



Metal Industry Indicators

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

September 18, 2015

The **primary metals leading index** decreased 1.1% in August to 159.5 from a downwardly revised 161.2 in July, and its 6-month smoothed growth rate declined to -4.3% from a downwardly revised -2.8% in July (Table 2). 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. The sharp decline in the primary metals leading index growth rate in August suggests that growth in primary metals industry activity is likely to be modest, at best, in the near term. Manufacturing activity has been volatile year-to-date, with limited metals demand, and much of that demand has been met with cheaper metal imports. Pent-up demand for transportation equipment, particularly automotive equipment, may generate some domestic metals demand in the months ahead. However, metals demand from the construction sector has been more robust since early 2011 and could underpin the primary metals industry near-term. Decreased global economic growth and the U.S. dollar's strength against other currencies continued to limit U.S. metal exports.

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).

Three of the four indicators that were available for the August index calculation decreased and one increased (Table 3). A falling stock price index combining construction and farm machinery companies and industrial machinery companies contributed -0.7 percentage point to the net decline in the leading index. The PMI, the Institute for Supply Management's purchasing managers' index, made a -0.4-percentage-point contribution to the leading index. Nevertheless, the PMI is still above the threshold that indicates increases in U.S. manufacturing activity. A third consecutive drop in the USGS metals price index growth rate also contributed -0.4 percentage point. In contrast, the longer average workweek in primary metals establishments made the only positive contribution, 0.4 percentage point, in August. 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.

The steel leading index decreased 0.6% to 112.7 in July from a revised 113.4 in June (Table 4). The retreat from the recent record high of the index for new housing permits made the largest negative contribution to the steel leading index in July (Table 5). Also, the lowest S&P stock price index for steel companies in 2 years had a strong negative effect on the leading index. Meanwhile, a longer average workweek in iron and steel mills and a rebound in light truck and car sales offset some of those declines. The steel leading index growth rate has remained in negative territory since the end of last year. Furthermore, cheaper steel imports from South Korea

and Turkey continued to rise, hindering U.S. steel industry growth. The overall finished steel import market share was still near 30% at the end of August. The copper leading index decreased 2.2% to 126.7 in July from 129.5 in June (Table 6). The lower index for new housing permits, the falling copper price, and a shorter average workweek in nonferrous metals, except aluminum, plants drove the copper leading index down in July (Table 7). The only positive contribution was the inflation-adjusted new orders for nonferrous metals products. Growth in the construction sector could support domestic copper industry activity in the near term.

The **metals price leading index** decreased 0.3% to 104.1 in July, the latest month for which it is available, from a revised 104.4 in June (Table 1). Its 6-month smoothed growth rate increased to -1.4% in July from a revised -1.6% in June. Three of its four indicators decreased in July. A drop in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.2 percentage point to the net decline in the metals price leading index. The Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate continued to decline and was the lowest since the end of 2012. It pointed to further decreases in growth for most industrialized countries. It contributed -0.1 percentage point to the metals price leading index. The contribution from a slightly closer yield spread between the U.S. 10-year Treasury Note and the federal funds rate was also -0.1 percentage point. In contrast, a rise in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed 0.1 percentage point. 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, increased in July. U.S. metals inventories levels continued to rise and reached a new recent record high. Moreover, global metal inventories are also rising. Record high inventories, along with the negative metals price leading index growth rate, indicate further declines in metal prices in the months ahead.

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	0.4%
Steel	-0.3%
Copper	-0.5%

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 16, 2015.

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)	Leading Index of Metal Prices Growth Rates	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982\$)	Primary Aluminum	Primary Copper	Steel Scrap
2014							
July	108.2	-2.0	5.7	3.5	27.8	2.8	-1.9
August	107.2	-3.6	2.2	3.1	36.0	-1.7	-2.5
September	106.4	-4.5	-6.1	3.9	12.2	-8.1	-2.0
October	105.7	-5.2	-4.7	7.0	19.7	-5.7	-11.6
November	105.4r	-5.0	-8.9	9.1	24.0	-11.6	-26.6
December	104.6	-5.8	-14.6	8.4	-4.1	-14.5	-25.3
2015							
January	103.7	-6.6	-28.6	13.0	-4.0	-33.0	-15.6
February	103.5	-6.1r	-21.3	12.6	-9.4	-21.5	-54.9
March	103.2r	-5.9r	-15.1	11.1r	-10.4	-14.9	-51.8
April	103.1r	-5.3r	-4.5	11.3	0.5	-8.5	-47.3
May	104.0r	-2.8r	-10.7	7.7	-19.3	-11.7	-42.7
June	104.4	-1.6r	-20.1	8.3r	-23.8	-19.6	-29.9
July	104.1	-1.4	-28.9	14.0	-26.9	-30.1	-32.7
August	NA	NA	-29.0	NA	-28.1	-29.9	-42.1

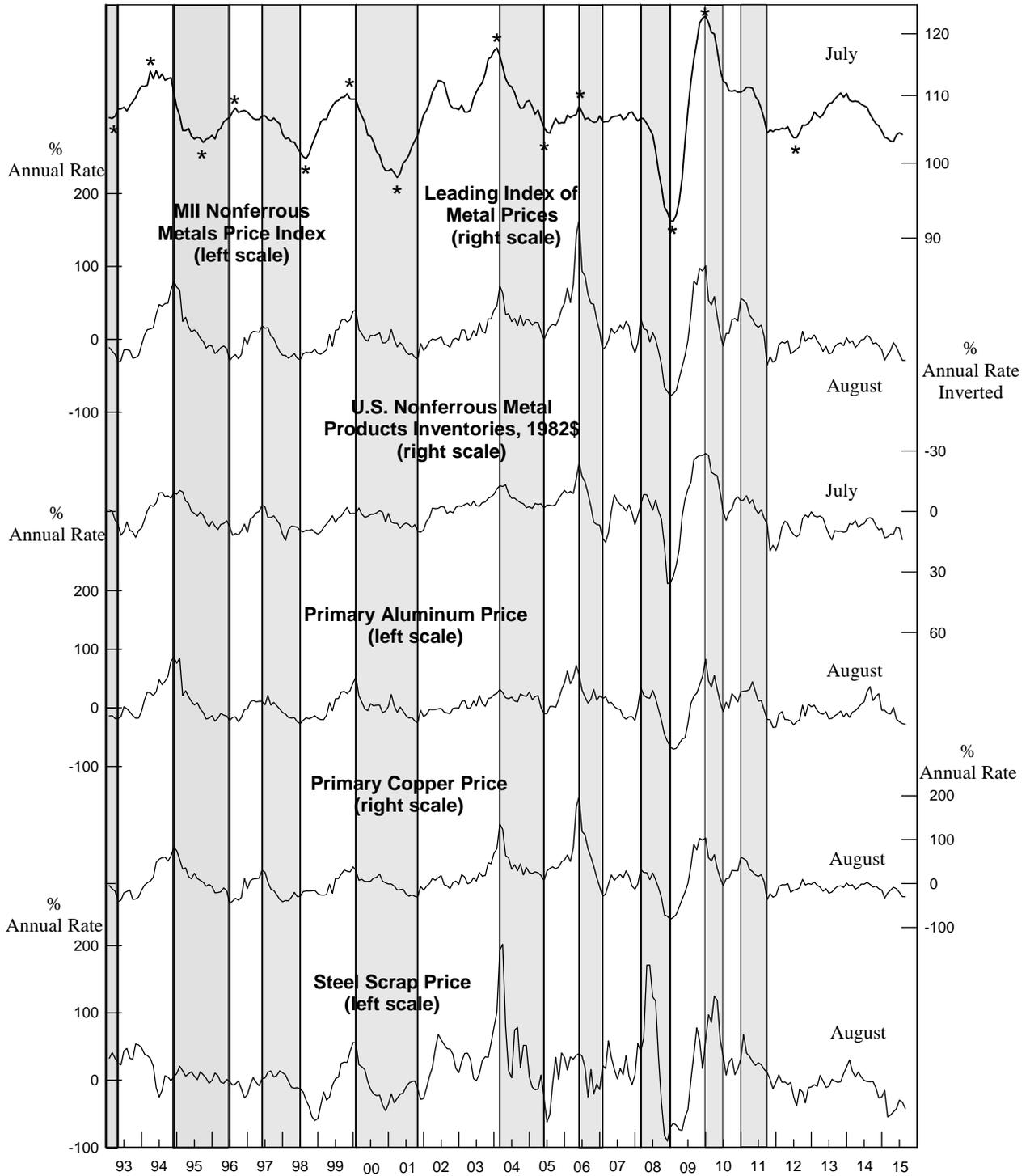
NA: Not available **r:** Revised

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.

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.

**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
2014				
August	165.5	2.9	113.6	4.1
September	165.6	2.4	114.3	4.7
October	165.2	1.4	114.3	3.9
November	164.8	0.8	113.5	2.0
December	164.3	0.1	114.4	3.1
2015				
January	163.1	-1.6	113.4	0.9
February	163.0r	-1.8r	113.1r	-0.1r
March	159.7r	-5.5r	112.4r	-1.5r
April	161.2r	-3.5	112.1r	-2.0r
May	163.1r	-1.1	112.8r	-1.1
June	163.0r	-1.0r	113.1r	-0.5r
July	161.2r	-2.8r	113.6	0.3
August	159.5	-4.3	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)	0.4r	0.4
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	-0.3r	-0.7
3. Ratio of price to unit labor cost (NAICS 331)	-0.3	NA
4. USGS metals price index growth rate	-0.1r	-0.4
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$	-0.1	NA
6. Index of new private housing units authorized by permit	-0.8	NA
7. Growth rate of U.S. M2 money supply, 2009\$	0.1	NA
8. PMI	-0.1r	-0.4
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-1.2r	-1.1
Coincident Index	June	July
1. Industrial production index, primary metals (NAICS 331)	0.1r	0.0
2. Total employee hours, primary metals (NAICS 331)	0.1	0.2
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	0.0r	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.3	0.4

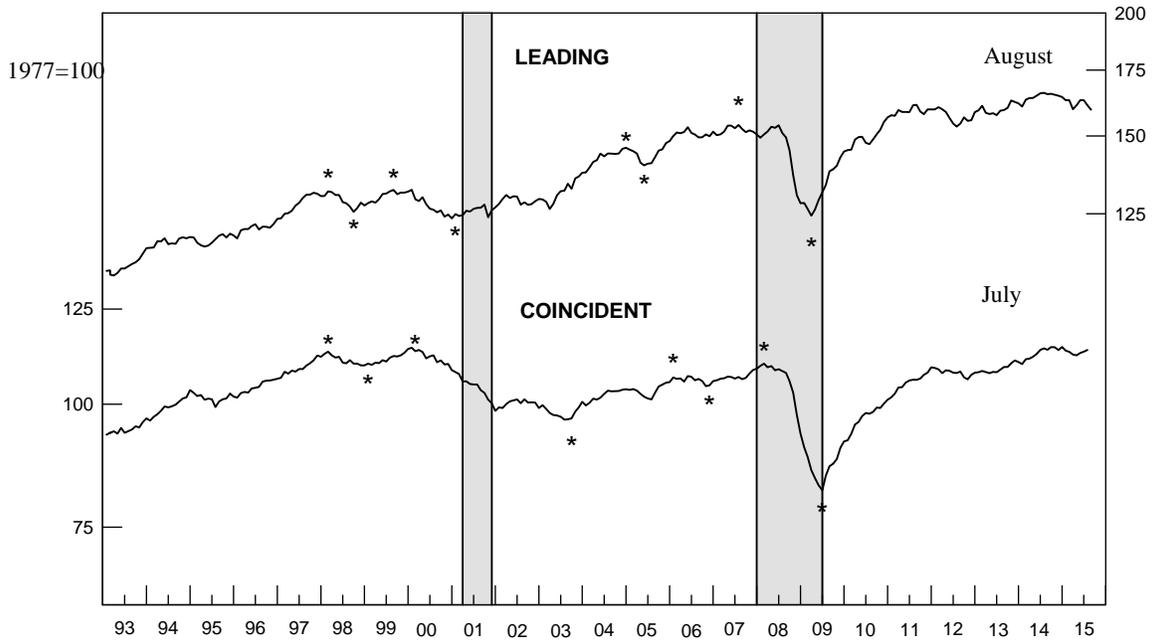
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, 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.

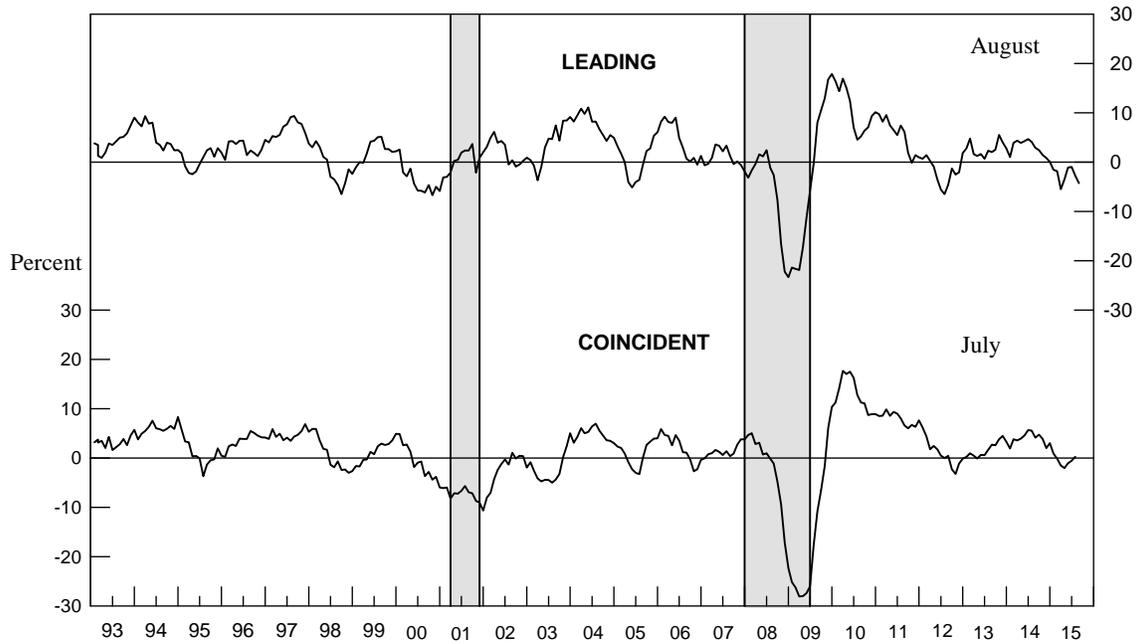
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1993-2015 1977=100



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, 1993-2015 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>
2014				
August	115.6	2.6	120.3	3.0
September	115.5	2.0	121.0	3.9
October	114.9	0.6	120.9	3.3
November	115.0	0.6	121.0	2.9
December	114.6	-0.1	121.3	3.1
2015				
January	114.0	-1.1	119.4	-0.3
February	114.6	-0.5	119.5r	-0.4r
March	113.1	-2.9	118.9r	-1.5r
April	113.5	-2.0	118.0r	-3.0r
May	114.0	-1.1	117.5r	-3.7
June	113.4r	-1.9r	118.8r	-1.6r
July	112.7	-2.7	118.4	-2.0

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)	-0.1	0.3
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.3r	0.0
3. Shipments of household appliances, 1982\$	-0.1	0.1
4. S&P stock price index, steel companies	-0.1	-0.5
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.2	0.2
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	0.2	0.1
7. Index of new private housing units authorized by permit	0.3	-0.8
8. Growth rate of U.S. M2 money supply, 2009\$	-0.3r	0.1
9. PMI	0.1	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.5r	-0.6
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	1.0r	-0.3
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.3r	0.0
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.3r	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.1r	0.2

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, 1993-2015

1977=100

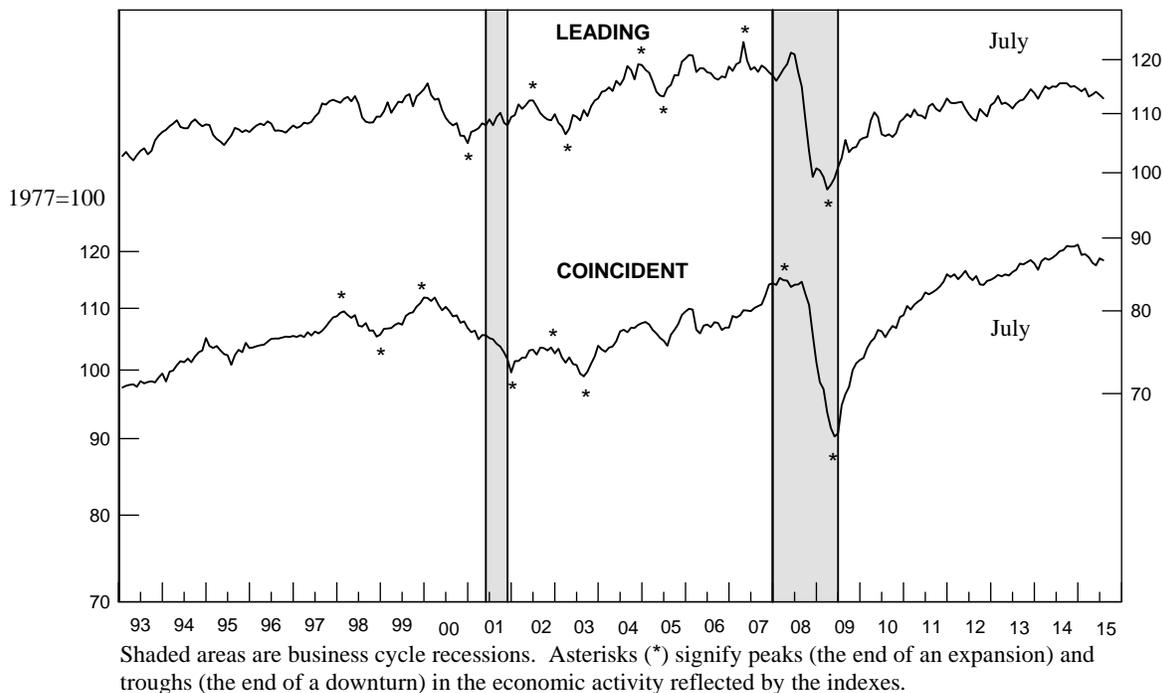
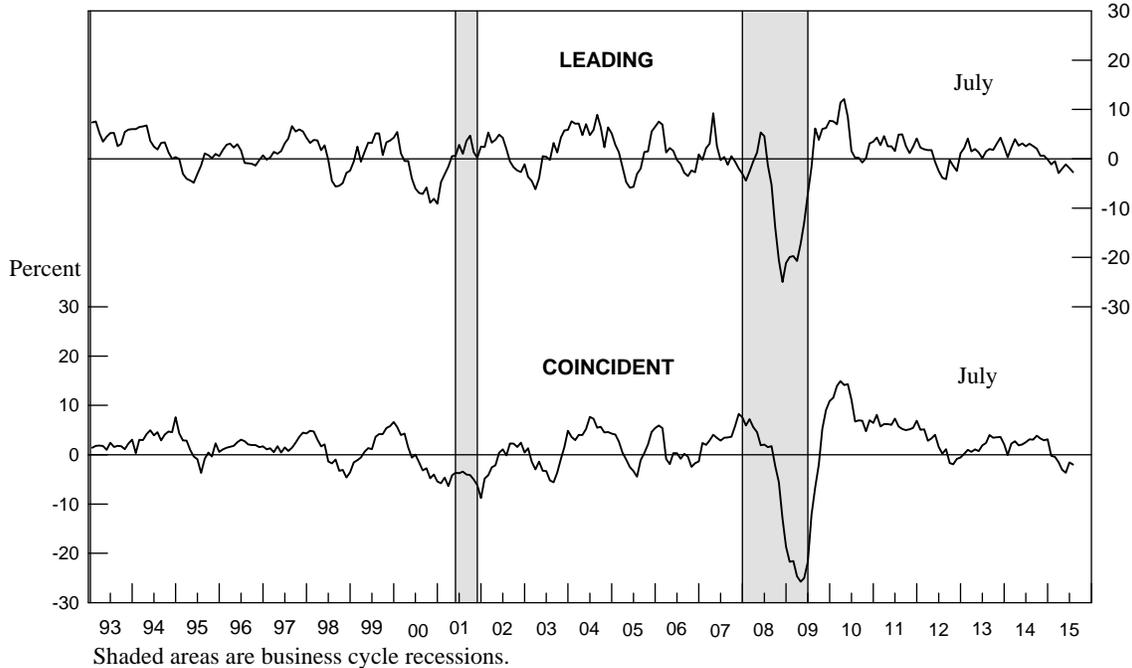


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1993-2015

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**

	<u>Leading Index</u>		<u>Coincident Index</u>	
	<u>(1977 = 100)</u>	<u>Growth Rate</u>	<u>(1977 = 100)</u>	<u>Growth Rate</u>
2014				
August	127.4	0.9	110.3	3.1
September	127.7	1.0	107.5	-2.1
October	128.1	1.4	105.4	-5.8
November	129.0	2.4	104.7	-6.6
December	128.8	1.8	109.4	1.6
2015				
January	126.3	-2.0	109.2	1.0
February	129.2	2.1	110.7	3.3
March	128.7	1.1	111.2	3.6
April	128.4	0.7	110.0r	1.4r
May	129.7	2.5r	111.1	3.1
June	129.5	1.8	110.1r	1.2
July	126.7	-2.3	109.6	0.6

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**

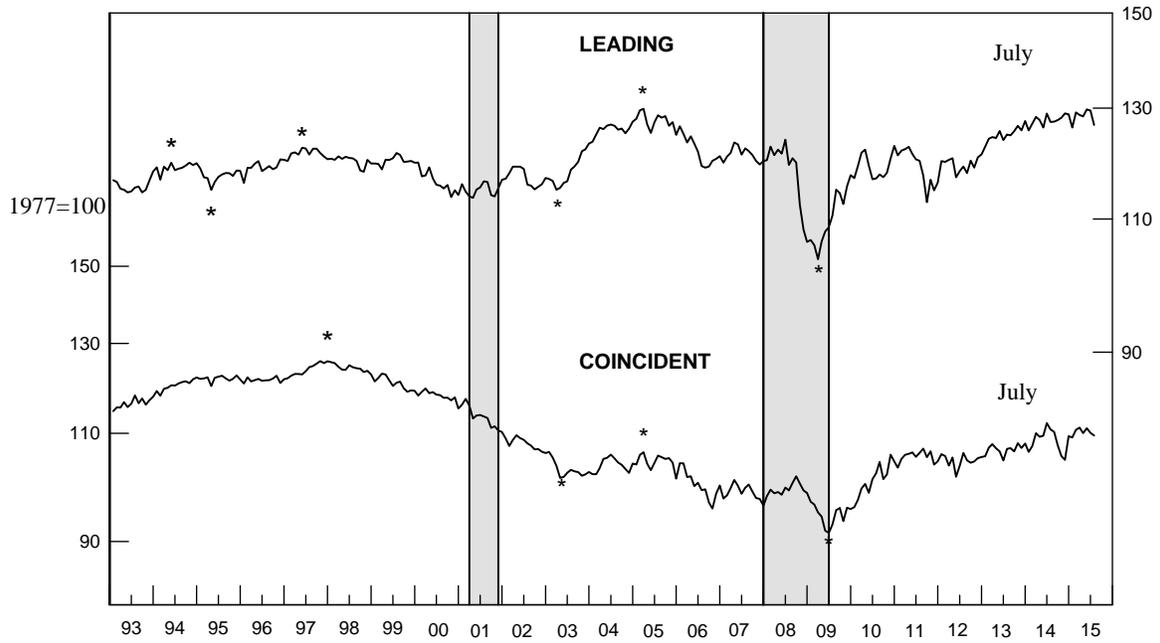
Leading Index	June	July
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	-0.5	-0.7
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.1	0.1
3. S&P stock price index, building products companies	0.1	-0.1
4. LME spot price of primary copper	-0.3	-0.5
5. Index of new private housing units authorized by permit	0.4	-1.0
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.1	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	<u>-0.1</u>	<u>-2.2</u>
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.3r	-0.3
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-1.3	-0.3
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	<u>-0.9r</u>	<u>-0.5</u>

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, 1993-2015

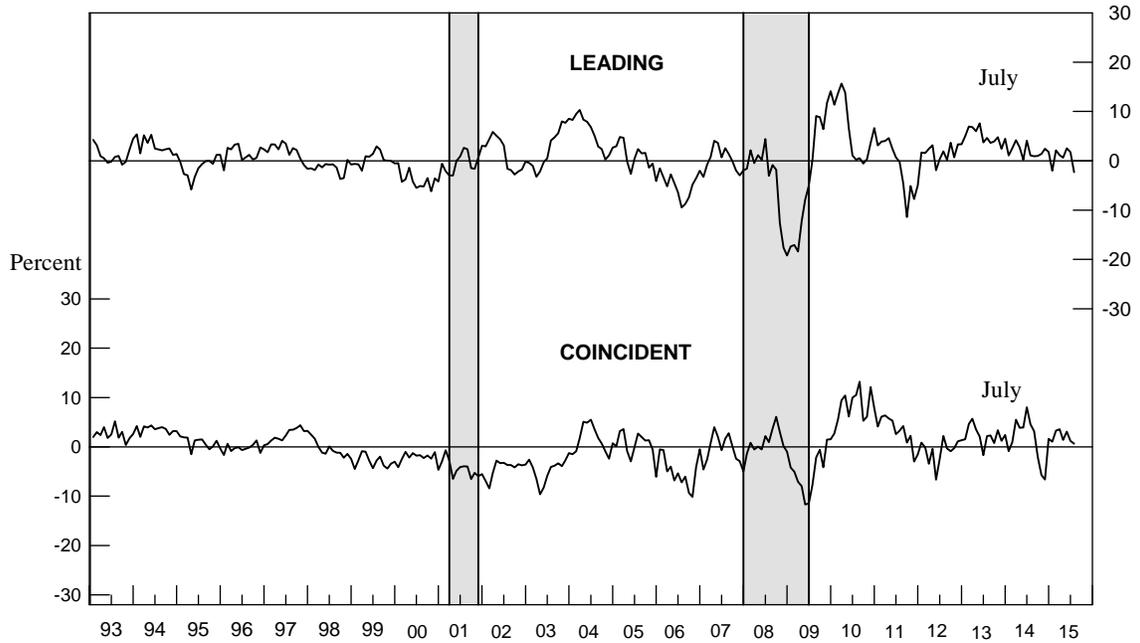
1977=100



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 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1993-2015

Percent

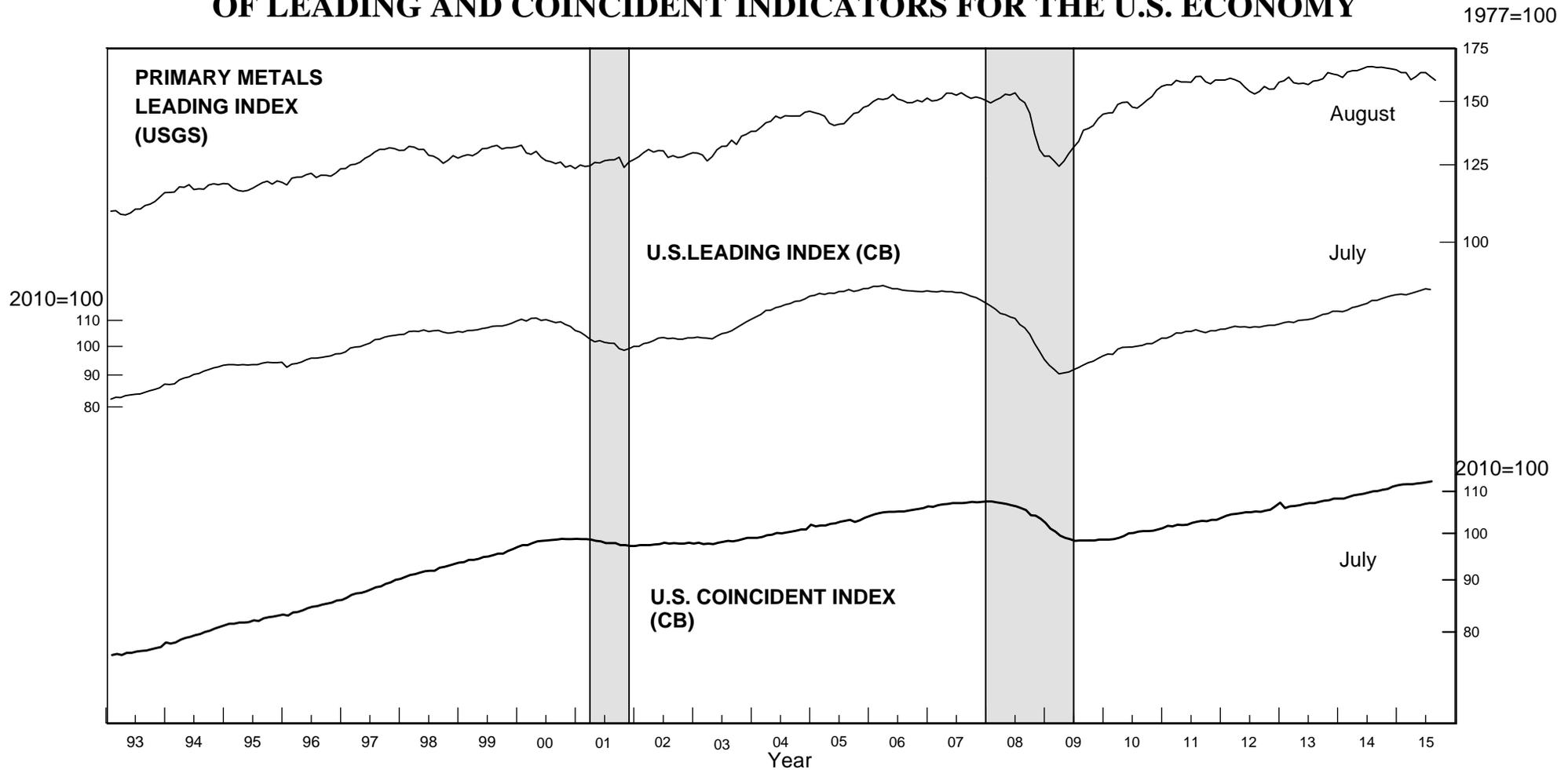


Shaded areas are business cycle recessions.

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.

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 2015