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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

July 11, 2019

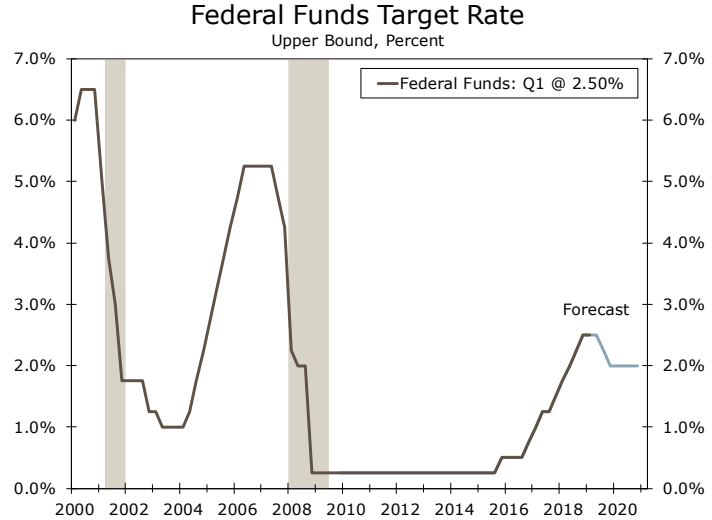
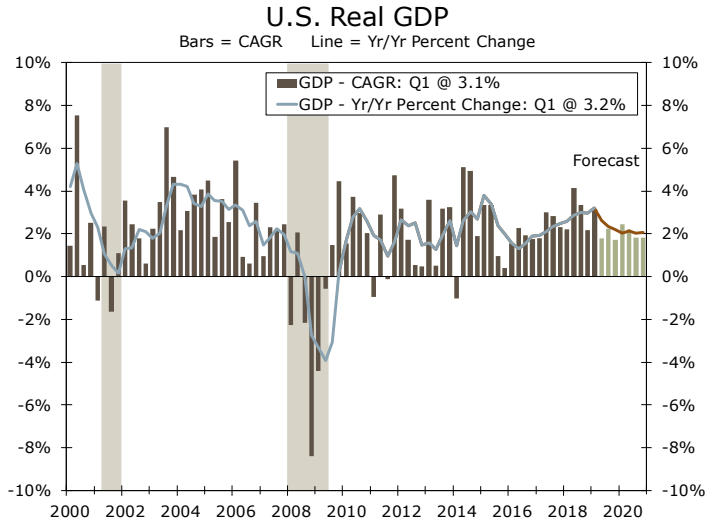
Together we'll go far



Key Takeaways

Developments since our June Monthly Economic Outlook

- **Our forecast for 2019 U.S. real GDP growth is unchanged at 2.6%.** Personal consumption and government spending are likely to support growth in the near-term, but business fixed investment growth appears tepid, and residential construction spending continues to contract.
- **Our forecast for the fed funds rate is also unchanged. We continue to 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.** Recent economic data in the United States have been supportive of our view that no additional easing will be needed past the two cuts we have forecast this year. However, we do not believe the recent data have been strong enough to forestall the cuts we already have slated to occur. **Our 2019 year-end target for the 10-year Treasury yield remains 2.30%.**
- Global growth has remained weak, and our forecasts for monetary policy abroad have shifted towards easier policy, on balance. Specifically, **we believe the European Central Bank will cut rates 10 bps at its September meeting.** At this point in time, we do not think the ECB will restart its asset purchase program.



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

Monthly Macro Calendar: July 8-August 2

Monday	Tuesday	Wednesday	Thursday	Friday
8	9	10	11	12
Consumer Credit May \$17.1B Bullard* (St. Louis Fed) Speaks at Washington University	JOLTS Job Openings May 7,323K Powell* (Fed Chair) Speaks on stress tests China CPI (YoY) June 2.7%	FOMC Meeting Minutes Powell* (Fed Chair) Testifies before House Fin. Services Panel George* (Kansas City Fed) Speaks in Helsinki Bank of Canada Meeting Previous 1.75%	CPI (YoY) May 1.8%, June 1.6% (W) Powell* (Fed Chair) Testifies before Senate Banking Committee Williams* (Fed Board of Governors) Speaks on Revitalization in NY	PPI Final Demand (YoY) May 1.8%, June 1.7% (W) Evans* (Chicago Fed) Speaks on Trade and Economy in Chicago
15	16	17	18	19
Import Price Index (YoY) May -1.5% Williams* (Fed Board of Governors) Speaks at LIBOR briefing China Q2 GDP (NSA, YoY) Q1 6.4%	Retail Sales (MoM) May 0.5% Industrial Production (MoM) May 0.4% Evans* (Chicago Fed) Speaks in Chicago	Housing Starts May 1,269K Eurozone Q2 GDP (SA, QoQ) Q1 0.4% U.S. Federal Reserve Beige Book	Williams* (Fed Board of Governors) Speaks on monetary policy Bostic (Atlanta Fed) Speaks to Clarksville Chamber in Tennessee	Bullard* (St. Louis Fed) Speaks at Central Bank Research in New York Rosengren* (Boston Fed) Speaks at Panel on Central Bank Independence
22	23	24	25	26
	Existing Home Sales May 5.34M	New Home Sales May 626K	Durable Goods Orders (MoM) May -1.3%	GDP Q2 (Annualized, QoQ) Q1 3.1% House Scheduled to Leave for August Recess
29	30	31	1 of August	2
	Personal Income (MoM) May 0.5% Consumer Confidence Index June 121.5	Eurozone CPI (YoY) June 1.2% FOMC Rate Decision Previous 2.50%, July 2.25% (W)	ISM Manufacturing Index June 51.7	Nonfarm Payrolls June 224K Trade Balance May -\$55.5B Senate Scheduled to Leave for August Recess

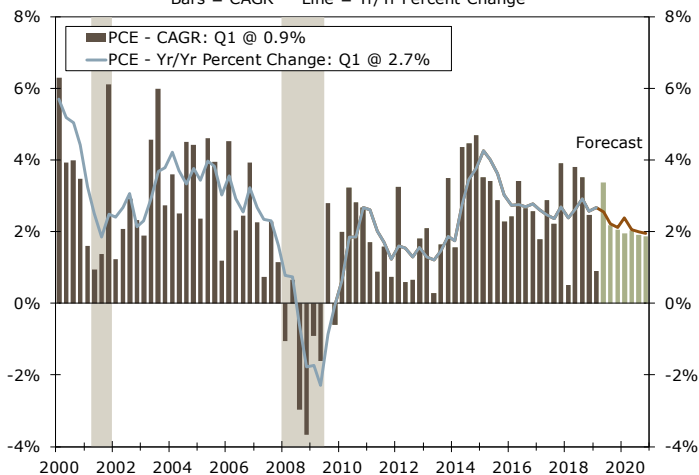
Note: (W) = Wells Fargo Estimate, (C) = Consensus Estimate, * = voting FOMC member in 2019

Source: Bloomberg LP and Wells Fargo Securities

- Real GDP growth forecast for Q2-2019: 1.8% (seasonally adjusted annualized rate)
 - **Change since last *Monthly Economic Outlook*: -0.2 percentage point**
 - *Commentary*: Our forecast for Q2 growth is little changed. We project that personal consumption is on pace for a 3.4% annualized gain in Q2, reflecting some rebound from a weak Q1 reading. Government consumption and investment is tracking to grow 5.2%, which would mark the fastest annualized rate since Q2-2009. This strength is partly due to a bounce-back from the federal government shutdown earlier this year. Equipment spending looks poised to contract, as nondefense capital goods shipments have fallen sharply. Discounting the Boeing-related weakness, however, private capital goods shipments ex-aircraft continue to grind higher, although the pace of growth remains more tepid than in the first quarter. Spending on structures appears likely to decline in Q2 amid a pullback in energy-related investment.
- Real GDP growth forecast for full-year 2019: 2.6%
 - **Change since last *Monthly Economic Outlook*: No Change**
 - *Commentary*: Our forecast for 2019 GDP growth is unchanged. Growth should be supported by personal consumption and government spending, while business investment growth should slow.

Real Personal Consumption Expenditures

Bars = CAGR Line = Yr/Yr Percent Change



Source: U.S. Department of Commerce and Wells Fargo Securities

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 amid increased confidence, and investment spending accelerates. After a transitory slowdown, inflation returns back to the 2% target.
- *Downside scenario*: Trade tensions come back to the fore and 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 drags global growth to its slowest pace since 2009, pulling the United States down with it.

Inflation Forecast

- Inflationary pressure remains modest. **We still do not expect core PCE inflation to return to 2% until 2020.** The overall trend in inflation remains tame and continues to support the case for “insurance” cuts by the Fed.

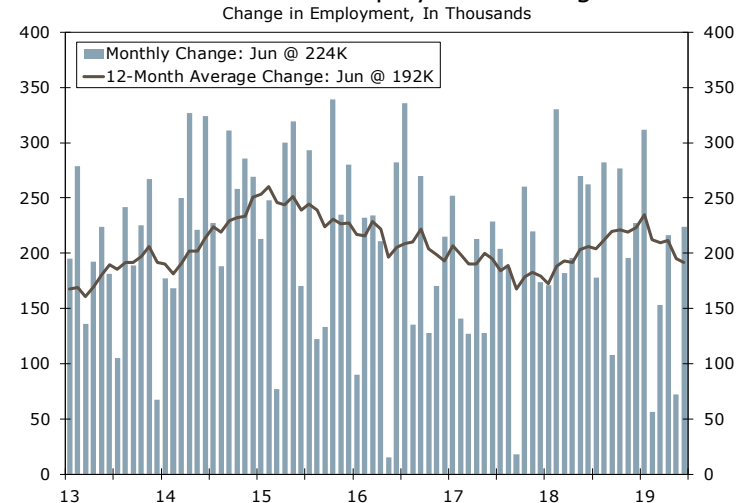
Labor Market Forecast

- Employment growth rebounded in June, allaying fears of a sharp deterioration in the labor market. **We expect employment growth to keep slowing gradually but remain strong enough for 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 the unemployment rate steady.

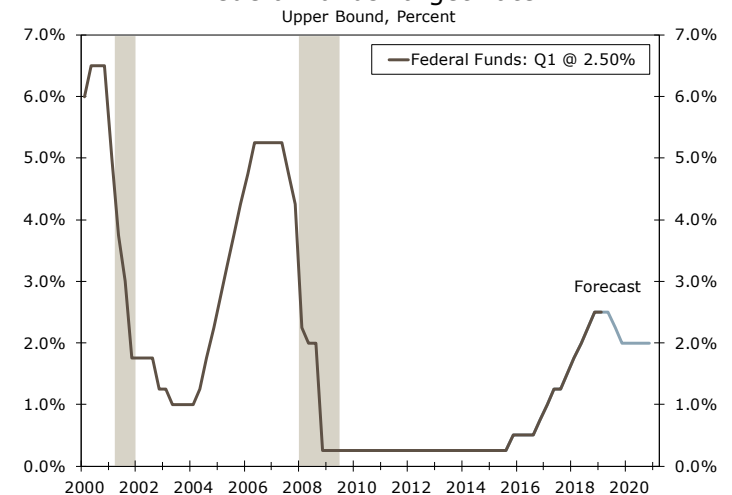
Fed Funds Outlook

- Fed Funds Forecast for 2019
 - **One 25 bps cut in July 2019, one 25 bps cut in Q4-2019**
 - The near-term risks surrounding trade have diminished and U.S. growth is expected to remain close to its potential rate. But, with muted inflation and less available ammunition than in prior expansions, we still 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%**
 - If the data are in-line with our forecast, we do not believe further accommodation will be needed in 2020.

U.S. Nonfarm Employment Change



Federal Funds Target Rate



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

Wells Fargo U.S. Interest Rate Forecast

	Actual				Forecast							
	2018				2019				2020			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Quarter End Interest Rates												
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	2.32	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	3.80	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	2.12	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	2.09	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	1.92	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	1.75	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	1.76	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	2.00	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	2.52	2.65	2.75	2.80	2.85	2.90	2.95

Forecast as of: July 11, 2019

Source: Federal Reserve Board and Wells Fargo Securities

What Are We Watching in the Month Ahead?

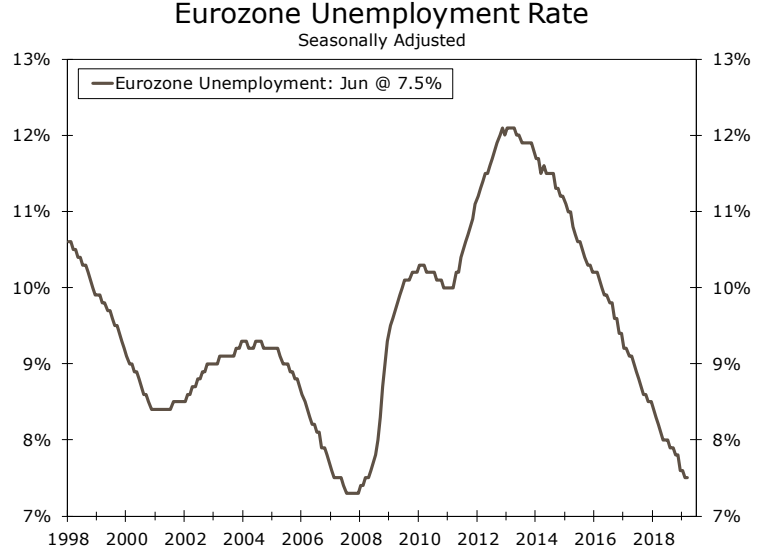
- Insurance cuts versus a full-blown easing cycle
 - In our view, the Fed will cut the fed funds rates 25 bps twice in the second half of the year, then keep policy on hold through 2020. Markets, in contrast, are priced for nearly 100 bps of easing by the end of 2020.
 - **If the Fed cuts rates in July as we expect, Treasury yields could still rise in response if the Fed signals that less stimulus will be forthcoming than the market currently anticipates.**
- Inflation: Not slowing enough for a full easing cycle
 - Although core inflation has slowed since late 2018, it has been steady over the past couple months. **If economic growth remains decent, it would likely take a further slowdown in inflation for the Fed to cut more than twice.**
- Global Economy: On pace for the slowest growth since 2009
 - Chairman Powell has signaled the FOMC's concern about the health of the global economy. **For U.S. Treasury yields to rise meaningfully, it will likely require an economic rebound elsewhere in the world, particularly in Europe.**

Eurozone Economy Still Teetering

- The recent slowdown in the Eurozone economy has been defined by a lagging manufacturing sector and a resilient service sector. This is perhaps best illustrated in Germany, Europe's largest economy and manufacturing powerhouse. **Factory orders in Germany are contracting at a pace not seen since the Great Recession.**
- Inflation also remains a persistent concern for monetary policymakers in Europe. Core CPI inflation is 0.8% year-over-year through May, and market-based inflation expectations have fallen significantly over the past year.

What to Do on the Cliff Edge?

- Despite the slowdown in economic growth that has taken place over the past year, **the unemployment rate in Europe continues to fall.** The unemployment rate is down 0.8 percentage points since May 2018 and 0.4 percentage points since the end of last year.
- **On balance, the Eurozone economy continues to tread water.** This enduring period of weak but still positive economic growth has put ECB officials in an awkward position, unable to tighten policy but unsure if more stimulus is truly needed. The lack of a clear rebound has led us to update our ECB forecast, covered on the next page.



Source: Bloomberg LP, IHS Markit and Wells Fargo Securities

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 <i>25 bps hike</i>	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: Cut in Q3-2019 (10 bps)
United Kingdom (BoE)	0.75	August 2018 <i>25 bps hike</i>	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 <i>25 bps hike</i>	No change through end-2020

Forecast as of: July 11, 2019

Source: Bloomberg LP and Wells Fargo Securities

What Are We Watching in the Month Ahead?

- European Central Bank
 - With core inflation remaining stagnant, inflation expectations down and the Eurozone economy still showing little evidence of an imminent rebound, **we look for a 10 bps rate cut in September from the ECB.**
 - At this point in time, we do not anticipate the ECB restarting its asset purchase program.
- Bank of Japan
 - **We do not expect the BoJ to make any material changes to 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.

Mexico Lagging the U.S., Canada

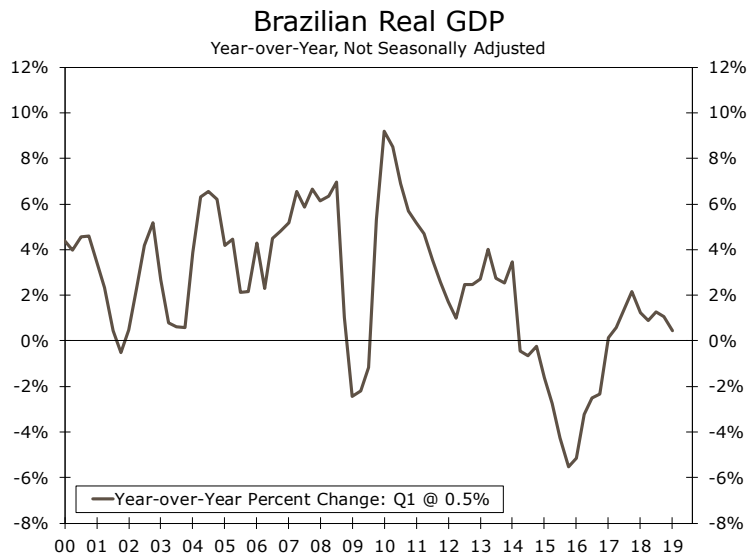
- The weakness in the global economy has not spared the developing economies in the Western Hemisphere. Mexico's economy continues to struggle, with real GDP growth just 1.3% year-over-year in Q1.
- In addition to the impact from a slow global growth environment, trade uncertainty, high real interest rates and structural challenges in some key sectors like oil and automobile manufacturing have weighed on Mexican growth. Against this backdrop, **we believe the Central Bank of Mexico will cut rates at least once before the end of the year.**



Source: IHS Markit and Wells Fargo Securities

Brazil Economic Recovery Faltering

- The Brazilian economy has also struggled of late. Real GDP in Brazil was accelerating in the wake of the deep 2014-2017 recession, but growth has once again begun to slow. **The ominous fiscal outlook remains an ongoing challenge in Brazil, and proposed pension reform to put the nation's public finances onto a more sustainable path continues to be a source of uncertainty.**
- While we do not believe the Central Bank of Brazil is ready to cut rates at this time, the motivation for it to pursue higher interest rates has been significantly reduced.



Countries that Profit from the Trade War with China

- **Tariffs have reduced imports into the United States from China on trend** and reversed (at least temporarily) a decades-long expansion of the U.S-China trade deficit.
- Yet, **the trade war has not reduced total imports nor has it made a dent in the overall trade deficit.** In fact, since the start of 2017, the trade deficit has widened 27.7%.
- Perhaps eventually production will shift back to the U.S., but so far there is not much evidence to support that supposition. Instead, **domestic importers are re-routing foreign supply chains.** Vietnam, Mexico and the Eurozone are the key benefactors to date.
- In 2017, **the three biggest U.S. import categories from China were computers, electronics and machinery & other manufacturing,** all of which have been exposed to tariffs and have seen their share of imports from China fall through the first five months of this year.
- In 2017, the computer & peripheral equipment category accounted for more than a third of all U.S. imports from China. As China's share has decreased, **Vietnam has more than doubled its share of U.S. computer imports** to 5.7% in the first five months of 2019. Mexico has been the largest beneficiary for electrical product imports, while Mexico, the Eurozone and Japan gained in U.S. imports of machinery and other manufacturing products.
- It appears that rather than spurring a shift towards more domestic production, thus far **the tariffs are instead shifting global supply chains to other foreign trading partners.**
- See our recent [special report](#) for more detail.

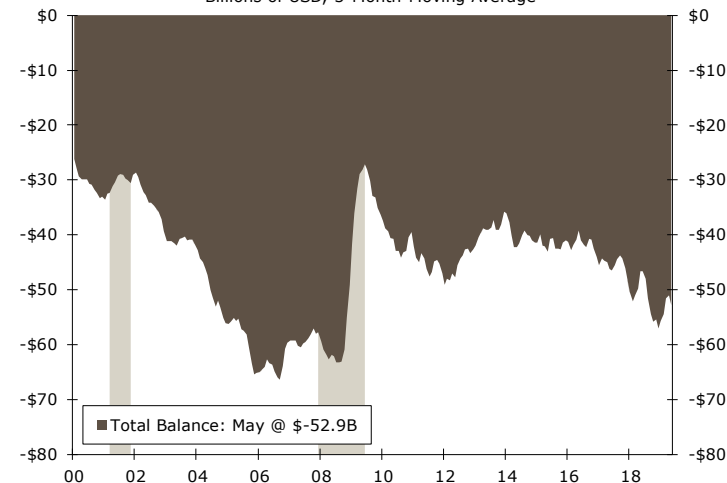
U.S. Imports from China

Billions of USD, NSA



U.S. Trade Balance in Goods & Services

Billions of USD, 3-Month Moving Average



Source: U.S. Department of Commerce and Wells Fargo Securities

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	1.8	2.2	1.7	2.4	2.2	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	0.9	3.4	2.2	2.1	2.0	2.0	1.9	1.9	2.5	2.6	2.4	2.1
Business Fixed Investment	9.6	7.3	3.4	4.8	11.5	8.7	2.5	5.4	4.4	0.0	2.1	4.3	3.9	3.6	2.9	2.8	5.3	6.9	3.5	3.3
Equipment	9.1	9.7	9.8	9.9	8.5	4.6	3.4	6.6	-1.0	-2.8	-0.5	3.9	3.1	2.6	2.1	2.0	6.1	7.4	1.3	2.1
Intellectual Property Products	8.0	6.6	1.7	0.7	14.1	10.5	5.6	10.7	12.0	6.2	5.0	4.6	4.7	4.6	3.7	3.6	4.6	7.5	8.4	4.6
Structures	12.8	3.8	-5.7	1.3	13.9	14.5	-3.4	-3.9	4.3	-5.0	3.0	4.5	4.5	4.0	3.5	3.5	4.6	5.0	0.4	3.4
Residential Construction	11.1	-5.5	-0.5	11.1	-3.4	-1.3	-3.6	-4.7	-2.0	-1.5	2.5	2.0	2.0	1.5	1.5	1.5	3.3	-0.3	-1.8	1.7
Government Purchases	-0.8	0.0	-1.0	2.4	1.5	2.5	2.6	-0.4	2.8	5.2	1.4	0.8	0.7	0.5	0.4	0.3	-0.1	1.5	2.3	1.0
Net Exports	-845.5	-844.1	-845.9	-899.2	-902.4	-841.0	-949.7	-955.7	-905.0	-931.8	-926.0	-939.3	-932.2	-931.0	-934.2	-933.6	-858.7	-912.2	-925.5	-932.7
Pct. Point Contribution to GDP	-0.1	0.1	0.0	-0.9	0.0	1.2	-2.0	-0.1	0.9	-0.6	0.1	-0.3	0.1	0.0	-0.1	0.0	-0.4	-0.3	-0.1	0.0
Inventory Change	-2.4	11.9	64.4	16.1	3.0	-36.8	89.8	96.8	122.8	82.0	80.0	68.0	75.0	80.0	80.0	80.0	22.5	45.0	88.2	78.8
Pct. Point Contribution to GDP	-0.8	0.2	1.0	-0.9	0.3	-1.2	2.3	0.1	0.6	-0.9	0.0	-0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0
Nominal GDP (a)	3.9	4.2	4.8	5.1	4.3	7.6	4.9	4.1	3.8	4.4	3.8	3.9	4.6	4.3	3.6	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	2.6	2.9	2.3	2.0	2.3	2.1	1.8	1.8	2.2	2.7	2.5	2.2
Retail Sales (b)	4.9	4.0	4.1	5.5	4.7	5.7	5.6	3.4	2.8	3.3	3.5	4.5	5.1	4.4	4.4	3.8	4.6	4.8	3.5	4.4
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	1.7	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	1.7	1.6	1.7	1.8	2.0	2.0	2.0	1.9	1.6	1.9	1.7	2.0
Consumer Price Index	2.5	1.9	2.0	2.1	2.2	2.7	2.6	2.2	1.6	1.8	1.8	1.9	2.3	2.2	2.2	2.2	2.1	2.4	1.8	2.2
"Core" Consumer Price Index	2.1	1.8	1.7	1.8	1.9	2.2	2.2	2.2	2.1	2.0	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	1.9	1.7	2.4	2.3	2.4	2.3	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	3.0	3.1	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	2.0	3.3	3.0	2.9	2.4	2.8	1.5	2.3	2.6	2.8	2.7	2.6
Nominal Personal Income (b)	4.1	4.3	4.5	4.6	4.3	4.5	4.5	4.3	3.8	4.1	4.2	4.2	4.4	4.2	3.9	3.6	4.4	4.4	4.1	4.0
Industrial Production (a)	2.4	5.6	-0.8	7.5	2.3	4.6	5.2	3.9	-2.2	-0.8	2.0	1.9	0.2	0.7	0.7	0.1	2.3	3.9	1.3	0.8
Capacity Utilization	75.5	76.5	76.3	77.6	77.9	78.5	79.1	79.4	78.6	78.3	78.9	79.1	79.0	79.1	79.0	78.9	76.5	78.7	78.7	79.0
Corporate Profits Before Taxes (b)	3.0	3.6	2.8	3.3	5.9	7.3	10.4	7.4	3.4	2.7	3.5	2.1	1.4	0.5	-2.5	-3.0	3.2	7.8	2.9	-0.9
Corporate Profits After Taxes	6.0	6.2	6.4	7.3	15.1	15.8	19.6	14.3	2.4	2.5	3.3	1.9	1.3	0.4	-2.8	-3.3	6.5	16.2	2.5	-1.2
Federal Budget Balance (c)	-317	4	-143	-225	-375	-7	-172	-319	-372	-55	-203	-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	109.7	109.3	108.8	108.0	107.0	105.8	104.5	108.9	106.4	109.4	106.3
Nonfarm Payroll Change (e)	173	190	136	218	228	243	189	233	174	171	155	150	190	420	-100	15	179	223	162	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	1.21	1.28	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	17.0	16.7	16.6	16.6	16.5	16.4	16.3	17.1	17.2	16.8	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	67.6	65.0	60.0	60.0	60.0	62.0	65.0	54.7	71.5	64.1	61.8
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	2.32	2.25	2.15	2.20	2.15	2.15	2.15	1.26	2.31	2.33	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	3.80	3.80	3.90	3.95	4.00	4.00	4.05	3.99	4.54	3.95	4.00
3 Month Bill	0.76	1.03	1.06	1.39	1.73	1.93	2.19	2.45	2.40	2.12	2.00	1.85	1.90	1.85	1.85	1.85	0.95	1.97	2.09	1.86
6 Month Bill	0.91	1.14	1.20	1.53	1.93	2.11	2.36	2.56	2.44	2.09	1.95	1.90	1.95	1.90	1.90	1.90	1.07	2.14	2.10	1.91
1 Year Bill	1.03	1.24	1.31	1.76	2.09	2.33	2.59	2.63	2.40	1.92	1.90	1.90	1.95	1.90	1.95	1.95	1.20	2.33	2.03	1.94
2 Year Note	1.27	1.38	1.47	1.89	2.27	2.52	2.81	2.48	2.27	1.75	1.85	1.90	1.95	1.95	2.00	2.00	1.40	2.53	1.94	1.98
5 Year Note	1.93	1.89	1.92	2.20	2.56	2.73	2.94	2.51	2.23	1.76	1.95	2.00	2.05	2.10	2.15	2.15	1.91	2.75	1.99	2.11
10 Year Note	2.40	2.31	2.33	2.40	2.74	2.85	3.05	2.69	2.41	2.00	2.20	2.30	2.35	2.40	2.40	2.45	2.33	2.91	2.23	2.40
30 Year Bond	3.02	2.84	2.86	2.74	2.97	2.98	3.19	3.02	2.81	2.52	2.65	2.75	2.80	2.85	2.90	2.95	2.89	3.11	2.68	2.88

Forecast as of: July 11, 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

U.S. Economic Forecast: Change Since Forecast from June 12, 2019

Changes to the 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)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	-0.20	0.14	-0.71	0.32	0.10	0.04	0.00	0.00	0.00	-0.05	-0.02
Personal Consumption	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.42	0.48	-0.17	-0.38	0.03	0.00	0.06	0.00	0.00	0.00	-0.06	-0.05
Business Fixed Investment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	-0.16	-0.59	1.03	0.01	0.01	0.01	0.01	0.00	0.00	0.50	0.11
Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	-1.46	2.21	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.23
Intellectual Property Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.84	1.15	0.25	0.02	0.02	0.02	0.01	0.01	0.00	0.00	1.44	0.12
Structures	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.64	-2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	-0.17
Residential Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.13
Government Purchases	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.01
Net Exports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.4	-9.4	-23.9	-24.1	-24.7	-25.2	-25.6	-26.0	0.0	0.0	-14.7	-25.4
Pct. Point Contribution to GDP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.17	-0.31	0.00	-0.01	-0.01	-0.01	-0.01	0.00	0.00	-0.08	-0.06
Inventory Change	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-2.69	-22.00	8.71	-19.33	-5.00	0.00	0.00	0.00	0.00	0.00	-8.83	-1.25
Pct. Point Contribution to GDP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	-0.41	0.64	-0.59	0.30	0.10	0.00	0.00	0.00	0.00	-0.05	0.04
Nominal GDP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	-0.13	0.16	-0.73	0.32	0.10	0.04	0.00	0.00	0.00	0.01	-0.02
Real Final Sales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.22	-0.52	-0.11	0.01	0.00	0.04	0.00	0.00	0.00	0.00	-0.07
Retail Sales (b)	-0.05	-0.05	-0.14	-0.18	-0.10	-0.03	-0.07	-0.04	-0.12	0.77	0.95	0.97	0.71	0.07	0.00	0.00	-0.11	-0.06	0.64	0.19
Inflation Indicators (b)																				
PCE Deflator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.06	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.01
"Core" PCE Deflator	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07	0.08	0.08	0.04	0.01	0.00	0.00	0.00	0.00	0.07	0.01
Consumer Price Index	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	0.00	-0.05	-0.09	-0.04	-0.09	0.01	0.00	0.00	-0.03	-0.05
"Core" Consumer Price Index	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.02	-0.02	-0.02	0.01	0.00	0.00	0.00	0.00	-0.02	0.00
Producer Price Index (Final Demand)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.02	0.08	0.05	0.04	0.03	0.09	0.14	0.00	0.00	0.03	0.07
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	0.00	-0.22	0.00	-0.10	-0.10	-0.50	0.00	-1.20	-0.20	0.00	0.00	-0.08	-0.32
Nominal Personal Income (b)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	0.04	0.07	0.07	0.08	0.03	0.00	0.00	0.00	0.00	0.04	0.03
Industrial Production (a)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.26	0.91	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.10
Capacity Utilization	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	-0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.08	0.00
Corporate Profits Before Taxes (b)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
Corporate Profits After Taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00
Federal Budget Balance (c)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.29	-15.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade Weighted Dollar Index (d)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.42	2.25	2.25	2.50	3.00	3.00	2.50	0.00	0.00	1.73	2.75
Nonfarm Payroll Change (e)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.42	0.00
Unemployment Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Housing Starts (f)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	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	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
Crude Oil - Brent - Front Contract (h)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	4.00	-4.00	-4.00	-3.00	-3.00	0.00	0.00	0.00	0.41	-2.50
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 Month LIBOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.00
Prime Rate	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
Conventional Mortgage Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
3 Month Bill	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.00
2 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.00
5 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.00
10 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	0.00
30 Year Bond	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	0.00

Forecast as of: July 11, 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%	2.2%
Eurozone	1.9%	1.2%	1.4%	1.8%	1.4%	1.5%
United Kingdom	1.4%	1.3%	1.4%	2.5%	2.0%	2.0%
Japan	0.8%	0.7%	0.4%	1.0%	0.8%	1.2%
Canada	1.9%	1.3%	1.8%	2.3%	1.9%	2.0%
Developing Economies ¹	4.5%	4.0%	4.3%	4.8%	4.5%	4.6%
China	6.6%	6.1%	6.0%	2.1%	2.3%	2.3%
India	7.4%	6.2%	6.8%	3.9%	3.3%	4.4%
Mexico	2.0%	1.3%	1.7%	4.9%	4.0%	3.8%

Forecast as of: July 11, 2019

¹Aggregated Using PPP Weights

Source: International Monetary Fund and Wells Fargo Securities

Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

	Central Bank Key Policy Rate					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	2.25%	2.00%	2.00%	2.00%	2.00%	2.00%
Eurozone ¹	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%
United Kingdom	0.75%	0.75%	0.75%	1.00%	1.00%	1.25%
Japan	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%
Canada	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
	2-Year Note					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	1.85%	1.90%	1.95%	1.95%	2.00%	2.00%
Eurozone ²	-0.70%	-0.65%	-0.55%	-0.40%	-0.25%	-0.10%
United Kingdom	0.70%	0.80%	1.05%	1.30%	1.50%	1.65%
Japan	-0.05%	-0.05%	0.00%	0.05%	0.05%	0.05%
Canada	1.55%	1.65%	1.70%	1.75%	1.80%	1.85%
	10-Year Note					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	2.20%	2.30%	2.35%	2.40%	2.40%	2.45%
Eurozone ²	-0.25%	-0.15%	-0.05%	0.05%	0.15%	0.25%
United Kingdom	1.00%	1.15%	1.35%	1.55%	1.70%	1.80%
Japan	0.00%	0.00%	0.05%	0.10%	0.10%	0.15%
Canada	1.60%	1.70%	1.75%	1.80%	1.85%	1.90%

Forecast as of: July 11, 2019

¹ ECB Deposit Rate ² German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

Changes to the Wells Fargo International Economic Forecast

	GDP			CPI		
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Global (PPP Weights)	0.00%	-0.04%	0.00%	0.00%	0.00%	-0.02%
Advanced Economies ¹	0.00%	0.00%	0.00%	0.00%	-0.05%	-0.04%
United States	0.00%	-0.06%	-0.03%	0.00%	-0.05%	-0.06%
Eurozone	0.00%	0.04%	0.01%	0.00%	-0.04%	-0.03%
United Kingdom	0.00%	0.00%	0.00%	0.00%	0.01%	-0.06%
Japan	0.02%	0.11%	0.08%	0.00%	-0.05%	0.00%
Canada	0.00%	0.10%	0.05%	0.00%	0.01%	0.09%
Developing Economies ¹	0.00%	-0.06%	0.00%	0.00%	0.04%	-0.01%
China	0.00%	0.00%	0.00%	0.00%	0.17%	0.03%
India ²	0.00%	-0.07%	-0.05%	0.00%	-0.11%	-0.10%
Mexico	0.00%	-0.15%	0.18%	0.00%	-0.12%	0.01%

Forecast as of: July 11, 2019

¹Aggregated Using PPP Weights

Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

	Central Bank Key Policy Rate					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Eurozone ¹	-0.10%	-0.10%	-0.10%	-0.10%	-0.30%	0.00%
United Kingdom	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Japan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	2-Year Note					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Eurozone ²	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
United Kingdom	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Japan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	10-Year Note					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	0.00%	0.00%	0.00%	0.00%	0.00%	2.45%
Eurozone ²	-0.20%	-0.15%	-0.15%	-0.15%	-0.20%	0.25%
United Kingdom	0.00%	0.05%	0.05%	0.05%	0.05%	1.80%
Japan	0.00%	0.00%	0.00%	0.00%	0.00%	0.15%
Canada	0.00%	0.05%	0.10%	0.10%	0.15%	1.90%

Forecast as of: July 11, 2019

¹ ECB Deposit Rate ² German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

Economists & Macro Strategists

Jay H. Bryson, Acting Chief Economist	jay.bryson@wellsfargo.com
Mark Vitner, Senior Economist	mark.vitner@wellsfargo.com
Sam Bullard, Senior Economist	sam.bullard@wellsfargo.com
Nick Bennenbroek, Macro Strategist	nicholas.bennenbroek@wellsfargo.com
Tim Quinlan, Senior Economist	tim.quinlan@wellsfargo.com
Azhar Iqbal, Econometrician	azhar.iqbal@wellsfargo.com
Sarah House, Senior Economist	sarah.house@wellsfargo.com
Charlie Dougherty, Economist	charles.dougherty@wellsfargo.com
Erik Nelson, Macro Strategist	erik.f.nelson@wellsfargo.com
Michael Pugliese, Economist	michael.d.pugliese@wellsfargo.com
Brendan McKenna, Macro Strategist	brendan.mckenna@wellsfargo.com

Economic Analysts

Shannon Seery, Economic Analyst	shannon.seery@wellsfargo.com
Matthew Honnold, Economic Analyst	matthew.honnold@wellsfargo.com
Jen Licis, Economic Analyst	jennifer.licis@wellsfargo.com

Administrative Assistant

Coren Burton, Administrative Assistant	coren.burton@wellsfargo.com
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