



Metal Industry Indicators

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

March 21, 2014

The **primary metals leading index** increased 0.5% in February to 163.1 from a revised 162.3 in January, and its 6-month smoothed growth rate increased to 1.6% from a revised 0.8% 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. Although the primary metals leading index growth rate rose in February, it had steadily declined since October, suggesting that growth in the primary metals industry is likely to be slow, at best, in the near future. The primary metals industry will likely be boosted by a rebound in the U.S. manufacturing sector. This rebound suggests that at least some of the manufacturing decline in January could have been an effect of severe weather and not a dip in durable goods demand. Similarly, residential construction activity had decreased since November, and permits for new housing declined sharply in January. An increase in housing permits in February points to a rise in metals consumption in the coming months.

Two of the four indicators that were available for the February index calculation increased, one decreased, and one remained the same as in January. The PMI, the Institute for Supply Management's purchasing managers' index, increased sharply in February. It made the largest positive contribution, 0.5 percentage point, to the net increase in the leading index. It remained above the threshold that indicates further increases in U.S. manufacturing activity. The stock price index combining construction and farm machinery companies and industrial machinery companies continued to climb and reached a new record high. It contributed 0.1 percentage point to the leading index. The USGS metals price index growth rate, which had been rising recently, declined in February and contributed -0.1 percentage point. The average workweek in primary metals establishments has remained steady over the last 3 months, and its contribution was zero. 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 1.1% in January, the latest month for which it is available. The largest negative contribution to the leading index in January was from the PMI. Moreover, the PMI has been declining for several months, along with the S&P stock price index for steel companies, housing permits, and new orders for iron and steel mill products. Small gains in the steel scrap price growth rate and car and light truck sales lifted the leading index slightly. The steel leading index growth rate suggests that steel industry activity will likely be

slow in the near term. The copper leading index decreased 0.5% in January. A decrease in housing permits made the largest negative contribution. In contrast, another construction related indicator, the S&P stock price index for building products companies, made the only positive contribution to the copper leading index. Fewer new orders for nonferrous metal products and a drop in the copper price made sizable negative contributions. The positive copper leading index growth rate would normally indicate that activity in the U.S. copper industry could still increase in the near term. However, the possibility that a flood of copper into the world market if copper held as collateral for loans has to be sold could subdue copper activity.

The **metals price leading index** decreased 0.7% to 109.6 in January, the latest month for which it is available, from a revised 110.4 in December. Its 6-month smoothed growth rate decreased to 0.9% from a downwardly revised 2.8% in December. All four of its indicators decreased in January. A drop in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed -0.4 percentage point to overall decline in the metals price leading index. The decrease in the Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate contributed -0.3 percentage point. The OECD leading index, which was indicating that most industrialized economies would have modest growth, has shifted downward. The growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed -0.2 percentage point. A decrease in the yield spread between the U.S. 10-year Treasury Note and the federal funds rate was so slight that its contribution 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, decreased in January. The level of U.S. metals inventories remains high. High inventories and the decline in the leading index of metal prices growth rate suggest that some metals prices will decline further 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	-0.2%
Steel	-0.8%
Copper	0.2%

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 18, 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
2013						
January	107.8r	6.0	7.1	4.2	3.3	-6.8
February	107.6	-2.1	7.4	-4.7	-4.0	-9.4
March	107.2r	-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	109.9r	-10.3	11.1	-13.5	-11.5	-1.5
September	110.3	-6.5	13.8r	-10.5	-6.0	-3.1
October	110.7	-4.8	10.8	-5.5	-5.5	-2.5
November	110.0r	-8.9	9.9	-15.5	-8.8	9.7
December	110.4	2.0	12.3r	-8.9	1.5	19.6
2014						
January	109.6	-4.9	8.3	-16.4	-5.0	29.8
February	NA	-1.9	NA	-7.6	-2.7	13.1

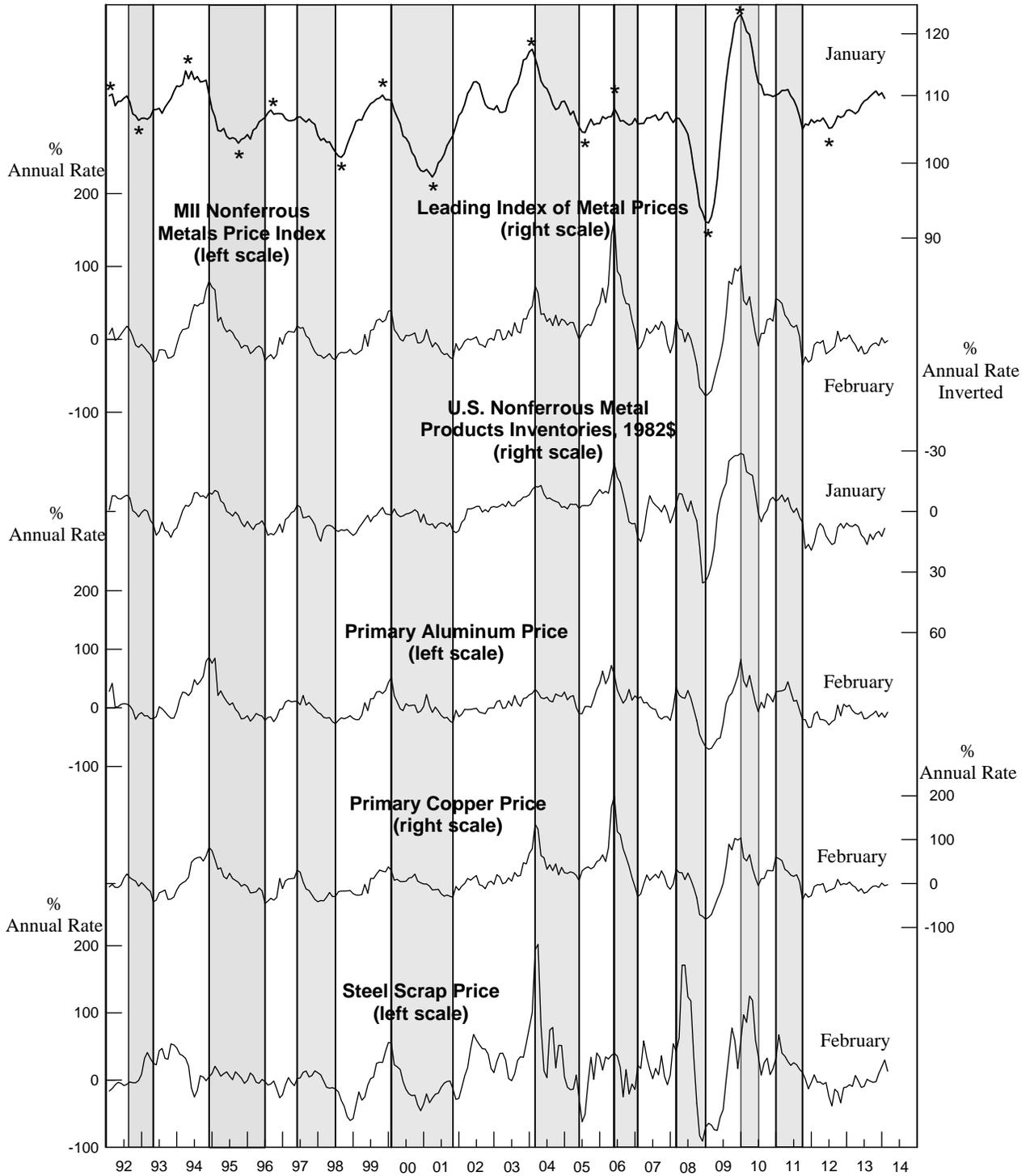
NA: Not available r: Revised

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				
February	162.6	4.2	111.0	0.7
March	159.6	0.6	110.0	-1.0
April	159.8	1.0	109.9	-1.4
May	160.3	1.7	110.2	-0.7
June	158.8	-0.2	110.0	-1.0
July	160.8	1.9	111.3	1.4
August	161.3r	2.0r	111.8r	2.1r
September	162.2r	2.5r	112.3r	2.9r
October	165.4r	6.0r	113.4r	4.5r
November	164.0r	3.6r	113.7r	4.4r
December	163.1r	2.0r	113.6r	3.8r
2014				
January	162.3r	0.8r	113.4	3.2
February	163.1	1.6	NA	NA

NA: Not available **r:** Revised

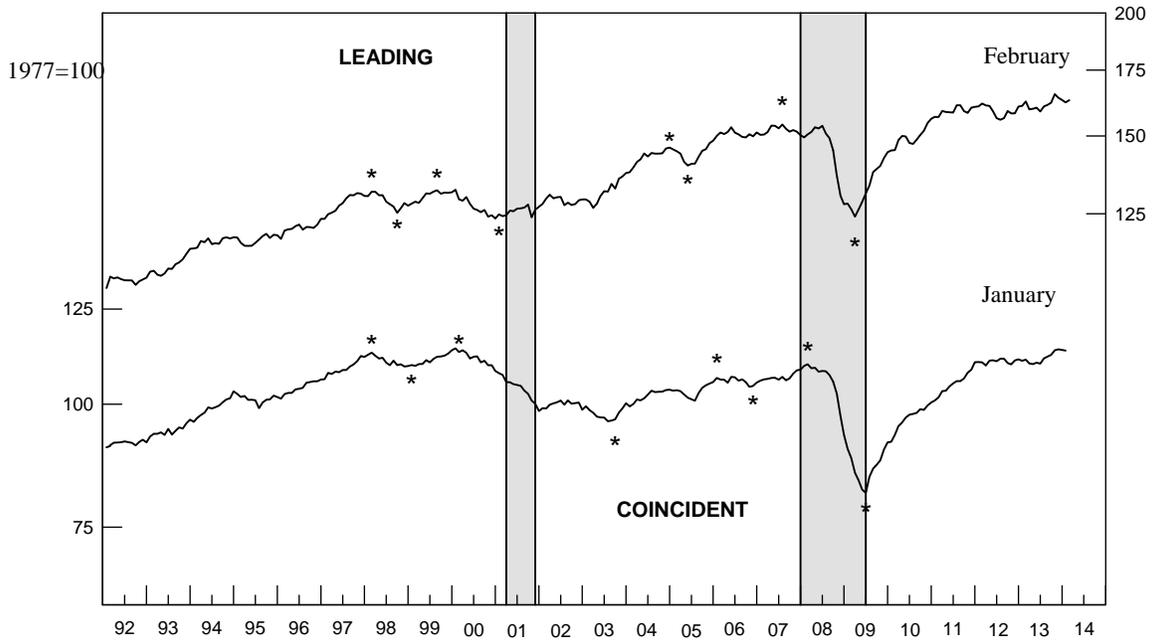
Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

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)			0.0r	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)			0.1	NA
4. USGS metals price index growth rate			0.1r	-0.1
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, 2005\$			0.0	NA
8. PMI			-0.6r	0.5
Trend adjustment			0.0	0.0
			<hr/>	<hr/>
Percent change (except for rounding differences)			-0.5	0.5
Coincident Index			December	January
1. Industrial production index, primary metals (NAICS 331)			-0.2r	0.0
2. Total employee hours, primary metals (NAICS 331)			0.0r	0.0
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$			-0.1r	-0.2
Trend adjustment			0.1	0.1
			<hr/>	<hr/>
Percent change (except for rounding differences)			-0.2r	-0.1
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.

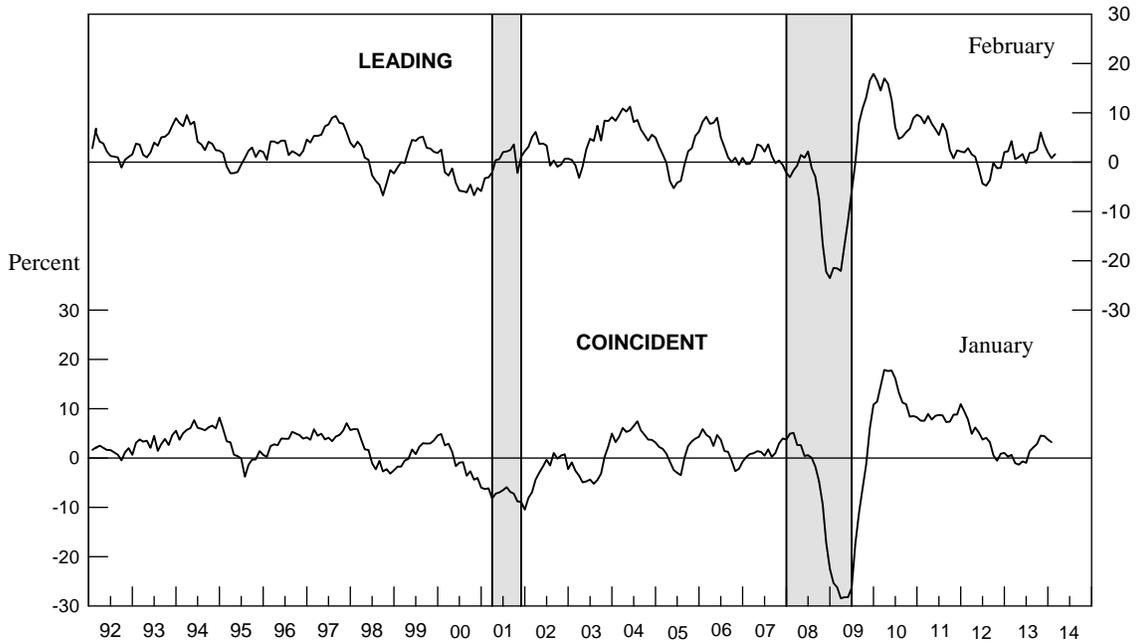
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1992-2014 1977=100



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

	<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				
February	112.6	3.6	115.5	-0.3
March	111.4	1.4	115.0	-1.1
April	111.8	2.0	115.1	-0.8
May	111.7	1.8	114.5	-1.7
June	111.0	0.6	115.4	0.0
July	112.0	2.1	116.4	1.7
August	112.8	2.9	117.1	2.8
September	112.8	2.4	117.0	2.5r
October	114.0	4.0r	118.0	3.8
November	114.6r	4.5r	117.8	3.0
December	113.6r	2.1r	117.0r	1.4r
2014				
January	112.4	-0.2	116.1	-0.2

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

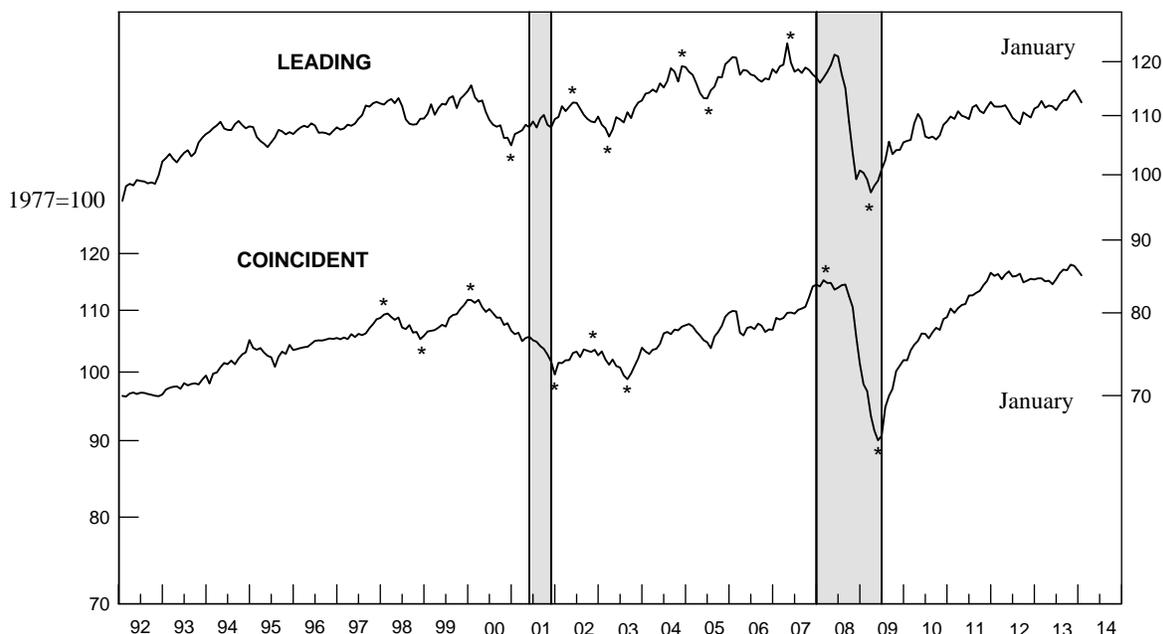
Leading Index	December	January
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.2r	-0.3
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.6r	-0.1
3. Shipments of household appliances, 1982\$	0.0r	0.0
4. S&P stock price index, steel companies	-0.1	-0.1
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.3	0.1
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	-0.2
8. Growth rate of U.S. M2 money supply, 2005\$	-0.1	0.0
9. PMI	-0.1	-0.6
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.9r	-1.0
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.4r	0.0
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	-0.8r	-0.5
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.4r	-0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.7r	-0.8

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, 1992-2014

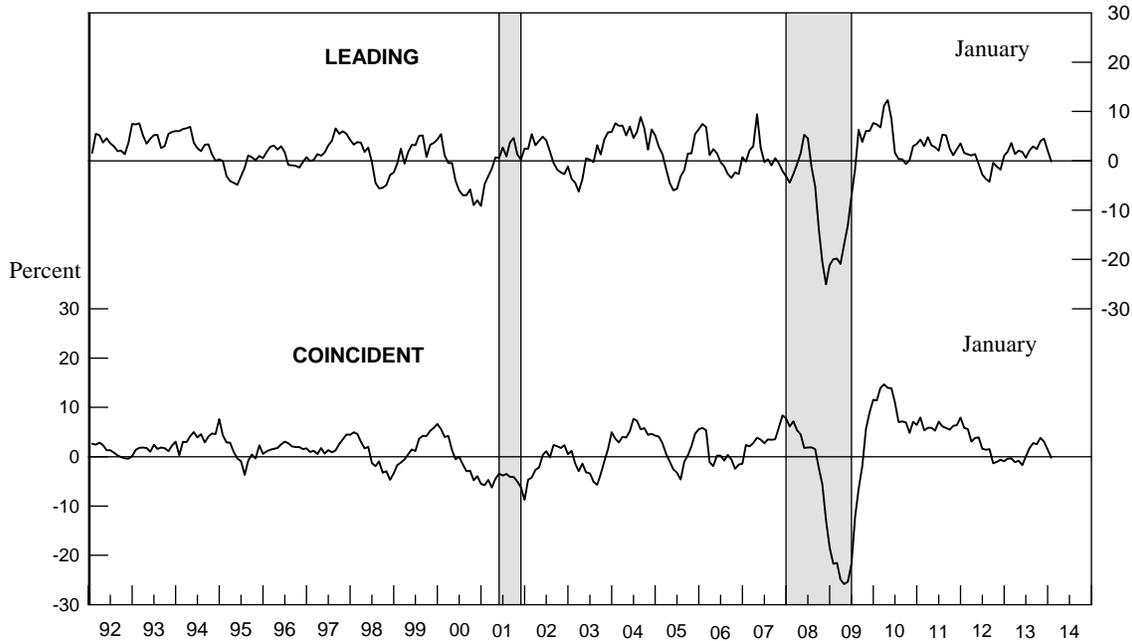
1977=100



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 5.
STEEL: 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 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				
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	108.1	2.6
September	131.2	6.8	107.4	1.3
October	132.1	7.2	109.0r	4.1r
November	131.2	4.6	106.7r	-0.2r
December	132.3r	5.3r	106.8r	-0.1r
2014				
January	131.7	3.7	107.0	0.5

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

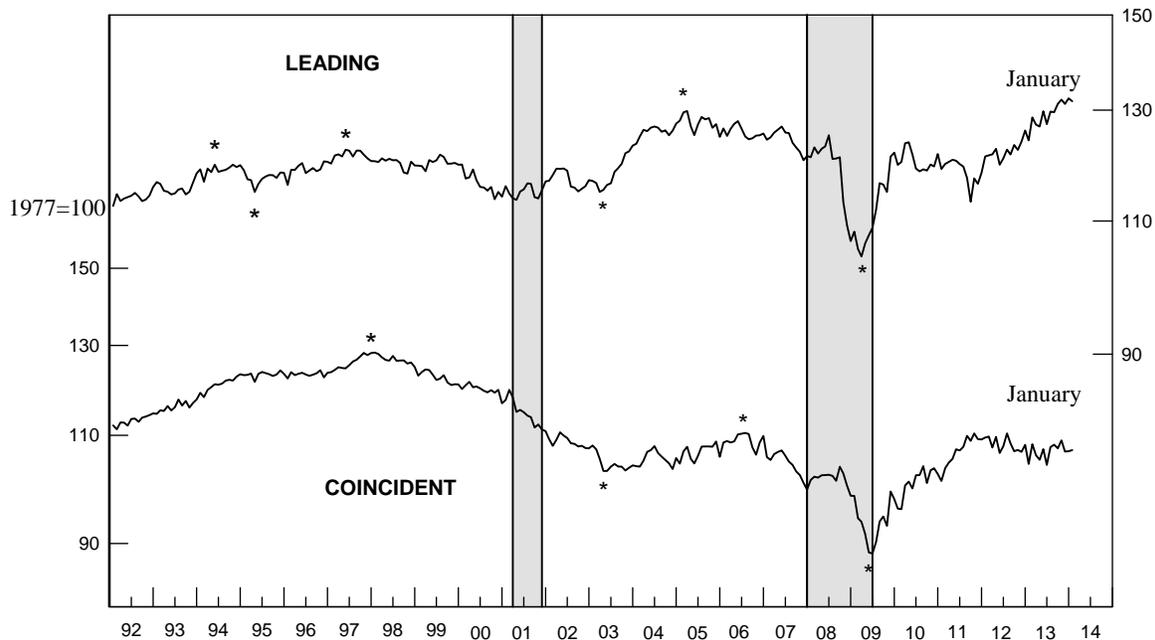
	December	January
Leading Index		
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	0.0	0.0
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.3	-0.2
3. S&P stock price index, building products companies	0.3	0.3
4. LME spot price of primary copper	0.2	-0.2
5. Index of new private housing units authorized by permit	-0.2	-0.3
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)	<u>0.7</u>	<u>-0.4</u>
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.0	0.1
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	0.0	0.0
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	<u>0.1</u>	<u>0.2</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; 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, 1992-2014

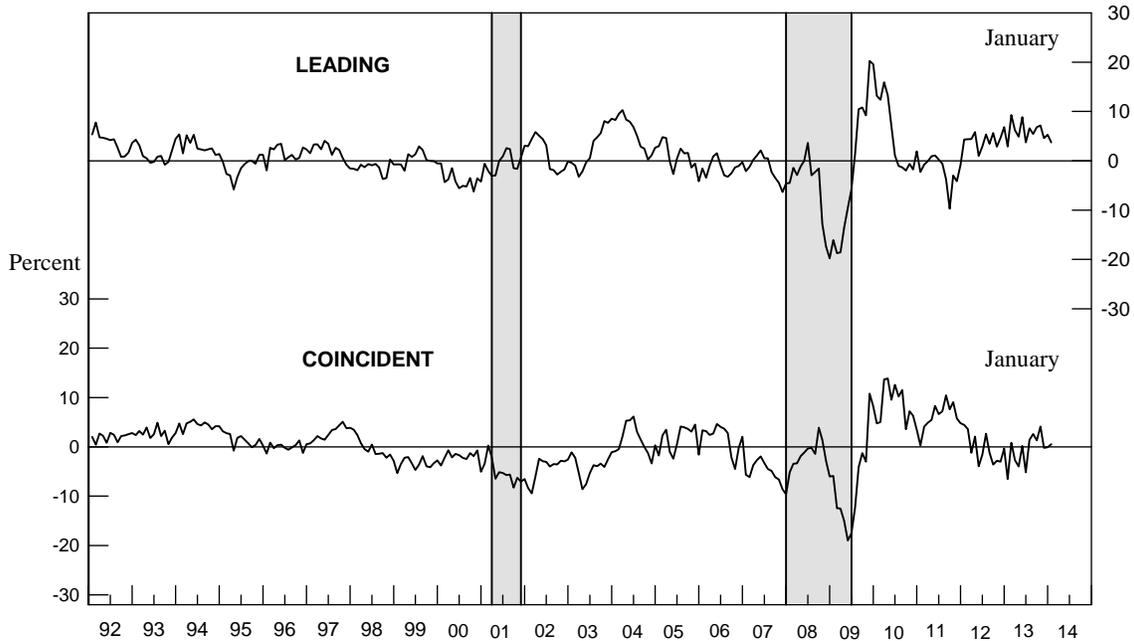
1977=100



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

Percent

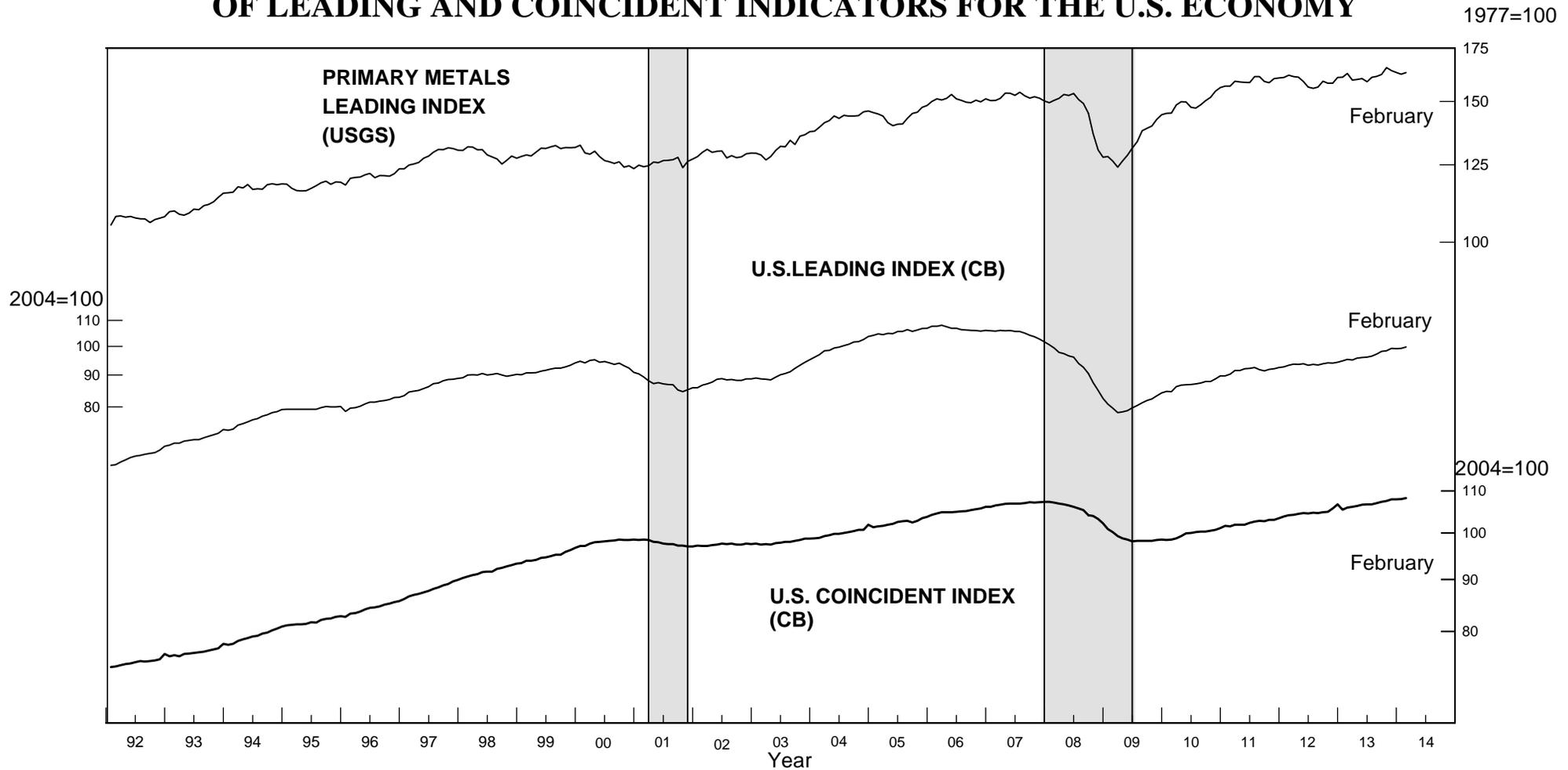


Shaded areas are business cycle recessions.

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.

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 2014