Callan | INSTITUTE

Third Quarter 2018

# Capital Market Review

## Everything Is Going Great! Right?

**ECONOMY**

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The U.S. economy has been firing on all cylinders, and the accompanying run-up in the equity market in the first three quarters buoyed confidence that all was not just well, but great! If only we knew in September what Halloween fright awaited us in October.

## Equity Risk Looms Large for Plans

**FUND SPONSOR**

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The median plan sponsor in Callan's database gained 2.7% in the quarter, lagging the 4.6% gain of a 60% S&P 500/40% Bloomberg Barclays Aggregate benchmark. Sponsors are focused on equity exposure, market volatility, and mitigating risk in the event of an equity correction.

## Markets Diverge, With U.S. Staying Strong

**EQUITY**

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U.S. stocks posted broad-based gains, fueled by strong economic growth, robust corporate earnings, and heightened stock buybacks. Several indices hit records. Non-U.S. developed and emerging markets faltered due to geopolitical and economic uncertainties.

## U.S. Returns Mostly Flat; EM Debt Volatile

**FIXED INCOME**

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The U.S. Treasury yield curve rose across the maturity spectrum on better-than-expected corporate earnings and solid U.S. economic data. The JPM EMBI Global Diversified Index (USD denominated) gained 2.3%, but the JPM GBI-EM Global Diversified Index fell 1.8%.

## Strong Market Both Here and Abroad

**REAL ESTATE**

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Supply and demand fundamentals were balanced but peaking. The Industrial sector performed the strongest. U.S. and non-U.S. REITs were trading at discounts to net asset value. European markets (ex-U.K.) and Asian products saw momentum.

## Boo! More Tricks Than Treats

**PRIVATE EQUITY**

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Private equity investment and exit activity showed a general slowdown during the third quarter. Company investments and exits trended slightly down, fewer new partnerships were closed, but dollar commitments increased. Investors are pursuing broad diversification.

## Active Traders Grind Forward; MACs Falter

**HEDGE FUNDS/MACs**

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Divergent economic forces around the globe created a modestly profitable trading environment for most hedge funds. Callan's Multi-Asset Class Peer Groups continued to struggle in the third quarter, particularly those overweighting bonds and underweighting U.S. growth stocks.

## DC Plans Rebound, TDFs Struggle

**DEFINED CONTRIBUTION**

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The Callan DC Index™ rose 1.8% in the second quarter and outpaced the 1.1% gain of the Age 45 Target Date Fund (TDF). DC plan balances grew by 1.9%, driven primarily by market performance. The second quarter marked another all-time high for TDFs' share of DC assets.

## Broad Market Quarterly Returns

| U.S. Equity<br>Russell 3000 | Non-U.S. Equity<br>MSCI ACWI ex USA | U.S. Fixed Income<br>Bloomberg Barclays Agg | Non-U.S. Fixed Income<br>Bloomberg Barclays Gbl ex US |
|---|---|---|---|
| +7.1% | +0.7% | 0.0% | -1.7% |

Sources: Bloomberg Barclays, MSCI, FTSE Russell

Knowledge. Experience. Integrity.

# Everything Is Great! Right?

**ECONOMY** | Jay Kloepfer

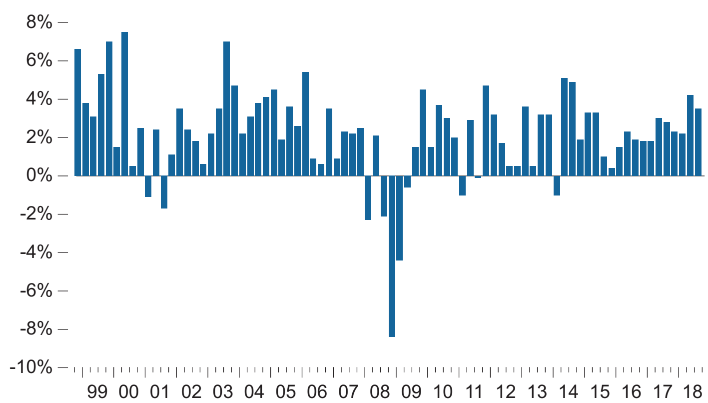
September 20 marked the capstone of a summer run-up in the U.S. equity market. We saw a true market correction in February (S&P 500 Index down 10.1%) and a drawdown of more than 7% in March, but the memory of those experiences was obliterated by a smooth, steady climb, with the S&P 500 gaining 12% in the first three quarters. Economic reports came in mixed for most economies outside the U.S. during 2018, but the U.S. economy has been firing on all cylinders, with the job market, investment, and output all showing robust gains. GDP grew 3.5% in the third quarter and 4.2% in the second. The accompanying run-up in the equity market buoyed confidence that all was not just well, but great, and this economic expansion and bull market still had fresh legs to keep going.

If only we knew in September what Halloween fright awaited us in October.

Since the start of the year, investors had been growing increasingly concerned that the expansion was getting long in the tooth, and that both the economy and the stock market must be nearing peaks. While elapsed time is not an economic variable, the fact that the current expansion set a record for length heightened fears of a downturn. Richly priced capital markets across all asset classes and a new peak in the level of corporate earnings reported during the summer earnings season suggested that a market correction was inevitable. Through the end of September, such fears contrasted with the continuing stream of good economic news, and the market roared. The unemployment rate dropped to 3.7% in September, the lowest since 2000. Wages continue to inch up, with average hourly earnings growth rising from 2% toward 3%. While potentially inflationary and certainly a cost to business, stronger wage growth kept consumer spending robust, and boosted consumer (and business) confidence.

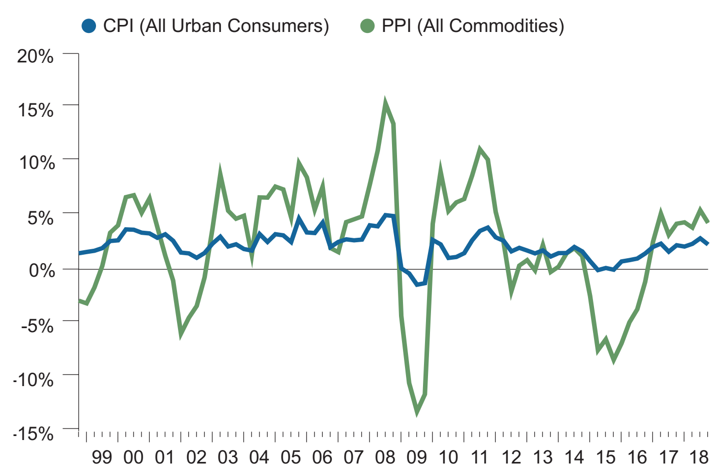
Against this backdrop, the Fed raised rates three times in 2018, bringing the Fed Funds rate to 2.0-2.25%. The Fed expects one more rate hike this year and three in 2019. The Fed has now raised rates 200 basis points over the past two years. Since inflation has not changed over this period, real rates have essentially risen by 2 percentage points. Much of the growth in the first half of 2018 was attributed to the tax cut and spending, and trade activity in advance of tariffs imposed in July by the U.S. and China. Monetary policy has incrementally become

**Quarterly Real GDP Growth** (20 Years)




Source: Bureau of Economic Analysis

**Inflation Year-Over-Year**




Source: Bureau of Labor Statistics

a more significant headwind, and it began showing up in the third quarter. While it is true that real rates are low relative to history, the change in rates is important. Since the mid-1980s real rates have risen by 2 percentage points four times; three of those occurrences resulted in recessions. In a study by Capital Economics, monetary policy tightening was a major contributing factor in 29 out of 45 recessions in G7 countries since 1960.

Higher interest rates are beginning to squeeze some of the most rate-sensitive segments of the economy. Housing has been an ongoing mystery; starts surged to an 11-year high in May, only to stall during the summer. Home sales are also clearly feeling the pressure of higher rates, and from the supply side, a shortage of houses. Residential investment contracted by 4% in the third quarter, following declines in each of the first two quarters. Home prices rose substantially in certain markets through the summer, but early indications are that rates began to crimp prices and sales in September. Housing can often be the canary in the coal mine: an early indicator of slowing economic activity and lower confidence.

Inflation had been gradually trending up, reaching 2.9% in June, finally fulfilling the expectations of many market observers, but the year-over-year gain in the CPI slowed to 2.3% in the third quarter. Much of the rise in the first half was attributable to a rebound in oil prices. Once oil prices stabilize as expected, the increase in inflation will likely abate. One reason for the stability of inflation is the growing dominance of services in the inflation calculation. The services inflation rate has been much steadier than the goods rate and consistently positive near 2%. Goods prices are more volatile and much more influenced than services by factors such as trade, currency, supply and demand of raw materials, and geopolitics.

### The Long-Term View

| Index | 2018 3rd Qtr | Periods ended Dec. 31, 2017 Year | 5 Yrs | 10 Yrs | 25 Yrs |
|---|---|---|---|---|---|
| **U.S. Equity** | | | | | |
| Russell 3000 | 7.12 | 21.13 | 15.58 | 8.60 | 9.72 |
| S&P 500 | 7.71 | 21.83 | 15.79 | 8.50 | 9.69 |
| Russell 2000 | 3.58 | 14.65 | 14.12 | 8.71 | 9.54 |
| **Non-U.S. Equity** | | | | | |
| MSCI ACWI ex USA | 0.71 | 27.19 | 6.80 | 1.84 | -- |
| MSCI Emerging Markets | -1.09 | 37.28 | 4.35 | 1.68 | -- |
| MSCI ACWI ex USA Small Cap | -1.51 | 31.65 | 10.03 | 4.69 | -- |
| **Fixed Income** | | | | | |
| Bloomberg Barclays Agg | 0.02 | 3.54 | 2.10 | 4.01 | 5.48 |
| 90-Day T-Bill | 0.49 | 0.86 | 0.27 | 0.39 | 2.60 |
| Bloomberg Barclays Long G/C | -0.47 | 10.71 | 4.43 | 7.26 | 7.67 |
| Bloomberg Barclays Gl Agg ex US | -1.74 | 10.51 | -0.20 | 2.40 | 5.02 |
| **Real Estate** | | | | | |
| NCREIF Property | 1.67 | 6.96 | 10.19 | 6.08 | 9.12 |
| FTSE NAREIT Equity | 0.79 | 5.23 | 9.46 | 7.44 | 10.76 |
| **Alternatives** | | | | | |
| CS Hedge Fund | 0.59 | 7.12 | 4.23 | 3.24 | – |
| Cambridge PE* | 4.51 | 19.48 | 13.97 | 9.14 | 15.65 |
| Bloomberg Commodity | -2.02 | 1.70 | -8.45 | -6.83 | 2.47 |
| Gold Spot Price | -4.65 | 13.68 | -4.82 | 4.56 | 5.63 |
| **Inflation** – CPI-U | 0.18 | 2.11 | 1.43 | 1.61 | 2.23 |

*Data for most recent period lags by a quarter
Sources: Bloomberg Barclays, Bloomberg, Credit Suisse, FTSE, MSCI, NCREIF, FTSE Russell, Standard & Poor's, Thomson Reuters/Cambridge, Bureau of Economic Analysis

Related to goods prices, the ISM manufacturing index had reached a 14-year high earlier this year, but fell back in September, as manufacturers and exporters face the triple threat of a stronger dollar (up 8% since mid-April), the imposition of tariffs in July and anticipation of more in October, and weakening of global growth.

### Recent Quarterly Economic Indicators

| | 3Q18 | 2Q18 | 1Q18 | 4Q17 | 3Q17 | 2Q17 | 1Q17 | 4Q16 |
|---|---|---|---|---|---|---|---|---|
| Employment Cost–Total Compensation Growth | 2.8% | 2.8% | 2.7% | 2.6% | 2.5% | 2.4% | 2.4% | 2.2% |
| Nonfarm Business–Productivity Growth | 2.2% | 3.0% | 0.3% | -0.3% | 2.3% | 1.6% | 0.4% | 1.3% |
| GDP Growth | 3.5% | 4.2% | 2.2% | 2.3% | 2.8% | 3.0% | 1.8% | 1.8% |
| Manufacturing Capacity Utilization | 75.8% | 75.5% | 75.3% | 75.2% | 74.4% | 74.9% | 74.6% | 74.4% |
| Consumer Sentiment Index (1966=100) | 98.1 | 98.3 | 98.9 | 98.4 | 95.1 | 96.4 | 97.2 | 93.2 |

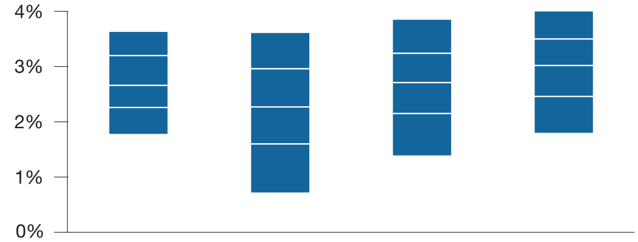
Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

# Equity Risk Looms Large for Plans

## FUND SPONSOR

– The median fund sponsor in Callan's database gained 2.7% in the third quarter.
– Taft-Hartley plans (+3.0%) were the best-performing sponsor by type, as they were the previous quarter; corporate plans (+2.3%) showed the lowest increase.
– By size, the strongest returns came from small plans (under $100 million), which rose 2.9%, compared to a 2.6% gain for medium plans ($100 million-$1 billion) and 2.3% for large plans (more than $1 billion).
– All types and sizes lagged a 60% S&P 500/40% Bloomberg Barclays US Aggregate benchmark, which rose 4.6%.
– Over the last year, three years, and five years, Taft-Hartley plans had the strongest returns of all fund types, while public plans have done best over the last 10 years.
– Investors are focused on concerns about equity exposure, market volatility, and how to mitigate risk in the event of an equity market correction in a rising interest rate environment.
– But they face competing fears: an equity market downturn vs. the fear of missing out (FOMO!).

### Callan Fund Sponsor Returns for the Quarter

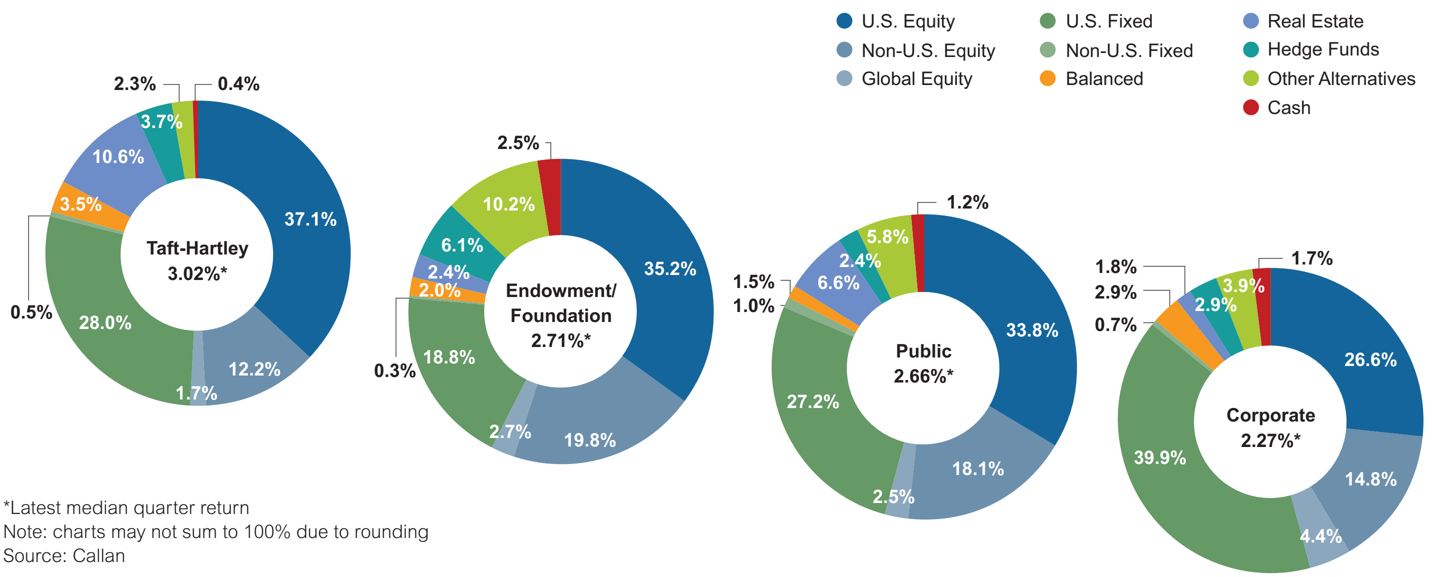



| | Public Database | Corporate Database | Endow/Fndn Database | Taft-Hartley Database |
|---|---|---|---|---|
| 10th Percentile | 3.64 | 3.62 | 3.86 | 4.01 |
| 25th Percentile | 3.20 | 2.96 | 3.24 | 3.50 |
| Median | 2.66 | 2.27 | 2.71 | 3.02 |
| 75th Percentile | 2.26 | 1.60 | 2.15 | 2.46 |
| 90th Percentile | 1.77 | 0.71 | 1.38 | 1.79 |

Source: Callan

– They are refining the definition of growth to include investments such as high yield, convertibles, low-volatility equity, hedge funds, multi-asset class strategies, and options-based strategies.
– Many sponsors are seeking higher returns outside of traditional asset classes such as equity and fixed income, and

### Callan Fund Sponsor Average Asset Allocation

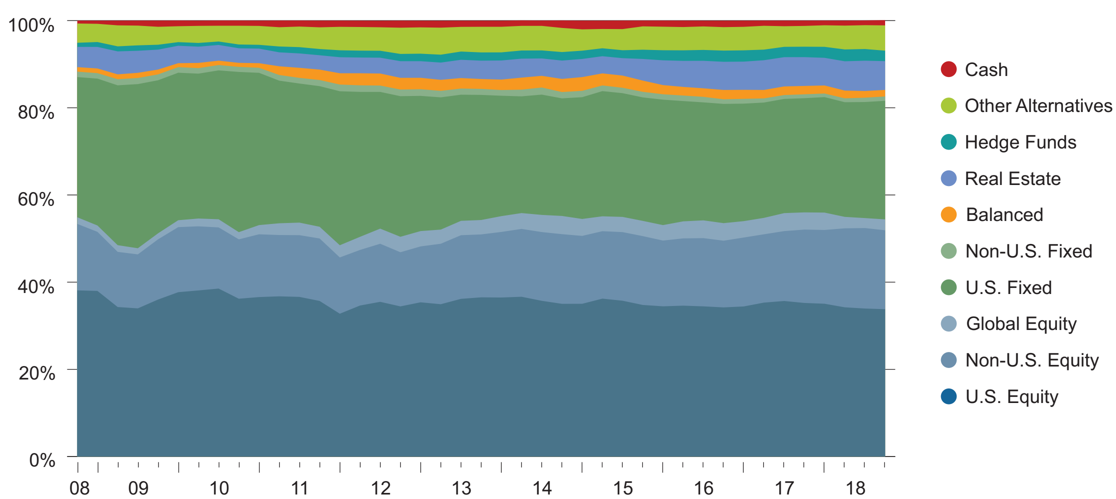



*Latest median quarter return
Note: charts may not sum to 100% due to rounding
Source: Callan

worry about risk mitigation. The late stage of the economic cycle combined with elevated equity valuations and low bond yields is causing sponsors to explore allocations to U.S. Treasuries, managed futures, and tail risk hedging.

- Concerns about fees and controlling costs continue among plan sponsors, and that issue has been an incentive to increase passive exposure.
- For defined contribution plans, fee reduction and disclosure, compliance, and evaluating the structure of fund line-ups are key areas of focus. Target date funds continue to dominate asset flows; they now account for almost 32.5% of DC assets, according to the Callan DC Index™.
- Negotiating fee reductions and fee transparency is ongoing for DC plan sponsors, in some cases to a significant extent. Interest in institutional investment structures is increasing as another path to fee reduction.
- Non-qualified deferred compensation (NQDC) plans are being evaluated on a standalone basis due to their design flexibility.
- Some corporate plan sponsors have made large voluntary contributions in 2018. As a result, plans are reaching full funding. A glidepath strategy for gradual de-risking is no longer needed for some; these plans can fully de-risk immediately.
- Endowments, foundations, and sovereign wealth funds saw a continuing focus on evaluating a sustainable distribution rate to balance intergenerational equity.
- Interest in multi-asset class strategies continues, in particular from public and corporate defined benefit plans. Callan divides the multi-asset class universe into four categories: long biased, absolute return, risk parity, and risk premia.

**Callan Public Fund Database Average Asset Allocation** (10 Years)




Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, endowments/foundations, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

# Global Equity

## U.S. Equities

U.S. stocks posted broad-based gains in the third quarter fueled by strong economic growth, robust corporate earnings, and heightened stock buybacks. Several major indices hit record levels during the quarter, and the 7.7% gain for the **S&P 500 Index** was its biggest since the fourth quarter of 2013. Volatility was muted in spite of persistent headlines around threats of trade wars and the ever-changing negotiations to avert them.

### Large Cap Outpaces Small Cap

- Tax reform and U.S. prosperity contributed to an acceleration in corporate earnings growth, and valuations remained elevated as strong sentiment persisted given positive economic data.
- Amazon (+17.8%), Apple (+22.4%), and Microsoft (+16.4%) were strong contributors to large cap outperformance.
- FAANG stocks plus Microsoft had a more muted impact than in previous quarters but still contributed nearly 25% of the S&P 500's quarterly return.
- All sectors landed in positive territory. The strongest performers were Health Care (+14.5%), Industrials (+10%), and Communication Services (+9.9%).
- The new Communication Services sector represents 10% of the S&P 500 and includes several FAANG stocks such as Alphabet, Facebook, and Netflix; Tech and Consumer Discretionary now represent lower weightings in the Index.

### Growth Continues to Outperform Value

- The divergence between growth and value is approaching a historical high; growth is outpacing value this year by the widest margin in 15 years within large cap (**Russell 1000 Growth** YTD: +17.1% vs. **Russell 1000 Value** YTD: +3.9%) due largely to ongoing euphoria over the FAANG stocks.
- Momentum continued as the leading factor for the quarter and year-to-date; value has been the worst-performing style for the last 18 months.

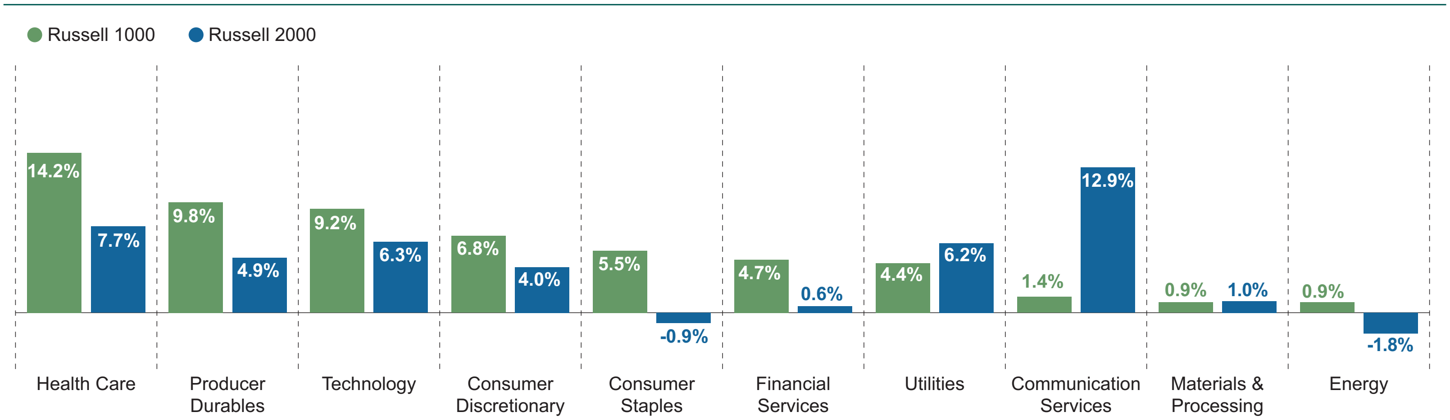
## Non-U.S. / Global Equity

Market divergence has emerged after synchronized growth in 2017. The U.S. continues to post positive returns while non-U.S. developed and emerging markets have lagged year-to-date, dragged down by geopolitical and economic uncertainties.

### Global/Non-U.S. Developed Markets See Slowing Growth

- The dollar rallied against the euro and yen given the fundamentals of the U.S. economy and the Fed's contractionary monetary policy; other central banks maintained the status quo.
- Global trade tensions coupled with Brexit negotiations and Italy's populism concerns tempered the European market despite solid earnings growth. In Japan, GDP growth and the re-election of Prime Minister Shinzo Abe as head of his party and sparked the market.

### Quarterly Performance of Select Sectors




Source: FTSE Russell

- Top sector performers were Health Care, Telecommunication Services, and Energy.
- Real Estate, Financials, and Consumer Staples were hurt by rising interest rates and a flattening yield curve.
- Style had a de minimis impact; however, growth moderately outperformed value. Volatility and small cap factors were out of favor given market uncertainties.

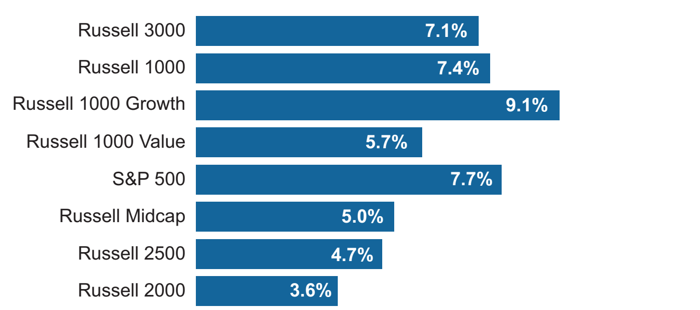
### Emerging Markets Under Pressure

- Emerging markets were under pressure from a rising dollar, U.S. interest rates, and U.S.-China trade frictions.
- Turkey was the worst-performing country within emerging markets as the lira and local currency bonds crashed due to the twin deficit, high level of dollar debt, and inflation.
- The economic slowdown in China and trade tensions with the U.S. weakened the market.
- Brazil and Russia were among the best performers due to climbing oil prices.
- Supported by the oil price hike, Energy was the best performer; Consumer Discretionary was the worst sector performer, weighed down by China and India.
- Value and large cap factors were in favor as Energy gained traction, and momentum struggled as market leadership rotated away from Asian tech companies.

### Non-U.S. Small Cap Underperforms

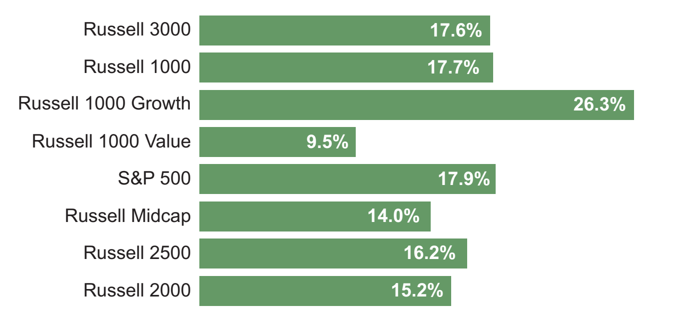
- Both non-U.S. developed and emerging market small cap underperformed large cap as the appetite for risk waned due to rising interest rates and the U.S. dollar, global trade tensions, and geopolitical conflicts.
- Value was favored in both non-U.S. developed and emerging market small cap as the Energy sector thrived.

### U.S. Equity: Quarterly Returns



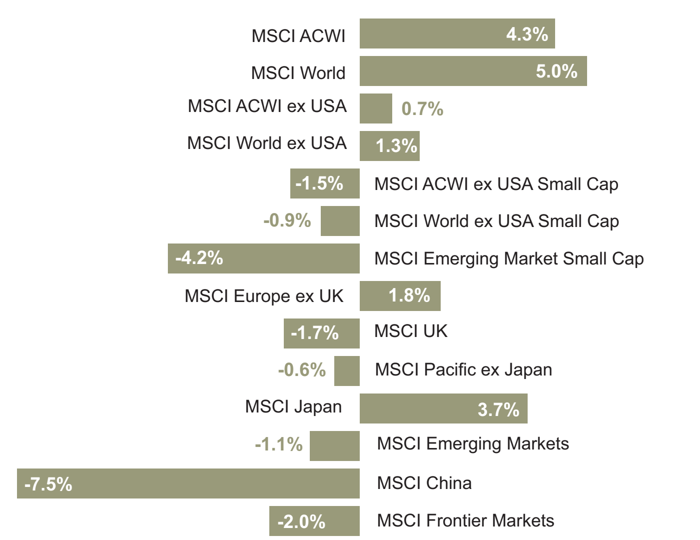

Sources: FTSE Russell and Standard & Poor's

### U.S. Equity: One-Year Returns



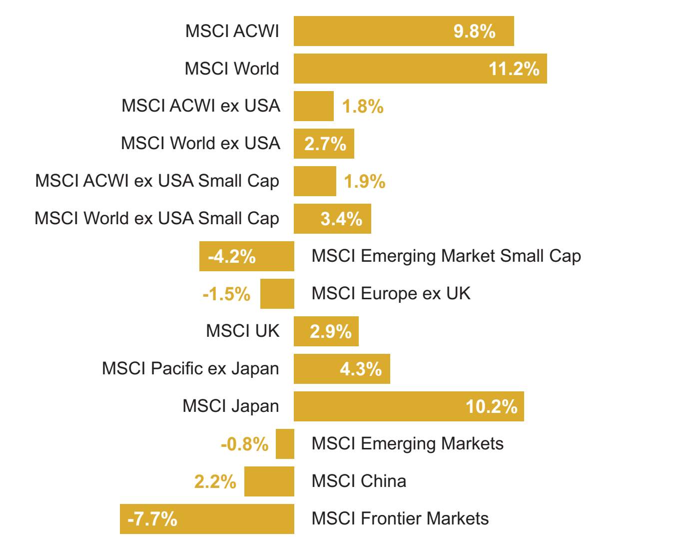

Sources: FTSE Russell and Standard & Poor's

### Non-U.S. Equity: Quarterly Returns (U.S. Dollar)




Source: MSCI

### Non-U.S. Equity: One-Year Returns (U.S. Dollar)




Source: MSCI

# Global Fixed Income

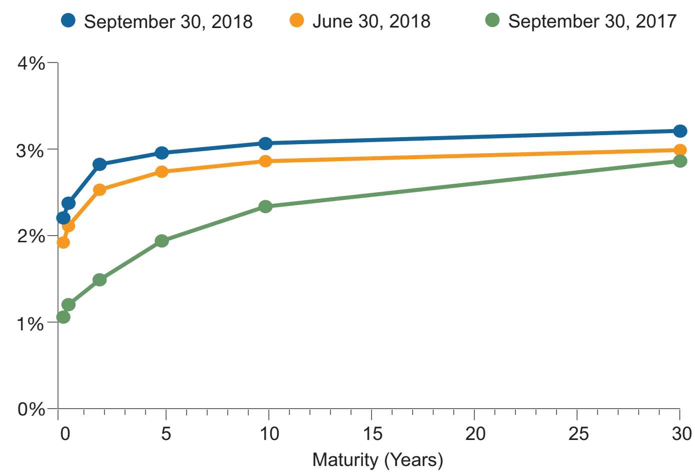
## U.S. Fixed Income

Fixed income markets grappled with multiple issues, resulting in continued volatility. Trade conflicts due to the imposition of tariffs, emerging market elections, and the rising U.S. dollar contributed to the unstable environment. U.S. rates rose in the third quarter and the yield curve continued flattening.

### High Yield Tops the Quarter

- The **Bloomberg Barclays US Aggregate Bond Index** was essentially flat, rising only 0.02% but gaining 1.6% year-to-date.
- The 10-year U.S. Treasury yield rose steadily, reaching a high of 3.10% before settling at 3.06% as strong economic data repriced investors' inflation expectations and increased the probability of a December rate hike by the Federal Reserve.
- The yield curve flattened, with short-term interest rates rising more quickly than longer-term rates. The spread between the 2-year and 10-year narrowed 9 basis points to 24 bps from last quarter, the tightest in 10 years.
- Investment-grade (IG) corporates gained 1.0% in the third quarter but dropped 2.3% YTD.
- New issuance remained strong with demand for new loans oversubscribed by an average of two to three times throughout the quarter.

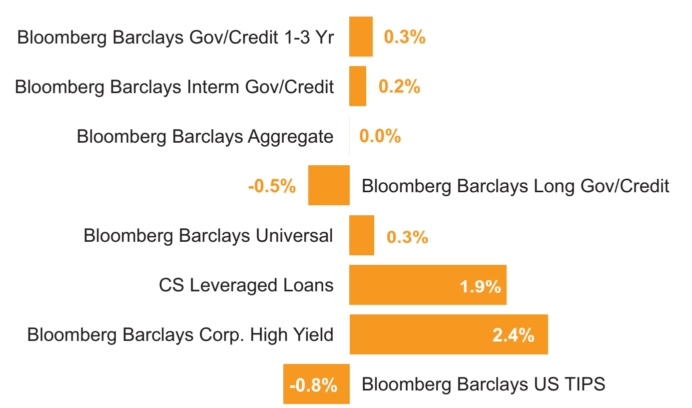
### U.S. Treasury Yield Curves




Source: Bloomberg

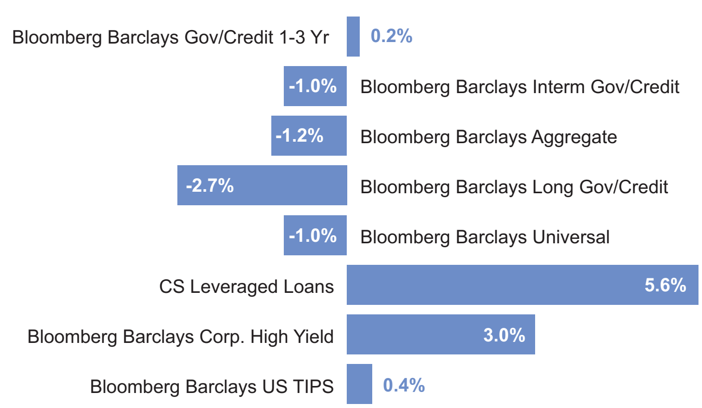
- Spreads continued to narrow this quarter.
- Higher rates and weaker overall fundamentals caused the IG sector to post negative results YTD.
- The **Bloomberg Barclays US Corporate High Yield Index** gained 2.4% in the quarter and +2.6% YTD.
- Low new issuance volume and stable fundamentals compressed spreads.

### U.S. Fixed Income: Quarterly Returns




Sources: Bloomberg Barclays and Credit Suisse

### U.S. Fixed Income: One-Year Returns




Sources: Bloomberg Barclays and Credit Suisse

- Bond issuance was $41 billion, 33% lower than in the third quarter of 2017.
- Bank loans gained 1.8% in the quarter and 4.0% YTD.
- Demand continues for floating-rate securities despite covenant-light structures and higher spread duration.
- Heavy issuance continued through the quarter; YTD leveraged loan issuance is above $900 billion, driven by leveraged buyout and mergers-and-acquisitions activities.
- CLO formation also increased demand in the third quarter.

## Non-U.S. Fixed Income

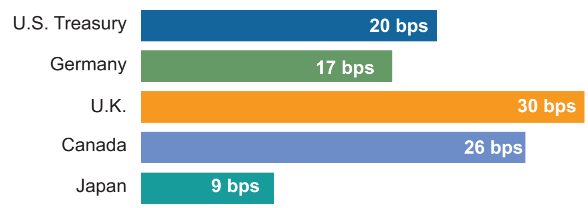
The **JPM EMBI Global Diversified Index** (USD denominated) gained 2.3%, with all sub-regions delivering positive results. Local currency emerging markets (EM), however, fared more poorly. The **JPM GBI-EM Global Diversified Index** fell 1.8% for the quarter but also endured significant intra-quarter volatility, including a 6.1% drop in August.

### Volatility Hinders Local EM Debt

- Return dispersion among countries was significant. Argentina (-35%) has seen its peso fall more than 50% this year to a record low as investors were spooked by previous currency debacles and worries over the economic picture. In addition to securing support from the International Monetary Fund, the country's central bank hiked short-term interest rates 15 percentage points to a global high of 60%.
- Turkey (-27%) endured a similar currency rout, though for different reasons. U.S.-imposed sanctions and concerns over central bank policy were the twin drivers of the lira's weakness. Turkey hiked short rates by 6.25 percentage points to 24% to stem its currency slide.
- Elsewhere, returns were far more modest (positive or negative); only Russia (-6%) and Mexico (+6%) were noteworthy.
- Issuers in Europe faced a different challenge as political uncertainties surrounding Italy caused that market to weaken.

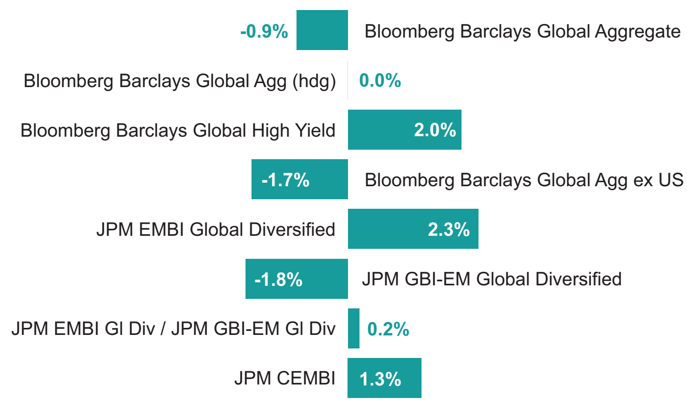
**Change in 10-Year Global Government Bond Yields**

2Q18 to 3Q18



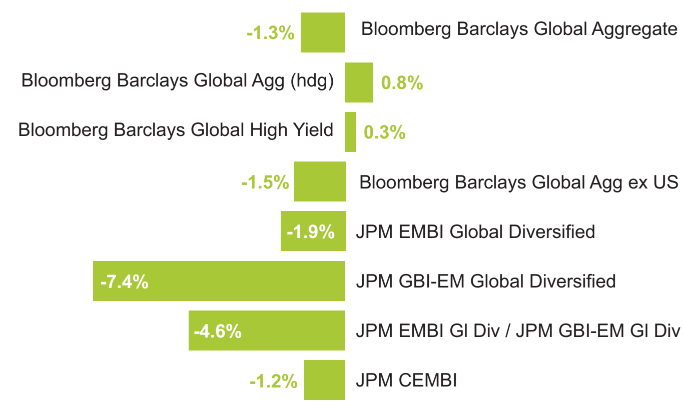

Source: Bloomberg Barclays

**Non-U.S. Fixed Income: Quarterly Returns**




Sources: Bloomberg Barclays and JPMorgan Chase

**Non-U.S. Fixed Income: One-Year Returns**



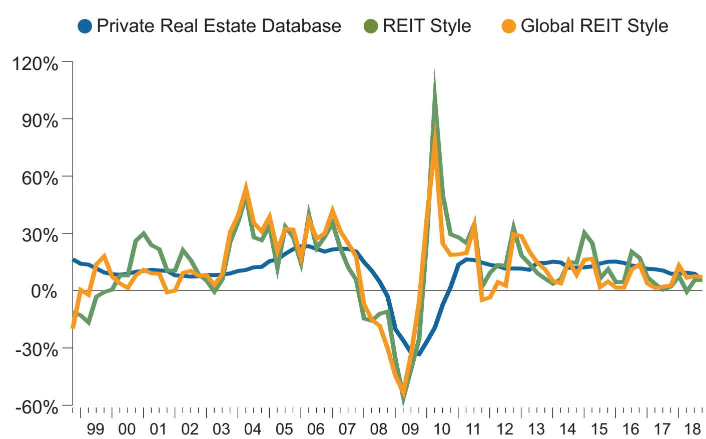

Sources: Bloomberg Barclays and JPMorgan Chase

# Market Robust With Private Valuations at Historic Highs

**REAL ESTATE |** Kevin Nagy, CAIA

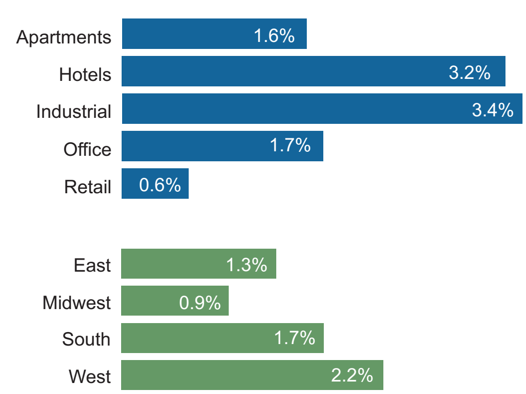
- Supply and demand fundamentals are balanced but peaking. Supply is in check and aided by strict commercial real estate lending standards. Demand continues on the back of strong U.S. growth.
- Transaction volumes took a step back from current cycle peak levels but remain robust, supporting pricing, which remains expensive.
- The Industrial sector is performing the strongest, benefitting from structural shifts in the economy, property markets, and consumer habits, which 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. Multifamily remains strong except for very high-end properties in some markets.
- U.S. core real estate returns continue to moderate and shift toward income with limited appreciation. Appreciation that occurs is coming from net operating income growth rather than further cap rate compression.
- Spreads remain relatively tight between core and value-add due to large amounts of capital in both strategies chasing fewer available deals, combined with more core investors chasing yield.
- Both U.S. and non-U.S. real estate investment trusts (REITs) are trading at discounts to net asset value, indicating relative value for public market securities compared to private real estate valuations.
- European real estate markets (ex-U.K.) are gaining momentum due to strong fundamentals in the major cities of Europe despite continued political noise across the region.
- Asian real estate products are seeing strong fundraising momentum, with existing managers reaching target fund sizes and Asia-focused open-end funds increasing.
- Farmland managers in the United States are concerned more about the reworking of the North American Free Trade Agreement than the trade war with China. Chinese tariffs on soybeans are seen as a temporary dislocation as opposed to a long-term headwind.
- As private real estate valuations continue to test historical highs, investors are looking at other sectors, such as real estate debt and REITs, to access the best risk-adjusted returns from real estate. This is resulting in the formation of some products with very wide mandates that allow the investment manager to place capital across real estate debt and equity markets and up and down the capital stack based on relative value.

### Rolling One-Year Returns



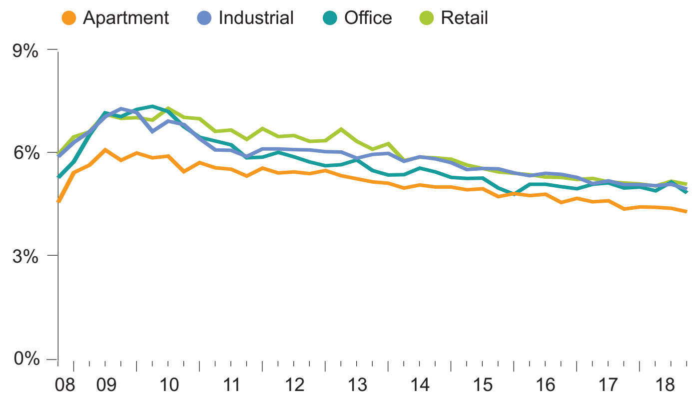

Source: Callan

### Sector Quarterly Returns by Property Type and Region



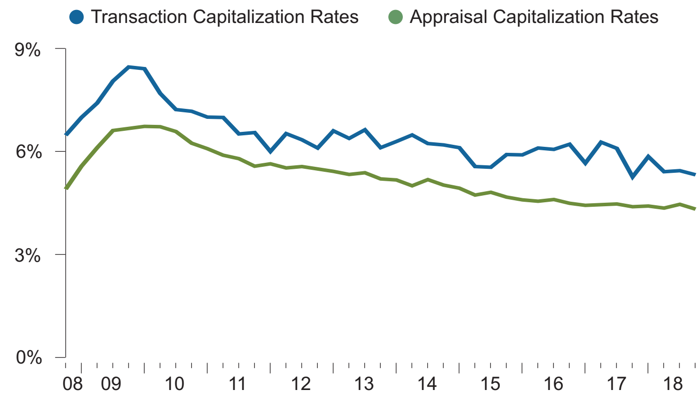

Source: NCREIF

### NCREIF Capitalization Rates by Property Type




Source: NCREIF
Note: Capitalization rates are appraisal-based.

### NCREIF Transaction and Appraisal Capitalization Rates




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

### Callan Database Median and Index Returns* for Periods ended September 30, 2018

| Private Real Assets | Last Quarter | Year to Date | Last Year | Last 3 Years | Last 5 Years | Last 10 Years | Last 15 Years |
|---|---|---|---|---|---|---|---|
| Real Estate ODCE Style | 1.51 | 5.57 | 7.68 | 8.32 | 9.94 | 4.64 | 7.09 |
| NFI-ODCE (value wt net) | 1.87 | 5.75 | 7.71 | 7.83 | 9.71 | 4.62 | 7.28 |
| NCREIF Property | 1.67 | 5.27 | 7.16 | 7.75 | 9.57 | 6.42 | 8.96 |
| NCREIF Farmland | 1.13 | 3.62 | 6.66 | 7.12 | 9.86 | 11.62 | 14.62 |
| NCREIF Timberland | 1.02 | 2.44 | 4.00 | 3.52 | 5.99 | 4.01 | 7.42 |
| **Public Real Estate** | | | | | | | |
| Global Real Estate Style | 0.25 | 1.00 | 5.57 | 7.18 | 7.10 | 7.64 | 9.62 |
| EPRA/NAREIT Developed | -0.30 | 0.06 | 3.66 | 6.19 | 5.43 | 6.04 | -- |
| Global ex-U.S. Real Estate Style | -0.14 | 1.49 | 7.08 | 6.96 | 5.27 | 6.83 | 9.61 |
| EPRA/NAREIT Developed ex US | -0.99 | -0.96 | 5.36 | 7.25 | 3.97 | 6.48 | 8.58 |
| U.S. REIT Style | 0.88 | 2.14 | 4.61 | 7.94 | 9.72 | 8.37 | 10.31 |
| NAREIT Equity REITs | 0.79 | 1.81 | 3.35 | 7.64 | 9.16 | 7.44 | 9.41 |

*Returns less than one year are not annualized.
Sources: Callan, FTSE Russell, NAREIT, NCREIF

# More Tricks Than Treats

**PRIVATE EQUITY** | Gary Robertson

Third quarter private equity partnerships holding final closes totaled $140 billion, with 197 new partnerships formed, according to Pitchbook. The dollar volume rose by 30% from $108 billion, but the number of funds closing declined by 6% from 210 in the prior quarter. Year-to-date, 2018 is running $64 billion (or 15%) behind a year ago. Investors are pursuing broad diversification with buyouts tracking to less than 50% of capital raised, and all other major strategies receiving significant new allocations.

– New buyout transactions declined although activity remained strong overall, according to PitchBook. Funds closed 1,477 investments with $126 billion in disclosed deal value, representing a 17% decline in count and a 4% dip in dollar value from the second quarter's 1,775 investments and $131 billion of announced value. The $13.8 billion purchase of Unilever's vegetable spread business (e.g., Country Crock) by KKR was the quarter's largest buyout.
– According to PitchBook, new investments in venture capital companies totaled 4,010 rounds of financing with $53 billion of announced value. The number of investments was down 23% from the prior quarter, and announced value fell 26%. The median pre-money valuations continued to increase across the board, with Series D showing the largest increases.
– There were 454 private M&A exits of private equity-backed companies (excluding venture capital), PitchBook reports, with disclosed values totaling $131 billion. Both private sale count and announced dollar volume were down from the prior quarter's 620 sales and $135 billion. There were 26 private-equity backed IPOs in the third quarter raising an aggregate $7 billion, down from 53 totaling $16 billion previously.
– Venture-backed M&A exits totaled 276 transactions with disclosed value of $34 billion. The number of sales declined from 344 in the second quarter, but announced values increased slightly from $31 billion in the second quarter. There were 53 VC-backed IPOs in the third quarter with a combined float of $14 billion. For comparison, the second quarter had 69 IPOs and total issuance of $19 billion.

Please see our upcoming issue of *Private Equity Trends* for more in-depth coverage.

**Funds Closed January 1 to September 30, 2018**

| Strategy | No. of Funds | Amt ($mm) | Share |
|---|---|---|---|
| Venture Capital | 270 | 45,756 | 12% |
| Growth Equity | 38 | 24,553 | 7% |
| Buyouts | 148 | 175,110 | 47% |
| Mezzanine Debt | 44 | 42,482 | 11% |
| Distressed | 11 | 23,103 | 6% |
| Energy | 22 | 20,222 | 5% |
| Secondary and Other | 55 | 27,368 | 7% |
| Fund-of-funds | 29 | 11,496 | 3% |
| **Totals** | **617** | **370,090** | **100%** |

Source: PitchBook
Figures may not total due to rounding.

**Private Equity Performance Database (%) (Pooled Horizon IRRs through June 30, 2018*)**

| Strategy | 3 Months | Year | 3 Years | 5 Years | 10 Years | 15 Years | 20 Years |
|---|---|---|---|---|---|---|---|
| All Venture | 3.68 | 12.97 | 9.23 | 16.18 | 9.51 | 9.70 | 17.90 |
| Growth Equity | 5.83 | 20.09 | 12.21 | 13.63 | 9.95 | 13.04 | 13.47 |
| All Buyouts | 5.38 | 22.64 | 13.65 | 14.41 | 8.83 | 14.59 | 12.43 |
| Mezzanine | 3.18 | 14.72 | 9.70 | 10.18 | 8.80 | 9.67 | 8.67 |
| Distressed | 2.45 | 10.99 | 6.72 | 9.52 | 9.49 | 10.77 | 10.34 |
| **All Private Equity** | **3.63** | **15.26** | **10.10** | **10.82** | **9.25** | **11.47** | **11.24** |
| S&P 500 | 4.82 | 19.11 | 11.94 | 13.97 | 9.12 | 12.97 | 12.81 |

Private equity returns are net of fees.
Sources: Standard & Poor's and Thomson Reuters/Cambridge
*Most recent data available at time of publication

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of *Capital Market Review* and other Callan publications.

# Active Trading Grinds Forward Under Market Stress

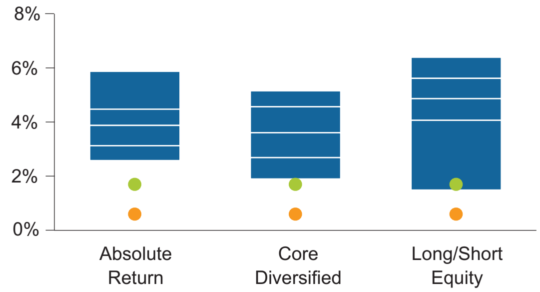
**HEDGE FUNDS/MACs** | Jim McKee

## Hedge Funds

A resilient U.S. economy stimulated by tax cuts and falling unemployment pushed up U.S. stocks and the U.S. dollar in the third quarter. The stronger dollar tied to rising short-term rates undermined a slowing Chinese economy as well as markets linked to it. Divergent economic forces around the globe created a modestly profitable trading environment for most hedge funds. The **Credit Suisse Hedge Fund Index** gained 0.6%.

– Aided by climbing U.S. stock prices, *Long/Short Equity* (+1.5%) topped CS hedge fund strategies.
– Supported by the strong U.S. corporate environment, event-driven strategies (*Event-Driven Multi, Distressed, Risk Arb*) made modest but steady gains.
– *Emerging Markets* (-4.1%) suffered the most, surrendering its excess returns over passive benchmarks from prior quarters.
– Reflecting live hedge fund portfolios, the **HFRI FOF Composite Index**, net of all fees, inched forward 0.3%.

### Hedge Fund-of-Funds Style Group Returns




| | Absolute Return | Core Diversified | Long/Short Equity |
|---|---|---|---|
| 10th Percentile | 5.9 | 5.2 | 6.4 |
| 25th Percentile | 4.5 | 4.6 | 5.6 |
| Median | 3.9 | 3.6 | 4.9 |
| 75th Percentile | 3.1 | 2.7 | 4.1 |
| 90th Percentile | 2.6 | 1.9 | 1.5 |
| CS Hedge Fund ● | 0.6 | 0.6 | 0.6 |
| 90-Day T-Bill +5% ● | 1.7 | 1.7 | 1.7 |

Sources: Callan, Credit Suisse, Federal Reserve

### Callan Database Median and Index Returns* for Periods ended September 30, 2018

| Hedge Fund Universe | Quarter | Year | 3 Years | 5 Years | 10 Years | 15 Years |
|---|---|---|---|---|---|---|
| **Callan Fund-of-Funds Database** | **0.37** | **4.53** | **3.96** | **4.04** | **4.54** | **4.89** |
| **Callan Absolute Return FOF Style** | **0.42** | **4.60** | **3.73** | **3.88** | **4.33** | **4.45** |
| **Callan Core Diversified FOF Style** | **0.68** | **3.37** | **3.76** | **3.61** | **4.36** | **5.07** |
| **Callan Long/Short Equity FOF Style** | **-0.30** | **4.86** | **5.17** | **4.87** | **5.33** | **5.89** |
| Credit Suisse Hedge Fund | 0.59 | 3.49 | 3.09 | 3.39 | 4.43 | 5.39 |
| CS Convertible Arbitrage | 0.92 | 1.86 | 3.97 | 2.56 | 6.05 | 3.97 |
| CS Distressed | 0.79 | 3.36 | 4.46 | 3.44 | 5.00 | 6.36 |
| CS Emerging Markets | -4.08 | -3.98 | 5.23 | 3.70 | 4.69 | 6.73 |
| CS Equity Market Neutral | -0.24 | 1.20 | 1.08 | 1.77 | -3.18 | 0.20 |
| CS Event-Driven Multi | 1.14 | 4.27 | 2.37 | 1.70 | 3.98 | 5.72 |
| CS Fixed Income Arb | 0.93 | 4.71 | 4.41 | 3.88 | 5.22 | 4.06 |
| CS Global Macro | -0.19 | 3.56 | 2.66 | 2.68 | 4.75 | 6.36 |
| CS Long/Short Equity | 1.54 | 5.55 | 4.37 | 5.40 | 5.72 | 6.49 |
| CS Managed Futures | 0.63 | 3.29 | -2.66 | 2.84 | 1.42 | 3.15 |
| CS Multi-Strategy | 0.98 | 3.05 | 4.84 | 5.67 | 6.59 | 6.36 |
| CS Risk Arbitrage | 0.82 | 1.13 | 4.50 | 2.54 | 3.33 | 3.95 |
| HFRI Asset Wtd Composite | 0.37 | 3.88 | 3.88 | 3.87 | 4.74 | -- |
| 90-Day T-Bill + 5% | 1.70 | 6.59 | 5.84 | 5.52 | 5.34 | 6.30 |

*Gross of fees. Sources: Bloomberg Barclays, Callan, Credit Suisse, Hedge Fund Research, Societe Generale, and Standard & Poor's

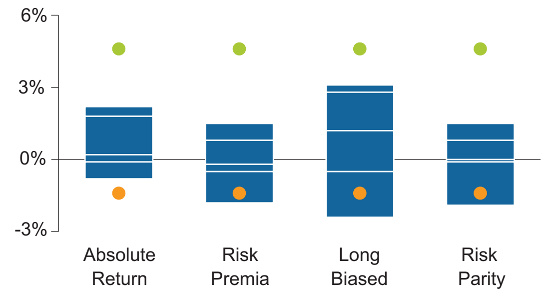
- Representing actual hedge fund portfolios, the median manager in the **Callan Hedge Fund-of-Funds Database** forged ahead 0.4%, net of all fees and expenses.
- Despite the U.S. equity rally, the median *Callan Long/Short Equity FOF* (-0.3%) slipped behind the *Callan Absolute Return FOF* (+0.4%), which tends to benefit from event-driven deals and credit trades.
- With diversifying exposures to both non-directional and directional styles, the *Core Diversified FOF* gained 0.7%.

## Multi-Asset Class (MAC) Strategies

Callan's **Multi-Asset Class (MAC) Style Groups** continued to struggle in the third quarter, particularly those overweighting bonds and underweighting U.S. growth stocks, as a stronger dollar and rising rates created a difficult top-down environment.

- The **HFR Risk Parity Index** targeting 12% volatility slipped 0.3%, given its typical fixed income bias.
- The **CS NB Multi Asset Risk Premia Index** (-1.4%) is an equal risk-weighted index of alternative risk factors (value, carry, momentum, and liquidity) across four capital markets (equity, fixed income, currency, and commodities) targeting 5% volatility.
- Within CS NB MARP, *Equity Value* (-3.4%) sank again, adding to losses from the prior two quarters for a 11.9% year-to-date loss. Supported by rising energy prices, *Commodity Momentum* (+5.9%) was strong again, leading to a 16% YTD gain.

### MAC Style Group Returns

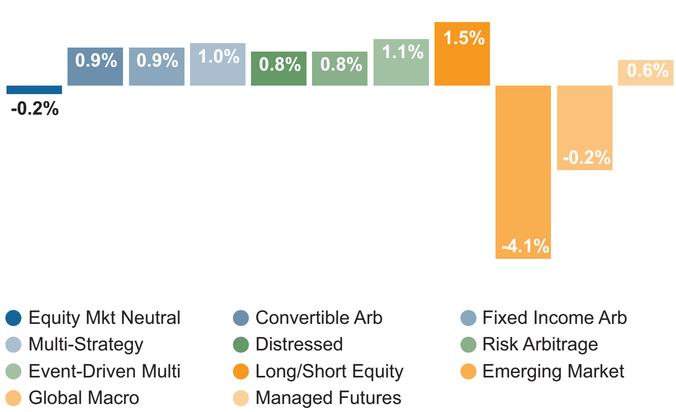



| | Absolute Return | Risk Premia | Long Biased | Risk Parity |
|---|---|---|---|---|
| 10th Percentile | 2.2 | 1.5 | 3.1 | 1.5 |
| 25th Percentile | 1.8 | 0.8 | 2.8 | 0.8 |
| Median | 0.2 | -0.2 | 1.2 | 0.0 |
| 75th Percentile | -0.1 | -0.5 | -0.5 | -0.1 |
| 90th Percentile | -0.8 | -1.8 | -2.4 | -1.9 |
| CS NB MARP (5%v) | -1.4 | -1.4 | -1.4 | -1.4 |
| 60% S&P 500/ 40% BB Barclays Agg | 4.6 | 4.6 | 4.6 | 4.6 |

Sources: Bloomberg Barclays, Callan, Credit Suisse, Neuberger Berman, Standard & Poor's

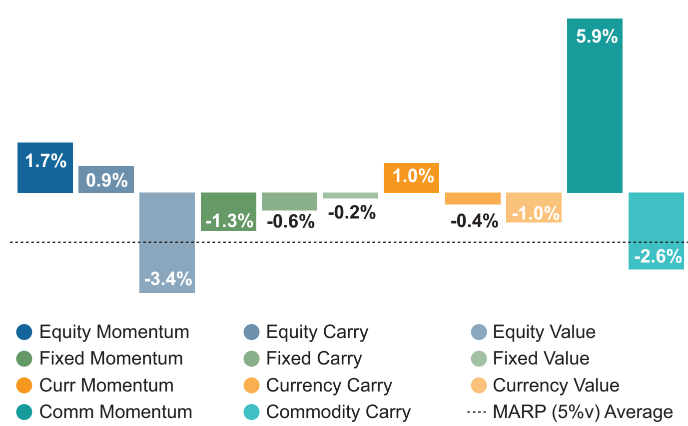
- Buoyed by its usually long equity bias within a dynamic asset allocation framework, the *Callan Long Biased MAC* advanced 1.2%.
- Likely impacted by underlying tilts to an equity value risk factor, the median *Callan Risk Premia MAC* slipped 0.2%.
- Typically targeting equal risk-weighted allocations to major asset classes with leverage, the *Callan Risk Parity MAC* (0.0%) was flat.
- As the most conservative MAC style focused on non-directional strategies of long and short asset class exposures, the *Callan Absolute Return MAC* edged ahead 0.2%.

### Credit Suisse Hedge Fund Strategy Returns




Source: Credit Suisse

### Alternative Risk Factor Breakdown




Sources: Credit Suisse Neuberger Berman

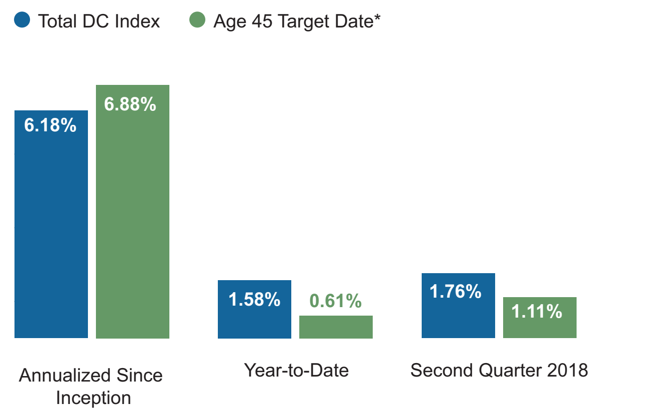
# DC Plans Rebound, TDFs Struggle

**DEFINED CONTRIBUTION** | James Veneruso, CFA, CAIA

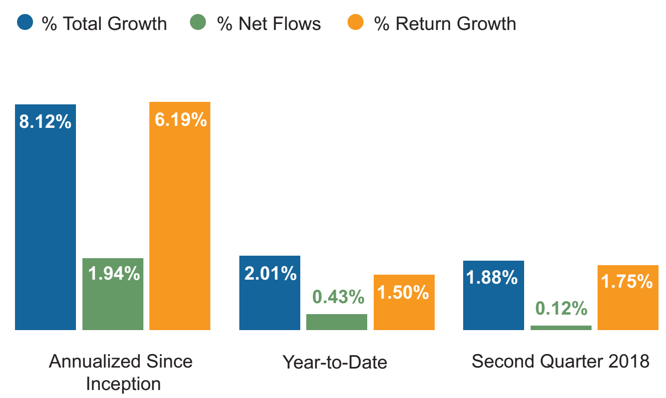
- The Callan DC Index™ rebounded from first quarter losses, returning 1.8% in the second quarter and outpacing the 1.1% gain of the Age 45 Target Date Fund (TDF).
- TDFs suffered from their higher allocation to non-U.S. equity and emerging markets. The average DC plan has a 5.6% allocation to non-U.S. equity and emerging markets, compared to 26.5% for the Age 45 TDF.
- Since inception, the DC Index's annual return of 6.2% trails the Age 45 TDF by 70 basis points.
- DC plan balances grew by 1.9%, driven primarily by market performance. For the quarter, inflows (participant and plan sponsor contributions) accounted for only 12 bps of growth.
- TDFs absorbed approximately 92 cents of every dollar that flowed into DC funds.
- Several DC investments saw material net outflows, including U.S. equities (large and small/mid cap), U.S./global balanced, and U.S. fixed income.
- Second quarter turnover (i.e., net transfer activity levels within DC plans) increased slightly from the first quarter to 0.35%, well below the historical average of 0.62%.
- The Callan DC Index's equity allocation ended the quarter at 70%, modestly above its historical average (68%).
- The second quarter marked another all-time high for TDFs' share of DC assets, expanding to 32.5%. U.S. large cap continues to be the second-highest allocation, at 24.1%.
- While TDFs have a larger overall weight within the Index, they remain less prevalent than the next largest plan holding, U.S. large cap equity. In plans that offer TDFs, they account for 35% of plan assets. U.S. large cap equity funds account for 24% of plan assets, even though they are offered by 100% of DC plans.

*The Callan DC Index is an equally weighted index tracking the cash flows and performance of nearly 90 plans, representing more than one million DC participants and over $135 billion in assets. The Index is updated quarterly and is available on Callan's website, as is the quarterly DC Observer newsletter.*

### Investment Performance




### Growth Sources




### Net Cash Flow Analysis (Second Quarter 2018)
(Top Two and Bottom Two Asset Gatherers)

| Asset Class | Flows as % of Total Net Flows |
|---|---|
| Target Date Funds | 91.57% |
| Brokerage Window | 2.33% |
| Company Stock | -18.29% |
| U.S. Large Cap | -44.41% |
| **Total Turnover**** | **0.35%** |

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

Note: DC Index inception date is January 2006.

* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

** Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.

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The *Capital Market Review* is a quarterly macroeconomic indicator newsletter that provides thoughtful insights on the economy and recent performance in the equity, fixed income, alternatives, real estate, and other capital markets.

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Callan was founded as an employee-owned investment consulting firm in 1973. Ever since, we have empowered institutional clients with creative, customized investment solutions that are backed by proprietary research, exclusive data, and ongoing education. Today, Callan advises on more than $2 trillion in total fund sponsor assets, which makes it among the largest independently owned investment consulting firms in the U.S. Callan uses a client-focused consulting model to serve pension and defined contribution plan sponsors, endowments, foundations, independent investment advisers, investment managers, and other asset owners. Callan has six offices throughout the U.S. For more information, please visit www.callan.com.

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The Callan Institute, established in 1980, is a source of continuing education for those in the institutional investment community. The Institute conducts conferences and workshops and provides published research, surveys, and newsletters. The Institute strives to present the most timely and relevant research and education available so our clients and our associates stay abreast of important trends in the investments industry.

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