# **Economics Group**

# WELLS SECURITIES

# Weekly Economic & Financial Commentary

#### **U.S. Review**

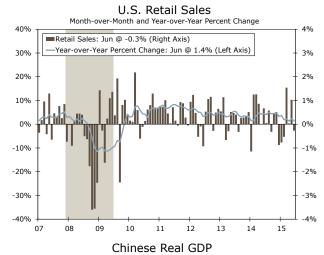
#### Data Support the Case for Sub Two Percent Q2 Growth

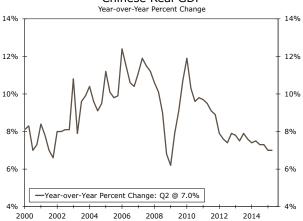
- Retail sales posted a 0.3 percent decline in June while May's reading was downwardly revised, suggesting less consumer spending for the second quarter.
- Industrial production posted a 0.3 percent increase in June; however the manufacturing component posted a flat reading for the second month in a row.
- Inflation metrics released this week indicated that prices have begun to stabilize.
- Housing starts continued to post sizable gains in June, rising 9.8 percent to a 1.2 million unit pace.

#### **Global Review**

#### Chinese GDP, Rate Cut in Canada & the Latest in Europe

- The Chinese economy grew 7.0 percent on a year-over-year basis through the second quarter. That topped expectations for 6.8 percent growth and on a sequential basis, the second quarter was a bit better than the first.
- In a much-anticipated decision, the Bank of Canada cut its benchmark lending rate citing a softer inflation outlook and "puzzling" weakness in the Canadian economy.
- Aggregate industrial production figures for the Eurozone revealed weakness in output for May.
- Our Topic of the Week on page 7 discusses Greece.





Wells Fargo U.S. Economic Forecast													
		Actual				Forecast			Actual		Forecast		
		20	14			20	15		2012	2013	2014	2015	2016
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q					
Real Gross Domestic Product <sup>1</sup>	-2.1	4.6	5.0	2.2	-0.2	1.9	2.9	3.6	2.3	2.2	2.4	2.2	3.0
Personal Consumption	1.2	2.5	3.2	4.4	2.1	2.9	3.2	3.0	1.8	2.4	2.5	3.0	2.8
Inflation Indicators <sup>2</sup>													
PCE Deflator	1.1	1.6	1.5	1.1	0.3	0.2	0.4	1.0	1.8	1.2	1.3	0.5	2.0
Consumer Price Index	1.4	2.1	1.8	1.2	-0.1	0.0	0.5	1.2	2.1	1.5	1.6	0.4	2.3
Industrial Production <sup>1</sup>	3.9	5.7	4.1	4.7	0.1	-1.4	2.5	3.1	3.8	2.9	4.2	2.0	3.0
Corporate Profits Before Taxes 2	-4.8	0.1	1.4	-0.2	4.5	4.3	4.6	4.9	11.4	4.2	-0.8	4.6	5.4
Trade Weighted Dollar Index <sup>3</sup>	76.9	75.9	81.3	85.1	92.1	89.9	91.0	92.3	73.5	75.9	78.5	91.3	95.3
Unemployment Rate	6.6	6.2	6.1	5.7	5.6	5.4	5.3	5.2	8.1	7.4	6.2	5.4	5.0
Housing Starts <sup>4</sup>	0.93	0.98	1.03	1.06	0.98	1.14	1.19	1.25	0.78	0.92	1.00	1.15	1.25
Quarter-End Interest Rates <sup>5</sup>													
Federal Funds Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.75	0.25	0.25	0.25	0.44	1.44
Conventional Mortgage Rate	4.34	4.16	4.16	3.86	3.77	3.98	4.15	4.23	3.66	3.98	4.17	4.03	4.51
10 Year Note	2.73	2.53	2.52	2.17	1.94	2.35	2.41	2.49	1.80	2.35	2.54	2.30	2.73
Forecast as of: July 17, 2015	2./3	2.53	2.52	2.1/	1.94	2.33	2.41	2.49	1.80	2.35	2.54	2.30	

#### 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

<sup>1</sup> Compound Annual Growth Rate Quarter-over-Quarter

<sup>2</sup> Year-over-Year Percentage Change

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

Millions of Units

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

Together we'll go far

#### U.S. Review

#### Data Support the Case for Sub Two Percent Q2 Growth

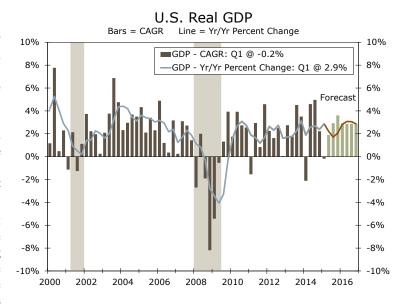
Economic data this week continued to send signals that GDP growth is not likely to break out above 2 percent in the second quarter. Retail sales data looked disappointing for the last month of Q2 implying less consumer spending, however some of the softness will be offset by slightly higher inventory building. Inflation metrics showed that prices have begun to slowly reverse course while the industrial sector began to show signs of a turn around. Based on the data over the last week, we have downwardly revised our call for second quarter GDP growth. While still higher than first quarter growth, we now believe that GDP growth for Q2 will come in around 1.9 percent.

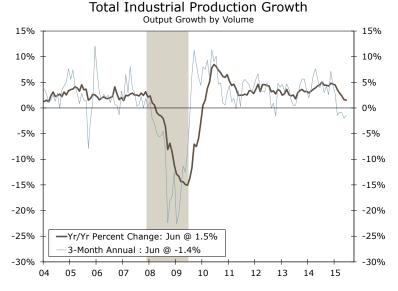
The biggest disappointment this week was the retail sales report which showed that sales slide 0.3 percent in June. Some of the decline was attributed to a fall in auto sales, but even excluding autos, sales still declined 0.1 percent for the month. The important control group within retail sales that feeds into the calculation for GDP posted a decline of 0.1 percent while May's data were downwardly revised to 1.2 percent. On net, we lowered our estimate of real consumer spending to 2.9 percent for Q2.

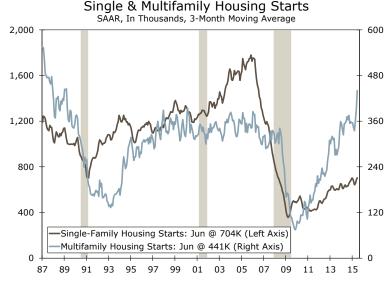
This week's readings on inflation for June showed evidence that prices have begun to firm. The producer price index (PPI) rose 0.4 percent for the month with prices firming for both goods and services. The PPI for personal consumption, which tracks closely with the personal consumption expenditure (PCE) deflator, the preferred metric used by the Fed, suggests that inflation is beginning to move back toward the Fed's 2 percent target range. Consumer prices also rose in June, with the consumer price index (CPI), posting a 0.3 percent increase for the month. On a year-over-year basis, consumer prices are now up 0.1 percent. As the year progresses, we expect inflation to pick up, reaching the Fed's two percent target range (for the PCE deflator) by the second quarter of next year.

The industrial sector looked somewhat better to close out Q2. The industrial production (IP) report showed that output rose 0.3 percent in June although manufacturing output was flat for the second month in a row in June. All of the increase in June's IP reading came from utility and mining. Auto production pulled back for the month but there is some evidence that seasonal adjustment factors may have played a role. Looking ahead to the third quarter, we expect manufacturing activity to gradually pick up once again as the headwinds from a stronger U.S. dollar and lower oil prices subside. Initial data for Q3 looks somewhat better. The July Empire Manufacturing Index rose more than expected to 3.86, the strongest reading since March of this year, although data from the Philly Fed were less optimistic.

Housing data continued to show signs of an improvement in June. Housing starts rose 9.8 percent to a 1.2 million unit pace. The strongest growth was observed in multi-family starts. Building permit data pointed to an ongoing rebound in housing construction after a slow start to the year. Permits rose another 7.4 percent with multifamily permits leading the increase.







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

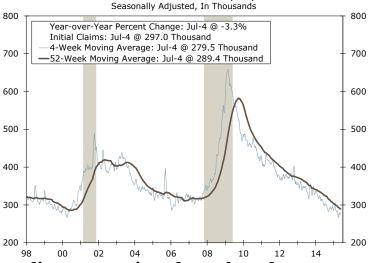
## **Existing Home Sales • Wednesday**

The housing market is finally finding its footing this season. Existing home sales perked up to 5.35 million on a seasonally adjusted annualized basis in May, or 9.2 percent higher than a year earlier. In addition, first-time homebuyers appear to be driving more of the gains, which is a welcome development. New home sales also advanced in May, rising 2.2 percent from a month earlier. Other housing metrics remain positive and point to further gains ahead. Pending sales have perked up and homebuilder confidence surged higher in June and remained high into July, thanks in part to stronger sales reported. Although mortgage rates have started to rise slightly again, the housing market is better equipped to handle it, as the labor market has improved dramatically and household finances are in better shape. As a result, we expect June existing home sales to rise to a seasonally adjusted annual rate of 5.41 million units, while new home sales are set to reach 537,000 units.

Previous: 5.35 Million Wells Fargo: 5.41 Million

Consensus: 5.40 Million

# Initial Claims for Unemployment



#### **Leading Economic Index • Thursday**

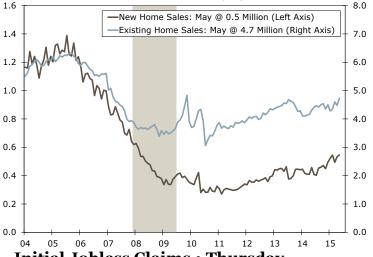
The Leading Economic Index (LEI) jumped 0.7 percent in May, matching the sizable gain in the previous month. It is unlikely that these strong gains will persist in June, as they were driven primarily by a huge upswing in building permits. In fact, building permits accounted for 0.34 percentage points of the monthly gain in the index, but they contracted in June. Furthermore, jobless claims have been a modestly positive contributor to the index, but claims reversed their downward trend in the second half of the month and thus are unlikely to contribute much.

The factory sector is also still facing headwinds and nondefense capital goods orders continue to contract. However, on the plus side, the ISM Manufacturing index improved in the month and the new orders component has been particularly strong. Nonetheless, we anticipate the LEI to increase by just 0.1 percent in June.

Previous: 0.7% Wells Fargo: 0.1%

Consensus: 0.1% (Month-over-Month)

# Existing & New Single-Family Home Sales Both Series In Millions of Units, Seasonally Adjusted Annual Rate

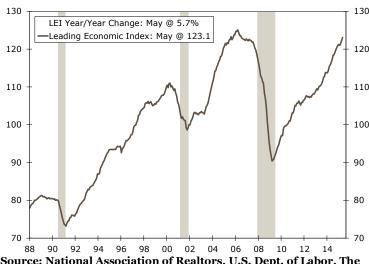


#### **Initial Jobless Claims • Thursday**

Jobless claims are notably volatile, but through the noise they appear to be rising. The four week moving average grew to 282,500 during the week ending July 11, up from 275,000 just two weeks prior. The upward trend in jobless claims should not be mistaken for deterioration in the broader labor market. The largest contributor to the upswing in the four-week moving average came during the same week as the Independence Day holiday, which may have adversely affected the seasonally adjusted figures. Furthermore, jobless claims are historically volatile at this time of the year due to auto manufacturing plant shutdowns that occur each summer to retool the factories. Those autoworkers are eligible for unemployment benefits, and a change in the timing of plant shutdowns causes unusual spikes during some weeks as the seasonal adjustment cannot account for unexpected changes in timing.

Previous: 281,000 Consensus: 278,000

#### Leading Economic Index



Source: National Association of Realtors, U.S. Dept. of Labor, The Conference Board and Wells Fargo Securities, LLC

#### **Global Review**

#### Is Growth Stabilizing in China?

The overall rate of GDP growth in China was paced by the service sector where growth in output strengthened to 8.4 percent in Q2 from 7.9 percent in Q1. There was also some modest acceleration in the agricultural sector. Growth in the construction sector, which has been slowing for the past few years, apparently slowed further in Q2. (Official data on construction output in the second quarter are not yet available.)

The stronger-than-expected GDP report in conjunction with June readings on Chinese retail sales and industrial production, which were also released this week and which exceeded consensus forecasts, may relieve some anxiety about the near-term outlook for the Chinese economy which has been heightened by the roughly 25 percent sell-off in the Shanghai Composite and the near 35 percent decline the Shenzhen Composite index. Still, a marked acceleration in economic activity back toward double-digit GDP growth rates just does not seem to be in the cards either. The breakneck pace of GDP growth over the past few decades was driven in large part by robust investment spending. With the Chinese government trying to rebalance the economy toward more consumer spending, a return to double-digit growth doesn't seem likely.

#### Rate Cut in Canada

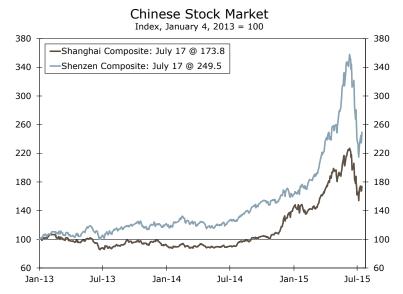
The Bank of Canada (BoC) this week cut its benchmark rate for the second time this year. In the accompanying statement the Bank noted the first quarter weakness in the United States and deterioration in other foreign economies like China as potential headwinds for Canadian exports.

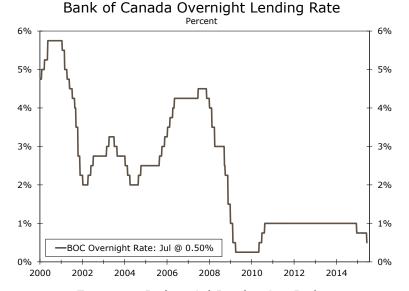
The BoC's inflation control targeting aims to keep CPI inflation at the 2 percent midpoint between 1 and 3 percent. Having said that, the BoC has at times stated that for policy purposes it also considers the core CPI inflation rate which remains above 2 percent at present. However, the BoC reckons that underlying inflation is closer to 1.5-1.7 percent after accounting for "transitory factors." The combination of a weakening in the inflation outlook and a major markdown to growth prospects for the Canadian economy this year were the primary discussion points in the BoC statement explaining the rate cut.

#### **Soft Patch in Eurozone Production**

We learned this week that industrial production in the Eurozone fell 0.4 percent in May and the scant gain of 0.1 percent in the prior month was revised to "no change". Since a recent cycle high in February, output is now off 0.5 percent. Survey measures of business conditions are mixed in Europe. While the broad Eurozone PMI sits at a 14-month high of 52.5 through June, other forward-looking measures are less rosy, perhaps reflecting concern over Greece. The Zew survey of Eurozone expectations, for example, slipped to 42.7 in July—its lowest level of the year.

The ECB kept rates unchanged at its meeting this week and at the accompanying the press conference, ECB President Draghi pledged more liquidity to help Greece.







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

## Australia CPI • Wednesday

The sharp drop in the price of petroleum that occurred at the end of last year led to a decline in the overall rate of CPI inflation in Australia, as it did in most economies. However, the core rate of inflation downunder has remained above 2 percent. Data on consumer prices in the second quarter will give analysts up-to-date insights on inflationary pressures (or the lack thereof) in Australia. Weaker-than-expected readings on inflation, should they print, could stoke expectations of further easing by the Reserve Bank of Australia (RBA).

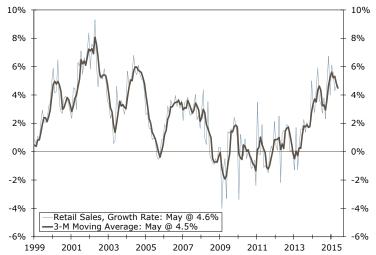
Speaking of the RBA, the minutes of the July 7 policy meeting, at which the Reserve Bank Board decided to keep the RBA's main policy rate unchanged at 2.00 percent, will be released on Tuesday. The minutes should shed some light on the RBA's current thinking regarding the outcome for monetary policy.

#### Previous: 1.3% (Year-over-Year)

Consensus: 1.7%

# United Kingdom Retail Sales

Year-over-Year Growth Rate of Index



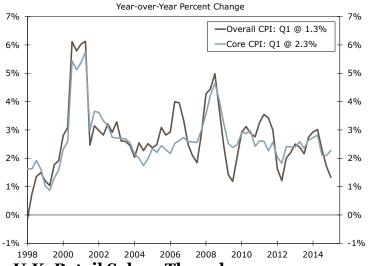
#### **Eurozone PMIs • Friday**

The purchasing managers' indices (PMIs) in the Eurozone are pointing toward stronger economic growth. The manufacturing PMI has been trending higher since the end of last year, and the service sector PMI rose to a 5-year high in June. The "advance" estimates of both the manufacturing and service sector PMIs for July are on the docket on Friday. Although the intensification of the Greek crisis in recent weeks could weigh somewhat on sentiment, both indices should remain firmly in expansion territory.

An index of French business confidence in July is on the docket on Wednesday. "Hard" data out of Italy, including industrial sales and orders in May and retail spending in May, will offer some insights into the current state of the Eurozone's third largest economy.

**Previous Manufacturing PMI: 52.5** Consensus: 52.5 **Previous Service PMI: 54.4** Consensus: 54.2

### Australian Consumer Price Index



#### U.K. Retail Sales • Thursday

Real GDP growth in the United Kingdom over the past few years has been driven by solid growth in consumer spending, which has remained resilient thus far in 2015. Indeed, real retail spending in the United Kingdom grew at an impressive year-over-year rate of 4.6 percent in May. Retail sales data for June are on the docket on Thursday.

A widely followed index of house prices will be released early in the week. According to this measure, house prices in June were up 4.5 percent on a year-ago basis. The minutes of the Bank of England's July 9 policy meeting will be released on Wednesday. Since January, all nine members of the Monetary Policy Committee (MPC) have voted to keep the Bank's main policy rate unchanged. It will be interesting to see if any MPC members voted to hike rates at the July 7 meeting.

Previous: 0.2% (Month-on-Month)

Consensus: 0.4%

# Eurozone Purchasing Managers' Indices



Wells Fargo Securities, LLC

#### **Interest Rate Watch**

#### **Mid-Year Assessment: Positive**

Our outlook for both GDP and the benchmark ten-year Treasury rate came in on our favor for the first half of 2015. We are gratified by these results. But why?

#### **GDP: Being Low, Being Right**

Fundamentals matter. Our Blue Chip forecast for 2015, in February after the Q4 GDP was released so we could establish a base, was at 2.8 percent and below the consensus estimate of 3.2 percent. Certainly, GDP growth will be sub-three percent this year given current trends.

We had solid consumer spending and an improvement in housing starts. What was central to our success was our observation that net exports were more negative than the consensus. This is consistent with the split-level economic theme we have emphasized for this year.

# The Ten-year Treasury Rate: On Target

For the average of June, we estimated 2.1 percent for the ten-year Treasury, while the actual was 2.16 percent—on target and better than the consensus estimate. Our estimate is made within a larger economic model of the economy that accounts for the influences of real growth, inflation, Fed policy and global capital flows.

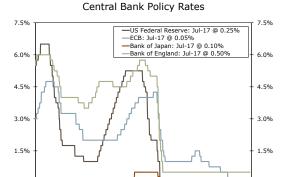
Lower for longer has been our expectation for U.S. Treasury rates and that turned out to be correct. In contrast, however, we were never a believer in the one percent thesis. Buying U.S. ten-year Treasury debt never made sense to us. As evidence, we point out that the total return for 7-10-year Treasury debt is slightly negative year to date and that fails to account for negative impacts of inflation and income taxes.

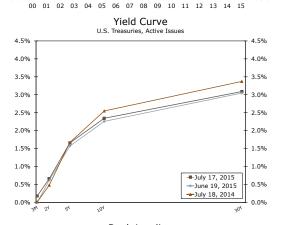
#### Looking Forward: Less Risk Aversion and an Active Fed

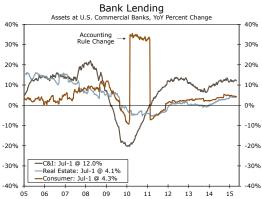
We anticipate that the search for safety will diminish as the Greek/Chinese financial concerns are reduced—although certainly not resolved. Second, we anticipate that the Fed will begin raising the funds rate, if not in September, then at least in December.

Moreover, our expectations are that inflation measures will continue to drift upward over time.

However, unlike prior economic expansions, our lower for longer theme will remain in place as capital flows will continue to favor U.S. debt—especially high grade corporate debt—and thereby limit the rise in rates for the year ahead.







#### **Credit Market Insights**

#### **Better Experience Obtaining Credit**

Consumers have reported better experiences obtaining credit in the past three months, according to June's consumer credit access survey results. The percentage of respondents who have been approved for all types of credit that they have applied for increased from 30 percent in February of this year to 34 percent in June. In addition, the rate at which people are rejected for some type of credit shrunk 2 percentage points to 8.1 percent in June from February of this year. This decline was mainly coming from consumers with a credit score lower than 680; the rejection rate for this group of respondents dropped 8.7 percentage points.

Other notable results in the survey were the declines in both credit card and credit limit rejection rates. The credit card rejection rate fell 6.9 percentage points and the credit card limit rejection rate posted a decline of 7.3 percentage points.

In the previous survey results released in March of this year, the likelihood of applying for a mortgage refinance in the next 12 months rose. June's survey results reflect March's expectation of 2.2 percent growth in mortgage refinance applications, a sign that consumers have prepared for a rate increase at the end of this year by taking advantage of today's low interest rates.

Excluding mortgage refinance, respondents expect that they will less likely be rejected for all other credit types. Respondents also reported a higher likelihood of applying for a loan to make big ticket purchases, such as autos and homes.

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

Credit Market Data					
Mortgage Rates	Current	Week Ago	4 Weeks Ago	Year Ago	
30-Yr Fixed	4.09%	4.04%	4.02%	4.13%	
15-Yr Fixed	3.25%	3.20%	3.21%	3.23%	
5/1 ARM	2.96%	2.93%	2.98%	2.97%	
1-Yr ARM	2.50%	2.50%	2.50%	2.39%	
Bank Lending	Current Assets (Billions)	1-Week Change (SAAR)	4-Week Change (SAAR)	Year-Ago Change	
Commercial & Industrial	\$1,902.0	23.84%	20.45%	12.02%	
Revolving Home Equity	\$447.9	-3.75%	-5.97%	-3.67%	
Residential Mortgages	\$1,618.4	11.76%	10.34%	2.12%	
Commerical Real Estate	\$1,687.9	11.19%	10.45%	8.39%	
Consumer	\$1,226.2	8.18%	8.33%	4.30%	

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

#### **Topic of the Week**

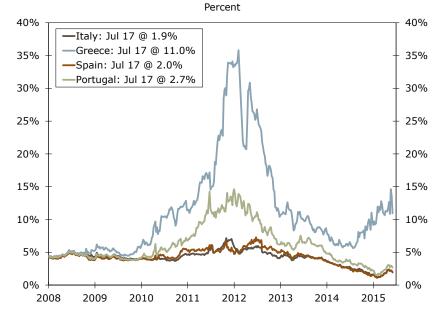
#### **Greece Remains in the Spotlight**

The Greek parliament this week approved legislation that will reform the country's value-added tax (VAT) as well as its pension system. Passage of the legislation was a precondition demanded by the country's creditors before they even start to consider the details of a potential third bailout package for the Hellenic Republic. Prime Minister Tsipras had to rely on votes from some opposition members to pass the legislation. Some lawmakers from Tsipras' Syriza Party voted against the legislation, stating that it violated their belief that more austerity measures will only damage the economy and further impoverish the poorest members of Greek society.

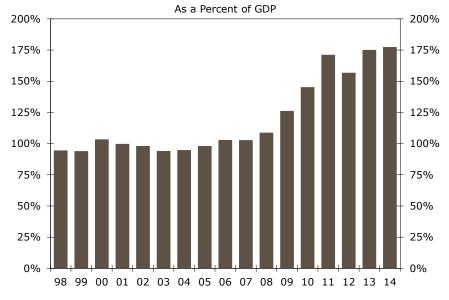
Following passage of the Greek legislation, Eurozone finance ministers reportedly approved a €7 billion bridge loan for Greece that will help to keep the country afloat while the details of a third bailout program are being hammered out. The ECB also approved an increase in its liquidity support for Greek banks to €90.7 billion from the previous ceiling of €89.8 billion. However, because the final details of a third bailout program will eventually need to be approved by the governments of all creditor countries, a third bailout is not yet necessarily a sure thing.

The IMF weighed in on the debate about Greece this week in a very visible manner. The debt-to-GDP ratio of the Greek government has exploded from about 100 percent before the global financial crisis to 180 percent at present, and the IMF expects that the ratio will eventually rise to 200 percent. The IMF said that "Greece's public debt has become highly unsustainable." Furthermore, the IMF concluded that "Greece's debt can now only be made sustainable through debt relief measures that go far beyond what Europe has been willing to consider so far." If the IMF continues to believe that Greece's debt is not sustainable, it may not be able to participate in another bailout agreement. Greece is far from being "out of the woods."

## 10-Year Government Bond Yields



#### Greek Government Debt



Source: IHS Global Insight, Wells Fargo Securities, LLC

#### **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**

<b>U.S. Interest Rates</b>			
	Friday	1 Week	1 Year
	7/17/2015	Ago	Ago
3-Month T-Bill	0.02	0.01	0.01
3-Month LIBOR	0.29	0.29	0.23
1-Year Treasury	0.23	0.26	0.20
2-Year Treasury	0.67	0.64	0.44
5-Year Treasury	1.67	1.66	1.62
10-Year Treasury	2.35	2.40	2.45
30-Year Treasury	3.08	3.19	3.27
Bond Buyer Index	3.76	3.85	4.38

Foreign Exchange Rates					
	Friday	1 Week	1 Year		
	7/17/2015	Ago	Ago		
Euro (\$/€)	1.085	1.116	1.353		
British Pound (\$/₤)	1.562	1.552	1.710		
British Pound (£/€)	0.695	0.719	0.791		
Japanese Yen (¥/\$)	124.040	122.780	101.180		
Canadian Dollar (C\$/\$)	1.299	1.266	1.076		
Swiss Franc (CHF/\$)	0.960	0.939	0.897		
Australian Dollar (US\$/A\$)	0.738	0.745	0.935		
Mexican Peso (MXN/\$)	15.902	15.714	12.999		
Chinese Yuan (CNY/\$)	6.210	6.209	6.204		
Indian Rupee (INR/\$)	63.474	63.400	60.178		
Brazilian Real (BRL/\$)	3.190	3.160	2.258		
U.S. Dollar Index	97.802	96.025	80.505		

Source: Bloomberg LP and Wells Fargo Securities, LLC

<b>Foreign Interest Rates</b>			
	Friday	1 Week	1 Year
	7/17/2015	Ago	Ago
3-Month Euro LIBOR	-0.02	-0.01	0.17
3-Month Sterling LIBOR	0.58	0.58	0.56
3-Month Canada Banker's Acceptance	0.74	0.97	1.27
3-Month Yen LIBOR	0.10	0.10	0.13
2-Year German	-0.22	-0.21	0.02
2-Year U.K.	0.63	0.58	0.83
2-Year Canadian	0.42	0.50	1.06
2-Year Japanese	0.01	0.02	0.06
10-Year German	0.79	0.90	1.15
10-Year U.K.	2.08	2.08	2.59
10-Year Canadian	1.56	1.69	2.14
10-Year Japanese	0.43	0.45	0.54

<b>Commodity Prices</b>			
	Friday	1 Week	1 Year
	7/17/2015	Ago	Ago
WTI Crude (\$/Barrel)	50.84	52.74	103.19
Gold (\$/Ounce)	1133.86	1163.70	1319.24
Hot-Rolled Steel (\$/S.Ton)	469.00	471.00	670.00
Copper (¢/Pound)	250.80	254.55	320.90
Soybeans (\$/Bushel)	10.14	10.21	12.10
Natural Gas (\$/MMBTU)	2.86	2.77	3.95
Nickel (\$/Metric Ton)	11,590	11,456	19,224
CRB Spot Inds.	455.04	453.68	531.38

# **Next Week's Economic Calendar**

Monda	ny	Tuesday	Wednesday	Thursday	Friday
20		21	22	23	24
			Existing Home Sales	LEI (MoM)	New Home Sales
<b>E</b>			May 5.35 M	May 0.7%	May 546K
Da			June 5.41 M (W)	June 0.1% (W)	June 537 K (W)
U.S.					
			Australia	United Kingdom	Eurozone
ata ta			CPI (YoY)	Retail Sales (MoM)	Manufacturing PMI
Global Da			Previous (Q1) 1.3%	Previous (May) 0.2%	Previous (June) 52.5

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

Source: Bloomberg LP and Wells Fargo Securities, LLC

# Wells Fargo Securities, LLC Economics Group

Diane Schumaker-Krieg	Global Head of Research,	(704) 410-1801	diane.schumaker@wellsfargo.com
	Economics & Strategy	(212) 214-5070	
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. bull ard @wells fargo.com
Nick Bennenbroek	Currency Strategist	(212) 214-5636	nicholas. bennen broek @wells fargo.com
Eugenio J. Alemán, Ph.D.	Senior Economist	(704) 410-3273	eugenio.j.aleman@wellsfargo.com
Anika R. Khan	Senior Economist	(704) 410-3271	anika.khan@wellsfargo.com
Azhar Iqbal	Econometrician	(704) 410-3270	azhar.iqbal@wellsfargo.com
Tim Quinlan	Economist	(704) 410-3283	tim.quinlan@wellsfargo.com
Eric Viloria, 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
Michael T. Wolf	Economist	(704) 410-3286	michael.t.wolf@wellsfargo.com
Erik Nelson	Economic Analyst	(704) 410-3267	erik.f.nelson@wellsfargo.com
Alex Moehring	<b>Economic Analyst</b>	(704) 410-3247	alex.v.moehring@wellsfargo.com
Donna LaFleur	<b>Executive Assistant</b>	(704) 410-3279	donna.lafleur@wellsfargo.com
Cyndi Burris	Senior Admin. Assistant	(704) 410-3272	cyndi.burris@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. ("WFS") 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. ("WFBNA") is registered with the Commodities Futures Trading Commission as a swap dealer and is a member in good standing of the National Futures Association. WFS and WFBNA 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

#### 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

