



Metal Industry Indicators

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

February 13, 2015

The **primary metals leading index** decreased 0.9% in January to 165.8 from a revised 167.3 in December, and its 6-month smoothed growth rate declined to -1.3% from a revised 0.7% 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 decrease in the leading index growth rate is suggesting that the primary metals industry recovery is likely to slow in the near future. Robust domestic manufacturing activity during 2014 underpinned the primary metals industry; however, new orders for durable goods have decreased 5 consecutive months. Construction industry activity is likely to continue to be volatile in 2015. The metals demand of the U.S. economy could support the primary metal industry's recovery; however, weak global economic growth and the strong U.S. dollar limit exports of U.S. metal products. Meanwhile, imports coming into the United States continue to rise.

Three of the four indicators that were available for the January index calculation decreased, and one increased. The largest negative contribution came from a drop in the stock price index combining construction and farm machinery companies and industrial machinery companies. It contributed -0.7 percentage point to the net decline in the leading index. The PMI, the Institute for Supply Management's purchasing managers' index, contributed -0.4 percentage point. Nevertheless, the PMI remains above the threshold that indicates increases in U.S. manufacturing activity. The USGS metals price index growth rate has declined since August. It contributed -0.3 percentage point to the leading index in January. In contrast, a longer average workweek in primary metals establishments contributed 0.4 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 0.5% to 114.6 in December from a revised 115.2 in November. Six of its nine indicators decreased. The largest negative contribution to the leading index came from a decline in the PMI. In contrast, the inflation-adjusted M2 money supply growth rate has risen sharply the last two months. It posted the only positive contribution in December. The steel leading index growth rate has steadily decreased since July and settled at zero in December, suggesting slow activity growth for the steel industry in the near term. Much of U.S. steel demand is being met by imports. Although steel imports declined in November and December, imports for 2014 were 38% higher than 2013. Furthermore, steel import permit applications were up 20% in January. In

December, the copper leading index remained at the upwardly revised 131.4 of November. Movements among its indicators were varied. Declines in the price of copper and lower new orders for nonferrous metal products, along with a tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate index were offset by the high S&P stock price index for building products companies. The copper leading index growth rate is still in the range that suggests that U.S. copper industry activity could grow slowly in the near term.

The **metals price leading index** decreased 0.4% to 105.2 in December, the latest month for which it is available, from a revised 105.6 in November. Its 6-month smoothed growth rate edged down to -4.5% from a revised -4.3% in November. Three of its four indicators decreased in December. The falling 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 net decrease in the metals price leading index. A slightly tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate contributed -0.1 percentage point to the leading index of metals prices. A decrease in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products also contributed -0.1 percentage point. In contrast, the Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate increased in December, but still remains in the territory that indicates further decreases in growth for most industrialized countries. It contributed 0.2 percentage point to the metals price leading index. 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 for the fourth consecutive month in December. U.S. metals inventories levels rose to a new recent record high. LME inventories also increased, with the exception of aluminum, which dropped to a 5-year low level. High global metal inventories along and the declining leading index of metal prices growth rate indicate that some metals prices are likely to decline further 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	0.9%
Steel	0.7%
Copper	1.3%

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. EST, Friday, March 20, 2015.

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
2013						
December	110.0	2.0	11.2	-8.9	1.5	19.6
2014						
January	108.9	-4.9	9.3	-16.4	-5.0	29.8
February	108.5r	-1.9	8.7	-7.6	-2.7	13.1
March	108.6	-11.3	7.7	-5.0	-12.7	4.9
April	108.5	-7.1	10.6	0.3	-8.7	12.1
May	108.3	-0.7	8.9	6.7	-1.0	4.7
June	108.0r	-0.1	8.2	10.2	-1.5	-0.4
July	107.8r	5.7	6.2	27.8	2.8	-1.9
August	107.0r	2.2	5.5r	36.0	-1.7	-2.5
September	106.3r	-6.1	6.4	12.2	-8.1	-2.0
October	105.9r	-4.7	10.3	19.7	-5.7	-11.6
November	105.6r	-8.9	12.5r	24.0	-11.6	-26.6
December	105.2	-14.6	14.0	-4.1	-14.5	-25.3
2015						
January	NA	-28.6	NA	-4.0	-33.0	-15.6

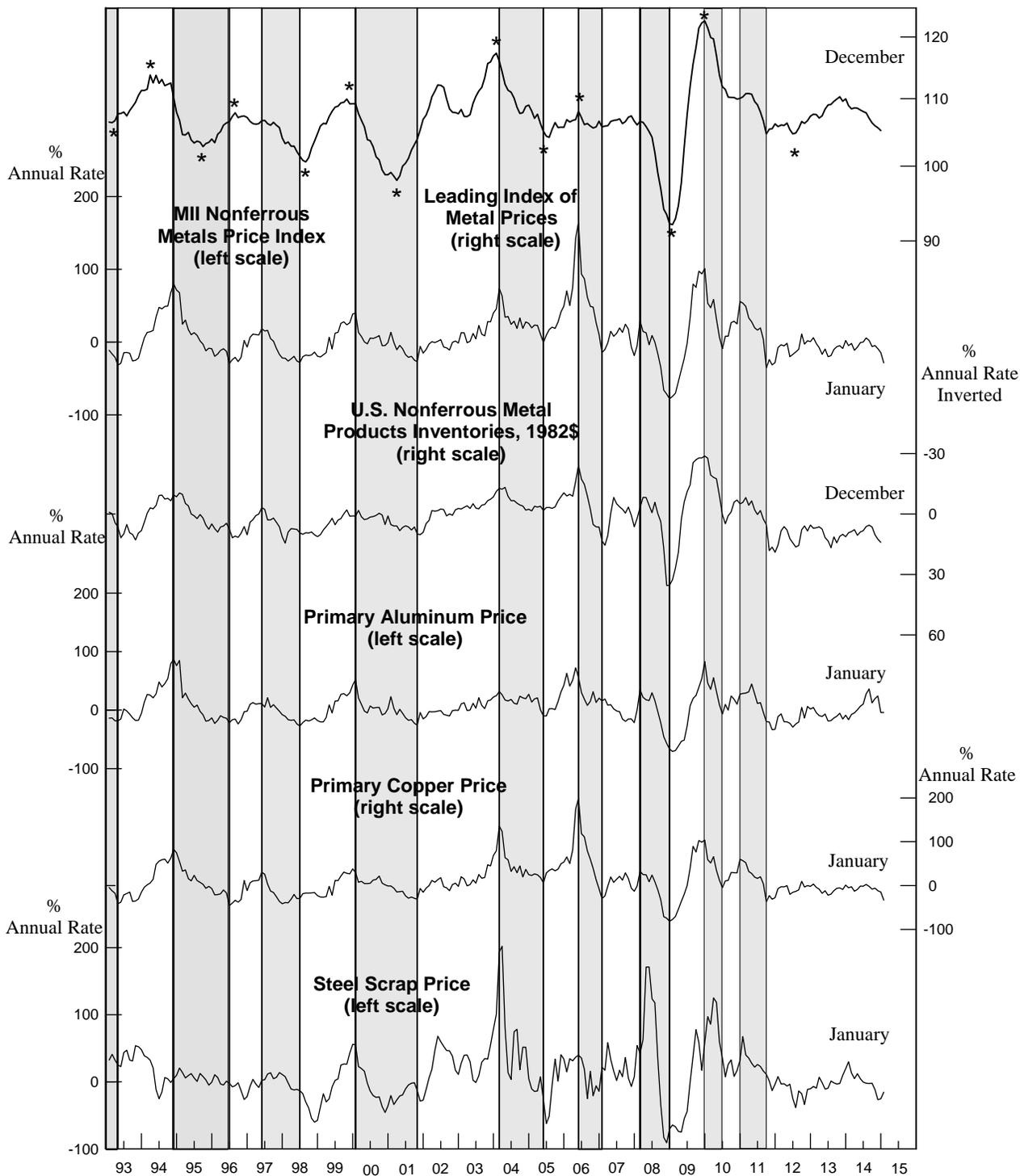
NA: Not available **r:** Revised

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
2014				
January	162.6r	0.5r	113.7r	2.3r
February	165.6	3.9r	114.8r	3.9
March	165.4r	3.4	114.8r	3.4
April	166.7r	4.4r	115.7r	4.4r
May	167.4r	4.6r	116.6r	5.2r
June	167.9r	4.4r	117.7r	6.2r
July	168.9r	4.8r	118.3r	6.2r
August	168.1r	3.1r	118.0r	4.8r
September	168.3r	2.7r	118.7r	5.2r
October	168.1r	2.0r	118.9r	4.8r
November	167.7r	1.3r	118.3r	3.2r
December	167.3r	0.7r	119.4	4.4
2015				
January	165.8	-1.3	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)	0.0r	0.4
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	-0.2r	-0.7
3. Ratio of price to unit labor cost (NAICS 331)	0.1	NA
4. USGS metals price index growth rate	-0.2r	-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	0.0	NA
7. Growth rate of U.S. M2 money supply, 2009\$	0.4	NA
8. PMI	-0.3r	-0.4
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.3r	-1.0
Coincident Index	November	December
1. Industrial production index, primary metals (NAICS 331)	-0.2r	0.4
2. Total employee hours, primary metals (NAICS 331)	-0.2r	0.2
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	-0.2	0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.5r	0.9

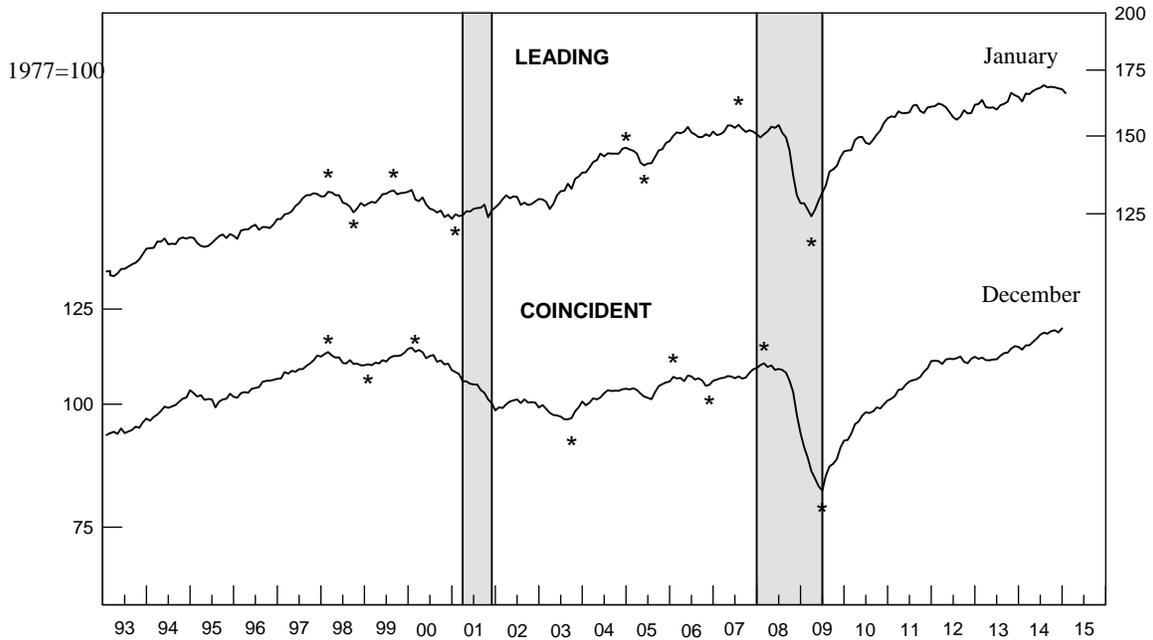
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

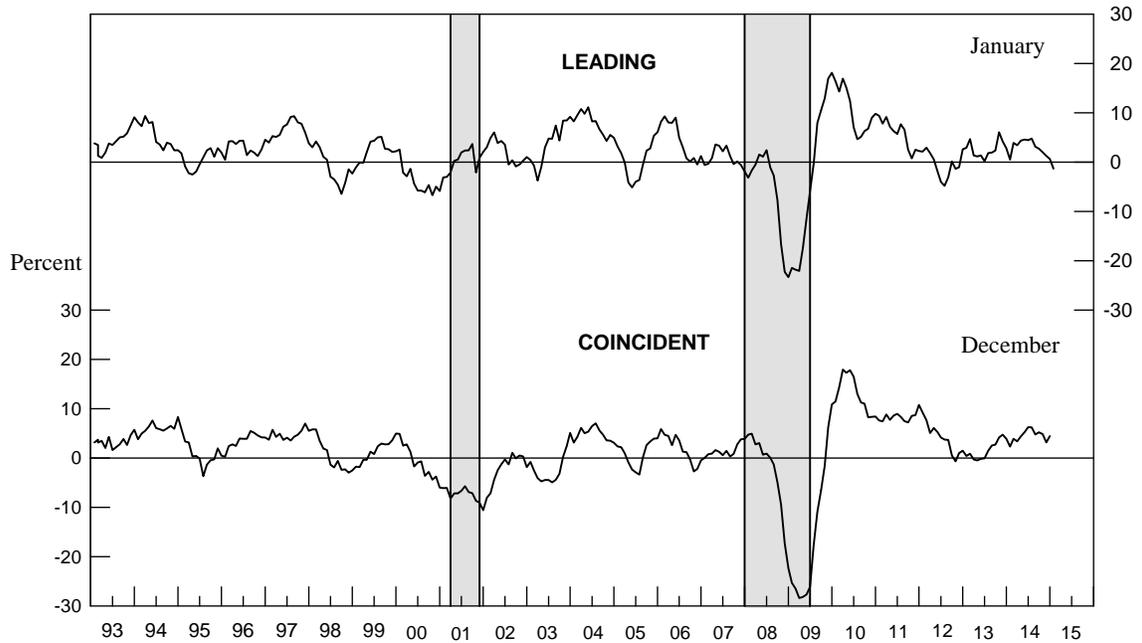
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1993-2015 1977=100



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, 1993-2015 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
2014				
January	112.5r	-0.1r	115.8r	-0.8r
February	113.8	1.9r	117.1r	1.2r
March	114.3	2.6	117.5r	1.6r
April	114.5	2.6	117.5r	1.4r
May	114.8r	2.7r	117.8r	1.4
June	114.5	1.8	118.5r	2.3r
July	115.5r	2.9r	119.4r	3.3
August	115.6	2.5r	119.6r	3.2
September	115.7	2.3	120.5r	4.3
October	115.1	1.0	120.8r	4.2
November	115.2r	1.0r	120.8r	3.9r
December	114.6	0.0	121.7	5.0

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	0.0
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.3r	-0.1
3. Shipments of household appliances, 1982\$	0.1	-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)	0.2	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.2	-0.1
7. Index of new private housing units authorized by permit	-0.2	0.0
8. Growth rate of U.S. M2 money supply, 2009\$	0.2r	0.4
9. PMI	0.0	-0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.1r	-0.5
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.4r	0.5
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.0r	-0.1
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.3	0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.0r	0.7

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

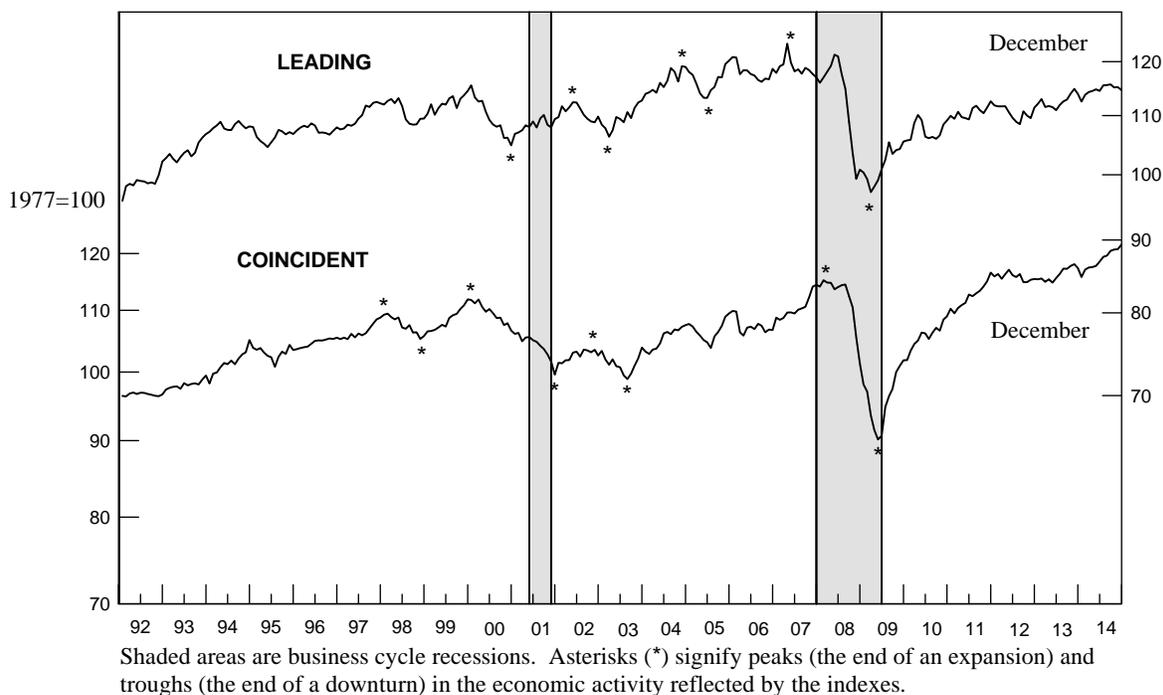
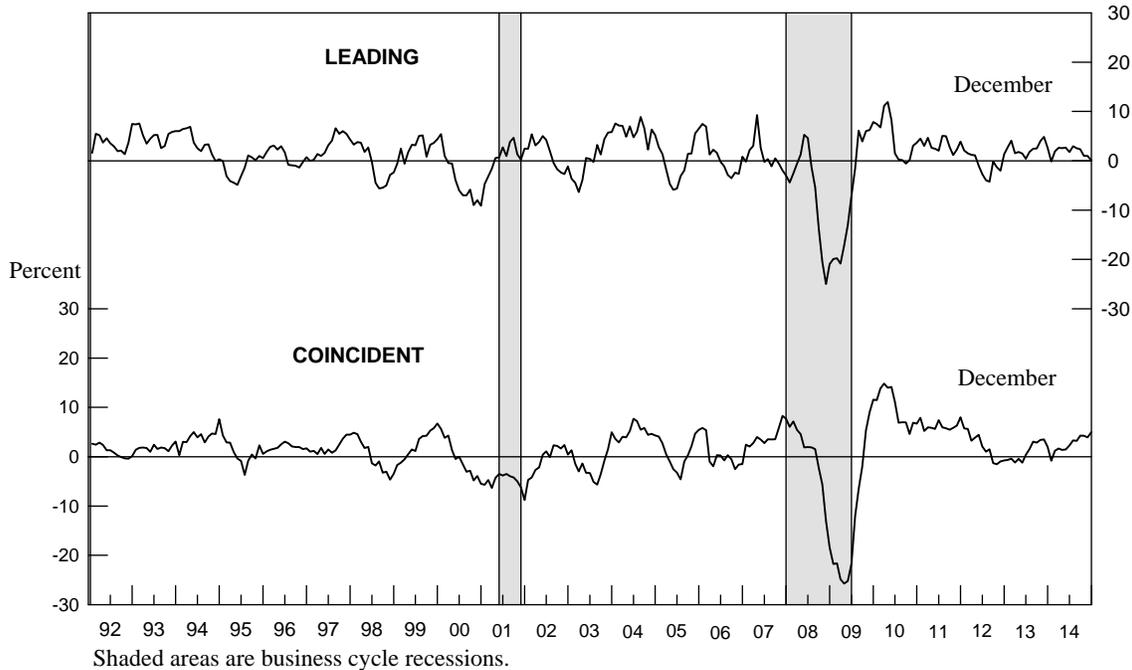


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1992-2014

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

	<u>Leading Index</u>		<u>Coincident Index</u>	
	<u>(1977 = 100)</u>	<u>Growth Rate</u>	<u>(1977 = 100)</u>	<u>Growth Rate</u>
2014				
January	128.1	0.3	107.8r	-1.5r
February	129.5	2.1	109.2r	0.7r
March	130.6	3.2	111.4r	4.5r
April	130.4	2.5	110.7r	3.2r
May	129.0	0.1	111.5r	4.3r
June	131.3	3.3	114.3r	8.8r
July	130.2	1.2	113.2r	5.8r
August	129.9	0.6r	112.8r	4.3r
September	130.2	0.8	110.7r	0.3r
October	130.8	1.3	111.0r	0.3r
November	131.4r	2.1r	111.6r	1.2r
December	131.4	1.8	113.0	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 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)	0.4r	0.0
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.0r	-0.1
3. S&P stock price index, building products companies	0.4	0.3
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	0.0	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.4r	0.0
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.2r	0.3
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	0.3r	0.7
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.6	1.1

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

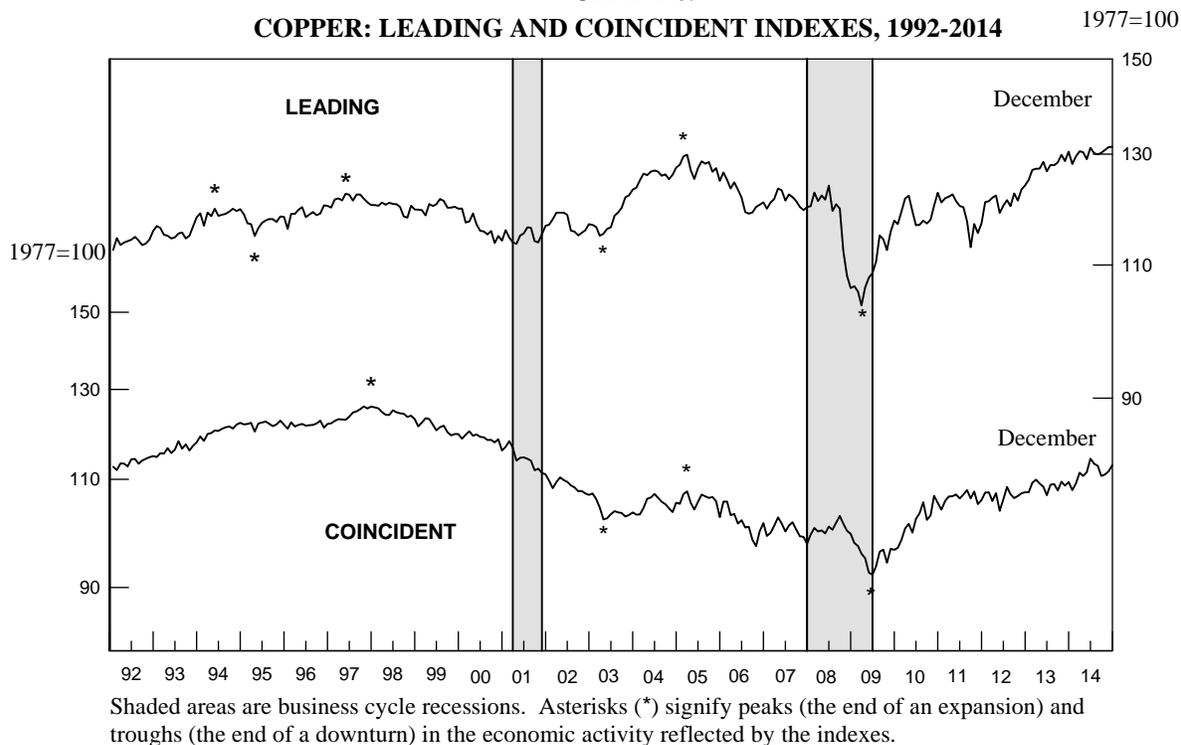


CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1992-2014

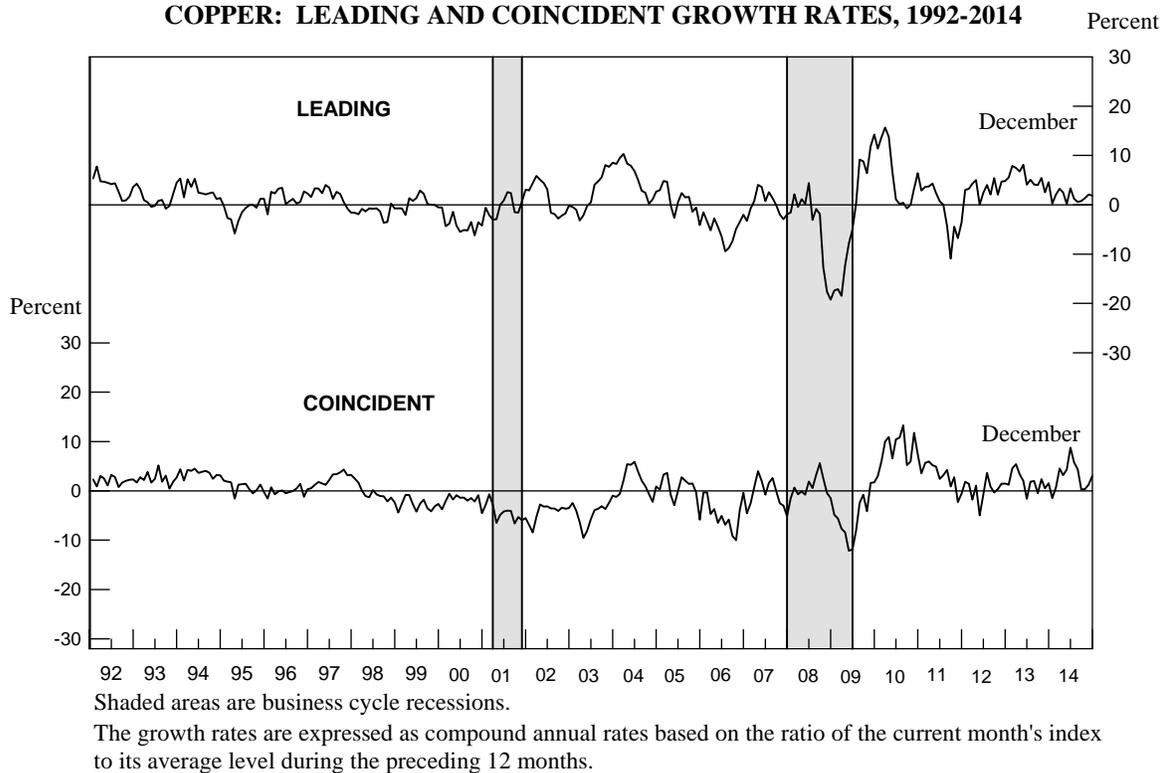
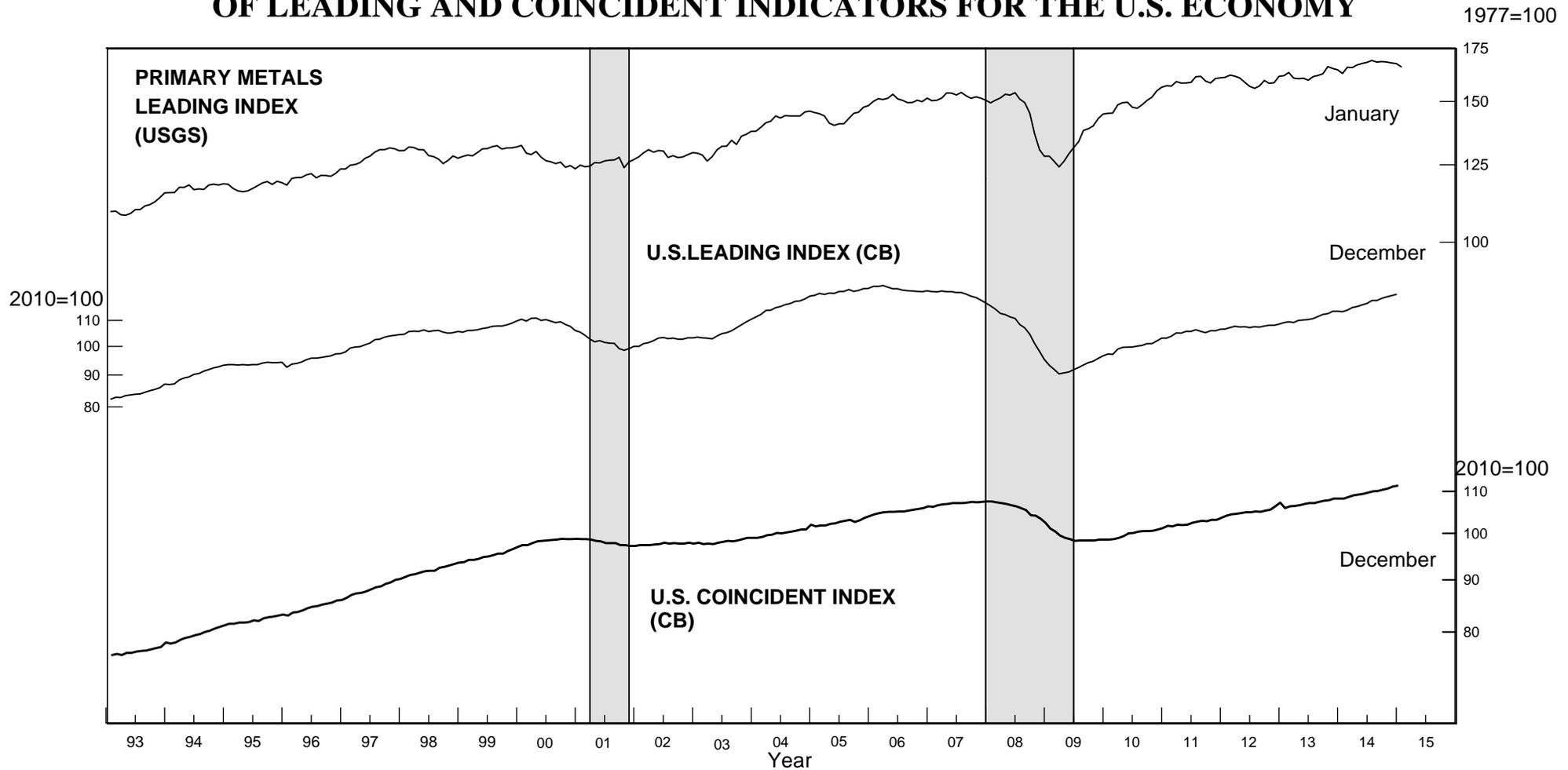


Chart 8.

**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).

February 2015