



# Metal Industry Indicators

## Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for July and August—Summary Report

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September 21, 2012

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The **primary metals leading index** increased 2.0% in August to 159.5 from a revised 156.3 in July, and its 6-month smoothed growth rate rose to -1.1% from a revised -5.1% in July. 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 is the first increase in the primary metals leading index since February, however its growth rate still remains below the threshold that indicates a decrease in U.S. metals industry activity in the near term. The U.S. manufacturing and construction sectors have propped up primary metals activity in recent months, particularly metals demand from the housing industry. However, economic slowdowns in China and Europe have weakened demand for U.S. metals. Moreover, unrest in the Mideast could undermine fragile global economic growth.

Two of the four indicators that were available for the August index calculation increased, and two decreased slightly. A one-half hour longer average workweek in primary metals establishments in August made the largest positive contribution, 1.1 percentage point, to the net increase in the leading index. The stock price index combining construction and farm machinery companies and industrial machinery companies, which had been declining since February, halted its downward spiral in August. It contributed 1.0 percentage point to the leading index. In contrast, the USGS metals price index growth rate lowered slightly in August, but its contribution rounded to zero. The step down in the PMI contributed -0.1 percentage point. It continues to point to a decrease in future manufacturing activity. The August 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 decreased 0.3% in July, the latest month for which it is available. Although only three of its nine indicators decreased, their negative contributions outweighed the modest gains of the other indicators. A 1-hour shorter average workweek in iron and steel plants held back the leading index the most in July. A sharp decline in the steel scrap price growth rate and fewer light truck and car sales also pulled the leading index down. However, an increase in the new building permits index and a rise in new orders for iron and steel products boosted the steel index some in July. The steel leading index growth rate fell deeper in negative territory and is indicating that steel industry activity could continue to decrease in the near term. The copper leading index increased 1.4% in July, with sizable gains in most of its six indicators. The rise in the index for new housing permits and a longer workweek in nonferrous metal products, except aluminum, manufacturing plants made the

largest positive contributions to the copper leading index. A jump in new orders for nonferrous metal products and the rising S&P stock price index for building products companies also buoyed the copper index. Slips in the copper price and a tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate made minimal negative contributions to the copper index. The relatively high copper leading index growth rate is indicating that copper industry activity could increase in the near term.

The **metals price leading index** increased 0.3% to 106.0 in July, the latest month for which it is available, from a revised 105.7 in June. Its 6-month smoothed growth rate rose to -2.7% from a revised -3.9% in June. Two of its four indicators increased in July. A gain in the growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products made the largest positive contribution, 0.2 percentage points, to the net increase in the leading index. The growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar also increased and contributed 0.1 percentage point the leading index. In contrast, a tighter yield spread between the U.S. 10-year Treasury Note and the federal funds rate offset some of those gains by 0.1 percentage point. The Organization for Economic Cooperation and Development (OECD) Total Leading Index growth rate continued to hover near zero, and its negative contribution rounded to zero in July. 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 a fourth consecutive month in July. The rising inventory growth rate and the still negative metals price leading index growth rate indicate further slowdowns in some metal prices.

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

Primary Metals	0.5%
Steel	0.2%
Copper	1.0%

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 August and September is scheduled for release on the World Wide Web at 10:00 a.m. EDT, Friday, October 19, 2012.**

**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>2011</b>						
July	110.0	19.4	-1.5	12.7	20.3	22.8
August	108.5	3.6	3.2	-4.0	3.8	16.0
September	106.6	-35.5	6.1	-19.8	-37.1	11.2
October	107.5	-24.0	19.6	-20.6	-22.8	1.2
November	107.3	-31.4	17.9	-33.6	-31.1	-12.9
December	109.1	-28.1	21.6	-32.9	-27.4	-3.3
<b>2012</b>						
January	107.5	-7.4	18.6	-11.1	-6.8	7.8
February	107.5	-3.7	12.3	-6.5	-2.7	-3.1
March	107.3	-5.3	9.8r	-20.0	-2.7	-3.0
April	107.3	-1.6	11.4	-20.3	0.0	-6.4
May	106.4	-20.3	15.4	-22.5	-19.6	-3.6
June	105.7r	-17.0	17.6r	-29.1	-15.3	-25.1
July	106.0	-13.6	21.0	-23.5	-13.0	-38.6
August	NA	-9.9	NA	-20.5	-9.5	-13.5

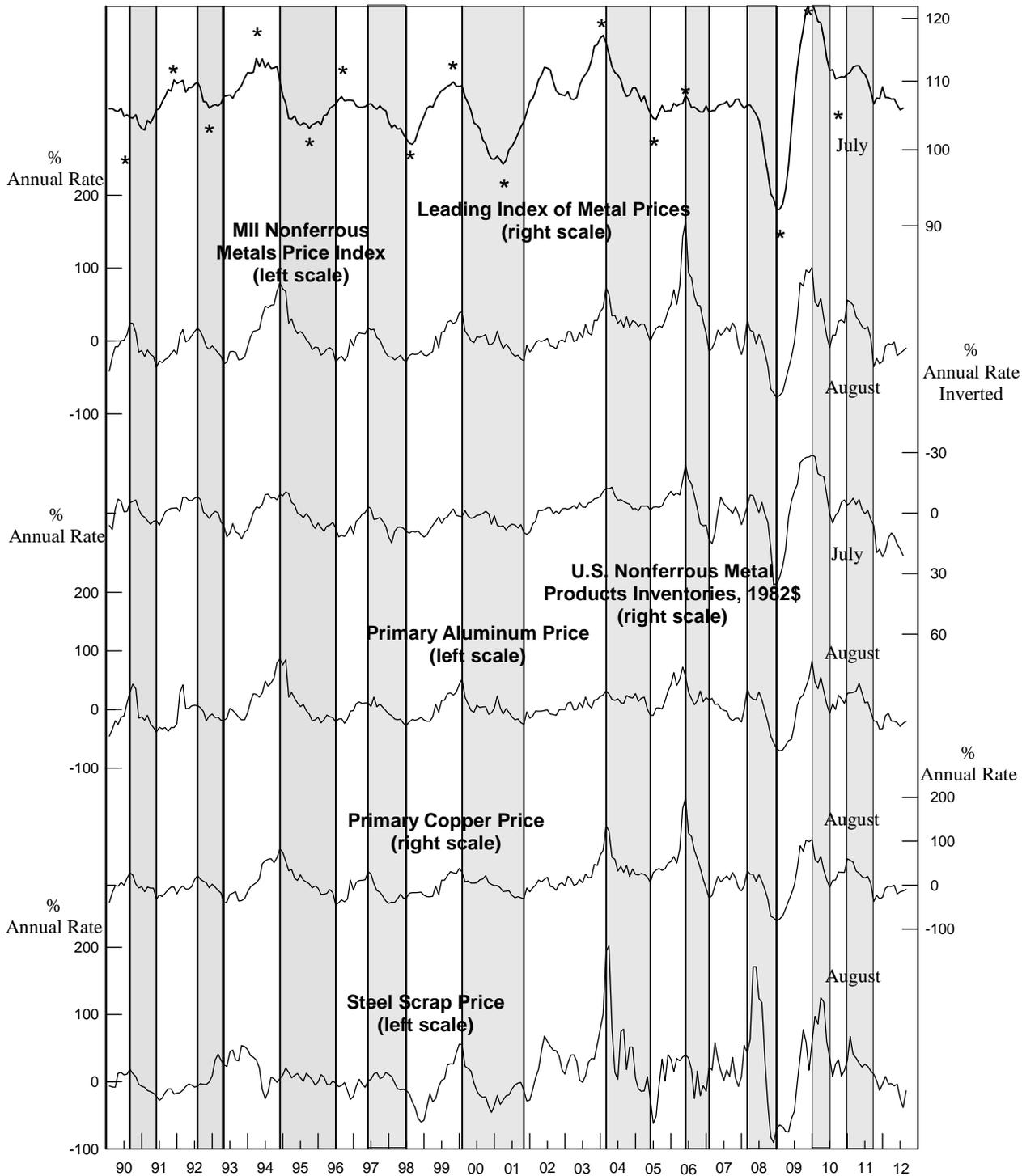
NA: Not available    r: Revised

**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>2011</b>				
September	158.8	2.0	108.0	8.9
October	158.6	0.9	109.5	10.2
November	161.4	3.4	111.1	11.3
December	162.2	3.7	114.2	15.2
<b>2012</b>				
January	162.6	3.6	113.3	11.6
February	163.3	3.9	113.5	10.0
March	162.4	2.3	112.6	6.7
April	161.9	1.4	113.7r	7.3
May	160.0r	-1.0r	113.5r	5.6r
June	156.9r	-4.6r	113.2r	4.0r
July	156.3r	-5.1r	113.8	3.9
August	159.5	-1.1	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>July</b>	<b>August</b>
1. Average weekly hours, primary metals (NAICS 331)	-0.8r	1.1
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994=100)	-0.1	0.9
3. Ratio of price to unit labor cost (NAICS 331)	-0.3	NA
4. USGS metals price index growth rate	0.0	0.0
5. New orders, primary metal products, (NAICS 331 & 335929) 1982\$	0.3	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	0.0r	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.5r	1.9
<b>Coincident Index</b>	<b>June</b>	<b>July</b>
1. Industrial production index, primary metals (NAICS 331)	-0.6r	0.5
2. Total employee hours, primary metals (NAICS 331)	0.2r	-0.4
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982\$	0.0r	0.5
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.3r	0.7

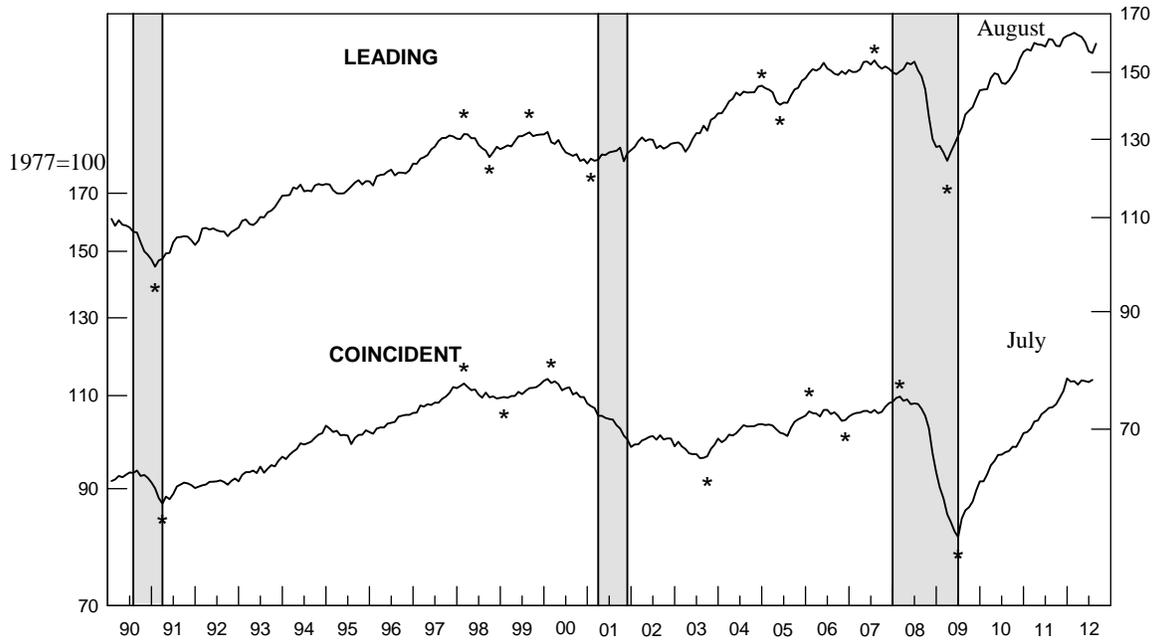
**Sources:** Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and U.S. Geological Survey; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board,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

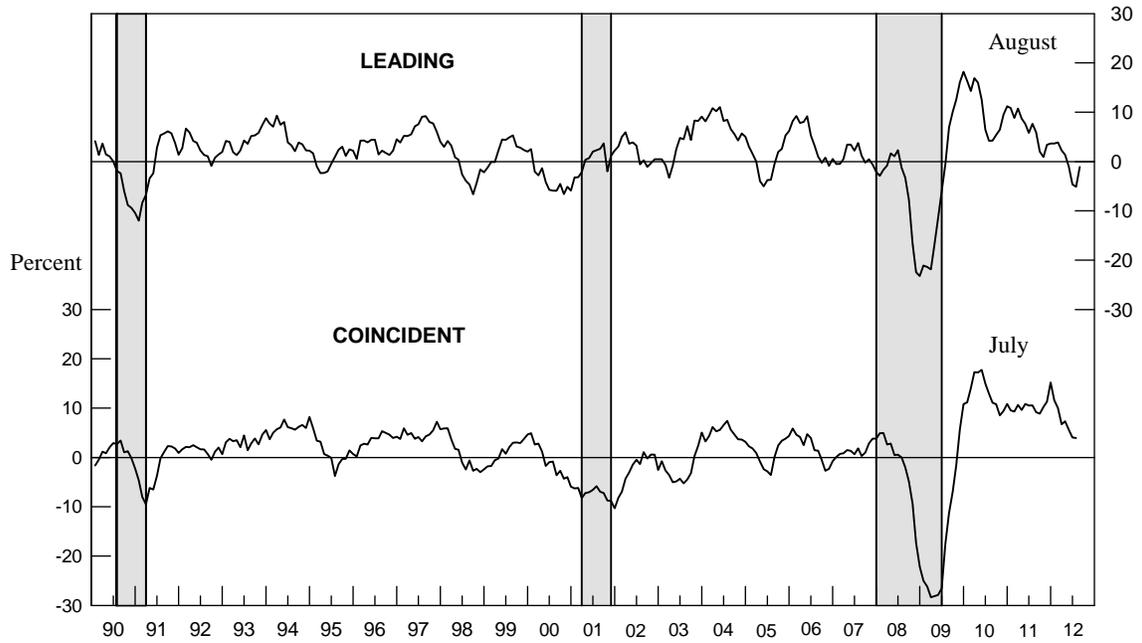
**PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1990-2012** 1977=100



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, 1990-2012** 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**

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
<b>2011</b>				
August	111.2	4.1	112.8	6.0
September	110.5	2.1	113.0	5.2
October	110.3	1.2	114.2	6.5
November	111.6	2.7	115.6	7.7
December	112.0	3.0	117.5	9.7
<b>2012</b>				
January	112.2	3.0	117.0	7.8
February	111.5	1.5	117.4	7.4
March	111.7	1.5	116.4	4.5
April	111.6	1.2r	117.3	5.1
May	110.9	-0.2	117.5	4.6
June	109.0r	-3.5r	116.4r	1.8r
July	108.7	-4.1	116.6	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 5.**  
**The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month**

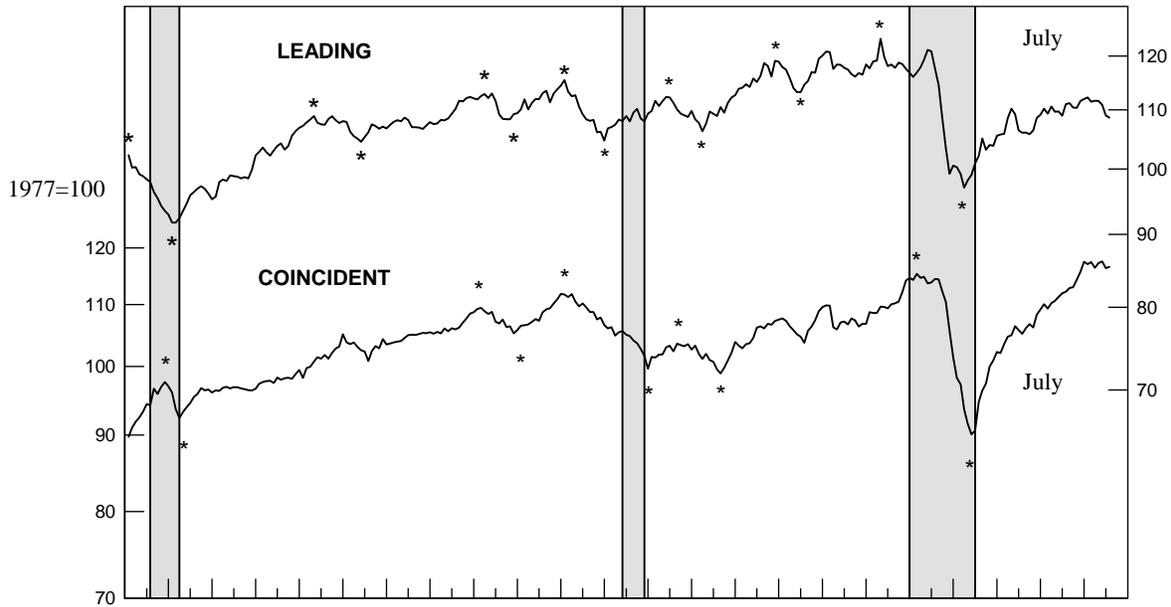
Leading Index	June	July
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	-0.3	-0.7
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982\$	0.1r	0.2
3. Shipments of household appliances, 1982\$	-0.3	0.1
4. S&P stock price index, steel companies	-0.5	0.0
5. Retail sales of U.S. passenger cars and light trucks (units)	0.2	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, \$/ton)	0.0	-0.4
7. Index of new private housing units authorized by permit	-0.2	0.3
8. Growth rate of U.S. M2 money supply, 2005\$	-0.3	0.1
9. PMI	-0.5	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-1.8	-0.5
<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\$	-0.1r	0.7
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.0	-0.9
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-1.0r	0.1

**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, 1990-2012**

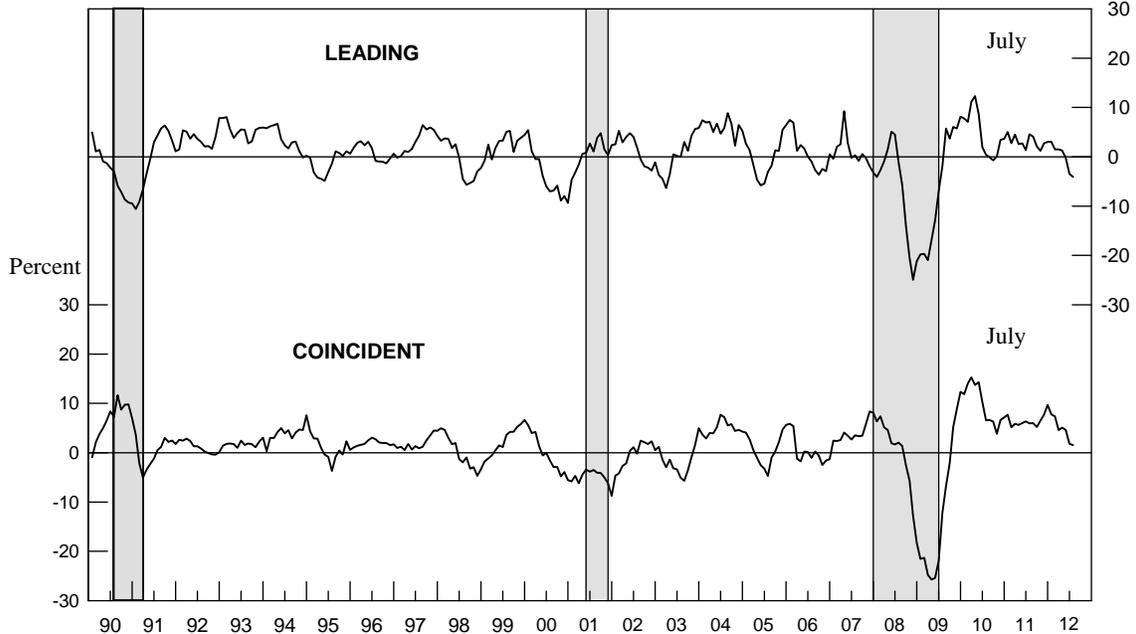
1977=100



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, 1990-2012**

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>
<b>2011</b>				
August	119.0	-2.3	108.9	9.9
September	115.0	-8.3	108.0	7.3
October	119.2	-1.7	109.5	9.0
November	118.3	-2.9	108.6	6.2
December	120.7	0.9	108.5	5.4
<b>2012</b>				
January	123.1	4.8	109.1	5.4
February	123.3	4.7	109.1r	4.1r
March	123.6r	4.9	106.7	-0.9r
April	124.5	5.8	109.1r	2.7r
May	121.5	0.9r	105.2r	-4.7r
June	122.7r	2.8r	107.2r	-1.2r
July	124.4	5.2	108.3	0.4

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**

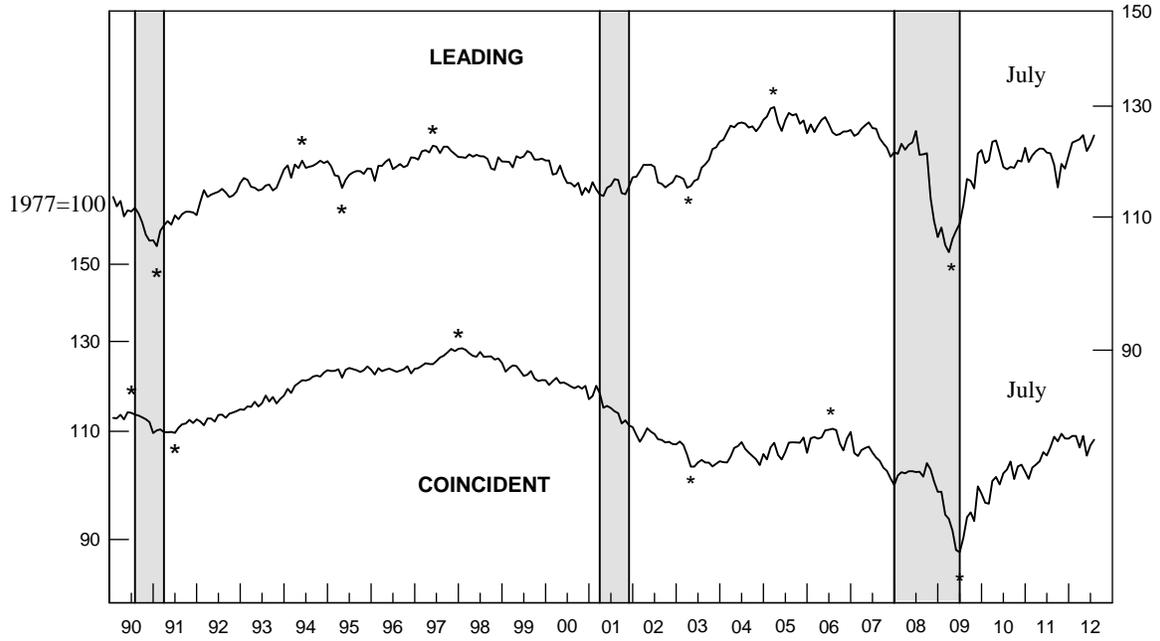
	<b>June</b>	<b>July</b>
<b>Leading Index</b>		
1. Average weekly hours, nonferrous metals (except aluminum) (NAICS 3314)	1.4	0.4
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982\$	0.0r	0.3
3. S&P stock price index, building products companies	-0.1	0.3
4. LME spot price of primary copper	0.1	0.0
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	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	<u>1.1r</u>	<u>1.3</u>
<b>Coincident Index</b>		
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)	1.6	0.9
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>1.1</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, 1990-2012**

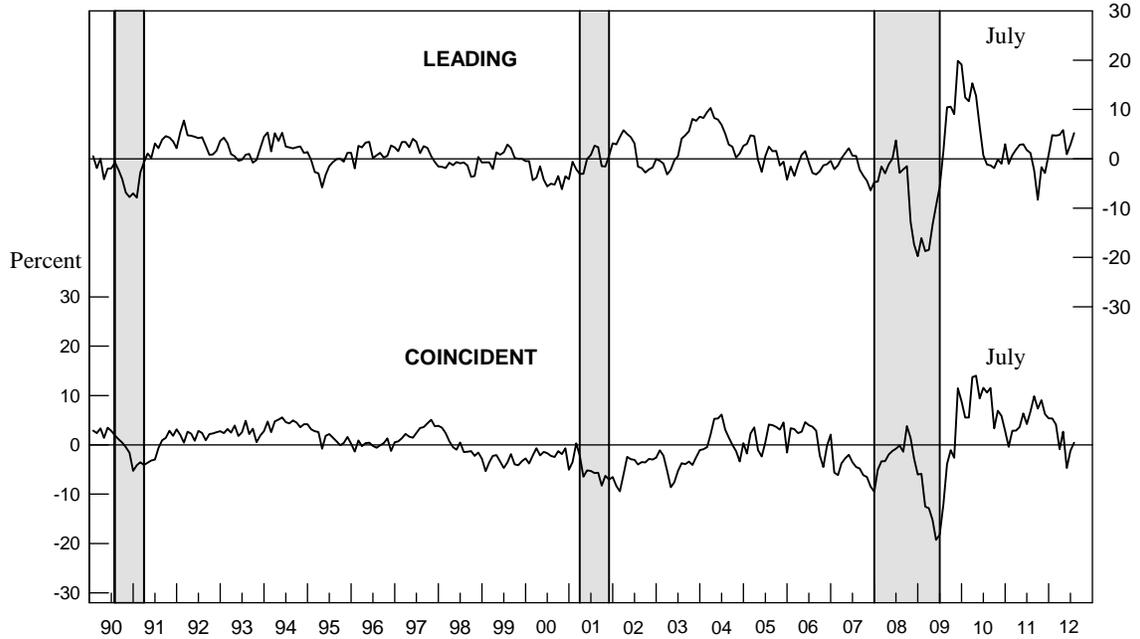
1977=100



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, 1990-2012**

Percent

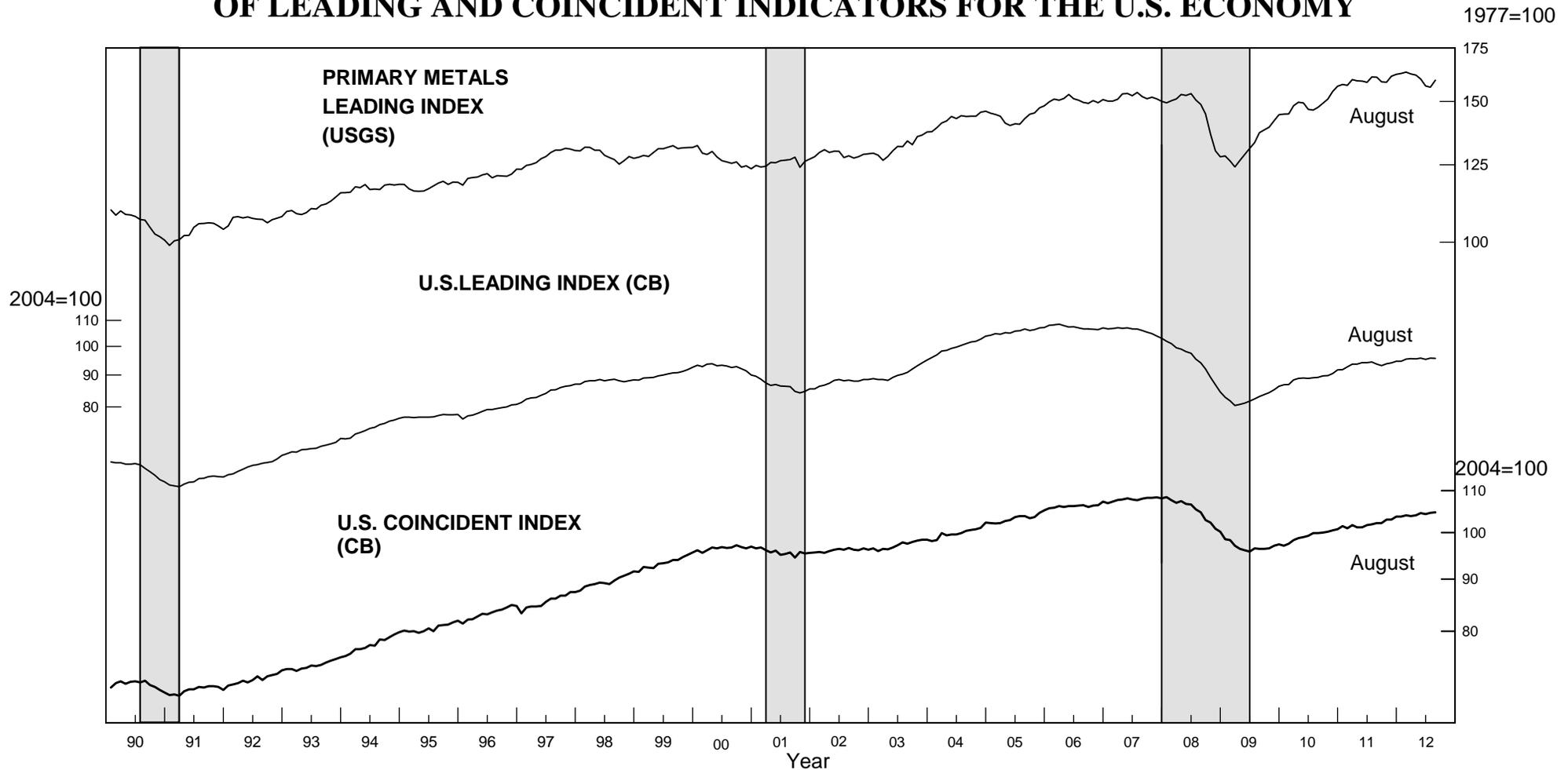


Shaded areas are business cycle recessions.

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).

September 2012