CBRE

Econometric Advisors

U.S. MACRO OUTLOOK AND FORECAST SCENARIOS

Q4 2018

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ECONOMIC GROWTH TO REMAIN HEALTHY IN 2019, MODERATING SLIGHTLY
JOB GAINS LIKELY TO SLOW AS POOL OF AVAILABLE LABOR SHRINKS

GDP GROWTH LIKELY SLOWED IN Q4, AS PERSONAL CONSUMPTION SLOWED SIGNIFICANTLY. JANUARY JOB GAINS BEAT EXPECTATIONS, WHILE WAGE GAINS REMAINED ABOVE THE 3% THRESHOLD.

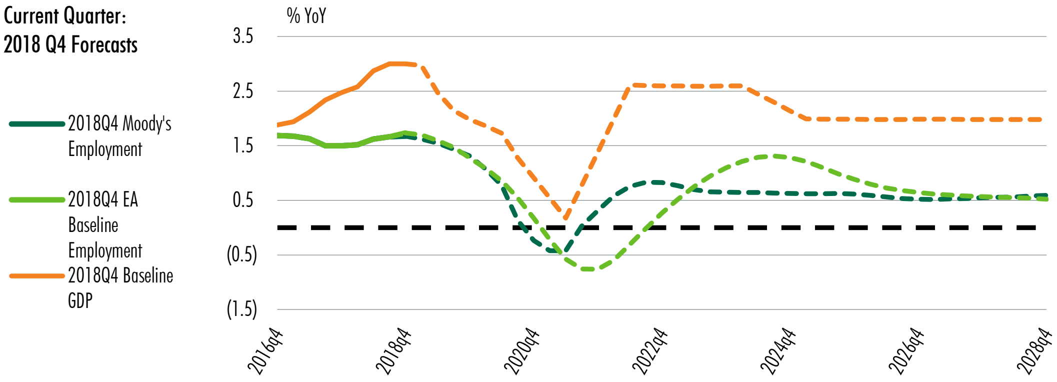
- *Buoyant economic growth, driven by strong corporate and consumer confidence, characterized 2018. Consumer confidence remains elevated, but survey data suggest it may have since declined to a Trump-administration low owing to since the 35-day partial government shutdown.*
- *Business confidence has also been shaken by the U.S.-China trade dispute and financial market volatility. Though the government shutdown's direct impact is negligible, several negative knock-on effects rippling through the U.S. economy are a cause for concern.*
- *January's jobs report showed solid gains across all economic sectors. Average monthly job gains for 2018 stood at a solid 218,000. Unemployment remains at its lowest rate in nearly two generations. The fiscal stimulus will continue to benefit consumers, but with the economy at or near full employment, job growth will likely moderate in 2019.*
- *Wage growth reached 3.2% in January, consistent with a tightening labor market. Although wage growth is significantly better than it has been throughout the expansion, it still isn't historically commensurate with current unemployment levels, nor is it keeping pace with the spending consumers have registered over the past three quarters.*

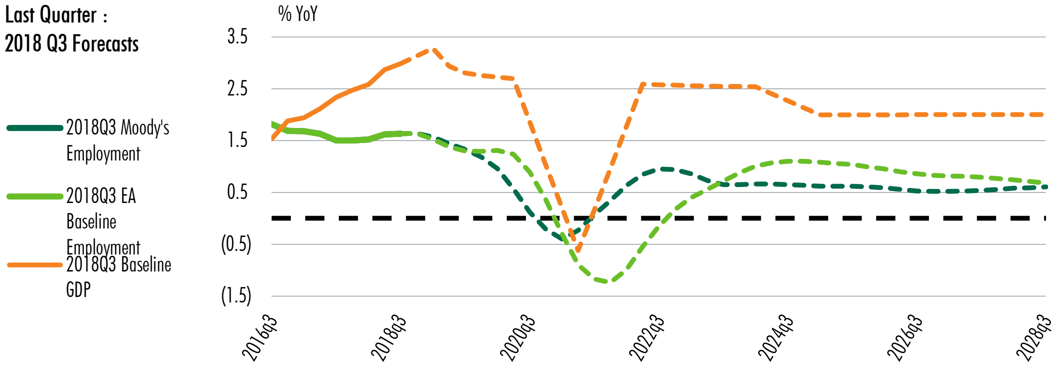
OUTLOOK: ECONOMIC GROWTH TO MODERATE IN 2019; A MILD DOWNTURN BY MID-2020

- *We have revised our U.S. growth forecast downward for 2019 due to cooling consumer and business optimism, slower global growth, the lagged effects of tighter monetary policy, and trade uncertainties. This year should see growth moderate from 2018 rates, though it will remain reasonable (we expect 2.4% in Q1 vs. 2.7% in Q4 2018).*
- *By H2 2020, we expect the economy to slow in reaction to higher interest rates, equity market corrections and credit market problems, with some shrinkage in employment. This relatively mild and quick downturn will be less pronounced than our Q3 outlook anticipated.*
- *Recent statements from the Fed have taken a more dovish stance towards monetary policy. We therefore expect two rate hikes during H2 2019 if wage growth and inflation surge.*

HOW HAVE OUR FORECASTS CHANGED SINCE LAST QUARTER?

THE DOWNTURN STARTING MID-2020 TO BE LESS PRONOUNCED; TIMING OF THE DOWNTURN REMAINS UNCHANGED



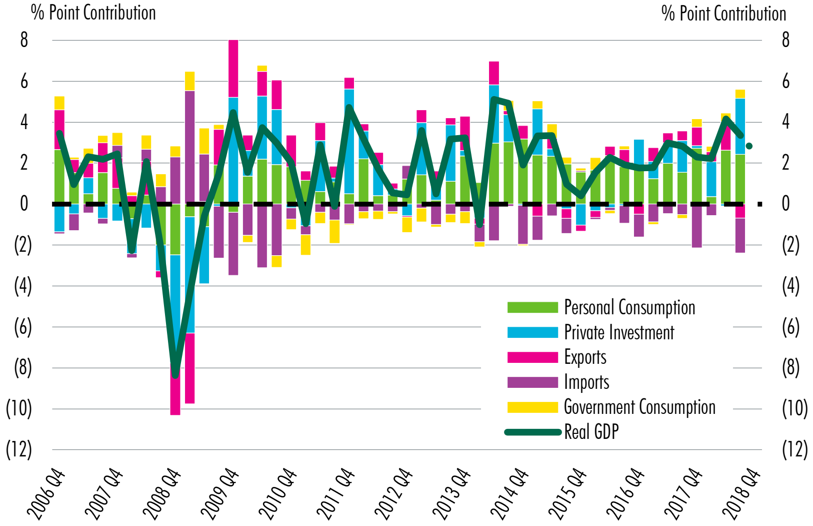


- We don't expect the downturn starting mid-2020 be as pronounced as we did in Q3. This is reflected in our employment numbers at the national and the metro levels. Our expectation for the downturn's timing remains unchanged.
- Global growth slowed toward the end of 2018. China's growth did too, its factory activity and exports to the U.S. slowing most in December.
- Slower global growth and the stock market turbulence near the end of 2018 have led the Fed to take a more dovish stance toward monetary policy. We now expect two rate hikes in the second half of 2019.
- Financial conditions may therefore tighten less quickly than we thought in Q3.
- Our decreased pessimism from Q3 to Q4 is largely due to a potentially less binding monetary policy and the possibility of a breakthrough in the U.S.-China trade dispute, as the Chinese economy slows.
- However, we still expect a downturn in mid-2020, as rising interest rates (especially short term rates) would weigh on business and consumer activity. Higher rates and possibly wages would also bring further volatility in equity markets with a major correction possible.
- Moreover, as the fiscal boost's effects fade, the government's constraints on any additional spending would in fact be a drag on growth.

Source: CBRE Econometric Advisors, Moody's; Q4 2018.

Q4 GDP ESTIMATES DELAYED; SLOWER GROWTH EXPECTED IN THE FINAL QUARTER

…AS PERSONAL CONSUMPTION LIKELY SLOWED DUE TO RETAIL SALES SURPRISING TO THE DOWNSIDE IN DECEMBER

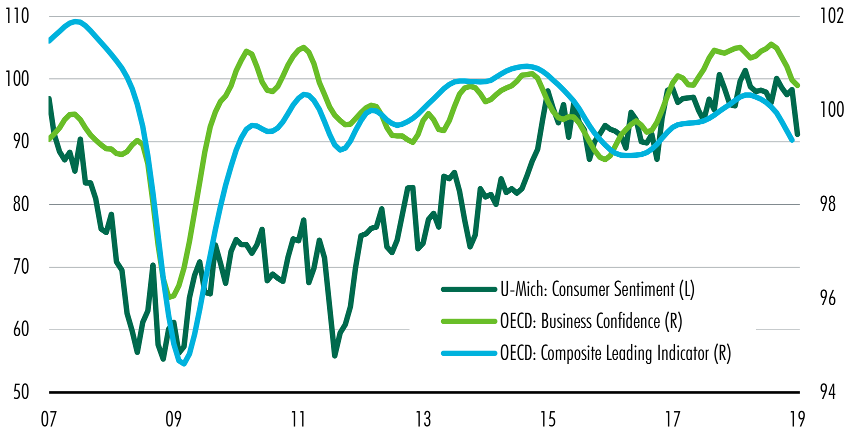


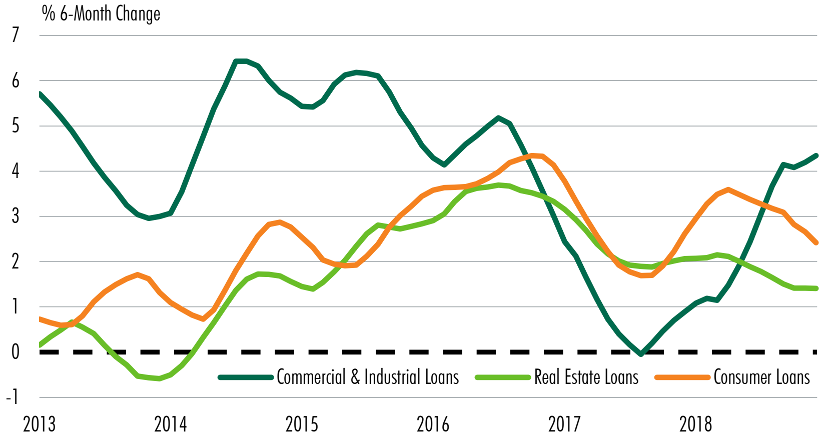
- GDP likely expanded at an annualized rate of 1.5% in Q4 2018, according to the Atlanta Fed, due to slower growth in personal consumption. Indeed, retail sales' 1.2% decline in December was its steepest fall since September 2009. Other market estimates of Q4 GDP range from 2.0% to 2.5% annualized; EA's is 2.3%.
- Moreover, December's volatile stock market likely reactivated some long-dormant wealth effects. As equity markets tumbled, consumers likely deferred/shelved some holiday purchases as they saw (in effect) their savings eroded.
- Trade was likely less of a drag on overall Q4 GDP, however. The trade deficit narrowed to $49 billion in November (from $56 billion) as imports dropped by $8 billion due to weakness in petroleum and cellphone imports.

Source: FRED Economic Data – St. Louis Fed; CBRE Econometric Advisors, Q4 2018

WHY WILL GROWTH MODERATE IN 2019?

WEAKER FORWARD-LOOKING SURVEY DATA; SOFTER CREDIT GROWTH IN THE CONSUMER AND REAL ESTATE SECTORS



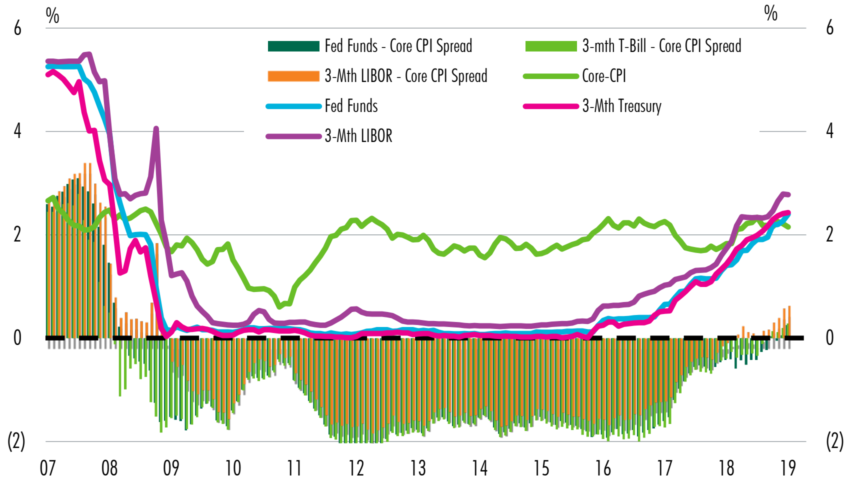


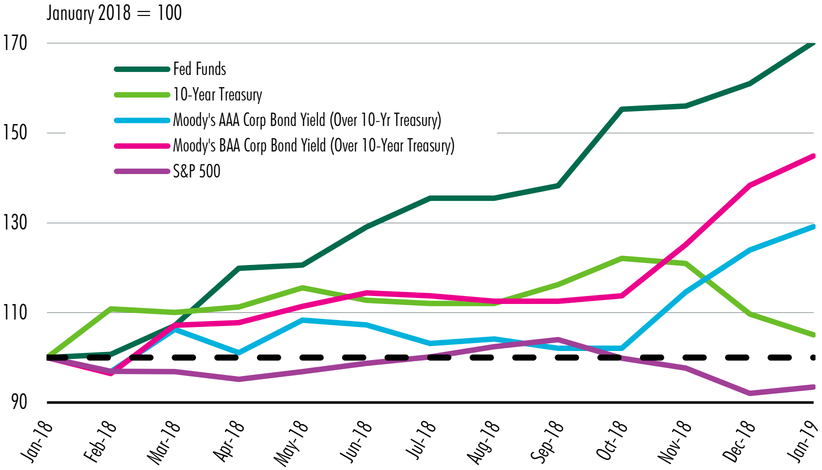
- After a notable deterioration in U.S. consumer sentiment in January, the data showed significant improvement in February—though it remained below average for the period since President Trump's election. The rebound is largely a response to the end of the partial government shutdown, but also reflects a shift in consumer expectations due to the more dovish approach to monetary policy the Fed has taken in its recent statements.
- It remains to be seen whether the consumer sentiment will last, however. Credit data show that, despite solid job growth and better wage growth, consumer loans (auto and credit card) were gradually slowing well before the stock markets turned volatile and the government shut down. That being said, consumers should continue to benefit from the remaining impact of the fiscal boost and the recent fall in gas prices. Consumer sentiment will also depend on how work to avoid further government shutdowns, and negotiations between Beijing and Washington to end the ongoing trade war, evolve.
- There has also been broad-based deterioration in the OECD's U.S. business confidence and leading indicator indices, owing to uncertainty fostered by the ongoing trade war and the stock market volatility. Since November, analysts have repeatedly revised downward S&P 500 quarterly earnings growth, envisioning deep cuts for 2019 as firms struggle with tight margins and high debt. We can expect slower and lower capex spends from firms.

Source: FRED Economic Data – St. Louis Fed; OECD; University of Michigan; Moody's; CBRE Econometric Advisors, Q4 2018

WHY WILL GROWTH MODERATE IN 2019?

SHORT-TERM REAL RATES HAVE TURNED POSITIVE; FINANCIAL CONDITIONS MATERIALLY TIGHTER



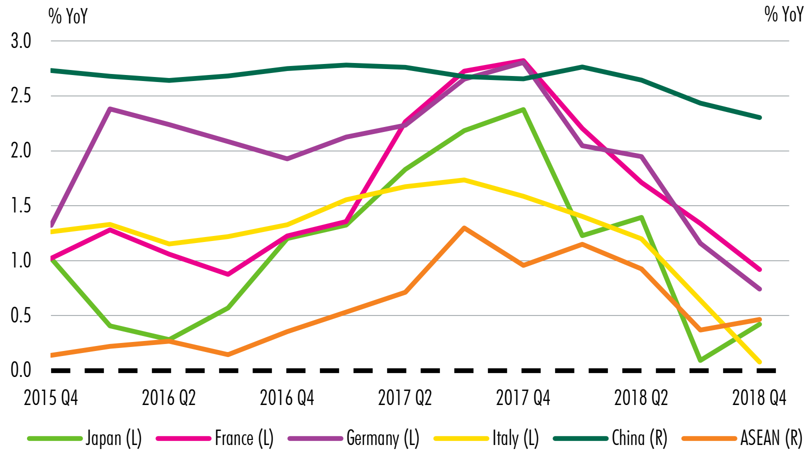


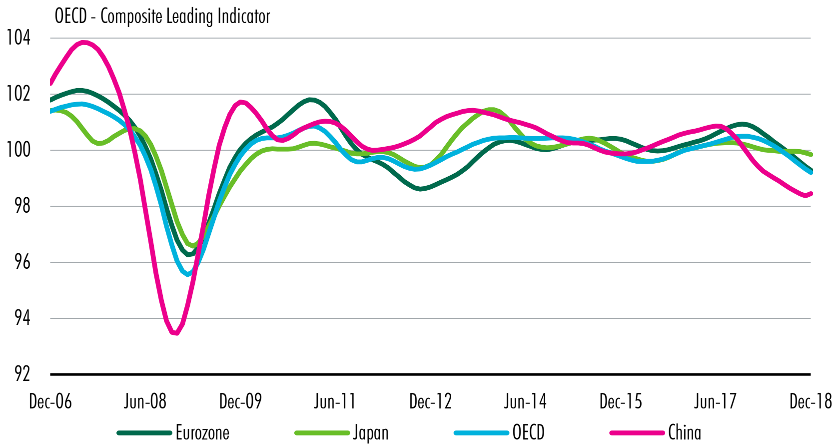
- With core CPI holding steady at 2% or near it, short-term real interest rates have turned positive as nominal rates have climbed past core CPI. Were we to take headline CPI into account, short-term real rates' increase becomes even more stark. While this is good news for savers investing in short-term securities and helps explain why Americans' confidence in their own finances are at a high, higher real rates will mean higher real costs of borrowing when it comes to short-to-medium-duration consumer loans (auto, credit card), which have already been declining (as we noted in the previous slide).
- Corporate credit spreads have also widened since late 2018, suggesting that investor sentiment has turned more negative toward the long-term outlook for corporate credit. Again, this does not come as a surprise as analysts have repeatedly revised the corporate earnings outlook downward; U.S. corporations have taken on more risky debt in recent years, which leaves room for significant credit risk—especially when interest rates are on the rise. The debt of U.S. BBB rated 10-year-plus index, for instance, more than tripled over the past 10 years, to $878 billion from $235 billion.

Source: FRED Economic Data – St. Louis Fed; CBRE Econometric Advisors, Q4 2018

GLOBAL GROWTH ALSO SEEN TO BE WEAKENING

GROWTH HAS SLOWED ACROSS EUROPE AND ASIA; LEADING INDICATORS SUGGEST A FURTHER WEAKENING



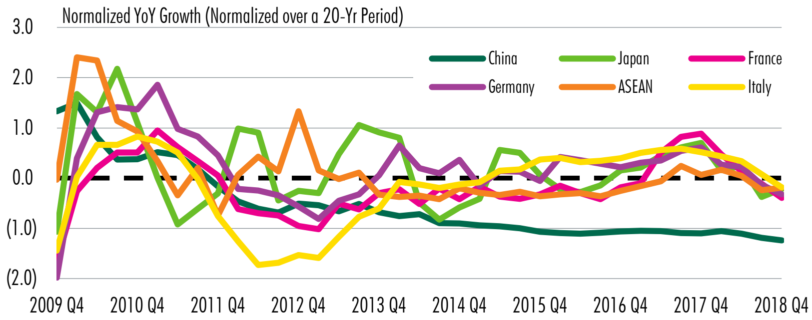


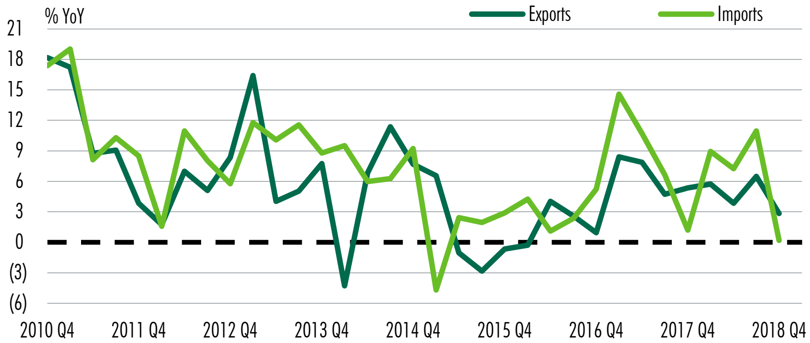
- The International Monetary Fund downgraded its expectations for the global economy, citing a rapidly slowing euro zone—especially Germany, France and Italy. Germany's exports have weakened, while its auto sector is still trying to adjust to new regulations. France has yet to rebound from street protests over a climate tax that have dampened economic sentiment. Meanwhile, Italy continues to battle debt problems and weak consumer spending. The European Commission has sharply downgraded its forecast for euro zone economic growth in 2019 and 2020.
- The OECD's composite leading indicator for Eurozone, the OECD group of nations, Japan and China also suggests that further weakening is imminent.
- The ongoing trade war, the potential for Britain to leave the European Union without a final agreement with the E.U., rising interest rates, high global debt levels, and more polarized politics around the world have been highlighted by the IMF and other institutions as potential downside risks that could lead to a sharp decline in global growth.

Source: Oxford Economics, OECD, CBRE Econometric Advisors; Q4 2018.

CHINA'S GROWTH—A PARTICULAR CONCERN

CHINESE GROWTH HAS CONTINUED TO EDGE LOWER; CHINESE IMPORTS TOO HAVE SEEN A SLUMP





- The slowing Chinese economy is of particular concern for world growth, and pressure from tightening financial regulations and U.S. tariffs could potentially snowball into a more dramatic decline in growth. Not only did China's annual growth slow to 6.6% in 2019—its slowest pace since 1990—but economic growth, normalized over the past 20 years, shows that growth has continuously deviated below the longer-term average. China's demand for imported goods declined sharply at the end of 2018.

- While January saw Chinese exports climb 9.1% on the year—defying market expectations with a marked turnaround from December's 4.4% drop—the data will need to be treated with caution, due to business distortions caused by the Chinese New Year holidays. Companies often rush out shipments ahead of the holidays.

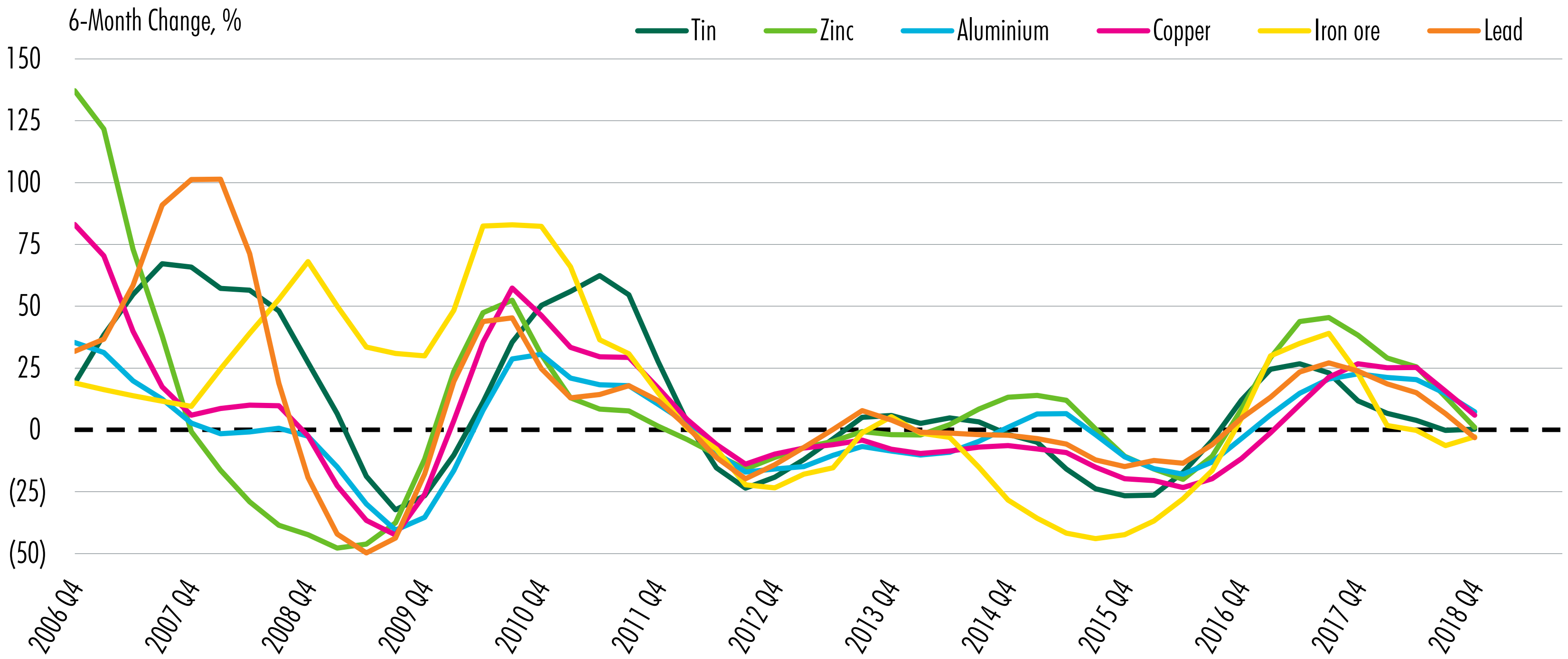
- Meanwhile, China's central bank (PBOC) is trying to avoid a hard landing by allowing banks to lend more against its reserves. The central government is also cutting tax rates for small businesses and reducing value-added taxes across a range of industries, especially manufacturing.

- In the ongoing U.S.-China trade negotiations, Chinese concessions include lifting auto tariffs and restoring imports of U.S. soybeans, while the U.S. continues to press China for a stable Yuan as part of the trade deal. More importantly, citing "significant progress" with regard to trade negotiations, President Trump has signaled an intention not to raise tariffs on $200 billion worth of Chinese imports from 10% to 25% after March 1.

Source: Oxford Economics, CBRE Econometric Advisors; Q4 2018.

WORLD COMMODITY PRICES—METALS SPECIFICALLY—HAVE ALSO SLUMPED

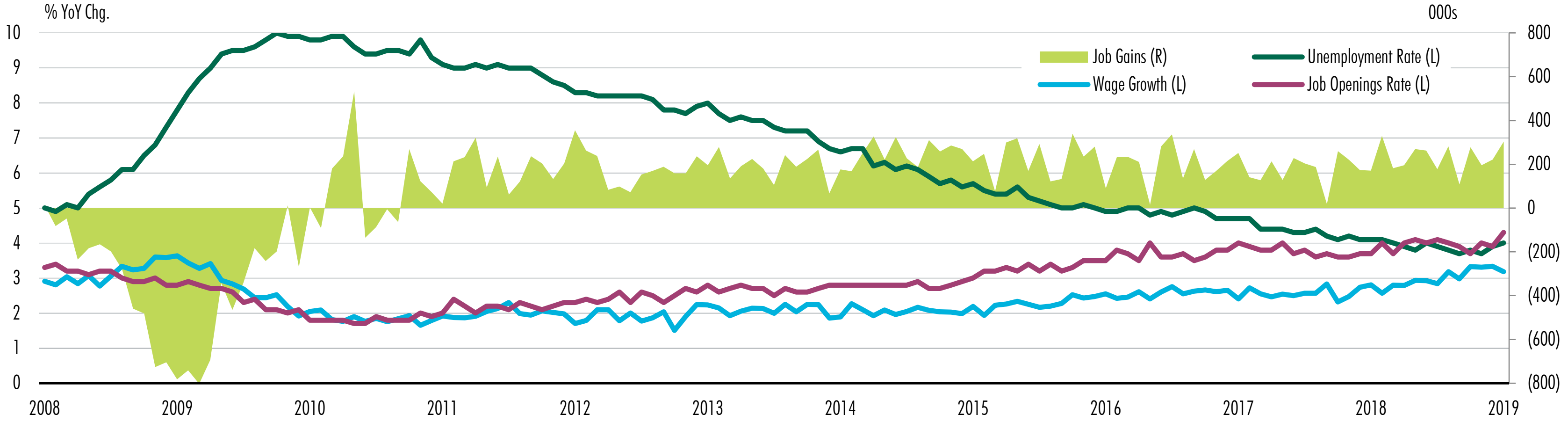
WEAKENING COMMODITY PRICES IS YET ANOTHER INDICATOR OF SLOWING GLOBAL DEMAND



Source: Oxford Economics; CBRE Econometric Advisors, Q4 2018

THE U.S. JOB MARKET REMAINED UPBEAT THROUGH 2018, WAGES BREACHED THE 3% THRESHOLD

JOB GAINS TO MODERATE IN 2019 AS AVAILABLE LABOR POOL SHRINKS

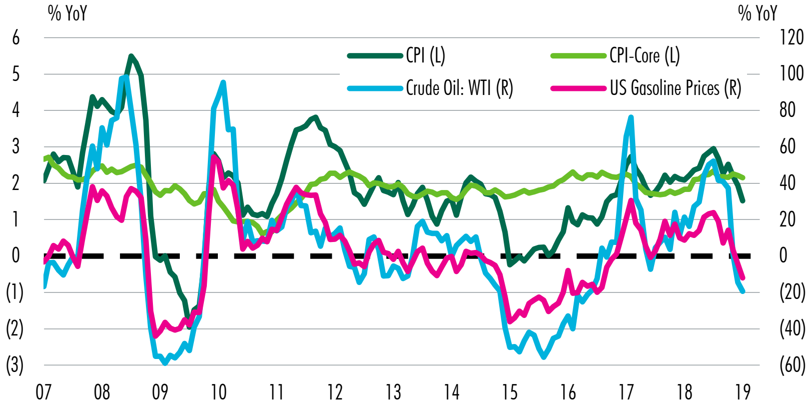


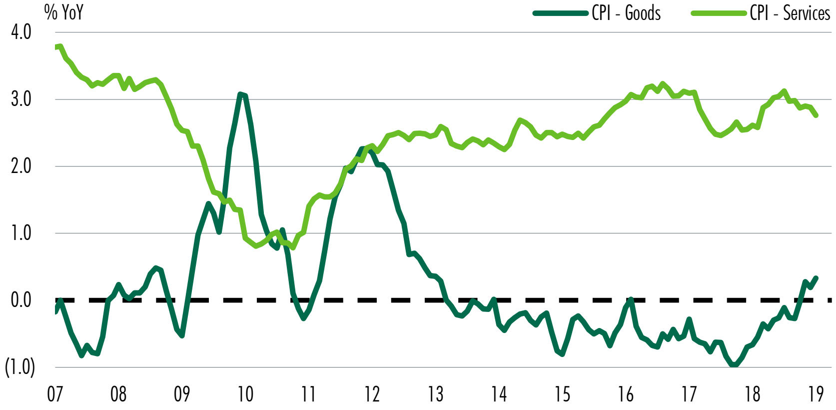
- The January jobs report showed solid gains across all economic sectors, despite the stock market volatility and the partial government shutdown. Average monthly job gains for 2018 were a solid 213,000. Unemployment is at its lowest rate in nearly two generations. Year-over-year wage growth reached 3.2% in January—significantly better than rates of the early expansion, but historically not commensurate with the current level of unemployment.
- Most economists agree that wage growth should accelerate as the labor market continues to tighten, however. The job openings rate set a new a record high in January—yet another indicator showing the labor market running tight. Wages have been slow to respond to this tightness, however, as the falling unemployment rate has likely created sectoral labour shortages, and not necessarily an economy-wide shortage.
- The tax reform will continue provide stimulus to the economy, further extending the cycle. Additional job growth will likely be tempered, however, given that the economy is operating near capacity, an aging population is shrinking the available labor pool, and productivity growth is low by historical standards.

Source: U.S. Bureau of Labor Statistics, CBRE Econometric Advisors; Q4 2018

EXPECT TWO RATE HIKES IN H2 2019 IF WAGE GROWTH AND INFLATION TREND UPWARD

FALL IN GASOLINE PRICES HOLDING DOWN CPI; CORE-CPI ANCHORED AROUND THE FED'S 2% LEVEL





- A fall in crude oil and local gasoline prices held headline CPI down in January, while core CPI held steady near the Fed's target level of 2%. The latest price data also suggest that price growth in the services industry has been slowing since mid-2018, while goods prices have finally started to show growth in recent months. This may be the first sign that continued economic growth and the tightening labor and product markets are starting to cause inflation pressure to build in the goods-producing sector.

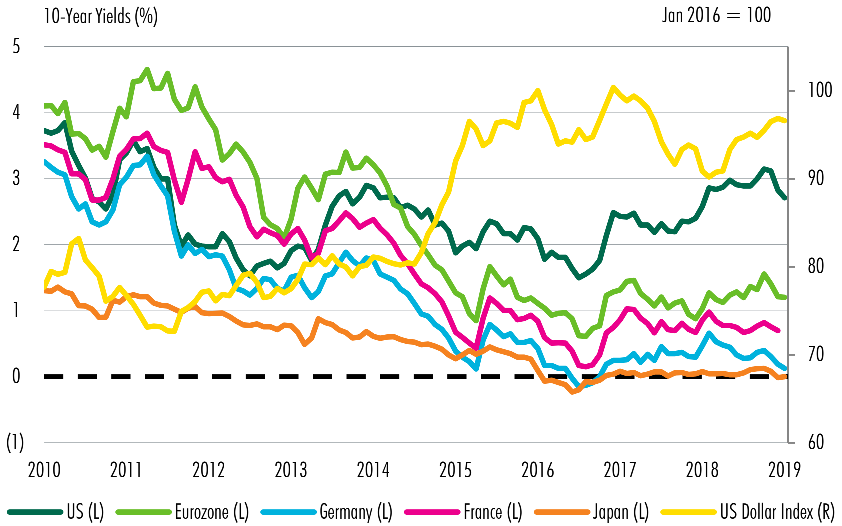
- The latest inflation print will likely reinforce the Fed's recent wait-and-see approach to rate-setting policy. Fed officials have pointed to subdued price pressures as one reason they can hold off on raising their short-term policy rate. Moreover, a surge in market volatility and uncertainty over slowing global growth prompted Fed officials to take a dovish stance on further raising rates. The central bank raised its benchmark rate four times last year; the most recent was in December 2018, to a range between 2.25% and 2.5%.

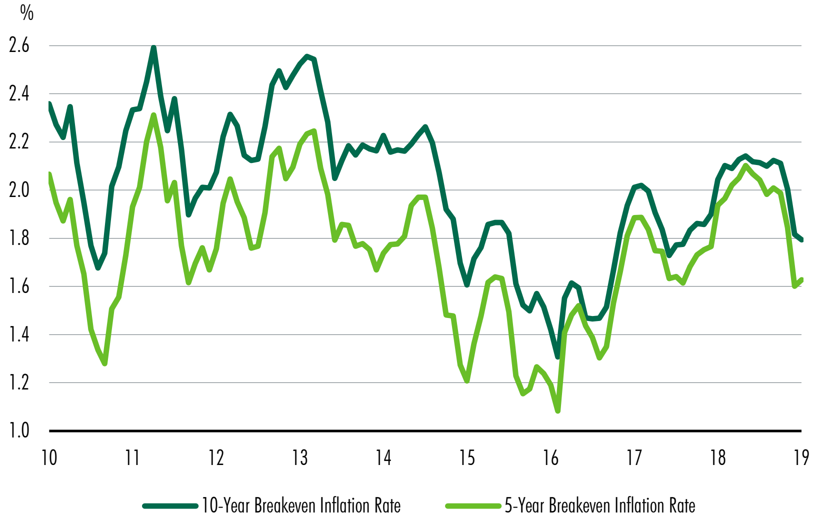
- Overall, we expect two rate hikes in H2 of 2019 if wage growth and inflation trend upward, though a look at the CME's FedWatch would suggest that markets expect rates to be held at the current level through 2019.

Source: U.S. Bureau of Labor Statistics; U.S. Energy Information Administration; CBRE Econometric Advisors, Q4 2018

STRONGER DOLLAR ALSO DAMPENING INFLATION

MEDIUM- AND LONGER-TERM INFLATION EXPECTATIONS HAVE COME OFF THEIR HIGHS



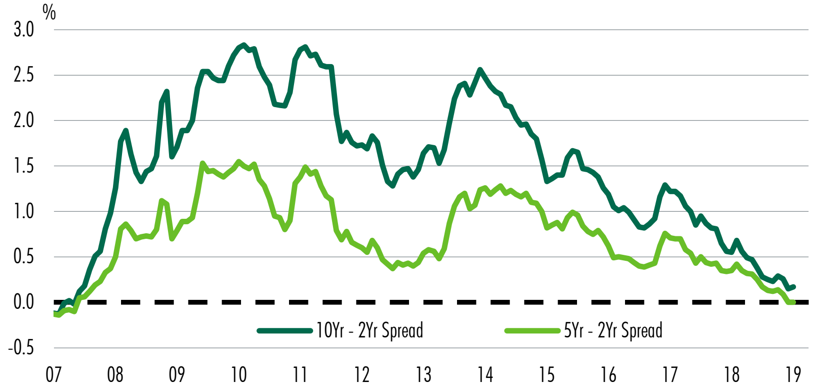


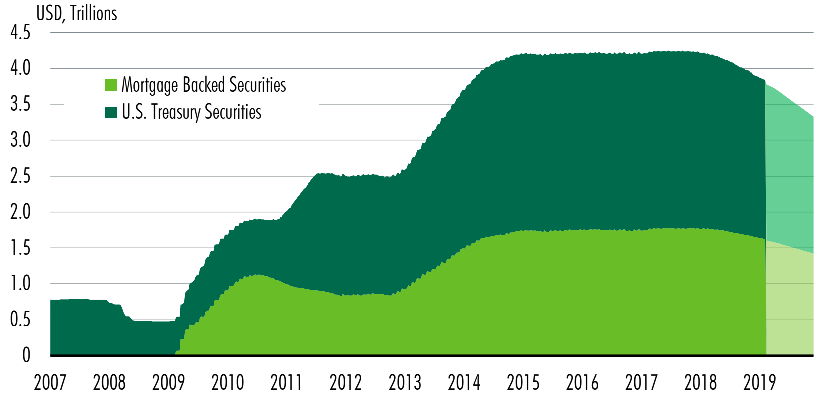
- With the U.S. 10-Year Treasury running 270 basis points above its German and Japanese counterparts, and with U.S. growth also significantly stronger than its peers, the trade-weighted U.S. dollar has strengthened by a little more than 6% over the past year, making foreign goods cheaper for American consumers. The strengthening dollar has likely dampened U.S. inflation as well, however.
- Inflation expectations for the medium and long term came off their highs during the last three months of 2018—most likely in response to the stock market turmoil toward the end of the year. The lower expectations likely led the Fed to pause in raising rates (at least for the first half of 2019). It may be one of the reasons financial markets are expecting no hikes for the year.

Source: FRED Economic Data – St. Louis Fed, CBRE Econometric Advisors; Q4 2018.

LOWERED INFLATION EXPECTATIONS DRIVING THE 10-YEAR LOWER, THE YIELD CURVE FLATTER

THE FED IS PLANNING TO END ITS BALANCE SHEET NORMALIZATION PROCESS



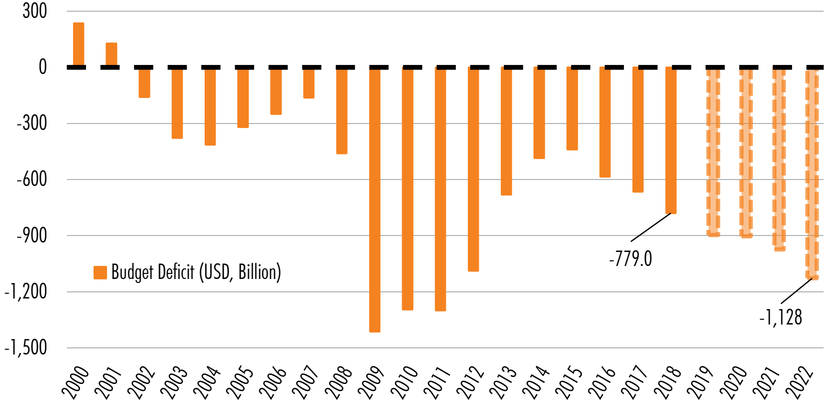


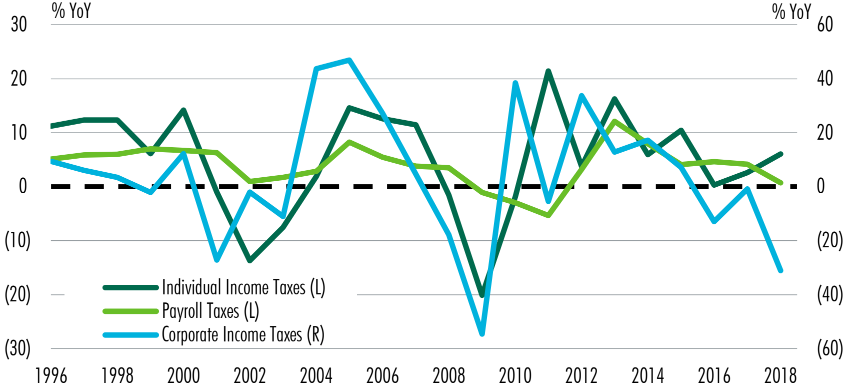
- Despite the flood of U.S. Treasury securities (from the government's debt issuance to fund higher deficits and the Fed's balance sheet run-off) in the primary and secondary markets since 2017, the Treasury yield curve continues to flatten, with the 10-year Treasury having fallen below 3% near the end of 2018.
- While strong appetite for U.S. debt has kept the 10-Year from rising to well over 3%, 2018's decline in the 10-year was related to the fall in actual and expected inflation, due in part to a the rush to safe alternatives to equities (especially in December). The spread between the 5-Year and the 2-Year is nearly zero, while the 10-Year / 2-Year spread is down to just 20 bps.
- The flattening yield curve is another reason the Fed will likely refrain from raising rates in H1 2019. Pushing up short-term rates while longer rates are edging down would only serve to accelerate the yield curve inversion.
- The Fed has also indicated that it plans to end the balance sheet run-off and complete balance sheet normalization at upcoming meetings. With a maximum monthly run-off ($50 billion) through the end of 2019, the Fed's balance sheet—at around $3.25 trillion—will still be significantly larger than it was before the 2008 financial crisis.

Source: FRED Economic Data – St. Louis Fed; CBRE Econometric Advisors, Q4 2018

2018 BUDGET DEFICIT HIGHEST SINCE 2012; CORPORATE TAXES SLUMP

DEBT ISSUANCES SURGE AND ARE EXPECTED TO REMAIN ELEVATED; MINIMAL IMPACT ON U.S. TREASURY SECURITIES



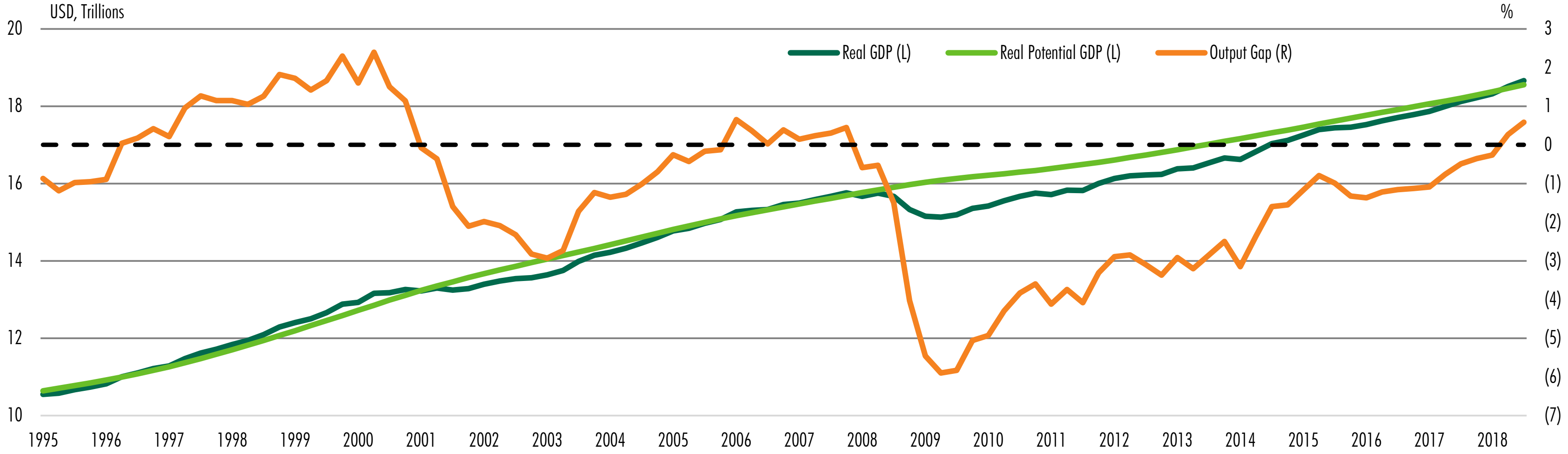


- The U.S. federal budget deficit widened to $779 billion—or 3.9% of GDP—for fiscal year 2018. This was a six-year high and a 17% increase over fiscal 2017. Total spending rose by 3.2% while revenues grew by 0.4%. Corporate tax revenues fell by 31%—a direct consequence of the tax law signed in 2017. Rising interest rates forced the federal government to pay more in interest on the national debt—currently more than $21 trillion.
- Rising budget deficits are boosting the U.S. Treasury's debt issuances, with the government borrowing a little over $1.34 trillion in 2018—the most since 2010 and more than twice 2017's $550 billion. Economists' estimates of annual debt issuance over the next 4 years range from $1.25 trillion to $1.45 trillion, while the CBO estimates that the U.S. government will spend around $7 trillion just to service the nation's debt over the next decade.
- However, it appears that the government's rising debt load seems to be less of a pressing concern for investors than the threat of an all-out trade war and the pace of the Fed's interest rate increases are. As noted earlier, despite the flood of U.S. Treasury securities, yields haven't surged higher because demand for the world's safest securities has not slackened. The U.S. 10-year yield is running 2.70 percentage points above its German and Japanese counterparts; from an absolute yield perspective, investor appetite for U.S. debt will remain strong so long as the U.S. registers solid growth and bond yields above those of its peers.

Source: U.S. Congressional Budget Office (CBO), CBRE Econometric Advisors; Q4 2018.

STIMULATIVE FISCAL POLICY AND DOVISH TONE IN MONETARY POLICY…

…AT A TIME WHEN THE OUTPUT GAP IS RUNNING POSITIVE



- The economy is in its tenth year of expansion and the labor market is nearing full employment; meanwhile, worryingly, the debt-to-GDP ratio has risen from around 60% in 2008 to a little over 105% in 2017.
- The output gap is also running positive for a second consecutive quarter, so it remains to be seen whether fiscal expansion, a recent change in the tone of monetary policy (less hawkish), a modest uptick in wages, and a strong job market will give rise to inflationary pressures. The recent fall in medium- and long-term inflation expectations and the decline in the U.S. 10-Year might suggest otherwise, but a further uptick in wages as the labor market tightens and a corresponding increase in consumer expenditure could fan inflationary pressures.
- In the event that the yield curve continues to flatten (or possibly invert), the positive output gap could close just as quickly as financial conditions tighten.

Source: U.S. Congressional Budget Office (CBO); CBRE Econometric Advisors, Q4 2018.

EA Scenarios

BASELINE SCENARIO

CBRE EA BASELINE FORECAST							
	2016	2017	2018	2019	2020	2021	2022
GDP, %	1.9	2.5	3.0	2.2	0.7	1.4	2.7
Emp, mil.	2.4	2.2	2.6	1.9	0.3	-1.2	0.4
CPI, %	1.8	2.1	2.2	2.1	1.9	1.6	1.6
10-yr Treasury, %	2.1	2.4	2.9	3.1	2.9	2.2	2.4

Note: Figures are Q4/Q4 change—except the 10-year, which is Q4 % yield.
Source: BEA, BLS, Federal Reserve, CBRE Econometric Advisors, Q4 2018.

- The combination of cooling consumer and business optimism, slower global growth, trade uncertainties and the lagged effects of a tighter monetary policy has prompted us to revise our growth forecast for the U.S. downward for 2019. Growth will be more moderate in 2019 than in 2018, but still reasonable. The remaining impact of the fiscal boost, the pickup in wages and consumer confidence that remains relatively strong will drive growth in 2019.
- Rising interest rates (long and short) will weigh on business and consumer activity by late-2019, leading to further volatility in equity markets. By the second half of 2020, we expect an economic slowdown in reaction to higher interest rates, equity market corrections, credit market problems and international geo-political/economic risk factors.
- The slowdown, however, will be relatively mild and quick—more like 1991 and 2001 in severity than 2008-9. We anticipate some shrinkage in employment in 2021 (a little over 1 million jobs) as the economy slows. The slowdown causes the Fed to lower interest rates and the 10-Year drops from 3.1% in 2019 to 2.2% by the end of 2021. Inflation also declines with the slowing economy.

Source: U.S. Congressional Budget Office (CBO); CBRE Econometric Advisors, Q4 2018

UPSIDE SCENARIO

CBRE EA UPSIDE FORECAST							
	2016	2017	2018	2019	2020	2021	2022
GDP, %	1.9	2.5	3.0	3.0	1.7	2.5	2.7
Emp, mil.	2.4	2.2	2.6	2.4	1.4	0.2	1.3
CPI, %	1.8	2.1	2.2	2.2	2.3	2.4	2.5
10-yr Treasury, %	2.1	2.4	2.9	3.2	3.2	2.8	3.1

Note: Figures are Q4/Q4 change—except the 10-year, which is Q4 % yield.
Source: BEA, BLS, Federal Reserve, CBRE Econometric Advisors, Q4 2018.

- Our *Upside* scenario assumes that President Trump's tax plan leads to a strong multiplier effect on growth, an infrastructure program that boosts productivity, capital repatriation that leads to business investment and a growing economy that adds to the labor force participation rate.
- We have revised our 2019 forecast downward to 3.0% from last quarter's 3.4% over concerns of slower global growth in 2019. Under our *Upside* scenario, however, slowing global growth has less of an impact than under the *Baseline* scenario. Growth in 2021 has been revised upward to 2.5% from last quarter's 1.9%.
- While these factors lead to a long expansionary cycle, the economy will see stronger inflation and will likely tighten more than under the *Baseline* scenario. Tighter financial and credit conditions will cause a mild cyclical downturn starting mid-2020, followed by a quick recovery. The downturn will not be nearly as severe as under the *Baseline* scenario.

Source: U.S. Congressional Budget Office (CBO); CBRE Econometric Advisors, Q4 2018

DOWNSIDE SCENARIO

CBRE EA DOWNSIDE FORECAST	2016	2017	2018	2019	2020	2021	2022
GDP, %	1.9	2.5	3.0	1.4	-0.3	0.3	2.7
Emp, mil.	2.4	2.2	2.6	1.4	-0.8	-2.5	-0.5
CPI, %	1.8	2.1	2.2	1.9	1.5	0.8	0.7
10-yr Treasury, %	2.1	2.4	2.9	3.0	2.6	1.6	1.6

Note: Figures are Q4/Q4 change—except the 10-year, which is Q4 % yield.
Source: BEA, BLS, Federal Reserve, CBRE Econometric Advisors, Q4 2018.

- While our *Baseline* assumes that the government's stimulative fiscal policies produce strong growth multipliers, our *Downside* scenario assumes that these do not come to fruition, are watered-down or misguided. As a result, the economy starts to see a slowdown in starting mid-2019 as the effects of fiscal stimulus fade. Year-over-year growth turns negative between Q4 2020 and Q3 2021, while inflation falls well below the Fed's target.
- Economic research suggests that fiscal multipliers—the "bang for the buck" of government spending and tax cuts—are much lower when the economy is running near full capacity, as it is today. This implies that the stimulus may not be that stimulative at all, meaning the economy would get higher inflation and interest rates without the benefit of stronger growth. The *Downside* scenario is the extreme version of this, accompanied by other downside policies such as a trade war, large-scale deportations, and otherwise anti-growth legislation.
- A realistic downside scenario more closely resembles the dot-com bust than the Great Recession, in terms of its overall damage to the economy. We expect 3.3 million net job losses over 2020 and 2021, before a cyclical recovery takes hold. The Fed's aggressive response—along with foreign capital flows into the U.S.—would likely keep the 10-Year yield well below 2% until 2022.

Source: U.S. Congressional Budget Office (CBO); CBRE Econometric Advisors, Q4 2018

SEVERE DOWNSIDE SCENARIO

CBRE EA SEVERE DOWNSIDE FORECAST							
	2016	2017	2018	2019	2020	2021	2022
GDP, %	1.9	2.5	3.0	-6.3	-0.6	4.0	3.9
Emp, mil.	2.4	2.2	2.6	-7.1	-6.2	-0.9	2.1
CPI, %	1.8	2.1	2.2	-3.7	-0.4	2.7	2.3
10-yr Treasury, %	2.1	2.4	2.9	2.5	2.0	1.2	1.2

Note: Figures are Q4/Q4 change—except the 10-year, which is Q4 % yield.
Source: BEA, BLS, Federal Reserve, CBRE Econometric Advisors, Q4 2018.

- This scenario is meant as a proxy for the Federal Reserve's *Severely Adverse* supervisory scenario under its Comprehensive Capital Analysis and Review (CCAR) program. CCAR is meant to evaluate the capital planning processes and capital adequacy of U.S. banks under stressful macroeconomic scenarios. This scenario is generated by overriding EA's baseline GDP with the Fed's GDP forecasts under its *Severely Adverse* scenario, which is then fed through to the other variables our macroeconomic model. As with the *Upside* and *Downside* scenarios, the overrides are to GDP levels, rather than growth rates. The estimates for the Fed's *Severely Adverse* scenario are released annually in February and can be found here.
- The scenario's supposed recession occurs immediately and wipes out nearly 3.7 million jobs by the end of 2019. Although the Fed is quiet on what might cause such a severe recession, we can safely assume that financial markets would suffer some sort of systemic failure, likely leading to government intervention. The Federal Reserve does not discuss a hypothetical reaction in terms of monetary policy either, but history tells us it would use everything in its toolbox to stop the bleeding. This could mean the re-introduction of quantitative easing, or even the introduction of negative interest rates. The *Severe Downside* scenario has an extremely low probability, but it offers a useful guide to capital planning under the direct macroeconomic situations.

Source: U.S. Congressional Budget Office (CBO); CBRE Econometric Advisors, Q4 2018

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