

# Economics Group

## MONTHLY OUTLOOK

### U.S. Overview

#### Post Brexit, Pre-Election Forecast

In the midst of such headline volatility, the economic forecast is, of course, highly uncertain but also necessary to provide a path through the crosswinds and the fog of battle. As a benchmark, real final sales, led by consumer spending, residential investment and government spending, continue to drive growth. Meanwhile, inflation continues to inch upward. This combination of better growth and continued moderate inflation provides the Fed a basis for raising the fed funds rate—but without any sense of urgency. Given the modest inflation pace and global uncertainties, the yield curve remains relatively flat. Finally, modest nominal GDP growth in the face of rising unit labor costs has resulted in a negative path for profits.

#### Three Tensions in Our Outlook

Three tensions persist in our outlook. First, the Great Divide persists between several elements of strength astride weakness in business investment, structures and net exports. Second, the persistent, but very modest, increase in inflation provides a soft push to Fed action. However, the push is so soft that the tension persists between the Fed's dot plot and the continued downshifting of that same dot plot of Fed intentions over time. Finally, the flatter yield curve continues along with a stronger dollar that reflects the global tensions of disappointing global growth and what appears to be a historically modest, but relatively strong, pace of U.S. growth. None of these tensions are new, but their persistence in the conversation continues.

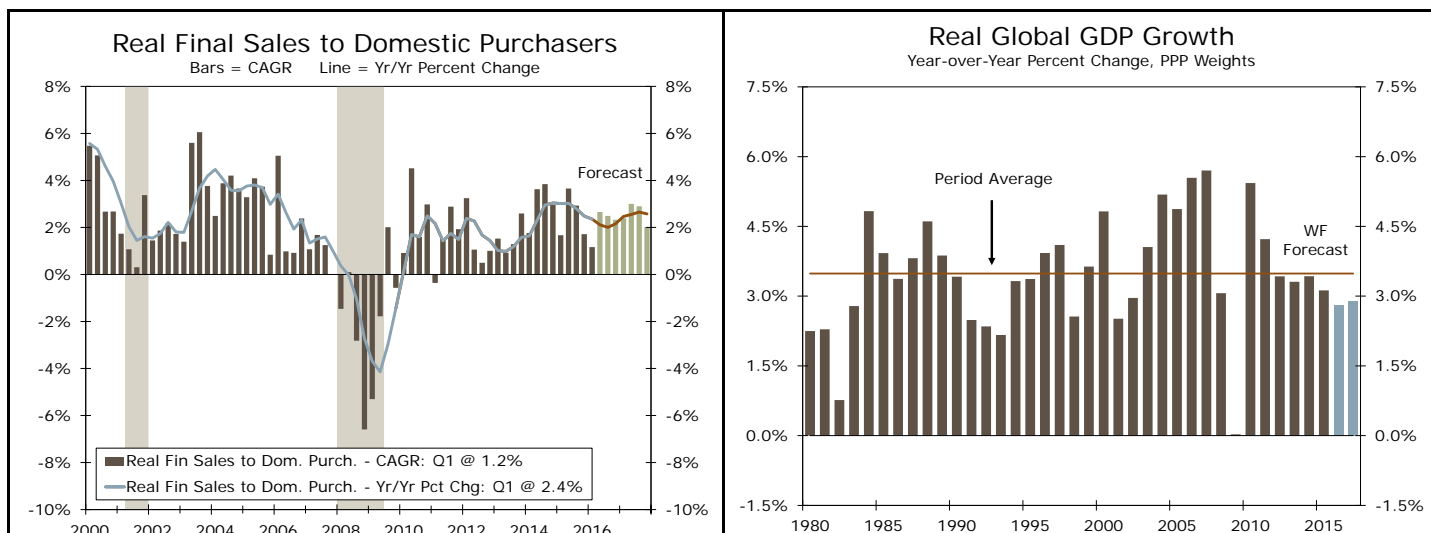
### International Overview

#### Will Brexit Cause a Global Recession?

Citizens in the United Kingdom shocked the world on June 23 when they voted to take the country out of the European Union (EU). We now look for the British economy to slip into a modest recession later this year. In our view, uncertainty regarding the ultimate economic and financial relationships that the U.K. will have with the rest of the EU will depress British investment spending in coming quarters. We look for the Bank of England to provide further monetary accommodation in coming months in an attempt to offset the economic weakness.

The U.K. accounts for only 4 percent of global GDP, so the direct economic effects of a modest British recession should be limited. The indirect effects should be limited as well. Financial markets have generally stabilized following their initial selloff, so negative wealth effects should not be as painful as some initially feared. Bank exposure to the U.K. accounts for only 4 percent of banking system assets in major economies, so any financial losses associated with a modest recession in the U.K. are not likely to trigger a global banking crisis.

We have made a minor downward adjustment to our global GDP forecast for 2017. If this proves to be correct, the global economy will have grown below its long-run average rate of 3.5 percent per annum for six consecutive years. An environment of slow global growth is not likely to produce meaningful inflation and significant monetary tightening by major foreign central banks anytime soon.



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



**The Great Divide—Unbalanced Real Growth**

Our first tension highlights the risks of unbalanced growth to continued economic expansion when such an expansion is built on such a narrow base and therefore is especially sensitive to a shock that may lead to a recession. We estimate second quarter real GDP growth of 2.3 percent followed by 2.0 percent growth for the second half of this year. Monthly job growth is expected to be 172,000 on average for 2016, thereby raising interesting issues for labor costs, corporate profits and prices.

Consumer spending has held up reasonably well and, looking ahead, is expected to provide most of the thrust for growth in the second half of 2016. For the rest of the year, real personal income gains should continue at a 2.5-3.0 percent rate of growth. Recent reports signal an improvement in real wage & salary growth while the pace of inflation remains moderate. Light vehicle sales continue at a 17 million-unit plus pace.

Residential investment is the second source for growth. Housing starts continue to improve at a steady but moderate pace and average 1.2 million in the second half of 2016 compared to 1.11 million in 2015. The composition of residential investment continues to shift in favor of more single-family construction, and construction employment has increased over 3 percent on a year-ago basis. Finally, government spending should improve modestly, growing a bit under 2 percent in the second half of 2016 compared to just 0.7 percent last year.

Overall, solid gains in domestic demand will be needed to offset the drag from disappointing business investment and slower global economic growth. Equipment and structures both declined in the first quarter of 2016. Both sectors are expected to see declines in 2016 compared to the positive contributions in recent years. In part, this poor performance is a response to two negative forces. One, the continued moderate pace of aggregate growth, and certainly the disappointing energy/global growth/dollar impacts have lowered the

incentive for firms to finance new capital investment—despite current continued low interest rates. Second, pretax economic profits have declined for the past four quarters, and this has reduced the cash flow needed to finance business expansion.

Net exports and inventories also continue to slow real growth. Merchandise exports have been weak over the past few quarters, consistent with a stronger dollar and weaker global growth. Inventory investment, specifically nonfarm inventories, has been a drag on growth for three straight quarters, consistent with moderate expectations for final sales growth.

**Tension: Inflation and Policy on a Knife’s Edge**

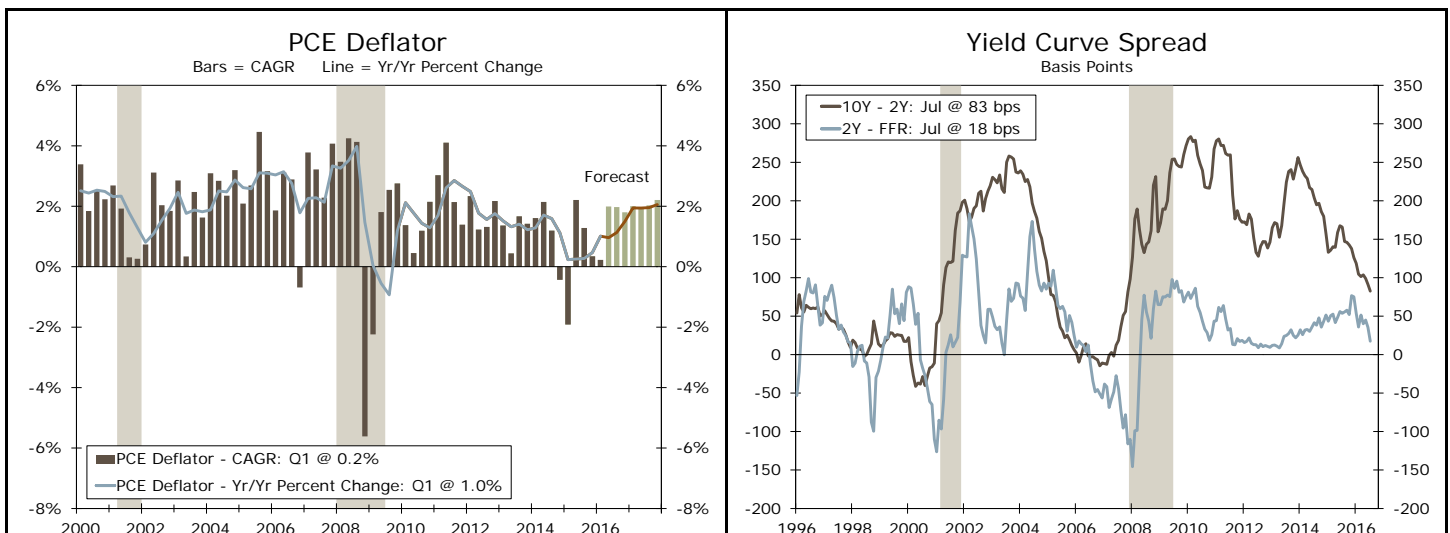
Both inflation and the pace of the Fed’s actions remain uncertain. With these uncertainties comes the challenge of a flatter yield curve and continued pressure on corporate profits.

Financial markets have become increasingly skeptical about how soon and how much the Fed will increase the federal funds rate this year simply because of the difficulty of judging the Fed’s reaction function. Certainly, the pace of inflation is expected to rise toward the 2 percent target—we estimate the PCE deflator will hit 1.9 percent in the first quarter of 2017. To what extent the Fed will act in anticipation of hitting this 2 percent target remains a mystery.

We believe the Fed will make a move in December and that it has not completely closed the door to a September move. We look for two quarter-point rate hikes in 2017.

**Tension: Flatter Yield Curve, Stronger Dollar**

We expect the FOMC to lower the trajectory of its dot-plot for the next two years at some point as well as lower its longer-term funds rate estimate. In addition, moderate long-term inflation expectations reinforce the push to a flatter yield curve of the past two years and that, along with global demand for U.S. fixed income instruments, underlies our view for a stronger dollar ahead as well.



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

Wells Fargo U.S. Economic Forecast																					
	Actual												Forecast								
	2014				2015				2016				2017				Actual			Forecast	
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	2013	2014	2015	2016	2017
Real Gross Domestic Product (a)	-0.9	4.6	4.3	2.1	0.6	3.9	2.0	1.4	1.1	2.3	2.1	1.9	1.8	2.4	2.5	1.4	1.5	2.4	2.4	1.8	2.1
Personal Consumption	1.3	3.8	3.5	4.3	1.8	3.6	3.0	2.4	1.5	4.3	2.7	2.0	2.3	3.2	3.1	1.9	1.7	2.7	3.1	2.7	2.7
Business Fixed Investment	8.3	4.4	9.0	0.7	1.6	4.1	2.6	-2.1	-4.5	1.1	0.6	3.4	3.1	2.9	2.8	2.5	3.0	6.2	2.8	-0.5	2.6
Equipment	3.5	6.5	16.4	-4.9	2.3	0.3	9.9	-2.1	-8.7	1.6	-1.0	3.5	3.0	2.7	2.2	1.7	3.2	5.8	3.1	-1.1	2.2
Intellectual Property Products	7.8	4.9	6.5	6.9	7.4	8.3	-0.8	-0.1	4.4	4.2	4.8	5.3	4.9	4.8	4.8	4.7	3.8	5.2	5.7	3.2	4.9
Structures	19.1	-0.2	-1.9	4.3	-7.4	6.2	-7.2	-5.1	-7.9	-5.0	-2.5	0.0	0.5	0.5	1.0	1.0	1.6	8.1	-1.5	-4.8	-0.2
Residential Construction	-2.7	10.4	3.4	9.9	10.1	9.4	8.2	10.1	15.6	0.0	9.0	8.5	8.5	8.5	8.0	8.0	9.5	1.8	8.9	8.9	7.9
Government Purchases	0.0	1.2	1.8	-1.4	-0.1	2.6	1.8	0.1	1.3	-0.3	1.8	1.7	1.2	1.0	1.0	0.9	-2.9	-0.6	0.7	1.0	1.2
Net Exports	-434.0	-443.3	-429.1	-463.6	-541.2	-534.6	-546.1	-551.9	-546.8	-542.9	-570.9	-596.1	-621.4	-644.7	-668.4	-690.0	-417.5	-442.5	-543.5	-564.2	-656.1
Pct. Point Contribution to GDP	-1.4	-0.2	0.4	-0.9	-1.9	0.2	-0.3	-0.1	0.1	0.1	-0.7	-0.6	-0.6	-0.6	-0.6	-0.5	0.2	-0.2	-0.6	-0.1	-0.6
Inventory Change	36.9	77.1	79.9	78.2	112.8	113.5	85.5	78.3	68.3	52.0	60.0	65.0	64.0	60.0	61.0	55.0	61.4	68.0	97.5	61.3	60.0
Pct. Point Contribution to GDP	-1.3	1.1	0.0	0.0	0.9	0.0	-0.7	-0.2	-0.2	-0.4	0.2	0.1	0.0	-0.1	0.0	-0.1	0.0	0.0	0.2	-0.2	0.0
Nominal GDP (a)	0.6	6.9	6.0	2.2	0.8	6.1	3.3	2.3	1.4	4.4	4.1	3.7	3.9	4.5	4.5	3.7	3.1	4.1	3.5	3.2	4.1
Real Final Sales	0.4	3.5	4.3	2.1	-0.2	3.9	2.7	1.6	1.3	2.9	1.9	1.8	1.9	2.6	2.4	1.6	1.4	2.4	2.3	2.1	2.1
Retail Sales (b)	2.6	4.8	4.7	4.4	2.9	2.1	2.3	2.0	2.7	2.7	2.8	3.4	4.6	4.1	4.2	4.2	3.8	4.1	2.3	2.9	4.3
Inflation Indicators (b)																					
PCE Deflator	1.3	1.7	1.6	1.1	0.2	0.3	0.3	0.5	1.0	1.0	1.1	1.5	1.9	1.9	2.0	2.1	1.4	1.4	0.3	1.1	2.0
"Core" PCE Deflator	1.4	1.6	1.6	1.4	1.3	1.3	1.3	1.4	1.6	1.6	1.6	1.7	1.6	1.6	1.7	1.7	1.5	1.5	1.3	1.6	1.6
Consumer Price Index	1.4	2.0	1.8	1.2	-0.1	0.0	0.1	0.4	1.1	1.1	1.3	1.7	2.4	2.3	2.3	2.3	1.5	1.6	0.1	1.3	2.3
"Core" Consumer Price Index	1.6	1.9	1.8	1.7	1.7	1.8	1.8	2.0	2.3	2.2	2.3	2.2	2.1	2.1	2.1	2.2	1.8	1.7	1.8	2.2	2.1
Producer Price Index (Final Demand)	1.4	2.0	1.8	1.2	-0.5	-0.8	-1.0	-1.3	-0.1	0.0	0.6	1.7	2.2	2.3	2.2	2.2	1.4	1.6	-0.9	0.6	2.2
Employment Cost Index	1.8	2.0	2.2	2.3	2.6	2.0	2.0	2.0	1.9	2.4	2.4	2.5	2.5	2.6	2.6	2.7	1.9	2.1	2.1	2.3	2.6
Real Disposable Income (a)	4.0	3.0	2.7	4.7	3.9	2.6	3.2	3.3	4.0	2.8	2.6	2.8	2.7	2.7	2.6	2.6	-1.4	2.7	3.5	3.2	2.7
Nominal Personal Income (b)	3.9	4.2	4.5	5.2	4.5	4.5	4.5	4.3	4.4	4.1	3.9	3.7	3.9	4.1	4.2	4.4	1.1	4.4	4.5	4.0	4.2
Industrial Production (a)	2.2	5.5	2.5	3.7	-1.9	-2.7	1.5	-3.3	-1.6	-1.2	1.8	2.5	2.6	2.2	2.3	2.5	1.9	2.9	0.3	-0.9	2.1
Capacity Utilization	77.6	78.4	78.4	78.6	77.7	76.6	76.6	75.8	75.4	75.1	75.4	75.6	75.9	76.2	76.6	76.8	76.9	78.2	76.7	75.4	76.4
Corporate Profits Before Taxes (b)	-3.6	1.2	5.8	3.4	4.6	0.6	-5.1	-11.5	-4.3	-0.6	1.9	1.9	1.6	1.8	1.7	1.7	2.0	1.7	-3.1	-0.3	1.7
Corporate Profits After Taxes	-7.5	-2.6	4.9	2.7	4.7	-0.6	-8.2	-15.0	-5.6	-2.1	0.8	1.1	1.1	1.4	1.5	1.5	1.2	-0.6	-5.1	-1.5	1.4
Federal Budget Balance (c)	-241	47	-117	-177	-263	123	-123	-216	-245	24	-138	-180	-180	-40	-190	-160	-680	-484	-439	-575	-590
Current Account Balance (d)	-94.7	-94.1	-95.6	-107.7	-114.5	-111.9	-123.1	-113.4	-124.7	-125.0	-135.0	-145.0	-150.0	-160.0	-165.0	-170.0	-366.4	-392.1	-463.0	-529.7	-645.0
Trade Weighted Dollar Index (e)	76.7	75.8	81.1	85.1	92.1	90.0	92.3	94.5	89.8	90.6	91.5	93.3	95.0	96.5	98.0	98.5	75.9	78.4	91.1	91.3	97.0
Nonfarm Payroll Change (f)	209	276	245	274	190	251	192	282	196	147	175	170	165	160	155	150	193	251	229	172	158
Unemployment Rate	6.7	6.2	6.1	5.7	5.6	5.4	5.2	5.0	4.9	4.9	4.8	4.7	4.7	4.6	4.6	4.5	7.4	6.2	5.3	4.8	4.6
Housing Starts (g)	0.94	0.98	1.02	1.06	0.99	1.16	1.16	1.13	1.15	1.19	1.23	1.24	1.24	1.25	1.26	1.28	0.92	1.00	1.11	1.22	1.27
Light Vehicle Sales (h)	15.8	16.5	16.7	16.8	16.7	17.1	17.8	17.8	17.1	17.1	17.1	17.0	16.9	16.8	16.7	16.6	15.5	16.4	17.3	17.1	16.8
Crude Oil - Brent - Front Contract (i)	107.6	109.5	103.7	77.3	55.6	63.9	51.6	45.0	35.2	47.0	51.5	53.5	54.5	56.0	63.0	61.5	108.4	99.5	54.0	46.8	58.8
Quarter-End Interest Rates (j)																					
Federal Funds Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.50	0.50	0.75	0.75	1.00	1.00	1.25	0.25	0.25	0.27	0.56	1.00
3 Month LIBOR	0.23	0.23	0.24	0.26	0.27	0.28	0.33	0.61	0.63	0.65	0.70	0.95	0.95	1.20	1.20	1.45	0.27	0.23	0.32	0.73	1.20
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.50	3.50	3.50	3.50	3.75	3.75	4.00	4.00	4.25	3.25	3.25	3.27	3.56	4.00
Conventional Mortgage Rate	4.34	4.16	4.16	3.86	3.77	3.98	3.89	3.96	3.69	3.57	3.46	3.53	3.57	3.60	3.64	3.67	3.98	4.17	3.85	3.56	3.62
3 Month Bill	0.05	0.04	0.02	0.04	0.03	0.01	0.00	0.16	0.21	0.26	0.28	0.47	0.55	0.77	0.82	1.01	0.06	0.03	0.05	0.30	0.79
6 Month Bill	0.07	0.07	0.03	0.12	0.14	0.11	0.08	0.49	0.39	0.36	0.39	0.58	0.65	0.87	0.92	1.11	0.09	0.06	0.17	0.43	0.89
1 Year Bill	0.13	0.11	0.13	0.25	0.26	0.28	0.33	0.65	0.59	0.45	0.48	0.67	0.73	0.94	0.99	1.20	0.13	0.12	0.32	0.55	0.97
2 Year Note	0.44	0.47	0.58	0.67	0.56	0.64	0.64	1.06	0.73	0.58	0.66	0.83	0.92	1.13	1.22	1.35	0.31	0.46	0.69	0.70	1.16
5 Year Note	1.73	1.62	1.78	1.65	1.37	1.63	1.37	1.76	1.21	1.01	1.02	1.15	1.19	1.33	1.39	1.48	1.17	1.64	1.53	1.10	1.35
10 Year Note	2.73	2.53	2.52	2.17	1.94	2.35	2.06	2.27	1.78	1.49	1.41	1.50	1.55	1.60	1.66	1.71	2.35	2.54	2.14	1.55	1.63
30 Year Bond	3.56	3.34	3.21	2.75	2.54	3.11	2.87	3.01	2.61	2.30	2.09	2.13	2.17	2.24	2.28	2.31	3.45	3.34	2.84	2.28	2.25

Forecast as of: July 13, 2016

- (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) Quarterly Sum - Billions USD
- (e) Federal Reserve Major Currency Index, 1973=100 - Quarter End
- (f) Average Monthly Change
- (g) Millions of Units - Annual Data - Not Seasonally Adjusted
- (h) Quarterly Data - Average Monthly SAAR; Annual Data - Actual Total Vehicles Sold
- (i) Quarterly Average of Daily Close
- (j) Annual Numbers Represent Averages

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

**Will Brexit Cause a Global Recession?**

Citizens in the United Kingdom shocked the world on June 23 when they voted to take the country out of the European Union. As we wrote in a recent report and as shown in the left chart below, we now expect that the U.K. economy will experience a modest recession starting later this year (see U.K. Recession Post-Brexit Referendum?, which is available upon request).

Although the U.K. will remain a full-fledged member of the EU for the next few years, the country will need to renegotiate the future status of its economic and financial relationships with the EU. At present, there is free movement of goods, services and individuals between the U.K. and the other 27 members of the EU (EU-27). But if the U.K. eventually leaves the EU, the country may no longer enjoy free movement of goods, services and individuals with the EU-27. In our view, the uncertainty surrounding the ultimate status will depress business investment in the U.K. today, thereby leading to the modest recession that we forecast. Indeed, there already is anecdotal evidence suggesting that investment projects in the U.K. are being shelved. We look for the Bank of England to provide further monetary accommodation in the coming months via rate cuts and more quantitative easing.

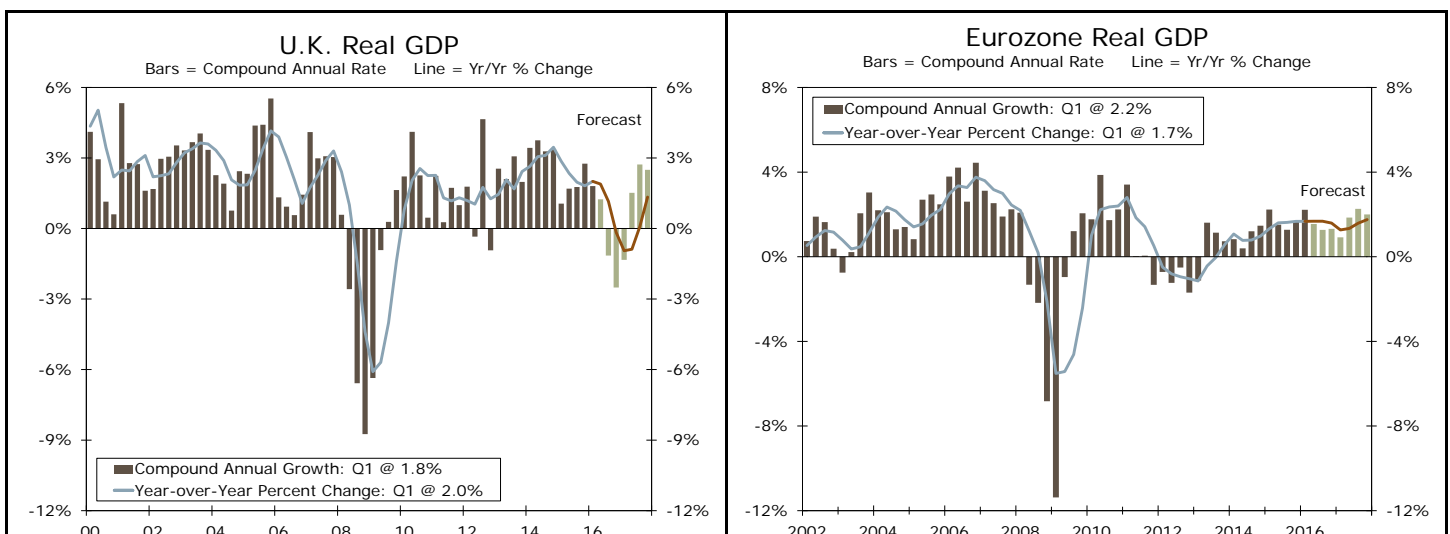
What effects would a modest U.K. recession have on the rest of the world? Let's start with other European economies. There are extensive trade ties between the U.K. and the EU-27, but the former accounts for only 7 percent of the latter's exports. Although export growth in many EU-27 countries may weaken a bit later this year as the U.K. slips into recession, the hit likely will not be large enough to pull most other European economies down into recession as well. We have shaved our GDP growth forecast for the Eurozone in 2017 from 1.9 percent last month to 1.5 percent this month. However, we still look for real GDP growth in the Eurozone to remain positive in the coming quarters (right chart below). More broadly, the U.K.'s

economy accounts for only 4 percent of global GDP so a modest recession there is not likely to produce a global recession, everything else equal.

However, there are indirect effects to consider as well. For example, the stock markets around the world weakened significantly in the immediate aftermath of the Brexit referendum, producing a painful hit to household wealth in some countries. However, the stock markets have stabilized and, in some cases, rebounded, so the wealth effects are not as bad as originally experienced. In addition, bank exposure to the U.K. accounts for only 4 percent of the banking system assets in major economies, so any financial losses associated with a modest U.K. recession are not likely to trigger a global banking crisis (see How Financially Exposed is the World to the U.K.?, which is available upon request).

We look for global GDP to grow 2.8 percent in 2016, which is down a tick from our forecast in June, and 2.9 percent in 2017, which is down 0.2 percentage points from our forecast last month (see chart on front page). If our forecasts are correct, the global economy will have grown below its long-run average of 3.5 percent per annum continuously from 2012 through 2017 (at the earliest).

An environment of slow global growth means that many commodity prices likely will not be returning to their elevated levels of a few years ago anytime soon. In addition, slow global growth in conjunction with depressed commodity prices means that inflationary pressures in many economies likely will remain muted. In the 10 years preceding the 2008 financial crisis, global CPI inflation averaged 4.7 percent per annum. We look for consumer prices on a global basis to rise only 3.1 percent this year and 3.6 percent in 2017, well below the average rate leading up to the global financial crisis. With continued slow growth and benign inflation, the central banks in most major foreign economies will likely feel little need to tighten monetary policy.



Source: IHS Global Insight and Wells Fargo Securities

## Wells Fargo International Economic Forecast

(Year-over-Year Percent Change)

	GDP			CPI		
	2015	2016	2017	2015	2016	2017
Global (PPP Weights)	3.0%	2.8%	2.9%	2.6%	3.1%	3.6%
Global (Market Exchange Rates)	2.8%	2.6%	2.7%	n/a	n/a	n/a
Advanced Economies <sup>1</sup>	1.9%	1.7%	1.8%	0.3%	0.8%	1.8%
United States	2.4%	1.8%	2.1%	0.1%	1.3%	2.3%
Eurozone	1.6%	1.7%	1.5%	0.0%	0.3%	1.1%
United Kingdom	2.2%	1.2%	-0.1%	0.0%	0.7%	1.8%
Japan	0.6%	0.2%	0.7%	0.8%	0.0%	1.0%
Korea	2.6%	2.7%	2.8%	0.7%	0.9%	1.9%
Canada	1.1%	1.3%	2.1%	1.1%	1.6%	2.0%
Developing Economies <sup>1</sup>	4.0%	3.9%	4.0%	4.7%	5.5%	5.3%
China	6.9%	6.4%	5.7%	1.4%	1.9%	1.8%
India <sup>2</sup>	6.6%	7.2%	7.6%	6.0%	4.9%	6.0%
Mexico	2.5%	2.4%	2.5%	2.7%	2.9%	2.9%
Brazil	-3.9%	-3.7%	-0.5%	9.0%	9.1%	7.2%
Russia	-3.7%	0.0%	1.7%	15.6%	7.2%	5.9%

Forecast as of: July 13, 2016

<sup>1</sup>Aggregated Using PPP Weights<sup>2</sup>Forecasts Refer to Fiscal Year

## Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

	3-Month LIBOR						10-Year Bond				
	2016		2017				2016		2017		
	Q3	Q4	Q1	Q2	Q3	Q4	Q3	Q4	Q1	Q2	Q3
U.S.	0.70%	0.95%	0.95%	1.20%	1.20%	1.45%	1.41%	1.50%	1.55%	1.60%	1.66%
Japan	-0.05%	-0.10%	-0.12%	-0.15%	-0.15%	-0.18%	-0.20%	-0.15%	-0.12%	-0.10%	-0.05%
Euroland <sup>1</sup>	-0.35%	-0.35%	-0.35%	-0.35%	-0.30%	-0.25%	-0.15%	-0.10%	-0.05%	0.00%	0.10%
U.K.	0.15%	0.15%	0.15%	0.15%	0.15%	0.20%	0.70%	0.70%	0.75%	0.80%	0.90%
Canada <sup>2</sup>	0.90%	0.90%	0.90%	1.10%	1.15%	1.40%	1.00%	1.05%	1.10%	1.25%	1.45%

Forecast as of: July 13, 2016

<sup>1</sup> 10-year German Government Bond Yield<sup>2</sup> 3-Month Canada Bankers' Acceptances

Source: International Monetary Fund and Wells Fargo Securities

## Wells Fargo Securities Economics Group

Diane Schumaker-Krieg	Global Head of Research, Economics & Strategy	(704) 410-1801 (212) 214-5070	diane.schumaker@wellsfargo.com
John E. Silvia, Ph.D.	Chief Economist	(704) 410-3275	john.silvia@wellsfargo.com
Mark Vitner	Senior Economist	(704) 410-3277	mark.vitner@wellsfargo.com
Jay H. Bryson, Ph.D.	Global Economist	(704) 410-3274	jay.bryson@wellsfargo.com
Sam Bullard	Senior Economist	(704) 410-3280	sam.bullard@wellsfargo.com
Nick Bennenbroek	Currency Strategist	(212) 214-5636	nicholas.bennenbroek@wellsfargo.com
Anika R. Khan	Senior Economist	(704) 410-3271	anika.khan@wellsfargo.com
Eugenio J. Alemán, Ph.D.	Senior Economist	(704) 410-3273	eugenio.j.aleman@wellsfargo.com
Azhar Iqbal	Econometrician	(704) 410-3270	azhar.iqbal@wellsfargo.com
Tim Quinlan	Senior Economist	(704) 410-3283	tim.quinlan@wellsfargo.com
Eric Viloría, CFA	Currency Strategist	(212) 214-5637	eric.viloria@wellsfargo.com
Sarah House	Economist	(704) 410-3282	sarah.house@wellsfargo.com
Michael A. Brown	Economist	(704) 410-3278	michael.a.brown@wellsfargo.com
Jamie Feik	Economist	(704) 410-3291	jamie.feik@wellsfargo.com
Erik Nelson	Currency Analyst	(212) 214-5632	erik.f.nelson@wellsfargo.com
Misa Batcheller	Economic Analyst	(704) 410-3060	misa.n.batcheller@wellsfargo.com
Michael Pugliese	Economic Analyst	(704) 410-3156	michael.d.pugliese@wellsfargo.com
Julianne Causey	Economic Analyst	(704) 410-3281	julianne.causey@wellsfargo.com
Donna LaFleur	Executive Assistant	(704) 410-3279	donna.lafleur@wellsfargo.com
Dawne Howes	Administrative Assistant	(704) 410-3272	dawne.howes@wellsfargo.com

Wells Fargo Securities Economics Group publications are produced by Wells Fargo Securities, LLC, a U.S. broker-dealer registered with the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority, and the Securities Investor Protection Corp. Wells Fargo Securities, LLC, distributes these publications directly and through subsidiaries including, but not limited to, Wells Fargo & Company, Wells Fargo Bank N.A., Wells Fargo Advisors, LLC, Wells Fargo Securities International Limited, Wells Fargo Securities Asia Limited and Wells Fargo Securities (Japan) Co. Limited. Wells Fargo Securities, LLC, is registered with the Commodities Futures Trading Commission as a futures commission merchant and is a member in good standing of the National Futures Association. Wells Fargo Bank, N.A. is registered with the Commodities Futures Trading Commission as a swap dealer and is a member in good standing of the National Futures Association. Wells Fargo Securities, LLC, and Wells Fargo Bank, N.A. are generally engaged in the trading of futures and derivative products, any of which may be discussed within this publication. Wells Fargo Securities, LLC does not compensate its research analysts based on specific investment banking transactions. Wells Fargo Securities, LLC's research analysts receive compensation that is based upon and impacted by the overall profitability and revenue of the firm which includes, but is not limited to investment banking revenue. The information and opinions herein are for general information use only. Wells Fargo Securities, LLC does not guarantee their accuracy or completeness, nor does Wells Fargo Securities, LLC assume any liability for any loss that may result from the reliance by any person upon any such information or opinions. Such information and opinions are subject to change without notice, are for general information only and are not intended as an offer or solicitation with respect to the purchase or sales of any security or as personalized investment advice. Wells Fargo Securities, LLC is a separate legal entity and distinct from affiliated banks and is a wholly owned subsidiary of Wells Fargo & Company © 2016 Wells Fargo Securities, LLC.

### Important Information for Non-U.S. Recipients

For recipients in the EEA, this report is distributed by Wells Fargo Securities International Limited ("WFSIL"). WFSIL is a U.K. incorporated investment firm authorized and regulated by the Financial Conduct Authority. The content of this report has been approved by WFSIL a regulated person under the Act. For purposes of the U.K. Financial Conduct Authority's rules, this report constitutes impartial investment research. WFSIL does not deal with retail clients as defined in the Markets in Financial Instruments Directive 2007. The FCA rules made under the Financial Services and Markets Act 2000 for the protection of retail clients will therefore not apply, nor will the Financial Services Compensation Scheme be available. This report is not intended for, and should not be relied upon by, retail clients. This document and any other materials accompanying this document (collectively, the "Materials") are provided for general informational purposes only.

SECURITIES: NOT FDIC-INSURED/NOT BANK-GUARANTEED/MAY LOSE VALUE

WELLS  
FARGO

SECURITIES