U.S. Department of the Interior U.S. Geological Survey

METAL INDUSTRY INDICATORS

September 1996

CIBCR

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

Changes to Price Section

We have made three changes to the price section of the **Metal Industry Indicators**. First, we added the **6-month smoothed growth rate of the Census Bureau's inventories for nonferrous and other primary metals** in 1982 dollars[1] to Table 1 and Chart 1. This series provides an estimate of the near-term trend of changes in stocks of nonferrous metals and nonferrous metal products in the United States. To make room for the growth rate of inventories, we are no longer publishing and plotting **the growth rate of the MII Metals Price Index**.

Second, we removed the **11-country leading index** from the metals price leading index. The 11-country index, produced by the Center for International Business Cycle Research (CIBCR) at Columbia University, does not become available until 2 to 3 months after the other indicators in the leading index. Also, it does not lead major changes in metal prices as well as the other indicators.

Third, we adjusted the **total value of debt in the U.S. nonfinancial sector** for inflation. This improves its performance as an indicator in the leading index.

We will continue to publish and plot the growth rate of the MII Nonferrous Metals Price Index, an index of London Metal Exchange prices for primary aluminum, copper, lead, and zinc. The MII Metals Price Index, the index we are discontinuing, includes these prices plus the price of No. 1 heavy melting steel scrap. We will continue to show the growth rate for the price of steel scrap separately in Table 1 and Chart 1.

Removing the 11-country leading index and deflating total debt result in a new leading index of metal prices. Besides deflated debt, its components include the values of new orders for nonferrous metals and U.S. M2 money supply, both adjusted for inflation, and the index of new private housing units authorized in the United States. The metals price leading index is constructed with the 6-month smoothed growth rates of these activities. This growth rate is a special moving average that measures near-term trend.

The new leading index turns before the MII nonferrous metals price index an average of 85% of the time, compared to 72% for the old leading index. There is also a slight improvement in the average number of months the new leading index leads the nonferrous metals price index, 8.5 months, compared to 8 months for the old index. We will continue to look for new indicators that lead changes in metal prices.

(continued on page 2)

Leading Indicators (6 months ago and latest month)	**Outlook**
Leading Index of Metal Prices	
Jan '96 96.1	The leading index points to declines in growth
July '96 95.4	for most metal prices in the near future.
Primary Metals Leading Index	
Feb '96 123.4	The leading index suggests that metal industry
Aug '96 125.5	activity will grow slowly in the months ahead.
Steel Leading Index	
Jan '96 101.8	The steel industry is likely to experience flat to
July '96 101.6	very slow growth in the near term.
Aluminum Mill Products Leading Index	
Jan '96 166.0	The aluminum leading indexes are predicting
July '96 170.6	modest growth in the aluminum industries.
Copper Leading Index	
Jan '96 116.1	Growth in the U.S. copper industry could be flat
July '96 115.5	to very slow during the next few months.

The Metal Industry Indicators (MII) is now on the World Wide Web. The URL for the MII is: http://minerals.er.usgs.gov/minerals/pubs/mii/

[1]The deflator used is the producer price index for nonferrous metals, Bureau of Labor Statistics code 102.

(continued from page 1)

Leading Index and Inventory Growth Point to Lower Metal Prices

The new Leading Index of Metal Prices increased 0.2% in July, the latest month for which it is available, to 95.4 from 95.2 in June. However, its 6-month smoothed growth rate for July is -2.4%. A growth rate below -1.0% usually means decreasing metal price growth in the coming months.

The growth rates of two of the three index components that were available for July, the deflated value of new orders for nonferrous metals and the index of permits for new private housing units, contributed 0.4 and 0.2 percentage points to the net increase in the leading index. The third available component, the deflated value of U.S. M2 money supply, declined in July, and contributed -0.4 percentage points to the net change in the index. The fourth indicator, deflated nonfinancial debt in the United States, was not available for the July index calculation.

Although the rates of decline in some metal prices slowed in August, most prices remained under downward pressure through mid-September. Inventory growth for U.S. nonferrous metal products, which surged last January and then slowed between February and May, began increasing in June and July, the latest months for which data are available. The latest trend in the metals price leading index, and the sizeable smoothed growth of nonferrous inventories (19.9%), imply further declining growth for most prices in the coming months.

It is important to remember that the business cycle is only one factor that may affect metal prices. Other factors include changes in metals production, inventory levels, speculation, strategic stockpiling, and production costs.

(continued on page 12)

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	Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
1995						
July	96.2	9.3	0.2	8.4	11.7	0.5
August	97.0	1.7	-0.6	-2.3	7.3	12.6
September	97.4	-3.0	1.5	-8.1	3.0	7.9
October	96.5	-12.0	5.1	-19.3	-6.1	2.9
November	97.6	-8.5r	6.1	-18.0	-1.7	-5.0
December	97.7	-9.2	4.3	-13.4	-6.9	-0.7
1996						
January	96.1	-19.4	29.5	-22.8	-21.2	10.6
February	97.0	-16.4	29.4	-17.5	-20.4	6.6
March	97.2	-11.4	24.4	-9.6	-18.8	-3.3
April	96.6	-9.1r	21.5	-12.5	-9.9	-4.8
May	95.1	-13.8	17.7	-14.1	-16.6	1.1
June	95.2	-29.3	18.2	-21.6	-45.4	-2.2
July	95.4	-24.1r	19.9	-16.6	-39.9	-7.6
August	NA	-21.0	NA	-15.6	-33.3	-5.8

r *- Revised*

Note: The components of the Leading Index of Metal Prices are the 6-month smoothed growth rates of the following: 1, the deflated value of new orders for nonferrous metals; 2, the deflated value of total debt of U.S. nonfinancial sectors; 3, the index of new private housing units authorized; and 4, the deflated value of U.S. M2 money supply. 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). Inventories consist of the deflated value of finished goods, work in progress, and raw materials for nonferrous metals and nonferrous metal products. 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); and the Bureau of the Census

Link To:

Chart 1.

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1995				
September	123.5r	0.7r	106.8	0.5
October	121.9r	-1.7r	106.5	-0.3
November	123.1r	0.3r	107.5	1.3
December	123.2r	0.5r	107.3	0.9
1996				
January	122.2r	-0.9r	107.3	0.9
February	123.4r	1.2r	107.4	1.1
March	122.9r	0.4r	107.5	1.3
April	123.5r	1.3r	107.9	1.9
May	124.1r	2.1r	108.3r	2.4r
June	123.3r	0.6r	108.5r	2.6r
July	122.6r	-0.7r	108.6	2.4
August	125.5	3.6	NA	NA

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	**July**	**August**
1. Average weekly hours, primary metals (SIC 33)	-0.2r	0.8
2. Weighted S&P stock price index, metals firms (1941–3=10)	-0.2r	0.4
3. Ratio of price to unit labor cost (SIC 33)	-0.2	NA
4. JOC metals price index growth rate (1980=100)	-0.1r	0.2
5. New orders, primary metals, 1982$	0.1	NA
6. Long-leading index of the U.S. economy (CIBCR)	0.1	NA
7. Short-leading index of the U.S. economy (CIBCR)	0.1r	1.0
Trend adjustment factors	-0.2	-0.2
Percent change (except for rounding differences)	-0.6r	2.2

Coincident Index	**June**	**July**
1. Industrial production index, primary metals (SIC 33)	0.3r	-0.2
2. Total employee hours, primary metals (SIC 33)	0.1r	-0.6
3. Manufacturers' sales, primary metals, 1987$	-0.3	0.7
Trend adjustment factor	0.1	0.1
Percent change (except for rounding differences)	0.2r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, Center for International Business Cycle Research, Bureau of Labor Statistics, and Federal Reserve Board; 4, Journal of Commerce; 5, Bureau of the Census and U.S. Geological Survey; 6 and 7, Center for International Business Cycle Research. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, Bureau of the Census, Bureau of Economic Analysis, 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 impact, in percentage points, on the percent change in the index. Each month, the sum of the contributions of the components plus the trend adjustment factor equals (except for rounding differences) the index's percent change from the previous month.

Links To:

Chart 2.

Chart 3.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1995				
August	101.4r	-1.0r	92.9	-1.6
September	101.6r	-0.4r	94.0	0.5
October	101.0r	-1.2r	93.0	-1.6
November	101.0r	-1.0r	94.5	1.4
December	101.4r	0.0	93.7	-0.3
1996				
January	101.8r	0.9	94.5	1.5
February	102.6r	2.5	94.0	0.5
March	101.0r	-0.5r	93.8	0.1
April	101.3r	0.3r	94.4	1.4
May	101.6r	0.7r	94.5	1.6
June	101.6r	0.6r	95.2r	2.9r
July	101.6	0.4	94.9	1.9

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, blast furnaces and basic steel products (SIC 331)	0.0r	-0.2
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982$, (SIC 331)	0.0r	0.1
3. Contracts and orders for plant and equipment, 1987$	0.0r	0.2
4. S&P stock price index, steel companies (1941-43=10)	-0.3	-0.3
5. Industrial production index for automotive products	0.2r	0.4
6. Steel scrap price (#1 heavy melting, $/ton)	0.0	-0.1
7. Total net new orders for machine tools, 1982$	0.1	NA
8. Long-leading index of the U.S. economy (CIBCR)	0.2r	0.1
9. Short-leading index of the U.S. economy (CIBCR)	0.1	0.0
Trend adjustment factors	-0.2	-0.2
Percent change (except for rounding differences)	0.1r	0.0
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	0.5r	-0.2
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills, 1982$	0.1	0.2
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	0.1	-0.4
Trend adjustment factor	0.1	0.1
Percent change (except for rounding differences)	0.8r	-0.3

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Conference Board; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce; 7, AMT-The Association for Manufacturing Technology and U.S. Geological Survey; 8 and 9, Center for International Business Cycle Research. Coincident: 1, Federal Reserve Board; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of Labor Statistics. All series are seasonally adjusted, except 4 and 6 of the leading index.

NA*: Not available* ***r*** *- Revised*

Links To:

Chart 4.

Chart 5.

Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1995				
August	167.9r	4.5r	141.7	-3.1
September	167.9r	3.9r	141.9	-2.7
October	166.4r	1.9r	144.0	0.2
November	169.6r	5.3r	140.8	-3.9
December	168.7r	3.8r	143.0	-0.6
1996				
January	166.0r	0.4r	139.4	-5.0
February	168.6r	3.1r	140.7	-2.8
March	167.4r	1.5r	142.6	0.0
April	169.2r	3.2r	141.3	-1.5
May	170.7r	4.2r	143.0r	1.0r
June	170.5r	3.3r	141.6r	-0.7r
July	170.6	2.8	141.3	-0.8

***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 Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index		**June**	**July**
1.	Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	0.0	-0.6
2.	Index of new private housing units authorized (1987=100)	-0.1	0.1
3.	Industrial production index for automotive products	0.2r	0.4
4.	Construction contracts, commercial and industrial (mil. sq. ft.)	-0.5	-0.6
5.	Net new orders for aluminum mill products (mil. lbs.)	0.0	0.5
6.	Long-leading index of the U.S. economy (CIBCR)	0.2r	0.1
7.	Short-leading index of the U.S. economy (CIBCR)	0.1	0.1
	Trend adjustment factors	0.0	0.0
	Percent change (except for rounding differences)	-0.1r	0.0
Coincident Index			
1.	Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	0.1r	-0.2
2.	Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	0.2	-0.8
3.	Shipments of aluminum mill products (mil. lbs.)	-1.5r	0.6
	Trend adjustment factor	0.2	0.2
	Percent change (except for rounding differences)	-1.0r	-0.2

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census; 3, Federal Reserve Board; 4, F.W. Dodge, McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc.; 6 and 7, Center for International Business Cycle Research. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, Bureau of the Census, The Aluminum Association, Inc., and U.S. Geological Survey. All series are seasonally adjusted.

NA: Not Available *r - Revised*

Links To:

Chart 6.

Chart 7.

Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1995				
August	117.2r	2.8r	118.0	-0.4
September	117.3r	2.7r	117.6	-0.9
October	115.8r	0.2r	119.0	1.3
November	117.3r	2.7r	119.6	2.2
December	117.5r	2.9r	118.8	0.8
1996				
January	116.1r	0.4r	119.3	1.5
February	117.1r	2.0r	119.2	1.2
March	117.5r	2.4r	118.6	0.1
April	117.9r	2.7r	119.6r	1.7r
May	118.5r	3.1r	119.8r	1.6r
June	116.7r	-0.4r	119.3	0.7
July	115.5	-2.4	119.9	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 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**June**	**July**
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	0.1	0.0
2. New orders, nonferrous and other primary metals, 1982$	0.0	0.2
3. MII stock price index, copper companies (1941-43=10)	-0.3	-0.3
4. Construction contracts, commercial and industrial (mil. sq. ft.)	-0.5	-0.5
5. Copper scrap price (N.Y. #2, cents/lb.)	-0.9	-0.4
6. Index of new private housing units authorized (1987=100)	-0.1	0.1
7. Long-leading index of the U.S. economy (CIBCR)	0.2r	0.1
8. Short-leading index of the U.S. economy (CIBCR)	0.1	0.0
Trend adjustment factors	-0.2	-0.2
Percent change (except for rounding differences)	-1.6r	-1.0
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	-0.4r	0.3
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	0.5r	-0.4
3. Copper refiners' shipments (short tons)	-0.6	0.4
Trend adjustment factor	0.1	0.1
Percent change (except for rounding differences)	-0.4r	0.4

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, U.S. Geological Survey; 4, F.W. Dodge, McGraw-Hill Information Systems Company; 5, Journal of Commerce; 6, Bureau of the Census; 7 and 8, Center for International Business Cycle Research. 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 and 5 of the leading index.

NA*: Not available* ***r*** *- Revised*

Links To:

Chart 8.

Chart 9.

(continued from page 2)

Modest Growth To Continue for U.S. Metal Industries

The primary metals leading index rose a strong 2.4% in August to 125.5 from a revised 122.6 in July. However, most of the growth occurred because of rebounds in August for two indicators that fell sharply in July. The stock price index for metals companies increased 4.6% in August after falling 4.9% in July, while average weekly hours for production workers rose to 44.3 from 43.9 in July, just above the 44.1 recorded for June.

These two indicators contributed just over one-half the net increase in the August leading index (see Table 3). The CIBCR short-leading index of the U.S. economy accounted for most of the remaining net increase in the primary metals leading index, and higher growth in the JOC metals price index, the fourth indicator available for August, accounted for the remainder of the net increase.

The primary metals industry is a broad industry group composed of 26 steel and other basic metal industries. For the leading indexes of four of these industries, which are only available through July, growth was held down by declines in average weekly hours, stock prices, and metal prices.

The July steel leading index was unchanged from a revised 101.6 in both May and June. Large increases in industrial production for automotive products and contracts and orders for plant and equipment helped offset declines in the indicators for average weekly hours, stock prices, and scrap prices.

The aluminum mill products leading index barely increased in July, edging up to 170.6 from a revised 170.5 in June. The largest positive contribution to this index came from new orders for aluminum mill products, which are compiled by the Aluminum Association. The leading index was also buoyed by a large increase in production for automotive products.

The primary and secondary aluminum leading index remained the same in July as in June, holding at 219.3. Deflated new orders for nonferrous and other metals made the largest positive contribution to this leading index. (Tables and charts for the primary and secondary aluminum indexes are in a separate file.)

The July copper leading index declined 1.0% to 115.5 from a revised 116.7 in June. The same components responsible for the June decrease in the leading index, the price of copper scrap, the stock price index for copper firms, and new commercial and industrial construction contracts, pushed the leading index lower in July.

The metal industry leading indexes signal significant changes in industry activity an average of 6 months in advance. Although growth in the leading indexes has been weak in recent months because of lower average weekly hours, stock prices, and metal prices, there is strength in other leading indicators.

New orders received by metal industries have been increasing since last March. New orders have been on an upward trend since mid-1995 for both the ferrous and nonferrous metal industries, with the latest 6-month smoothed growth rate of new orders for the broad primary metals industry standing at 15.0%.

Moreover, permits issued for new housing construction in the United States still remain at high levels, while production of automotive products has been increasing steadily since last March. The recent performances of the metals industry leading indexes suggest that overall metals activity will continue to grow slowly in the months ahead.

New Leading Indexes for Metal Industries

Next month, we will begin publishing new leading indexes for the primary metal, steel, copper, and aluminum industries. The most significant change in these indexes is the elimination of the CIBCR short- and long-leading indexes of the U.S. economy, which are produced by the Center for International Business Cycle Research.

Since 1992, the Center has been a partner with the U.S. Bureau of Mines and the U.S. Geological Survey (USGS) in the production of the **Metal Industry Indicators**. Beginning with the October 1996 issue, the report will be produced solely by the USGS. The CIBCR has provided invaluable assistance to both the Bureau of Mines and the Geological Survey in developing metal industry indexes. The new leading indexes continue to show the influence of the CIBCR.

The next release of the metal industry indicators summary on MINES FaxBack is scheduled for 10:00 A.M. ET, Tuesday, October 22. It can be accessed from a touch-tone telephone attached to a fax machine by dialing 703-648-4999.

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