Callan

Mendocino County Employees Retirement Association Performance Review

Periods ended September 30, 2018

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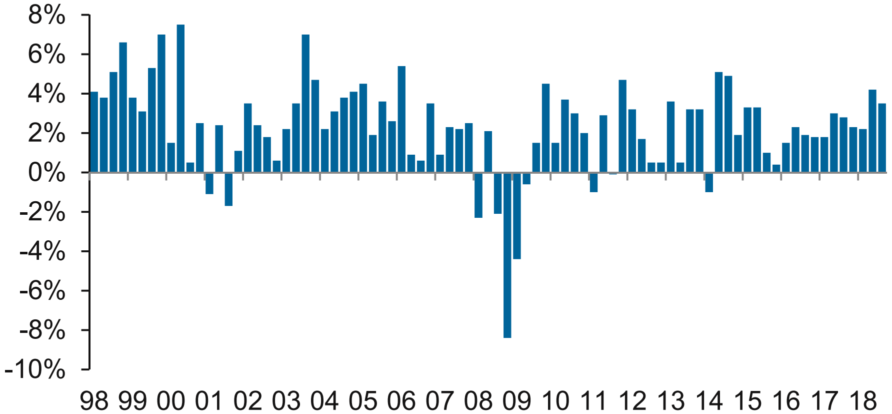
Economic and Capital Market Overview

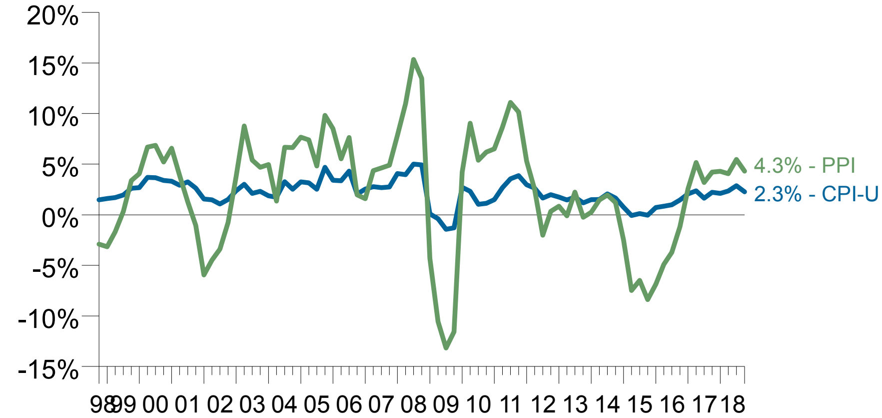
U.S. Economy

For periods ended September 30, 2018

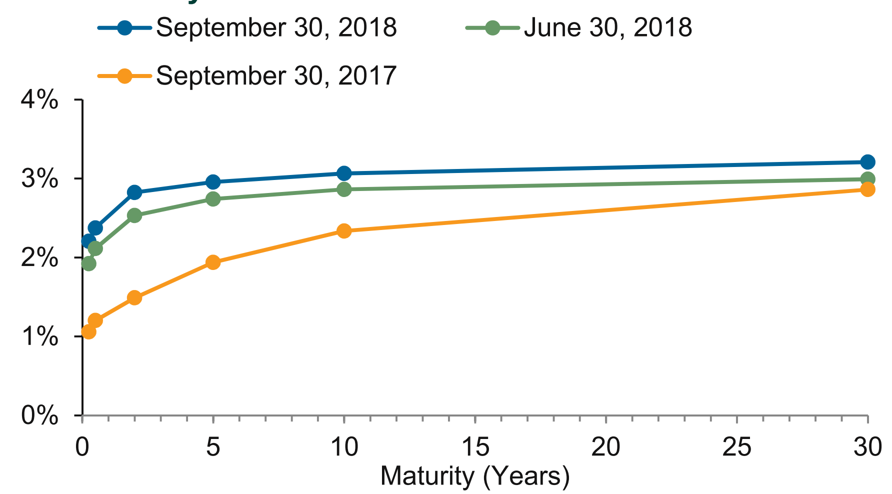
Quarterly Real GDP Growth



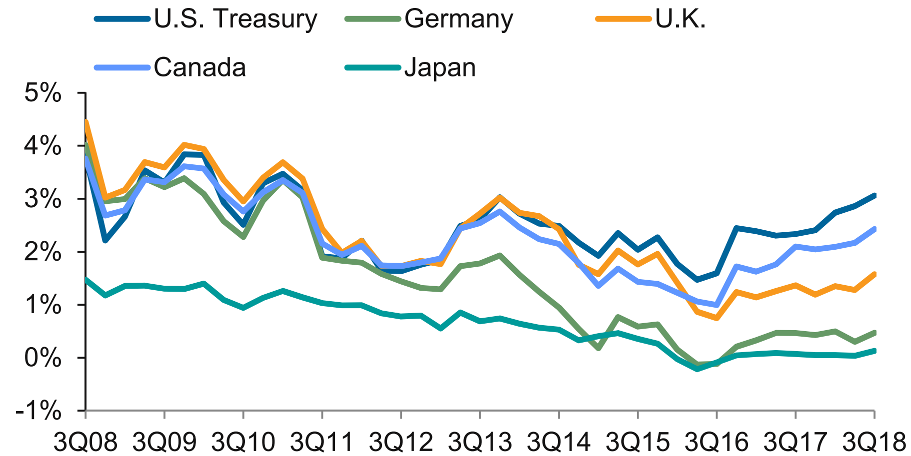
Inflation Year-Over-Year



U.S. Treasury Yield Curves



10-Year Global Government Bond Yields



Sources: Bureau of Labor Statistics, Bloomberg

Market Environment 3Q18: Global Economy

- At the head of the pack, the U.S. economy continued to feel the shot of adrenaline provided by early 2018 tax cuts and fiscal stimulus, recording +4.2% real GDP growth in the second quarter and an estimated +3.6% in the third quarter.
- Overseas, the economic picture was less bright with trade headwinds and several idiosyncratic stories weighing on growth.
- The labor market remains strong in the US. Unemployment hit 3.7% in October, its lowest since 1969 and wages inched up +2.8% (y/y) in September.
- Inflation remains well behaved: Headline CPI was 2.7% in September (y/y); Core CPI was 2.2% (y/y)
  - Rising oil prices, tariffs and tight labor market conditions could pose a threat?
- The Fed raised rates as expected by 25 bps in September to a target of 2.00% to 2.25%. The Fed expects one more rate hike this year and three in 2019. Markets have priced in fewer but are moving closer to Fed projections

Returns for Periods ended September 30, 2018

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	7.12	17.58	13.46	12.01	9.79
S&P 500	7.71	17.91	13.95	11.97	9.81
Russell 2000	3.58	15.24	11.07	11.11	9.38
Non-U.S. Equity					
MSCI World ex USA	1.31	2.67	4.24	5.18	5.39
MSCI Emerging Markets	-1.09	-0.81	3.61	5.40	--
MSCI ACWI ex USA Small Cap	-1.51	1.86	6.14	8.73	--
Fixed Income					
Bloomberg Barclays Aggregate	0.02	-1.22	2.16	3.77	5.02
3-Month T-Bill	0.49	1.59	0.52	0.34	2.56
Bloomberg Barclays Long Gov/Credit	-0.47	-2.73	5.18	7.11	6.73
Bloomberg Barclays Global Agg ex-US	-1.74	-1.45	-0.33	2.20	4.36
Real Estate					
NCREIF Property	1.81	7.31	9.60	6.43	9.27
FTSE NAREIT Equity	0.79	3.35	9.16	7.44	9.71
Alternatives					
CS Hedge Fund	0.59	3.49	3.39	4.43	--
Bloomberg Commodity	-2.02	2.59	-7.18	-6.24	2.40
Gold Spot Price	-4.65	-6.90	-2.05	3.11	4.95
Inflation - CPI-U	0.18	2.28	1.52	1.44	2.24

NCREIF Property Index data is preliminary

Broad Market Index Performance: October Update

Broad Market Index Performance As of October 31, 2018	October	Year to Date	1 Year
Russell 1000	-7.08%	2.67%	6.84%
S&P 500	-6.84%	3.01%	7.18%
Russell 2500	-10.15%	-0.80%	3.16%
MSCI ACWI ex-US (net div)	-8.13%	-10.97%	-8.66%
MSCI Emerging Markets (net div)	-8.71%	-15.72%	-13.28%
Barclays 1-3 Year Gov/Cred	0.11%	0.52%	0.38%
Barclays Aggregate	-0.79%	-2.38%	-2.05%
BofA ML High Yld BB-B Constrained	-1.44%	0.40%	0.28%

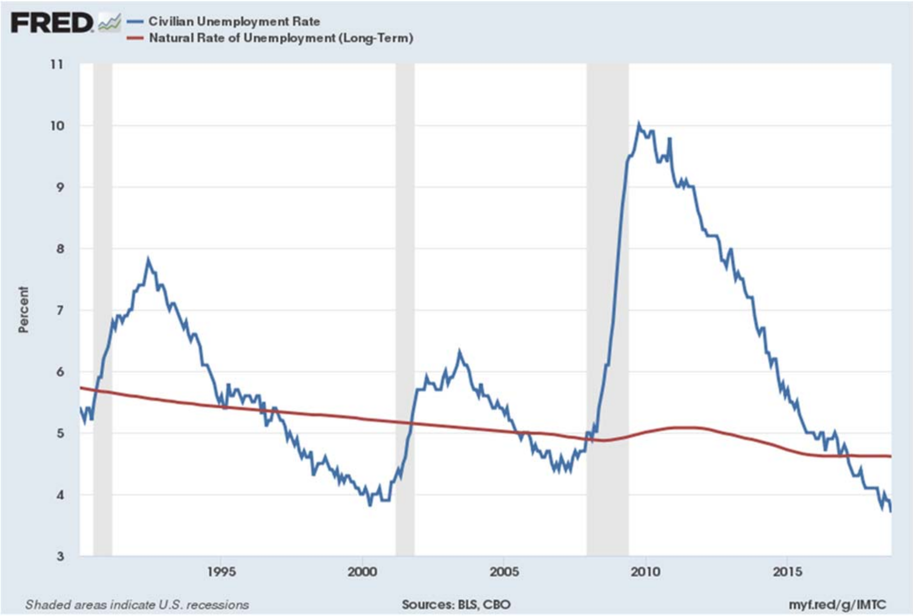
What Are We Talking About with Investors?

Common themes in the second half of 2018

- Current expansion is growing long in the tooth; a downturn seems inevitable, should something be done about it?
  - Increased conversation around the merits of risk mitigation strategies.
- Litany of macro investing concerns raising anxiety:
  - Trade wars and inflation
  - Weaker GDP cycle going forward
  - Inverted yield curve
  - Emerging markets underperformance
  - Value underperformance
  - Equity concentration risk
  - When does China become an asset class?

Will Inflation Catch Fire? The Job Market Squeeze on Policy

10 years of persistent monetary and fiscal stimulus has caught up to global growth



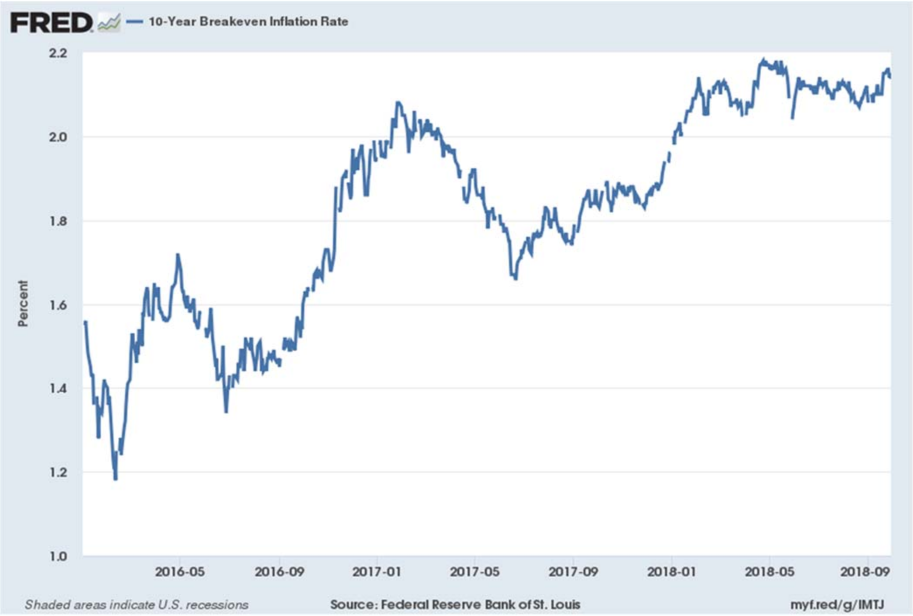
- Discouraged worker effect has been pervasive since the Global Financial Crisis.
- Gradual, persistent growth has finally coaxed workers back from the sidelines, erasing the slack in the job market.

- The U.S. unemployment rate has reached a generational low dropping to 3.7% in September, and well below the long-term natural rate of unemployment.

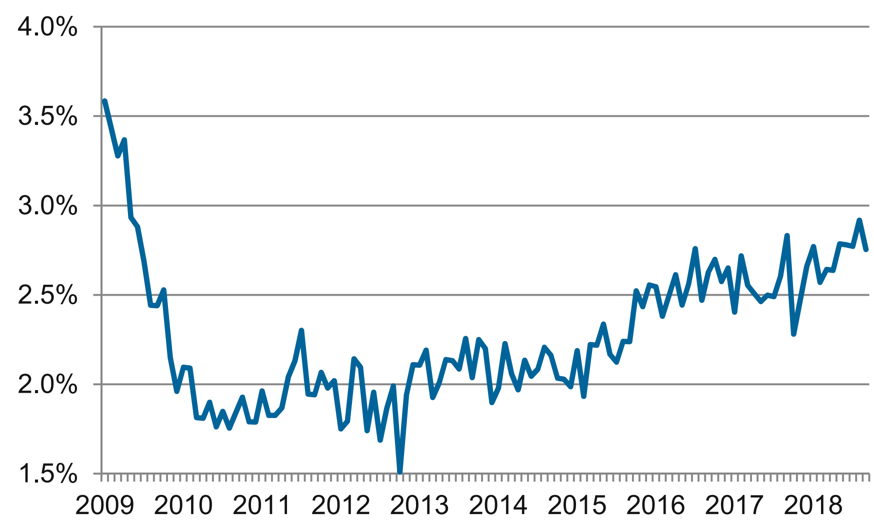
- Source: Federal Reserve

Broad-Based Inflation Measures Still Relatively Benign in the U.S.

Expectations are higher, but still low relative to long-term history



U.S. Average Hourly Earnings, %Year over Year



– U.S. inflation expectations as expressed by the break-even rate (TIPS vs nominal Treasury yields) moved higher in 2017 and cracked 2% as the year began, but the rate has since hovered around 2.1% through the first three quarters.

– Wages have been very sticky in a narrow range around 2% growth until 2016.

– January 2018 report of 2.8% growth triggered the February market sell-off. Wage growth has not taken off since January.

– Tight labor markets might finally be pushing up wages. Good for workers and consumer spending.

– Tax cut may also flow to owners and wage earners, fueling further inflationary pressures.

– Such pressure has yet to show as headline inflation.

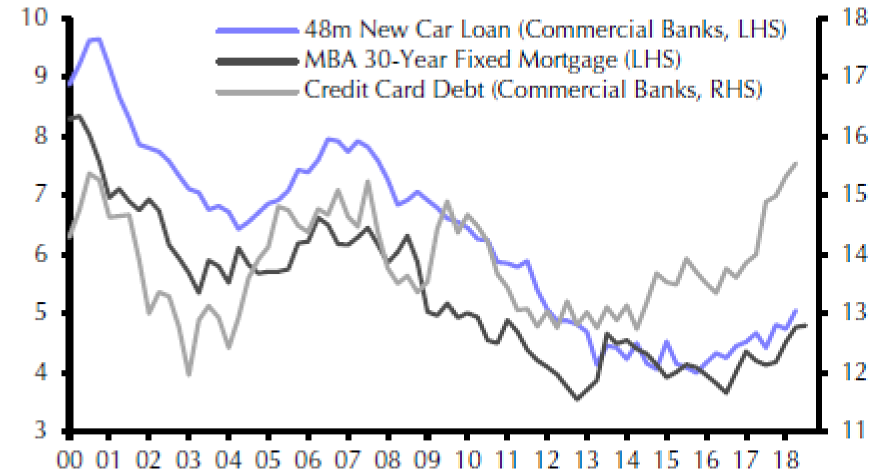
Source: Federal Reserve, U.S. Department of Labor

Consumers Sensitive to Interest Rate Hikes, but Disaster May Not Be Looming

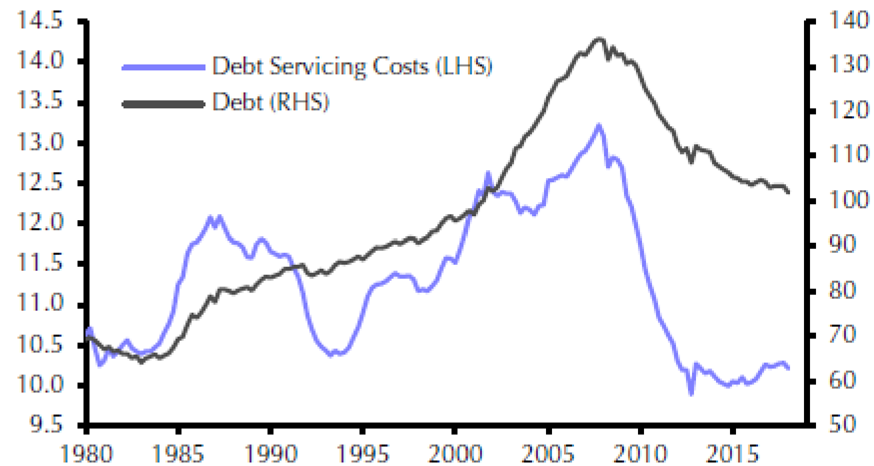
Consumption is 70% of GDP, and the sector typically leads growth (and contractions)

- The U.S. savings rate has fallen to its lowest level in a decade.
- From Capital Economics: “The savings rate is at a decade low because the household net wealth is at a record high. This situation is sustainable IF housing and equity valuations don’t fall.”
- That remains a big IF…
- Debt servicing cost looks very reasonable relative to history.
- However, consumer interest rates have risen markedly in recent quarters.
- Rates on credit card debt now at their highest level in many years. Higher rates combined with the rise in volume of credit card debt is a potential cause for concern.

Consumer Interest Rates (%)



Household Debt Servicing Costs (% of disposable income)



Source: Capital Economics; Thomson Reuters

U.S. Stock Market Resumes Its Incredible Run in the Third Quarter

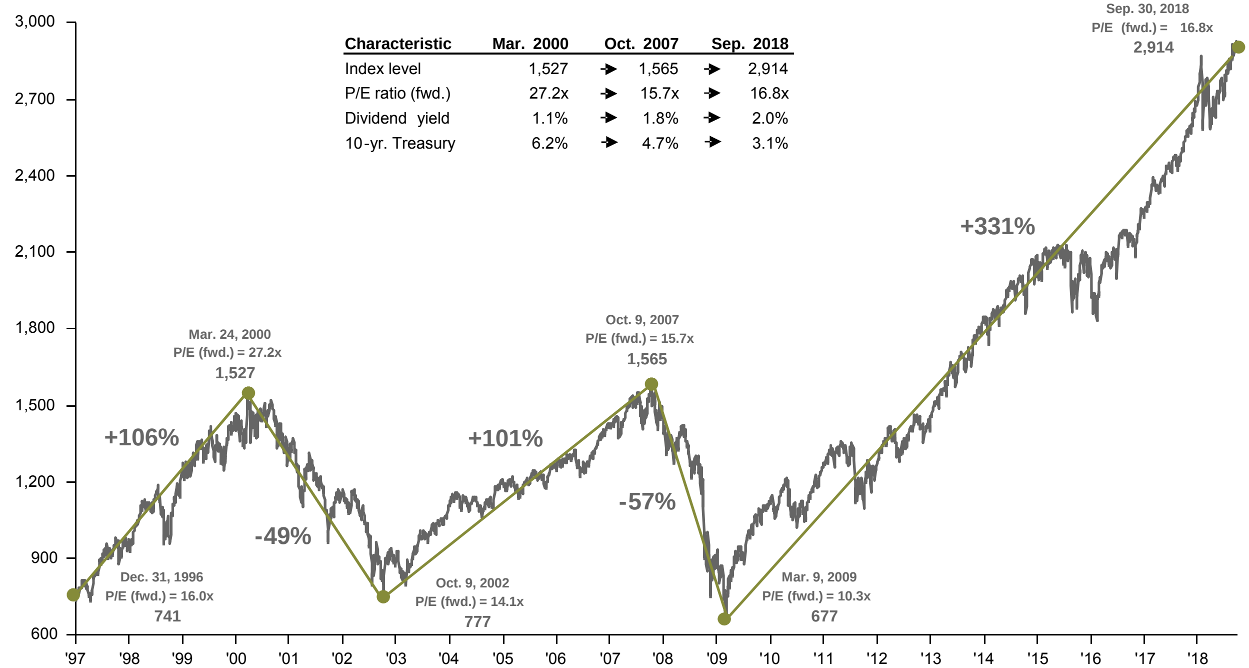
– Relentless climb in S&P 500 Price Index since the trough of the market in Q1 2009.

– Forward valuation dropped in the first and second quarter of 2018; rose again in the robust third quarter, now at 16.8, above the 25-year average, but nowhere near the peak set in 2000

– Dividend yield on stocks has been comparable to that of a 10-year Treasury for an extended period, and the gap is just widening now; vastly different relationship between stock and bond yields in 2000 and 2007

S&P 500 Price Index

Characteristic	Mar. 2000		Oct. 2007		Sep. 2018
Index level	1,527	➔	1,565	➔	2,914
P/E ratio (fwd.)	27.2x	➔	15.7x	➔	16.8x
Dividend yield	1.1%	➔	1.8%	➔	2.0%
10-yr. Treasury	6.2%	➔	4.7%	➔	3.1%

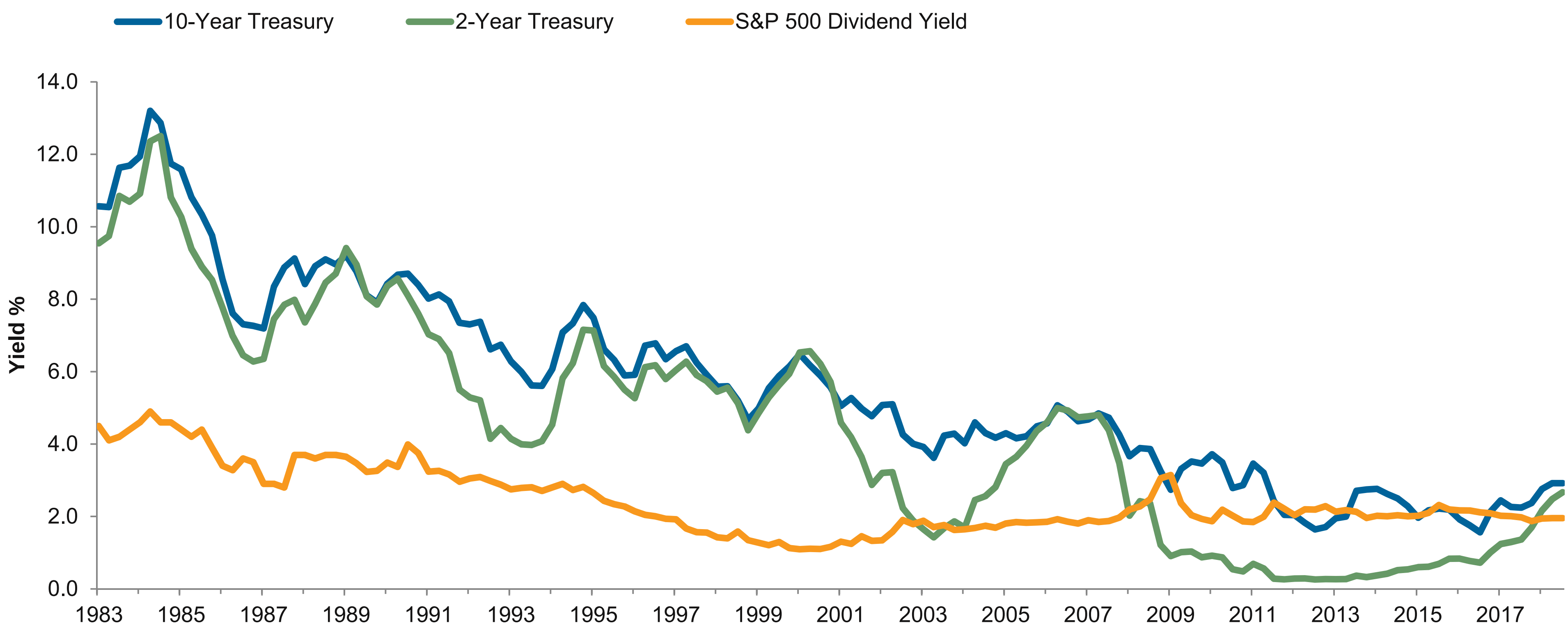


Source: Compustat, FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management.
Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by Compustat. Forward price to earnings ratio is a bottom-up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns.
Guide to the Markets – U.S. Data are as of September 30, 2018.

Source: J.P. Morgan Asset Management.

Long Period of Zero Interest Rate Policy Skews Memories of 'Normal Markets'

Long-term historical relationship between bond yields and dividends has been distorted by 10 years of extreme policy intervention.



Yields on 2-Year Treasury notes are higher than the S&P dividend for the first time in 10 years

Source: Callan LLC

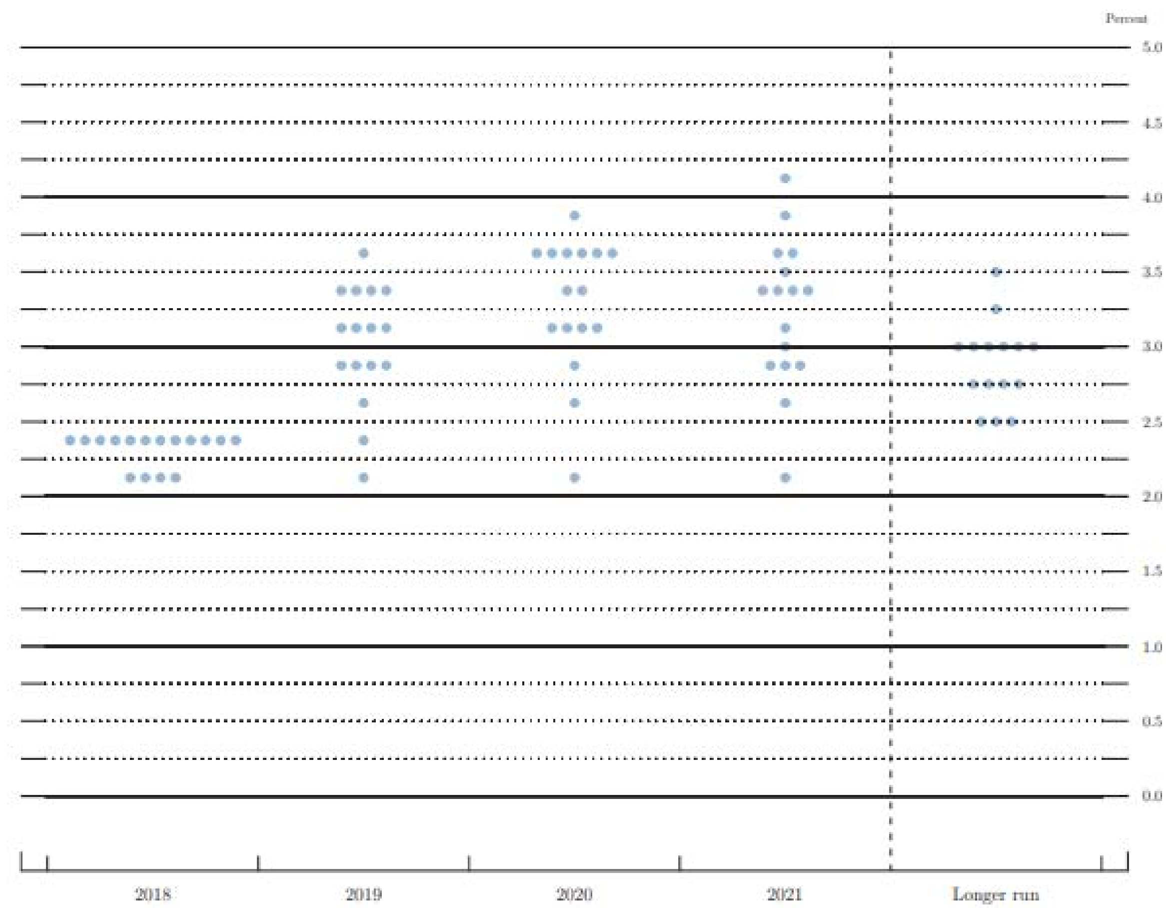
Market Watches the Fed, But Doesn’t Always Believe It

Futures market discounts FOMC projections of future Fed funds target

- Median of 2018 projections (2.4%) still lies in the range between 2.0% and 2.5%, suggesting a total of four rate hikes this year.
- Median for 2019 is 3.1%, and 3.4% in 2020.
- Longer term, median expectation is settled around 3%
- Planned fed rate hikes would raise short rates above current long rates. Will the Fed persist and push the yield curve into an inverted position if long rates do not rise sufficiently?

Federal Reserve Dot Plot—September 2018

FOMC participants’ assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



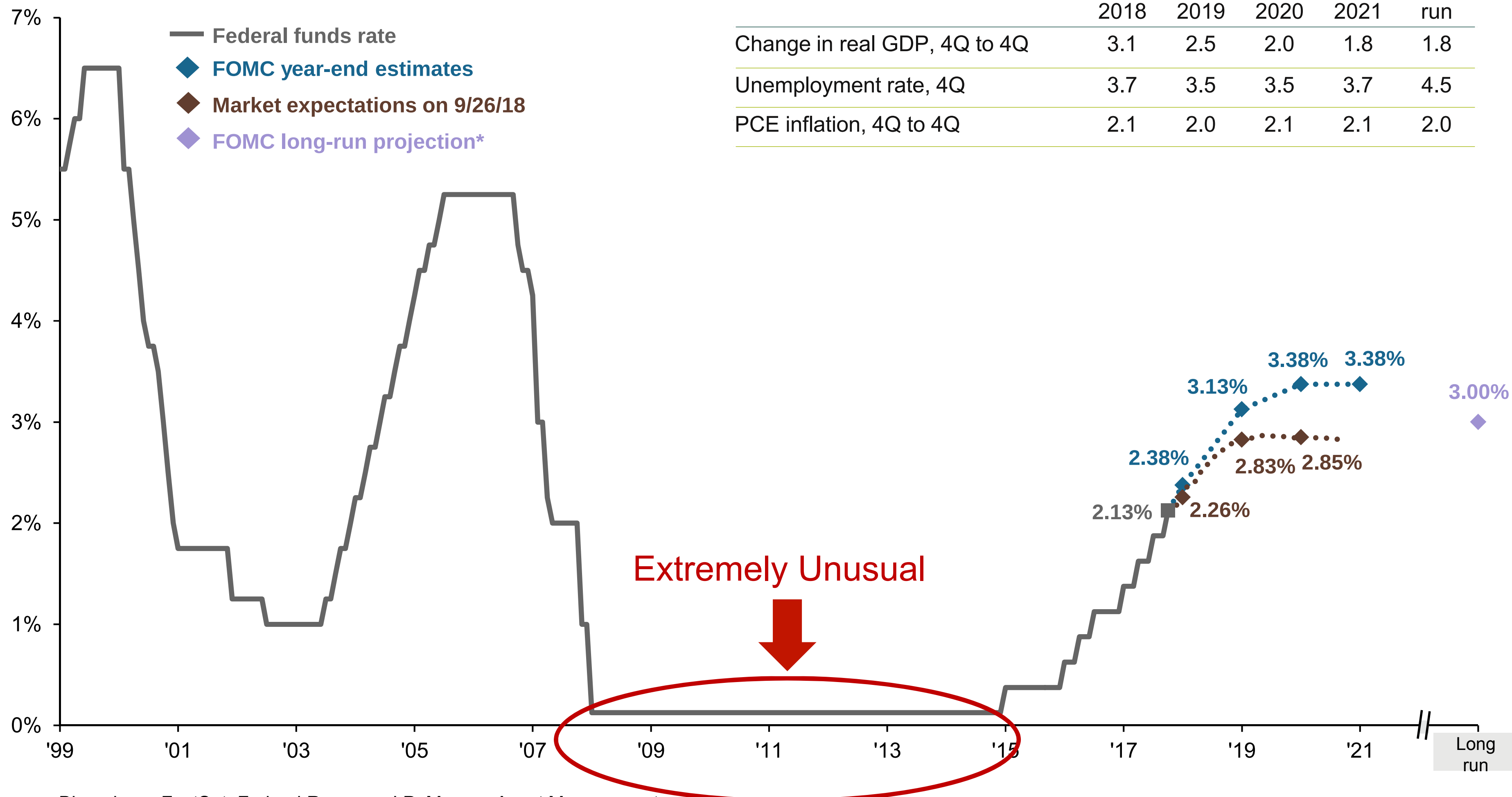
Source: Federal Reserve

Unprecedented Policy Response Is Finally Over

Fed moves toward normalization with four rate hikes expected in 2018

Federal funds rate expectations

FOMC and market expectations for the fed funds rate



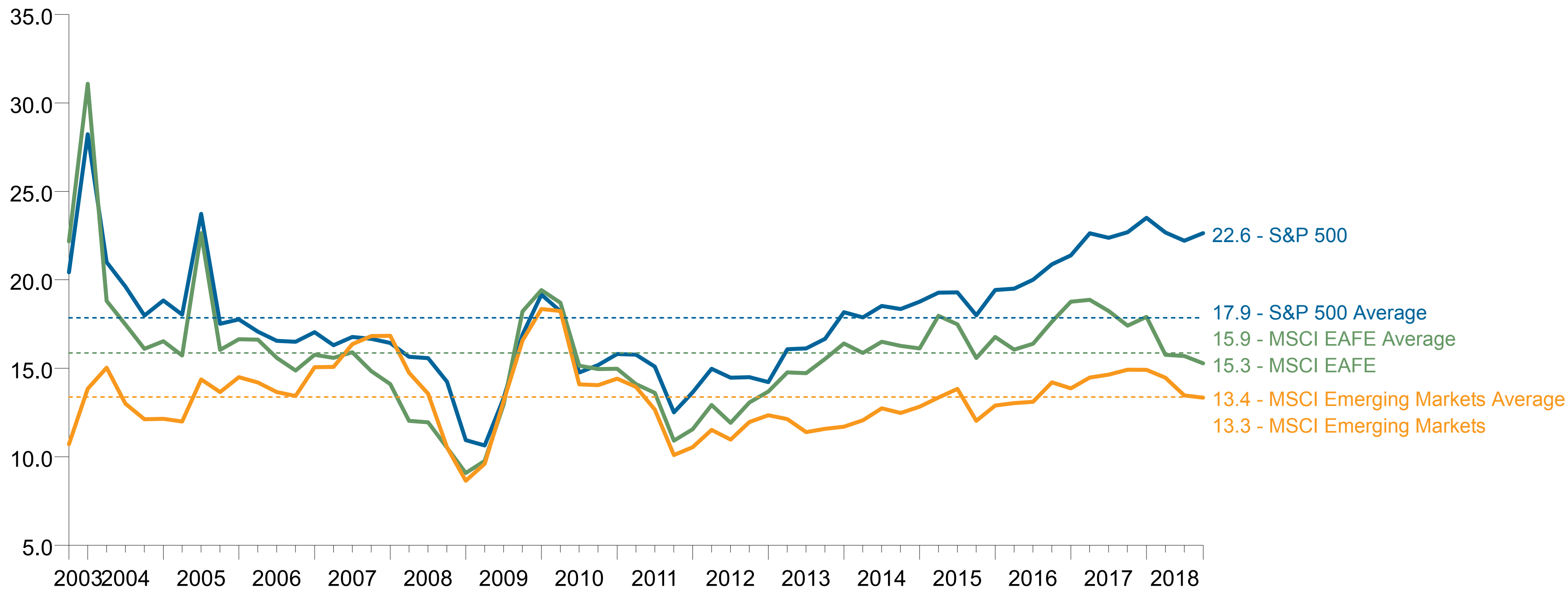
FOMC September 2018 forecasts (percent)

	2018	2019	2020	2021	Long run
Change in real GDP, 4Q to 4Q	3.1	2.5	2.0	1.8	1.8
Unemployment rate, 4Q	3.7	3.5	3.5	3.7	4.5
PCE inflation, 4Q to 4Q	2.1	2.0	2.1	2.1	2.0

Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.
Market expectations are the federal funds rates priced into the fed futures market as of the date of the September 2018 FOMC meeting and are through September 2021. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy.
Guide to the Markets – U.S. Data are as of September 30, 2018.

Equity Valuations—Historical Data

Price/Earnings Ratio (exc neg) for 15 Years ended September 30, 2018



– U.S. equity valuations have slipped since the start of the year, but remain higher than non-U.S. developed and emerging market equity valuations relative to the 15-year average for each index

– Current valuations are well below the tech-bubble era and have recuperated steadily after the Global Financial Crisis

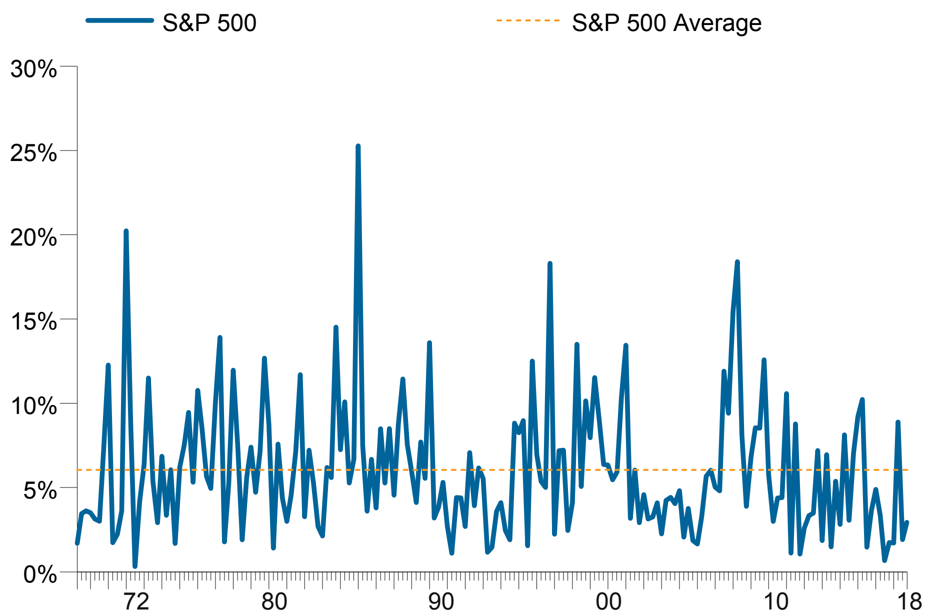
– Forward valuations have dropped in each of the first and second quarters of 2018, but jumped back up in the third quarter to 16.8; 16.1 is the 25-year average

Sources: MSCI, Standard & Poor's

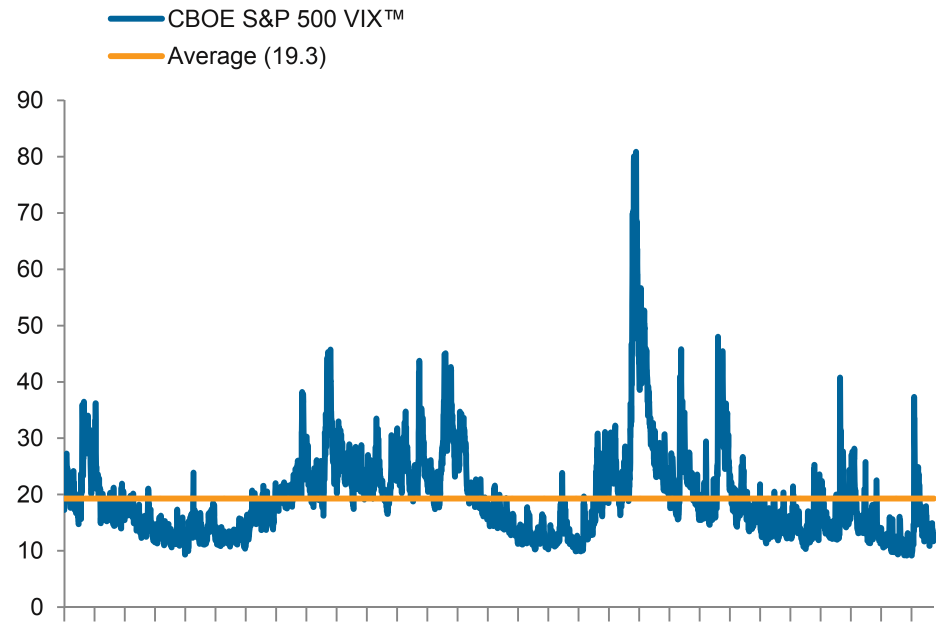
Market Volatility—Realized and Implied

S&P 500 Index

Standard Deviation for S&P 500



CBOE VIX™



- The VIX, measuring the implied volatility of S&P 500 Index options, spiked 116% on Feb 5 when the market sank 4%, marking the biggest jump ever recorded—albeit from historically low levels.
- Volatility remained elevated through March and April, then fell back as the second and year progressed, ending the third quarter at 12, well below the long-term average of 19.3
- First quarter 2018 volatility was exacerbated by anxiety about overly optimistic sentiment to start the year, expectations for determined action on the part of the Fed to raise rates, de-risking on the part of systematic investors, and accelerating wage growth.
- Valuations as measured by traditional metrics like P/E remain high.

Sources: CBOE, Standard & Poor's

U.S. Equity Performance

U.S. equity markets posted broad-based gains in the quarter fueled by strong economic growth, robust corporate earnings, and heightened stock buybacks. Several major indices hit record levels during the quarter; the S&P 500 saw it's biggest gain in five years. Volatility was muted despite ongoing trade war threats.

Large Cap Outpaced Small Cap

– FAANG stocks plus Microsoft had a more muted impact, but still contributed nearly 25% of the S&P 500's quarterly return.

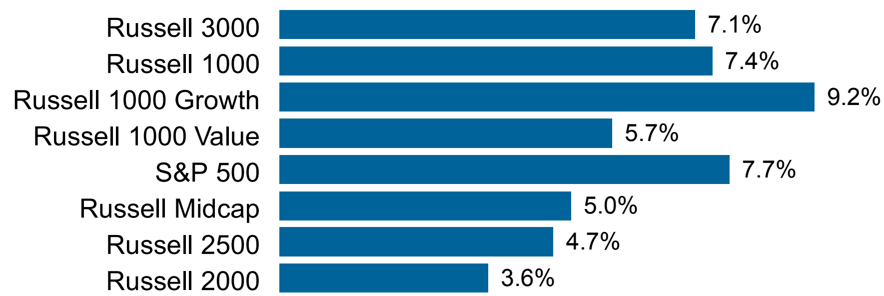
– All sectors landed in positive territory led by Health Care (+14.5%), Industrials (+10%), and Communication Services (+9.9%).

Growth Continued to Outperform Value

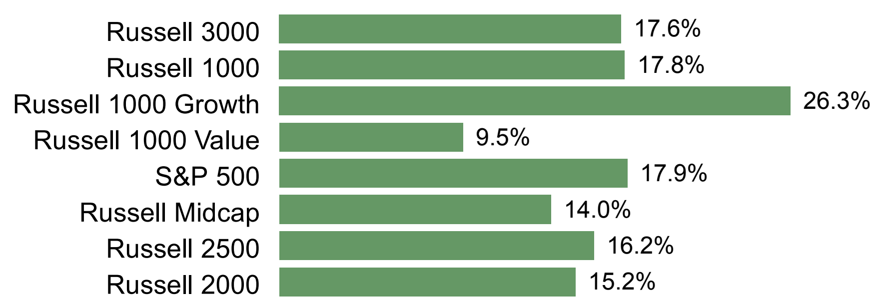
– Growth outpacing Value this year by the widest margin in 15 years (R1G YTD: +17.1% vs. R1V YTD: +3.9%) driven by ongoing FAANG stock euphoria.

– Momentum continued as the leading factor; Value is worst-performing style for last 18 months.

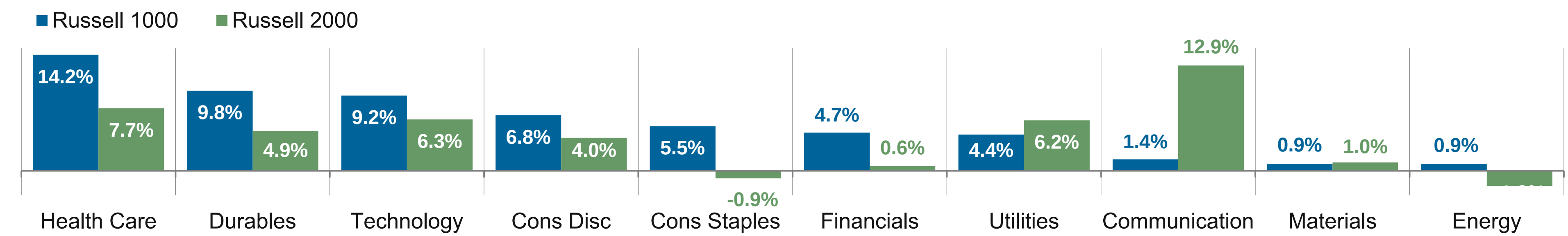
U.S. Equity: Quarterly Returns



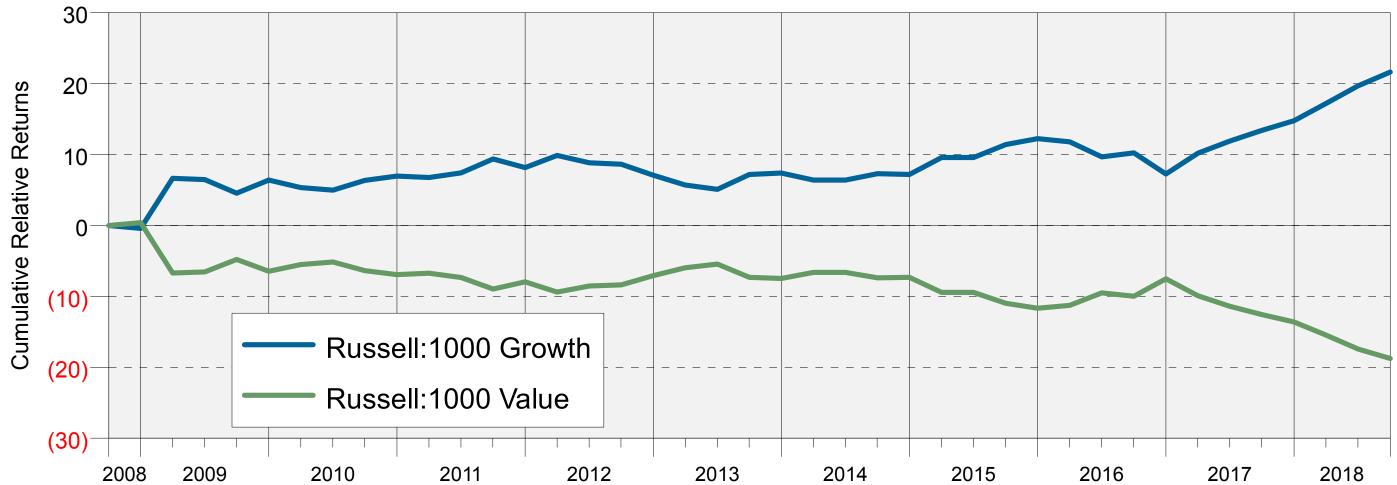
U.S. Equity: Annual Returns



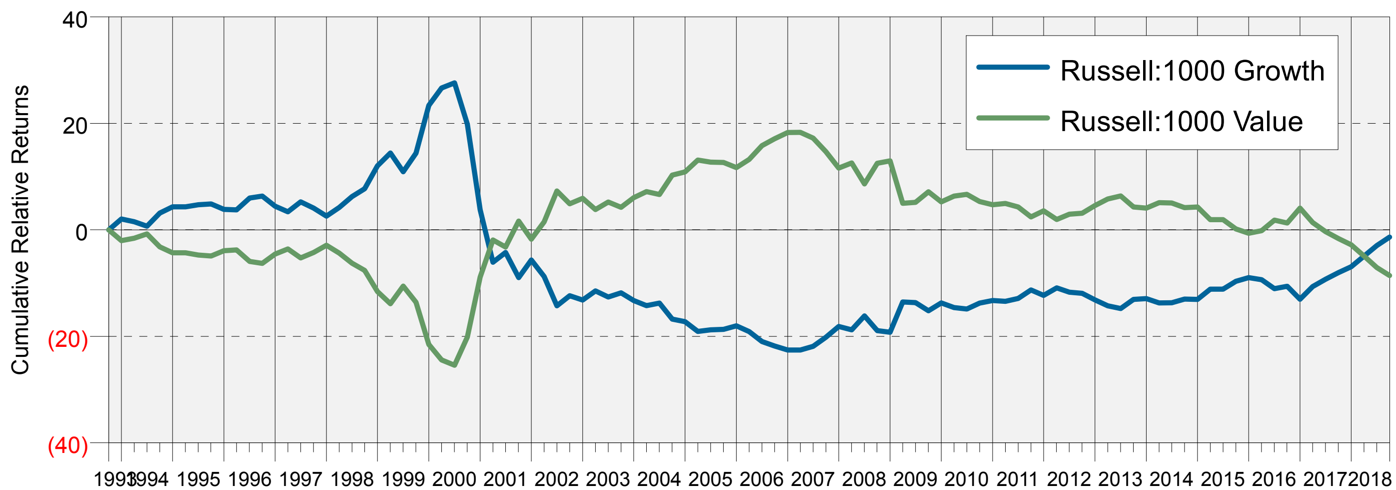
Quarter ended September 30, 2018



Cumulative Relative Returns Relative To Russell:1000 Index
for 10 Years Ended September 30, 2018



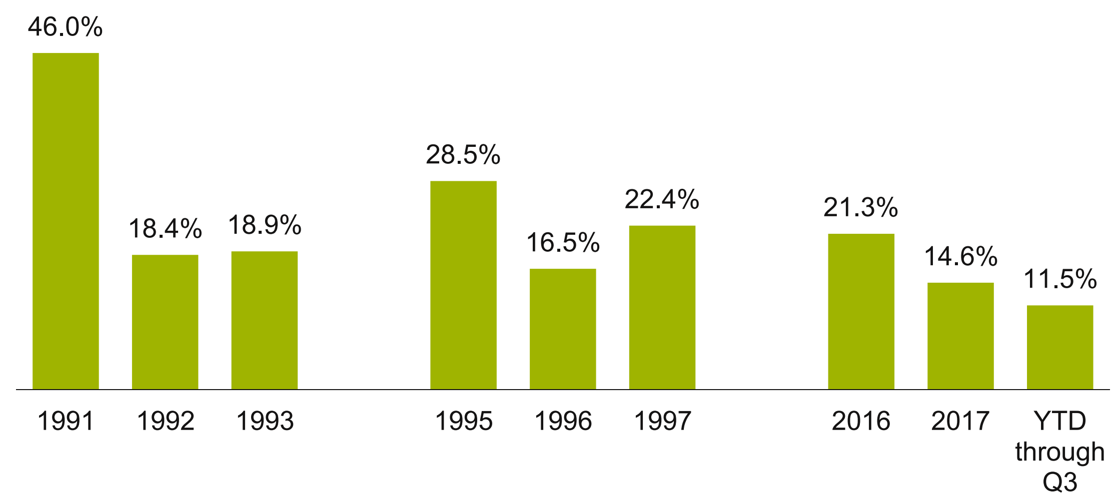
Cumulative Relative Returns Relative To Russell:1000 Index
for 25 Years Ended September 30, 2018



Small Cap Continues Strong Quarterly Performance but Non-Earners Rise in Index

- Through the third quarter, the Russell 2000 Index was up 11.5% but has sold off early in the fourth quarter
- If calendar year results in rebound, it would be the third consecutive year of double digit small-cap performance, which has happened only twice since the 1978 inception of the index
- The percentage of non-earners in the Russell 2000 ticked up, signaling a potential deterioration in quality of the index
- Rising interest rates and trade tensions with China may increase volatility levels of stocks
- Intra-market correlations dropped in the third quarter and are close to record-low levels established in November 2017; intra-sector correlations are below long-term averages in every sector except Communication Services, Real Estate, and Utilities
  - Lower correlations imply higher stock specific risk which should create a more favorable environment for active managers

Consecutive 3-Year Double Digit Russell 2000 Returns



Non-earners Within the Russell 2000

Source: Callan, Russell Investment Group, FactSet, BofA Merrill Lynch US Equity & US Quant Strategy

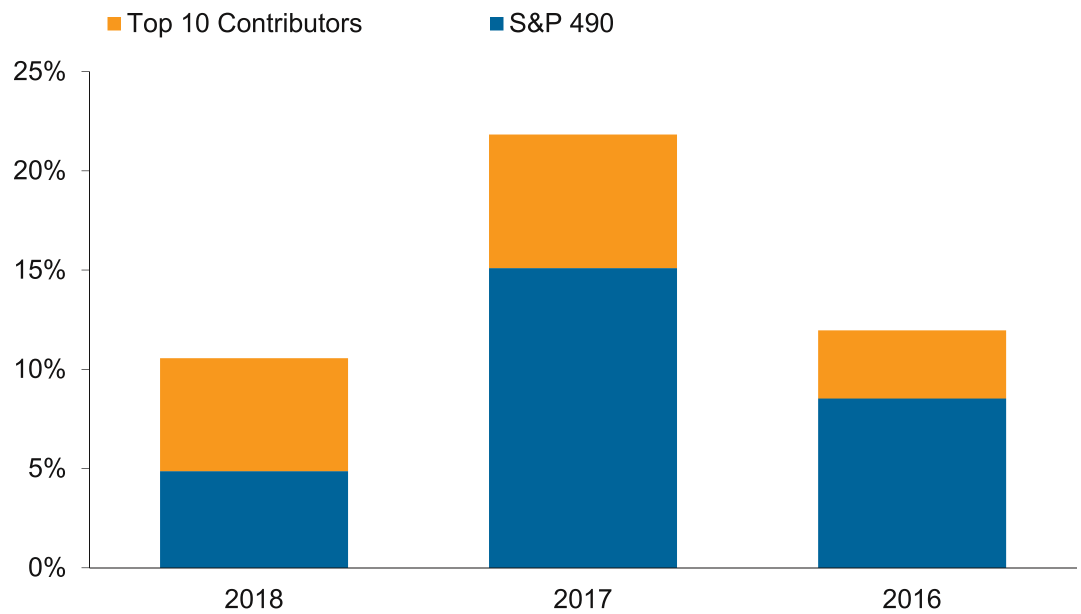
Concentration Risk within U.S. Equities

– The top five stocks by market cap in the S&P500 comprise approximately 14% of the market cap of the index.

– The market breadth within the S&P 500 Index remains very narrow. The top 10 performing stocks made up the lion's share of positive performance year-to-date.

– Technology and Communications stocks, particularly FAANG stocks (Facebook, Apple, Amazon, Netflix, Google/Alphabet and to some extent Microsoft) continue to drive outsized proportion of returns within equity indices.

Top 10 Contributors Versus Rest of S&P 500 Index



Source: Bloomberg as of 9/28/2018

U.S. Equities: Best House on a Bad Block

– U.S. equity has been the one major asset class with positive returns YTD

– What is driving divergence between US and other asset classes?

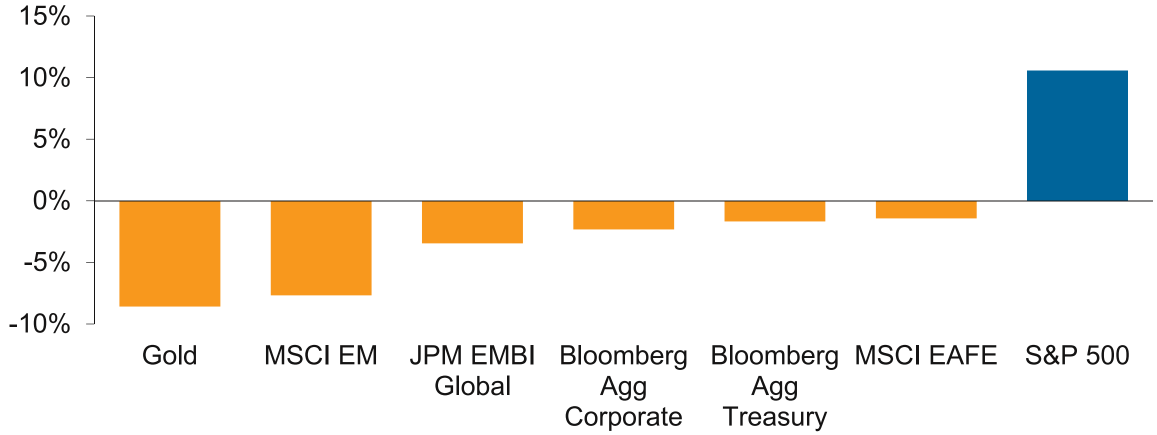
1) “Earnings Miracle”

60% of Russell 1000 companies beat consensus earnings expectations by at least one standard deviation in the third quarter - a 15 year record ; only 11% of companies reported earnings that missed expectations by at least a standard deviation; the gap between beats and misses is also at record levels.

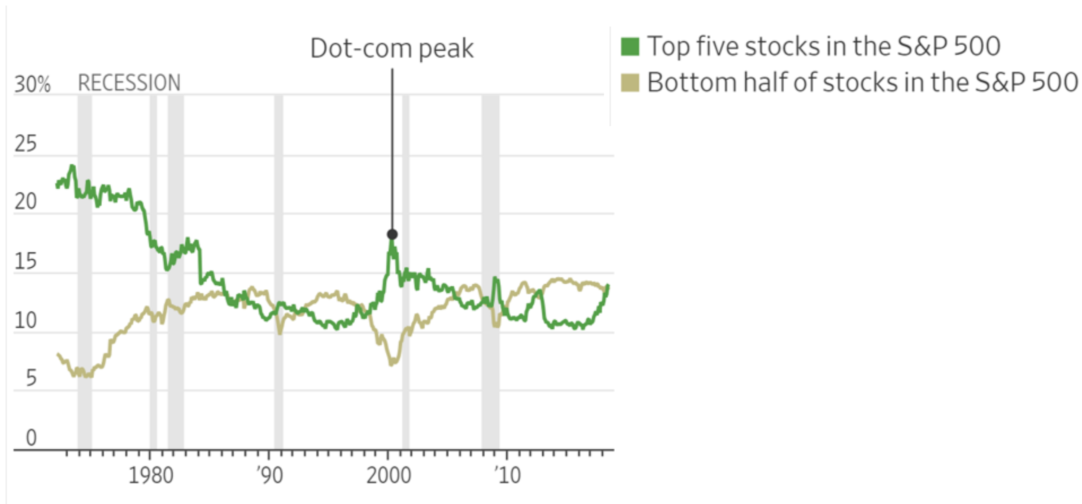
2) Tariff/Trade Uncertainty

Companies with international exposure underperformed those with primarily domestic exposure

Year-to-Date Returns Through Third Quarter for Various Asset Classes



Share of the S&P 500 Market Capitalization



Source: Bloomberg, Ned Davis Research analysis of S&P Dow Jones Indices data, WSJ.com

Non-U.S. Equity Performance

Market divergence emerged after synchronized growth in 2017. U.S. continues to gain; non-U.S. markets lagged.

Non-U.S. Developed Positive Territory but Lags U.S.

- Dollar rallied against euro and yen given strong U.S. economy and Fed's contractionary monetary policy.
- Strong earnings boosted Health Care & Telecomm; Energy benefited from positive supply-demand dynamics. Real Estate, Financials, and Staples adversely impacted by rising rates.
- Growth moderately outperformed value. Volatility and small cap factors were out of favor given market uncertainties

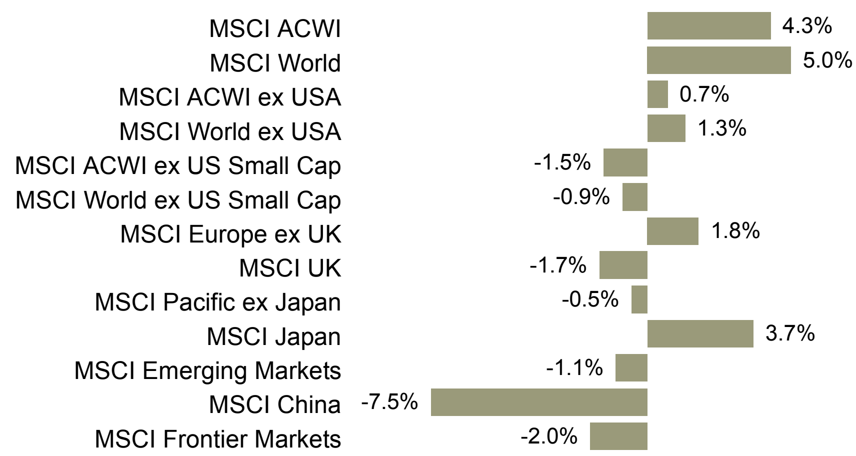
Emerging Markets Faltered

- EM pressured by rising dollar, U.S. interest rates, trade frictions
- China weakened by economic slowdown; regulatory concerns weighed on Chinese Tech companies
- Energy top performer on rising oil prices; Consumer Discretionary negatively impacted by China and India

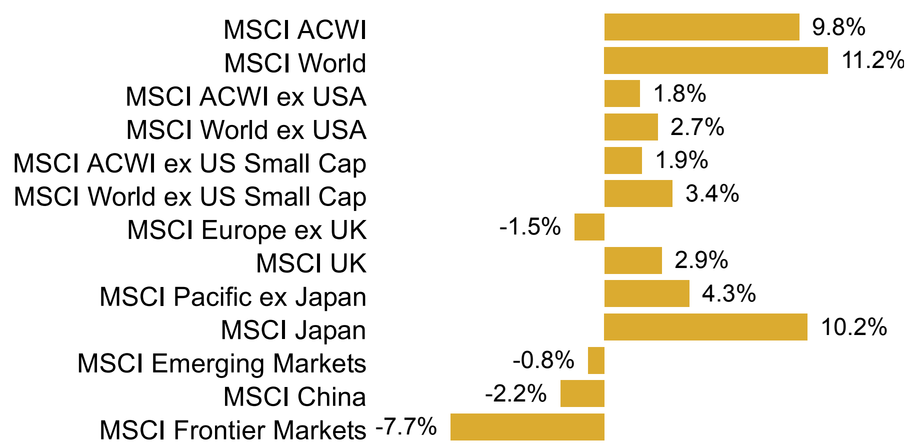
Non-U.S. Small Cap Trailed Large Cap

- Both non-U.S. developed and emerging market small cap underperformed large cap as appetite for risk waned due to rising rates/dollar and trade tensions
- Value was favored as Energy thrived

Global Equity: Quarterly Returns



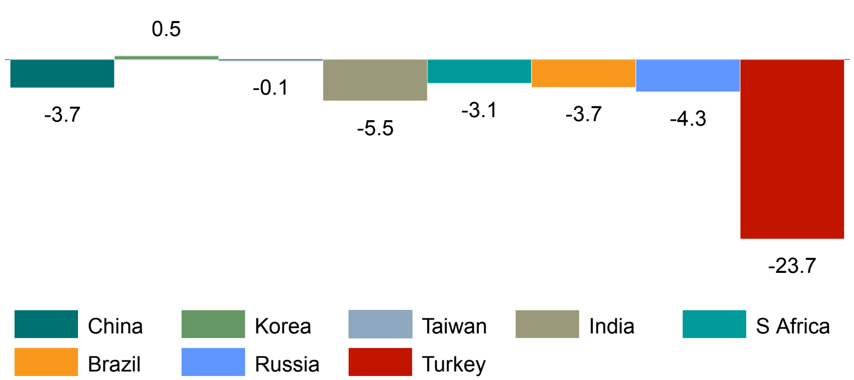
Global Equity: Annual Returns



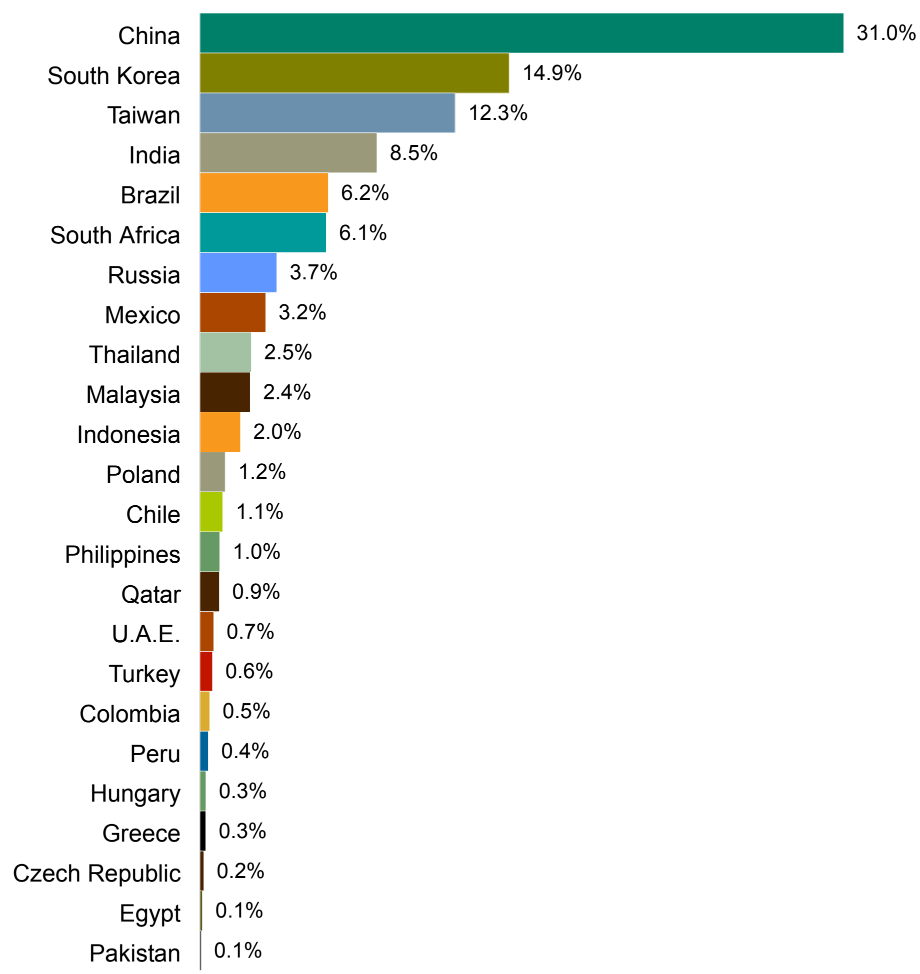
Currency Effect – A Big Negative for Emerging Markets

- Emerging market currencies were under pressure as the dollar strengthened
- The eight largest countries in MSCI EM constitute 80% of its market cap
- The 3Q return for these country's currencies ranged from +0.47% to -5.48% as depicted below.
  - Concerns about economic policies, levels of dollar denominated debt and inflation sparked Turkey's lira to capitulate
- These currency returns are added (or subtracted) from local equity returns to calculate total return for U.S. Dollar-based investors
  - Effect for EM was strongly negative in 3Q2018

Returns for Quarter ended September 30, 2018



MSCI Emerging Markets Country Exposure as of September 30, 2018



Source: MSCI

U.S. Fixed Income Performance

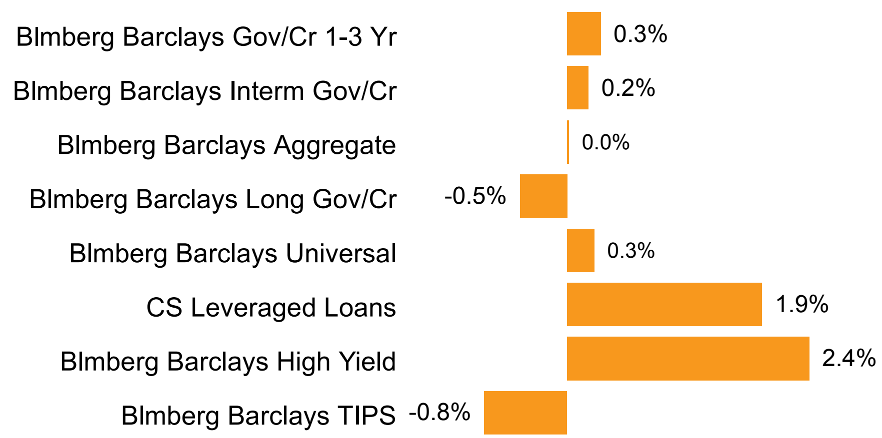
Fixed income performance was flat. Yield curve rose across maturity spectrum on better-than-expected corporate earnings and solid U.S. economic data.
- 10-year U.S. Treasury yield reached a high of 3.10% before settling at 3.06%
- The yield curve flattened with shorter-term rates rising faster than longer-term

Investment Grade Corporates Earned Strong Quarter
- +0.97% for the quarter; -2.3% YTD
- New issuance remained strong with an average of 2-3x oversubscribed demand throughout the quarter
- Spreads continued to narrow despite leverages increasing

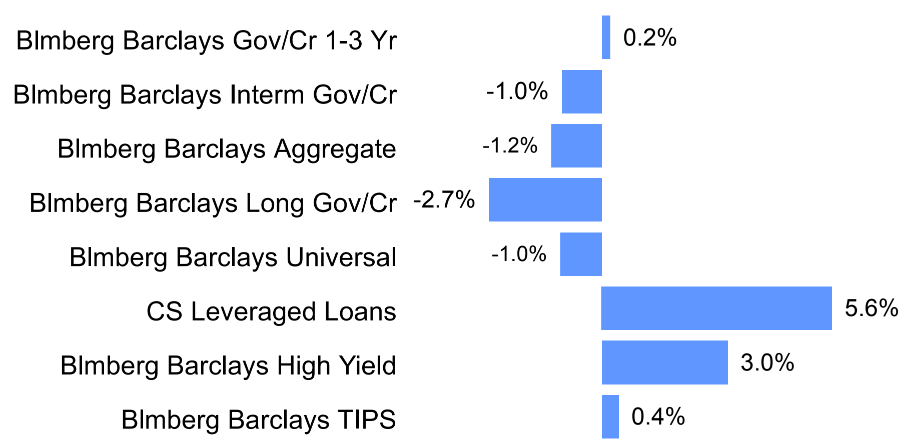
High Yield Top Performer for Quarter
- +2.4% for the quarter; +2.6% YTD
- Low new issuance volume and stable fundamentals compressed spreads
- Bond issuance was $41 billion, 33% lower than 3Q17

Bank Loans Remain Strong
- +1.9% for the quarter; +4.0% YTD
- Demand continues for floating rate securities despite covenant-lite structures and higher spread duration
- Heavy issuance continued through the quarter;

U.S. Fixed Income: Quarterly Returns



U.S. Fixed Income: Annual Returns

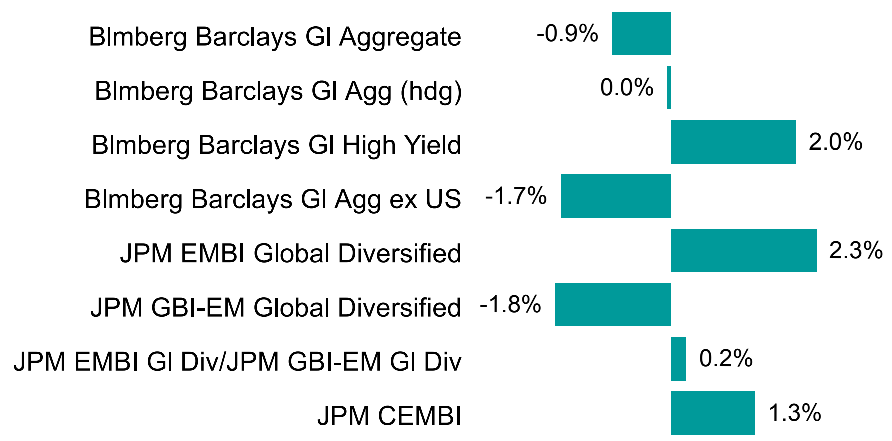


Global Fixed Income Performance

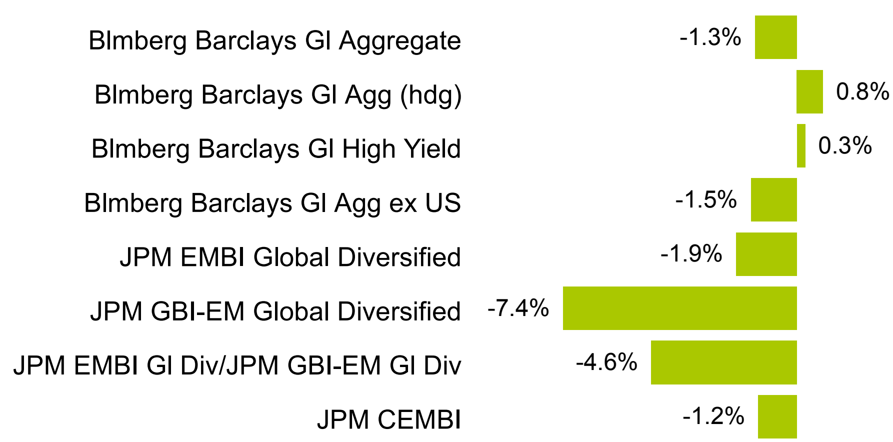
Volatility Hinders Local EM Debt

– EM Debt ($US) +2.3%; faring better than local currency debt (-1.8%).
– Currency volatility and reduced risk appetites weighed heavily on local emerging market debt due to economic and political strife in Argentina (-35%) and Turkey (-27%).

Global Fixed Income: Quarterly Returns



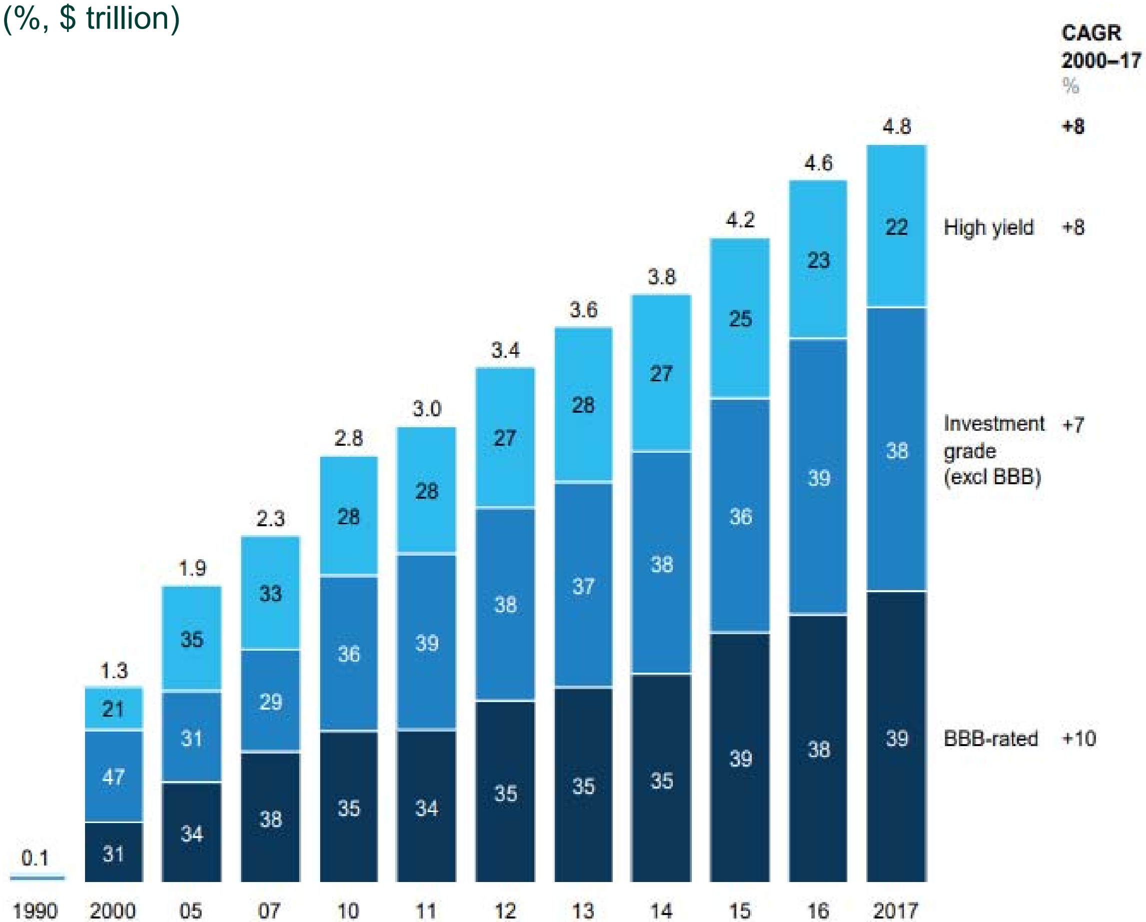
Global Fixed Income: Annual Returns



Rising Risks In Corporate Credit Market

- Leverage has increased as corporations have taken advantage of the low rate environment, and overall average credit quality has declined.
- The amount of BBB-rated US nonfinancial corporates has steadily grown to the point where it is now approximately half of all IG corporate debt (up from 20% in 1990), and nearly double the size of the high yield bond market.
- Rising interest costs on an increasing amount of debt may portend a higher default environment as maturities come near.
- In the event of severe impairment which leads to a series of downgrades, the market may experience a significant dislocation in high yield spreads.
- The size of the high yield bond market has now been exceeded by the leveraged loan market amid heavy issuance.

U.S. nonfinancial corporate bonds outstanding based on S&P ratings[1]
(%, $ trillion)



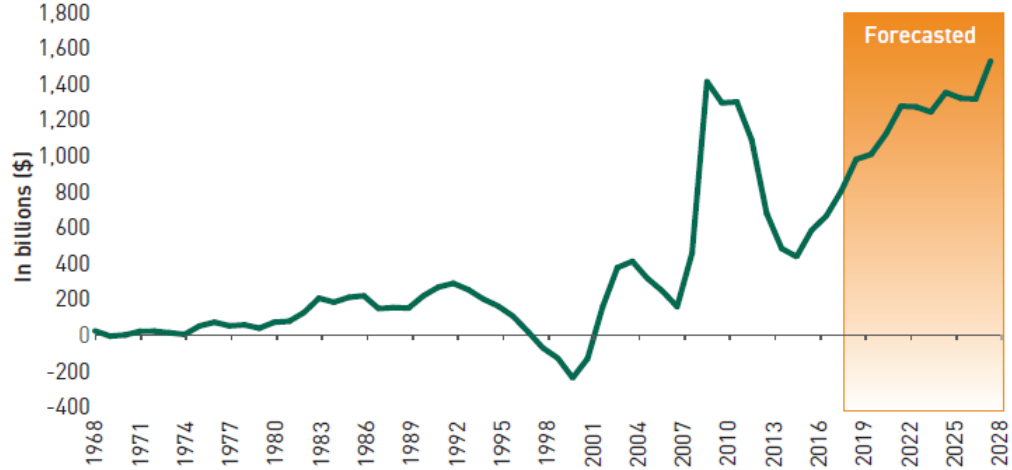
1 Shares from Morgan Stanley applied to Dealogic numbers.
NOTE: Figures may not sum to 100%, because of rounding.

Source: Morgan Stanley; Dealogic; McKinsey Global Institute analysis

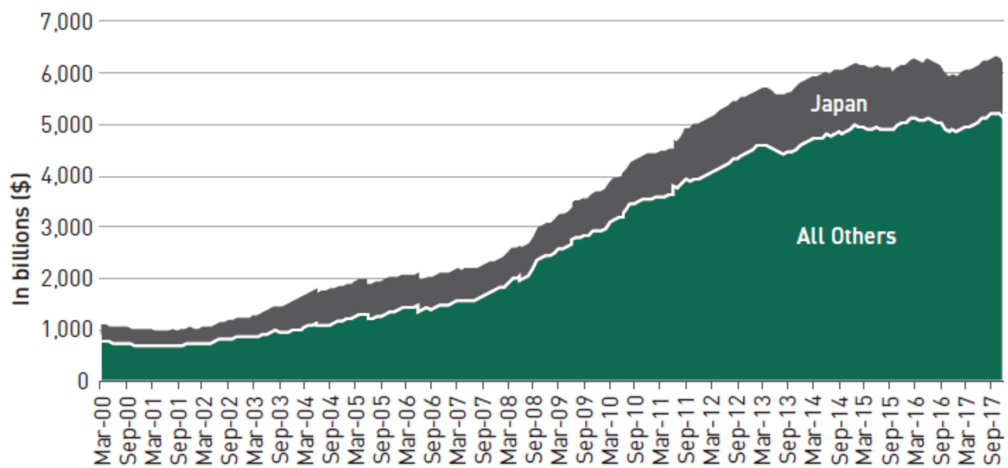
Implications of Stimulative U.S. Fiscal Policy

– As a result of recent U.S. tax reform, Treasury issuance is likely to rise to fund the deficit.
  – Technical pressures from this increase in supply and slower demand may change the dynamic for U.S. Treasuries as a risk diversifier.
– Japan and other developed economies may embark on their rate hikes as soon as 2019.
  – Rising yields for investors in their home markets may be more appealing for foreign investors than purchasing and holding U.S. Treasuries.
– To the extent that these developments take hold, U.S. Treasuries may exhibit more volatility than historical norms would suggest.

U.S. Federal Budget Deficit



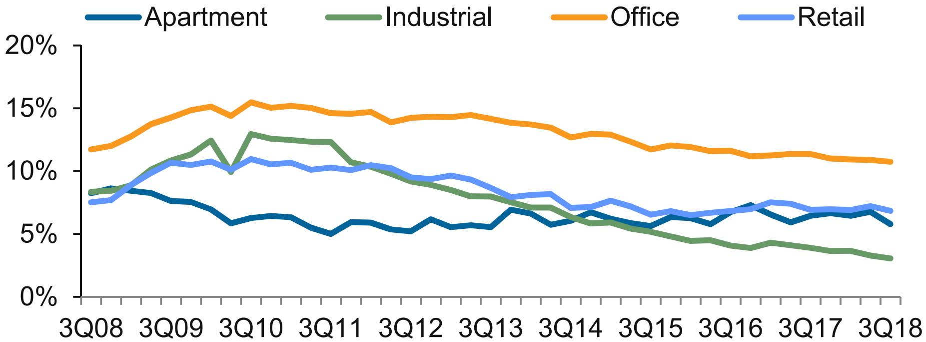
Foreign Holders of U.S. Treasuries



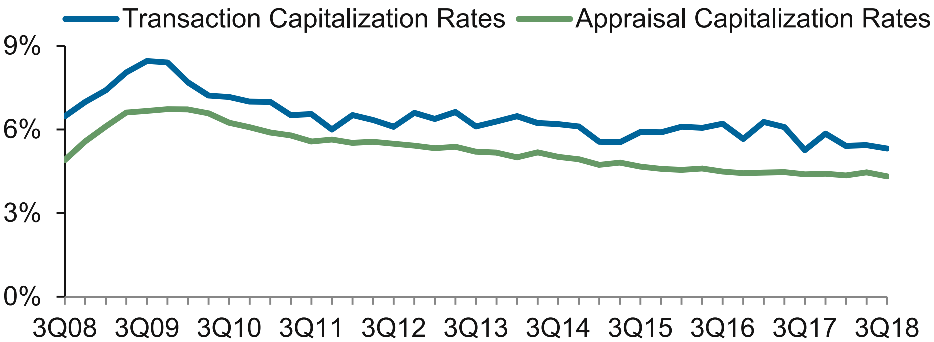
Sources: CBO, Department of the Treasury/Federal Reserve Board

Real Estate Market

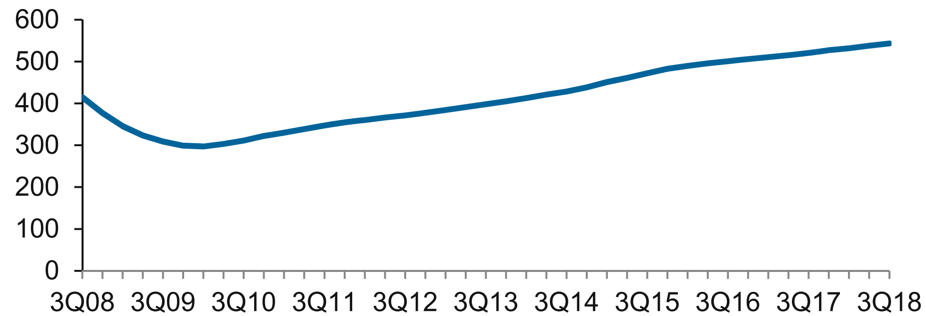
Vacancy by Property Type



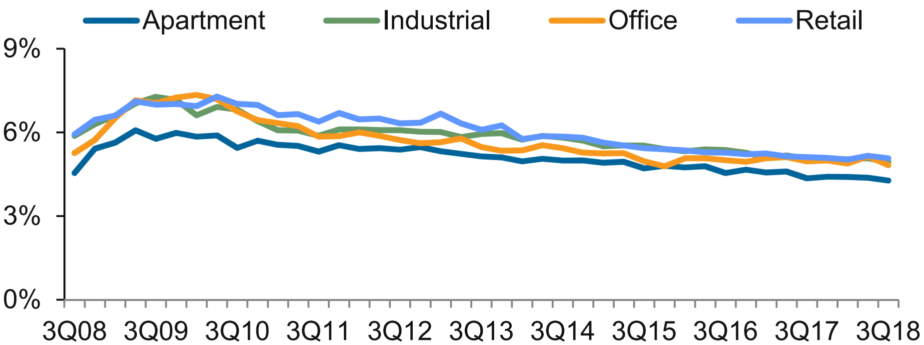
Current Value vs Transaction Cap Rates



Price Index



Current Value Cap Rates by Property Type



– Supply and demand fundamentals are balanced but peaking. Supply is in check and aided by strict commercial real estate lending standards. Demand continues on the back of synchronized domestic growth.

– Transaction volumes took a step back from current cycle peak levels but remain robust, supporting pricing which remains expensive.

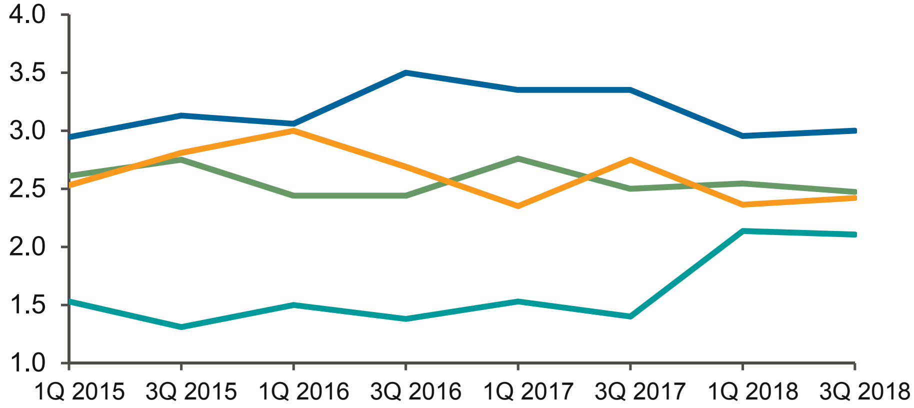
– The industrial sector is performing the strongest, benefitting as structural shifts in the economy, property markets, and consumer habits continue to dampen demand for traditional retail space. Office is performing as expected late in the cycle and tenant improvements and other capital expenditures are increasingly eroding cash flow. Multi-family remains strong except for very high-end properties in some markets, though luxury rents have rebounded from last year's lulls.

Source: NCREIF. Note: Transaction capitalization rate is equal-weighted.

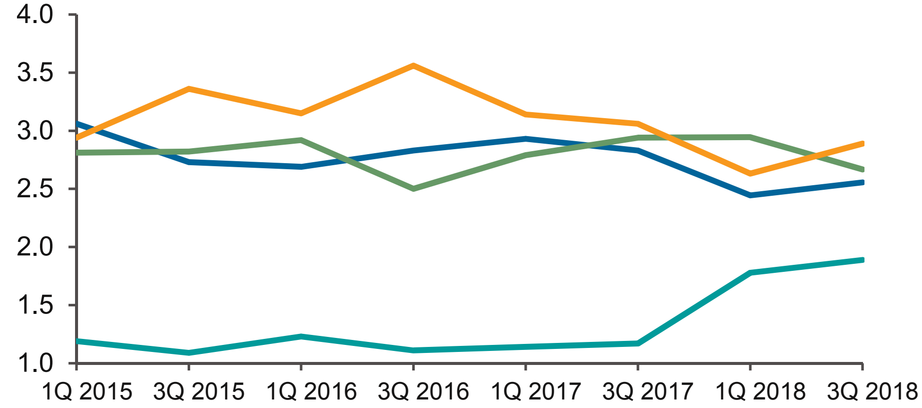
Consultant Survey: Historical Analysis

Significant Issues Facing Institutional Plans Over Time (4 = most important, 1 = least important)

Public DB Plans

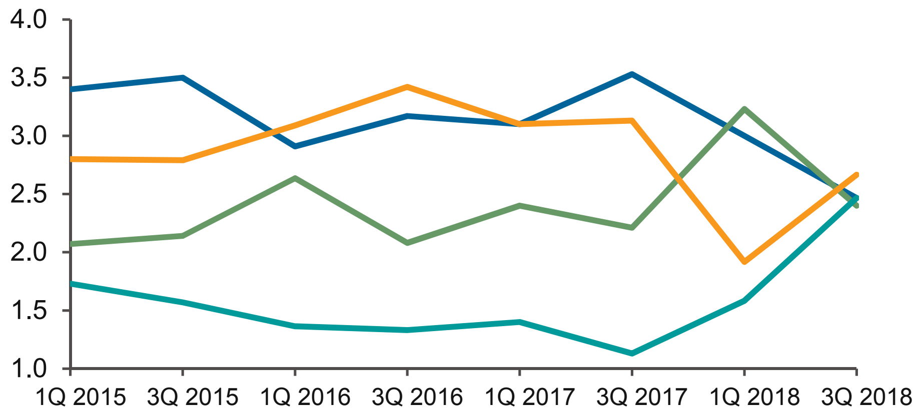


Corporate DB Plans

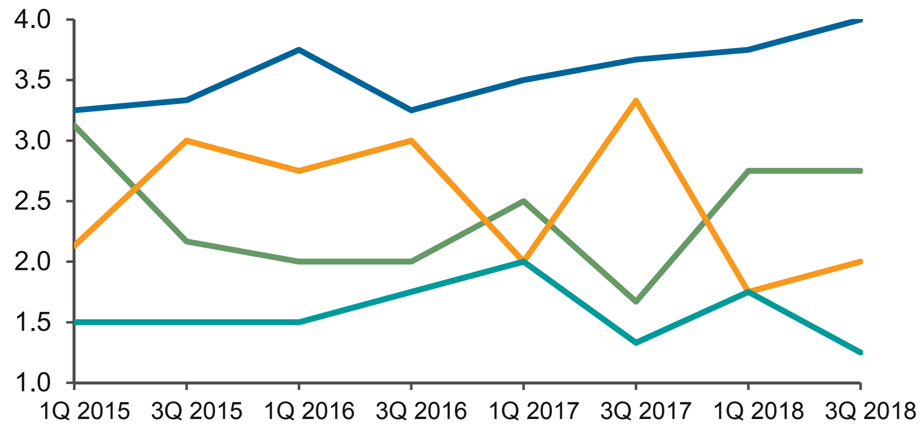


Return enhancement   Risk management   Funding status or spending policy   Liquidity

Endowments & Foundations

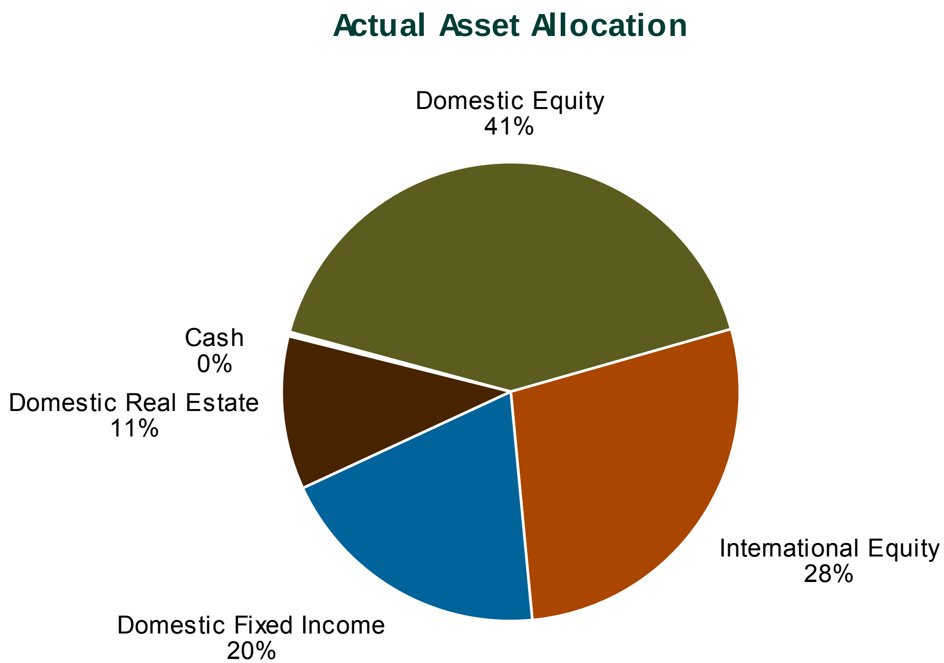


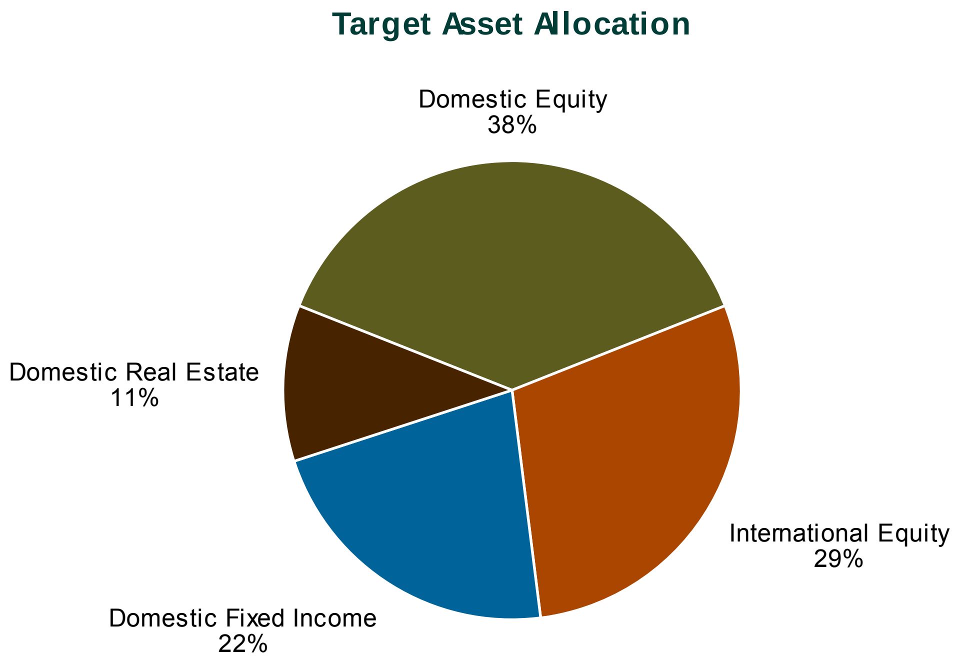
Taft-Hartley Plans



Plan Performance

MCERA Actual vs Target Asset Allocation as of September 30, 2018

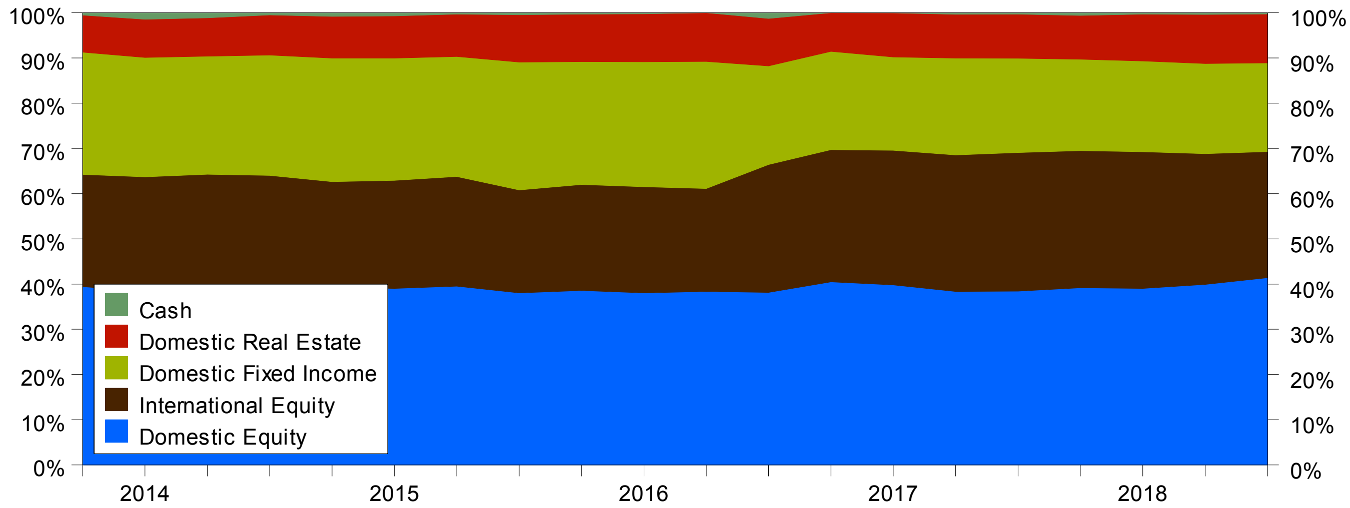




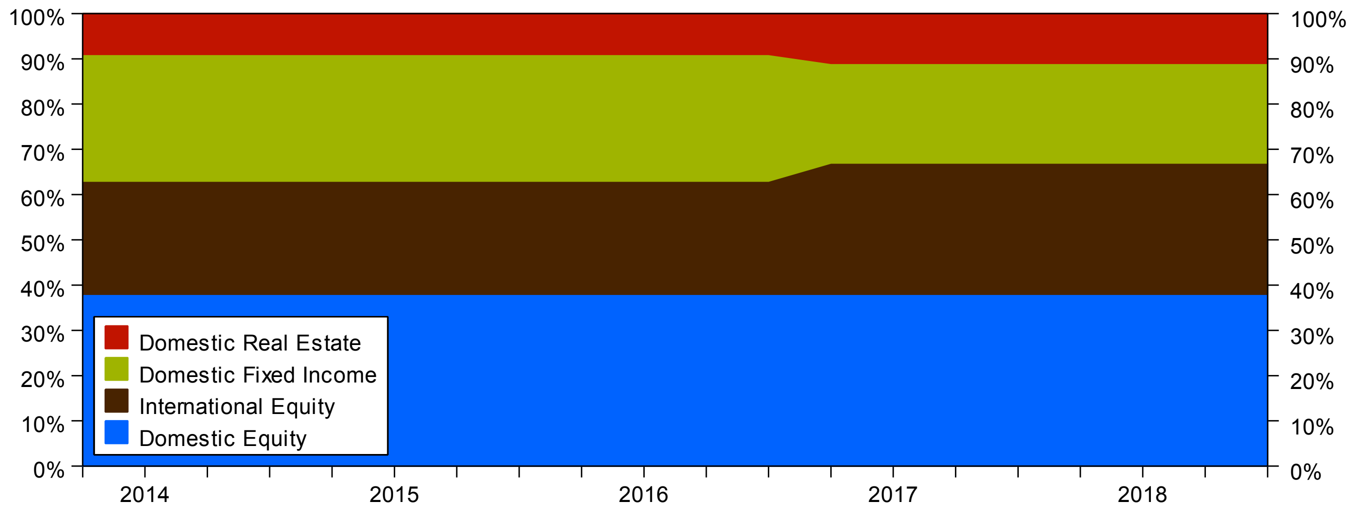
Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equity	219,629	41.4%	38.0%	3.4%	18,055
International Equity	147,891	27.9%	29.0%	(1.1%)	(5,942)
Domestic Fixed Income	104,148	19.6%	22.0%	(2.4%)	(12,552)
Domestic Real Estate	57,473	10.8%	11.0%	(0.2%)	(878)
Cash	1,316	0.2%	0.0%	0.2%	1,316
Total	530,458	100.0%	100.0%		

MCERA Actual vs Target Historical Asset Allocation

Actual Historical Asset Allocation

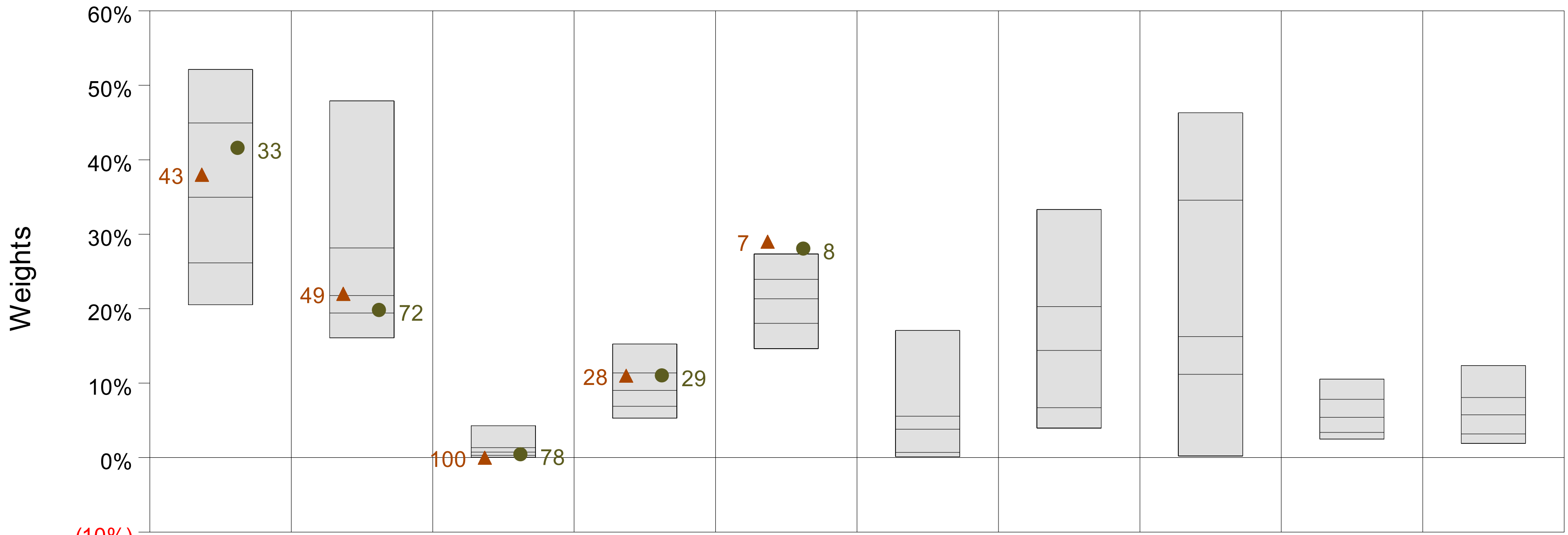


Target Historical Asset Allocation



MCERA Asset Class Weights vs Callan Public Fund Sponsor Database

Asset Class Weights vs Callan Public Fund Sponsor Database



	Domestic Equity	Domestic Fixed Income	Cash	Domestic Real Estate	International Equity	Intl Fixed-Inc	Alternative	Global Equity Broad	Private Equity	Real Assets
10th Percentile	52.12	47.90	4.27	15.25	27.35	17.07	33.32	46.33	10.57	12.37
25th Percentile	44.95	28.16	1.34	11.37	23.93	5.57	20.28	34.56	7.82	8.08
Median	34.98	21.77	0.75	9.03	21.33	3.82	14.39	16.23	5.42	5.76
75th Percentile	26.15	19.41	0.31	6.91	18.03	0.70	6.71	11.19	3.39	3.18
90th Percentile	20.52	16.08	0.02	5.29	14.65	0.12	3.96	0.23	2.47	1.92
Fund ●	41.40	19.63	0.25	10.83	27.88	-	-	-	-	-
Target ▲	38.00	22.00	0.00	11.00	29.00	-	-	-	-	-
% Group Invested	98.41%	95.24%	77.78%	63.49%	95.24%	19.05%	44.44%	19.05%	23.81%	28.57%

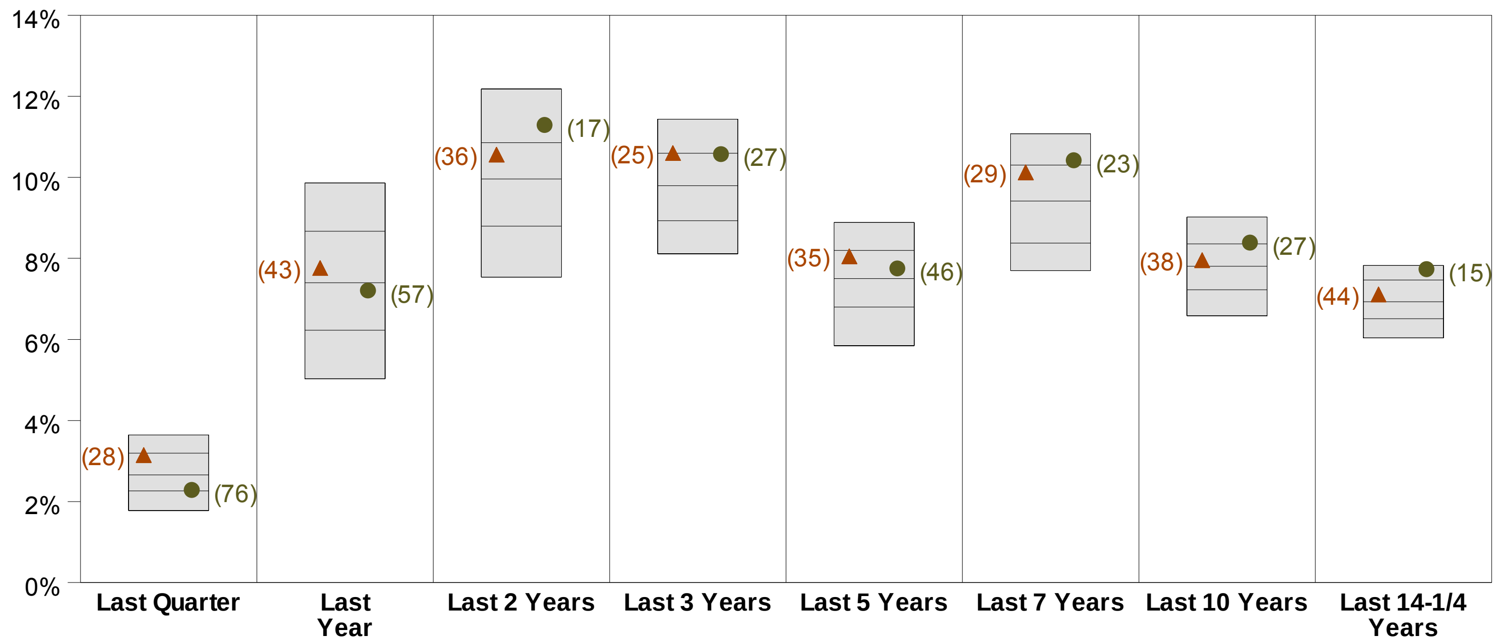
- The chart above ranks MCERA's asset allocation and the target allocation versus the Callan Public Fund Sponsor Database

Asset Allocation as of September 30, 2018

	September 30, 2018				June 30, 2018	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Domestic Equities	**$219,629,210**	**41.40%**	**$(1,000,000)**	**$12,954,999**	**$207,674,212**	**39.91%**
Large Cap Equities	**$152,746,364**	**28.80%**	**$0**	**$9,849,022**	**$142,897,342**	**27.46%**
Vanguard S&P 500 Index	39,517,064	7.45%	0	2,825,809	36,691,255	7.05%
SSGA S&P Equal Weighted NL CTF	37,269,149	7.03%	0	1,915,462	35,353,687	6.79%
Boston Partners	37,764,171	7.12%	0	2,701,339	35,062,832	6.74%
Harbor Cap Appreciation	38,195,980	7.20%	0	2,406,412	35,789,568	6.88%
Mid Cap Equities	**$33,410,099**	**6.30%**	**$0**	**$1,523,013**	**$31,887,086**	**6.13%**
Fidelity Low Priced Stock	15,834,152	2.98%	0	358,856	15,475,295	2.97%
Janus Enterprise	17,575,947	3.31%	0	1,164,157	16,411,791	3.15%
Small Cap Equities	**$33,472,747**	**6.31%**	**$(1,000,000)**	**$1,582,964**	**$32,889,783**	**6.32%**
Prudential Small Cap Value	14,177,912	2.67%	0	(75,855)	14,253,767	2.74%
AB US Small Growth	19,294,834	3.64%	(1,000,000)	1,658,819	18,636,016	3.58%
International Equities	**$147,890,970**	**27.88%**	**$0**	**$(2,559,232)**	**$150,450,203**	**28.91%**
EuroPacific	26,275,982	4.95%	0	(222,844)	26,498,826	5.09%
Harbor International	29,457,479	5.55%	0	(1,163,037)	30,620,516	5.88%
Oakmark International	28,697,691	5.41%	0	(420,552)	29,118,244	5.60%
Mondrian International	26,247,373	4.95%	0	387,531	25,859,842	4.97%
T. Rowe Price Intl Small Cap	22,416,742	4.23%	0	(1,028,846)	23,445,588	4.51%
Investec	14,795,702	2.79%	0	(111,484)	14,907,187	2.86%
Domestic Fixed Income	**$104,148,494**	**19.63%**	**$0**	**$374,602**	**$103,773,892**	**19.94%**
Dodge & Cox Income	52,428,596	9.88%	0	332,037	52,096,559	10.01%
PIMCO	51,719,898	9.75%	0	42,565	51,677,332	9.93%
Real Estate	**$57,472,781**	**10.83%**	**$(21,432)**	**$1,023,813**	**$56,470,400**	**10.85%**
RREEF Private Fund	29,566,479	5.57%	0	651,354	28,915,125	5.56%
Barings Core Property Fund	26,756,302	5.04%	0	351,027	26,405,275	5.07%
625 Kings Court	1,150,000	0.22%	(21,432)	21,432	1,150,000	0.22%
Cash	**$1,316,500**	**0.25%**	**$(673,720)**	**$0**	**$1,990,220**	**0.38%**
Total Fund	**$530,457,955**	**100.0%**	**$(1,695,152)**	**$11,794,182**	**$520,358,925**	**100.0%**

MCERA Total Fund Performance as of September 30, 2018

Performance vs Callan Public Fund Sponsor Database (Gross)

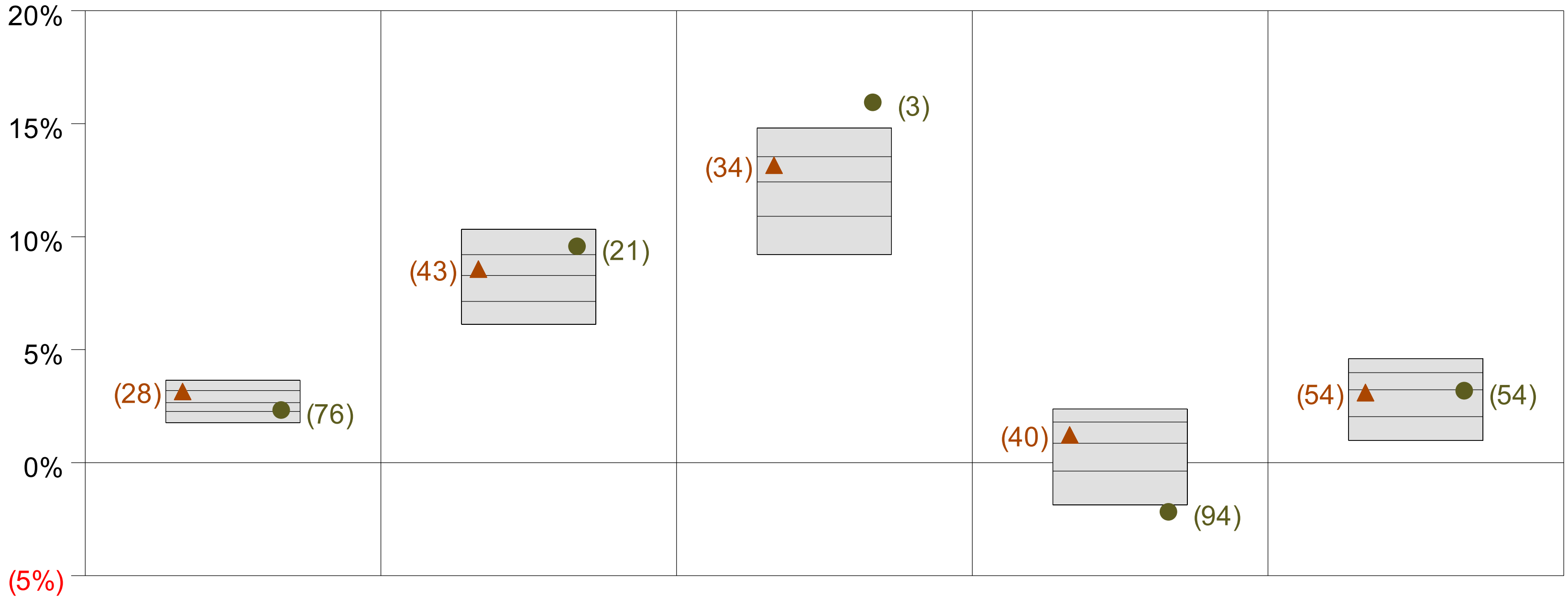


	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years	Last 14-1/4 Years
10th Percentile	3.64	9.86	12.18	11.44	8.89	11.08	9.02	7.83
25th Percentile	3.20	8.67	10.86	10.60	8.20	10.31	8.36	7.47
Median	2.66	7.40	9.96	9.79	7.50	9.41	7.81	6.93
75th Percentile	2.26	6.23	8.80	8.93	6.80	8.38	7.23	6.51
90th Percentile	1.77	5.03	7.54	8.12	5.85	7.70	6.59	6.04
Total Fund ●	2.24	7.16	11.25	10.53	7.70	10.38	8.34	7.69
Total Fund Benchmark ▲	3.15	7.77	10.56	10.60	8.05	10.13	7.96	7.11

- The Callan Public Fund Sponsor Database consists of public employee pension total funds including both Callan LLC client and surveyed non-client funds.
- Returns greater than one year are annualized

MCERA Total Fund Fiscal Year Performance

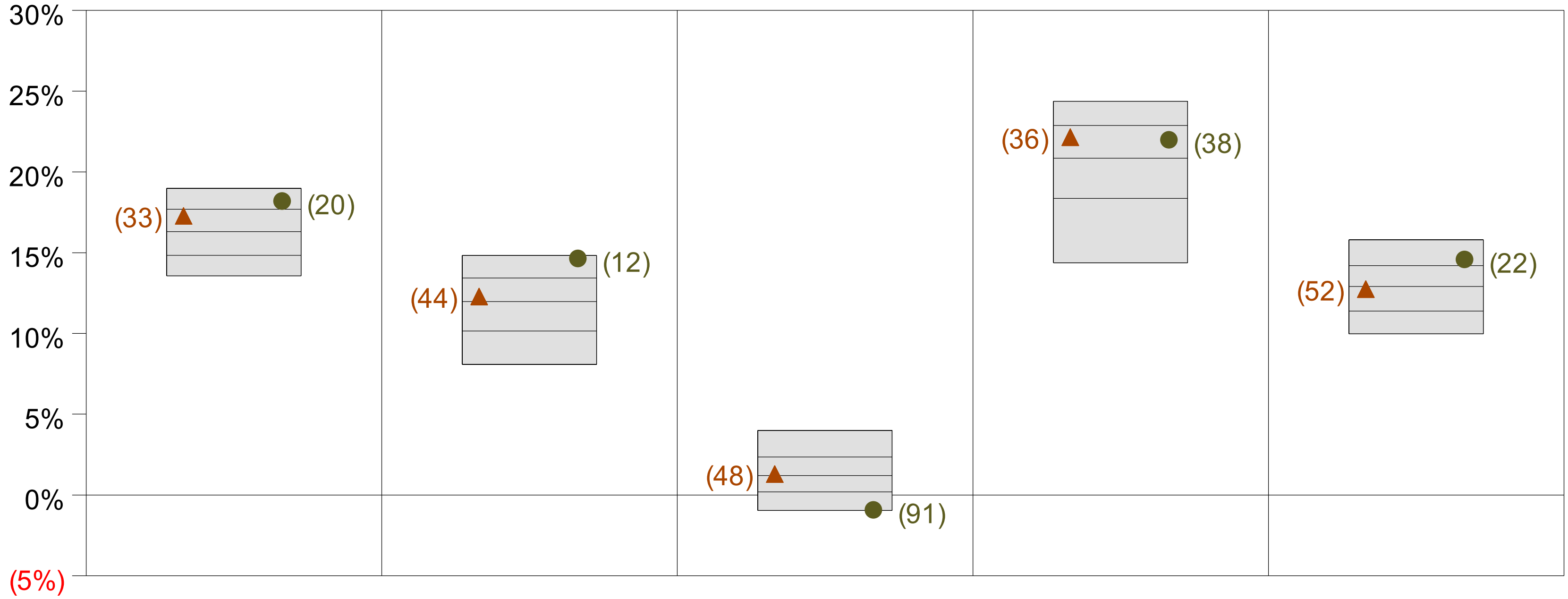
September 30, 2018



	Fiscal YTD	FY 2018	FY 2017	FY 2016	FY 2015
10th Percentile	3.64	10.33	14.81	2.37	4.61
25th Percentile	3.20	9.21	13.54	1.80	3.98
Median	2.66	8.29	12.43	0.86	3.23
75th Percentile	2.26	7.14	10.90	(0.38)	2.04
90th Percentile	1.77	6.12	9.21	(1.87)	0.98
Total Fund ●	2.24	9.48	15.86	(2.26)	3.09
Total Fund Benchmark ▲	3.15	8.57	13.16	1.23	3.10

MCERA Total Fund Fiscal Year Performance (continued)

September 30, 2018

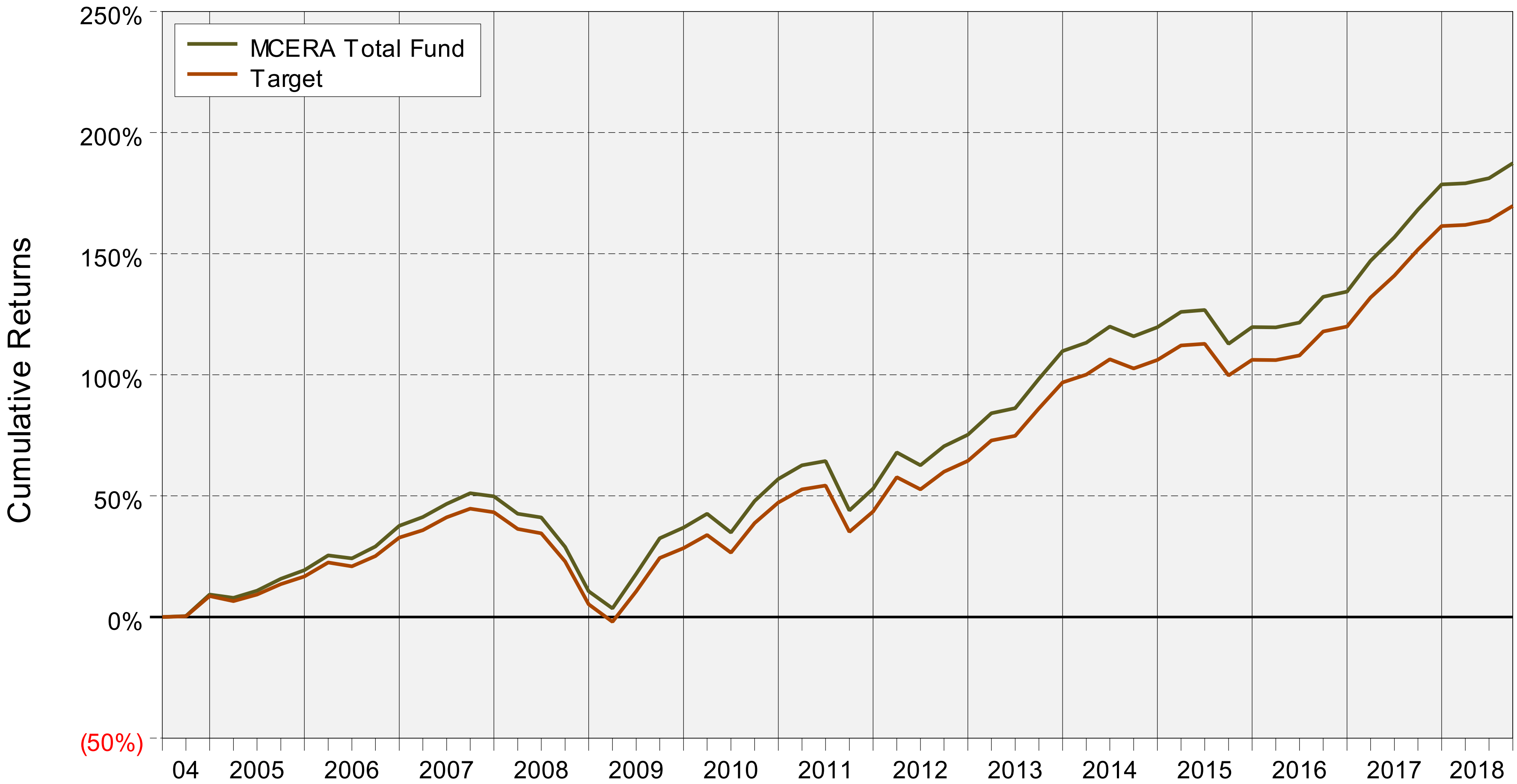


		FY 2014	FY 2013	FY 2012	FY 2011	FY 2010
10th Percentile		18.99	14.82	3.99	24.38	15.80
25th Percentile		17.69	13.43	2.36	22.87	14.20
Median		16.31	11.98	1.20	20.86	12.90
75th Percentile		14.83	10.14	0.20	18.36	11.38
90th Percentile		13.56	8.08	(0.96)	14.38	9.98
Total Fund	●	18.08	14.52	(1.04)	21.87	14.47
Total Fund Benchmark	▲	17.27	12.29	1.30	22.15	12.74

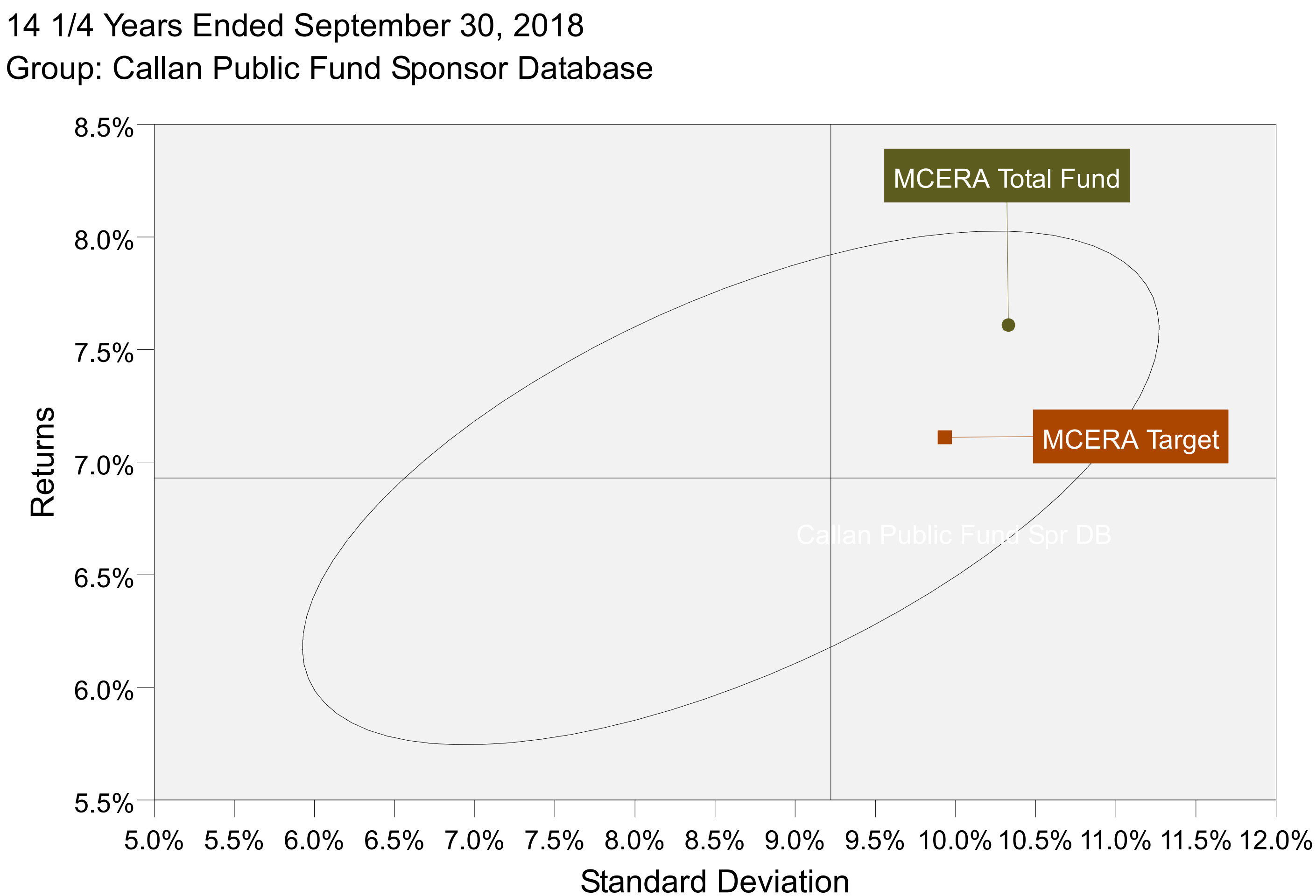
MCERA Cumulative Total Fund Performance

For 14 ¼ Years Ended September 30, 2018

Fourteen and One-Quarter Year Cumulative Returns



MCERA Annualized Return vs Risk



- The chart above plots 14 ¼ year annualized return vs standard deviation of the MCERA Total Fund and the Total Fund Target. Over the trailing 14 ¼ year period the MCERA Total Fund has achieved an annualized return higher than the Total Fund Target with a similar level of volatility.

Investment Manager Returns for Periods Ended September 30, 2018

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Domestic Equties	**6.25%**	**18.38%**	**17.01%**	**12.99%**	**16.93%**
Russell 3000 Index	7.12%	17.58%	17.07%	13.46%	16.86%
Large Cap Equities					
Vanguard S&P 500 Index	7.70%	17.86%	17.27%	13.92%	-
S&P 500 Index	7.71%	17.91%	17.31%	13.95%	16.91%
SSGA S&P Eq Weighted NL CTF	5.42%	-	-	-	-
S&P 500 Eq Weighted	5.42%	13.95%	15.43%	12.49%	16.73%
Boston Partners	7.70%	12.96%	14.43%	10.82%	15.94%
S&P 500 Index	7.71%	17.91%	17.31%	13.95%	16.91%
Russell 1000 Value Index	5.70%	9.45%	13.55%	10.72%	15.02%
Harbor Cap Appreciation (1)	6.72%	27.03%	20.09%	16.96%	18.78%
S&P 500 Index	7.71%	17.91%	17.31%	13.95%	16.91%
Russell 1000 Growth Index	9.17%	26.30%	20.55%	16.58%	18.69%
Mid Cap Equities					
Fidelity Low Priced Stock	2.32%	10.07%	11.25%	9.36%	14.15%
Russell MidCap Value Idx	3.30%	8.81%	13.09%	10.72%	15.54%
Janus Enterprise (2)	7.09%	21.18%	19.58%	15.37%	18.15%
Russell MidCap Growth Idx	7.57%	21.10%	16.65%	13.00%	16.86%
Small Cap Equities					
Prudential Small Cap Value (3)	(0.53%)	5.24%	14.51%	9.20%	14.22%
US Small Cap Value Idx	2.12%	9.39%	15.19%	10.48%	15.62%
Russell 2000 Value Index	1.60%	9.33%	16.12%	9.91%	15.26%
AB US Small Growth (4)	9.16%	37.72%	24.87%	14.58%	20.10%
Russell 2000 Growth Index	5.52%	21.06%	17.98%	12.14%	17.52%

Investment Manager Returns for Periods Ended September 30, 2018 (continued)

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
International Equities	**(1.80%)**	**(1.32%)**	**8.92%**	**3.59%**	**7.46%**
MSCI ACWI ex-US Index	0.80%	2.25%	10.49%	4.60%	7.74%
EuroPacific	(0.84%)	1.47%	9.93%	6.20%	9.54%
Harbor International (1)	(3.80%)	(2.95%)	6.40%	1.92%	6.86%
Oakmark International (2)	(1.44%)	(6.30%)	10.72%	4.18%	10.64%
Mondrian International	1.29%	(0.34%)	7.76%	3.53%	6.21%
MSCI EAFE Index	1.35%	2.74%	9.23%	4.42%	8.30%
MSCI ACWI ex-US Index	0.80%	2.25%	10.49%	4.60%	7.74%
T. Rowe Price Intl Small Cap	(4.64%)	3.32%	-	-	-
MSCI ACWI ex US Small Cap	(1.51%)	1.86%	11.24%	6.14%	9.05%
Investec	(0.95%)	(0.50%)	-	-	-
MSCI Emerging Markets Index	(1.09%)	(0.81%)	12.36%	3.61%	5.03%
Domestic Fixed Income	**0.36%**	**(0.82%)**	**2.64%**	**2.66%**	**3.26%**
Blmbg Aggregate Index	0.02%	(1.22%)	1.31%	2.16%	2.02%
Dodge & Cox Income	0.64%	(0.12%)	3.14%	3.05%	3.42%
PIMCO	0.08%	(1.52%)	2.15%	2.26%	3.10%
Blmbg Aggregate Index	0.02%	(1.22%)	1.31%	2.16%	2.02%
Real Estate	**1.81%**	**7.50%**	**7.99%**	**9.49%**	**10.78%**
Real Estate Custom Benchmark (3)	1.89%	7.90%	8.53%	10.01%	11.25%
RREEF Private	2.25%	8.59%	8.17%	10.07%	10.80%
Barings Core Property Fund	1.33%	6.41%	7.76%	8.73%	-
NFI-ODCE Equal Weight Net	1.89%	7.90%	8.17%	9.93%	10.26%
625 Kings Court	1.86%	7.16%	14.51%	13.42%	14.02%
Total Fund	**2.24%**	**7.16%**	**10.53%**	**7.70%**	**10.38%**
Total Fund Benchmark*	3.15%	7.77%	10.60%	8.05%	10.13%

MCERA Domestic Equity Composite Performance

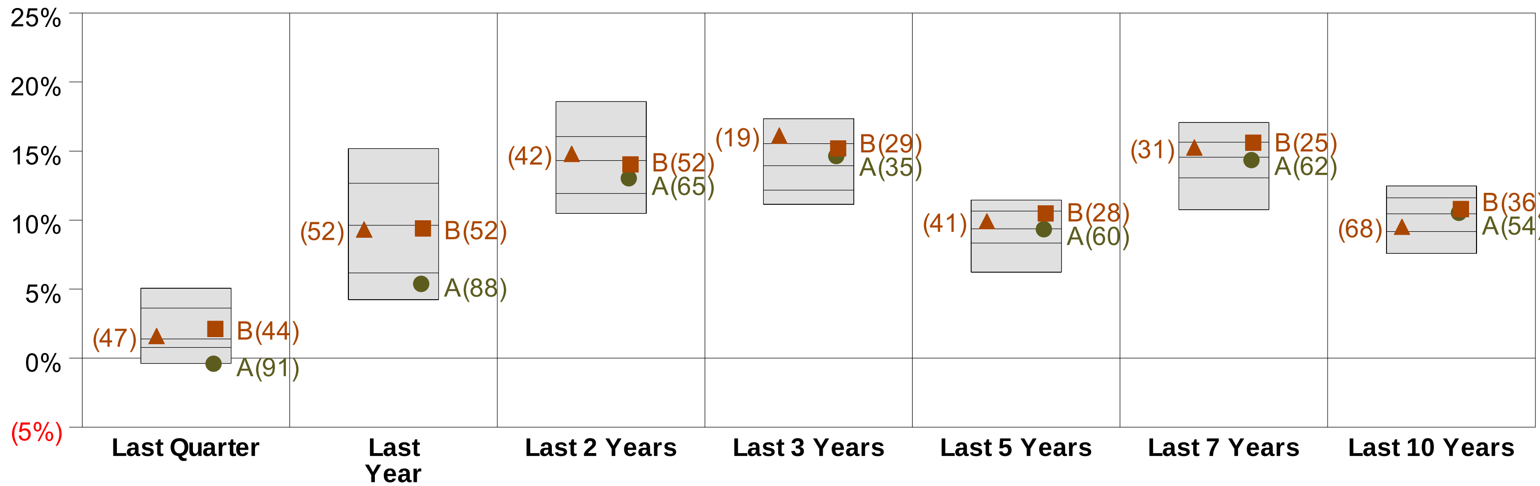
For Periods Ended September 30, 2018

Performance vs Public Fund - Domestic Equity (Gross)

	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	7.32	19.79	20.06	17.92	13.86	17.23	12.68
25th Percentile	7.01	18.41	18.86	17.17	13.40	16.97	12.27
Median	6.60	17.30	18.08	16.77	13.07	16.71	11.89
75th Percentile	6.17	15.88	16.92	16.15	12.40	16.04	11.51
90th Percentile	5.74	14.58	16.14	15.28	11.52	15.41	11.10
Domestic Equity Composite ●	6.25	18.38	19.89	17.01	12.99	16.93	12.51
Russell 3000 Index ▲	7.12	17.58	18.14	17.07	13.46	16.86	12.01

Prudential Small Cap Value Performance
For Periods Ended September 30, 2018

Performance vs Callan Small Cap Value Mutual Funds (Net)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	5.07	15.18	18.58	17.35	11.45	17.07	12.48
25th Percentile	3.63	12.67	16.05	15.53	10.66	15.63	11.61
Median	1.39	9.63	14.31	13.93	9.36	14.56	10.46
75th Percentile	0.78	6.17	11.92	12.17	8.33	13.06	9.17
90th Percentile	(0.38)	4.24	10.49	11.15	6.23	10.76	7.59
Prudential Small Cap Value ● A	(0.53)	5.24	12.90	14.51	9.20	14.22	10.39
US Small Cap Value Idx ■ B	2.12	9.39	14.04	15.19	10.48	15.62	10.80
Russell 2000 Value Index ▲	1.60	9.33	14.80	16.12	9.91	15.26	9.52

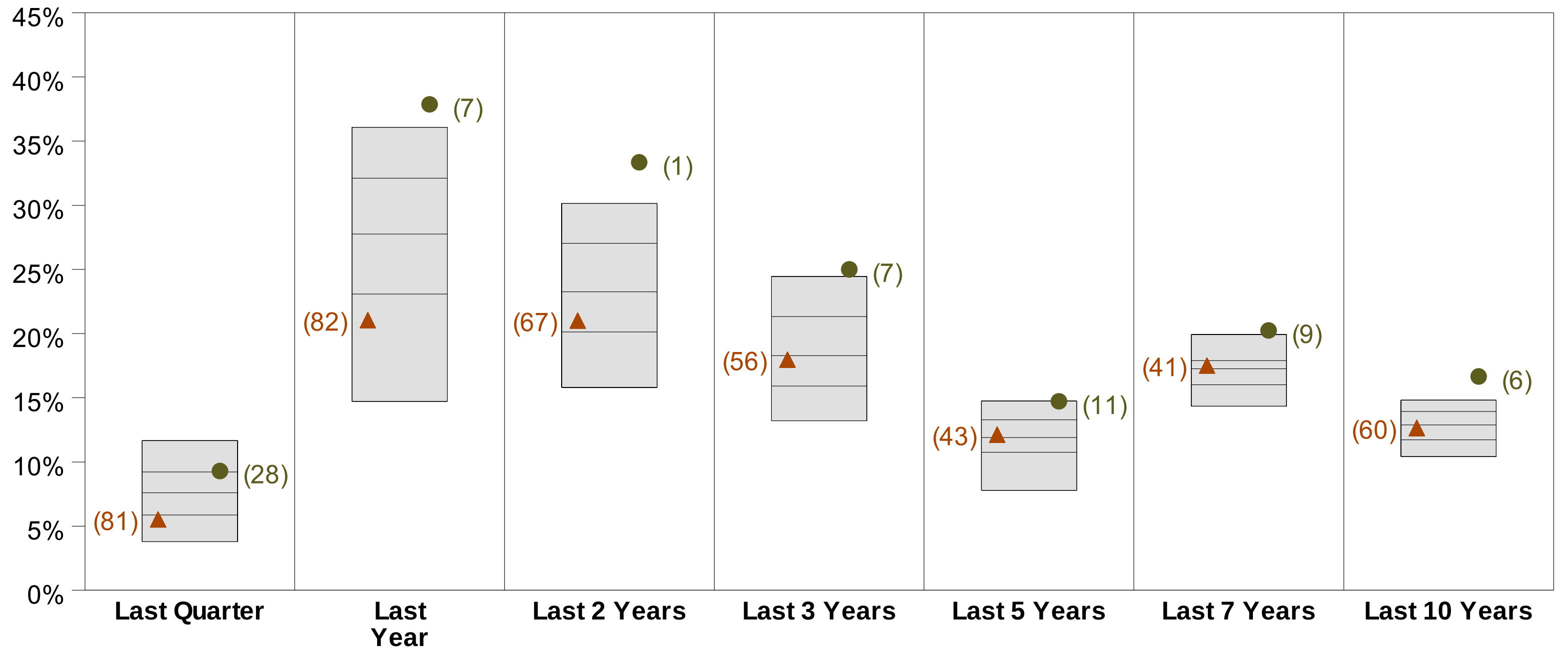
Investment Philosophy

QMA believes a systematic approach that focuses on stocks with low valuations and confirming signals of attractiveness can outperform a small cap value benchmark. Its research shows that adapting to changing market conditions by dynamically shifting the weight on specific factors, while simultaneously maintaining a focus on value stocks, leads to better performance than using static factor exposures. Switched share class in Septemeber 2015.

AB US Small Cap Growth Performance

For Periods Ended September 30, 2018

Performance vs Callan Small Cap Growth Mutual Funds (Net)



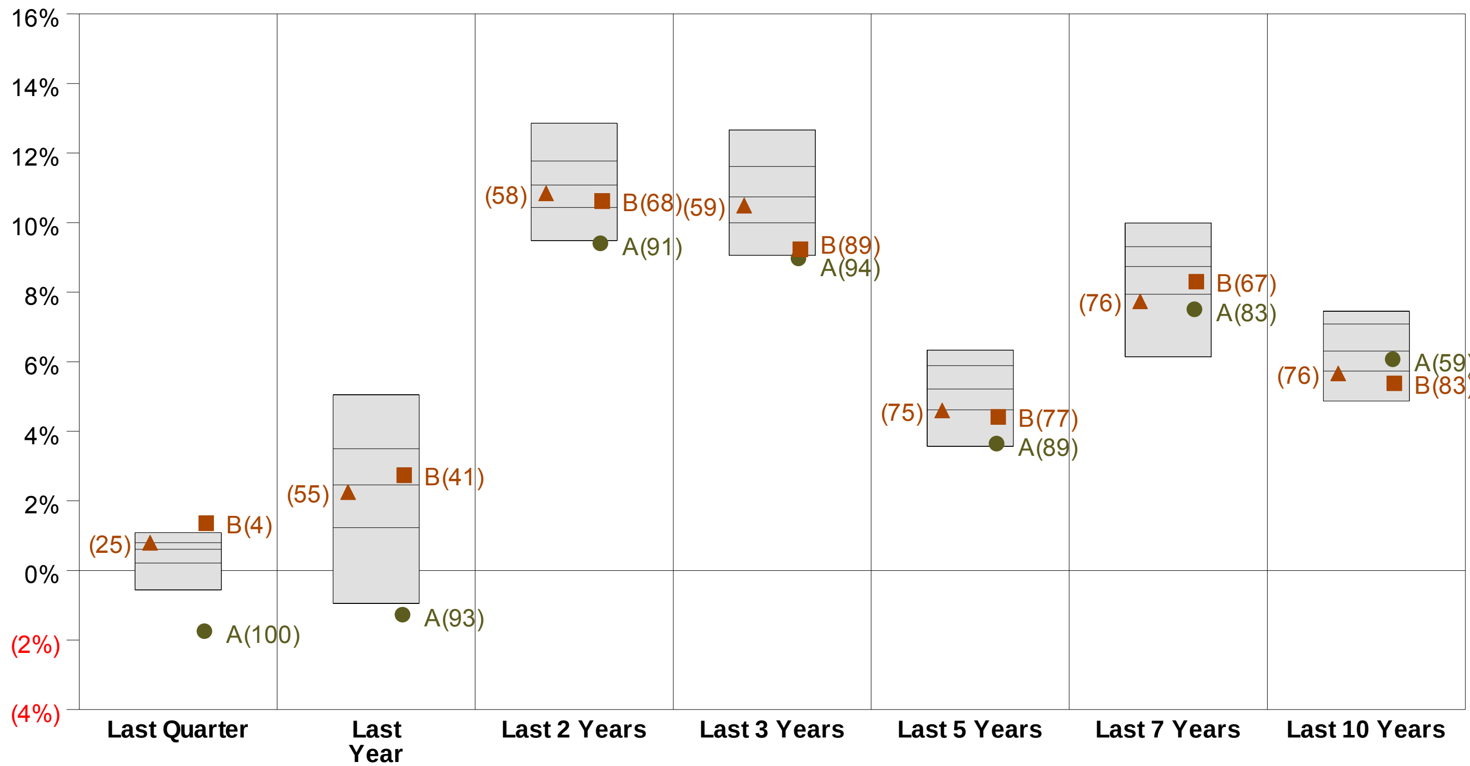
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	11.66	36.07	30.15	24.47	14.76	19.94	14.82
25th Percentile	9.23	32.12	27.05	21.32	13.28	17.90	13.94
Median	7.60	27.75	23.25	18.28	11.90	17.27	12.90
75th Percentile	5.87	23.08	20.14	15.92	10.75	16.01	11.73
90th Percentile	3.78	14.72	15.80	13.21	7.78	14.34	10.41
AB US Small Growth ●	9.16	37.72	33.21	24.87	14.58	20.10	16.51
Russell 2000 Growth Index ▲	5.52	21.06	21.02	17.98	12.14	17.52	12.65

Investment Philosophy

AB's small cap growth investment process emphasizes in-house fundamental research and direct management contact in order to identify rapidly growing companies with accelerating earnings power and reasonable valuations.

MCERA International Equity Composite Performance
For Periods Ended September 30, 2018

Performance vs Public Fund - International Equity (Gross)

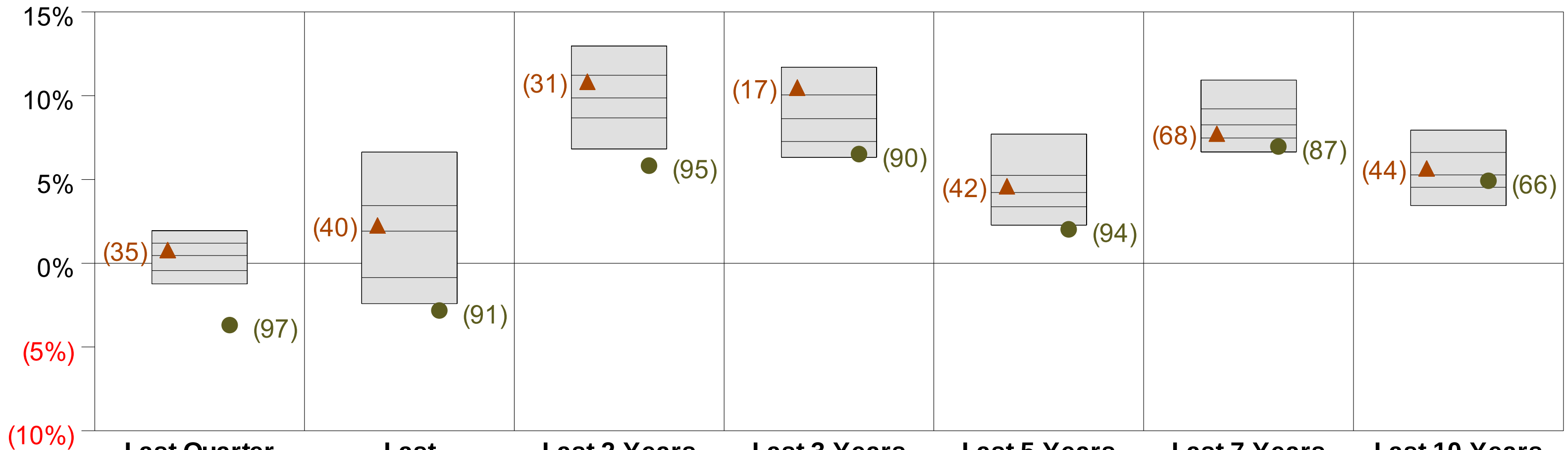


		Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile		1.09	5.05	12.86	12.67	6.34	9.99	7.45
25th Percentile		0.80	3.50	11.77	11.61	5.89	9.31	7.09
Median		0.61	2.46	11.08	10.74	5.21	8.74	6.31
75th Percentile		0.21	1.23	10.43	10.00	4.62	7.94	5.73
90th Percentile		(0.56)	(0.95)	9.48	9.06	3.57	6.15	4.87
International Equity Composite	● A	(1.80)	(1.32)	9.35	8.92	3.59	7.46	6.02
MSCI EAFE Index	■ B	1.35	2.74	10.62	9.23	4.42	8.30	5.38
MSCI ACWIxUS Gross	▲	0.80	2.25	10.84	10.49	4.60	7.74	5.67

Harbor International Performance

For Periods Ended September 30, 2018

Performance vs Callan Non US Equity Mutual Funds (Net)



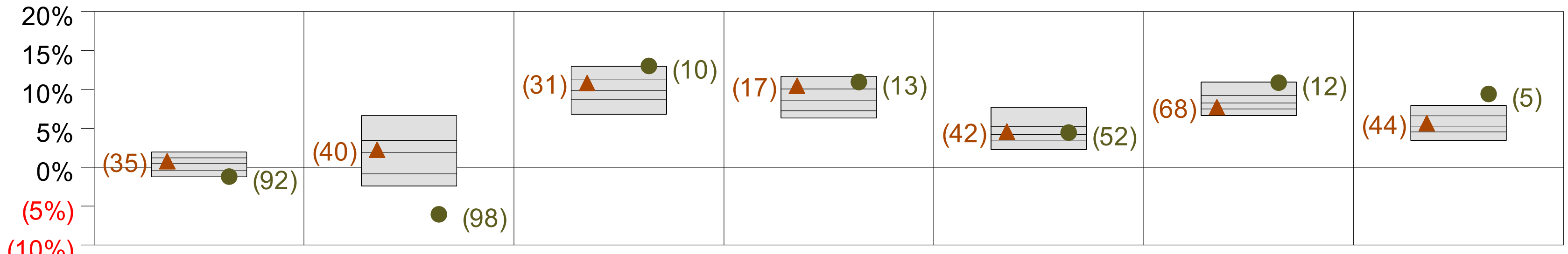
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	1.95	6.64	12.97	11.70	7.72	10.94	7.95
25th Percentile	1.20	3.44	11.23	10.05	5.25	9.22	6.61
Median	0.46	1.92	9.87	8.63	4.22	8.27	5.28
75th Percentile	(0.44)	(0.85)	8.69	7.27	3.38	7.48	4.54
90th Percentile	(1.22)	(2.41)	6.83	6.32	2.28	6.65	3.44
Harbor International ●	(3.80)	(2.95)	5.72	6.40	1.92	6.86	4.81
MSCI ACWIxUS Gross ▲	0.80	2.25	10.84	10.49	4.60	7.74	5.67

Investment Philosophy

The Harbor International Fund is sub-advised by Marathon-London. At the heart of Marathon's investment philosophy is the "capital cycle" approach to investment. This is based on the idea that the prospect of high returns will attract excessive capital (and hence competition), and vice versa. In addition, the assessment of how management responds to the forces of the capital cycle - particularly whether they curtail investment when returns have been poor - and how they are incentivized are critical to the investment outcome. Given the contrarian and long-term nature of the capital cycle, the investment philosophy results in strong views versus the market and long holding periods (5 years plus). The attractiveness of an individual security, therefore, should be evaluated within this timeframe.

Oakmark International Performance
For Periods Ended September 30, 2018

Performance vs Callan Non US Equity Mutual Funds (Net)



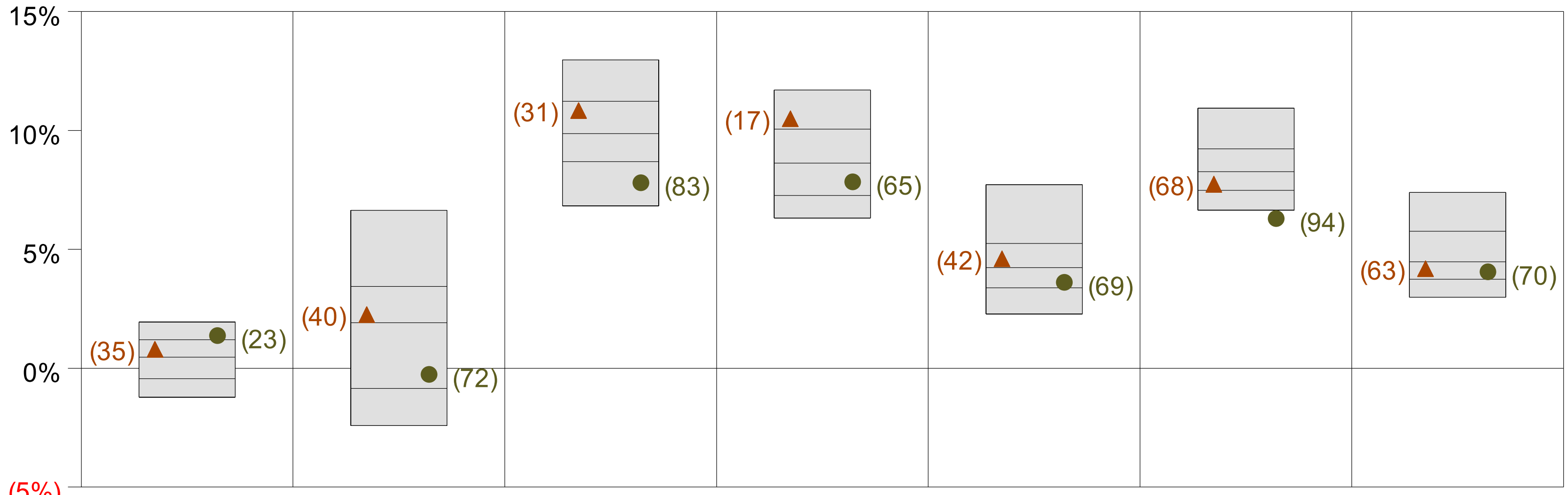
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	1.95	6.64	12.97	11.70	7.72	10.94	7.95
25th Percentile	1.20	3.44	11.23	10.05	5.25	9.22	6.61
Median	0.46	1.92	9.87	8.63	4.22	8.27	5.28
75th Percentile	(0.44)	(0.85)	8.69	7.27	3.38	7.48	4.54
90th Percentile	(1.22)	(2.41)	6.83	6.32	2.28	6.65	3.44
Oakmark International ●	(1.44)	(6.30)	12.78	10.72	4.18	10.64	9.18
MSCI ACWIxUS Gross ▲	0.80	2.25	10.84	10.49	4.60	7.74	5.67

Investment Philosophy

Harris Associates are value investors. They seek to invest in companies that trade at a substantial discount to their underlying business values and run by managers who think and act as owners. They believe that purchasing a quality business at a discount to its underlying value minimizes risk while providing substantial profit potential. Over time, they believe the price of a stock will rise to reflect the company's underlying business value; in practice, their investment time horizon is generally three to five years. They are concentrated investors, building focused portfolios that provide diversification but are concentrated enough so that their best ideas can make a meaningful impact on investment performance. They believe they can add value through their stock selection capabilities and low correlation to international indices and peers. Harris believes their greatest competitive advantage is their long-term investment horizon, exploiting the mispricing of securities caused by what they believe is the short-term focus of many market participants. *This fund was converted into a CIT in November 2015.

Mondrian International Performance
For Periods Ended September 30, 2018

Performance vs Callan Non US Equity Mutual Funds (Net)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 7-1/2 Years
10th Percentile	1.95	6.64	12.97	11.70	7.72	10.94	7.39
25th Percentile	1.20	3.44	11.23	10.05	5.25	9.22	5.77
Median	0.46	1.92	9.87	8.63	4.22	8.27	4.48
75th Percentile	(0.44)	(0.85)	8.69	7.27	3.38	7.48	3.74
90th Percentile	(1.22)	(2.41)	6.83	6.32	2.28	6.65	2.98
Mondrian International ●	1.29	(0.34)	7.72	7.76	3.53	6.21	3.97
MSCI ACWIxUS Gross ▲	0.80	2.25	10.84	10.49	4.60	7.74	4.19

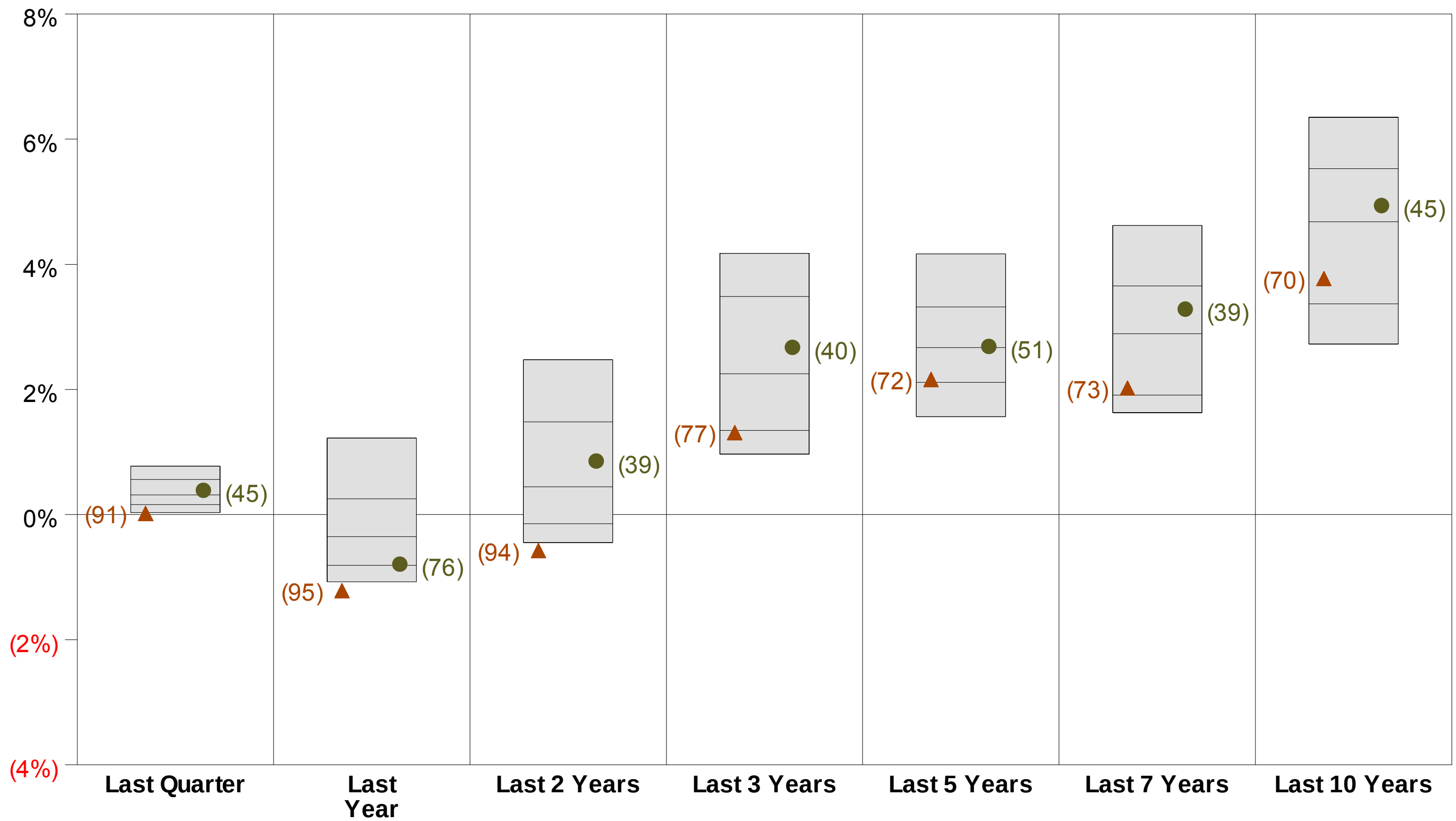
Investment Philosophy

Mondrian's value driven investment philosophy is based on the belief that investments need to be evaluated in terms of their fundamental long-term value. In the management of international equity assets, they invest in securities where rigorous dividend discount analysis identifies value in terms of the long term flow of income. Mondrian's management fee is 80 bps on all assets.

MCERA Fixed Income Composite Performance

For Periods Ended September 30, 2018

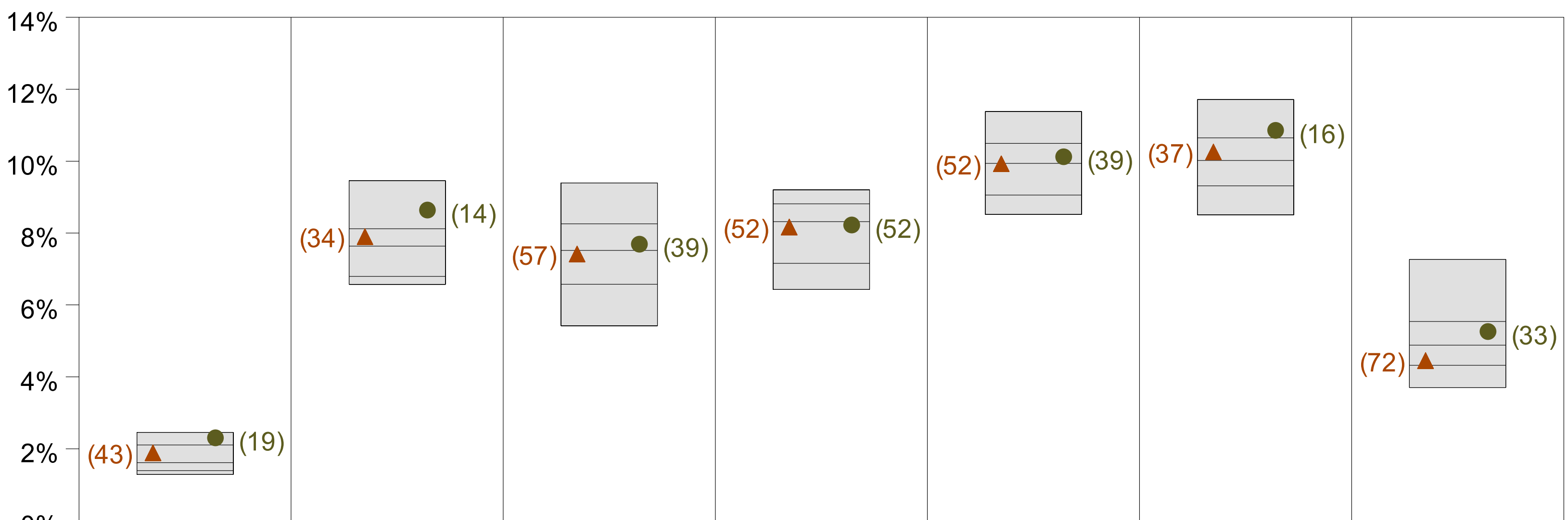
Performance vs Public Fund - Domestic Fixed (Gross)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	0.78	1.22	2.47	4.18	4.17	4.62	6.35
25th Percentile	0.56	0.25	1.48	3.49	3.32	3.65	5.53
Median	0.31	(0.35)	0.44	2.25	2.67	2.89	4.68
75th Percentile	0.16	(0.81)	(0.15)	1.35	2.12	1.91	3.37
90th Percentile	0.03	(1.08)	(0.45)	0.97	1.56	1.63	2.73
Domestic Fixed Income Composite ●	0.36	(0.82)	0.83	2.64	2.66	3.26	4.91
Blmbg Aggregate ▲	0.02	(1.22)	(0.57)	1.31	2.16	2.02	3.77

RREEF America II Performance
For Periods Ended September 30, 2018

Performance vs Callan Open End Core Cmmingled Real Est (Net)



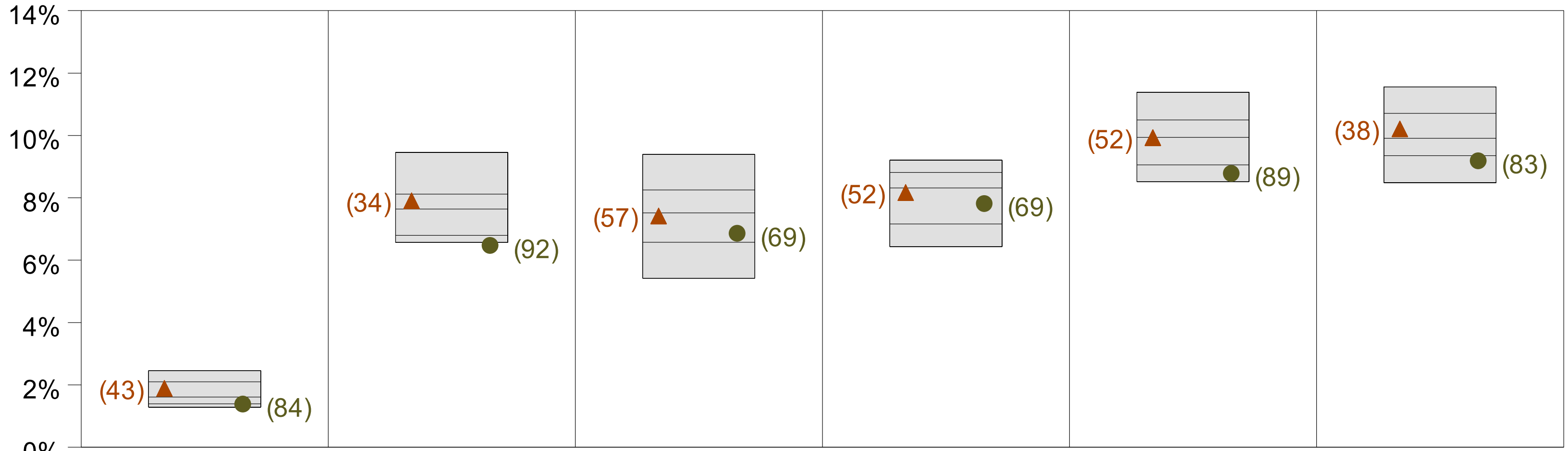
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 7 Years	Last 10 Years
10th Percentile	2.46	9.46	9.39	9.20	11.38	11.72	7.27
25th Percentile	2.10	8.12	8.25	8.81	10.49	10.65	5.54
Median	1.61	7.64	7.52	8.32	9.94	10.02	4.89
75th Percentile	1.39	6.79	6.58	7.16	9.06	9.32	4.32
90th Percentile	1.29	6.57	5.42	6.43	8.52	8.50	3.70
RREEF Private ●	2.25	8.59	7.64	8.17	10.07	10.80	5.21
NCREIF NFI-ODCE Eq Wt Net ▲	1.89	7.90	7.42	8.17	9.93	10.26	4.45

Investment Philosophy

RREEF America II acquires 100 percent equity interests in small- to medium-sized ($10 million to $70 million) apartment, industrial, retail and office properties in targeted metropolitan areas within the continental United States. The fund capitalizes on RREEF's national research capabilities and market presence to identify superior investment opportunities in major metropolitan areas across the United States.

Barings Core Property Fund Performance
For Periods Ended September 30, 2018

Performance vs Callan Open End Core Cmmingled Real Est (Net)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6-3/4 Years
10th Percentile	2.46	9.46	9.39	9.20	11.38	11.55
25th Percentile	2.10	8.12	8.25	8.81	10.49	10.71
Median	1.61	7.64	7.52	8.32	9.94	9.91
75th Percentile	1.39	6.79	6.58	7.16	9.06	9.35
90th Percentile	1.29	6.57	5.42	6.43	8.52	8.49
Barings Core Property Fund ●	1.33	6.41	6.79	7.76	8.73	9.13
NCREIF NFI-ODCE Eq Wt Net ▲	1.89	7.90	7.42	8.17	9.93	10.21

Investment Philosophy

Barings believes that the investment strategy for the Core Property Fund is unique with the goal of achieving returns in excess of the benchmark index, the NFI-ODCE Index, with a level of risk associated with a core fund. The construct of the Fund relies heavily on input from Barings Research, which provided the fundamentals for the investment strategy. Strategic targets and fund exposure which differentiate the Fund from its competitors with respect to both its geographic and property type weightings, and we believe will result in performance in excess of industry benchmarks over the long-term.

Callan

Callan Update

Published Research Highlights from 3Q18

Promoting Gender Diversity in the Investment Industry

An Investor Framework for Addressing Climate Change

Infrastructure: No Longer a Niche Option

Your Plan Will Face a Cyberattack. Here's How to Prepare.

Popular Blog Posts

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Anna West

Under the Hood of the MSCI EM Index
Tom Shingler

IRS Eases Up on Student Loan Repayment in 401(k) Plans
Jana Steele

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Real Estate Indicators charticle
Active vs. Passive quarterly charts
Capital Market Review quarterly newsletter
Monthly Updates to the Periodic Table

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Upcoming Conferences, Workshops, and Webinars

Live Events

2019 National Conference
January 28–30, 2019 – Palace Hotel
San Francisco, California

"Callan College"—Ongoing fiduciary education
Introduction to Investments sessions
– San Francisco, April 16–17, 2019
– San Francisco, July 16–17, 2019
– Chicago, October 22–23, 2019

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– Infrastructure: Real Perspectives on an Evolving Asset Class
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"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialog to raise the bar across the industry."
— *Greg Allen, CEO, CRO*

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