

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

January 15, 2020

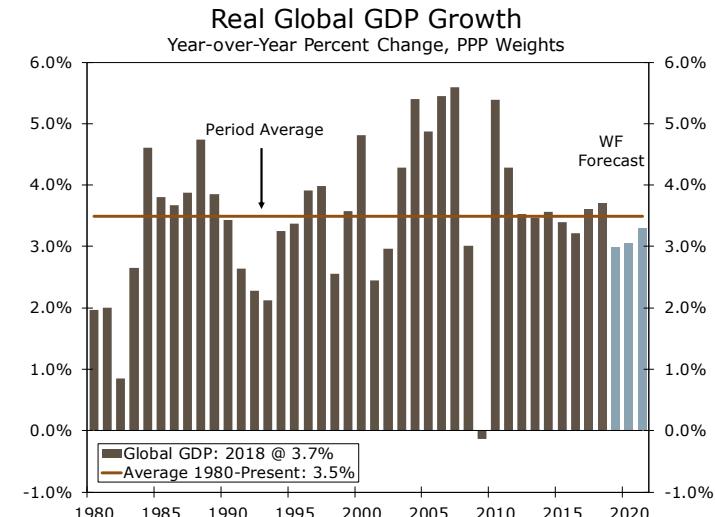
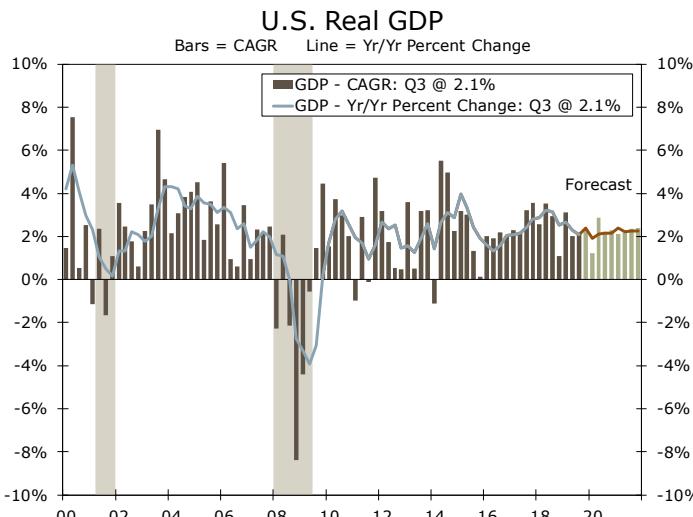
Together we'll go far



Key Takeaways

Developments since our Annual Economic Outlook

- Our forecast now looks for Q4-19 GDP to grow at a 2.3% annualized pace. That is an upgrade from our prior forecast of 1.5%, but the change is largely a function of a bigger-than-expected narrowing in the trade deficit. Our quarterly economic growth numbers are a little lumpy, partially reflecting trade quirks and the ongoing production struggles at Boeing. Through the noise, we expect core domestic demand to rise at around a 2% pace over the next few quarters.
- We continue to look for the Fed to keep the fed funds rate unchanged for the foreseeable future. Economic growth appears to be stabilizing, and the recent détente on trade between the United States and China should give the Fed confidence to pause, so long as the truce holds. That said, a reversal of last year's insurance cuts remains a long ways off. Our 2020 year-end forecast for the 10-year Treasury yield remains at 2.20%.
- Since our last update, we have made no material changes to our international forecast. Our forecast for real global GDP growth remains largely unchanged, and we continue to expect the European Central Bank to cut rates 10 bps in March.



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

Monthly Macro Calendar: January 6-February 7

Monday	Tuesday	Wednesday	Thursday	Friday
13	14	15	16	17
Rosengren (Boston Fed) Discusses Economic Outlook	Consumer Price Index (YoY) December 2.3%	PPI Final Demand (YoY) November 1.1%; December 1.4% (W)	Import Price Index (YoY) November -1.3%; December 0.4% (W)	Housing Starts November 1,365K; December 1,392K (W)
Bostic (Atlanta Fed) Discusses Economic Outlook & Monetary Policy	Williams* (New York Fed) Discusses Behavioral Science at London Event	Kaplan* (Dallas Fed) Speaks to the Economic Club of New York	Retail Sales (MoM) November 0.2%; December 0.3% (W)	Industrial Production (MoM) November 1.1%; December -0.1% (W)
George (Kansas City Fed) Discusses Economic & Monetary Policy Outlook	Harker* (Philadelphia Fed) Discusses Monetary Policy Normalization	U.S. Federal Reserve Beige Book U.S. & China to Sign Phase I Trade Deal	China Q4 GDP (YoY) Q3 6.0%; Q4 5.9% (W)	JOLTS Job Openings October 7,267K; November 7,250K (C)
20	21	22	23	24
FOMC Blackout Period Begins	Bank of Japan Rate Decision Previous -0.10%	Existing Home Sales November 5.35M; December 5.42M (C)	European Central Bank Rate Decision Previous -0.5% (Deposit); January -0.5% (W)	Markit U.S. Manufacturing PMI December 52.4
President's Day [U.S. Markets Closed]		Canada Consumer Price Index (YoY) November 2.2%	Japan Consumer Price Index (YoY) November 0.5%	
		Bank of Canada Rate Decision Previous 1.75%; January 1.75% (W)		
27	28	29	30	31
	Durable Goods Orders (MoM) November -2.1%	FOMC Rate Decision Previous 1.75%; January 1.75% (W)	U.S. Q4 GDP (QoQ, Annualized) Q3 2.1%; Q4 2.3% (W)	Personal Income & Spending (MoM) November 0.5%, 0.4%
	Consumer Confidence Index December 126.5; January 128.2 (C)	Powell* (FOMC Chair) Holds Post-FOMC Meeting Press Conference	Bank of England Rate Decision Previous 0.75%; January 0.75% (W)	Eurozone Q4 GDP (QoQ, SA) Q3 0.2%
				Eurozone Consumer Price Index (YoY) December 1.3%
3	4	5	6	7
ISM Manufacturing Index December 47.2		Trade Balance November -\$43.1B	Nonfarm Productivity (QoQ, SAAR) Q3 -0.2%	Nonfarm Payrolls December 145K
Bostic (Atlanta Fed) Discusses Big Data, AI & Machine Learning		ISM Non-Manufacturing Index December 55.0	Bank of India Rate Decision Previous 4.0%	
Reserve Bank of Australia Rate Decision Previous 0.75%		Bank of Brazil Rate Decision Previous 4.5%		
		U.S. Treasury Quarterly Refunding		

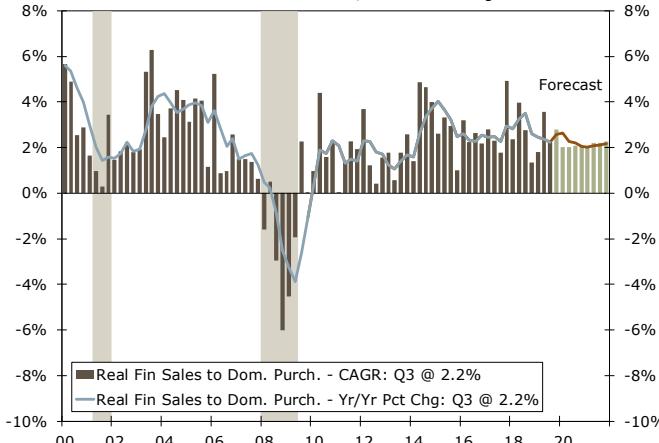
Note: (W) = Wells Fargo Estimate, (C) = Consensus Estimate, * = voting FOMC member in 2020

Source: Bloomberg LP and Wells Fargo Securities

U.S. Growth Outlook

- Real GDP growth forecast for Q4-2019: 2.3% (seasonally adjusted annualized rate)
 - **Change since last *Monthly Economic Outlook*: +0.8 percentage points**
 - **Our upwardly revised forecast is almost entirely a function of a larger boost to growth from net exports.** The November trade report revealed a much larger narrowing in the trade deficit than we had previously anticipated, as imports fell for the third straight month. **We had penciled in a modest boost from trade in Q4, but accounting for the outsized November gain we now look for net exports to add 1.4 percentage points to the headline Q4 figure.** This is partially offset by a slower inventory build. We expect final sales to private domestic purchasers—a measure of underlying strength of the domestic economy—to rise nearly 3% in Q4.
- Real GDP growth forecast for full-year 2020: 2.1% (year-over-year percent change)
 - **Change since last *Monthly Economic Outlook*: +0.2 percentage points**
 - Ongoing struggles with Boeing's 737 MAX may result in some lumpy quarterly estimates for equipment spending, inventories and net exports in H1-2020. **Looking through that noise, domestic demand should continue to grow at a solid rate.** We expect consumer spending to grow at about a 2% pace, and look for equipment spending to gradually climb out of its present slump on its way to a 3-4% pace of growth. Residential construction is also expected to be a bright spot amid low mortgage rates.

Real Final Sales to Domestic Purchasers
Bars = CAGR Line = Yr/Yr Percent Change



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. Inflation returns to the Fed's 2% target and periodically exceeds it for brief periods of time.
- **Downside scenario:** A renewed escalation in the trade war or some unexpected geopolitical development weighs on economic growth domestically and abroad. Uncertainty continues to have both direct and indirect negative effects, and U.S. economic growth slips below potential for a time.

Inflation Forecast

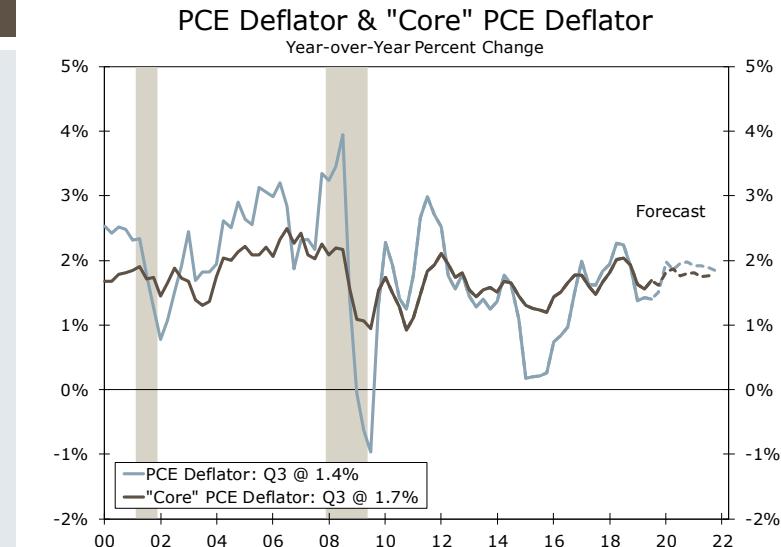
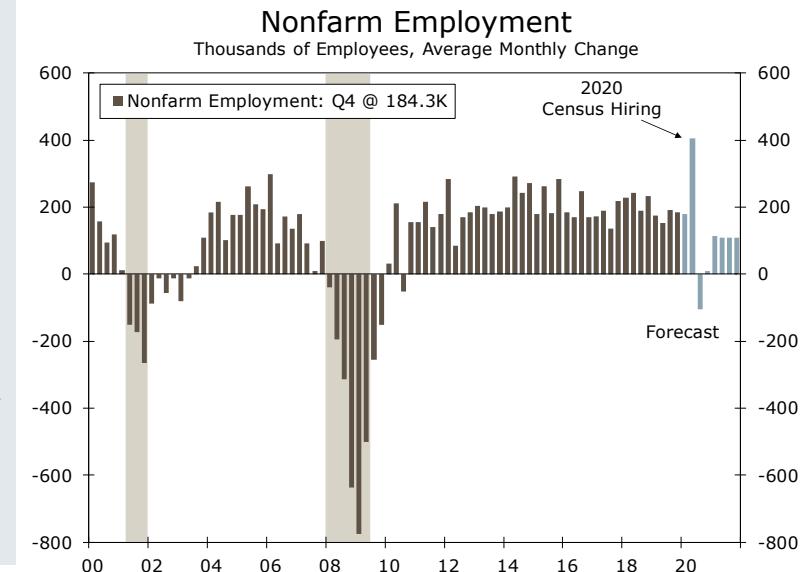
- We have revised our core inflation forecast lower on the less drastic tariff outcome and on softer labor cost pressures. **We expect core PCE inflation to rise slightly in the coming months, but to remain just shy of 2%.**

Labor Market Forecast

- **We expect the pace of hiring to slow, though Census hiring in the coming months will create some volatility in the quarterly data.** Nonfarm payroll growth averaged 176,000 in 2019, and we expect it to slow to an average of 123,000 in 2020.
- **We do not expect the current slowdown in wage growth to persist.**

Fed Funds Outlook

- Fed Funds Forecast for 2020 & 2021: **No Change**
- We believe the fed funds rate will remain unchanged through 2021, as **growth, inflation and financial conditions will be healthy enough to prevent more easing, but not hot enough to warrant rate hikes.**
- With wage growth softening and Fed officials hinting at a desire for core PCE inflation to overshoot for a period, **taking back last year's insurance cuts remains a distant prospect.** Unless inflation breaks out to the upside, we do not think the Fed will be compelled to hike rates anytime soon. Conversely, with the U.S. and China having made some progress on the trade policy front, we do not anticipate that further insurance cuts will be warranted.



Source: U.S. Department of Labor, 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				2021			
	1Q	2Q	3Q	4Q	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	2.00	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
3 Month LIBOR	2.31	2.34	2.40	2.81	2.60	2.32	2.09	1.91	1.80	1.80	1.80	1.80	1.85	1.85	1.85	1.85
Prime Rate	4.75	5.00	5.25	5.50	5.50	5.50	5.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75
Conventional Mortgage Rate	4.44	4.57	4.63	4.64	4.28	3.80	3.61	3.72	3.90	3.90	3.90	3.90	3.95	4.00	4.05	4.10
3 Month Bill	1.73	1.93	2.19	2.45	2.40	2.12	1.88	1.55	1.60	1.60	1.60	1.60	1.65	1.65	1.65	1.65
6 Month Bill	1.93	2.11	2.36	2.56	2.44	2.09	1.83	1.60	1.60	1.60	1.60	1.65	1.65	1.70	1.70	1.70
1 Year Bill	2.09	2.33	2.59	2.63	2.40	1.92	1.75	1.59	1.65	1.70	1.70	1.75	1.80	1.80	1.85	1.85
2 Year Note	2.27	2.52	2.81	2.48	2.27	1.75	1.63	1.58	1.75	1.80	1.80	1.85	1.90	1.90	1.95	2.00
5 Year Note	2.56	2.73	2.94	2.51	2.23	1.76	1.55	1.69	1.85	1.90	1.90	1.95	2.00	2.05	2.10	2.15
10 Year Note	2.74	2.85	3.05	2.69	2.41	2.00	1.68	1.92	2.10	2.15	2.15	2.20	2.25	2.30	2.35	2.40
30 Year Bond	2.97	2.98	3.19	3.02	2.81	2.52	2.12	2.39	2.50	2.55	2.60	2.70	2.75	2.80	2.85	2.90

Forecast as of: January 15, 2020

Source: Federal Reserve Board and Wells Fargo Securities

What Are We Watching in the Month Ahead?

- Fed on hold, but for how long?
 - The Fed seems content to keep the fed funds rate at its current level for the foreseeable future. Yet, the median dot in the dot plot shows one hike in 2021 and another in 2022. **Will the Fed eventually start to signal that gradual hikes are necessary to get the fed funds rate up to its “longer-run” level?**
- Overseas monetary policy keeping a lid on U.S. rates
 - Even if the Fed eventually hints at higher rates, extraordinarily easy monetary policy abroad will likely prevent Treasury yields from rising too much. **Foreign economies, especially in Europe, need to strengthen before we see materially higher rates in the United States.**
- Inflation remains the missing ingredient
 - Core PCE inflation has been below 2.0% every month since September 2018, and was just 1.6% in November. Furthermore, wage growth has slowed of late, despite continued labor market tightening.
 - **A continued period of minimal inflation pressures would likely allow the Fed to remain patient and further limit the upside to longer-term Treasury yields.**

Eurozone Manufacturing Stabilizing?

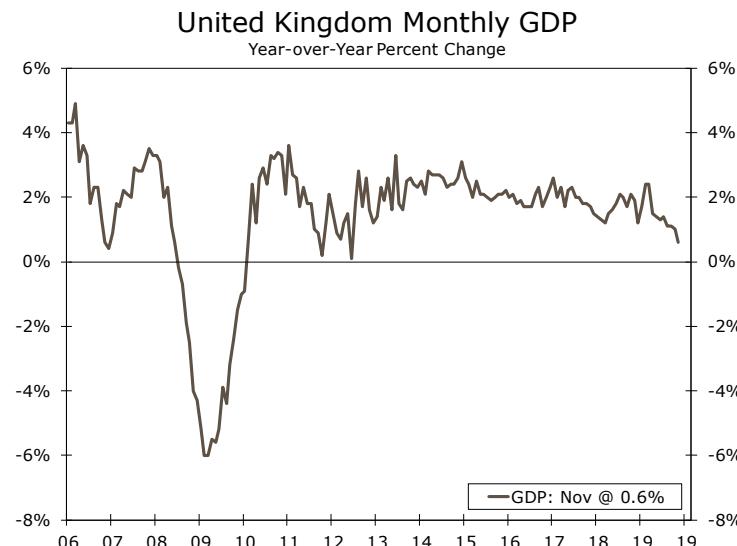
- In Europe, there are signs that a stabilization in the manufacturing sector has taken hold. The Eurozone manufacturing PMI has stabilized around 46-47 over the past few months, and hard data on industrial output and factory orders in Germany suggest that the pace of contraction has eased.
- We still expect that the European Central Bank will cut rates one more time 10 bps at its March meeting. That said, we recognize that the risks are skewed towards no cut. Stronger PMIs and/or a better-than-expected Q4-19 real GDP number could be enough to forestall further easing.



Source: Bloomberg LP and Wells Fargo Securities

U.K. Economy Stalling Out

- In the United Kingdom, the risks to our forecast are drifting in the opposite direction, as the U.K. economy appears to be stalling out. **Monthly GDP data suggest that growth ground to a halt in the three months ending in November.**
- The deterioration in the data, in combination with some dovish comments by policymakers at the BoE, have boosted expectations some easing could be in the offing. At present, we expect the BoE to keep its rates on hold for the foreseeable future. **Should the data continue to deteriorate, however, policymakers may not have much of a choice.**



Wells Fargo Central Bank Policy Forecasts

Central Bank	Current Policy Rate	Last Major Policy Change	WF Next Forecasted Policy Change
United States (FOMC)	1.75%	October 2019 25 bps cut	No change through Q4-2021
Eurozone (ECB)	-0.50% (Deposit Rate)	September 2019 <i>10 bps cut, restart of asset purchases in November of 20 billion euros per month with an open-ended timeframe</i>	Next Rate Move: Cut in Q1-2020, Likely March (10 bps)
United Kingdom (BoE)	0.75%	August 2018 25 bps hike	No change through Q1-2021
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 Q1-2021
Canada (BoC)	1.75%	October 2018 25 bps hike	No change through Q1-2021

Forecast as of: January 15, 2020

Source: Bloomberg LP and Wells Fargo Securities

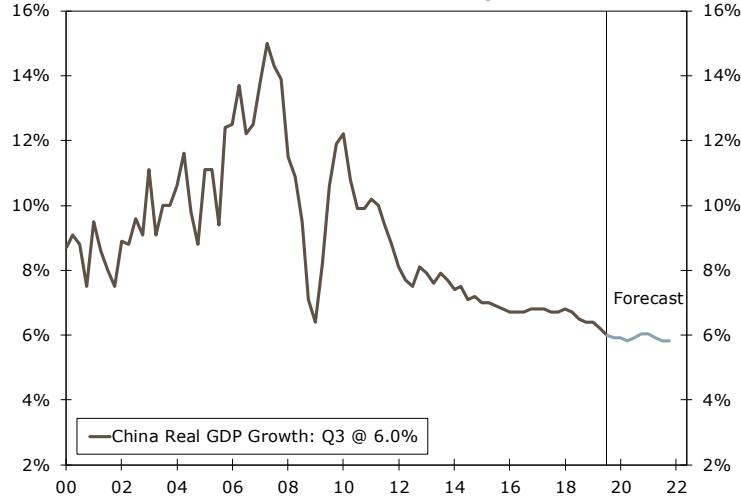
What Are We Watching in the Month Ahead?

- European Central Bank
 - With core inflation remaining below target and the Eurozone economy still showing little evidence of an imminent rebound, **we look for another 10 bps rate cut in March.**
- Bank of Japan
 - **We do not expect the BoJ to make any material changes to monetary policy for the foreseeable future.** That said, the balance of risks has gradually become tilted towards additional easing. Should it occur, we believe this easing would most likely come by pushing policy rates deeper into negative territory.
- Bank of England
 - **We expect the BoE to keep interest rates on hold through the end of 2020, but we acknowledge that the balance of risks is skewed towards a rate cut at one of the next few meetings.**
- Bank of Canada
 - **We look for the BoC to keep rates on hold for the foreseeable future.** Economic growth in Canada appears listless at around 1.5%, but core inflation continues to track close to the 2% target.

China Slowdown Remains Orderly

- China reports its Q4-2019 real GDP growth on Thursday, and we expect it to come in just below 6.0% year-over-year, which would be roughly steady with the previous quarter. **Policymakers in China started the year by taking further steps to stimulate the economy, cutting the reserve requirement ratio for banks 50 bps.**
- The combination of a trade détente between the United States and China, as well as continued stimulus support from the authorities will, we believe, keep **real GDP growth in China floating in a tight range of 5.75%-6.0% over the next year.**

China Real GDP Growth
Year-over-Year Percent Change

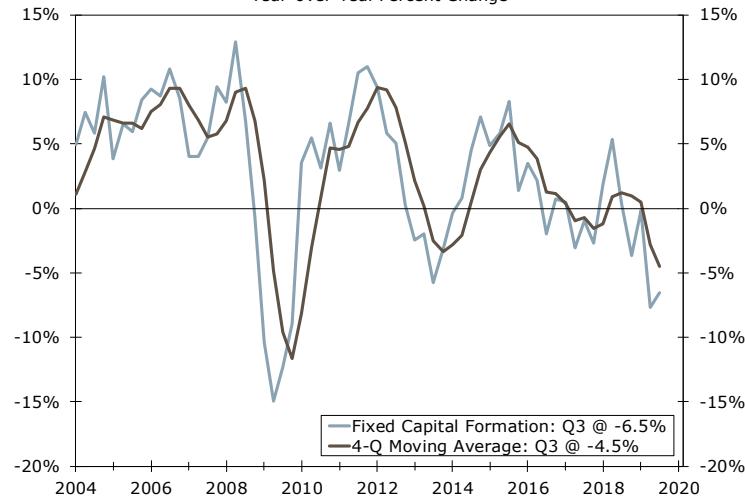


Source: IHS Markit and Wells Fargo Securities

Mexican Economy Struggling Mightily

- In Mexico, the economic situation remains challenging. Real GDP growth has been negative on a year-over-year basis for two quarters in a row, and **gross fixed capital formation is contracting at the fastest pace since the Great Recession.**
- We expect economic growth in Mexico to stabilize and strengthen some over the course of 2020, but **the improvement is likely to be modest**, until more is done to address some of the structural issues facing the economy, such as the fiscal challenges related to Pemex. We believe more rate cuts from the Bank of Mexico are likely this year.

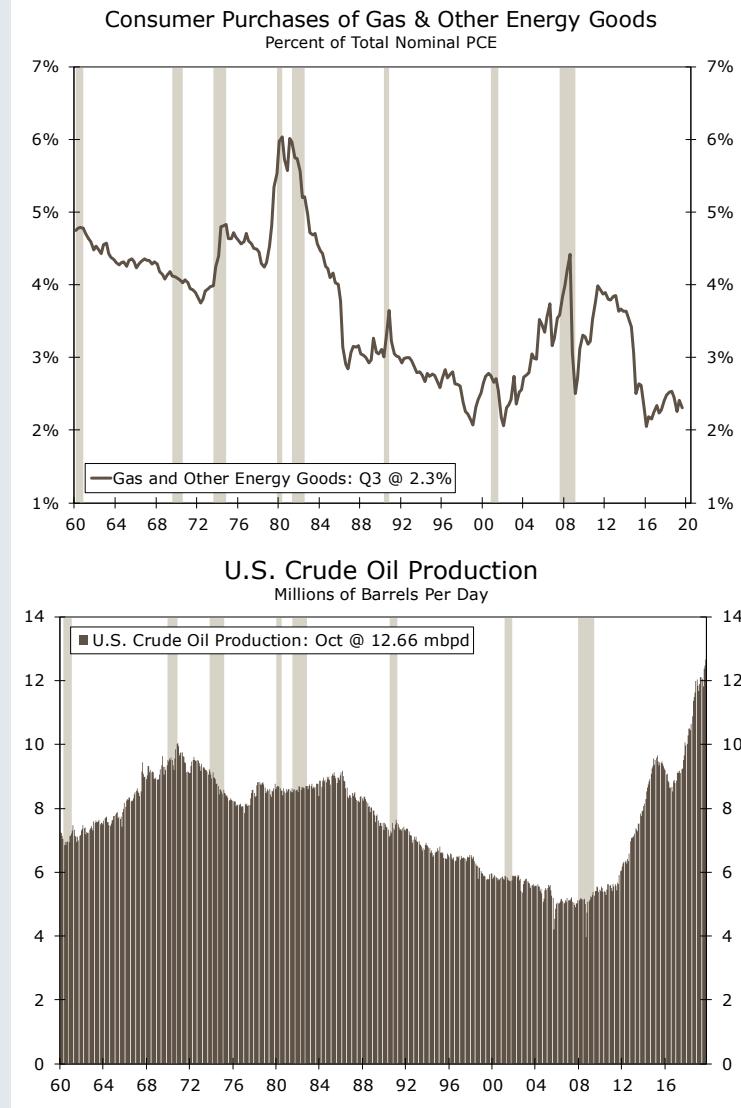
Mexican Gross Fixed Investment
Year-over-Year Percent Change



Topic of the Month

Potential Implications of Iranian Crisis

- The year began amid rising tensions from the **killing of Iranian General Soleimani**, which had all the hallmarks of the sort of crisis that could weigh on financial markets.
- Oil prices spiked on the initial news, but since settled down. However, if tensions flare again, **investors would likely instinctively turn to oil prices as a risk barometer**, raising questions about potential knock-on effects for the economy.
- Consumer purchases of “gasoline & other energy sources” accounted for roughly 4% of total personal consumption expenditures (PCE) at the time of the 1970s oil price shocks.
- Today, however, those goods account for only 2% of PCE. Additionally, **the United States has become less reliant on foreign sources of oil**. Production of crude oil has increased over the past decade, and November marked the third consecutive month that U.S. petroleum exports exceeded imports.
- **Therefore, oil prices would likely need to shoot much higher from their current levels to have a meaningful effect on consumer purchases of other goods and services.**
- While the uncertainty a crisis of this nature imparts could potentially be more meaningful, **consumer spending is actually remarkably resilient even in the midst of challenging times**.
- **The direct effects of the Iranian crisis on the U.S. economy appear to be rather small.**
- For further reading on this subject, see our recent special report, [**“Consumers Are Resilient Even in Challenging Times”**](#).



Source: U.S. Department of Commerce, Energy Information Administration and Wells Fargo Securities

U.S. Economic Forecast

Wells Fargo U.S. Economic Forecast

	Actual												Forecast				Actual		Forecast						
	2018				2019				2020				2021				2018		2019		2020		2021		
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	2018	2019	2020	2021	2018	2019	2020	2021	
Real Gross Domestic Product (a)	2.6	3.5	2.9	1.1	3.1	2.0	2.1	2.3	1.2	2.9	2.2	2.3	2.1	2.2	2.4	2.4	2.9	2.3	2.1	2.3	2.9	2.6	2.3	2.0	
Personal Consumption	1.7	4.0	3.5	1.4	1.1	4.6	3.1	2.2	2.1	2.0	1.9	1.9	1.8	2.1	2.2	2.2	3.0	2.6	2.3	2.3	2.0	2.4	2.3	2.0	
Business Fixed Investment	8.8	7.9	2.1	4.8	4.4	-1.0	-2.3	1.1	2.2	2.6	3.7	3.9	4.0	3.9	3.9	3.8	6.4	2.3	1.6	3.8	6.8	1.6	0.7	3.0	
Equipment	6.6	3.4	2.9	7.4	-0.1	0.8	-3.8	0.0	1.4	1.5	2.6	2.9	3.4	3.4	3.2	3.0	6.8	1.6	0.7	3.0	7.4	7.7	5.2	5.7	
Intellectual Property Products	9.7	11.9	4.1	11.7	10.8	3.6	4.7	6.3	5.1	4.4	5.7	6.0	5.9	5.5	5.6	5.7	7.4	-4.5	-3.8	2.0	4.1	-4.5	-3.8	2.0	
Structures	12.1	11.0	-2.1	-9.0	4.0	-11.1	-9.9	-10.5	-1.5	1.5	2.5	2.0	1.8	1.9	2.0	2.1	4.1	-1.5	-1.6	4.0	4.1	2.2	1.3	0.9	
Residential Investment	-5.3	-3.7	-4.0	-4.7	-1.0	-3.0	4.6	4.5	4.3	4.5	4.5	4.3	4.0	4.0	3.8	3.5	-1.5	-1.6	-1.6	4.0	4.1	4.1	4.1	4.1	
Government Purchases	1.9	2.6	2.1	-0.4	2.9	4.8	1.7	0.8	1.1	1.1	1.0	0.8	0.8	0.8	0.8	0.7	1.7	2.2	1.3	0.9	2.2	1.3	0.9	0.9	
Net Exports	-884.2	-850.5	-962.4	-983.0	-944.0	-980.7	-990.1	-923.7	-932.9	-931.6	-938.6	-941.5	-948.8	-954.8	-952.1	-950.7	-920.0	-959.6	-936.1	-951.6	-920.0	-959.6	-936.1	-951.6	
Pct. Point Contribution to GDP	0.0	0.7	-2.1	-0.4	0.7	-0.7	-0.1	1.4	-0.2	0.0	-0.1	-0.1	-0.1	-0.1	0.1	0.0	-0.4	-0.2	0.1	-0.1	-0.4	-0.2	0.1	-0.1	
Inventory Change	40.5	-28.0	87.2	93.0	116.0	69.4	69.4	28.0	-5.0	30.0	40.0	50.0	59.0	60.0	60.0	60.0	48.1	70.7	28.8	59.8	0.1	0.1	-0.2	0.2	
Pct. Point Contribution to GDP	0.1	-1.2	2.1	0.1	0.5	-0.9	0.0	-0.9	-0.7	0.7	0.2	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Nominal GDP (a)	5.0	7.1	4.8	2.9	3.9	4.7	3.8	4.2	3.5	4.8	4.1	4.2	4.2	4.1	4.1	4.1	5.4	4.2	4.1	4.2	4.2	4.2	4.1	4.2	
Real Final Sales	2.4	4.8	0.8	1.0	2.6	3.0	2.1	3.5	1.9	2.1	2.0	2.1	1.9	2.2	2.4	2.4	2.8	2.3	2.4	2.1	2.8	2.3	2.1	2.1	
Retail Sales (b)	4.7	5.7	5.5	3.4	2.8	3.4	4.0	4.1	4.2	3.0	2.7	2.9	3.0	3.1	2.9	3.0	4.8	3.6	3.2	3.0	4.8	3.6	3.2	3.0	
Inflation Indicators (b)																									
PCE Deflator	1.9	2.3	2.2	1.9	1.4	1.4	1.4	1.5	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.8	2.1	1.4	1.9	1.9	1.9	1.4	1.9	1.9	
"Core" PCE Deflator	1.8	2.0	2.0	1.9	1.6	1.6	1.7	1.6	1.8	1.9	1.8	1.8	1.8	1.7	1.8	1.8	2.0	1.6	1.8	1.8	1.8	2.0	1.6	1.8	
Consumer Price Index	2.2	2.7	2.6	2.2	1.6	1.8	1.8	2.0	2.4	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.4	1.8	2.2	2.1	2.1	2.4	1.8	2.1	
"Core" Consumer Price Index	1.9	2.2	2.2	2.2	2.1	2.1	2.3	2.3	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.2	2.1	2.0	2.0	
Producer Price Index (Final Demand)	2.8	3.0	3.1	2.8	1.9	2.0	1.6	1.2	1.8	1.5	2.0	2.3	2.3	2.2	2.2	2.2	2.9	1.7	1.9	2.2	2.9	1.7	1.9	2.2	
Employment Cost Index	2.7	2.8	2.8	2.9	2.8	2.7	2.8	2.8	2.8	2.9	3.0	3.0	3.0	3.1	3.1	3.1	2.8	2.8	2.9	2.9	2.8	2.9	2.9	3.1	
Real Disposable Income (b)	3.9	3.9	4.1	3.9	3.3	3.0	2.9	2.7	2.3	3.4	2.7	2.3	2.1	1.5	2.0	2.2	4.0	3.0	2.7	1.9	4.0	3.0	2.7	1.9	
Nominal Personal Income (b)	5.6	5.8	5.9	4.9	4.6	4.7	4.4	4.5	4.3	5.1	4.7	4.3	4.1	3.5	3.9	4.1	5.6	4.6	4.6	4.6	5.6	4.6	4.6	3.9	
Industrial Production (a)	2.3	4.6	5.2	3.9	-1.9	-2.3	1.2	-0.6	-3.9	1.6	1.7	2.1	1.2	1.8	1.9	1.3	3.9	0.8	-0.5	1.7	1.25	1.27	1.33	1.35	
Capacity Utilization	77.9	78.5	79.1	79.4	78.6	77.8	77.6	77.1	76.4	76.7	77.0	77.4	78.0	78.4	78.9	79.2	78.7	77.8	76.9	78.6	78.7	77.8	76.9	78.6	
Corporate Profits Before Taxes (b)	2.9	2.4	4.2	4.2	-2.2	1.3	-1.2	1.5	3.0	2.0	2.5	2.2	2.2	2.0	1.8	2.0	3.4	-0.2	2.4	2.0	10.0	0.0	2.8	2.0	
Corporate Profits After Taxes	10.3	8.3	11.3	10.1	-2.9	1.3	-0.3	1.9	3.8	2.9	2.5	2.2	2.2	2.0	1.8	2.0	10.0	0.0	2.8	2.0	10.0	0.0	2.8	2.0	
Federal Budget Balance (c)	-375	-7	-172	-319	-372	-56	-237	-357	-414	-49	-230	-331	-448	-66	-255	-359	-779	-984	-1050	-1100	-779	-984	-1050	-1100	
Trade Weighted Dollar Index (d)	103.1	107.3	107.6	110.1	109.8	109.7	111.0	109.9	109.3	108.5	107.5	106.5	105.8	104.8	104.3	103.8	106.4	110.1	107.9	104.6	110.1	107.9	104.6	104.6	
Nonfarm Payroll Change (e)	228	243	189	233	174	152	193	184	180	405	-105	10	115	110	110	110	223	176	123	111	223	176	123	111	
Unemployment Rate	4.1	3.9	3.8	3.8	3.9	3.6	3.6	3.5	3.6	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.9	3.7	3.6	3.7	3.9	3.7	3.6	3.7	
Housing Starts (f)	1.32	1.26	1.23	1.19	1.21	1.26	1.28	1.35	1.34	1.33	1.33	1.32	1.34	1.35	1.35	1.36	1.25	1.27	1.33	1.35	1.25	1.27	1.33	1.35	
Light Vehicle Sales (g)	17.1	17.3	17.0	17.4	16.8	17.0	17.0	16.8	16.5	16.4	16.4	16.4	16.4	16.4	16.4	16.4	17.2	16.9	16.4	16.4	17.2	16.9	16.4		
Crude Oil - Brent - Front Contract (h)	66.9	74.6	75.8	68.6	63.8	67.6	61.5	61.7	61.0	58.0	60.0	61.0	61.0	61.0	61.0	61.0	71.5	63.6	60.0	61.0	71.5	63.6	60.0	61.0	
Quarter-End Interest Rates (i)																									
Federal Funds Target Rate	1.75	2.00	2.25	2.50	2.50	2.50	2.00	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.96	2.25	1.75	1.75	1.96	2.25	1.80	1.85	
3 Month LIBOR	2.31	2.34	2.40	2.81	2.60	2.32	2.09	1.91	1.80	1.80	1.80	1.80	1.85	1.85	1.85	1.85	2.31	2.33	1.80	1.85	2.31	2.33	1.80	1.85	
Prime Rate	4.75	5.00	5.25	5.50	5.50	5.50	5.00	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.96	5.25	4.75	4.75	4.96	5.25	4.75	4.75	
Conventional Mortgage Rate	4.44	4.57	4.63	4.64	4.28	3.80	3.61	3.72	3.90	3.90	3.90	3.90	3.95	4.00	4.05	4.10	4.54	3.94	3.90	4.03	4.54	3.94	3.90	4.03	
3 Month Bill	1.73	1.93	2.19	2.45	2.40	2.12	1.88	1.55	1.60	1.60	1.60	1.60	1.65	1.65	1.65	1.65	1.97	2.11	1.60	1.65	1.97	2.11	1.60	1.65	
6 Month Bill	1.93	2.11	2.36	2.56	2.44	2.09	1.83	1.60	1.60	1.60	1.60	1.60	1.65	1.65	1.70	1.70	2.14	2.11	1.61	1.69	2.14	2.11	1.61	1.69	
1 Year Bill	2.09	2.33	2.59	2.63	2.40	1.92	1.75	1.59	1.65	1.70	1.75	1.75	1.80	1.80	1.85	1.85	2.33	2.05	1.70	1.83	2.33	2.05	1.70	1.83	
2 Year Note	2.27	2.52	2.81	2.48	2.27	1.75	1.63	1.58	1.75	1.80	1.80	1.85	1.90	1.90	1.95	2.00	2.53	1.97	1.80	1.94	2.53	1.97	1.80	1.94	
5 Year Note	2.56	2.73	2.94	2.51	2.23	1.76	1.55	1.69	1.85	1.90	1.90	1.95	2.00	2.05	2.10	2.15	2.75	1.95	1.90	2.08	2.75	1.95	1.90	2.08	
10 Year Note	2.74	2.85	3.05	2.69	2.41	2.00	1.68	1.92	2.10	2.15	2.15	2.20	2.25	2.30	2.35	2.40	2.91	2.14	2.15	2.33	2.91	2.14	2.15	2.33	
30 Year Bond	2.97	2.98	3.19	3.02	2.81	2.52	2.12	2.39	2.50	2.55	2.60	2.70	2.75	2.80	2.85	2.90	3.11	2.58	2.59	2.83	3.11	2.58	2.59	2.83	

Forecast as of: January 15, 2020

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 December 18, 2019

Changes to the Wells Fargo U.S. Economic Forecast

	Actual								Forecast								Actual 2018	Forecast 2019 2020 2021		
	2018				2019				2020				2021							
	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	-0.02	0.83	-0.20	0.38	0.16	0.00	0.00	0.00	0.00	0.00	0.05	0.20	0.04	
Personal Consumption	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	
Business Fixed Investment	0.00	0.00	0.00	0.00	0.00	0.00	0.37	-1.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.20	0.00	
Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.03	-1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.20	0.00	
Intellectual Property Products	0.00	0.00	0.00	0.00	0.00	0.00	-0.43	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	-0.03	0.00	
Structures	0.00	0.00	0.00	0.00	0.00	0.00	2.14	-4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	-0.50	0.00	
Residential Investment	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	-0.05	-0.06	0.00	
Government Purchases	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.07	0.00	
Net Exports	0.0	0.0	0.0	0.0	0.0	0.0	-1.8	59.6	49.4	49.7	50.8	51.2	51.6	51.9	52.2	52.4	0.0	14.4	50.2	52.0
Pct. Point Contribution to GDP	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	1.29	-0.21	0.01	0.02	0.01	0.01	0.01	0.00	0.01	0.00	0.08	0.19	0.01
Inventory Change	0.00	0.00	0.00	0.00	0.00	0.00	-10.34	-26.00	-25.00	-7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-9.08	-8.00	0.00
Pct. Point Contribution to GDP	0.00	0.00	0.00	0.00	0.00	0.00	-0.20	-0.33	0.02	0.37	0.14	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	0.01	0.04
Nominal GDP	0.00	0.00	0.00	0.00	0.00	0.00	0.01	1.00	-0.05	0.39	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.27	0.05
Real Final Sales	0.00	0.00	0.00	0.00	0.00	0.00	0.18	1.20	-0.22	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.19	0.00
Retail Sales (b)	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
Inflation Indicators (b)																				
PCE Deflator	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.08	0.08	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.00
"Core" PCE Deflator	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.01	0.01	0.00	-0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Consumer Price Index	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.02	0.01	0.00	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00	0.02	-0.01
"Core" Consumer Price Index	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.07	-0.07	-0.07	-0.05	0.00	0.00	0.00	0.00	0.00	-0.01	-0.07	0.00	0.00
Producer Price Index (Final Demand)	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
Employment Cost Index	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.16	-0.03	-0.04	-0.03	-0.01	0.00	0.00	0.00	-0.06	0.00	0.00	-0.07	-0.02
Real Disposable Income (b)	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.32	0.41	0.41	0.40	0.08	0.00	0.00	0.00	0.00	0.00	0.08	0.32	0.00
Nominal Personal Income (b)	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.32	0.44	0.44	0.47	0.12	0.00	0.00	0.00	0.00	0.00	0.07	0.37	0.00
Industrial Production (a)	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
Capacity Utilization	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
Corporate Profits Before Taxes (b)	0.00	0.00	0.00	0.00	0.00	0.00	-0.44	-1.10	0.00	1.20	-0.70	0.05	0.85	-1.20	-0.70	1.00	0.00	-0.39	0.14	-0.01
Corporate Profits After Taxes	0.00	0.00	0.00	0.00	0.00	0.00	-0.67	-0.25	0.95	2.20	0.50	0.08	0.90	-1.14	-0.60	1.06	0.00	-0.23	0.93	0.06
Federal Budget Balance (c)	0.00	0.00	0.00	0.00	0.00	0.00	10.30	-3.43	-3.43	-3.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trade Weighted Dollar Index (d)	-0.02	0.00	0.01	0.02	0.01	0.04	0.06	1.11	1.50	1.75	1.50	1.50	1.50	1.25	1.25	1.25	0.00	0.31	1.56	1.31
Nonfarm Payroll Change (e)	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00
Unemployment Rate	0.00	0.03	-0.03	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	0.00	-0.01	0.00	0.00
Housing Starts (f)	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.01	0.04	0.04	0.04
Light Vehicle Sales (g)	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	0.00	-0.02	0.00	0.00
Crude Oil - Brent - Front Contract (h)	0.00	0.00	0.00	0.00	0.00	0.00	0.15	1.00	-2.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	0.04	0.50	2.00
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	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
3 Month LIBOR	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	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	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
Conventional Mortgage Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.08	0.04	0.00	0.00
3 Month Bill	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	0.12	0.00	0.00	0.00
2 Year Note	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	0.14	0.00	0.00	0.00
5 Year Note	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.05	0.00
10 Year Note	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	0.14	0.00	0.00	0.00
30 Year Bond	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00

Forecast as of: January 15, 2020

Notes: (a) Compound Annual Growth Rate Quarterly Millions of Units - Annual Data - Not Seasonally Adjusted

(b) Year-over-Year Percentage Change (g) Quarterly Data - Average Monthly SAA; Annual Data - Actual Total Vehicles Sold

(c) Quarterly Sum - Billions USD; Annual E(h) Quarterly Average of Daily Close

(d) Federal Reserve Advanced Economic Data (i) Annual Numbers Represent Averages

(e) Average Monthly Change

Wells Fargo International Economic Forecast

(Year-over-Year Percent Change)

	GDP				CPI			
	2018	2019	2020	2021	2018	2019	2020	2021
Global (PPP Weights)	3.6%	3.0%	3.0%	3.3%	3.6%	3.4%	3.6%	3.4%
Advanced Economies ¹	2.3%	2.0%	1.7%	2.0%	2.0%	1.5%	1.9%	1.8%
United States	2.9%	2.3%	2.1%	2.3%	2.4%	1.8%	2.2%	2.1%
Eurozone	1.9%	1.2%	1.1%	1.4%	1.8%	1.2%	1.3%	1.4%
United Kingdom	1.3%	1.3%	1.1%	1.5%	2.5%	1.8%	1.8%	2.0%
Japan	0.3%	1.1%	0.5%	1.0%	1.0%	0.5%	1.2%	1.0%
Canada	2.0%	1.6%	1.6%	1.7%	2.3%	1.9%	1.8%	2.0%
Developing Economies ¹	4.5%	3.7%	4.0%	4.2%	4.8%	4.7%	4.9%	4.5%
China	6.6%	6.1%	5.9%	5.9%	2.1%	2.9%	3.0%	2.1%
India	7.4%	5.1%	6.0%	6.6%	3.9%	3.6%	4.5%	4.4%
Mexico	2.1%	0.1%	1.1%	1.8%	4.9%	3.6%	3.5%	3.4%

Forecast as of: January 15, 2020

¹Aggregated Using PPP Weights

Source: International Monetary Fund and Wells Fargo Securities

International Forecast: Change Since December 18, 2019

Changes to the Wells Fargo International Economic Forecast

	GDP				CPI			
	2018	2019	2020	2021	2018	2019	2020	2021
Global (PPP Weights)	0.00%	0.01%	0.01%	-0.01%	0.00%	0.03%	0.02%	0.02%
Advanced Economies ¹	0.00%	0.04%	0.10%	0.02%	0.00%	0.01%	-0.03%	-0.07%
United States	0.00%	0.05%	0.20%	0.04%	0.00%	0.02%	-0.03%	-0.11%
Eurozone	0.00%	0.03%	0.03%	0.00%	0.00%	-0.01%	-0.03%	-0.07%
United Kingdom	-0.04%	0.03%	0.01%	-0.08%	0.00%	0.00%	0.00%	0.00%
Japan	0.00%	0.05%	0.09%	0.00%	0.00%	0.01%	0.04%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	0.00%	-0.02%	-0.12%	0.00%
Developing Economies ¹	0.00%	-0.01%	-0.06%	-0.02%	0.00%	0.05%	0.06%	0.09%
China	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%
India ²	0.00%	-0.10%	-0.32%	-0.07%	0.00%	0.11%	0.35%	0.48%
Mexico	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-0.18%	-0.16%

Forecast as of: January 15, 2020

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						
	2020				2021	
	Q1	Q2	Q3	Q4	Q1	Q2
United States	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
Eurozone ¹	-0.60%	-0.60%	-0.60%	-0.60%	-0.60%	-0.60%
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						
	2020				2021	
	Q1	Q2	Q3	Q4	Q1	Q2
United States	1.75%	1.80%	1.80%	1.85%	1.90%	1.90%
Eurozone ²	-0.70%	-0.65%	-0.60%	-0.55%	-0.45%	-0.35%
United Kingdom	0.65%	0.75%	0.80%	0.90%	0.95%	1.00%
Japan	-0.05%	-0.05%	0.00%	0.00%	0.05%	0.05%
Canada	1.70%	1.75%	1.75%	1.80%	1.85%	1.85%
10-Year Note						
	2020				2021	
	Q1	Q2	Q3	Q4	Q1	Q2
United States	2.10%	2.15%	2.15%	2.20%	2.25%	2.30%
Eurozone ²	-0.35%	-0.30%	-0.20%	-0.10%	0.05%	0.20%
United Kingdom	0.90%	1.00%	1.05%	1.05%	1.10%	1.15%
Japan	0.05%	0.05%	0.10%	0.10%	0.15%	0.15%
Canada	1.70%	1.75%	1.80%	1.85%	1.90%	1.95%

Forecast as of: January 15, 2020

¹ ECB Deposit Rate ²German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

International Forecast: Change Since December 18, 2019

Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

	Central Bank Key Policy Rate				
	2020				2021
	Q1	Q2	Q3	Q4	Q1
United States	0.00%	0.00%	0.00%	0.00%	0.00%
Eurozone ¹	0.00%	0.00%	0.00%	0.00%	0.00%
United Kingdom	0.00%	0.00%	0.00%	0.00%	0.00%
Japan	0.00%	0.00%	0.00%	0.00%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	0.00%
2-Year Note					
	2020				2021
	Q1	Q2	Q3	Q4	Q1
	0.00%	0.00%	0.00%	0.00%	0.00%
United States	0.00%	0.00%	0.00%	0.00%	0.00%
Eurozone ²	0.00%	0.00%	0.00%	0.00%	0.00%
United Kingdom	0.00%	0.00%	0.00%	0.00%	0.00%
Japan	0.00%	0.00%	0.00%	0.00%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	0.00%
10-Year Note					
	2020				2021
	Q1	Q2	Q3	Q4	Q1
	0.00%	0.00%	0.00%	0.00%	0.00%
United States	0.00%	0.00%	0.00%	0.00%	0.00%
Eurozone ²	0.05%	0.05%	0.05%	0.05%	0.05%
United Kingdom	0.00%	0.00%	0.00%	0.00%	0.00%
Japan	0.00%	0.00%	0.00%	0.00%	0.00%
Canada	0.00%	0.00%	0.00%	0.00%	0.00%

Forecast as of: January 15, 2020

¹ ECB Deposit Rate ²German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

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