



# Metal Industry Indicators

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

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April 17, 2015

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The **primary metals leading index** decreased 1.9% in March to 162.5 from a revised 165.6 in February, and its 6-month smoothed growth rate declined to -5.1% from a revised -1.7% in February. 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 sharp decline in the leading index growth rate is indicating that the primary metals industry recovery is likely to slow further, or possibly come to an end, in the near term. U.S. manufacturing has slowed in 2015 and new orders for durable goods have decreased 3 of the last 4 months. Furthermore, domestic durable goods inventories are rising. The metals demand from the construction sector is likely to continue to be volatile in 2015. Slow global economic growth, accelerating worldwide metal inventories, and the strong U.S. dollar limit exports of U.S. metal products. Meanwhile, more types of metals are being imported into the U.S., weakening the primary metals industry's recovery.

All four indicators that were available for the March index calculation decreased. The average workweek in primary metals establishments has been getting shorter since last fall. In March, it was one-half hour shorter than February. It contributed -1.1 percentage points to the overall decline in the leading index. The USGS metals price index growth rate has steadily declined since August; it contributed -0.3 percentage point to the leading index. A drop in the stock price index combining construction and farm machinery companies and industrial machinery companies also contributed -0.3 percentage point. The PMI, the Institute for Supply Management's purchasing managers' index, decreased for the fifth consecutive month, contributing -0.4 percentage point. Nevertheless, the PMI remains above the threshold that indicates increases in U.S. manufacturing activity. The March 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 0.8% to 114.8 in February from a revised 113.9 in January. Five of its nine indicators increased. The inflation-adjusted M2 money supply growth rate has risen to its highest level in more than two years and posted the largest positive contribution to the leading index. An uptick in the S&P stock price index for steel companies and a rise in new orders for iron and steel mill products also made large positive contributions to leading index. The largest negative contribution to the leading index came from the falling steel scrap price growth rate. Despite this month's uptick in the steel leading index growth rate, it has generally

decreased since July and remains in negative territory. The increase in domestic steel products demand will likely be met by imports. Steel imports market share in March was 33%. Furthermore, production in domestic steel mills was down 10% in February from January, as well as down 10% from February of 2014. The copper leading index increased 2.3% to 131.9 in February from a revised 128.9 in January. All of its six indicators increased. Average weekly hours in nonferrous metals, except aluminum, plants, rebounded to its recent trend. A higher copper price and a rise in the S&P stock price index for building materials also boosted the copper leading index in February. The copper leading index growth rate moved back into positive territory. U.S. copper industry activity is more likely to remain volatile in the near term.

The **metals price leading index** remained at the revised 103.7 January level in February, the latest month for which it is available. However, its 6-month smoothed growth rate increased to -5.6% from a revised -6.3% in January. Two of its four indicators increased in February. 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 wider yield spread between the U.S. 10-year Treasury Note and the federal funds rate contributed 0.1 percentage point. In contrast, the declining growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.3 percentage point. The revised Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate has remained essentially flat in the territory that indicates further decreases in growth for most industrialized countries. Its contribution to the metals price leading index rounded to zero. 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 sixth consecutive month in February. U.S. metals inventories levels reached a new recent record high. However, LME warehouse inventories decreased slightly recently. Nevertheless, relatively high global metal inventories, the negative leading index of metal prices growth rate, and slow global economic growth suggest that metals price are not likely to rise significantly in the near future.

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

Primary Metals	-0.2%
Steel	0.4%
Copper	0.9%

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 March and April is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, May 15, 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
<b>2014</b>						
February	108.7r	-1.9	8.7	-7.6	-2.7	13.1
March	108.8r	-11.3	7.7	-5.0	-12.7	4.9
April	108.8r	-7.1	10.6	0.3	-8.7	12.1
May	108.5r	-0.7	8.9	6.7	-1.0	4.7
June	108.3r	-0.1	8.2	10.2	-1.5	-0.4
July	108.0r	5.7	6.2	27.8	2.8	-1.9
August	107.2r	2.2	5.5	36.0	-1.7	-2.5
September	106.4r	-6.1	6.9	12.2	-8.1	-2.0
October	105.8r	-4.7	10.4r	19.7	-5.7	-11.6
November	105.3r	-8.9	12.4	24.0	-11.6	-26.6
December	104.7	-14.6	13.5	-4.1	-14.5	-25.3
<b>2015</b>						
January	103.7r	-28.6	16.5r	-4.0	-33.0	-15.6
February	103.7	-21.3	17.7	-9.4	-21.5	-54.9
March	NA	-15.1	NA	-10.4	-14.9	-51.8

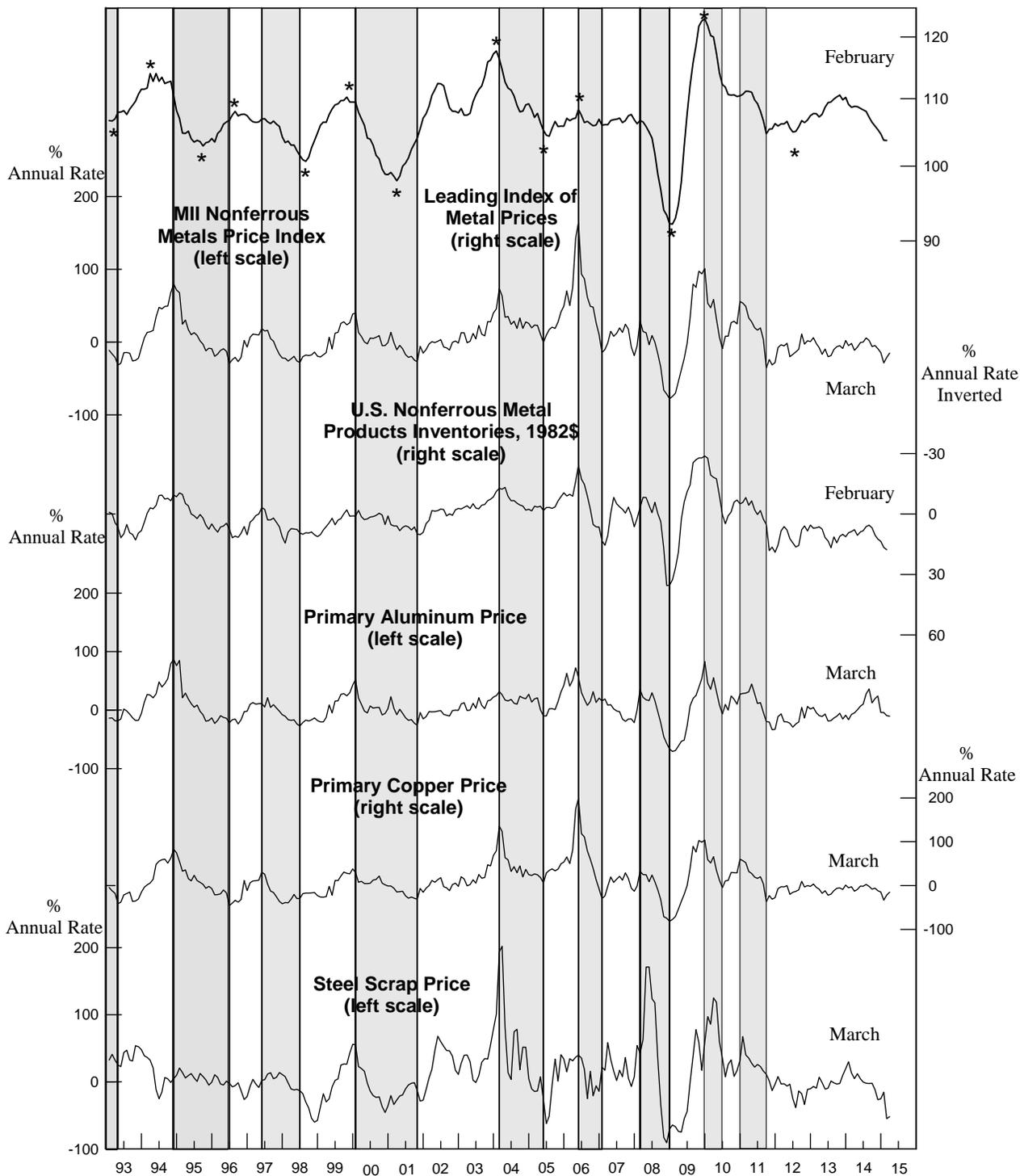
NA: Not available    r: Revised

**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
<b>2014</b>				
March	165.5	3.5	114.8	3.4
April	166.9	4.6	115.7	4.4
May	167.4	4.5	116.6	5.2
June	168.1	4.6	117.7	6.2
July	168.7	4.5	118.3	6.2
August	168.3	3.3	118.0	4.9
September	168.2r	2.5	118.5	4.9
October	167.6	1.4	118.4	3.9
November	167.4	0.9	118.0	2.7
December	166.7r	0.0r	118.7r	3.5r
<b>2015</b>				
January	165.4r	-1.7r	117.7r	1.2r
February	165.6r	-1.7r	117.5	0.3
March	162.5	-5.1	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**

<b>Leading Index</b>	<b>February</b>	<b>March</b>
1. Average weekly hours, primary metals (NAICS 331)	-0.1r	-1.1
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	0.1r	-0.3
3. Ratio of price to unit labor cost (NAICS 331)	-0.4	NA
4. USGS metals price index growth rate	-0.1r	-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	0.2	NA
7. Growth rate of U.S. M2 money supply, 2009\$	0.4	NA
8. PMI	-0.1	-0.4
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.1r	-2.1
<b>Coincident Index</b>	<b>January</b>	<b>February</b>
1. Industrial production index, primary metals (NAICS 331)	-0.8r	-0.3
2. Total employee hours, primary metals (NAICS 331)	0.1r	-0.1
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	-0.2r	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.8r	-0.2

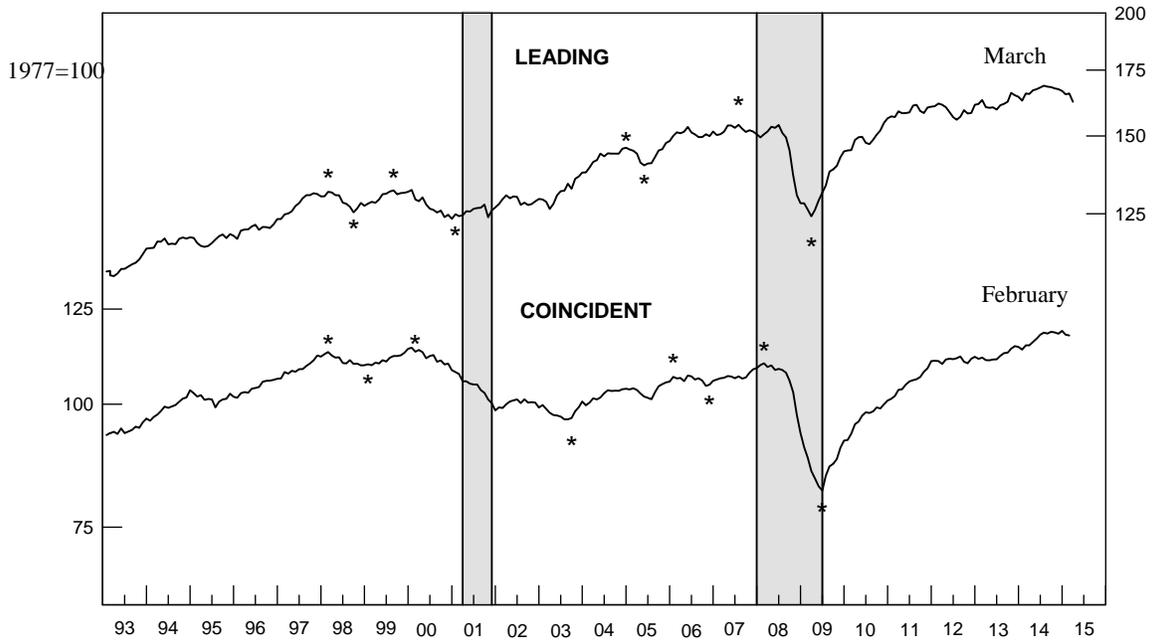
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

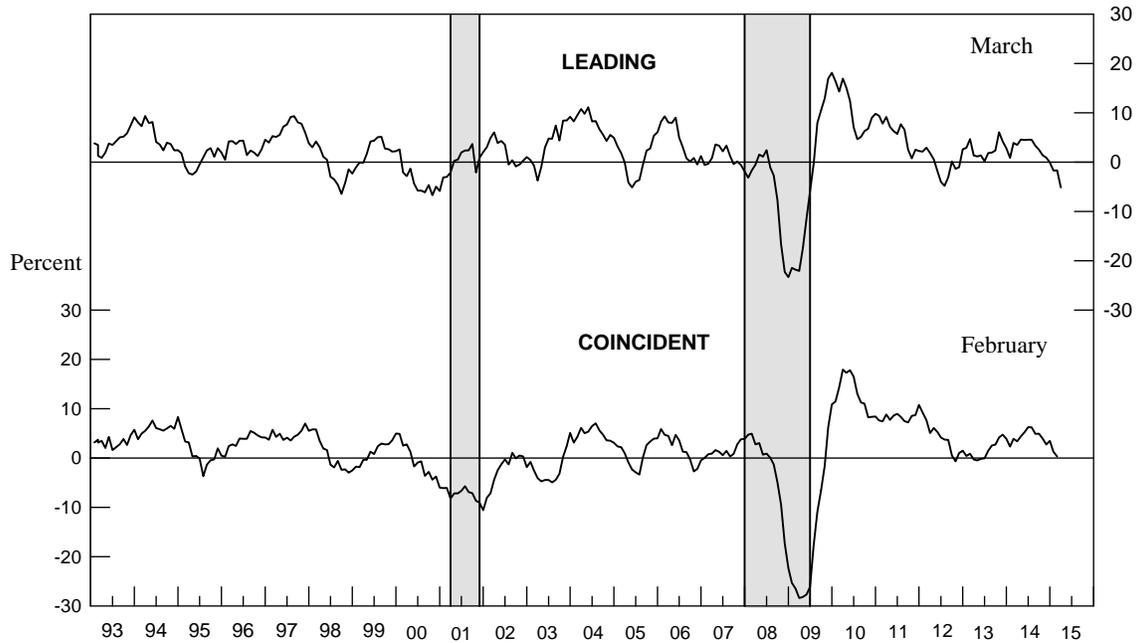
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1993-2015** 1977=100



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>
<b>2014</b>				
March	114.3	2.7	117.5	1.6
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	0.9r	120.8	4.2
November	115.2	1.0	120.8	3.9
December	114.5	-0.2	120.8	3.5
<b>2015</b>				
January	113.9r	-1.2r	119.0r	0.2r
February	114.8	-0.1	119.5	0.6

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**

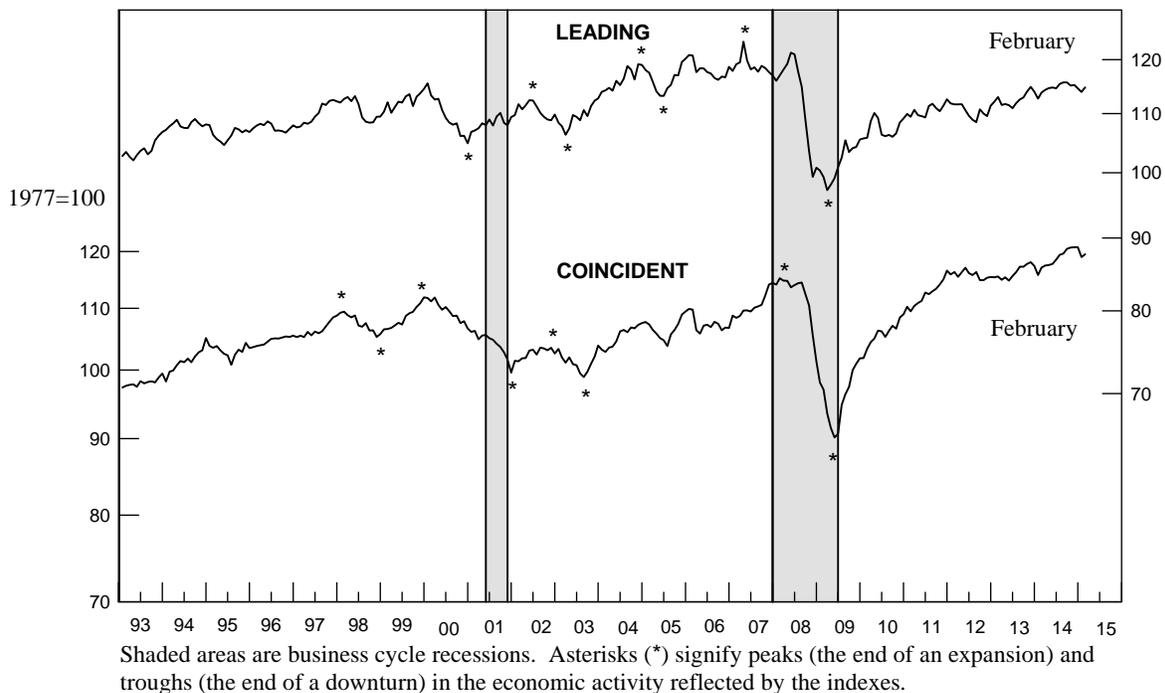
<b>Leading Index</b>	<b>January</b>	<b>February</b>
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	-0.1	0.2
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.1	0.3
3. Shipments of household appliances, 1982\$	-0.2r	-0.1
4. S&P stock price index, steel companies	-0.6	0.3
5. Retail sales of U.S. passenger cars and light trucks (units)	0.0	-0.2
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	0.1	-0.3
7. Index of new private housing units authorized by permit	0.0	0.2
8. Growth rate of U.S. M2 money supply, 2009\$	0.6r	0.4
9. PMI	-0.2	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.5r	0.7
<b>Coincident Index</b>		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-1.0r	-0.2
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.5r	0.2
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	-0.1	0.3
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-1.5r	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

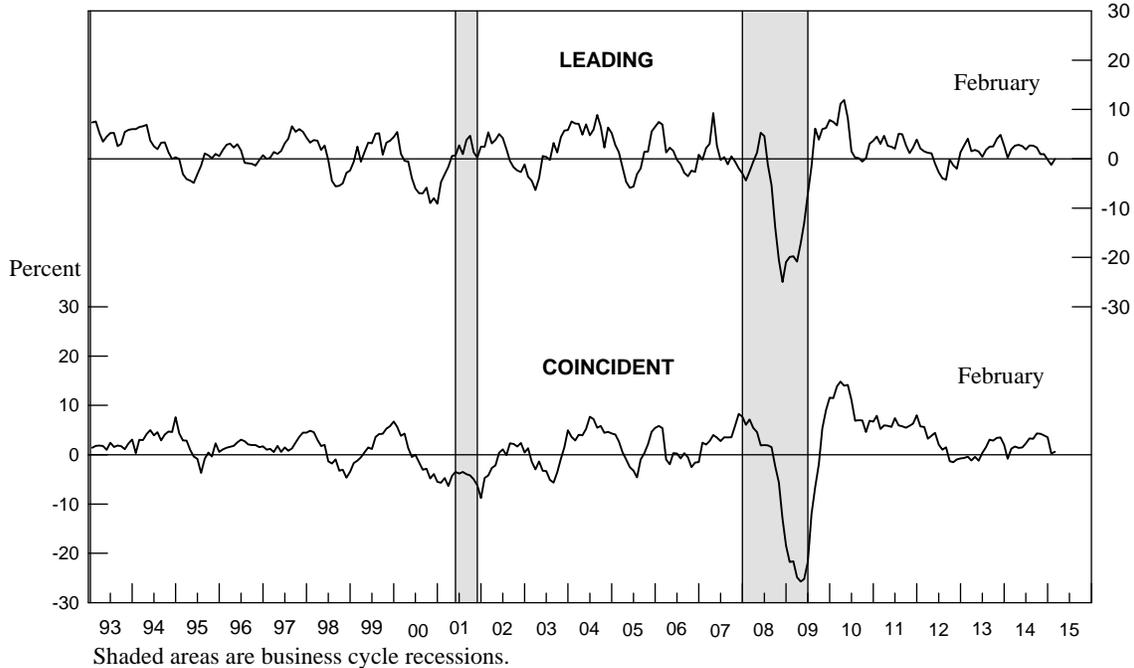
**CHART 4.**  
**STEEL: LEADING AND COINCIDENT INDEXES, 1993-2015**

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**

	<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>2014</b>				
March	130.7	3.3	111.4	4.5
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	108.4r	-3.7r
November	131.4	2.0r	109.7	-1.5r
December	131.4	1.6	112.3r	2.8r
<b>2015</b>				
January	128.9r	-2.0r	110.8r	-0.2r
February	131.9	2.1	111.8	1.0

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**

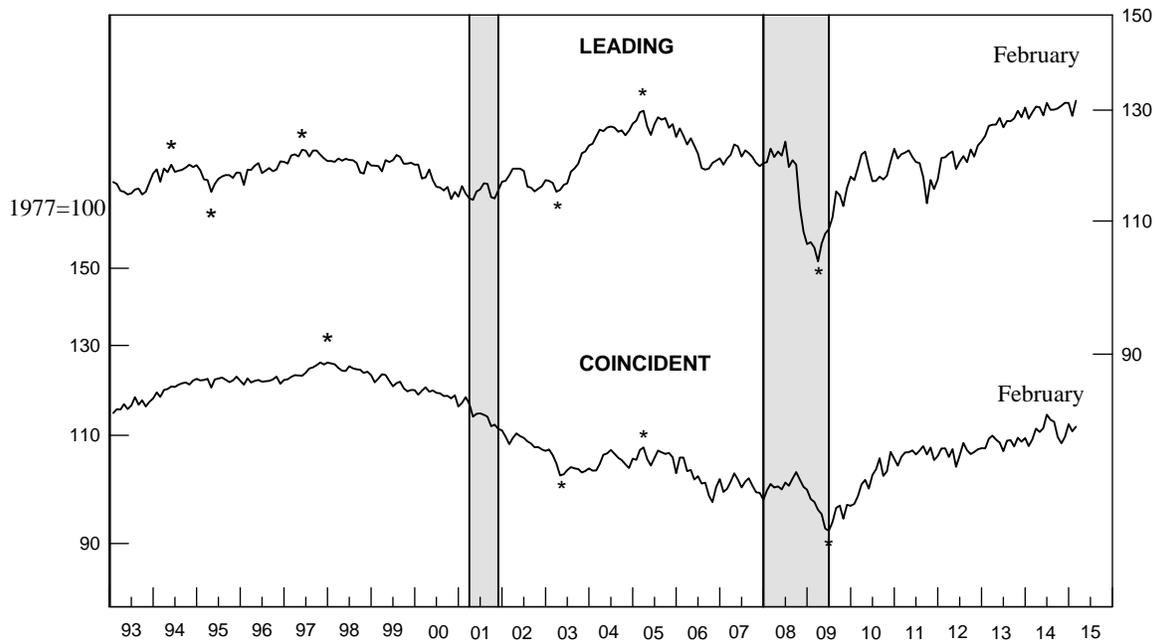
<b>Leading Index</b>	<b>January</b>	<b>February</b>
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	-1.1	1.0
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.1	0.2
3. S&P stock price index, building products companies	0.0	0.4
4. LME spot price of primary copper	-0.8	0.4
5. Index of new private housing units authorized by permit	0.0	0.2
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.3	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	<u>-2.1</u>	<u>2.3</u>
<b>Coincident Index</b>		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.0r	-0.5
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-1.5	1.3
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	<u>-1.4r</u>	<u>0.9</u>

**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**

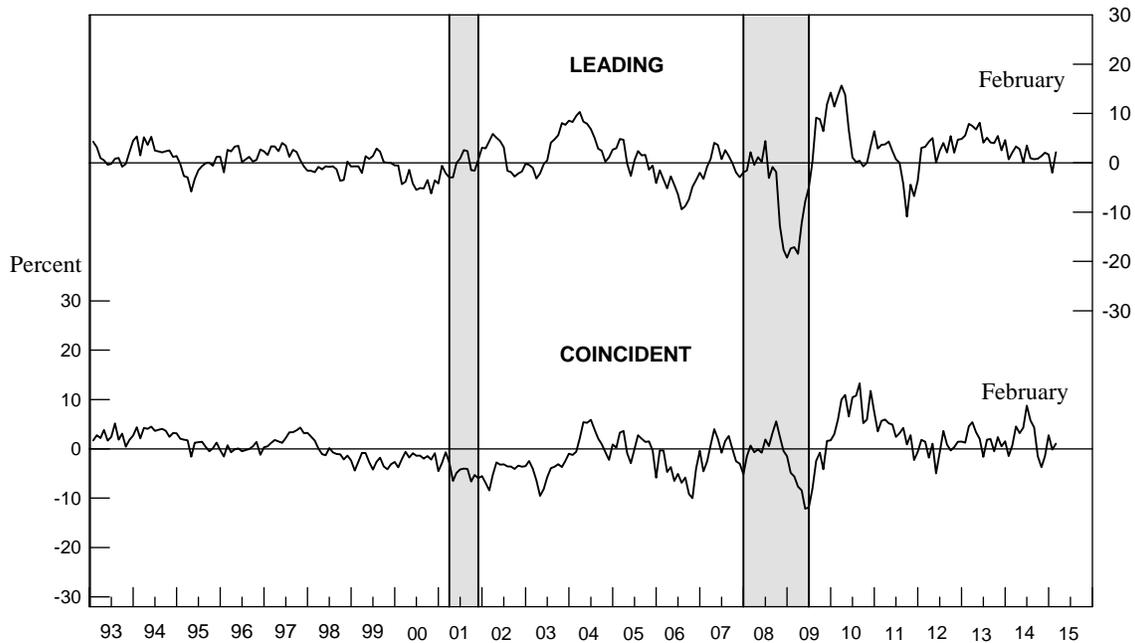
1977=100



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

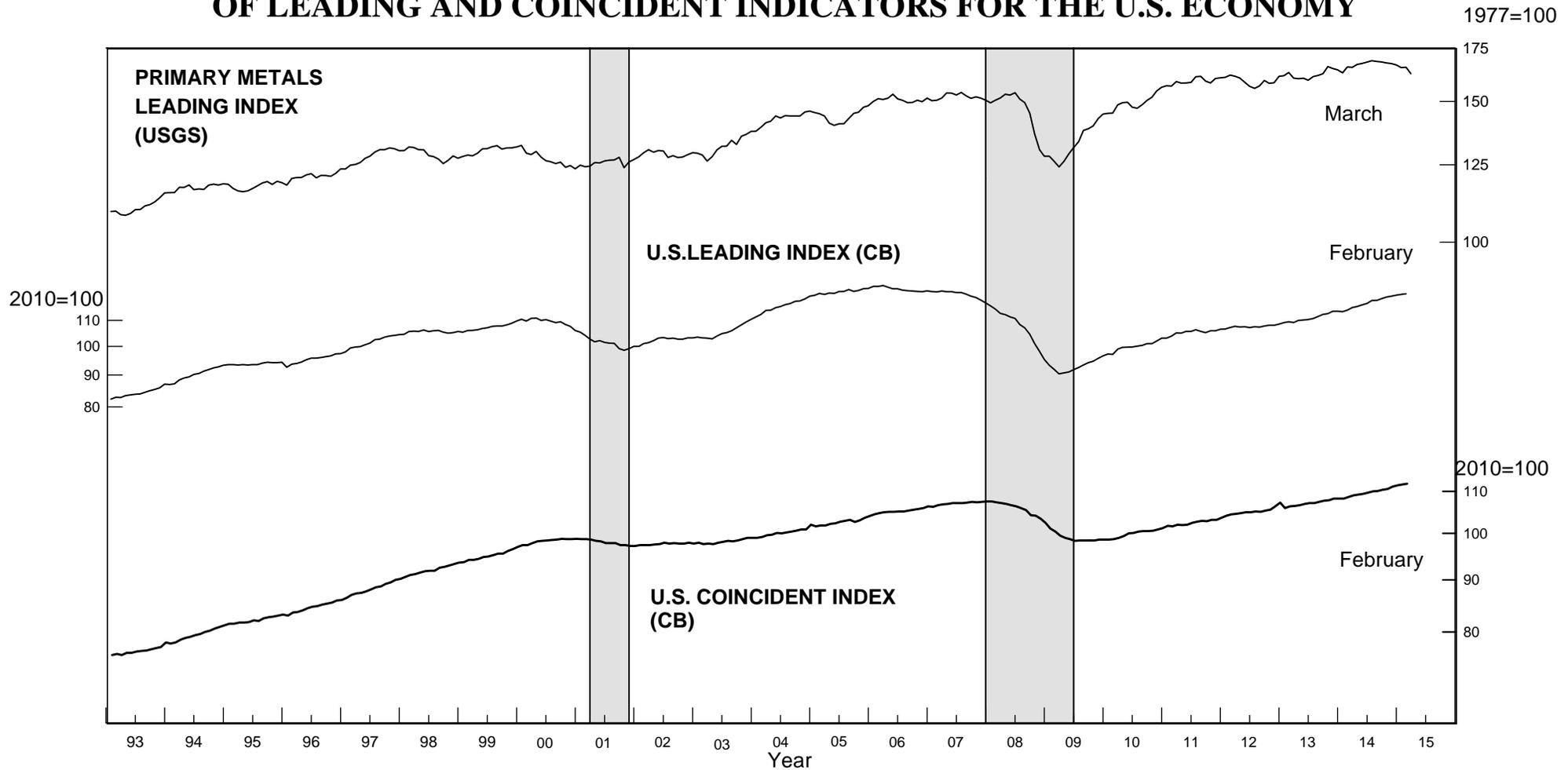


Shaded areas are business cycle recessions.

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).

April 2015