

Economics Group

Weekly Economic & Financial Commentary

U.S. Review

Q1 Growth Comes in a Paltry 0.7 Percent

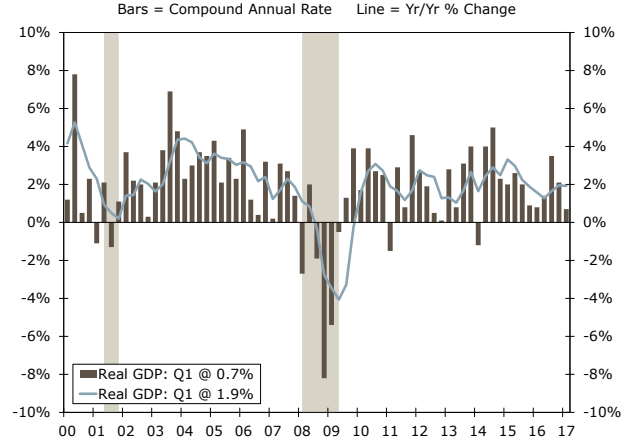
- Residual seasonality likely deserved some of the blame in the weak numbers in this morning's Q1 GDP report, and the slowdown in personal consumption was also a major factor. That said, many factors that weighed on consumption were transitory, and business investment has perked up.
- Other economic data released this week point to an economy on solid footing. The housing market had a strong start to the year but is constrained by lean inventory, as evidenced by new and pending home sales data. Consumers are in high spirits and confident in the economic outlook, particularly in terms of job prospects, according to surveys released this week.

Global Review

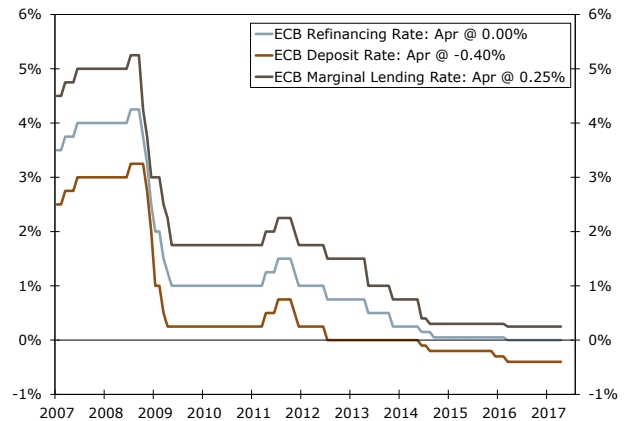
Eurozone: Diminution of Downside Risks?

- Markets breathed a sigh of relief this week following the first round of the French presidential election. Polls show that the centrist Emmanuel Macron should beat the populist Marine Le Pen in the second round of the election on May 7.
- The ECB kept its main policy rates on hold this week, but said that the downside risks to the outlook were starting to diminish. The ECB likely will maintain the current size of its QE program for the next few months, but it could announce plans sometime this summer to "taper" further if the economic outlook remains sanguine and/or inflation continues to trend higher.

U.S. Real GDP



ECB Policy Rates



Wells Fargo U.S. Economic Forecast													
	Actual				Forecast				Actual			Forecast	
	2016				2017				2014	2015	2016	2017	2018
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q					
Real Gross Domestic Product ¹	0.8	1.4	3.5	2.1	0.7	2.9	2.6	2.5	2.4	2.6	1.6	2.1	2.7
Personal Consumption	1.6	4.3	3.0	3.5	0.3	2.7	2.5	2.3	2.9	3.2	2.7	2.3	2.7
Inflation Indicators ²													
PCE Deflator	0.9	1.0	1.0	1.4	2.0	1.8	1.9	1.9	1.5	0.3	1.1	1.9	2.0
Consumer Price Index	1.1	1.1	1.1	1.8	2.6	2.3	2.4	2.2	1.6	0.1	1.3	2.4	2.3
Industrial Production ¹	-1.3	-0.7	0.8	0.7	1.5	3.0	2.4	2.4	3.1	-0.7	-1.2	1.6	2.4
Corporate Profits Before Taxes ²	-6.6	-4.3	2.1	9.3	3.8	3.6	3.2	3.1	5.9	-3.0	-0.1	3.4	2.9
Trade Weighted Dollar Index ³	89.8	90.6	90.0	95.8	94.0	96.3	97.0	99.3	78.4	91.1	91.6	96.6	97.4
Unemployment Rate	4.9	4.9	4.9	4.7	4.7	4.6	4.6	4.5	6.2	5.3	4.9	4.6	4.5
Housing Starts ⁴	1.15	1.16	1.14	1.25	1.25	1.24	1.26	1.27	1.00	1.11	1.17	1.26	1.35
Quarter-End Interest Rates ⁵													
Federal Funds Target Rate	0.50	0.50	0.50	0.75	1.00	1.25	1.50	1.50	0.25	0.27	0.52	1.31	1.88
Conventional Mortgage Rate	3.69	3.57	3.46	4.20	4.20	4.29	4.45	4.46	4.17	3.85	3.65	4.35	4.53
10 Year Note	1.78	1.49	1.60	2.45	2.40	2.55	2.72	2.75	2.54	2.14	1.84	2.61	2.84

Forecast as of: April 28, 2017

¹ Compound Annual Growth Rate Quarter-over-Quarter

² Year-over-Year Percentage Change

³ Federal Reserve Major Currency Index, 1973=100 - Quarter End

⁴ Millions of Units

⁵ Annual Numbers Represent Averages

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

Inside

U.S. Review	2
U.S. Outlook	3
Global Review	4
Global Outlook	5
Point of View	6
Topic of the Week	7
Market Data	8

Together we'll go far



U.S. Review

Economic Growth Trips Out of the Gate in Q1

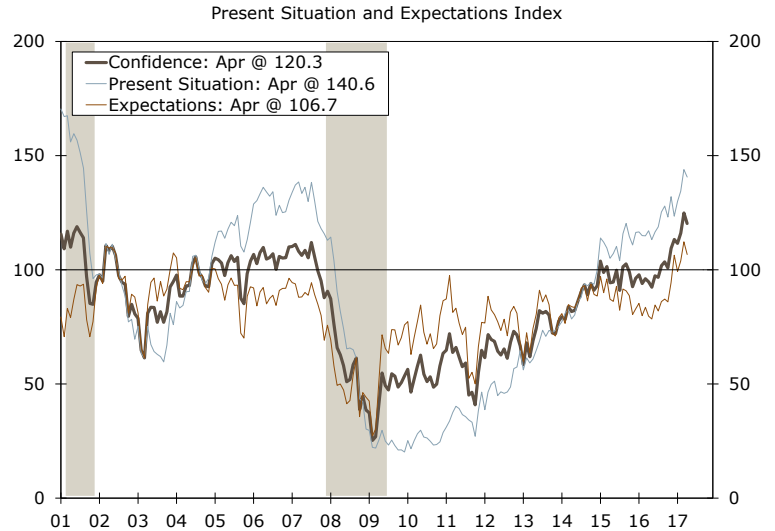
This morning's first estimate of Q1 GDP growth was expected to be on the weak side, as Q1 has tended to be many times over the past decade. Still, residual seasonality in the series does not explain the very weak showing for personal consumption in the first three months of 2017. Personal consumption has been the driving force of GDP growth for much of the past two years as the commodity downturn, slower business investment and slower global economic growth weighed on other components of GDP, while the strong domestic labor force supported solid personal consumption. Given that, the 0.3 percent print for PCE could be cause for concern. We suspect that some of the slowdown was transitory, as warm weather cut utilities consumption in January and February. The auto sector is also less supportive to retail sales as the boom in sales tops out. Another possible factor in soft spending in the first quarter is the later timing of tax returns this year, which may have pushed out some purchases to April. Fundamentals support a bounce back in consumption as the strong labor market supports income growth.

There is little indication spending has hit an inflection point from the consumer surveys, which we look to for hints about future consumer spending. The Conference Board's Consumer Confidence report earlier this week did decline slightly more than expected in April after hitting a cycle-high in March. Its current reading is the second highest. The University of Michigan Survey of Consumer Sentiment was also positive. Confidence has surged since the November election, particularly in the expectations component. Though the surge in attitudes has yet to translate to a surge in spending, we are encouraged by consumers' assessment of their present situation, as consumers report favorable labor market conditions, which bodes well for future spending.

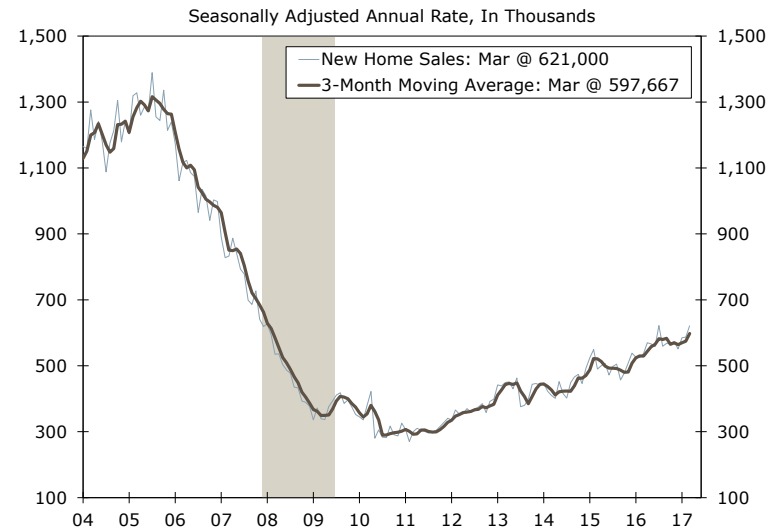
Residential investment was a bright spot in Q1 GDP. Housing has been one area in which soft data and hard data agree. The NAHB/Wells Fargo Housing Market Index has jumped since the election, and new homes sales have followed suit, rising to the second highest current-cycle pace in March. The rise in new home sales surprised consensus, which had expected a softer reading after February's surge. Demand for housing is strong although the supply of homes for sale, particularly for lower priced homes, is lean and buyers face stiff competition. That competition was likely a contributing factor to the softer March print for pending home sales, which measures contract signings of existing properties. Mild weather in January and February likely also pulled forward some activity that usually happens in March. The trend in housing is strong, and the sector is set for an active year as rising interest rates and house prices may prompt consumers on the fence to decide now is the time to buy.

Equipment spending was another bright spot in Q1 GDP as the recovery in business spending continues. Durable goods factory data this week showed solid shipments of core capital goods in March, which are a useful proxy for business investment in the GDP calculations. Core order capital goods orders did slow, which suggests a more moderate clip to start Q2.

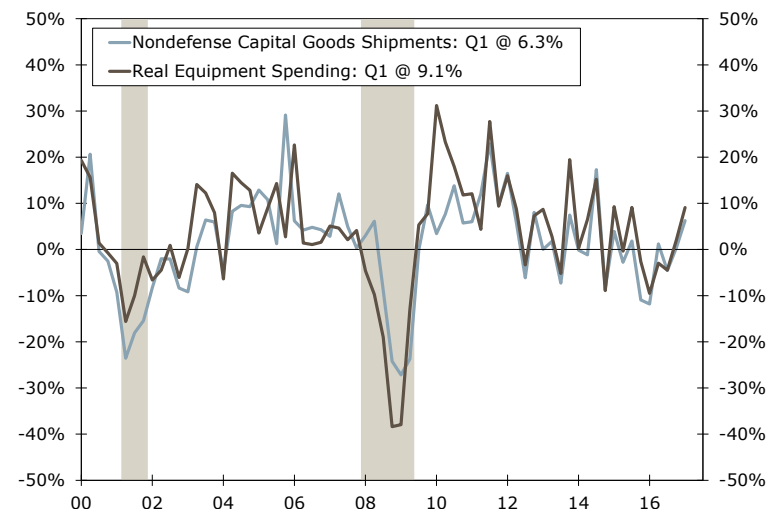
Conference Board Consumer Confidence



New Home Sales



Core Capital Goods Shipments vs. Equipment Spending



Source: The Conference Board, U.S. Department of Commerce and Wells Fargo Securities

PCE Inflation • Monday

Inflation, according to the PCE deflator, the most closely watched measure by the Fed, started the year off strong. After strong gains in the first two months of the year, the year-over-year rate reached the Fed’s target for the first time in nearly five years. Inflation looks to have softened in March, however. Energy prices, which lifted inflation in January and February, fell in March. Core inflation is also expected to stay flat following weakness in core goods and an unusually large decline in wireless phone services.

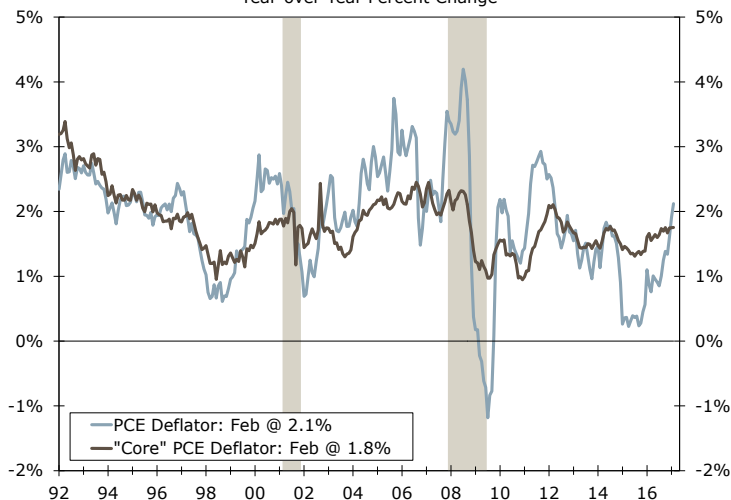
We look for nominal personal income to have risen 0.2 percent in March, but the weaker rate of inflation points to stronger growth in real disposable income. Spending is also set to increase about 0.1 percent amid greater utilities spending and tax returns that were delayed in February.

Previous: 0.1%

Wells Fargo: -0.1%

Consensus: -0.2% (Month-over-Month)

PCE Deflator vs. Core PCE Deflator
Year-over-Year Percent Change



ISM Manufacturing • Monday

After a turnaround that began late last year, activity in the manufacturing sector looks to have lost some steam. Purchasing managers’ indices, including the ISM index, generally edged lower in March, while manufacturing output according to the Fed’s industrial production report fell for the first time in seven months.

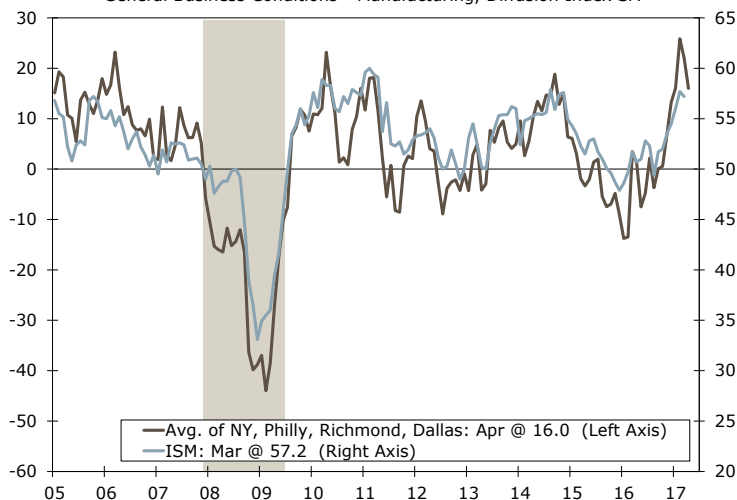
The pullback follows some of the strongest readings on manufacturing activity in more than two years and suggests activity is settling in at a more sustainable pace. We expect the ISM manufacturing index to have slipped in April to a still-strong 56.6. Improvement in global growth and commodity prices, as well as a relatively stable dollar, all look to underpin a continued recovery in the factory sector.

Previous: 57.2

Wells Fargo: 56.6

Consensus: 56.5

U.S. Regional Fed Surveys
General Business Conditions - Manufacturing, Diffusion Index SA



Employment • Friday

Nonfarm payrolls rose by an average of 178,000 jobs per month in the first quarter, but atypical weather and a late Easter holiday led to sizeable monthly swings. After increasing by more than 200,000 jobs in January and February, hiring slowed to 98,000 in March.

With seasonal effects expected to play less of a role in April, we expect payrolls to have risen a more trend-like 190,000. Jobless claims fell both over the survey week and on a four-week average basis in April, consistent with fewer layoffs, while hiring plans edged up in March.

After an unusually large drop in the number of workers reported as unemployed in March, we expect the unemployment rate to tick up to 4.6 percent in April, although the trend remains downward.

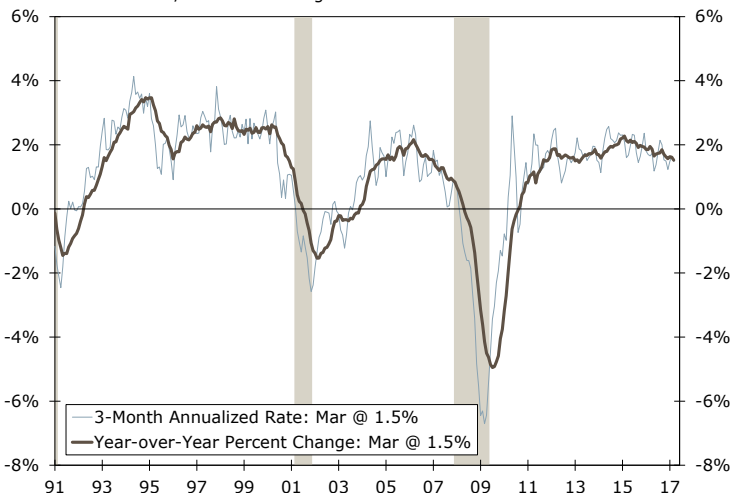
Previous: 98,000

Wells Fargo: 190,000

Consensus: 193,000

Nonfarm Employment Growth

Yr/Yr Percent Change vs. 3-Month Annualized Rate



Source: U.S. Dept. of Commerce, ISM, Federal Reserve System, U.S. Dept. of Labor and Wells Fargo Securities

Global Review

Eurozone: Diminution of Downside Risks?

Voters in France went to the polls on Sunday April 23 in the first round of that country's presidential election. After the votes had been tabulated, Emmanuel Macron, the candidate of the centrist *En Marche!* party, and Marine Le Pen, of the right wing National Front, were on their way to face off in the second round. The winner of the run-off election on May 7 will become the next president of France.

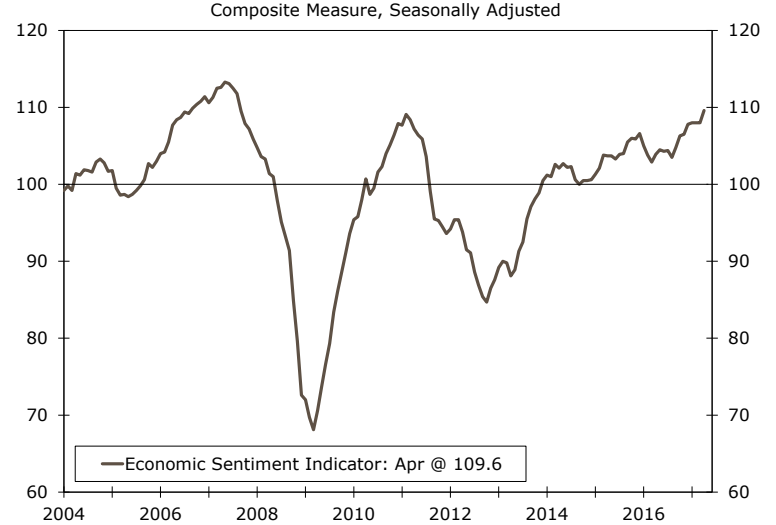
Most market participants were relieved that Jean-Luc Mélenchon, the candidate of the Left Party, did not make it into the second round. The fear was that candidates representing the far right and the far left, who both hold skeptical views regarding French membership in the European Union, would make it into the second round. Polls show that Macron should beat Le Pen handily in the second round. Polls obviously can be poor predictors, and anything can clearly happen between now and May 7. That said, the polls for the first round of the election turned out to be quite accurate. If Mr. Macron is elected president on May 7, then a downside risk to the French economy, and more broadly the overall euro area, from a potential unraveling of the European Union and/or the Eurozone will have dissipated.

The European Central Bank (ECB) held a regularly scheduled policy meeting on Thursday, at which the Governing Council kept its main policy rates unchanged, which was universally expected (see chart on front page). In the statement ECB President Draghi read at the beginning of his press conference, the Governing Council stated that risks to the Eurozone outlook "are still tilted to the downside." However, the Governing Council also acknowledged that risks were "moving towards a more balanced configuration." Indeed, the Eurozone economy appears to be on solid footing right now, at least if sentiment indicators are to be believed. The economic confidence indicator in the euro area, which has been trending higher since last summer, rose to a new cycle high in April (top chart).

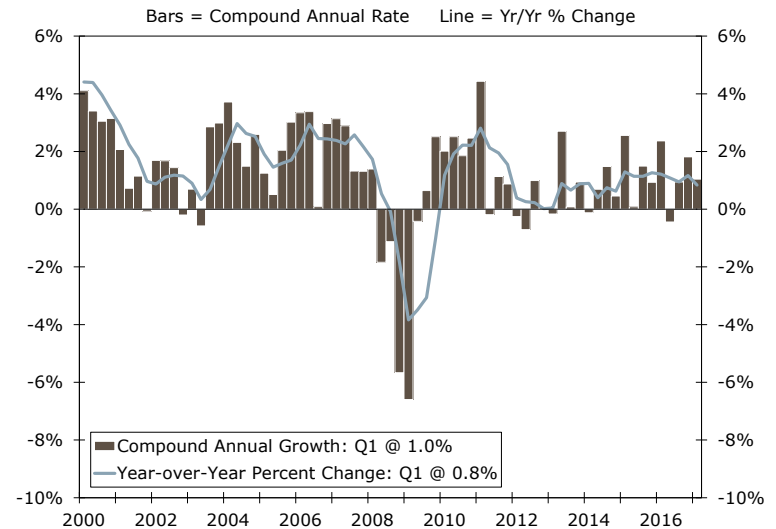
However, "hard" data generally show that economic growth in the euro area is not quite as strong at present as the "soft" data would imply. Yes, real GDP in Spain rose 0.8 percent (not annualized) on a sequential basis in the first quarter to keep the year-over-year rate of growth steady at 3.0 percent. But, Spain is an outlier. Real GDP in France grew only 0.3 percent sequentially and 0.8 percent year-over-year in Q1 (middle chart). More generally, real GDP in the overall euro area likely rose at a sub-2 percent rate in the first quarter. In other words, the Eurozone economy continues to grow, albeit at a fairly modest pace.

Modest GDP growth has translated into benign CPI inflation. The overall rate of inflation currently stands just below 2 percent (bottom chart). Although the core rate of inflation is lower, it did shoot up from 0.7 percent in March to 1.2 percent in April. In our view, the ECB will continue to buy €60 billion worth of bonds each month for the next few months. Sometime this summer, however, the Governing Council could announce plans to "taper" its bond purchases further if the economic outlook remains sanguine and/or inflation continues to trend higher.

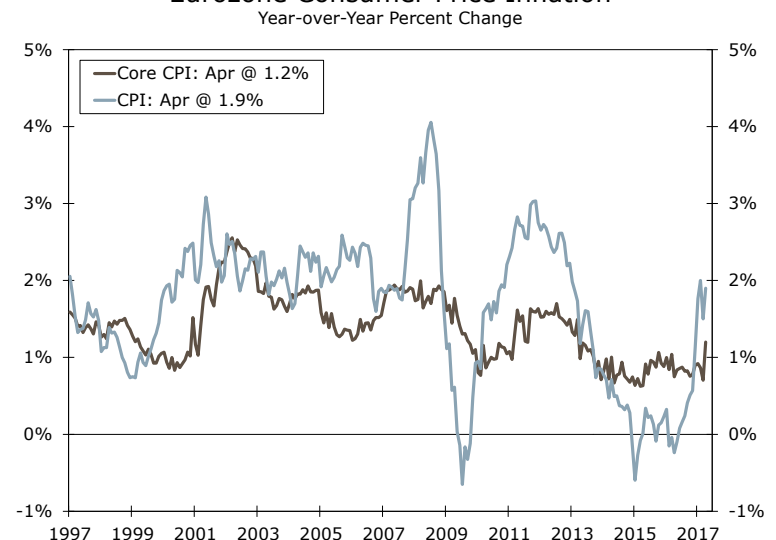
Eurozone Economic Sentiment Indicator



French Real GDP



Eurozone Consumer Price Inflation



Source: IHS Global Insight and Wells Fargo Securities

China Caixin Manufacturing PMI • Monday

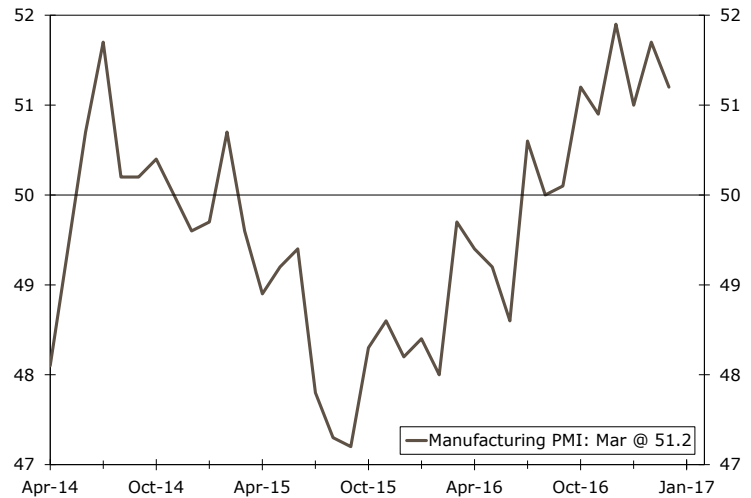
The Caixin manufacturing PMI index has been in expansionary territory (above the 50-threshold) since July 2016, and analysts expect this trend to continue. Although the index downshifted to 51.2 in March from 51.7 in February, the consensus forecast is calling for a slight rebound to 51.3 for April.

Last week, Q1 GDP data for China revealed that the Chinese economy expanded 6.9 percent year over year. The notable strength in the secondary industry, which includes manufacturing, boosted the headline number and provided further evidence that economic growth is stabilizing following a gradual deceleration in GDP. The secondary industry accounts for roughly 40 percent of the value added in the Chinese economy. As the second-largest economy, and the world's largest manufacturer, China's Caixin manufacturing PMI will be watched especially closely by markets.

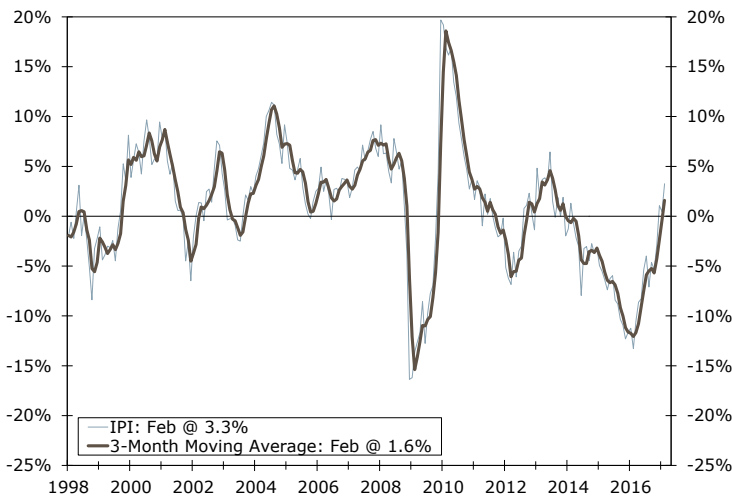
Previous: 51.2

Consensus: 51.3

Caixin China Manufacturing PMI
Seasonally Adjusted



Brazilian Industrial Production Index
Year-over-Year Percent Change



Brazil Industrial Production • Wednesday

Brazilian industrial production data for March is slated to be released next Wednesday. After decreasing 0.2 percent in January, the index increased 0.1 percent in February. A strong print for March could signal that Brazil is successfully emerging from its eight-quarter long recession. In Q4, the industrial sector of Brazil, which includes mining, manufacturing, construction and utilities production, contracted 2.5 percent, year over year.

Also on the docket for next week is Brazilian trade data, including total imports and total exports for April, both of which are expected to downshift from the prior month. Vehicle sales data for April are also slated for release early next week, a notable metric to gauge the strength of the consumer. Taken together, next week's indicators will be helpful in assessing the strength of the Brazilian economy recovery as it attempts to emerge from recession.

Previous: 0.1%

Consensus: 0.0% (Month-over-Month)

Eurozone GDP • Wednesday

Real GDP in the Eurozone rose 0.4 percent in Q4-2016 and is expected to rise 0.5 percent in Q1-2017 to mark the 16th consecutive quarter in which growth has been positive on a sequential basis. But because economic growth has been generally sluggish over that period, inflation has remained subdued, as further evidenced by this morning's release of the CPI.

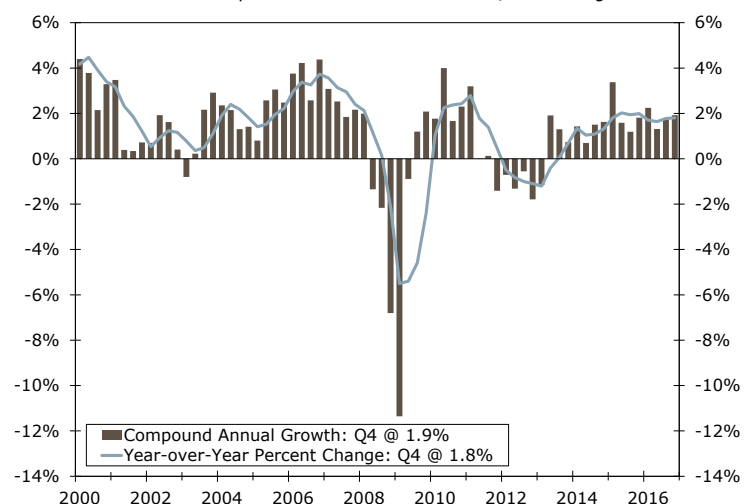
We forecast that the pace of economic activity in the euro area will gradually gain traction as exports accelerate and as the effects of monetary accommodation make their way through the economy. In our view, the ECB will deem that further policy accommodation is not needed as inflation slowly creeps higher. Policy tightening will likely not be needed either, at least not in the foreseeable future. We look for the Eurozone to expand 1.8 percent and 2.0 percent in 2017 and 2018, respectively.

Previous: 0.4%

Wells Fargo: 0.5%

Consensus: 0.5% (Not Annualized)

Eurozone Real GDP
Bars = Compound Annual Rate Line = Yr/Yr % Change



Source: IHS Global Insight, Bloomberg LP and Wells Fargo Securities

Interest Rate Watch

Looking Ahead to the FOMC

With the disappointing first quarter GDP numbers and generally softer economic data in general for March, we do not expect the Fed to make any major changes to policy or its policy statement at this week's FOMC meeting. The policy statement will likely reaffirm the Fed's belief that despite the apparently weak first quarter GDP data, the overall economy is very close to where the Fed would like it to be in regard to full employment and inflation. The bottom line should be that two more quarter point rate hikes are likely this year, which is one more than the financial markets are currently pricing in.

We expect the Fed to look past the most recent stumble in GDP growth. Sluggish first quarter real GDP growth has been an all too frequent occurrence during this expansion, with the current quarter likely marking the fifth time in the past eight years that reported first quarter growth will be the weakest quarter of the year. Given the apparent issues with residual seasonality, the Fed will likely focus more attention on the continued improvement in the labor market and rebound in inflation.

While Q1 GDP growth was disappointing, corporate earnings seem to be coming in at or above consensus expectations, and top-line revenues are also coming in on the strong side. We suspect that the improvement in earnings is due to companies working through the earlier appreciation of the dollar, a rebound in oil prices and energy production, and some strengthening in global demand.

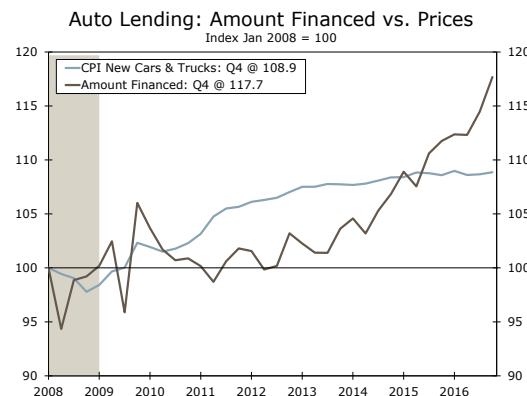
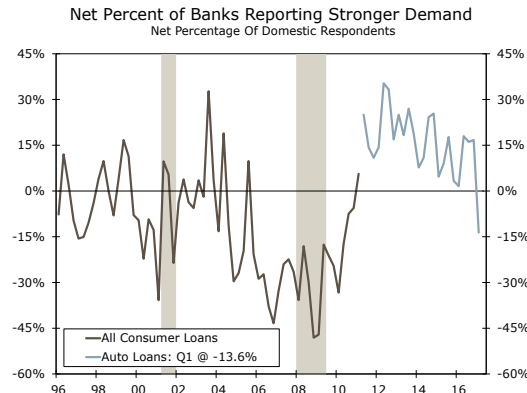
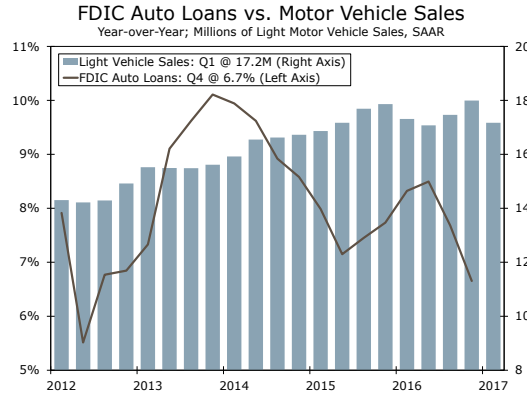
Long-term interest rates have remained remarkably well behaved in light of the recent pop in equity markets, as well as higher forecasts for global GDP growth and inflation. The 10-year yield rose slightly following the French election but ended the week right around 2.30 percent. Our take on the split is that stock investors are focusing on more immediate concerns surrounding improved earnings and less geopolitical risk in Europe while bond investors are more focused on the potential for more disruption coming from the Korean peninsula as well as the current budget impasse in Washington.

Credit Market Insights

Moderation in Auto Lending

Light vehicle sales remained elevated at 17.2 million in Q1, or 15.2 percent higher than the average quarterly pace of 14.9 million since the end of the recession. However, auto loans have decreased the past two quarters, and ended 2017 at 6.7 percent year-over-year growth, down from 8.5 percent growth in Q2-2016. As we examine the current auto lending environment, there are signs pointing to a potential moderation in the run on auto sales that we have seen recently.

In addition to the slowdown of auto lending, the net percent of banks reporting tighter standards for auto loans has grown to 11.7 percent, substantially up from the -6.3 net percent reported in Q1-2016. Of all consumer loan categories surveyed, autos currently have the highest net percentage of banks reporting a tightening of credit standards. Furthermore, Q1-2017 brought a sharp decline in demand for auto loans, with a net percentage of -13.6 percent reporting stronger demand for auto loans, down from 16.7 percent in Q4. Loan rates have been at all-time lows, but have recently started to tick upward, which could explain the tightening standards and dwindling demand for auto loans. Last, auto loan financing has continued rising compared to new car and truck prices, possibly signaling an oversupply of auto financing. Considering the auto lending market's tightening standards, decreasing consumer demand, and heavy supply of financing relative to prices, a slowdown of auto sales could be imminent.



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

Credit Market Data

Mortgage Rates	Current	Week Ago	4 Weeks Ago	Year Ago
	30-Yr Fixed	4.03%	3.97%	4.10%
15-Yr Fixed	3.27%	3.23%	3.36%	2.89%
5/1 ARM	3.12%	3.10%	3.19%	2.86%

Bank Lending	Current Assets (Billions)	1-Week Change (SAAR)	4-Week Change (SAAR)	Year-Ago Change
	Commercial & Industrial	\$2,091.0	-6.55%	0.34%
Revolving Home Equity	\$395.8	-6.19%	-6.18%	-7.31%
Residential Mortgages	\$1,741.8	-14.47%	-3.27%	3.87%
Commercial Real Estate	\$2,010.1	17.55%	6.84%	8.93%
Consumer	\$1,367.9	6.77%	3.10%	6.02%

Source: Freddie Mac, Federal Reserve Board and Wells Fargo Securities

Topic of the Week

Grading the Labor Market Ahead of Graduation

The strongest labor market in a decade bodes well for the Class of 2017, but young workers, including college grads, still face a challenging labor market relative to older workers.

College graduates have typically had more success in the labor market, hence the willingness of many college-goers to take on debt in order to finance their education. For young college graduates, however, the right job is not always found quickly. Historically, the unemployment rate for college grads under the age of 25 has run closely in line with the headline unemployment rate. Yet over the past year, the unemployment rate for young college grads has been little changed (top chart).

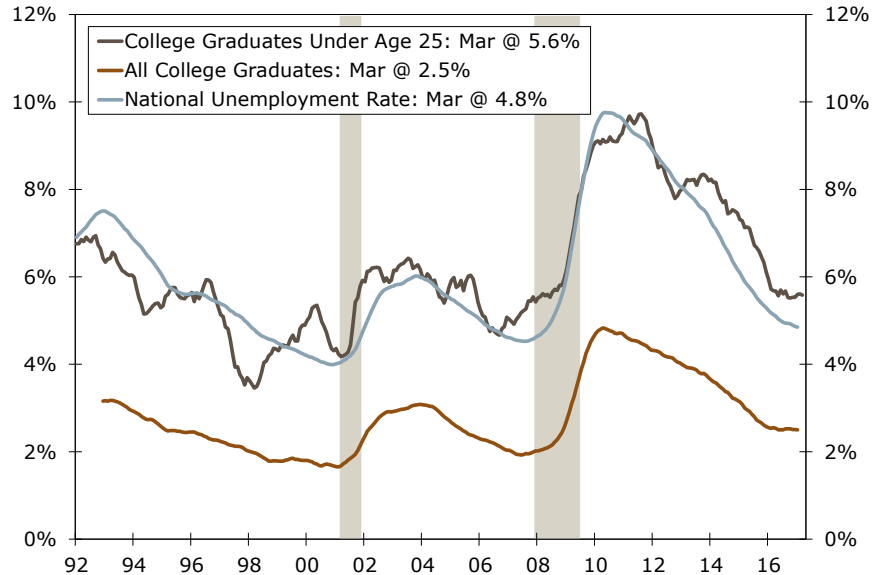
Under-employment also remains more pervasive for young workers. In terms of hours, 20-24 year-olds are most likely to find themselves employed part time despite wanting full-time work (bottom chart). Others find themselves overqualified for the job they hold. According to New York Fed data, 43 percent of college grads ages 22-27 are in jobs that do not typically require a degree compared to 34 percent of all college grads.

At the same time, wage growth among young workers embarking on a career continues to lag, with growth in median weekly earnings for 20-24 year-olds lagging all other age groups since the recession.

The slow rate of earnings growth for young workers stands to exacerbate the student debt challenges faced by college-goers. However, there are indications that borrowers are having a slightly easier time coping. The share of federal loans currently in repayment—both in terms of dollars outstanding and number of recipients—has increased over the past year, while delinquency rates have edged lower. That may have more to do with the growth in income-based repayment plans, however, than the (slowly) improving labor market. Over the past year, the number of federal loan recipients on income-driven plans has risen by 1.37 million while falling slightly for non-income based plans.

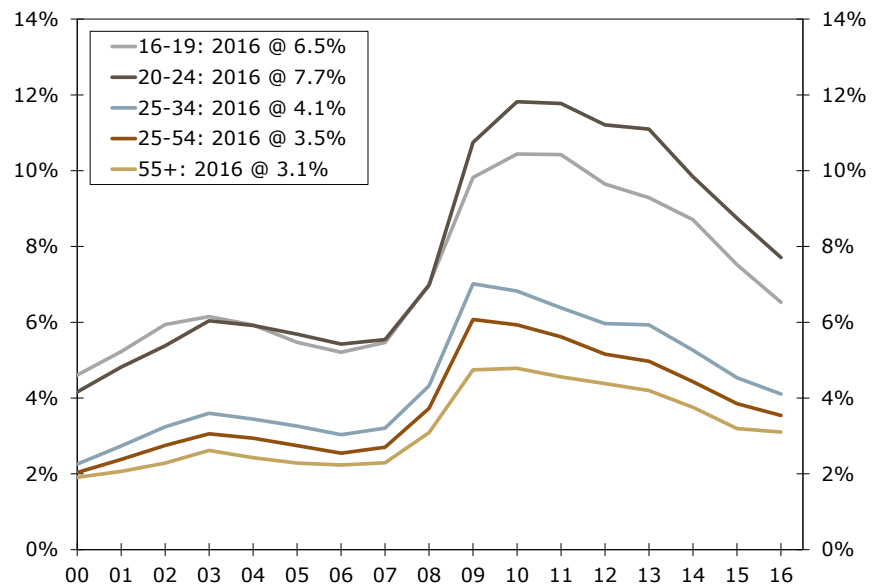
Unemployment Rates of College Graduates

Percent, NSA 12-Month Moving Average



Young Workers Most Likely to Be Under-Employed

Part Time for Economic Reasons as a Percent of Employed



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

Subscription Info

Wells Fargo's *Weekly Economic & Financial Commentary* is distributed to subscribers each Friday afternoon by e-mail.

To subscribe please visit: www.wellsfargo.com/economicsemail

The *Weekly Economic & Financial Commentary* is available via the Internet at www.wellsfargo.com/economics

Via The Bloomberg Professional Service at WFRE.

And for those with permission at www.wellsfargoresearch.com

Market Data ♦ Mid-Day Friday

U.S. Interest Rates

	Friday 4/28/2017	1 Week Ago	1 Year Ago
3-Month T-Bill	0.80	0.77	0.21
3-Month LIBOR	1.17	1.15	0.64
1-Year Treasury	1.18	1.13	0.55
2-Year Treasury	1.27	1.18	0.78
5-Year Treasury	1.83	1.77	1.29
10-Year Treasury	2.30	2.25	1.82
30-Year Treasury	2.98	2.90	2.68
Bond Buyer Index	3.82	3.71	3.32

Foreign Exchange Rates

	Friday 4/28/2017	1 Week Ago	1 Year Ago
Euro (\$/€)	1.090	1.073	1.135
British Pound (\$/£)	1.295	1.282	1.461
British Pound (£/€)	0.841	0.838	0.777
Japanese Yen (¥/\$)	111.430	109.090	108.110
Canadian Dollar (C\$/\\$)	1.366	1.350	1.256
Swiss Franc (CHF/\$)	0.994	0.996	0.967
Australian Dollar (US\$/A\$)	0.748	0.754	0.763
Mexican Peso (MXN/\$)	18.897	18.811	17.271
Chinese Yuan (CNY/\$)	6.894	6.886	6.476
Indian Rupee (INR/\$)	64.246	64.613	66.521
Brazilian Real (BRL/\$)	3.189	3.147	3.489
U.S. Dollar Index	99.056	99.977	93.761

Source: Bloomberg LP and Wells Fargo Securities

Foreign Interest Rates

	Friday 4/28/2017	1 Week Ago	1 Year Ago
3-Month Euro LIBOR	-0.36	-0.36	-0.27
3-Month Sterling LIBOR	0.32	0.34	0.59
3-Month Canada Banker's Acceptance	0.92	0.93	0.93
3-Month Yen LIBOR	0.01	0.01	-0.03
2-Year German	-0.73	-0.79	-0.50
2-Year U.K.	0.08	0.09	0.54
2-Year Canadian	0.73	0.72	0.67
2-Year Japanese	-0.21	-0.22	-0.24
10-Year German	0.32	0.25	0.26
10-Year U.K.	1.09	1.03	1.61
10-Year Canadian	1.54	1.47	1.48
10-Year Japanese	0.02	0.02	-0.08

Commodity Prices

	Friday 4/28/2017	1 Week Ago	1 Year Ago
WTI Crude (\$/Barrel)	48.93	49.62	46.03
Gold (\$/Ounce)	1266.80	1284.10	1266.25
Hot-Rolled Steel (\$/S.Ton)	615.00	650.00	550.00
Copper (¢/Pound)	259.80	253.75	222.45
Soybeans (\$/Bushel)	9.18	9.19	10.16
Natural Gas (\$/MMBTU)	3.28	3.10	2.08
Nickel (\$/Metric Ton)	9,288	9,435	9,166
CRB Spot Inds.	503.59	501.87	454.29

Next Week's Economic Calendar

	Monday 1	Tuesday 2	Wednesday 3	Thursday 4	Friday 5	
U.S. Data	Real Personal Spending February -0.1% March 0.1% (W)	Vehicle Sales March 16.5M April 17.1M (W)	ISM Non-Manufacturing March 55.2 April 56.1 (W)	Trade Balance February -\$43.6B March -\$44.4B (W)	Nonfarm Employment March 98K April 190K (W)	
	ISM Manufacturing March 57.2 April 56.6 (W)			Factory Orders February 1.0% March 0.3% (W)		
	Global Data	China Caixin PMI Manufacturing Previous (March) 51.2		Eurozone GDP (QoQ) Previous (March) 0.4%	Eurozone Retail Sales (MoM) Previous (February) 0.7%	Switzerland Industrial Production (MoM) Previous (February) 0.2%
				Brazil Industrial Production Previous (February) 0.1%		

Note: (W) = Wells Fargo Estimate (C) = Consensus Estimate

Source: Bloomberg LP 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	(212) 214-8543	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 Strategist	(212) 214-5652	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
E. Harry Pershing	Economic Analyst	(704) 410-3034	harry.pershing@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 © 2017 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