



# **PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS**



**PERIOD ENDING: SEPTEMBER 30, 2019**

Investment Performance Review for

**Stanislaus County Employees' Retirement Association**

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Investment Landscape

TAB I

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Investment Performance  
Review

TAB II





**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

4<sup>TH</sup> QUARTER 2019  
Investment Landscape



# Recent Verus research

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## Annual outlooks

### PRIVATE EQUITY OUTLOOK

In our annual outlook we discuss the following trends occurring in the private markets:

- Continued strong deal flow in 2018, surpassing the all-time high of 2017.
- Another strong year for M&A activity by strategic buyers in response to slowing global growth to shore up profit margins.
- Europe's continued deployment into new investments to surpass exits by almost 2x, despite the uncertainty of political policies.
- Persistent excess returns above public markets and borrower-friendly leveraged financing driving more capital into the private markets, however investors are gravitating towards larger fund managers with longer track records.
- The continued evolution of secondary markets encompassing increasingly complex transactions.

## Topics of interests

### CRISIS RISK MITIGATION

We went back in time to find the worst periods in U.S. stock market history. There is always a question regarding whether it is possible to employ risk mitigation within a portfolio without giving up too much in terms of returns or paying too much in expenses.

We briefly examine strategies which are thought to mitigate these effects and find that some are better than others. Most institutional investors already have an effective program of crisis risk mitigation in the form of a significant allocation to high-quality bonds. For those wishing to construct a dedicated crisis risk allocation, we suggest a roadmap.

### THE INVESTMENT GOLDEN RULE

Effective capital allocation involves distributing financial resources in a way that aligns the goals and objectives of an organization with its investment program. For institutional investors, this involves designing an appropriate strategic asset allocation (SAA), selecting competent investment managers, and then managing the resulting portfolio well. We believe there is a framework that can help. The "Investment Golden Rule" combines the components of the capital allocation process with the return objective in order to improve investment decisions across the organization. In this paper we analyze some practical examples of the capital allocation process through the lens of this framework.



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# 3<sup>rd</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag. **p. 7**
- Trade policies and conflict likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to hinder growth in the future. **p. 16**

## PORTFOLIO IMPACTS

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. **p. 26**
- Core inflation has crept up to cycle-highs in 2019, increasing to 2.4% YoY in September. Headline inflation rose 1.7% YoY, dragged down by falling energy prices. Neither the media nor investors appear to be concerned about rising inflation, as of yet. Investors remain focused on deflationary forces in the global economy. **p. 9**

## THE INVESTMENT CLIMATE

- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%. **p. 18**
- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion. **p. 18**

## ASSET ALLOCATION ISSUES

- Risk assets were flat over the quarter. Global equities gained 0.0% and U.S. Treasuries gained 2.4% as domestic interest rates fell. Longer duration exposures continued to outperform. **p. 41**
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Emerging market currencies fell -4.0% in Q3 on the back of U.S. dollar strength. These currencies remain depressed relative to history. **p. 36**

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



# What drove the market in Q3?

## "Trade talks seen as unlikely to mend U.S.-China divide"

### U.S. TREASURY FEDERAL BUDGET NET CUSTOMS RECEIPTS (\$BILLIONS)

Apr	May	Jun	Jul	Aug
\$5.24	\$4.93	\$5.61	\$6.47	\$7.01

Article Source: Reuters, September 16<sup>th</sup>, 2019

## "World Economy Sends Up Flares as Manufacturing Slump Hits U.S."

### ISM MANUFACTURING PURCHASING MANAGERS' INDEX

Apr	May	Jun	Jul	Aug	Sep
52.8	52.1	51.7	51.2	49.1	47.8

Article Source: Bloomberg, September 30<sup>th</sup>, 2019

## "Fed Will Weigh Resuming Balance Sheet Growth at October Meeting"

### SIZE OF FEDERAL RESERVE BALANCE SHEET (\$TRILLIONS)

Apr	May	Jun	Jul	Aug	Sep
\$3.93	\$3.85	\$3.83	\$3.78	\$3.76	\$3.86

Article Source: The Wall Street Journal, September 19<sup>th</sup>, 2019

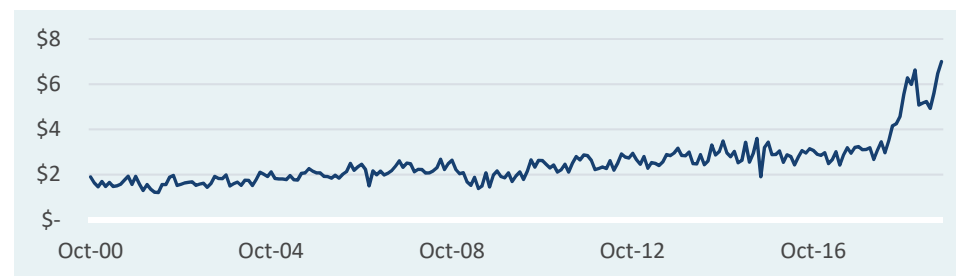
## "Can Boris Johnson deliver Brexit as he pledged?"

### GBP/USD SPOT EXCHANGE RATE (PRICE OF 1 GBP in USD)

Apr	May	Jun	Jul	Aug	Sep
\$1.30	\$1.26	\$1.27	\$1.22	\$1.22	\$1.23

Article Source: The Australian Financial Review, September 11<sup>th</sup>, 2019

### U.S. TREASURY FEDERAL BUDGET NET RECEIPTS CUSTOMS (\$BILLIONS)



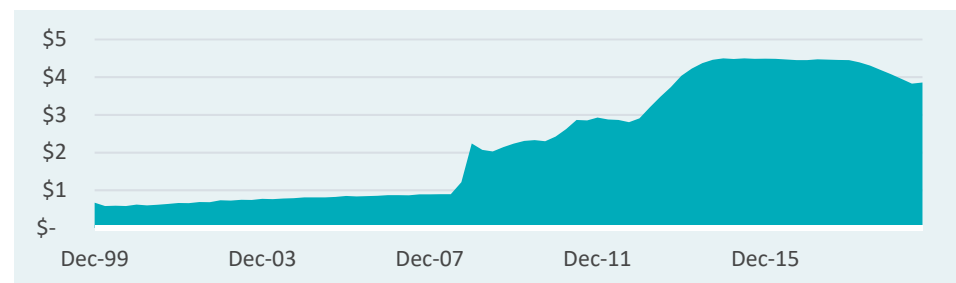
Source: Bloomberg, as of 8/31/19

### MANUFACTURING PURCHASING MANAGERS INDEXES (RELATIVE TO 50)



Source: Bloomberg, Federal Reserve, as of 9/30/19. A reading of 0 is considered neutral.

### FEDERAL RESERVE BALANCE SHEET (\$TRILLIONS)



Source: Bloomberg, Federal Reserve, as of 9/30/19

# Economic environment



# U.S. economics summary

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag.
- U.S-China trade remained a major story in Q3. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Trade conflict has likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to act as a drag on growth in the future.
- Core inflation has crept up to cycle-highs, rising 2.4% YoY in September. Headline inflation increased 1.7% YoY, dragged down by falling energy prices.
- The U.S. unemployment rate reached a 50-year low of 3.5% in September. Historically, the rate of unemployment has risen prior to the beginning of each U.S. recession, which suggests the U.S. expansion may still have room to run.
- Despite record unemployment, wage growth remains lukewarm, decelerating from a cycle high of 3.4% achieved in February, to 2.9% in September.
- In October, the IMF cut its 2019 global economic growth forecast from 3.2% to 3.0%, referencing global trade friction as a primary driver.

	Most Recent	12 Months Prior
GDP (YoY)	2.3% 6/30/19	3.2% 6/30/18
Inflation (CPI YoY, Core)	2.4% 9/30/19	2.3% 9/30/18
Expected Inflation (5yr-5yr forward)	1.7% 9/30/19	2.2% 9/30/18
Fed Funds Target Range	1.75 – 2.00% 9/30/19	2.00 – 2.25% 9/30/18
10 Year Rate	1.7% 9/30/19	3.1% 9/30/18
U-3 Unemployment	3.5% 9/30/19	3.7% 9/30/18
U-6 Unemployment	6.9% 9/30/19	7.5% 9/30/18

# GDP growth

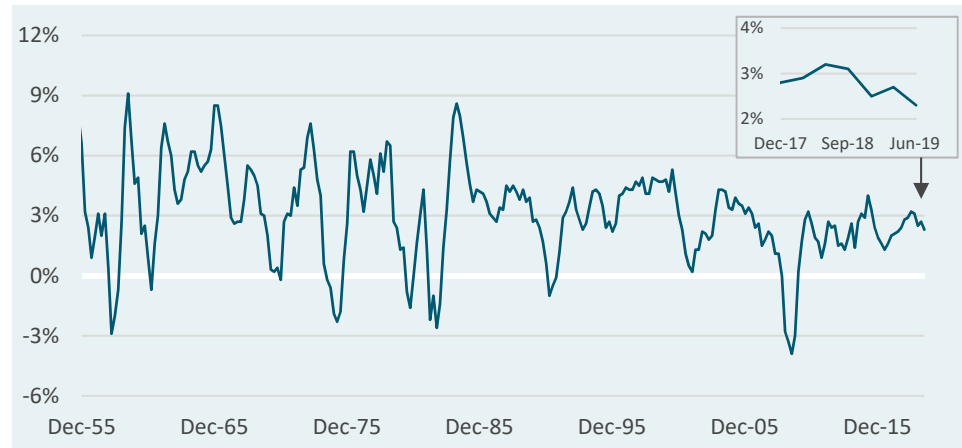
Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). A lack of corporate inventory investment detracted -0.9% from the overall GDP print, perhaps fueled by frontloaded business purchases in efforts to avoid tariffs. Business investment also acted as a slight drag. Weakness was offset by strength in consumer spending not seen since late 2014. Economists broadly expect U.S. economic growth to moderate to a 2.0% pace in 2020.

economic growth. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to further weigh on trade, spending, and business investment.

On October 9<sup>th</sup>, the Federal Reserve Bank of Atlanta GDPNow forecast indicated GDP growth of 1.7% in the third quarter. This forecast has recently fallen due to weaker than expected inventory investment.

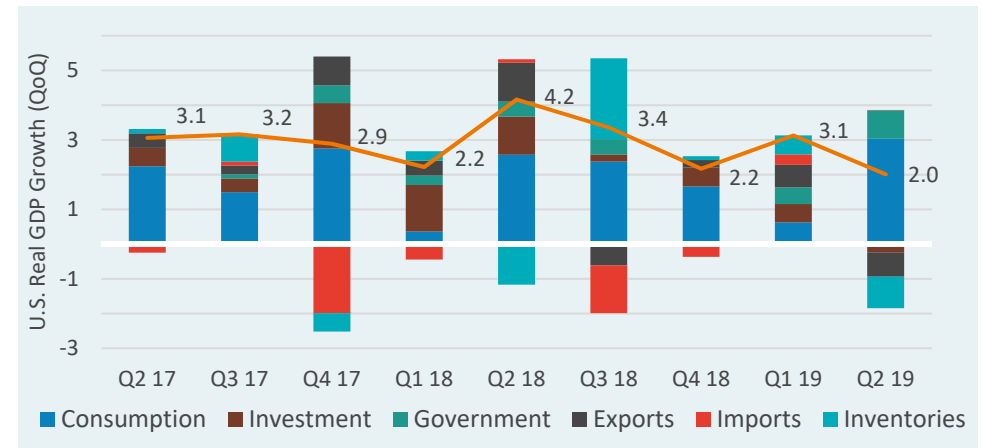
Trade policies and conflict likely resulted in a mild drag on

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



Source: Bloomberg, as of 6/30/19

## U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 6/30/19



# Inflation

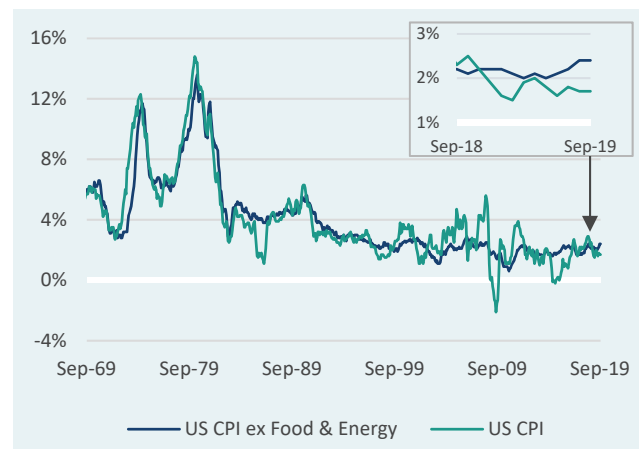
Core inflation has crept up to cycle-highs, rising 2.4% YoY in September. Headline inflation increased 1.7% YoY, held down by falling energy prices. Neither the media nor investors appear to be concerned about rising inflation, as of yet. Investors remain focused on deflationary forces across the global economy.

The market is pricing inflation to be very low over the next 10 years, as indicated by the U.S. 10yr TIPS breakeven inflation rate of 1.52%. This breakeven rate is still a ways

from its cycle low of 1.18% achieved in February 2016, when the price of oil crashed to below \$30 per barrel and pushed inflation down drastically.

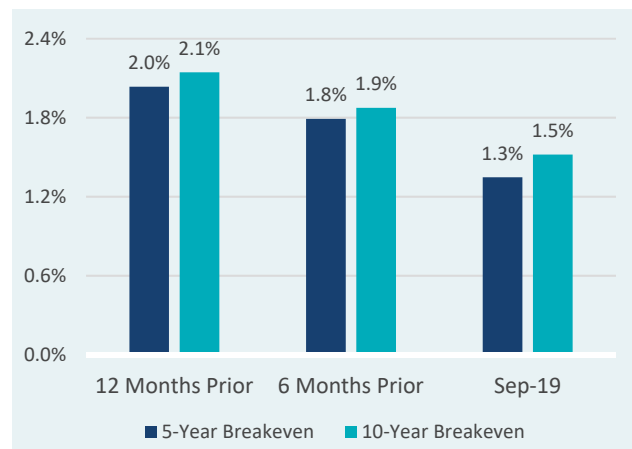
We believe it is likely that inflation will remain subdued. If inflation was to rise persistently, this might place central banks in a perilous position, given their recent unwillingness to raise interest rates. A rising inflation environment would also put upward pressure on interest rates, creating a drag on the global economy.

**U.S. CPI (YOY)**



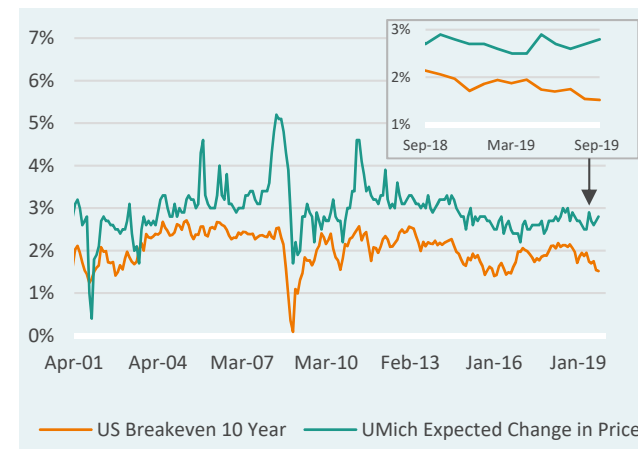
Source: Bloomberg, as of 9/30/19

**U.S. BREAKEVEN INFLATION RATES**



Source: FRED, as of 9/30/19

**INFLATION EXPECTATIONS**



Source: Bloomberg, as of 9/30/19

# Labor market

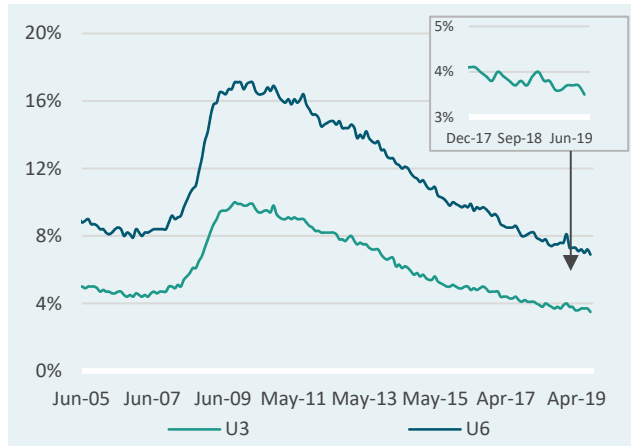
The U.S. unemployment rate reached a 50-year low of 3.5% in September. Historically, the rate of unemployment has risen prior to the beginning of each U.S. recession, which suggests the U.S. expansion may still have room to run. Despite record unemployment, wage growth remains lukewarm, decelerating to 2.9% YoY in September, down from a cycle high of 3.4% YoY achieved in February.

Interestingly, the small pool of U.S. workers who are currently unemployed have been out of work for much

longer, on average, than during past economic cycles. A shift in the composition of U.S. jobs may be contributing to this effect, as many manufacturing jobs have been outsourced/lost, and automated production processes have displaced some workers. Mismatches between the skills of available U.S. job-seekers and the skills required for current jobs appears to be creating some *structural unemployment*. Workers who are *structurally unemployed* require retraining and education to reposition themselves in the labor market.

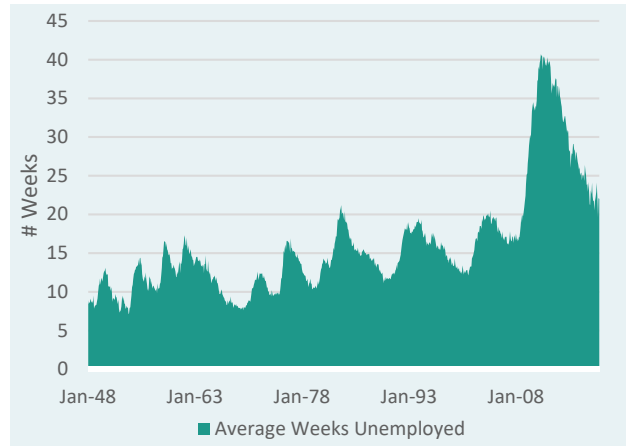
U.S. labor market remains strong, though further upside may be limited

U.S. UNEMPLOYMENT



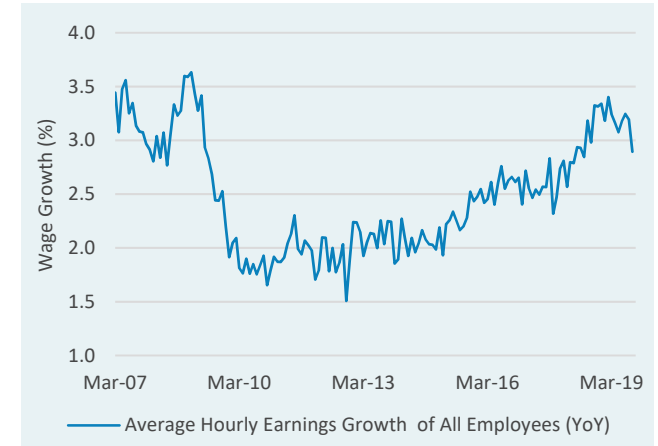
Source: FRED, as of 9/30/19

LENGTH OF UNEMPLOYMENT



Source: FRED, as 9/30/19

U.S. WAGE GROWTH



Source: FRED, as of 9/30/19

# The consumer

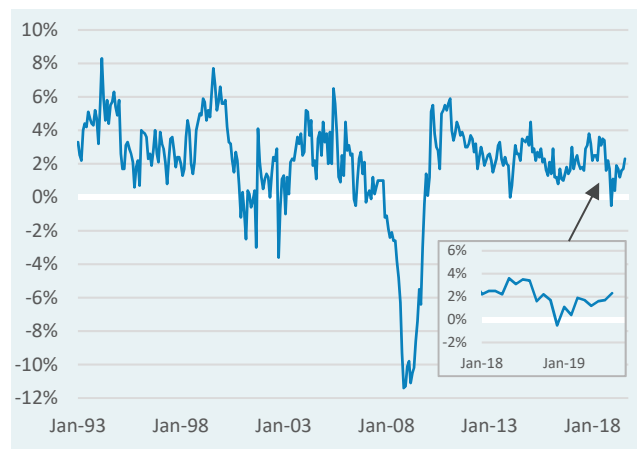
Retail sales fell in late 2018 but recovered year-to-date with a September growth rate of 2.3% YoY. Big-ticket purchases of items such as automobiles and homes have slowed from their 2016 highs.

The U.S. consumer continues to exhibit strength, as the labor market has reached record tightness, sentiment remains solid, and borrowing costs have fallen. However, slowing big ticket purchases will act as a headwind to growth. This slowing may be partly an effect of low interest rate burnout. As interest rates have been low for many years, consumers in need of big-ticket items have likely already purchased those items. Since

consumers are not likely to purchase yet another car or home, the incremental positive impacts of lower interest rates may be limited.

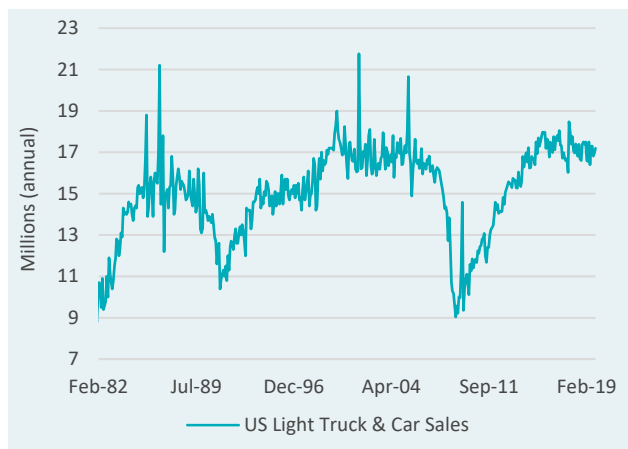
Consumer spending growth throughout this expansion has been a bright spot but has remained moderate, perhaps influenced by memories of the U.S. housing bubble and global financial crisis. Conservative spending habits are reflected in much higher savings rates than those witnessed during the economic boom of the 2000s – during which households spent more of their disposable income than any time since the Great Depression of the 1930s.

**REAL RETAIL SALES GROWTH (YOY)**



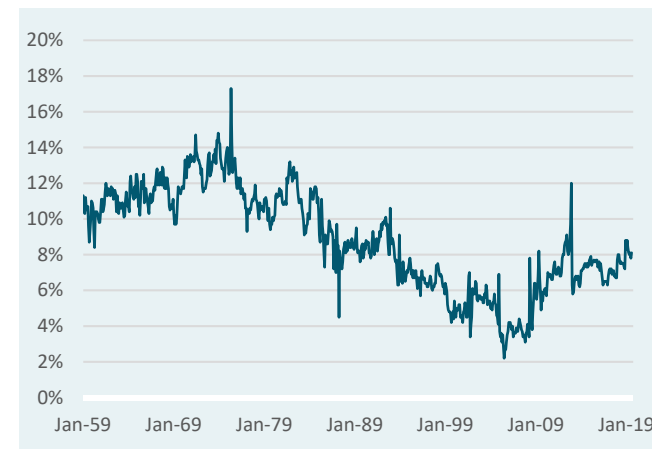
Source: FRED, as of 8/31/19

**AUTO SALES**



Source: Bloomberg, as of 9/30/19

**PERSONAL SAVINGS RATE**



Source: FRED, as of 8/31/19



# Sentiment

Consumer sentiment faded but remained strong relative to history. The ratcheting up of trade tensions between the U.S. and China cast a shadow over a robust U.S. labor market.

Quits rate data from the Bureau of Labor Statistics indicated that 2.3% of total employed U.S. workers voluntarily quit their jobs in August - a level not seen since April 2001. Policymakers and economists view the quits rate as a measure of job confidence; quits rates typically rise when the labor market is relatively tight, and wages are moving higher.

Over the quarter, the University of Michigan's Consumer Sentiment Index fell from 98.2 to 93.2. Consumers remained more concerned about the near-term future than about the current situation. The two components of the index – Expectations and Current Situation - fell from 89.3 to 83.4 and from 111.9 to 108.5, respectively.

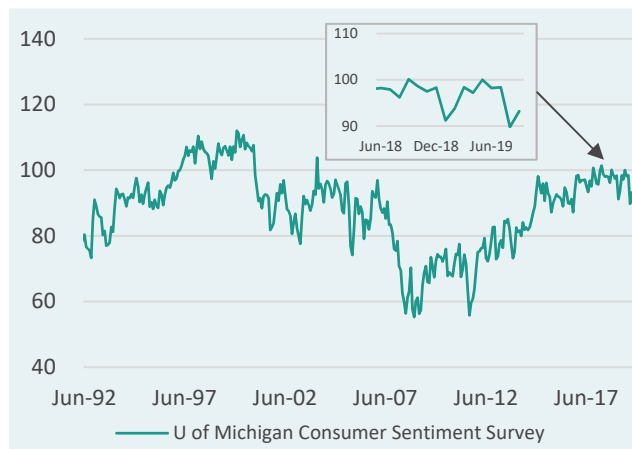
Optimism among small business owners trended lower as well. In the September NFIB report, 30% of small business owners reported they were negatively affected by tariffs.

**U.S. WORKER QUIT RATE**



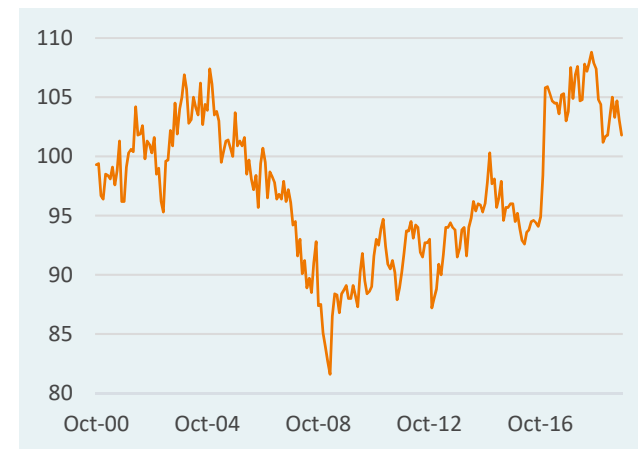
Source: FRED, as of 8/31/19

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 9/30/19 (see Appendix)

**NFIB SMALL BUSINESS OPTIMISM INDEX**



Source: NFIB, as of 9/30/19

# Housing

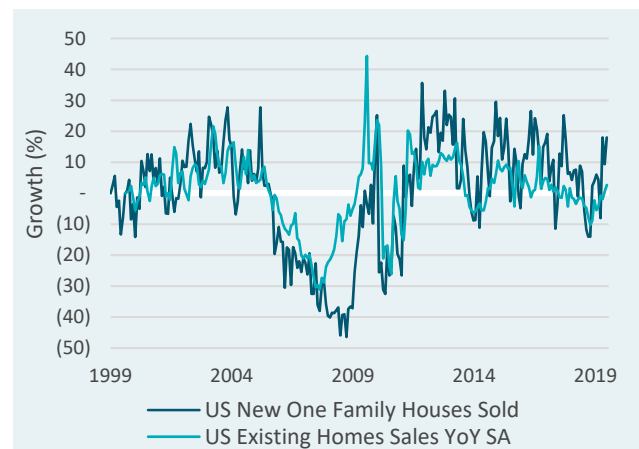
The housing market appears to be cooling off after a strong boom throughout the recent economic expansion. Home prices are falling modestly in some markets, and sales activity slowed in 2018. However, the recent drop in interest rates and mortgage rates has eased the cost of home ownership and may reignite activity.

Existing home sales grew +2.6% YoY in August. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +18% YoY. An increase in new home sales likely reflects rising homebuilder activity in recent years, as indicated by the NAHB Housing Starts and Housing Permits Indices.

Home prices have fallen. The median U.S. home sale price was down -5% YoY in Q2. Falling prices and further weakening of the U.S. economy may create negative momentum as many buyers do not wish to purchase a home in a falling housing market, or in an economy that may be headed for recession.

It is always helpful to remember that home price trends can vary meaningfully by location, which means national statistics are sometimes difficult to interpret at a local level.

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



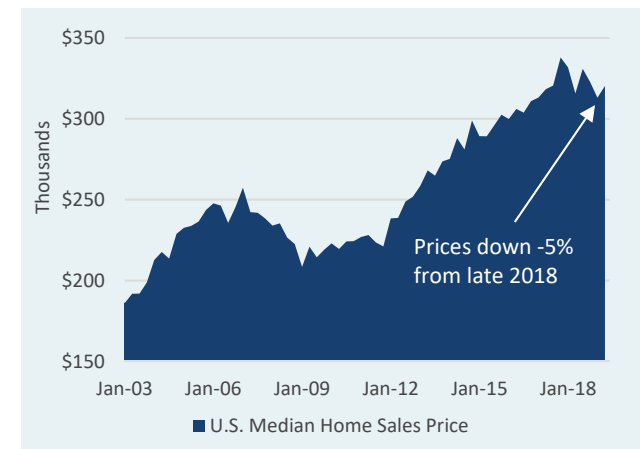
Source: FRED, as of 8/31/19

**HOUSING STARTS & PERMITS**



Source: Bloomberg, NAHB, as of 8/31/19 (see appendix)

**MEDIAN U.S. HOME SALES PRICE**



Source: FRED, as of 6/30/19

# International economics summary

- The Organization for Economic Development cut its 2019 calendar year forecast for global growth from 3.2% to 2.9% and its 2020 calendar year forecast from 3.4% to 3.0%. Driving the downward revisions were trade tensions, which the OECD estimated would reduce 2019 global growth by 0.6%, cue for central banks to step in and attempt to bolster economic growth through more accommodative policy.
- A major theme in the third quarter was the global manufacturing slowdown, which was illuminated by gloomy European manufacturing PMI data. The Markit Eurozone Manufacturing PMI fell to 45.7, further into contractionary territory indicated by a reading below 50. The German reading fell to 41.7. It has yet to be seen whether manufacturing weakness will spill into the larger services sector, where PMIs still indicate business expansion.
- Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a
- Unemployment rates continued to tick lower around the globe. In the U.S., unemployment hit a 50-year low at 3.5%.
- U.S-China negotiations will likely continue to impact trade around the world. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Dormant trade tensions between the U.S. and the E.U. saw a resurgence over the quarter – the U.S. applied tariffs between 10-25% on \$7.5B of imports from the E.U.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.3% 6/30/19	1.7% 9/30/19	3.5% 9/30/19
Eurozone	1.2% 6/30/19	0.8% 9/30/19	7.4% 8/31/19
Japan	1.0% 6/30/19	0.4% 9/30/19	2.3% 5/31/19
BRICS Nations	5.0% 6/30/19	3.1% 9/30/19	5.1% 6/30/19
Brazil	1.0% 6/30/19	2.9% 9/30/19	11.8% 8/31/19
Russia	0.9% 6/30/19	4.0% 9/30/19	4.3% 8/31/19
India	5.8% 3/31/19	4.0% 9/30/19	8.5% 12/31/17
China	6.2% 6/30/19	3.0% 9/30/19	3.6% 6/30/19

# International economics

The United States delivered year-over-year GDP growth of 2.3% in the second quarter, extending outperformance relative to other developed nations, which have posted year-over-year growth of around 1.0%.

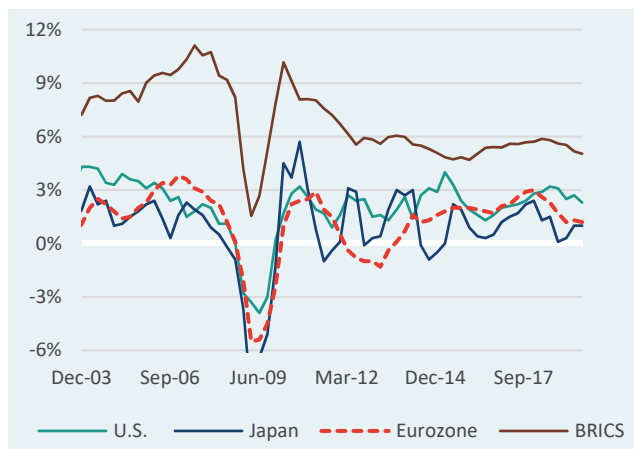
The Organization for Economic Development cut its 2019 calendar year forecast for global growth from 3.2% to 2.9% and its 2020 calendar year forecast from 3.4% to 3.0%.

Driving the downward revisions were trade tensions, which the OECD estimated would reduce 2019 global growth by 0.6%, 2019 U.S. growth by 0.7%, and 2019 Chinese growth by 1.0%

Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a cue for central banks to step in and attempt to bolster economic growth through more accommodative policy. Unemployment rates continued to tick lower around the globe. In the U.S., unemployment hit a 50-year low at 3.5%.

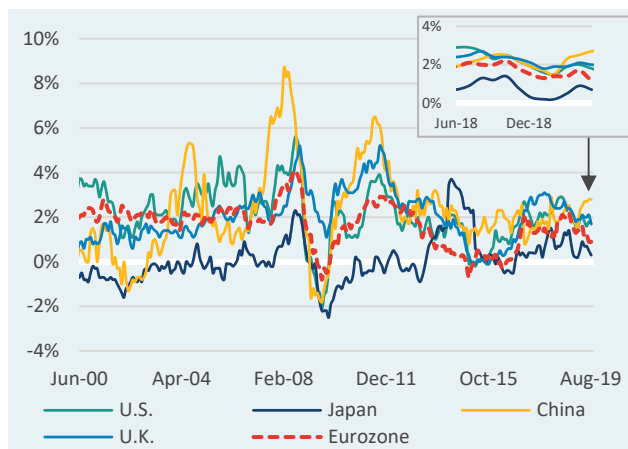
Chinese GDP expanded 6.0% year-over-year in the third quarter, its slowest rate of growth since the first quarter of 1992. Beijing's official target range for 2019 growth is between 6.0-6.5%.

**REAL GDP GROWTH (YOY)**



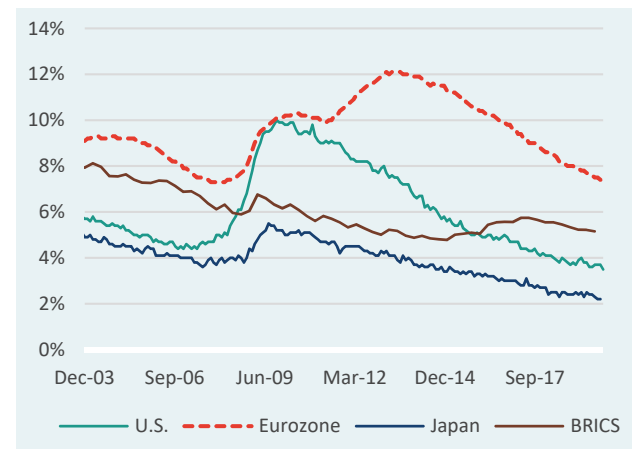
Source: Bloomberg, as of 6/30/19

**INFLATION (CPI YOY)**



Source: Bloomberg, as of 9/30/19

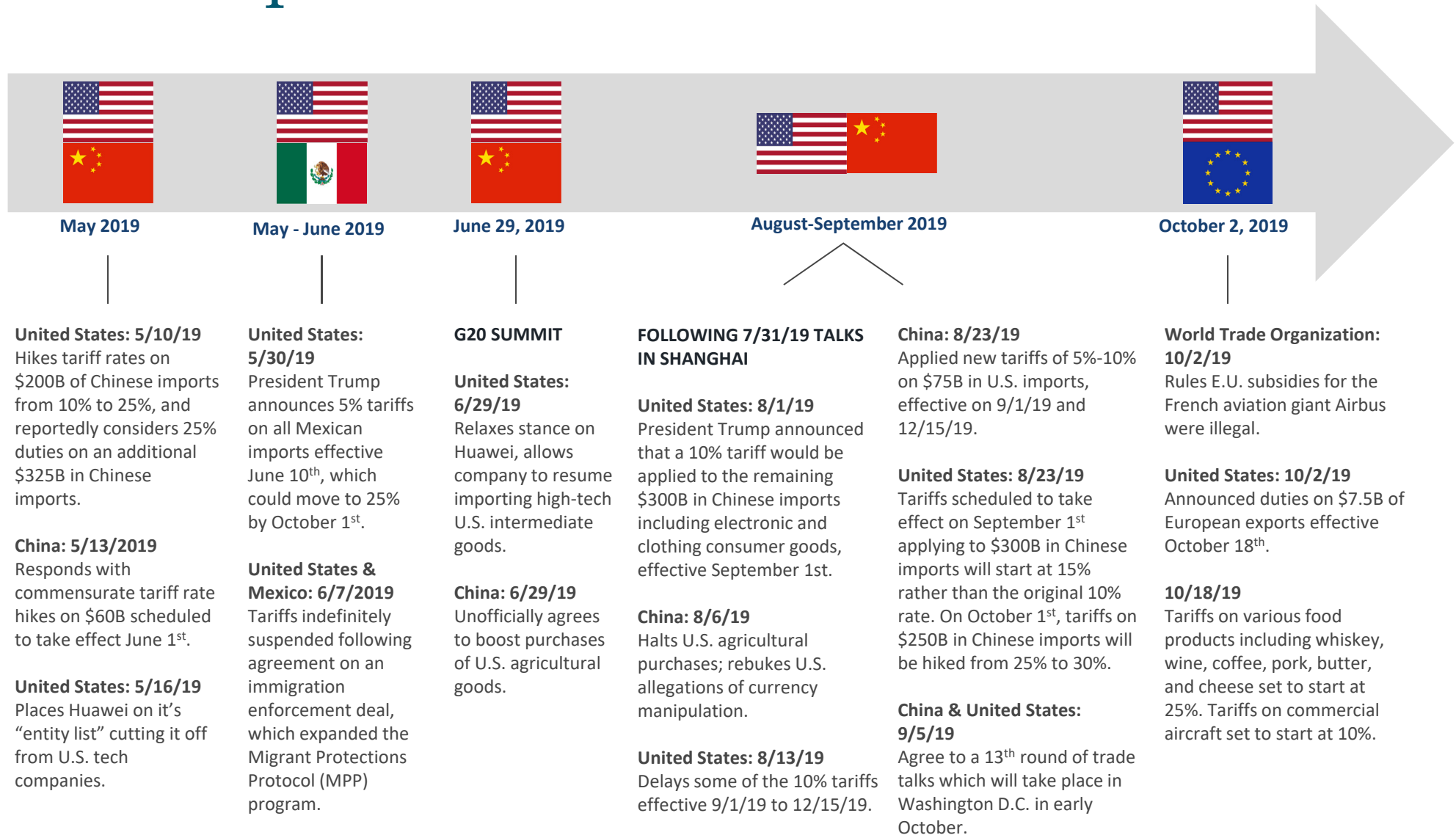
**UNEMPLOYMENT RATE**



Source: Bloomberg, as of 9/30/19 or most recent release



# Trade update



Source: Wikimedia Commons

# Fixed income rates & credit

# Interest rate environment

- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.
- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%.
- FOMC members appear divided on the likely future path of interest rates. Per the September dot plot, 8 of 17 members expect one further 0.25% cut by the end of 2020, 2 expect no change, and 7 expect either one or two 0.25% rate hikes.
- The European Central Bank delivered a fresh stimulus package in September, in line with expectations. The ECB cut its main deposit rate from -0.40% to -0.50% and announced it would restart asset purchases of €20 billion per month, beginning November 1<sup>st</sup>.
- Global sovereign yields continued to plummet. In Germany, 10-year bond yields touched fresh all-time lows, and the entire German sovereign curve moved below 0%. In Italy, 10-year bond yields fell 1.28% to 0.82%, boosted by the formation of a new coalition government between the Democratic Party and the Five-Star Movement.
- Repo rates, which represent the overnight rate paid by short-term borrowers of cash, surged as overnight liquidity was constrained. The New York Fed intervened, injecting over \$300 billion into money markets over the course of a few weeks. Fed officials viewed the brief spike in repo rates as a financial “plumbing” issue, which could justify an “organic resumption of balance sheet growth”, not to be confused with crisis-era QE policy.

Area	Short Term (3M)	10-Year
United States	1.81%	1.66%
Germany	(0.57%)	(0.57%)
France	(0.59%)	(0.27%)
Spain	(0.54%)	0.15%
Italy	(0.28%)	0.82%
Greece	0.65%	1.35%
U.K.	0.78%	0.49%
Japan	(0.32%)	(0.21%)
Australia	1.06%	1.02%
China	2.33%	3.14%
Brazil	5.04%	7.05%
Russia	6.58%	7.01%

Source: Bloomberg, as of 9/30/19

# Rising global debt – two opposing forces

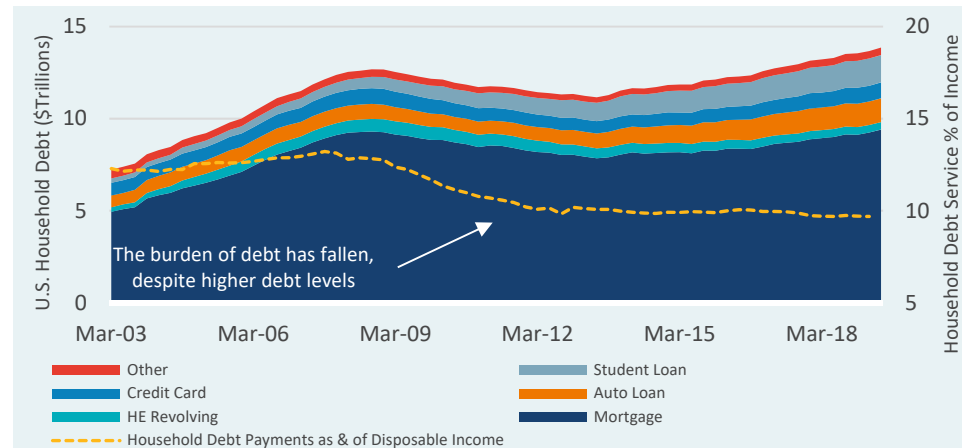
As the world has entered a low interest rate environment, many businesses and households have taken on greater debt. This is a natural trend – cheaper financing makes many purchases economical that were not when interest rates were high. As the cost of debt falls, businesses have also increasingly sought debt as a preferred source of overall financing.

Simultaneously, lower interest rates have offset much of the burden of taking on more debt. Some may argue that if an entity loads up on debt, but interest rates fall enough so that the entity's monthly debt payment does not change, this additional debt does not add significant risk to the entity's situation. It appears this is what is occurring around the world – greater use of debt, with the

burden of that debt largely offset by much lower interest rates. However, we believe risks are heightened in this environment.

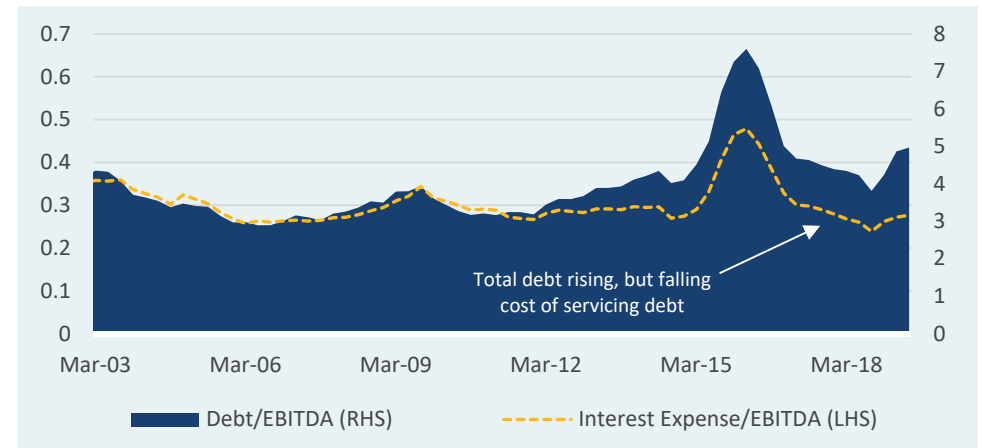
What are the investment implications? Changes in debt levels and interest rates tend to be slow-moving and secular, and difficult to act upon. But these events may in fact be informative about the future. First, expanded budgets and higher debt loads create incentives for governments to keep interest rates low to avoid economic problems. Second, significant corporate profit growth in recent years from financial engineering should not be expected to continue indefinitely. Third, higher debt loads may add to deflationary pressure, if debt service begins to take a greater share of income. We will continue to watch these secular forces.

## HOUSEHOLD DEBT BURDEN



Source: FRED, as of 6/30/19

## HIGH YIELD DEBT BURDEN

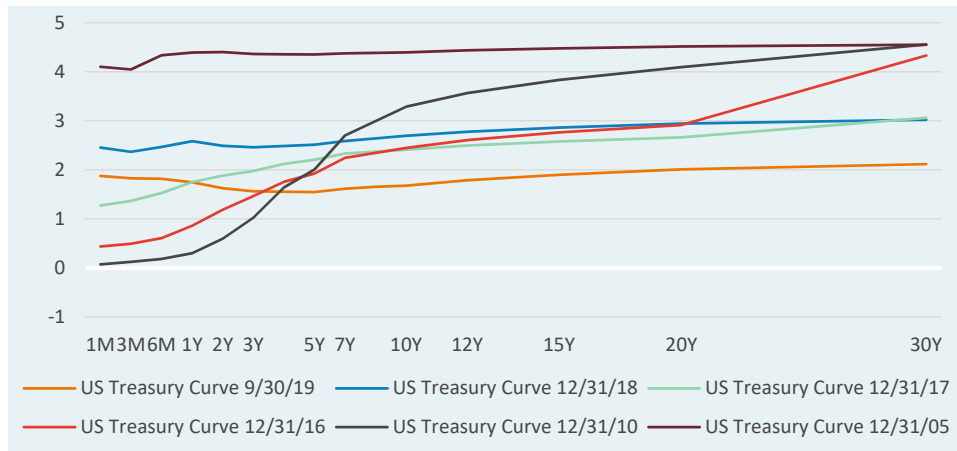


Source: Bank of America Merrill Lynch, as of 6/30/19 – Interest expense divided by total debt

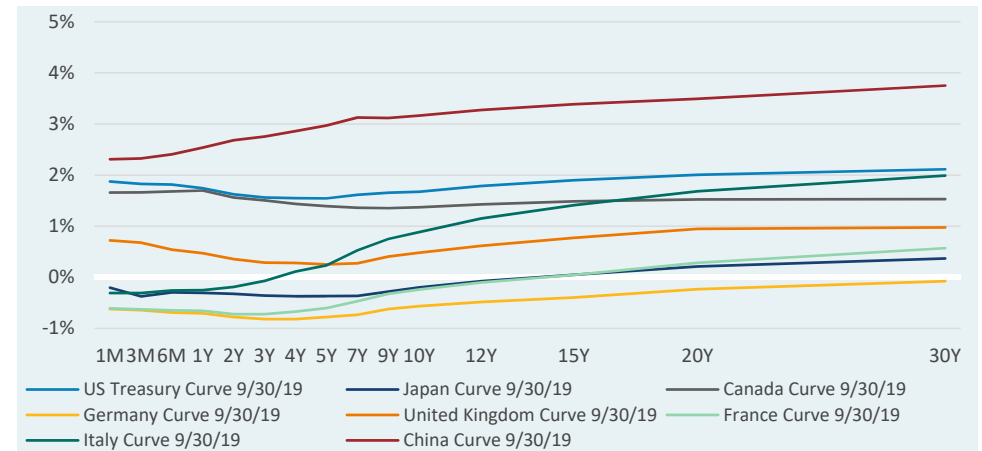


# Yield environment

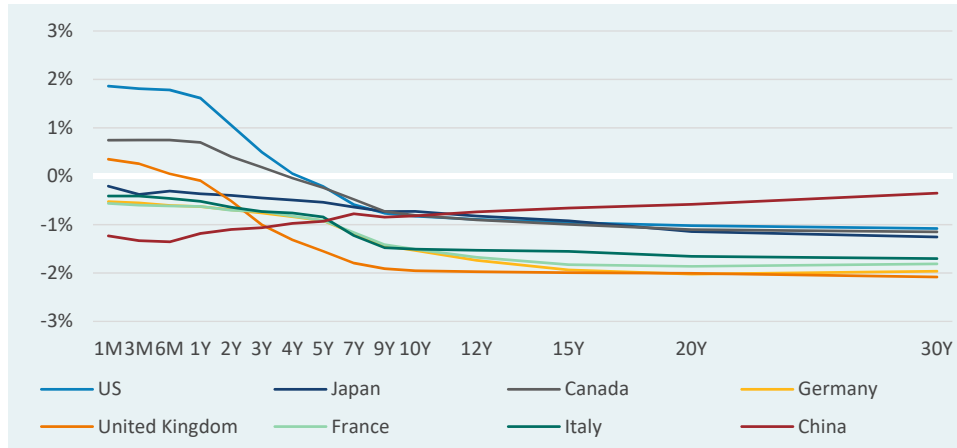
U.S. YIELD CURVE



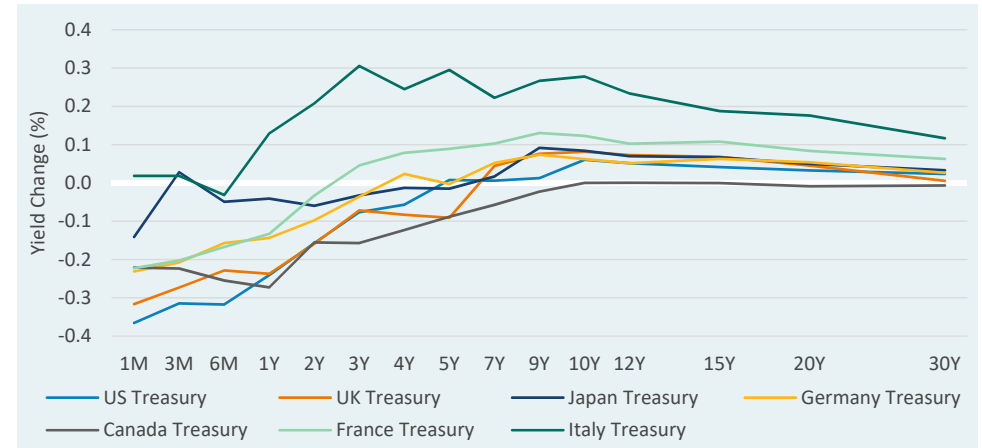
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



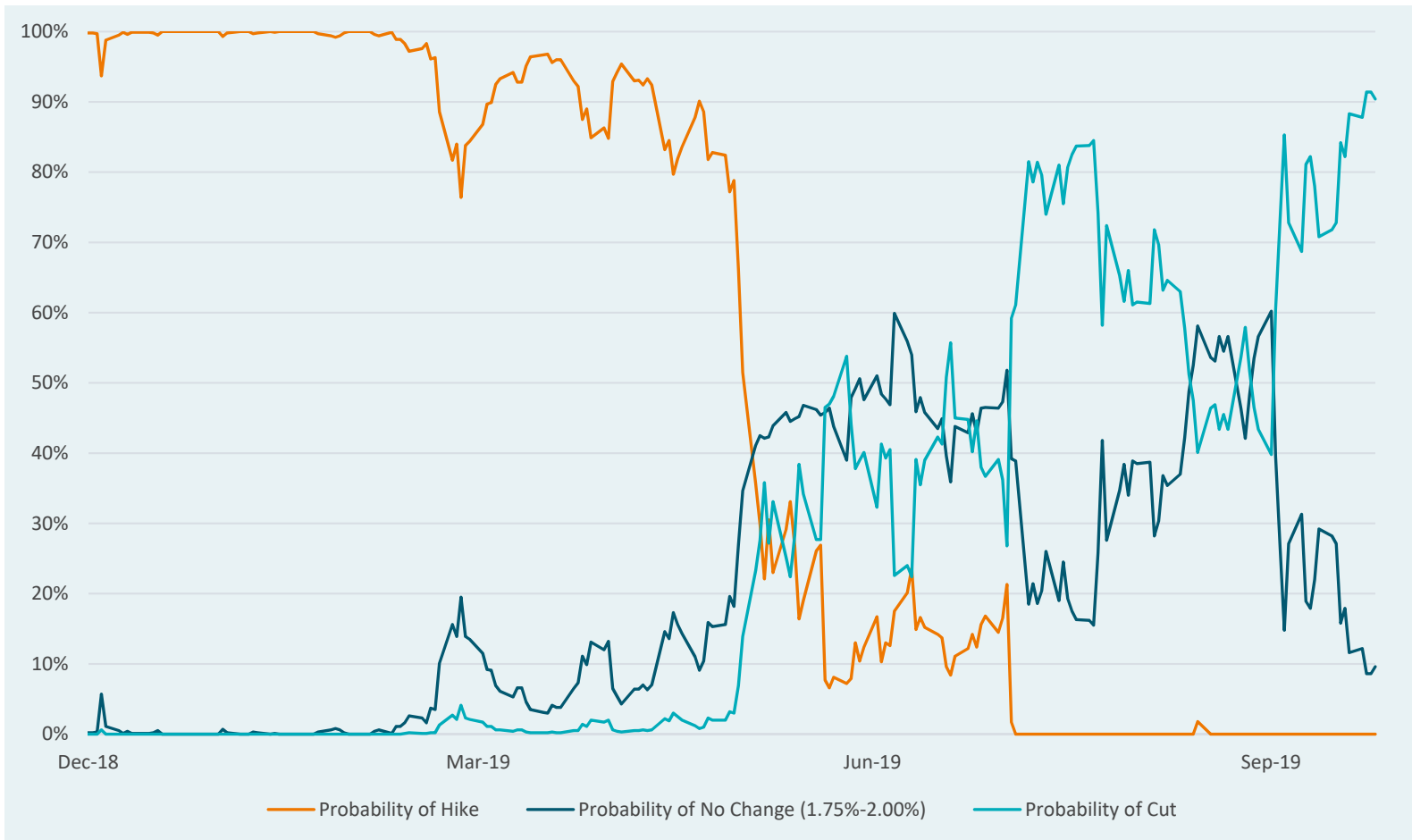
IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/19

# October Fed meeting

FUTURES IMPLIED PROBABILITIES FOR OCTOBER FED RATE DECISION



In September, the Fed cut its range for federal funds by 0.25%, in line with expectations

Investors expect the Fed to cut rates again by 0.25% at the October 30<sup>th</sup> meeting

Source: Bloomberg, as of 10/24/19

# Credit environment

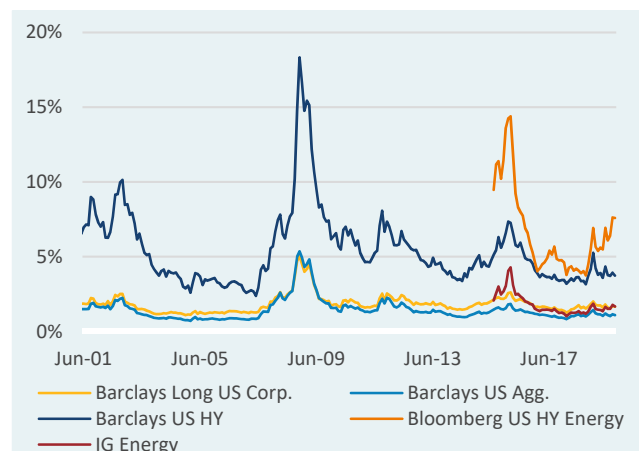
High yield bond spreads tightened slightly during Q3 as below investment grade assets remained somewhat stable over the period. Credit in general has been positively impacted by Federal Reserve dovishness. Anticipation of easier interest rate policies, which could potentially lengthen the credit cycle, has strengthened sentiment for risk assets. BB-rated bonds outperformed both CCC- and B-rated bonds in the third quarter once again. High yield bonds have returned +11.4% YTD, materially outperforming bank loans (+6.4%), but slightly underperforming investment grade credit (+12.6%).

The bank loan market has experienced some modest positive performance as interest rates rose off of their lows during the

quarter. The asset class was impacted by a pause in the Fed's hiking cycle and uncertainty surrounding future moves.

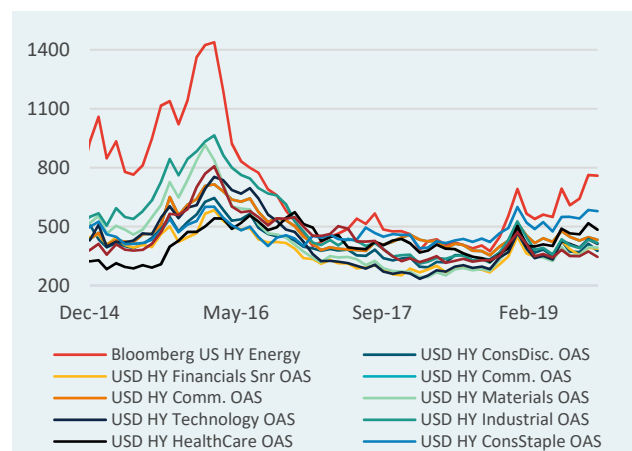
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with widening credit spreads and higher propensity for default activity. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted, with an overweight to emerging market debt which appears to offer more attractive value. This positioning should result in an overall neutral credit risk stance. Within U.S. markets, higher quality and more liquid assets appear most attractive.

## SPREADS



Source: Barclays, Bloomberg, as of 9/30/19

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/19

Market	Credit Spread (OAS)	
	9/30/19	9/30/18
Long U.S. Corp	1.7%	1.5%
U.S. Inv Grade Corp	1.2%	1.1%
U.S. High Yield	3.7%	3.2%
U.S. Bank Loans*	4.5%	3.7%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/19

\*Discount margin (4-year life)

# Default & issuance

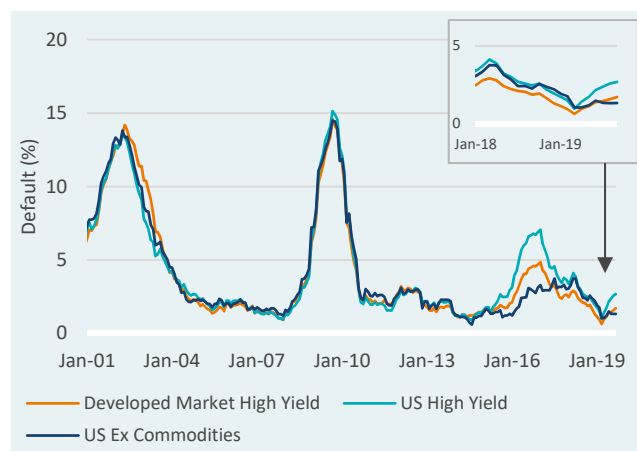
Default activity has been low and stable in the U.S. credit market, despite price volatility. The par-weighted default rate for high yield increased to 2.5% but remains below its long-term average range of 3.0-3.5%. For loans, the par-weighted default rate at the end of the third quarter was 1.4% and remains below the long-term average of 3.1%, according to data from J.P. Morgan. Consumer, retail, telecom, and utilities sectors may be especially prone to stress in the current environment.

Senior loan and high yield markets have essentially

recovered from a wave of defaults seen in 2015-2016 that were generated by energy and metals/mining sectors. High yield bond recovery rates have improved significantly since that time. However, the recent reversal in this recovery trend is notable and worth watching.

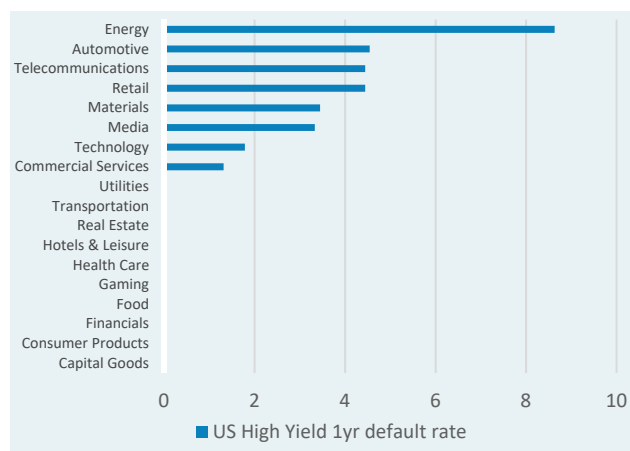
Gross high yield issue activity increased in September as investors took advantage of a dip in yields. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening.

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



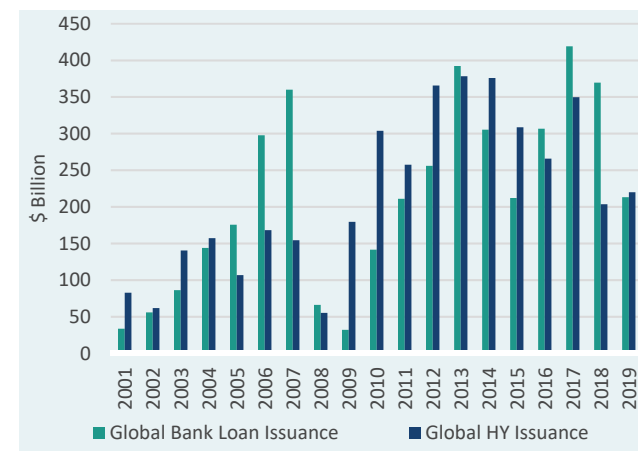
Source: BofA Merrill Lynch, as of 9/30/19

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



Source: BofA Merrill Lynch, as of 9/30/19 – par weighted

**GLOBAL ISSUANCE (\$ BILLIONS)**



Source: Bloomberg, BofA Merrill Lynch, as of 9/30/19



# Equity

# Equity environment

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.
- The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by flat earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S. equities on track for three consecutive quarters of earnings loss.
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies, which created volatility and currency losses for unhedged investors.
- A large rotation from momentum stocks into value stocks occurred in Q3. The selloff was a multi-standard deviation event, with performance of the prior five months largely reversed in several days. The fall was likely due to a combination of better than expected economic news, monetary/fiscal stimulus expectations, and extreme positioning in these factors.
- Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have continued their run of underperformance.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	1.7%		4.3%	
US Small Cap (Russell 2000)	(2.4%)		(8.9%)	
US Large Value (Russell 1000 Value)	1.4%		4.0%	
US Large Growth (Russell 1000 Growth)	1.5%		3.7%	
International Large (MSCI EAFE)	(1.1%)	2.3%	(1.3%)	4.2%
Eurozone (Euro Stoxx 50)	(1.4%)	3.8%	1.3%	11.5%
U.K. (FTSE 100)	(2.2%)	1.4%	(2.7%)	5.4%
Japan (NIKKEI 225)	2.9%	3.6%	(8.2%)	(5.9%)
Emerging Markets (MSCI Emerging Markets)	(4.2%)	(2.2%)	(2.0%)	(0.4%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/19

# Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.

The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by slow earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S.

equities on track for three consecutive quarters of earnings loss. Revenue growth in Q3 is expected to be 2.8% YoY. Investors may point to seemingly lofty earnings growth expectations for 2020 as reason for optimism, though in reality this is a fairly average forecast. Growth expectations are typically high initially, and then fall to a more realistic level as time passes.

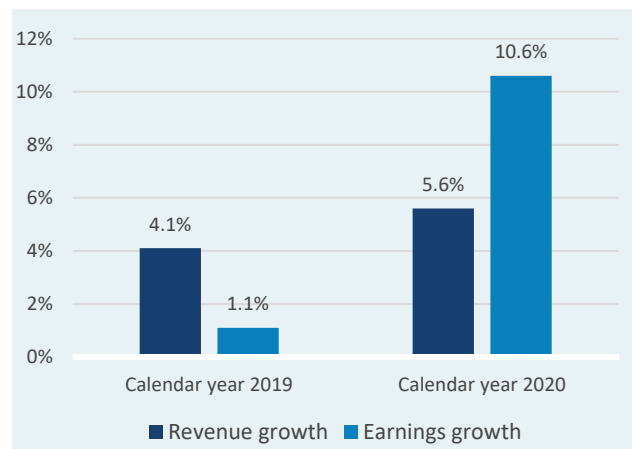
U.S. equities offer lower yields and less attractive valuations relative to other markets around the world, which suggests domestic equities might underperform over the long-term. However, U.S. may continue to outperform over the shorter-term due to relative economic and market strength.

## U.S. EQUITIES



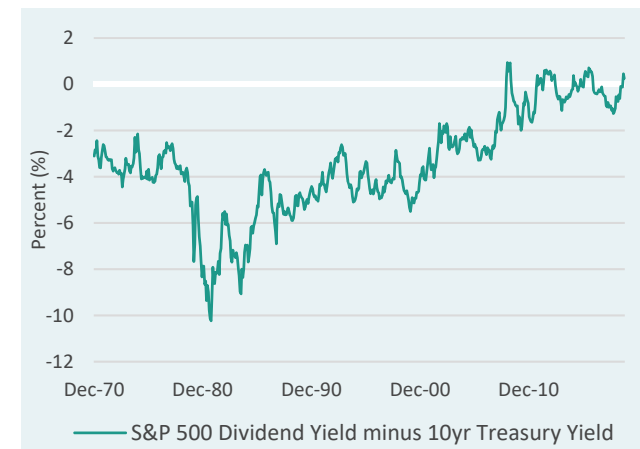
Source: Standard & Poor's, as of 9/30/19

## Q3 2019 EARNINGS EXPECTATIONS



Source: FactSet, as of 10/11/19

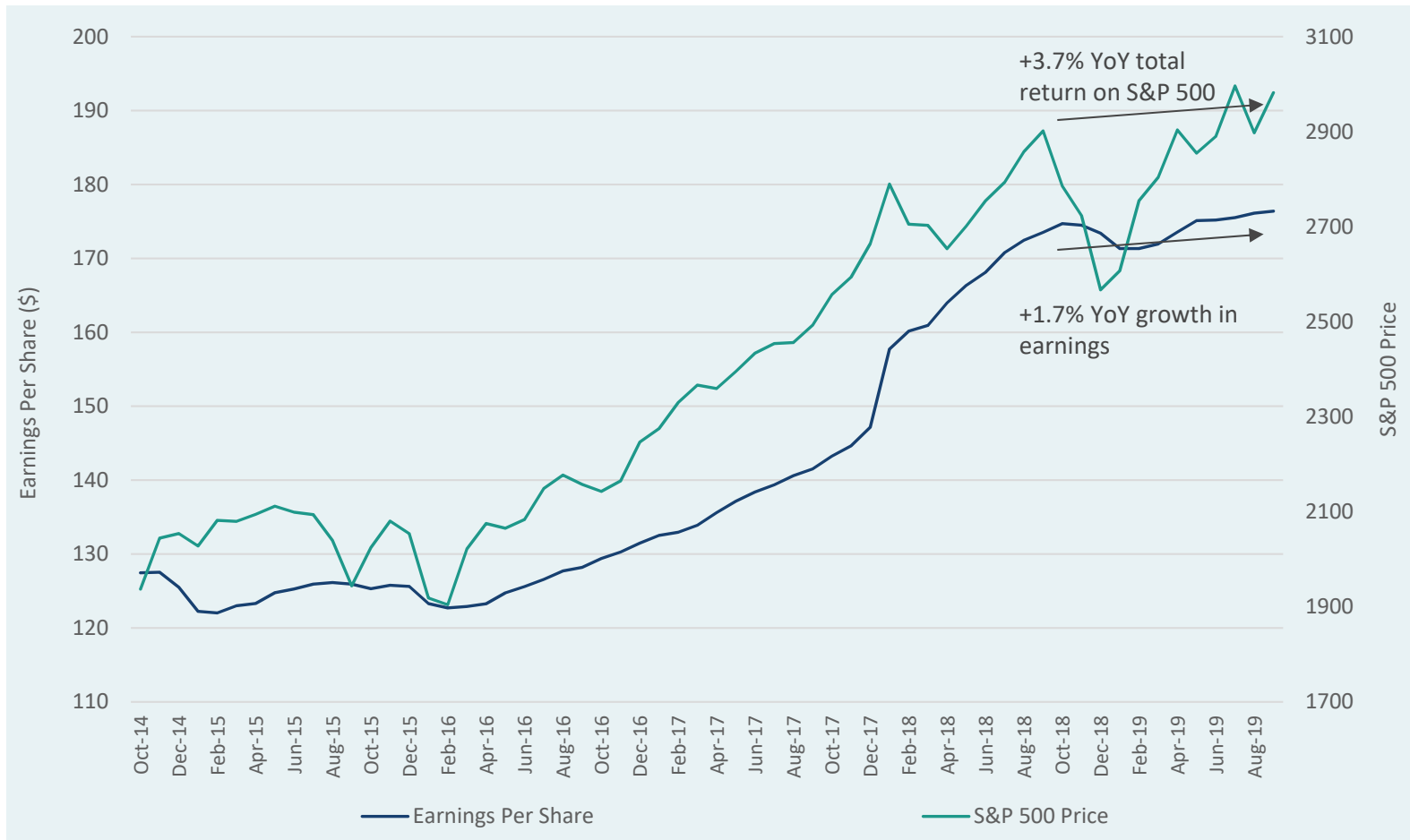
## RELATIVE YIELDS



Source: Standard & Poor's, as of 9/30/19

# Domestic equity

S&P 500 INDEX PRICE & EARNINGS LEVEL



U.S. equity performance has moderated

If earnings flatten out, this may lead to milder future returns

Source: Standard & Poor's, Bloomberg, as of 9/30/19

# Domestic equity size & style

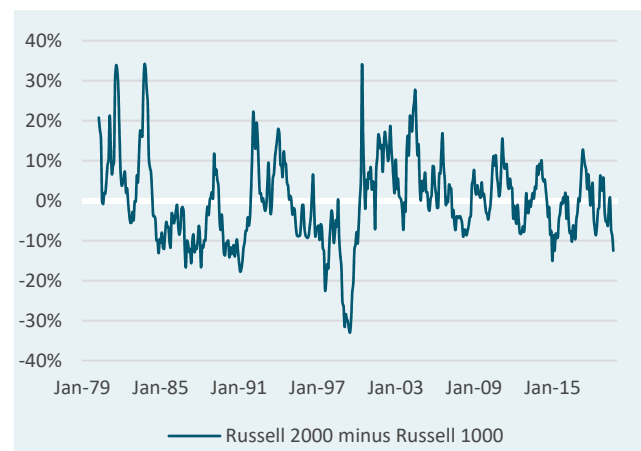
Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have extended their run of weakness.

The impact of sector performance on the value premium was mixed in the third quarter. Financials (+2.0%) and Utilities (+9.3%) outperformed the overall index (S&P 500 +1.7%) which boosted value, but poor Energy (-6.3%) performance counteracted these effects. Information Technology beat the

overall index (+3.3%) which acted as a headwind for value stocks.

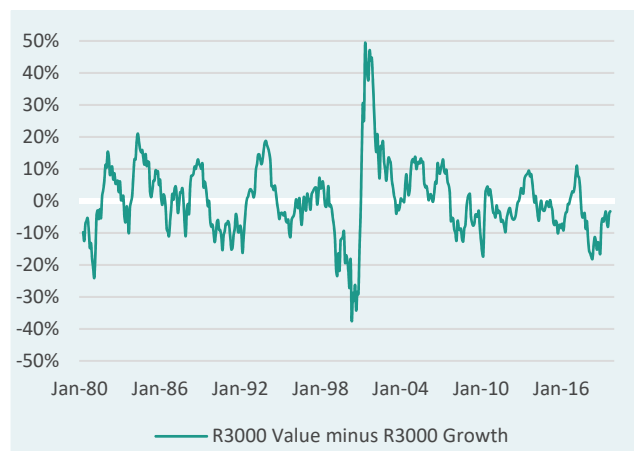
Value stocks have exhibited a long run of underperformance over the past decade. Our view has been that value stocks did not appear attractive, despite persistent performance pain. This was because value stocks had underperformed due to fundamental reasons rather than due to prices becoming stretched. Now, for the first time in this cycle it appears value prices are becoming unusually cheap, as indicated by a large disparity between Russell 1000 Value and Russell 1000 Growth P/E multiples.

**SMALL CAP VS LARGE CAP (YOY)**



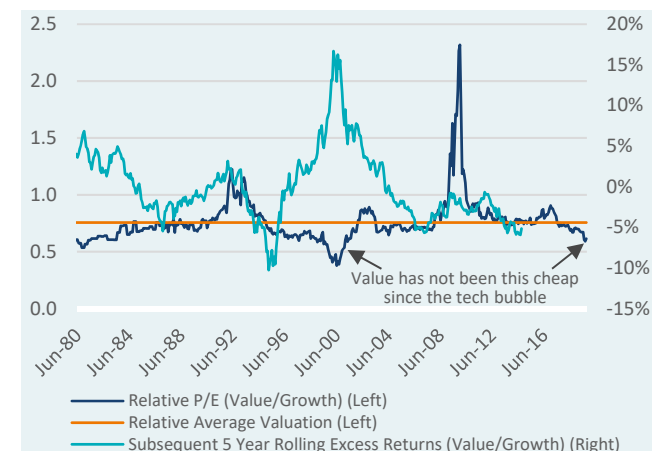
Source: FTSE, as of 9/30/19

**VALUE VS GROWTH (YOY)**



Source: FTSE, as of 9/30/19

**VALUE STARTING TO LOOK CHEAP**



Source: Russell, Bloomberg, as of 9/30/19



# Domestic equity style – a closer look

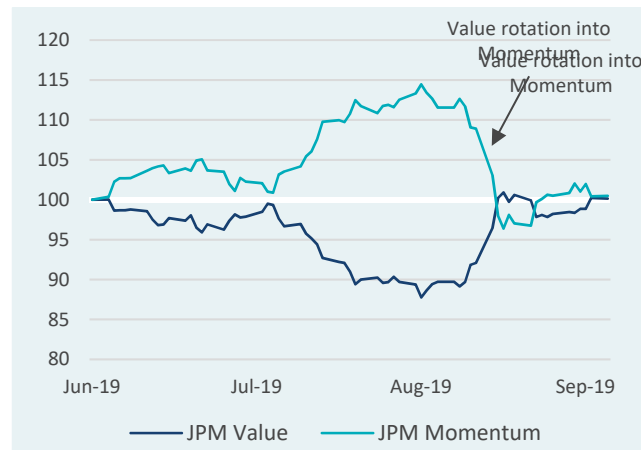
One of the largest rotations in decades into value stocks from momentum stocks occurred in Q3. The selloff was a multi-standard deviation event, with performance accruing from the prior five months largely reversed in several days. The reversal was likely due to a combination of better than expected economic news, monetary/fiscal stimulus expectations, and extreme positioning in these factors.

However, the selloff was short-lived as factor volatility reversed later in September. The Q3 reversal did not negate a long run of poor value results. As mentioned, the value factor

remains cheap relative to history.

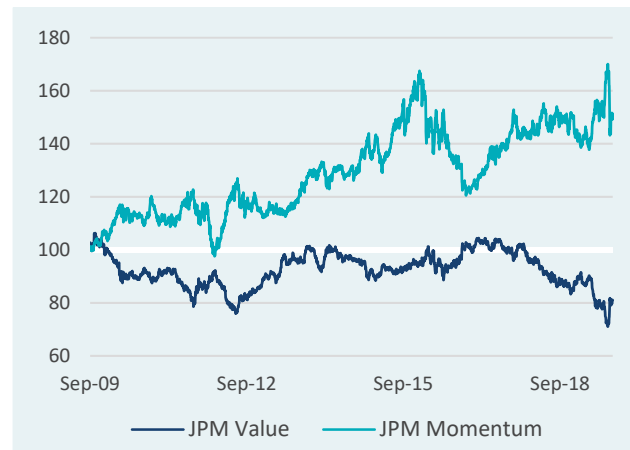
Mean reversion is a key underlying driver of the value factor. After the Global Financial Crisis, the speed at which stocks moved in/out of the respective top (cheap) and bottom (expensive) factor quintiles slowed relative to history. While expensive stocks are now exiting the bottom quintile at a somewhat faster rate, stocks with the most attractive valuations continued to remain cheap for longer periods of time relative to the pre-Global Financial Crisis period.

**Q3 CUMULATIVE FACTOR PERFORMANCE**  
(INDEXED 6/30/2019 = 100)



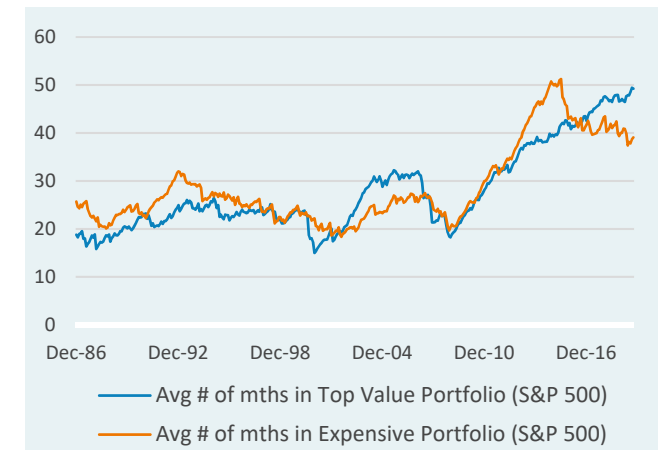
Source: J.P. Morgan Chase & Co., Copyright 2019, as of 9/30/19

**10YR CUMULATIVE FACTOR PERFORMANCE**  
(INDEXED 9/30/2009 = 100)



Source: J.P. Morgan Chase & Co., Copyright 2019, as of 9/30/19

**STRUCTURAL HEADWIND TO VALUE**



Source: J.P. Morgan Chase & Co., Copyright 2019, as of 9/30/19

# International developed equity

International equity performance was impacted heavily by currency movements in the third quarter. In local terms, the MSCI EAFE Index delivered a total return of 1.8%, bringing year-to-date performance to 15.7%. For unhedged U.S. investors however, the MSCI EAFE Index generated a quarterly return of -1.1%, dragging the year-to-date figure to 12.8%. Dollar strength reemerged as a powerful force driving returns due in part to widening interest rate differentials between the U.S. and the rest of the world.

Japanese equities outperformed over the period, delivering a

Q3 return of 3.5% in local terms. Unhedged U.S. investors in the MSCI Japan Index received only 3.1%, as the yen depreciated slightly vs. the U.S. dollar over the period.

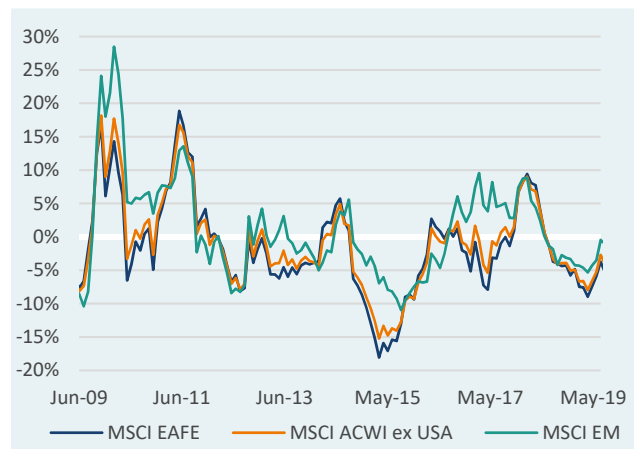
The British pound weakened in July as the new Prime Minister Boris Johnson signaled a much harder line on Brexit than his predecessor's. Toward the end of the quarter, the pound strengthened as markets began pricing a lower likelihood of a "no-deal" Brexit, which many market participants viewed as unfriendly to markets.

INTERNATIONAL DEVELOPED EQUITIES



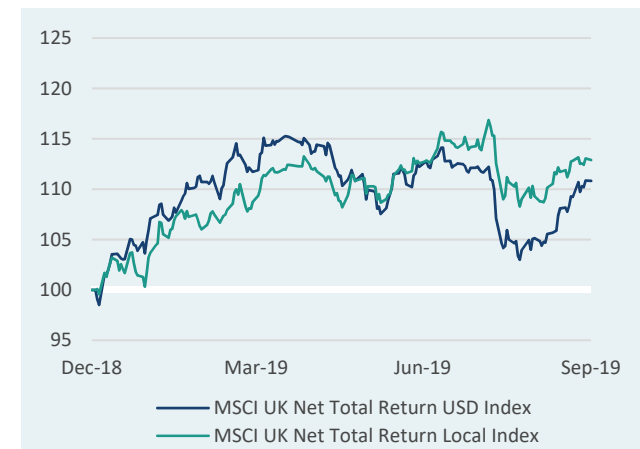
Source: MSCI, as of 9/30/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/19

U.K. EQUITY PERFORMANCE (YTD)



Source: Bloomberg, as of 9/30/19

# Emerging market equity

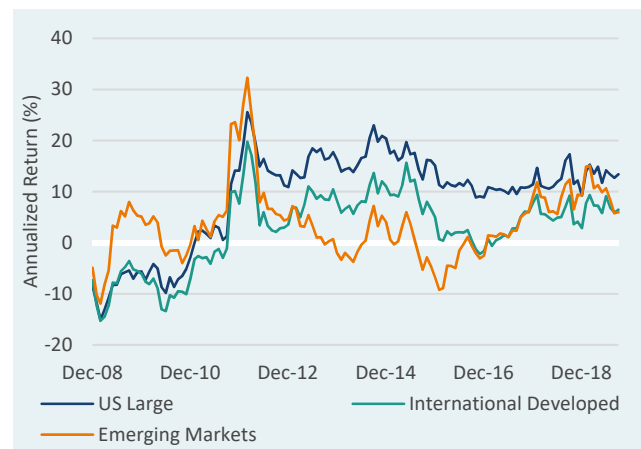
Emerging market equities (MSCI Emerging Markets -4.2%) lagged developed markets (MSCI EAFE -1.1%) over the quarter, while U.S. equities outperformed (S&P 500 +1.7%).

Equity multiples have expanded year-to-date, recovering to the levels of September 2018. Developed and emerging markets continue to appear cheap relative to domestic equity valuations.

We see two opposing forces impacting emerging markets in

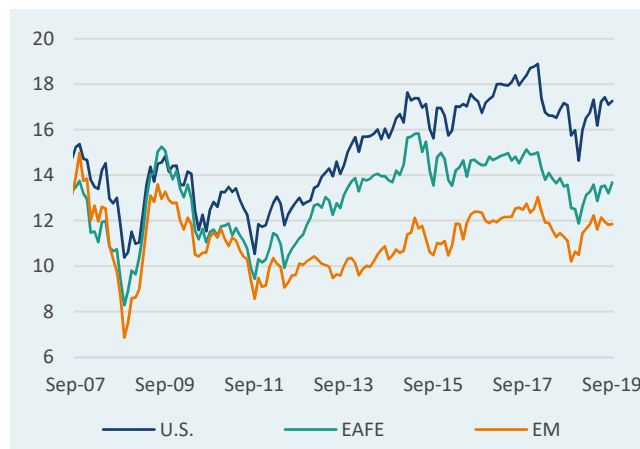
the current environment. The first force is decelerating global growth and a rising probability of recession, which likely bodes poorly for emerging market performance. However, the second force of widespread central bank dovishness may boost emerging market performance in the near term. Specifically, if global growth levels out while central banks unleash another round of easing, there may be material upside to emerging market equities. On balance, we remain moderately bullish on emerging markets, though we are watching developments closely.

**EQUITY PERFORMANCE (3-YR ROLLING)**



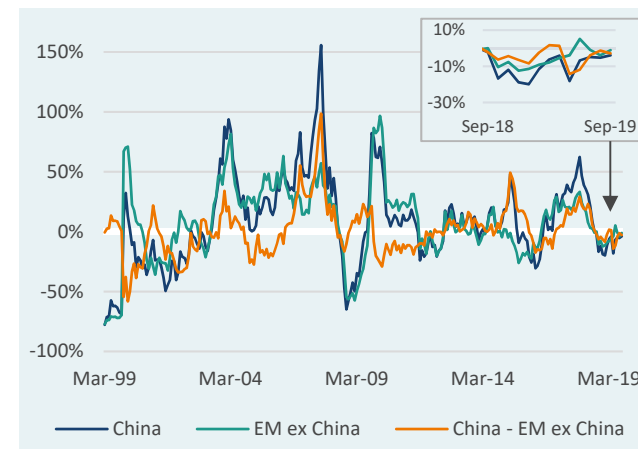
Source: Standard & Poor's, MSCI, as of 9/30/19

**FORWARD P/E**



Source: MSCI, as of 9/30/19

**CHINA & EM: ROLLING 1-YEAR PERFORMANCE (USD)**



Source: MSCI, as of 9/30/19

# Equity valuations

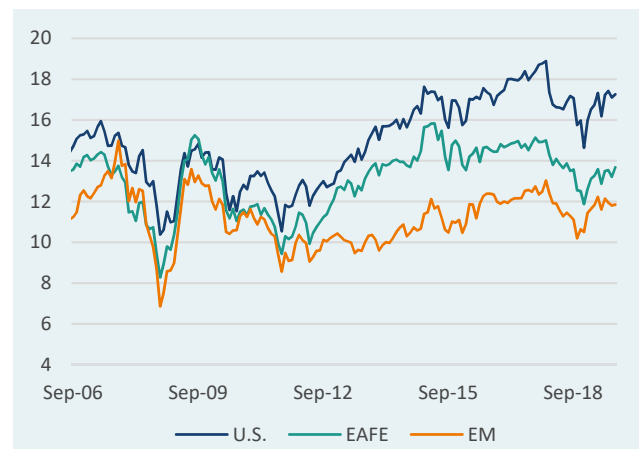
Equity valuations have climbed back up year-to-date as prices recover from their large drop in late 2018. U.S. equities are expensive relative to their long-run average, while international and emerging equities currently sit at normal levels.

The forward P/E multiple on the MSCI US Index ticked up from 17.2x to 17.3x over the quarter and remains above both its 5-year (17.1x) and 10-year (15.3x) averages. International equities remain at a forward P/E multiple (13.7x) between the

5-year (14.2x) and 10-year (13.2x) averages. Emerging market equities became a bit cheaper but are still trading at a forward P/E of 11.9x, above both their 5-year and 10-year averages.

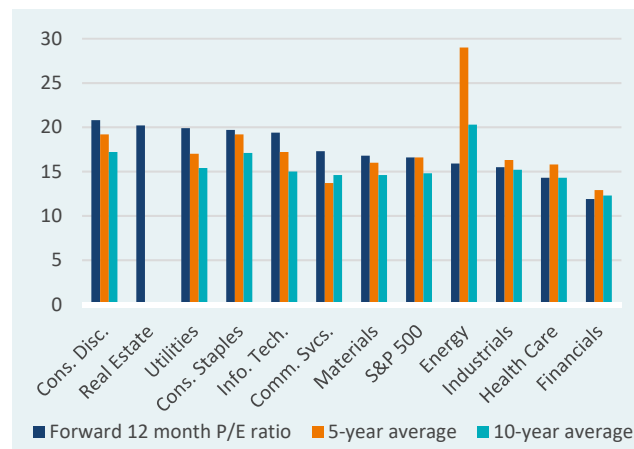
U.S. large cap stocks outperformed most unhedged international and emerging market equities. In a more uncertain geopolitical landscape, investors appear to remain willing to stomach loftier relative valuations in exchange for the quality of U.S. institutions. The U.S. economy is less reliant on exports, and U.S. companies are less reliant on foreign demand, helping to shield U.S. stocks from trade turbulence.

## FORWARD P/E RATIOS



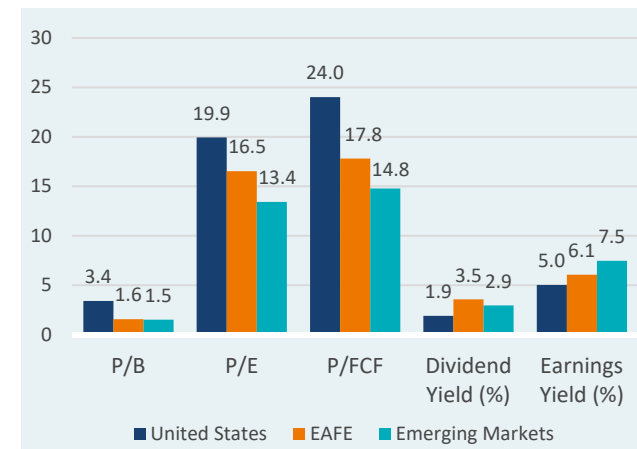
Source: MSCI, 12m forward P/E, as of 9/30/19

## S&P 500 INDEX FORWARD SECTOR P/E RATIOS



Source: Standard & Poor's, FactSet, as of 10/11/19

## VALUATION METRICS (3-MONTH AVERAGE)



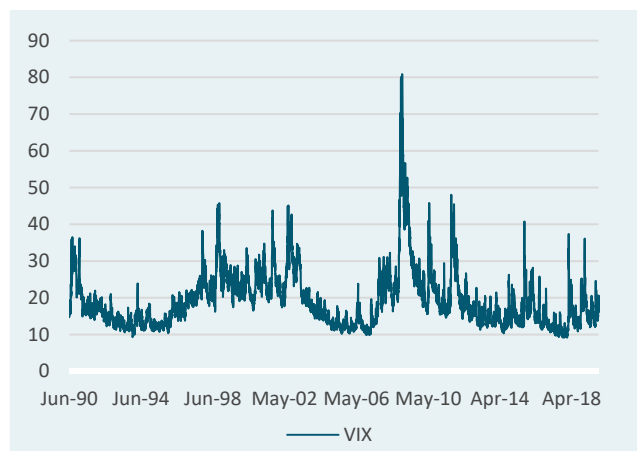
Source: Bloomberg, MSCI as of 9/30/19 - trailing P/E

# Equity volatility

Implied volatility on both U.S. stocks and European stocks picked up over the quarter, albeit from depressed levels. The VIX Index which measures the 30-day implied volatility of U.S. stocks jumped to nearly 25.0 in August following a material escalation in U.S.-Chinese trade tensions. By quarter-end, the VIX settled at 16.2, up 1.1 points, and above its year-to-date average of 15.9. In Europe, the V2X Index gauging implied volatility on the Euro Stoxx 50 Index rose from 13.7 to 15.8, above its year-to-date average of 15.4.

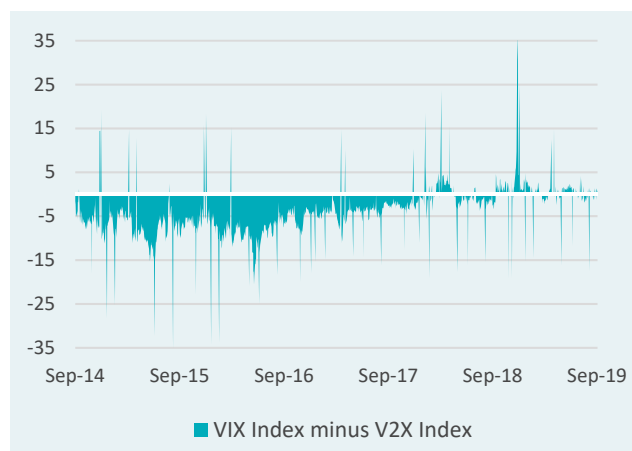
Despite the ratcheting up of trade tension in Q3, the realized trailing 30-day realized volatility on Chinese mainland shares was surprisingly low – falling from 18.0% to 12.9%. In comparison, U.S. 30-day volatility rose from 12.2% to 12.7%. Volatility of U.S. and China equities has only been this close 17% of the time. Looking ahead to Q4, despite realized volatility being low, it is important to remember that Chinese equities have been extremely volatile. As recent as 2014, 30-day annualized volatility reached 60% in mainland China.

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



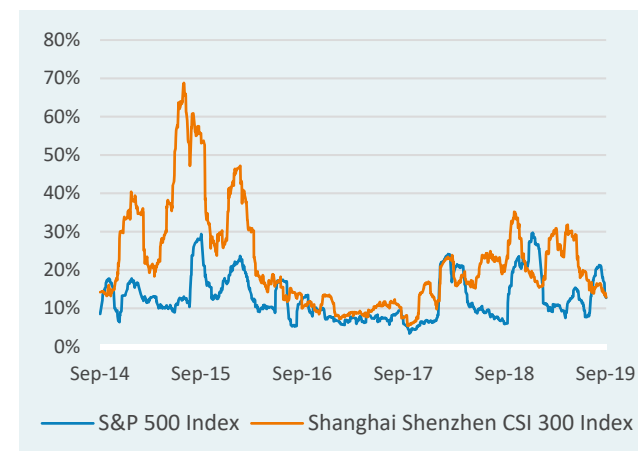
Source: CBOE, as of 9/30/19

**U.S. IMPLIED VOLATILITY VS. EUROPEAN IMPLIED VOLATILITY**



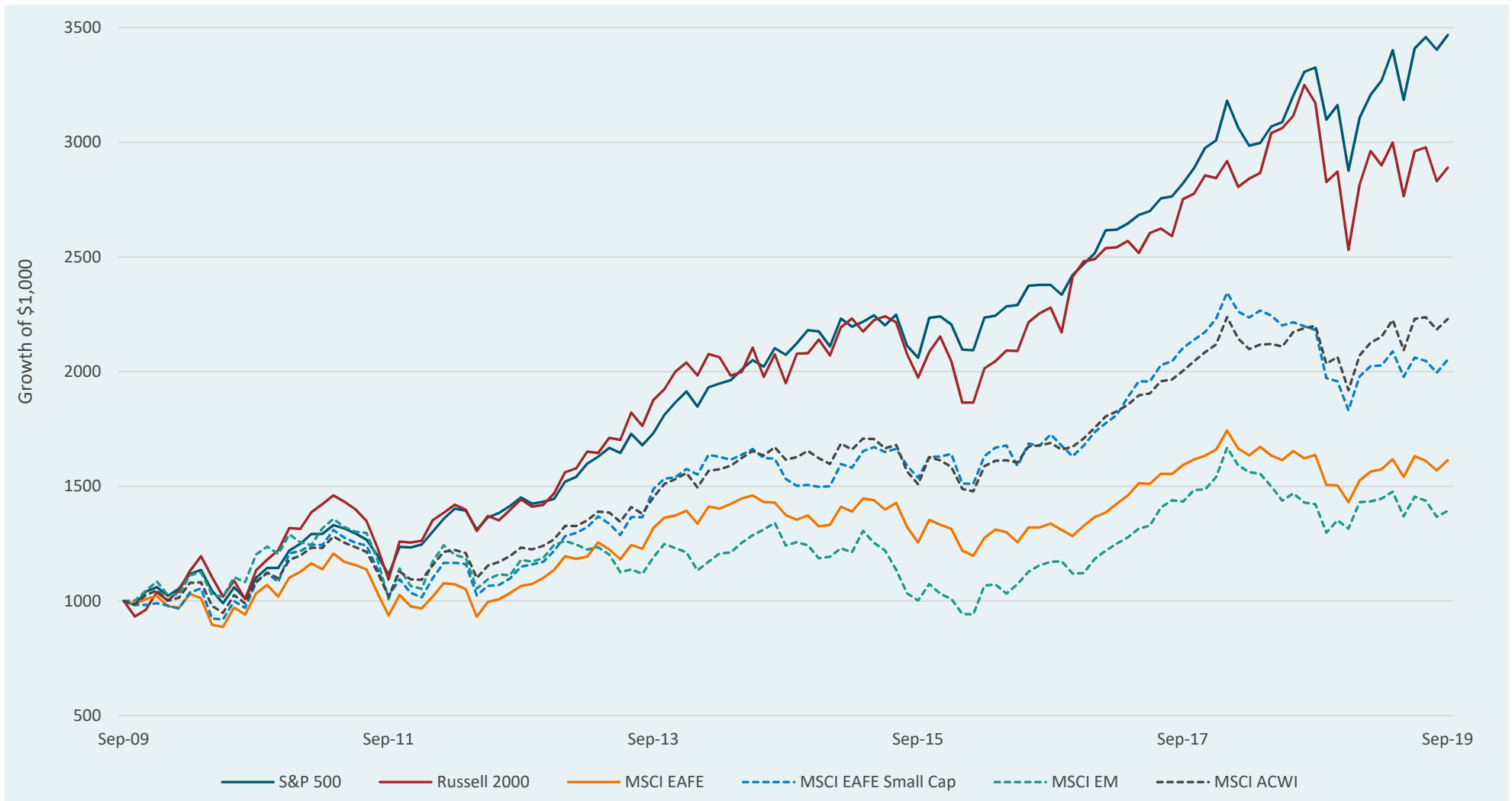
Source: Bloomberg, as of 9/30/19

**30-DAY REALIZED VOLATILITY – U.S. LARGE CAP STOCKS VS. CHINESE MAINLAND STOCKS**



Source: Bloomberg, as of 9/30/19

# Long-term equity performance



Source: Morningstar, as of 9/30/19



# Other assets

# Currency

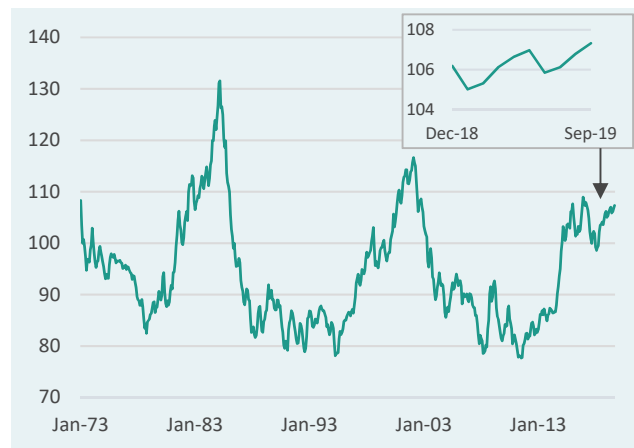
The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Investors are pricing in a 78% chance of one more 0.25% rate cut by the end of 2019, and a 25% chance of 0.50% in rate cuts. The market continues to price in more aggressive easing than what the Federal Reserve has indicated, which may contribute to volatility if actual easing measures underwhelm the market.

A variety of market scenarios may lead to U.S. dollar

weakness in the short-term, including: aggressive easing by the Federal Reserve which leads to a convergence of U.S. and international interest rates levels, further upside surprise to U.S. inflation, and/or weakening U.S. economic conditions which brings the U.S. more in line with other developed economies.

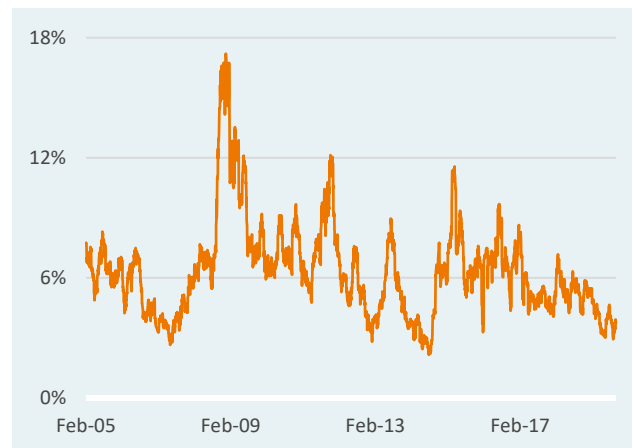
Emerging market currencies fell -4% quarter, on the back of U.S. dollar strength. These currencies remain very depressed relative to history.

**U.S. DOLLAR TRADE WEIGHTED INDEX**



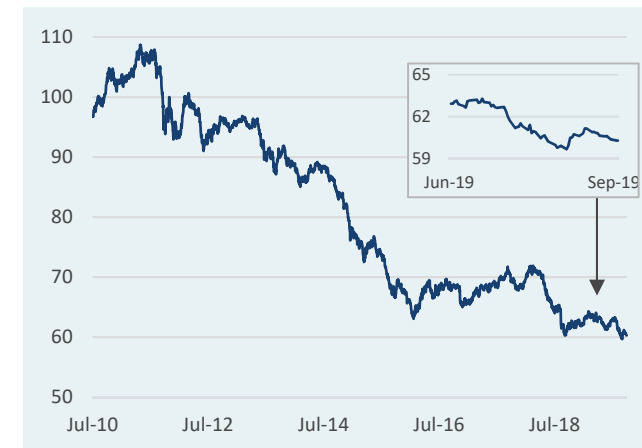
Source: Federal Reserve, Verus, as of 9/30/19

**BLOOMBERG DOLLAR SPOT INDEX REALIZED 30-DAY VOLATILITY**



Source: Bloomberg, as of 9/30/19

**JPM EMERGING MARKET CURRENCY INDEX**



Source: Bloomberg, JPMorgan, as of 9/30/19

# Appendix

# Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD	5-Year	10-Year	
BEST ↑	Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	23.3	13.1	15.4
	Large Cap Equity	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	18.5	9.9	13.5
	Small Cap Growth	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	16.3	8.8	13.1
	Large Cap Value	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	13.8	8.1	11.6
	Small Cap Equity	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	11.8	6.6	11.5
	60/40 Global Portfolio	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	11.4	6.4	10.0
	International Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	9.7	4.6	9.3
	US Bonds	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	9.1	4.1	6.4
	Small Cap Value	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	7.3	3.3	5.0
	Hedge Funds of Funds	-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	5.7	2.0	4.1
	Emerging Markets Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	3.9	1.9	3.9
	Real Estate	-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	3.3	0.9	2.9
	Commodities	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	1.9	0.4	0.5
	Cash	-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	1.5	-8.6	-4.3
	WORST ↓																								

Large Cap Equity

Large Cap Value

Large Cap Growth

Small Cap Equity

Small Cap Value

Small Cap Growth

International Equity

Emerging Markets Equity

US Bonds

Cash

Commodities

Real Estate

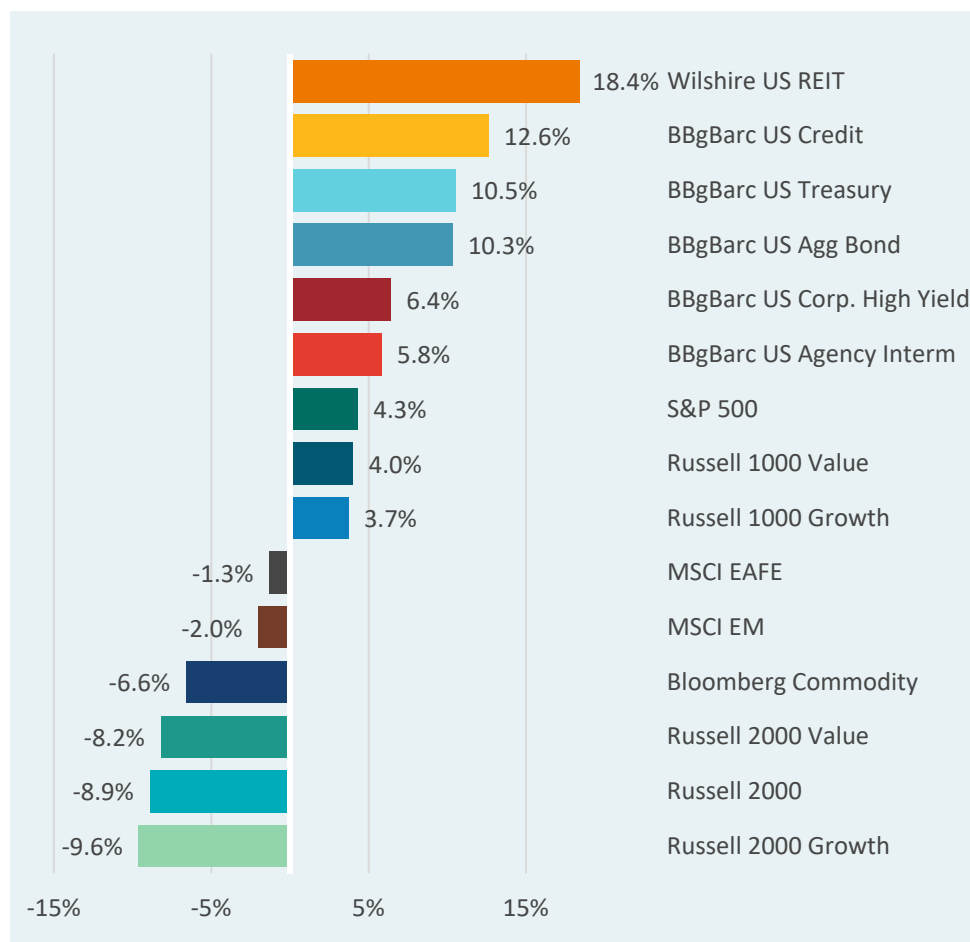
Hedge Funds of Funds

60% MSCI ACWI/40% BBgBarc Global Bond

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/19.

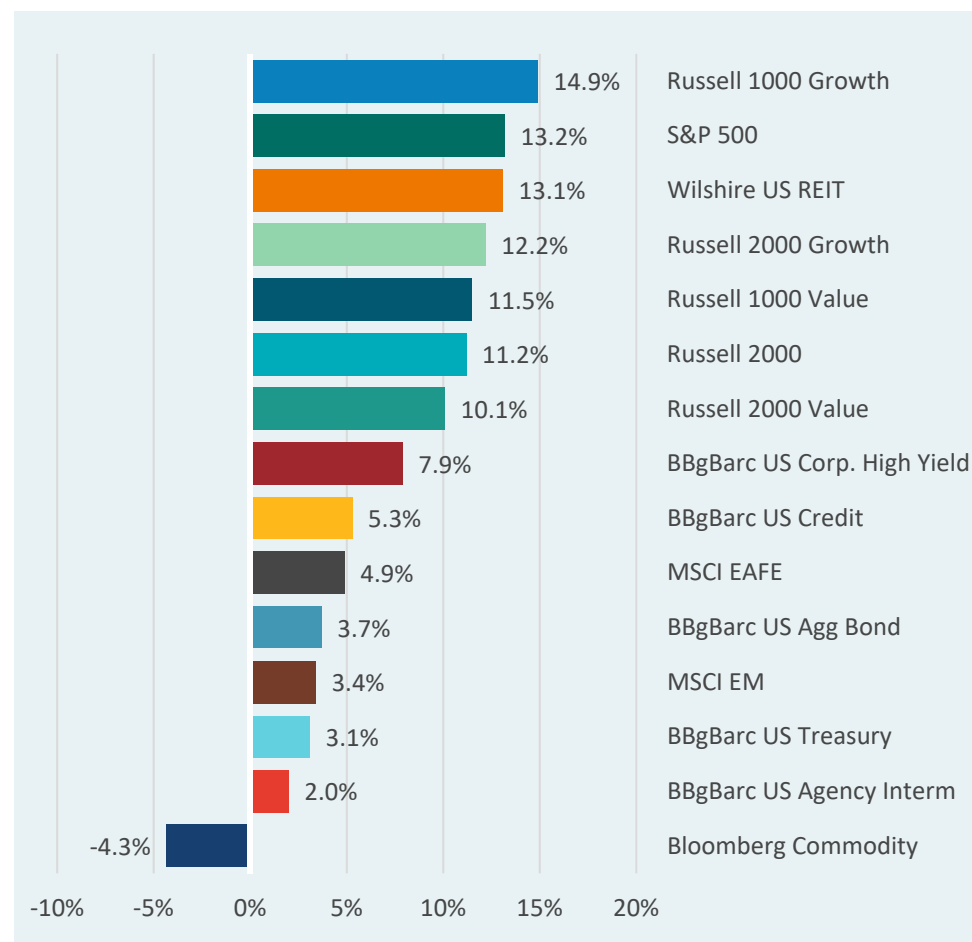
# Major asset class returns

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

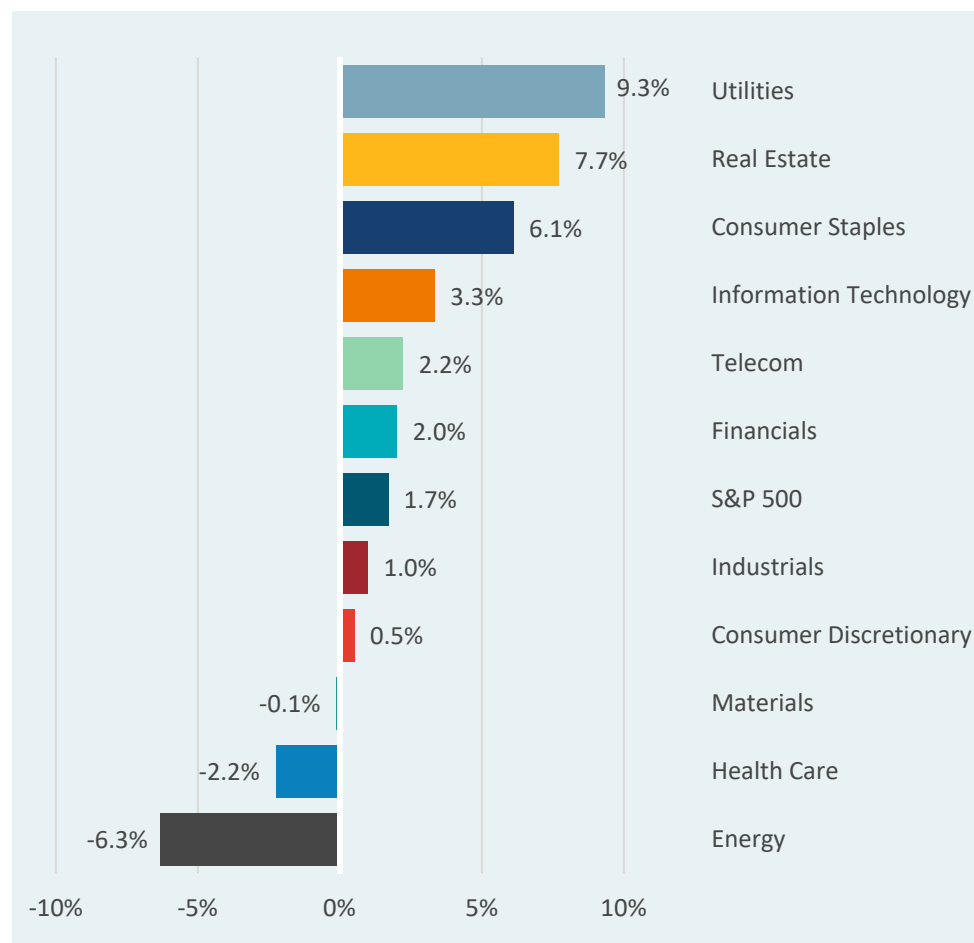
TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

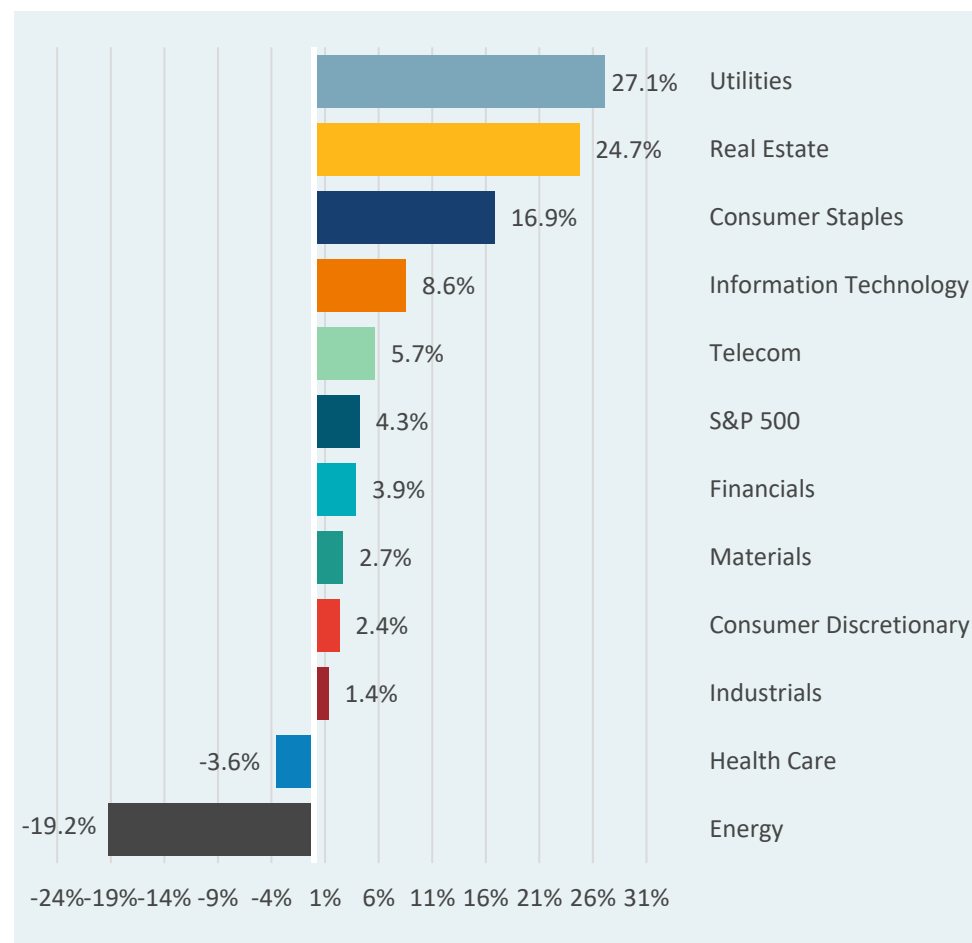
# S&P 500 sector returns

Q3



Source: Morningstar, as of 9/30/19

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19



# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	1.9	1.7	20.6	4.3	13.4	10.8	13.2
S&P 500 Equal Weighted	3.1	0.8	20.1	3.4	11.1	9.5	13.4
DJ Industrial Average	2.1	1.8	17.5	4.2	16.4	12.3	13.6
Russell Top 200	1.6	1.8	20.0	4.1	14.2	11.2	13.3
Russell 1000	1.7	1.4	20.5	3.9	13.2	10.6	13.2
Russell 2000	2.1	(2.4)	14.2	(8.9)	8.2	8.2	11.2
Russell 3000	1.8	1.2	20.1	2.9	12.8	10.4	13.1
Russell Mid Cap	2.0	0.5	21.9	3.2	10.7	9.1	13.1
<b>Style Index</b>							
Russell 1000 Growth	0.0	1.5	23.3	3.7	16.9	13.4	14.9
Russell 1000 Value	3.6	1.4	17.8	4.0	9.4	7.8	11.5
Russell 2000 Growth	(0.8)	(4.2)	15.3	(9.6)	9.8	9.1	12.2
Russell 2000 Value	5.1	(0.6)	12.8	(8.2)	6.5	7.2	10.1

## INTERNATIONAL EQUITY

<b>Broad Index</b>							
MSCI ACWI	2.1	(0.0)	16.2	1.4	9.7	6.7	8.3
MSCI ACWI ex US	2.6	(1.8)	11.6	(1.2)	6.3	2.9	4.5
MSCI EAFE	2.9	(1.1)	12.8	(1.3)	6.5	3.3	4.9
MSCI EM	1.9	(4.2)	5.9	(2.0)	6.0	2.3	3.4
MSCI EAFE Small Cap	2.8	(0.4)	12.1	(5.9)	5.9	6.0	7.5
<b>Style Index</b>							
MSCI EAFE Growth	1.1	(0.4)	17.9	2.2	7.8	5.5	6.5
MSCI EAFE Value	4.8	(1.7)	7.7	(4.9)	5.1	1.0	3.2
<b>Regional Index</b>							
MSCI UK	4.2	(2.5)	10.1	(2.9)	4.6	0.4	4.8
MSCI Japan	4.0	3.1	11.1	(4.7)	6.2	5.6	5.5
MSCI Euro	2.8	(2.0)	13.9	(1.1)	7.1	2.4	3.1
MSCI EM Asia	2.0	(3.4)	6.0	(3.9)	6.3	4.1	5.2
MSCI EM Latin American	2.6	(5.6)	6.3	6.7	6.8	(0.8)	(0.5)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	(1.4)	1.3	7.6	7.1	2.2	2.4	3.5
BBgBarc US Treasury Bills	0.2	0.6	1.9	2.4	1.5	1.0	0.6
BBgBarc US Agg Bond	(0.5)	2.3	8.5	10.3	2.9	3.4	3.7
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	(0.1)	0.6	3.1	4.4	1.5	1.3	1.2
BBgBarc US Treasury Long	(2.5)	7.9	19.8	24.8	4.1	6.8	6.9
BBgBarc US Treasury	(0.8)	2.4	7.7	10.5	2.2	2.9	3.1
<b>Issuer</b>							
BBgBarc US MBS	0.1	1.4	5.6	7.8	2.3	2.8	3.1
BBgBarc US Corp. High Yield	0.4	1.3	11.4	6.4	6.1	5.4	7.9
BBgBarc US Agency Interm	(0.2)	1.0	4.1	5.8	1.9	2.0	2.0
BBgBarc US Credit	(0.7)	3.0	12.6	12.6	4.3	4.5	5.3

## OTHER

<b>Index</b>							
Bloomberg Commodity	1.2	(1.8)	3.1	(6.6)	(1.5)	(7.2)	(4.3)
Wilshire US REIT	2.8	7.9	27.2	18.4	7.2	10.2	13.1
CS Leveraged Loans	0.4	0.9	6.4	3.1	4.7	4.1	5.4
Alerian MLP	0.8	(5.1)	11.8	(6.4)	(2.7)	(8.2)	7.0
<b>Regional Index</b>							
JPM EMBI Global Div	(0.5)	1.5	13.0	11.6	4.6	5.7	6.9
JPM GBI-EM Global Div	1.0	(0.8)	7.9	10.1	3.1	0.6	2.5
<b>Hedge Funds</b>							
HFRI Composite	(0.3)	(0.5)	6.7	0.3	3.8	2.9	4.0
HFRI FOF Composite	(0.6)	(1.1)	5.0	(0.2)	3.1	1.9	2.7
<b>Currency (Spot)</b>							
Euro	(1.8)	(0.3)	1.5	5.1	(2.1)	0.3	(1.9)
Pound	1.2	(3.2)	(3.2)	(5.5)	(1.7)	(5.3)	(2.6)
Yen	(1.0)	(4.3)	(4.6)	(6.1)	(1.0)	(2.9)	(2.9)

Source: Morningstar, HFR, as of 9/30/19

# 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](http://www.langerresearch.com))

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

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

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

# Notices & disclosures

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# Stanislaus County Employees' Retirement Association

Investment Performance Review

Period Ending: September 30, 2019



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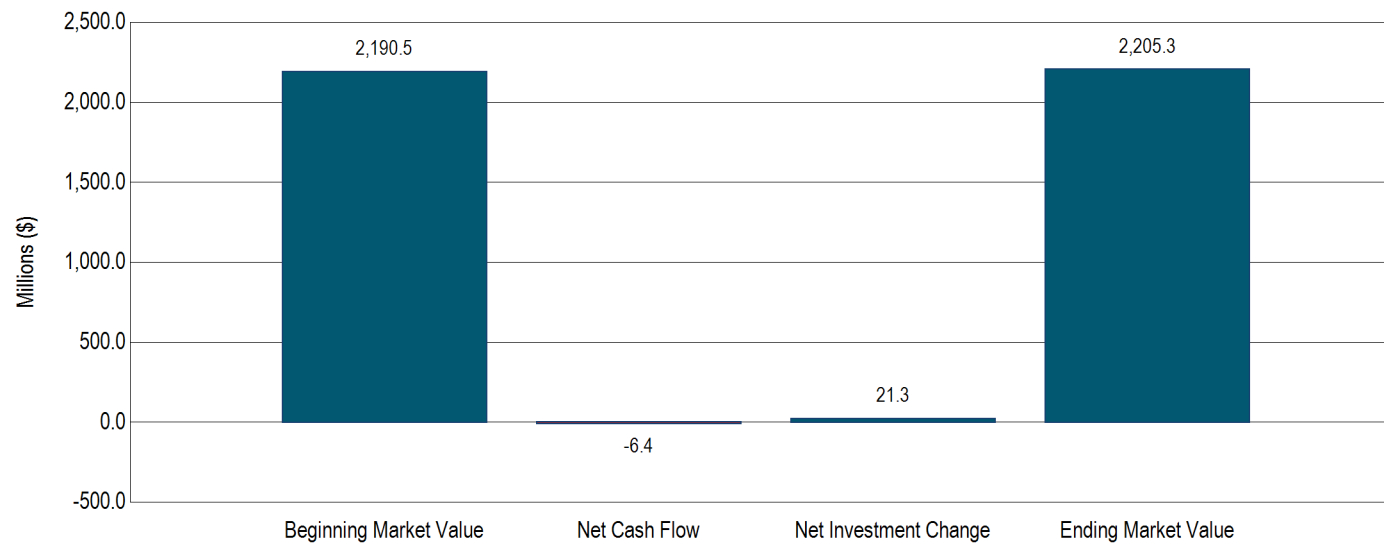
# Total Fund Portfolio Reconciliation

Period Ending: September 30, 2019

## Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	Year-To-Date
Beginning Market Value	\$2,190,456,401	\$2,190,456,401	\$1,989,872,398
Net Cash Flow	-\$6,441,293	-\$6,441,293	-\$23,702,909
Net Investment Change	\$21,329,528	\$21,329,528	\$239,175,147
Ending Market Value	\$2,205,344,636	\$2,205,344,636	\$2,205,344,636

## Change in Market Value Last Three Months

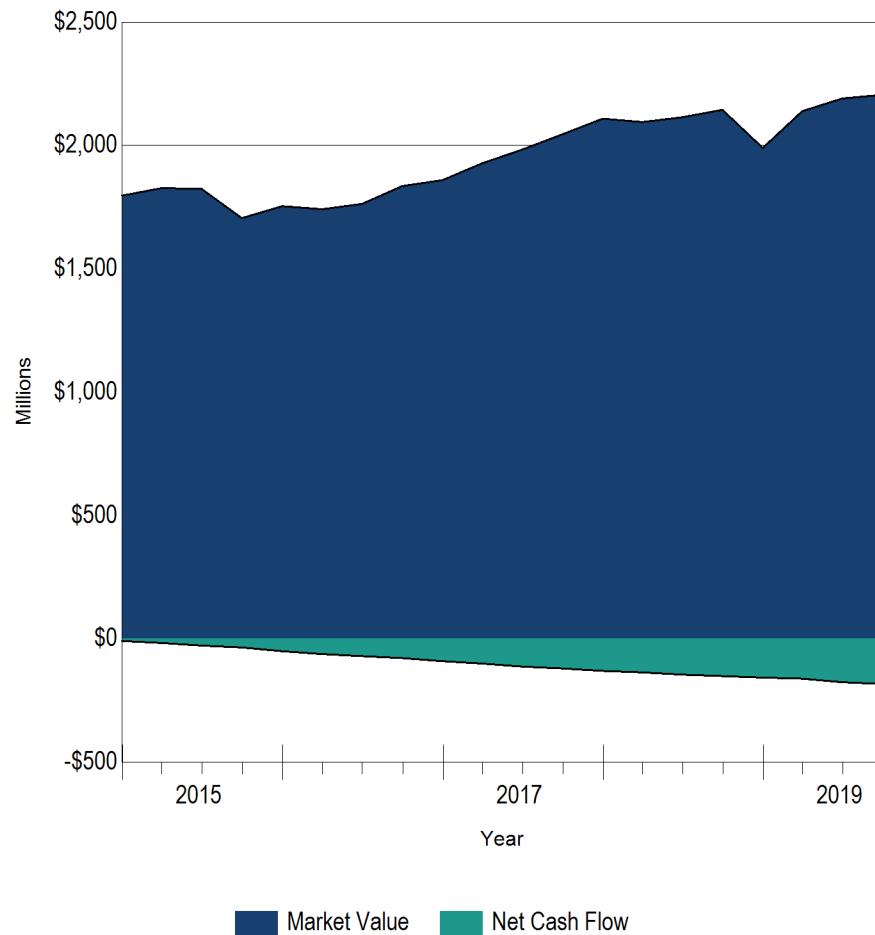


Contributions and withdrawals may include intra-account transfers between managers/funds.

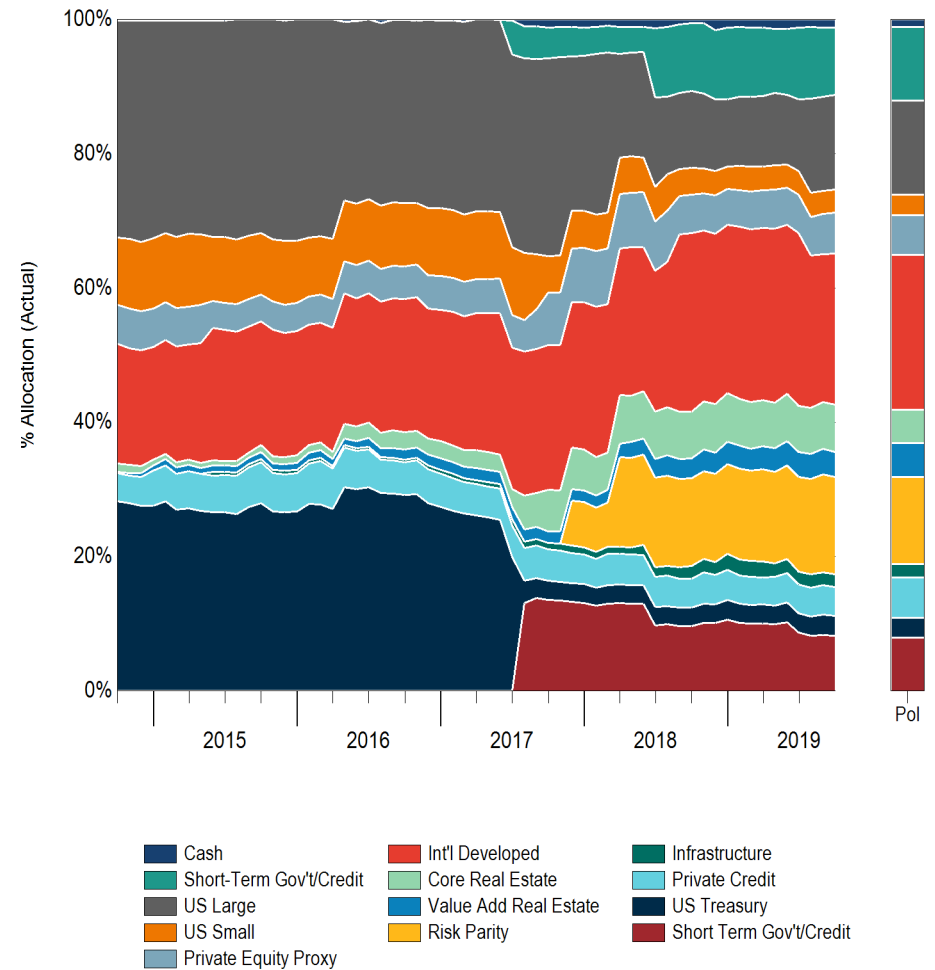
# Total Fund Asset Allocation History

Period Ending: September 30, 2019

Market Value History  
Cumulative Cash Flows

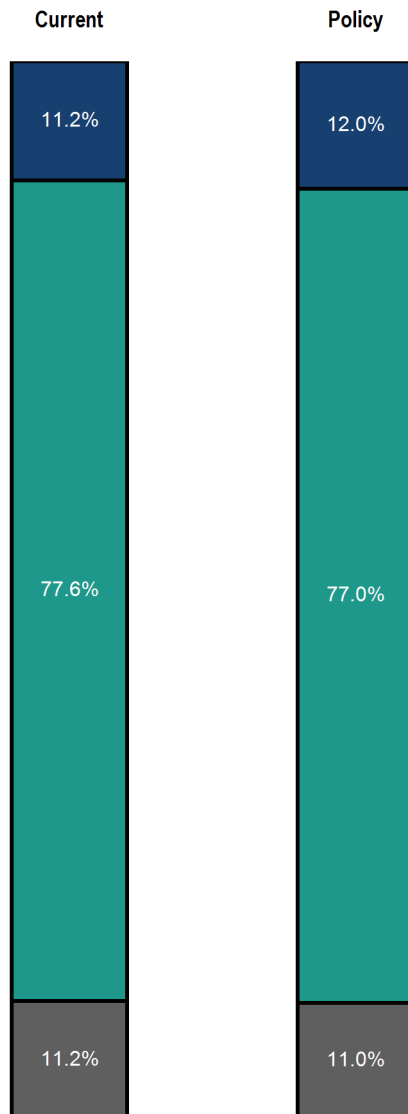


Asset Allocation History



# Total Fund Asset Allocation vs. Policy

Period Ending: September 30, 2019



	Current	%	Policy	%
<b>Liquidity Sub-Portfolio</b>	<b>\$246,941,449</b>	<b>11.2%</b>	<b>\$264,641,356</b>	<b>12.0%</b>
Cash	\$26,432,511	1.2%	\$22,053,446	1.0%
Short-Term Gov't/Credit	\$220,508,938	10.0%	\$242,587,910	11.0%
<b>Growth Sub-Portfolio</b>	<b>\$1,711,860,859</b>	<b>77.6%</b>	<b>\$1,698,115,370</b>	<b>77.0%</b>
US Large	\$311,775,296	14.1%	\$308,748,249	14.0%
US Small	\$76,437,244	3.5%	\$66,160,339	3.0%
Private Equity Proxy	\$133,604,490	6.1%	\$132,320,678	6.0%
Int'l Developed	\$496,674,052	22.5%	\$507,229,266	23.0%
Core Real Estate	\$154,642,541	7.0%	\$110,267,232	5.0%
Value Add Real Estate	\$82,662,246	3.7%	\$110,267,232	5.0%
Risk Parity	\$319,005,753	14.5%	\$286,694,803	13.0%
Infrastructure	\$42,045,476	1.9%	\$44,106,893	2.0%
Private Credit	\$95,013,760	4.3%	\$132,320,678	6.0%
<b>Risk-Diversifying Sub-Portfolio</b>	<b>\$246,542,328</b>	<b>11.2%</b>	<b>\$242,587,910</b>	<b>11.0%</b>
US Treasury	\$64,294,111	2.9%	\$66,160,339	3.0%
Short Term Gov't/Credit	\$182,248,217	8.3%	\$176,427,571	8.0%
<b>Total</b>	<b>\$2,205,344,636</b>	<b>100.0%</b>	<b>\$2,205,344,636</b>	<b>100.0%</b>

Russell 3000 Index serving as proxy for Private Equity while capital is being called. International Equity policy target consists of 21% international developed and 6% emerging markets.

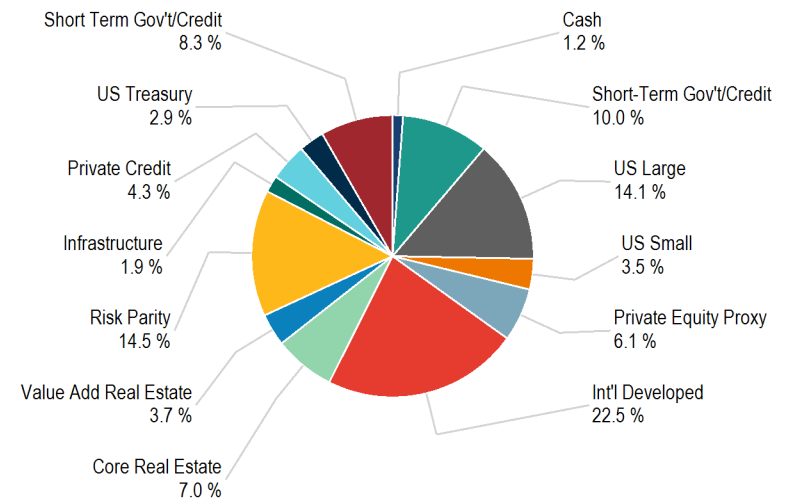


# Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2019

	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Total Fund</b>	<b>0.9</b>	<b>11.9</b>	<b>0.9</b>	<b>4.3</b>	<b>7.9</b>	<b>6.3</b>	<b>8.5</b>
Policy Index	0.4	11.0	0.4	3.7	7.2	6.4	8.2
InvMetrics Public DB Net Rank	36	74	36	36	50	47	24
<b>Liquidity Sub-Portfolio</b>	<b>1.5</b>	<b>6.7</b>	<b>1.5</b>	<b>7.4</b>	<b>2.7</b>	<b>2.0</b>	<b>--</b>
StanCERA Liquidity Blended BM	0.7	3.3	0.7	4.4	1.8	1.5	--
<b>Cash</b>	<b>0.6</b>	<b>1.1</b>	<b>0.6</b>	<b>1.6</b>	<b>1.3</b>	<b>1.2</b>	<b>--</b>
FTSE T-Bill 1 Month TR	0.5	1.8	0.5	2.3	1.5	0.9	--
<b>Short-Term Gov't/Credit</b>	<b>1.6</b>	<b>7.4</b>	<b>1.6</b>	<b>8.2</b>	<b>--</b>	<b>--</b>	<b>--</b>
BBgBarc US Govt/Credit 1-3 Yr. TR	0.7	3.4	0.7	4.6	--	--	--
eV US Government Fixed Inc Net Rank	62	16	62	63	--	--	--
<b>Growth Sub-Portfolio</b>	<b>0.8</b>	<b>13.9</b>	<b>0.8</b>	<b>3.5</b>	<b>9.6</b>	<b>7.3</b>	<b>--</b>
StanCERA Growth Blended BM	0.3	13.1	0.3	3.2	9.0	--	--
<b>US Large</b>	<b>1.2</b>	<b>19.2</b>	<b>1.2</b>	<b>2.2</b>	<b>13.0</b>	<b>10.1</b>	<b>--</b>
Russell 1000	1.4	20.5	1.4	3.9	13.2	10.6	--
eV US Large Cap Equity Net Rank	52	51	52	54	38	41	--
<b>US Small</b>	<b>-2.2</b>	<b>14.5</b>	<b>-2.2</b>	<b>-9.9</b>	<b>5.9</b>	<b>5.6</b>	<b>--</b>
Russell 2000	-2.4	14.2	-2.4	-8.9	8.2	8.2	--
eV US Small Cap Value Equity Net Rank	85	54	85	73	55	69	--
<b>Private Equity Proxy</b>	<b>1.2</b>	<b>20.1</b>	<b>1.2</b>	<b>8.5</b>	<b>14.7</b>	<b>11.5</b>	<b>13.6</b>
Russell 3000 +3%	2.3	22.0	2.3	5.9	15.8	13.5	16.1
eV US Large Cap Equity Net Rank	53	41	53	13	23	22	23

Current Allocation



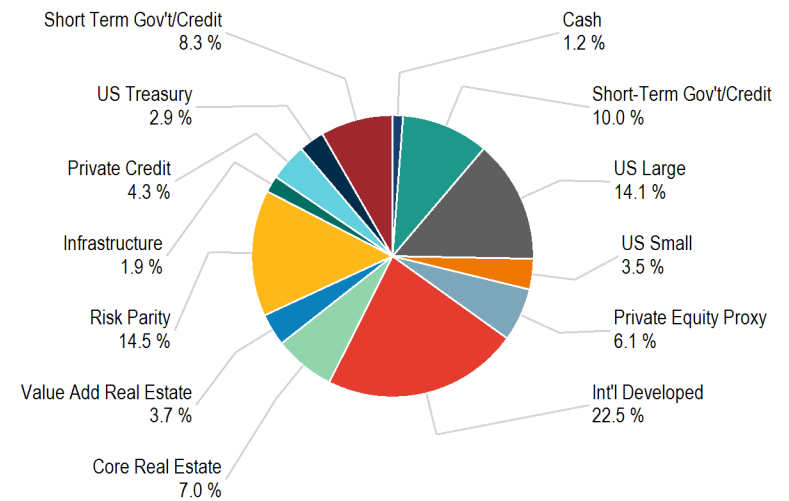
Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgBarc US Gov't/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns. All data is preliminary.

# Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2019

	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Int'l Developed</b>	<b>-1.4</b>	<b>11.3</b>	<b>-1.4</b>	<b>-2.7</b>	<b>6.1</b>	<b>3.2</b>	<b>5.1</b>
MSCI ACWI ex USA Gross	-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9
eV ACWI ex-US Equity Unhedged Net Rank	31	68	31	52	53	69	79
<b>Core Real Estate</b>	<b>2.8</b>	<b>9.1</b>	<b>2.8</b>	<b>7.3</b>	<b>5.0</b>	<b>7.0</b>	<b>--</b>
NCREIF Property Index	1.4	4.8	1.4	6.2	6.8	8.6	--
eV US REIT Net Rank	99	99	99	96	93	92	--
<b>Value Add Real Estate</b>	<b>3.3</b>	<b>7.2</b>	<b>3.3</b>	<b>8.2</b>	<b>10.9</b>	<b>10.9</b>	<b>--</b>
NCREIF Property Index +2%	1.9	6.4	1.9	8.3	8.9	10.7	--
<b>Risk Parity</b>	<b>3.0</b>	<b>20.0</b>	<b>3.0</b>	<b>13.8</b>	<b>--</b>	<b>--</b>	<b>--</b>
60% MSCI ACWI Net/40% BBgBarc Global Aggregate	0.3	12.4	0.3	4.2	--	--	--
<b>Infrastructure</b>	<b>3.1</b>	<b>10.9</b>	<b>3.1</b>	<b>12.8</b>	<b>13.1</b>	<b>--</b>	<b>--</b>
CPI + 5%	1.5	6.0	1.5	6.8	7.2	--	--
eV Infrastructure Net Rank	27	98	27	81	1	--	--
<b>Private Credit</b>	<b>0.4</b>	<b>3.9</b>	<b>0.4</b>	<b>4.7</b>	<b>3.1</b>	<b>3.9</b>	<b>--</b>
S&P/LSTA Leveraged Loan Index+2%	1.5	8.4	1.5	5.2	6.6	6.1	--
<b>Risk-Diversifying Sub-Portfolio</b>	<b>1.4</b>	<b>5.6</b>	<b>1.4</b>	<b>7.2</b>	<b>3.0</b>	<b>3.4</b>	<b>4.5</b>
StanCERA Risk-Diversifying Blended BM	1.3	5.2	1.3	7.1	2.0	2.2	2.3
<b>US Treasury</b>	<b>2.9</b>	<b>8.8</b>	<b>2.9</b>	<b>11.8</b>	<b>4.3</b>	<b>4.2</b>	<b>4.9</b>
BBgBarc US Treasury 7-10 Yr TR	2.7	9.8	2.7	14.0	2.4	3.8	4.4
eV US Government Fixed Inc Net Rank	1	1	1	1	1	1	1
<b>Short-Term Gov't/Credit</b>	<b>0.9</b>	<b>4.6</b>	<b>0.9</b>	<b>5.8</b>	<b>--</b>	<b>--</b>	<b>--</b>
BBgBarc US Govt/Credit 1-3 Yr. TR	0.7	3.4	0.7	4.6	--	--	--
eV US Short Duration Fixed Inc Net Rank	20	14	20	8	--	--	--

Current Allocation



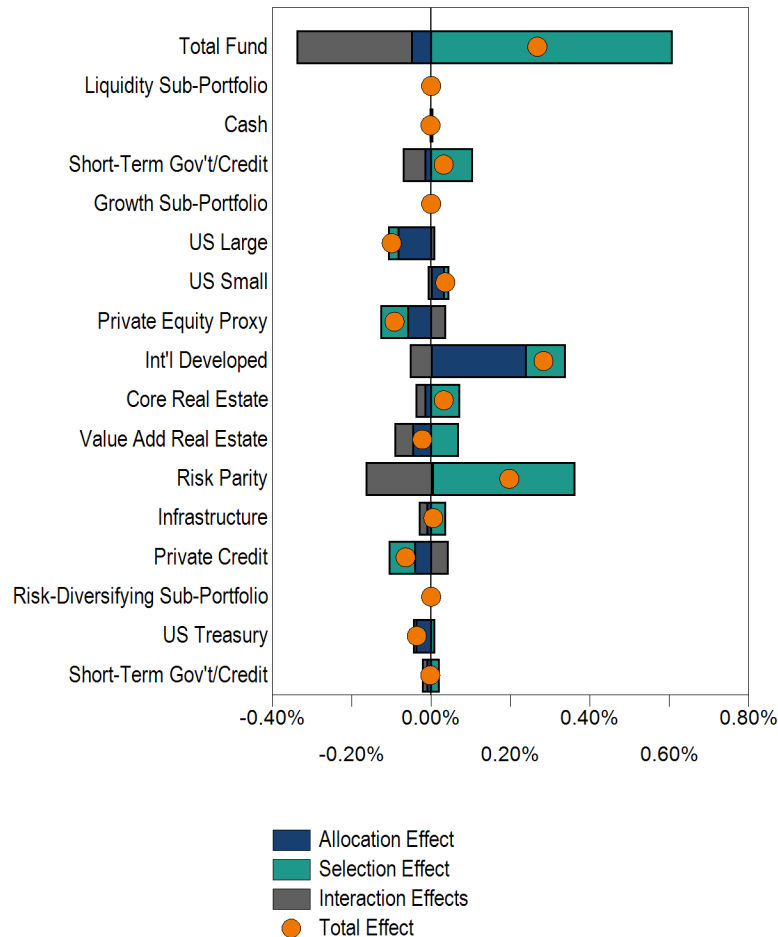
Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgBarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17%

# Total Fund

## Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: September 30, 2019

### Attribution Effects Last Three Months



### Performance Attribution

	Quarter
Wtd. Actual Return	0.94%
Wtd. Index Return *	0.41%
<b>Excess Return</b>	<b>0.53%</b>
Selection Effect	0.60%
Allocation Effect	-0.05%
Interaction Effect	-0.29%

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

### Attribution Summary Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Liquidity Sub-Portfolio	1.5%	0.7%	0.8%	--	--	--	--
Cash	0.6%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%
Short-Term Gov't/Credit	1.6%	0.7%	0.9%	0.1%	0.0%	-0.1%	0.0%
Growth Sub-Portfolio	0.8%	0.3%	0.5%	--	--	--	--
US Large	1.2%	1.4%	-0.2%	0.0%	-0.1%	0.0%	-0.1%
US Small	-2.2%	-2.4%	0.2%	0.0%	0.0%	0.0%	0.0%
Private Equity Proxy	1.2%	2.3%	-1.1%	-0.1%	-0.1%	0.0%	-0.1%
Int'l Developed	-1.4%	-1.8%	0.4%	0.1%	0.2%	-0.1%	0.3%
Core Real Estate	2.8%	1.4%	1.4%	0.1%	0.0%	0.0%	0.0%
Value Add Real Estate	3.3%	1.9%	1.3%	0.1%	0.0%	0.0%	0.0%
Risk Parity	3.0%	0.3%	2.7%	0.4%	0.0%	-0.2%	0.2%
Infrastructure	3.1%	1.5%	1.7%	0.0%	0.0%	0.0%	0.0%
Private Credit	0.4%	1.5%	-1.0%	-0.1%	0.0%	0.0%	-0.1%
Risk-Diversifying Sub-Portfolio	1.4%	1.3%	0.2%	--	--	--	--
US Treasury	2.9%	2.7%	0.2%	0.0%	0.0%	0.0%	0.0%
Short-Term Gov't/Credit	0.9%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>0.9%</b>	<b>0.4%</b>	<b>0.5%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>0.3%</b>

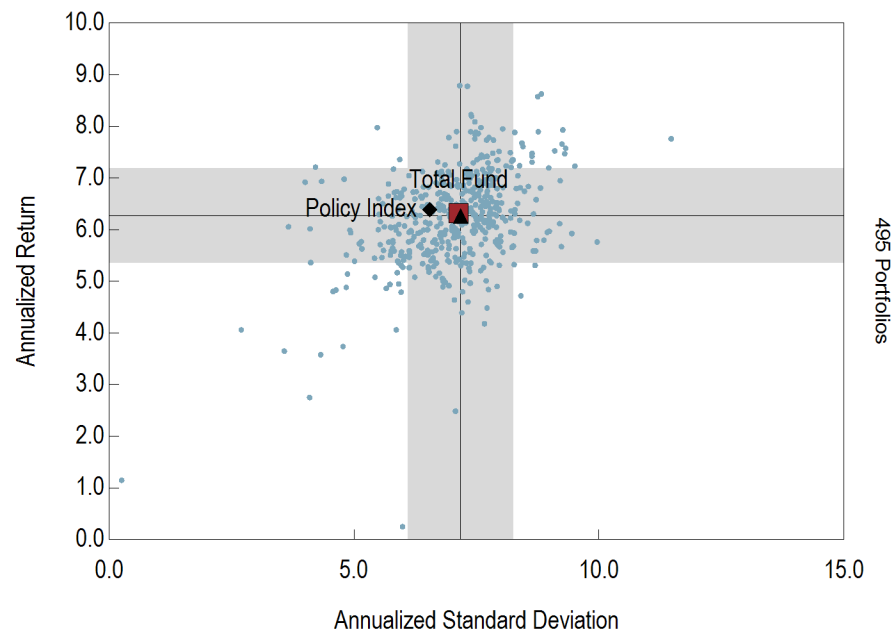
Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2%

# Total Fund Risk Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2019

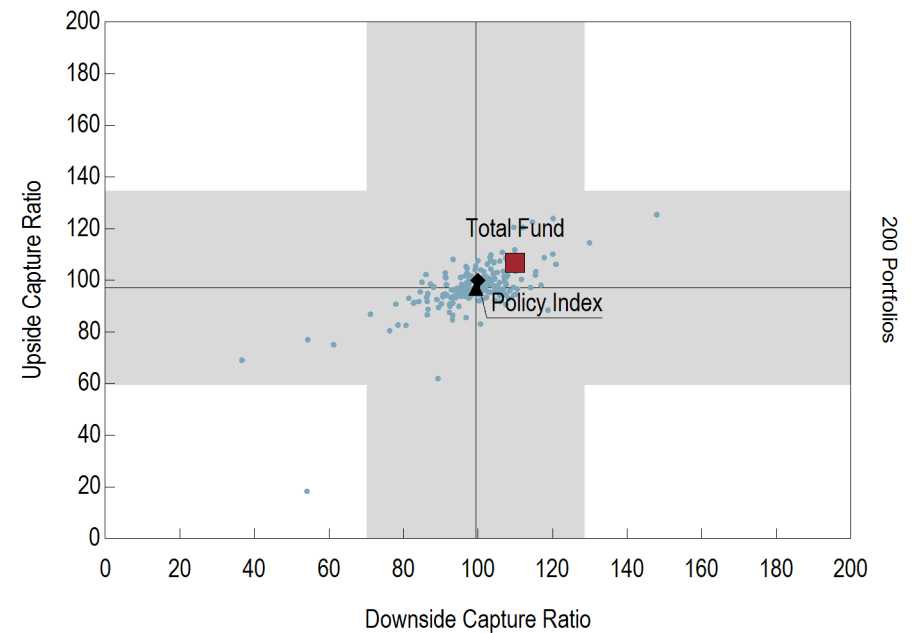
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	6.32%	-0.07%	7.13%	-0.53%	1.07	1.38%	0.97	0.75	-0.05	106.89%	109.96%
Policy Index	6.39%	0.00%	6.54%	0.00%	1.00	0.00%	1.00	0.83	--	100.00%	100.00%

Risk vs. Return



- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Net

Up Markets vs. Down Markets



- Total Fund
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Net

# Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
<b>Total Fund</b>	<b>2,205,344,636</b>	<b>100.0</b>	<b>0.9</b>	<b>11.9</b>	<b>0.9</b>	<b>4.3</b>	<b>7.9</b>	<b>6.3</b>	<b>8.5</b>	<b>-4.4</b>	<b>15.3</b>	<b>7.8</b>	<b>-0.6</b>	<b>6.5</b>	<b>8.9</b>	<b>Dec-94</b>
Policy Index			0.4	11.0	0.4	3.7	7.2	6.4	8.2	-3.7	14.3	8.5	0.2	7.5	8.0	Dec-94
InvMetrics Public DB Net Rank			36	74	36	36	50	47	24	51	36	36	55	22		
<b>Liquidity Sub-Portfolio</b>	<b>246,941,449</b>	<b>11.2</b>	<b>1.5</b>	<b>6.7</b>	<b>1.5</b>	<b>7.4</b>	<b>2.7</b>	<b>2.0</b>	<b>--</b>	<b>0.8</b>	<b>0.4</b>	<b>1.3</b>	<b>1.0</b>	<b>-43.6</b>	<b>9.7</b>	<b>Apr-11</b>
StanCERA Liquidity Blended BM			0.7	3.3	0.7	4.4	1.8	1.5	--	1.6	0.8	1.2	0.6	0.7	1.3	Apr-11
<b>Cash</b>	<b>26,432,511</b>	<b>1.2</b>	<b>0.6</b>	<b>1.1</b>	<b>0.6</b>	<b>1.6</b>	<b>1.3</b>	<b>1.2</b>	<b>--</b>	<b>1.6</b>	<b>0.9</b>	<b>1.3</b>	<b>1.0</b>	<b>-43.6</b>	<b>9.2</b>	<b>Apr-11</b>
FTSE T-Bill 1 Month TR			0.5	1.8	0.5	2.3	1.5	0.9	--	1.8	0.8	0.2	0.0	0.0	0.6	Apr-11
<b>Short-Term Gov't/Credit</b>	<b>220,508,938</b>	<b>10.0</b>	<b>1.6</b>	<b>7.4</b>	<b>1.6</b>	<b>8.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>0.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.8</b>	<b>Jun-17</b>
BBgBarc US Govt/Credit 1-3 Yr. TR			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.3	Jun-17
eV US Government Fixed Inc Net Rank			62	16	62	63	--	--	--	87	--	--	--	--		
Insight	220,508,938	10.0	1.6	7.4	1.6	8.2	--	--	--	0.6	--	--	--	--	3.8	Jun-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.3	Jun-17
eV US Short Duration Fixed Inc Net Rank			1	1	1	1	--	--	--	96	--	--	--	--		
<b>Growth Sub-Portfolio</b>	<b>1,711,860,859</b>	<b>77.6</b>	<b>0.8</b>	<b>13.9</b>	<b>0.8</b>	<b>3.5</b>	<b>9.6</b>	<b>7.3</b>	<b>--</b>	<b>-6.1</b>	<b>19.3</b>	<b>8.9</b>	<b>-0.8</b>	<b>6.9</b>	<b>6.9</b>	<b>Jul-15</b>
StanCERA Growth Blended BM			0.3	13.1	0.3	3.2	9.0	--	--	-4.9	19.1	8.1	--	--	7.4	Jul-15
<b>US Large</b>	<b>311,775,296</b>	<b>14.1</b>	<b>1.2</b>	<b>19.2</b>	<b>1.2</b>	<b>2.2</b>	<b>13.0</b>	<b>10.1</b>	<b>--</b>	<b>-4.0</b>	<b>21.1</b>	<b>10.8</b>	<b>0.5</b>	<b>12.5</b>	<b>9.8</b>	<b>Jul-15</b>
Russell 1000			1.4	20.5	1.4	3.9	13.2	10.6	--	-4.8	21.7	12.1	0.9	13.2	10.6	Jul-15
eV US Large Cap Equity Net Rank			52	51	52	54	38	41	--	36	50	39	47	39		
BlackRock Russell 1000 Growth	154,878,643	7.0	1.5	23.3	1.5	3.7	16.9	13.4	--	-1.5	30.2	7.2	5.7	13.1	16.3	Jun-10
Russell 1000 Growth			1.5	23.3	1.5	3.7	16.9	13.4	--	-1.5	30.2	7.1	5.7	13.0	16.3	Jun-10
eV US Large Cap Growth Equity Net Rank			23	33	23	44	31	23	--	52	39	19	35	26		
BlackRock Russell 1000 Value	78,609,386	3.6	1.4	17.9	1.4	4.1	9.5	7.9	11.6	-8.2	13.8	17.3	-3.6	13.5	12.4	Jul-09
Russell 1000 Value			1.4	17.8	1.4	4.0	9.4	7.8	11.5	-8.3	13.7	17.3	-3.8	13.5	12.2	Jul-09
eV US Large Cap Value Equity Net Rank			53	42	53	31	55	42	35	41	83	20	57	24		
Dodge & Cox-Equity	78,287,267	3.5	0.3	13.0	0.3	-2.0	10.9	8.1	12.0	-6.5	16.9	21.2	-4.0	10.7	11.7	Dec-94
Russell 1000 Value			1.4	17.8	1.4	4.0	9.4	7.8	11.5	-8.3	13.7	17.3	-3.8	13.5	9.9	Dec-94
eV US Large Cap Value Equity Net Rank			81	91	81	80	30	35	23	27	49	6	59	63		

Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Govt/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgBarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns. All data is preliminary.

# Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
<b>US Small</b>	<b>76,437,244</b>	<b>3.5</b>	<b>-2.2</b>	<b>14.5</b>	<b>-2.2</b>	<b>-9.9</b>	<b>5.9</b>	<b>5.6</b>	<b>--</b>	<b>-16.7</b>	<b>14.8</b>	<b>16.2</b>	<b>-4.5</b>	<b>3.8</b>	<b>7.9</b>	<b>Apr-12</b>
Russell 2000			-2.4	14.2	-2.4	-8.9	8.2	8.2	--	-11.0	14.6	21.3	-4.4	4.9	10.3	Apr-12
eV US Small Cap Value Equity Net Rank			85	54	85	73	55	69	--	67	16	95	48	62		
Capital Prospects	76,437,244	3.5	-2.2	14.5	-2.2	-9.9	7.2	6.7	--	-16.7	14.7	27.1	-7.5	5.1	--	Dec-08
Russell 2000 Value			-0.6	12.8	-0.6	-8.2	6.5	7.2	--	-12.9	7.8	31.7	-7.5	4.2	--	Dec-08
eV US Small Cap Value Equity Net Rank			85	54	85	73	34	47	--	67	17	39	73	50		
<b>Private Equity Proxy</b>	<b>133,604,490</b>	<b>6.1</b>	<b>1.2</b>	<b>20.1</b>	<b>1.2</b>	<b>8.5</b>	<b>14.7</b>	<b>11.5</b>	<b>13.6</b>	<b>-0.2</b>	<b>21.2</b>	<b>11.7</b>	<b>1.4</b>	<b>13.7</b>	<b>9.2</b>	<b>Nov-03</b>
Russell 3000 +3%			2.3	22.0	2.3	5.9	15.8	13.5	16.1	-2.2	24.1	15.7	3.5	15.6	12.1	Nov-03
eV US Large Cap Equity Net Rank			53	41	53	13	23	22	23	14	50	34	40	24		
Northern Trust Russell 3000	133,604,490	6.1	1.2	20.1	1.2	--	--	--	--	--	--	--	--	--	20.1	Dec-18
Russell 3000			1.2	20.1	1.2	--	--	--	--	--	--	--	--	--	20.1	Dec-18
eV US Large Cap Equity Net Rank			53	41	53	--	--	--	--	--	--	--	--	--		
<b>Int'l Developed</b>	<b>496,674,052</b>	<b>22.5</b>	<b>-1.4</b>	<b>11.3</b>	<b>-1.4</b>	<b>-2.7</b>	<b>6.1</b>	<b>3.2</b>	<b>5.1</b>	<b>-15.8</b>	<b>27.4</b>	<b>5.3</b>	<b>-3.8</b>	<b>-4.5</b>	<b>6.0</b>	<b>Sep-04</b>
MSCI ACWI ex USA Gross			-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4	6.1	Sep-04
eV ACWI ex-US Equity Unhedged Net Rank			31	68	31	52	53	69	79	51	74	20	77	64		
LSV Asset Mgt	248,877,925	11.3	-0.9	9.6	-0.9	-4.4	5.9	2.6	4.8	-16.9	27.5	8.2	-5.4	-4.2	5.9	Aug-04
MSCI ACWI ex USA Gross			-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4	6.3	Aug-04
eV ACWI ex-US Equity Unhedged Net Rank			18	76	18	70	58	76	81	63	73	8	86	62		
Fidelity	247,796,127	11.2	-2.0	13.0	-2.0	-0.9	6.2	3.5	5.2	-14.7	27.0	1.8	-2.3	-4.9	3.4	Apr-06
MSCI ACWI ex USA Gross			-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4	3.4	Apr-06
eV ACWI ex-US Equity Unhedged Net Rank			51	51	51	38	53	63	76	40	77	42	66	70		
<b>Core Real Estate</b>	<b>154,642,541</b>	<b>7.0</b>	<b>2.8</b>	<b>9.1</b>	<b>2.8</b>	<b>7.3</b>	<b>5.0</b>	<b>7.0</b>	<b>--</b>	<b>1.6</b>	<b>5.2</b>	<b>5.2</b>	<b>-0.8</b>	<b>31.9</b>	<b>--</b>	<b>Mar-08</b>
NCREIF Property Index			1.4	4.8	1.4	6.2	6.8	8.6	--	6.7	7.0	8.0	13.3	11.8	--	Mar-08
eV US REIT Net Rank			99	99	99	96	93	92	--	1	56	86	91	36		
Prime Property Fund	58,055,197	2.6	1.4	4.6	1.4	6.6	7.9	--	--	8.0	8.8	9.2	--	--	8.4	Sep-15
NCREIF-ODCE			1.3	3.8	1.3	5.6	7.3	--	--	8.3	7.6	8.8	--	--	8.0	Sep-15
eV US REIT Net Rank			99	99	99	97	46	--	--	1	10	14	--	--		
BlackRock US Real Estate	39,623,889	1.8	6.8	24.6	6.8	16.4	6.4	9.6	--	-4.2	3.7	6.6	4.4	31.9	9.4	Sep-12
DJ US Select RESI TR USD			6.8	24.6	6.8	16.4	6.5	9.7	--	-4.2	3.8	6.6	4.5	31.9	9.5	Sep-12
eV US REIT Net Rank			70	80	70	80	80	68	--	37	86	52	65	36		
PGIM Real Estate US Debt Fund	56,963,455	2.6	1.5	4.6	1.5	6.3	--	--	--	--	--	--	--	--	--	Sep-18
Gilberto-Levy Commercial Mortgage Performance Index			0.0	6.0	0.0	8.4	--	--	--	--	--	--	--	--	--	Sep-18
eV US REIT Net Rank			99	99	99	98	--	--	--	--	--	--	--	--		

Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2%

Total Fund  
Performance Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
<b>Value Add Real Estate</b>	<b>82,662,246</b>	<b>3.7</b>	<b>3.3</b>	<b>7.2</b>	<b>3.3</b>	<b>8.2</b>	<b>10.9</b>	<b>10.9</b>	<b>--</b>	<b>11.7</b>	<b>11.9</b>	<b>8.8</b>	<b>18.9</b>	<b>--</b>	<b>10.5</b>	<b>Jul-14</b>
NCREIF Property Index +2%			1.9	6.4	1.9	8.3	8.9	10.7	--	8.8	9.1	10.1	15.6	--	11.0	Jul-14
American Strategic Value Realty	52,655,541	2.4	1.9	6.1	1.9	7.8	9.5	--	--	9.2	10.1	11.7	18.3	--	11.6	Dec-14
NCREIF Property Index			1.4	4.8	1.4	6.2	6.8	--	--	6.7	7.0	8.0	13.3	--	8.4	Dec-14
Greenfield Gap VII	10,199,705	0.5	9.5	14.2	9.5	14.7	14.2	12.6	--	12.9	14.7	6.1	19.4	--	12.2	Jul-14
NCREIF ODCE + 1%			1.6	4.5	1.6	6.6	8.4	10.4	--	9.4	8.7	9.8	16.2	--	10.8	Jul-14
Greenfield Gap VIII	19,807,000	0.9	3.5	6.1	3.5	4.6	--	--	--	--	--	--	--	--	16.9	Apr-18
NCREIF ODCE + 1%			1.6	4.5	1.6	6.6	--	--	--	--	--	--	--	--	7.6	Apr-18
<b>Risk Parity</b>	<b>319,005,753</b>	<b>14.5</b>	<b>3.0</b>	<b>20.0</b>	<b>3.0</b>	<b>13.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-7.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>6.9</b>	<b>Nov-17</b>
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			0.3	12.4	0.3	4.2	--	--	--	-6.0	--	--	--	--	3.6	Nov-17
AQR Global Risk Premium - EL	158,801,166	7.2	1.9	17.8	1.9	10.5	--	--	--	--	--	--	--	--	8.3	Mar-18
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			0.3	12.4	0.3	4.2	--	--	--	--	--	--	--	--	3.3	Mar-18
PanAgora Risk Parity Multi Asset	160,204,587	7.3	4.2	22.4	4.2	17.4	--	--	--	-7.6	--	--	--	--	7.6	Nov-17
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			0.3	12.4	0.3	4.2	--	--	--	-6.0	--	--	--	--	3.6	Nov-17
<b>Infrastructure</b>	<b>42,045,476</b>	<b>1.9</b>	<b>3.1</b>	<b>10.9</b>	<b>3.1</b>	<b>12.8</b>	<b>13.1</b>	<b>--</b>	<b>--</b>	<b>8.3</b>	<b>20.9</b>	<b>4.1</b>	<b>--</b>	<b>--</b>	<b>7.5</b>	<b>May-15</b>
CPI + 5%			1.5	6.0	1.5	6.8	7.2	--	--	7.0	7.2	7.2	--	--	6.9	May-15
eV Infrastructure Net Rank			27	98	27	81	1	--	--	1	25	99	--	--		
MS Infrastructure Partners II	42,045,476	1.9	3.1	10.9	3.1	12.8	13.1	--	--	8.3	20.9	4.1	--	--	7.4	May-15
CPI + 5%			1.5	6.0	1.5	6.8	7.2	--	--	7.0	7.2	7.2	--	--	6.9	May-15
eV Infrastructure Net Rank			27	98	27	81	1	--	--	1	25	99	--	--		
<b>Private Credit</b>	<b>95,013,760</b>	<b>4.3</b>	<b>0.4</b>	<b>3.9</b>	<b>0.4</b>	<b>4.7</b>	<b>3.1</b>	<b>3.9</b>	<b>--</b>	<b>4.2</b>	<b>-0.4</b>	<b>1.9</b>	<b>5.4</b>	<b>8.8</b>	<b>4.2</b>	<b>May-13</b>
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	5.9	May-13
Medley Capital	12,870,163	0.6	-4.9	-8.5	-4.9	-14.8	-5.3	-1.7	--	-12.7	3.4	3.4	5.4	6.8	0.9	May-13
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	5.9	May-13
Raven Capital	14,178,247	0.6	2.2	7.2	2.2	9.5	1.5	2.1	--	5.3	-6.1	-3.6	1.2	7.6	-0.9	May-13
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	5.9	May-13
Raven Opportunity III	42,168,305	1.9	0.8	7.2	0.8	9.5	3.5	--	--	11.0	-7.4	-4.5	--	--	1.4	Jul-15
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	--	--	2.4	6.2	12.3	--	--	6.3	Jul-15
White Oak Pinnacle	25,797,045	1.2	1.8	5.0	1.8	7.7	6.1	7.0	--	8.4	2.0	5.9	8.6	14.4	11.0	Aug-13
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	6.0	Aug-13



# Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
<b>Risk-Diversifying Sub-Portfolio</b>	<b>246,542,328</b>	<b>11.2</b>	<b>1.4</b>	<b>5.6</b>	<b>1.4</b>	<b>7.2</b>	<b>3.0</b>	<b>3.4</b>	<b>4.5</b>	<b>1.1</b>	<b>3.8</b>	<b>5.2</b>	<b>0.2</b>	<b>6.1</b>	<b>4.9</b>	<b>Nov-03</b>
<i>StanCERA Risk-Diversifying Blended BM</i>			1.3	5.2	1.3	7.1	2.0	2.2	2.3	1.4	1.3	1.3	0.9	3.0	--	Nov-03
<b>US Treasury</b>	<b>64,294,111</b>	<b>2.9</b>	<b>2.9</b>	<b>8.8</b>	<b>2.9</b>	<b>11.8</b>	<b>4.3</b>	<b>4.2</b>	<b>4.9</b>	<b>0.7</b>	<b>5.0</b>	<b>5.2</b>	<b>0.2</b>	<b>6.1</b>	<b>5.2</b>	<b>Nov-03</b>
<i>BBgBarc US Treasury 7-10 Yr TR</i>			2.7	9.8	2.7	14.0	2.4	3.8	4.4	0.9	2.6	1.1	1.6	9.0	4.9	Nov-03
<i>eV US Government Fixed Inc Net Rank</i>			1	1	1	1	1	1	1	86	1	1	78	6		
<b>Northern Trust Intermediate Gov't Bond</b>	<b>46,476,837</b>	<b>2.1</b>	<b>1.2</b>	<b>5.2</b>	<b>1.2</b>	<b>7.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.8</b>	<b>Jul-17</b>
<i>BBgBarc US Govt Int TR</i>			1.2	5.2	1.2	7.5	--	--	--	1.4	--	--	--	--	2.9	Jul-17
<i>eV US Government Fixed Inc Net Rank</i>			74	79	74	71	--	--	--	1	--	--	--	--		
<b>Northern Trust Long Term Gov't Bond</b>	<b>17,817,274</b>	<b>0.8</b>	<b>7.8</b>	<b>19.6</b>	<b>7.8</b>	<b>24.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-1.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>9.5</b>	<b>Jul-17</b>
<i>BBgBarc US Govt Long TR</i>			7.8	19.6	7.8	24.6	--	--	--	-1.8	--	--	--	--	9.5	Jul-17
<i>US Long Duration Fixed Income Rank</i>			14	66	14	13	--	--	--	25	--	--	--	--		
<b>Short-Term Gov't/Credit</b>	<b>182,248,217</b>	<b>8.3</b>	<b>0.9</b>	<b>4.6</b>	<b>0.9</b>	<b>5.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.0</b>	<b>May-17</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.2	May-17
<i>eV US Short Duration Fixed Inc Net Rank</i>			20	14	20	8	--	--	--	75	--	--	--	--		
<b>DFA</b>	<b>182,248,217</b>	<b>8.3</b>	<b>0.9</b>	<b>4.6</b>	<b>0.9</b>	<b>5.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.6</b>	<b>Jul-17</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.2	Jul-17
<i>eV US Short Duration Fixed Inc Net Rank</i>			20	14	20	8	--	--	--	75	--	--	--	--		

Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills. StanCERA Risk-Diversifying Blended BM (8/31/2019): 27% BBgBarc US Treasury 7-10 Yr. TR and 73% BBgBarc US Gov't/Credit 1-3 Yr. TR. All data is preliminary.

# Total Fund

## Closed End Funds - Investment Summary

Period Ending: September 30, 2019

			Verus Internal Analysis								
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 9/30/2019 <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Total Distributions	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Latest Valuation	
Real Estate											
7/31/2014	Greenfield Gap VII	\$10,199,705	\$15,000,000	\$14,335,328	96%	\$664,672	\$11,499,348	80.2%	151.4%	6/30/2019	
6/30/2018	Greenfield Gap VIII	\$19,807,000	\$40,000,000	\$17,835,852	45%	\$22,164,148	\$0	N/A	111.1%	6/30/2019	
Total Real Estate		\$30,006,705	\$55,000,000	\$32,171,180	58%	\$22,828,820	\$11,499,348	35.7%	129.0%		
% of Portfolio (Market Value)		1.4%									
Direct Lending											
5/31/2013	Medley Capital	\$12,870,163	\$30,000,000	\$29,000,453	97%	\$999,547	\$22,943,895	79.1%	123.5%	6/30/2019	
5/31/2013	Raven Capital	\$14,178,247	\$40,000,000	\$34,505,763	86%	\$5,494,237	\$23,560,780	68.3%	109.4%	6/30/2019	
7/31/2015	Raven Opportunity III	\$42,168,305	\$50,000,000	\$41,719,265	83%	\$8,280,735	\$3,740,992	9.0%	110.0%	6/30/2019	
8/31/2013	White Oak Pinnacle	\$25,797,045	\$40,000,000	\$40,000,000 <sup>4</sup>	100%	\$0	\$43,501,301	108.8%	173.2%	6/30/2019	
Total Direct Lending		\$95,013,760	\$160,000,000	\$145,225,481	91%	\$14,774,519	\$93,746,968	64.6%	130.0%		
% of Portfolio (Market Value)		4.3%									
Infrastructure											
5/31/2015	MS Infrastructure Partners II	\$42,045,476	\$50,000,000	\$50,130,435	100%	-\$130,435	\$18,608,746	37.1%	121.0%	6/30/2019	
Total Infrastructure		\$42,045,476	\$50,000,000	\$50,130,435	100%	-\$130,435	\$18,608,746	37.1%	121.0%		
% of Portfolio (Market Value)		1.9%									

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

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

3 Last known market value + capital calls - distributions

4 Includes redeemed contributions, which are amounts withheld from distributions and applied to fulfill capital calls

Total Fund  
Closed End Funds - IRR Summary

Period Ending: September 30, 2019

Real Estate	Inception	Fund Level (G)	StanCERA (G)	Fund Level (N)	StanCERA (N)	IRR Date
Greenfield Gap VII	7/31/2014	18.0%	18.5%	14.1%	14.0%	6/30/2019
NCREIF-ODCE PME					9.3%	6/30/2019
Direct Lending						
Medley Capital	5/31/2013	5.1%	3.6%	3.2%	1.3%	6/30/2019
S&P/LSTA Leveraged Loan Index PME					3.4%	6/30/2019
Raven Capital	5/31/2013	6.2%	6.2%	2.7%	2.7%	6/30/2019
S&P/LSTA Leveraged Loan Index PME					3.7%	6/30/2019
Raven Opportunity III	7/31/2015	10.8%	10.8%	5.6%	5.6%	6/30/2019
S&P/LSTA Leveraged Loan Index PME					4.9%	6/30/2019
White Oak Pinnacle	8/31/2013	10.2%	10.2%	7.3%	7.5%	6/30/2019
S&P/LSTA Leveraged Loan Index PME					3.9%	6/30/2019
Infrastructure						
MS Infrastructure Partners II	5/31/2015	21.2%	21.2%	14.0%	12.2%	6/30/2019
CPI PME					1.9%	6/30/2019

IRR information provided by managers.

# Total Fund

## Performance Analysis - 3 and 5 Years (Net of Fees)

Period Ending: September 30, 2019

### 3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock Russell 1000 Growth	16.89%	0.00%	13.29%	0.01%	1.00	0.04%	1.00	1.16	0.00	100.00%	100.00%
BlackRock Russell 1000 Value	9.52%	0.09%	12.32%	0.11%	1.00	0.06%	1.00	0.65	1.60	100.23%	99.64%
Dodge & Cox-Equity	10.91%	1.48%	13.63%	0.93%	1.06	3.96%	0.92	0.69	0.37	113.53%	104.83%
Capital Prospects	7.23%	0.69%	17.65%	0.81%	0.98	3.28%	0.97	0.32	0.21	95.90%	94.63%
LSV Asset Mgt	5.93%	-0.92%	12.40%	-1.28%	1.05	2.97%	0.94	0.35	-0.31	101.89%	107.02%
Fidelity	6.21%	-0.64%	11.15%	-0.36%	0.96	2.07%	0.97	0.42	-0.31	93.08%	97.21%
Prime Property Fund	7.93%	0.63%	3.25%	0.26%	1.05	0.67%	0.96	1.96	0.93	109.24%	--
American Strategic Value Realty	9.51%	2.74%	3.91%	0.05%	1.40	1.31%	0.97	2.04	2.09	144.34%	--
BlackRock US Real Estate	6.45%	-0.03%	12.79%	-0.02%	1.00	0.05%	1.00	0.38	-0.73	99.68%	99.91%

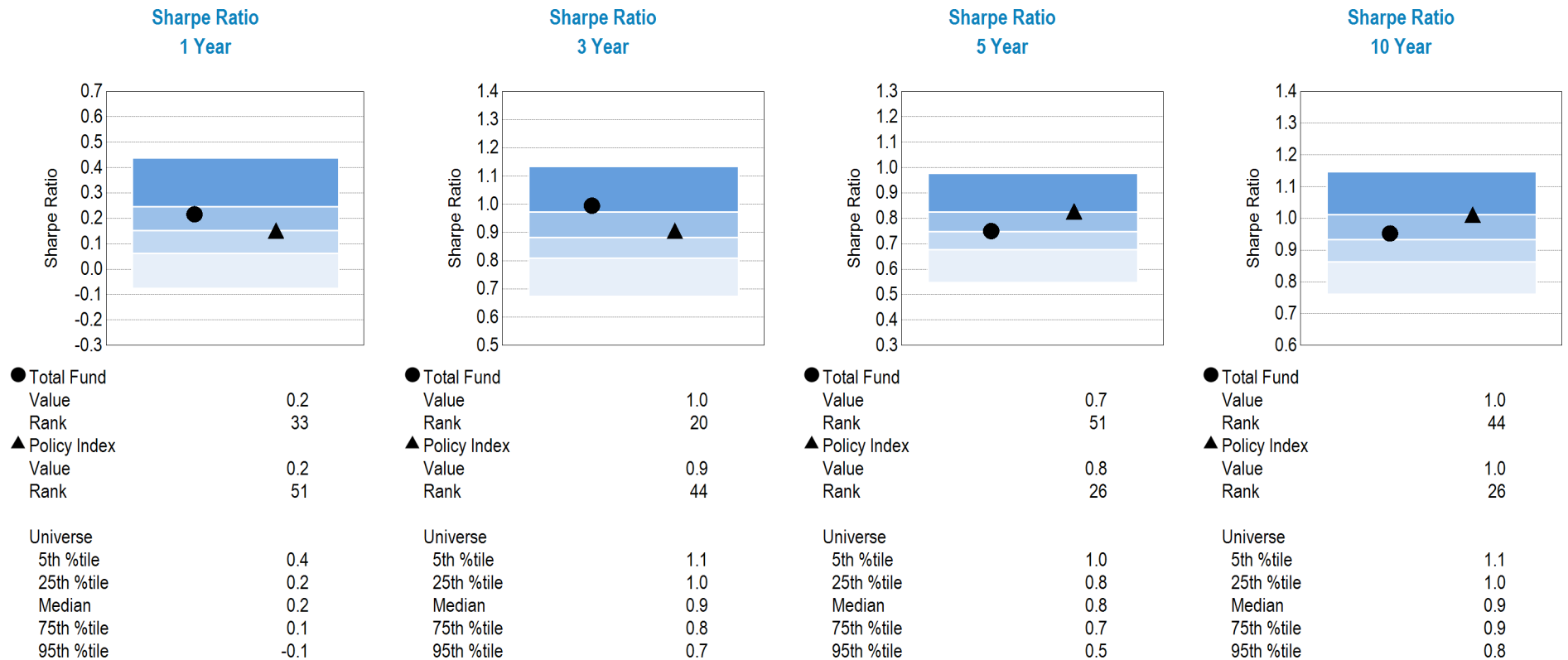
### 5 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock Russell 1000 Growth	13.42%	0.02%	12.88%	0.03%	1.00	0.04%	1.00	0.97	0.56	100.16%	100.01%
BlackRock Russell 1000 Value	7.89%	0.10%	11.91%	0.11%	1.00	0.06%	1.00	0.58	1.55	100.30%	99.68%
Dodge & Cox-Equity	8.10%	0.31%	13.54%	-0.34%	1.08	4.19%	0.91	0.53	0.07	112.65%	107.24%
Capital Prospects	6.67%	-0.50%	16.12%	-0.40%	0.99	2.95%	0.97	0.35	-0.17	92.18%	97.62%
LSV Asset Mgt	2.56%	-0.83%	13.63%	-1.07%	1.07	2.86%	0.96	0.12	-0.29	108.35%	107.31%
Fidelity	3.51%	0.12%	11.81%	0.35%	0.93	2.16%	0.97	0.21	0.06	89.63%	93.74%
BlackRock US Real Estate	9.62%	-0.06%	14.37%	-0.05%	1.00	0.05%	1.00	0.60	-1.39	99.54%	99.97%

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

# Total Fund Sharpe Ratio Rankings (Net of Fees)

Period Ending: September 30, 2019



# Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2019

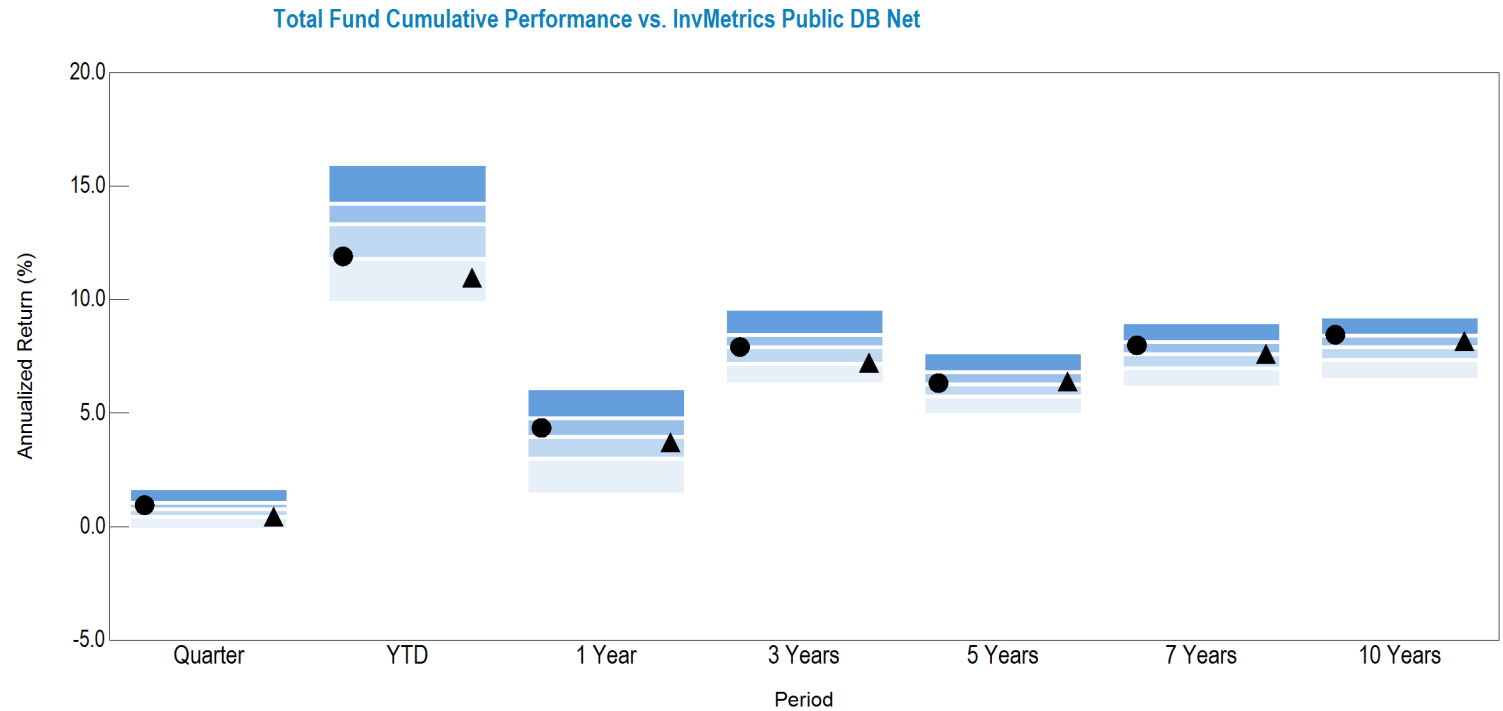
Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Cash Account	Cash and Equivalents	0.10% of Assets	\$26,432,453	\$26,432	0.10%
Insight	Domestic Fixed Income	0.12% of Assets	\$220,508,938	\$264,611	0.12%
BlackRock Russell 1000 Growth	Domestic Equity	0.02% of Assets	\$154,878,643	\$30,976	0.02%
BlackRock Russell 1000 Value	Domestic Equity	0.02% of Assets	\$78,609,386	\$15,722	0.02%
Dodge & Cox-Equity	Domestic Equity	0.40% of First 10.0 Mil, 0.20% of Next 90.0 Mil, 0.15% Thereafter	\$78,287,267	\$176,575	0.23%
Capital Prospects	Domestic Equity	0.75% of Assets	\$76,437,244	\$573,279	0.75%
Northern Trust Russell 3000	Domestic Equity	0.02% of Assets	\$133,604,490	\$26,721	0.02%
LSV Asset Mgt	International Equity	0.75% of First 25.0 Mil, 0.65% of Next 25.0 Mil, 0.55% of Next 50.0 Mil, 0.45% Thereafter	\$248,877,925	\$1,294,951	0.52%
Fidelity	International Equity	0.25% of Assets	\$247,796,127	\$619,490	0.25%
Prime Property Fund	Real Estate	0.84% of Assets	\$58,055,197	\$487,664	0.84%
BlackRock US Real Estate	Real Estate	0.09% of First 100.0 Mil, 0.07% Thereafter	\$39,623,889	\$35,662	0.09%
American Strategic Value Realty	Real Estate	1.25% of First 10.0 Mil, 1.20% of Next 15.0 Mil, 1.10% of Next 25.0 Mil, 1.00% Thereafter	\$52,655,541	\$606,555	1.15%
AQR Global Risk Premium - EL	Alternatives	0.38% of Assets	\$158,801,166	\$603,444	0.38%
PanAgora Risk Parity Multi Asset	Alternatives	0.35% of Assets	\$160,204,587	\$560,716	0.35%
Northern Trust Intermediate Gov't Bond	Domestic Fixed Income	0.05% of First 25.0 Mil, 0.04% Thereafter	\$46,476,837	\$21,091	0.05%
Northern Trust Long Term Gov't Bond	Domestic Fixed Income	0.05% of First 25.0 Mil, 0.04% Thereafter	\$17,817,274	\$8,909	0.05%
DFA	Domestic Fixed Income	0.20% of First 25.0 Mil, 0.10% Thereafter	\$182,248,217	\$207,248	0.11%
<b>Total</b>			<b>\$1,904,877,938</b>	<b>\$5,560,045</b>	<b>0.29%</b>

Closed end funds excluded from fee analysis. Fidelity has performance based fees which are not included in the analysis above; fee shown is the annual base fee only. Northern Trust aggregates StanCERA's Northern Trust Bond Funds.

# Total Fund

## Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: September 30, 2019

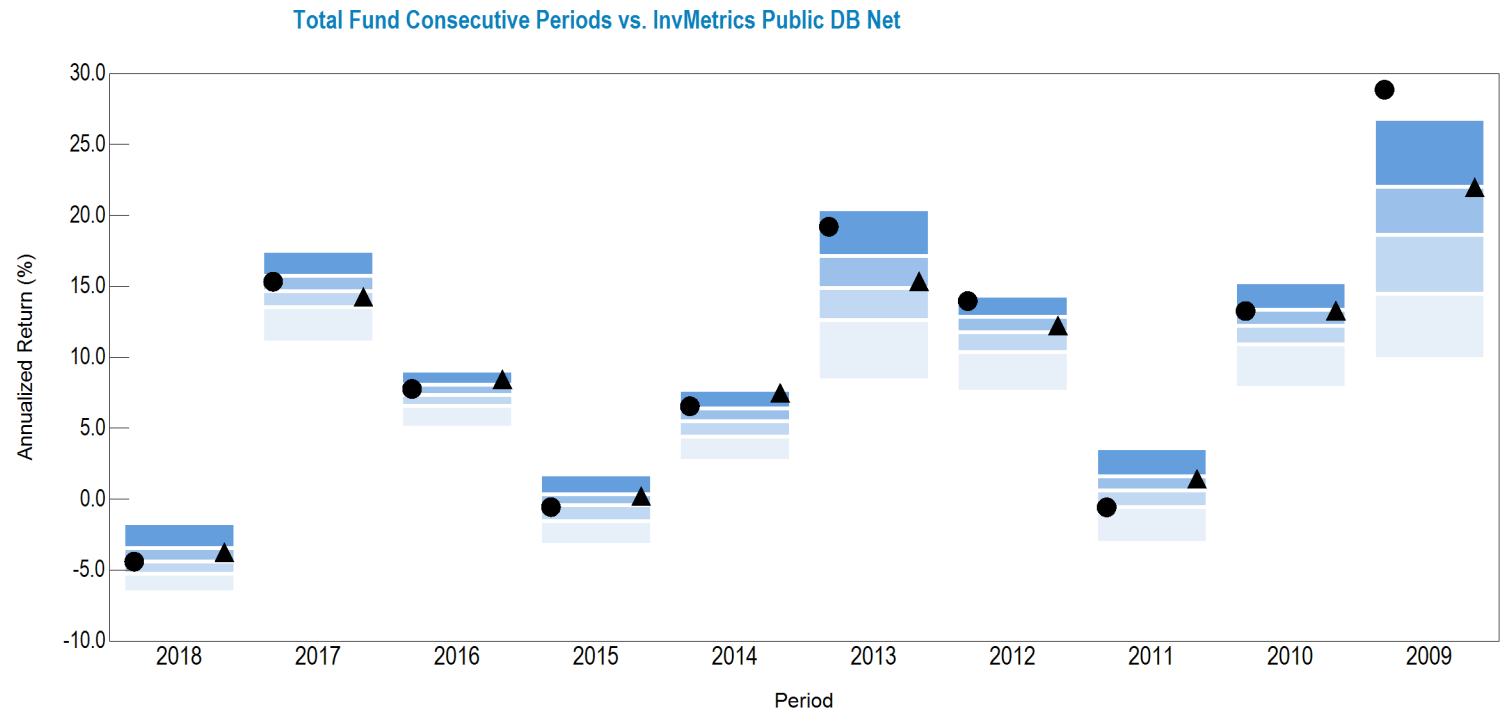


	Return (Rank)						
5th Percentile	1.7	15.9	6.1	9.6	7.7	9.0	9.2
25th Percentile	1.1	14.2	4.8	8.4	6.8	8.1	8.4
Median	0.8	13.3	4.0	7.9	6.3	7.6	7.9
75th Percentile	0.4	11.8	3.0	7.2	5.7	7.0	7.4
95th Percentile	-0.1	9.8	1.4	6.3	4.9	6.1	6.5
# of Portfolios	562	558	554	542	495	469	415
● Total Fund	0.9 (36)	11.9 (74)	4.3 (36)	7.9 (50)	6.3 (47)	8.0 (32)	8.5 (24)
▲ Policy Index	0.4 (76)	11.0 (85)	3.7 (58)	7.2 (75)	6.4 (44)	7.6 (50)	8.2 (37)

# Total Fund

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

Period Ending: September 30, 2019



	Return (Rank)									
5th Percentile	-1.7	17.5	9.0	1.7	7.7	20.4	14.3	3.6	15.3	26.8
25th Percentile	-3.4	15.8	8.1	0.4	6.4	17.2	12.9	1.6	13.4	22.0
Median	-4.4	14.7	7.4	-0.4	5.5	14.9	11.8	0.6	12.2	18.6
75th Percentile	-5.2	13.6	6.6	-1.5	4.4	12.7	10.4	-0.5	10.9	14.5
95th Percentile	-6.5	11.1	5.0	-3.2	2.7	8.4	7.6	-3.1	7.9	9.9
# of Portfolios	496	269	269	262	210	191	159	137	131	128
● Total Fund	-4.4 (51)	15.3 (36)	7.8 (36)	-0.6 (55)	6.5 (22)	19.2 (12)	14.0 (9)	-0.6 (77)	13.3 (27)	28.9 (2)
▲ Policy Index	-3.7 (34)	14.3 (60)	8.5 (18)	0.2 (29)	7.5 (8)	15.4 (45)	12.3 (41)	1.4 (30)	13.3 (27)	22.0 (26)



## Domestic Equity Managers

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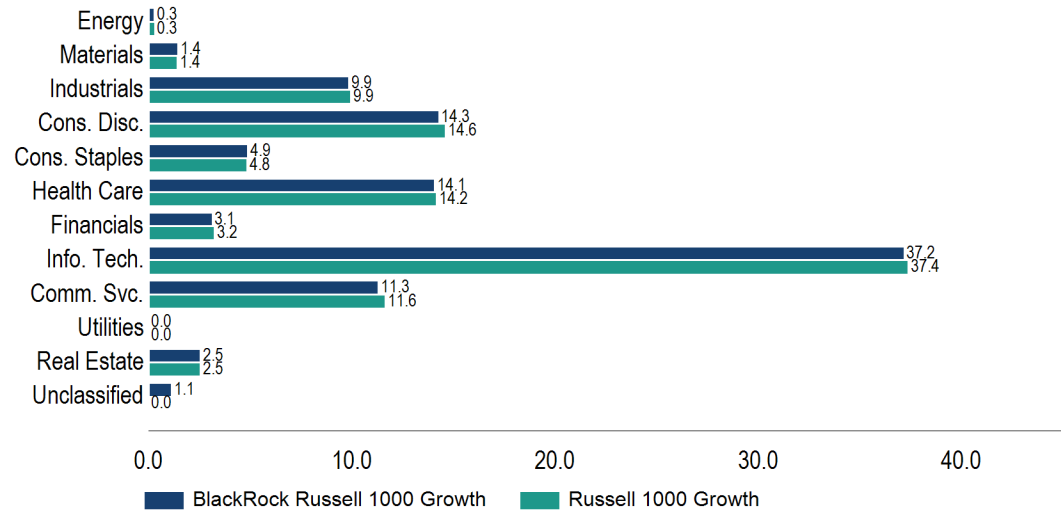
# BlackRock Russell 1000 Growth Manager Portfolio Overview

Period Ending: September 30, 2019

## Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	530	526
Weighted Avg. Market Cap. (\$B)	298.57	300.55
Median Market Cap. (\$B)	12.13	12.24
Price To Earnings	26.73	26.74
Price To Book	8.07	8.05
Price To Sales	3.09	3.09
Return on Equity (%)	35.49	35.42
Yield (%)	1.22	1.21
Beta	1.00	1.00

## Sector Allocation (%) vs Russell 1000 Growth



## Largest Holdings

	End Weight	Return
MICROSOFT	7.45	4.14
APPLE	7.17	13.60
AMAZON.COM	5.09	-8.33
FACEBOOK CLASS A	3.02	-7.73
ALPHABET 'C'	2.63	12.78
ALPHABET A	2.59	12.78
VISA 'A'	2.12	-0.75
MASTERCARD	1.73	2.79
CISCO SYSTEMS	1.50	-9.16
MERCK & COMPANY	1.46	1.06

## Bottom Contributors

	Avg Wgt	Return	Contribution
AMAZON.COM	1.88	-8.33	-0.16
NETFLIX	0.37	-27.14	-0.10
FACEBOOK CLASS A	1.11	-7.73	-0.09
UNITEDHEALTH GROUP	0.55	-10.53	-0.06
CISCO SYSTEMS	0.58	-9.16	-0.05
PAYPAL HOLDINGS	0.32	-9.50	-0.03
ILLUMINA	0.13	-17.37	-0.02
ADOBE (NAS)	0.35	-6.24	-0.02
ALIGN TECHNOLOGY	0.05	-33.90	-0.02
WORKDAY CLASS A	0.08	-17.33	-0.01

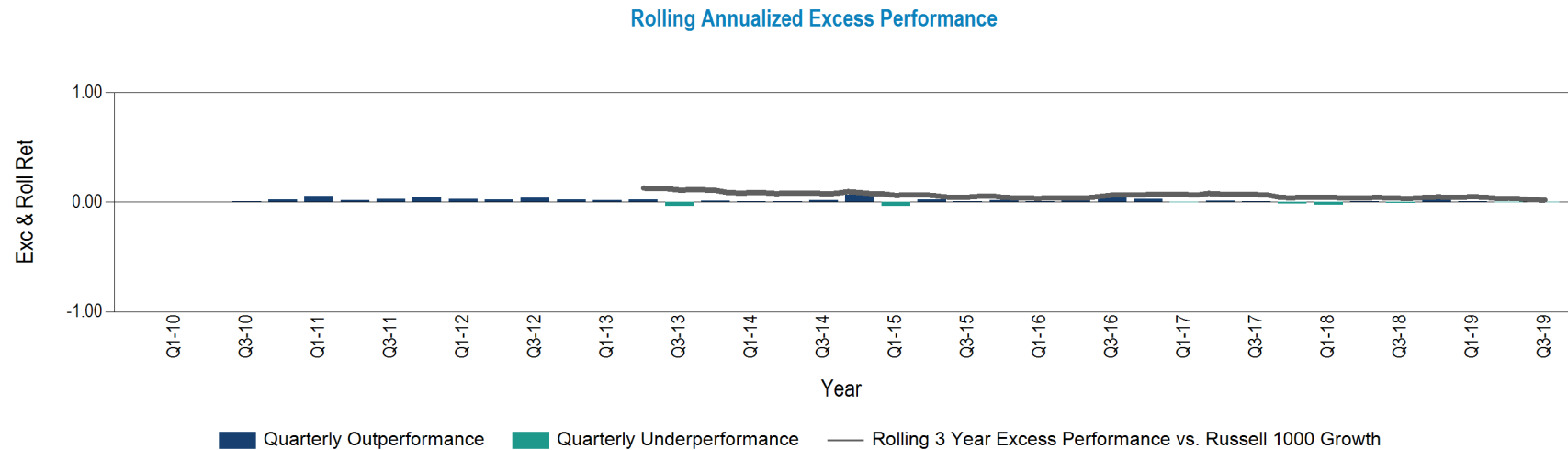
## Top Contributors

	Avg Wgt	Return	Contribution
APPLE	2.19	13.60	0.30
ALPHABET 'C'	0.79	12.78	0.10
MICROSOFT	2.44	4.14	0.10
ALPHABET A	0.78	12.78	0.10
HOME DEPOT	0.31	12.24	0.04
TEXAS INSTRUMENTS	0.26	13.29	0.03
NIKE 'B'	0.25	12.17	0.03
UNITED PARCEL SER.'B'	0.17	16.99	0.03
COSTCO WHOLESALE	0.28	9.26	0.03
COCA COLA	0.32	7.70	0.02

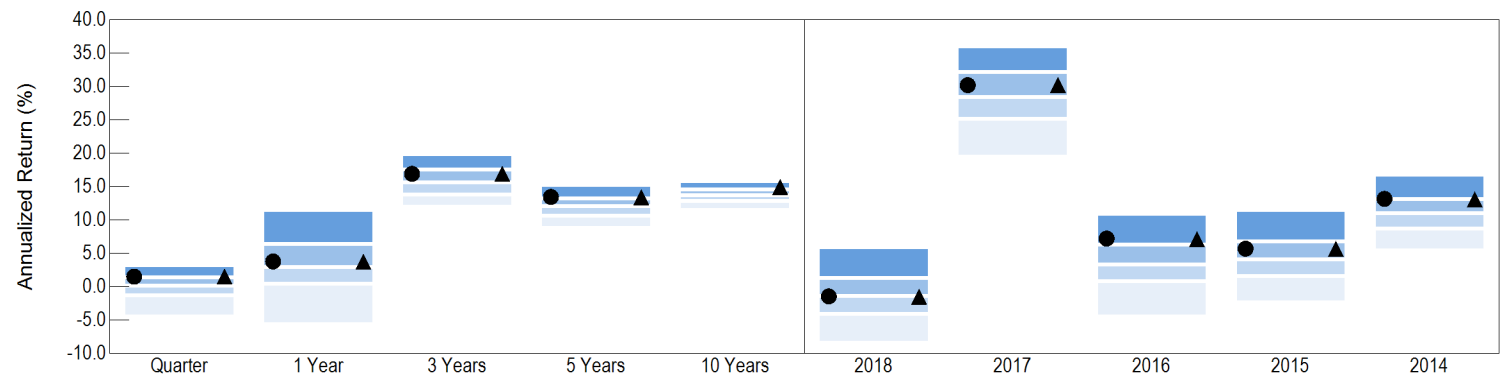
Unclassified sector allocation includes cash allocations.

# BlackRock Russell 1000 Growth Manager Performance Comparisons (Gross of Fees)

Period Ending: September 30, 2019



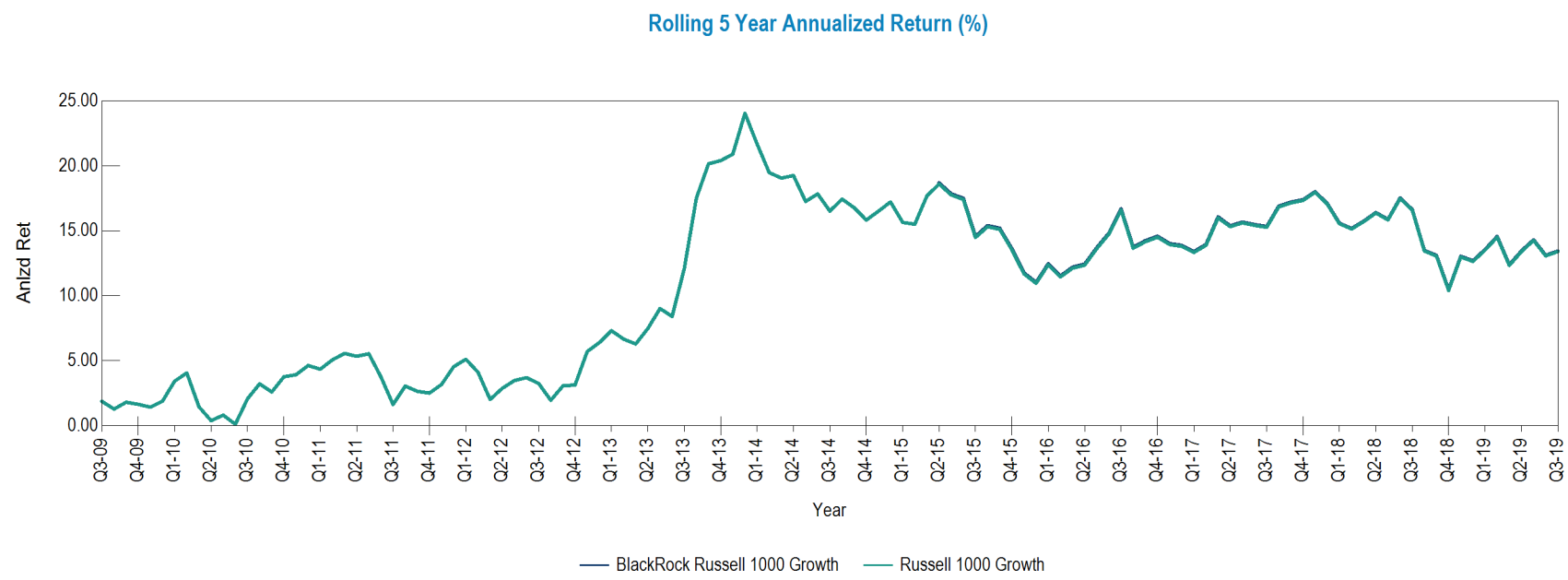
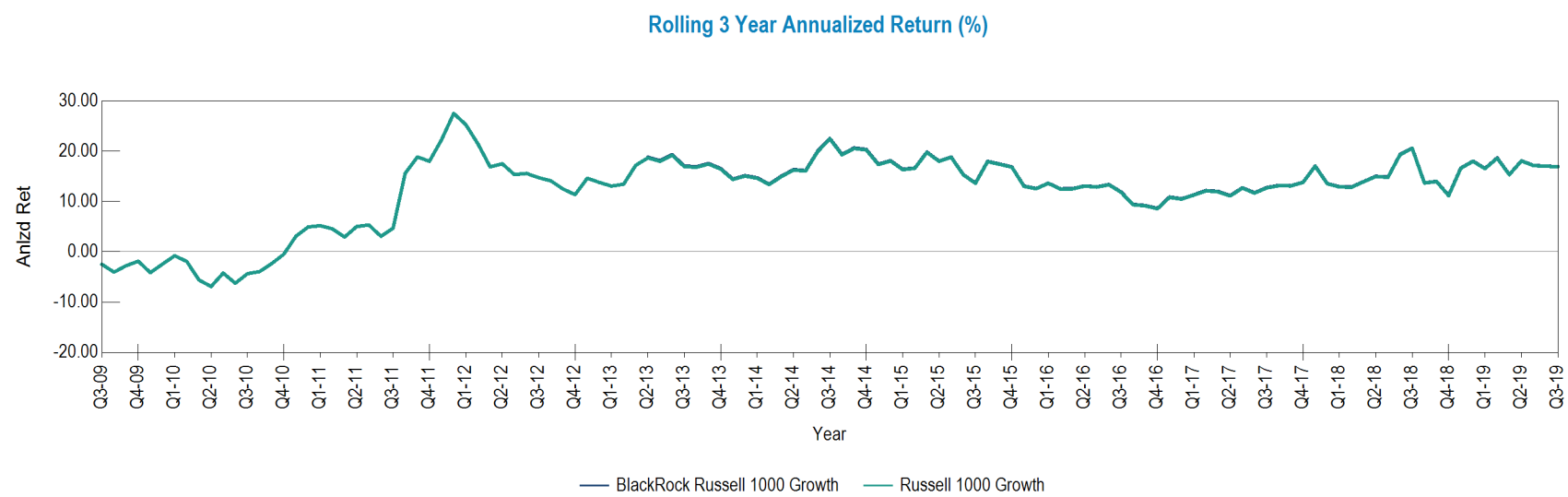
## BlackRock Russell 1000 Growth vs. eV US Large Cap Growth Equity Net Universe



	Quarter	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	2015	2014
<b>Return (Rank)</b>										
5th Percentile	3.2	11.4	19.8	15.2	15.7	5.8	36.0	10.8	11.4	16.7
25th Percentile	1.4	6.4	17.6	13.2	14.6	1.4	32.2	6.3	6.8	13.1
Median	0.2	2.9	15.7	12.1	13.7	-1.3	28.5	3.4	4.1	11.1
75th Percentile	-1.2	0.5	13.8	10.7	12.9	-4.1	25.2	0.8	1.6	8.7
95th Percentile	-4.5	-5.6	12.0	8.8	11.5	-8.4	19.5	-4.5	-2.3	5.5
# of Portfolios	179	176	169	161	138	179	182	182	175	180
● BlackRock Russell 1000 Growth	1.5 (23)	3.8 (43)	16.9 (31)	13.4 (23)	-- (--)	-1.5 (52)	30.2 (38)	7.2 (19)	5.7 (35)	13.1 (25)
▲ Russell 1000 Growth	1.5 (23)	3.7 (44)	16.9 (31)	13.4 (23)	14.9 (19)	-1.5 (52)	30.2 (38)	7.1 (20)	5.7 (35)	13.0 (28)

BlackRock Russell 1000 Growth  
Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

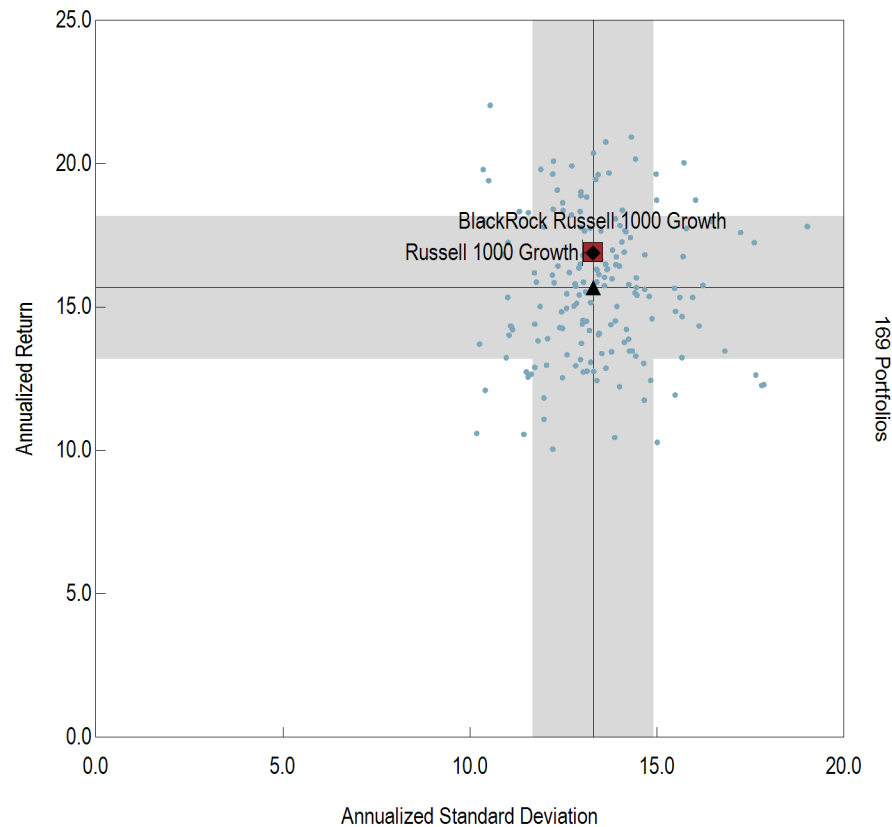
Period Ending: September 30, 2019



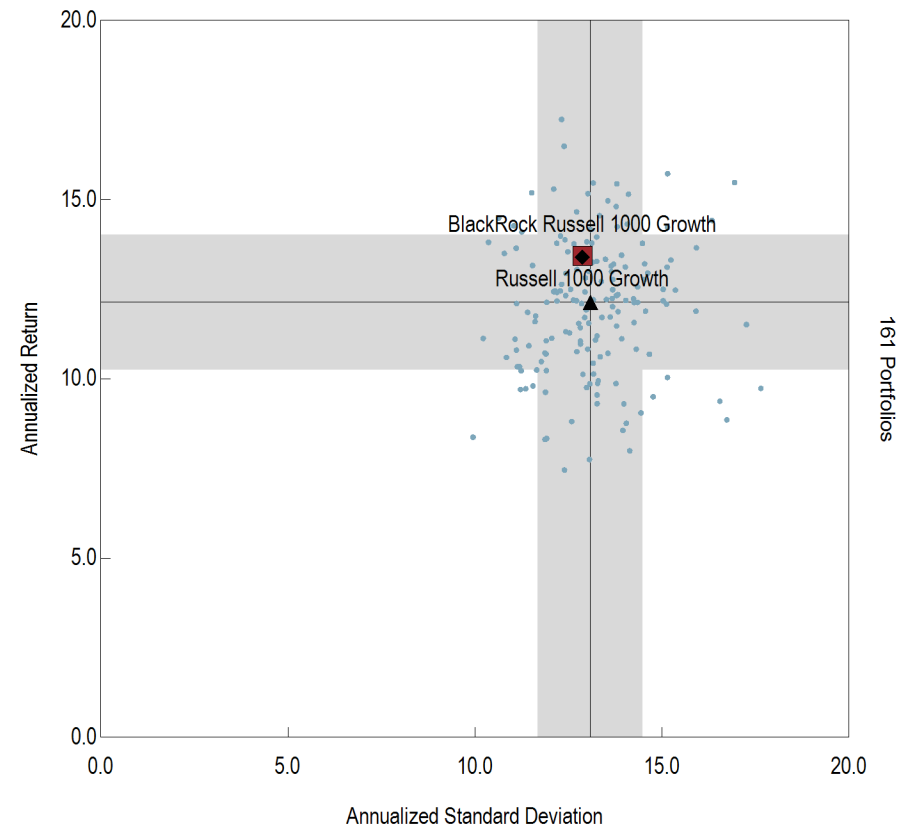
# BlackRock Russell 1000 Growth Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2019

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
BlackRock Russell 1000 Growth	16.91%	13.29%	1.16
Russell 1000 Growth	16.89%	13.30%	1.15
eV US Large Cap Growth Equity Net Median	15.68%	13.30%	1.07

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
BlackRock Russell 1000 Growth	13.4%	12.9%	1.0
Russell 1000 Growth	13.4%	12.9%	1.0
eV US Large Cap Growth Equity Net Median	12.1%	13.1%	0.8

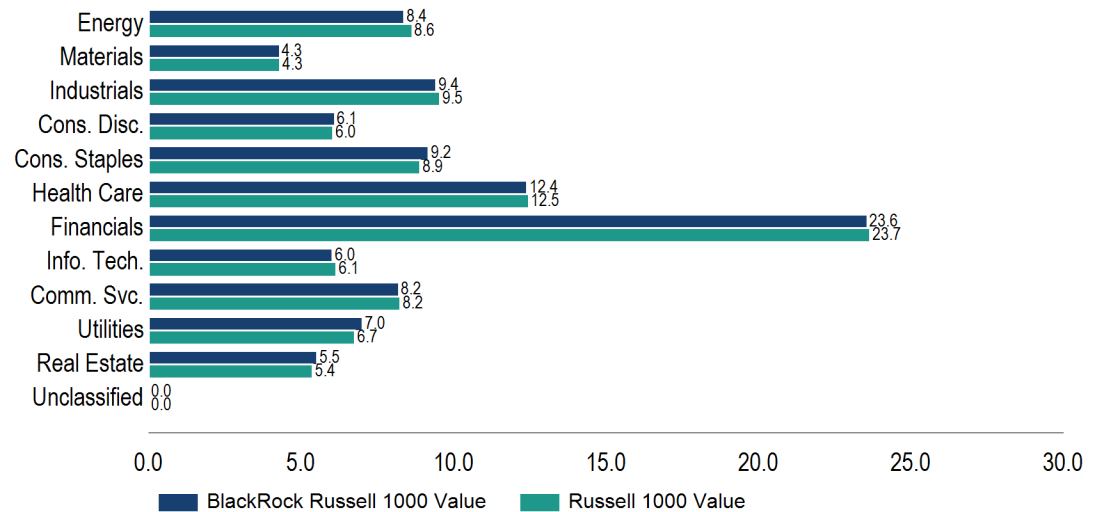
# BlackRock Russell 1000 Value Manager Portfolio Overview

Period Ending: September 30, 2019

## Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	761	760
Weighted Avg. Market Cap. (\$B)	114.46	114.23
Median Market Cap. (\$B)	8.95	8.98
Price To Earnings	16.78	16.68
Price To Book	2.25	2.24
Price To Sales	1.50	1.50
Return on Equity (%)	14.90	14.92
Yield (%)	2.63	2.62
Beta	1.00	1.00

## Sector Allocation (%) vs Russell 1000 Value



## Largest Holdings

	End Weight	Return
BERKSHIRE HATHAWAY 'B'	3.01	-2.42
JP MORGAN CHASE & CO.	2.76	6.01
EXXON MOBIL	2.21	-6.70
JOHNSON & JOHNSON	2.16	-6.42
PROCTER & GAMBLE	2.14	14.17
AT&T	2.04	14.64
VERIZON COMMUNICATIONS	1.84	6.78
BANK OF AMERICA	1.81	1.23
INTEL	1.69	8.37
WALT DISNEY	1.68	-6.10

## Bottom Contributors

	Avg Wgt	Return	Contribution
PFIZER	0.59	-16.28	-0.10
EXXON MOBIL	0.80	-6.70	-0.05
JOHNSON & JOHNSON	0.78	-6.42	-0.05
WALT DISNEY	0.60	-6.10	-0.04
GENERAL ELECTRIC	0.22	-14.77	-0.03
EOG RES.	0.13	-20.07	-0.03
BERKSHIRE HATHAWAY 'B'	1.03	-2.42	-0.02
CHEVRON	0.59	-3.71	-0.02
ANTHEM	0.13	-14.65	-0.02
SCHLUMBERGER	0.14	-12.66	-0.02

## Top Contributors

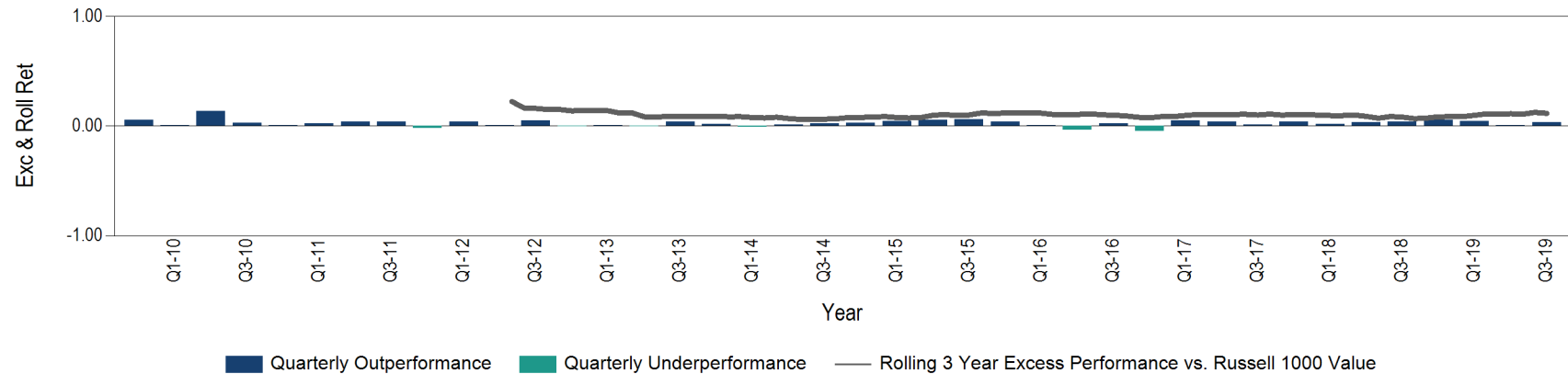
	Avg Wgt	Return	Contribution
PROCTER & GAMBLE	0.63	14.17	0.09
AT&T	0.60	14.64	0.09
JP MORGAN CHASE & CO.	0.89	6.01	0.05
INTEL	0.53	8.37	0.04
MEDTRONIC	0.32	12.71	0.04
VERIZON COMMUNICATIONS	0.58	6.78	0.04
WELLS FARGO & CO	0.47	7.77	0.04
NEXTERA ENERGY	0.24	14.37	0.03
WALMART	0.38	7.94	0.03
HOME DEPOT	0.24	12.24	0.03

Unclassified sector allocation includes cash allocations.

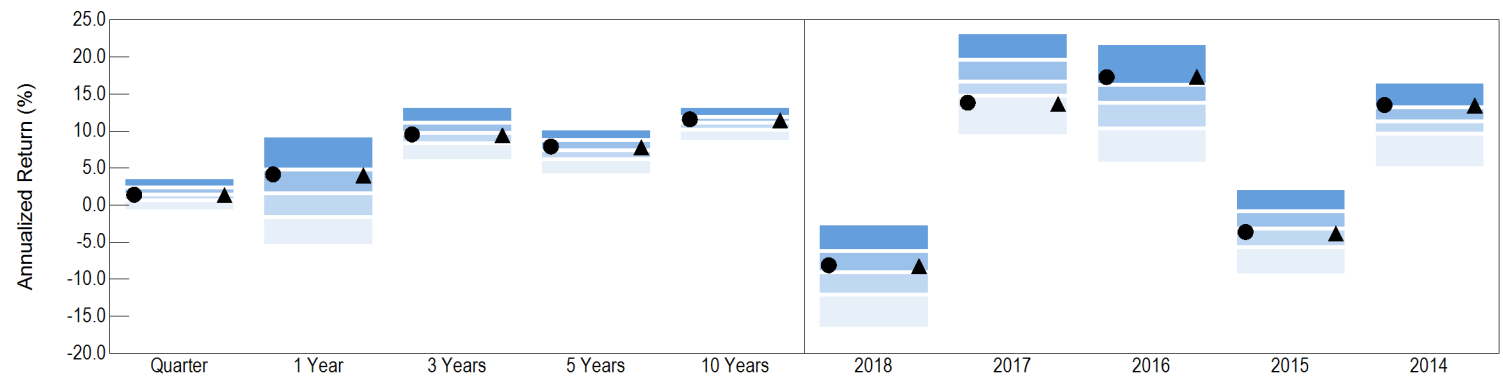
# BlackRock Russell 1000 Value Manager Performance Comparisons (Gross of Fees)

Period Ending: September 30, 2019

Rolling Annualized Excess Performance



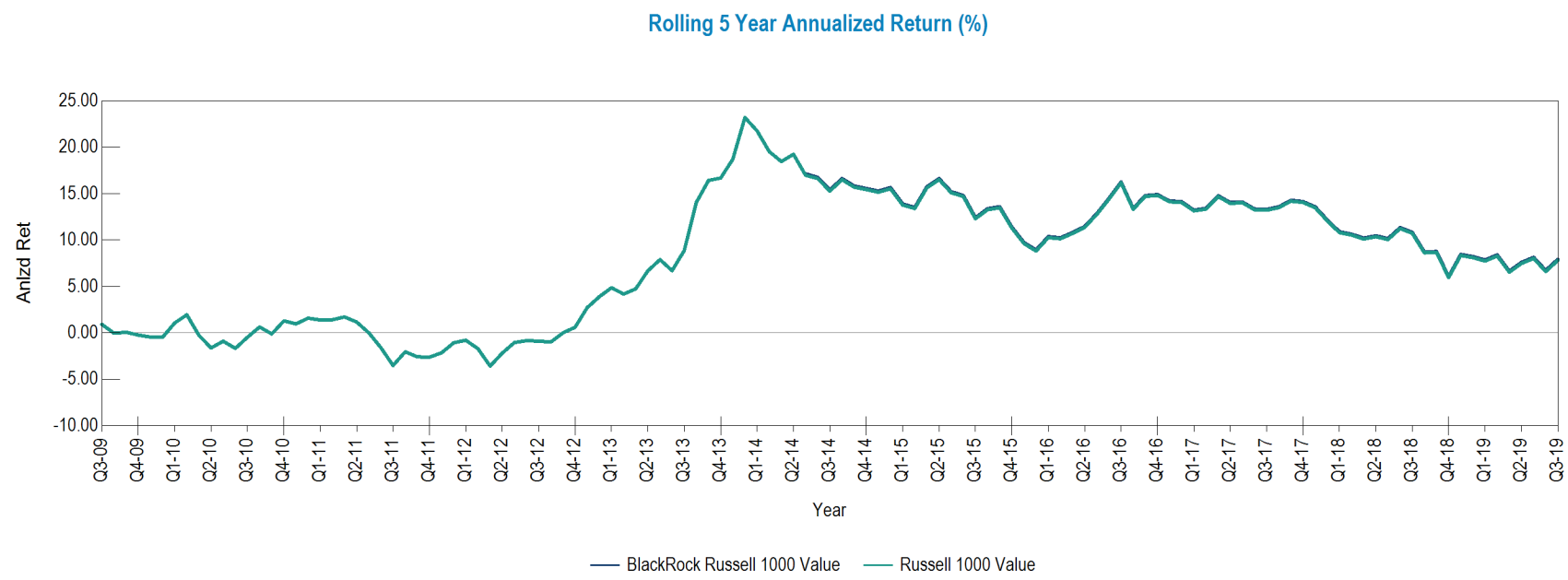
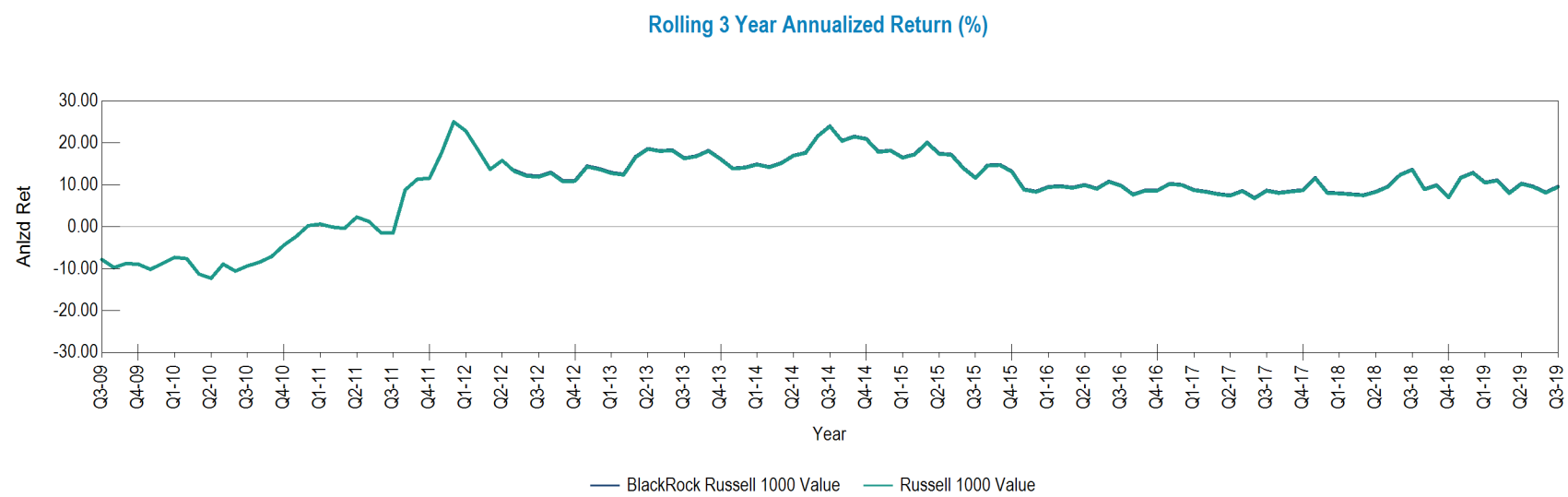
BlackRock Russell 1000 Value vs. eV US Large Cap Value Equity Net Universe



	Quarter		1 Year		3 Years		5 Years		10 Years		2018	2017	2016	2015	2014
<b>Return (Rank)</b>															
5th Percentile	3.7		9.3		13.4		10.3		13.3		-2.5	23.3	21.8	2.2	16.6
25th Percentile	2.5		4.9		11.1		8.8		12.0		-6.1	19.7	16.3	-0.8	13.3
Median	1.5		1.7		9.8		7.5		11.2		-9.0	16.7	13.8	-3.1	11.3
75th Percentile	0.7		-1.6		8.4		6.2		10.2		-12.0	14.8	10.4	-5.7	9.7
95th Percentile	-0.8		-5.5		6.0		4.0		8.5		-16.7	9.4	5.6	-9.4	5.0
# of Portfolios	236		231		226		218		176		239	231	225	195	197
● BlackRock Russell 1000 Value	1.4 (53)		4.1 (31)		9.5 (54)		7.9 (42)		11.6 (34)		-8.1 (40)	13.8 (83)	17.3 (20)	-3.6 (57)	13.5 (23)
▲ Russell 1000 Value	1.4 (55)		4.0 (32)		9.4 (57)		7.8 (44)		11.5 (39)		-8.3 (43)	13.7 (86)	17.3 (19)	-3.8 (59)	13.5 (24)

BlackRock Russell 1000 Value  
 Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

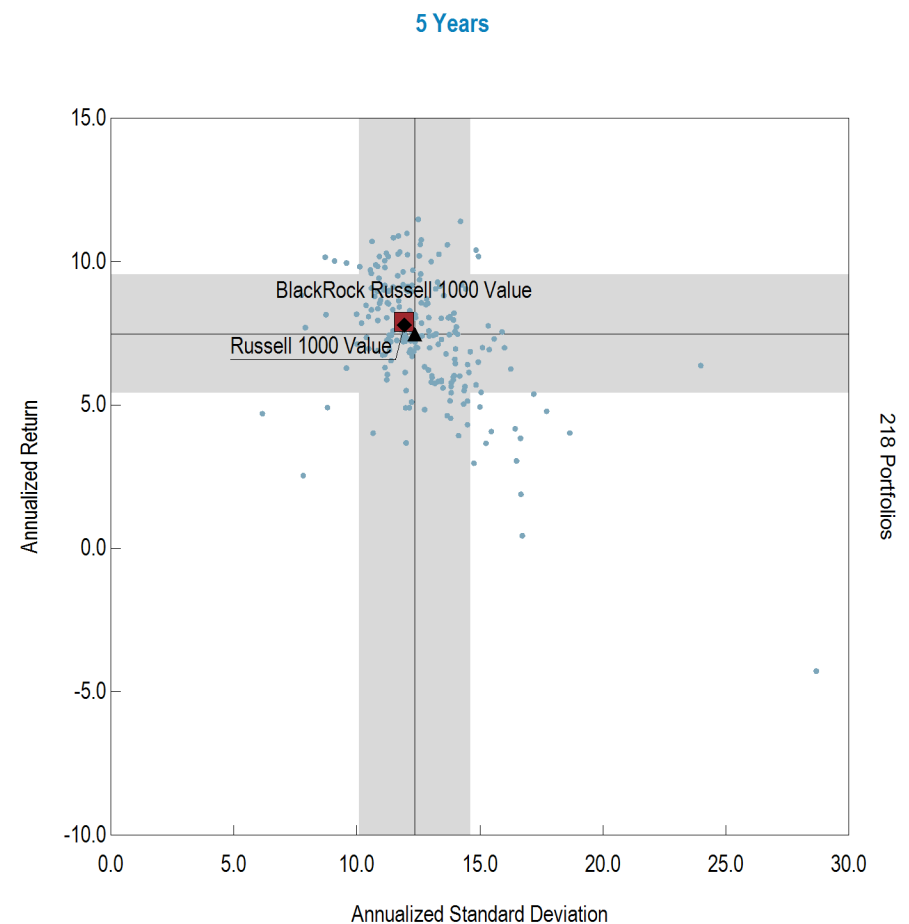
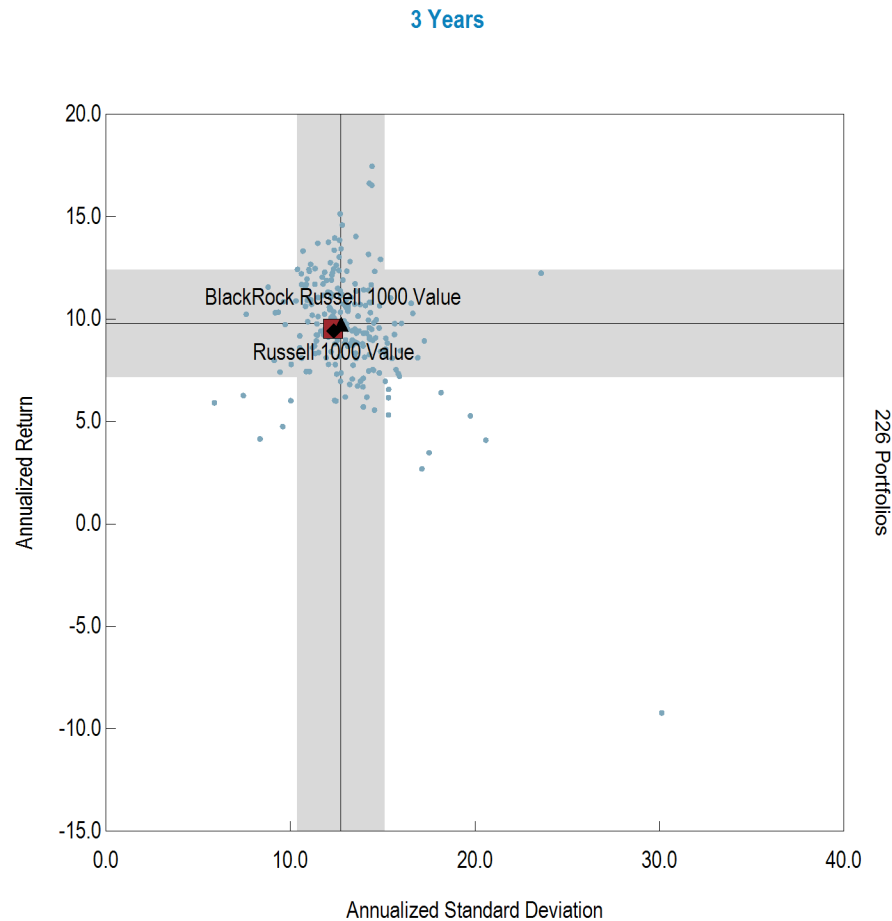
Period Ending: September 30, 2019





# BlackRock Russell 1000 Value Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2019



	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
BlackRock Russell 1000 Value	9.55%	12.32%	0.65
Russell 1000 Value	9.43%	12.34%	0.64
eV US Large Cap Value Equity Net Median	9.78%	12.74%	0.65

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
BlackRock Russell 1000 Value	7.9%	11.9%	0.6
Russell 1000 Value	7.8%	11.9%	0.6
eV US Large Cap Value Equity Net Median	7.5%	12.4%	0.5

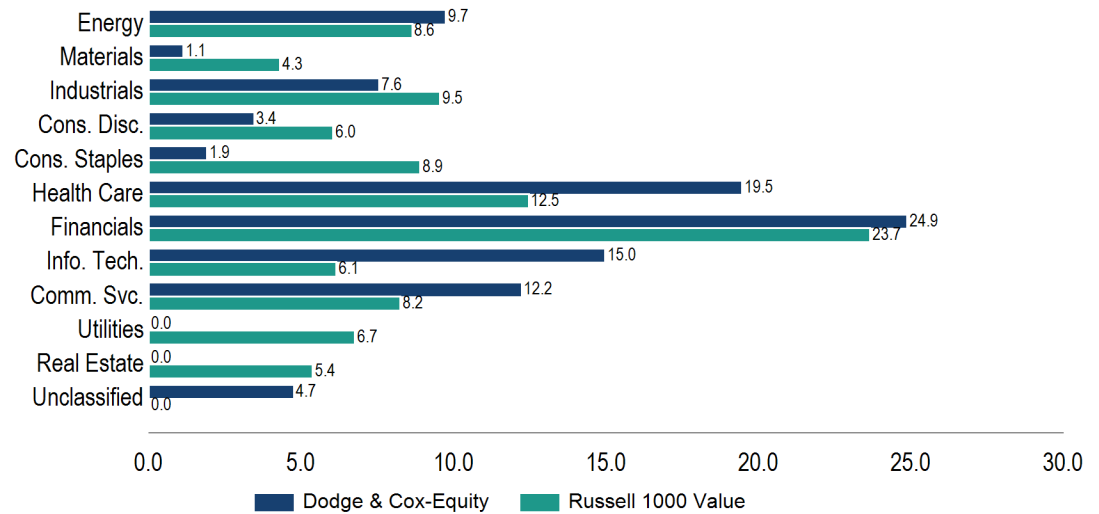
# Dodge & Cox-Equity Manager Portfolio Overview

Period Ending: September 30, 2019

## Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	66	760
Weighted Avg. Market Cap. (\$B)	102.15	114.23
Median Market Cap. (\$B)	34.10	8.98
Price To Earnings	14.34	16.68
Price To Book	2.22	2.24
Price To Sales	1.44	1.50
Return on Equity (%)	15.80	14.92
Yield (%)	2.53	2.62
Beta	1.03	1.00

## Sector Allocation (%) vs Russell 1000 Value



## Largest Holdings

	End Weight	Return
WELLS FARGO & CO	3.64	7.77
CHARLES SCHWAB	3.34	4.55
CAPITAL ONE FINL.	3.25	0.71
COMCAST A	3.25	7.14
ALPHABET 'C'	3.19	12.78
OCCIDENTAL PTL.	3.18	-10.00
CHARTER COMMS.CL.A	3.02	4.29
SANOFI ADR 2:1 (XSC)	2.99	7.07
BANK OF AMERICA	2.89	1.23
FEDEX	2.84	-10.98

## Bottom Contributors

	Avg Wgt	Return	Contribution
FEDEX	3.10	-10.98	-0.34
OCCIDENTAL PTL.	2.72	-10.00	-0.27
MICRO FOCUS	0.60	-43.64	-0.26
INTL.SPN.ADR 1:1	0.66	-34.08	-0.22
CONCHO RESOURCES	0.66	-34.08	-0.22
HP	1.98	-8.23	-0.16
SCHLUMBERGER	1.17	-12.66	-0.15
UNITEDHEALTH GROUP	1.32	-10.53	-0.14
NOVARTIS 'B' SPN.ADR 1:1	2.35	-4.83	-0.11
APACHE	1.01	-10.71	-0.11
FOX A	0.81	-13.33	-0.11

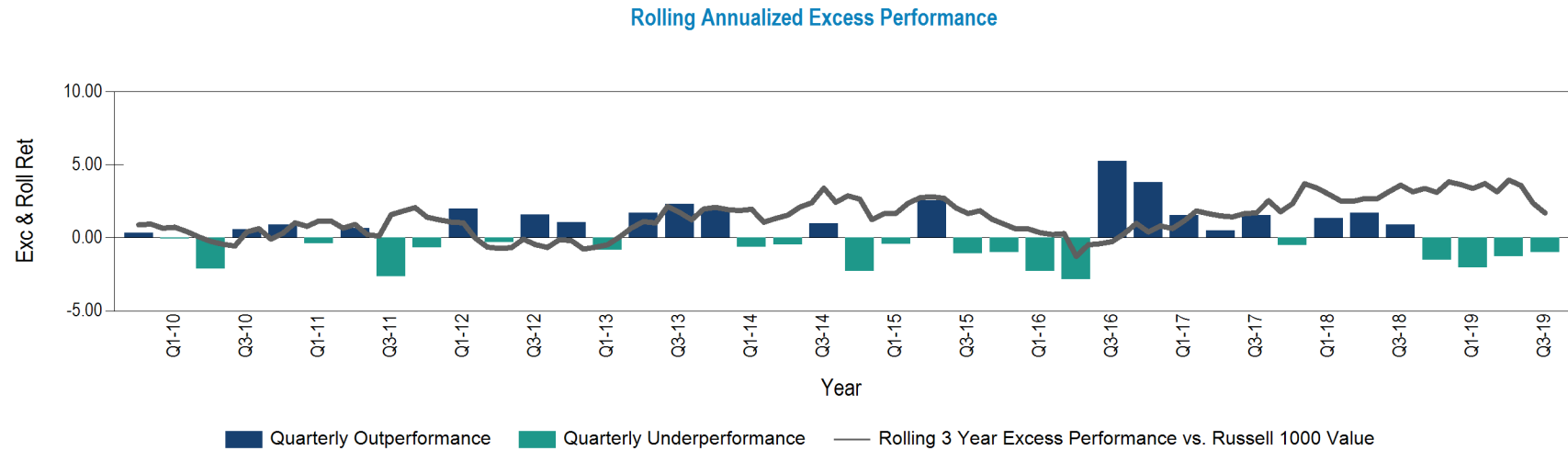
## Top Contributors

	Avg Wgt	Return	Contribution
ALPHABET 'C'	3.06	12.78	0.39
WELLS FARGO & CO	3.43	7.77	0.27
BRISTOL MYERS SQUIBB	1.96	12.80	0.25
COMCAST A	3.45	7.14	0.25
ASTRAZENECA	2.37	9.07	0.21
SPN.ADR.2:1	2.37	9.07	0.21
SANOFI ADR 2:1 (XSC)	2.77	7.07	0.20
GLAXOSMITHKLINE	2.23	7.87	0.18
SPN.ADR 1:2	2.23	7.87	0.18
CHARTER COMMS.CL.A	3.75	4.29	0.16
JP MORGAN CHASE & CO.	2.64	6.01	0.16
MICROCHIP TECH.	1.86	7.60	0.14

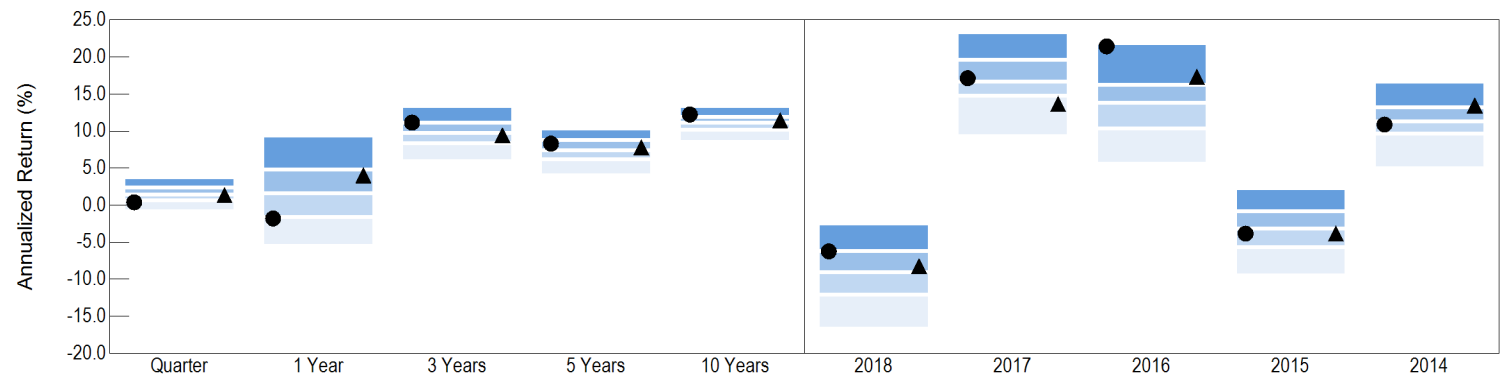
Unclassified sector allocation includes cash allocations.

# Dodge & Cox-Equity Manager Performance Comparisons (Gross of Fees)

Period Ending: September 30, 2019

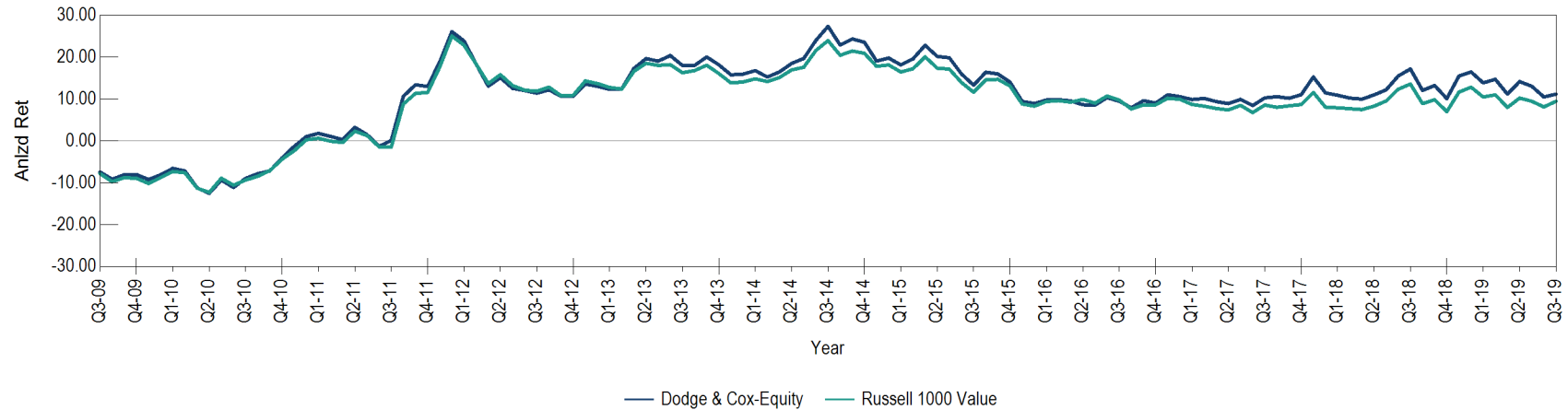


## Dodge & Cox-Equity vs. eV US Large Cap Value Equity Net Universe

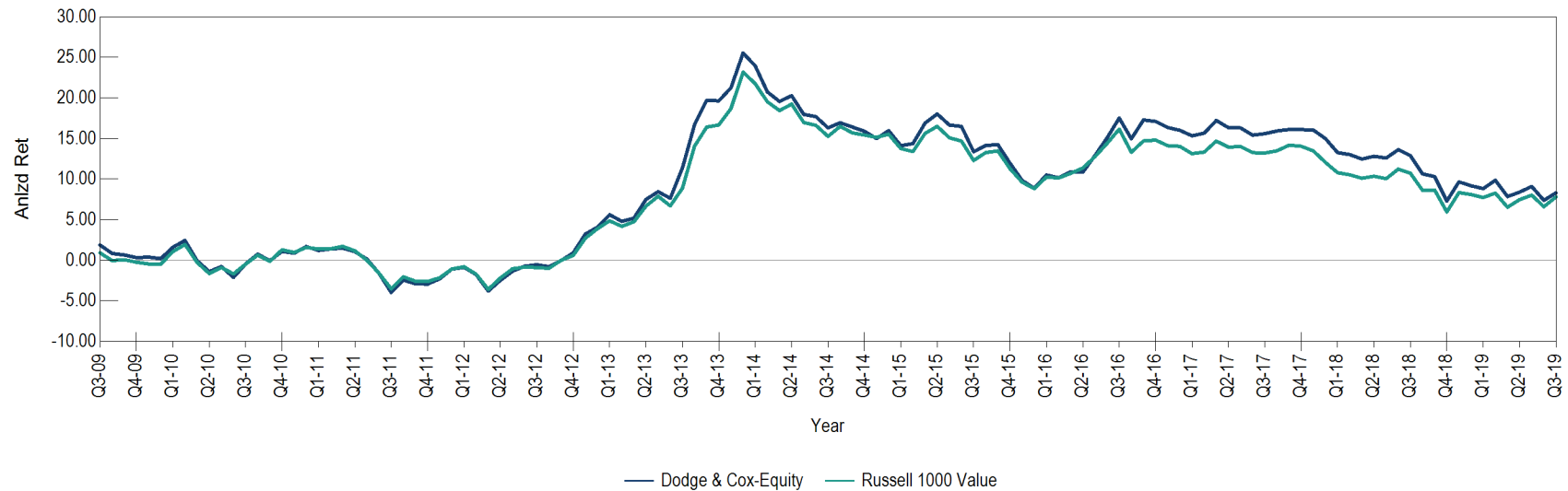


		Return (Rank)																			
5th Percentile		3.7	9.3	13.4	10.3	13.3	-2.5	23.3	21.8	2.2	16.6										
25th Percentile		2.5	4.9	11.1	8.8	12.0	-6.1	19.7	16.3	-0.8	13.3										
Median		1.5	1.7	9.8	7.5	11.2	-9.0	16.7	13.8	-3.1	11.3										
75th Percentile		0.7	-1.6	8.4	6.2	10.2	-12.0	14.8	10.4	-5.7	9.7										
95th Percentile		-0.8	-5.5	6.0	4.0	8.5	-16.7	9.4	5.6	-9.4	5.0										
# of Portfolios		236	231	226	218	176	239	231	225	195	197										
●	Dodge & Cox-Equity	0.4	(79)	-1.8	(78)	11.1	(25)	8.3	(33)	12.2	(17)	-6.3	(26)	17.1	(45)	21.4	(6)	-3.9	(59)	10.9	(60)
▲	Russell 1000 Value	1.4	(55)	4.0	(32)	9.4	(57)	7.8	(44)	11.5	(39)	-8.3	(43)	13.7	(86)	17.3	(19)	-3.8	(59)	13.5	(24)

Rolling 3 Year Annualized Return (%)



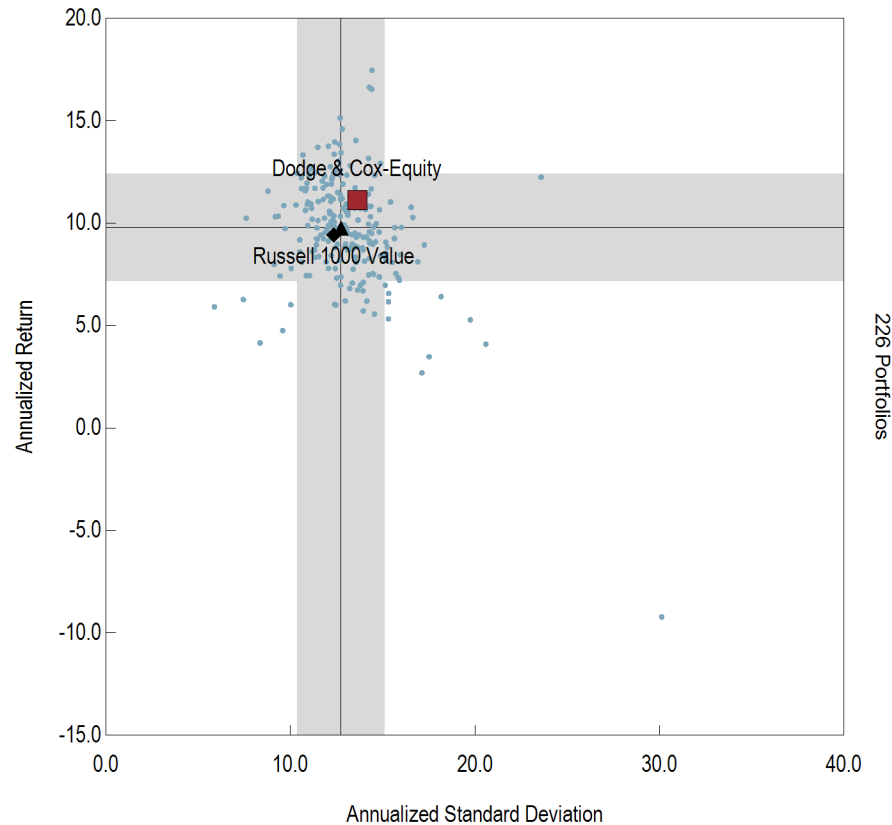
Rolling 5 Year Annualized Return (%)



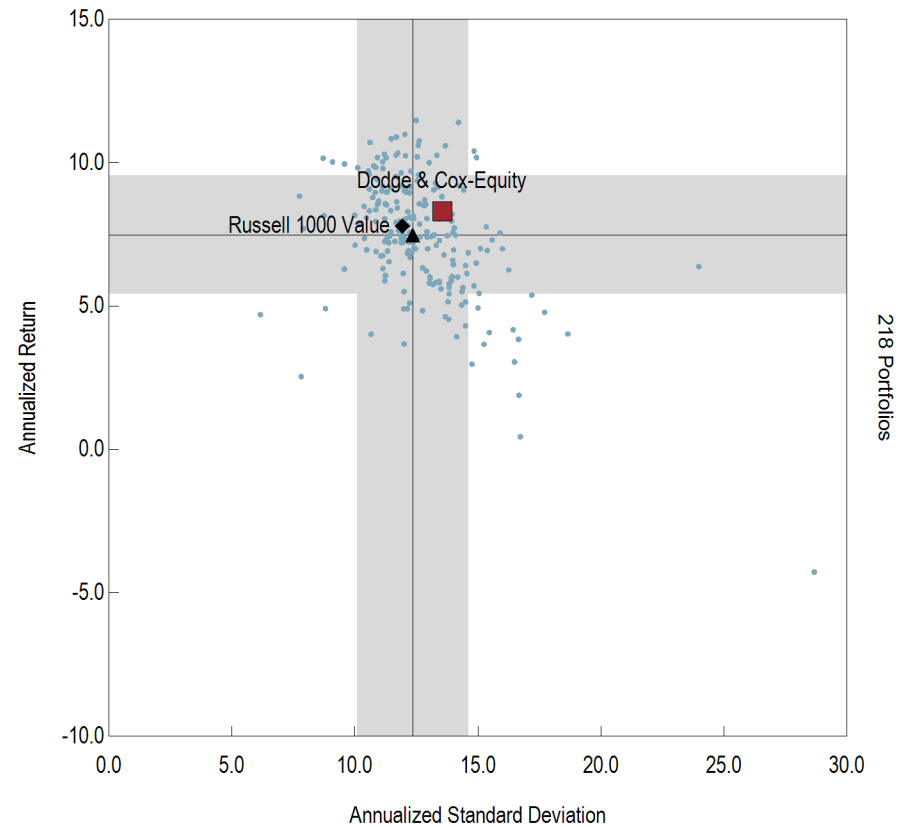
# Dodge & Cox-Equity Risk vs. Return 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2019

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Dodge & Cox-Equity	11.14%	13.63%	0.70
Russell 1000 Value	9.43%	12.34%	0.64
eV US Large Cap Value Equity Net Median	9.78%	12.74%	0.65

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Dodge & Cox-Equity	8.3%	13.5%	0.5
Russell 1000 Value	7.8%	11.9%	0.6
eV US Large Cap Value Equity Net Median	7.5%	12.4%	0.5

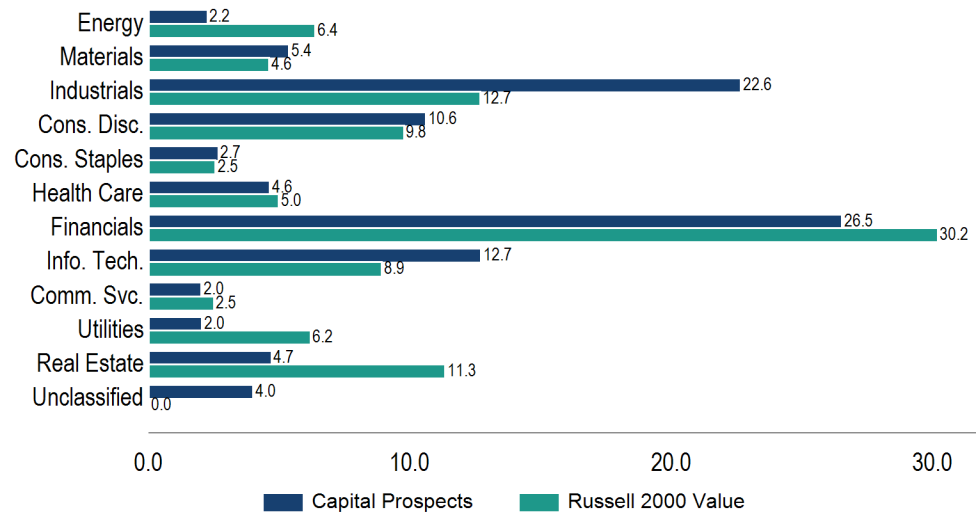
# Capital Prospects Manager Portfolio Overview

Period Ending: September 30, 2019

## Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	285	1,387
Weighted Avg. Market Cap. (\$B)	2.47	1.96
Median Market Cap. (\$B)	1.24	0.62
Price To Earnings	16.98	14.85
Price To Book	1.93	1.62
Price To Sales	0.98	0.92
Return on Equity (%)	9.98	5.44
Yield (%)	1.83	2.21
Beta	1.05	1.00

## Sector Allocation (%) vs Russell 2000 Value



## Largest Holdings

	End Weight	Return
ARCONIC	1.62	0.78
OFG BANCORP	1.26	-7.58
CROWN HDG.	1.26	8.12
AIR LEASE	1.25	1.45
LITTELFUSE	1.11	0.53
HOSTESS BRANDS CL.A	1.05	-3.15
CENTERSTATE BANK	0.87	4.61
KNOWLES	0.85	11.09
CINEMARK HOLDINGS	0.80	7.99
MODINE MANUFACTURING	0.80	-20.54

## Bottom Contributors

	Avg Wgt	Return	Contribution
VERSO 'A'	0.85	-35.01	-0.30
MEREDITH	0.84	-32.54	-0.27
HILLENBRAND	0.72	-21.44	-0.15
OWENS ILLINOIS NEW	0.37	-40.23	-0.15
MODINE MANUFACTURING	0.69	-20.54	-0.14
QUOTIENT TECHNOLOGY	0.48	-27.19	-0.13
RANGE RES.	0.28	-45.02	-0.13
VERINT SYSTEMS	0.57	-20.45	-0.12
INGEVITY	0.54	-19.33	-0.11
TWIN DISC	0.33	-29.87	-0.10

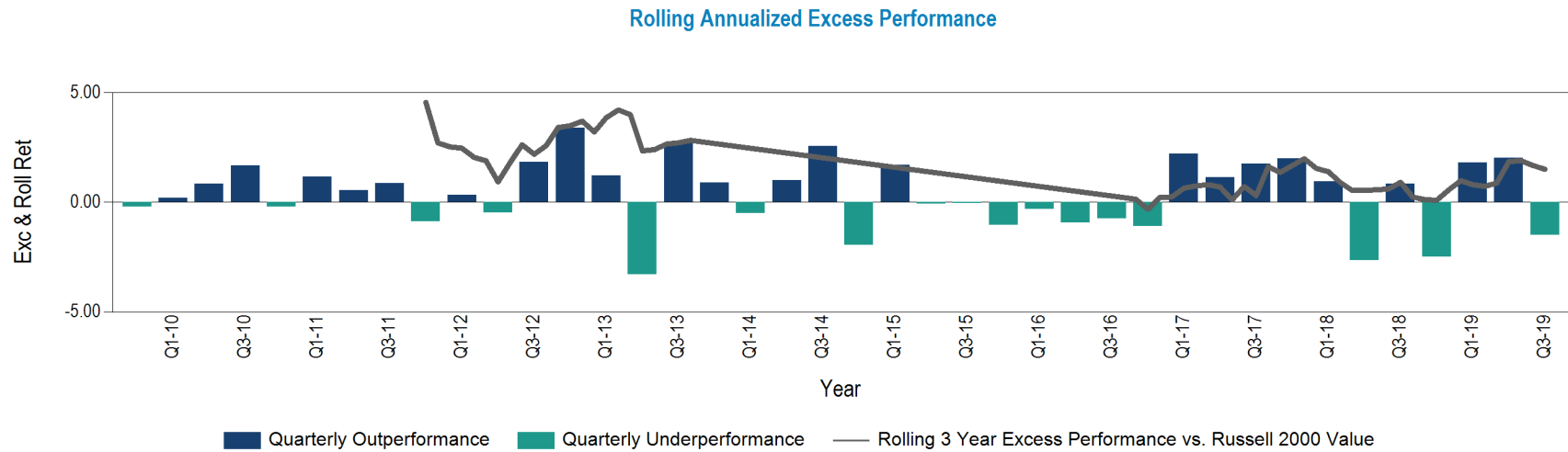
## Top Contributors

	Avg Wgt	Return	Contribution
TOWER INTERNATIONAL	0.56	58.62	0.33
MOBILE MINI	0.65	22.19	0.14
SPX	0.56	21.17	0.12
M/I HOMES	0.32	31.92	0.10
CROWN HDG.	1.21	8.12	0.10
UNIVERSAL ELECTRONICS	0.40	24.09	0.10
LATTICE SEMICONDUCTOR	0.36	25.33	0.09
KNOWLES	0.82	11.09	0.09
SP PLUS	0.56	15.88	0.09
HORACE MANN EDUCATORS	0.56	15.69	0.09

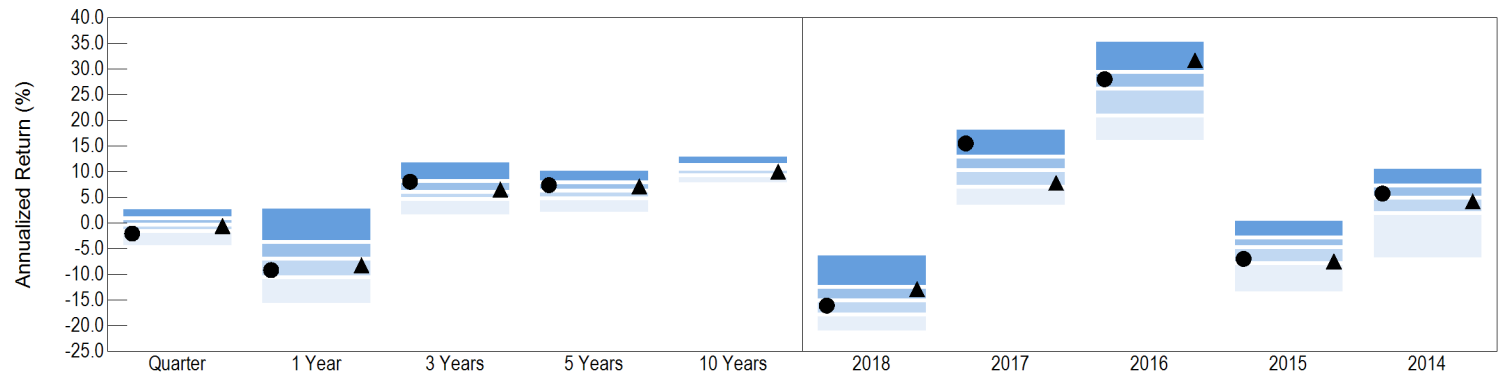
Unclassified sector allocation includes cash allocations.

# Capital Prospects Manager Performance Comparisons (Gross of Fees)

Period Ending: September 30, 2019



## Capital Prospects vs. eV US Small Cap Value Equity Net Universe



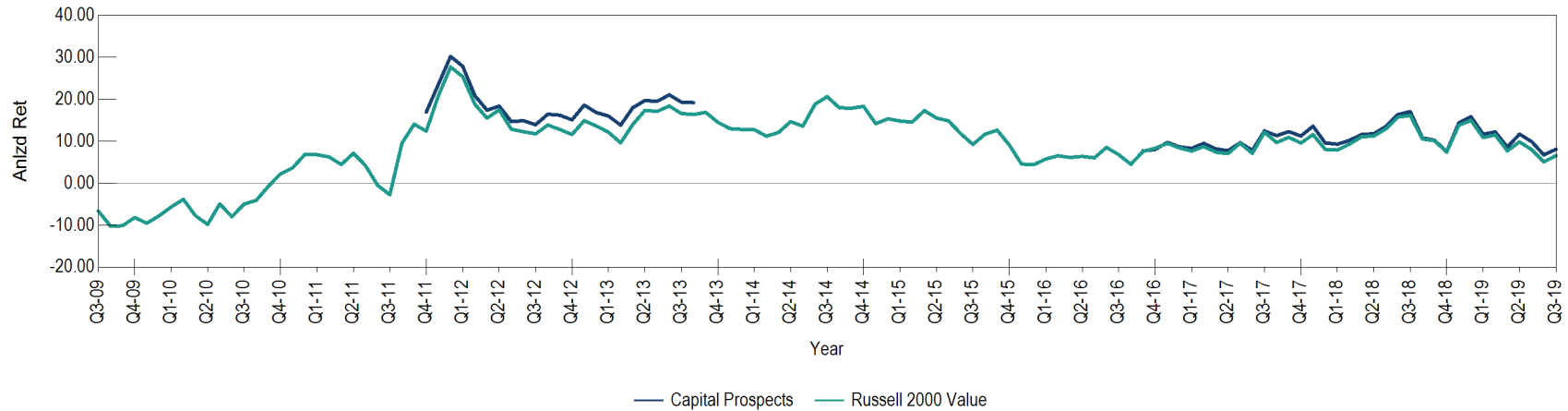
	Quarter	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	2015	2014
<b>Return (Rank)</b>										
5th Percentile	3.0	3.2	12.1	10.5	13.2	-6.0	18.6	35.7	0.8	10.9
25th Percentile	1.0	-3.6	8.2	8.0	11.4	-12.4	13.1	29.5	-2.7	7.4
Median	-0.3	-6.8	6.2	6.4	10.7	-15.0	10.3	26.2	-4.6	5.0
75th Percentile	-1.5	-10.5	4.8	4.9	9.4	-17.8	7.2	21.1	-7.8	2.0
95th Percentile	-4.7	-15.9	1.4	1.9	7.7	-21.3	3.3	15.9	-13.7	-7.0
# of Portfolios	172	171	168	158	134	168	170	151	137	135
● Capital Prospects	-2.1 (84)	-9.2 (66)	8.0 (27)	7.4 (32)	-- (--)	-16.1 (60)	15.5 (13)	28.1 (32)	-7.0 (71)	5.7 (44)
▲ Russell 2000 Value	-0.6 (57)	-8.2 (60)	6.5 (43)	7.2 (36)	10.1 (67)	-12.9 (31)	7.8 (70)	31.7 (15)	-7.5 (73)	4.2 (58)

## Capital Prospects

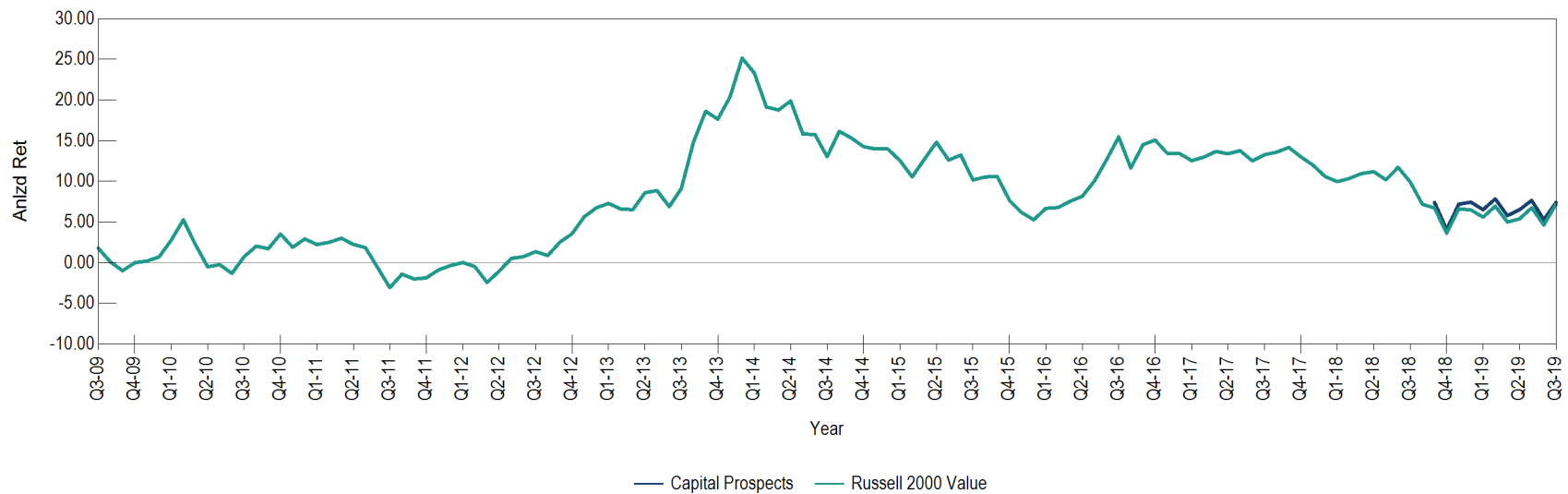
### Manager Performance - Rolling 3 & 5 Year (Gross of Fees)

Period Ending: September 30, 2019

Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)

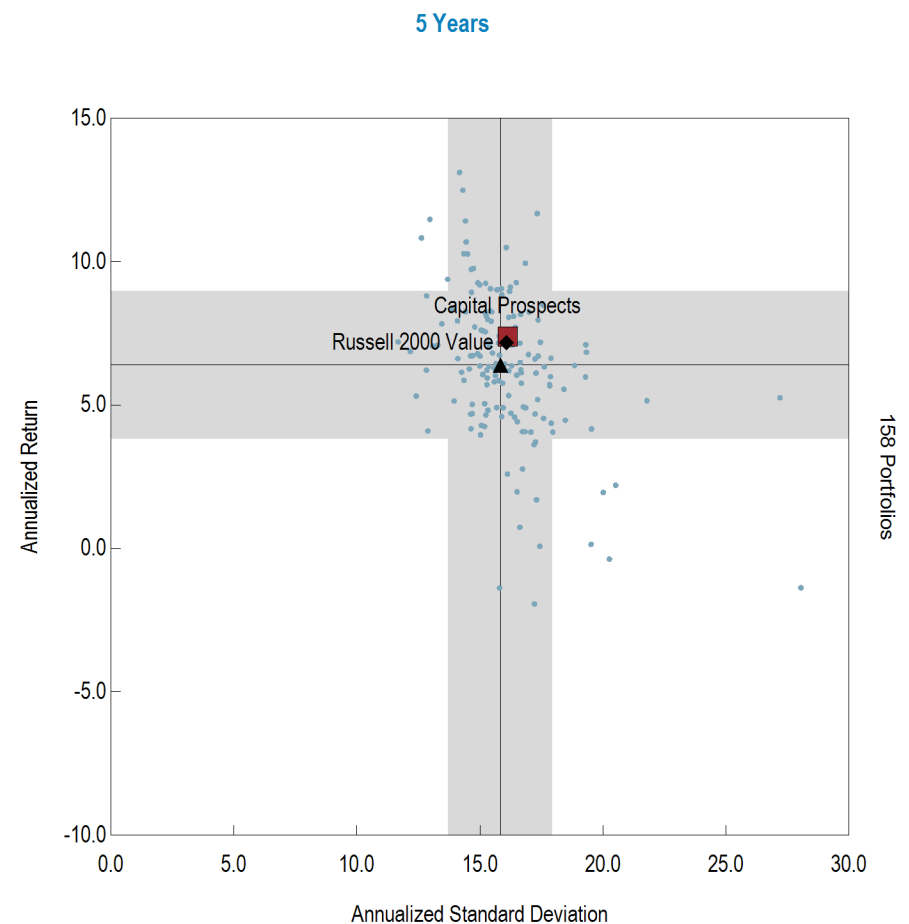
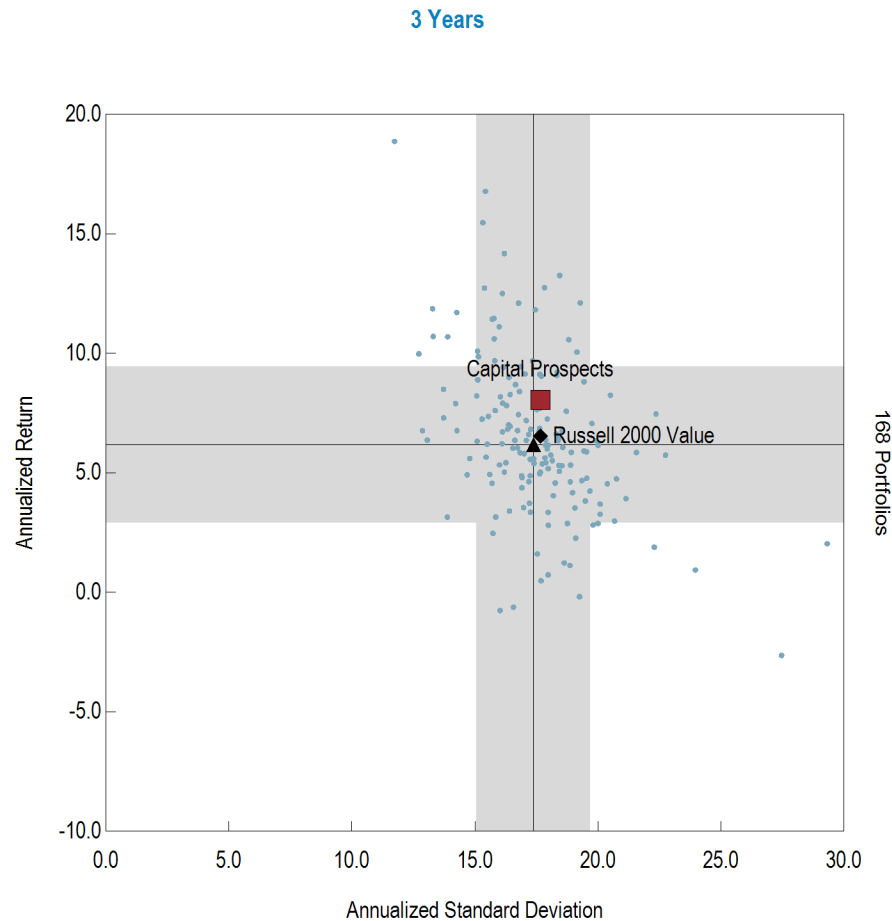




# Capital Prospects

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

Period Ending: September 30, 2019



	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Capital Prospects	8.04%	17.67%	0.37
Russell 2000 Value	6.54%	17.67%	0.28
eV US Small Cap Value Equity Net Median	6.18%	17.38%	0.27

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Capital Prospects	7.4%	16.1%	0.4
Russell 2000 Value	7.2%	16.1%	0.4
eV US Small Cap Value Equity Net Median	6.4%	15.8%	0.3

## International Equity Managers

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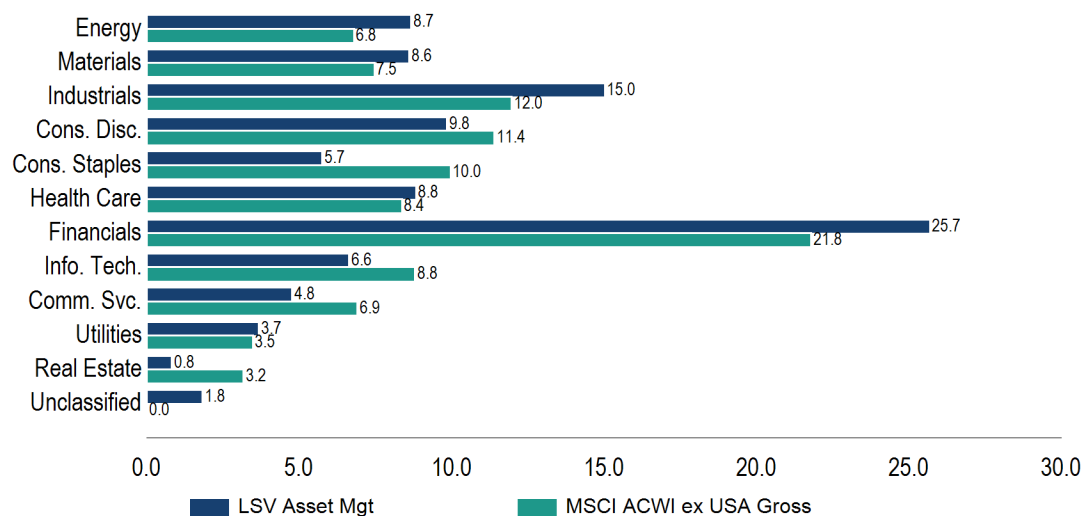
# LSV Asset Mgt Manager Portfolio Overview

Period Ending: September 30, 2019

## Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	266	2,206
Weighted Avg. Market Cap. (\$B)	35.76	64.02
Median Market Cap. (\$B)	6.29	7.29
Price To Earnings	9.80	14.97
Price To Book	1.61	2.31
Price To Sales	0.62	1.17
Return on Equity (%)	13.51	15.03
Yield (%)	4.48	3.26
Beta	0.99	1.00

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



## Largest Holdings

	End Weight	Return
ROCHE HOLDING	2.49	3.40
SAMSUNG ELECTRONICS	1.71	0.74
SANOFI	1.68	7.27
GLAXOSMITHKLINE	1.48	8.36
TOTAL	1.48	-5.68
ENEL	1.45	9.20
KONINKLIJKE AHOLD DELHAIZE	1.38	12.73
ROYAL DUTCH SHELL B	1.36	-8.57
KDDI	1.31	4.63
BP	1.20	-7.43

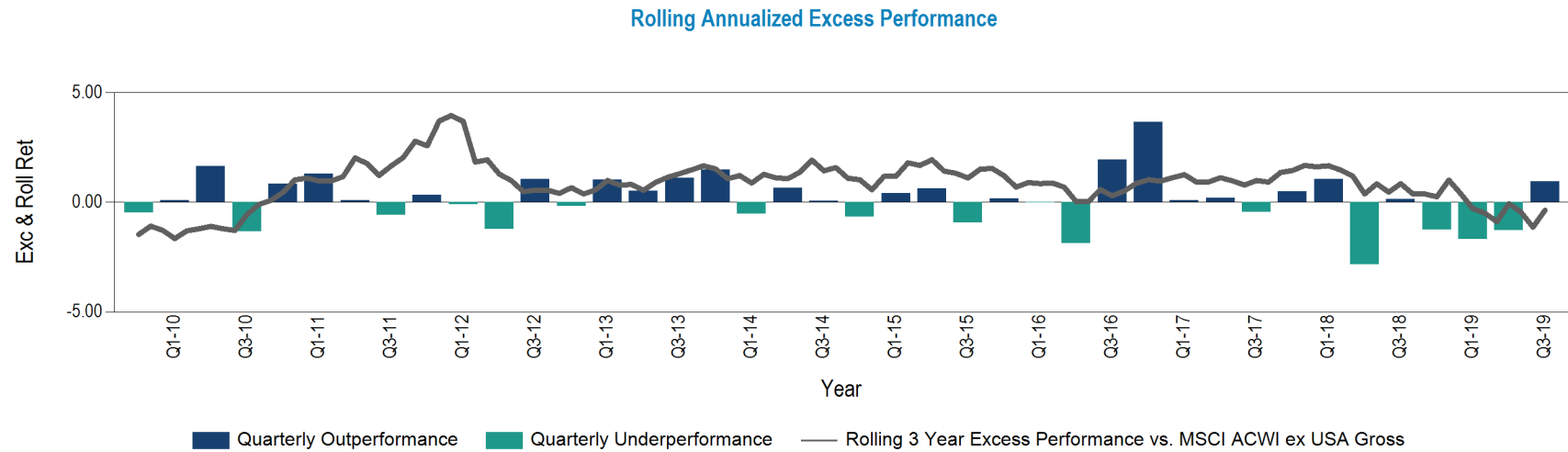
## Bottom Contributors

	Avg Wgt	Return	Contribution
TECK RESOURCES	0.48	-29.71	-0.14
SUBORDINATE VOTING B			
ROYAL DUTCH SHELL B	1.60	-8.57	-0.14
ASSORE	0.39	-31.84	-0.12
DEUTZ	0.29	-39.46	-0.11
VOLVO B	0.95	-11.46	-0.11
BANK NEGARA INDONESIA	0.46	-20.49	-0.09
BP	1.22	-7.43	-0.09
TOTAL	1.45	-5.68	-0.08
HUSKY EN.	0.28	-24.84	-0.07
SKF B	0.67	-10.08	-0.07

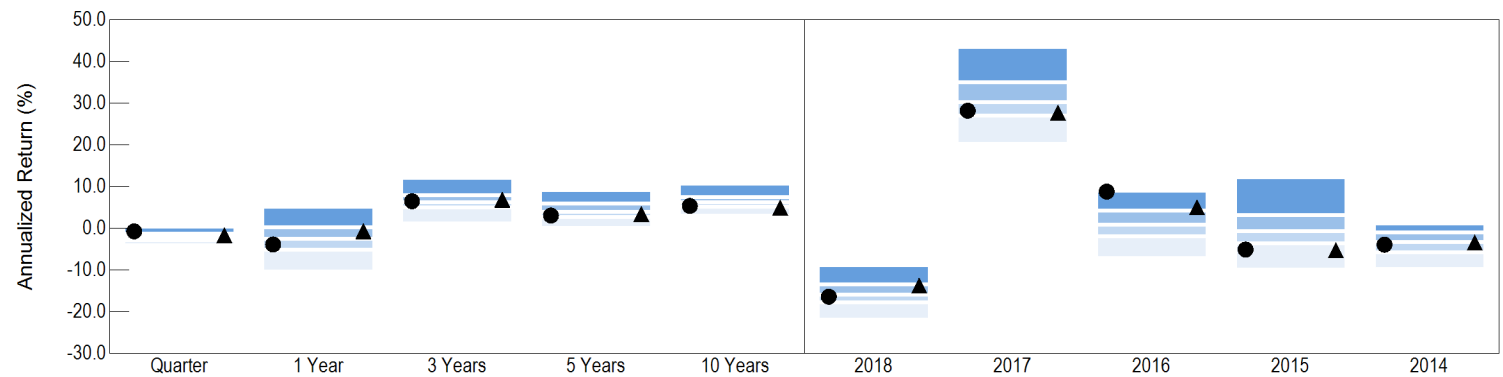
## Top Contributors

	Avg Wgt	Return	Contribution
NANYA TECHNOLOGY	0.50	39.95	0.20
JBS ON	0.45	42.18	0.19
KONINKLIJKE AHOLD	1.24	12.73	0.16
DELHAIZE			
CHINA MED.SY.HDG.(DI)	0.46	32.51	0.15
ENEL	1.45	9.20	0.13
KING YUAN ELTN.	0.34	35.98	0.12
SANOFI	1.65	7.27	0.12
GLAXOSMITHKLINE	1.39	8.36	0.12
RADIANT OPTO-ELECTRONICS	0.52	22.06	0.11
LENDLEASE GROUP STAPLED UNITS	0.35	32.16	0.11

Unclassified sector allocation includes cash allocations.

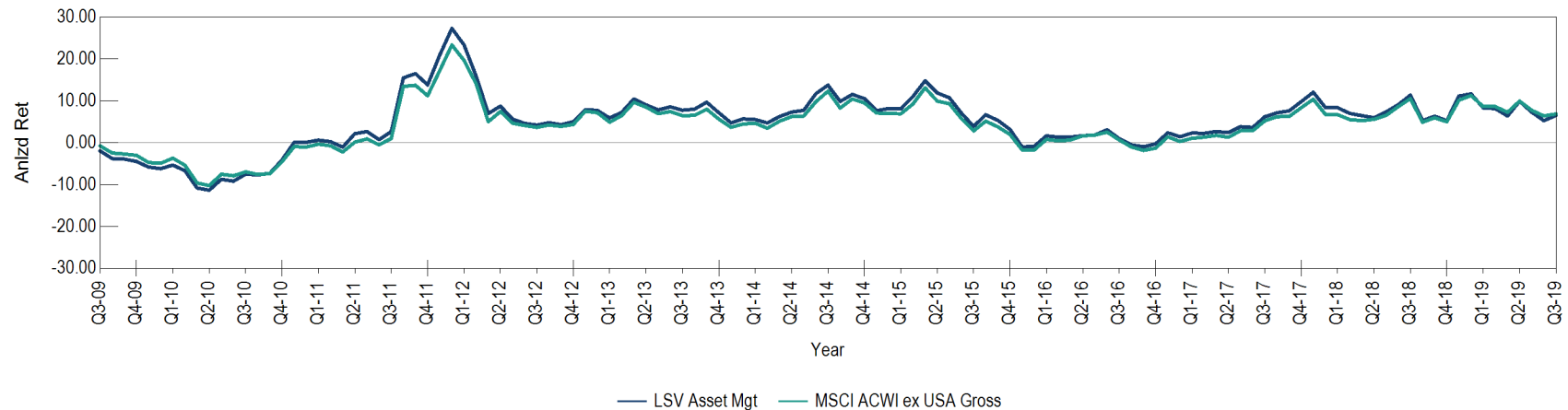


**LSV Asset Mgt vs. eV ACWI ex-US Equity Unhedged Net Universe**

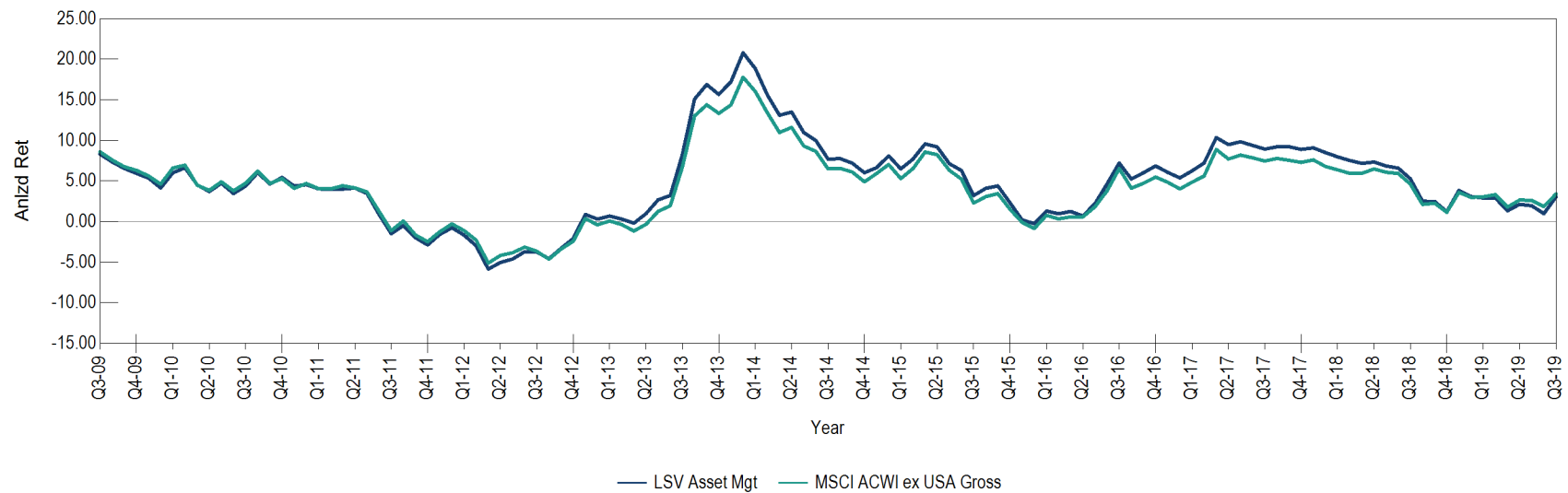


	Quarter	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	2015	2014
<b>Return (Rank)</b>										
5th Percentile	0.3	5.1	12.0	9.0	10.6	-8.9	43.4	9.0	12.2	1.0
25th Percentile	-1.3	0.4	8.0	6.0	7.6	-13.4	35.1	4.3	3.2	-0.9
Median	-2.0	-2.5	6.3	4.1	6.4	-15.8	30.3	0.8	-0.6	-3.2
75th Percentile	-2.8	-5.1	5.0	2.8	5.2	-17.7	27.2	-1.8	-3.6	-5.7
95th Percentile	-4.0	-10.4	1.3	0.1	3.1	-21.9	20.3	-7.0	-9.9	-9.8
# of Portfolios	188	186	177	156	102	187	176	161	123	94
● LSV Asset Mgt	-0.8 (16)	-3.9 (63)	6.5 (46)	3.0 (72)	5.3 (74)	-16.4 (59)	28.2 (67)	8.8 (7)	-5.1 (85)	-4.0 (57)
▲ MSCI ACWI ex USA Gross	-1.7 (38)	-0.7 (35)	6.8 (42)	3.4 (65)	4.9 (79)	-13.8 (30)	27.8 (70)	5.0 (22)	-5.3 (85)	-3.4 (52)

Rolling 3 Year Annualized Return (%)

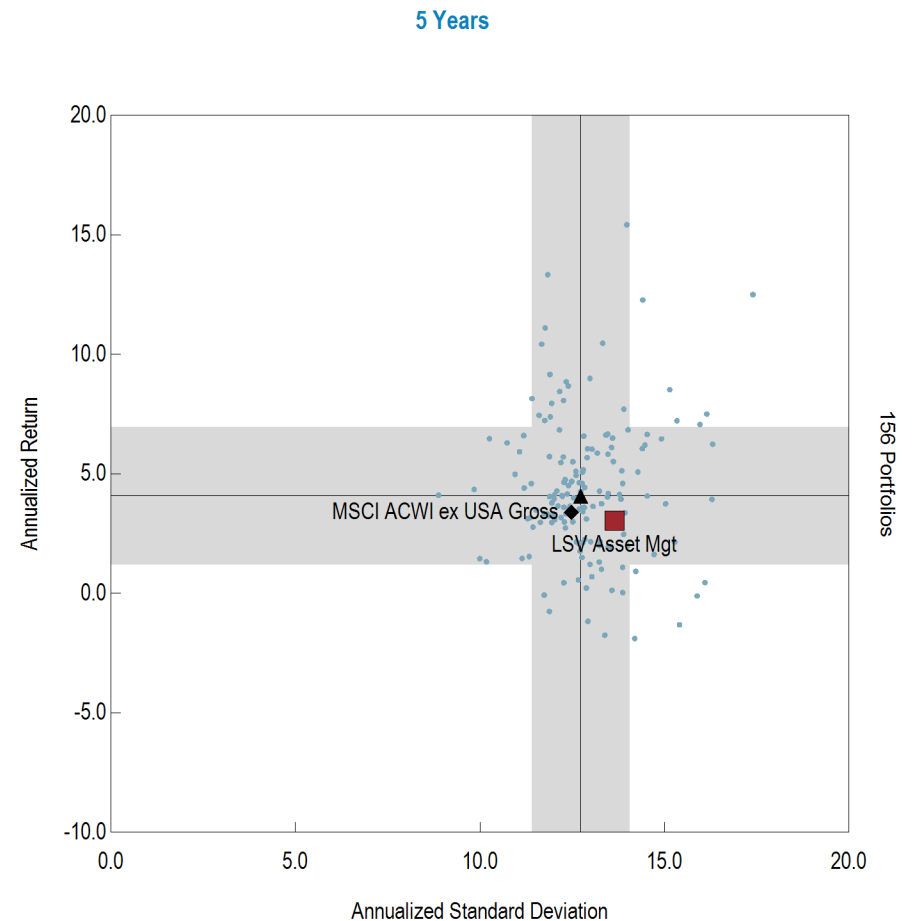
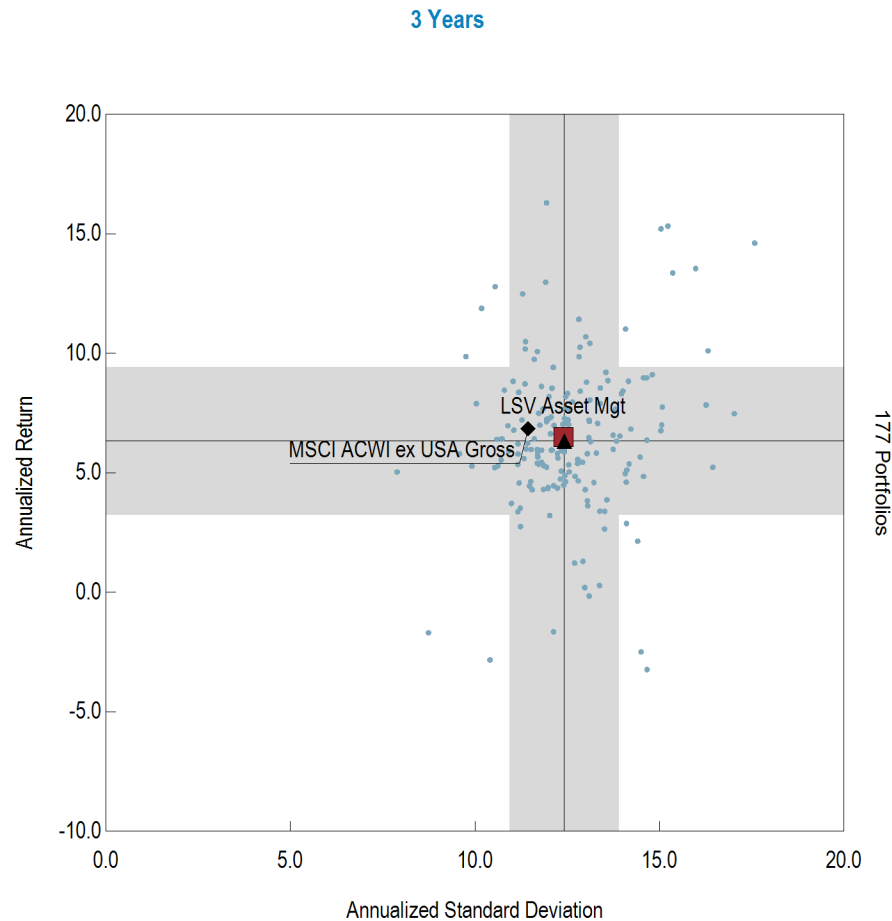


Rolling 5 Year Annualized Return (%)



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

Period Ending: September 30, 2019



	3 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
LSV Asset Mgt	6.48%	12.40%	0.40
MSCI ACWI ex USA Gross	6.85%	11.45%	0.46
eV ACWI ex-US Equity Unhedged Net Median	6.33%	12.42%	0.38

	5 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
LSV Asset Mgt	3.0%	13.6%	0.2
MSCI ACWI ex USA Gross	3.4%	12.5%	0.2
eV ACWI ex-US Equity Unhedged Net Median	4.1%	12.7%	0.2

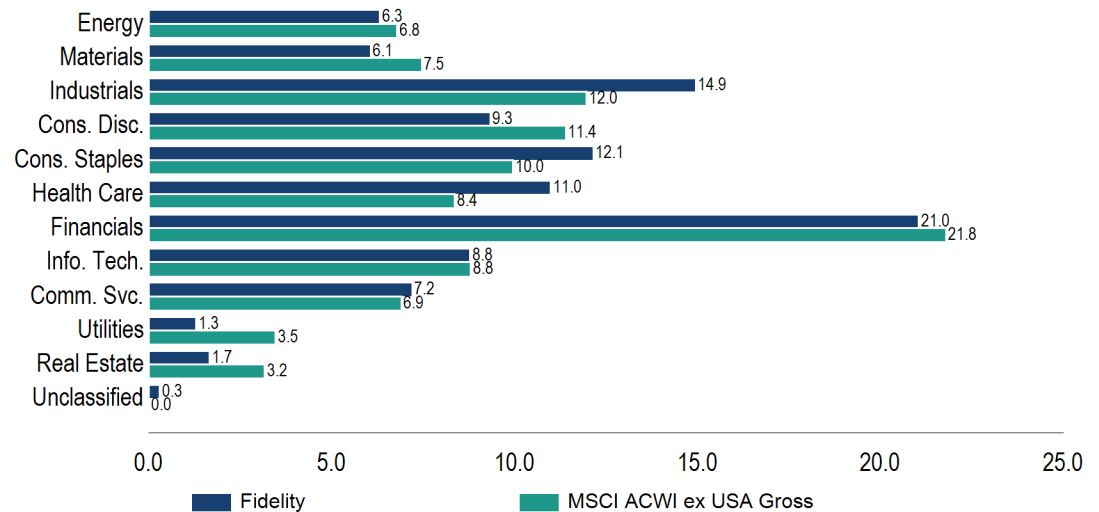
# Fidelity Manager Portfolio Overview

Period Ending: September 30, 2019

## Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	222	2,206
Weighted Avg. Market Cap. (\$B)	62.97	64.02
Median Market Cap. (\$B)	14.77	7.29
Price To Earnings	18.08	14.97
Price To Book	2.58	2.31
Price To Sales	1.31	1.17
Return on Equity (%)	16.40	15.03
Yield (%)	2.65	3.26
Beta	1.04	1.00

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



## Largest Holdings

	End Weight	Return
AIA GROUP	2.27	-12.04
NESTLE 'R'	2.12	4.76
TENCENT HOLDINGS	1.85	-6.67
ROCHE HOLDING	1.82	3.40
SAP	1.81	-14.09
ROYAL DUTCH SHELL A	1.62	-8.77
TAIWAN SEMICON.MNFG.	1.36	14.80
SANOFI	1.30	7.27
TECHTRONIC INDS.	1.30	-8.34
TREASURY WINE ESTATES	1.19	20.90

## Bottom Contributors

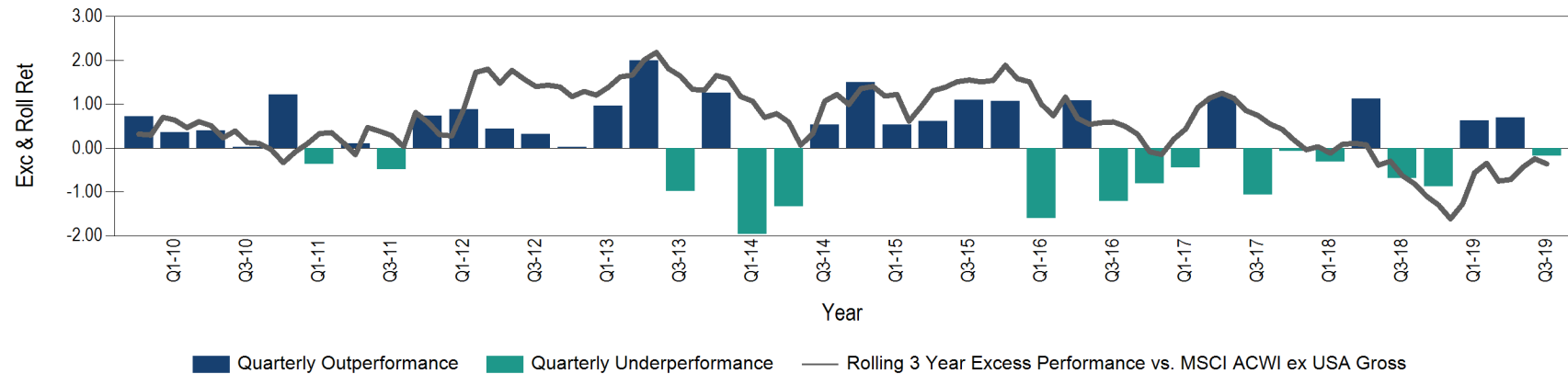
	Avg Wgt	Return	Contribution
SAP	1.86	-14.09	-0.26
AIA GROUP	1.94	-12.04	-0.23
SOFTBANK GROUP	1.04	-17.75	-0.18
ROYAL DUTCH SHELL A	1.61	-8.77	-0.14
FRESENIUS MED.CARE	0.94	-14.13	-0.13
PRUDENTIAL	0.72	-15.78	-0.11
TECHTRONIC INDS.	1.25	-8.34	-0.10
ARCELORMITTAL	0.40	-21.48	-0.09
BP	1.14	-7.43	-0.08
SIEMENS	0.82	-10.10	-0.08

## Top Contributors

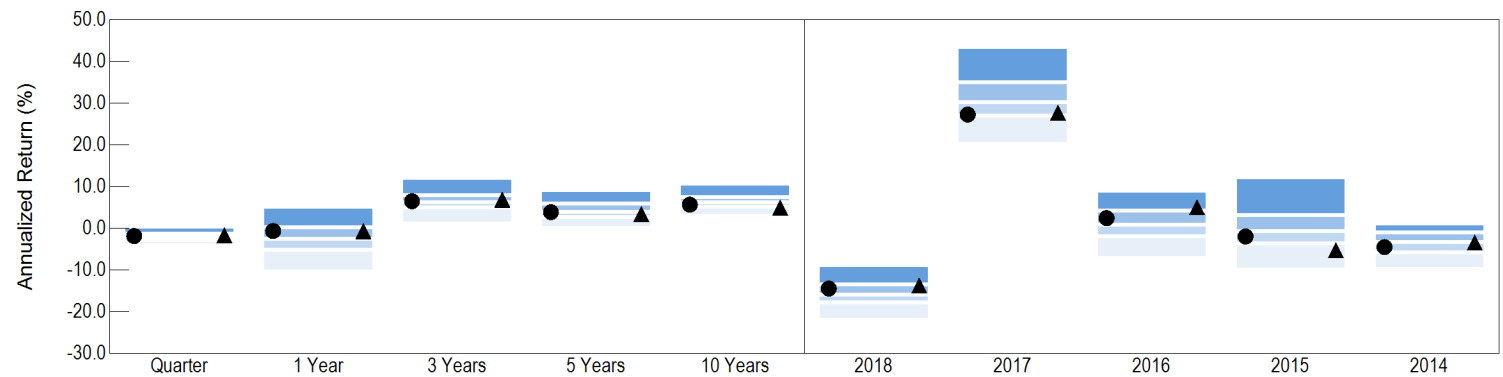
	Avg Wgt	Return	Contribution
TREASURY WINE ESTATES	0.90	20.90	0.19
LONDON STOCK EX.GROUP	0.51	29.36	0.15
ASML HOLDING	0.73	18.40	0.14
TOKYO ELECTRON	0.36	36.85	0.13
NESTLE 'R'	2.06	4.76	0.10
SHIN-ETSU CHEMICAL	0.58	15.91	0.09
SANOFI	1.13	7.27	0.08
DAIICHI SANKYO	0.36	20.98	0.08
TAIWAN SEMICON.MNFG.	0.50	14.80	0.07
TOKIO MARINE HOLDINGS	0.76	8.43	0.06

Unclassified sector allocation includes cash allocations.

Rolling Annualized Excess Performance



Fidelity vs. eV ACWI ex-US Equity Unhedged Net Universe



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

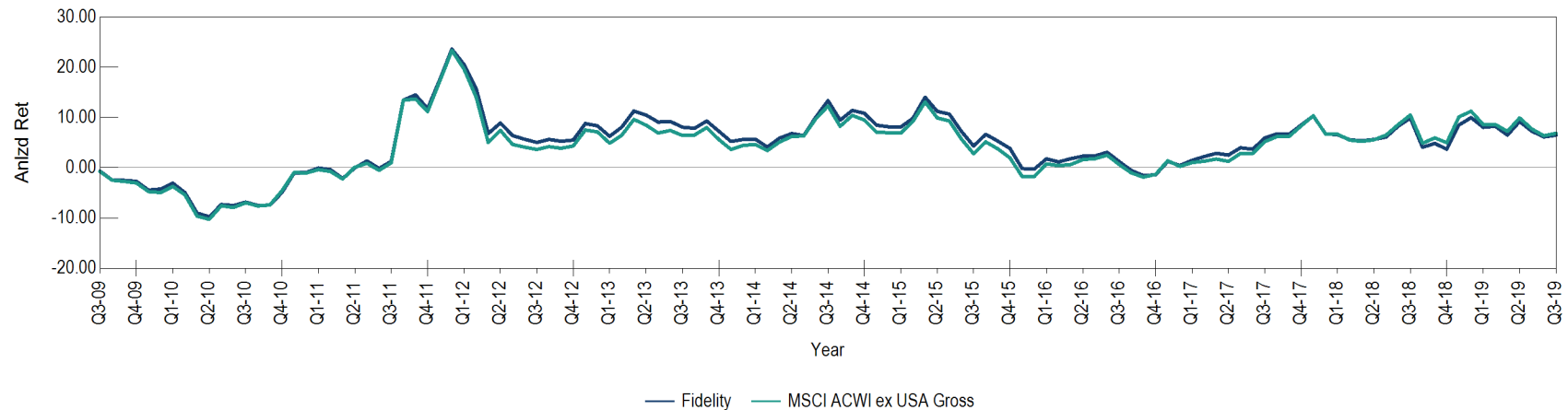
# of Portfolios

● Fidelity  
▲ MSCI ACWI ex USA Gross

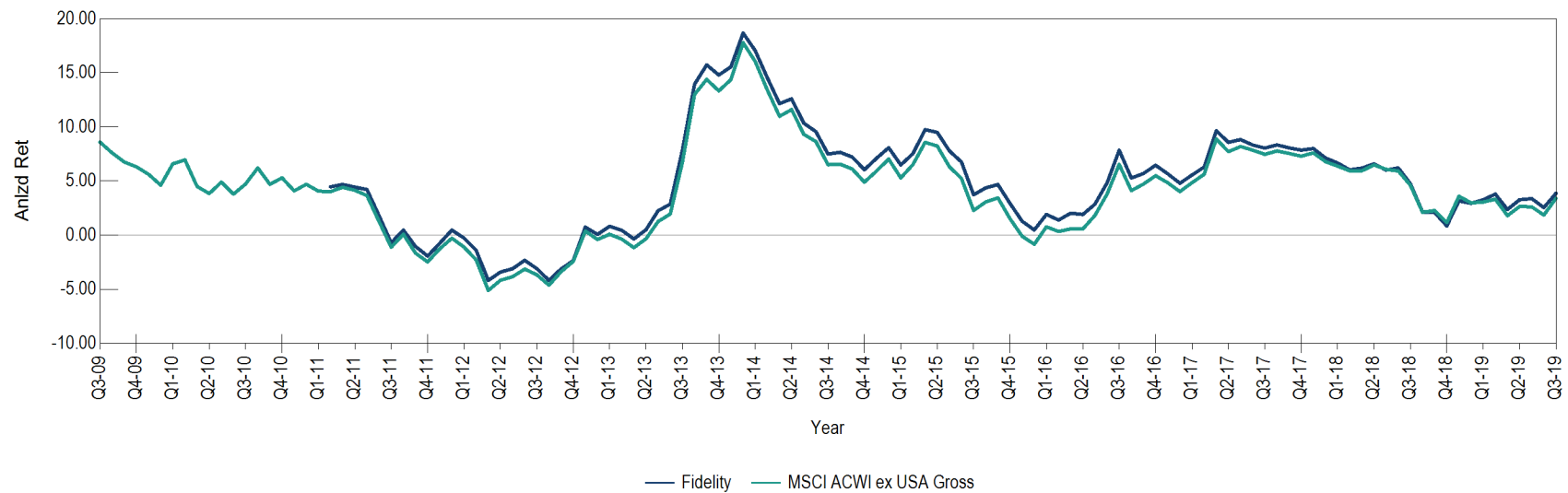
Return (Rank)	Quarter	1 Year	3 Years	5 Years	10 Years	2018	2017	2016	2015	2014
5th Percentile	0.3	5.1	12.0	9.0	10.6	-8.9	43.4	9.0	12.2	1.0
25th Percentile	-1.3	0.4	8.0	6.0	7.6	-13.4	35.1	4.3	3.2	-0.9
Median	-2.0	-2.5	6.3	4.1	6.4	-15.8	30.3	0.8	-0.6	-3.2
75th Percentile	-2.8	-5.1	5.0	2.8	5.2	-17.7	27.2	-1.8	-3.6	-5.7
95th Percentile	-4.0	-10.4	1.3	0.1	3.1	-21.9	20.3	-7.0	-9.9	-9.8
# of Portfolios	188	186	177	156	102	187	176	161	123	94
● Fidelity	-1.9 (47)	-0.7 (35)	6.5 (46)	3.9 (56)	5.7 (69)	-14.5 (39)	27.3 (75)	2.4 (37)	-2.0 (64)	-4.5 (64)
▲ MSCI ACWI ex USA Gross	-1.7 (38)	-0.7 (35)	6.8 (42)	3.4 (65)	4.9 (79)	-13.8 (30)	27.8 (70)	5.0 (22)	-5.3 (85)	-3.4 (52)



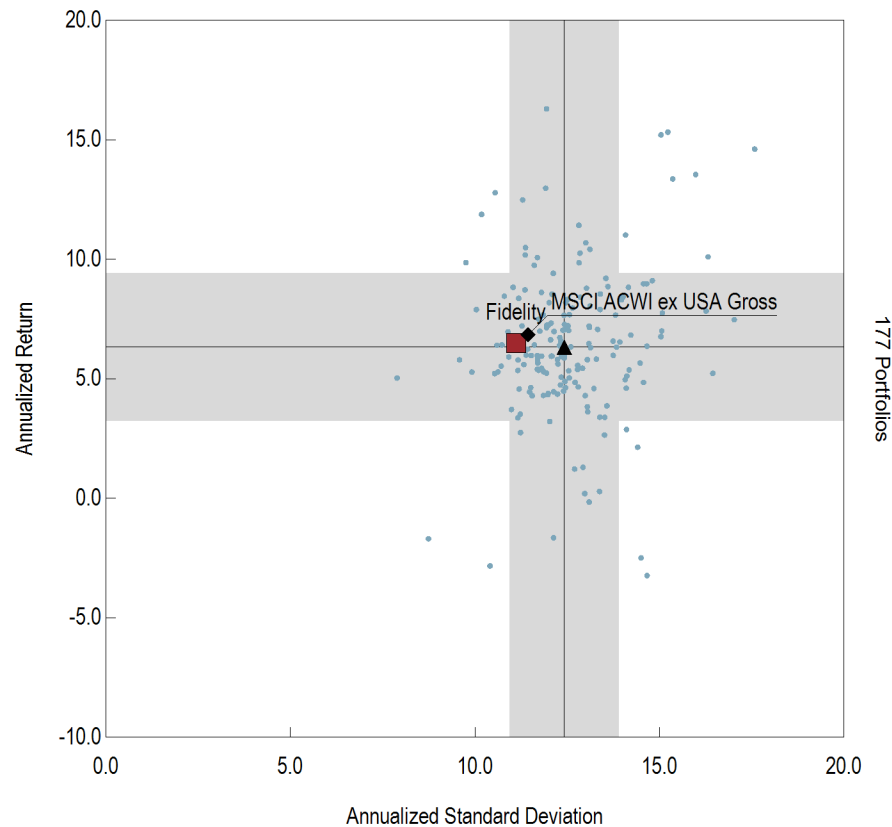
Rolling 3 Year Annualized Return (%)



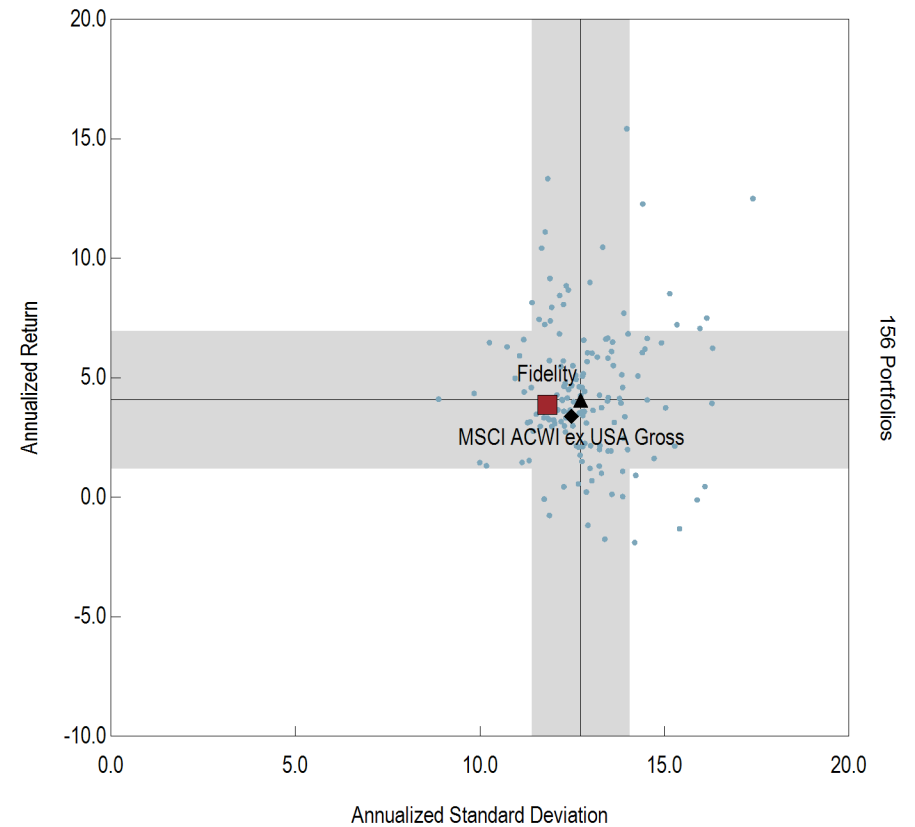
Rolling 5 Year Annualized Return (%)



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Fidelity	6.48%	11.13%	0.44
MSCI ACWI ex USA Gross	6.85%	11.45%	0.46
eV ACWI ex-US Equity Unhedged Net Median	6.33%	12.42%	0.38

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Fidelity	3.9%	11.8%	0.2
MSCI ACWI ex USA Gross	3.4%	12.5%	0.2
eV ACWI ex-US Equity Unhedged Net Median	4.1%	12.7%	0.2

## Domestic Fixed Income Managers

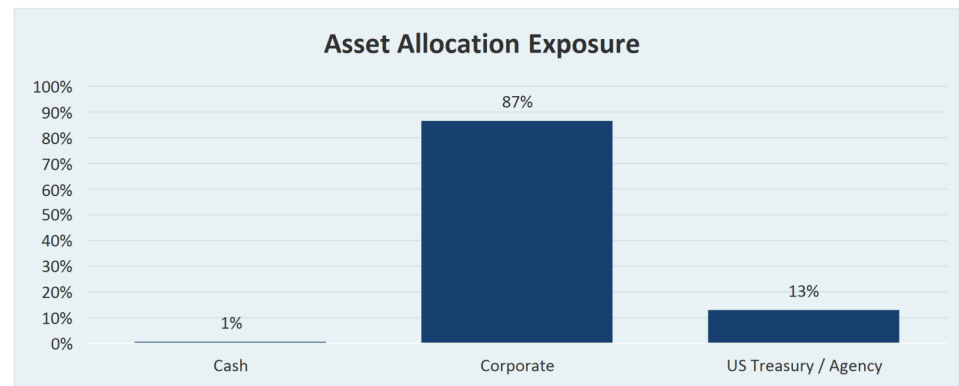
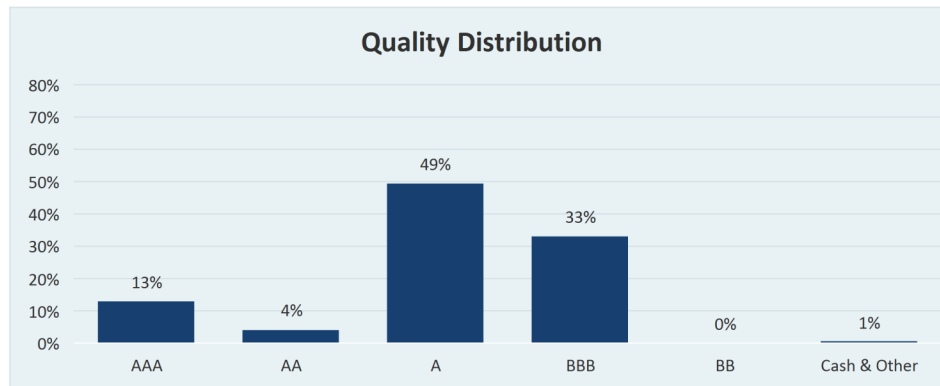
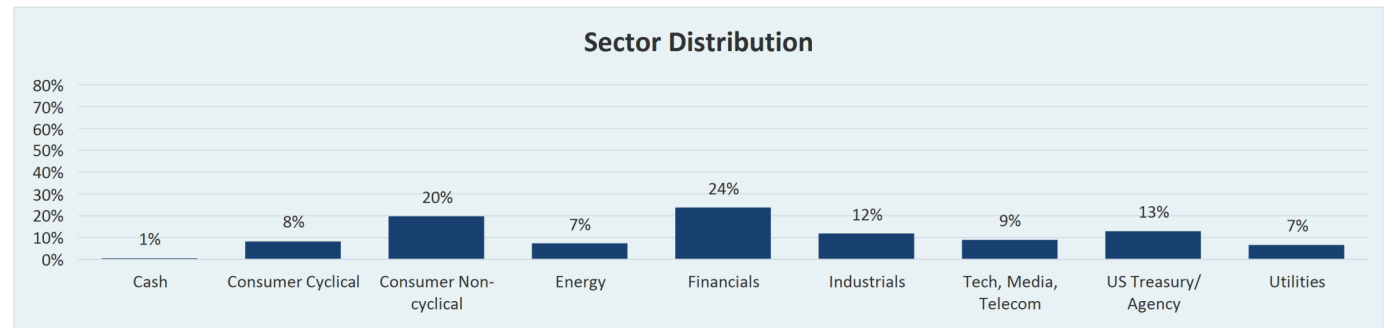
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# Insight

## Manager Portfolio Overview

Period Ending: September 30, 2019

Summary	Portfolio
Average Quality	A
Effective duration (years)	4.16
Average Coupon	3.50%
Yield to Worst	2.53%

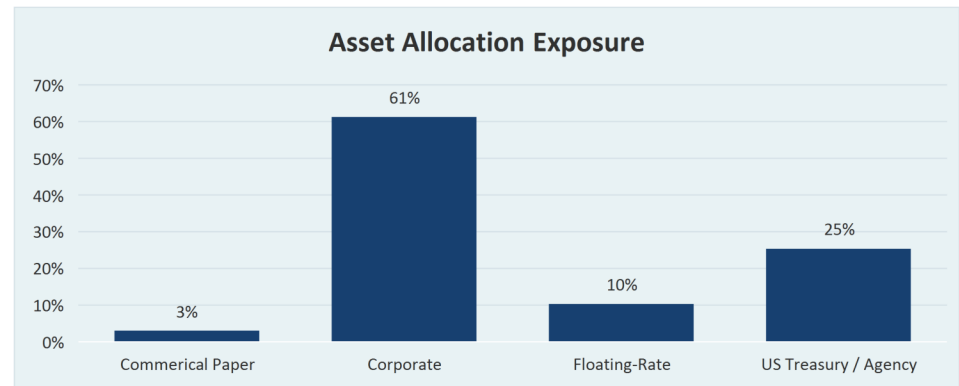
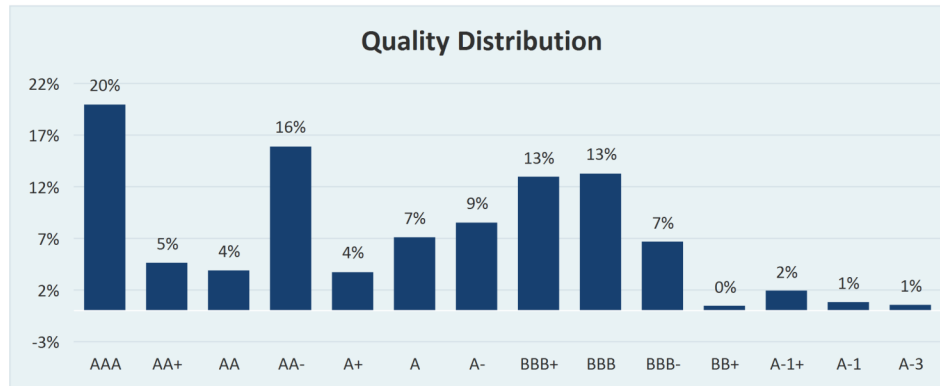
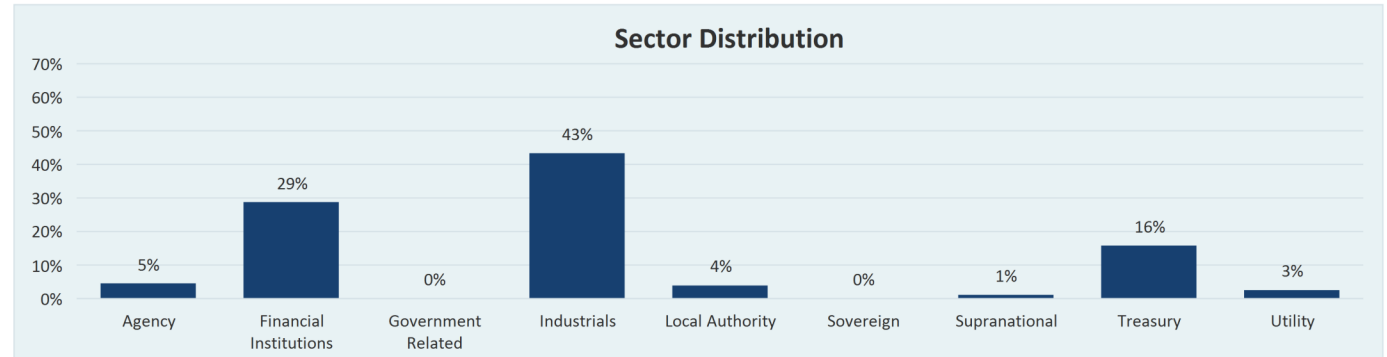


# DFA

## Manager Portfolio Overview

Period Ending: September 30, 2019

Summary	Portfolio
Average Quality	A+
Effective duration (years)	1.22
Average Coupon	2.80%
Yield to Worst	2.25%



**Performance Return Calculations**

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

**Data Source**

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

**Illiquid Alternatives**

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

**Manager Line Up**

<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>
Northern Trust Russell 3000	12/31/2018	Northern Trust	Prime Property Fund	9/30/2015	Prime Property
BlackRock Russell 1000 Growth	6/30/2010	BlackRock	American Strategic Value Realty	12/31/2014	American Realty
BlackRock Russell 1000 Value	7/31/2009	BlackRock	BlackRock US Real Estate	9/30/2012	BlackRock
Dodge & Cox - Equity	12/31/1994	Northern Trust	Greenfield Gap	7/31/2014	Greenfield
Capital Prospects	12/31/2008	Northern Trust	Medley Capital	5/31/2013	Medley Capital
LSV Asset Mgt	8/31/2004	Northern Trust	Raven Capital	5/31/2013	Raven Capital
Fidelity	4/30/2006	Northern Trust	Raven Opportunity III	7/31/2015	Raven Capital
Insight	6/29/2017	Northern Trust	White Oak Pinnacle	8/31/2013	White Oak
DFA	7/31/2017	Northern Trust	PanAgora Risk Parity Multi Asset	11/30/2017	PanAgora
Northern Trust Intermediate Gov't Bond	7/31/2017	Northern Trust	AQR Global Risk Premium - EL	3/5/2018	AQR
Northern Trust Long Term Gov't Bond	7/31/2017	Northern Trust	MS Infrastructure	5/31/2015	Morgan Stanley
			PGIM Real Estate US Debt Fund	9/28/2018	Prudential

**Policy & Custom Index Composition**

Policy Index (5/31/2019):	14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills.
US Equity Blended:	60% Russell 1000, 15% Russell 2000, 25% Russell 3000 + 3%.
Prior Policy Index:	10% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 27% MSCI ACWI ex-USA, 20% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 1% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills.
StanCERA Liquidity Blended BM (8/31/2019):	92% BBgBarc US Gov't/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 Month TR.
StanCERA Growth Blended BM (8/31/2019):	18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI/40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns.
StanCERA Risk-Diversifying Blended BM (8/31/2019):	27% BBgBarc US Treasury 7-10 Yr. TR and 73% BBgBarc US Gov't/Credit 1-3 Yr. TR.

### Other Disclosures

Fiscal Year End: 6/30

Cash Account includes cash held at Northern Trust for all closed end funds and cash held by BlackRock.

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

All data prior to 6/30/2015 provided by the previous consultant.

## Appendix

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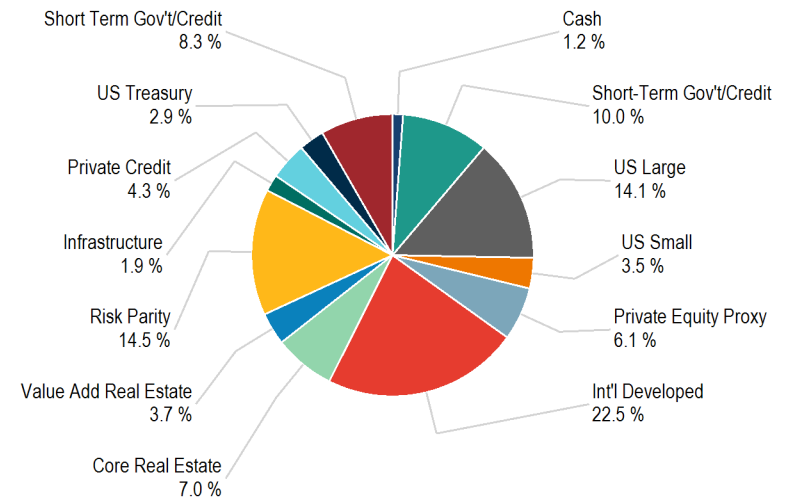


# Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2019

	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Total Fund</b>	<b>1.0</b>	<b>12.2</b>	<b>1.0</b>	<b>4.7</b>	<b>8.3</b>	<b>6.7</b>	<b>8.8</b>
<i>Policy Index</i>	<i>0.4</i>	<i>11.0</i>	<i>0.4</i>	<i>3.7</i>	<i>7.2</i>	<i>6.4</i>	<i>8.2</i>
<b>Liquidity Sub-Portfolio</b>	<b>1.5</b>	<b>6.8</b>	<b>1.5</b>	<b>7.6</b>	<b>2.8</b>	<b>2.1</b>	<b>--</b>
<i>StanCERA Liquidity Blended BM</i>	<i>0.7</i>	<i>3.3</i>	<i>0.7</i>	<i>4.4</i>	<i>1.8</i>	<i>1.5</i>	<i>--</i>
<b>Cash</b>	<b>0.6</b>	<b>1.2</b>	<b>0.6</b>	<b>1.7</b>	<b>1.4</b>	<b>1.3</b>	<b>--</b>
<i>FTSE T-Bill 1 Month TR</i>	<i>0.5</i>	<i>1.8</i>	<i>0.5</i>	<i>2.3</i>	<i>1.5</i>	<i>0.9</i>	<i>--</i>
<b>Short-Term Gov't/Credit</b>	<b>1.6</b>	<b>7.5</b>	<b>1.6</b>	<b>8.4</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>	<i>0.7</i>	<i>3.4</i>	<i>0.7</i>	<i>4.6</i>	<i>--</i>	<i>--</i>	<i>--</i>
<b>Growth Sub-Portfolio</b>	<b>0.9</b>	<b>14.2</b>	<b>0.9</b>	<b>3.9</b>	<b>10.0</b>	<b>7.7</b>	<b>--</b>
<i>StanCERA Growth Blended BM</i>	<i>0.3</i>	<i>13.1</i>	<i>0.3</i>	<i>3.2</i>	<i>9.0</i>	<i>--</i>	<i>--</i>
<b>US Large</b>	<b>1.3</b>	<b>19.3</b>	<b>1.3</b>	<b>2.2</b>	<b>13.1</b>	<b>10.2</b>	<b>--</b>
<i>Russell 1000</i>	<i>1.4</i>	<i>20.5</i>	<i>1.4</i>	<i>3.9</i>	<i>13.2</i>	<i>10.6</i>	<i>--</i>
<b>US Small</b>	<b>-2.1</b>	<b>15.2</b>	<b>-2.1</b>	<b>-9.2</b>	<b>6.7</b>	<b>6.3</b>	<b>--</b>
<i>Russell 2000</i>	<i>-2.4</i>	<i>14.2</i>	<i>-2.4</i>	<i>-8.9</i>	<i>8.2</i>	<i>8.2</i>	<i>--</i>
<b>Private Equity Proxy</b>	<b>1.2</b>	<b>20.1</b>	<b>1.2</b>	<b>8.5</b>	<b>14.7</b>	<b>11.6</b>	<b>13.6</b>
<i>Russell 3000 +3%</i>	<i>2.3</i>	<i>22.0</i>	<i>2.3</i>	<i>5.9</i>	<i>15.8</i>	<i>13.5</i>	<i>16.1</i>
<b>Int'l Developed</b>	<b>-1.3</b>	<b>11.6</b>	<b>-1.3</b>	<b>-2.3</b>	<b>6.6</b>	<b>3.6</b>	<b>5.6</b>
<i>MSCI ACWI ex USA Gross</i>	<i>-1.7</i>	<i>12.1</i>	<i>-1.7</i>	<i>-0.7</i>	<i>6.8</i>	<i>3.4</i>	<i>4.9</i>

Current Allocation

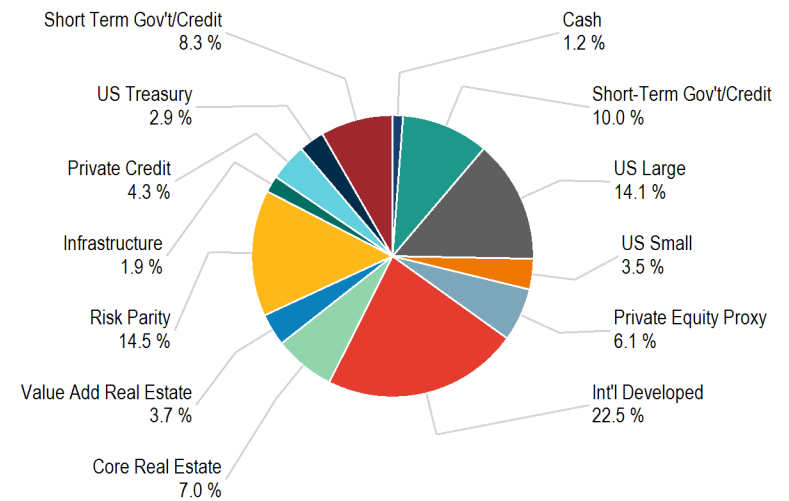


# Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2019

	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Core Real Estate</b>	<b>2.9</b>	<b>9.6</b>	<b>2.9</b>	<b>8.0</b>	<b>5.4</b>	<b>7.4</b>	<b>--</b>
<i>NCREIF Property Index</i>	1.4	4.8	1.4	6.2	6.8	8.6	--
<b>Value Add Real Estate</b>	<b>3.5</b>	<b>8.1</b>	<b>3.5</b>	<b>9.4</b>	<b>12.3</b>	<b>13.3</b>	<b>--</b>
<i>NCREIF Property Index +2%</i>	1.9	6.4	1.9	8.3	8.9	10.7	--
<b>Risk Parity</b>	<b>3.1</b>	<b>20.4</b>	<b>3.1</b>	<b>14.3</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>60% MSCI ACWI Net/40% BBgBarc Global Aggregate</i>	0.3	12.4	0.3	4.2	--	--	--
<b>Infrastructure</b>	<b>3.1</b>	<b>10.9</b>	<b>3.1</b>	<b>12.8</b>	<b>14.8</b>	<b>--</b>	<b>--</b>
<i>CPI + 5%</i>	1.5	6.0	1.5	6.8	7.2	--	--
<b>Private Credit</b>	<b>0.6</b>	<b>4.4</b>	<b>0.6</b>	<b>5.3</b>	<b>4.0</b>	<b>5.1</b>	<b>--</b>
<i>S&amp;P/LSTA Leveraged Loan Index+2%</i>	1.5	8.4	1.5	5.2	6.6	6.1	--
<b>Risk-Diversifying Sub-Portfolio</b>	<b>1.5</b>	<b>5.7</b>	<b>1.5</b>	<b>7.3</b>	<b>3.1</b>	<b>3.6</b>	<b>4.6</b>
<i>StanCERA Risk-Diversifying Blended BM</i>	1.3	5.2	1.3	7.1	2.0	2.2	2.3
<b>US Treasury</b>	<b>3.0</b>	<b>8.9</b>	<b>3.0</b>	<b>11.8</b>	<b>4.3</b>	<b>4.3</b>	<b>5.0</b>
<i>BBgBarc US Treasury 7-10 Yr TR</i>	2.7	9.8	2.7	14.0	2.4	3.8	4.4
<b>Short-Term Gov't/Credit</b>	<b>0.9</b>	<b>4.7</b>	<b>0.9</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>	0.7	3.4	0.7	4.6	--	--	--

Current Allocation



Total Fund  
Performance Summary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
<b>Total Fund</b>	<b>2,205,344,636</b>	<b>100.0</b>	<b>1.0</b>	<b>12.2</b>	<b>1.0</b>	<b>4.7</b>	<b>8.3</b>	<b>6.7</b>	<b>8.8</b>	<b>-4.1</b>	<b>15.7</b>	<b>8.3</b>	<b>-0.2</b>	<b>6.9</b>	<b>9.2</b>	<b>Dec-94</b>
<i>Policy Index</i>			0.4	11.0	0.4	3.7	7.2	6.4	8.2	-3.7	14.3	8.5	0.2	7.5	8.0	Dec-94
<b>Liquidity Sub-Portfolio</b>	<b>246,941,449</b>	<b>11.2</b>	<b>1.5</b>	<b>6.8</b>	<b>1.5</b>	<b>7.6</b>	<b>2.8</b>	<b>2.1</b>	<b>--</b>	<b>0.9</b>	<b>0.5</b>	<b>1.5</b>	<b>1.0</b>	<b>-43.6</b>	<b>9.7</b>	<b>Apr-11</b>
<i>StanCERA Liquidity Blended BM</i>			0.7	3.3	0.7	4.4	1.8	1.5	--	1.6	0.8	1.2	0.6	0.7	1.3	Apr-11
<b>Cash</b>	<b>26,432,511</b>	<b>1.2</b>	<b>0.6</b>	<b>1.2</b>	<b>0.6</b>	<b>1.7</b>	<b>1.4</b>	<b>1.3</b>	<b>--</b>	<b>1.7</b>	<b>1.1</b>	<b>1.5</b>	<b>1.0</b>	<b>-43.6</b>	<b>9.2</b>	<b>Apr-11</b>
<i>FTSE T-Bill 1 Month TR</i>			0.5	1.8	0.5	2.3	1.5	0.9	--	1.8	0.8	0.2	0.0	0.0	0.6	Apr-11
<b>Short-Term Gov't/Credit</b>	<b>220,508,938</b>	<b>10.0</b>	<b>1.6</b>	<b>7.5</b>	<b>1.6</b>	<b>8.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>0.7</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>3.9</b>	<b>Jun-17</b>
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.3	Jun-17
<i>Insight</i>	220,508,938	10.0	1.6	7.5	1.6	8.4	--	--	--	0.7	--	--	--	--	3.9	Jun-17
<i>BBgBarc US Govt/Credit 1-3 Yr. TR</i>			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.3	Jun-17
<b>Growth Sub-Portfolio</b>	<b>1,711,860,859</b>	<b>77.6</b>	<b>0.9</b>	<b>14.2</b>	<b>0.9</b>	<b>3.9</b>	<b>10.0</b>	<b>7.7</b>	<b>--</b>	<b>-5.8</b>	<b>19.7</b>	<b>9.5</b>	<b>-0.4</b>	<b>7.4</b>	<b>7.4</b>	<b>Jul-15</b>
<i>StanCERA Growth Blended BM</i>			0.3	13.1	0.3	3.2	9.0	--	--	-4.9	19.1	8.1	--	--	7.4	Jul-15
<b>US Large</b>	<b>311,775,296</b>	<b>14.1</b>	<b>1.3</b>	<b>19.3</b>	<b>1.3</b>	<b>2.2</b>	<b>13.1</b>	<b>10.2</b>	<b>--</b>	<b>-3.9</b>	<b>21.3</b>	<b>11.0</b>	<b>0.7</b>	<b>12.6</b>	<b>10.0</b>	<b>Jul-15</b>
<i>Russell 1000</i>			1.4	20.5	1.4	3.9	13.2	10.6	--	-4.8	21.7	12.1	0.9	13.2	10.6	Jul-15
<i>BlackRock Russell 1000 Growth</i>	154,878,643	7.0	1.5	23.3	1.5	3.8	16.9	13.4	--	-1.5	30.2	7.2	5.7	13.1	16.3	Jun-10
<i>Russell 1000 Growth</i>			1.5	23.3	1.5	3.7	16.9	13.4	--	-1.5	30.2	7.1	5.7	13.0	16.3	Jun-10
<i>BlackRock Russell 1000 Value</i>	78,609,386	3.6	1.4	17.9	1.4	4.1	9.5	7.9	11.6	-8.1	13.8	17.3	-3.6	13.5	12.4	Jul-09
<i>Russell 1000 Value</i>			1.4	17.8	1.4	4.0	9.4	7.8	11.5	-8.3	13.7	17.3	-3.8	13.5	12.2	Jul-09
<i>Dodge &amp; Cox-Equity</i>	78,287,267	3.5	0.4	13.1	0.4	-1.8	11.1	8.3	12.2	-6.3	17.1	21.4	-3.9	10.9	11.9	Dec-94
<i>Russell 1000 Value</i>			1.4	17.8	1.4	4.0	9.4	7.8	11.5	-8.3	13.7	17.3	-3.8	13.5	9.9	Dec-94
<b>US Small</b>	<b>76,437,244</b>	<b>3.5</b>	<b>-2.1</b>	<b>15.2</b>	<b>-2.1</b>	<b>-9.2</b>	<b>6.7</b>	<b>6.3</b>	<b>--</b>	<b>-16.1</b>	<b>15.7</b>	<b>17.1</b>	<b>-3.9</b>	<b>4.4</b>	<b>8.6</b>	<b>Apr-12</b>
<i>Russell 2000</i>			-2.4	14.2	-2.4	-8.9	8.2	8.2	--	-11.0	14.6	21.3	-4.4	4.9	10.3	Apr-12
<i>Capital Prospects</i>	76,437,244	3.5	-2.1	15.2	-2.1	-9.2	8.0	7.4	--	-16.1	15.5	28.1	-7.0	5.7	--	Dec-08
<i>Russell 2000 Value</i>			-0.6	12.8	-0.6	-8.2	6.5	7.2	--	-12.9	7.8	31.7	-7.5	4.2	--	Dec-08
<b>Private Equity Proxy</b>	<b>133,604,490</b>	<b>6.1</b>	<b>1.2</b>	<b>20.1</b>	<b>1.2</b>	<b>8.5</b>	<b>14.7</b>	<b>11.6</b>	<b>13.6</b>	<b>-0.2</b>	<b>21.2</b>	<b>11.8</b>	<b>1.4</b>	<b>13.7</b>	<b>9.2</b>	<b>Nov-03</b>
<i>Russell 3000 +3%</i>			2.3	22.0	2.3	5.9	15.8	13.5	16.1	-2.2	24.1	15.7	3.5	15.6	12.1	Nov-03
<i>Northern Trust Russell 3000</i>	133,604,490	6.1	1.2	20.1	1.2	--	--	--	--	--	--	--	--	--	20.1	Dec-18
<i>Russell 3000</i>			1.2	20.1	1.2	--	--	--	--	--	--	--	--	--	20.1	Dec-18

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
<b>Int'l Developed</b>	<b>496,674,052</b>	<b>22.5</b>	<b>-1.3</b>	<b>11.6</b>	<b>-1.3</b>	<b>-2.3</b>	<b>6.6</b>	<b>3.6</b>	<b>5.6</b>	<b>-15.5</b>	<b>27.9</b>	<b>6.0</b>	<b>-3.4</b>	<b>-4.2</b>	<b>6.6</b>	<b>Sep-04</b>
MSCI ACWI ex USA Gross			-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4	6.1	Sep-04
LSV Asset Mgt	248,877,925	11.3	-0.8	10.0	-0.8	-3.9	6.5	3.0	5.3	-16.4	28.2	8.8	-5.1	-4.0	6.4	Aug-04
MSCI ACWI ex USA Gross			-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4	6.3	Aug-04
Fidelity	247,796,127	11.2	-1.9	13.2	-1.9	-0.7	6.5	3.9	5.7	-14.5	27.3	2.4	-2.0	-4.5	3.9	Apr-06
MSCI ACWI ex USA Gross			-1.7	12.1	-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4	3.4	Apr-06
<b>Core Real Estate</b>	<b>154,642,541</b>	<b>7.0</b>	<b>2.9</b>	<b>9.6</b>	<b>2.9</b>	<b>8.0</b>	<b>5.4</b>	<b>7.4</b>	<b>--</b>	<b>1.9</b>	<b>5.5</b>	<b>5.8</b>	<b>-0.5</b>	<b>31.9</b>	<b>--</b>	<b>Mar-08</b>
NCREIF Property Index			1.4	4.8	1.4	6.2	6.8	8.6	--	6.7	7.0	8.0	13.3	11.8	--	Mar-08
Prime Property Fund	58,055,197	2.6	1.7	5.5	1.7	7.9	9.1	--	--	9.1	9.9	10.4	--	--	9.6	Sep-15
NCREIF-ODCE			1.3	3.8	1.3	5.6	7.3	--	--	8.3	7.6	8.8	--	--	8.0	Sep-15
BlackRock US Real Estate	39,623,889	1.8	6.8	24.7	6.8	16.5	6.5	9.7	--	-4.1	3.8	6.6	4.4	31.9	9.5	Sep-12
DJ US Select RESI TR USD			6.8	24.6	6.8	16.4	6.5	9.7	--	-4.2	3.8	6.6	4.5	31.9	9.5	Sep-12
PGIM Real Estate US Debt Fund	56,963,455	2.6	1.6	5.0	1.6	6.7	--	--	--	--	--	--	--	--	--	Sep-18
Gilberto-Levy Commercial Mortgage Performance Index			0.0	6.0	0.0	8.4	--	--	--	--	--	--	--	--	--	Sep-18
<b>Value Add Real Estate</b>	<b>82,662,246</b>	<b>3.7</b>	<b>3.5</b>	<b>8.1</b>	<b>3.5</b>	<b>9.4</b>	<b>12.3</b>	<b>13.3</b>	<b>--</b>	<b>12.9</b>	<b>13.5</b>	<b>10.3</b>	<b>21.7</b>	<b>--</b>	<b>12.8</b>	<b>Jul-14</b>
NCREIF Property Index +2%			1.9	6.4	1.9	8.3	8.9	10.7	--	8.8	9.1	10.1	15.6	--	11.0	Jul-14
American Strategic Value Realty	52,655,541	2.4	2.1	6.8	2.1	8.6	10.7	--	--	10.2	11.5	13.1	21.4	--	13.2	Dec-14
NCREIF Property Index			1.4	4.8	1.4	6.2	6.8	--	--	6.7	7.0	8.0	13.3	--	8.4	Dec-14
Greenfield Gap VII	10,199,705	0.5	10.1	15.7	10.1	16.6	16.0	15.7	--	14.6	16.5	7.7	22.0	--	15.2	Jul-14
NCREIF ODCE + 1%			1.6	4.5	1.6	6.6	8.4	10.4	--	9.4	8.7	9.8	16.2	--	10.8	Jul-14
Greenfield Gap VIII	19,807,000	0.9	4.0	7.3	4.0	6.1	--	--	--	--	--	--	--	--	18.3	Apr-18
NCREIF ODCE + 1%			1.6	4.5	1.6	6.6	--	--	--	--	--	--	--	--	7.6	Apr-18
<b>Risk Parity</b>	<b>319,005,753</b>	<b>14.5</b>	<b>3.1</b>	<b>20.4</b>	<b>3.1</b>	<b>14.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-6.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>7.3</b>	<b>Nov-17</b>
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			0.3	12.4	0.3	4.2	--	--	--	-6.0	--	--	--	--	3.6	Nov-17
AQR Global Risk Premium - EL	158,801,166	7.2	2.0	18.1	2.0	10.9	--	--	--	--	--	--	--	--	8.7	Mar-18
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			0.3	12.4	0.3	4.2	--	--	--	--	--	--	--	--	3.3	Mar-18

Total Fund  
Performance Summary (Gross of Fees)

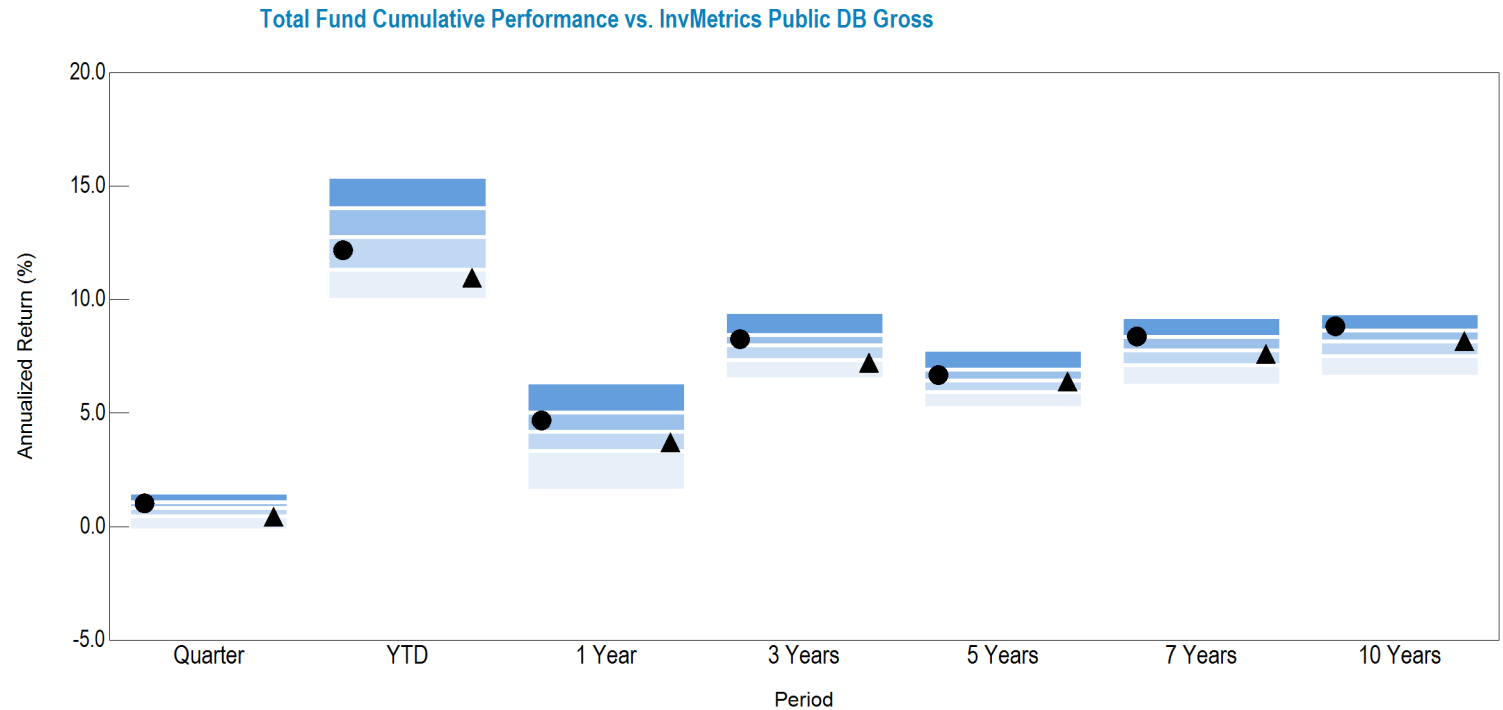
Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
PanAgora Risk Parity Multi Asset	160,204,587	7.3	4.3	22.7	4.3	17.8	--	--	--	-7.3	--	--	--	--	8.0	Nov-17
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			0.3	12.4	0.3	4.2	--	--	--	-6.0	--	--	--	--	3.6	Nov-17
<b>Infrastructure</b>	<b>42,045,476</b>	<b>1.9</b>	<b>3.1</b>	<b>10.9</b>	<b>3.1</b>	<b>12.8</b>	<b>14.8</b>	<b>--</b>	<b>--</b>	<b>8.3</b>	<b>20.9</b>	<b>12.8</b>	<b>--</b>	<b>--</b>	<b>10.5</b>	<b>May-15</b>
CPI + 5%			1.5	6.0	1.5	6.8	7.2	--	--	7.0	7.2	7.2	--	--	6.9	May-15
MS Infrastructure Partners II	42,045,476	1.9	3.1	10.9	3.1	12.8	14.8	--	--	8.3	20.9	12.8	--	--	10.5	May-15
CPI + 5%			1.5	6.0	1.5	6.8	7.2	--	--	7.0	7.2	7.2	--	--	6.9	May-15
<b>Private Credit</b>	<b>95,013,760</b>	<b>4.3</b>	<b>0.6</b>	<b>4.4</b>	<b>0.6</b>	<b>5.3</b>	<b>4.0</b>	<b>5.1</b>	<b>--</b>	<b>4.9</b>	<b>0.4</b>	<b>3.9</b>	<b>6.6</b>	<b>12.1</b>	<b>7.2</b>	<b>May-13</b>
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	5.9	May-13
Medley Capital	12,870,163	0.6	-4.7	-7.7	-4.7	-13.8	-4.3	-0.8	--	-11.9	4.5	4.4	6.5	7.7	2.7	May-13
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	5.9	May-13
Raven Capital	14,178,247	0.6	2.2	7.2	2.2	9.5	1.7	3.1	--	5.3	-6.1	-2.1	2.7	13.7	2.3	May-13
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	5.9	May-13
Raven Opportunity III	42,168,305	1.9	0.8	7.2	0.8	9.5	4.2	--	--	11.0	-7.4	5.6	--	--	5.6	Jul-15
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	--	--	2.4	6.2	12.3	--	--	6.3	Jul-15
White Oak Pinnacle	25,797,045	1.2	2.2	6.1	2.2	9.3	7.6	8.1	--	10.0	3.6	6.8	9.3	16.5	14.4	Aug-13
S&P/LSTA Leveraged Loan Index+2%			1.5	8.4	1.5	5.2	6.6	6.1	--	2.4	6.2	12.3	1.3	3.6	6.0	Aug-13
<b>Risk-Diversifying Sub-Portfolio</b>	<b>246,542,328</b>	<b>11.2</b>	<b>1.5</b>	<b>5.7</b>	<b>1.5</b>	<b>7.3</b>	<b>3.1</b>	<b>3.6</b>	<b>4.6</b>	<b>1.2</b>	<b>4.0</b>	<b>5.4</b>	<b>0.3</b>	<b>6.2</b>	<b>5.0</b>	<b>Nov-03</b>
StanCERA Risk-Diversifying Blended BM			1.3	5.2	1.3	7.1	2.0	2.2	2.3	1.4	1.3	1.3	0.9	3.0	--	Nov-03
<b>US Treasury</b>	<b>64,294,111</b>	<b>2.9</b>	<b>3.0</b>	<b>8.9</b>	<b>3.0</b>	<b>11.8</b>	<b>4.3</b>	<b>4.3</b>	<b>5.0</b>	<b>0.7</b>	<b>5.1</b>	<b>5.4</b>	<b>0.3</b>	<b>6.2</b>	<b>5.3</b>	<b>Nov-03</b>
BBgBarc US Treasury 7-10 Yr TR			2.7	9.8	2.7	14.0	2.4	3.8	4.4	0.9	2.6	1.1	1.6	9.0	4.9	Nov-03
Northern Trust Intermediate Gov't Bond	46,476,837	2.1	1.2	5.2	1.2	7.6	--	--	--	1.5	--	--	--	--	2.9	Jul-17
BBgBarc US Govt Int TR			1.2	5.2	1.2	7.5	--	--	--	1.4	--	--	--	--	2.9	Jul-17
Northern Trust Long Term Gov't Bond	17,817,274	0.8	7.9	19.6	7.9	24.7	--	--	--	-1.7	--	--	--	--	9.5	Jul-17
BBgBarc US Govt Long TR			7.8	19.6	7.8	24.6	--	--	--	-1.8	--	--	--	--	9.5	Jul-17
<b>Short-Term Gov't/Credit</b>	<b>182,248,217</b>	<b>8.3</b>	<b>0.9</b>	<b>4.7</b>	<b>0.9</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.1</b>	<b>May-17</b>
BBgBarc US Govt/Credit 1-3 Yr. TR			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.2	May-17
DFA	182,248,217	8.3	0.9	4.7	0.9	5.9	--	--	--	1.3	--	--	--	--	2.8	Jul-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.7	3.4	0.7	4.6	--	--	--	1.6	--	--	--	--	2.2	Jul-17

# Total Fund

## Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: September 30, 2019

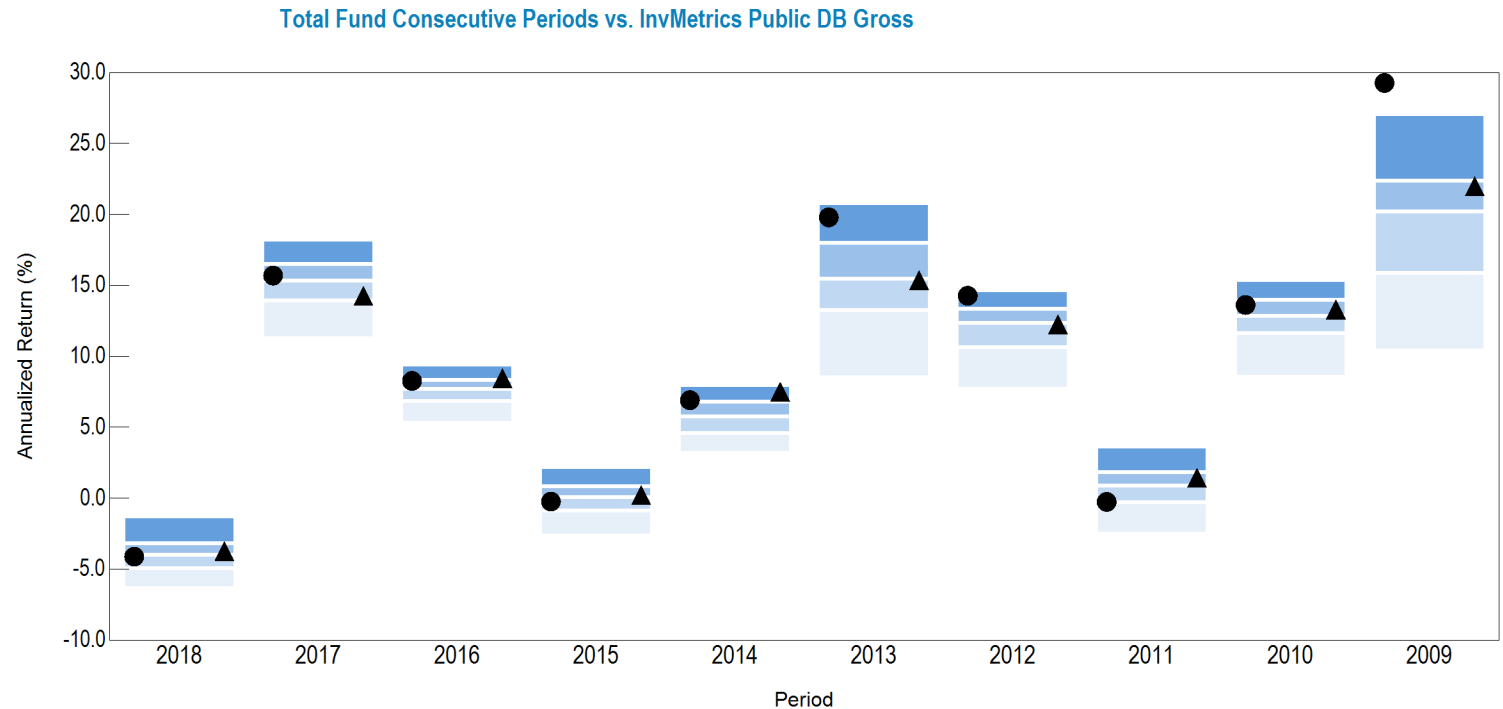


	Return (Rank)													
5th Percentile	1.5	15.4	6.3	9.4	7.8	9.2	9.4							
25th Percentile	1.1	14.0	5.0	8.4	6.9	8.4	8.7							
Median	0.8	12.8	4.2	8.0	6.5	7.8	8.2							
75th Percentile	0.5	11.3	3.4	7.4	6.0	7.1	7.5							
95th Percentile	-0.2	10.0	1.6	6.5	5.2	6.2	6.6							
# of Portfolios	343	339	336	325	315	297	267							
● Total Fund	1.0 (31)	12.2 (61)	4.7 (36)	8.3 (36)	6.7 (39)	8.4 (24)	8.8 (20)							
▲ Policy Index	0.4 (78)	11.0 (81)	3.7 (64)	7.2 (81)	6.4 (53)	7.6 (59)	8.2 (50)							

# Total Fund

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

Period Ending: September 30, 2019



	Return (Rank)									
5th Percentile	-1.3	18.2	9.4	2.2	8.0	20.8	14.6	3.6	15.4	27.0
25th Percentile	-3.1	16.5	8.4	0.9	6.8	18.0	13.4	1.9	14.0	22.4
Median	-4.0	15.3	7.7	0.1	5.8	15.5	12.4	0.9	12.9	20.2
75th Percentile	-4.9	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7	15.9
95th Percentile	-6.3	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6	10.5
# of Portfolios	319	304	305	316	248	231	236	206	188	184
● Total Fund	-4.1 (53)	15.7 (43)	8.3 (29)	-0.2 (60)	6.9 (23)	19.8 (12)	14.3 (10)	-0.3 (75)	13.6 (35)	29.3 (1)
▲ Policy Index	-3.7 (43)	14.3 (71)	8.5 (23)	0.2 (46)	7.5 (12)	15.4 (52)	12.3 (53)	1.4 (35)	13.3 (42)	22.0 (29)

# Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



## Glossary

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**Long-Nickels ICM:** IRR-based methodology developed by Austin Long and Craig Nickels that makes meaningful comparisons between private capital investments and indexes like the S&P 500 Total Return; known as Index Comparison Method (ICM), or Public Market Equivalent (PME). The methodology assumes buying and selling the index according to the timing and size of the cash flows between the investor and the private investment.

The direct opportunity cost comparison of how net funds invested in the private investment would have performed had they been invested in the stated index over the life of the particular investment. In calculation of the IRRICM, the private capital valuation is ignored and substituted instead with a ValuationICM. ValuationICM is essentially a sum of private capital contributions and distributions grown to the analysis date using the respective index values; contributions are treated as purchases into the index and are used to increase the ValuationICM, while distributions are treated as sales and are applied to reduce ValuationICM; the IRRICM then becomes a standard IRR calculation, using the original private capital transactions and ValuationICM substituted for the original private capital valuation.

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