



# Metal Industry Indicators

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

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September 20, 2013

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The **primary metals leading index** increased 0.6% in August to 161.6 from a revised 160.6 in July, and its 6-month smoothed growth rate increased to 2.5% from a revised 1.7% 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. This is the second consecutive increase in the primary metals leading index, and its high growth rate indicates an end to the steep decline in primary metals industry activity. Increased manufacturing activity is raising domestic metals consumption, and at this time, residential construction is supporting metals consumption as well. Global economic growth is increasing and is boosting U.S. metal products exports.

Three of the four indicators that were available for the August index calculation increased, and one was unchanged from July. A surge in the USGS metals price index growth rate contributed 0.3 percentage point to the overall increase in the primary metals leading index. The rising stock price index combining construction and farm machinery companies and industrial machinery companies contributed 0.3 percentage point as well. The PMI continued to point to an increase in manufacturing activity. It contributed 0.1 percentage point. The average workweek in primary metals establishments remained the same in August as in July; its contribution was 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 1.5% in July, the latest month for which it is available. Six of its nine indicators posted gains, but the sharp increase in the PMI and a rebound in the inflation-adjusted M2 money supply growth rate made the largest positive contributions to the steel leading index. Slips in new orders for iron and steel products and in light truck and cars sales in July slightly offset some of those hefty gains in the other steel indicators. The positive steel leading index growth rate indicates that the decline in steel industry activity growth could slow in the near term. The copper leading index increased 2.0% in July. All six of its indicators increased in July, with most of that increase coming from a 1-hour longer average workweek in nonferrous metals (except aluminum) plants. A rebound in new orders for nonferrous metal products, a high new building permits index, and a wider yield spread between the U.S. 10-year Treasury Note and the federal funds rate also lifted the copper leading index. The high copper leading index growth rate indicates that the decline in industry activity could slow in the near term.

The **metals price leading index** edged up 0.1% to 109.7 in July, the latest month for which it is available, from a revised 109.6 in June. However, its 6-month smoothed growth rate decreased to 3.7% from a revised 4.0% in June. Three of its four indicators increased in July. Two indicators, the yield spread between the U.S. 10-year Treasury Note and the federal funds rate and the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed 0.3 percentage point each to the net increase in the leading index. The rising Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate contributed 0.1 percentage point. It indicates modest growth in many industrialized economies in the near future. In contrast, the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.3 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. Levels of these inventories continued to set new record highs. However, metal inventories elsewhere are declining, suggesting metals price growth in the near future.

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	1.1%
Steel	0.3%
Copper	3.0%

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](mailto: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 18, 2013.**

**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
<b>2012</b>						
July	105.6r	-13.6	16.3	-23.5	-13.0	-38.6
August	106.2	-9.9	15.6	-20.5	-9.5	-13.5
September	107.1	11.0	7.8	4.2	9.7	-17.9
October	106.9	-2.8	6.0	-13.7	-3.2	-34.0
November	107.1	1.8	8.2	6.1	0.0	-11.2
December	107.9	0.7	5.8	1.7	-1.9	-10.4
<b>2013</b>						
January	108.1	6.0	7.1	4.2	3.3	-6.8
February	108.0	-2.1	7.4	-4.7	-4.0	-9.4
March	107.7r	-7.7	6.3r	-9.3	-8.1	7.0
April	108.0r	-16.8	6.1r	-10.9	-17.7	-1.4
May	109.1r	-9.7	11.7r	-6.8	-11.6	-11.0
June	109.6r	-20.2	11.8r	-19.0	-21.9	-9.4
July	109.7r	-18.5	17.0	-18.2	-19.4	1.3
August	NA	-10.3	NA	-13.5	-11.5	-1.5

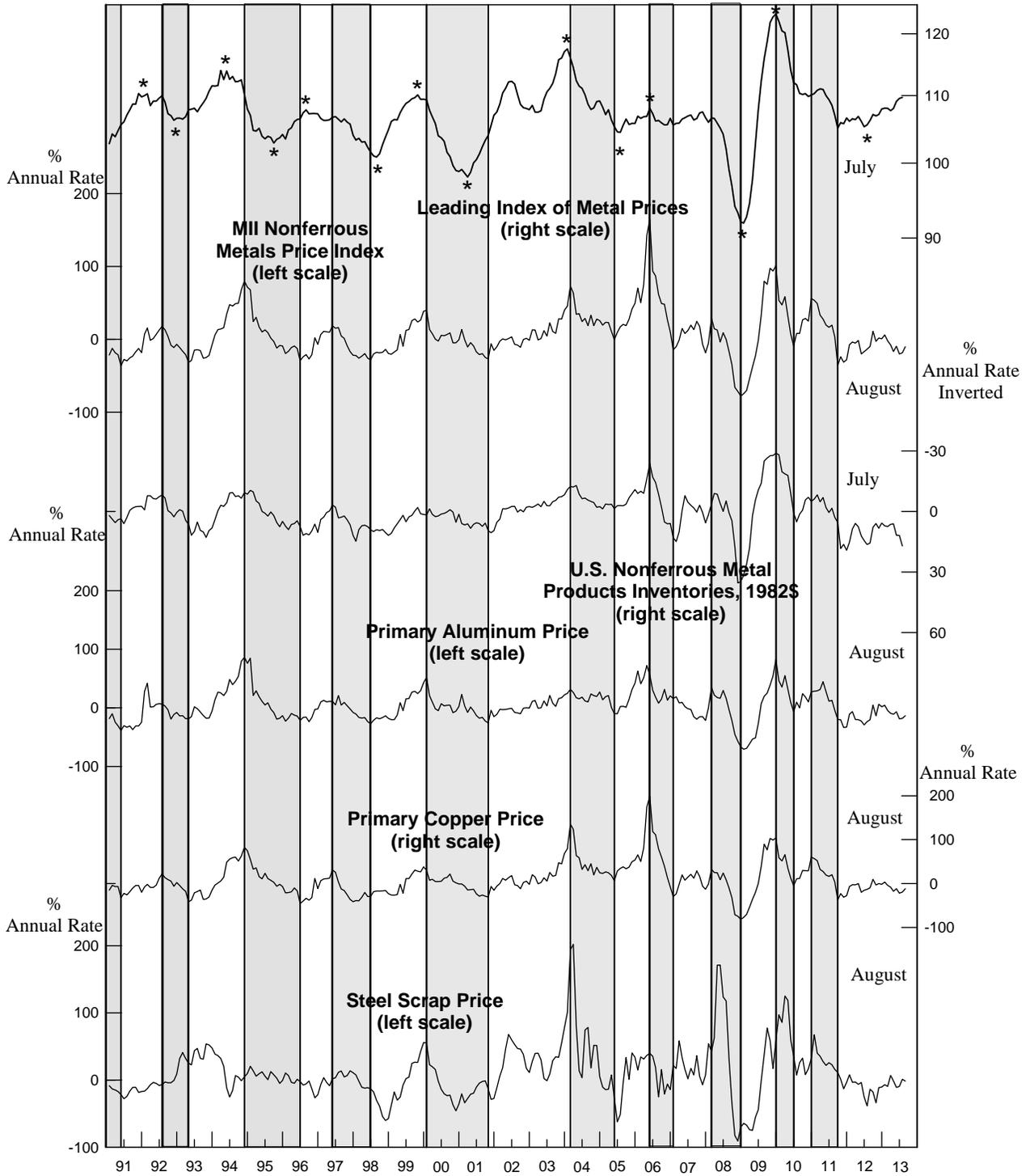
**NA:** Not available    **r:** Revised

**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
<b>2012</b>				
August	156.5	-3.6	111.3	3.4
September	158.7	-0.6	110.1	0.4
October	159.0	-0.2	110.0	-0.2
November	158.7	-0.6	110.9	0.9
December	161.0	2.4	111.2	1.1
<b>2013</b>				
January	161.4r	2.8	110.9	0.5
February	162.5	4.0	110.9	0.4r
March	158.7r	-0.4	109.9	-1.2r
April	159.5r	0.7	109.5	-1.9r
May	159.4r	0.7	110.0	-1.0r
June	157.7r	-1.4r	109.8r	-1.2r
July	160.6r	1.7r	111.0	0.9
August	161.6	2.5	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**

<b>Leading Index</b>	<b>July</b>	<b>August</b>
1. Average weekly hours, primary metals (NAICS 331)	0.3r	0.0
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	0.2r	0.3
3. Ratio of price to unit labor cost (NAICS 331)	0.0	NA
4. USGS metals price index growth rate	-0.1	0.3
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$	0.0	NA
6. Index of new private housing units authorized by permit	0.2	NA
7. Growth rate of U.S. M2 money supply, 2005\$	0.5	NA
8. PMI	0.6r	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.7r	0.7
<b>Coincident Index</b>	<b>June</b>	<b>July</b>
1. Industrial production index, primary metals (NAICS 331)	-0.4r	0.5
2. Total employee hours, primary metals (NAICS 331)	-0.3	0.2
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	0.4	0.3
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.2r	1.1

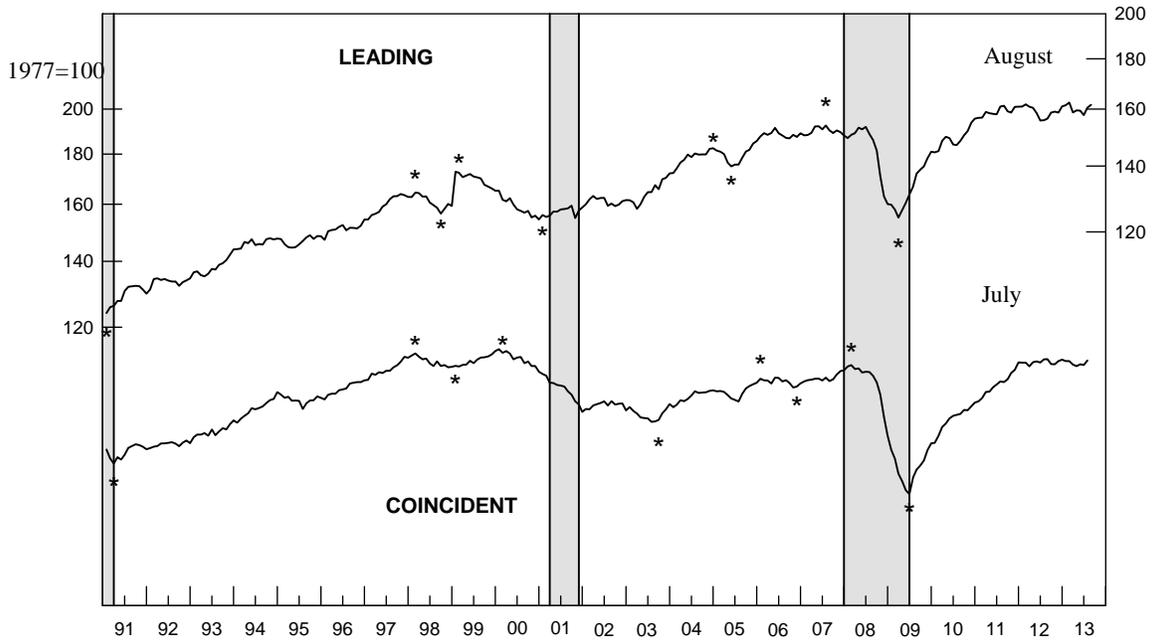
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

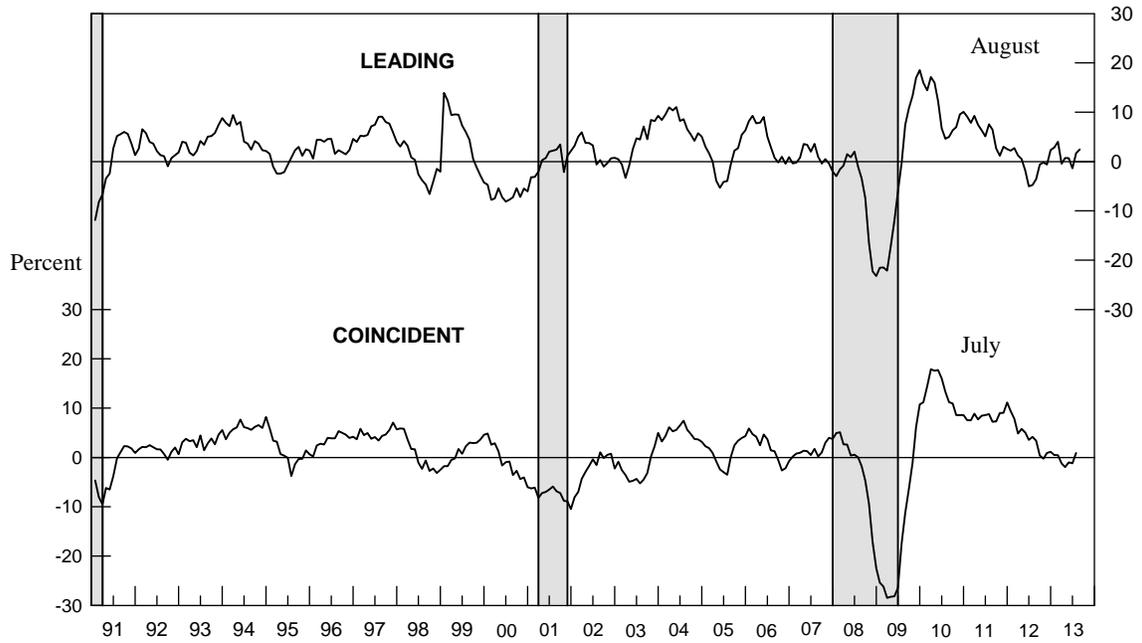
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1991-2013** 1977=100



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, 1991-2013** 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>
<b>2012</b>				
August	108.5	-4.3	116.8	2.1
September	110.6	-0.4	115.3	-0.7
October	110.5	-0.4	115.7	-0.4
November	110.0	-1.3	116.1	0.1
December	111.3	1.1	116.1	-0.1
<b>2013</b>				
January	111.8	2.2	116.4	0.4
February	112.5	3.4	116.5	0.6
March	110.9r	0.4	116.0	-0.2r
April	111.7	1.9	116.1	-0.2
May	111.2	1.1	115.5	-1.1
June	110.5r	-0.2r	116.4r	0.6r
July	112.2	2.5	116.8	1.2

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**

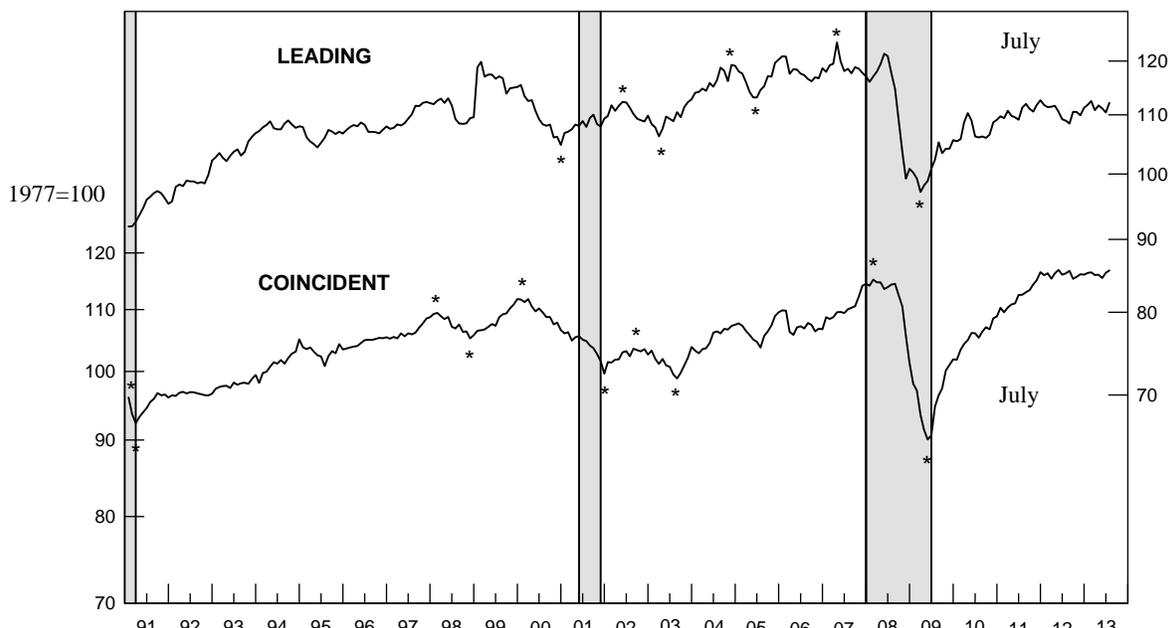
<b>Leading Index</b>	<b>June</b>	<b>July</b>
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.2	0.2
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.0	-0.1
3. Shipments of household appliances, 1982\$	-0.1r	0.2
4. S&P stock price index, steel companies	-0.2	0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	0.1	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.2	0.0
7. Index of new private housing units authorized by permit	-0.3	0.2
8. Growth rate of U.S. M2 money supply, 2005\$	-0.4	0.5
9. PMI	0.2	0.5
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.7r	1.5
<b>Coincident Index</b>		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.2r	0.4
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.9r	0.1
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.1	-0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.9	0.4

**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; 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, 1991-2013**

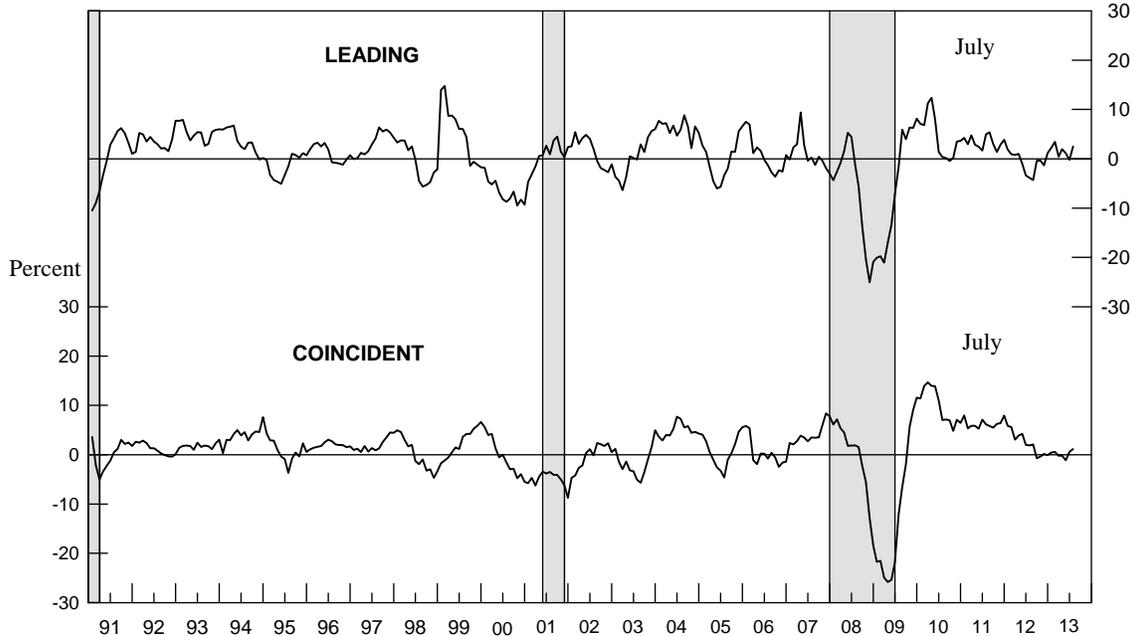
1977=100



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 5.**  
**STEEL: LEADING AND COINCIDENT GROWTH RATES, 1991-2013**

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 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>
<b>2012</b>				
August	121.6	3.4	108.4	-1.2
September	123.3	5.6	106.8	-3.6
October	122.4	2.8	107.1	-2.8
November	124.0	4.6	106.7	-3.0
December	126.1	6.8	108.1	-0.3
<b>2013</b>				
January	124.2	2.9	104.3	-6.5
February	128.6	9.3	108.2	0.8
March	127.2r	6.2r	106.0	-2.7
April	126.8	4.8	104.3	-5.5
May	129.8	8.9	106.9	-0.2
June	127.2r	3.6r	104.1r	-5.0r
July	129.7	6.7	107.2	0.8

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.

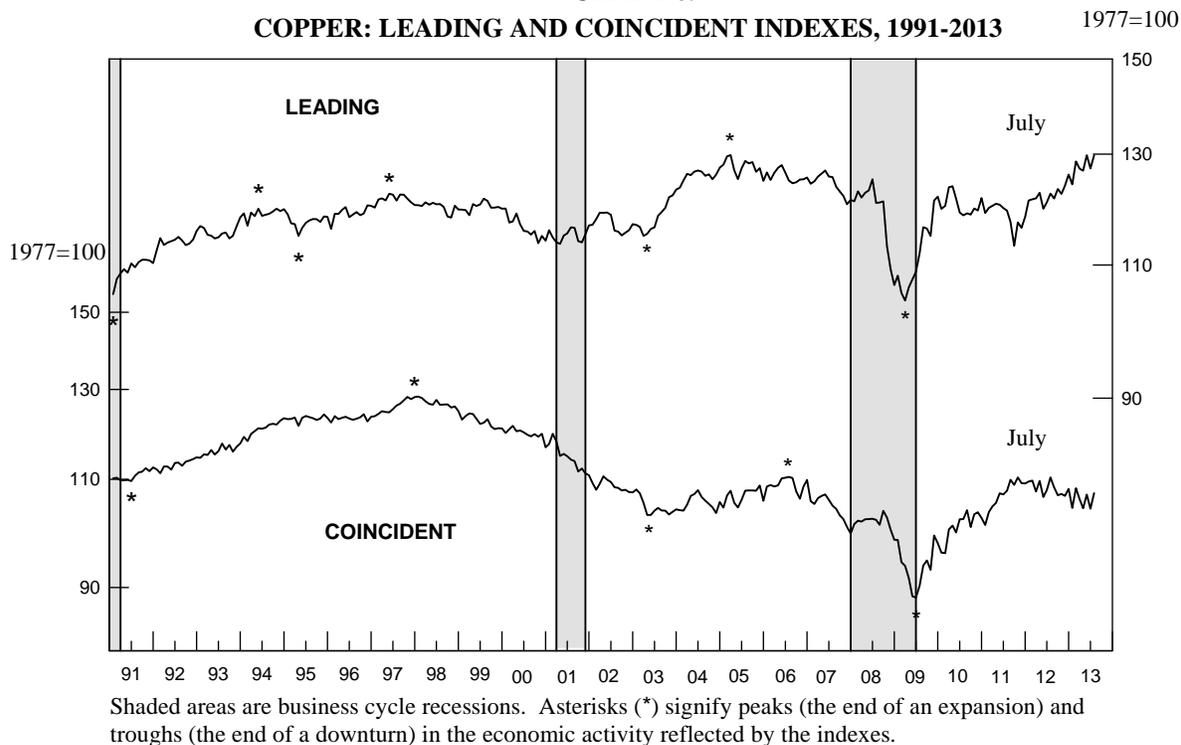
**Table 7.**  
**The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month**

<b>Leading Index</b>	<b>June</b>	<b>July</b>
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	-0.7	1.1
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	-0.2	0.3
3. S&P stock price index, building products companies	-0.5	0.1
4. LME spot price of primary copper	-0.4	0.0
5. Index of new private housing units authorized by permit	-0.4	0.2
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.3	0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-1.9	1.9
<b>Coincident Index</b>		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	-1.2r	0.2
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-1.5	2.6
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-2.6r	2.9

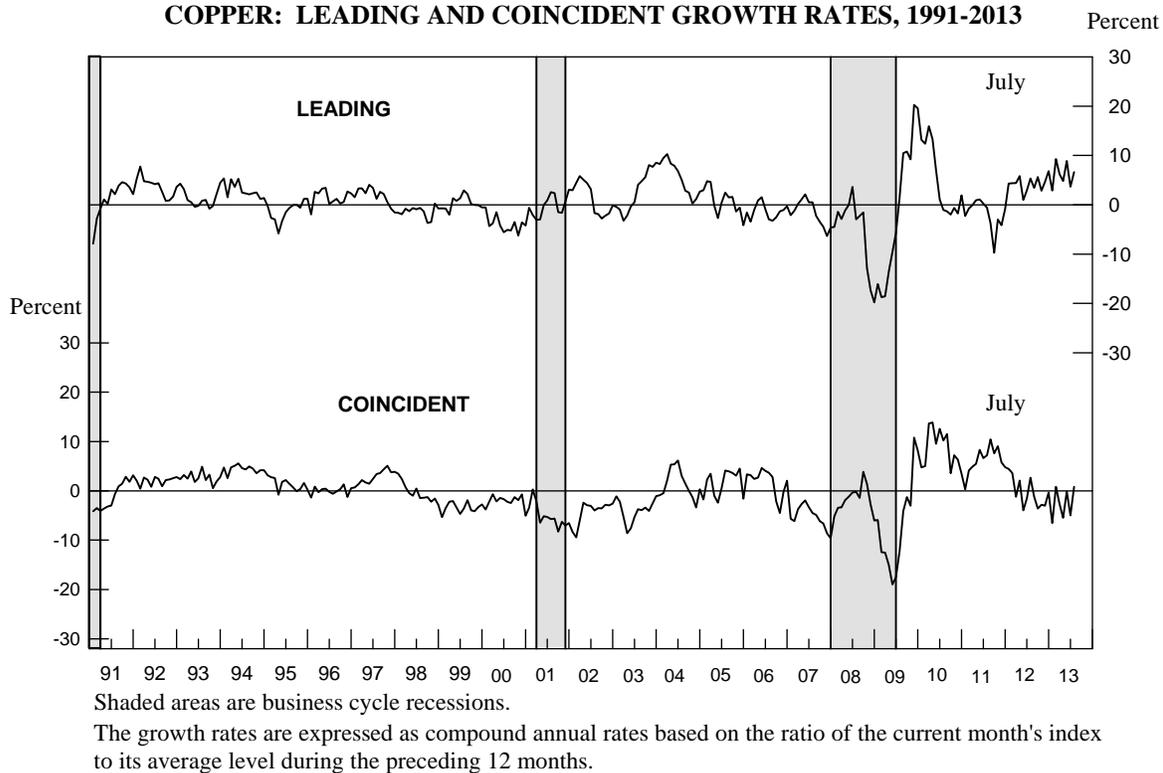
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 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, 1991-2013**

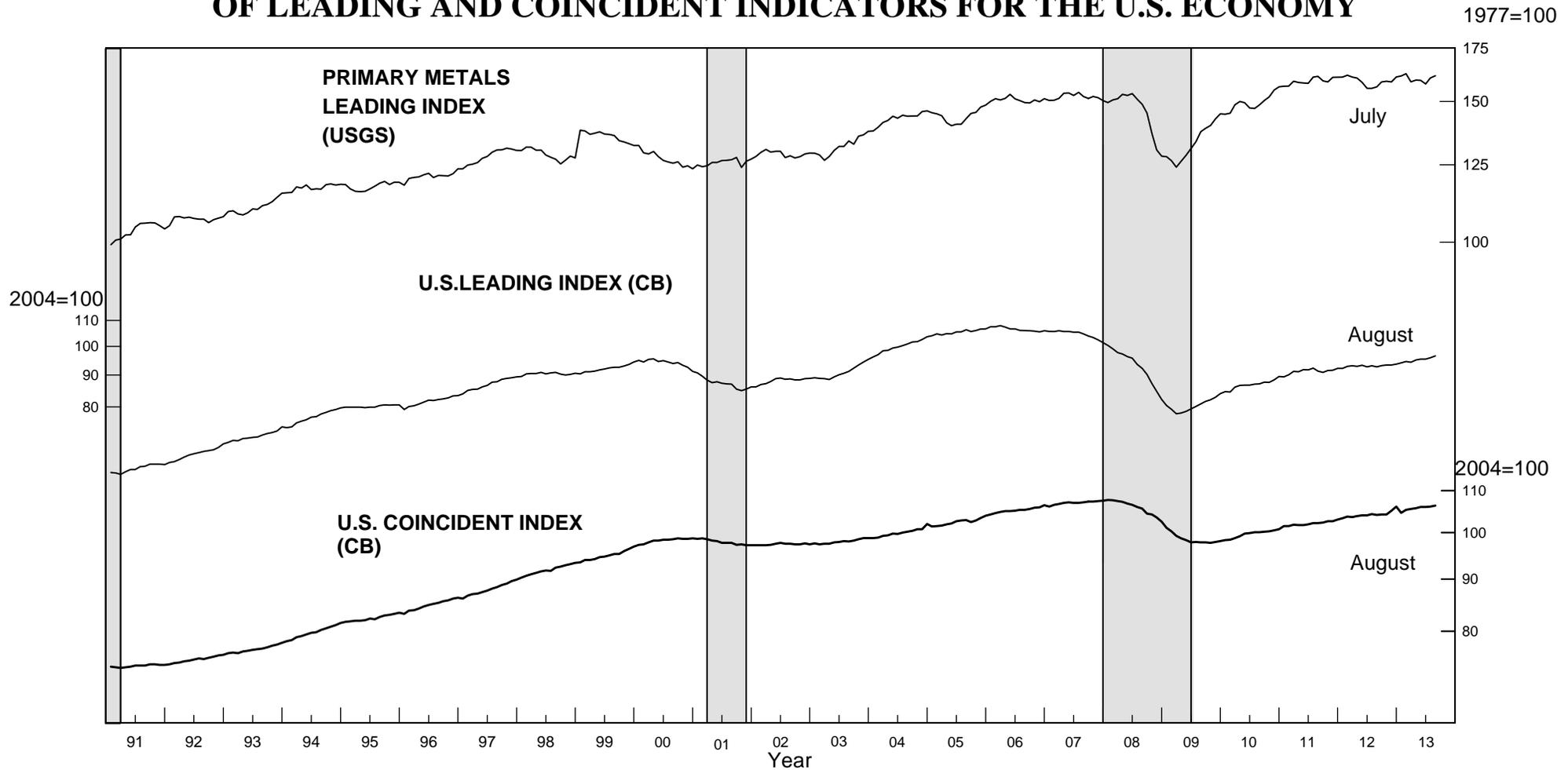


**CHART 7.**  
**COPPER: LEADING AND COINCIDENT GROWTH RATES, 1991-2013**



**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 2013