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Metal Industry Indicators

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

March 20, 2015

The **primary metals leading index** decreased 0.3% in February to 166.3 from a revised 166.8 in January, and its 6-month smoothed growth rate declined to -1.1% from a revised -0.2% in January. 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 negative leading index growth rate is indicating that the primary metals industry recovery is likely to slow in the near term. Activity in the U.S. manufacturing sector, which accelerated during 2014 and underpinned the primary metals industry, has declined the last 3 months. Furthermore, new orders for manufactured goods have decreased for 6 consecutive months, which will limit metals demand growth in the months ahead. The metals demand from the construction sector is likely to continue to be volatile in 2015. Weak global economic growth, high worldwide metal inventories, and the strong U.S. dollar restrain exports of U.S. metal products while steadily rising metal imports undermine the U.S. primary metals industry's recovery.

Three of the four indicators that were available for the February index calculation decreased, and one increased. A shorter average workweek in primary metals establishments contributed -0.2 percentage point to the net decline in the leading index. The USGS metals price index growth rate continued to fall in February; it also contributed -0.2 percentage point to the leading index. The PMI, the Institute for Supply Management's purchasing managers' index, decreased for the fourth consecutive month, contributing -0.1 percentage point. Nevertheless, the PMI remains above the threshold that indicates increases in U.S. manufacturing activity. In contrast, a rise in the stock price index combining construction and farm machinery companies and industrial machinery companies contributed 0.2 percentage point. The February 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% to 114.4 in January from a revised 114.5 in December. Five of its nine indicators decreased. The largest negative contribution to the leading index came from a decline in the S&P stock price index for steel companies. In contrast, the inflation-adjusted M2 money supply growth rate has risen the last three months and posted the largest positive contribution. The steel leading index growth rate has steadily decreased since July and has moved into negative territory, indicating further steel industry activity declines in the near term. Much of domestic steel demand continues to be met by imports. Steel imports market share in

February was 33%. The copper leading index declined 2.0% to 128.8 in January from 131.4 in December. Inflation-adjusted new orders for nonferrous metal products was the only one of its six indicators to increase. Shorter average weekly hours in nonferrous, except aluminum, products plants, a lower copper price, and a tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate held the copper leading index down in January. Although the copper leading index growth rate moved into negative territory, a 1-month negative reading is not necessarily a sign of a downturn in copper industry activity. U.S. copper industry activity is more likely to remain choppy in the near term.

The **metals price leading index** decreased 0.9% to 103.8 in January, the latest month for which it is available, from a revised 104.7 in December. Its 6-month smoothed growth rate decreased to -5.9% from a revised -5.2% in December. Two of its four indicators decreased in January. A sharp decline in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.8 percentage point to the net decrease in the metals price leading index. A tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate contributed -0.3 percentage point. In contrast, the Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate increased in January, but still remains in the territory that indicates further decreases in growth for most industrialized countries. It contributed 0.1 percentage point to the metals price leading index. A rise in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products 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, increased for the fifth consecutive month in January. U.S. metals inventories levels reached a new recent record high. LME warehouses and other global inventories also increased. These high metal inventories, the negative leading index of metal prices growth rate, and weak global economies indicate further metals price declines in the near future.

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

Primary Metals	0.3%
Steel	-0.2%
Copper	-1.2%

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 February and March is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, April 17, 2015.

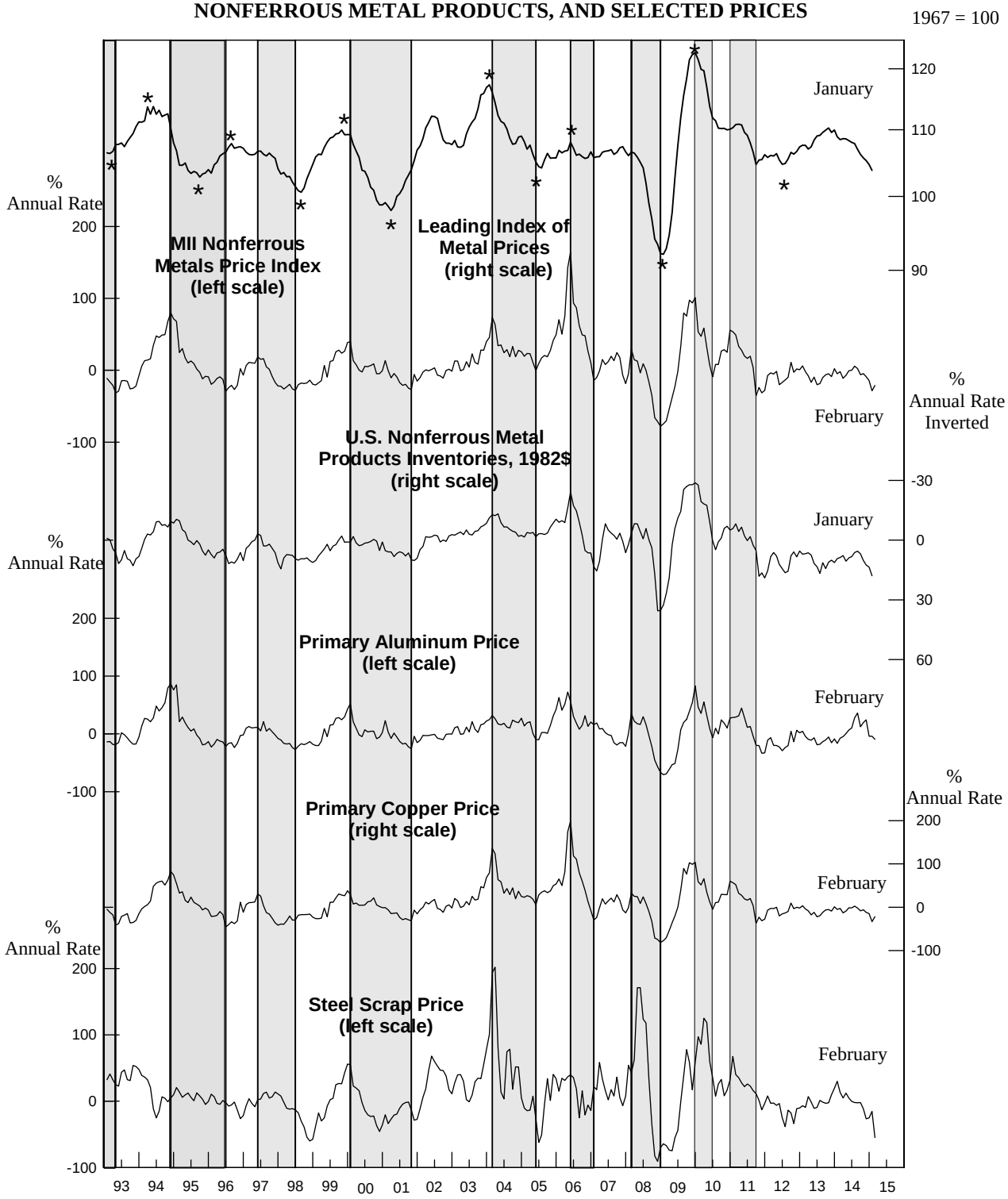
Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

		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
2014						
January	108.9	-4.9	9.3	-16.4	-5.0	29.8
February	108.5	-1.9	8.7	-7.6	-2.7	13.1
March	108.6	-11.3	7.7	-5.0	-12.7	4.9
April	108.6r	-7.1	10.6	0.3	-8.7	12.1
May	108.3	-0.7	8.9	6.7	-1.0	4.7
June	108.0	-0.1	8.2	10.2	-1.5	-0.4
July	107.8	5.7	6.2	27.8	2.8	-1.9
August	107.0	2.2	5.5	36.0	-1.7	-2.5
September	106.2r	-6.1	6.9r	12.2	-8.1	-2.0
October	105.7r	-4.7	10.2r	19.7	-5.7	-11.6
November	105.2r	-8.9	12.4r	24.0	-11.6	-26.6
December	104.7r	-14.6	13.5r	-4.1	-14.5	-25.3
2015						
January	103.8	-28.6	17.9	-4.0	-33.0	-15.6
February	NA	-21.3	NA	-9.4	-21.5	-54.9

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



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.

U.S. Geological Survey, March 2015

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2014				
February	165.7r	3.9	114.8	3.9
March	165.5r	3.5r	114.8	3.4
April	166.9r	4.6r	115.7	4.4
May	167.4	4.5r	116.6	5.2
June	168.1r	4.6r	117.7	6.2
July	168.7r	4.5r	118.3	6.2
August	168.3r	3.3r	118.0	4.9r
September	168.1r	2.5r	118.5r	4.9r
October	167.6r	1.4r	118.4r	3.9r
November	167.4r	0.9r	118.0r	2.7r
December	166.6r	-0.2r	118.6r	3.3r
2015				
January	166.8r	-0.2	119.0	3.3
February	166.3	-1.1	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	**January**	**February**
1. Average weekly hours, primary metals (NAICS 331)	0.1r	-0.2
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	-0.3r	0.2
3. Ratio of price to unit labor cost (NAICS 331)	0.0	NA
4. USGS metals price index growth rate	-0.2r	-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	0.0	NA
7. Growth rate of U.S. M2 money supply, 2009$	0.7	NA
8. PMI	-0.2r	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.1r	-0.3

Coincident Index	**December**	**January**
1. Industrial production index, primary metals (NAICS 331)	0.2r	0.3
2. Total employee hours, primary metals (NAICS 331)	0.2	0.2
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982$	0.1r	-0.3
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.6r	0.3

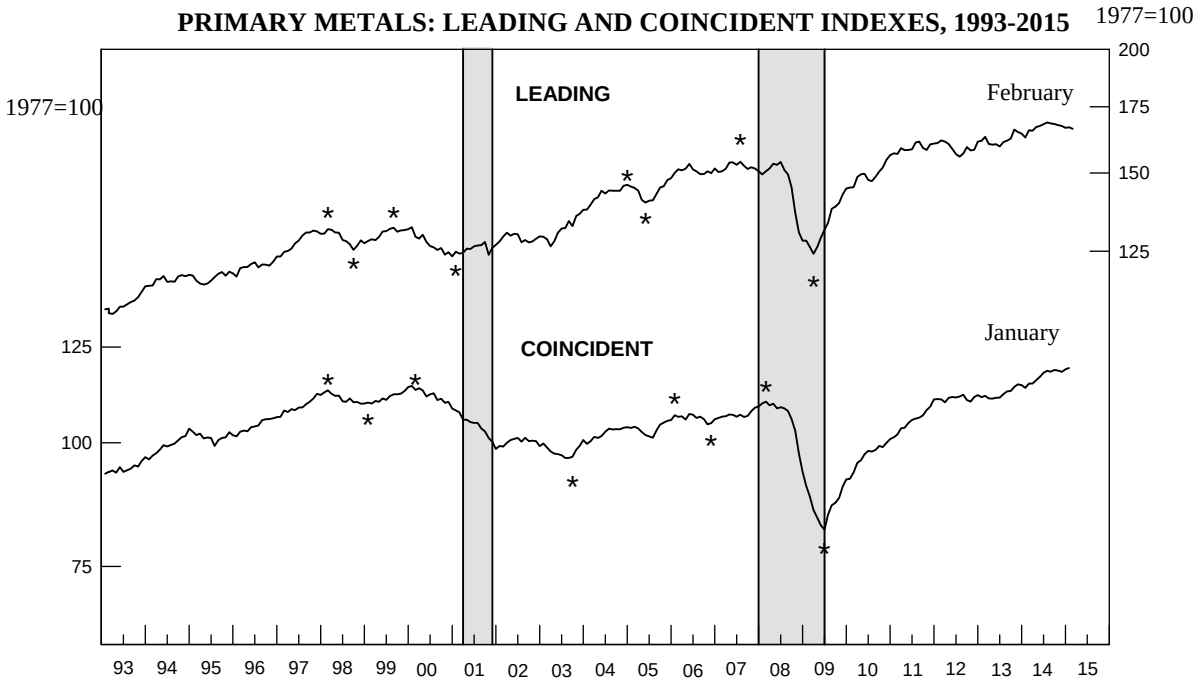
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

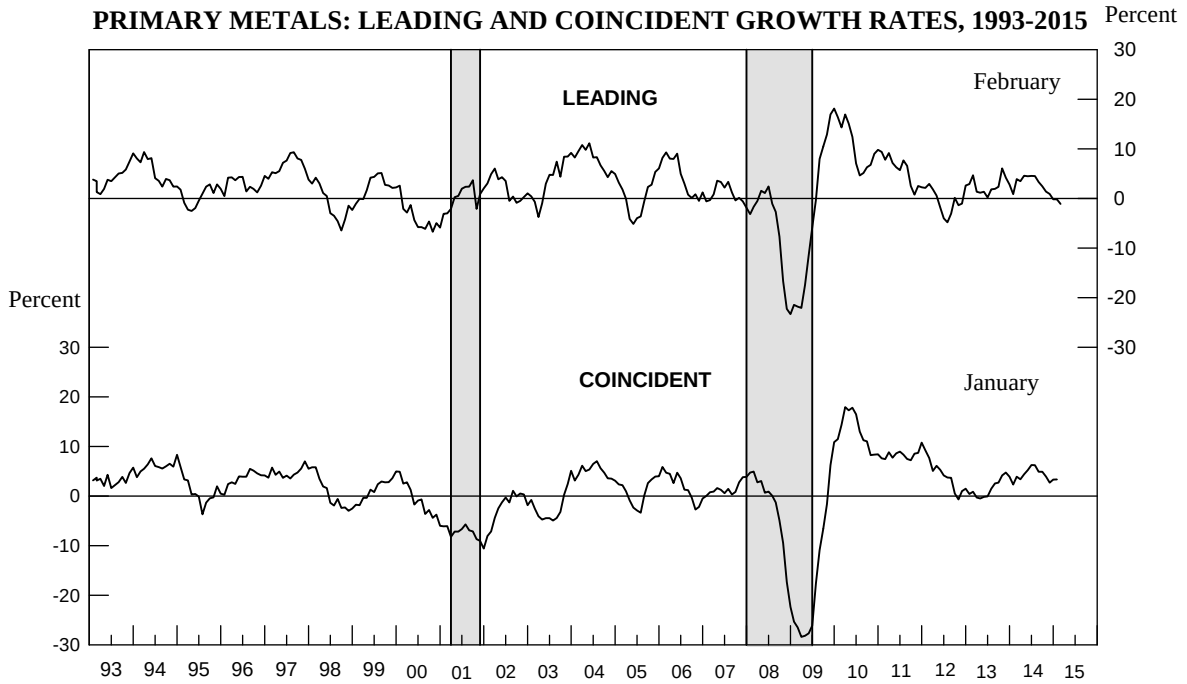
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1993-2015



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



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				
February	113.8	1.9r	117.1	1.2
March	114.3	2.7r	117.5	1.6
April	114.6r	2.8r	117.5	1.4
May	114.7r	2.6r	117.8	1.4
June	114.6r	1.9r	118.5	2.3
July	115.4r	2.7r	119.4	3.3
August	115.7r	2.7r	119.6	3.2
September	115.7	2.3	120.5	4.3
October	115.1	1.0	120.8	4.2
November	115.2	1.0	120.8	3.9
December	114.5r	-0.2r	120.8r	3.5r
2015				
January	114.4	-0.5	120.6	2.7

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

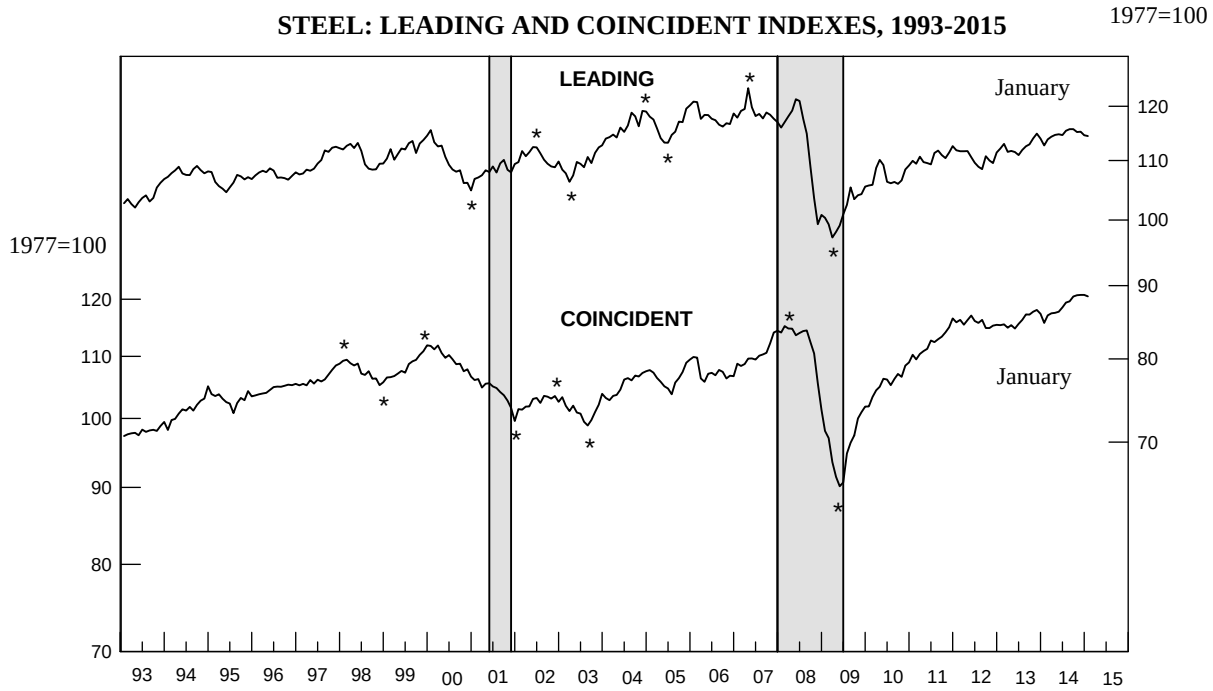
Leading Index	**December**	**January**
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.0	-0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.1	-0.1
3. Shipments of household appliances, 1982$	-0.1	0.1
4. S&P stock price index, steel companies	-0.2	-0.6
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.1	0.0
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	-0.1	0.1
7. Index of new private housing units authorized by permit	0.0	0.0
8. Growth rate of U.S. M2 money supply, 2009$	0.4	0.7
9. PMI	-0.3	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.5	-0.1
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	0.0r	0.2
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.3r	-0.4
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.2	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.0r	-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; 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.

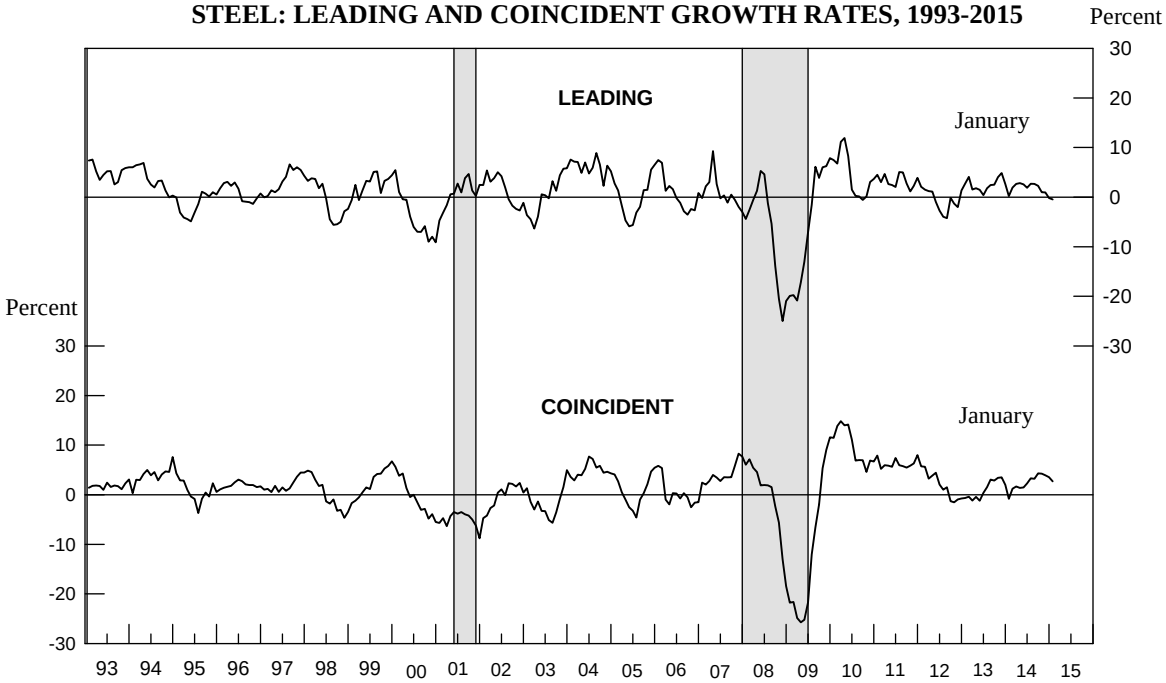
STEEL: LEADING AND COINCIDENT INDEXES, 1993-2015



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, 1993-2015



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.

U.S. Geological Survey, March 2015

Table 6.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2014				
February	129.6r	2.1	109.2	0.7
March	130.7r	3.3r	111.4	4.5
April	130.6r	2.8r	110.7	3.2
May	129.0	0.0r	111.5	4.3
June	131.4r	3.5r	114.3	8.8
July	130.0r	0.9r	113.2	5.8
August	130.1r	0.7r	112.8	4.3
September	130.3r	0.8	109.6r	-1.5r
October	130.9r	1.4r	108.6r	-3.4r
November	131.4	2.1	109.7r	-1.6r
December	131.4	1.6r	112.0r	2.1r
2015				
January	128.8	-2.1	110.7	-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

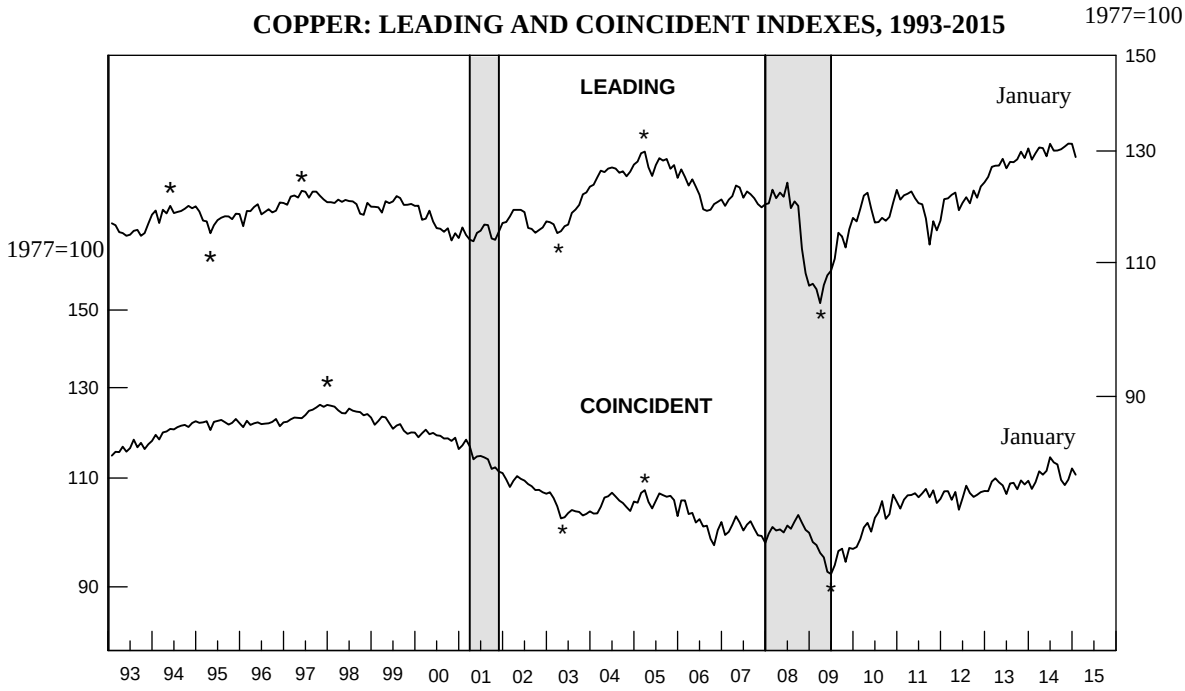
Leading Index	**December**	**January**
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	0.0	-1.1
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982$	-0.1	0.1
3. S&P stock price index, building products companies	0.3	0.0
4. LME spot price of primary copper	-0.1	-0.8
5. Index of new private housing units authorized by permit	0.0	0.0
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.1	-0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.0	-2.1
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	1.2r	0.3
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	0.8r	-1.5
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	2.1	-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.

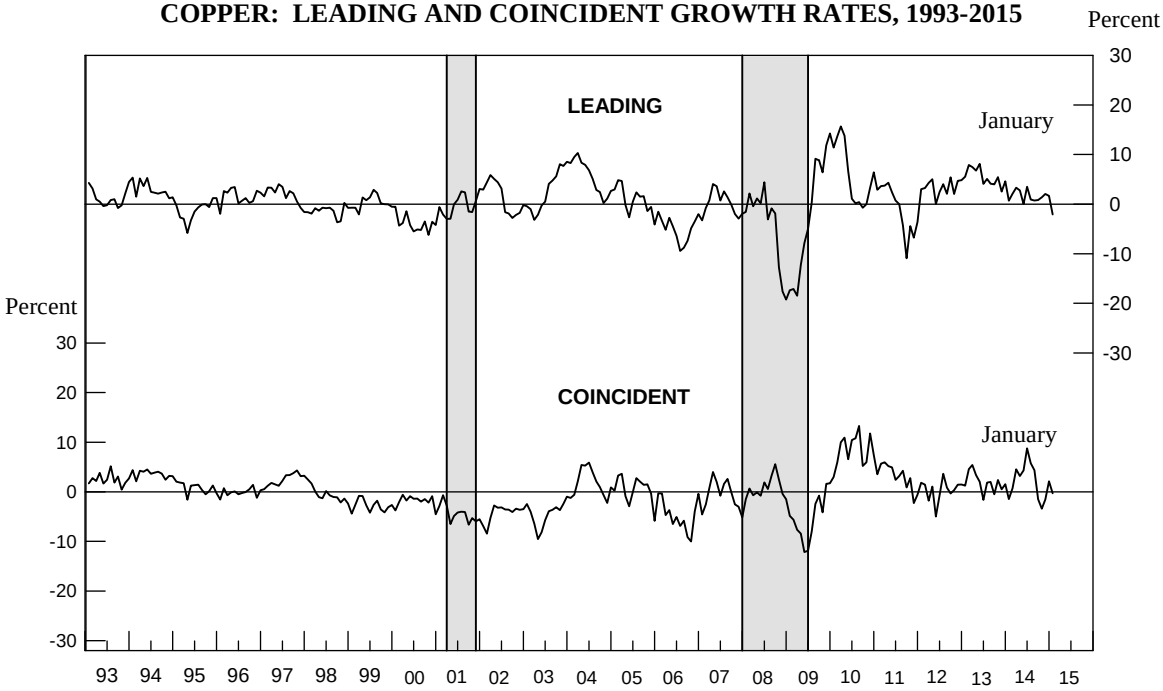
COPPER: LEADING AND COINCIDENT INDEXES, 1993-2015



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 7.

COPPER: LEADING AND COINCIDENT GROWTH RATES, 1993-2015

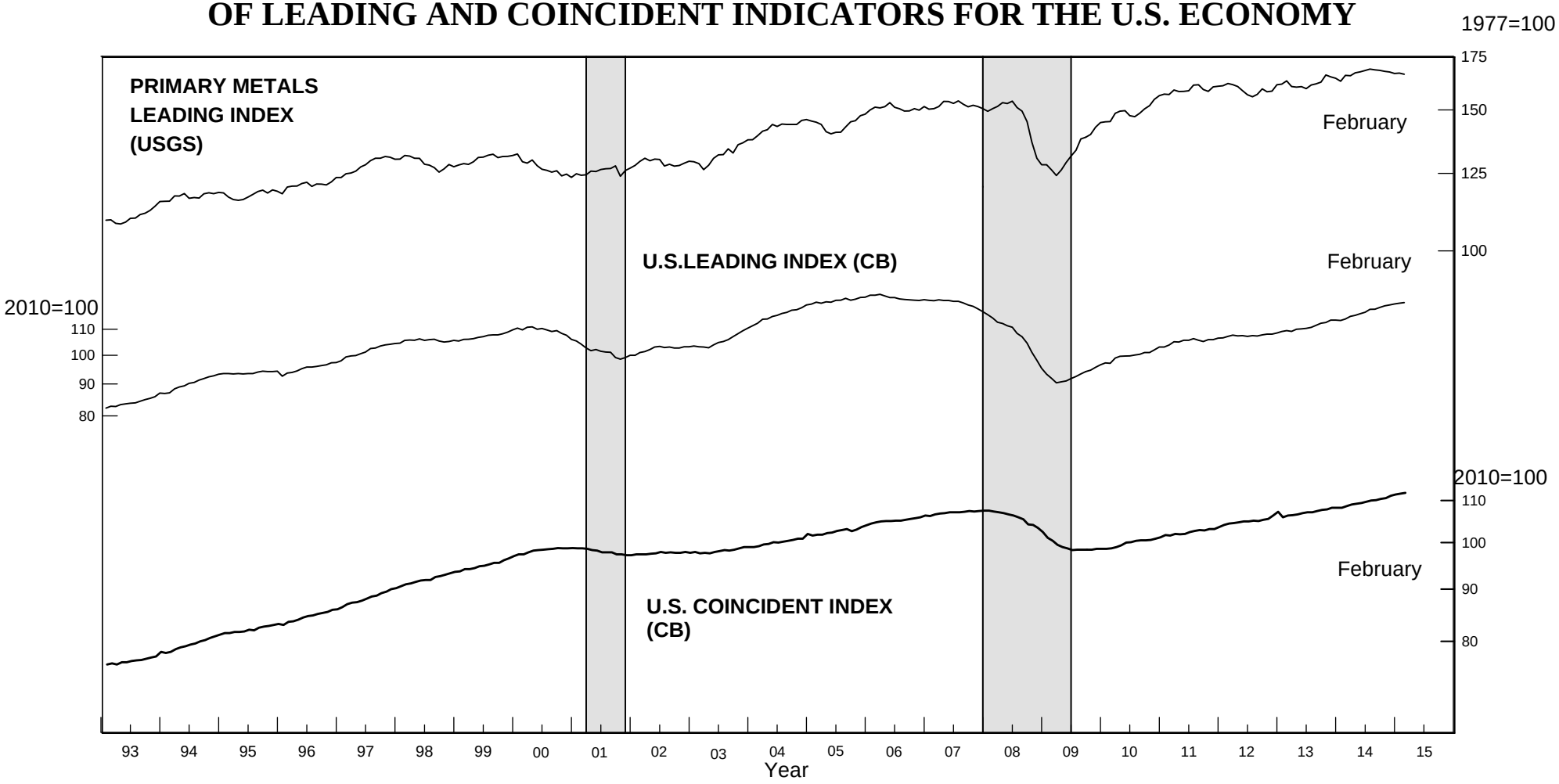


Shaded areas are business cycle recessions.

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.

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).

March 2015