REVIEW OF MARKET PERFORMANCE

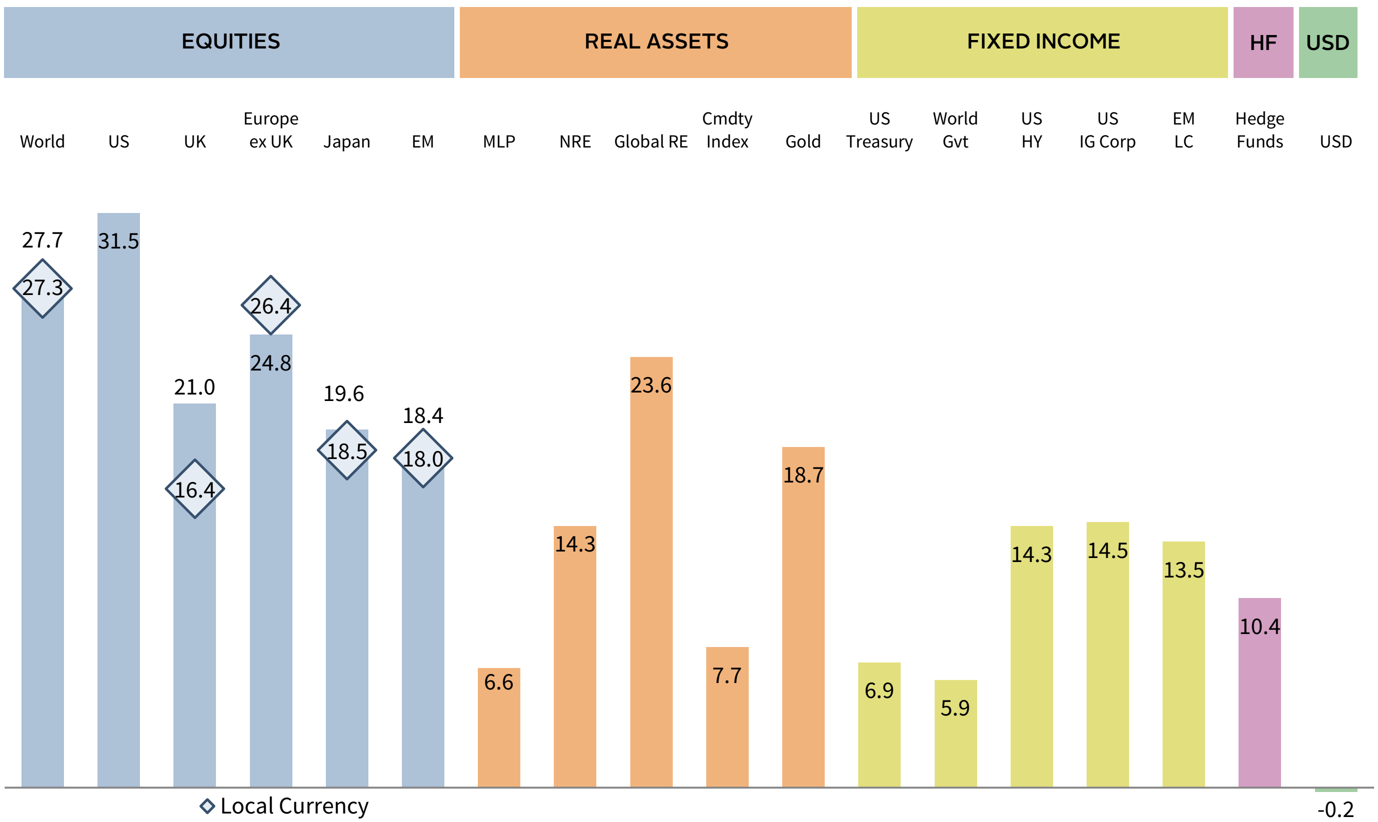
CALENDAR YEAR 2019

CAMBRIDGE ASSOCIATES

Asset market gains were broadly based

GLOBAL ASSET CLASS PERFORMANCE: CY 2019

Total Return (%) • US Dollar



Bonds performed strongly as investors sought relative safety due to heightened trade tensions between the United States and China, raising fresh fears regarding the global growth outlook. Nonetheless, equities managed to climb the wall of worry, generating strong double-digit returns, led by the United States. Real estate and gold outperformed among real assets, spurred on by falling yields and risk-off sentiment, while the dollar finished broadly unchanged.

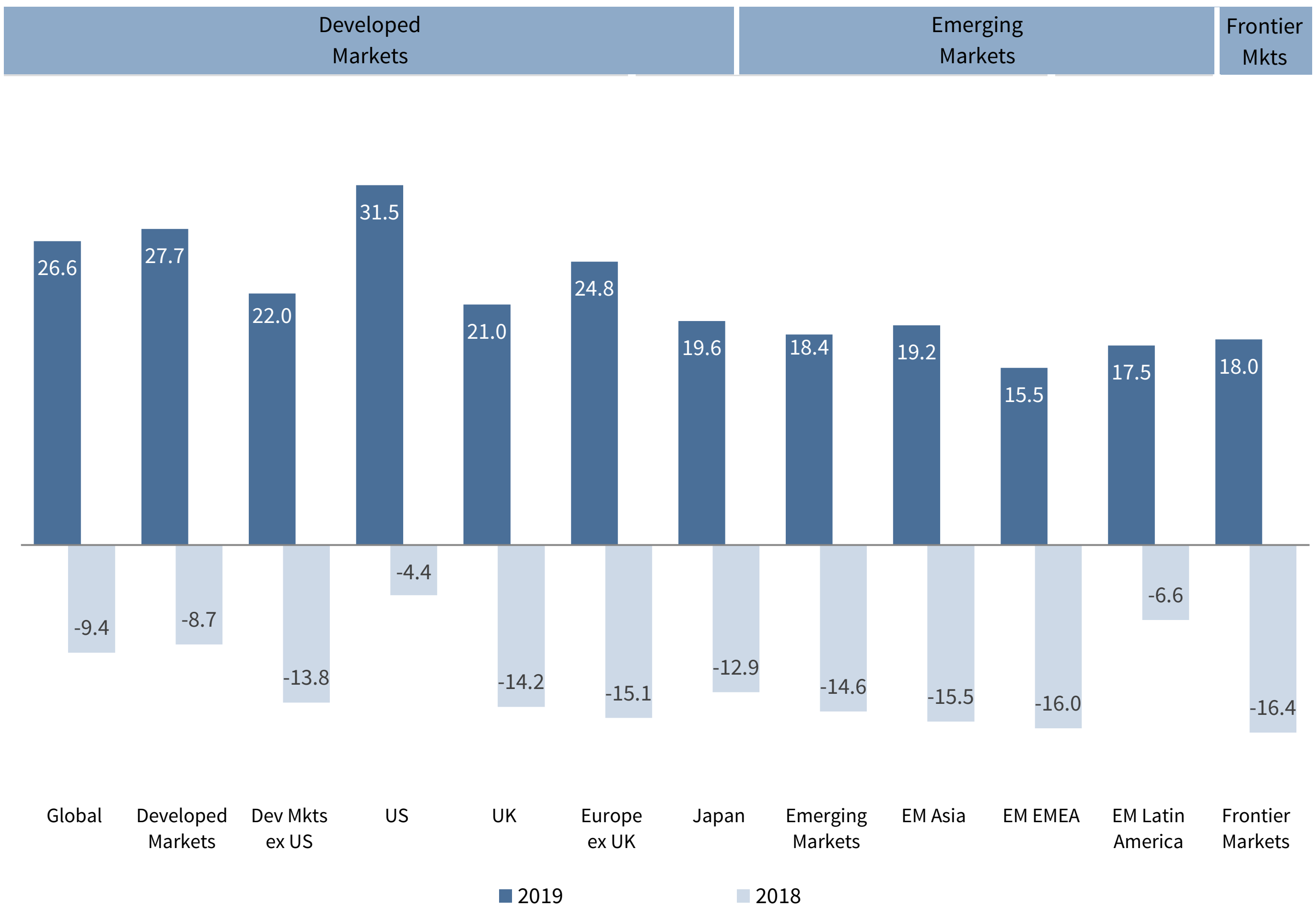
Sources: Alerian, Bloomberg Index Services Limited, Bloomberg L.P., EPRA, Federal Reserve, FTSE Fixed Income LLC, FTSE International Limited, Hedge Fund Research, Inc., Intercontinental Exchange, Inc., J.P. Morgan Securities, Inc., MSCI Inc., National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Asset classes represented by: MSCI World Index ("World"), S&P 500 Index ("US"), MSCI UK Index ("UK"), MSCI Europe ex UK Index ("Europe ex UK"), MSCI Japan Index ("Japan"), MSCI Emerging Markets Index ("Emerging Markets"), Alerian MLP Total Return Index ("MLP"), market cap-weighted Datastream World Energy Index and Datastream World Basic Resources Index blend ("NRE"), FTSE® EPRA/NAREIT Global Real Estate Index ("Global RE"), Bloomberg Commodity TR Index ("Cmdty"), LBMA Gold Price ("Gold"), Bloomberg Barclays US Treasury Index ("US Treasury"), FTSE World Government Bond Index ("World Gvt"), Bloomberg Barclays US High Yield Bond Index ("US HY"), Bloomberg Barclays US Corporate Investment Grade Bond Index ("US IG Corp"), J.P. Morgan GBI-EM Global Diversified Index ("EM LC"), Hedge Fund Research Fund Weighted Composite Index ("Hedge Funds"), and Nominal Trade Weighted US Dollar Index: Broad ("USD"). Total return data for all MSCI indexes are net of dividend taxes. Hedge Fund Research data are preliminary for the preceding five months. Gold performance based on spot price returns.

US stocks excelled, while broader equity returns were also robust

GLOBAL EQUITY PERFORMANCE: CY 2019 VS CY 2018

Total Return (%) • US Dollar



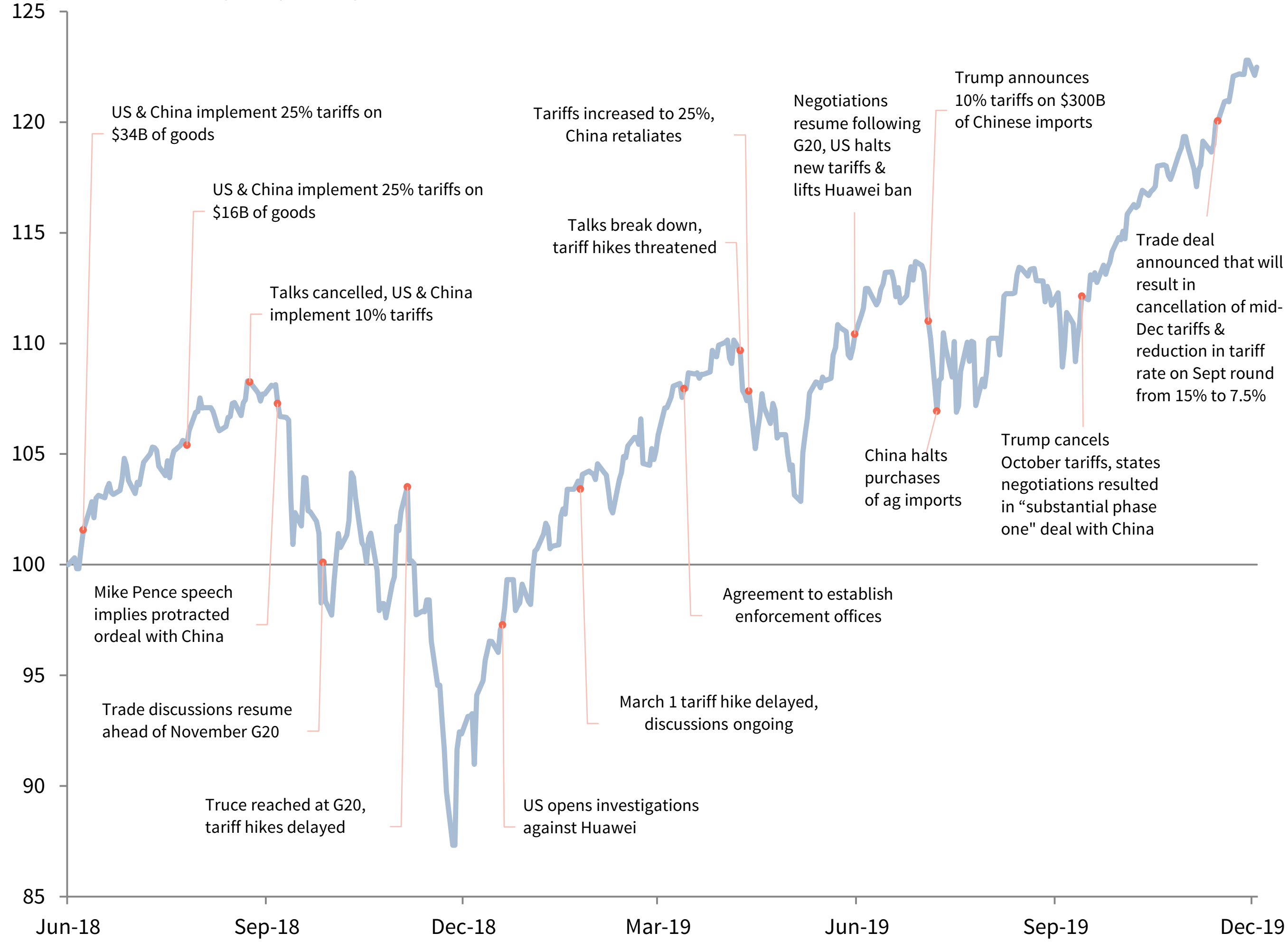
US equities continued to outperform in calendar year (CY) 2019 and reached new all-time highs. Most other developed markets also managed to put in very strong performances, despite the continuation of geopolitical gyrations. Emerging markets (EM) lagged their developed peers, due both to a series of political and social storms buffeting their economies, and their heightened exposure to Chinese growth.

Sources: MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Asset classes represented by the following: MSCI All Country World Index ("Global"), MSCI World Index ("Developed Markets"), MSCI EAFE Index ("Dev Mkts ex US"), S&P 500 Index ("US"), MSCI UK Index ("UK"), MSCI Europe ex UK Index ("Europe ex UK"), MSCI Japan Index ("Japan"), MSCI Emerging Markets Index ("Emerging Markets"), MSCI Emerging Markets Asia Index ("EM Asia"), MSCI Emerging Markets Europe, the Middle East & Africa Index ("EM EMEA"), MSCI Emerging Markets Latin America Index ("EM Latin America"), and MSCI Frontier Markets Index ("Frontier Markets"). Total returns for MSCI indexes are net of dividend taxes.

The US-China trade war intensified, but markets ultimately looked through it

S&P 500 CUMULATIVE WEALTH AND THE US-CHINA TRADE WAR

June 30, 2018 – December 31, 2019 • June 30, 2018 = 100



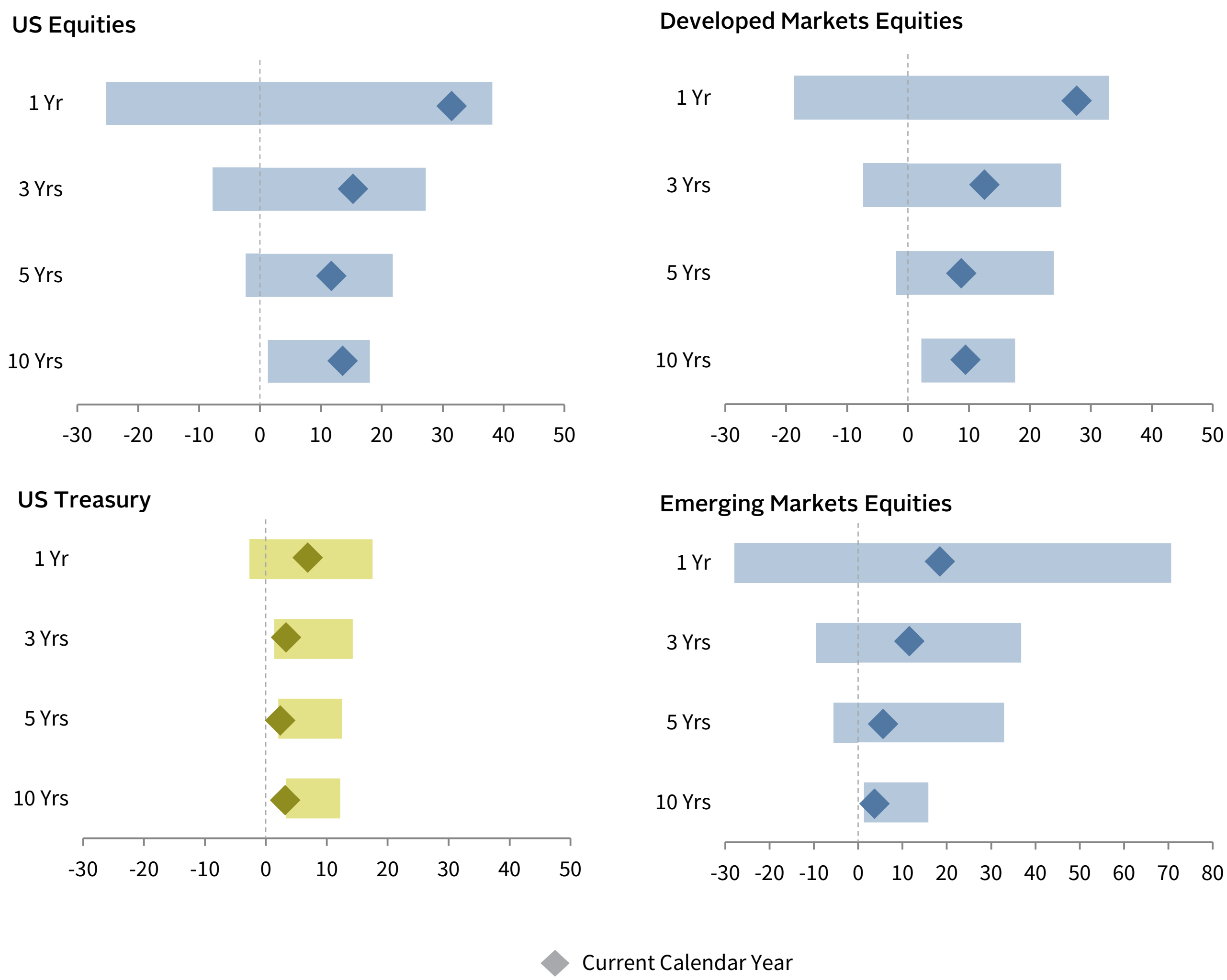
The trade war between the world's two largest economies intensified in CY 2019, as both sides implemented and increased tariffs on a combined roughly $450 billion of goods. The conflict raised concerns of escalation toward a “tech war,” as the United States hardened its stance on Chinese multinational technology company Huawei. These developments had a mixed impact on stock market performance, but talk of a “Phase One” deal, which has subsequently been signed, has allowed US stocks to hit new all-time highs.

Sources: Standard & Poor's and Thomson Reuters Datastream.
Notes: Cumulative wealth based on gross total returns in USD terms. If an event falls on a non-trading day, the chart data point and label reflect the nearest subsequent trading day.

One- and ten-year equity returns are elevated versus history, while bond returns picked up

AVERAGE ANNUAL COMPOUND RETURN RANGE FOR VARIOUS TIME PERIODS

Periods ended December 31, 2019 • Total Return (%) • US Dollar



One-year developed markets equity returns were well above their long-term medians in CY 2019, with US stocks also posting ten-year returns near the top quartile of their respective ten-year return distributions. In addition, US Treasuries posted their strongest returns for several years. Still, Treasuries have lagged in recent years generally as rates have approached zero and inflation has moderated.

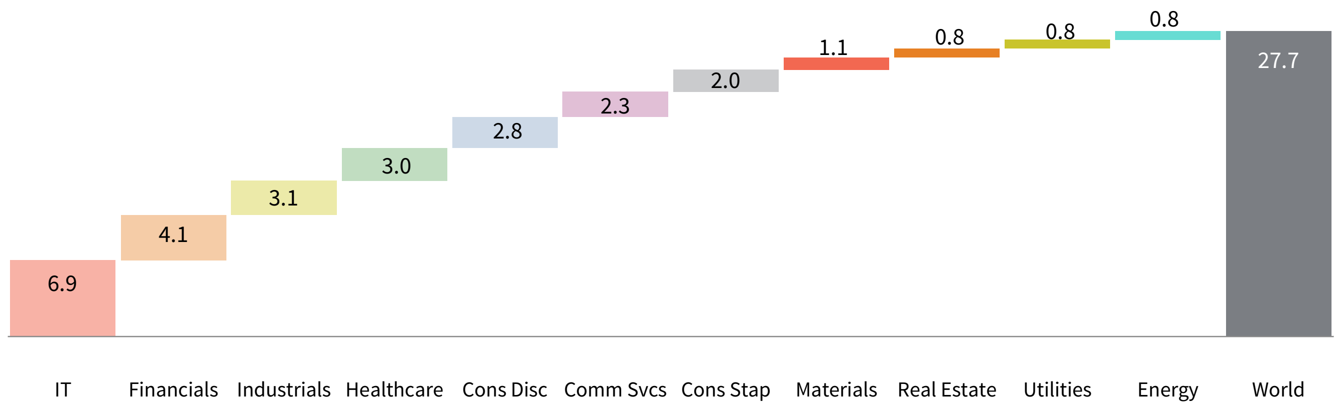
Sources: Bloomberg Index Services Limited, Global Financial Data, Inc., MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Ranges reflect the 5th and 95th percentile of calendar year returns. Asset classes represented by the following indexes: S&P 500 Index ("US Equities"), MSCI World Index ("Developed Markets Equities"), Bloomberg Barclays US Treasury Index ("US Treasury"), MSCI Emerging Markets Index ("Emerging Markets Equities"). Total returns for all MSCI indexes are net of dividend taxes. Total returns for the MSCI Emerging Markets Index are gross of dividend taxes prior to calendar year 2001. The first full calendar year periods are 1901 for S&P 500, 1971 for MSCI World, 1973 for US Treasury, and 1989 for MSCI Emerging Markets. Data prior to 1968 for US Equities are from Global Financial Data, Inc.

Information technology is the standout sector across markets

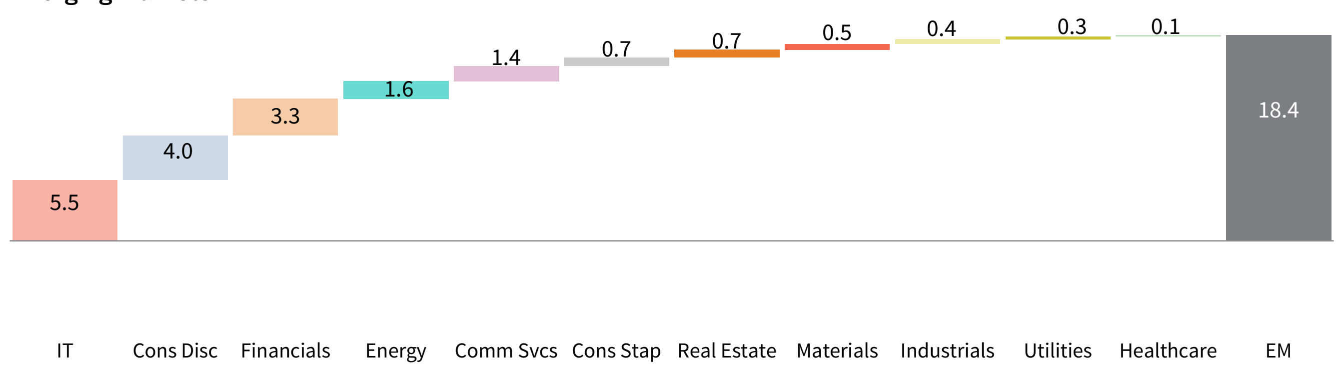
SECTOR CONTRIBUTIONS TO TOTAL RETURN: CY 2019

Percent (%) • US Dollar

Developed Markets



Emerging Markets



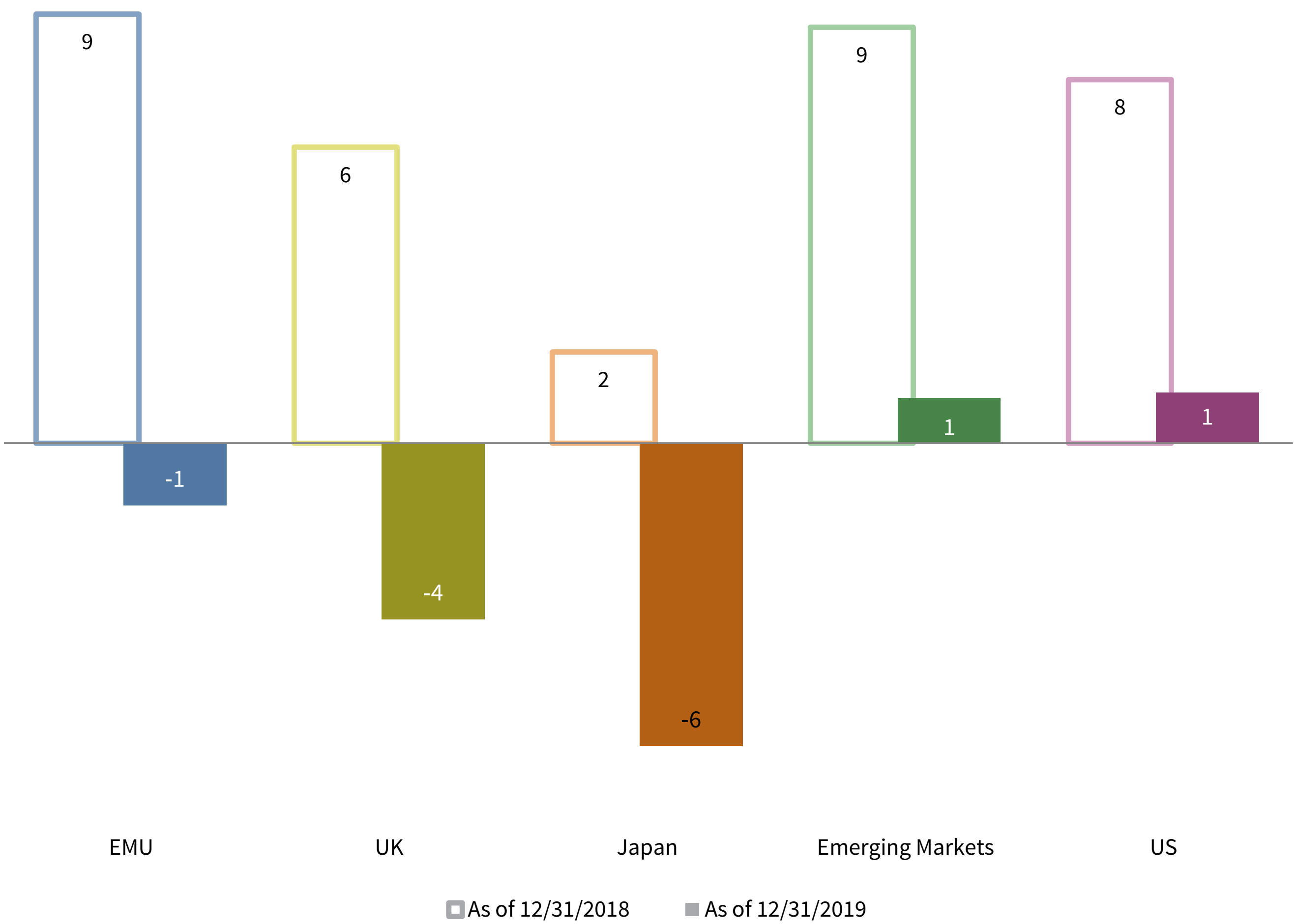
Information technology contributed the most to both developed and emerging markets' performance, as earnings in many sectors declined and investors paid a premium for firms capable of generating revenue growth. Materials and industrials in emerging markets underperformed their developed peers, as trade tensions had an outsized impact on them.

Sources: FactSet Research Systems, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Total return data for all MSCI indexes are net of dividend taxes. Developed markets sector contributions to total return data are represented by the MSCI World Index. Emerging markets sector contributions to total return data are represented by the MSCI Emerging Markets Index. These charts depict the market cap–weighted sector returns of their respective indexes.

EPS growth estimates declined sharply in CY2019

CHANGE IN CY 2019 EPS GROWTH ESTIMATES DURING THE CALENDAR YEAR

As of December 31, 2019 • Percent (%)

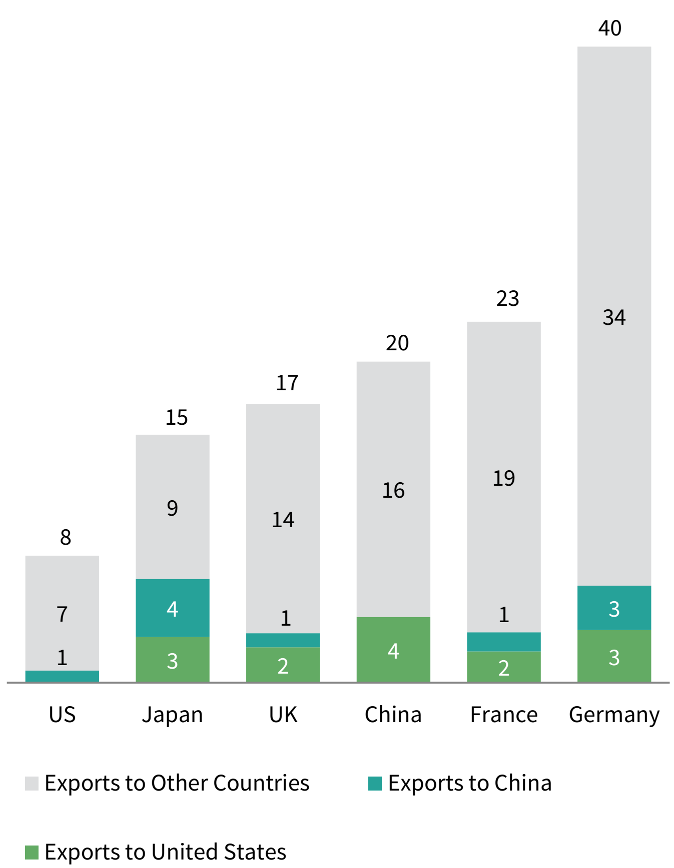


Earnings per share (EPS) growth estimates declined sharply across all major regions during CY 2019. The impact of the US-China trade dispute was the genesis of the slowdown. However, it soon spread to other sectors of the economy via the confidence channel and fears that the conflict may escalate. More localized impacts included the United Kingdom bearing the brunt of uncertainty around Brexit and an increase in the consumption tax in Japan.

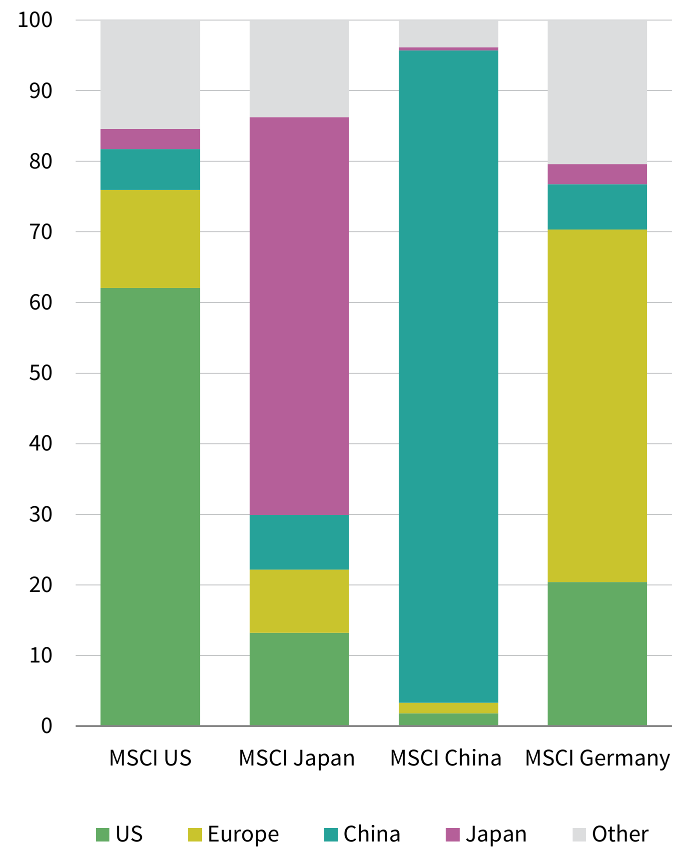
Sources: I/B/E/S, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: EPS estimates for 2019 are based on I/B/E/S aggregates of each region's respective MSCI index. Data are in local currency terms, except for emerging markets estimates, which are in US dollar terms. Estimates for Japan are based on fiscal year ended March 2020.

The most mercantile nations were disproportionately impacted by trade disputes

EXPORTS OF GOODS AS A PERCENTAGE OF GDP
As of December 31, 2018 • Percent (%)



GEOGRAPHIC REVENUE EXPOSURE
As of December 31, 2019 • Percent (%)

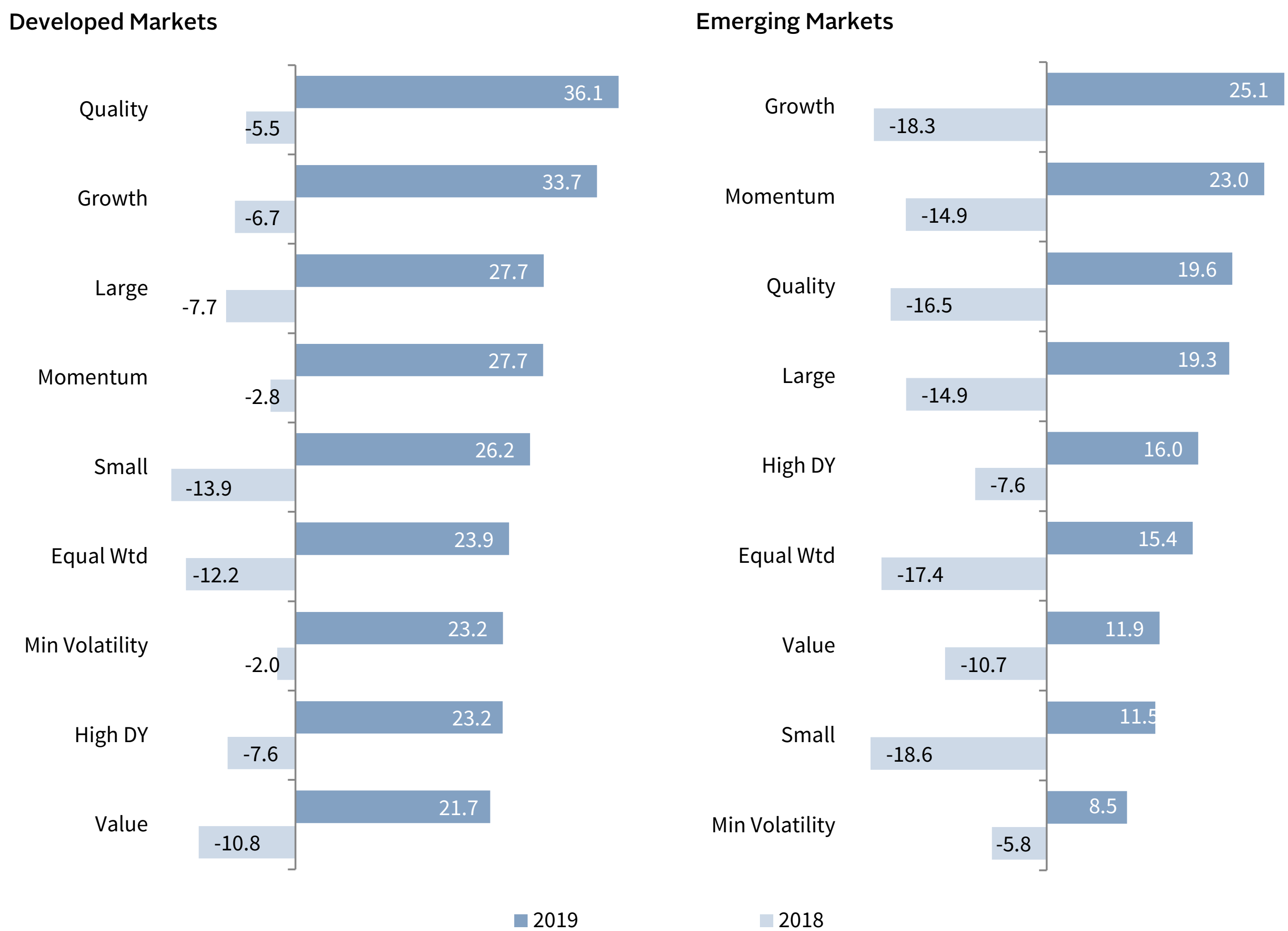


Germany's export-led growth model ensured that it was one of the most economically impacted by recent trade issues, while Japan's relatively higher share of exports bound for China was also a negative for its corporates. Growth in the United States is holding up much better than its peers; its equity market's high domestic revenue exposure contributed to its outperformance.

Sources: Factset Research Systems, International Monetary Fund, MSCI Inc., National Sources, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Uncertainty supported quality, while generalized weakness was a value headwind

EQUITY PERFORMANCE BY FACTOR AND STYLE: CY 2019 VS CY 2018
As of December 31, 2019 • US Dollar • Percent (%)



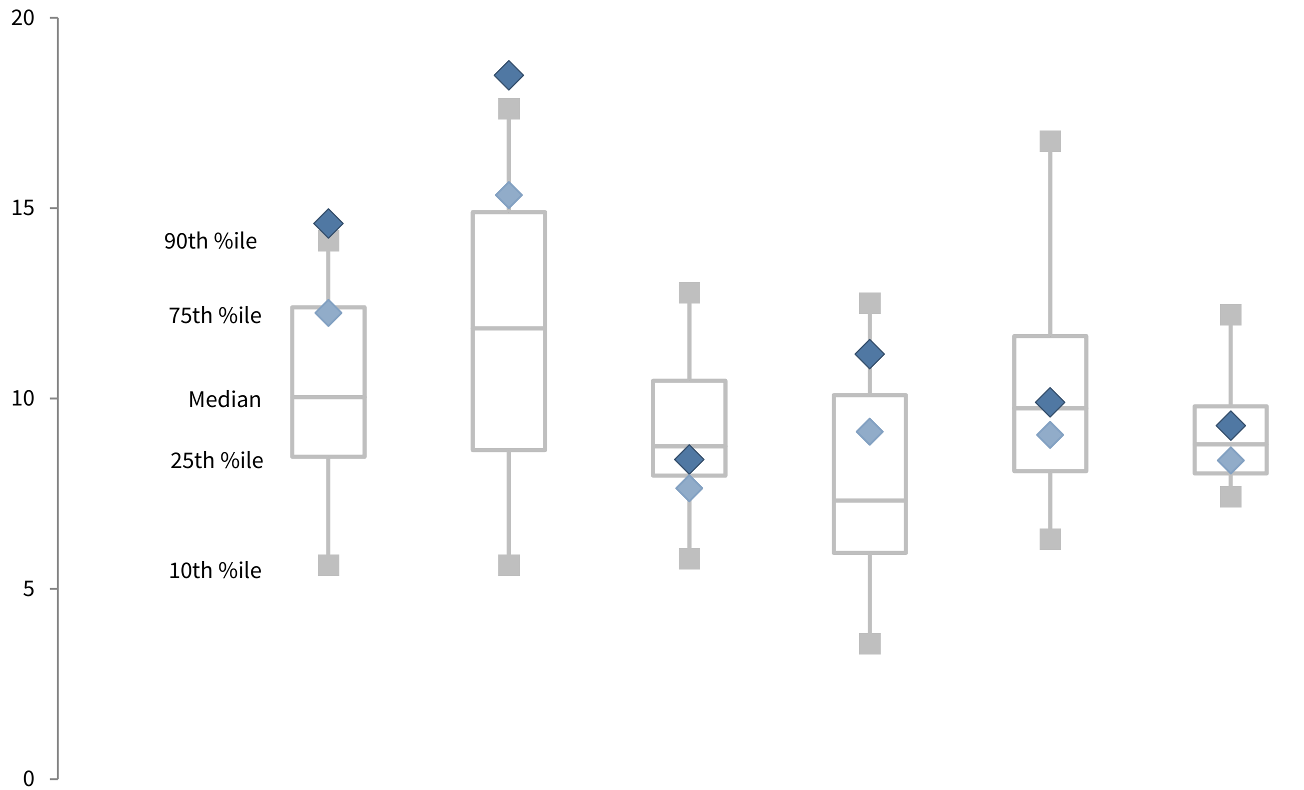
With economic uncertainty elevated and with EPS growth declining, it is perhaps unsurprising that the quality factor outperformed this year. Growth also performed strongly, as investors continued to value the ability of some of these firms to generate revenue growth. Value stocks brought up the rear because of greater sensitivity to broader economic growth and correlation to bond yields, with the picture in emerging markets broadly similar to that in developed ones.

Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Factors are based on the MSCI World Index and MSCI Emerging Markets Index. Total return data for all MSCI indexes are net of dividend taxes.

Valuations rose in all markets, led by the United States

CYCLICALLY ADJUSTED PRICE-TO-CASH EARNINGS (CAPCE) RATIOS BY REGION: CY 2019 VS CY 2018

As of December 31, 2019



% Change	World	US	UK	Europe ex UK	Japan	EM
to 50th %ile	-31.3	-36.0	4.1	-34.5	-1.5	-5.3
to 25th %ile	-42.0	-53.2	-5.1	-46.8	-18.2	-13.6
to 10th %ile	-61.5	-69.6	-31.1	-68.1	-36.3	-20.1

◆ 12/31/2019 CAPCE ◆ 12/31/2018 CAPCE

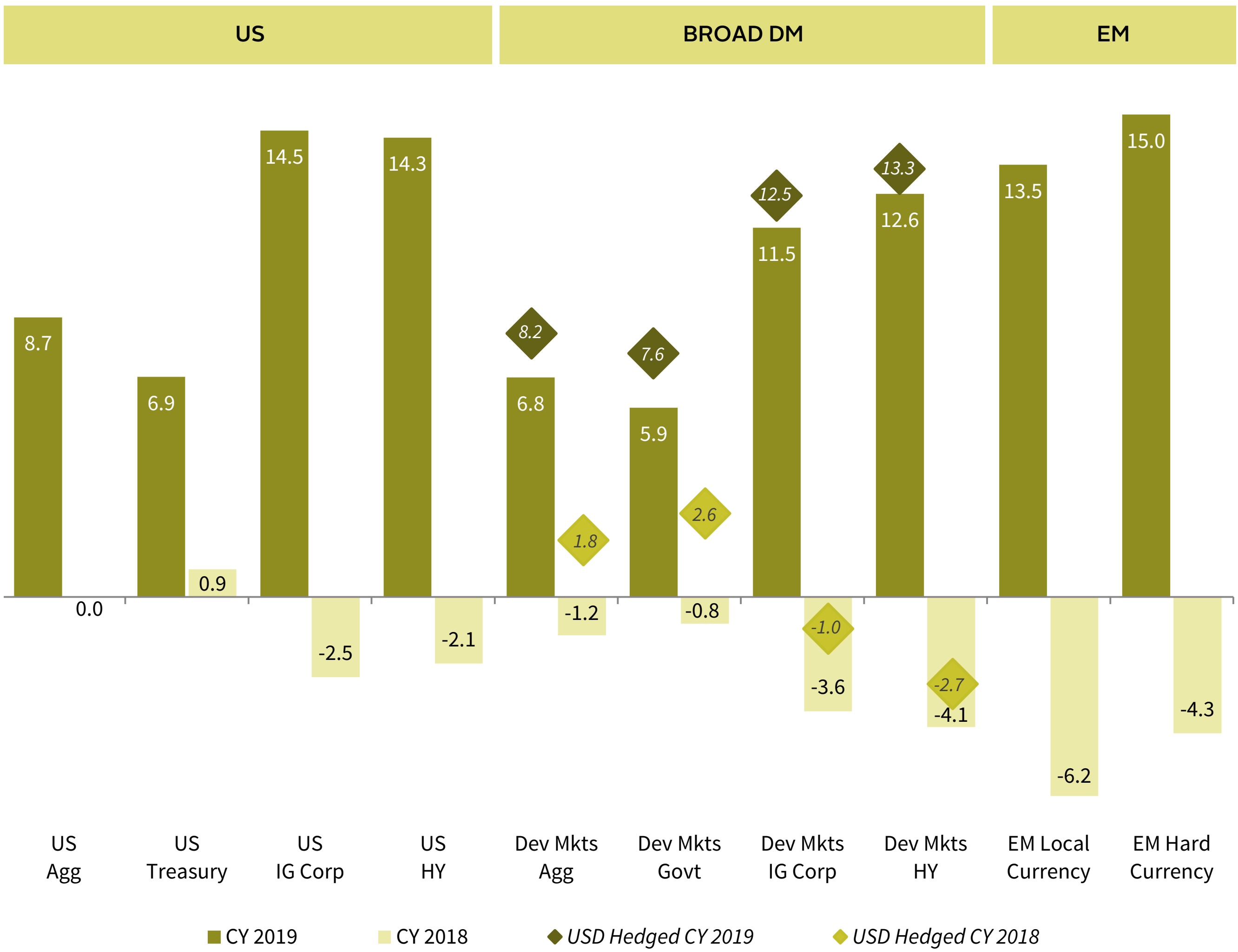
With earnings in the United States forecast to essentially flatline for CY2019, the extremely strong equity market performance was a multiple expansion story. The cyclically adjusted price-to-cash earnings ratio in that market now sits at the 93rd percentile. Multiples also expanded in Europe and Japan, with sentiment boosted by continued accommodative monetary policy, but, on a historical basis, valuations in these markets are much less extreme.

Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: The cyclically adjusted price-to-cash earnings (CAPCE) ratio is calculated by dividing the inflation-adjusted index price by trailing ten-year average inflation-adjusted cash earnings. Cash earnings are defined as net income from continuing operations plus depreciation and amortization expense. MSCI does not publish cash earnings for banks and insurance companies and therefore excludes these two industry groups from index-level cash earnings. EM is cyclically-adjusted by trailing five-year data.

Bonds delivered strong performance

GLOBAL BOND PERFORMANCE: CY 2019 VS CY 2018

Total Return (%) • US Dollar



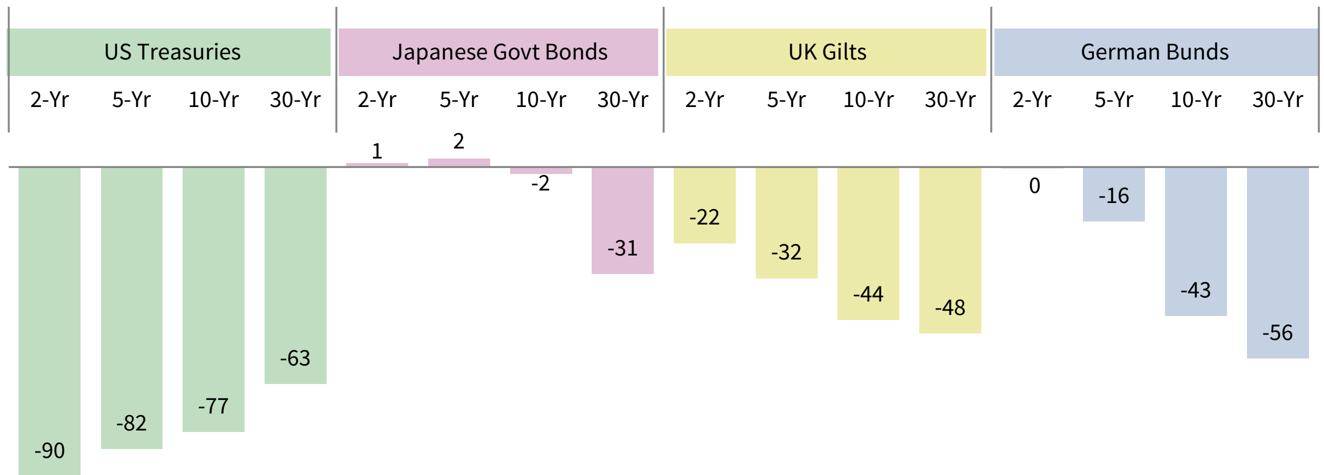
Major central banks pivoted to a more dovish stance, with inflation expectations declining, and the escalating US-China trade war diminishing the market's global growth outlook. US bonds generally outperformed global counterparts with investment-grade and high-yield corporates faring particularly well due both to Treasury yields falling and credit spreads narrowing. Hedging programs improved results vis-à-vis unhedged exposures as interest rate differentials provided additional return.

Sources: Bloomberg Index Services Limited, FTSE Fixed Income LLC, J.P. Morgan Securities, Inc., and Thomson Reuters Datastream.
Notes: Asset classes represented by Bloomberg Barclays US Aggregate Bond Index ("US Agg"), Bloomberg Barclays US Treasury Index ("US Treasury"), Bloomberg Barclays US Corporate Investment Grade Bond Index ("US IG Corp"), Bloomberg Barclays US High Yield Bond Index ("US HY"), Bloomberg Barclays Global Aggregate Bond Index ("Dev Mkts Agg"), FTSE World Government Bond Index ("Dev Mkts Govt"), Bloomberg Barclays Global Aggregate Corporate Bond Index ("Dev Mkts IG Corp"), Bloomberg Barclays Global High Yield Bond Index ("Dev Mkts HY"), J.P. Morgan Government Bond Index-Emerging Markets Global Diversified Index ("EM Local Currency") and J.P. Morgan Emerging Markets Bond Index - Global Diversified Index ("EM Hard Currency").

Longer-dated bonds generally outperformed shorter-dated ones

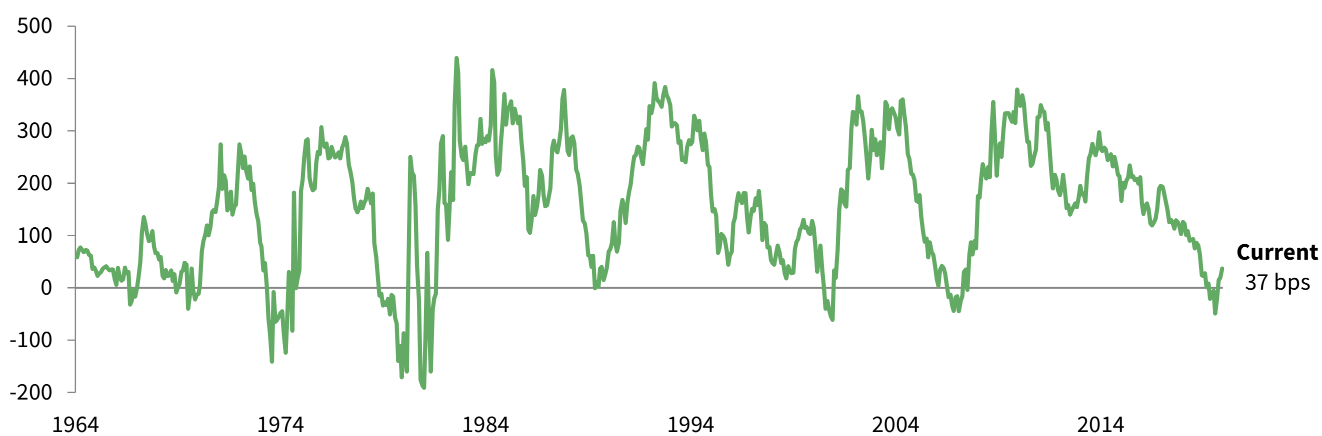
CHANGE IN YIELD VS DEC 2018 FOR VARIOUS GOVERNMENT BOND MATURITIES

As of December 31, 2019 • Basis Points (bps)



10-YR/3-MO US TREASURY YIELD SPREAD

January 31, 1964 – December 31, 2019 • Basis Points (bps)



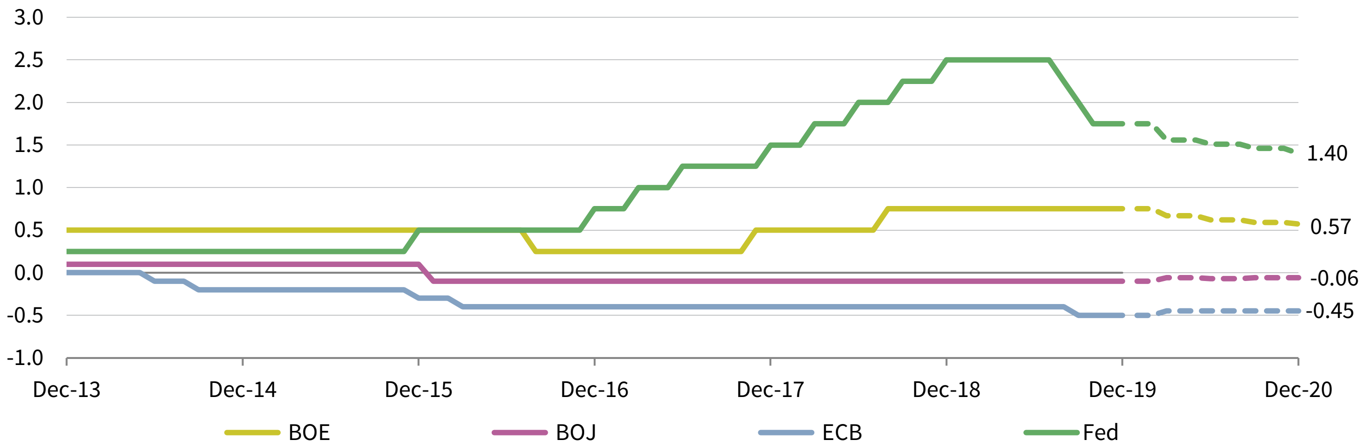
In the United States, short-dated bonds outperformed long-dated ones (in yield terms) as the Federal Reserve reversed its policy course and cut rates three times. Outside of the United States, long-dated bonds performed strongly for the same reasons that spurred US rate cuts, namely slowing growth and inflation and fears about an escalating trade war. However the inability of the central banks in those countries to cut rates much further meant that short-dated bond performance was more muted. This long-dated outperformance was also seen in the US earlier in the year and resulted in the yield curve slope turning negative, reflecting expectations of a much weaker growth environment.

Sources: Federal Reserve, Global Financial Data, Inc., and Thomson Reuters Datastream.

The Federal Reserve paused its tightening cycle and delivered three rate cuts

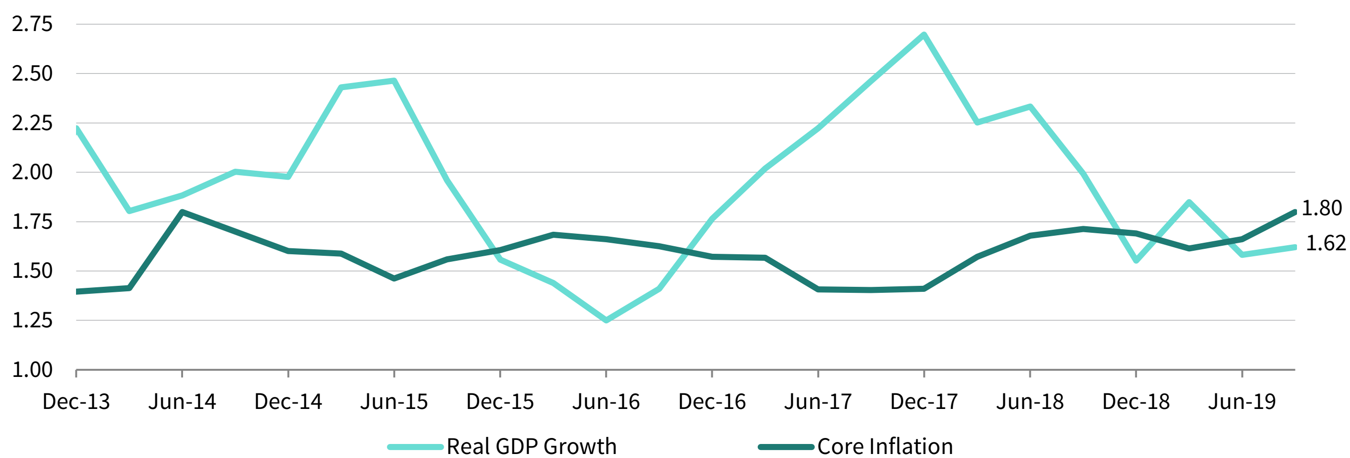
CENTRAL BANK POLICY RATES

December 31, 2013 – December 31, 2020 • Percent (%)



G7 CORE INFLATION AND GDP GROWTH

Fourth Quarter 2013 – Third Quarter 2019 • Year-Over-Year Percent Change (%)



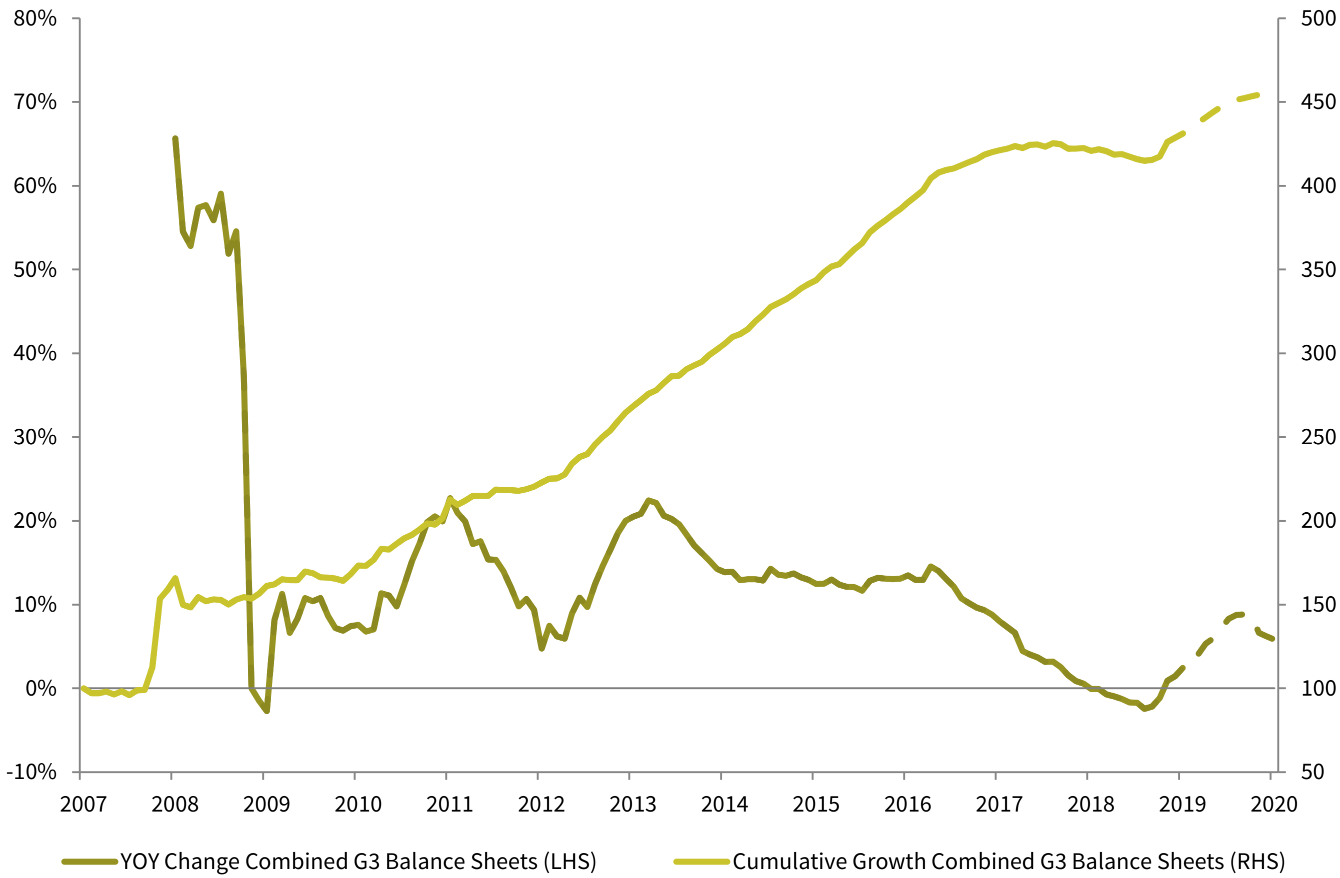
When equity markets declined rapidly at the end of 2018, reflecting mounting concerns about global growth, the Fed paused its tightening cycle and eventually began cutting rates to support the economy. Having delivered three cuts, described as insurance cuts, they now appear to be on hold for the time being, albeit markets think they will ultimately have to deliver more. With Europe also severely impacted by softening growth, the European Central Bank (ECB) decided to lower its deposit rate by 10 basis points (bps) to -0.5%.

Sources: Bloomberg L.P., OECD, and Thomson Reuters Datastream.
Note: Dashed lines (top chart) represent market-based policy rate expectations, which are based on the OIS markets.

Central bank balance sheet growth turning positive again

G3 CENTRAL BANK BALANCE SHEET GROWTH

December 31, 2007 – December 31, 2020 • December 31, 2007 = 100 • Local Currency



The Fed, after its continued balance sheet trimming led to the first sustained balance sheet contraction across the big three central banks combined, suspended this run-off as part of broader easing measures. The ECB likewise changed tack and restarted its Asset Purchase Program, as it is somewhat constrained by already having negative interest rates, and has been buying €20 billion of bonds per month since November.

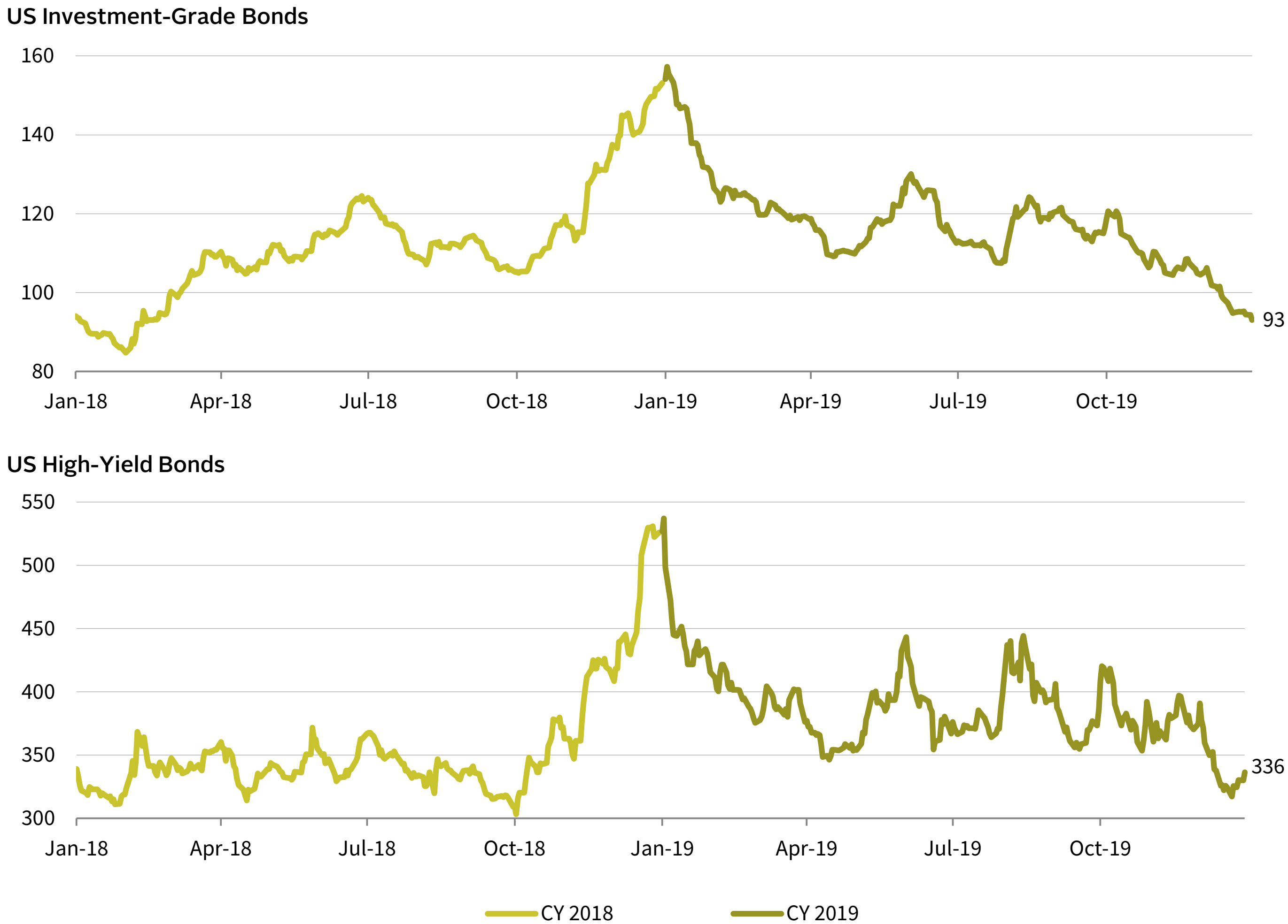
Sources: Bank of Japan, European Central Bank, Federal Reserve, and Thomson Reuters Datastream.

Notes: The combined G3 balance sheet consists of the balance sheets of the European Central Bank, US Federal Reserve, and Bank of Japan. Estimates are represented by dotted lines and begin after December 31, 2019.

Corporate bonds unwound the weakness seen in late 2018

OPTION-ADJUSTED SPREADS ON US INVESTMENT-GRADE AND HIGH-YIELD BONDS: CY 2018 & CY 2019

January 1, 2018 – December 31, 2019 • Basis Points (bps)



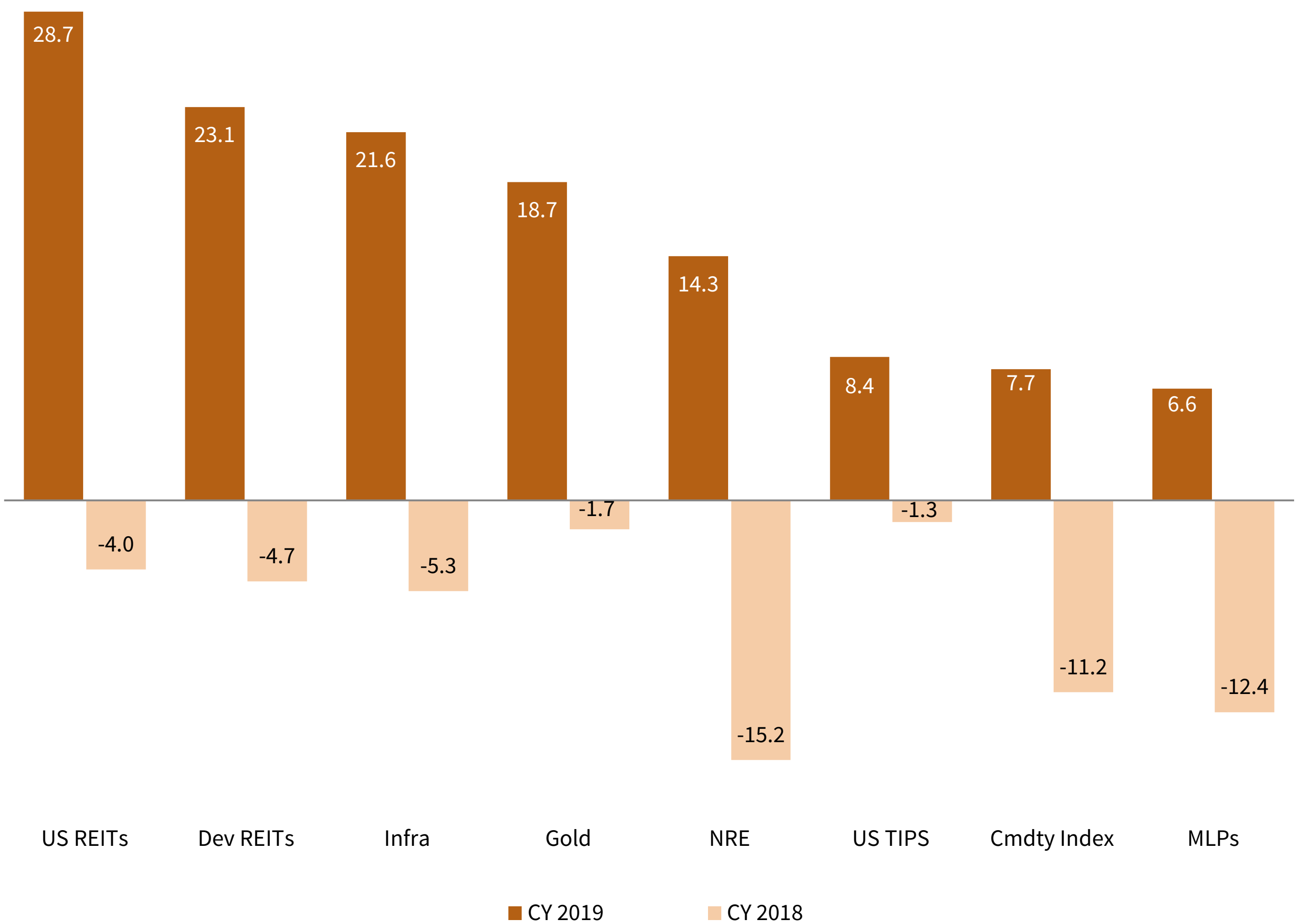
After a very strong January, investment-grade (IG) credit spreads have gradually continued to tighten, reversing all of the widening seen in fourth quarter 2018. High-yield (HY) bonds have shown a broadly similar profile, and they now trade just 33 bps wider than the post-crisis low in spreads that they saw in late 2018. The strong performance of US Treasuries, combined with this spread compression, meant that both IG and HY corporate bonds had a very strong 2019 from a total return perspective.

Sources: Bloomberg Index Services Limited and Thomson Reuters Datastream.
Notes: Data for US investment-grade and US high-yield bonds are represented by the Bloomberg Barclays US Corporate Investment Grade Bond Index and the Bloomberg Barclays US High Yield Bond Index, respectively. Data are daily.

REITs and infrastructure outperformed, while MLPs lagged

REAL ASSET AND INFLATION SENSITIVE PERFORMANCE: CY 2019 VS CY 2018

Total Return (%) • US Dollar



REITs and infrastructure delivered strong performance as plummeting interest rates reignited investors' search for yield. Gold prices climbed to six-year highs amid heightened uncertainty stemming from rising geopolitical tensions, as well as declining real rates, which also supported TIPS. MLPs lagged due to weak gas prices negatively impacting upstream producers, as well as some tax-loss harvesting in Q3 and Q4 post earlier price declines.

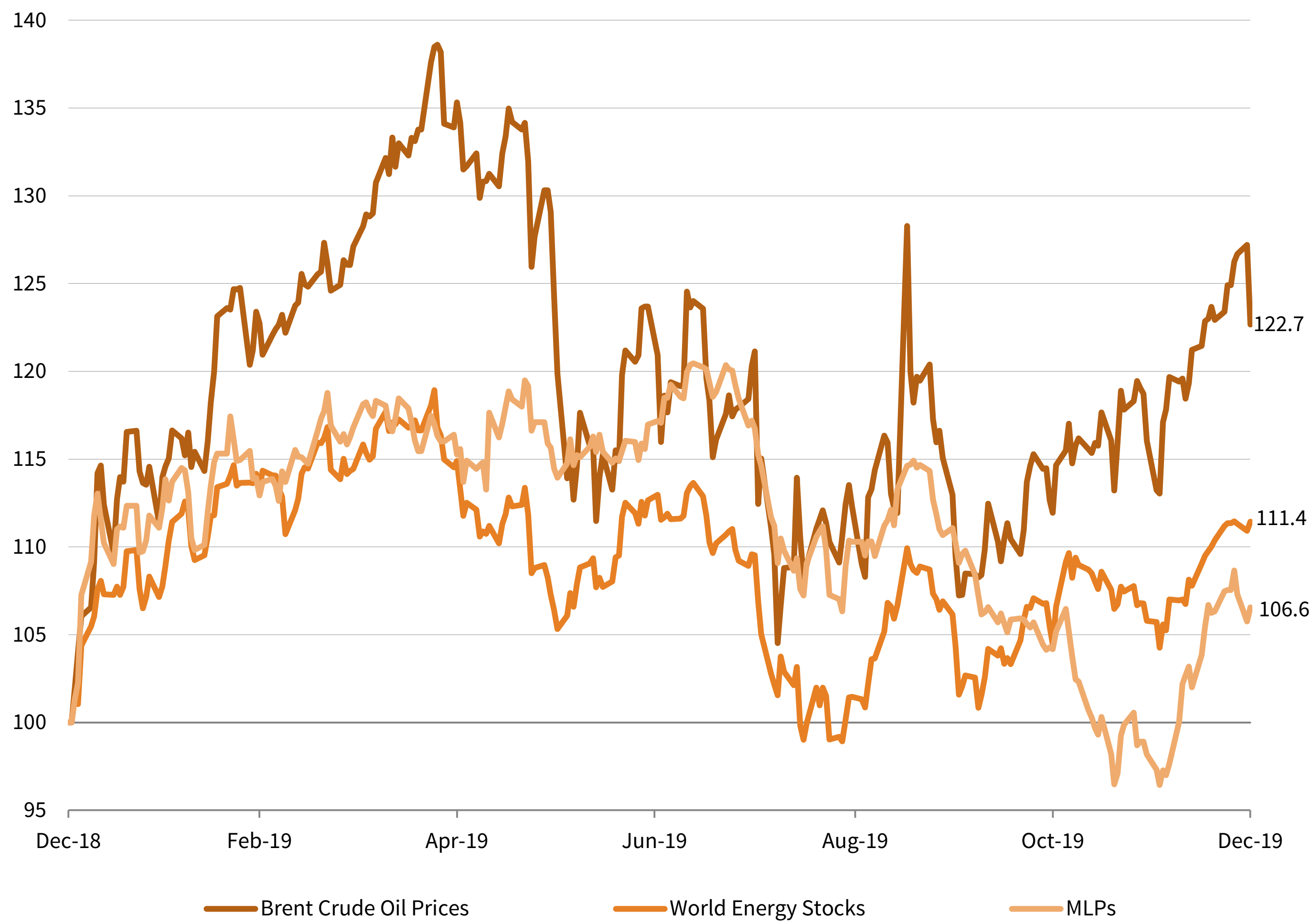
Sources: Alerian, Bloomberg Index Services Limited, Bloomberg L.P., EPRA, FTSE International Limited, Intercontinental Exchange, Inc., MSCI Inc., National Association of Real Estate Investment Trusts, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: All returns are total returns, except those for gold, which are based on spot price returns. Asset classes represented by the following: FTSE® NAREIT All Equity REITs Index ("US REITs"), LBMA Gold Price ("Gold"), MSCI World Infrastructure Index ("Infra"), FTSE® EPRA/NAREIT Developed Real Estate Index ("Dev REITs"), Bloomberg Barclays US TIPS Index ("US TIPS"), Alerian MLP Total Return Index ("MLPs"), market cap-weighted Datastream World Energy Index and Datastream World Basic Resources Index blend ("NRE"), and Bloomberg Commodity TR Index ("Cmdty"). Total return data for all MSCI indexes are net of dividend taxes.

It was a volatile year for oil and oil-linked assets

PERFORMANCE OF SELECT ENERGY ASSETS

December 31, 2018 – December 31, 2019 • December 31, 2018 =100 • US Dollar



Oil prices enjoyed a very strong start to the year, supported by a number of factors such as embargoes on Iranian oil exports, OPEC shying away from any production increases, and tensions in the Middle East—highlighted by attacks on oil pipelines and tankers—continuing to escalate. Most of these gains rapidly evaporated, however, as trade war fears grew and global slowdown concerns mounted. An attack on a Saudi oil processing facility caused a sharp jump in prices in the third quarter, but production disruptions proved to be limited.

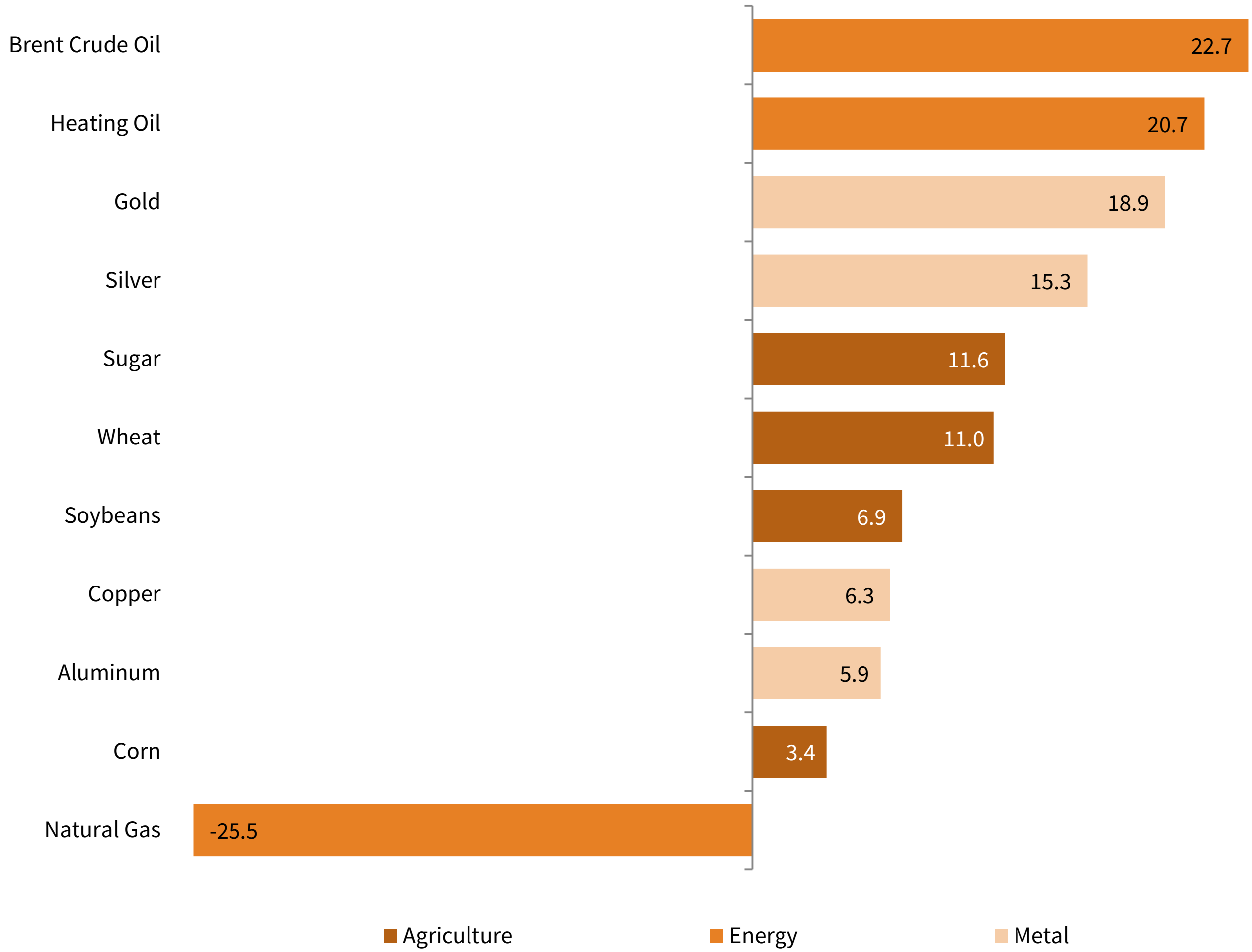
Sources: Alerian, Bloomberg L.P., Intercontinental Exchange, Inc., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Brent Crude Oil Prices, World Energy Stocks, and MLPs are represented by the ICE Brent Crude Near-Month Futures, MSCI World Energy Index, and the Alerian MLP Total Return Index, respectively. Total return data for all MSCI indexes are net of dividend taxes. Data are daily.

Most commodity prices rallied, reversing 2018 declines, with natural gas the outlier

SELECT COMMODITY SPOT PERFORMANCE: CY 2019

As of December 31, 2019 • Percent (%) • US Dollar



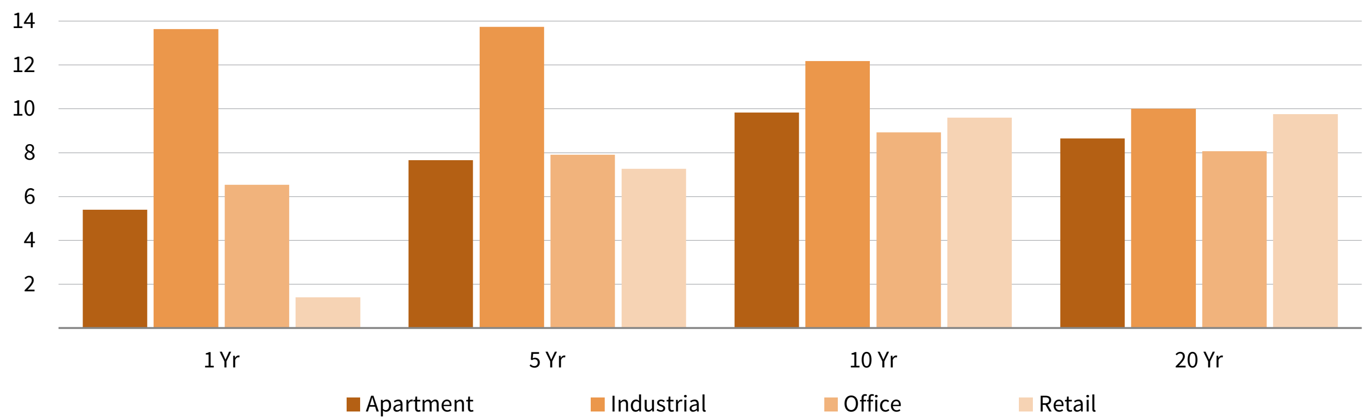
In 2019, most commodities rallied to some extent, reversing some of the declines seen in 2018. Copper prices, often a barometer of economic health, were up moderately, reflecting continuing uneasiness over the economic outlook but also some optimism about a gradual recovery. Gold performed strongly due to elevated uncertainty and declining real yields. Natural gas stood out due to its weak performance, as it struggled to digest a supply glut. An increase in export capacity and slower demand growth in Asia led to a surplus environment.

Source: Bloomberg L.P.
Note: Spot returns reflect changes in near-month futures contracts, as reported by Bloomberg L.P.

Strong year for industrial property also sees retail lagging

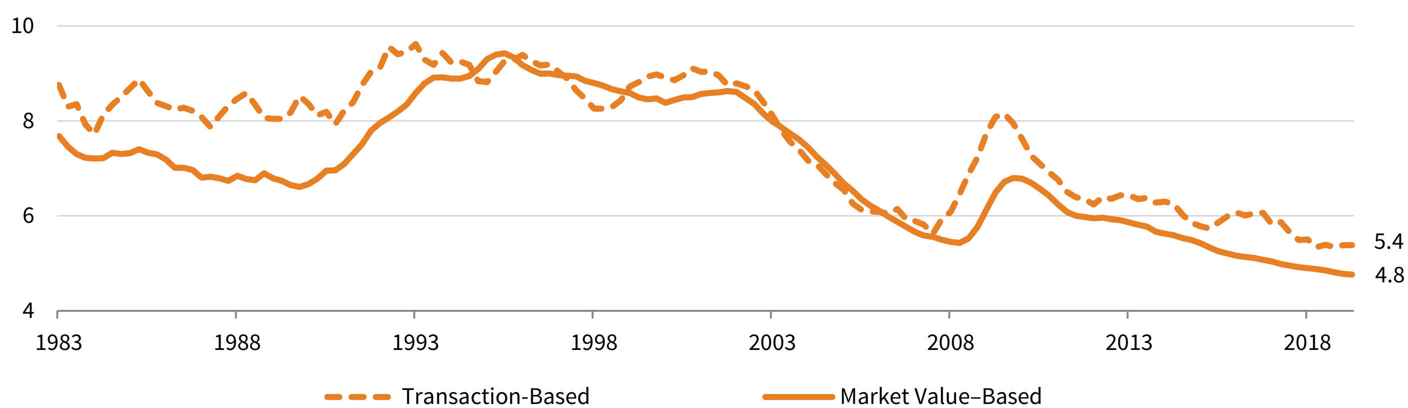
RETURNS BY PROPERTY TYPE

As of Third Quarter 2019 • Total Return (%) • US Dollar



ALL PROPERTY CAP RATES

Second Quarter 1983 – Third Quarter 2019 • Percent (%)

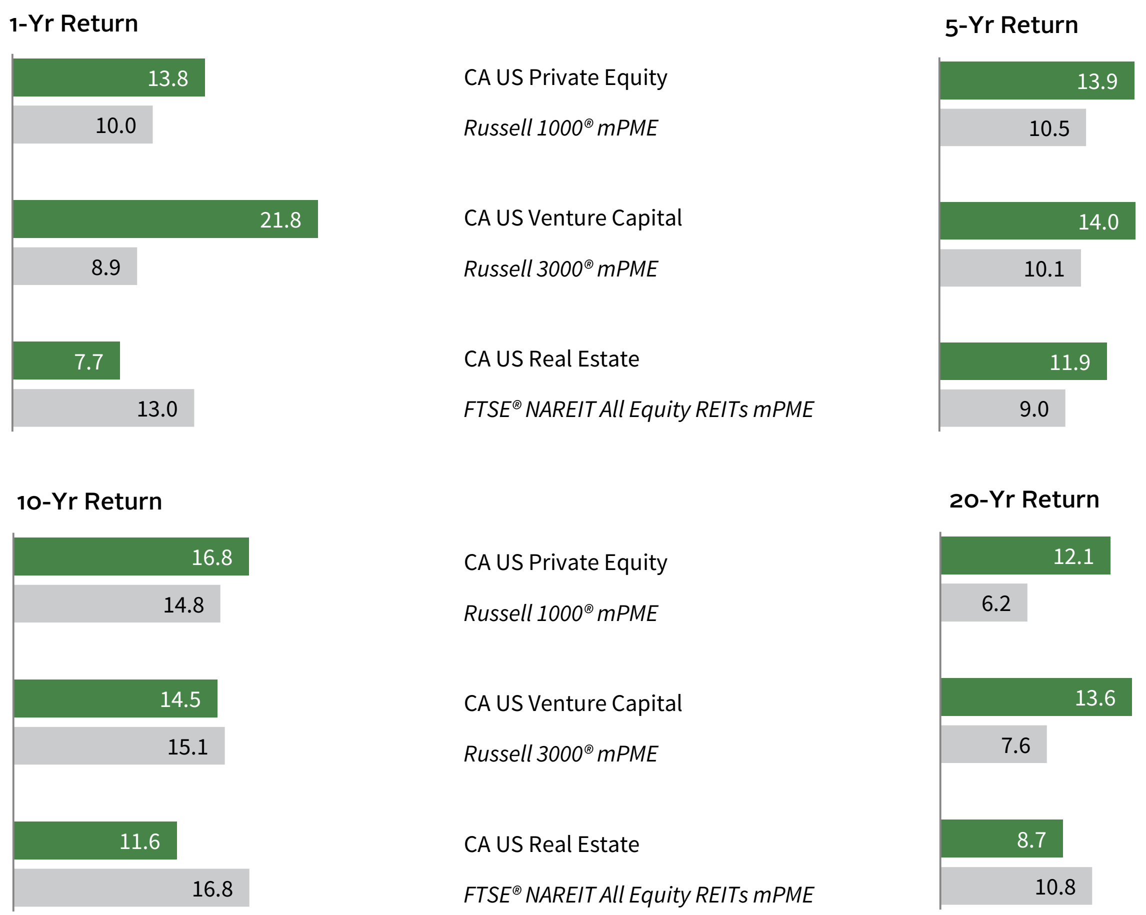


Continued e-commerce and logistics expansion meant industrial properties enjoyed some of the strongest net operating income growth on record, largely at the expense of retail properties. Falling cap rates, as a result of low inflation and falling long-term interest rates, and declining vacancy rates, provided an additional tailwind across property types.

Source: National Council of Real Estate Investment Fiduciaries.
Notes: Cap-rate data represent a four-quarter moving average. All data are quarterly.

Private investments outperformed public equivalents in recent years

PERFORMANCE OF SELECT CAMBRIDGE ASSOCIATES PRIVATE INVESTMENT INDEXES VS PUBLIC EQUIVALENTS
As of Second Quarter 2019 • Percent (%)



US private equity markets have outperformed public markets over all trailing periods. US venture capital delivered the greatest degree of outperformance over the most recent one- and five-year periods, while also significantly outperforming over the long term. US real estate has underperformed public REITs recently, which have been supported by the aggressive yield bid as a result of declining economic growth and inflation expectations.

Sources: Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, National Association of Real Estate Investment Trusts, and Thomson Reuters Datastream.
Notes: Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest. The CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME net asset value is a function of mPME cash flows and public index returns.

Strong year for hedge fund returns, broad-based across strategies

HEDGE FUND PERFORMANCE: CY 2019
Total Return (%) • US Dollar

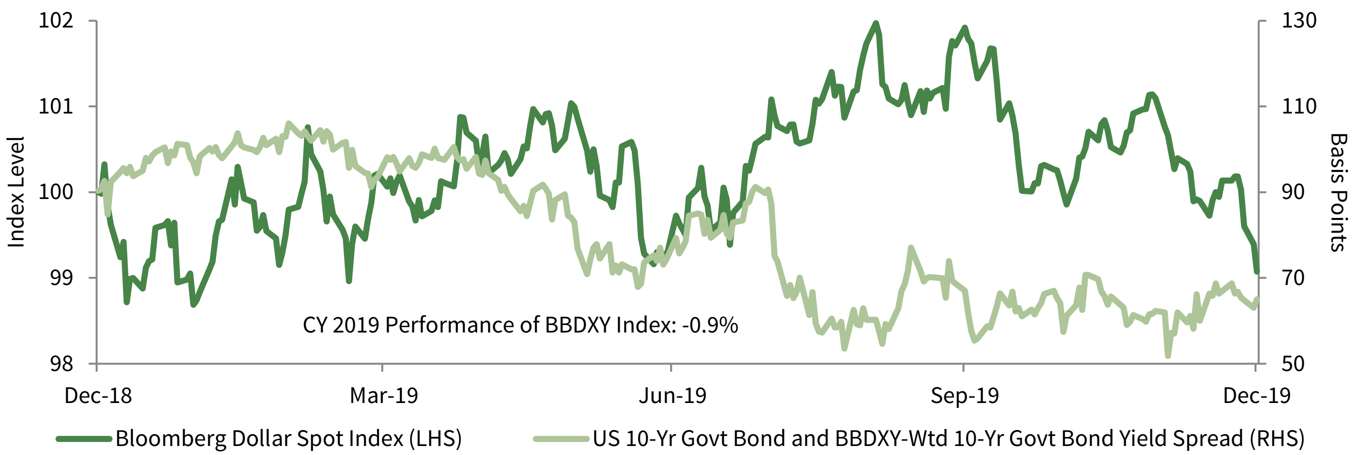
Preliminary data from Hedge Fund Research, Inc., suggest performance across the primary hedge fund strategies was strong in calendar year 2019, with the widely followed HFRI Fund Weighted Composite up a preliminary 10.4%. Equity hedge funds indicate a long bias this year as evidenced by a strong 13%+ performance, while market neutral funds saw less benefit from the very strong performance of stock markets. The economic and geopolitical gyrations of the year also presented an opportunity-rich year for macro and relative value funds.

Source: Hedge Fund Research, Inc.
Note: Hedge Fund Research data are preliminary for the preceding five months.

The US dollar finished marginally lower on the year

BLOOMBERG DOLLAR SPOT INDEX (BBDXY) AND 10-YR GOVERNMENT BOND YIELD SPREAD

December 31, 2018 – Decmeber 31, 2019 • December 31, 2018 = 100



US DOLLAR TO CHINESE YUAN EXCHANGE RATE

December 31, 2018 – December 31, 2019

The US dollar declined modestly versus a basket of global currencies for calendar year 2019. During the first half of the year, the dollar broadly tracked the interest rate spread of US bonds versus global bonds. However, as the trade conflict escalated later in the year, the dollar became the beneficiary of a flight-to-quality bid. This was particularly noticeable in the middle of the third quarter as Chinese authorities let the renminbi depreciate beyond the psychologically important level of seven versus the dollar. As some fears subsided later on in the year the dollar declined to levels more consistent with interest rate differentials.

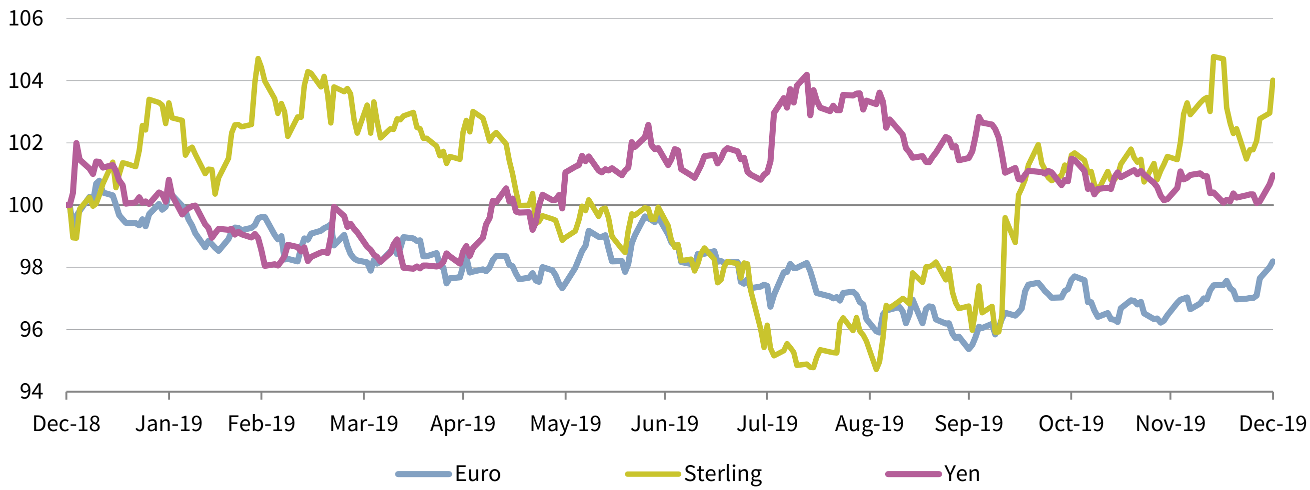
Sources: Bloomberg L.P., MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: The Bloomberg Dollar Spot Index (BBDXY) tracks the performance of a basket of 10 global currencies versus the U.S. Dollar. The BBDXY-weighted yield uses the BBDXY weights to calculate a weighted 10-year government bond yield: EMU (32%), Japan (18%), Canada (11%), UK (10%), Mexico (10%), Australia (5%), Switzerland (5%), South Korea (4%), China (3%) and India (2%). BBDXY and USD/CNY data are daily.

Developed markets currencies were mixed, while the yuan led emerging currencies lower

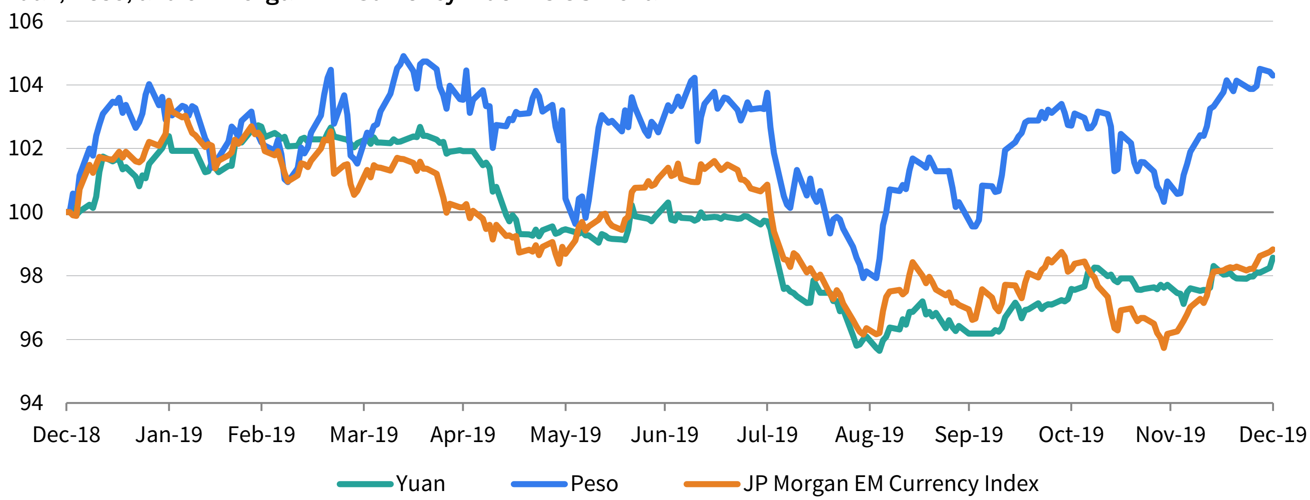
SELECT NOMINAL CURRENCY MOVEMENTS VS THE US DOLLAR

December 31, 2018 – December 31, 2019 • December 31, 2018 = 100

Euro, Sterling, and Yen vs US Dollar



Yuan, Peso, and JP Morgan EM Currency Index vs US Dollar



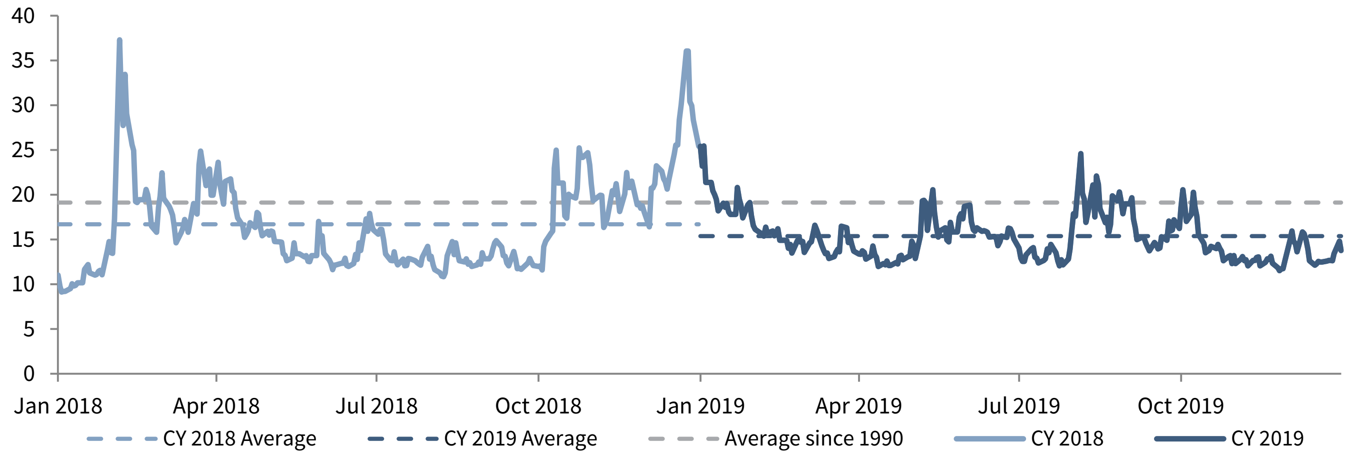
Sources: J.P. Morgan Securities, Inc. and Thomson Reuters Datastream.
Note: Data are daily.

The dollar's performance against the primary developed markets currencies was mixed. The Eurozone's economic weakness on the back of the trade wars, along with the ECB's decision to both cut rates and restart quantitative easing, caused the euro to weaken. By contrast, sterling rallied later in the year as investors embraced the growing likelihood of a Conservative Party election victory. The weakness of the Chinese Yuan dragged overall EM currency performance lower, while the Mexican peso finished the year stronger due primarily to the signing of the USMCA trade agreement.

Equity volatility declined after a spike and finished below historical average levels

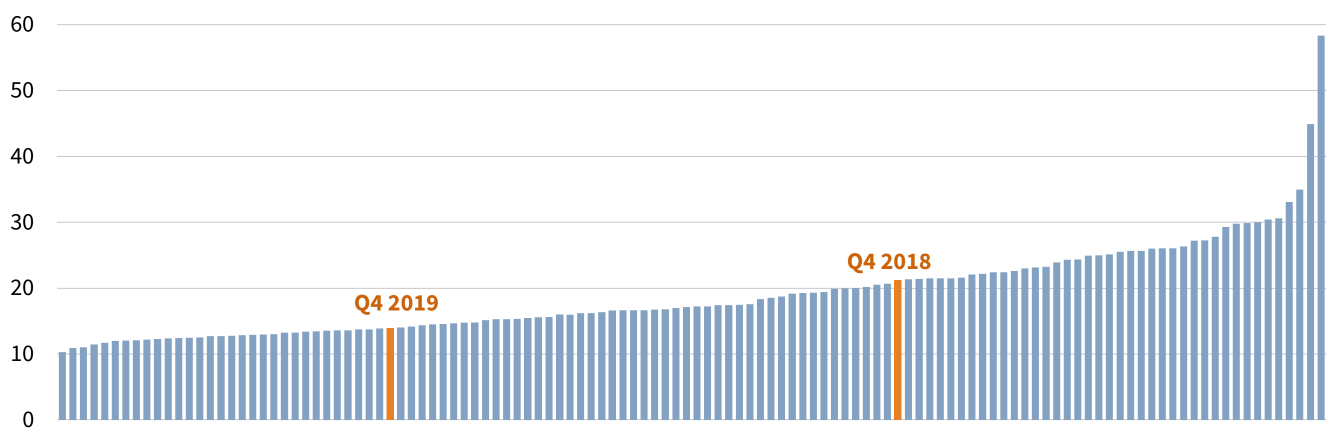
S&P 500 IMPLIED VOLATILITY: CY 2018 & CY 2019

January 1, 2018 – December 31, 2019 • Index Level



QUARTERLY AVERAGE S&P 500 IMPLIED VOLATILITY SORTED IN ASCENDING ORDER

First Quarter 1990 – Fourth Quarter 2019



Over the course of CY2019, quarterly average equity volatility declined. This decline came after an elevated VIX level during the market sell-off in fourth quarter 2018. The headline tennis of the trade war also spurred several bouts of above-average volatility during the course of the year.

Sources: Chicago Board Options Exchange and Thomas Reuters Datastream.

Notes: The Chicago Board Options Exchange Volatility Index (VIX) measures the implied volatility of near-term S&P 500 Index options. Data are daily. Bottom chart calculates average VIX observed for each quarter based on daily closes.

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