



# Metal Industry Indicators

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

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October 17, 2014

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The **primary metals leading index** decreased 0.7% in September to 167.7 from 168.9 in August, and its 6-month smoothed growth rate decreased to 2.0% from a revised 4.1% in August. 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 monthly decline in the primary metals leading index growth rate. It is pointing to slower growth in metals industry activity. Although the recovery in the metals industry could continue in the near term, the pace of the recovery most likely will be uneven. Activity in the manufacturing sector, which had underpinned the metals industry recovery, has declined recently. Durable goods orders retreated from record highs, due to decreased orders for transportation equipment. Furthermore, the metals consumption from the construction sector, which had been supported by robust multi-family apartment building and moderate nonresidential construction, also decreased. Moreover, slowing global economic growth continues to limit U.S. metal products exports.

Three of the four available indicators for the September index calculation decreased, and one increased. A sharp decrease in the PMI, the Institute for Supply Management's purchasing managers' index, contributed -0.5 percentage point to the net decline in the primary metals leading index. Nevertheless, the PMI remains above the threshold that indicates increases in U.S. manufacturing activity. The fall in the USGS metals price index growth rate contributed -0.3 percentage point. The third consecutive decline in the stock price index combining construction and farm machinery companies and industrial machinery companies contributed -0.1 percentage point to the primary metals leading index. In contrast, a slightly longer average workweek in primary metals establishments contributed 0.2 percentage point. The September 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 decreased 0.1% in August, the latest month for which it is available. Movements among its nine indicators were varied. The largest negative contributions came from declines in inflation-adjusted household appliances shipments and in the index for new building permits issued. Some of those declines were offset by a surge of new car and light truck sales in August. Growth in the steel industry will likely continue to be slow-to-modest in the near term. Although U.S. steel exports have remained relatively flat; imports have generally increased. Steel imports declined slightly in August; however, preliminary steel import permit

applications rose in September. These imports continue to undermine growth in the domestic steel industry. The copper leading index decreased 0.2% in August. A longer average workweek in nonferrous metal products, except aluminum, made the largest positive contribution to leading index. It was offset by a sharp decrease in the index for new housing permits issued, which made the largest negative contribution. The still positive copper leading index growth rate suggests that U.S. copper industry activity growth is likely to be flat to slow in the near term.

The **metals price leading index** declined for the fifth month in a row in August, the latest month for which it is available. It decreased 0.9% to 106.9 from a revised 107.9 in July, and its 6-month smoothed growth rate decreased to -3.7% from a revised -2.2% in July. All four of its indicators decreased in August. A drop in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar made the largest negative contribution, -0.5 percentage point, to the overall decline in the metals price leading index. The Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate has fallen into negative territory, which indicates further decreases in growth for most industrialized countries. It contributed -0.2 percentage point to the metals price leading index. The decrease in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed -0.1 percentage point. The contribution from a tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate also 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, decreased in August. However, high levels of metals remain in the United States. The leading index of metal prices growth rate indicates 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 if the transportation equipment industry thrives.

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

Primary Metals	0.3%
Steel	0.4%
Copper	0.0%

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 September and October is scheduled for release on the World Wide Web at 10:00 a.m. EST, Friday, November 14, 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
<b>2013</b>						
August	109.6r	-10.3	11.3	-13.5	-11.5	-1.5
September	110.0	-6.5	14.2	-10.5	-6.0	-3.1
October	110.4	-4.8	11.1	-5.5	-5.5	-2.5
November	109.7	-8.9	10.0	-15.5	-8.8	9.7
December	110.1	2.0	11.2	-8.9	1.5	19.6
<b>2014</b>						
January	109.0r	-4.9	9.3	-16.4	-5.0	29.8
February	108.6	-1.9	8.7	-7.6	-2.7	13.1
March	108.8	-11.3	7.7	-5.0	-12.7	4.9
April	108.7	-7.1	10.6r	0.3	-8.7	12.1
May	108.4r	-0.7	8.5	6.7	-1.0	4.7
June	108.2r	-0.1	8.0r	10.2	-1.5	-0.4
July	107.9r	5.7	6.3r	27.8	2.8	-1.9
August	106.9	2.2	4.9	36.0	-1.7	-2.5
September	NA	-6.1	NA	12.2	-8.1	-2.0

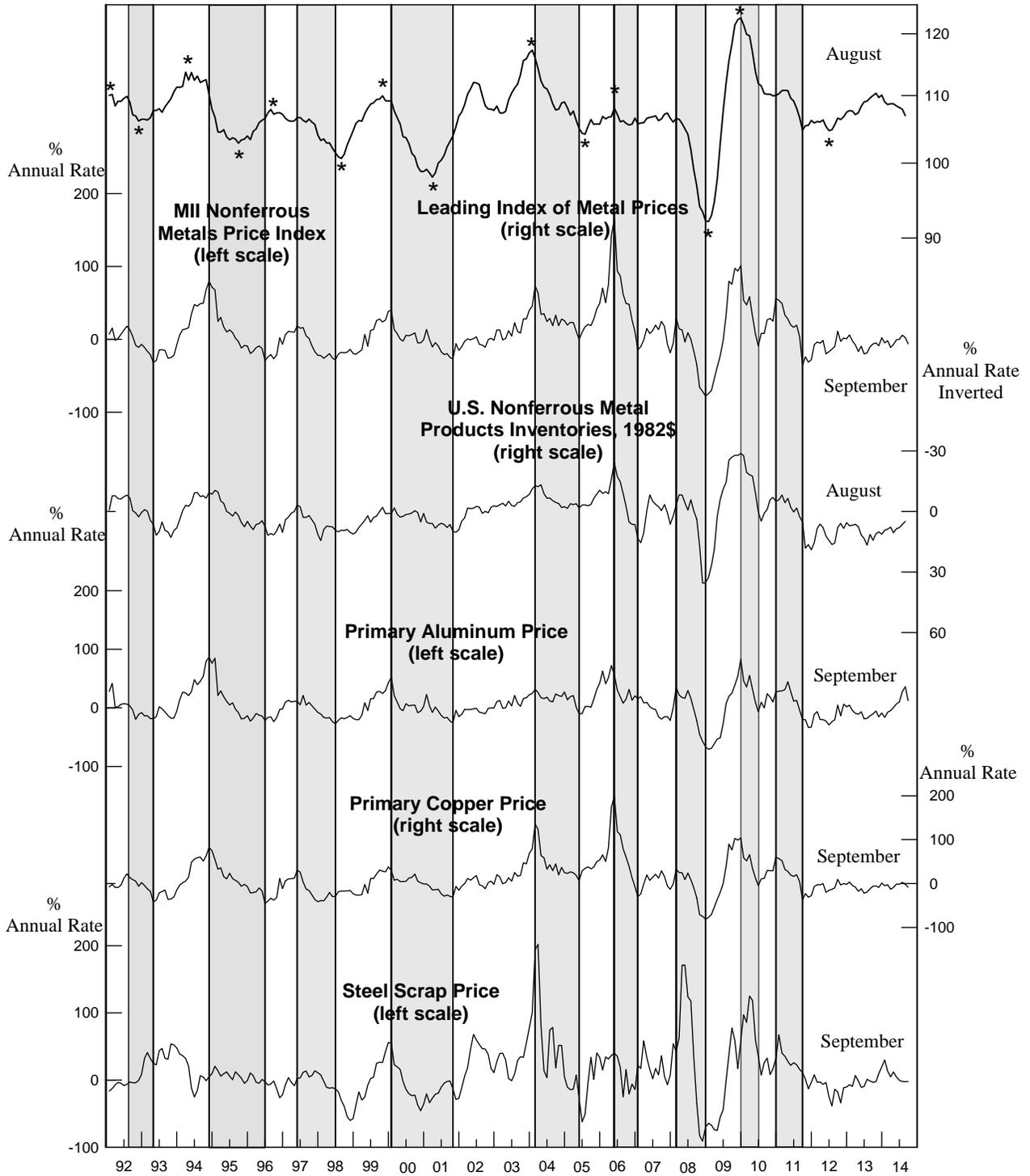
NA: Not available    r: Revised

**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>2013</b>				
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
<b>2014</b>				
January	162.3	0.2	113.3	2.4
February	165.6	3.9	114.4	3.9
March	165.3	3.4	114.4	3.4
April	166.9	4.7	115.5r	4.6r
May	167.8r	5.0r	116.2r	5.2r
June	167.8r	4.4r	117.0r	5.8r
July	169.1r	5.1r	117.8r	6.1r
August	168.9	4.0r	118.1	5.6
September	167.7	2.0	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>August</b>	<b>September</b>
1. Average weekly hours, primary metals (NAICS 331)	0.0r	0.2
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	-0.2r	-0.1
3. Ratio of price to unit labor cost (NAICS 331)	0.1	NA
4. USGS metals price index growth rate	0.0	-0.3
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$	-0.1	NA
6. Index of new private housing units authorized by permit	-0.3	NA
7. Growth rate of U.S. M2 money supply, 2005\$	0.0	NA
8. PMI	0.2r	-0.5
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.3r	-0.7
<b>Coincident Index</b>	<b>July</b>	<b>August</b>
1. Industrial production index, primary metals (NAICS 331)	0.2	0.1
2. Total employee hours, primary metals (NAICS 331)	0.1r	0.1
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	0.2r	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.6	0.3

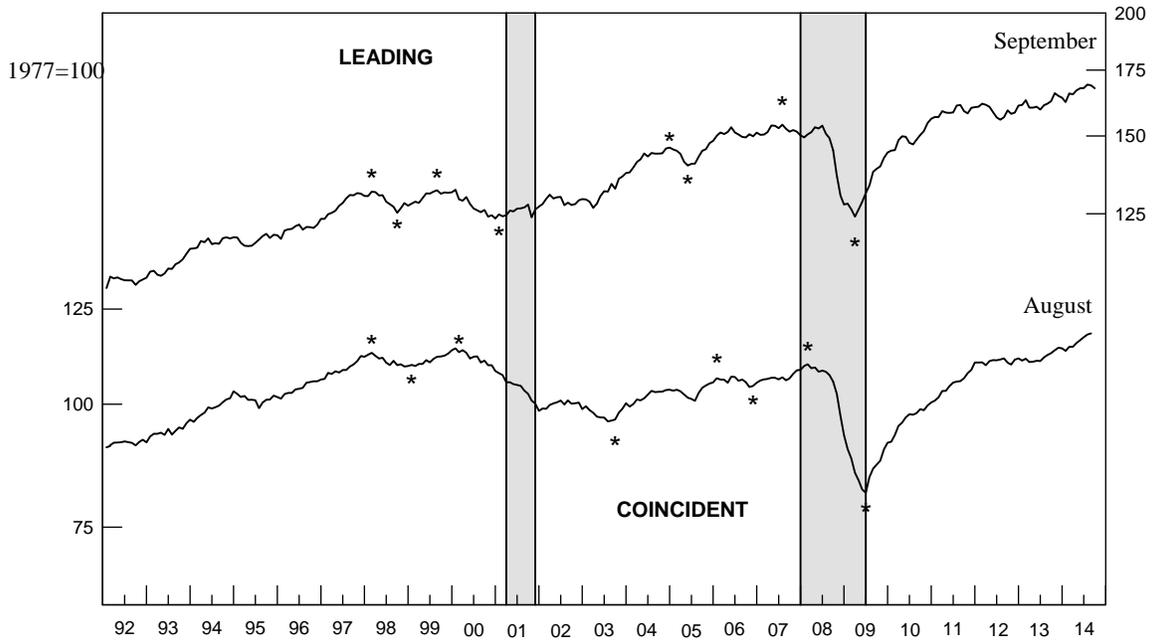
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

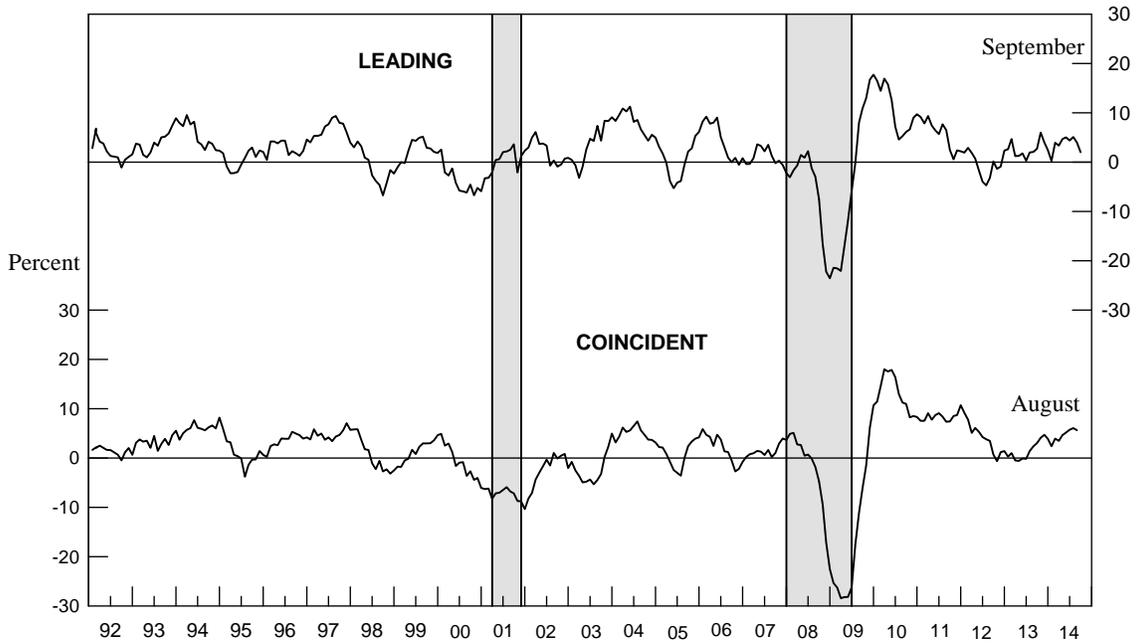
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1992-2014** 1977=100



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>
<b>2013</b>				
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
<b>2014</b>				
January	112.3	-0.4	115.6	-1.0
February	113.8	1.9	116.9	1.1
March	114.3	2.6	117.3r	1.5r
April	114.5	2.6	117.3	1.2
May	114.9	2.8	117.6	1.4
June	114.6	1.9	118.3	2.1r
July	115.8r	3.3r	119.2	3.2r
August	115.7	2.7	119.7	3.5

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**

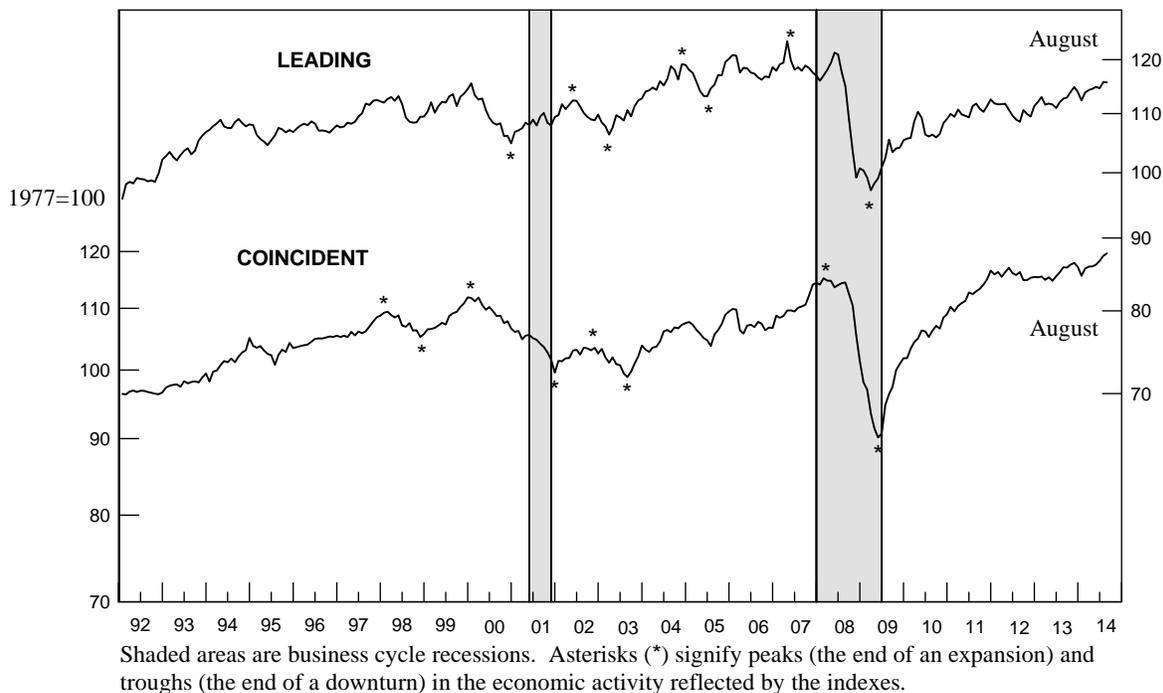
<b>Leading Index</b>	<b>July</b>	<b>August</b>
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.1r	0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.1	-0.2
3. Shipments of household appliances, 1982\$	0.4r	-0.4
4. S&P stock price index, steel companies	0.1	0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.1	0.3
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.1	0.0
7. Index of new private housing units authorized by permit	0.4	-0.3
8. Growth rate of U.S. M2 money supply, 2005\$	0.1	0.0
9. PMI	0.2	0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.0r	-0.2
<b>Coincident Index</b>		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.3r	0.1
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.3r	-0.2
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.1r	0.3
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.8r	0.3

**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

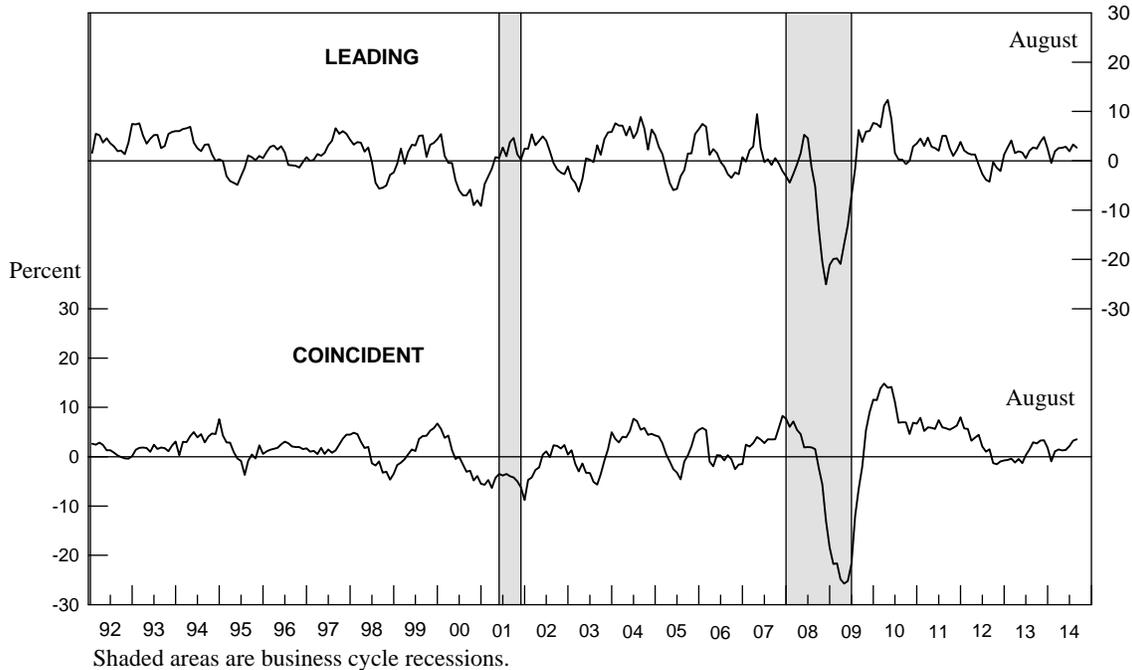
**CHART 4.**  
**STEEL: LEADING AND COINCIDENT INDEXES, 1992-2014**

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
<b>2013</b>				
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
<b>2014</b>				
January	128.1	0.3	106.0	-3.4
February	129.5	2.1	107.2	-1.2
March	130.6	3.2	109.2	2.4
April	130.4r	2.5	108.5	1.4
May	129.0	0.1	108.6r	1.6r
June	131.2	3.3	110.7r	5.3r
July	130.2	1.2r	110.1r	3.6r
August	129.9	0.6	110.1	3.2

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.

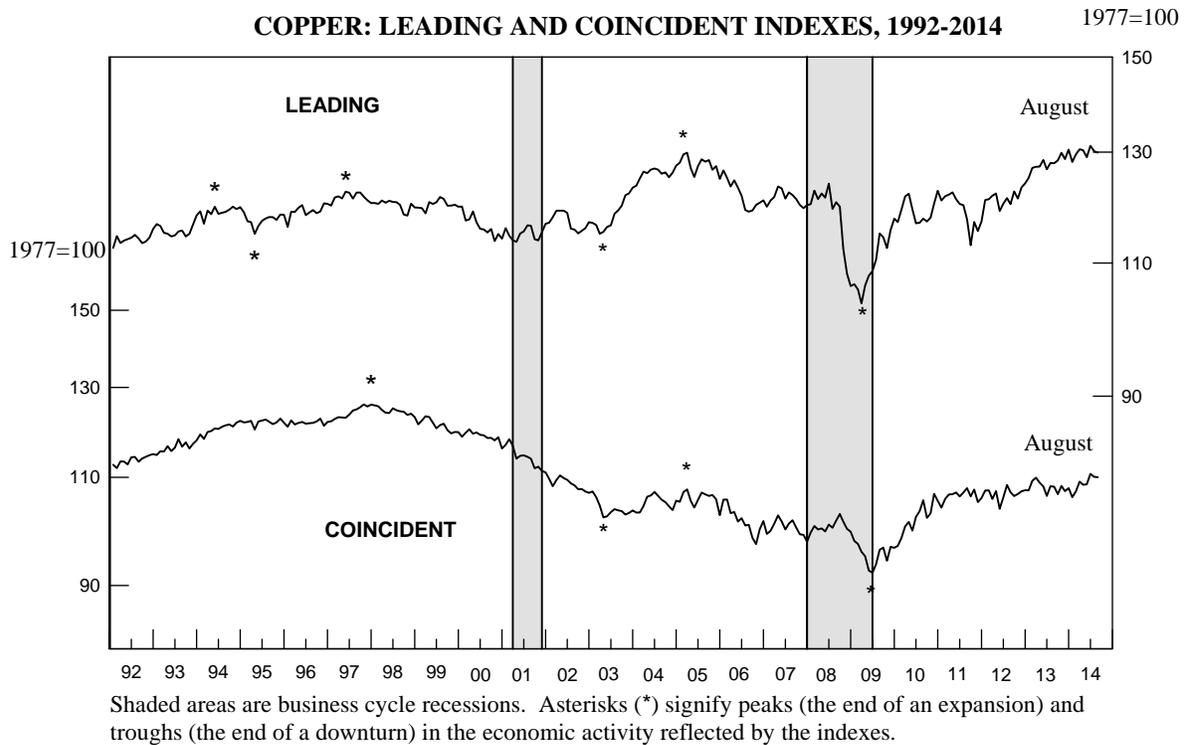
**Table 7.**  
**The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month**

Leading Index	July	August
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	-1.3r	0.4
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.0r	0.0
3. S&P stock price index, building products companies	-0.2	0.0
4. LME spot price of primary copper	0.1	-0.1
5. Index of new private housing units authorized by permit	0.5	-0.3
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.0	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.9	-0.1
<b>Coincident Index</b>		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	-0.1r	0.1
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-0.5r	-0.3
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	-0.1

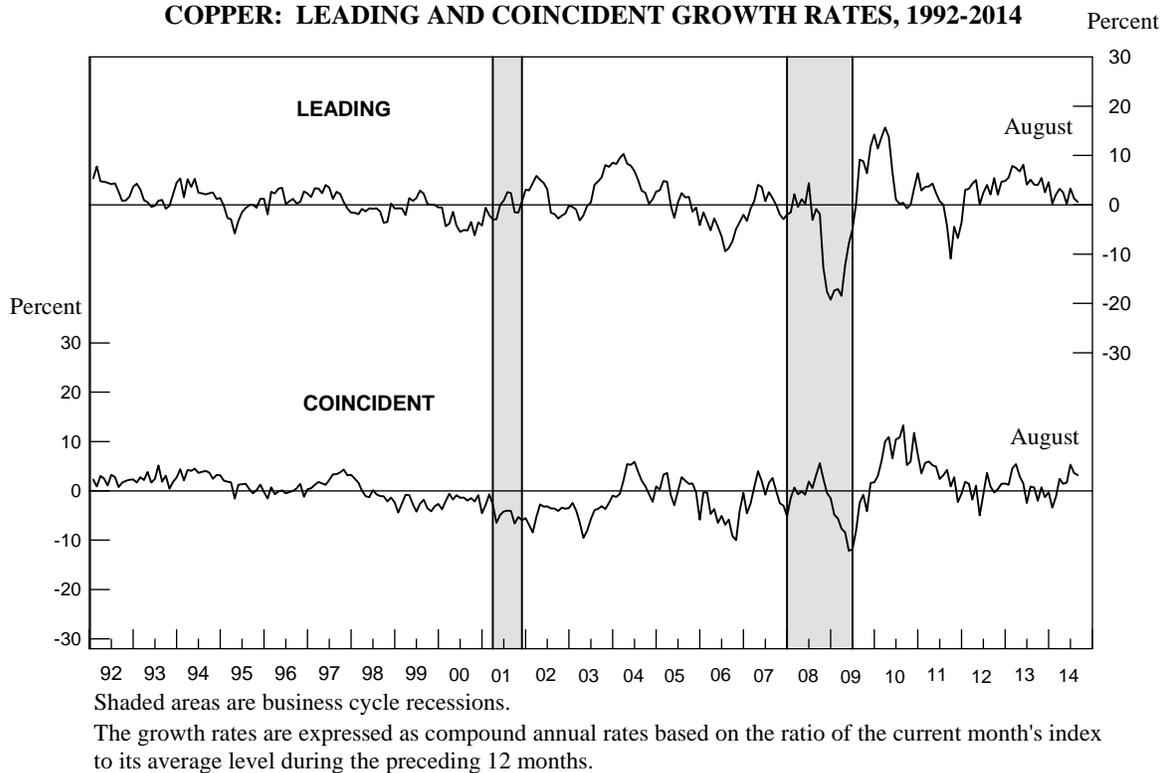
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; and 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau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

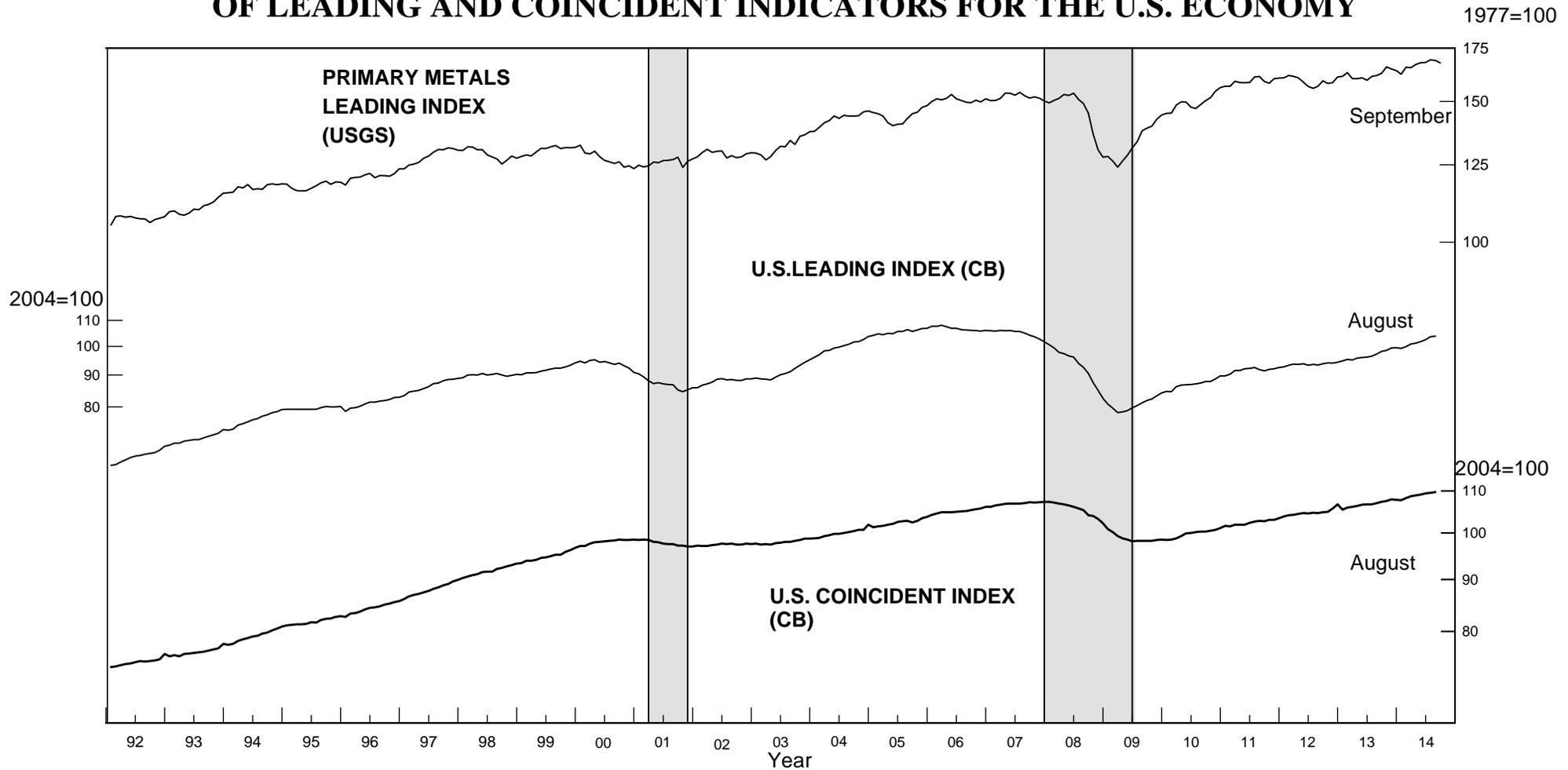


**CHART 7.**  
**COPPER: LEADING AND COINCIDENT GROWTH RATES, 1992-2014**



**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).

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