



Metal Industry Indicators

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

June 20, 2014

The **primary metals leading index** increased 1.0% in May to 167.7 from a revised 166.1 in April, and its 6-month smoothed growth rate increased to 4.9% from a downwardly revised 3.7% in April. 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 positive primary metals leading index growth rate suggests that activity growth in the metals industry is likely to continue in the near term. The U.S. manufacturing sector, particularly the accelerating aerospace and other transportation equipment industry, is raising metals consumption. The construction sector's metals consumption is more volatile. The increase in metals consumption from residential building is offset by the decline in nonresidential building, which is the more metal-intensive industry. Slowing global economic growth is reducing U.S. metal products exports.

All four of the indicators that were available for the May index calculation increased. A longer average workweek in primary metals establishments contributed 0.6 percentage point to the overall gain in the leading index. The rising stock price index combining construction and farm machinery companies and industrial machinery companies reached a new record high in May. It contributed 0.1 percentage point to the leading index. The PMI, the Institute for Supply Management's purchasing managers' index, moved to its highest level of the year, rising well above the threshold that indicates further increases in U.S. manufacturing activity. It also contributed 0.1 percentage point. The gain in the USGS metals price index growth rate was so small that its contribution rounded to zero. The May 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 0.3% in April, the latest month for which it is available. Although five of its nine indicators decreased in April, increases in three indicators outweighed those declines. Rises in the index for new housing permits and the S&P stock price index for iron and steel companies made the largest positive contributions to the steel leading index. The PMI also made a positive contribution. The steel scrap price growth rate was essentially unchanged from March. The steel leading index growth rate suggests that growth in steel industry activity will likely be slow-to-modest in the near term. The copper leading index increased 0.1% in April. Movement among its indicators was varied. The index for new housing permits made the largest positive

contribution to the copper leading index. In contrast, the falling S&P stock price index for building products companies made the largest negative contribution. The negative contribution from a shorter average workweek in nonferrous metal products, except aluminum, plants also held the copper leading index back. Nevertheless, the positive copper leading index growth rate suggests that activity in the U.S. copper industry could increase in the near term.

The **metals price leading index** was unchanged in April, the latest month for which it is available, from a downwardly revised 108.8 level in March. However, its 6-month smoothed growth rate decreased to -0.8% from a revised -0.6% growth rate in March. Two of its four indicators increased in April. The rising growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar contributed 0.1 percentage point to the metals price leading index. The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products increased for a second month in a row. Its contribution rounded to zero. In contrast, the negative contribution from the declining Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate contributed -0.1 percentage point. The OECD leading index, which has been declining for 8 consecutive months, indicates a decrease in growth for most industrialized countries. The yield spread between the U.S. 10-year Treasury Note and the federal funds rate eased down only slightly from March; thus, its contribution was 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 sharply in April. The level of U.S. metals inventories stands at a 5-year high. High inventories and the negative leading index of metal prices growth rate indicate that some metals prices, particularly copper, could decline in the near future. Furthermore, concern over the probe into Chinese metal warehouse inventories is suppressing metals price increases.

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

Primary Metals	0.4%
Steel	-0.5%
Copper	-0.6%

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 May and June is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, July 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						
April	107.5	-16.8	7.5	-10.9	-17.7	-1.4
May	108.5	-9.7	11.7r	-6.8	-11.6	-11.0
June	109.1	-20.2	13.4r	-19.0	-21.9	-9.4
July	109.3	-18.5	16.7r	-18.2	-19.4	1.3
August	109.7	-10.3	11.3r	-13.5	-11.5	-1.5
September	110.1	-6.5	14.2r	-10.5	-6.0	-3.1
October	110.4r	-4.8	11.1r	-5.5	-5.5	-2.5
November	109.7r	-8.9	10.0	-15.5	-8.8	9.7
December	110.1	2.0	11.2r	-8.9	1.5	19.6
2014						
January	109.1r	-4.9	9.3r	-16.4	-5.0	29.8
February	108.6r	-1.9	8.3r	-7.6	-2.7	13.1
March	108.8r	-11.3	6.8r	-5.0	-12.7	4.9
April	108.8	-7.1	10.3	0.3	-8.7	12.1
May	NA	-0.7	NA	6.7	-1.0	4.7

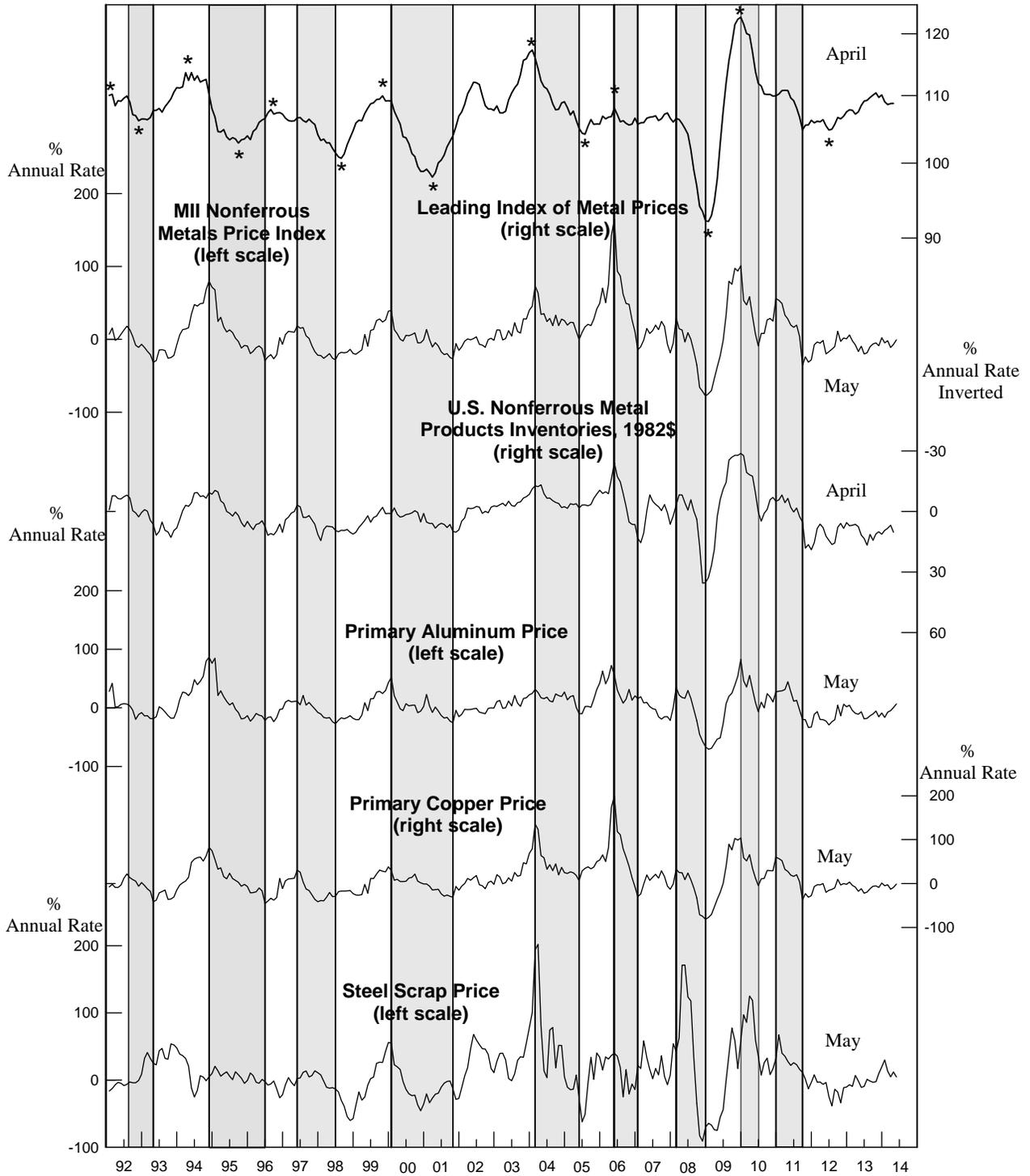
NA: Not available r: Revised

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				
May	160.9r	2.1r	110.7r	-0.1r
June	159.6r	0.4r	110.7r	-0.2
July	161.3r	2.1r	111.6r	1.4r
August	161.8r	2.1	112.2	2.3r
September	162.8r	2.7	112.7r	3.1r
October	165.8r	5.9	113.5r	4.1r
November	164.8r	3.9r	114.2r	4.7r
December	164.1r	2.5r	114.0r	4.0r
2014				
January	162.3	0.2r	113.3	2.4
February	165.4	3.7r	114.3r	3.6r
March	165.1r	3.0r	114.3r	3.3r
April	166.1r	3.7r	114.8	3.5
May	167.7	4.9	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			April	May
1. Average weekly hours, primary metals (NAICS 331)			0.4r	0.6
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)			0.2	0.1
3. Ratio of price to unit labor cost (NAICS 331)			-0.4	NA
4. USGS metals price index growth rate			0.1r	0.0
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, 2005\$			-0.1	NA
8. PMI			0.1r	0.1
Trend adjustment			0.0	0.0
			0.6r	0.8
Coincident Index			March	April
1. Industrial production index, primary metals (NAICS 331)			-0.1r	-0.3
2. Total employee hours, primary metals (NAICS 331)			-0.3	0.4
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$			0.4r	0.1
Trend adjustment			0.1	0.1
			0.1r	-0.3

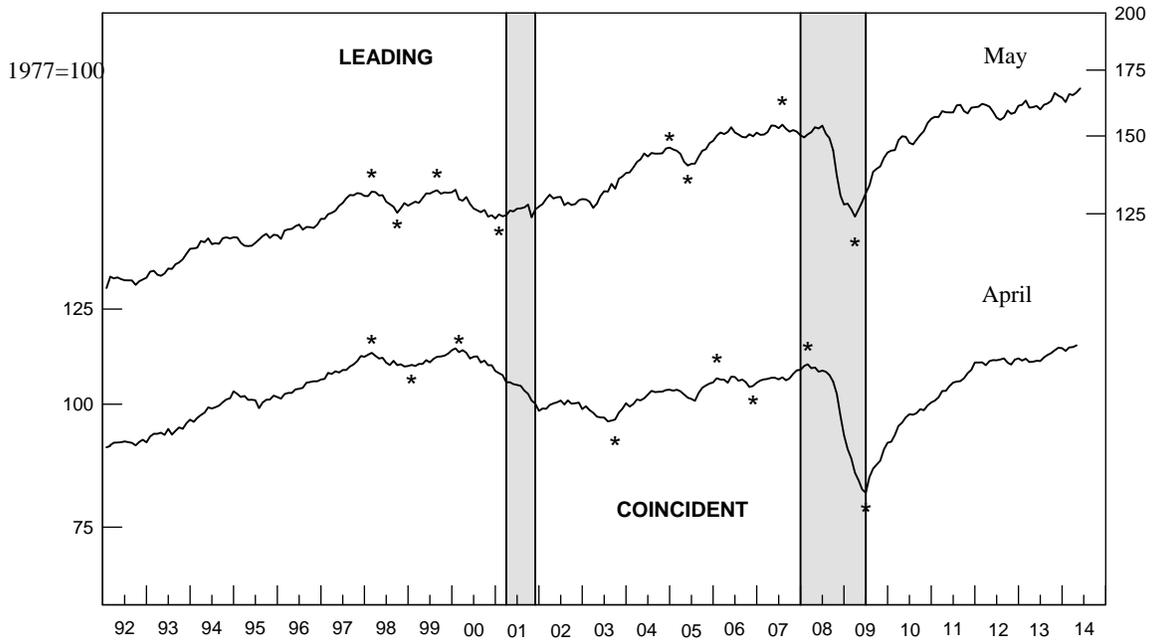
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

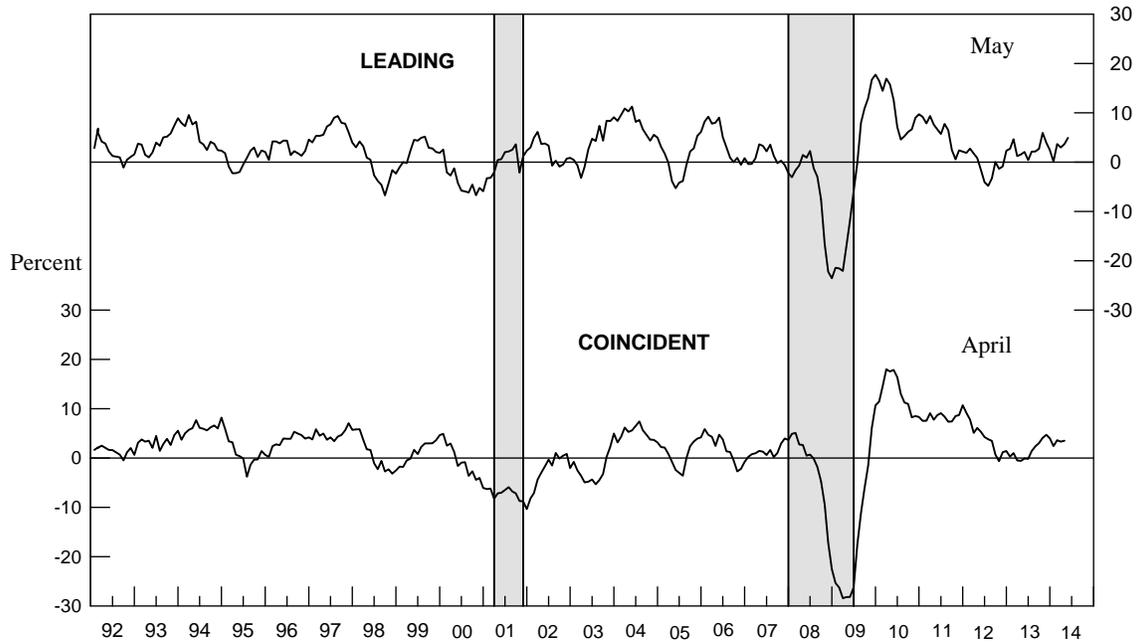
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1992-2014 1977=100



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				
May	111.8r	2.0r	114.7r	-1.3r
June	111.1r	0.6	115.5r	0.3r
July	112.2r	2.2r	116.2r	1.4r
August	112.8	2.8r	117.2	2.9
September	112.9r	2.4	117.1r	2.7r
October	113.9	3.8r	117.7r	3.3r
November	114.9r	4.8r	117.9r	3.3r
December	113.8r	2.2	117.2r	1.8r
2014				
January	112.4r	-0.5r	115.7	-0.8
February	113.7r	1.7r	116.9r	1.0
March	114.1	2.3r	117.3r	1.4r
April	114.4	2.3	116.7	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	March	April
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.1	-0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.2r	-0.1
3. Shipments of household appliances, 1982\$	0.2	-0.1
4. S&P stock price index, steel companies	0.1	0.3
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)	-0.3	0.0
7. Index of new private housing units authorized by permit	-0.1	0.3
8. Growth rate of U.S. M2 money supply, 2005\$	-0.3	-0.1
9. PMI	0.1	0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.3r	0.2
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.2r	-0.4
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.3r	0.0
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.2r	-0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.4r	-0.5

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

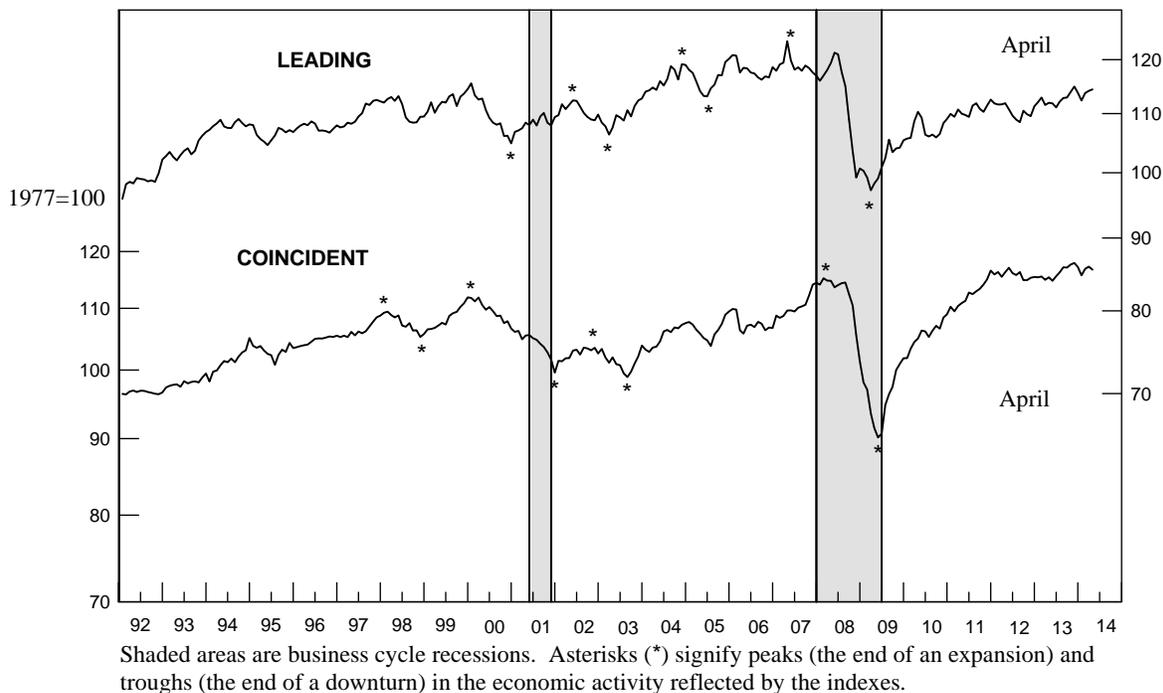
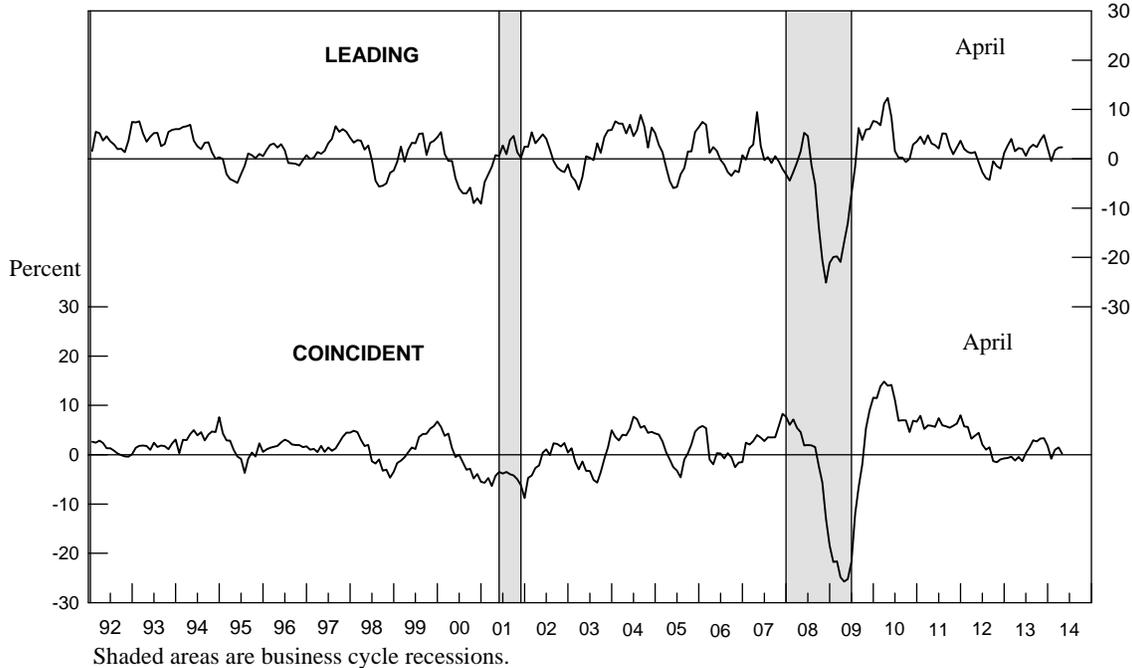


CHART 5.
STEEL: LEADING AND COINCIDENT GROWTH RATES, 1992-2014

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>
2013				
May	128.5r	8.1r	108.2	1.4
June	126.7r	4.1r	106.3	-2.5
July	127.9r	5.1r	108.2	0.8
August	127.8r	4.1r	108.1	0.7
September	128.4r	4.0	106.6	-2.0
October	129.8r	5.4r	108.3	0.7
November	128.6r	2.6r	107.2r	-1.3r
December	130.5r	4.6	107.8r	-0.3r
2014				
January	128.1	0.3r	106.0r	-3.4r
February	129.5	2.0r	107.0r	-1.6r
March	130.5	3.2r	109.2r	2.6r
April	130.6	2.8	108.5	1.5

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

Leading Index	March	April
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	0.8	-0.1
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.1	0.1
3. S&P stock price index, building products companies	0.2	-0.3
4. LME spot price of primary copper	-0.4	0.1
5. Index of new private housing units authorized by permit	-0.1	0.4
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.0	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	<u>0.6</u>	<u>0.2</u>
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.0r	-0.1
2. Total employee hours, nonferrous metals (except aluminum) (NAICS 3314)	-2.0	-0.6
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	<u>-1.9</u>	<u>-0.6</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

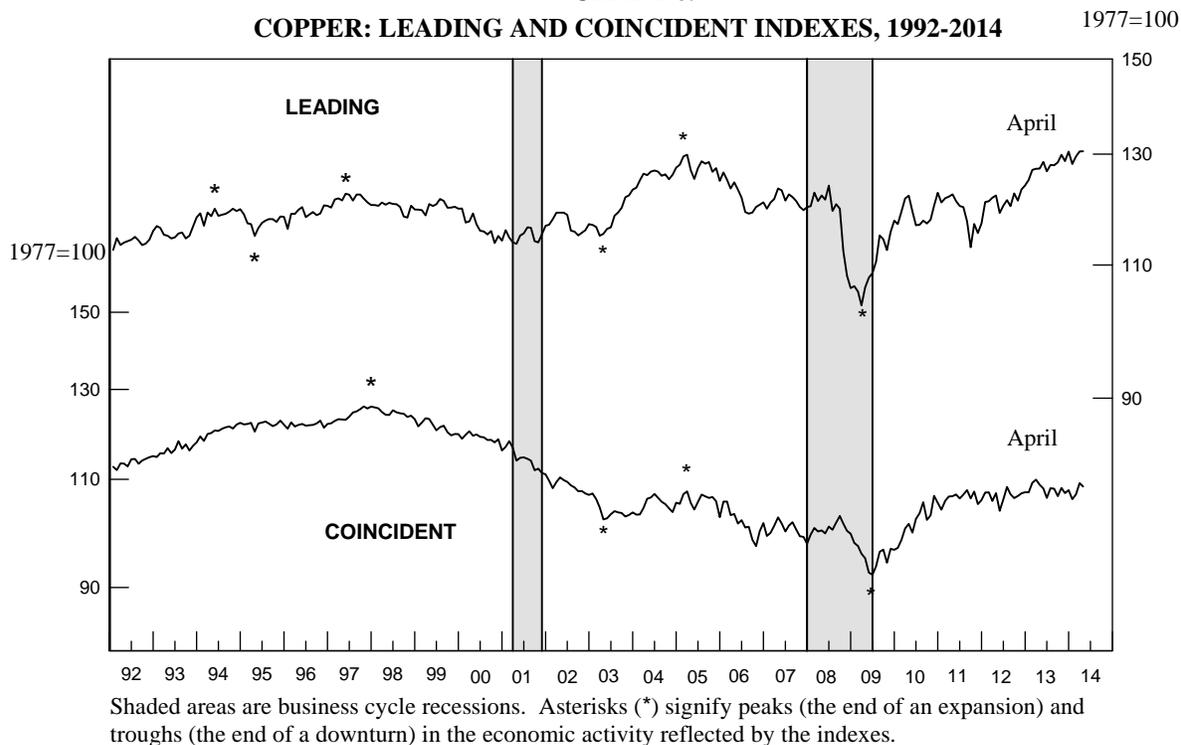


CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1992-2014

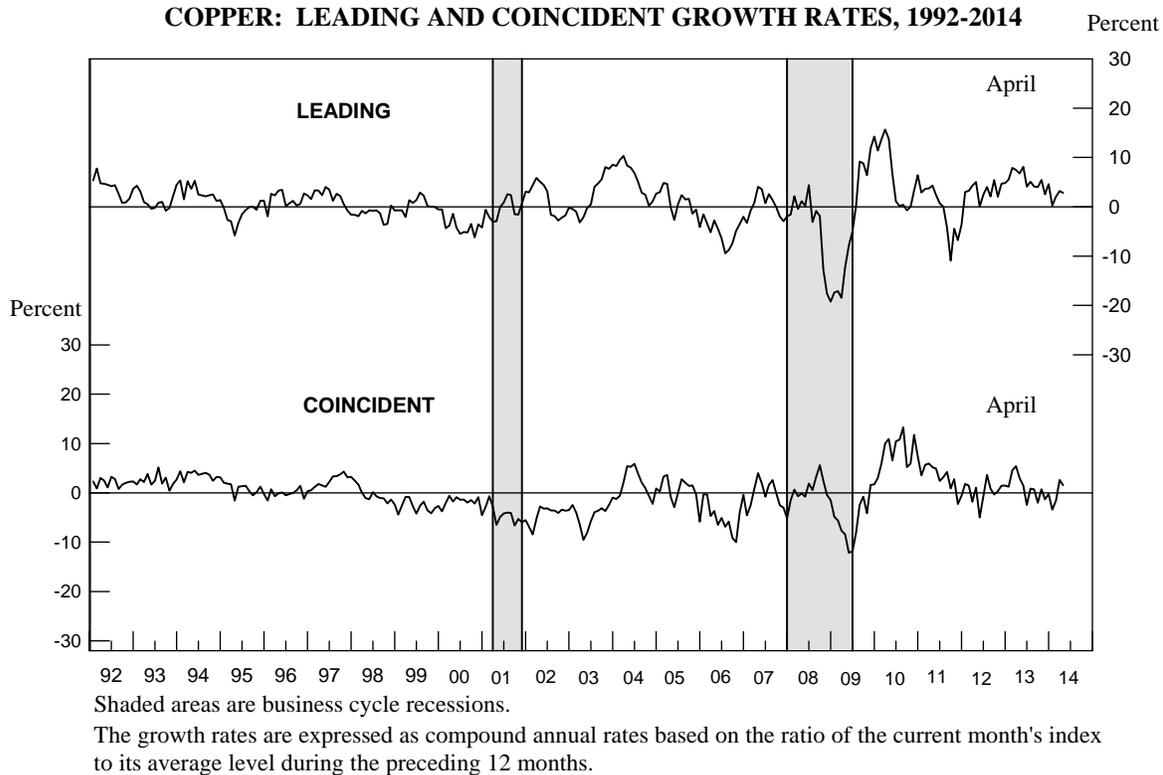
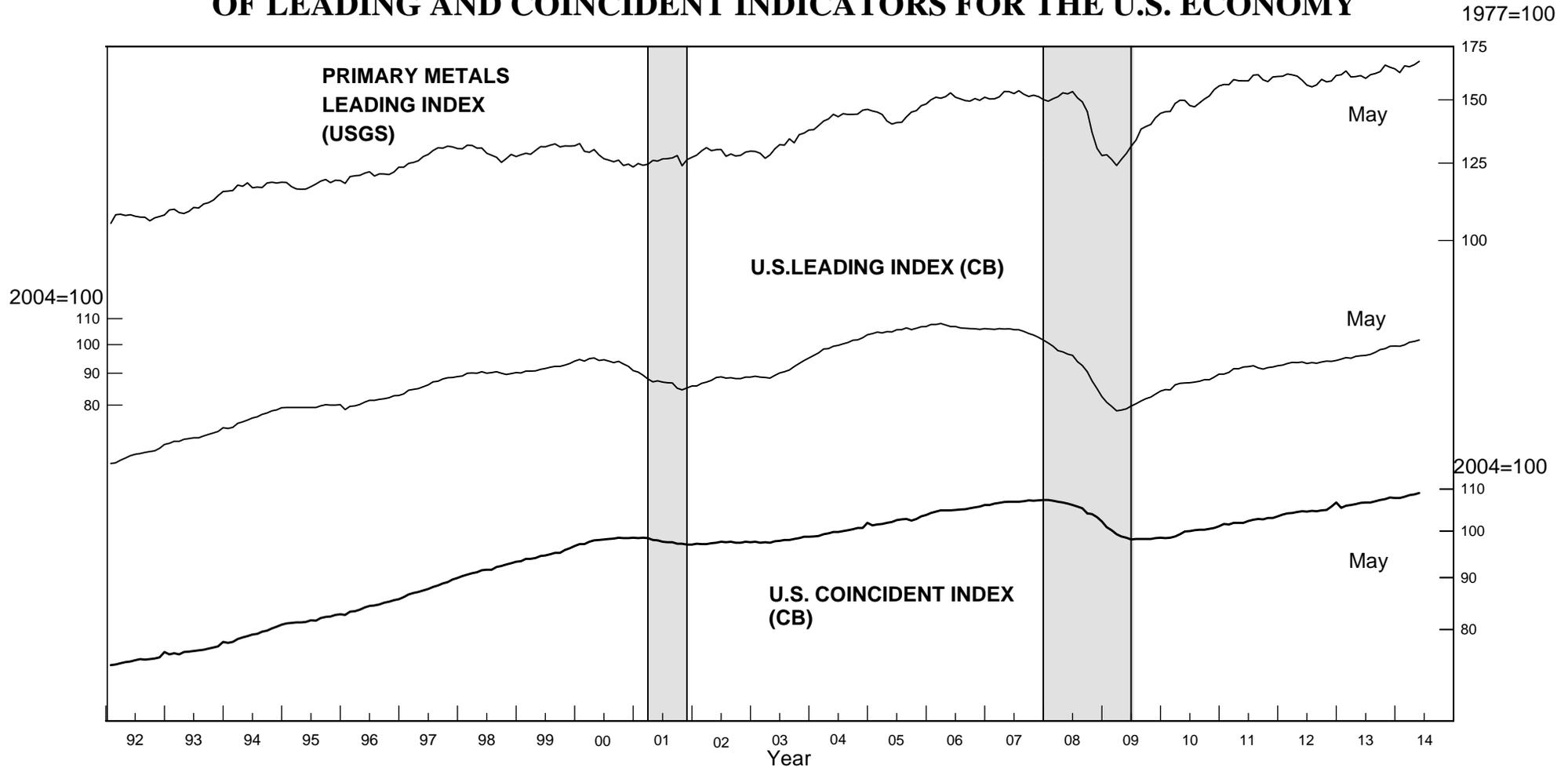


Chart 8.

**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).

June 2014