

Wells Fargo Economics

Monthly Macro Manual

Your guide to the data and events that will shape the economic outlook and drive financial markets in the month ahead

June 12, 2019

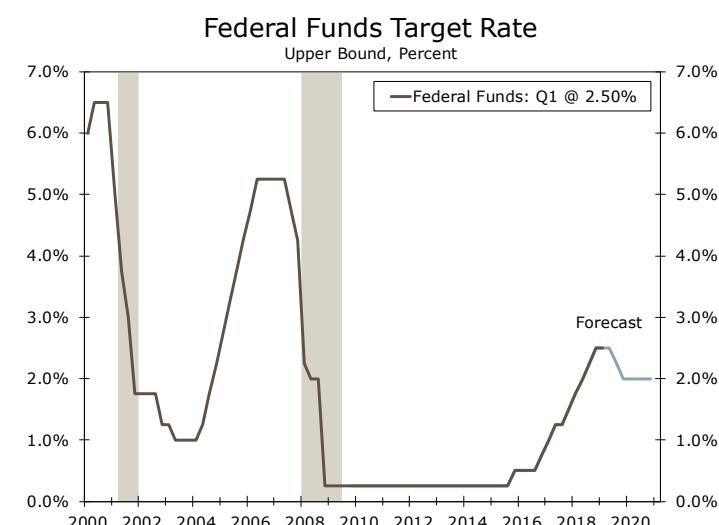
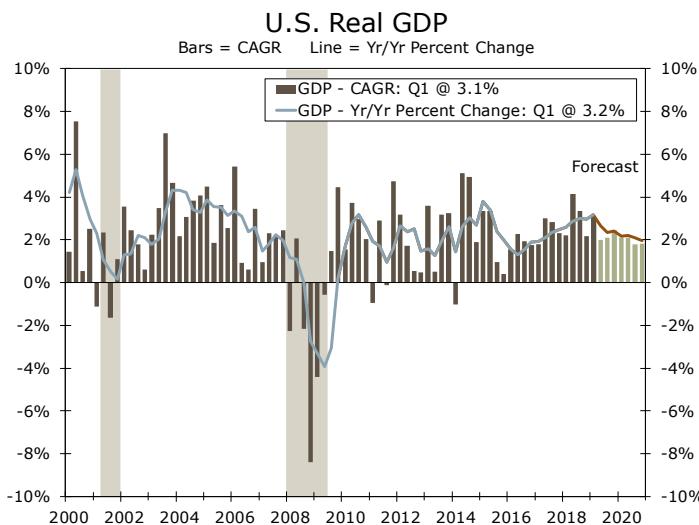
Together we'll go far



Key Takeaways

Developments since our May Monthly Economic Outlook

- We have scaled back our forecast for 2019 U.S. real GDP growth to 2.6%. Personal consumption growth appears to have bounced back in Q2, and government purchases continue to grow solidly. But, business fixed investment growth appears tepid, and residential construction spending continues to contract.
- Our forecast for the fed funds rate has changed. We now expect one 25 bps cut in July 2019, one 25 bps cut in Q4-2019 (probably October) and then no further changes to policy through the end of 2020. Both domestic and global growth have slowed, and softer inflation has pushed up the real federal funds rate. With limited fears about the Fed being “behind the curve” and less available ammunition than in prior expansions, we think the Fed is likely to proactively deliver two “insurance” cuts to forestall a sharper deceleration in GDP and prices. Our 2019 year-end target for the 10-year Treasury yield is 2.30%.
- Global growth has weakened across the board. Our forecast for global real GDP growth in 2019 is 3.2%, which, if realized, would match 2016’s pace for the slowest since the Great Recession. Another escalation in the ongoing trade spat, should it occur, could push global growth to lows not seen in a decade.



Source: U.S. Department of Commerce, Federal Reserve Board and Wells Fargo Securities

Monthly Macro Calendar: June 10-July 5

| Monday | Tuesday | Wednesday | Thursday | Friday |
|--|--|--|---|--|
| 10 | 11 | 12 | 13 | 14 |
| JOLTS Job Openings April 7,449 | PPI Final Demand (YoY) May 1.8% | CPI (YoY) April 2.0%, May 1.9% (W) | Import Price Index (YoY) April -0.2%, -1.4% (W) | Retail Sales (MoM) April -0.2%, 0.7% (W) |
| | China CPI (YoY) April 2.5% | WFS Mid-year Economic Outlook Call See below for details | | Industrial Production (MoM) April -0.5%, -0.1% (W) |
| 17 | 18 | 19 | 20 | 21 |
| | Housing Starts April 1,235K | FOMC Meeting Previous 2.50% | Japan CPI (YoY) April 0.9% | Existing Home Sales April 5.19M |
| | | United Kingdom CPI (YoY) April 2.1% | Bank of England Meeting Previous 0.750% | Brainard (Board of Gov) & Mester (Clev.) Fed Listens Event in Cincinnati |
| | | Canada CPI (YoY) April 2.0% | Bank of Japan Meeting Previous -0.1% | Daly (San Francisco Fed) Hosts Discussion at Event in San Francisco |
| 24 | 25 | 26 | 27 | 28 |
| | New Home Sales April 673K | Durable Goods Orders (MoM) April -2.1% | Bank of Mexico Meeting Previous 8.25% | Personal Income & Spending (MoM) April 0.5% & 0.3% |
| | Consumer Confidence Index May 134.1 | | | Eurozone CPI (YoY) May 1.2% |
| | Powell* (Fed Chair) Speaks at Council on Foreign Relations | | | Group of 20 (G20) Summit, Japan |
| 1 | 2 | 3 | 4 | 5 |
| ISM Manufacturing Index May 52.1 | Reserve Bank of Australia Meeting Previous 1.25% | Trade Balance April -\$50.8B | | Nonfarm Payrolls April 75,000 |
| | | ISM Non-Manufacturing Index May 56.9 | | |

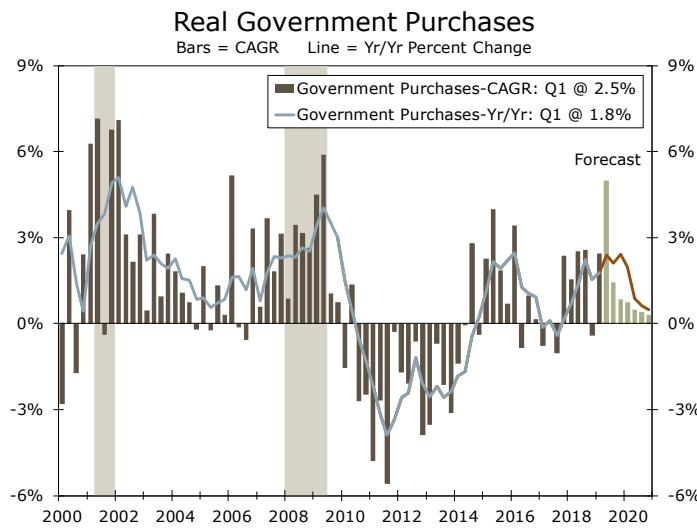
Note: (W) = Wells Fargo Estimate, (C) = Consensus Estimate, * = voting FOMC member in 2019

WFS Mid-Year Economic Outlook Webcast: June 12, 2019, at 1:00pm ET. Register [Here](#).

Source: Bloomberg LP and Wells Fargo Securities

U.S. Growth Outlook

- Real GDP growth forecast for Q2-2019: 2.0% (seasonally adjusted annualized rate)
 - **Change since last *Monthly Economic Outlook*: -0.5 percentage point**
 - **Commentary:** Economic data available so far for the second quarter have been mixed. Personal consumption appears likely to grow at a solid rate in Q2, but this in part simply reflects a bounce-back from a very weak Q1 reading. **Government consumption and investment is tracking to grow at the fastest annualized rate since Q2-2009.** Some of this strength is related to the continued bounce-back from the federal government shutdown earlier this year, but some of it has been underlying strength, including in the state & local sector. **Beyond consumption and government, however, the near-term growth outlook appears soft.** Business fixed investment growth appears tepid, and residential investment continues to lag.
- Real GDP growth forecast for full-year 2019: 2.6% (2.4% Q4-over-Q4)
 - **Change since last *Monthly Economic Outlook*: -0.1 percentage point**
 - **Commentary:** Our forecast for 2019 GDP growth is a bit weaker than last month, in part due to weaker incoming data and continued uncertainty/escalation around trade policy. **Slower investment spending growth is the primary culprit for the downward revision.**



Key Themes and Upside/Downside Scenarios

- **Upside scenario:** Trade uncertainty across the globe dissipates after a U.S.-China deal is reached and the USMCA is passed. The global economy finds firmer footing, and investment spending accelerates. After a transitory slowdown, inflation returns back to the 2% target.
- **Downside scenario:** Trade uncertainty continues to have both direct and indirect negative effects on the economy. Another escalation in the trade disputes between the United States and its major trading partners pushes global growth to its slowest pace since 2009, pulling the United States down with it.

Federal Reserve Watch: Two Rate Cuts in 2019

Inflation Forecast

- Inflationary pressure remains modest. We do not expect core PCE inflation to return to 2% until 2020. **Although we continue to believe much of the recent weakness has been transitory, we also believe the Fed has become increasingly committed to showing that 2% inflation is a symmetric target.**

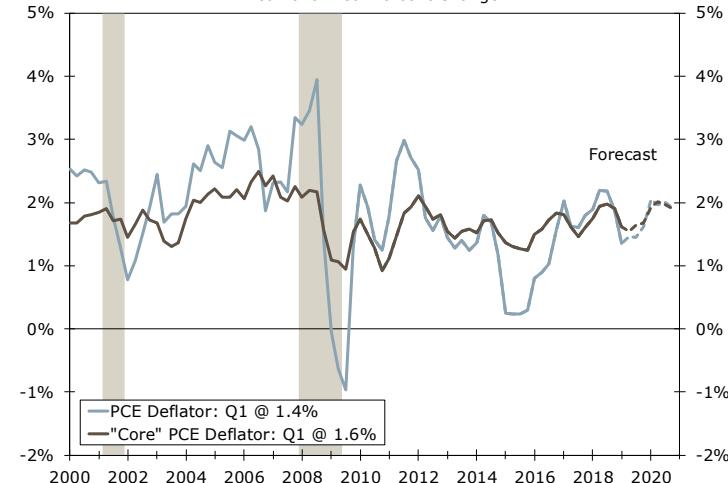
Labor Market Forecast

- The trend in hiring has downshifted, but remains strong enough for gradual labor market tightening to continue.** By our estimates, it takes job growth of about 100,000 per month to meet labor force growth and keep unemployment steady.

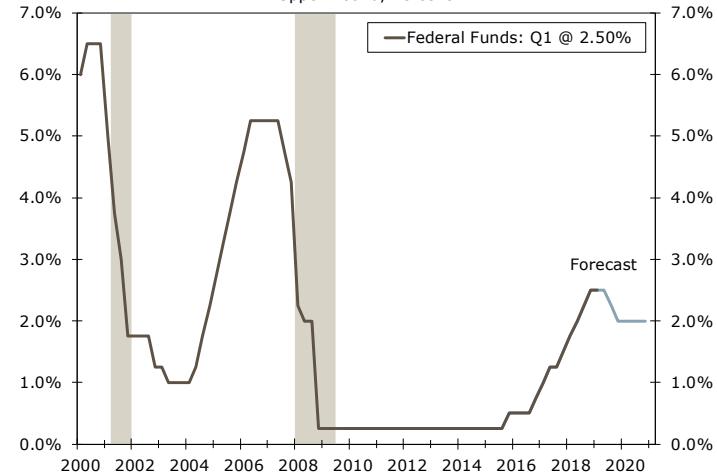
Fed Funds Outlook

- Fed Funds Forecast for 2019
 - One 25 bps cut in July 2019, one bps cut in Q4-2019**
 - Both domestic and global growth have slowed, and slower inflation has pushed up the real federal funds rate. With limited fears about the Fed being “behind the curve” and less available ammunition than in prior expansions, we think the Fed is likely to deliver two “insurance” cuts to forestall a sharper deceleration in GDP and prices.
- Fed Funds Forecast for 2020
 - Fed funds range to remain unchanged at 1.75%-2.00%**
 - So long as the data evolve as we expect, we do not believe further accommodation will be needed in 2020.

PCE Deflator & "Core" PCE Deflator
Year-over-Year Percent Change



Federal Funds Target Rate
Upper Bound, Percent



Source: Federal Reserve Board, U.S. Department of Commerce and Wells Fargo Securities

U.S. Interest Rate Outlook

Wells Fargo U.S. Interest Rate Forecast

| Quarter End Interest Rates | Actual | | | | Forecast | | | | | | | |
|----------------------------|--------|------|------|------|----------|------|------|------|------|------|------|------|
| | 2018 | | | | 2019 | | | | 2020 | | | |
| | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q |
| Federal Funds Target Rate | 1.75 | 2.00 | 2.25 | 2.50 | 2.50 | 2.50 | 2.25 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| 3 Month LIBOR | 2.31 | 2.34 | 2.40 | 2.81 | 2.60 | 2.45 | 2.25 | 2.15 | 2.20 | 2.15 | 2.15 | 2.15 |
| Prime Rate | 4.75 | 5.00 | 5.25 | 5.50 | 5.50 | 5.50 | 5.25 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 |
| Conventional Mortgage Rate | 4.44 | 4.57 | 4.63 | 4.64 | 4.28 | 3.75 | 3.80 | 3.90 | 3.95 | 4.00 | 4.00 | 4.05 |
| 3 Month Bill | 1.73 | 1.93 | 2.19 | 2.45 | 2.40 | 2.25 | 2.00 | 1.85 | 1.90 | 1.85 | 1.85 | 1.85 |
| 6 Month Bill | 1.93 | 2.11 | 2.36 | 2.56 | 2.44 | 2.15 | 1.95 | 1.90 | 1.95 | 1.90 | 1.90 | 1.90 |
| 1 Year Bill | 2.09 | 2.33 | 2.59 | 2.63 | 2.40 | 1.95 | 1.90 | 1.90 | 1.95 | 1.90 | 1.95 | 1.95 |
| 2 Year Note | 2.27 | 2.52 | 2.81 | 2.48 | 2.27 | 1.85 | 1.85 | 1.90 | 1.95 | 1.95 | 2.00 | 2.00 |
| 5 Year Note | 2.56 | 2.73 | 2.94 | 2.51 | 2.23 | 1.90 | 1.95 | 2.00 | 2.05 | 2.10 | 2.15 | 2.15 |
| 10 Year Note | 2.74 | 2.85 | 3.05 | 2.69 | 2.41 | 2.15 | 2.20 | 2.30 | 2.35 | 2.40 | 2.40 | 2.45 |
| 30 Year Bond | 2.97 | 2.98 | 3.19 | 3.02 | 2.81 | 2.60 | 2.65 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 |

Forecast as of: June 12, 2019

Source: Federal Reserve Board and Wells Fargo Securities

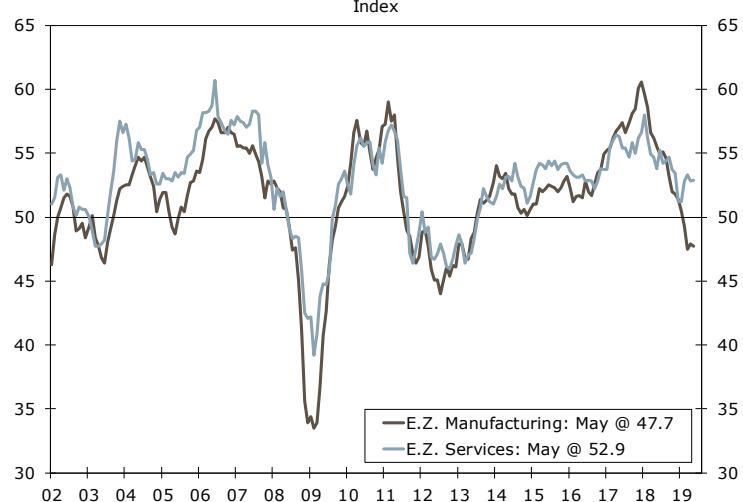
What Are We Watching in the Month Ahead?

- Insurance cuts versus a full-blown easing cycle
 - In our view, the Fed will cut the fed funds rates 25 bps twice in the second half of the year, then keep policy on hold through 2020. **Markets, in contrast, are priced for 83 bps of easing between now and the end of 2020.**
 - Thus, we expect Treasury yields to *rise* modestly over the span of our forecast horizon as the economic outlook proves less dire than markets currently anticipate. The economic data will be key to watch in this regard.
- Trade policy: The key to the outlook
 - Our baseline forecast assumes that trade policy tensions between the United States and China continue for the foreseeable future, but that the U.S. will delay raising tariffs any further on China, the EU or elsewhere.
 - **In our upside scenario, where trade policy tension dissipates and the United States and China reach a trade deal, we would probably remove the 50 bps of cuts included in our baseline scenario.**
 - **In the downside scenario, where the United States places new tariffs on approximately \$300 billion of Chinese imports or European/Japanese automobile imports, more than 50 bps of easing may be warranted.**

Eurozone Continues to Tread Water

- The Eurozone economy continues to teeter on the edge, with economic growth neither fast enough to reassure officials at the ECB nor slow enough to warrant more monetary stimulus. **The weakness in Europe has been heavily concentrated in the manufacturing sector.**
- The Eurozone PMI for manufacturing is firmly in contraction territory, as is factory order growth in Germany, a key cog in Europe's industrial engine. Despite this weakness, the Eurozone's larger service sector has hung in reasonably well, boosted by a resilient labor market.

Eurozone Purchasing Managers' Indices

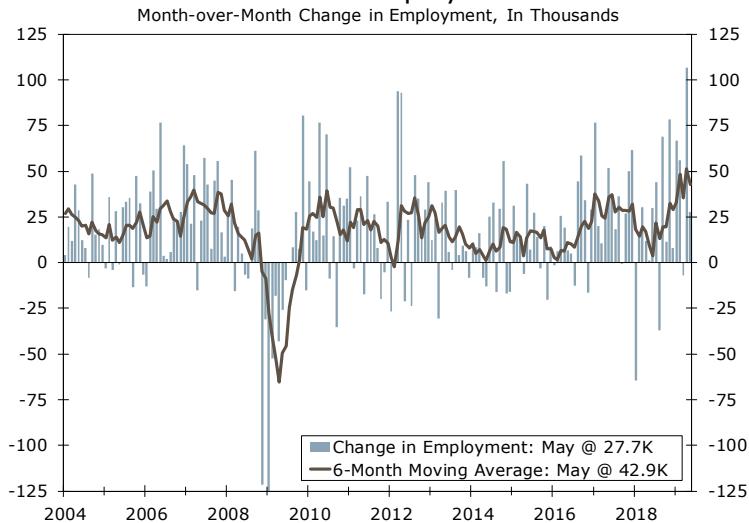


Source: Bloomberg LP, IHS Markit and Wells Fargo Securities

Canada Showing Signs of Stabilizing

- Economic growth has been abysmal in Canada over the past two quarters, with quarterly annualized growth of just 0.3% in Q4-2018 and 0.4% in Q1-2019. **More recent data have been a bit better, as job growth has been robust of late and the housing market has shown some signs of stabilization.**
- In light of this, the BoC adopted a relatively upbeat tone at its May 29 meeting, noting in its statement that the slowdown in late 2018/early 2019 appears temporary. We expect growth to rebound, but given the very slow start to the year we look for just 1.5% real GDP growth in Canada in 2019.

Canadian Employment



Wells Fargo Central Bank Policy Forecasts

| Central Bank | Current Policy Rate | Last Major Policy Change | WF Next Forecasted Policy Change |
|----------------------|-------------------------|--|--|
| United States (FOMC) | 2.50 | December 2018 25 bps hike | Next Rate Move: Cut in Q3-2019 (25 bps) |
| Eurozone (ECB) | -0.40 (Deposit Rate) | December 2018 <i>Confirmed end of QE program at end of 2018</i> | Next Rate Move: Hike in Q3-2020 (20 bps) |
| United Kingdom (BoE) | 0.75 | August 2018 25 bps hike | Next Rate Move: Hike in Q2-2020 (25 bps) |
| Japan (BoJ) | -0.10 | July 2018 <i>QQE and a greater degree of variation in 10-year govt. bond yield target</i> | No change through end-2020 |
| Canada (BoC) | 1.75 | October 2018 25 bps hike | No change through end-2020 |

Forecast as of: June 12, 2019

Source: Bloomberg LP and Wells Fargo Securities

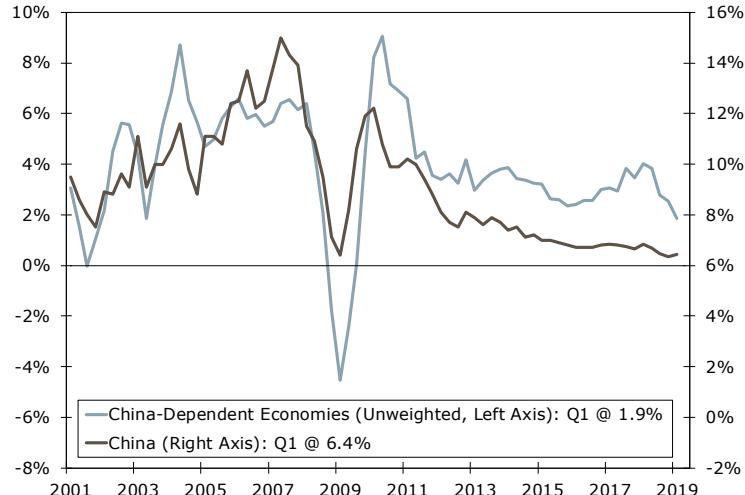
What Are We Watching in the Month Ahead?

- European Central Bank
 - With core inflation remaining stagnant near 1% and the Eurozone economy still sluggish, **we do not expect a rate hike from the ECB until Q3-2020. At this time, we are not looking for additional stimulus from the ECB.**
- Bank of Japan
 - **We do not expect the BoJ to make any material changes to monetary policy.** With global growth softening and an increase in the consumption tax scheduled to take place later this year, the BoJ will likely maintain its extraordinarily accommodative monetary policy for the foreseeable future.
- Bank of England
 - With Brexit uncertainty likely to linger for much of the year, **we do not anticipate a rate hike from the BoE until Q2-2020.**
- Bank of Canada
 - **We look for the BoC to remain on hold for the foreseeable future.** A stronger near-term outlook should be enough to stave off rate cuts, but risks related to trade and housing will likely forestall hikes.

Looking Beyond the Official China Data

- Fears about global growth generally and China specifically remain at the forefront. Yet, even just analyzing the current state of the Chinese economy can be a challenging task. **Economic data in China are less granular and transparent than in economies such as the United States, and some analysts have questioned the veracity of the Chinese figures.**
- In a recent [special report](#), we developed a new lens through which to view China's economy by calculating both a weighted and unweighted average of economic growth in seven China-dependent economies.

Assessing the Slowdown in China (Unweighted)
Real GDP Growth, Year-over-Year

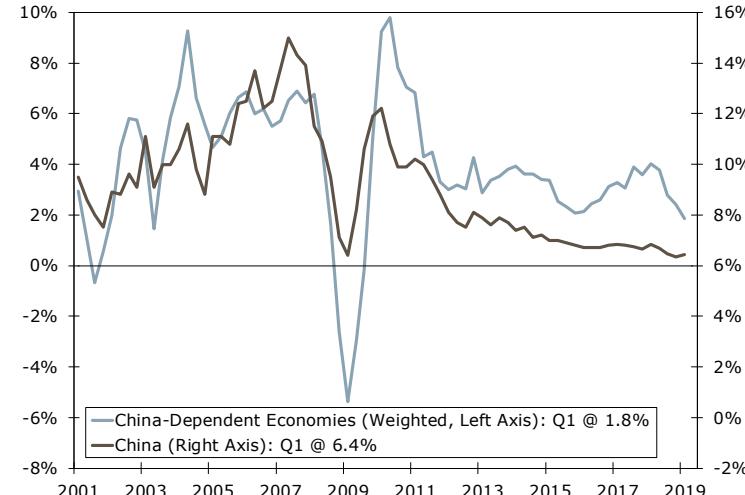


Source: IHS Markit and Wells Fargo Securities

Slowdown Serious, but Not Alarming

- The average growth rate in these economies has not fallen off a cliff, as it did during the Great Recession or the Asian Financial Crisis. That said, **average growth in the China-dependent economies has been halved since Q1-2018 and is below 2% for the first time since 2009.** Weighting the economies by their relative exposure to China offers a similar result.
- Given the recent trade developments and warning signs flashed by other economies, we have trimmed our Chinese GDP forecast. **We look for real GDP growth in China of 6.1% in 2019 and 6.0% in 2020, down from 6.6% in 2018.**

Assessing the Slowdown in China (Weighted)
Real GDP Growth, Year-over-Year



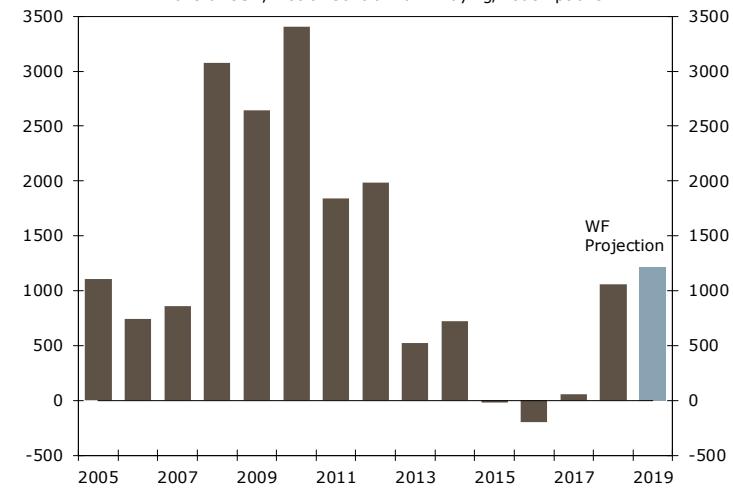
Topic of the Month

Do Deficits Still Matter?

- The recent widening in the federal budget deficit and persistently low yields on U.S. Treasury securities have led some observers to question the idea that larger deficits lead to higher interest rates, or even if deficits matter at all. **Can the United States really run large budget deficits indefinitely with minimal consequences?**
- In our view, yields on Treasury securities have remained low in the face of bigger deficits for both cyclical and structural reasons. On the cyclical side, a dovish turn by the Fed and falling growth/inflation expectations have weighed on yields, dominating the upward pressure from more government debt issuance. **Net sovereign bond issuance in other major foreign economies has also been quite low recently**, due to both fiscal consolidation and to quantitative easing programs by foreign central banks. Econometric analysis that attempts to control for factors like these suggests that deficits still exert upward pressure on yields, all else equal.
- On the structural side, **the United States enjoys many built-in advantages that make financing large deficits easier**. The U.S. dollar is the world's reserve currency, the U.S. economy is the largest in the world and the Treasury market is the gold standard for liquid, safe assets.
- In our view, it is not that deficits no longer matter. Rather, **favorable circumstances for large-scale sovereign debt issuance exist today, but that does not mean they will exist forever**.
- For further reading, see our recent special report, [**"Do Deficits Still Matter?"**](#)

| IMF Budget Deficit Forecasts | | | |
|------------------------------|--|-------|-------|
| | General Government, % of GDP, Negative = Deficit | | |
| | 2018 | 2019 | 2020 |
| Australia | -1.2% | -1.5% | -0.7% |
| Canada | -0.4% | -0.6% | -0.6% |
| France | -2.6% | -3.3% | -2.4% |
| Germany | 1.7% | 1.1% | 1.1% |
| Italy | -2.1% | -2.7% | -3.4% |
| Japan | -3.2% | -2.8% | -2.1% |
| Korea | 2.8% | 2.1% | 1.5% |
| Spain | -2.7% | -2.3% | -2.3% |
| Sweden | 0.8% | 0.5% | 0.3% |
| Switzerland | 0.3% | 0.3% | 0.2% |
| United Kingdom | -1.4% | -1.3% | -1.2% |
| United States | -4.3% | -4.6% | -4.4% |

Sovereign Bond Net Issuance: US, UK, JP, EZ
Billions of USD, Net of Central Bank Buying/Redemptions



Source: International Monetary Fund and Wells Fargo Securities

U.S. Economic Forecast

Wells Fargo U.S. Economic Forecast

| | Actual | | | | | | | | | | | | Forecast | | | | Actual | | Forecast | |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|--------|----------|--------|
| | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | | | | 2017 | 2018 | 2019 | 2020 |
| | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | | | | |
| Real Gross Domestic Product (a) | 1.8 | 3.0 | 2.8 | 2.3 | 2.2 | 4.2 | 3.4 | 2.2 | 3.1 | 2.0 | 2.1 | 2.4 | 2.1 | 2.1 | 1.8 | 1.8 | 2.2 | 2.9 | 2.6 | 2.1 |
| Personal Consumption | 1.8 | 2.9 | 2.2 | 3.9 | 0.5 | 3.8 | 3.5 | 2.5 | 1.3 | 2.9 | 2.4 | 2.4 | 1.9 | 2.0 | 1.9 | 1.9 | 2.5 | 2.6 | 2.5 | 2.1 |
| Business Fixed Investment | 9.6 | 7.3 | 3.4 | 4.8 | 11.5 | 8.7 | 2.5 | 5.4 | 2.3 | 0.1 | 2.7 | 3.2 | 3.9 | 3.6 | 2.9 | 2.8 | 5.3 | 6.9 | 3.0 | 3.1 |
| Equipment | 9.1 | 9.7 | 9.8 | 9.9 | 8.5 | 4.6 | 3.4 | 6.6 | -1.1 | -2.8 | 1.0 | 1.7 | 3.1 | 2.6 | 2.1 | 2.0 | 6.1 | 7.4 | 1.3 | 1.9 |
| Intellectual Property Products | 8.0 | 6.6 | 1.7 | 0.7 | 14.1 | 10.5 | 5.6 | 10.7 | 7.2 | 5.1 | 4.7 | 4.6 | 4.7 | 4.6 | 3.7 | 3.5 | 4.6 | 7.5 | 6.9 | 4.5 |
| Structures | 12.8 | 3.8 | -5.7 | 1.3 | 13.9 | 14.5 | -3.4 | -3.9 | 1.7 | -2.5 | 3.0 | 4.5 | 4.5 | 4.0 | 3.5 | 3.5 | 4.6 | 5.0 | 0.2 | 3.6 |
| Residential Construction | 11.1 | -5.5 | -0.5 | 11.1 | -3.4 | -1.3 | -3.6 | -4.7 | -3.5 | -3.5 | 2.5 | 2.0 | 2.0 | 1.5 | 1.5 | 1.5 | 3.3 | -0.3 | -2.5 | 1.5 |
| Government Purchases | -0.8 | 0.0 | -1.0 | 2.4 | 1.5 | 2.5 | 2.6 | -0.4 | 2.5 | 5.0 | 1.4 | 0.8 | 0.7 | 0.5 | 0.4 | 0.3 | -0.1 | 1.5 | 2.2 | 1.0 |
| Net Exports | -845.5 | -844.1 | -845.9 | -899.2 | -902.4 | -841.0 | -949.7 | -955.7 | -903.6 | -922.4 | -902.0 | -915.2 | -907.5 | -905.8 | -908.6 | -907.6 | -858.7 | -912.2 | -910.8 | -907.4 |
| Pct. Point Contribution to GDP | -0.1 | 0.1 | 0.0 | -0.9 | 0.0 | 1.2 | -2.0 | -0.1 | 1.0 | -0.4 | 0.4 | -0.3 | 0.2 | 0.0 | -0.1 | 0.0 | -0.4 | -0.3 | 0.0 | 0.0 |
| Inventory Change | -2.4 | 11.9 | 64.4 | 16.1 | 30.3 | -36.8 | 89.8 | 96.8 | 125.5 | 104.0 | 71.3 | 87.3 | 80.0 | 80.0 | 80.0 | 80.0 | 22.5 | 45.0 | 97.0 | 80.0 |
| Pct. Point Contribution to GDP | -0.8 | 0.2 | 1.0 | -0.9 | 0.3 | -1.2 | 2.3 | 0.1 | 0.6 | -0.5 | -0.7 | 0.3 | -0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | -0.1 |
| Nominal GDP (a) | 3.9 | 4.2 | 4.8 | 5.1 | 4.3 | 7.6 | 4.9 | 4.1 | 3.6 | 4.5 | 3.7 | 4.6 | 4.3 | 4.2 | 3.5 | 3.6 | 4.2 | 5.2 | 4.3 | 4.1 |
| Real Final Sales | 2.6 | 2.8 | 1.8 | 3.2 | 1.9 | 5.4 | 1.0 | 2.1 | 2.5 | 2.7 | 2.8 | 2.1 | 2.3 | 2.1 | 1.8 | 1.8 | 2.2 | 2.7 | 2.5 | 2.2 |
| Retail Sales (b) | 4.9 | 4.1 | 4.3 | 5.7 | 4.8 | 5.8 | 5.7 | 3.4 | 2.9 | 2.6 | 2.6 | 3.6 | 4.4 | 4.4 | 4.4 | 3.8 | 4.7 | 4.9 | 2.9 | 4.2 |
| Inflation Indicators (b) | | | | | | | | | | | | | | | | | | | | |
| PCE Deflator | 2.0 | 1.6 | 1.6 | 1.8 | 1.9 | 2.2 | 2.2 | 1.9 | 1.4 | 1.5 | 1.5 | 1.6 | 2.1 | 2.0 | 2.0 | 1.9 | 1.8 | 2.0 | 1.5 | 2.0 |
| "Core" PCE Deflator | 1.8 | 1.6 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 1.9 | 1.6 | 1.5 | 1.6 | 1.7 | 1.9 | 2.0 | 2.0 | 1.9 | 1.6 | 1.9 | 1.6 | 1.9 |
| Consumer Price Index | 2.5 | 1.9 | 2.0 | 2.1 | 2.2 | 2.7 | 2.6 | 2.2 | 1.6 | 1.9 | 1.8 | 2.0 | 2.4 | 2.2 | 2.2 | 2.2 | 2.1 | 2.4 | 1.8 | 2.3 |
| "Core" Consumer Price Index | 2.1 | 1.8 | 1.7 | 1.8 | 1.9 | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.2 | 2.1 | 1.8 | 2.1 | 2.1 | 2.1 |
| Producer Price Index (Final Demand) | 2.0 | 2.2 | 2.4 | 2.7 | 2.8 | 3.0 | 3.1 | 2.8 | 2.0 | 1.9 | 1.8 | 1.7 | 2.3 | 2.3 | 2.3 | 2.2 | 2.3 | 2.9 | 1.9 | 2.3 |
| Employment Cost Index | 2.4 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | 2.8 | 3.0 | 3.1 | 3.2 | 3.2 | 3.2 | 3.3 | 3.3 | 2.5 | 2.8 | 3.0 | 3.2 |
| Real Disposable Income (a) | 4.5 | 2.2 | 2.2 | 2.3 | 4.4 | 1.8 | 2.6 | 3.2 | 2.2 | 3.3 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.5 | 2.6 | 2.8 | 2.8 | 2.9 |
| Nominal Personal Income (b) | 4.1 | 4.3 | 4.5 | 4.6 | 4.3 | 4.5 | 4.5 | 4.3 | 3.8 | 4.0 | 4.1 | 4.1 | 4.3 | 4.2 | 3.9 | 3.6 | 4.4 | 4.4 | 4.0 | 4.0 |
| Industrial Production (a) | 2.4 | 5.6 | -0.8 | 7.5 | 2.3 | 4.6 | 5.2 | 3.9 | -1.9 | -1.8 | 1.6 | 1.9 | 0.2 | 0.7 | 0.7 | 0.1 | 2.3 | 3.9 | 1.1 | 0.7 |
| Capacity Utilization | 75.5 | 76.5 | 76.3 | 77.6 | 77.9 | 78.5 | 79.1 | 79.4 | 78.6 | 78.5 | 78.9 | 79.1 | 79.0 | 79.1 | 79.0 | 78.9 | 76.5 | 78.7 | 78.8 | 79.0 |
| Corporate Profits Before Taxes (b) | 3.0 | 3.6 | 2.8 | 3.3 | 5.9 | 7.3 | 10.4 | 7.4 | 3.1 | 2.7 | 3.5 | 2.1 | 1.4 | 0.5 | -2.5 | -3.0 | 3.2 | 7.8 | 2.8 | -0.9 |
| Corporate Profits After Taxes | 6.0 | 6.2 | 6.4 | 7.3 | 15.1 | 15.8 | 19.6 | 14.3 | 1.9 | 2.5 | 3.3 | 1.9 | 1.3 | 0.4 | -2.8 | -3.3 | 6.5 | 16.2 | 2.4 | -1.2 |
| Federal Budget Balance (c) | -317 | 4 | -143 | -225 | -375 | -7 | -172 | -319 | -372 | -71 | -188 | -300 | -447 | -69 | -234 | -314 | -666 | -779 | -950 | -1050 |
| Trade Weighted Dollar Index (d) | 112.9 | 109.7 | 104.1 | 106.1 | 103.1 | 107.3 | 107.6 | 110.1 | 109.8 | 107.3 | 107.0 | 106.5 | 105.5 | 104.0 | 102.8 | 102.0 | 108.9 | 106.4 | 107.6 | 103.6 |
| Nonfarm Payroll Change (e) | 173 | 190 | 136 | 218 | 228 | 243 | 189 | 233 | 174 | 153 | 155 | 150 | 190 | 420 | -100 | 15 | 179 | 223 | 158 | 131 |
| Unemployment Rate | 4.6 | 4.4 | 4.3 | 4.1 | 4.1 | 3.9 | 3.8 | 3.8 | 3.9 | 3.6 | 3.6 | 3.6 | 3.5 | 3.4 | 3.6 | 3.6 | 4.4 | 3.9 | 3.7 | 3.5 |
| Housing Starts (f) | 1.23 | 1.17 | 1.18 | 1.26 | 1.32 | 1.26 | 1.23 | 1.19 | 1.20 | 1.27 | 1.31 | 1.30 | 1.28 | 1.29 | 1.30 | 1.30 | 1.20 | 1.25 | 1.27 | 1.29 |
| Light Vehicle Sales (g) | 17.1 | 16.8 | 17.1 | 17.6 | 17.1 | 17.2 | 16.9 | 17.5 | 16.8 | 16.8 | 16.7 | 16.6 | 16.6 | 16.5 | 16.4 | 16.3 | 17.1 | 17.2 | 16.7 | 16.5 |
| Crude Oil - Brent - Front Contract (h) | 54.6 | 50.8 | 52.2 | 61.4 | 66.9 | 74.6 | 75.8 | 68.6 | 63.8 | 66.0 | 61.0 | 64.0 | 64.0 | 63.0 | 65.0 | 65.0 | 54.7 | 71.5 | 63.7 | 64.3 |
| Quarter-End Interest Rates (i) | | | | | | | | | | | | | | | | | | | | |
| Federal Funds Target Rate | 1.00 | 1.25 | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.50 | 2.50 | 2.25 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.13 | 1.96 | 2.31 | 2.00 |
| 3 Month LIBOR | 1.15 | 1.30 | 1.33 | 1.69 | 2.31 | 2.34 | 2.40 | 2.81 | 2.60 | 2.45 | 2.25 | 2.15 | 2.20 | 2.15 | 2.15 | 2.15 | 1.26 | 2.31 | 2.36 | 2.16 |
| Prime Rate | 4.00 | 4.25 | 4.25 | 4.50 | 4.75 | 5.00 | 5.25 | 5.50 | 5.50 | 5.50 | 5.25 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 4.13 | 4.96 | 5.31 | 5.00 |
| Conventional Mortgage Rate | 4.20 | 3.90 | 3.81 | 3.94 | 4.44 | 4.57 | 4.63 | 4.64 | 4.28 | 3.75 | 3.80 | 3.90 | 3.95 | 4.00 | 4.00 | 4.05 | 3.99 | 4.54 | 3.93 | 4.00 |
| 3 Month Bill | 0.76 | 1.03 | 1.06 | 1.39 | 1.73 | 1.93 | 2.19 | 2.45 | 2.40 | 2.25 | 2.00 | 1.85 | 1.90 | 1.85 | 1.85 | 1.85 | 0.95 | 1.97 | 2.13 | 1.86 |
| 6 Month Bill | 0.91 | 1.14 | 1.20 | 1.53 | 1.93 | 2.11 | 2.36 | 2.56 | 2.44 | 2.15 | 1.95 | 1.90 | 1.95 | 1.90 | 1.90 | 1.90 | 1.07 | 2.14 | 2.11 | 1.91 |
| 1 Year Bill | 1.03 | 1.24 | 1.31 | 1.76 | 2.09 | 2.33 | 2.59 | 2.63 | 2.40 | 1.95 | 1.90 | 1.90 | 1.95 | 1.90 | 1.95 | 1.95 | 1.20 | 2.33 | 2.04 | 1.94 |
| 2 Year Note | 1.27 | 1.38 | 1.47 | 1.89 | 2.27 | 2.52 | 2.81 | 2.48 | 2.27 | 1.85 | 1.85 | 1.90 | 1.95 | 1.95 | 2.00 | 2.00 | 1.40 | 2.53 | 1.97 | 1.98 |
| 5 Year Note | 1.93 | 1.89 | 1.92 | 2.20 | 2.56 | 2.73 | 2.94 | 2.51 | 2.23 | 1.90 | 1.95 | 2.00 | 2.05 | 2.10 | 2.15 | 2.15 | 1.91 | 2.75 | 2.02 | 2.11 |
| 10 Year Note | 2.40 | 2.31 | 2.33 | 2.40 | 2.74 | 2.85 | 3.05 | 2.69 | 2.41 | 2.15 | 2.20 | 2.30 | 2.35 | 2.40 | 2.40 | 2.45 | 2.33 | 2.91 | 2.27 | 2.40 |
| 30 Year Bond | 3.02 | 2.84 | 2.86 | 2.74 | 2.97 | 2.98 | 3.19 | 3.02 | 2.81 | 2.60 | 2.65 | 2.75 | 2.80 | 2.85 | 2.90 | 2.95 | 2.89 | 3.11 | 2.70 | 2.88 |

Forecast as of: June 12, 2019

Notes: (a) Compound Annual Growth Rate Quarter-over-Quarter

(b) Year-over-Year Percentage Change

(c) Quarterly Sum - Billions USD; Annual Data Represents Fiscal Yr.

(d) Federal Reserve Advanced Foreign Economies Index, 2006=100 - Quarter End

(e) Average Monthly Change

(f) Millions of Units - Annual Data - Not Seasonally Adjusted

(g) Quarterly Data - Average Monthly SAAR; Annual Data - Actual Total Vehicles Sold

(h) Quarterly Average of Daily Close

(i) Annual Numbers Represent Averages

U.S. Economic Forecast: Change Since Forecast from May 31, 2019

Changes to the Wells Fargo U.S. Economic Forecast

| | Actual | | | | | | | | | | | | Forecast | | | | Actual | | Forecast | | |
|--|--------|------|------|------|-------|------|------|--------|--------|--------|--------|-------|----------|---------|--------|-------|--------|--------|----------|-------|-------|
| | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | | | | 2017 | | 2018 | | |
| | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 1Q | 2Q | 3Q | 4Q | 2019 | 2020 | 2019 | 2020 | |
| Real Gross Domestic Product (a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.10 | -0.49 | -0.08 | -0.03 | 0.01 | -0.03 | 0.01 | 0.01 | 0.00 | 0.00 | -0.13 | -0.05 | |
| Personal Consumption | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | |
| Business Fixed Investment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.46 | -3.90 | -0.48 | -0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.93 | -0.33 | |
| Equipment | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.25 | -3.98 | -0.41 | -0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.14 | -0.32 | |
| Intellectual Property Products | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.46 | -2.73 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | -0.88 | -0.17 | |
| Structures | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.47 | -5.00 | -1.50 | -0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.54 | -0.60 | |
| Residential Construction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.67 | -5.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.00 | 0.00 | -1.10 | 0.02 | |
| Government Purchases | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 1.31 | -0.16 | -0.15 | 0.00 | -0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 | 0.00 | |
| Net Exports | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -4.3 | -4.1 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | -4.0 | 0.0 | 0.0 | -4.1 | -4.0 | |
| Pct. Point Contribution to GDP | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.02 | 0.00 | |
| Inventory Change | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -2.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.71 | 0.00 | |
| Pct. Point Contribution to GDP | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.05 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Nominal GDP | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.27 | -0.70 | -0.61 | 0.07 | 0.04 | -0.12 | -0.07 | -0.07 | 0.00 | 0.00 | -0.27 | -0.13 | |
| Real Final Sales | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.06 | -0.55 | -0.08 | -0.03 | 0.01 | -0.03 | 0.01 | 0.01 | 0.00 | 0.00 | -0.13 | -0.05 | |
| Retail Sales (b) | 0.00 | 0.00 | 0.00 | 0.00 | -0.03 | 0.00 | 0.00 | 0.00 | 0.03 | -0.45 | -0.45 | -0.45 | -0.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.33 | -0.11 |
| Inflation Indicators (b) | | | | | | | | | | | | | | | | | | | | | |
| PCE Deflator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.05 | -0.11 | -0.24 | -0.22 | -0.16 | -0.12 | -0.01 | -0.06 | 0.00 | 0.00 | -0.16 | -0.09 | |
| "Core" PCE Deflator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.06 | -0.03 | -0.03 | -0.03 | 0.01 | -0.05 | -0.08 | -0.09 | 0.00 | 0.00 | -0.04 | -0.05 | |
| Consumer Price Index | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.11 | -0.24 | -0.22 | -0.20 | -0.08 | 0.05 | 0.02 | 0.00 | 0.00 | -0.14 | -0.05 | |
| "Core" Consumer Price Index | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.06 | -0.06 | -0.06 | -0.06 | -0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.05 | -0.02 | |
| Producer Price Index (Final Demand) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | -0.01 | -0.11 | -0.07 | -0.06 | 0.03 | 0.00 | 0.00 | 0.01 | -0.06 | -0.02 | |
| Employment Cost Index | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Real Disposable Income (a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.08 | -0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.07 | -0.24 | 0.00 | |
| Nominal Personal Income (b) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.30 | -0.32 | -0.15 | 0.15 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.08 | -0.11 | 0.04 | |
| Industrial Production (a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.08 | -1.58 | -2.11 | 0.06 | -0.26 | -0.27 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.83 | -0.24 | |
| Capacity Utilization | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.02 | -0.33 | -0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.15 | 0.00 | |
| Corporate Profits Before Taxes (b) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -4.30 | -3.50 | -0.23 | -3.61 | -2.11 | -1.00 | -2.00 | -1.00 | -1.00 | 0.00 | 0.00 | -2.88 | -1.54 | |
| Corporate Profits After Taxes | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -4.47 | -3.49 | -0.23 | -3.60 | -2.10 | -1.00 | -2.00 | -1.00 | -1.00 | 0.00 | 0.00 | -2.92 | -1.54 | |
| Federal Budget Balance (c) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -8.17 | 33.17 | 0.60 | 2.11 | -2.53 | -0.18 | 0.67 | 0.00 | 0.00 | 25.00 | 0.00 | | |
| Trade Weighted Dollar Index (d) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.75 | -1.75 | -1.25 | -1.00 | -1.75 | -1.75 | -1.25 | 0.00 | 0.00 | -1.19 | -1.44 | | |
| Nonfarm Payroll Change (e) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -12.00 | -48.00 | -15.00 | -10.00 | 40.00 | 280.00 | -200.00 | -75.00 | 0.00 | 0.00 | -21.25 | 11.25 | | |
| Unemployment Rate | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.07 | -0.07 | 0.00 | 0.00 | -0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.03 | -0.02 | |
| Housing Starts (f) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.04 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Light Vehicle Sales (g) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.03 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | |
| Crude Oil - Brent - Front Contract (h) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -4.00 | -7.00 | -4.00 | -4.00 | -4.00 | -4.00 | -1.00 | 0.00 | 0.00 | 0.00 | -3.75 | -2.25 | |
| Quarter-End Interest Rates (i) | | | | | | | | | | | | | | | | | | | | | |
| Federal Funds Target Rate | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.25 | -0.50 | -0.50 | -0.50 | -0.50 | -0.50 | -0.50 | 0.00 | 0.00 | -0.19 | -0.44 | |
| 3 Month LIBOR | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.20 | -0.40 | -0.50 | -0.45 | -0.50 | -0.50 | -0.25 | 0.00 | 0.00 | -0.28 | -0.43 | |
| Prime Rate | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.25 | -0.50 | -0.50 | -0.50 | -0.50 | -0.50 | -0.25 | 0.00 | 0.00 | -0.19 | -0.44 | |
| Conventional Mortgage Rate | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.45 | -0.45 | -0.40 | -0.40 | -0.30 | -0.25 | -0.10 | 0.00 | 0.00 | -0.33 | -0.26 | |
| 3 Month Bill | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.15 | -0.40 | -0.55 | -0.50 | -0.55 | -0.50 | -0.30 | 0.00 | 0.00 | -0.28 | -0.46 | |
| 2 Year Note | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.60 | -0.60 | -0.50 | -0.45 | -0.35 | -0.20 | -0.05 | 0.00 | 0.00 | -0.43 | -0.26 | |
| 5 Year Note | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.55 | -0.55 | -0.50 | -0.40 | -0.25 | -0.15 | -0.05 | 0.00 | 0.00 | 0.00 | -0.40 | -0.21 | |
| 10 Year Note | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.45 | -0.45 | -0.40 | -0.40 | -0.30 | -0.25 | -0.10 | 0.00 | 0.00 | 0.00 | -0.33 | -0.26 | |
| 30 Year Bond | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.35 | -0.35 | -0.30 | -0.30 | -0.25 | -0.15 | -0.05 | 0.00 | 0.00 | 0.00 | -0.25 | -0.19 | |

Forecast as of: June 12, 2019

Notes: (a) Compound Annual Growth Rate Quarter-over-Quarter

(b) Year-over-Year Percentage Change

(c) Quarterly Sum - Billions USD; Annual Data Represents Fiscal Yr.

(d) Federal Reserve Advanced Foreign Economies Index, 2006=100 - Quarter End

(e) Average Monthly Change

(f) Millions of Units - Annual Data - Not Seasonally Adjusted

(g) Quarterly Data - Average Monthly SAAR; Annual Data - Actual Total Vehicles Sold

(h) Quarterly Average of Daily Close

(i) Annual Numbers Represent Averages

Source: U.S. Department of Commerce, U.S. Department of Labor, IHS Markit, Federal Reserve Board and Wells Fargo Securities

Wells Fargo International Economic Forecast

(Year-over-Year Percent Change)

| | GDP | | | CPI | | |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | <u>2018</u> | <u>2019</u> | <u>2020</u> | <u>2018</u> | <u>2019</u> | <u>2020</u> |
| Global (PPP Weights) | 3.6% | 3.2% | 3.3% | 3.6% | 3.3% | 3.5% |
| Advanced Economies ¹ | 2.2% | 2.0% | 1.8% | 2.0% | 1.7% | 2.0% |
| United States | 2.9% | 2.6% | 2.1% | 2.4% | 1.8% | 2.3% |
| Eurozone | 1.9% | 1.1% | 1.4% | 1.8% | 1.4% | 1.5% |
| United Kingdom | 1.4% | 1.3% | 1.4% | 2.5% | 2.0% | 2.1% |
| Japan | 0.8% | 0.6% | 0.3% | 1.0% | 0.8% | 1.2% |
| Canada | 1.9% | 1.2% | 1.7% | 2.3% | 1.9% | 1.9% |
| Developing Economies ¹ | 4.5% | 4.1% | 4.3% | 4.8% | 4.4% | 4.6% |
| China | 6.6% | 6.1% | 6.0% | 2.1% | 2.2% | 2.3% |
| India | 7.4% | 6.3% | 6.9% | 3.9% | 3.4% | 4.5% |
| Mexico | 2.0% | 1.5% | 1.5% | 4.9% | 4.1% | 3.8% |

Forecast as of: June 12, 2019

¹Aggregated Using PPP Weights

Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

| | Central Bank Key Policy Rate | | | | | | 10-Year Bond | | | | | |
|-----------------------|------------------------------|--------|--------|--------|--------|--------|--------------|--------|-------|-------|-------|-------|
| | 2019 | | | 2020 | | | 2019 | | | 2020 | | |
| | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 |
| U.S. | 2.50% | 2.25% | 2.00% | 2.00% | 2.00% | 2.00% | 2.15% | 2.20% | 2.30% | 2.35% | 2.40% | 2.40% |
| Japan | -0.10% | -0.10% | -0.10% | -0.10% | -0.10% | -0.10% | -0.05% | 0.00% | 0.00% | 0.05% | 0.10% | 0.10% |
| Eurozone ¹ | -0.40% | -0.40% | -0.40% | -0.40% | -0.40% | -0.20% | -0.10% | -0.05% | 0.00% | 0.10% | 0.20% | 0.35% |
| U.K. | 0.75% | 0.75% | 0.75% | 0.75% | 1.00% | 1.00% | 0.90% | 1.00% | 1.10% | 1.30% | 1.50% | 1.65% |
| Canada | 1.75% | 1.75% | 1.75% | 1.75% | 1.75% | 1.75% | 1.55% | 1.60% | 1.65% | 1.65% | 1.70% | 1.70% |

Forecast as of: June 12, 2019

¹ 10-year German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

International Forecast: Change Since Forecast from May 31, 2019

Changes to the Wells Fargo International Economic Forecast

| | GDP | | | CPI | | |
|-----------------------------------|--------|--------|--------|-------|--------|--------|
| | 2018 | 2019 | 2020 | 2018 | 2019 | 2020 |
| Global (PPP Weights) | 0.00% | -0.20% | -0.04% | 0.00% | -0.05% | -0.02% |
| Advanced Economies ¹ | 0.00% | -0.08% | -0.03% | 0.00% | -0.03% | -0.03% |
| United States | 0.00% | -0.13% | -0.06% | 0.00% | -0.18% | -0.01% |
| Eurozone | 0.03% | 0.02% | 0.00% | 0.00% | 0.18% | 0.05% |
| United Kingdom | 0.00% | 0.00% | 0.00% | 0.00% | 0.07% | 0.02% |
| Japan | -0.02% | -0.07% | -0.08% | 0.00% | -0.18% | 0.00% |
| Canada | 0.04% | -0.46% | 0.11% | 0.00% | 0.07% | -0.10% |
| Developing Economies ¹ | 0.00% | -0.29% | -0.05% | 0.00% | -0.07% | -0.02% |
| China | 0.00% | -0.17% | 0.02% | 0.00% | 0.02% | 0.00% |
| India ² | 0.10% | -0.66% | -0.16% | 0.00% | -0.47% | -0.05% |
| Mexico | 0.00% | -0.16% | 0.00% | 0.00% | 0.05% | 0.02% |

Forecast as of: June 12, 2019

¹Aggregated Using PPP Weights

Changes to the Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

| | Central Bank Key Policy Rate | | | | | | 10-Year Bond | | | | | |
|-----------------------|------------------------------|--------|--------|--------|--------|--------|--------------|--------|--------|--------|--------|--------|
| | 2019 | | | 2020 | | | 2019 | | | 2020 | | |
| | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 |
| U.S. | 0.00% | -0.25% | -0.50% | -0.50% | -0.50% | -0.50% | -0.45% | -0.45% | -0.40% | -0.40% | -0.30% | -0.25% |
| Japan | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | -0.09% | -0.08% | -0.10% | -0.08% | -0.06% | -0.06% |
| Euroland ¹ | 0.00% | 0.00% | 0.00% | -0.20% | -0.20% | -0.20% | -0.25% | -0.30% | -0.35% | -0.35% | -0.35% | -0.30% |
| U.K. | 0.00% | 0.00% | 0.00% | -0.25% | 0.00% | -0.25% | -0.35% | -0.30% | -0.50% | -0.40% | -0.25% | -0.20% |
| Canada | 0.00% | 0.00% | 0.00% | -0.25% | -0.25% | -0.25% | -0.30% | -0.30% | -0.35% | -0.40% | -0.35% | -0.30% |

Forecast as of: June 12, 2019

¹ 10-year German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

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