



Metal Industry Indicators

Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for March and April—Summary Report

May 15, 2015

The **primary metals leading index** increased 0.6% in April to 162.9 from a revised 161.9 in March, and its 6-month smoothed growth rate rose to -4.3% from a revised -5.7% in March. 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 increase in leading index is not yet suggesting that the slow-up in the primary metals industry recovery is going to change in the near term. The still deeply negative growth rate is pointing to further declines in some metal industry activity growth. U.S. durable goods inventories are rising faster than consumption. The metals demand from the construction sector is likely to continue to be volatile and slow in the near term. Although the U.S. dollar lowered against other currencies recently, global economic growth is still slow and worldwide metal inventories are still relatively high.

Two of the four indicators that were available for the April index calculation increased, and two were unchanged from their March levels. The USGS metals price index growth rate increased in April, after steadily declining since August. It contributed 0.5 percentage point to the net increase in the leading index. A rise in the stock price index combining construction and farm machinery companies and industrial machinery companies contributed 0.1 percentage point. The PMI, the Institute for Supply Management's purchasing managers' index, remained at the same level as in March. The PMI remains above the threshold that indicates increases in U.S. manufacturing activity. Although the average workweek in primary metals establishments has been getting shorter since last fall, it was unchanged in April from March. The contributions from the PMI and the average workweek in primary metal establishments were zero. The April 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 1.5% to 112.9 in March from a revised 114.6 in February. A slightly longer average workweek in iron and steel mills was the only indicator that increased in March. The other eight components posted negative contributions to the steel leading index. The largest negative contribution came from a drop in the inflation-adjusted M2 money supply growth rate, which had risen to its highest level in more than two years in February. The steel leading index growth rate, which has generally decreased since July, has fallen further into negative territory. Increases in domestic steel mill products demand will most likely be met by

cheaper steel imports. The copper leading index decreased 0.3% to 131.6 in March from a revised 132.0 in February. The copper leading index was held back because of large negative contributions in two indicators. The largest negative contribution came from a shorter average workweek in nonferrous metals, except aluminum, plants. Also, a decline in the index for new housing permits made an equally large negative contribution. Despite these declines the copper leading index growth rates remained positive recently, suggesting that domestic copper industry activity could trend higher in the near term.

The **metals price leading index** decreased 0.3% in March, the latest month for which it is available, to 103.0 from a revised 103.3 in February. However, its 6-month smoothed growth rate increased to -5.9% from a revised -6.2% in February. Two of its four indicators decreased in March. The growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.4 percentage point to the net decline in the leading index. The revised Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate was the most negative since the end of 2012 and pointed to further decreases in growth for most industrialized countries. It contributed -0.1 percentage point. In contrast, a rise in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed 0.2 percentage point to the metals price leading index. A slightly wider yield spread between the U.S. 10-year Treasury Note and the federal funds rate 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, decreased in March. However, U.S. metals inventories levels reached a new recent record high. LME warehouse inventories also rose slightly for some metals recently. High global metal inventories, the negative leading index of metal prices growth rate, and slow global economic growth continue to suggest that metals price are not likely to rise significantly in the near future.

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

Primary Metals	-0.9%
Steel	-0.5%
Copper	-0.3%

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 April and May is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, June 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						
March	108.8	-11.3	7.7	-5.0	-12.7	4.9
April	108.8	-7.1	10.6	0.3	-8.7	12.1
May	108.5	-0.7	8.9	6.7	-1.0	4.7
June	108.2r	-0.1	8.2	10.2	-1.5	-0.4
July	108.0	5.7	6.2	27.8	2.8	-1.9
August	107.1r	2.2	5.5	36.0	-1.7	-2.5
September	106.3r	-6.1	6.9	12.2	-8.1	-2.0
October	105.7r	-4.7	10.4	19.7	-5.7	-11.6
November	105.2r	-8.9	13.1r	24.0	-11.6	-26.6
December	104.4r	-14.6	13.5	-4.1	-14.5	-25.3
2015						
January	103.4r	-28.6	16.5	-4.0	-33.0	-15.6
February	103.3r	-21.3	15.5r	-9.4	-21.5	-54.9
March	103.0	-15.1	14.0	-10.4	-14.9	-51.8
April	NA	-4.5	NA	0.5	-8.5	-47.3

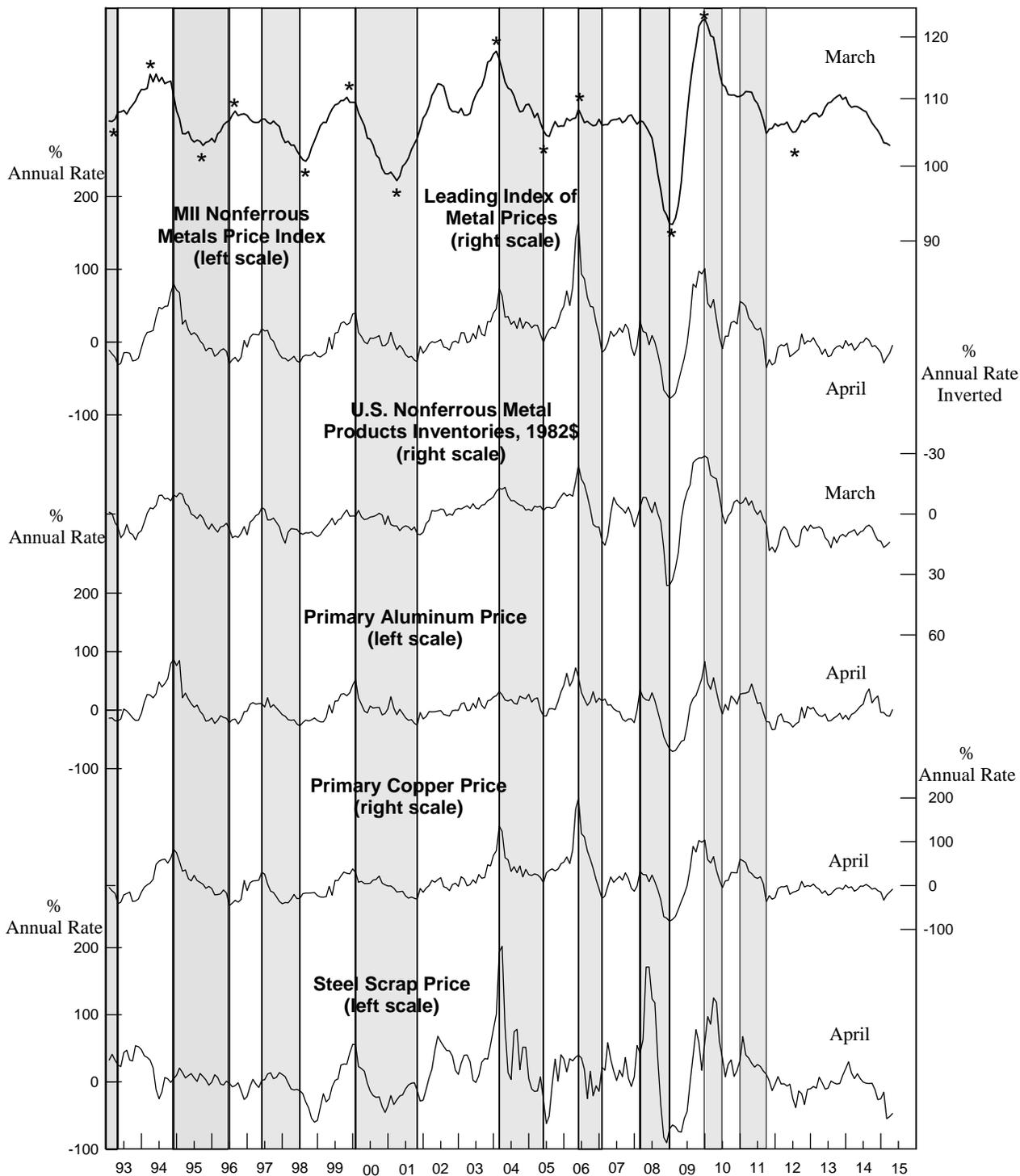
NA: Not available r: Revised

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				
April	166.9	4.6	115.7	4.4
May	167.4	4.5	116.6	5.2
June	168.0r	4.6	117.7	6.2
July	168.8r	4.6r	118.3	6.2
August	168.4r	3.4r	118.0	4.9
September	168.2	2.5	118.5	4.9
October	167.7r	1.4	118.4	3.9
November	166.9r	0.4r	117.6r	2.0r
December	166.6r	-0.2r	118.5r	3.2r
2015				
January	165.3r	-1.8r	117.5r	1.0r
February	165.3r	-2.0r	116.9r	-0.5r
March	161.9r	-5.7r	115.9	-2.3
April	162.9	-4.3	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		March	April
1. Average weekly hours, primary metals (NAICS 331)		-0.6	0.0
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)		-0.1r	0.1
3. Ratio of price to unit labor cost (NAICS 331)		-0.4	NA
4. USGS metals price index growth rate		-0.1r	0.5
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$		0.0	NA
6. Index of new private housing units authorized by permit		-0.3	NA
7. Growth rate of U.S. M2 money supply, 2009\$		-0.5	NA
8. PMI		-0.2r	0.0
Trend adjustment		0.0	0.0
Percent change (except for rounding differences)		-2.2r	0.6
Coincident Index		February	March
1. Industrial production index, primary metals (NAICS 331)		-0.4r	-0.6
2. Total employee hours, primary metals (NAICS 331)		-0.2r	-0.4
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$		-0.1r	0.1
Trend adjustment		0.1	0.1
Percent change (except for rounding differences)		-0.6r	-0.8

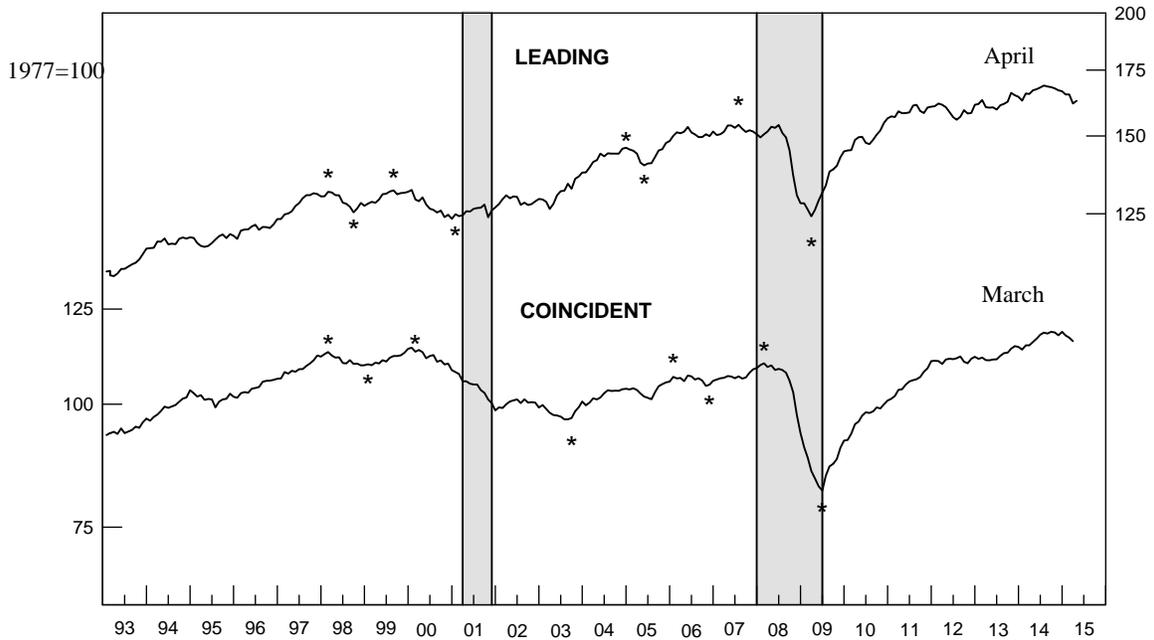
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

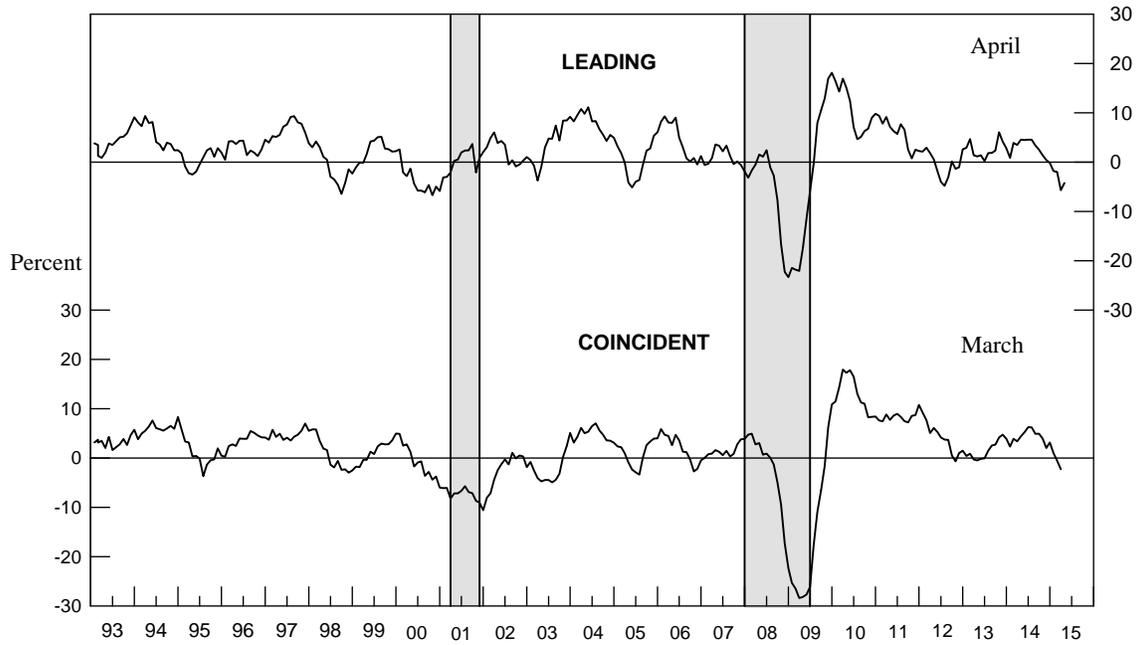
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1993-2015 1977=100



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

	<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				
April	114.6	2.8	117.5	1.4
May	114.7	2.6	117.8	1.4
June	114.6	1.9	118.5	2.3
July	115.4	2.7	119.4	3.3
August	115.7	2.7	119.6	3.2
September	115.7	2.3	120.5	4.3
October	115.1	0.9	120.8	4.2
November	115.1r	0.8r	120.8	3.9
December	114.6r	-0.1r	120.8	3.6r
2015				
January	114.0r	-1.1r	119.0	0.3r
February	114.6r	-0.4r	118.7r	-0.7
March	112.9	-3.2	118.1	-1.7

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	February	March
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\$	0.2r	-0.1
3. Shipments of household appliances, 1982\$	-0.2r	-0.3
4. S&P stock price index, steel companies	0.3	-0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.2	0.2
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	-0.3	-0.3
7. Index of new private housing units authorized by permit	0.2	-0.3
8. Growth rate of U.S. M2 money supply, 2009\$	0.4	-0.5
9. PMI	-0.1	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.5r	-1.5
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.7r	-0.6
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.0r	0.0
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.3	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.3r	-0.4

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

1977=100

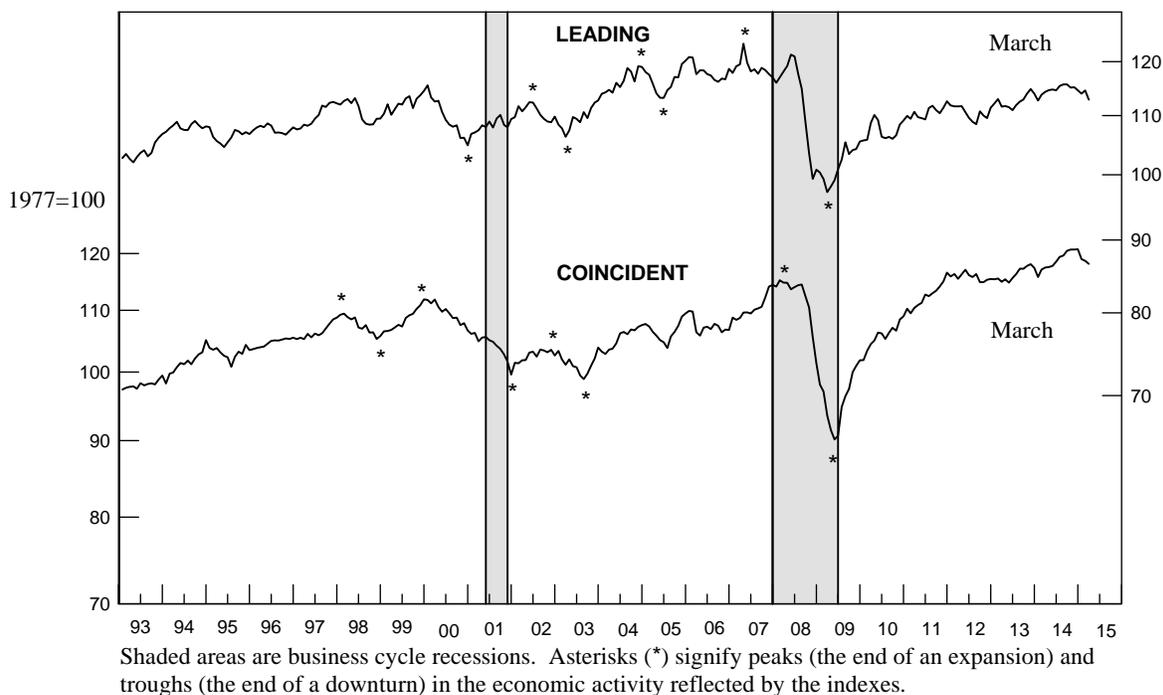
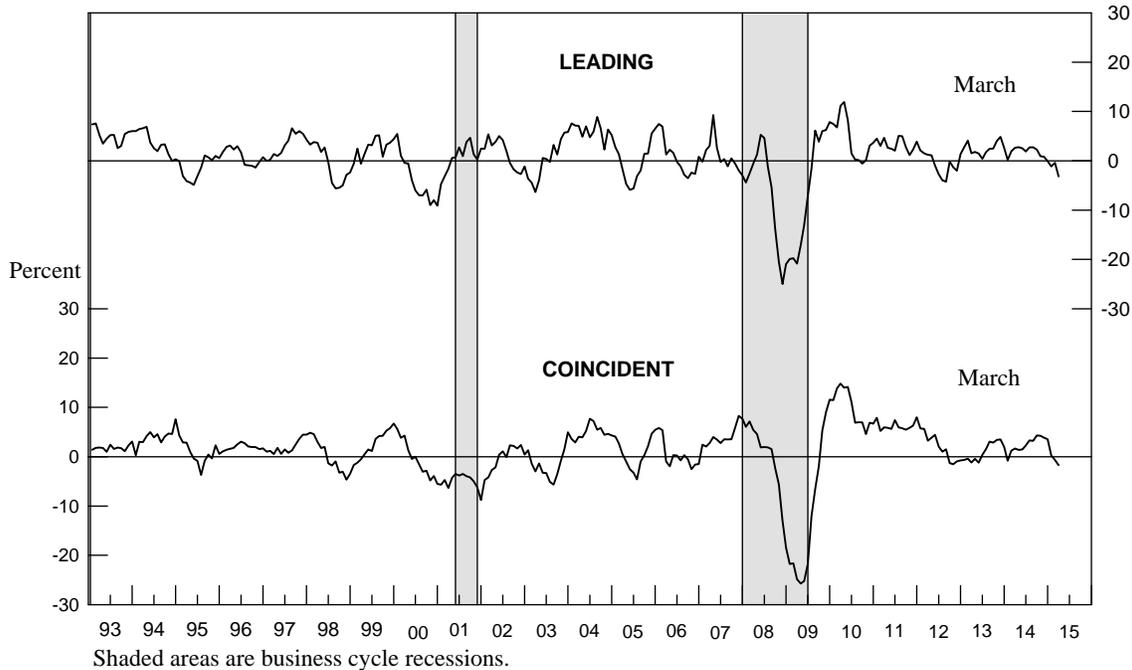


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1993-2015

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

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2014				
April	130.6	2.8	110.7	3.2
May	129.0	0.0	111.5	4.3
June	131.4	3.5	114.3	8.8
July	130.0	0.9	113.2	5.8
August	130.1	0.7	112.8	4.3
September	130.3	0.8	109.6	-1.5
October	130.9	1.4	108.4	-3.7
November	131.5r	2.1r	107.8r	-4.6r
December	131.4r	1.6	111.8r	2.1r
2015				
January	128.9	-2.0	110.1r	-1.1r
February	132.0r	2.3r	111.3r	0.7r
March	131.6	1.5	111.0	-0.1

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

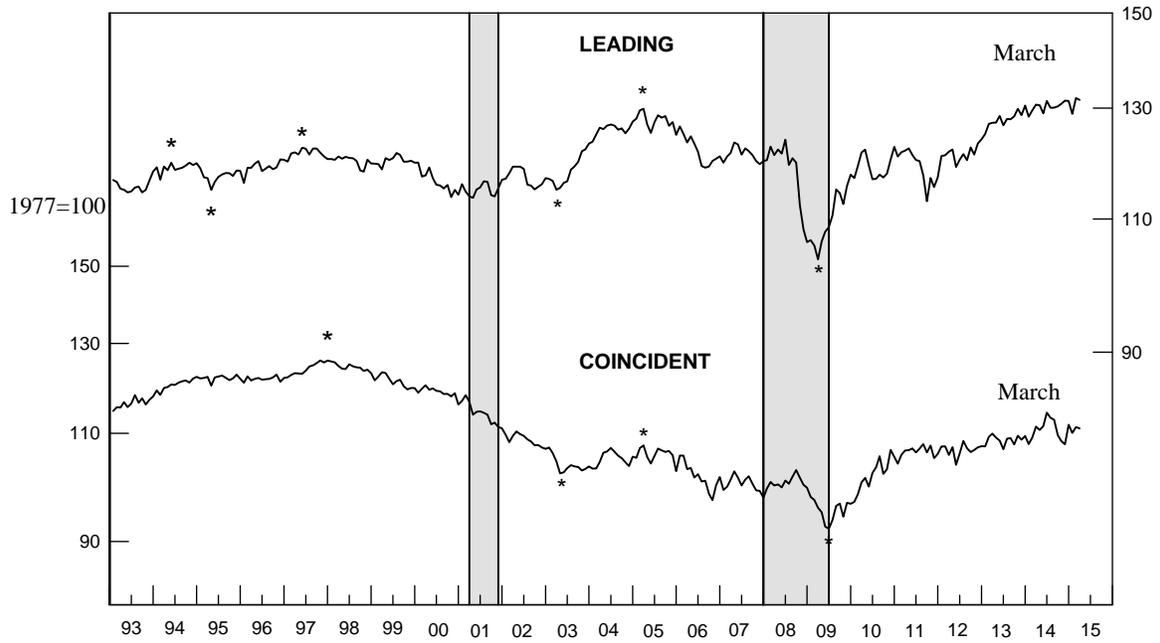
Leading Index	February	March
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	1.1r	-0.4
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.2	0.2
3. S&P stock price index, building products companies	0.4	0.1
4. LME spot price of primary copper	0.4	0.2
5. Index of new private housing units authorized by permit	0.2	-0.4
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.1	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	2.4r	-0.3
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	-0.1r	-0.2
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	1.1r	-0.1
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.1r	-0.2

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

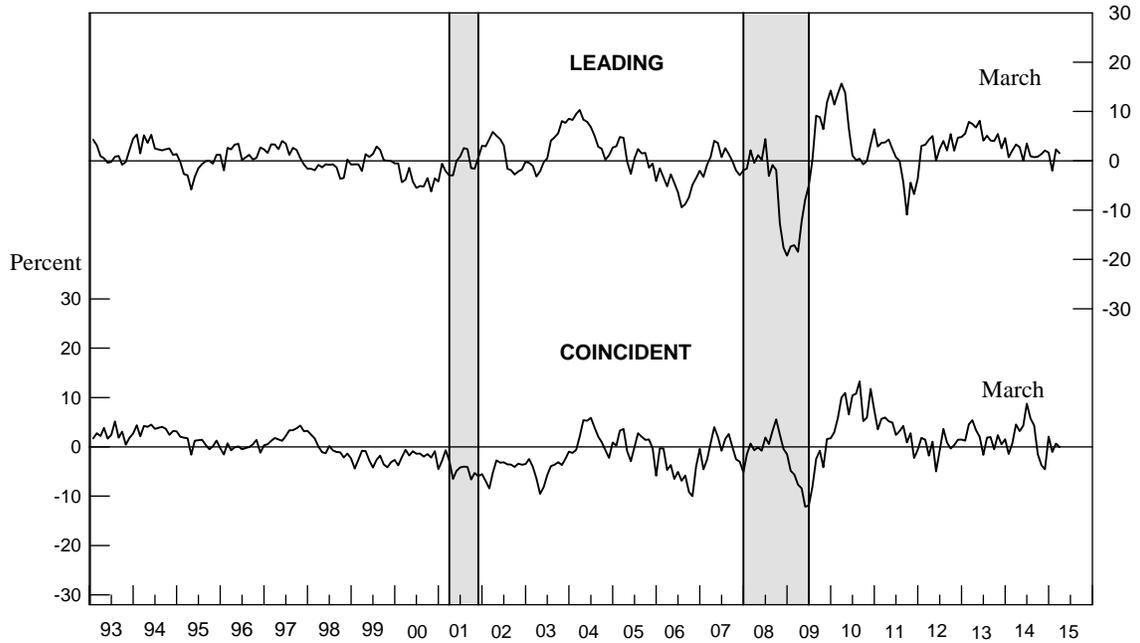
1977=100



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 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1993-2015

Percent

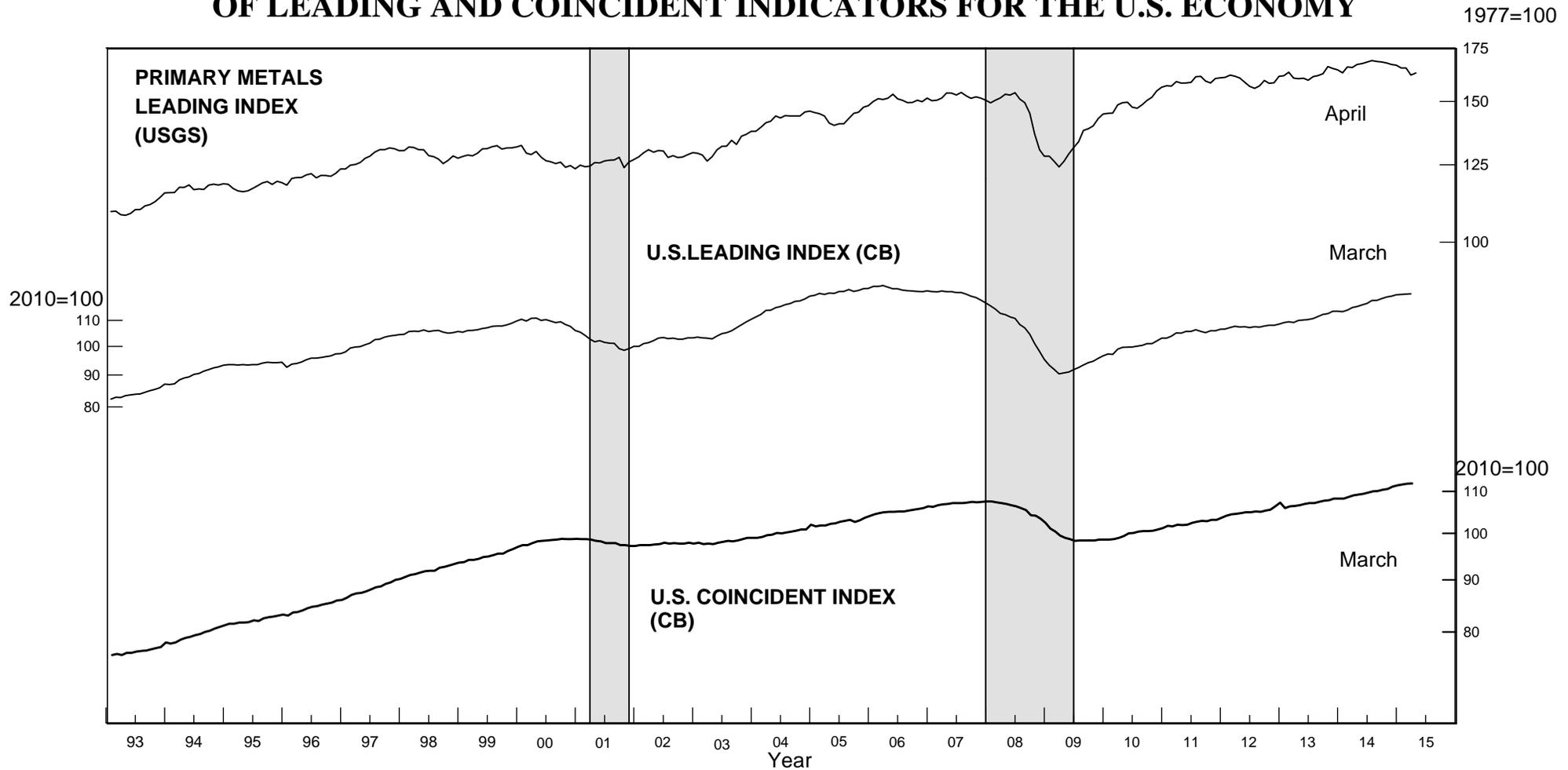


Shaded areas are business cycle recessions.

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.

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).

May 2015