



# Metal Industry Indicators

## Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for November and December—Summary Report

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January 24, 2014

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The **primary metals leading index** increased 1.1% in December to 166.6 from a revised 164.8 in November, and its 6-month smoothed growth rate increased to 6.0% from a revised 4.5% in November. 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 fifth increase in the last 6 months in the primary metals leading index growth rate, and it is pointing to an increase in primary metals industry activity in 2014. The U.S. manufacturing sector is underpinning the primary metals industry with increasing metals consumption. Automotive production, which grew more than 10% in 2013, was a particularly heavy metals consumer. Private construction activity, which is the bulk of construction spending, also boosted its metals consumption last year. However, the housing industry could be showing early signs of a slowdown with recent declines in new housing permits. Global economic growth was slow in 2013, and the outlook for 2014 is still somewhat weak, which could further dampen U.S. metal products exports.

Three of the four indicators that were available for the December index calculation increased, and one declined. The stock price index combining construction and farm machinery companies and industrial machinery companies reached a record high in December. It made the largest positive contribution, 0.5 percentage point, to the net increase in the primary metals leading index. A longer average workweek in primary metals establishments in December contributed 0.4 percentage point. The USGS metals price index growth rate rose sharply and contributed 0.2 percentage point. The PMI, the Institute for Supply Management's purchasing managers' index, decreased slightly and held the leading index back 0.1 percentage point. Nevertheless, it still pointed to further increases in U.S. manufacturing activity. The December 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 0.5% in November, the latest month for which it is available. Most of its nine indicators posted gains, but it was the rise in the S&P stock price index for steel companies that was the major contributor to the increase in the steel leading index. A jump in car and light truck sales also boosted the leading index. In contrast, a retreat in the inflation-adjusted M2 money supply growth rate offset much of the gains in other indicators. The steel leading index growth rate indicates that the steel industry activity could increase in the near term. The copper leading index decreased 0.8% in November. Four of its indicators

decreased, but it was a pullback in the length of the average workweek in nonferrous, except aluminum, plants that accounted for most of the decline in the copper leading index. On the other hand, the S&P stock price index for building products companies moved to its second highest level in 6 years. The copper leading index growth rate still suggests that activity in the U.S. copper industry could increase in the near term.

The **metals price leading index** decreased 0.5% to 110.2 in November, the latest month for which it is available, from an upwardly revised 110.7 in October. Its 6-month smoothed growth rate decreased to 2.9% from a revised 4.2% in October. Two of its four indicators declined in November. A sharp decline in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.3 percentage point to the metals price leading index. A drop in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products also contributed -0.3 percentage point. In contrast, a wider yield spread between the U.S. 10-year Treasury Note and the federal funds rate contributed 0.1 percentage point. The rise in the Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate contributed 0.1 percentage point as well. The OECD leading index is indicating modest growth in most 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, decreased for the second consecutive month in November. The level of U.S. metals inventories is still near a record high. However, low global metal inventories and the positive leading index of metal prices growth rate indicate further increases for some metals in the near future.

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

Primary Metals	0.4%
Steel	0.2%
Copper	-2.0%

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 December and January is scheduled for release on the World Wide Web at 10:00 a.m. EST, Friday, February 21, 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>2012</b>						
November	106.8r	1.8	8.2	6.1	0.0	-11.2
December	107.7r	0.7	5.8	1.7	-1.9	-10.4
<b>2013</b>						
January	107.8r	6.0	7.1	4.2	3.3	-6.8
February	107.7r	-2.1	7.4	-4.7	-4.0	-9.4
March	107.2r	-7.7	6.3	-9.3	-8.1	7.0
April	107.6r	-16.8	7.5	-10.9	-17.7	-1.4
May	108.6r	-9.7	11.6	-6.8	-11.6	-11.0
June	109.1r	-20.2	13.1	-19.0	-21.9	-9.4
July	109.4	-18.5	16.4r	-18.2	-19.4	1.3
August	109.8	-10.3	11.7r	-13.5	-11.5	-1.5
September	110.4r	-6.5	13.7	-10.5	-6.0	-3.1
October	110.7r	-4.8	10.8r	-5.5	-5.5	-2.5
November	110.2	-8.9	9.5	-15.5	-8.8	9.7
December	NA	2.0	NA	-8.9	1.5	19.6

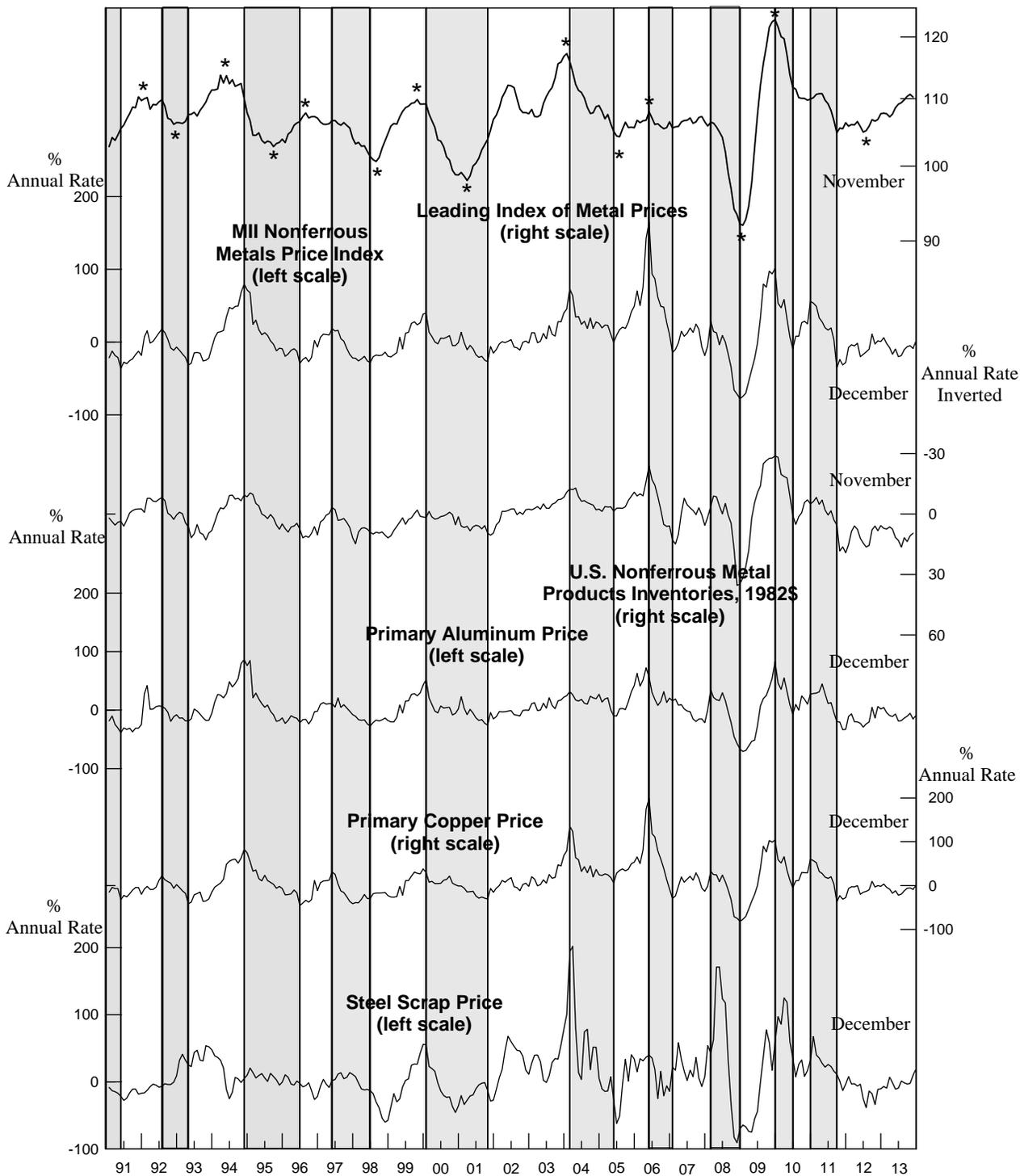
NA: Not available    r: Revised

**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>				
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	159.8	0.9	109.7	-1.6
May	159.6	0.7	110.2	-0.7
June	157.8	-1.5	109.9	-1.2
July	160.9	2.0	111.3	1.3r
August	161.5	2.1r	111.8	2.1r
September	162.4r	2.7r	112.1	2.7r
October	166.1r	6.7r	113.4r	4.5r
November	164.8r	4.5r	113.9	4.8
December	166.6	6.0	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>November</b>	<b>December</b>
1. Average weekly hours, primary metals (NAICS 331)	0.0	0.4
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	0.1r	0.5
3. Ratio of price to unit labor cost (NAICS 331)	-0.3	NA
4. USGS metals price index growth rate	0.0	0.2
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$	0.0	NA
6. Index of new private housing units authorized by permit	-0.1	NA
7. Growth rate of U.S. M2 money supply, 2005\$	-0.7	NA
8. PMI	0.1r	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.9r	1.0
<b>Coincident Index</b>	<b>October</b>	<b>November</b>
1. Industrial production index, primary metals (NAICS 331)	0.5r	0.0
2. Total employee hours, primary metals (NAICS 331)	0.2	0.2
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	0.2	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.0r	0.4

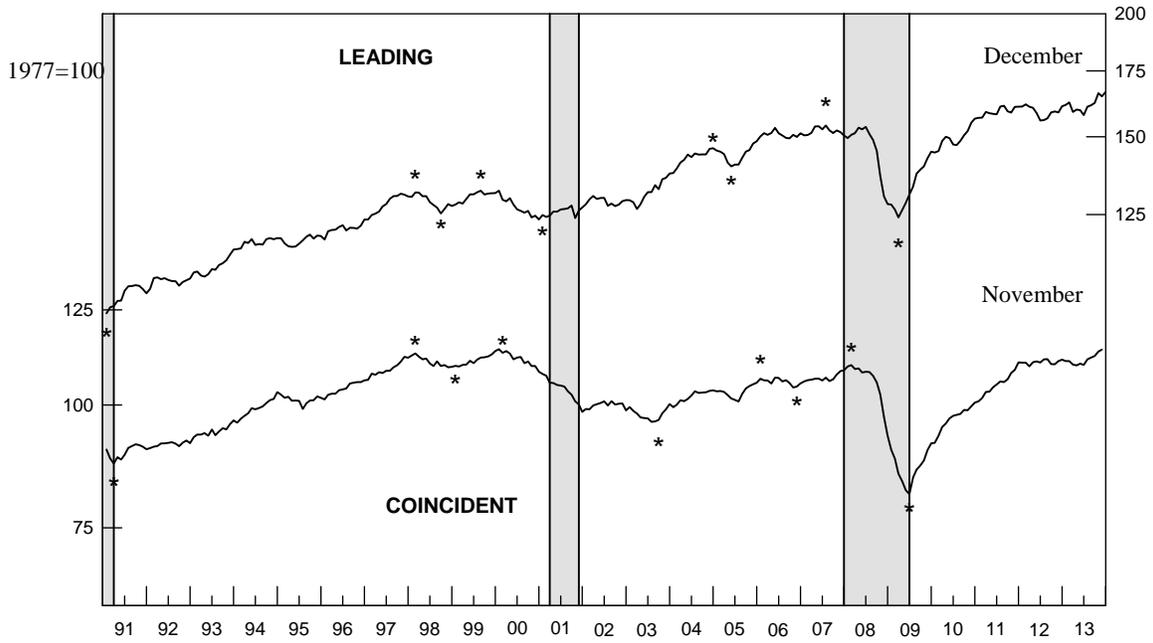
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

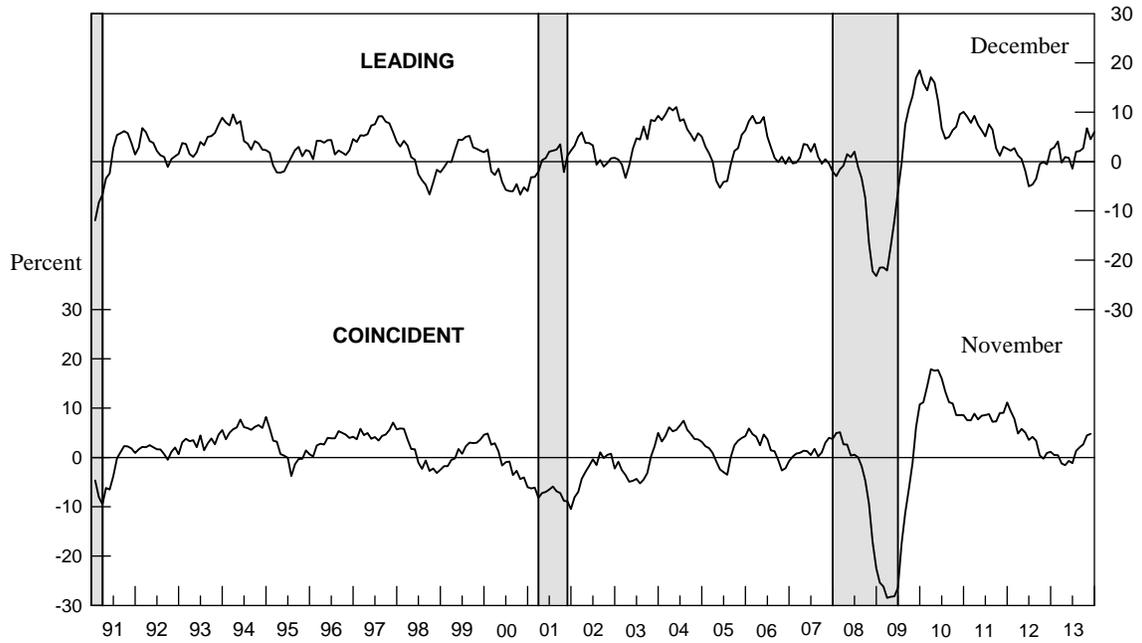
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1991-2013** 1977=100



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>				
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	0.7r	116.0	-0.2
April	111.8	2.0	116.1	-0.1
May	111.2	1.1	115.5	-1.1
June	110.4	-0.4	116.4	0.5
July	112.1	2.3	117.5	2.2
August	112.8	3.0	118.1	3.1
September	113.0	2.7	118.0	2.7
October	114.5r	4.9r	119.0r	4.0r
November	115.1	5.3	119.2	3.8

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

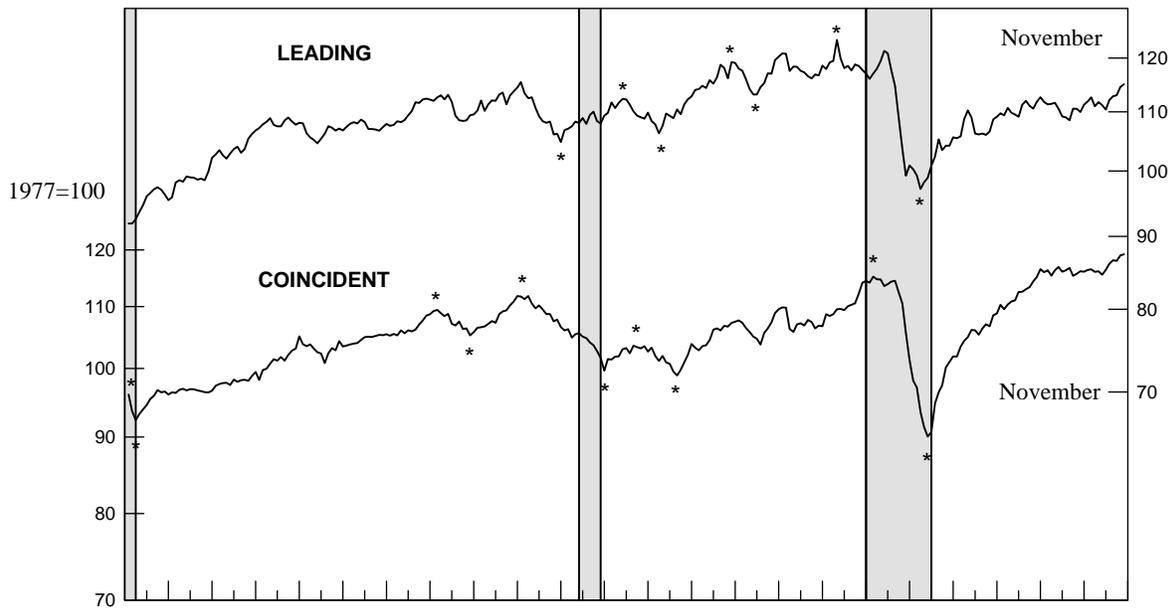
<b>Leading Index</b>	<b>October</b>	<b>November</b>
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	-0.3	0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.2r	-0.1
3. Shipments of household appliances, 1982\$	0.1	0.2
4. S&P stock price index, steel companies	0.2	0.4
5. Retail sales of U.S. passenger cars and light trucks (units)	0.0	0.3
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.1	0.2
7. Index of new private housing units authorized by permit	0.3	-0.1
8. Growth rate of U.S. M2 money supply, 2005\$	0.8	-0.7
9. PMI	0.0	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	<u>1.2r</u>	<u>0.4</u>
<b>Coincident Index</b>		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.7r	0.0
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.5r	-0.1
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	-0.5	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	<u>0.8r</u>	<u>0.1</u>

**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**

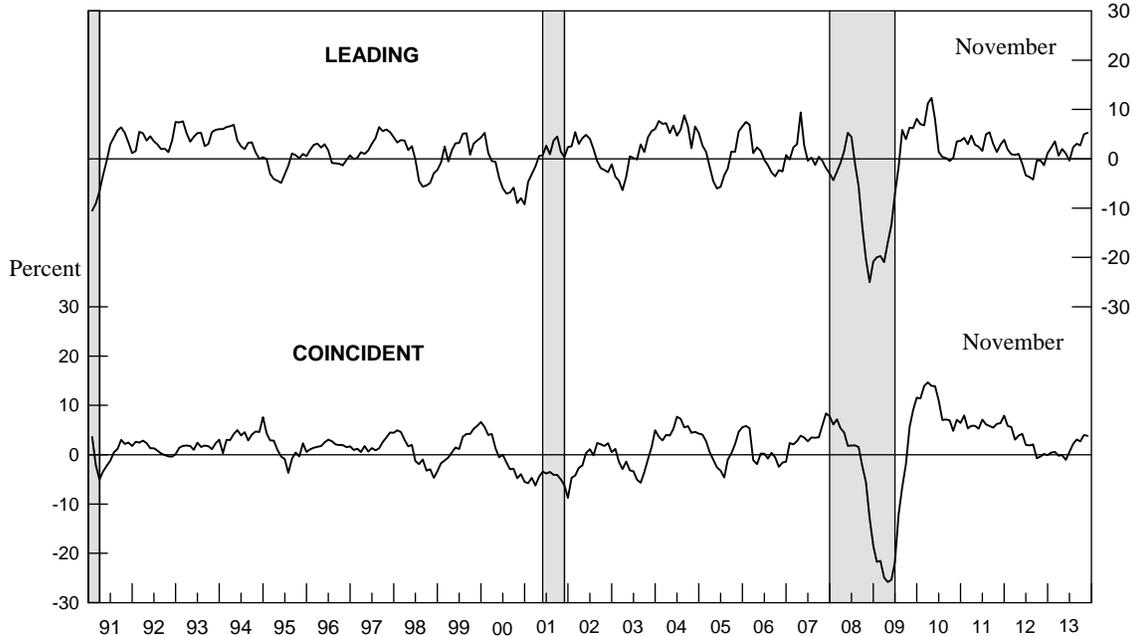
1977=100



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**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>2012</b>				
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	105.1	-4.0
May	129.8	8.9	107.2	0.2
June	127.3	3.7	104.1	-5.2
July	129.7	6.6	107.7	1.4
August	129.6	5.5	108.3	2.9
September	131.2	6.8	107.8r	2.0r
October	132.1r	7.2r	107.9r	2.0r
November	131.1	4.5	105.7	-1.8

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.

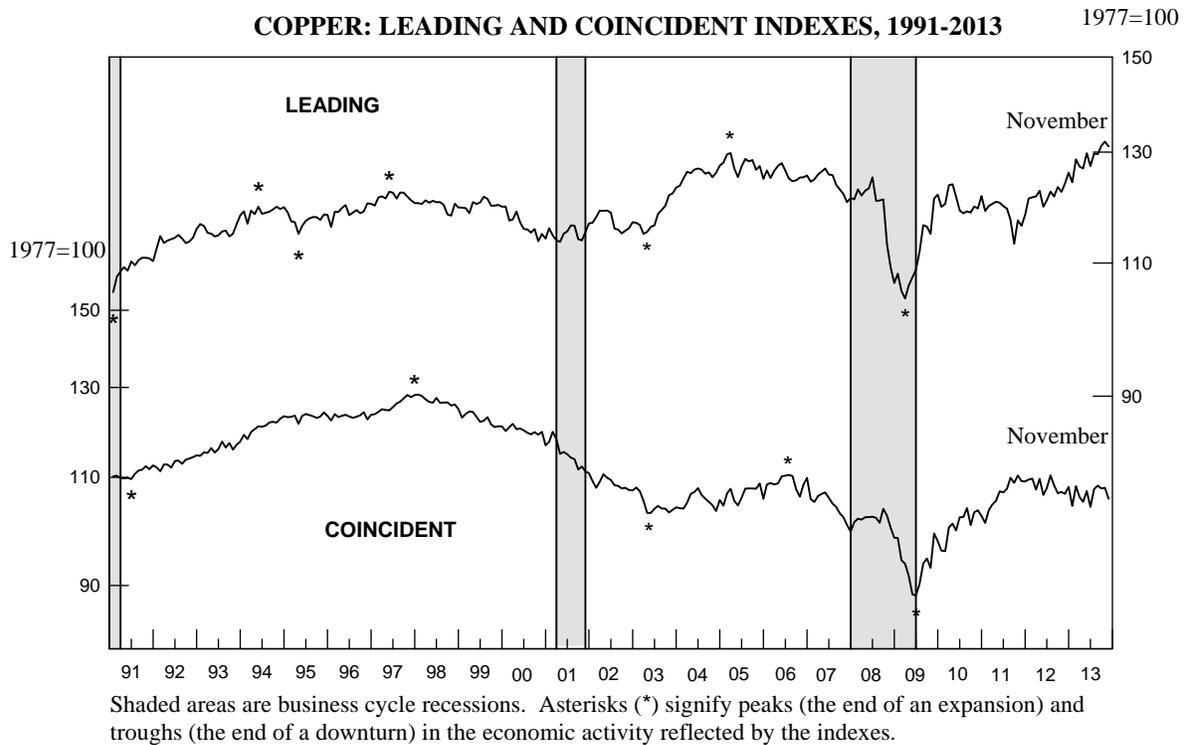
**Table 7.  
The Contribution of Each Copper Index Component to the Percent Change  
in the Index from the Previous Month**

	October	November
<b>Leading Index</b>		
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	0.7	-0.7
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.0r	-0.1
3. S&P stock price index, building products companies	-0.2	0.2
4. LME spot price of primary copper	0.0	-0.1
5. Index of new private housing units authorized by permit	0.4	-0.1
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.2	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.7r	-0.7
<b>Coincident Index</b>		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	-0.3	-0.3
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	0.3	-1.8
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.1	-2.0

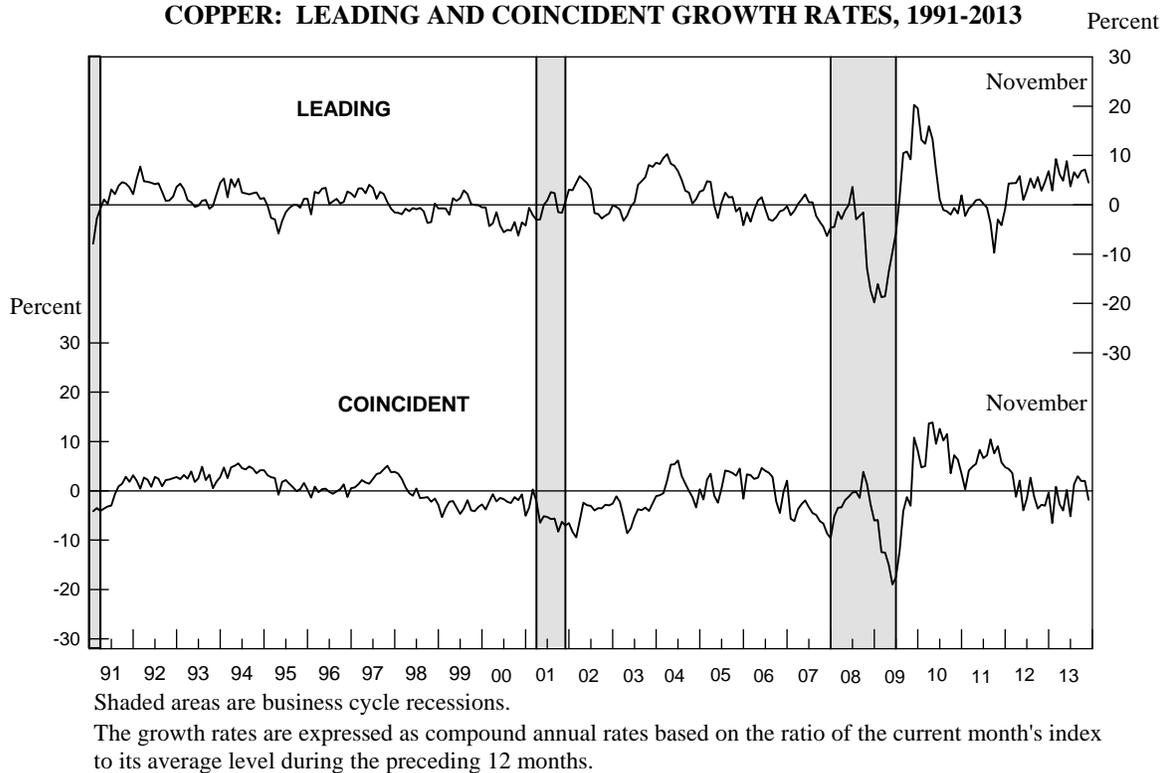
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau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

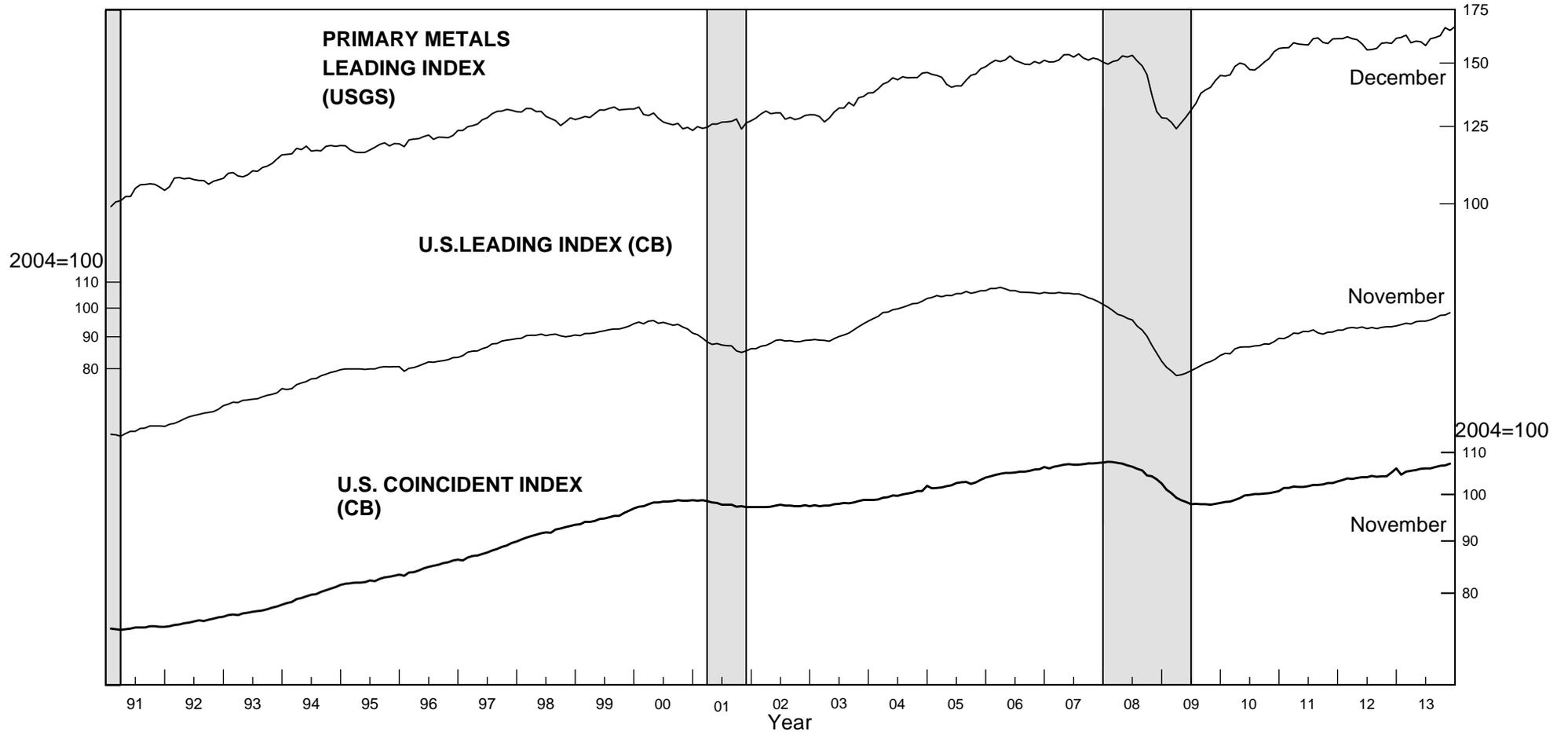


**CHART 7.**  
**COPPER: LEADING AND COINCIDENT GROWTH RATES, 1991-2013**



**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).

January 2014