



Metal Industry Indicators

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

February 21, 2014

The **primary metals leading index** dropped 1.4% in January to 161.5 from a revised 163.8 in December. Its 6-month smoothed growth rate slipped into negative territory, settling at -0.1% in January from a revised 2.9% in December. 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 primary metals leading index growth rate has declined 3 consecutive months and is suggesting that the recent acceleration in primary metals industry activity is likely to slow in the immediate future. The U.S. manufacturing sector, which supported the primary metals industry with increased metals consumption during 2013, decreased in January. Moreover, residential construction activity declined sharply in January. It is uncertain how much of these declines can be attributed to severe weather; however, decreasing new housing permits suggest that the housing industry is slowing. Global economic growth is rising slowly but is very uneven across countries, which could hinder U.S. metal products exports.

Two of the four indicators that were available for the January index calculation increased, and two declined. The PMI, the Institute for Supply Management's purchasing managers' index, declined sharply in January. It made the largest negative contribution, -1.3 percentage points, to the net decrease in the leading index. However, it remained above the threshold that indicates further increases in U.S. manufacturing activity. A shorter average workweek in primary metals establishments in January contributed -0.7 percentage point. Meanwhile, the stock price index combining construction and farm machinery companies and industrial machinery companies reached a new high. It contributed 0.2 percentage point to the leading index. The rising USGS metals price index growth rate also contributed 0.2 percentage point. The January 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 0.8% in December, the latest month for which it is available. Most of its nine indicators decreased, but it was the drop in new orders for iron and steel mill products that made the largest negative contribution. Fewer car and light truck sales also made a sizable negative contribution. In contrast, a longer average workweek in iron and steel mills and the rising steel scrap price growth rate offset some of the declines in the other indicators. The steel leading index growth rate indicates that steel industry activity will likely be slow in the near term. The copper leading index increased 0.8% in December. New orders for

nonferrous metal products and the S&P stock price index for building products companies made the largest positive contributions to the leading index. A rise in the copper price made a sizable contribution. In contrast, only the index for new housing permits made a negative contribution to the copper leading index. 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** increased 0.5% to 110.8 in December, the latest month for which it is available, from revised 110.3 in November. Its 6-month smoothed growth rate increased to 3.5% from a revised 3.1% in November. Three of its four indicators increased in December; however, the increase in the Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate was so slight that its contribution rounded to zero. The OECD leading index is indicating most industrialized economies are on track for at least modest growth the near future. A surge in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed 0.3 percentage point. A wider yield spread between the U.S. 10-year Treasury Note and the federal funds rate contributed 0.2 percentage point. The growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar was unchanged from November. 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 December. The level of U.S. metals inventories reached a new recent high. However, low global metal inventories, particularly copper, and the rise in the leading index of metal prices growth rate indicate further increases for some metals in the near future.

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

Primary Metals	0.5%
Steel	0.1%
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) at the U.S. Geological Survey.

The *Metal Industry Indicators* summary report with indexes for January and February is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, March 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
2012						
December	107.6r	0.7	5.8	1.7	-1.9	-10.4
2013						
January	107.7r	6.0	7.1	4.2	3.3	-6.8
February	107.6r	-2.1	7.4	-4.7	-4.0	-9.4
March	107.1r	-7.7	6.3	-9.3	-8.1	7.0
April	107.6	-16.8	7.5	-10.9	-17.7	-1.4
May	108.6	-9.7	11.6	-6.8	-11.6	-11.0
June	109.1	-20.2	13.1	-19.0	-21.9	-9.4
July	109.4	-18.5	16.4	-18.2	-19.4	1.3
August	109.8	-10.3	11.1r	-13.5	-11.5	-1.5
September	110.3r	-6.5	13.7	-10.5	-6.0	-3.1
October	110.7	-4.8	10.8	-5.5	-5.5	-2.5
November	110.3r	-8.9	9.9r	-15.5	-8.8	9.7
December	110.8	2.0	13.7	-8.9	1.5	19.6
2014						
January	NA	-4.9	NA	-16.4	-5.0	29.8

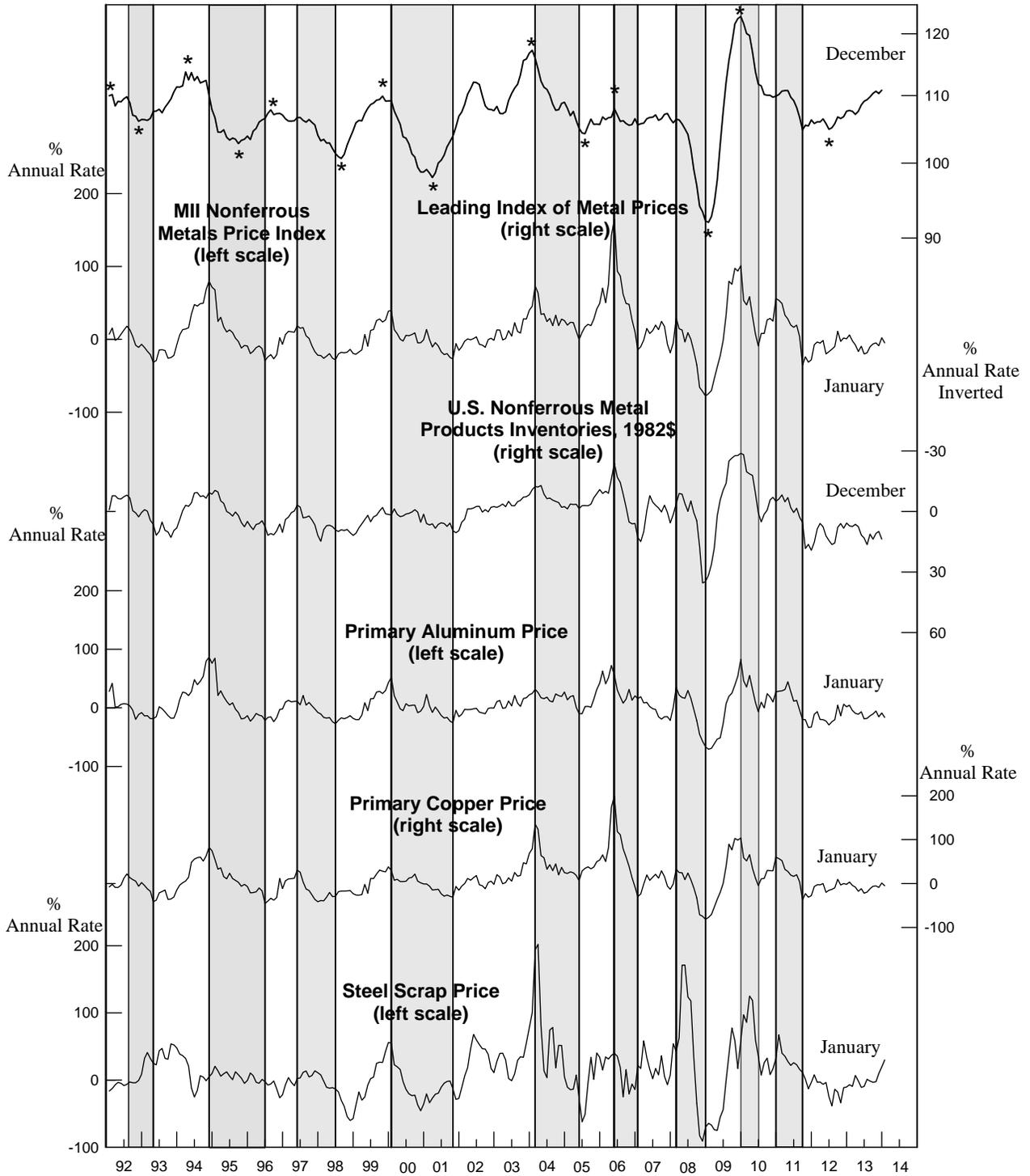
NA: Not available **r:** Revised

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
2013				
January	160.9r	2.2r	110.7r	0.2r
February	162.6	4.2r	111.0r	0.7r
March	159.6r	0.6r	110.0r	-1.0r
April	159.8	1.0r	109.9r	-1.4r
May	160.3r	1.7r	110.2	-0.7
June	158.8r	-0.2r	110.0r	-1.0r
July	160.8r	1.9r	111.3	1.4r
August	161.1r	1.8r	111.6r	1.9r
September	162.1r	2.4r	112.0r	2.5r
October	165.3r	5.9r	113.2r	4.2r
November	163.9r	3.5r	113.4r	4.1r
December	163.8r	2.9r	114.0	4.7
2014				
January	161.5	-0.1	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	December	January
1. Average weekly hours, primary metals (NAICS 331)	-0.1r	-0.7
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	0.2r	0.2
3. Ratio of price to unit labor cost (NAICS 331)	0.2	NA
4. USGS metals price index growth rate	0.1r	0.2
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$	-0.1	NA
6. Index of new private housing units authorized by permit	-0.1	NA
7. Growth rate of U.S. M2 money supply, 2005\$	-0.2	NA
8. PMI	-0.1	-1.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.1	-1.6
Coincident Index	November	December
1. Industrial production index, primary metals (NAICS 331)	-0.3r	0.3
2. Total employee hours, primary metals (NAICS 331)	0.4r	0.1
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	0.0r	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.2r	0.5

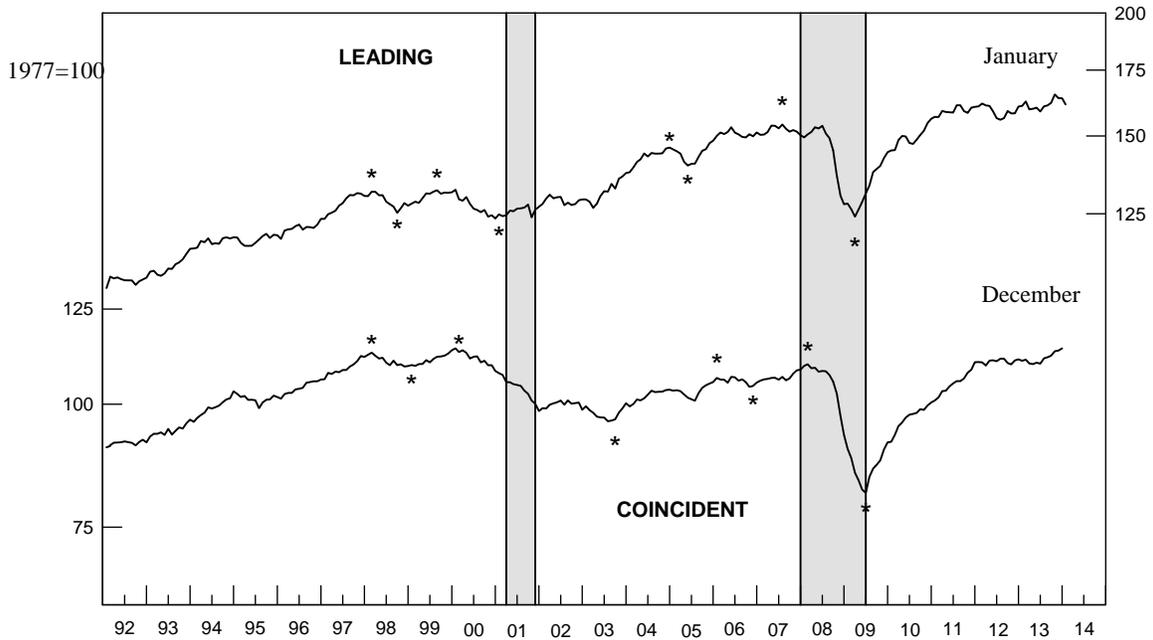
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

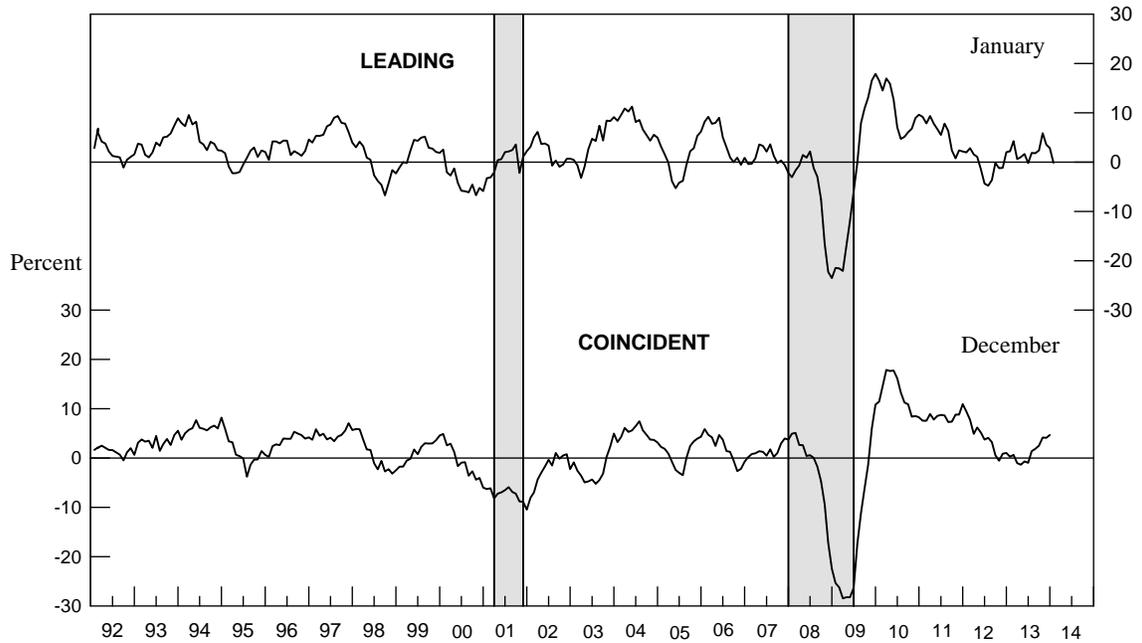
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1992-2014 1977=100



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

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2013				
January	111.6r	1.8r	115.5r	-0.4r
February	112.6	3.6r	115.5r	-0.3r
March	111.4r	1.4r	115.0r	-1.1r
April	111.8	2.0	115.1r	-0.8r
May	111.7r	1.8r	114.5r	-1.7r
June	111.0r	0.6r	115.4r	0.0r
July	112.0r	2.1r	116.4r	1.7r
August	112.8	2.9r	117.1r	2.8r
September	112.8r	2.4r	117.0r	2.4r
October	114.0r	4.1r	118.0r	3.8r
November	114.7r	4.7r	117.8r	3.0r
December	113.8	2.4	117.9	3.0

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

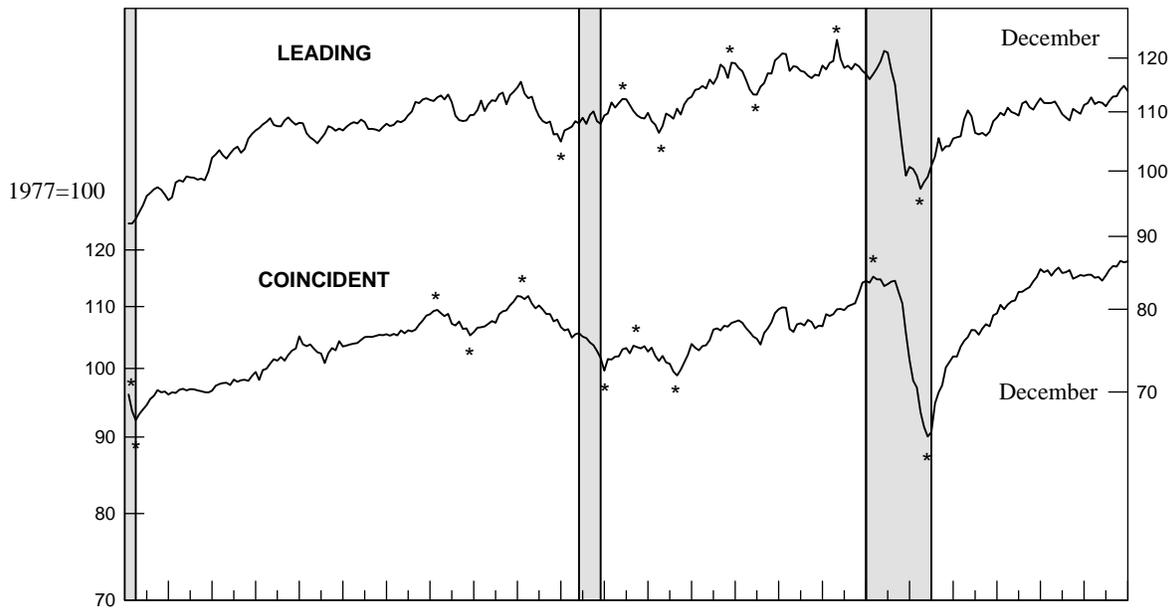
Leading Index	November	December
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.1	0.4
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.1	-0.5
3. Shipments of household appliances, 1982\$	0.1r	-0.1
4. S&P stock price index, steel companies	0.4	-0.1
5. Retail sales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

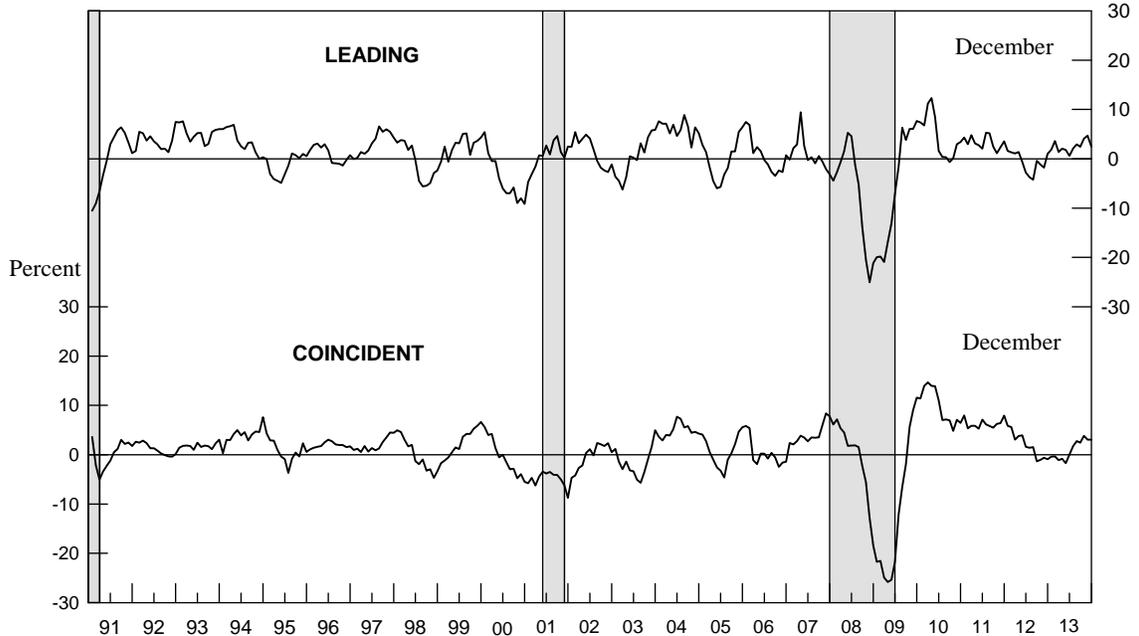
1977=100



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>
2013				
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	108.1r	2.6r
September	131.2	6.8	107.4r	1.3r
October	132.1	7.2	108.2r	2.7r
November	131.2r	4.6r	106.3r	-0.9r
December	132.2	5.2	106.3	-0.7

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	November	December
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	-0.7	0.0
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.0r	0.3
3. S&P stock price index, building products companies	0.2	0.3
4. LME spot price of primary copper	-0.1	0.2
5. Index of new private housing units authorized by permit	-0.1	-0.2
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)	<hr/> -0.6r	<hr/> 0.7
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	-0.1r	0.0
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-1.8	0.0
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	<hr/> -1.8r	<hr/> 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; 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

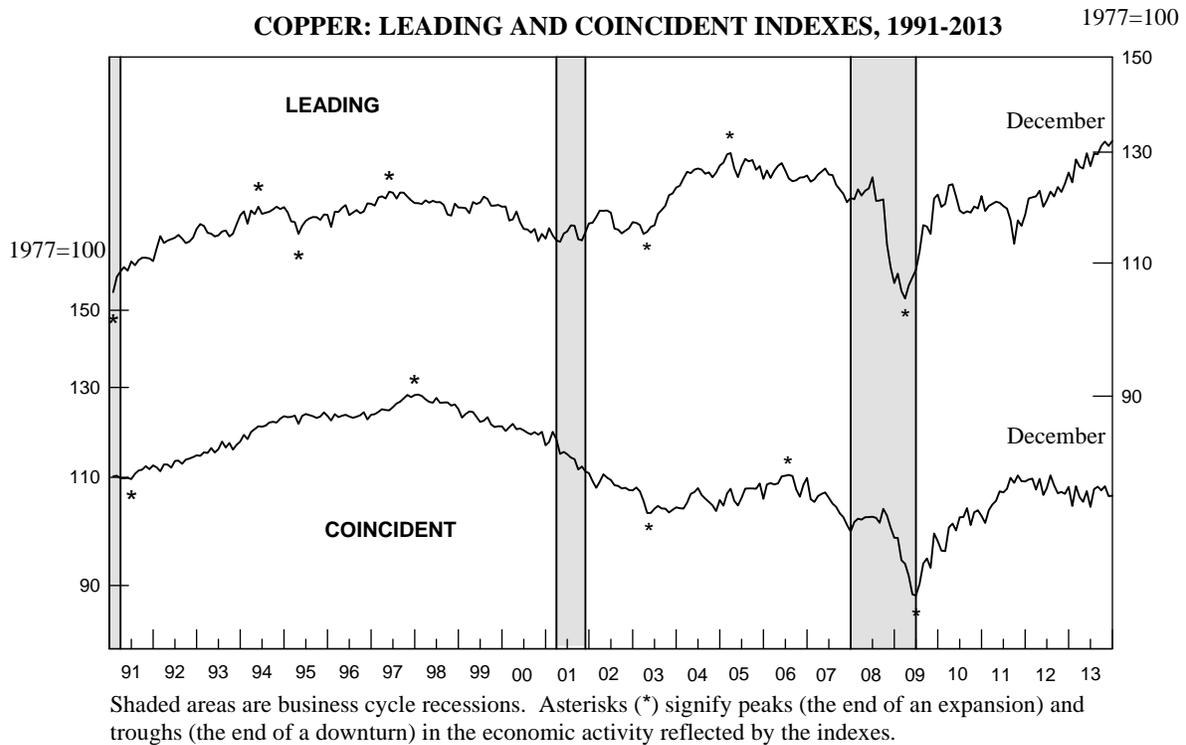


CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1991-2013

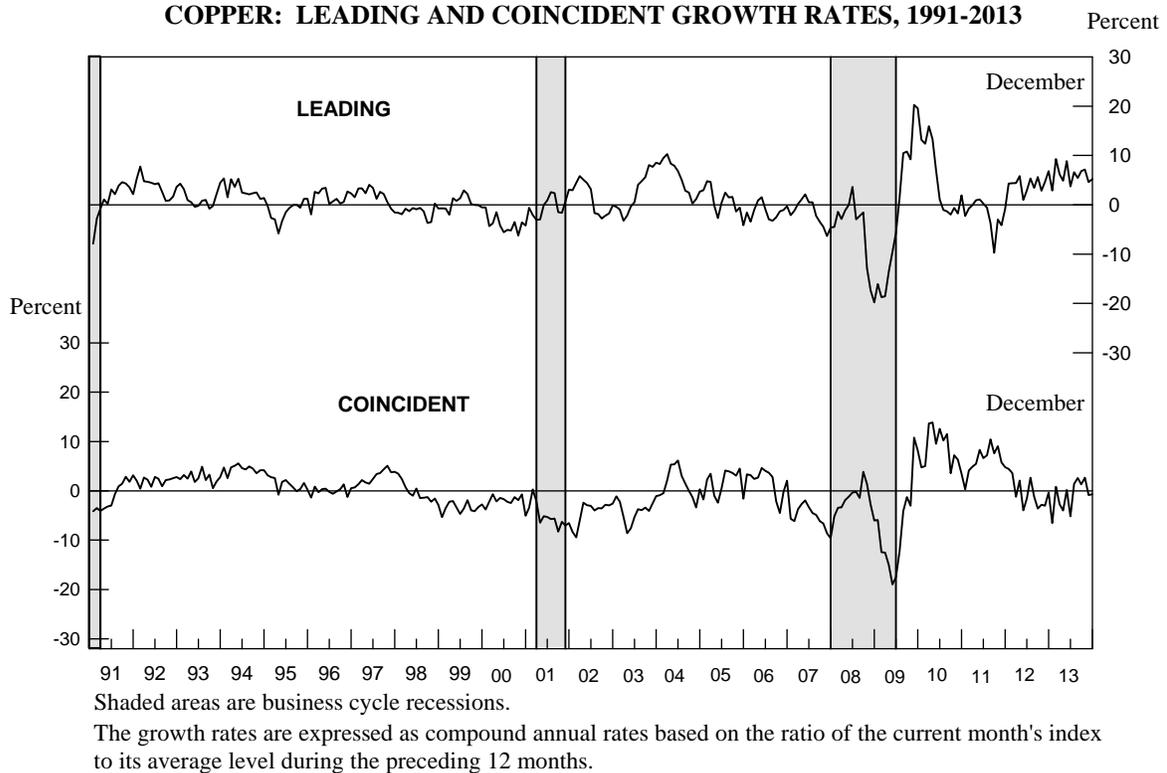
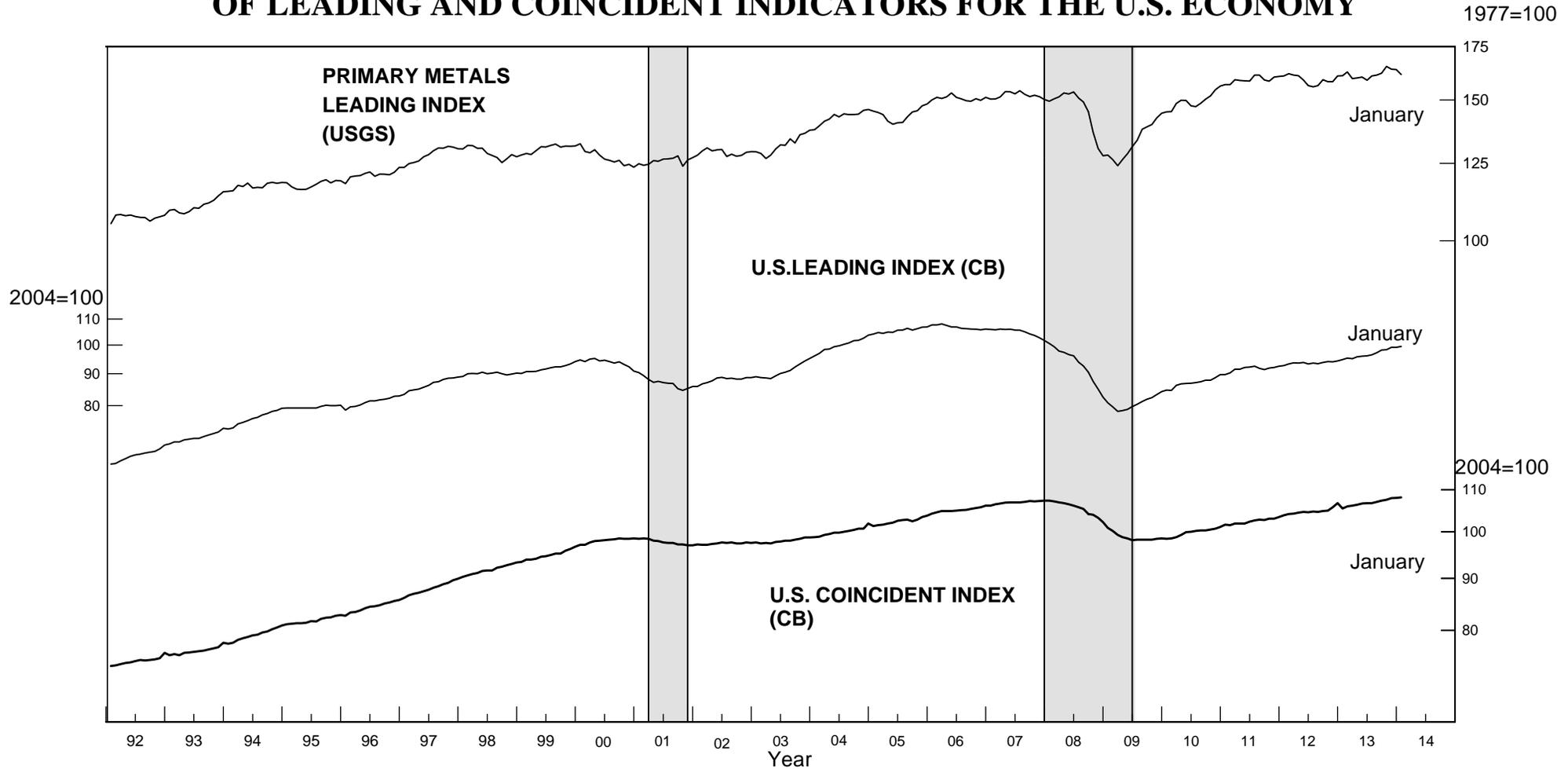


Chart 8.

**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).

February 2014