# **Economics Group**

# Weekly Economic & Financial Commentary

# **U.S. Review**

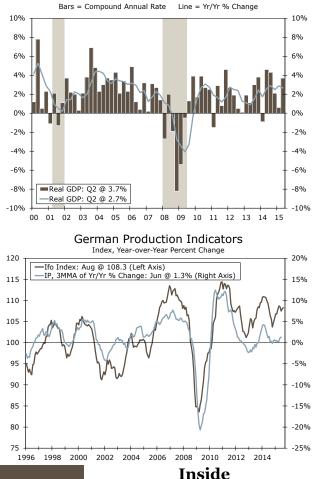
## Markets Whipsawed, but the U.S. Economy Is Stable

- Fears that economic activity in China is much weaker than reported rattled global financial markets during the week. The VIX, which gauges equity market volatility, jumped to its highest level since late-2011. At the same time, economic data released during the week continued to show that the U.S. economy is on solid footing.
- Second-quarter real GDP growth in the U.S. was upwardly revised from a 2.3 percent pace in the advance estimate to a more-than-expected 3.7 percent annual rate. Consumer and government spending as well as business and residential investment were revised higher in the second estimate.

# **Global Review**

#### **Mixed Foreign Economic Data This Week**

- Indices of business confidence in the euro area generally moved higher in August, suggesting that economic growth in the Eurozone remains positive thus far in Q3.
- Japanese retail spending rebounded in July from its slump in June. However, the overall CPI inflation rate receded further, indicating that authorities need to do more to boost inflation toward the government's 2 percent objective.
- The downturn in Brazil deepened, with real GDP falling 2.6 percent on a year-ago basis in Q2.



U.S. Real GDP

Wells Fargo U.S. Economic Forecast													
	Actual			F	orecas	t		Actual		Forecast			
		20	14			20	15		2012	2013	2014	2015	2016
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q					
Real Gross Domestic Product 1	-0.9	4.6	4.3	2.1	0.6	3.7	1.5	2.3	2.2	1.5	2.4	2.4	2.6
Personal Consumption	1.3	3.8	3.5	4.3	1.8	3.1	3.0	3.0	1.5	1.7	2.7	3.0	2.8
Inflation Indicators <sup>2</sup>													
PCE Deflator	1.3	1.7	1.6	1.1	0.2	0.2	0.5	1.1	1.9	1.4	1.4	0.5	2.0
Consumer Price Index	1.4	2.1	1.8	1.2	-0.1	0.0	0.4	1.0	2.1	1.5	1.6	0.3	2.2
Industrial Production <sup>1</sup>	3.6	5.7	3.9	4.7	-0.2	-2.0	3.2	3.1	2.8	1.9	3.7	1.8	3.1
Corporate Profits Before Taxes <sup>2</sup>	-3.6	1.2	5.8	3.4	4.6	-0.5	4.9	6.6	10.0	2.0	1.7	3.9	6.7
Trade Weighted Dollar Index <sup>3</sup>	76.9	75.9	81.3	85.1	92.1	89.9	92.0	93.0	73.5	75.9	78.5	91.7	95.9
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	1.16	1.22	1.25	0.78	0.92	1.00	1.15	1.25
Quarter-End Interest Rates 5													
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	1.38
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	2.71

Forecast as of: August 28, 2015 <sup>1</sup> Compound Annual Growth Rate Quarter-over-Quarter

Year-over-Year Percentage Change

<sup>3</sup> Federal Reserve Major Currency Index, 1973=100 - Quarter End

<sup>4</sup> Millions of Units

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, LLC

# WELLS SECURITIES



U.S. Review

U.S. Outlook

**Global Review** 

**Global Outlook** 

Topic of the Week

Point of View

Market Data

2

3

4

5

6

7 8

## **U.S. Review**

## What a Difference a Week Makes

It was a week that kept everyone on pins and needles. Recent Chinese news, including an unexpected yuan devaluation and a soft manufacturing survey, contributed to the most volatile week for equity markets since the U.S. Treasury debt downgrade in 2011. Oil prices fell below the psychological level of \$40 per barrel and the U.S. Treasury yield touched 2 percent. By the end of the week, the release of solid economic data out of the U.S. and some communication from the Federal Reserve on the expected timing of the rate hike helped assuage some of the market jitters.

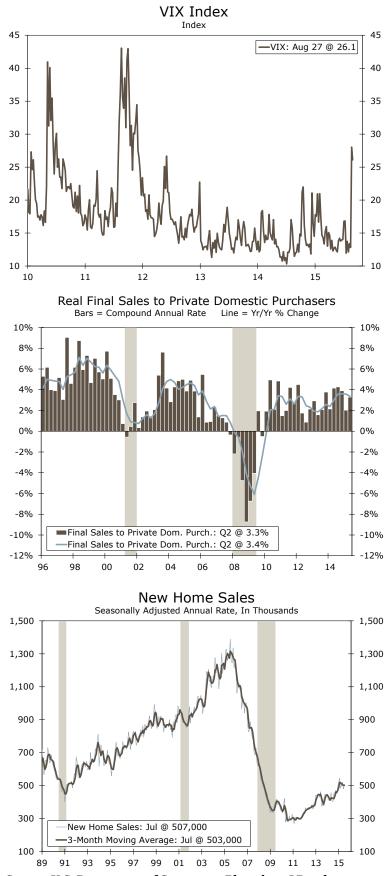
Keep in mind, Chair Janet Yellen already warned that as we get closer to the expected timing of the first rate hike that we could see some "heightened financial volatility." She also noted in her late-2014 speech that "the Federal Reserve will strive to clearly and transparently communicate its monetary policy strategy in order to minimize the likelihood of surprises that could disrupt financial markets, both at home and around the world."

Meanwhile, second-quarter real GDP growth in the U.S. was upwardly revised from a 2.3 percent pace in the advance estimate to a more-than-expected 3.7 percent annual rate. Real final sales to private domestic purchasers, which excludes inventory investment, net exports and government spending, are now reported to have expanded 3.3 percent on the back of stronger consumer spending, business fixed investment and residential investment.

Although growth came in at a robust pace during the quarter, there are a couple of cautionary points to make. First, real Gross Domestic Income (GDI), which gauges economic activity based on income rather than expenditures, posted a paltry 0.6 percent increase. Although real GDP and GDI typically equate overtime, it is not uncommon to see quarterly discrepancies. And second, the solid increase in inventory investment over the past two quarters sets up the second half of the year for a slower pace of inventory building, which will undoubtedly detract from headline growth.

In addition to these highly publicized figures on economic growth, the Federal Reserve got another glimpse of inflation through the GDP deflator. The GDP deflator nudged just a tad higher and is now reported to have increased 2.1 percent in the second quarter, which is consistent with other inflation gauges. However, the renewed drop in oil prices opens the door to downside risks for headline and core inflation readings. The good news is that the Fed continues to beat the "reasonably confident" drum and sees moves in commodity prices as "transitory".

The markets also got a pulse of the housing market this week. Resale home prices, which controls for differences in the mix of homes for sale, remained in a tight range. The Federal Housing Finance Agency's House Price Index rose 5.6 percent in June and the S&P Case-Shiller U.S. Composite Index showed that prices increased 4.5 percent. New home sales rose for the third month out of the past four in July, increasing to a 507,000-unit pace, and pending home sales also had a solid showing during the week. The housing market continues to ride the wave of gradually increasing household formations due to gains in the labor market.



Source: U.S. Department of Commerce, Bloomberg LP and Wells Fargo Securities, LLC

# **ISM Manufacturing • Tuesday**

The manufacturing sector has shown signs of a mild pickup over the past couple of months after a tough start to the year. The ISM manufacturing index has rebounded off its two-year lows of April but, at 52.7 in July, still suggests the factory sector is expanding at a relatively tepid pace. The August reading is likely to show little change in the trend. U.S. manufacturing activity has been hindered by sluggish growth overseas and a strengthening of the dollar, both of which continued through August. The early purchasing managers' indices for August, when taken together, also look only lukewarm. Although the Empire State Manufacturing Index's drop looks extreme compared to other PMIs already released, the Markit index and other regional Fed PMIs generally softened in August.

## Previous: 52.7 Consensus: 52.6

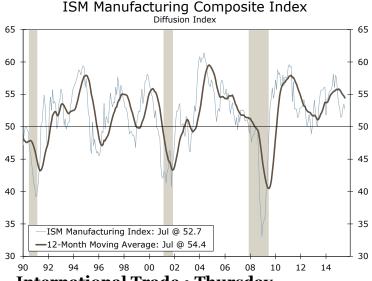
Wells Fargo: 52.9



The labor market has continued to make strides in recent months, with nonfarm payrolls increasing an average of 235,000 jobs over the past three months. Unemployment has also continued to trek lower, while the number of workers involuntarily employed part time has fallen by nearly half a million since the start of the year.

With jobless claims still hovering near the lowest levels since the early 2000s, we look for little change in the recent pace of hiring. The labor differential—the share of consumers reporting jobs are plentiful minus the share reporting jobs are hard to get—jumped in August and is now at the highest level since early 2008, suggesting that the unemployment rate continued to move lower. We expect payrolls rose by 214,000 in August and the unemployment rate declined to 5.2 percent.

Previous: 215,000Wells Fargo: 214,000Consensus: 220,000

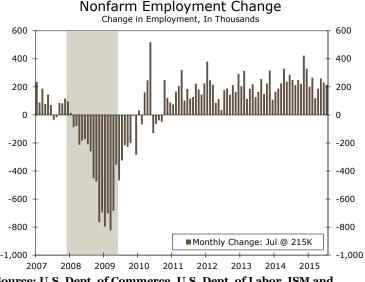


**International Trade • Thursday** 

After little change in May, the trade deficit widened in June by nearly \$3 billion to a gap of -\$43.8 billion. Stronger spending by U.S. households led to an inflow of consumer goods, which contributed to a \$2.8 billion rise in imports. Exports were little changed, down \$136 million, with growth on a price-adjusted basis slowing in recent months as many of the nation's major trading partners grapple with sluggish economic growth.

We expect the trade balance to have narrowed in July amid stronger exports in services and lower oil prices. The narrowing is likely only temporary, however. With the United States continuing to gradually strengthen and activity in many other regions of the world set to remain tepid, we expect the trade balance to drift wider over the remainder of the year and for net exports to exert a drag on GDP in the second half of 2015.

# Previous: -\$43.8 BillionWells Fargo: -\$39.5 BillionConsensus: -\$43.5 Billion



Source: U.S. Dept. of Commerce, U.S. Dept. of Labor, ISM and Wells Fargo Securities, LLC

# **Global Review**

#### Eurozone Economy Continues to Expand in Q3

Although investors' attention was largely fixated this week on the gyrations in the world's stock markets, recent economic data suggest that economic growth in the Eurozone has remained positive thus far in the third quarter. As shown on the front page, the Ifo index of German business sentiment, which has a fair degree of correlation with growth in German industrial production (IP), rose further in August. Not only was the outturn stronger than most analysts had expected, but strength was concentrated in the component measuring the "current assessment," which rose to its highest level in more than a year. The strength in this component suggests that IP likely grew in the Eurozone's largest economy in August.

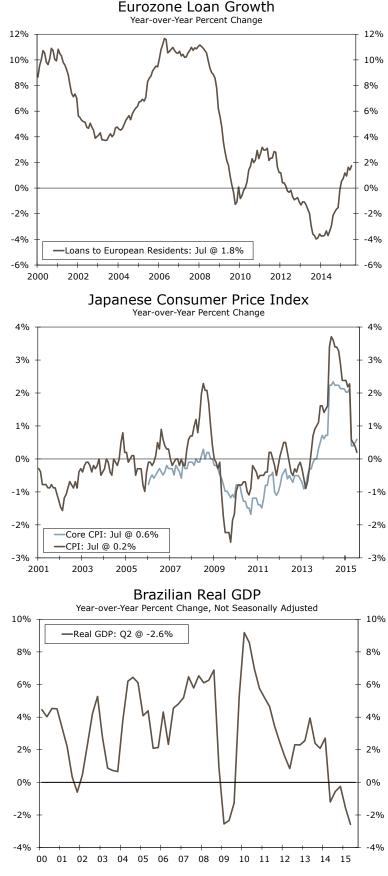
The positive economic data in the euro area were not confined to only Germany. The comparable business sentiment index in France rose to its highest level in nearly four years in August. In Italy, business confidence edged lower, although it remained at an elevated level, while consumer confidence surged higher. The general rise in confidence in the Eurozone in August undoubtedly reflects, at least in part, the waning of the most recent Greek debt crisis last month. In addition, higher confidence may reflect a recent relaxation in financial conditions. As shown in the top chart, the recovery in bank lending in the euro area that has been underway this year continued in July. Real GDP in the Eurozone has risen for nine consecutive quarters, and we expect growth to remain positive for the foreseeable future.

#### Japan: Rebound in Growth but No Signs of Inflation

Real GDP in Japan declined 1.6 percent at an annualized rate in Q2-2015, but some economic data for July that printed this week suggested that the economy may be back on the right track again in the third quarter. Retail sales rose 1.2 percent in July, more than reversing their 0.6 percent drop during the previous month, and the unemployment rate ticked lower. However, the CPI inflation rate, which had been artificially boosted last year by the increase in the consumption tax, slumped further in July (middle chart). With the overall CPI more or less flat on a year-ago basis, authorities likely will need to do more to realize the government's 2 percent inflation objective.

#### Downturn in Brazil Deepened in Q2

Data released this morning showed that real GDP in Brazil fell 2.6 percent on a year-ago basis in the second quarter (bottom chart). Not only was the outturn weaker than most analysts had expected, but the year-over-year growth rate today is as weak as it was in the aftermath of the global financial crisis in 2009. Moreover, weakness in the domestic economy was widespread with real consumer spending down 2.7 percent on a year-ago basis and fixed investment spending off nearly 12 percent. The only bit of good news was that real exports rose 7.5 percent in Q2, the strongest year-over-year growth rate in more than four years. The Brazilian economy will need strong export growth going forward to help offset the weakness emanating from the domestic economy.



Source: IHS Global Insight and Wells Fargo Securities, LLC

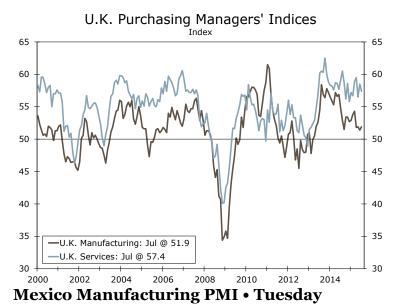
# **China Manufacturing PMI • Monday**

With a global economy in need of good news, China will start the reporting week with the release of the national manufacturing PMI. We already had a peek at the private PMI release last week and that did not show a very good picture of the conditions of the Chinese manufacturing sector. Having said this, this index is a qualitative index, not a quantitative index. That is, it tells you that something is better or worse, but it cannot tell by how much.

Nevertheless, markets are expecting the national manufacturing PMI to come in below the "all-important" 50 demarcation line, which was the actual print in July. Markets are expecting the index to have dropped to 49.7 in August. If true, this will be the first time dropping below the 50 demarcation line since February of this year. Thus, China could, once again, make or break expectations for next week as it has done for the past couple of weeks.

#### Previous: 50.0

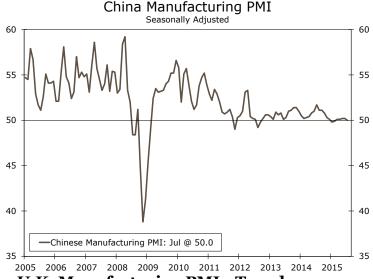
#### Consensus: 49.7



The manufacturing sector has been the bright spot for the Mexican economy this year with the automobile sector surging due to very strong U.S. automobile demand. However, the rest of the Mexican economy has been more or less a drag on growth this year, with the mining sector, but more specifically, the petroleum sector continuing to weaken.

The expectation is for the August manufacturing PMI (both the official IMEF and the Markit indices) to remain above the 50 demarcation line with an improving trend compared to previous months. On Wednesday, we will get results for leading indicators for August, and on Thursday, we get gross fixed investment (GFI) for June, which will give us a hint to the strength of GFI during the second quarter of the year ahead of the release of GDP from the demand side. The week will close with the release of consumer confidence for August on Friday.

#### Previous: 52.7



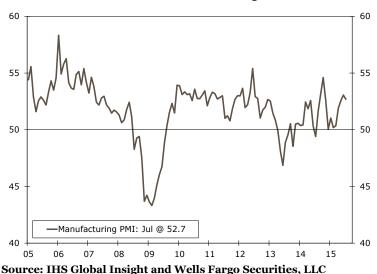
### **U.K. Manufacturing PMI • Tuesday**

After slowing down considerably earlier this year, when it fell from a March reading of 54.3 to 51.8 in April, the U.K. manufacturing PMI has hovered around the 51-52+ region, very close to the 50 demarcation point between expansion and contraction. The expectation is for this index to continue to remain close to the demarcation line but not fall below it in the short to medium term.

On Thursday, we will get the services PMI, which depends more on the domestic economy rather than on global demand. That index has been stronger than the manufacturing PMI and the expectation is that this index has remained strong in August. The U.K. economy has been able to de-couple from its Eurozone neighbors since the recovery from the Great Recession, and the service sector has been an important contributor to this differentiation.

#### Previous: 51.9

#### Consensus: 51.9



#### Mexico IMEF Manufacturing Index

# **Interest Rate Watch**

## Never a Good Time?

From the Fed funds futures market, the probability of a September FOMC move to raise the funds rate has dropped noticeably in the past week (top graph). Unfortunately, both the FOMC and financial markets have fallen into a trap that there is no good time to raise interest rates. However, while the administered Fed funds rate remains near zero, the economy moves ahead.

#### Will Do or Should Do?

One of the challenges for decision makers is to distinguish between what the Fed will do versus what it should do. The next step is that if the Fed does not do what you believe it should do—then what do you believe it will do?

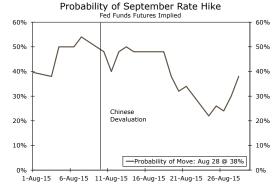
Decision makers cannot stand on the sidelines. The challenge then is to make decisions under conditions of uncertainty—sometimes severe uncertainty. In the current environment, the FOMC appears increasingly likely to decide not to raise the funds rate at its September meeting.

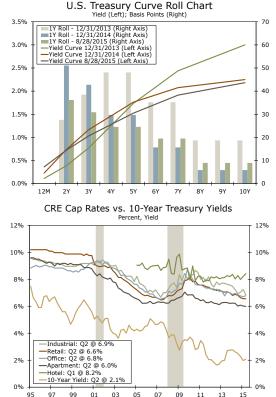
However, for private decision makers, if the FOMC makes no move in September, but is eventually going to normalize rates, decision makers must decide, under conditions of uncertainty, if asset prices today are consistent with future interest rates or are these financial asset prices only at fair value if the funds rate remains near zero forever?

#### Never Enough Information to Be Certain

Under conditions of uncertainty, investors must examine two sets of investment alternatives. First, how much additional compensation do I get for going out the Treasury yield curve? As illustrated in the middle graph, the gain in yield becomes fairly sparse beyond five years. Moreover, if the FOMC does reach its 3.75 percent funds rate goal by the end of 2017, or inflation really does return to 2 percent—there are likely to be significant real capital losses, regardless of when the rate hikes begin.

In a similar way, the impact on long-term assets, such as commercial real estate, given the low level of cap rates (bottom graph), could be significant.





# **Credit Market Insights** Household Debt Holds Steady

The New York Fed's Quarterly Report on Household Debt and Credit depicted a broadly stable second quarter for credit markets. Aggregate household debt balances were unchanged in the second quarter of 2015 at \$11.9 trillion. Household debt is down 6.5 percent from its peak in 2008 as households have continued to deleverage. Despite strong mortgage origination growth in the second quarter, underwriting standards remained tight. Only 8 percent of all new mortgages were originated to borrowers with credit scores below 660. The health of borrowers continues to improve as the share of mortgages balances 90 or more days delinquent fell to only 2.5 percent.

Consumer credit indicators showed less robust signs but remained healthy overall. Credit card delinquency rates held steady at 8.4 percent, although they remain slightly above the levels seen in the second half of 2014. Fourteen percent fewer consumers had a bankruptcy notation added to their credit reports in the second quarter of 2015 compared to the same quarter last year.

Student loans continue to be a bleaker segment of household debt. While outstanding student debt remained flat in the second quarter at \$1.2 trillion, the delinquency rate increased to 11.5 percent in the second quarter from 11.1 percent in the first quarter. Rising student debt can limit the ability of young adults to take on other forms of debt, and this may weigh on overall credit markets in the long-run.

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

Credit Market Data						
Mortgage Rates	Current	Week Ago	4 Weeks Ago	Year Ago		
30-Yr Fixed	3.84%	3.93%	3.91%	4.10%		
15-Yr Fixed	3.06%	3.15%	3.13%	3.25%		
5/1 ARM	2.90%	2.94%	2.95%	2.97%		
1-Yr ARM	2.62%	2.62%	2.54%	2.39%		
Bank Lending	<b>Current Assets</b>	1-Week	4-Week	Year-Ago		
Bunk Lenang	(Billions)	Change (SAAR)	Change (SAAR)	Change		
Commercial & Industrial	\$1,905.3	17.53%	3.56%	10.97%		
Revolving Home Equity	\$444.5	-10.55%	-6.24%	-3.89%		
Residential Mortgages	\$1,615.2	41.88%	5.49%	2.37%		
Commerical Real Estate	\$1,711.4	7.69%	10.97%	8.99%		
Consumer	\$1,237.0	7.83%	9.90%	4.64%		

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

# Topic of the Week

### **Financial Effects of the Commodities Selloff**

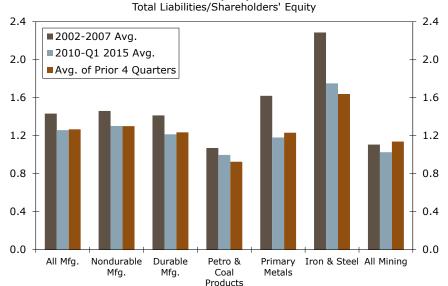
With oil prices recently breaking through \$40/barrel and other commodity prices continuing to slide, we thought it would be useful to quantify the effect of lower commodity prices on exposed sectors and discuss how well equipped they are to handle financial turmoil.

Mining companies recorded an aggregate \$37.6 billion after-tax loss in Q1, steeper than the loss seen in the depths of the prior recession, and coming on the heels of a loss of \$16.3 billion in Q4 2014. Beyond mining, companies further along in the production chain are feeling some of the pain from lower commodity prices as well. The primary metals sector saw backto-back after-tax losses of \$1.1 billion, while after-tax profits in the petroleum and coal products and iron and steel sectors declined more than 30 percent year over year in Q1.

Lower commodity prices have clearly hit the bottom lines of companies with exposure, both direct and indirect. Yet, arguably more important is the ability of these companies to endure the downdraft in prices. To analyze this, we looked at two key ratios for these sectors: the debt-to-equity ratio, a measure of leverage, and interest coverage, a measure of how capable companies are of covering their interest expense.

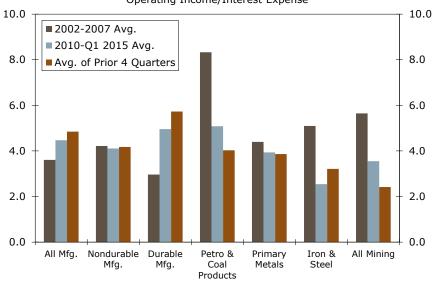
Leverage has generally decreased in most of these commodityexposed industries since the prior expansion (top chart). Interestingly, while leverage in the mining sector has actually edged higher, the leverage ratio for the sector as a whole actually remains well below ratios in many other sectors.

However, interest coverage tells a slightly different story (bottom chart). The coverage ratio for the petroleum and coal products sector has fallen dramatically since the past expansion, while the iron and steel and primary metals sectors have also seen their ratios decline. Fortunately, these industries have seen commensurate declines in leverage since the past expansion. However, in the mining sector, where leverage has increased over the past decade, the coverage ratio is less than half of what it was during the prior expansion. Moreover, the coverage ratio is lower for mining than any other sector in our sample. Thus, while companies further along the commodities production chain look sturdier, mining companies appear less prepared for the storm.



Debt to Equity Ratios

Interest Coverage Ratios Operating Income/Interest Expense



Source: U.S. Department of Commerce and 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

U.S. Interest Rates			
	Friday	1 Week	1 Year
	8/28/2015	Ago	Ago
3-Month T-Bill	0.05	0.02	0.03
3-Month LIBOR	0.32	0.33	0.23
1-Year Treasury	0.42	0.40	0.18
2-Year Treasury	0.68	0.61	0.50
5-Year Treasury	1.47	1.43	1.63
10-Year Treasury	2.14	2.04	2.34
30-Year Treasury	2.88	2.72	3.07
Bond Buyer Index	3.79	3.73	4.17

Foreign Exchange Rates						
	Friday	1 Week	1 Year			
	8/28/2015	Ago	Ago			
Euro (\$/€)	1.124	1.139	1.318			
British Pound (\$/£)	1.535	1.569	1.659			
British Pound (₤/€)	0.732	0.725	0.795			
Japanese Yen (¥/\$)	120.840	122.040	103.720			
Canadian Dollar (C\$/\$)	1.330	1.319	1.086			
Swiss Franc (CHF/\$)	0.961	0.947	0.915			
Australian Dollar (US\$/A\$	) 0.713	0.732	0.936			
Mexican Peso (MXN/\$)	16.935	16.987	13.086			
Chinese Yuan (CNY/\$)	6.390	6.389	6.144			
Indian Rupee (INR/\$)	66.163	65.833	60.515			
Brazilian Real (BRL/\$)	3.575	3.500	2.242			
U.S. Dollar Index	95.811	95.008	82.477			
Source: Bloomberg LP and Wells Fargo Securities LLC						

Foreign Interest Rates						
	Friday	1 Week	1 Year			
	8/28/2015	Ago	Ago			
3-Month Euro LIBOR	-0.03	-0.03	0.13			
3-Month Sterling LIBOR	0.59	0.59	0.56			
3-Month Canada Banker's Acceptance	0.74	0.74	1.27			
3-Month Yen LIBOR	0.09	0.09	0.13			
2-Year German	-0.22	-0.25	-0.02			
2-Year U.K.	0.64	0.50	0.85			
2-Year Canadian	0.40	0.33	1.10			
2-Year Japanese	0.01	0.01	0.07			
10-Year German	0.70	0.56	0.88			
10-Year U.K.	1.91	1.69	2.37			
10-Year Canadian	1.41	1.27	2.00			
10-Year Japanese	0.38	0.37	0.49			

Commodity Prices					
	Friday	1 Week	1 Year		
	8/28/2015	Ago	Ago		
WTI Crude (\$/Barrel)	42.17	40.45	94.55		
Gold (\$/Ounce)	1128.11	1160.95	1289.69		
Hot-Rolled Steel (\$/S.Ton)	462.00	464.00	662.00		
Copper (¢/Pound)	232.30	230.35	312.65		
Soybeans (\$/Bushel)	8.92	9.22	10.91		
Natural Gas (\$/MMBTU)	2.71	2.68	4.04		
Nickel (\$/Metric Ton)	10,031	10,370	18,763		
CRB Spot Inds.	440.22	447.95	532.60		

Source: Bloomberg LP and Wells Fargo Securities, LLC

# Next Week's Economic Calendar

Monday	Tuesday	Wednesday	Thursday	Friday
31	1	2	3	4
	Construction Spending (MoM)	Factory Order	Trade Balance	Nonfarm Payrolls
3	June 0.1%	June 1.8%	June -\$43.84B	July 215K
	July 0.5% (W)	July 1.1% (W)	July -\$39.5B(W)	August 214K (W)
	ISM Manfucturing		ISM Non-Manfucturing	Unemployment Rate
	July 52.7		July 60.3	July 5.3%
	August 52.9 (W)		August 58.4 (W)	August 5.2% (W)
China	United Kingdom			Canada
Manufacturing PMI	Manufacturing PMI			Unemployment Rate
Previous (July) 50.0	Previous (July) 51.9			Previous (July) 6.8%
	Mexico			
	Manufacturing PMI			
•	Previous (July) 52.7			

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

# 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.bullard@wellsfargo.com
Nick Bennenbroek	Currency Strategist	(212) 214-5636	nicholas.bennenbroek@wellsfargo.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
Erik Nelson	Economic Analyst	(704) 410-3267	erik.f.nelson@wellsfargo.com
Alex Moehring	Economic Analyst	(704) 410-3247	alex.v.moehring@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
Donna LaFleur	Executive Assistant	(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 futures the Commodities Futures and the Vells 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 © 2015 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