



Metal Industry Indicators

Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for July and August—Summary Report

September 19, 2014

The **primary metals leading index** decreased 0.1% in August to 168.9 from a revised 169.0 in July, and its 6-month smoothed growth rate decreased to 4.1% from an upwardly revised 5.0% in July. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. Usually a growth rate above +1.0% signals an increase in metals activity, and a growth rate below -1.0% indicates a downturn in activity. Although the primary metals leading index growth rate decreased in August, it is still moderately high. The recovery in the metals industry is likely to continue. Manufacturing sector activity decreased only slightly in August, after accelerating since the start of the year. Durable goods orders rose to the highest level on record, lifted by increased new orders for transportation equipment. Furthermore, the construction sector's metals consumption is becoming more constant. While single-family home building has yet to increase substantially, metal consumption from multi-family apartment building and nonresidential construction is rising. However, slow global economic growth is reducing U.S. metal products exports, thus most of the production from the primary metals industry will be consumed domestically.

Two of the four available indicators for the August index calculation decreased, and two increased. The second consecutive decline in the stock price index combining construction and farm machinery companies and industrial machinery companies contributed -0.4 percentage point to the net decrease in the primary metals leading index. A shorter average workweek in primary metals establishments contributed -0.2 percentage point. In contrast, a sharp increase in the PMI, the Institute for Supply Management's purchasing managers' index, contributed 0.4 percentage point to the primary metals leading index. The PMI rose to over a 3-year high and above the threshold that indicates further increases in U.S. manufacturing activity. The rise in the USGS metals price index growth rate was so slight that its contribution rounded to zero. The August leading index should be considered preliminary because only four of its eight indicators were available, and the leading index will be subject to revision when the other components are added next month.

Metals are key inputs in durable goods manufacturing and construction, which account for almost a quarter of gross domestic product final sales. Therefore, the primary metals leading index also gives early signals of major changes in activity for the overall U.S. economy (Chart 8).

The steel leading index increased 0.7% in July, the latest month for which it is available. The sharp increase in the index for new building permits issued and the rising PMI made the largest positive contributions the steel leading index. Growth in the steel industry will likely continue to be slow-to-modest in the near term. Although U.S. steel imports have been steadily increasing and exports have remained relatively flat; steel import permit applications decreased 8.0% in August. This could promote domestic steel industry activity. The copper leading

index decreased 0.8% in July. A shorter average workweek in nonferrous metal products, except aluminum, plants made the largest negative contribution to the copper leading index. This gain was partially offset by a sharp increase in the index for new housing permits issued, which was the only indicator that made a significantly large positive contribution to the copper leading index. The copper leading index growth rate is still above the threshold that indicates an increase in copper industry activity. U.S. copper industry activity growth is likely to be slow to modest in the near term.

The **metals price leading index** declined for the fourth month in a row in July, the latest month for which it is available. It decreased 0.3% to 108.0 from 108.3 in June, and its 6-month smoothed growth rate decreased to -2.2% from a revised -1.7% in June. Three of its four indicators decreased in July. The decrease in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed -0.2 percentage points to the net decline in the metals price leading index. The Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate decreased for the 9th consecutive month, which indicates further decreases in growth for most industrialized countries. It contributed -0.1 percentage point to the metals price leading index. The contribution from a tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate was so small that it rounded to zero. In contrast, a slight uptick in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar made the only positive contribution, 0.1 percentage point, to the metals price leading index. The metals price leading index signals major changes in the growth rate of nonferrous metal prices an average of 8 months in advance.

The growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories, which is an indicator of supply and usually moves inversely with the price of metals, decreased in July. High United States and Chinese metal inventories and the negative leading index of metal prices growth rate indicate that some metals prices, particularly copper, could decline further in the near future. The price of aluminum, which is in low supply in the LME, is likely to rise because of high consumption from the transportation equipment industry.

The percent changes from June to July for the **metal industry coincident indexes**, which measure current economic activity, are shown below. July is the latest month for which these indexes are available.

Primary Metals	0.6%
Steel	0.8%
Copper	0.1%

Tables 1, 3, 5, and 7 identify the indicators and, for the industry indexes, show the contributions of each indicator to its respective index.

The *Metal Industry Indicators* report is produced at the U.S. Geological Survey. For more information about these indexes and the *Metal Industry Indicators* monthly report, contact Gail James (703-648-4915), (e-mail, gjames@usgs.gov) at the U.S. Geological Survey.

The *Metal Industry Indicators* summary report with indexes for August and September is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, October 17, 2014.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

	Six-Month Smoothed Growth Rates					
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
2013						
July	109.2	-18.5	16.7	-18.2	-19.4	1.3
August	109.7	-10.3	11.3	-13.5	-11.5	-1.5
September	110.0r	-6.5	14.2	-10.5	-6.0	-3.1
October	110.4	-4.8	11.1	-5.5	-5.5	-2.5
November	109.7r	-8.9	10.0	-15.5	-8.8	9.7
December	110.1r	2.0	11.2	-8.9	1.5	19.6
2014						
January	109.1	-4.9	9.3	-16.4	-5.0	29.8
February	108.6r	-1.9	8.7	-7.6	-2.7	13.1
March	108.8	-11.3	7.7r	-5.0	-12.7	4.9
April	108.7r	-7.1	9.9r	0.3	-8.7	12.1
May	108.5	-0.7	8.5r	6.7	-1.0	4.7
June	108.3	-0.1	8.1r	10.2	-1.5	-0.4
July	108.0	5.7	6.0	27.8	2.8	-1.9
August	NA	2.2	NA	36.0	-1.7	-2.5

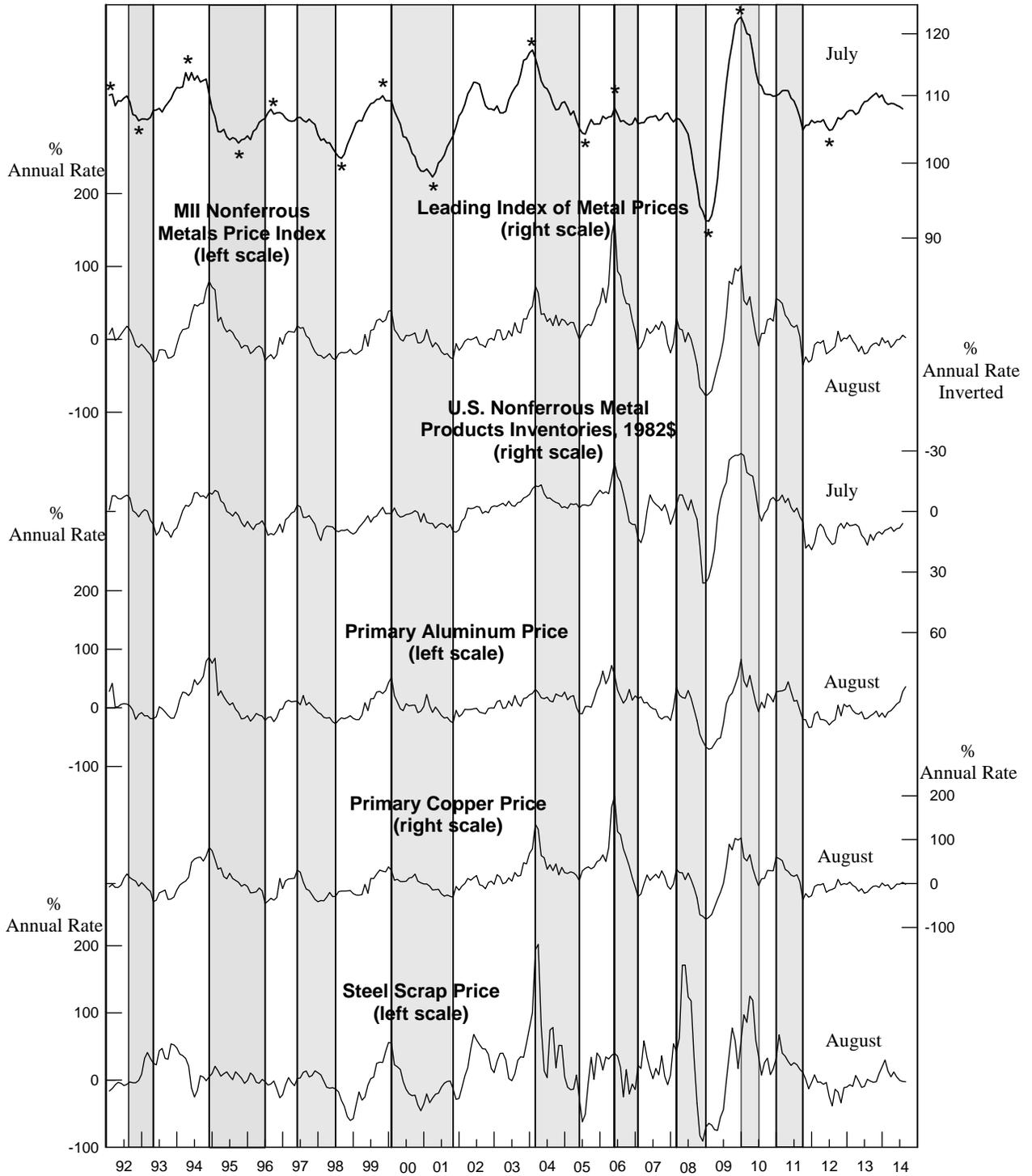
NA: Not available r: Revised

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metal products, the Organization for Economic Cooperation and Development (OECD) Total Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metal products (NAICS 3313, 3314, & 335929). Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS), American Metal Market (AMM), the London Metal Exchange (LME), U.S. Census Bureau, the Organization for Economic Cooperation and Development (OECD), and Federal Reserve Board.

**CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES
OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF
NONFERROUS METAL PRODUCTS, AND SELECTED PRICES**

1967 = 100



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2013				
August	161.7	2.1	112.2	2.3
September	162.7	2.7	112.7	3.1
October	165.8	6.0	113.5	4.1
November	164.8	4.0	114.2	4.7
December	164.0	2.5	114.0	3.9
2014				
January	162.3	0.2	113.3	2.4
February	165.6r	3.9r	114.4r	3.9r
March	165.3r	3.4r	114.4r	3.4r
April	166.9r	4.7r	115.4r	4.5r
May	167.5r	4.7r	116.0r	4.8r
June	167.7r	4.3r	116.9r	5.6r
July	169.0r	5.0r	117.6	5.9
August	168.9	4.1	NA	NA

NA: Not available **r:** Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index			July	August
1. Average weekly hours, primary metals (NAICS 331)			-0.1r	-0.2
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)			-0.1	-0.4
3. Ratio of price to unit labor cost (NAICS 331)			0.1	NA
4. USGS metals price index growth rate			0.2r	0.0
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$			-0.1	NA
6. Index of new private housing units authorized by permit			0.4	NA
7. Growth rate of U.S. M2 money supply, 2005\$			0.1	NA
8. PMI			0.2r	0.4
Trend adjustment			0.0	0.0
			0.7r	-0.2
Coincident Index			June	July
1. Industrial production index, primary metals (NAICS 331)			0.5r	0.2
2. Total employee hours, primary metals (NAICS 331)			0.3r	0.2
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$			0.1	0.1
Trend adjustment			0.1	0.1
			1.0r	0.6

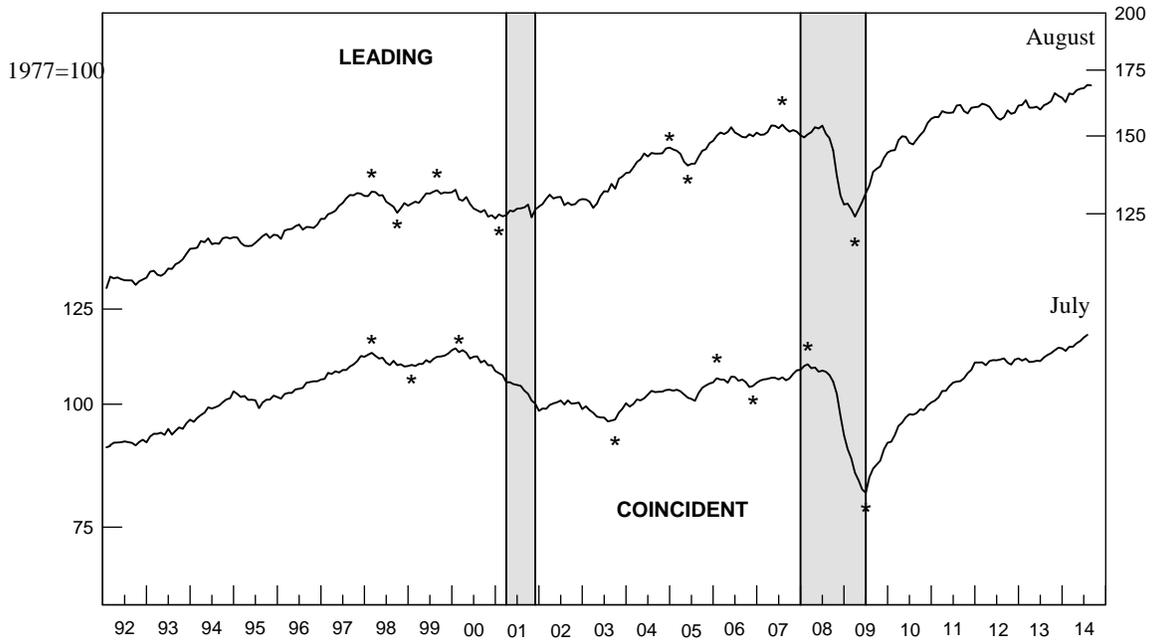
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; and 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available **r:** Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

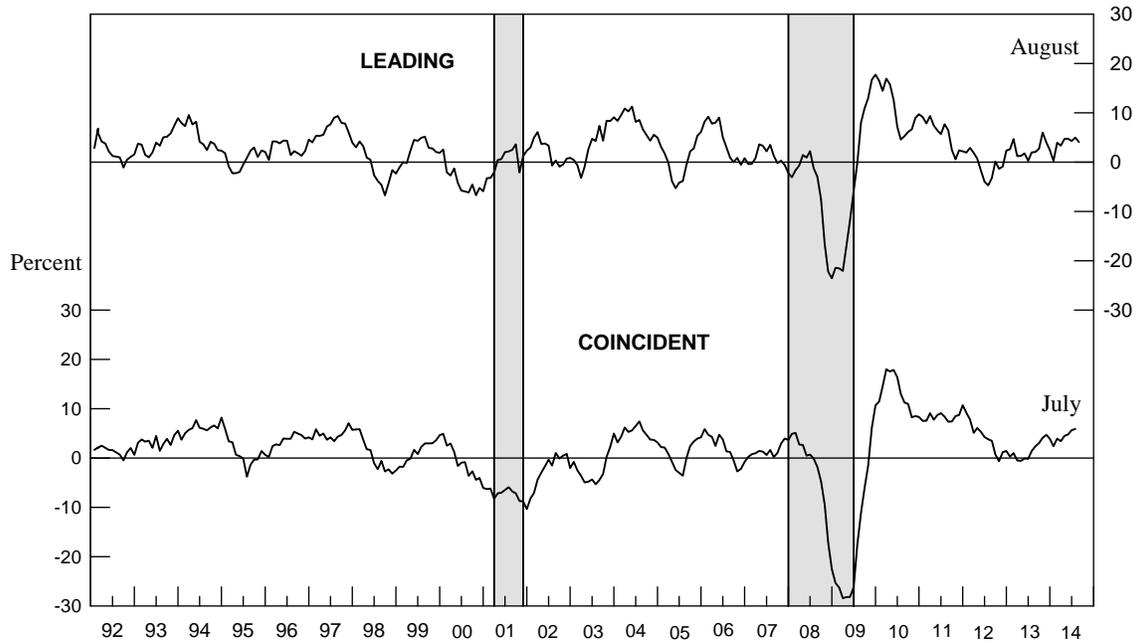
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1992-2014 1977=100



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1992-2014 Percent



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	<u>Leading Index</u>		<u>Coincident Index</u>	
	<u>(1977 = 100)</u>	<u>Growth Rate</u>	<u>(1977 = 100)</u>	<u>Growth Rate</u>
2013				
August	112.7	2.7	117.2	2.9
September	112.9	2.5	117.1	2.7
October	113.9	3.9	117.7	3.3
November	114.8	4.8	117.9	3.3
December	113.9	2.4	117.2	1.8
2014				
January	112.3r	-0.4	115.6	-1.0
February	113.8	1.9	116.9	1.1
March	114.3	2.6	117.2	1.4
April	114.5	2.6	117.3	1.2
May	114.9	2.8	117.6	1.4
June	114.6r	1.9r	118.3r	2.2r
July	115.4	2.8	119.2	3.1

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

Leading Index	June	July
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	-0.2	0.0
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.2r	-0.1
3. Shipments of household appliances, 1982\$	0.3r	0.1
4. S&P stock price index, steel companies	-0.1	0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	0.0	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.1	-0.1
7. Index of new private housing units authorized by permit	-0.2	0.4
8. Growth rate of U.S. M2 money supply, 2005\$	-0.2	0.1
9. PMI	0.0	0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.3r	0.6
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.3r	0.2
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.4r	0.4
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	-0.2	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.6r	0.7

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, U.S. Bureau of Economic Analysis and American Automobile Manufacturers Association; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; and 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.
STEEL: LEADING AND COINCIDENT INDEXES, 1992-2014

1977=100

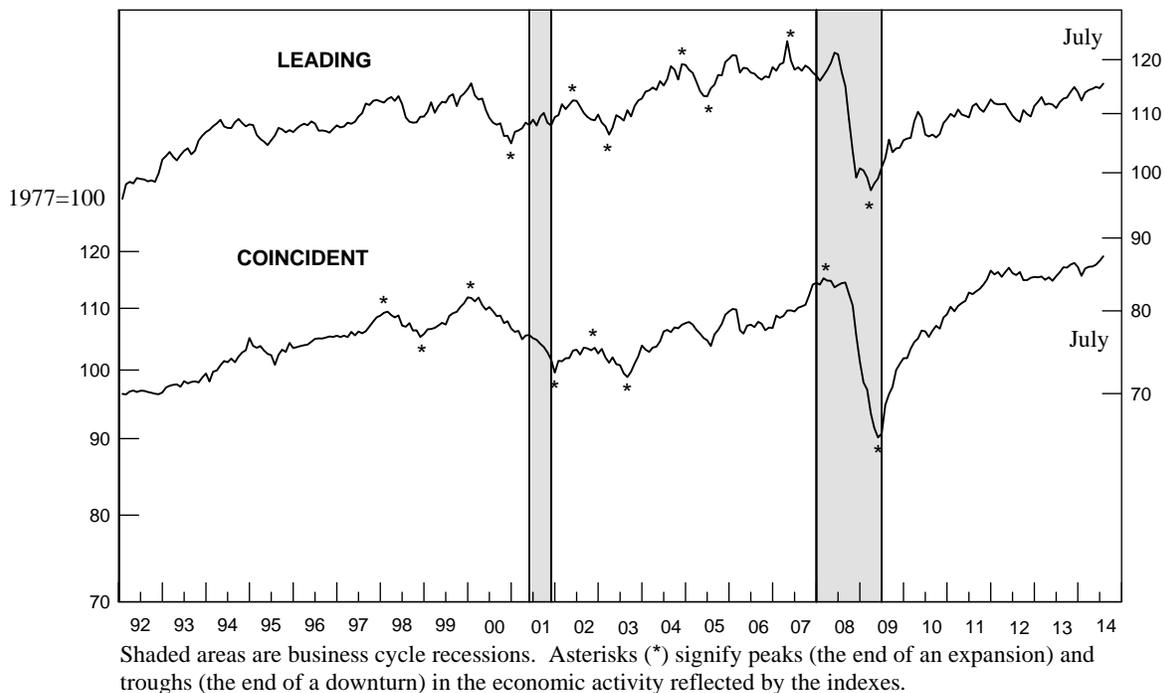
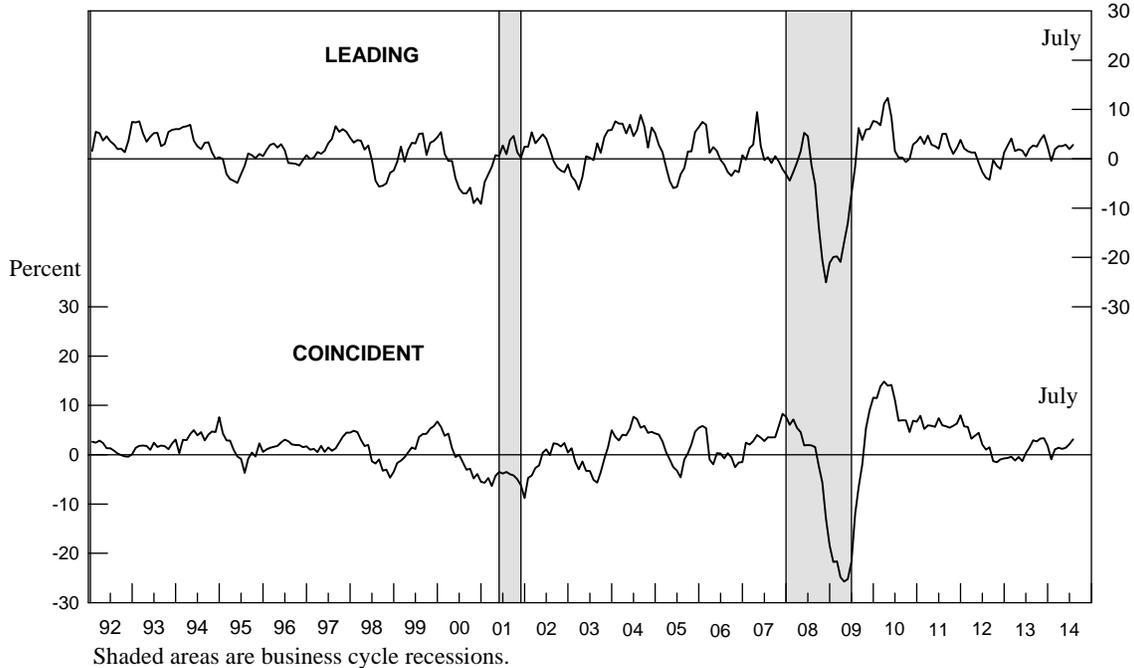


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1992-2014

Percent



The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 6.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2013				
August	127.8	4.1	108.1	0.7
September	128.4	4.0	106.6	-2.0
October	129.8	5.4	108.3	0.7
November	128.6	2.6	107.2	-1.3
December	130.5	4.6	107.8	-0.3
2014				
January	128.1	0.3	106.0	-3.4
February	129.5	2.1	107.2	-1.2
March	130.6r	3.2	109.2r	2.4r
April	130.3	2.5	108.5r	1.4r
May	129.0	0.1	107.9r	0.4r
June	131.2	3.3	110.3r	4.7r
July	130.2	1.3	110.4	4.1

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 7.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	June	July
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	1.4	-1.2
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.1r	-0.1
3. S&P stock price index, building products companies	0.5	-0.2
4. LME spot price of primary copper	0.0	0.1
5. Index of new private housing units authorized by permit	-0.2	0.5
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.0	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.8r	-0.9
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.2	0.1
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	1.9	-0.1
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	2.2	0.1

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; and 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; and 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 4, and 6 of the leading index.

r: Revised NA: Not available

CHART 6.
COPPER: LEADING AND COINCIDENT INDEXES, 1992-2014

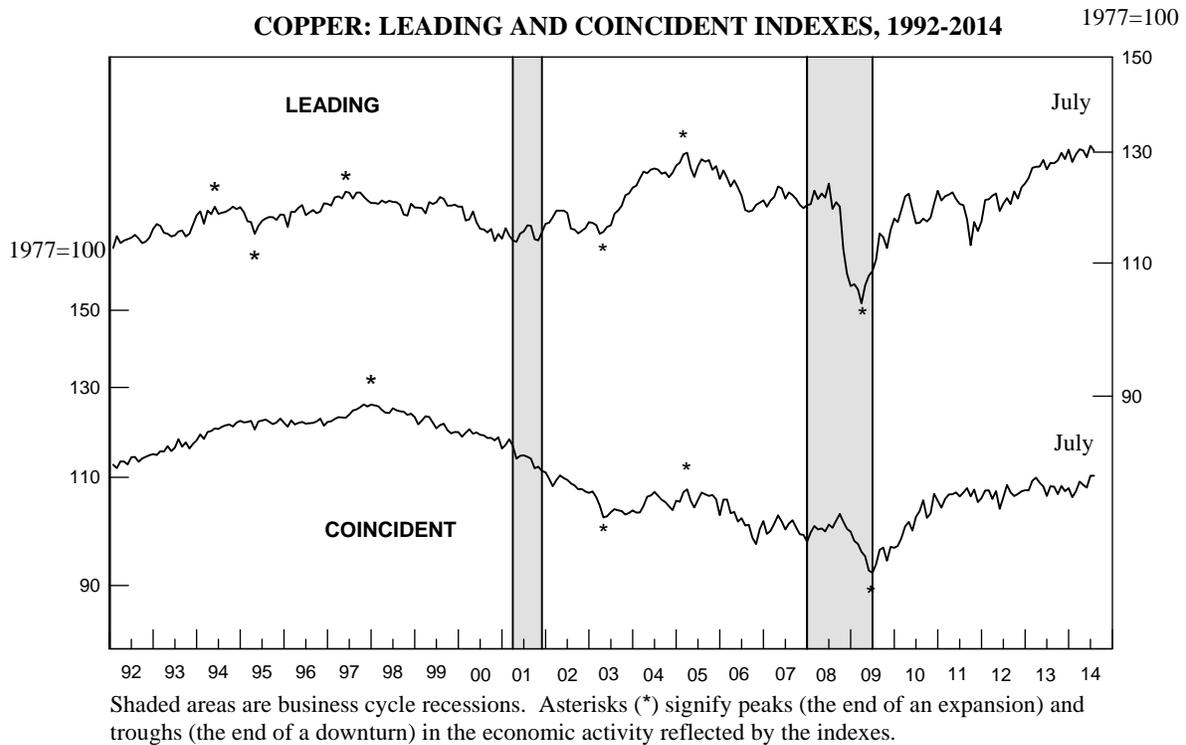


CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1992-2014

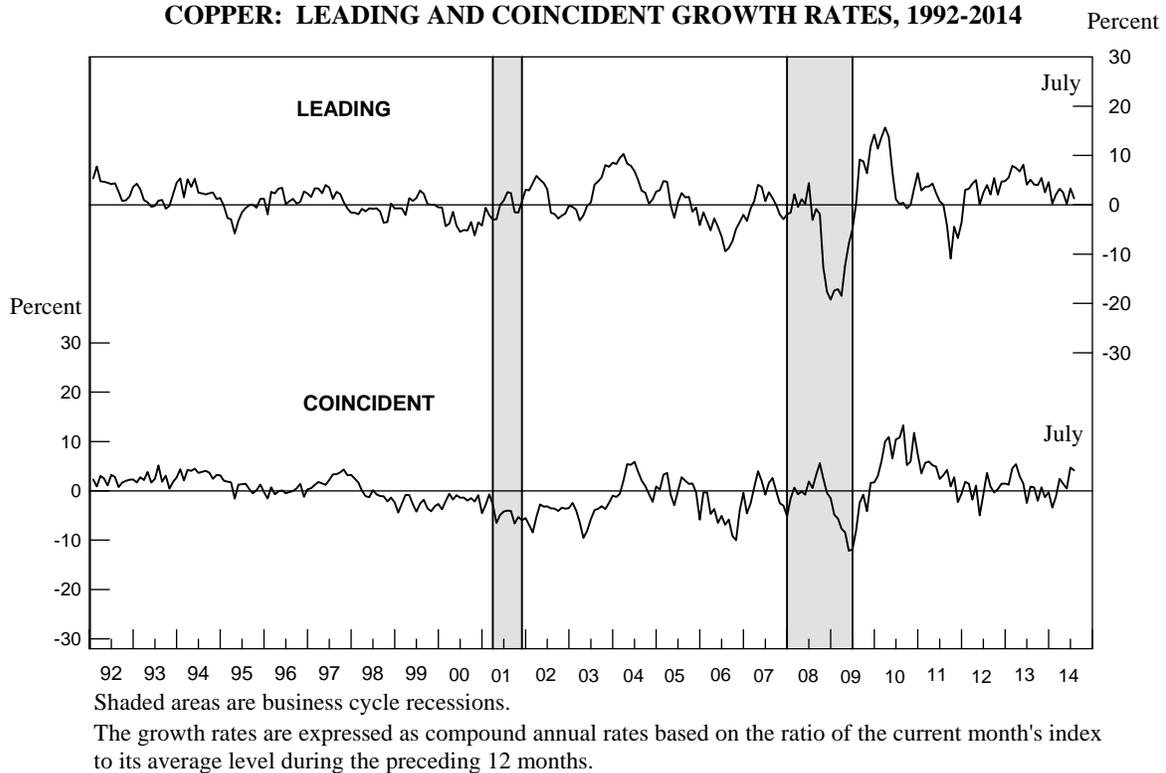
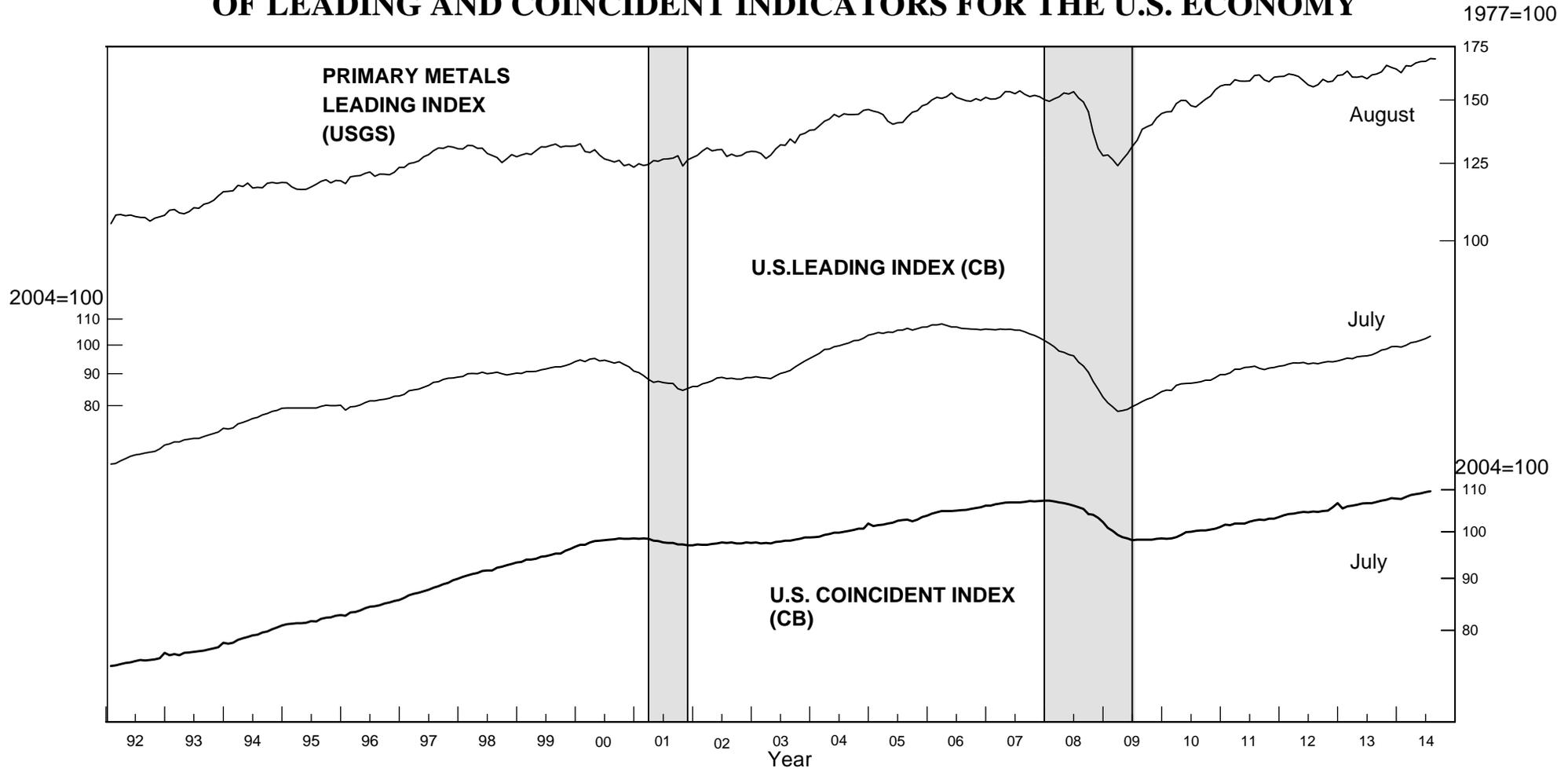


Chart 8.

**PRIMARY METALS LEADING INDEX AND COMPOSITE INDEXES
OF LEADING AND COINCIDENT INDICATORS FOR THE U.S. ECONOMY**



Shaded areas are business cycle recessions.

Sources: U.S. Geological Survey (USGS) and Conference Board (CB).

September 2014