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Metal Industry Indicators

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

May 20, 2011

The **primary metals leading index** increased 0.3% to 158.5 in April from a revised 158.0 in March; however, its 6-month smoothed growth rate eased down to 9.7% from a revised 10.3% 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. The relatively high leading index growth rate suggests that the recovery in the U.S. metals industry could continue. Domestic manufacturing activity appears healthy enough to generate moderate metals demand. However, it is not clear how much the geopolitical turmoil in North Africa and the Middle East will affect the U.S. economy. It has already become clear that the earthquake and tsunami in Japanese have disrupted automotive supplies to the United States.

Two of the four indicators that were available for the April index calculation increased. The stock price index combining construction and farm machinery companies and industrial machinery companies rebounded in April, making the only sizable positive contribution, 0.7 percentage points, to the net increase in the leading index. The increase in the USGS metals price index growth rate was so slight that its contribution rounded to zero. In contrast, a slightly shorter average workweek in primary metals establishments in April held the leading index back 0.2 percentage points. The decrease in the PMI contributed another -0.2 percentage points. Nevertheless, the PMI remains well above the threshold that denotes an increase in manufacturing activity in the near future. The April leading index should be considered preliminary because only four of its eight indicators were available, and the leading index will likely be revised 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 March. Movement among its indicators was mixed, but longer weekly hours in iron and steel plants and a higher index for new housing permits issued, spurred by a jump in apartment and condo building, boosted the leading index the most in March. A sharp decline in the steel scrap price growth rate and the falling inflation-adjusted M2 money supply growth rate kept the leading index from rising higher. Although the steel leading index growth rate eased down slightly, it is still relatively high and is indicating continued activity growth in the U.S. steel industry in the near term. The copper leading index increased 0.6% in March, and its growth rate moved higher in positive territory. Most of its indicators posted gains in March, with an increase in the index for new housing permits making the largest positive contribution to the leading index. In contrast, a drop in the 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 back in March. The second positive reading in a row in the copper leading index growth rate is not yet suggesting that the risk to the recovery in domestic copper industry activity is over. However, Asia's copper demand could underpin the U.S. copper industry in the near future.

The **metals price leading index** increased 0.6% to 109.9 in March, the latest month for which it is available, from 109.2 in February. Its 6-month smoothed growth rate moved higher in positive territory, rising to 2.3% from a revised 0.4% in February. Three of its four indicators increased. The growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar continued its upward climb, contributing 0.4 percentage points to the net increase in the leading index. The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products almost doubled in March and contributed 0.3 percentage points. The growth rate of the Organization for Economic Cooperation and Development (OECD) Total Leading Index was almost flat, and its contribution rounded to zero. In contrast, the yield spread between the U.S. 10-year Treasury Note and the federal funds rate tightened in March and made the only negative contribution, -0.2 percentage points, to the leading index. 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, rose in March. The still negative inventory growth rate and the positive metals price leading index growth rate suggest metals price growth. The concern over the weakened global economic climate threatening metals price growth could be tempered by low Chinese metals inventories, thus boosting price growth 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	0.8%
Steel	0.4%
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 April and May is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, June 17.

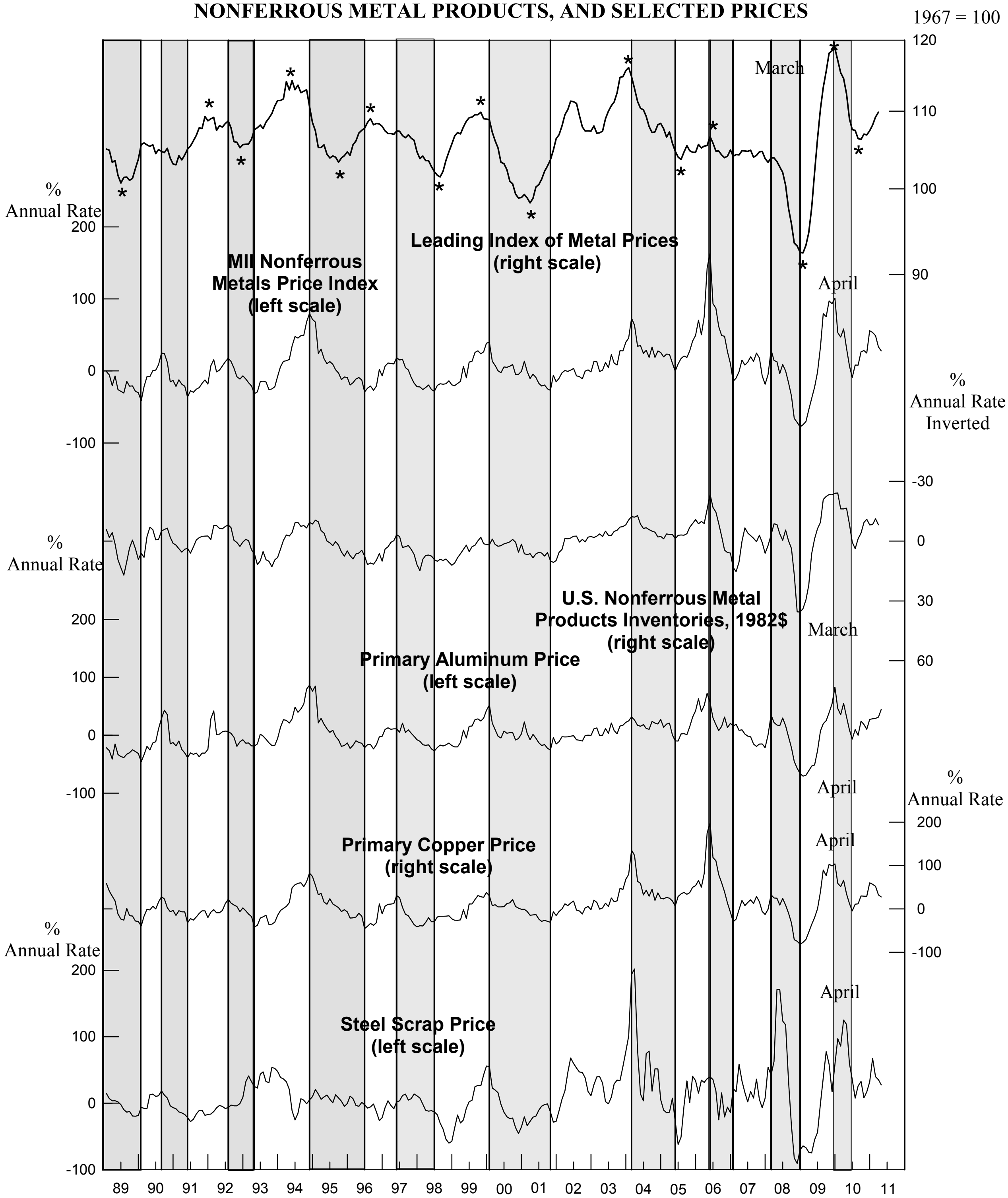
Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

		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
2010						
March	114.5r	58.2	-16.2	55.0	66.0	125.1
April	112.3r	31.5	-16.5	31.7	34.6	118.5
May	109.0r	6.9	-8.4	9.0	12.3	59.6
June	107.5r	-9.2	0.5	-6.7	-4.7	35.7
July	107.4r	8.2	3.8	9.6	10.8	7.3
August	106.4	7.9	-1.1	-0.1	11.9	25.7
September	106.2	26.5	-4.1	24.0	29.8	32.6
October	106.9r	28.4	-9.4	18.6	29.4	8.1
November	106.8	24.8	-11.0r	10.1	29.1	16.8
December	107.4	55.8	-8.1	27.2	60.1	32.0
2011						
January	108.1r	53.4	-8.4r	28.4	57.0	67.3
February	109.2	48.9	-11.2r	29.2	52.3	39.9
March	109.9	33.1	-8.2	31.1	32.2	35.3
April	NA	27.7	NA	44.7	27.6	27.7

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



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
2010				
May	147.3	11.3	96.1	16.6
June	145.4	6.3	95.8	13.3
July	144.6	3.5	95.9	10.7
August	146.1	4.1	96.0	8.9
September	147.8	5.1r	96.5	8.0
October	150.0	6.8	96.4	5.9
November	153.1	9.5	98.0	7.4
December	155.9r	11.9	100.1r	10.3
2011				
January	155.9r	10.5r	100.7	9.8r
February	157.0r	10.5r	101.8r	10.4
March	158.0r	10.3r	102.6	10.3
April	158.5	9.7	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)	0.3r	-0.2
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994 = 100)	0.0r	0.7
3. Ratio of price to unit labor cost (NAICS 331)	0.3	NA
4. USGS metals price index growth rate	-0.2r	0.0
5. New orders, primary metal products, (NAICS 331 & 335929) 1982$	0.1	NA
6. Index of new private housing units authorized by permit	0.5	NA
7. Growth rate of U.S. M2 money supply, 2005$	-0.3	NA
8. PMI	0.0	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.7r	0.3
Coincident Index	**February**	**March**
1. Industrial production index, primary metals (NAICS 331)	0.0r	0.0
2. Total employee hours, primary metals (NAICS 331)	1.1	0.5
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)	1.1r	0.7

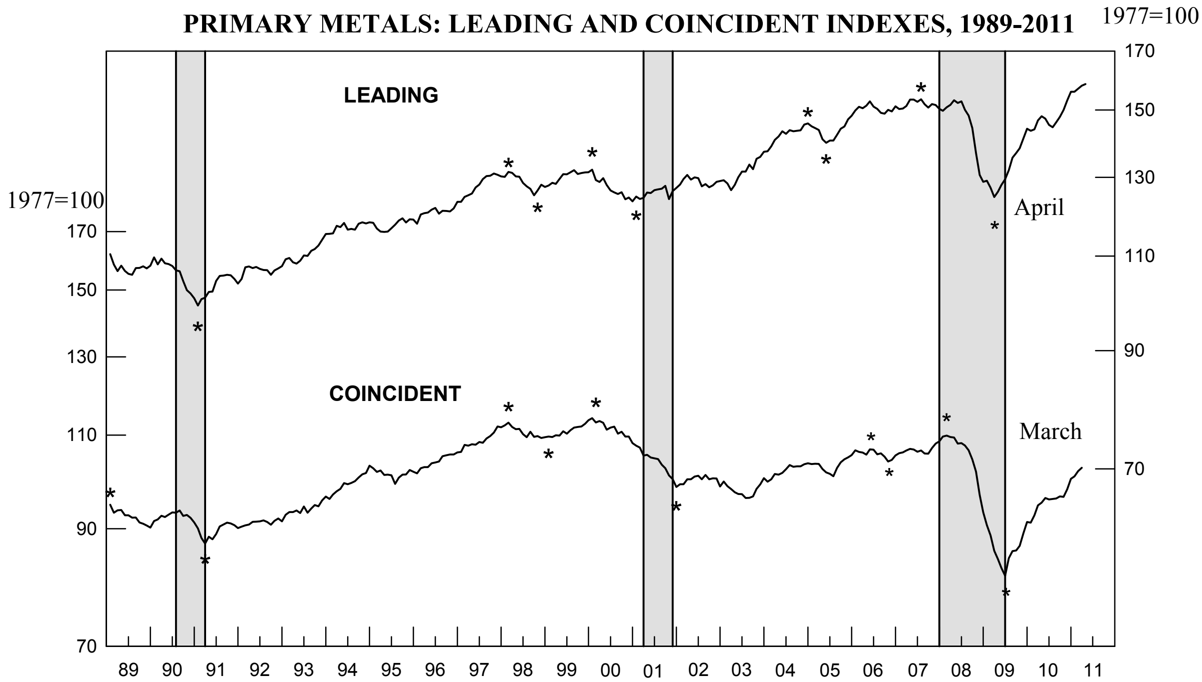
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

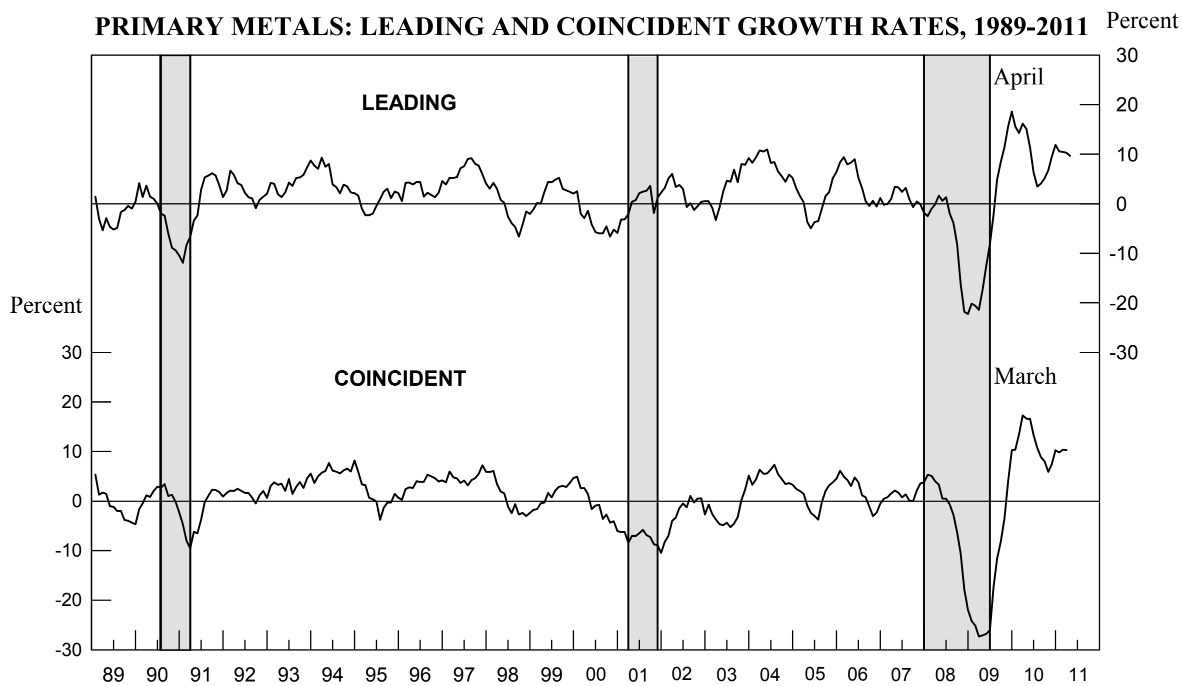
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1989-2011



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, 1989-2011



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
2010				
April	111.6	12.0	97.4	15.7
May	110.7	8.5	98.7	16.1
June	107.6	1.7	97.1	10.1
July	106.0	-1.7	95.4	4.3
August	106.4	-1.5	96.2	4.2
September	107.5	0.1	97.0	4.2
October	109.0	2.1	96.9	2.5
November	112.0	6.7r	100.1r	7.8r
December	113.3	8.0	102.2	10.7
2011				
January	112.7r	6.1	102.4	9.5
February	113.9r	7.2r	102.0r	7.4r
March	114.2	7.0	102.4	7.2

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.

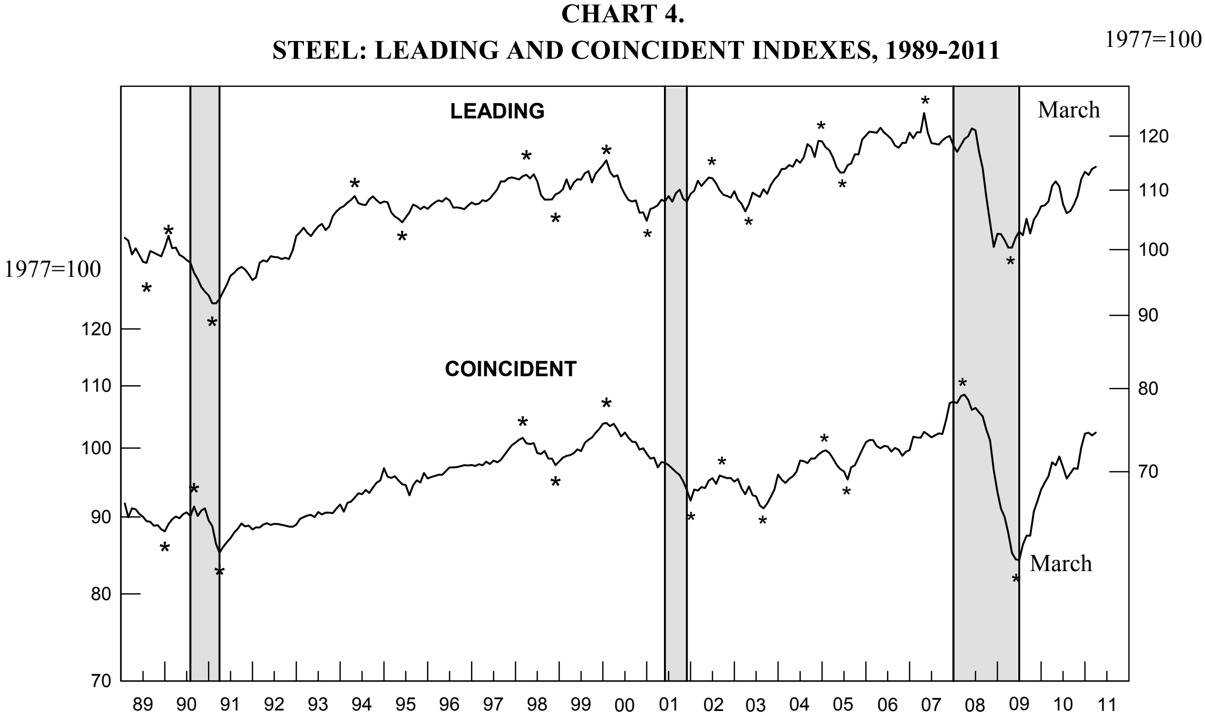
Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**February**	**March**
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.2r	0.8
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.3r	0.1
3. Shipments of household appliances, 1982$	0.2r	0.1
4. S&P stock price index, steel companies	0.4	-0.2
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, $/ton)	0.5	-0.5
7. Index of new private housing units authorized by permit	-0.3	0.4
8. Growth rate of U.S. M2 money supply, 2005$	0.0r	-0.3
9. PMI	0.0	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.0r	0.3
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.3r	-0.2
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982$	-0.5r	-0.1
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.4r	0.6
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; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

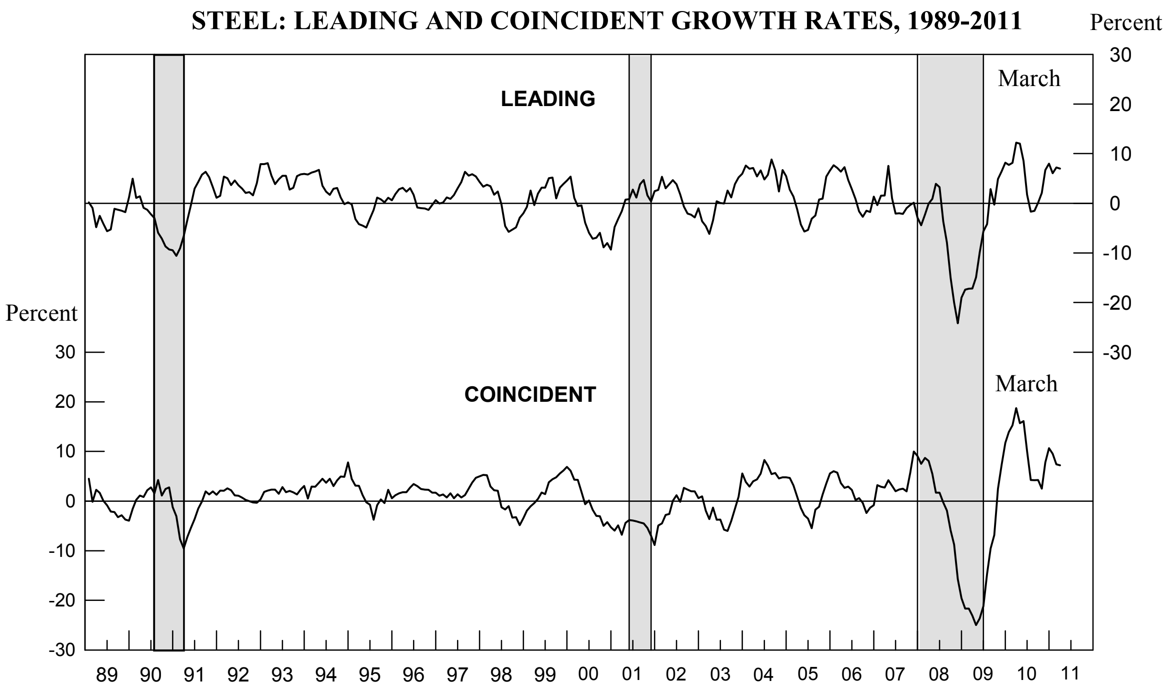
r: Revised

CHART 4.
STEEL: LEADING AND COINCIDENT INDEXES, 1989-2011



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, 1989-2011



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

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2010				
April	124.0	11.8	97.5	11.2
May	121.7	5.7	96.1	7.1
June	119.4	0.3	97.6	8.7
July	118.6	-2.1	98.9	9.3
August	119.1	-2.0	100.4	10.6
September	118.6	-3.0	97.5	3.4
October	120.3	-0.6	99.7	6.8
November	119.9r	-1.8	100.0	5.9
December	122.5	2.5	99.3r	4.0r
2011				
January	120.0	-1.2	97.7r	0.3r
February	121.2r	0.7r	100.7r	5.4r
March	121.9	1.8	101.9	6.5

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.

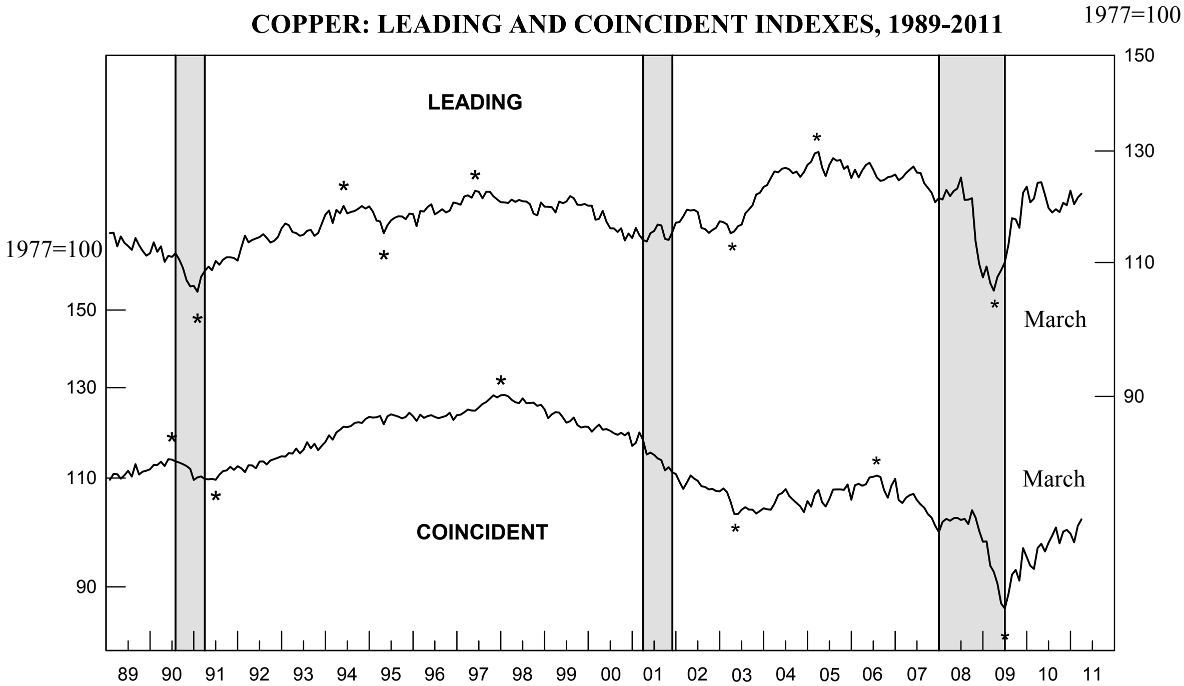
Table 7.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

	February	March
Leading Index		
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$	0.2r	0.2
3. S&P stock price index, building products companies	0.1	0.0
4. LME spot price of primary copper	0.1	-0.3
5. Index of new private housing units authorized by permit	-0.3	0.6
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	0.2	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.1r	0.5
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.2	0.1
2. Total employee hours, nonferrous metals except aluminum (NAICS 3314)	2.8	1.0
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	3.1r	1.2

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; 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.

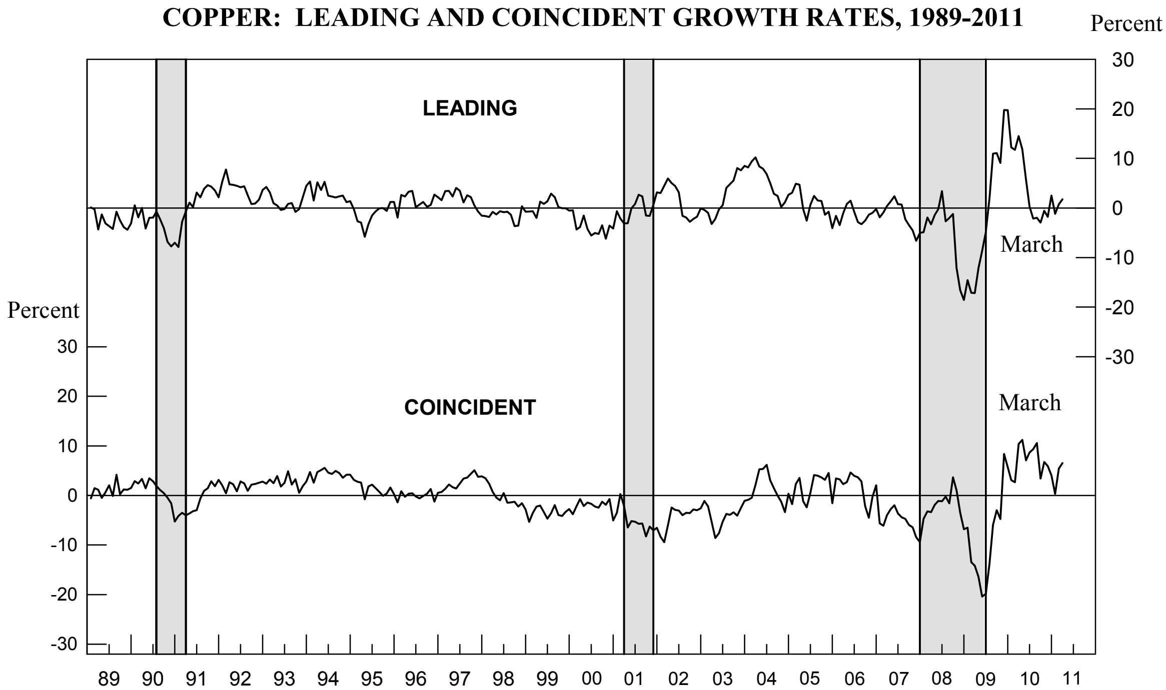
r: Revised NA: Not available

CHART 6.
COPPER: LEADING AND COINCIDENT INDEXES, 1989-2011



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, 1989-2011

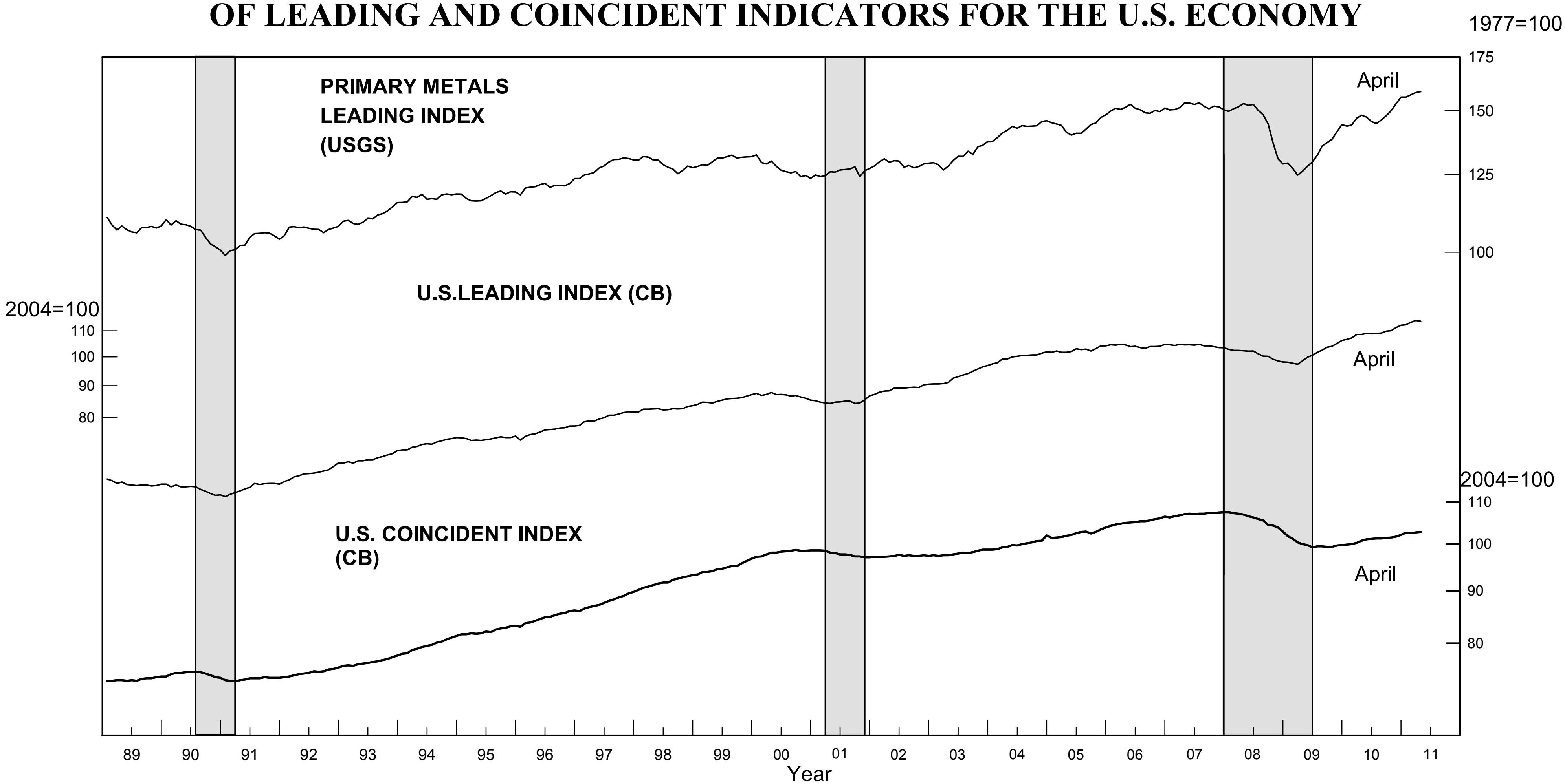


Shaded areas are business cycle recessions.

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 2011