	9.7	-0.2	7.1
Lee Munder Small Value	25,580,142	13.4	-6.8	0.0	8.0	6.1		-15.5	7.7	27.3	-0.5	4.1
Russell 2000 Value		11.9	-7.5	0.2	10.9	5.6		-12.9	7.8	31.7	-7.5	4.2

Sec. A Sec.	Q _l		z	Boston	Partney	N _{III}	ian Blair	ر د	SGA PU	Sell She	M Cap C	on of the state of		
SSGA S&P STOP FEEDS	hio run	A Large	G& CO/8	Sostof	Group,	S %	20 VAILLE #	SMID Cox	Ground #	ander Sh) Alle #	noletene	ess Index	- %
SSGA S&P 500 Flagship Fund			143	90.7	41	96.0	63	87.9	7	14.6	0	0.0	0	0.0
QMA Large Cap Core	143	59.0			19	53.0	32	57.9	2	3.8	5	5.5	66	5.5
lvy Large Cap Growth	41	28.6	19	23.0			8	12.2	1	3.3	0	0.0	2	0.6
Boston Partners Large Cap Value	63	28.0	32	32.1	8	22.3			0	0.0	0	0.0	7	1.6
William Blair SMID Cap Growth	7	0.4	2	0.2	1	2.5	0	0.0			1	1.1	56	6.3
Lee Munder Small Value	0	0.0	5	0.7	0	0.0	0	0.0	1	2.6			84	4.8
SSGA Russell Small Cap Completeness Index	0	0.0	66	7.9	2	2.6	7	3.3	56	74.3	84	90.7		-

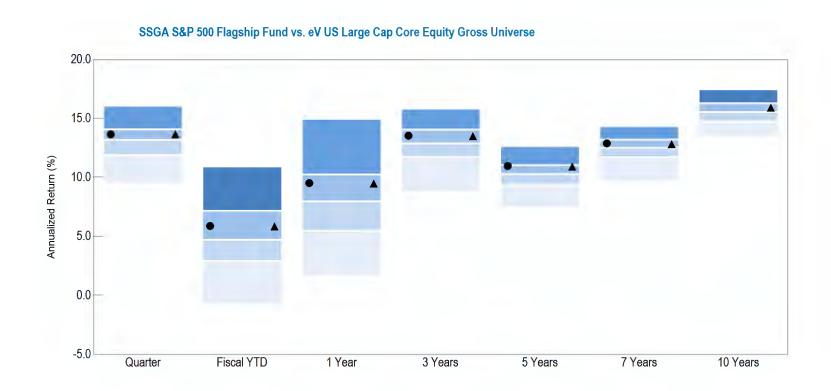
Correlation Matrix
3 Months Ending March 31, 2019

					S. C.A. P.L.	ίο.			
S _Q			Boston Par	Villan D.	١	Sell Shall Ca			
Sep Sep Sin	Place Phase	The Cap Cope	Scholowy,	Milian Bair Sull	OC. *Minde	SNAIL SNAIL SNAIL SNAIL SNAIL SAILE	Then .		
	TO FUND	Cap Core	Growing.	AD Value	O Grown	All Value	ess Index	S40	
SSGA S&P 500 Flagship Fund	1.00	-	-			_	-	_	
QMA Large Cap Core	1.00	1.00					-		
lvy Large Cap Growth	0.98	0.99	1.00			_			
Boston Partners Large Cap Value	0.99	1.00	1.00	1.00	-	-	-	-	
William Blair SMID Cap Growth	0.87	0.89	0.94	0.93	1.00	-	-	_	
Lee Mu <mark>nder</mark> Small Value	0.92	0.93	0.97	0.96	0.99	1.00		-	
SSGA Russell Small Cap Completeness Index	0.96	0.97	0.99	0.99	0.98	0.99	1.00	-	
S&P 500	1.00	1.00	0.98	0.99	0.87	0.92	0.96	1.00	

	Portfolio	S&P 500
Number of Holdings	505	505
Weighted Avg. Market Cap. (\$B)	212.45	211.45
Median Market Cap. (\$B)	21.19	21.17
Price To Earnings	20.25	20.23
Price To Book	3.49	3.48
Price To Sales	2.09	2.09
Return on Equity (%)	26.13	26.28
Yield (%)	2.01	2.00
Beta	1.00	1.00

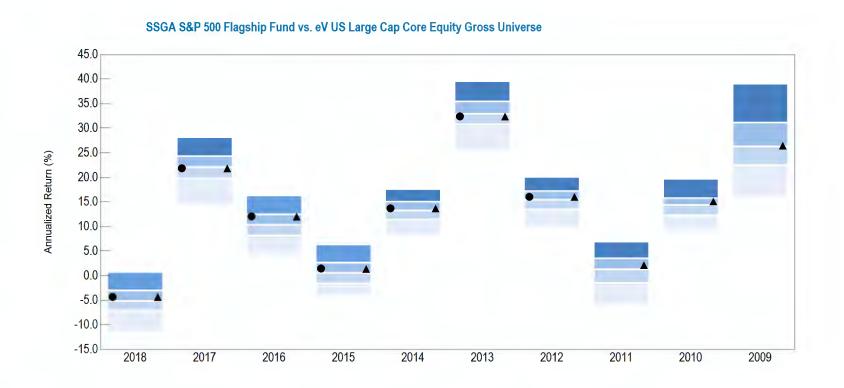


Top Holdings			Top Contributor	rs		Bott	tom Contribu	tors	
Ending Period Weigh	nt		Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution
MICROSOFT	3.83%	APPLE	3.38	20.94	0.71	ABBVIE	0.66	-11.48	-0.08
APPLE	3.60%	MICROSOFT	3.73	16.62	0.62	CVS HEALTH	0.41	-17.06	-0.07
AMAZON.COM	3.11%	AMAZON.COM	2.93	18.56	0.54	BIOGEN	0.29	-21.45	-0.06
FACEBOOK CLASS A	1.68%	FACEBOOK CLASS A	1.49	27.16	0.41	CIGNA	0.34	-15.30	-0.05
BERKSHIRE HATHAWAY 'B'	1.65%	EXXON MOBIL	1.37	19.81	0.27	CME GROUP	0.32	-12.13	-0.04
JOHNSON & JOHNSON	1.58%	CISCO SYSTEMS	0.93	25.60	0.24	BERKSHIRE HATHAWAY 'B'	1.88	-1.61	-0.03
ALPHABET 'C'	1.53%	VISA 'A'	1.10	18.59	0.20	BRISTOL MYERS SQUIBB	0.41	-7.38	-0.03
ALPHABET A	1.49%	MASTERCARD	0.82	25.02	0.20	KRAFT HEINZ	0.12	-23.19	-0.03
EXXON MOBIL	1.45%	ALPHABET 'C'	1.51	13.30	0.20	PFIZER	1.21	-1.88	-0.02
JP MORGAN CHASE & CO.	1.41%	ALPHABET A	1.48	12.63	0.19	WALGREENS BOOTS ALLIANCE	0.27	-6.84	-0.02
Total	24 32%					ALLIANGE			



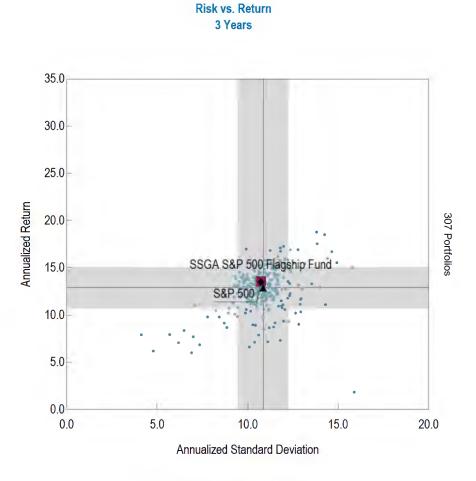
	Return (Rank)							
5th Percentile	16.1	10.9	14.9	15.8	12.6	14.3	17.5	
25th Percentile	14.1	7.2	10.2	14.0	11.1	13.2	16.3	
Median	13.2	4.7	8.0	12.9	10.3	12.5	15.5	
75th Percentile	11.9	2.9	5.5	11.8	9.4	11.7	14.7	
95th Percentile	9.5	-0.8	1.7	8.7	7.4	9.6	13.4	
# of Portfolios	321	321	321	307	290	262	226	
SSGA S&P 500 Flagship FundS&P 500	13.6 (3 13.6 (3	,	(38) 9.5 (38) 9.5	(33) 13.5 (33) 13.5	` '	(29) 12.9 (32) 12.8	(39) (40) 15.9	() (36)





	Return (Rank	()								
5th Percentile	0.7	28.2	16.3	6.3	17.7	39.6	20.1	7.0	19.7	39.1
25th Percentile	-3.0	24.3	12.5	2.7	15.1	35.5	17.2	3.6	15.8	31.2
Median	-5.1	22.1	10.4	0.6	13.3	32.9	15.4	1.3	14.4	26.3
75th Percentile	-7.1	19.8	8.2	-1.6	11.4	30.8	13.4	-1.5	12.3	22.6
95th Percentile	-11.4	14.4	4.3	-4.1	8.2	25.4	9.8	-5.9	9.1	16.1
# of Portfolios	316	318	308	267	267	261	254	259	254	280
SSGA S&P 500 Flagship FundS&P 500	-4.4 (40) -4.4 (40)	21.9 (52) 21.8 (53)	12.0 (31) 12.0 (31)	1.5 (40) 1.4 (42)	13.7 (42) 13.7 (42)	32.4 (58) 32.4 (58)	16.1 (39) 16.0 (41)	() 2.1 (40)	() 15.1 (37)	() 26.5 (48)

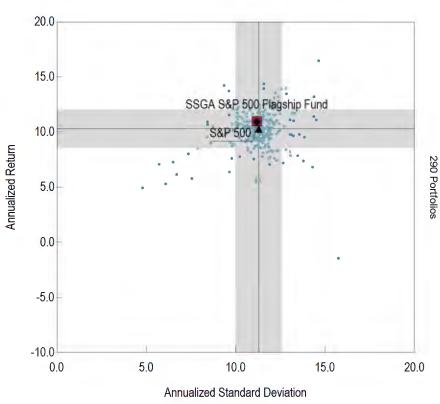






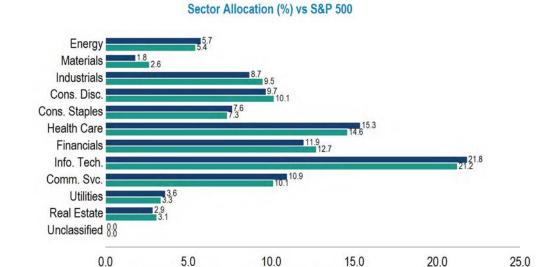
- S&P 500
- Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross





- SSGA S&P 500 Flagship Fund
- S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

	Portfolio	S&P 500
Number of Holdings	218	505
Weighted Avg. Market Cap. (\$B)	198.59	211.45
Median Market Cap. (\$B)	20.91	21.17
Price To Earnings	17.26	20.23
Price To Book	2.96	3.48
Price To Sales	1.40	2.09
Return on Equity (%)	23.54	26.28
Yield (%)	2.07	2.00
Beta	1.06	1.00

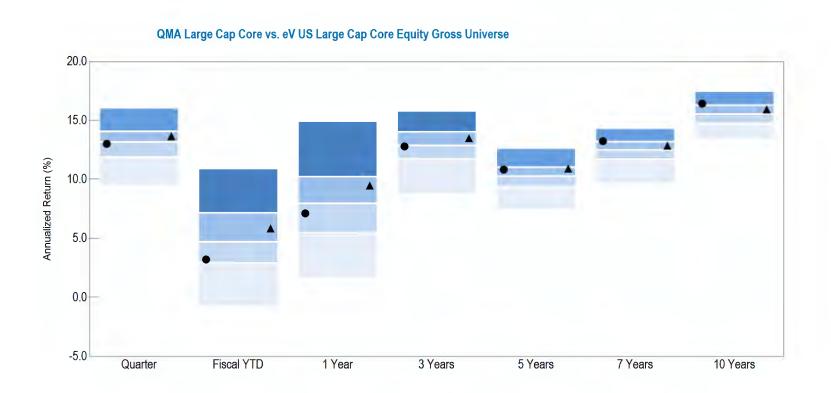


S&P 500

*Unclassified includes Cash

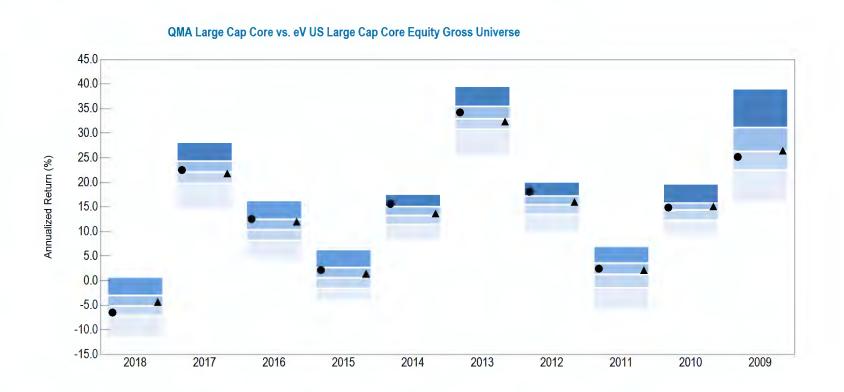
QMA Large Cap Core

Top Holdings			Top Contributor	S		Bott	om Contribut	tors	
Ending Period Weight			Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution
MICROSOFT	4.38%	MICROSOFT	3.94	16.62	0.65	BIOGEN	0.78	-21.45	-0.17
APPLE	2.94%	APPLE	2.68	20.94	0.56	MACY'S	0.49	-18.02	-0.09
FACEBOOK CLASS A	2.08%	FACEBOOK CLASS A	1.44	27.16	0.39	QURATE RETAIL SERIES A	0.44	-18.14	-0.08
ALPHABET 'C'	2.07%	CISCO SYSTEMS	1.50	25.60	0.38	BRISTOL MYERS SQUIBB	0.95	-7.38	-0.07
AMAZON.COM	1.90%	AMAZON.COM	1.82	18.56	0.34	CVS HEALTH	0.35	-17.06	-0.06
PROCTER & GAMBLE	1.74%	CELGENE	0.69	47.20	0.33	WALGREENS BOOTS	0.73	-6.84	-0.05
EXXON MOBIL	1.74%	VISA 'A'	1.67	18.59	0.31	ALLIANCE	0.70		
CISCO SYSTEMS	1.65%	GENERAL ELECTRIC	0.76	37.43	0.28	USANA HEALTH SCIENCES	0.13	-28.76	-0.04
INTEL	1.62%	ALPHABET 'C'	2.07	13.30	0.28	KRAFT HEINZ	0.14	-23.19	-0.03
		PROCTER & GAMBLE	1.75	14.09	0.25	HP	0.72	-4.24	-0.03
BERKSHIRE HATHAWAY 'B' Total	1.55% 21.68 %				3.20	ABBVIE	0.26	-11.48	-0.03



	5th Percentile
	25th Percentile
	Median
	75th Percentile
	95th Percentile
	# of Portfolios
۰	QMA Large Cap Core
▲	S&P 500

Return (Rar	nk)												
16.1		10.9		14.9		15.8		12.6		14.3		17.5	
14.1		7.2		10.2		14.0		11.1		13.2		16.3	
13.2		4.7		8.0		12.9		10.3		12.5		15.5	
11.9		2.9		5.5		11.8		9.4		11.7		14.7	
9.5		-0.8		1.7		8.7		7.4		9.6		13.4	
321		321		321		307		290		262		226	
13.0 13.6	(56) (36)	3.2 5.9	(70) (38)	7.1 9.5	(60) (33)	12.8 13.5	(53) (36)	10.8 10.9	(34) (32)	13.2 12.8	(25) (40)	16.4 15.9	(21) (36)

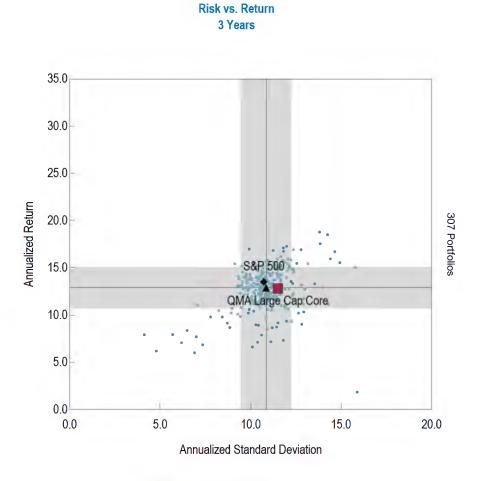


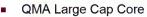
5th Percentile	
25th Percentile	
Median	
75th Percentile	
95th Percentile	
# of Portfolios	

QMA Large Cap Core

S&P 500

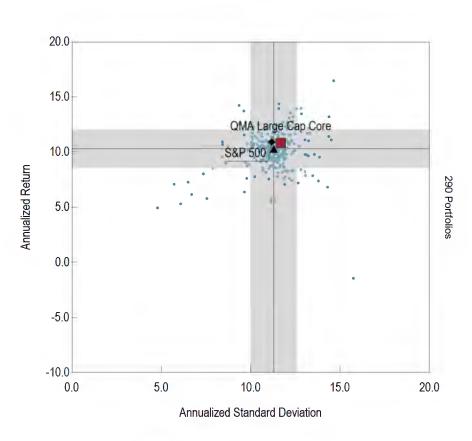
Return (Ra	nk)															
0.7	28.2	16.3	6	3	17.7		39.6		20.1		7.0		19.7		39.1	
-3.0	24.3	12.5	2	7	15.1		35.5		17.2		3.6		15.8		31.2	
-5.1	22.1	10.4	0	6	13.3		32.9		15.4		1.3		14.4		26.3	
-7.1	19.8	8.2	-1	6	11.4		30.8		13.4		-1.5		12.3		22.6	
-11.4	14.4	4.3	-4	1	8.2		25.4		9.8		-5.9		9.1		16.1	
316	318	308	26	7	267		261		254		259		254		280	
-6.5 (70 -4.4 (40	,	(42) 12.5 (53) 12.0	(25) 2 (31) 1	(- /		(20) (42)	34.3 32.4	(37) (58)	18.1 16.0	(18) (41)	2.4 2.1	(34) (40)	14.9 15.1	(40) (37)	25.2 26.5	(58) (48)



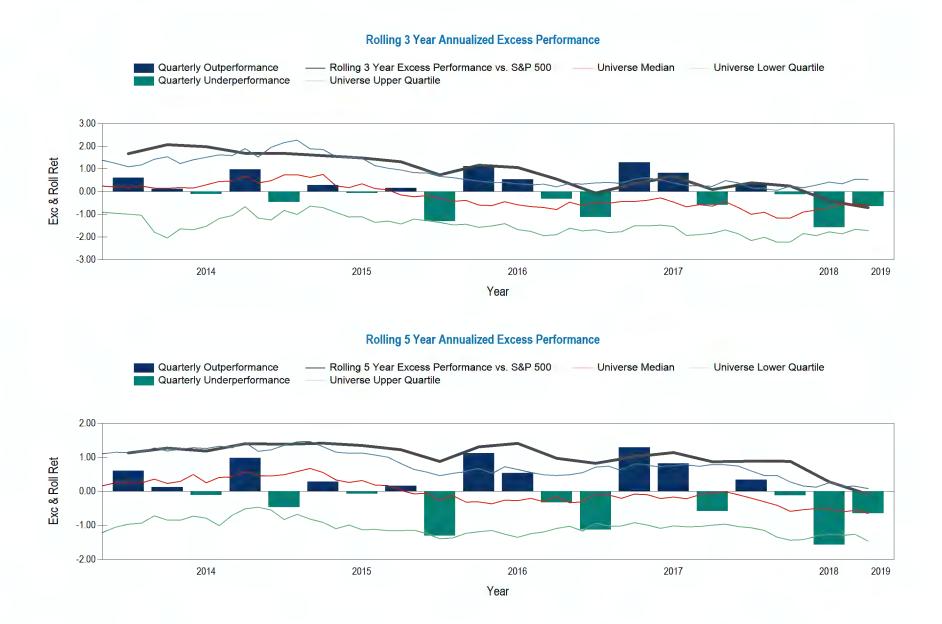


- S&P 500
- Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

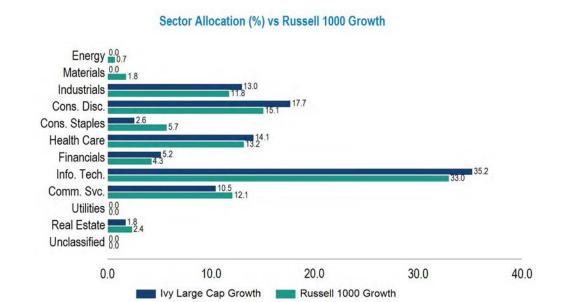




- QMA Large Cap Core
- S&P 500
- Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross



	Portfolio	Russell 1000 Growth
Number of Holdings	44	545
Weighted Avg. Market Cap. (\$B)	261.24	262.28
Median Market Cap. (\$B)	72.85	11.70
Price To Earnings	30.42	24.26
Price To Book	7.64	6.92
Price To Sales	4.39	2.84
Return on Equity (%)	48.89	38.85
Yield (%)	0.88	1.28
Beta	0.95	1.00



Top Holdings			Top Contributo	rs		Bot	tom Contribu	tors	
Ending Period Weight			Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution
MICROSOFT	7.93%	MICROSOFT	8.14	16.62	1.35	CME GROUP	4.36	-12.13	-0.53
ALPHABET A	5.00%	AMAZON.COM	5.66	18.56	1.05	ABIOMED	1.08	-12.14	-0.13
AMAZON.COM	4.96%	APPLE	4.64	20.94	0.97	PFIZER	2.71	-1.88	-0.05
APPLE	4.58%	VISA 'A'	4.45	18.59	0.83	UNITEDHEALTH GROUP	3.12	-0.37	-0.01
VISA 'A'	4.57%	MASTERCARD	3.29	25.02	0.82	ELANCO ANIMAL HEALTH	0.11	1.71	0.00
MASTERCARD	3.56%	INTUIT	2.44	33.10	0.81	BOOKING HOLDINGS	1.71	1.31	0.02
VERISK ANALYTICS CL.A	3.39%	VERISK ANALYTICS CL.A	3.20	22.21	0.71	CHARLES SCHWAB	1.05	3.34	0.04
CME GROUP	3.31%	DANAHER	2.45	28.19	0.69	MONSTER BEVERAGE	0.45	10.89	0.05
INTUIT	3.12%	PAYPAL HOLDINGS	2.89	23.49	0.68	ILLUMINA	1.48	3.59	0.05
PAYPAL HOLDINGS	3.12%	COSTAR GP.	1.73	38.26	0.66	CATERPILLAR	1.03	7.30	0.08
Total	43.51%								



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

Ivy Large Cap GrowthRussell 1000 Growth

Return (Rar	ık)												
19.6		12.5		18.9		20.8		15.8		16.4		19.4	
17.5		8.4		14.8		18.3		14.1		14.9		18.0	
16.1		6.6		12.4		16.4		12.9		13.9		17.0	
14.6		4.8		9.6		14.3		11.4		12.7		16.0	
11.9		0.1		4.7		11.8		9.0		11.2		14.1	
253		253		253		246		242		224		216	
16.1	(50)	8.2	(27)	14.8	(26)	18.0	(28)	14.1	(27)	14.8	(28)		()
16.1	(49)	6.6	(51)	12.7	(47)	16.5	(49)	13.5	(38)	14.3	(39)	17.5	(34)



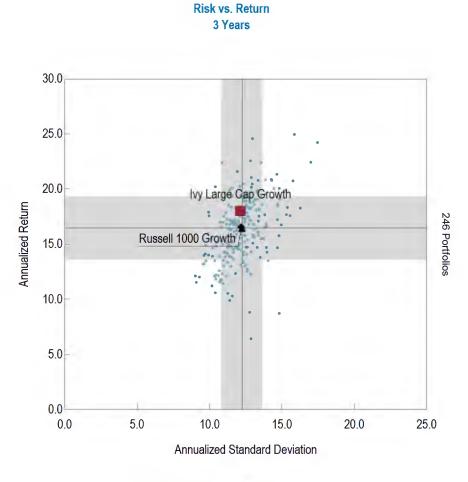


5th Percentile 25th Percentile
Median
75th Percentile 95th Percentile
of Portfolios

Ivy Large Cap Growth
 Russell 1000 Growth

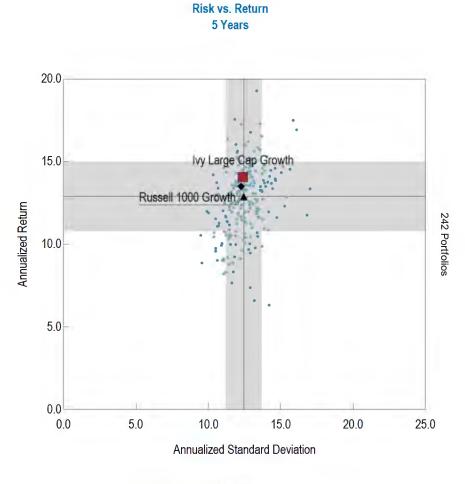
Return (Ra	nk)								
6.1	36.7	12.0	11.6	17.3	42.8	21.6	6.4	24.4	49.5
1.7	32.7	7.3	7.6	14.3	37.3	18.2	2.2	19.1	38.6
-0.6	28.8	4.6	4.7	12.0	34.3	15.7	-0.3	16.1	34.0
-3.5	26.2	1.8	2.1	9.5	31.0	13.4	-3.2	13.2	28.7
-8.8	20.5	-2.7	-2.4	5.8	26.6	10.2	-8.0	9.6	17.7
255	265	282	270	291	274	274	294	304	350
3.2 (15	30.2 (4	2) 2.1 (72)	7.6 (26)	12.8 (40)	37.3 (25)	13.0 (78)	3.6 (17)	(-	-) ()
-1.5 (57) 30.2 (4	2) 7.1 (26)	5.7 (42)	13.0 (38)	33.5 (56)	15.3 (55)	2.6 (22)	16.7 (4)	6) 37.2 (33)





Ivy Large Cap Growth

- Russell 1000 Growth
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Growth Equity Gross



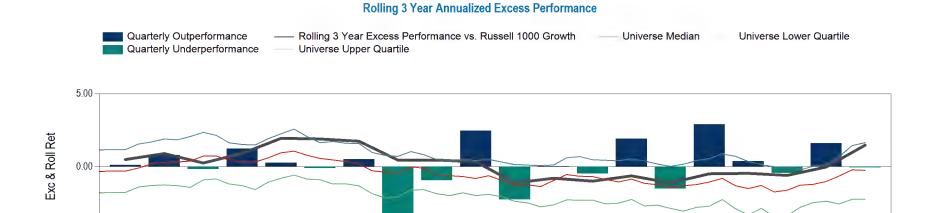
Ivy Large Cap Growth

- Russell 1000 Growth
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Growth Equity Gross

2014

2018

2019



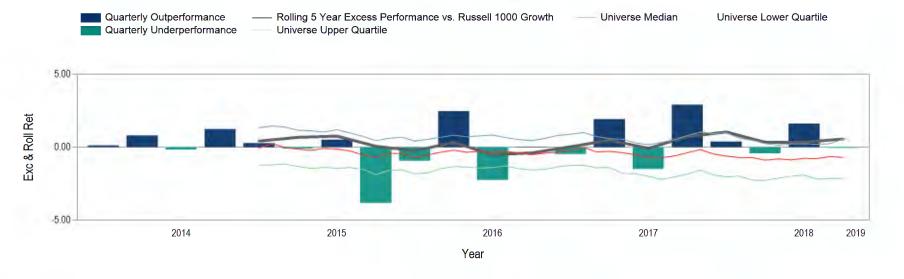
Rolling 5 Year Annualized Excess Performance

2016

Year

2017

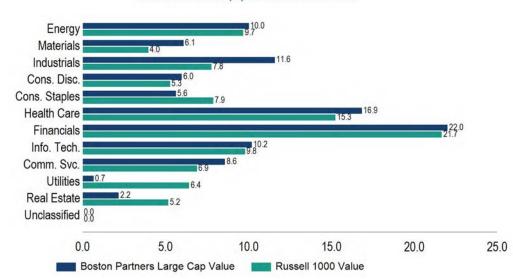
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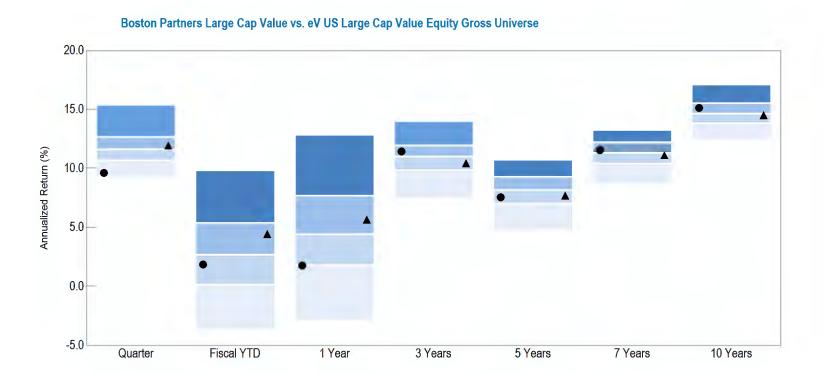
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	Portfolio	Russell 1000 Value
Number of Holdings	81	722
Weighted Avg. Market Cap. (\$B)	141.00	119.91
Median Market Cap. (\$B)	35.54	8.86
Price To Earnings	16.82	17.33
Price To Book	2.27	2.21
Price To Sales	1.54	1.53
Return on Equity (%)	16.43	14.19
Yield (%)	2.34	2.63
Beta	1.04	1.00

Sector Allocation (%) vs Russell 1000 Value

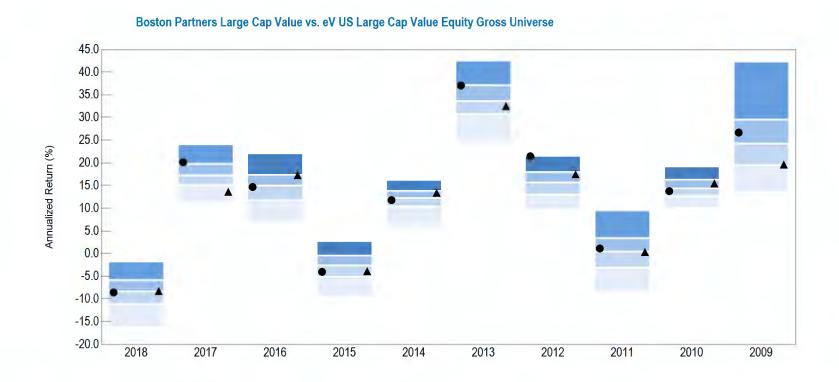


Top Holdings			Top Contributor	rs		Bottom Contributors							
Ending Period Weight			Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution				
CISCO SYSTEMS	4.31%	CISCO SYSTEMS	3.57	25.60	0.91	CVS HEALTH	2.08	-17.06	-0.35				
JOHNSON & JOHNSON	4.30%	COMCAST A	3.12	17.42	0.54	CIGNA	1.74	-15.30	-0.27				
BERKSHIRE HATHAWAY 'B'	4.15%	CITIGROUP	2.45	20.36	0.50	BERKSHIRE HATHAWAY 'B'	4.61	-1.61	-0.07				
COMCAST A	3.56%	BOEING	2.21	18.87	0.42	HP	1.72	-4.24	-0.07				
BANK OF AMERICA	3.40%	JOHNSON & JOHNSON	4.60	9.04	0.42	WALGREENS BOOTS	0.95	-6.84	-0.07				
PROCTER & GAMBLE	2.99%	PROCTER & GAMBLE	2.89	14.09	0.41	ALLIANCE							
CHEVRON	2.83%	CHEVRON	2.73	14.37	0.39	PFIZER	3.35	-1.88	-0.06				
CITIGROUP	2.67%	BANK OF AMERICA	2.94	12.55	0.37	MOSAIC	0.46	-6.42	-0.03				
VERIZON COMMUNICATIONS	2.57%	UNITED TECHNOLOGIES	1.69	21.76	0.37	CEMEX ADR 1:10	0.36	-3.73	-0.01				
PFIZER	2.27%	DXC TECHNOLOGY	1.50	21.31	0.32	NORDSTROM	0.28	-3.98	-0.01				
Total	33.03%				3.02	UNITEDHEALTH GROUP	0.63	-0.37	0.00				
TOtal	33.03%												



	Return (Rank	k)												
5th Percentile	15.4		9.8		12.9		14.0		10.7		13.3		17.1	
25th Percentile	12.7		5.4		7.7		11.9		9.3		12.2		15.5	
Median	11.6		2.7		4.4		11.0		8.2		11.3		14.7	
75th Percentile	10.7		0.2		1.8		9.8		7.0		10.4		13.8	
95th Percentile	9.3		-3.7		-2.9		7.4		4.7		8.6		12.4	
# of Portfolios	337		337		337		335		326		304		274	
 Boston Partners Large Cap Value Russell 1000 Value 	9.6 11.9	(93) (43)	1.9 4.4	(61) (35)	1.7 5.7	(76) (36)	11.4 10.5	(39) (65)	7.6 7.7	(65) (60)	11.5 11.1	(45) (57)	15.1 14.5	(40) (55)





	5th Percentile
	25th Percentile
	Median
	75th Percentile
	95th Percentile
	# of Portfolios
•	Boston Partners Large Cap Value
•	Russell 1000 Value

Return (Ra	nk)								
-1.8	24.0	22.1	2.8	16.3	42.5	21.5	9.5	19.2	42.3
-5.8	19.8	17.4	-0.4	13.9	37.2	18.0	3.4	16.3	29.5
-8.3	17.2	15.0	-2.6	12.2	33.6	15.7	0.5	14.3	24.3
-11.1	15.1	11.8	-5.1	10.4	30.8	13.0	-3.1	12.7	19.6
-16.1	11.2	7.0	-9.4	5.9	24.6	9.6	-8.6	10.1	13.5
336	342	346	312	307	310	303	310	323	360
-8.6 (55	9) 20.1 (22	2) 14.7 (54)	-3.9 (65)	11.8 (58)	37.0 (26)	21.5 (6) 1.2 (43)	13.8 (61) 26.7 (35)
-8.3 (50) 13.7 (87	7) 17.3 (26)	-3.8 (64)	13.5 (33)	32.5 (60)	17.5 (30	0.4 (51)	15.5 (35) 19.7 (75)



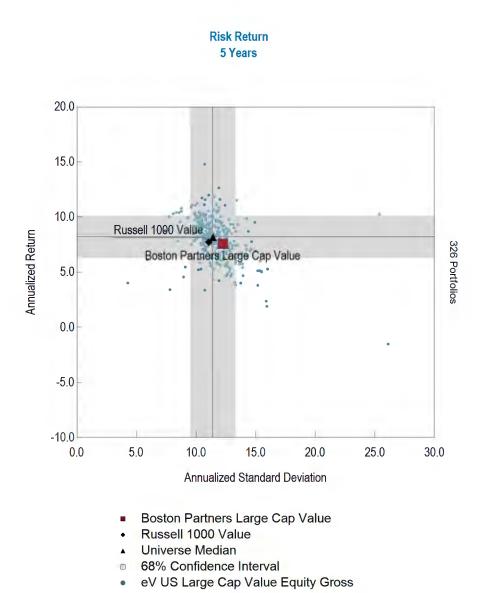
Risk vs. Return

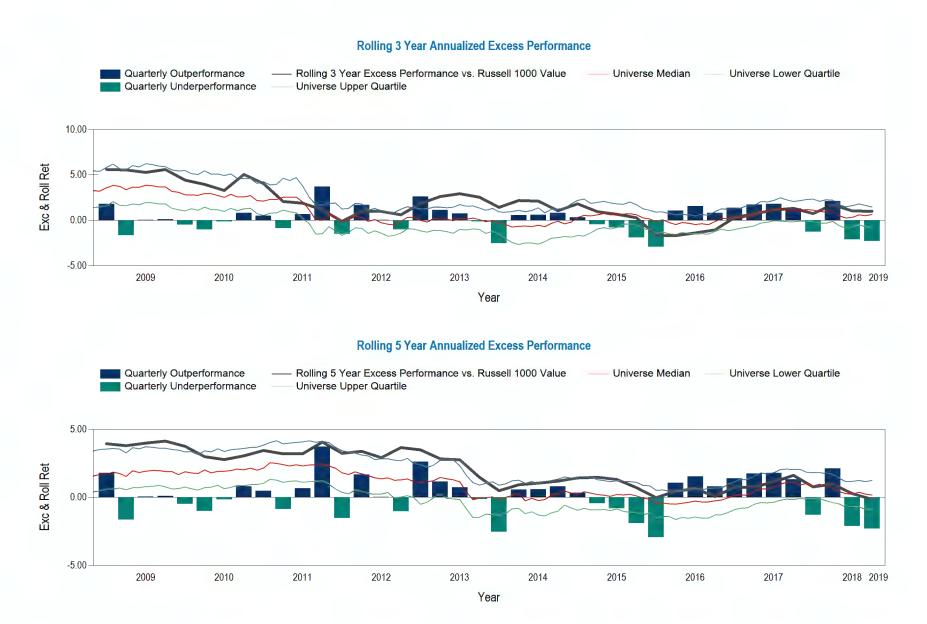
3 Years

25.0 20.0 Annualized Return 15.0 335 Portfolios 10.0 5.0 0.0 0.0 5.0 10.0 15.0 20.0 30.0 25.0 Annualized Standard Deviation



- Russell 1000 Value
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Value Equity Gross





	Portfolio	Russell Small Cap Completeness
Number of Holdings	2,467	2,472
Weighted Avg. Market Cap. (\$B)	7.36	7.32
Median Market Cap. (\$B)	1.11	1.11
Price To Earnings	19.68	19.73
Price To Book	2.68	2.69
Price To Sales	1.37	1.39
Return on Equity (%)	7.53	7.47
Yield (%)	1.48	1.47
Beta	0.99	1.00



Top Holdings			Top Contributo	rs		Bottom Contributors							
Ending Period Weight			Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution				
SERVICENOW	0.92%	SERVICENOW	0.76	38.44	0.29	TESLA	1.10	-15.91	-0.17				
TESLA	0.81%	WORLDPAY A	0.55	48.50	0.27	QURATE RETAIL SERIES A	0.20	-18.14	-0.04				
WORLDPAY A	0.72%	SQUARE CL.A	0.40	33.57	0.13	STAMPS.COM	0.06	-47.69	-0.03				
NXP SEMICONDUCTORS	0.63%	NXP SEMICONDUCTORS	0.61	20.94	0.13	GREEN DOT CLASS A	0.09	-23.73	-0.02				
WORKDAY CLASS A	0.59%	FIRST DATA CL.A	0.22	55.35	0.12	UNITI GROUP	0.06	-27.81	-0.02				
PALO ALTO NETWORKS	0.46%	PALO ALTO NETWORKS	0.41	28.95	0.12	NU SKIN ENTERPRISES 'A'	0.08	-21.51	-0.02				
SQUARE CL.A	0.46%	WORKDAY CLASS A	0.56	20.77	0.12	WEIGHT WATCHERS	0.04	-47.73	-0.02				
LAS VEGAS SANDS	0.46%	COSTAR GP.	0.29	38.26	0.11	INTERNATIONAL	0.04	-41.13	-0.02				
T-MOBILE US	0.45%	VEEVA SYSTEMS CL.A	0.26	42.03	0.11	GRUBHUB	0.17	-9.56	-0.02				
SPLUNK	0.45%	YUM CHINA HOLDINGS	0.30	34.33	0.10	HAEMONETICS	0.13	-12.56	-0.02				
Total	5.88%					HERBALIFE NUTRITION	0.15	-10.11	-0.02				
Iotai	J.00 /0												

SSGA Russell Small Cap Completeness Index vs. eV US Small Cap Core Equity Gross Universe



Re	turn (Rank)												
5th Percentile	18.6	3.7		11.1		17.8		11.1		14.2		20.1	
25th Percentile	15.6	-1.5		5.9		13.9		9.1		12.9		17.6	
Median	13.9	-5.1		1.7		12.4		7.7		11.5		16.5	
75th Percentile	12.4	-7.7		-2.0		10.1		6.3		10.3		15.5	
95th Percentile	10.2	-10.7		-5.5		7.5		3.5		7.8		14.4	
# of Portfolios	171	171		171		164		159		149		127	
 SSGA Russell Small Cap Completeness Index Russell Small Cap Completeness 	15.8 (2 16.0 (2	,	(20) (20)	5.1 5.1	(31) (30)	13.4 13.5	(31) (30)	8.0 8.0	(43) (43)	 11.6	() (48)	 16.5	() (51)



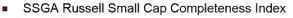
SSGA Russell Small Cap Completeness Index vs. eV US Small Cap Core Equity Gross Universe



	Return (Ran	k)														
5th Percentile	-2.3	24.9	29.1		4.8	11.3	49	9.7	23.4		5.7		36.7		55.4	
25th Percentile	-7.2	17.6	23.8		0.7	8.5	43	3.8	19.4		0.9		30.8		36.5	
Median	-10.8	14.9	20.6		-1.8	5.6	40	0.3	17.2		-1.4		27.4		29.9	
75th Percentile	-14.1	12.0	18.6		-5.1	2.6	36	3.9	14.0		-5.2		24.5		23.7	
95th Percentile	-18.9	7.5	11.0	-	10.6	-3.1	29	9.1	10.1		-10.3		18.9		16.7	
# of Portfolios	173	171	168		151	142	1	33	127		122		125		136	
 SSGA Russell Small Cap Completeness Inde Russell Small Cap Completeness 	• x -9.2 (37) -9.2 (37)	18.2 18.3	(23) 16.5 (23) 16.6	,	-3.5 (68) -3.4 (68)	7.4 7.4	(37) (40) 38	(3.5 (6) 6) 18.0	() (39)	-3.9	() (72)	26.6	() (56)	 37.7	() (24)

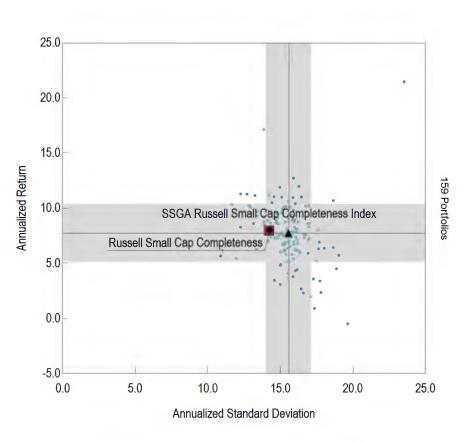
Risk vs. Return

3 Years 40.0 30.0 Annualized Return 164 Portfolios 20.0 SSGA Russell Small Cap Completeness Index Russell Small Cap Completeness 10.0 0.0 5.0 10.0 15.0 20.0 0.0 25.0 Annualized Standard Deviation



- Russell Small Cap Completeness
- Universe Median
- 68% Confidence Interval
- eV US Small Cap Core Equity Gross



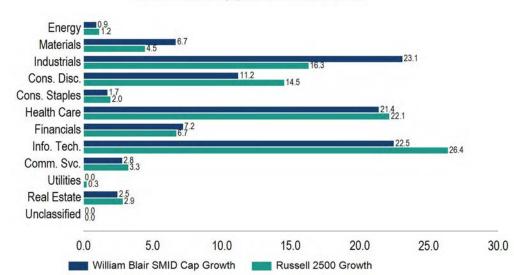


- SSGA Russell Small Cap Completeness Index
- Russell Small Cap Completeness
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small Cap Core Equity Gross



	Portfolio	Russell 2500 Growth
Number of Holdings	71	1,488
Weighted Avg. Market Cap. (\$B)	7.91	5.73
Median Market Cap. (\$B)	5.77	1.14
Price To Earnings	28.41	24.04
Price To Book	5.05	4.75
Price To Sales	2.57	1.81
Return on Equity (%)	19.12	11.89
Yield (%)	0.59	0.76
Beta	0.91	1.00

Sector Allocation (%) vs Russell 2500 Growth

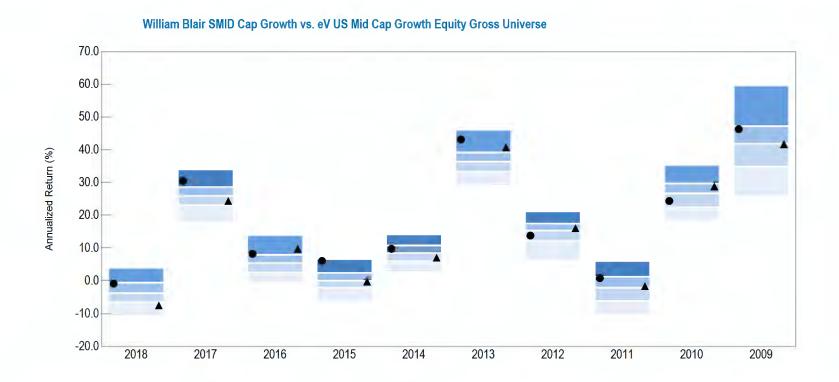


Top Holdings			Top Contributors			В	ottom Contribut	ors	
Ending Period Weight			Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution
COPART 3	3.31%	COSTAR GP.	2.84	38.26	1.09	WEIGHT WATCHERS	0.70	-47.73	-0.34
COSTAR GP. 3	3.26%	EURONET WWD.	2.51	39.28	0.98	INTERNATIONAL			
	2.90%	ROGERS	1.54	60.39	0.93	HEALTHCARE SVS.GP.	1.69	-17.49	-0.29
	2.77%	VEEVA SYSTEMS CL.A	2.16	42.03	0.91	INOGEN	0.79	-23.19	-0.18
		COPART	3.14	26.81	0.84	NU SKIN ENTERPRISES 'A	0.79	-21.51	-0.17
	2.57%	BOOZ ALLEN	0.11	20.01	0.01	SIX FLAGS ENTM.	1.52	-9.96	-0.15
	2.50%	HAMILTN.HLDG.	2.59	29.55	0.76	LIGAND PHARMS.'B'	1.40	-7.36	-0.10
BURLINGTON STORES 2	2.45%	BWX TECHNOLOGIES	2.39	30.14	0.72	ENCOMPASS HEALTH	1.98	-4.91	-0.10
PURE STORAGE CL.A 2	2.29%					CENTENNIAL	1.00	1.01	0.10
VEEVA SYSTEMS CL.A 2	2.23%	BALL	2.63	26.07	0.68	RSO.DEV.CL.A	0.47	-20.24	-0.10
ROGERS 2	2.20%	LIVE NATION ENTM.	2.25	29.02	0.65	BURLINGTON STORES	2.13	-3.68	-0.08
	.49%	HEICO NEW 'A'	1.77	33.58	0.59				
10tai	1-1-70					VIRTU FINANCIAL CL.A	1.08	-6.92	-0.07



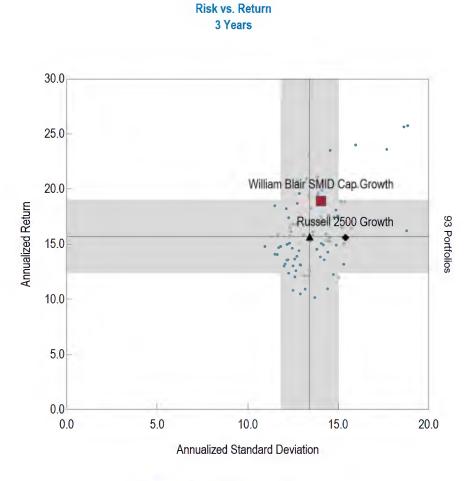
	Return (Ran	K)												
5th Percentile	24.3		11.4		19.1		23.3		14.3		15.5		20.6	
25th Percentile	20.9		9.5		14.8		18.1		12.0		13.9		18.2	
Median	19.1		7.4		11.8		15.7		10.8		12.8		17.2	
75th Percentile	17.4		4.7		8.6		13.9		9.4		11.8		16.5	
95th Percentile	15.1		0.2		2.7		11.6		7.5		10.5		15.3	
# of Portfolios	95		95		95		93		89		86		75	
William Blair SMID Cap GrowthRussell 2500 Growth	17.4 19.0	(77) (53)	4.2 1.9	(77) (93)	10.1 7.5	(65) (81)	18.9 15.6	(18) (51)	13.5 9.7	(9) (73)	15.6 12.6	(4) (56)	19.3 17.5	(10) (45)

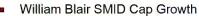




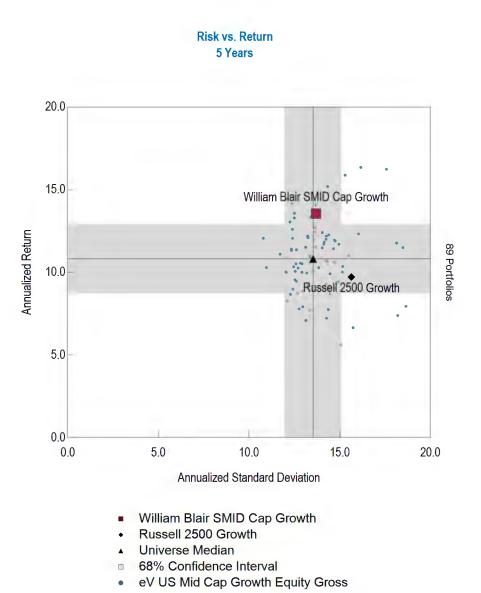
	Return (R	lank)								
5th Percentile	4.0	34.0	13.9	6.7	14.2	46.0	21.3	6.1	35.3	59.6
25th Percentile	-0.5	28.7	8.0	2.5	10.9	39.2	17.6	1.3	29.8	47.2
Median Median	-3.7	25.9	5.4	0.0	8.6	36.4	15.4	-2.1	26.7	41.9
75th Percentile	-6.5	23.1	2.6	-2.1	6.1	33.2	12.2	-6.1	22.5	34.9
95th Percentile	-10.8	17.7	-0.5	-6.3	2.6	29.0	6.0	-10.4	18.3	25.7
# of Portfolios	93	97	105	105	117	106	111	122	127	142
William Blair SMID Cap Growth	-0.9 (2	29) 30.4	(16) 8.2	(22) 6.1	(7) 9.8	(33) 43.1	(11) 13.8	(68) 0.9	(28) 24.4	(65) 46.3 (30)
▲ Russell 2500 Growth	-7.5 (7	79) 24.5	(62) 9.7	(13) -0.2	(55) 7.1	(65) 40.7	(17) 16.1	(44) -1.6	(46) 28.9	(35) 41.7 (51)

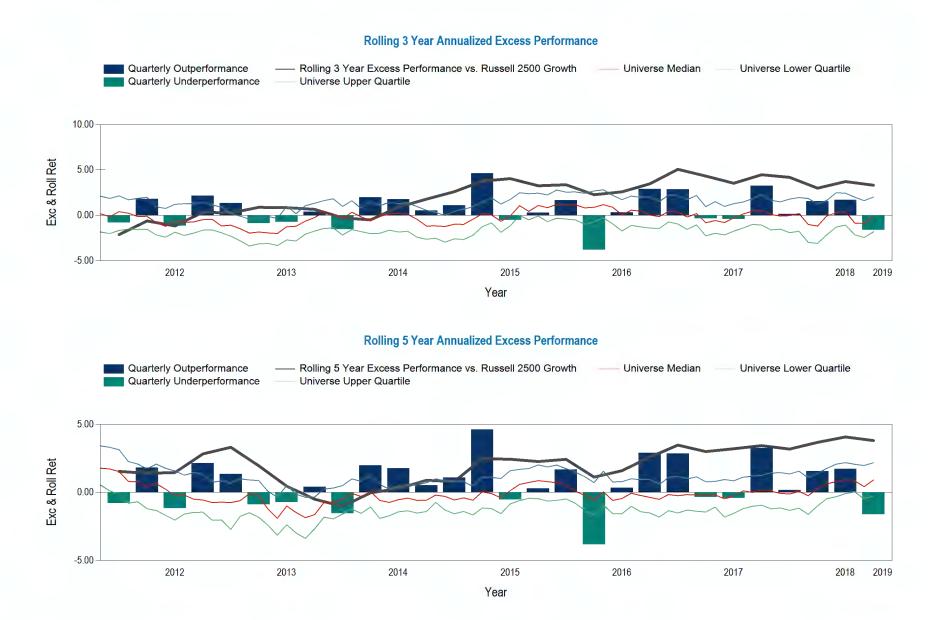






- · Russell 2500 Growth
- ▲ Universe Median
- 68% Confidence Interval
- eV US Mid Cap Growth Equity Gross

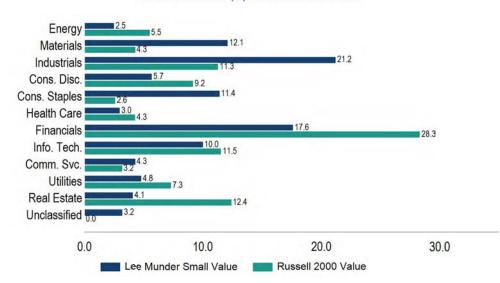




Characteristics

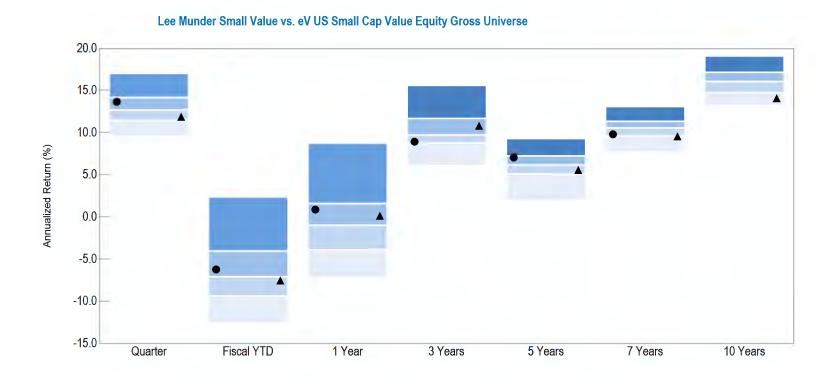
	Portfolio	Russell 2000 Value
Number of Holdings	89	1,366
Weighted Avg. Market Cap. (\$B)	3.13	2.06
Median Market Cap. (\$B)	2.84	0.68
Price To Earnings	16.51	15.60
Price To Book	1.89	1.61
Price To Sales	1.01	0.92
Return on Equity (%)	11.39	6.04
Yield (%)	1.67	2.22
Beta	0.97	1.00

Sector Allocation (%) vs Russell 2000 Value



*Unclassified includes Cash

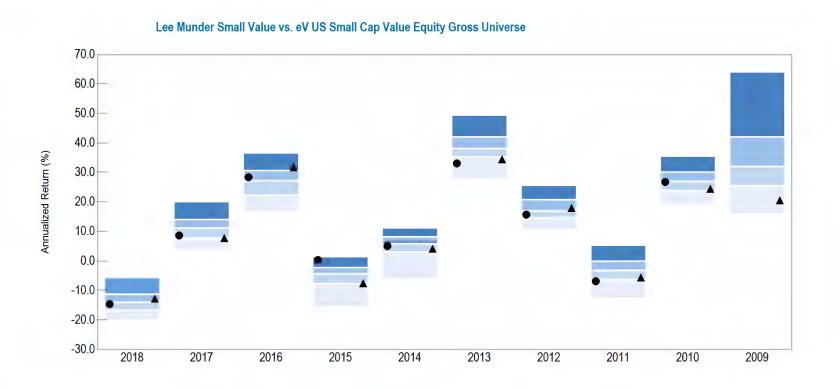
Top Holdings			Top Contributo	rs		Bottom Contributors					
Ending Period Weight			Avg Wgt	Return	Contribution		Avg Wgt	Return	Contribution		
MACOM TECH.SLTN.HDG.	2.48%	NEXSTAR MEDIA GROUP	1.91	38.55	0.74	VISTA OUTDOOR	0.60	-29.43	-0.18		
NEXSTAR MEDIA GROUP CL.A	2.38%	CL.A				TAILORED BRANDS	0.30	-41.25	-0.12		
ISHARES RSL.2000 VALUE	2.28%	TREEHOUSE FOODS	2.31	27.29	0.63	HURON CNSL.GP.	1.51	-7.97	-0.12		
BLACKSTONE MGE.TST.CL.A	2.07%	CLEAN HARBORS	1.01	44.94	0.45	B & G FOODS	0.80	-13.88	-0.11		
MURPHY USA	2.07%	MACOM TECH.SLTN.HDG.	2.41	15.16	0.37	MICHAELS COMPANIES	0.70	-15.66	-0.11		
STERLING BANCORP	2.07%	VIAVI SOLUTIONS	1.41	23.18	0.33	LIVENT	0.80	-11.01	-0.09		
DARLING INGREDIENTS	1.96%	CORPORATE OFFICE	1.01	31.10	0.31	MATTHEWS INTL.'A'	0.90	-8.55	-0.08		
IBERIABANK	1.96%	PROPS. TST.				VALVOLINE	1.61	-3.54	-0.06		
		W R GRACE	1.41	20.64	0.29	MILACRON HOLDINGS	1.11	-4.79	-0.05		
PORTLAND GEN.ELEC.	1.96%	ITT	1.41	20.47	0.29	DEL FRISCO'S					
TREEHOUSE FOODS	1.96%	STERLING BANCORP	2.11	13.25	0.28	RESTAURANT GP.	0.50	-10.35	-0.05		
Total	21.20%	HAIN CELESTIAL GP.	0.60	45.78	0.28						



	5th Percentile
	25th Percentile
	Median
	75th Percentile
	95th Percentile
	# of Portfolios
۰	Lee Munder Small Value
▲	Russell 2000 Value

Return (Rar	nk)												
17.0		2.4		8.8		15.6		9.3		13.1		19.1	
14.2		-4.0		1.6		11.7		7.3		11.4		17.2	
12.7		-7.1		-1.0		9.7		6.2		10.6		16.1	
11.5		-9.4		-3.9		8.8		5.1		9.6		14.8	
9.6		-12.6		-7.3		6.1		2.0		7.8		13.2	
216		216		216		211		202		191		176	
13.7	(34)	-6.2	(42)	0.9	(31)	8.9	(70)	7.1	(30)	9.8	(71)		()
11.9	(69)	-7.5	(56)	0.2	(39)	10.9	(33)	5.6	(66)	9.6	(76)	14.1	(88)



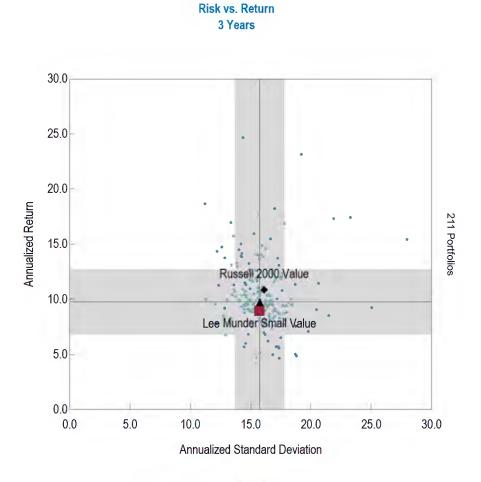


	5th Percentile
	25th Percentile
	Median
	75th Percentile
	95th Percentile
	# of Portfolios
_	

Lee Munder Small Value
Russell 2000 Value

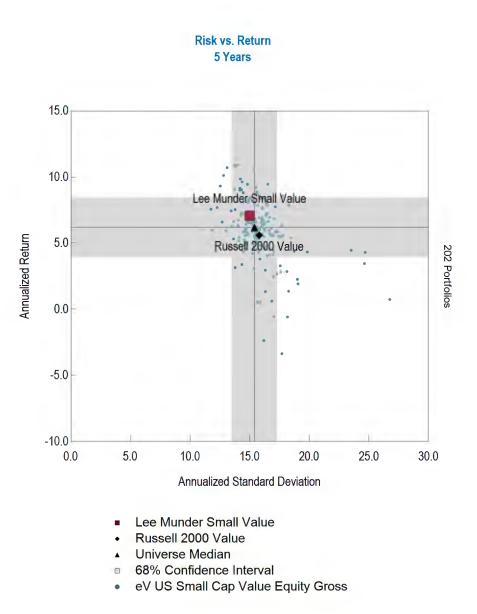
Return	(Rank)																		
-5.7		20.2		36.7		1.5		11.2		49.4		25.7		5.3		35.6		64.2	
-11.4		14.1		30.7		-2.2		8.2		42.1		20.8		0.0		30.2		42.1	
-14.0		11.1		27.2		-4.3		5.8		38.1		16.9		-3.3		26.9		32.0	
-16.7		7.8		22.2		-7.7		3.1		35.2		14.7		-6.2		23.8		25.5	
-20.2		3.7		16.8		-15.8		-6.3		27.8		10.3		-12.6		19.2		16.1	
220		224		222		212		206		199		187		177		186		197	
-14.7	(56)	8.6	(68)	28.4	(38)	0.4	(9)	5.1	(60)	33.1	(85)	15.7	(61)	-6.9	(79)	26.8	(54)		()
-12.9	(39)	7.8	(75)	31.7	(17)	-7.5	(74)	4.2	(68)	34.5	(78)	18.1	(43)	-5.5	(69)	24.5	(72)	20.6	(85)



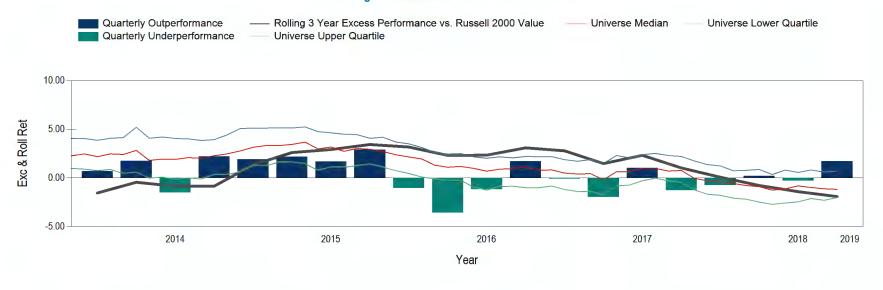




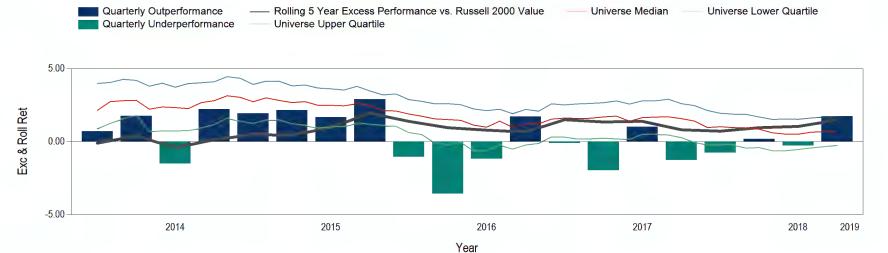
- Russell 2000 Value
- Universe Median
- 68% Confidence Interval
- eV US Small Cap Value Equity Gross



Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance





	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total International Equity	306,784,510	11.5	-0.3	-3.8	8.9	2.8	9.0	-14.3	26.9	6.2	-5.9	-4.8
MSCI ACWI ex USA Gross		10.4	-1.4	-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		23	11	20	26	70	68	43	80	13	85	83
SSGA MSCI ACWI Ex US Index Fund	101,789,584	10.4	-1.5	-4.0	8.4	2.8		-14.0	27.6	4.8	-5.5	-3.6
MSCI ACWI ex USA Gross		10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
eV All EAFE Equity Gross Rank		49	25	42	29	67		42	49	17	96	49
PIMCO RAE Fundamental Global Ex US Fund	100,323,053	7.9	-2.7	-7.6	9.2	1.8		-14.7	26.7	13.5	-10.9	-5.7
MSCI ACWI ex USA Gross		10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
eV All EAFE Equity Gross Rank		92	39	67	19	89		47	53	1	99	79
SGA Global Growth	104,671,873	16.3	3.5									
MSCI ACWI ex USA Gross		10.4	-1.4									
eV ACWI ex-US Core Equity Gross Rank		2	3									

EAFE Effective Style Map 3 Years



EAFE Effective Style Map 5 Years

Large Value SSGA MSCI ACWI Ex US Index Fund	Large Growth
MSCI ACWI ex USA Gross	
 PIMCO RAE Fundamental Globa Ex US Fund 	
•	_
Small Value	Small Growth

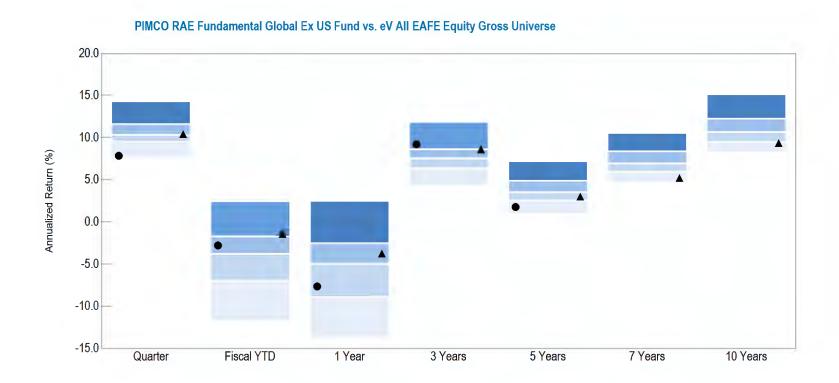
Research Affiliates converted to PIMCO RAE Fundamental Global Ex US Fund on 6/5/15 (performance prior to this date represents previously held Enhanced RAFI Global ex US). Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total International Equity	306,784,510	11.4	-0.5	-4.2	8.5	2.5	8.6	-14.5	26.5	5.9	-6.2	-5.0
MSCI ACWI ex USA Gross	= 3	10.4	-1.4	-3.7	8.6	3.0	9.3	-13.8	27.8	5.0	-5.3	-3.4
SSGA MSCI ACWI Ex US Index Fund	101,789,584	10.4	-1.5	-4.0	8.3	2.8		-14.0	27.5	4.7	-5.5	-3.7
MSCI ACWI ex USA Gross		10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
PIMCO RAE Fundamental Global Ex US Fund	100,323,053	7.7	-3.1	-8.1	8.7	1.3		-15.1	26.0	13.0	-11.4	-5.9
MSCI ACWI ex USA Gross		10.4	-1.4	-3.7	8.6	3.0		-13.8	27.8	5.0	-5.3	-3.4
SGA Global Growth	104,671,873	16.2	3.2									
MSCI ACWI ex USA Gross		10.4	-1.4									

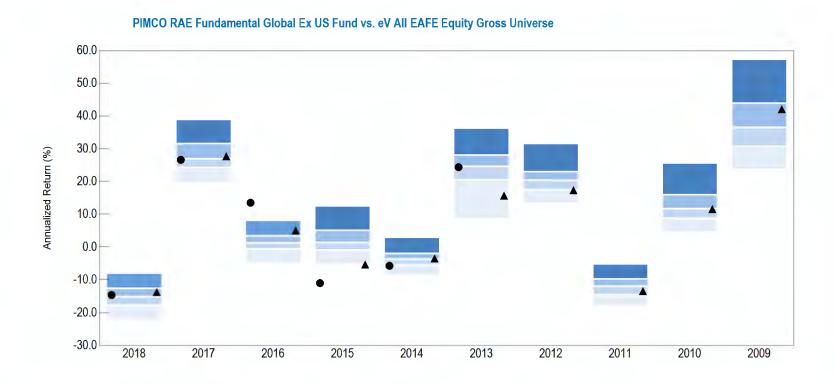
Research Affiliates converted to PIMCO RAE Fundamental Global Ex US Fund on 6/5/15 (performance prior to this date represents previously held Enhanced RAFI Global ex US).





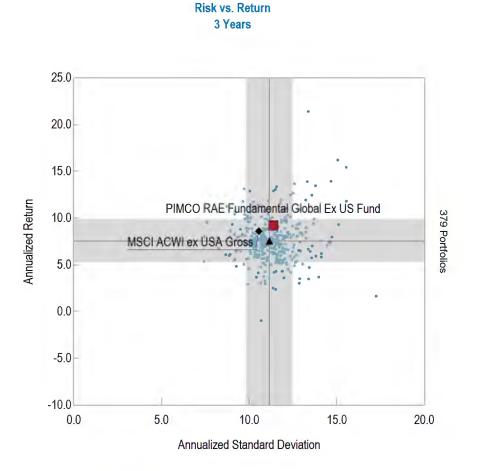
R	eturn (Rank)												
5th Percentile	14.3		2.4		2.5		11.8		7.2		10.6		15.2	
25th Percentile	11.6		-1.7		-2.5		8.6		4.9		8.4		12.3	
Median	10.3		-3.8		-5.0		7.6		3.5		7.0		10.7	
75th Percentile	9.5		-7.0		-8.9		6.4		2.6		6.0		9.5	
95th Percentile	7.5		-11.8		-13.8		4.2		0.9		4.7		8.2	
# of Portfolios	395		395		395		379		337		299		269	
 PIMCO RAE Fundamental Global Ex US Fund MSCI ACWI ex USA Gross 	7.9 10.4	(92) (47)	-2.7 -1.4	(39) (24)	-7.6 -3.7	(67) (39)	9.2 8.6	(19) (26)	1.8 3.0	(89) (63)	 5.2	() (92)	9.3	() (79)





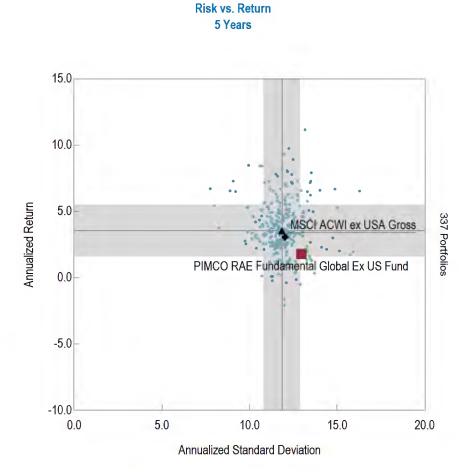
	Return	(Rank)	Co.																
5th Percentile	-8.0		39.0	8.1		12.6		3.0		36.3		31.7		-5.1		25.7		57.3	
25th Percentile	-12.6		31.6	3.4		5.2		-1.9		28.1		23.1		-9.7		16.1		44.0	
Median	-15.1		27.0	1.3		1.4		-3.7		24.6		20.4		-12.0		11.7		36.5	
75th Percentile	-17.8		24.3	-0.6		-0.9		-5.4		20.5		17.5		-14.5		8.7		30.7	
95th Percentile	-22.2		19.7	-4.9		-5.4		-8.6		8.6		13.3		-18.2		4.6		23.7	
# of Portfolios	391		370	350		325		314		284		263		278		352		455	
 PIMCO RAE Fundamental Global Ex US MSCI ACWI ex USA Gross 	Fund -14.7 -13.8	(47) (40)	26.7 (53) 27.8 (48)	13.5 5.0	(1) (16)	-10.9 -5.3	(99) (95)	-5.7 -3.4	(79) (47)	24.5 15.8	(51) (90)	 17.4	() (77)	-13.3	() (62)	 11.6	() (52)	 42.1	() (30)



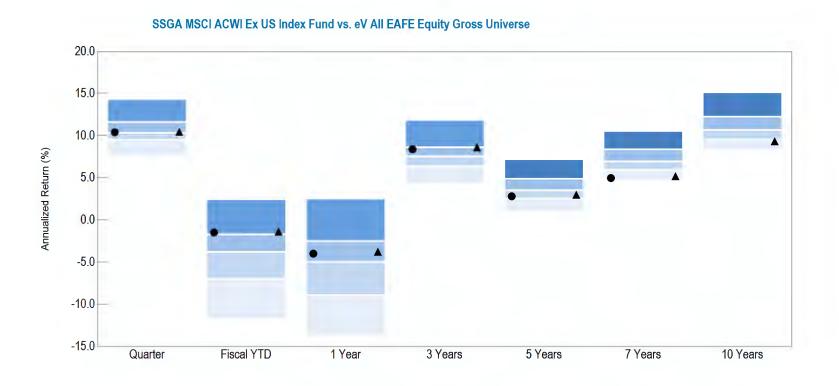




- MSCI ACWI ex USA Gross
- Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross

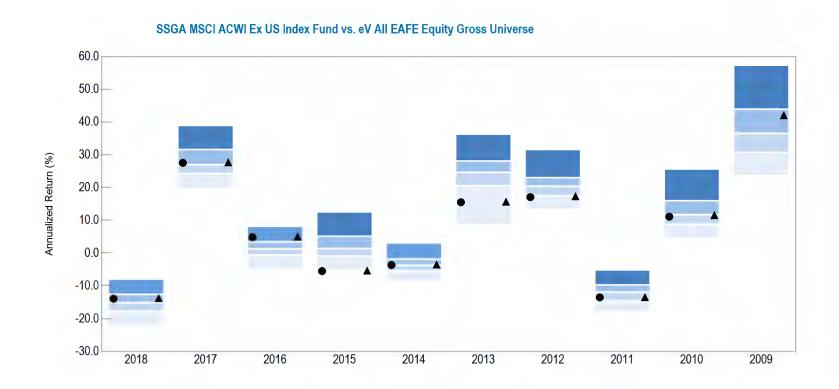


- PIMCO RAE Fundamental Global Ex US Fund
- MSCI ACWI ex USA Gross
- Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross



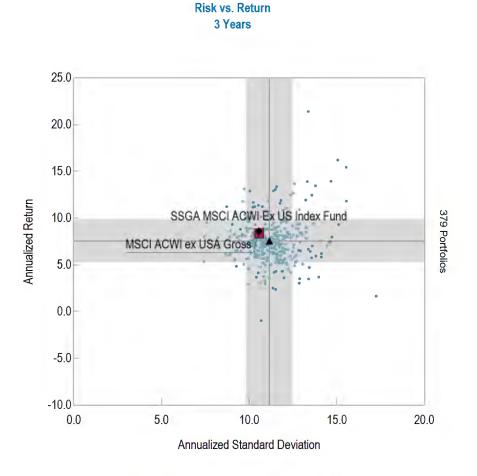
	Return (Rank	k)												
5th Percentile	14.3		2.4		2.5		11.8		7.2		10.6		15.2	
25th Percentile	11.6		-1.7		-2.5		8.6		4.9		8.4		12.3	
Median	10.3		-3.8		-5.0		7.6		3.5		7.0		10.7	
75th Percentile	9.5		-7.0		-8.9		6.4		2.6		6.0		9.5	
95th Percentile	7.5		-11.8		-13.8		4.2		0.9		4.7		8.2	
# of Portfolios	395		395		395		379		337		299		269	
 SSGA MSCI ACWI Ex US Index Fund MSCI ACWI ex USA Gross 	10.4 10.4	(49) (47)	-1.5 -1.4	(25) (24)	-4.0 -3.7	(42) (39)	8.4 8.6	(29) (26)	2.8 3.0	(67) (63)	5.0 5.2	(94) (92)	9.3	() (79)





	Return (Rani	k)								
5th Percentile	-8.0	39.0	8.1	12.6	3.0	36.3	31.7	-5.1	25.7	57.3
25th Percentile	-12.6	31.6	3.4	5.2	-1.9	28.1	23.1	-9.7	16.1	44.0
M edian	-15.1	27.0	1.3	1.4	-3.7	24.6	20.4	-12.0	11.7	36.5
75th Percentile	-17.8	24.3	-0.6	-0.9	-5.4	20.5	17.5	-14.5	8.7	30.7
95th Percentile	-22.2	19.7	-4.9	-5.4	-8.6	8.6	13.3	-18.2	4.6	23.7
# of Portfolios	391	370	350	325	314	284	263	278	352	455
 SSGA MSCI ACWI Ex US Index Fund MSCI ACWI ex USA Gross 	-14.0 (42) -13.8 (40)	27.6 (49) 27.8 (48)	4.8 (17) 5.0 (16)	-5.5 (96) -5.3 (95)	-3.6 (49) -3.4 (47)	15.5 (90) 15.8 (90)	17.1 (81 17.4 (77) -13.5 (64)) -13.3 (62)	11.2 (55) 11.6 (52)	() 42.1 (30)

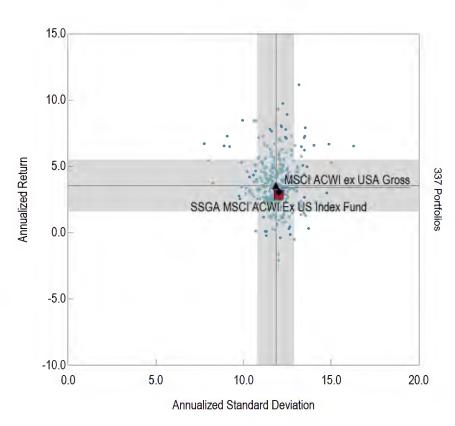




SSGA MSCI ACWI Ex US Index Fund

- MSCI ACWI ex USA Gross
- Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross





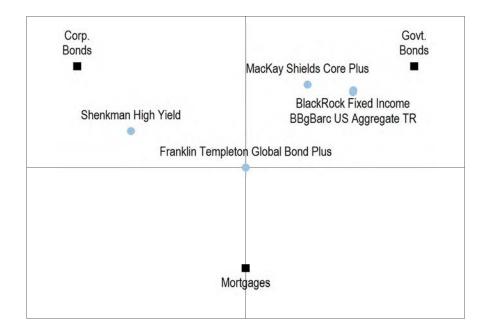
- SSGA MSCI ACWI Ex US Index Fund
- MSCI ACWI ex USA Gross
- Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross

	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fixed Income	435,628,172	2.8	4.5	4.1	3.4	3.0	6.0	0.5	4.3	5.5	-0.8	4.6
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
InvestorForce Public DB US Fix Inc Gross Rank		46	30	81	22	37	10	51	50	37	77	69
Total Domestic Fixed Income												
BlackRock Fixed Income	167,671,095	3.0	5.0	4.9	2.4	3.1	4.5	0.4	3.9	3.1	1.1	6.2
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
eV All US Fixed Inc Gross Rank		55	27	35	56	49	50	54	54	53	39	29
Doubleline Core Plus	87,393,521	3.0	4.0	4.0	3.0			0.0	4.2	4.8		
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0			0.0	3.5	2.6		
eV US Core Plus Fixed Inc Gross Rank		93	95	92	76			33	86	52		
MacKay Shields Core Plus	88,536,134	3.5	4.6	4.4	3.3			-0.6	5.0	5.1		
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0			0.0	3.5	2.6		
eV US Core Plus Fixed Inc Gross Rank		63	81	80	54			67	52	46		
Total Global Fixed Income		-	- 2									-
Franklin Templeton Global Bond Plus	91,838,305	1.5	4.7	2.1	4.3	2.3		2.4	3.0	6.8	-3.5	2.4
JPM GBI Global TR USD		1.8	2.1	-1.0	0.9	0.9		-0.7	6.8	1.6	-2.6	0.7
eV Global Fixed Inc Unhedged Gross Rank		92	14	35	33	43		6	96	24	67	50

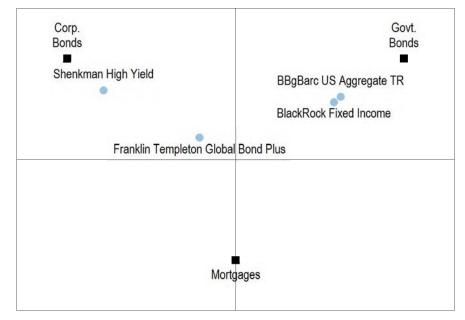
Vertas Transition Account used to liquidated PIMCO Core Plus on 11/15/15, remaining balance is residual cash. MacKay Shields and Doubleline funded 12/1/15. SSGA TIPS liquidated in 4Q18. Shenkman HY liquidated 1Q19 and has a residual cash balance of \$189,116 included in market value. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



Fixed Income Style Map 3 Years



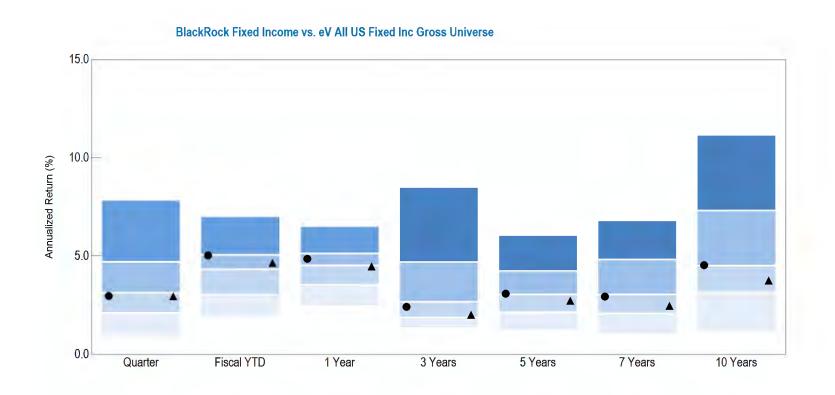
Fixed Income Style Map 5 Years



	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fixed Income	435,628,172	2.8	4.3	3.8	3.1	2.7	5.7	0.1	3.9	5.1	-1.1	4.3
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
Total Domestic Fixed Income		_									_	-
BlackRock Fixed Income	167,671,095	2.9	4.8	4.6	2.2	2.8	4.3	0.1	3.6	2.9	0.8	6.0
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0	2.7	3.8	0.0	3.5	2.6	0.6	6.0
Doubleline Core Plus	87,393,521	3.0	3.8	3.7	2.7			-0.3	3.9	4.6		
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0			0.0	3.5	2.6		
MacKay Shields Core Plus	88,536,134	3.4	4.2	4.0	2.9			-1.0	4.5	4.7		
BBgBarc US Aggregate TR		2.9	4.6	4.5	2.0			0.0	3.5	2.6		
Total Global Fixed Income	1		-01									
Franklin Templeton Global Bond Plus	91,838,305	1.5	4.4	1.8	3.8	1.8	-	1.9	2.4	6.1	-4.1	1.9
JPM GBI Global TR USD		1.8	2.1	-1.0	0.9	0.9		-0.7	6.8	1.6	-2.6	0.7

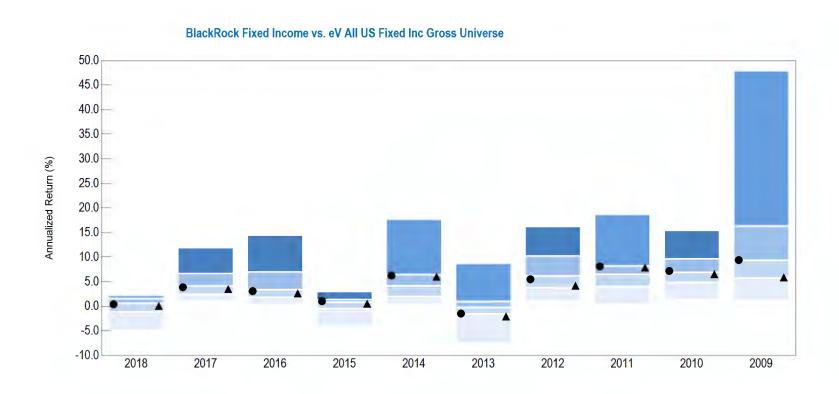
Vertas Transition Account used to liquidated PIMCO Core Plus on 11/15/15, remaining balance is residual cash. MacKay Shields and Doubleline funded 12/1/15. SSGA TIps liquidated in 4Q18.





	Return (Rar	nk)												
5th Percentile	7.8		7.0		6.5		8.5		6.1		6.8		11.2	
25th Percentile	4.7		5.1		5.1		4.7		4.2		4.8		7.3	
Median	3.1		4.3		4.5		2.7		3.1		3.0		4.5	
75th Percentile	2.1		3.0		3.5		1.9		2.1		2.1		3.2	
95th Percentile	0.9		1.9		2.5		1.3		1.2		1.0		1.2	
# of Portfolios	1,900		1,900		1,897		1,842		1,762		1,660		1,412	
BlackRock Fixed Income	3.0	(55)	5.0	(27)	4.9	(35)	2.4	(56)	3.1	(49)	3.0	(52)	4.5	(50)
BBgBarc US Aggregate TR	2.9	(55)	4.6	(40)	4.5	(54)	2.0	(69)	2.7	(61)	2.5	(65)	3.8	(63)

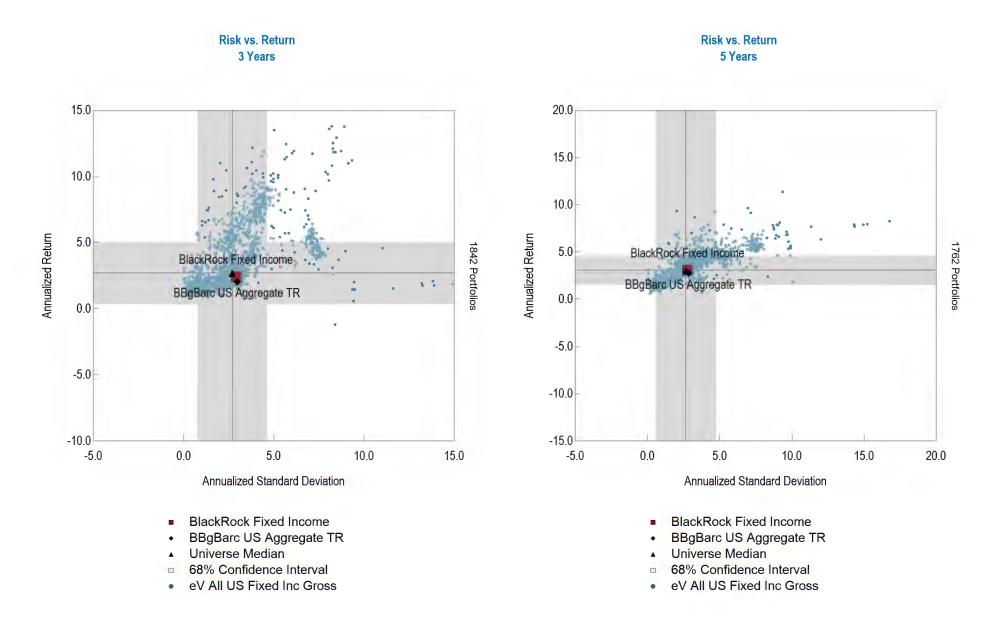




	5th Percentile
	25th Percentile
	Median
	75th Percentile
	95th Percentile
	# of Portfolios
۰	BlackRock Fixed Income
A	BBgBarc US Aggregate TR

Return	(Rank)																	
2.2		12.0		14.5		3.0		17.7		8.7		16.2		18.6		15.5		47.9	
1.5		6.6		7.0		1.4		6.4		0.9		10.2		8.2		9.7		16.3	
0.6		4.1		3.3		8.0		4.2		-0.3		6.1		6.5		6.9		9.3	
-1.1		2.4		1.8		-0.5		2.0		-1.5		3.8		4.0		4.8		5.7	
-4.9		1.1		0.4		-4.1		0.5		-7.5		1.1		0.4		1.4		1.2	
1,899		1,843		1,722		1,394		1,364		1,281		1,241		1,211		1,157		1,287	
0.4	(54)	3.9	(54)	3.1	(53)	1.1	(39)	6.2	(29)	-1.5	(75)	5.5	(56)	8.1	(28)	7.2	(45)	9.4	(50)
0.0	(61)	3.5	(59)	2.6	(60)	0.6	(59)	6.0	(33)	-2.0	(83)	4.2	(70)	7.8	(32)	6.5	(57)	5.9	(73)



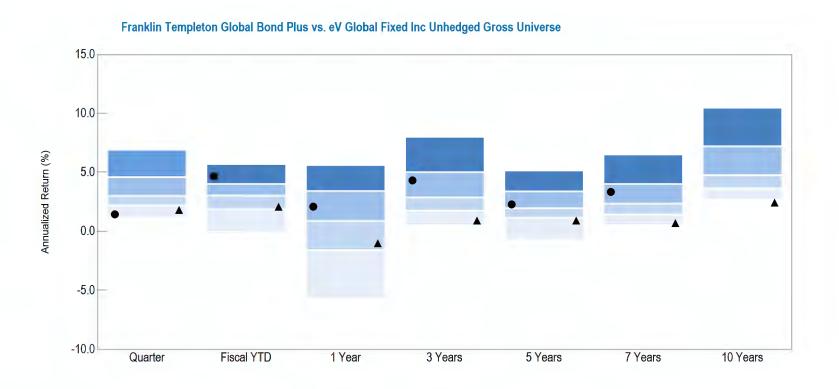


Rolling 3 Year Annualized Excess Performance



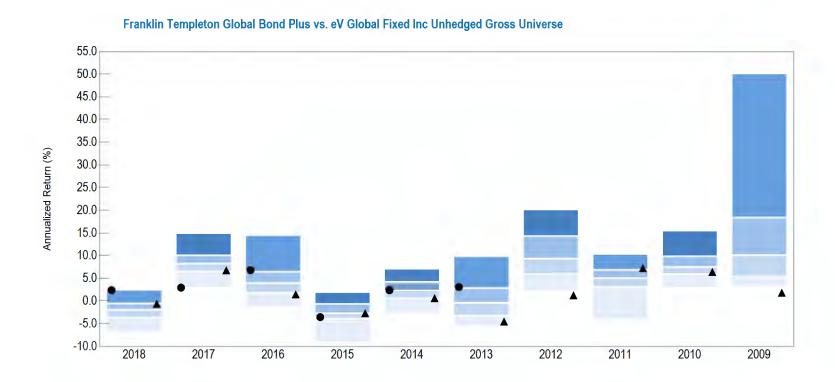
Rolling 5 Year Annualized Excess Performance





	Return (Rank)												
5th Percentile	6.9		5.7		5.6		8.0		5.2		6.5		10.5	
25th Percentile	4.6		4.0		3.4		5.0		3.4		4.0		7.2	
Median	3.0		3.0		0.9		2.9		2.0		2.3		4.8	
75th Percentile	2.2		1.9		-1.6		1.7		1.2		1.4		3.7	
95th Percentile	1.2		0.0		-5.7		0.5		-0.7		0.5		2.7	
# of Portfolios	236		236		236		223		202		166		122	
Franklin Templeton Global Bond PlusJPM GBI Global TR USD	1.5 1.8	(92) (88)	4.7 2.1	(14) (73)	2.1 -1.0	(35) (71)	4.3 0.9	(33) (92)	2.3 0.9	(43) (81)	3.4 0.7	(35) (90)	 2.4	() (97)

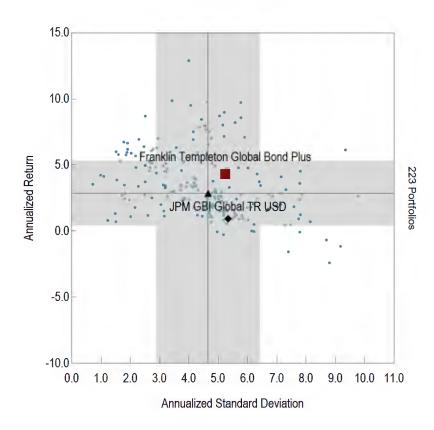




	Return (Rank	()								
5th Percentile	2.5	15.0	14.5	2.0	7.1	9.8	20.2	10.4	15.5	50.1
25th Percentile	-0.5	10.1	6.5	-0.6	4.2	2.8	14.3	6.9	9.9	18.4
Median	-2.0	8.2	4.0	-2.7	2.3	-0.4	9.4	5.0	7.5	10.1
75th Percentile	-3.7	6.5	1.8	-4.0	0.6	-3.2	5.9	3.2	6.0	5.4
95th Percentile	-7.0	3.0	-1.5	-9.2	-2.7	-5.6	2.2	-4.2	3.0	3.2
# of Portfolios	231	231	221	189	159	142	118	108	76	72
Franklin Templeton Global Bond PlusJPM GBI Global TR USD	2.4 (6) -0.7 (27)	3.0 (96) 6.8 (72)	6.8 (24) 1.6 (79)	-3.5 (67) -2.6 (48)	2.4 (50) 0.7 (75)	3.0 (23) -4.5 (89)	() 1.3 (98)	() 7.2 (19)	() 6.4 (72)	() 1.9 (99)

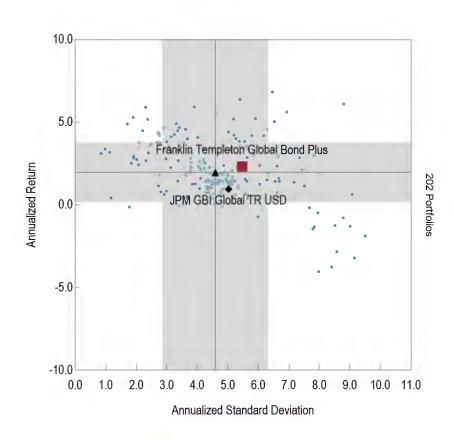


Risk vs. Return 3 Years



- Franklin Templeton Global Bond Plus
- JPM GBI Global TR USD
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Fixed Inc Unhedged Gross

Risk vs. Return 5 Years



- Franklin Templeton Global Bond Plus
- JPM GBI Global TR USD
- Universe Median
- 68% Confidence Interval
- eV Global Fixed Inc Unhedged Gross

	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Real Estate	114,444,971	0.9	5.3	7.6	7.0	9.8	7.2	8.8	4.3	9.0	16.0	13.1
NCREIF Property Index		1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE		1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
RREEF America II	114,367,873	0.9	5.2	7.4	7.0	9.9	9.6	8.6	4.4	9.3	16.7	13.0
NCREIF-ODCE		1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index		1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
TA Associates Realty	77,098	-5.6	4.0	7.4	6.0	9.4	3.7	16.2	5.2	4.6	16.7	15.1
NCREIF Property Index		1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE		1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5

Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. RREEF liquidated in 1Q 2018.



	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Real Estate	114,444,971	0.9	5.3	7.6	6.7	9.3	6.9	8.8	4.3	8.0	15.1	12.5
NCREIF Property Index		1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE		1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
RREEF America II	114,367,873	0.9	5.2	7.4	6.7	9.3	9.0	8.6	4.4	8.2	15.7	12.0
NCREIF-ODCE		1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index		1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
TA Associates Realty	77,098	-5.6	4.0	7.4	5.7	8.9	2.6	16.2	5.2	3.7	15.4	14.6
NCREIF Property Index		1.8	4.9	6.8	7.1	9.1	8.5	6.7	7.0	8.0	13.3	11.8
NCREIF-ODCE		1.4	5.4	7.5	8.0	10.2	8.7	8.3	7.6	8.8	15.0	12.5

	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Commodities	64,358,170	7.5	-7.1	-5.7	4.3	-7.1		-12.6	7.5	14.5	-26.3	
Bloomberg Commodity Index TR USD		6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Commodities Broad Basket MStar MF Rank		50	77	74	32	34		64	15	27	80	
Gresham MTAP Commodity Builder	32,118,409	7.3	-7.7	-6.2	3.5	-7.8		-12.7	5.9	12.3	-25.4	-16.1
Bloomberg Commodity Index TR USD		6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	-17.0
Commodities Broad Basket MStar MF Rank		52	81	76	42	52		65	28	53	71	34
Wellington Commodity	32,239,761	7.6	-6.4	-5.2	4.8	-6.0		-12.6	9.1	15.8	-25.7	
Bloomberg Commodity Index TR USD		6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Commodities Broad Basket MStar MF Rank		48	58	50	25	20		64	7	13	73	

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



	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Commodities	64,358,170	7.5	-7.1	-5.7	4.1	-7.4		-12.6	7.5	13.6	-26.8	_
Bloomberg Commodity Index TR USD		6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	
Gresham MTAP Commodity Builder	32,118,409	7.3	-7.7	-6.2	3.4	-8.2		-12.7	5.9	11.5	-25.9	-16.8
Bloomberg Commodity Index TR USD		6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	-17.0
Wellington Commodity	32,239,761	7.6	-6.4	-5.2	4.7	-6.4		-12.6	9.1	14.9	-26.3	
Bloombera Commodity Index TR USD		6.3	-5.6	-5.3	2.2	-8.9		-11.2	1.7	11.8	-24.7	

	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Liquid Alts/HFoF	86,664,006	3.4	0.4	2.7	4.7	2.9		0.9	5.4	0.3	0.7	5.4
CPI + 5%		2.4	4.6	6.9	7.3	6.5		7.0	7.2	7.2	5.8	5.8
Aetos Capital	43,396,503	4.0	0.9	2.0	5.0	3.2	5.4	-1.9	6.8	2.6	1.2	5.2
ICE BofAML 90 DAY T-BILLS + 400 bps		1.3	3.9	5.2	4.2	3.8	4.0	4.9	3.9	3.3	3.1	3.5
Titan Advisors	43,267,502	2.9	-0.1	3.4	4.5			3.8	4.0	0.6		
ICE BofAML 90 DAY T-BILLS + 400 bps		1.3	3.9	5.2	4.2			4.9	3.9	3.3		

UBP liquidated 12/31/2015. Titan Advisors funded 2/1/2016. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.



	Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Liquid Alts/HFoF	86,664,006	3.4	0.4	2.7	4.5	2.5		0.9	5.4	-0.5	0.0	4.6
CPI + 5%		2.4	4.6	6.9	7.3	6.5		7.0	7.2	7.2	5.8	5.8
Aetos Capital	43,396,503	4.0	0.9	2.0	4.8	2.8	5.1	-1.9	6.8	1.8	0.5	4.5
ICE BofAML 90 DAY T-BILLS + 400 bps		1.3	3.9	5.2	4.2	3.8	4.0	4.9	3.9	3.3	3.1	3.5
Titan Advisors	43,267,502	2.9	-0.1	3.4	4.3			3.8	4.0	-0.1		
ICE BofAML 90 DAY T-BILLS + 400 bps		1.3	3.9	5.2	4.2			4.9	3.9	3.3		

Performance Return Calculations

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are linked geometrically 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.

Manager Line Up					
<u>Manager</u>	Fund Incepted	Data Source	<u>Manager</u>	Fund Incepted	Data Source
SSGA S&P 500 Flagship Fund	7/27/2011	SSGA	RREEF America II	3/1/2003	Deutsche
QMA Large Cap Core	12/1/2008	BNY	TA Associates Realty	6/1/2007	TA Realty
Waddell & Reed	6/4/2010	BNY	Gresham MTAP Commodity	12/31/2013	Gresham
Robeco Boston Partners	2/1/1999	BNY	Wellington Commodity	1/3/2014	Wellington
William Blair Mid Cap Grw	12/1/2006	BNY	Aetos Capital	6/1/2005	Aetos
Lee Munder Small Value	8/26/2009	BNY	BlackRock Private Capital II	7/13/2005	BlackRock
SSGA Russell Sm Cap Idx	5/17/2013	SSGA	Pantheon USA Fund VI	7/26/2005	Pantheon
PIMCO RAE	8/14/2012	PIMCO	PIMCO BRAVO	1/14/2011	PIMCO
SSGA MSCI ACWI ex US	1/1/2010	SSGA	KKR Mezzanine Partners	7/8/2011	KKR
SGA Global Growth	6/4/2018	SGA	Stepstone Secondary Opps II	5/10/2013	Stepstone
Skellig DST Water Fund	10/28/2014	KBI	Titan Advisors	2/1/2016	Titan
BlackRock Fixed Income	12/1/1995	BNY	Ocean Avenue	5/27/2016	Ocean Ave
Doubleline Core Plus	12/1/2015	BNY	Pathway	4/12/2016	Pathway
MacKay Shields Core Plus	12/1/2015	MacKay	TPG Diversified Credit	11/21/2016	TPG
Franklin Templeton Global	4/3/2012	BNY			

Policy & Custom Index Composition

Policy Index:

20% Russell 3000, 20% MSCI ACWI ex US, 27% BBgBarc US Aggregate, 3% MSCI ACWI, 10% NCREIF Property, 5% Bloomberg Commodity, 5% CPI +500 bps, 5% Private Equity Returns, 5% Private Credit Returns.

Other Disclosures



Glossary

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

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

Beachmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager. **Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios. Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

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

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

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

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

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

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

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

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

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

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

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

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

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



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