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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

August 06, 2019

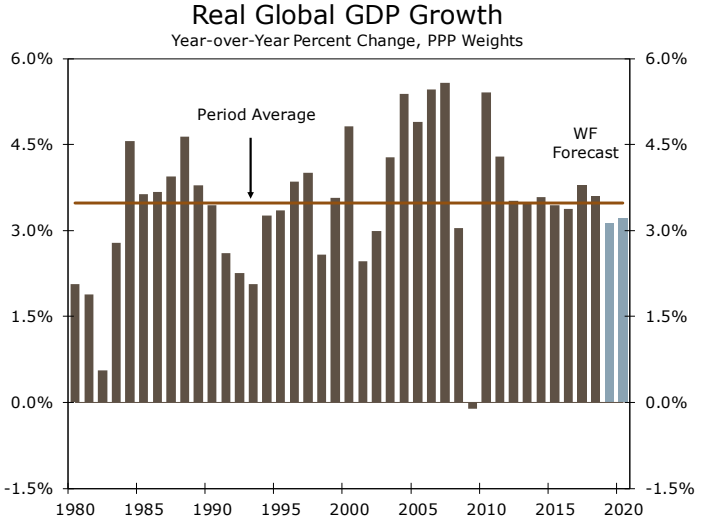
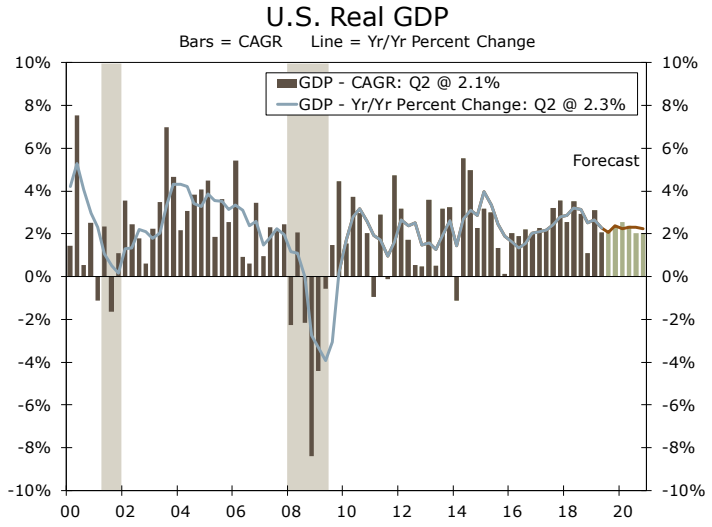
Together we'll go far



Key Takeaways

Developments since our July Monthly Economic Outlook

- Our forecast for 2019 U.S. real GDP growth has fallen to 2.3%. This in part reflects annual revisions to previous data. As a result, our forecast for 2020 has risen. On balance, U.S. economic growth continues to be decent, led by consumer and government spending, but investment spending growth is tepid.
- Our forecast for the fed funds rate has changed. We now expect a 25 bps cut at the September meeting and then no further changes to policy through the end of 2020. We believe the risks to this forecast are tilted toward more easing rather than less. In the near term, we expect the Fed to act more quickly given the recent deterioration in U.S.-China trade relations. More risk to the downside from trade and a more dovish Fed will likely keep downward pressure on yields over the next few months. Our 2019 year-end forecast for the 10-year Treasury yield is now 2.05%.
- Our global forecasts have shifted towards easier monetary policy and weaker growth, on balance. We believe the European Central Bank will cut rates 10 bps and restart QE in September. We also no longer expect the Bank of England to begin hiking its policy rate in mid-2020.



Source: U.S. Department of Commerce, International Monetary Fund and Wells Fargo Securities

Monthly Macro Calendar: August 5-September 6

Monday	Tuesday	Wednesday	Thursday	Friday
5	6	7	8	9
ISM Non-Manufacturing Index July 53.7 Brainard* (Fed Board of Governors) Speaks on Payment System	JOLTS Job Openings June 7.3M Bullard* (St. Louis Fed) Speaks in Washington	Evans* (Chicago Fed) Speaks in Chicago Reserve Bank of India Meeting Previous 5.75% (Repurchase Rate)	Japan GDP (QoQ Annualized) Q1 2.2%; Q2 0.5% (C)	PPI Final Demand (YoY) June 1.7%; July 1.6% (W) U.K. GDP (QoQ) Q1 0.5%; 0.0% (C)
12	13	14	15	16
	Consumer Price Index (YoY) June 1.6%	Import Price Index (YoY) June -2.0% Eurozone GDP (QoQ) Q1 0.2% U.K. CPI (YoY) June 2.0%	Retail Sales (MoM) June 0.4% Industrial Production (MoM) June 0.0% Bank of Mexico Meeting Previous 8.25% (Overnight Rate)	Housing Starts June 1.3M
19	20	21	22	23
		Existing Home Sales June 5.27M Canada CPI (YoY) June 2.0% FOMC Meeting Minutes	Federal Reserve Policy Symposium Annual Meeting in Jackson Hole Japan CPI (YoY) June 0.7%	New Home Sales June 646K
26	27	28	29	30
Durable Goods Orders (MoM) June 1.9%	Consumer Confidence July 135.7			Personal Income (MoM) June 0.4% Eurozone CPI (YoY) July 1.1%
2 of September	3	4	5	6
	ISM Manufacturing Index July 51.2 Reserve Bank of Australia Meeting Previous 1.00% (Cash Rate Target)	Trade Balance June -\$55.2B Bank of Canada Meeting Previous 1.75% (Overnight Rate) U.S. Federal Reserve Beige Book		Nonfarm Payrolls July 164K

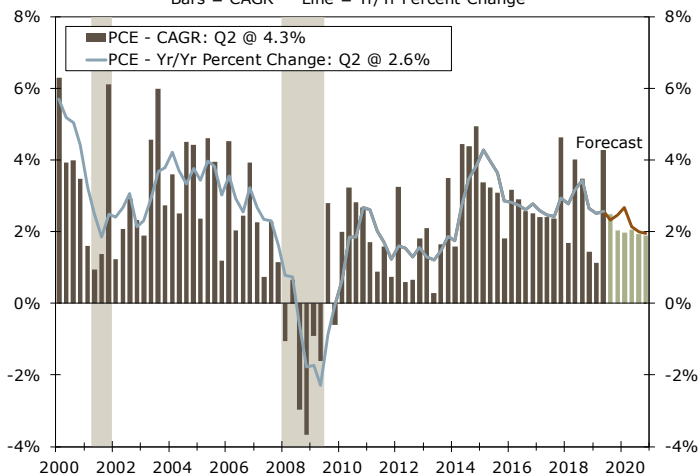
Note: (W) = Wells Fargo Estimate, (C) = Consensus Estimate, * = voting FOMC member in 2019

Source: Bloomberg LP and Wells Fargo Securities

- Real GDP growth forecast for Q3-2019: 2.1% (seasonally adjusted annualized rate)
 - Change since last *Monthly Economic Outlook*: -0.1 percentage point**
 - Commentary*: Real GDP rose 2.1% in Q2-2019. Growth was largely supported by personal consumption expenditures (PCE), which shot up at a 4.3% annualized rate. Government spending was another notable area of strength, in part due to a bounce-back from the shutdown early this year. The housing market continued to be an area of weakness, however, as residential construction spending declined for the sixth straight quarter. The trade war also weighed on growth. Net exports reduced GDP growth by 0.7 percentage points, as real exports fell and, despite the break-neck pace in PCE, imports were essentially flat. Inventories also sliced nearly a full percentage point off of headline growth. Consumers are expected to do the heavy lifting in H2-2019, as investment and trade will likely continue to be hampered by the ongoing trade war.
- Real GDP growth forecast for full-year 2019: 2.3%
 - Change since last *Monthly Economic Outlook*: -0.3 percentage points**
 - Commentary*: This downward revision is largely a function of the BEA's annual revisions to the GDP numbers. On balance, we still expect quarterly growth around 2% through 2020.

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*: The trade war escalates further, and the lagged effect of recent tariff actions start to weigh on economic growth domestically and abroad. Uncertainty continues to have both direct and indirect negative effects on the economy, and the slowest pace of global growth since 2009 pulls the United States down with it.

Inflation Forecast

- We estimate the latest round of tariffs will add a little over 0.1 percentage point to the year-over-year rate of CPI inflation. This relatively small increase is largely because goods make up only a fraction of the CPI. Still, the overall trend in inflation remains tame, and we still do not expect core PCE inflation to return to 2% until 2020.

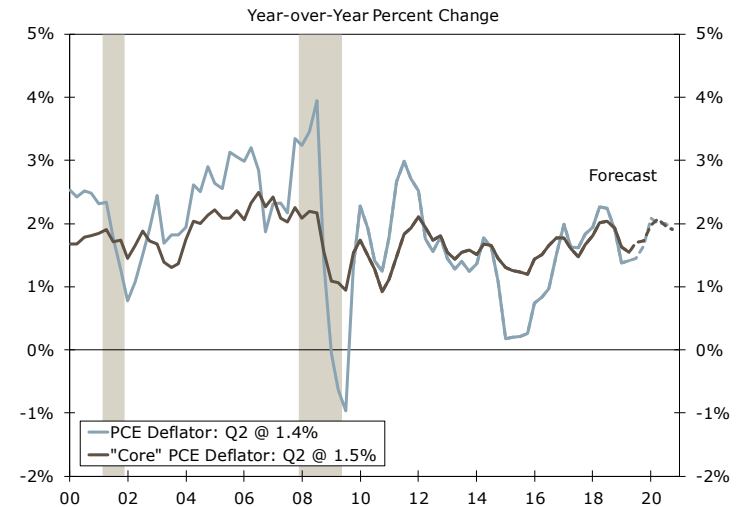
Labor Market Forecast

- Further tightening in the labor market will likely be gradual. Employers added 164K jobs in July, but June and May's gains were revised lower a total of 41K. This nudged the three- and six-month averages to about 140K, well below last year's average of 223K jobs.

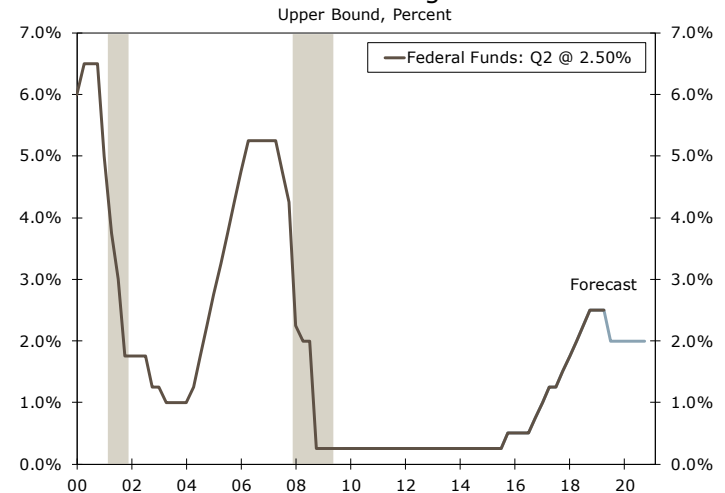
Fed Funds Outlook

- Fed Funds Forecast for 2019
 - One 25 bps cut in Q3-2019 (September) to 1.75%-2.00%
 - The latest escalation in the trade war gives more reason for the FOMC to be concerned about near-term downside risks to the outlook. As a result, we do not believe the Fed will wait until October to cut rates again.
- Fed Funds Forecast for 2020
 - Fed funds range to remain unchanged at 1.75%-2.00%
 - If inflation picks back up and growth remains near potential, we do not anticipate further accommodation.
 - We believe the risks to our forecast are tilted toward more, rather than less, easing.

PCE Deflator & "Core" PCE Deflator



Federal Funds Target Rate



Source: U.S. Department of Commerce, Federal Reserve Board 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	2.00	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	2.20	2.20	2.20	2.15	2.15	2.15
Prime Rate	4.75	5.00	5.25	5.50	5.50	5.50	5.00	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	3.55	3.70	3.80	3.85	3.95	4.05
3 Month Bill	1.73	1.93	2.19	2.45	2.40	2.12	1.90	1.90	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	1.95	1.95	1.90	1.90	1.90
1 Year Bill	2.09	2.33	2.59	2.63	2.40	1.92	1.85	1.90	1.95	1.95	1.95	2.00
2 Year Note	2.27	2.52	2.81	2.48	2.27	1.75	1.70	1.80	1.85	1.90	2.00	2.05
5 Year Note	2.56	2.73	2.94	2.51	2.23	1.76	1.65	1.80	1.85	1.95	2.05	2.15
10 Year Note	2.74	2.85	3.05	2.69	2.41	2.00	1.90	2.05	2.15	2.20	2.30	2.40
30 Year Bond	2.97	2.98	3.19	3.02	2.81	2.52	2.45	2.60	2.70	2.75	2.85	2.95

Forecast as of: August 6, 2019

Source: Federal Reserve Board and Wells Fargo Securities

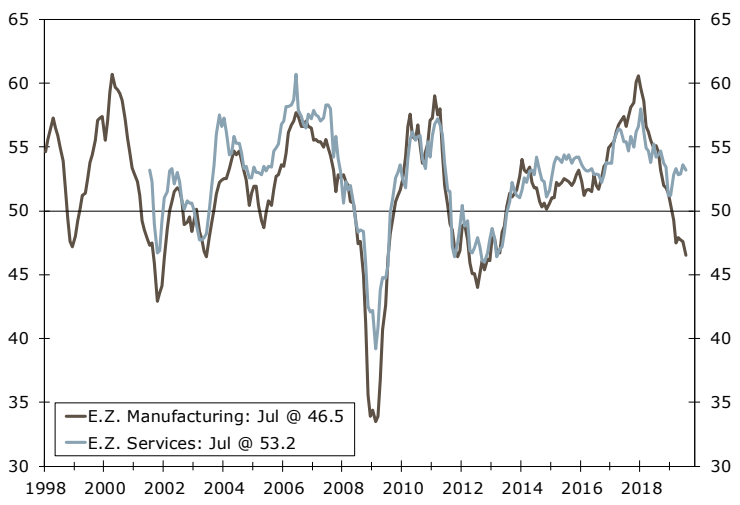
What Are We Watching in the Month Ahead?

- Insurance cuts versus a full-blown easing cycle
 - In our view, the FOMC will cut the fed funds rates 25 bps again in September, then keep policy on hold through the end of 2020. We believe the risks to our forecast are tilted toward more easing rather than less.
 - Fed funds futures imply a bit more than 100 bps of additional easing between now and the end of next year.
 - Even if the realized amount of easing ends up being somewhere between our forecast and the market's, this should still mean Treasury yields eventually climb higher through 2020.
- Inflation: Not slowing enough for a full easing cycle
 - After slowing in Q1, core PCE inflation picked up to a 1.8% annualized rate in Q2. If core inflation rebounds further by early next year as we currently expect, will this help neutralize the Fed's easing bias?
- Trade: How to handicap recent developments?
 - Chairman Powell has signaled the FOMC's concern about the health of the global economy and the path forward for trade policy. How will the Fed's reaction function change in light of recent trade developments?

Eurozone Divergence Continues

- As seen in the left chart, it is highly unusual for growth in the European manufacturing sector and service sector to decouple by such a wide margin. This has left ECB policymakers with a difficult question: will the larger service sector continue to keep the economy afloat, or will a deteriorating global backdrop and manufacturing sector eventually pull down the Eurozone economy as a whole? We think the former, and it appears the ECB agrees. But it remains an open question, and with core inflation just 0.9%, we expect the ECB to act in an effort to ensure the expansion continues.

Eurozone Purchasing Managers' Indices

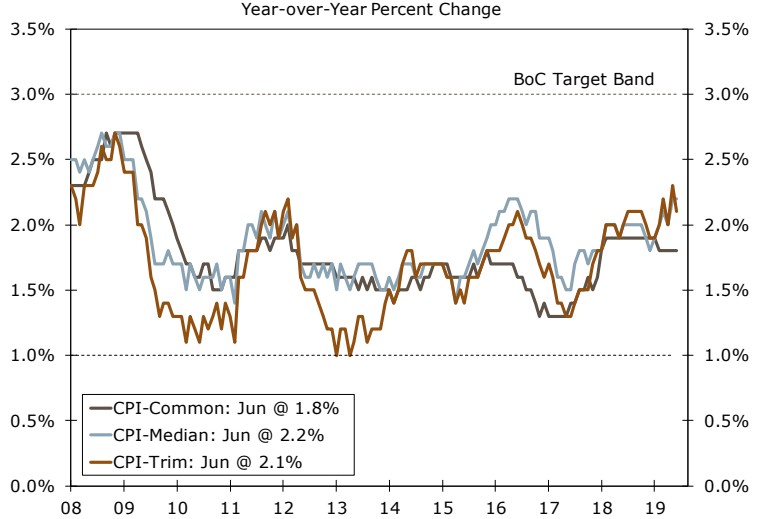


Source: Bloomberg LP, IHS Markit and Wells Fargo Securities

Canada Weathering the Global Storm

- The Canadian economy has weathered the global economic storm relatively well so far. Economic growth is returning to potential after a slowdown late last year and early this year, while core inflation remains around the 2% target. Employment growth has been robust through the first half of the year.
- Housing data out of Canada have also been better over the past few months. At its most recent meeting on July 10, the Bank of Canada noted that “at the national level, the housing market is stabilizing, although there are still significant adjustments underway in some regions.”

Canadian Measures of Core Inflation



Wells Fargo Central Bank Policy Forecasts

Central Bank	Current Policy Rate	Last Major Policy Change	WF Next Forecasted Policy Change
United States (FOMC)	2.25	July 2018 <i>25 bps cut</i>	Next Rate Move: Cut in September 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 September 2019 (10 bps) Restart QE program in September 2019; €45 billion sov. bonds/month
United Kingdom (BoE)	0.75	August 2018 <i>25 bps hike</i>	No change through end-2020
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: August 06, 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.**
 - **We also expect the ECB to restart its QE program in September with €45 billion/month in sovereign bond purchases.** We are not expecting the ECB to buy corporate bonds or equities at this time.
- 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 an extended period of time and other major central banks taking an extremely dovish turn, **we now expect the BoE to keep interest rates on hold through the end of 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.

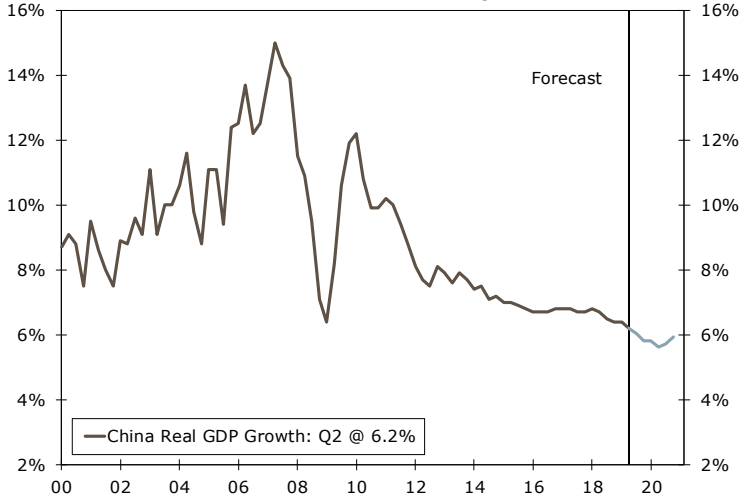
China Slowing, but in an Orderly Fashion

- Our forecast assumes that the newest round of tariffs on \$300 billion of U.S. imports from China will go into effect at 10% but go no higher than that.
- Thus far, the slowdown in the Chinese economy has been relatively orderly.** Real GDP growth in China in Q2-2019 was 6.2% year-over-year, down half a percentage point from the reading in Q2-2018 (bottom left chart). **The most recent monthly data showed the economy may have actually firmed late in the second quarter,** as both industrial production and retail sales accelerated year-over-year in June.

Stimulus Helping, but Powers Not Limitless

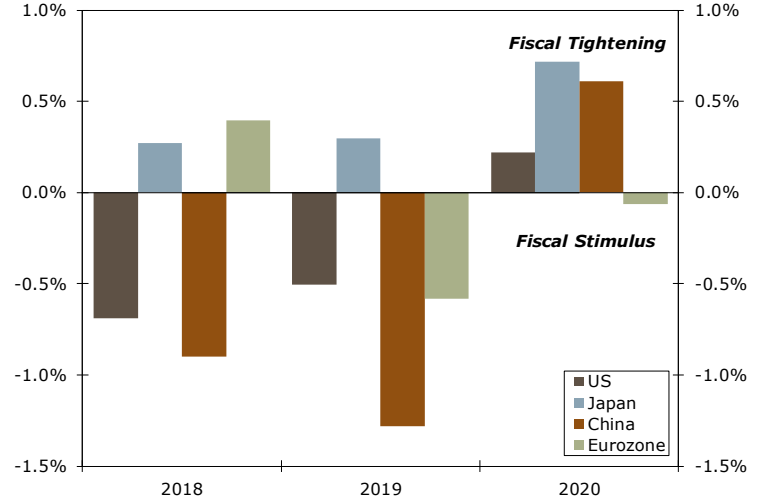
- Policymakers in China are doing their best via both fiscal and monetary measures to prevent the economy from slowing too sharply.** We continue to expect that to be the case, **but their powers are not limitless.** The structural budget deficit in China, for example, has already grown more than the it did in the United States after the tax cuts and budget boost in 2018.
- Consequently, we have revised down our growth forecast in China.** We now expect real GDP growth to be 6.1% in 2019 (unchanged from our last forecast) and 5.8% in 2020 (down from 6.0%).

China Real GDP Growth
Year-over-Year Percent Change



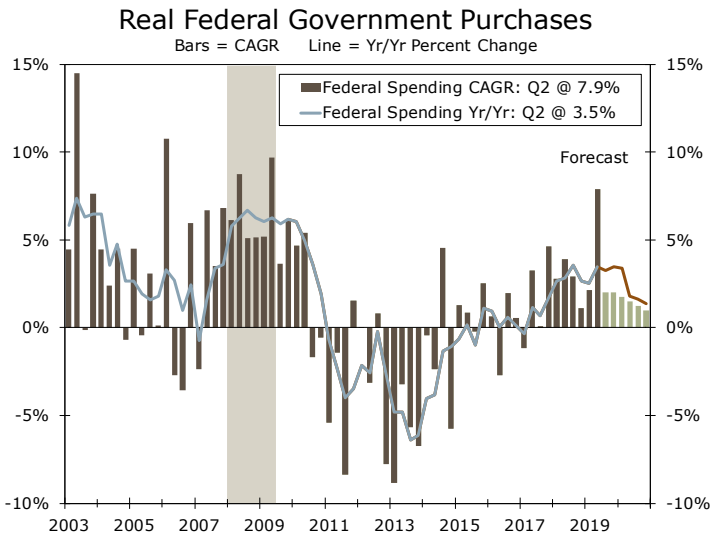
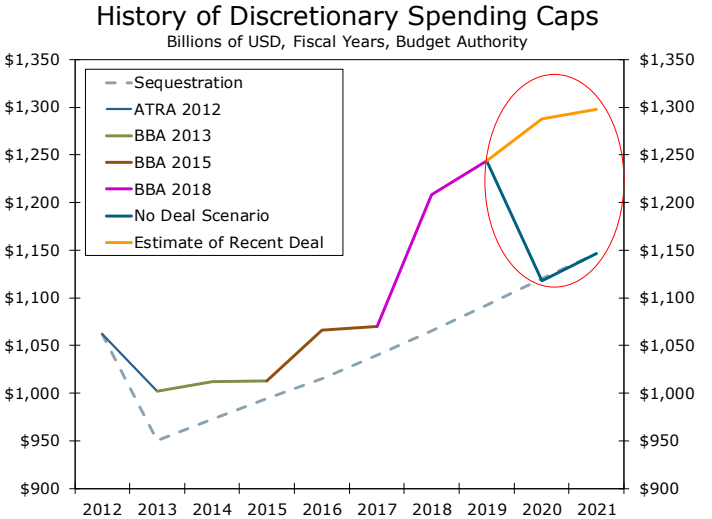
Source: Bloomberg LP, International Monetary Fund and Wells Fargo Securities

Change in Structural Budget Balance
Percent of GDP



U.S. Government Avoids Fiscal Cliff, Suspends Debt Ceiling

- Last week, President Trump signed a budget bill that would suspend the debt ceiling through July 31, 2021 and increase the discretionary spending budget caps about \$320 billion over FY-2020 and FY-2021.
- **In our view, the key fact to understand about the \$320 billion number, which is the one that has been most commonly cited in media reporting, is that it is an increase in spending relative to current law and not current spending.**
- Absent a budget deal, discretionary budget authority subject to the sequestration level budget caps was set to decline about \$125 billion in FY-2020 and \$100 billion in FY-2021 relative to FY-2019 (top chart). Thus, **the deal essentially amounts to just a modest increase in inflation-adjusted discretionary spending relative to current spending.**
- **The budget agreement was roughly in-line with what we already had previously anticipated, and as such our August forecast saw only a very modest boost to real GDP growth (<0.1 ppt) that can be attributed to the recent budget deal (bottom chart).**
- Bear in mind that, as it relates to funding the government for FY-2020, this was merely step one of a two-step process. Policymakers will next need to appropriate the money to the various government programs via the 12 annual appropriations bills. **Until appropriations are complete, the threat of a partial federal government shutdown after September 30 will remain.**
- For further reading, see our [special report](#) on the budget deal.



Source: CBO, Congressional Research Service, 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)	2.3	2.2	3.2	3.5	2.6	3.5	2.9	1.1	3.1	2.1	2.1	2.3	2.5	2.4	2.0	2.0	2.4	2.9	2.3	2.3				
Personal Consumption	2.4	2.4	2.4	4.6	1.7	4.0	3.5	1.4	1.1	4.3	2.5	2.0	2.0	2.0	1.9	1.9	2.6	3.0	2.5	2.2				
Business Fixed Investment	6.6	4.4	2.4	8.4	8.8	7.9	2.1	4.8	4.4	-0.6	3.3	3.2	4.1	3.6	2.9	2.8	4.4	6.4	3.2	3.2				
Equipment	6.3	8.9	6.2	12.9	6.6	3.4	2.9	7.4	-0.1	0.7	1.1	2.0	3.6	2.6	2.1	2.0	4.7	6.8	2.3	2.3				
Intellectual Property Products Structures	6.3	0.3	4.9	4.7	9.7	11.9	4.1	11.7	10.8	4.7	7.0	4.6	4.7	4.6	3.7	3.5	3.7	7.4	8.1	4.7				
Residential Construction	7.3	2.0	-7.7	5.2	12.1	11.0	-2.1	-9.0	4.0	-10.6	-2.0	3.5	4.5	4.0	3.5	3.5	4.7	4.1	-2.5	2.2				
Government Purchases	11.9	-2.2	-2.0	9.9	-5.3	-3.7	-4.0	-4.7	-1.0	-1.5	2.5	2.0	2.0	1.5	1.5	1.5	3.5	-1.5	-1.8	1.7				
Net Exports	-0.3	1.4	-0.1	2.4	1.9	2.6	2.1	-0.4	2.9	5.0	0.9	1.2	1.1	1.0	0.9	0.8	0.7	1.7	2.2	1.3				
Pct. Point Contribution to GDP	-831.5	-850.0	-833.7	-883.8	-884.2	-850.5	-962.4	-983.0	-944.0	-978.7	-976.2	-977.4	-954.8	-956.0	-959.4	-959.1	-849.7	-920.0	-969.1	-957.3				
Inventory Change	0.1	-0.3	0.4	-0.8	0.0	0.7	-2.1	-0.4	0.7	-0.7	0.1	0.0	0.5	0.0	-0.1	0.0	-0.4	-0.4	-0.3	0.1				
Pct. Point Contribution to GDP	8.7	16.6	70.2	31.1	40.5	-28.0	87.2	93.0	116.0	71.7	60.0	68.0	60.0	70.0	75.0	80.0	31.7	48.1	78.9	71.3				
Nominal GDP (a)	4.2	3.5	5.4	6.4	5.0	7.1	4.8	2.9	3.9	4.6	3.8	4.5	4.7	4.4	3.8	3.8	4.3	5.4	4.2	4.3				
Real Final Sales	3.0	2.0	2.2	4.2	2.4	4.8	0.8	1.0	2.6	3.0	2.7	2.1	2.7	2.2	1.9	1.9	2.3	2.8	2.3	2.4				
Retail Sales (b)	4.9	4.0	4.1	5.5	4.7	5.7	5.6	3.4	2.8	3.4	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	2.3	2.2	1.9	1.4	1.4	1.4	1.6	2.1	2.0	2.0	1.9	1.8	2.1	1.5	2.0				
"Core" PCE Deflator	1.8	1.6	1.5	1.7	1.8	2.0	2.0	1.9	1.6	1.5	1.7	1.7	2.0	2.1	2.0	1.9	1.6	2.0	1.6	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	2.0	2.4	2.3	2.3	2.3	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	2.2	2.3	2.3	2.3	1.8	2.1	2.1	2.3				
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	2.4	2.4	2.3	2.9	1.8	2.4				
Employment Cost Index	2.4	2.4	2.5	2.6	2.7	2.8	2.8	2.9	2.8	2.7	2.7	2.8	2.8	3.0	3.0	3.1	2.5	2.8	2.8	3.0				
Real Disposable Income (a)	4.9	2.7	2.3	3.7	6.9	2.7	3.3	2.8	4.4	2.5	3.4	2.7	2.2	3.1	1.7	1.3	2.9	4.0	3.3	2.5				
Nominal Personal Income (b)	4.2	4.5	4.7	5.4	5.6	5.8	5.9	4.9	4.6	4.9	4.9	5.1	4.6	4.4	4.0	3.7	4.7	5.6	4.9	4.2				
Industrial Production (a)	2.4	5.6	-0.8	7.5	2.3	4.6	5.2	3.9	-1.9	-1.2	1.2	1.7	0.5	1.1	1.8	0.8	2.3	3.9	1.2	1.0				
Capacity Utilization	75.5	76.5	76.3	77.6	77.9	78.5	79.1	79.4	78.6	78.0	78.9	79.1	79.0	79.1	79.0	78.9	76.5	78.7	78.6	79.0				
Corporate Profits Before Taxes (b)	-1.3	0.5	0.3	-0.6	2.9	2.4	4.2	4.2	-2.2	-1.2	3.9	4.0	4.5	2.8	-1.9	-1.5	-0.3	3.4	1.2	0.9				
Corporate Profits After Taxes	1.4	4.3	3.9	3.3	10.3	8.3	11.3	10.1	-2.9	-1.0	4.2	3.9	4.4	2.7	-2.2	-1.8	3.2	10.0	1.1	0.7				
Federal Budget Balance (c)	-317	4	-143	-225	-375	-7	-172	-319	-372	-56	-203	-300	-447	-69	-234	-326	-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	111.3	110.8	110.0	108.3	107.0	105.8	108.9	106.4	110.4	107.8				
Nonfarm Payroll Change (e)	173	190	136	218	228	243	189	233	174	157	158	150	190	420	-100	15	179	223	160	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	1.26	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	17.5	17.1	17.3	17.0	17.4	16.8	17.0	16.7	16.6	16.6	16.6	16.6	16.6	17.1	17.2	16.8	16.6				
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	2.00	2.00	2.00	2.00	2.00	2.00	1.13	1.96	2.25	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	2.20	2.20	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	5.00	5.00	5.00	5.00	5.00	5.00	4.13	4.96	5.25	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	3.55	3.70	3.80	3.85	3.95	4.05	3.99	4.54	3.83	3.91				
3 Month Bill	0.76	1.03	1.06	1.39	1.73	1.93	2.19	2.45	2.40	2.12	1.90	1.90	1.90	1.85	1.85	1.85	0.95	1.97	2.08	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	1.95	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	1.92	1.85	1.90	1.95	1.95	1.95	2.00	1.20	2.33	2.02	1.96				
2 Year Note	1.27	1.38	1.47	1.89	2.27	2.52	2.81	2.48	2.27	1.75	1.70	1.80	1.85	1.90	2.00	2.05	1.40	2.53	1.88	1.95				
5 Year Note	1.93	1.89	1.92	2.20	2.56	2.73	2.94	2.51	2.23	1.76	1.65	1.80	1.85	1.95	2.05	2.15	1.91	2.75	1.86	2.00				
10 Year Note	2.40	2.31	2.33	2.40	2.74	2.85	3.05	2.69	2.41	2.00	1.90	2.05	2.15	2.20	2.30	2.40	2.33	2.91	2.09	2.26				
30 Year Bond	3.02	2.84	2.86	2.74	2.97	2.98	3.19	3.02	2.81	2.52	2.45	2.60	2.70	2.75	2.85	2.95	2.89	3.11	2.60	2.81				

Forecast as of: August 6, 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 July 11, 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)	0.50	-0.84	0.38	1.25	0.33	-0.64	-0.43	-1.08	-0.03	0.25	-0.14	0.57	0.11	0.15	0.20	0.19	0.15	0.07	-0.24	0.20				
Personal Consumption	0.61	-0.47	0.14	0.72	1.16	0.21	-0.04	-1.03	0.23	0.90	0.30	-0.04	0.01	0.01	0.02	0.01	0.07	0.39	0.08	0.09				
Business Fixed Investment	-2.99	-2.94	-1.00	3.55	-2.67	-0.85	-0.43	-0.63	-0.03	-0.58	1.21	-1.09	0.20	-0.02	-0.01	-0.01	-0.90	-0.55	-0.25	-0.04				
Equipment	-2.73	-0.81	-3.62	3.04	-1.88	-1.19	-0.56	0.79	0.89	3.45	1.56	-1.91	0.47	0.00	0.00	0.00	-1.31	-0.67	0.97	0.18				
Intellectual Property Products	-1.65	-6.34	3.19	4.03	-4.38	1.40	-1.56	1.01	-1.19	-1.53	2.04	-0.03	-0.03	-0.03	-0.02	-0.02	-0.98	-0.14	-0.26	0.13				
Structures	-5.54	-1.86	-1.99	3.90	-1.82	-3.52	1.33	-5.14	-0.36	-5.57	-5.00	-1.00	0.00	0.00	0.00	0.00	0.06	-0.87	-2.92	-1.22				
Residential Construction	0.78	3.27	-1.53	-1.19	-1.85	-2.37	-0.45	0.01	0.96	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.16	-1.17	0.03	0.00				
Government Purchases	0.51	1.31	0.93	0.04	0.36	0.05	-0.50	0.04	0.07	-0.24	-0.51	0.39	0.39	0.54	0.54	0.54	0.76	0.25	-0.12	0.30				
Net Exports	14.0	-5.9	12.2	15.5	18.2	-9.5	-12.8	-27.3	-39.0	-47.0	-50.3	-38.1	-22.6	-25.0	-25.3	-25.5	8.9	-7.9	-43.6	-24.6				
Pct. Point Contribution to GDP	0.23	-0.39	0.34	0.09	0.02	-0.55	-0.06	-0.27	-0.21	-0.08	-0.07	0.25	0.32	-0.05	0.00	-0.01	0.04	-0.09	-0.19	0.10				
Inventory Change	11.11	4.67	5.88	14.94	10.12	8.77	-2.57	-3.85	-6.84	-10.27	-20.00	0.00	-15.00	-10.00	-5.00	0.00	9.15	3.12	-9.28	-7.50				
Pct. Point Contribution to GDP	0.10	-0.12	-0.04	0.27	-0.14	-0.03	-0.19	-0.04	-0.02	0.00	-0.20	0.42	-0.31	0.10	0.10	0.10	0.05	-0.03	-0.07	0.01				
Nominal GDP	0.33	-0.66	0.56	1.34	0.71	-0.55	-0.16	-1.18	0.11	0.23	-0.02	0.58	0.11	0.15	0.21	0.20	0.14	0.26	-0.17	0.22				
Real Final Sales	0.40	-0.73	0.41	1.00	0.48	-0.63	-0.24	-1.04	-0.01	0.02	0.44	0.15	0.43	0.04	0.10	0.09	0.11	0.10	-0.20	0.22				
Retail Sales (b)	0.00	0.00	0.00	0.00	0.00	-0.04	0.00	0.00	0.00	0.05	-0.03	-0.03	-0.03	-0.05	0.00	0.00	0.00	-0.01	0.00	-0.02				
Inflation Indicators (b)																								
PCE Deflator	-0.04	-0.01	0.02	0.04	0.05	0.07	0.06	0.04	-0.01	-0.10	-0.07	-0.03	0.00	0.04	0.00	0.00	0.00	0.06	-0.05	0.01				
"Core" PCE Deflator	-0.03	-0.02	0.02	0.05	0.06	0.08	0.06	0.03	-0.04	-0.08	-0.03	-0.02	0.01	0.05	0.00	0.00	0.00	0.06	-0.04	0.01				
Consumer Price Index	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.09	0.11	0.11	0.10	0.00	0.00	0.01	0.10				
"Core" Consumer Price Index	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.12	0.13	0.14	0.13	0.00	0.00	0.01	0.13				
Producer Price Index (Final Demand)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.07	-0.07	-0.03	-0.01	0.05	0.05	0.00	0.00	-0.04	0.01				
Employment Cost Index	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.26	-0.27	-0.33	-0.44	-0.29	-0.26	-0.19	0.00	0.00	-0.22	-0.29				
Real Disposable Income (a)	0.43	0.53	0.13	1.40	2.44	0.92	0.65	-0.39	2.44	-0.83	0.36	-0.25	-0.25	0.27	0.20	-1.03	0.29	1.14	0.55	-0.11				
Nominal Personal Income (b)	0.06	0.19	0.19	0.84	1.33	1.36	1.38	0.66	0.84	0.85	0.78	0.93	0.22	0.14	0.07	0.07	0.32	1.18	0.85	0.13				
Industrial Production (a)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	-0.33	-0.76	-0.16	0.26	0.37	1.19	0.74	0.00	0.00	-0.10	0.18				
Capacity Utilization	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	0.00				
Corporate Profits Before Taxes (b)	-4.37	-3.06	-2.47	-3.83	-3.06	-4.91	-6.22	-3.24	-5.62	-3.89	0.46	1.95	3.11	2.34	0.63	1.50	-3.43	-4.36	-1.74	1.83				
Corporate Profits After Taxes	-4.59	-1.93	-2.54	-3.91	-4.78	-7.54	-8.34	-4.18	-5.28	-3.50	0.97	1.94	3.10	2.34	0.63	1.50	-3.26	-6.20	-1.45	1.83				
Federal Budget Balance (c)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.48	0.48	-0.02	-0.09	0.10	0.01	-11.92	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	0.00	2.00	2.00	2.00	1.25	1.25	1.25	0.00	0.00	1.00	1.44				
Nonfarm Payroll Change (e)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-13.67	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-2.67	0.00				
Unemployment Rate	0.00	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	0.01	0.00				
Housing Starts (f)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Light Vehicle Sales (g)	0.03	0.03	0.04	-0.10	0.05	0.07	0.08	-0.09	0.02	-0.02	0.01	0.00	0.02	0.08	0.17	0.27	0.00	0.03	0.00	0.13				
Crude Oil - Brent - Front Contract (h)	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				
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	-0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	0.00				
3 Month LIBOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Prime Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	0.00				
Conventional Mortgage Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.25	-0.20	-0.15	-0.15	-0.05	0.00	0.00	0.00	-0.11	-0.09				
3 Month Bill	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00				
2 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.15	-0.10	-0.10	-0.05	0.00	0.05	0.00	0.00	-0.06	-0.03				
5 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.30	-0.20	-0.20	-0.15	-0.10	0.00	0.00	0.00	-0.13	-0.11				
10 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.30	-0.25	-0.20	-0.20	-0.10	-0.05	0.00	0.00	-0.14	-0.14				
30 Year Bond	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.20	-0.15	-0.10	-0.10	-0.05	0.00	0.00	0.00	-0.09	-0.06				

Forecast as of: August 6, 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%	3.1%	3.2%	3.6%	3.3%	3.5%
Advanced Economies ¹	2.2%	1.9%	1.9%	2.0%	1.7%	2.0%
United States	2.9%	2.3%	2.3%	2.4%	1.8%	2.3%
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%	0.6%	1.1%
Canada	1.9%	1.3%	1.8%	2.3%	1.8%	1.9%
Developing Economies ¹	4.5%	4.0%	4.1%	4.8%	4.5%	4.6%
China	6.6%	6.1%	5.8%	2.1%	2.5%	2.4%
India	7.4%	6.2%	6.8%	3.9%	3.2%	4.4%
Mexico	2.0%	0.9%	1.7%	4.9%	3.9%	3.8%

Forecast as of: August 06, 2019

¹Aggregated Using PPP Weights

Source: International Monetary Fund and Wells Fargo Securities

Changes to the Wells Fargo International Economic Forecast

	GDP			CPI		
	2018	2019	2020	2018	2019	2020
Global (PPP Weights)	-0.02%	-0.04%	-0.04%	0.00%	0.03%	0.03%
Advanced Economies ¹	0.01%	-0.08%	0.09%	0.00%	0.01%	0.02%
United States	0.07%	-0.22%	0.21%	0.00%	0.06%	0.05%
Eurozone	0.02%	0.03%	-0.01%	0.00%	0.03%	0.02%
United Kingdom	0.00%	0.00%	0.00%	0.00%	-0.05%	-0.03%
Japan	0.00%	0.00%	0.00%	0.00%	-0.13%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	-0.11%	-0.08%
Developing Economies ¹	-0.04%	-0.01%	-0.13%	-0.02%	0.05%	0.04%
China	0.00%	0.04%	-0.24%	0.00%	0.13%	0.08%
India ²	0.00%	0.00%	0.00%	0.00%	-0.03%	0.05%
Mexico	0.00%	-0.40%	0.00%	0.00%	-0.08%	-0.06%

Forecast as of: August 06, 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	2.00%	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%	0.75%	0.75%	0.75%
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	1.70%	1.80%	1.85%	1.90%	2.00%	2.05%
Eurozone ²	-0.80%	-0.75%	-0.65%	-0.50%	-0.35%	-0.20%
United Kingdom	0.50%	0.60%	0.65%	0.75%	0.80%	0.85%
Japan	-0.10%	-0.10%	-0.05%	0.00%	0.00%	0.00%
Canada	1.50%	1.60%	1.65%	1.70%	1.75%	1.80%
	10-Year Note					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	1.90%	2.05%	2.15%	2.20%	2.30%	2.40%
Eurozone ²	-0.40%	-0.35%	-0.30%	-0.15%	0.00%	0.15%
United Kingdom	0.60%	0.85%	0.95%	1.05%	1.15%	1.20%
Japan	-0.10%	-0.05%	0.00%	0.05%	0.05%	0.10%
Canada	1.50%	1.65%	1.75%	1.80%	1.85%	1.90%

Forecast as of: August 06, 2019

¹ ECB Deposit Rate ² German Government Bond Yield

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	-0.25%	0.00%	0.00%	0.00%	0.00%	0.00%
Eurozone ¹	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
United Kingdom	0.00%	0.00%	0.00%	-0.25%	-0.25%	-0.50%
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	-0.15%	-0.10%	-0.10%	-0.05%	0.00%	0.00%
Eurozone ²	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%	-0.25%
United Kingdom	-0.20%	-0.20%	-0.40%	-0.55%	-0.70%	-0.85%
Japan	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%
Canada	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	-0.10%

	10-Year Note					
	2019		2020			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	-0.30%	-0.25%	-0.20%	-0.20%	-0.10%	-0.05%
Eurozone ²	-0.15%	-0.20%	-0.25%	-0.20%	-0.15%	-0.10%
United Kingdom	-0.40%	-0.30%	-0.40%	-0.50%	-0.55%	-0.60%
Japan	-0.10%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%
Canada	-0.10%	-0.05%	0.00%	0.00%	0.00%	0.00%

Forecast as of: August 06, 2019

¹ ECB Deposit Rate ² German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

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