



# Metal Industry Indicators

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

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November 22, 2013

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The **primary metals leading index** increased 1.4% in October to 164.6 from a revised 162.3 in September, and its 6-month smoothed growth rate increased to 5.0% from a revised 2.6% in September. 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 fourth consecutive increase in the primary metals leading index, and its currently high growth rates suggest an increase in primary metals industry activity in the near term. The U.S. manufacturing sector has been gaining strength recently and is raising its metals consumption. Low interest rates and increased employment continue to boost residential construction. Moreover, global economic growth appears to be rising, which bodes well for U.S. metal products exports.

All four of the indicators that were available for the October index calculation increased. A one-half-hour-longer average workweek in primary metals establishments contributed 1.1 percentage points 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 0.1 percentage point in October. A rise in the USGS metals price index growth rate added another 0.1 percentage point. The PMI, the Institute for Supply Management's purchasing managers' index, inched higher and pointed to further increases in manufacturing activity. However, its contribution rounded to zero. The October 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 remained at its revised August level in September, the latest month for which it is available. Movement among its nine indicators was mixed, but the rising S&P stock price index for steel companies and higher orders for iron and steel mill products made the largest positive contributions to the leading index. A drop in car and light truck sales offset much of those gains in September. The positive steel leading index growth rate indicates an increase in steel industry activity in the near term. The copper leading index increased 0.8% in September. Most of its indicators increased, but the rebound in the S&P stock price index for building products companies and a surge in the copper price accounted for nearly all of the gain in the copper leading index. The high copper leading index growth rate suggests that activity in the U.S. copper industry could pick up in the near term.

The **metals price leading index** increased 0.3% to 110.0 from an upwardly revised 109.7 in September, the latest month for which it is available. However, its 6-month smoothed growth rate remained at the revised August rate of 3.3% in September. Two of its four indicators increased in September. A sharply accelerating growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar made the largest positive contribution, 0.2 percentage point, to the leading index. A wider yield spread between the U.S. 10-year Treasury Note and the federal funds rate contributed 0.1 percentage point. In contrast, declines in the other indicators were so small that their contributions to the metals price leading index rounded to zero. The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products barely decreased in September. The revised Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate, which has been generally rising over the last 2 years, slipped in September. The OECD leading index is pointing to modest growth in many industrialized economies in the near future. 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, was unchanged in September from its August rate. However, U.S. inventory levels increased to near record highs. Nevertheless, low global metal inventories and the positive growth rate of the leading index of metal prices suggest increases for some metals in the near future.

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

|                |       |
|----------------|-------|
| Primary Metals | 0.3%  |
| Steel          | 0.1%  |
| Copper         | -1.4% |

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 October and November is scheduled for release on the World Wide Web at 10:00 a.m. EST, Friday, December 20, 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<br>of Metal Prices<br>(1967=100) | MII Nonferrous<br>Metals Price Index | U.S. Nonferrous Metal<br>Products Inventories<br>(1982\$) | Primary<br>Aluminum | Primary<br>Copper | Steel<br>Scrap |
| <b>2012</b> |                                                |                                      |                                                           |                     |                   |                |
| September   | 107.1                                          | 11.0                                 | 7.8                                                       | 4.2                 | 9.7               | -17.9          |
| October     | 106.8r                                         | -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     | 108.0                                          | 6.0                                  | 7.1                                                       | 4.2                 | 3.3               | -6.8           |
| February    | 107.7r                                         | -2.1                                 | 7.4                                                       | -4.7                | -4.0              | -9.4           |
| March       | 107.4                                          | -7.7                                 | 6.3                                                       | -9.3                | -8.1              | 7.0            |
| April       | 107.8r                                         | -16.8                                | 7.5                                                       | -10.9               | -17.7             | -1.4           |
| May         | 108.7r                                         | -9.7                                 | 11.6                                                      | -6.8                | -11.6             | -11.0          |
| June        | 109.3                                          | -20.2                                | 11.7                                                      | -19.0               | -21.9             | -9.4           |
| July        | 109.4r                                         | -18.5                                | 16.8r                                                     | -18.2               | -19.4             | 1.3            |
| August      | 109.7r                                         | -10.3                                | 11.8r                                                     | -13.5               | -11.5             | -1.5           |
| September   | 110.0                                          | -6.5                                 | 11.8                                                      | -10.5               | -6.0              | -3.1           |
| October     | NA                                             | -4.8                                 | NA                                                        | -5.5                | -5.5              | -2.5           |

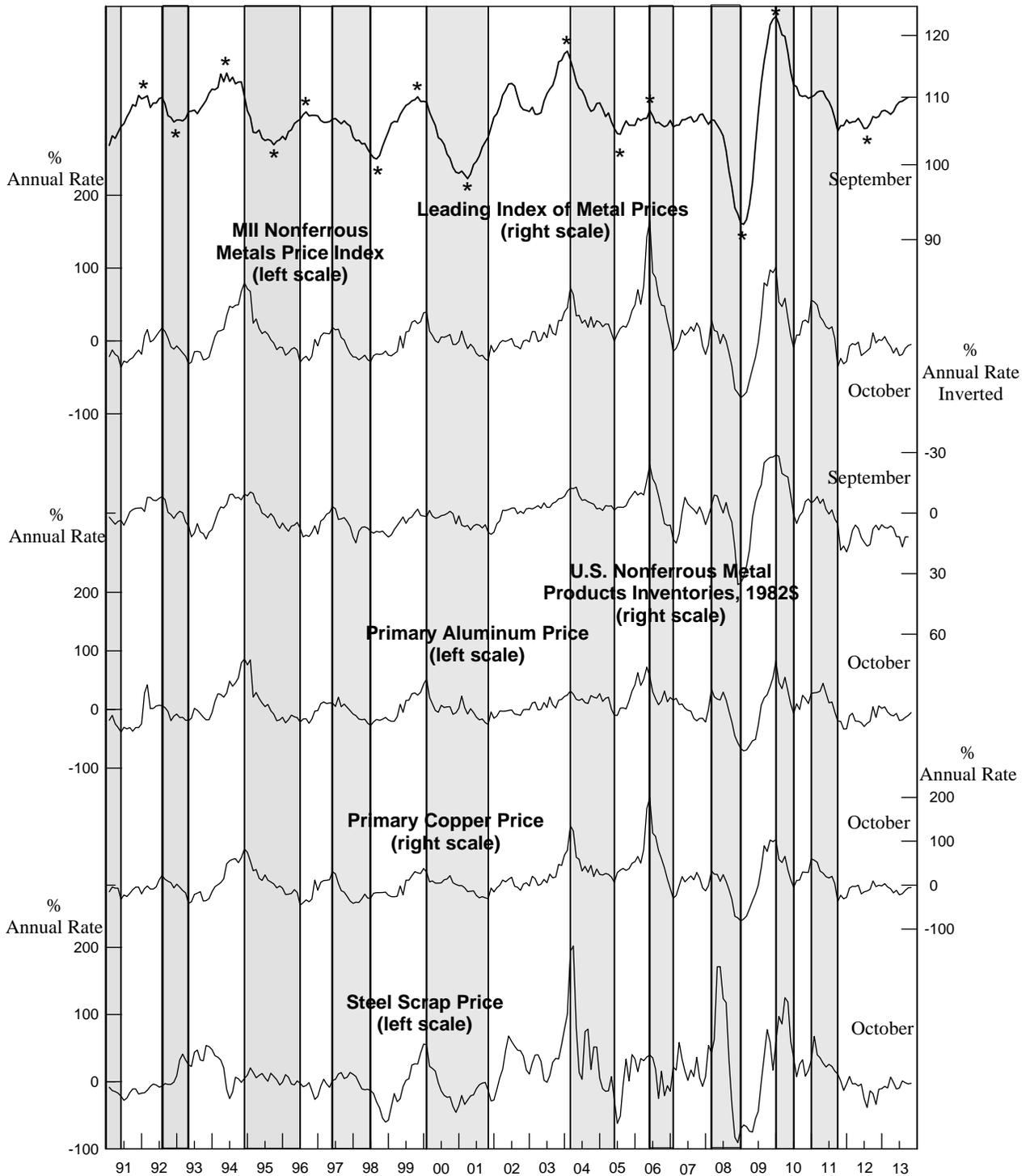
NA: Not available    r: Revised

**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 |
| <b>2012</b> |               |             |                  |             |
| October     | 159.1         | -0.1        | 110.0            | -0.2        |
| November    | 158.7         | -0.6        | 110.9            | 0.9         |
| December    | 161.1         | 2.4         | 111.2            | 1.1         |
| <b>2013</b> |               |             |                  |             |
| January     | 161.5         | 2.9         | 110.9            | 0.5         |
| February    | 162.6         | 4.1         | 110.9            | 0.4         |
| March       | 159.0         | -0.2        | 109.9            | -1.2        |
| April       | 159.8r        | 0.9r        | 109.7r           | -1.6r       |
| May         | 159.6r        | 0.7r        | 110.2r           | -0.7r       |
| June        | 157.8         | -1.5r       | 109.9            | -1.2r       |
| July        | 161.0         | 2.1         | 111.4            | 1.5r        |
| August      | 161.5r        | 2.2r        | 111.8            | 2.2         |
| September   | 162.3r        | 2.6r        | 112.1            | 2.6         |
| October     | 164.6         | 5.0         | 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>September</b> | <b>October</b>   |
| 1. Average weekly hours, primary metals (NAICS 331)                                                        | 0.1r             | 1.1              |
| 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)                                                           | 0.0              | NA               |
| 4. USGS metals price index growth rate                                                                     | -0.1r            | 0.1              |
| 5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$                                         | 0.2              | NA               |
| 6. Index of new private housing units authorized by permit                                                 | 0.0              | NA               |
| 7. Growth rate of U.S. M2 money supply, 2005\$                                                             | -0.1             | NA               |
| 8. PMI                                                                                                     | 0.1              | 0.0              |
| Trend adjustment                                                                                           | 0.0              | 0.0              |
| Percent change (except for rounding differences)                                                           | 0.4r             | 1.3              |
| <b>Coincident Index</b>                                                                                    | <b>August</b>    | <b>September</b> |
| 1. Industrial production index, primary metals (NAICS 331)                                                 | -0.1r            | 0.0              |
| 2. Total employee hours, primary metals (NAICS 331)                                                        | 0.3r             | 0.0              |
| 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)                                                           | 0.3r             | 0.2              |

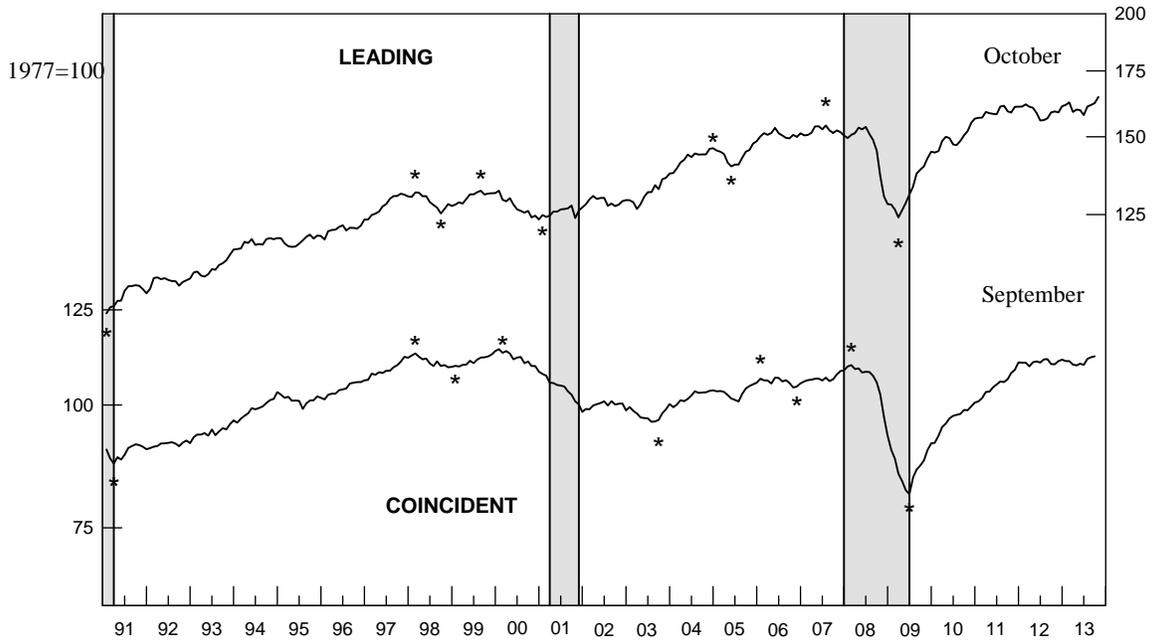
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

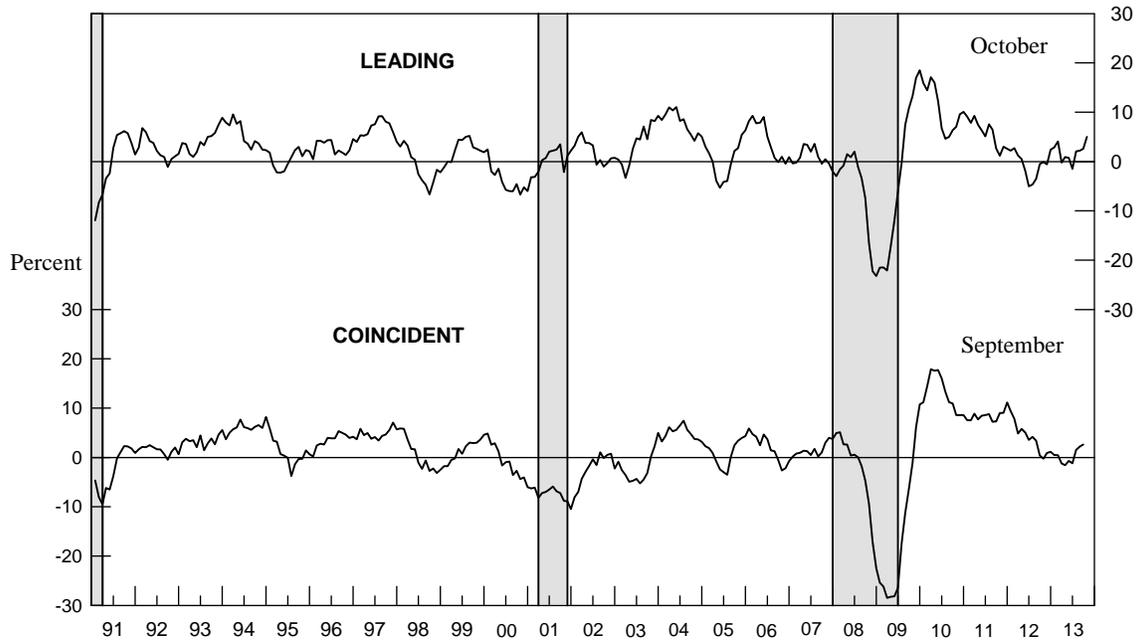
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1991-2013** 1977=100



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> |                      |                    |                         |                    |
| October     | 110.6                | -0.3               | 115.7                   | -0.4               |
| November    | 110.0                | -1.3               | 116.1                   | 0.1                |
| December    | 111.3                | 1.2                | 116.1                   | -0.1               |
| <b>2013</b> |                      |                    |                         |                    |
| January     | 111.9                | 2.3                | 116.4                   | 0.4                |
| February    | 112.6                | 3.5                | 116.5                   | 0.6                |
| March       | 111.0                | 0.6                | 116.0                   | -0.2               |
| April       | 111.8                | 2.0                | 116.1                   | -0.1               |
| May         | 111.2                | 1.1r               | 115.5                   | -1.1               |
| June        | 110.4                | -0.3               | 116.4                   | 0.6                |
| July        | 112.1                | 2.3                | 117.5r                  | 2.2r               |
| August      | 112.8r               | 3.0r               | 118.1r                  | 3.1r               |
| September   | 112.8                | 2.4                | 118.2                   | 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**

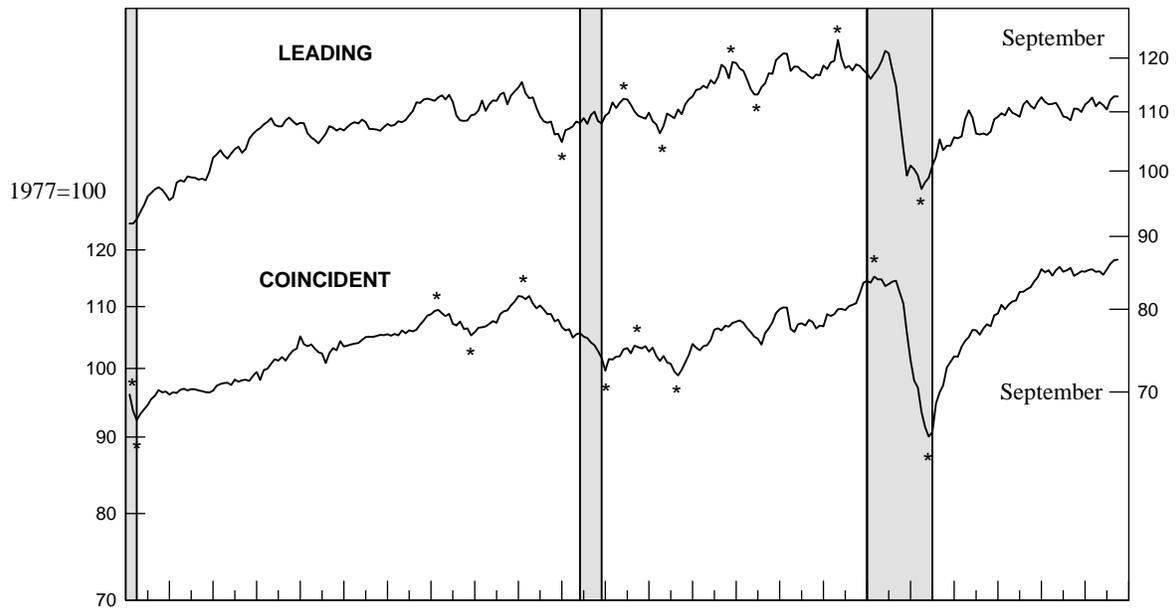
| <b>Leading Index</b>                                                        | <b>August</b> | <b>September</b> |
|-----------------------------------------------------------------------------|---------------|------------------|
| 1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)           | 0.2           | -0.1             |
| 2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$             | 0.0           | 0.2              |
| 3. Shipments of household appliances, 1982\$                                | 0.0           | -0.1             |
| 4. S&P stock price index, steel companies                                   | 0.2           | 0.2              |
| 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           | 0.1              |
| 7. Index of new private housing units authorized by permit                  | -0.1          | 0.0              |
| 8. Growth rate of U.S. M2 money supply, 2005\$                              | 0.0           | -0.1             |
| 9. PMI                                                                      | 0.0           | 0.1              |
| Trend adjustment                                                            | 0.0           | 0.0              |
| Percent change (except for rounding differences)                            | 0.5           | 0.0              |
| <b>Coincident Index</b>                                                     |               |                  |
| 1. Industrial production index, iron and steel products (NAICS 3311 & 3312) | -0.4r         | 0.1              |
| 2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$     | 0.1r          | 0.1              |
| 3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)           | 0.8r          | -0.2             |
| Trend adjustment                                                            | 0.1           | 0.1              |
| Percent change (except for rounding differences)                            | 0.6r          | 0.1              |

**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**

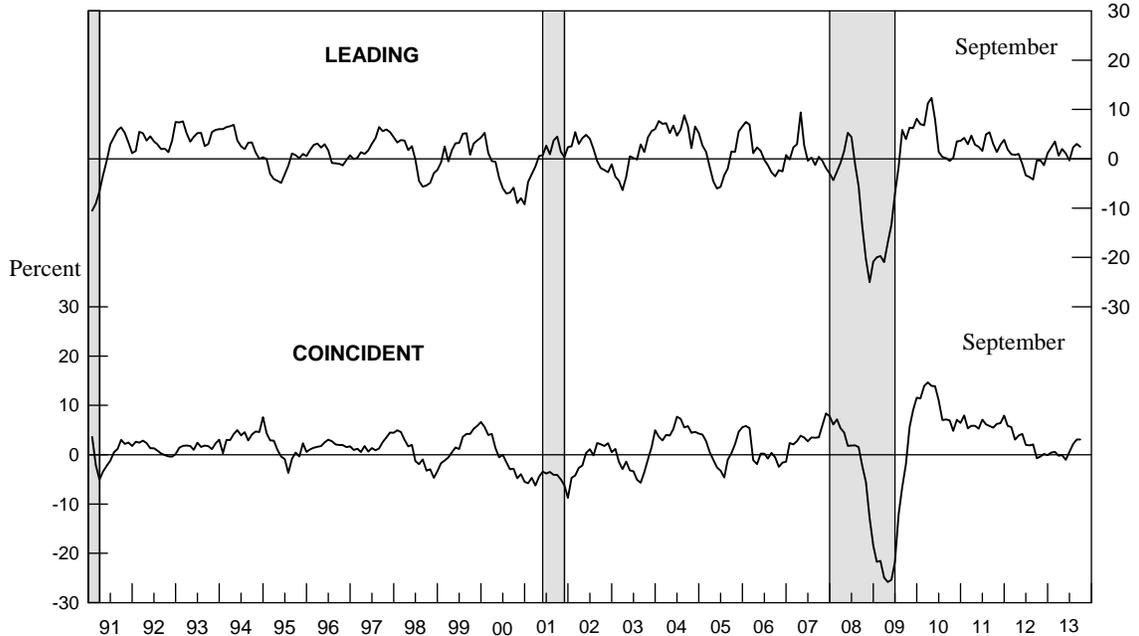
1977=100



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> |                      |                    |                         |                    |
| 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       | 127.2                | 6.2                | 106.0                   | -2.7               |
| April       | 126.8                | 4.9                | 105.1r                  | -4.0r              |
| May         | 129.8                | 8.9                | 107.2r                  | 0.2r               |
| June        | 127.2                | 3.6                | 104.1r                  | -5.2r              |
| July        | 129.7                | 6.6                | 107.8r                  | 1.5r               |
| August      | 129.6r               | 5.5r               | 108.3r                  | 3.0r               |
| September   | 130.6                | 5.9                | 106.8                   | 0.3                |

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.

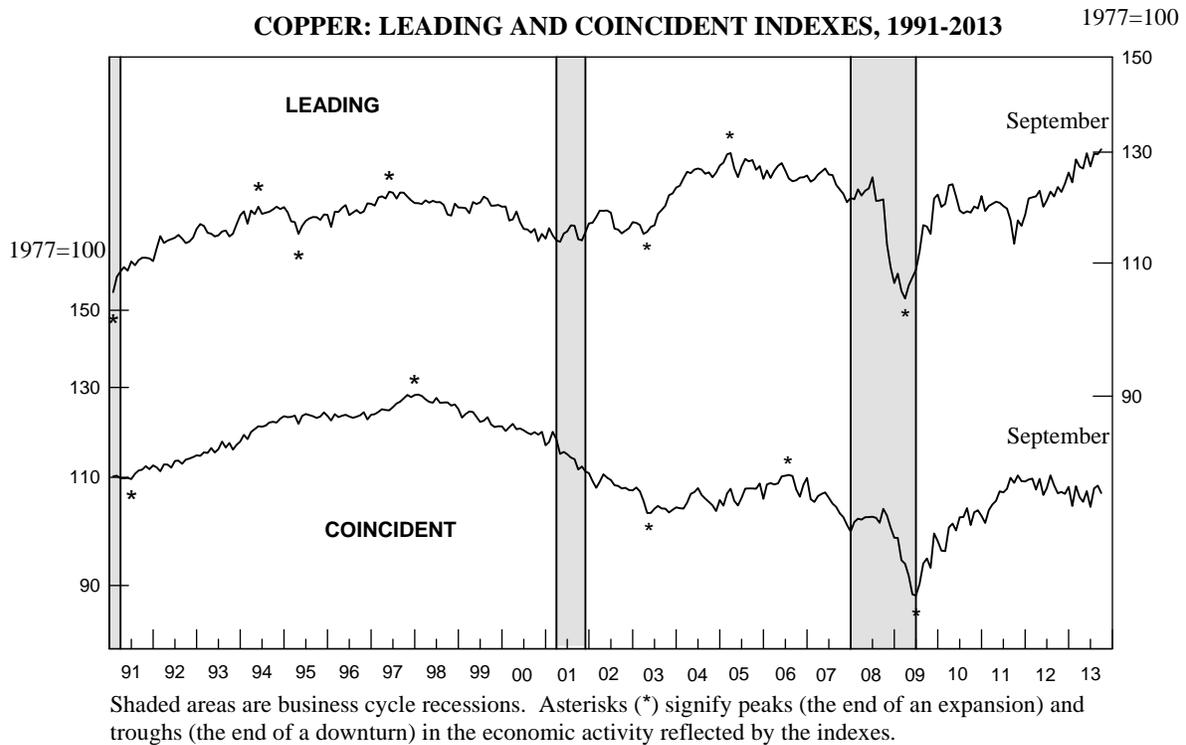
**Table 7.**  
**The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month**

|                                                                                        | <b>August</b> | <b>September</b> |
|----------------------------------------------------------------------------------------|---------------|------------------|
| <b>Leading Index</b>                                                                   |               |                  |
| 1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)              | 0.1r          | 0.0              |
| 2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$          | -0.1          | 0.1              |
| 3. S&P stock price index, building products companies                                  | -0.2          | 0.5              |
| 4. LME spot price of primary copper                                                    | 0.2           | 0.1              |
| 5. Index of new private housing units authorized by permit                             | -0.2          | 0.0              |
| 6. Spread between the U.S. 10-year Treasury Note and the federal funds rate            | 0.1           | 0.1              |
| Trend adjustment                                                                       | 0.0           | 0.0              |
| Percent change (except for rounding differences)                                       | <u>-0.1r</u>  | <u>0.8</u>       |
| <b>Coincident Index</b>                                                                |               |                  |
| 1. Industrial production index, primary smelting and refining of copper (NAICS 331411) | 0.5r          | 0.1              |
| 2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)              | 0.0r          | -1.6             |
| 3. Copper refiners' shipments (short tons)                                             | NA            | NA               |
| Trend adjustment                                                                       | 0.1           | 0.1              |
| Percent change (except for rounding differences)                                       | <u>0.6r</u>   | <u>-1.4</u>      |

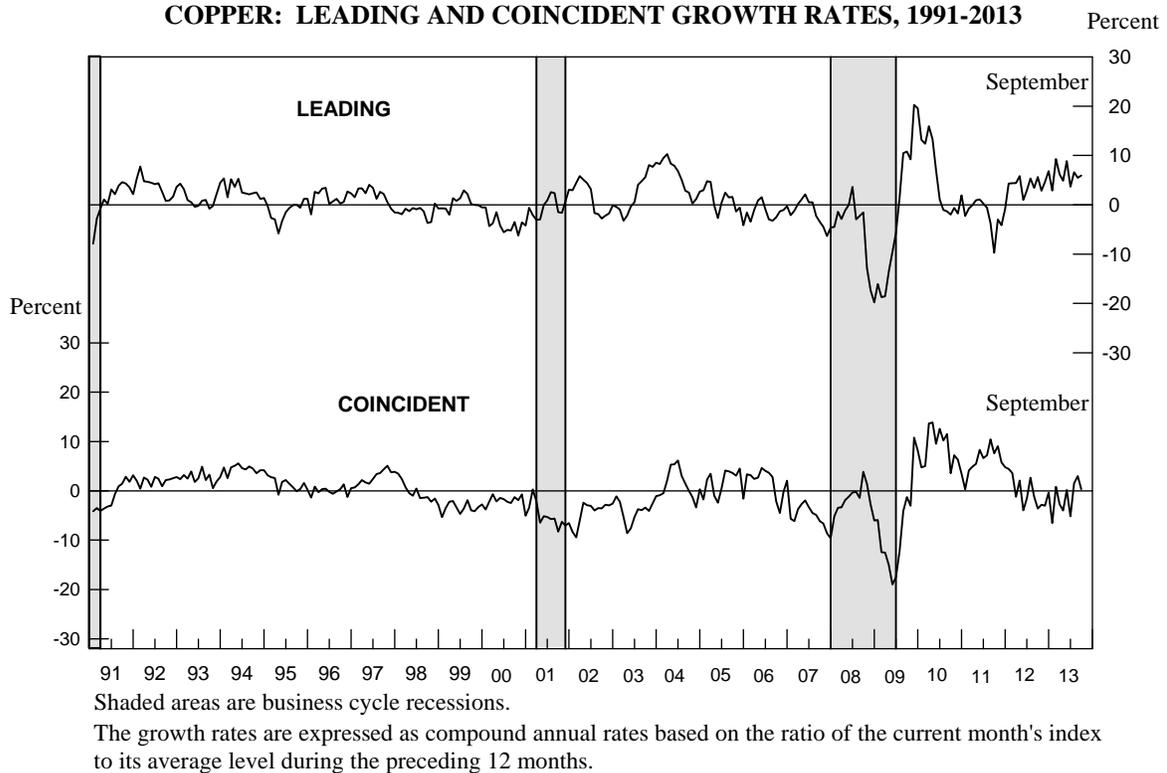
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau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

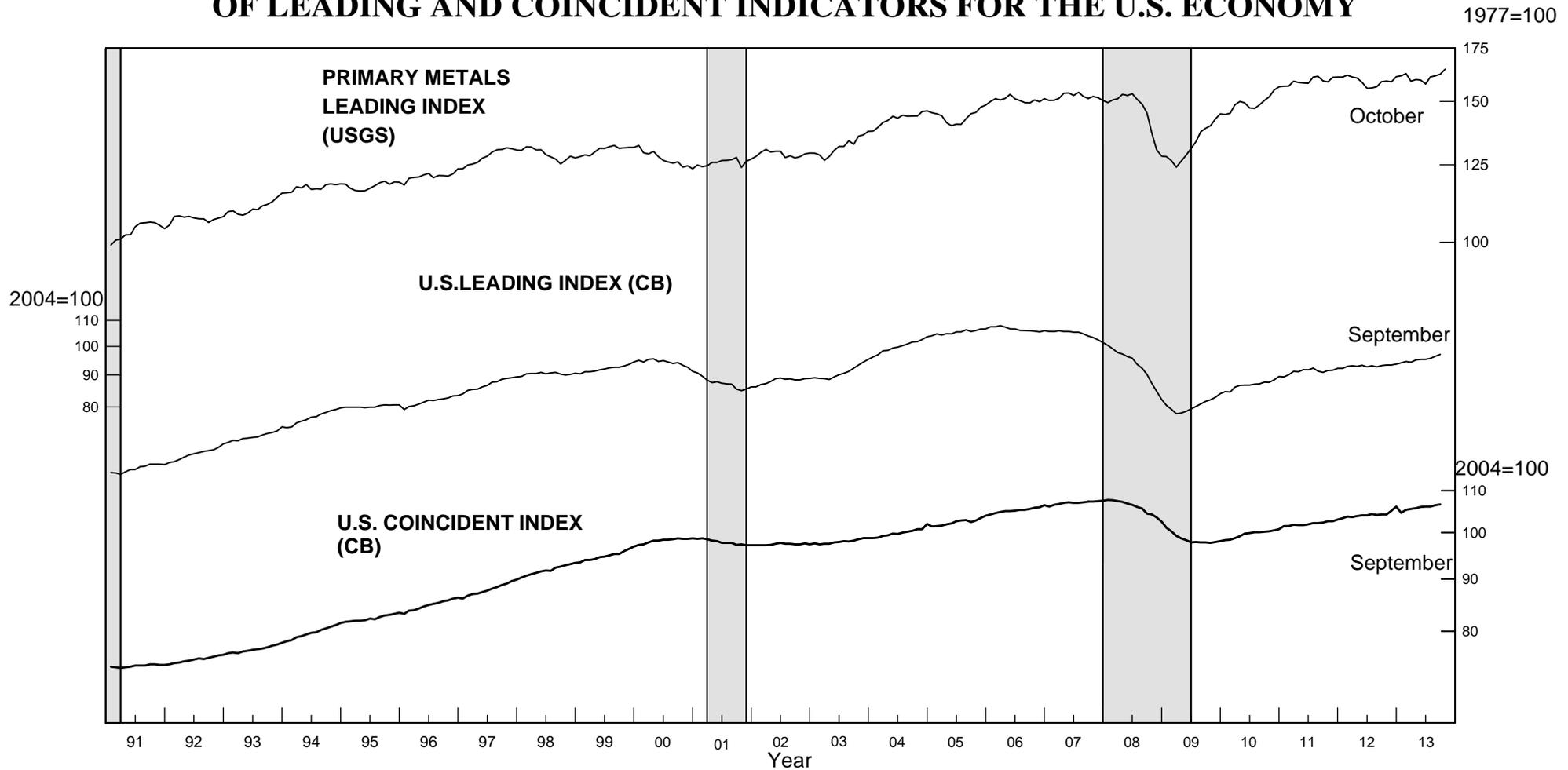


**CHART 7.**  
**COPPER: LEADING AND COINCIDENT GROWTH RATES, 1991-2013**



**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).

November 2013