

FEDERAL RESERVE statistical release



G.3 (402)

For immediate release

CAPACITY UTILIZATION Manufacturing, Mining, Utilities, and Industrial Materials

August 18, 1986

Capacity utilization in manufacturing, mining, and utilities decreased 0.2 percentage point in July to 78.2 percent; declines of similar magnitude occurred in each of these three sectors. Over the past six months, the overall rate has fallen 2.6 percentage points. Since the rate for total industry reached 82 percent in July-August 1984, capacity utilization has fallen 3-1/4 percentage points in manufacturing; about 12 percentage points in mining (primarily oil well drilling); and nearly 2 percentage points for utilities.

The 0.2 percentage point drop in manufacturing capacity utilization in July reflected a drop of 3.4 percentage points in the rate at auto assembly plants and significant declines for instruments, petroleum products, and rubber and plastics products. Smaller declines were reported in most other industries. In the primary metals and electrical machinery industries, increases in utilization reflected the return to work of workers who had been on strike in June.

Producers of industrial materials operated at 77.9 percent of capacity in July, the same as in June. The rate for producers of durable goods materials eased 0.2 percentage point while the rates for nondurable goods materials and energy materials rose by 0.1 and 0.3 percentage point respectively.

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In next month's statistical release, revised estimates of industrial capacity utilization rates will be issued for the period since January 1984. This revision will incorporate revised industrial production and capacity indexes.

Capacity Utilization: Summary

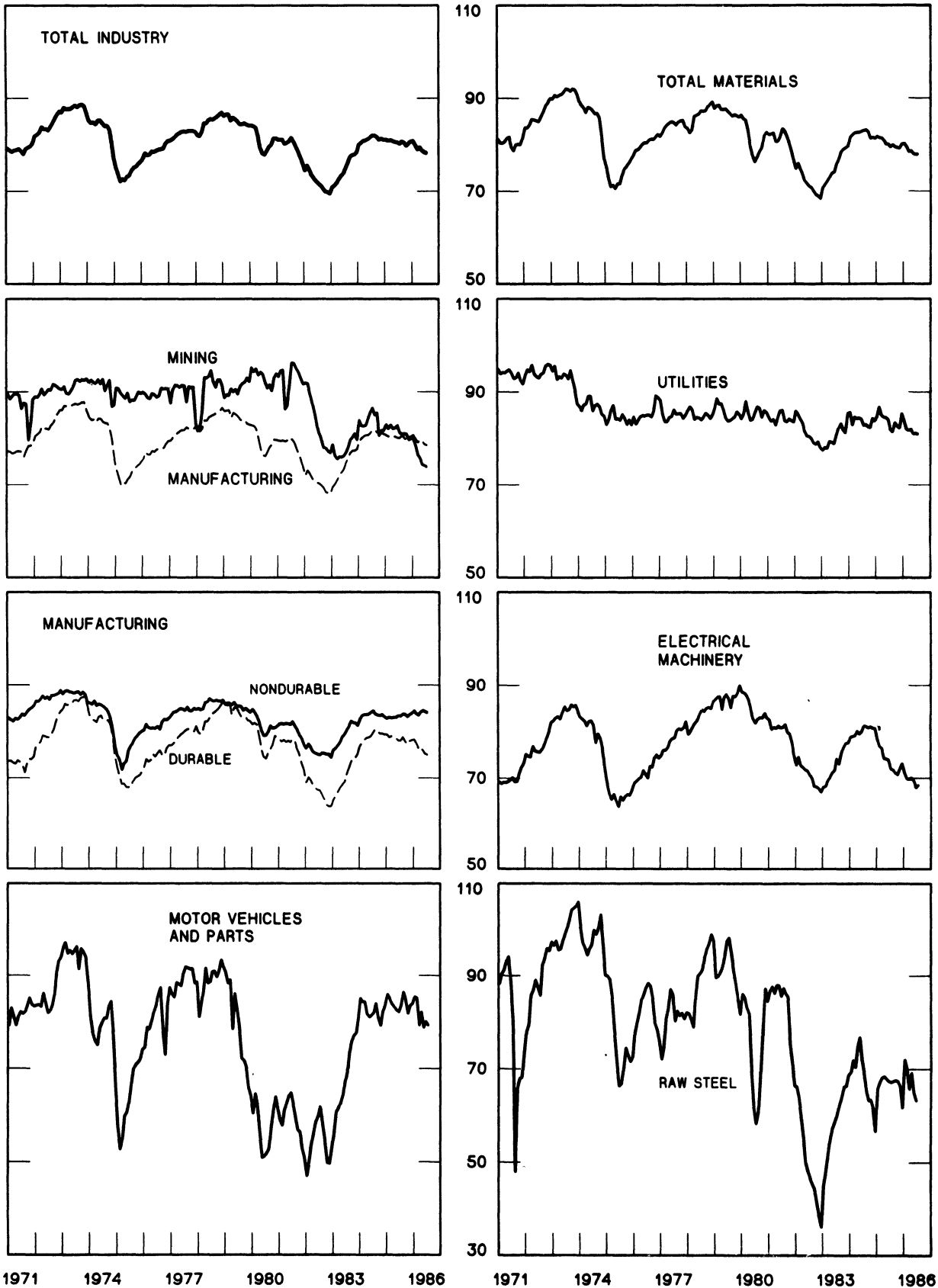
Percent of capacity, seasonally adjusted

Series	1973	1975	1978	1982	1987	1986			
	High	Low	-80 High	Low	-85 Avg.	APR	MAY	JUN	JUL
Total Industry	88.6	72.1	86.9	69.5	81.7	79.4	78.8	78.4	78.2
Manufacturing	87.7	69.9	86.5	68.0	80.6	79.6	79.3	78.7	78.5
Durable	87.4	67.9	86.3	63.7	78.8	76.6	75.8	75.1	74.9
Nondurable	88.8	71.8	87.0	74.4	83.5	84.2	84.5	84.2	84.0
Mining	92.8	87.8	95.2	76.9	87.7	75.6	74.3	74.1	73.8
Utilities	95.6	82.9	88.5	78.0	87.9	82.0	81.1	81.2	81.0
Industrial Materials	92.0	70.5	89.1	68.4	82.5	78.6	78.0	77.9	77.9

CAPACITY UTILIZATION

JULY DATA

SEASONALLY ADJUSTED, PERCENT



MANUFACTURING, MINING AND UTILITIES

Table 1

Capacity Utilization

Monthly, seasonally adjusted, percent of capacity

Series	1973	1975	1978	1982	1987	1985	1985		1986							
	High	Low	-80	Low	-85	Avg.	JUL	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
Total Industry	88.6	72.1	86.9	69.5	81.7	80.2	80.2	80.3	80.7	80.8	79.9	79.0	79.4	78.8	78.4	78.2
Manufacturing	87.7	69.9	86.5	68.0	80.6	80.1	80.2	80.4	80.7	79.8	79.1	79.6	79.3	78.7	78.5	
Primary processing	91.9	68.3	89.1	65.1	81.7	82.3	83.0	83.3	84.8	83.9	82.9	83.2	83.3	82.6	82.6	
Advanced processing	86.0	71.1	85.1	69.5	80.2	79.1	79.0	79.0	78.8	78.1	77.2	78.0	77.6	76.9	76.7	
Durable manufacturing	87.4	67.9	86.3	63.7	78.8	78.0	77.9	78.1	78.2	77.3	76.3	76.6	75.8	75.1	74.9	
Stone, clay and glass products	89.3	67.1	86.6	62.9	77.7	80.6	79.9	81.9	83.1	82.0	82.6	83.5	82.7	83.3		
Primary metals	101.9	67.0	97.1	45.8	80.2	71.5	76.0	74.3	77.3	73.7	70.8	71.6	69.5	66.7	67.6	
Iron and steel, subtotal	105.8	66.6	100.3	37.6	79.4	66.1	72.9	69.9	73.4	68.2	63.5	64.4	60.8	58.5		
Nonferrous metals, subtotal	95.6	62.1	91.1	60.8	81.3	80.2	80.9	81.3	83.6	82.4	82.3	82.8	83.2	79.5		
Fabricated metal products	85.0	64.7	87.4	61.3	77.9	80.5	80.9	81.5	81.9	81.9	81.2	80.5	80.3	80.1	79.7	
Nonelectrical machinery	89.0	68.2	86.0	62.9	78.5	75.2	73.0	72.9	72.8	71.8	70.9	70.2	69.8	68.8	68.5	
Electrical machinery	85.7	63.7	89.9	66.9	78.3	71.9	72.0	73.0	71.1	69.8	69.7	70.0	69.5	67.9	68.5	
Motor vehicles and parts	97.1	52.7	93.3	47.0	78.0	83.6	83.5	83.9	85.3	85.0	79.4	82.1	78.9	80.1	79.3	
Automobiles	91.8	43.7	93.3	36.6	76.7	82.2	75.8	79.4	82.2	85.1	75.7	80.4	75.3	79.5	76.1	
Aerospace and misc. trans. eqp.	77.0	69.6	87.1	70.7	76.6	85.0	87.6	87.2	88.1	86.8	87.2	88.5	88.1	88.0	87.5	
Instruments	89.2	74.9	88.9	77.8	83.4	83.4	82.0	81.6	81.6	81.7	81.9	81.6	80.7	80.6	79.3	
Other durables	87.7	69.0	81.0	69.1	81.8	83.2	83.2	83.2	83.8	83.2	83.1	83.4	83.5	82.6	82.2	
Nondurable manufacturing	88.8	71.8	87.0	74.4	83.5	83.3	83.6	83.9	84.4	83.8	83.5	84.2	84.5	84.2	84.0	
Food and kindred products	85.8	77.6	85.1	76.5	82.4	80.2	78.8	79.3	79.4	79.6	78.9	79.3	79.7	79.0		
Textile mill products	92.1	58.9	88.3	70.6	84.5	84.7	87.7	86.3	87.1	89.5	87.9	89.3	89.8	90.2		
Paper and products	95.6	67.7	92.7	80.8	88.4	92.4	91.2	93.9	94.3	93.4	93.2	93.4	93.4	94.4		
Chemicals and products	88.6	69.2	82.9	67.6	78.7	78.0	78.4	78.5	79.6	79.7	79.7	80.2	80.0	79.7		
Petroleum products	99.6	83.7	91.7	69.7	87.7	86.7	86.5	88.1	92.1	88.0	87.5	91.0	94.4	91.5	90.8	
Rubber and plastics products	97.5	59.5	89.4	71.2	84.6	86.0	87.4	86.8	86.7	86.4	85.1	84.0	84.8	84.8		
Other nondurables	86.4	72.3	92.4	78.9	86.1	86.8	88.6	88.3	88.1	86.0	86.5	88.1	88.0	87.9	87.7	
Mining	92.8	87.8	95.2	76.9	87.7	81.2	79.7	80.0	80.0	78.4	76.4	75.6	74.3	74.1	73.8	
Utilities	95.6	82.9	88.5	78.0	87.9	81.9	82.3	85.3	83.8	82.1	81.8	82.0	81.1	81.2	81.0	
Electric utilities	98.7	83.0	87.6	78.2	88.7	81.0	80.8	84.4	81.2	80.1	80.9	82.3	81.5	81.6	81.5	

Table 2

Output, Capacity, and Capacity Utilization

Quarterly, seasonally adjusted

Series	OUTPUT					CAPACITY					UTILIZATION				
	1985 Q2	1985 Q3	1985 Q4	1986 Q1	1986 Q2	1985 Q2	1985 Q3	1985 Q4	1986 Q1	1986 Q2	1985 Q2	1985 Q3	1985 Q4	1986 Q1	1986 Q2
Total Industry	124.2	124.8	125.4	125.6	124.7	154.0	155.1	156.2	157.2	158.1	80.7	80.5	80.3	79.9	78.9
Manufacturing	126.6	127.6	128.2	128.9	128.6	157.7	158.9	160.2	161.3	162.4	80.3	80.3	80.0	79.9	79.2
Primary processing	108.1	109.5	110.4	111.7	110.9	132.0	132.4	132.8	133.2	133.6	81.9	82.7	83.1	83.8	83.0
Advanced processing	137.9	138.6	139.0	139.1	139.3	173.2	174.9	176.7	178.3	179.7	79.6	79.2	78.7	78.0	77.5
Durable manufacturing	127.9	128.5	128.9	129.1	127.4	163.1	164.5	165.8	167.0	168.1	78.5	78.1	77.7	77.3	75.8
Stone, clay and glass products	115.6	115.8	116.3	119.7	121.2	142.3	143.2	144.1	144.9	145.8	81.2	80.9	80.7	82.6	83.2
Primary metals	78.7	80.4	82.8	81.0	75.4	110.8	110.4	110.0	109.5	108.9	71.0	72.9	75.2	73.9	69.3
Iron and steel, subtotal	68.3	70.0	73.9	70.1	62.1	104.3	103.8	103.3	102.5	101.5	65.5	67.4	71.6	68.3	61.2
Nonferrous metals, subtotal	98.3	100.2	99.5	101.7	100.5	122.9	122.9	122.8	122.8	122.9	80.0	81.5	81.0	82.8	81.8
Fabricated metal products	108.3	107.5	108.4	109.1	107.3	133.2	133.3	133.4	133.5	133.6	81.3	80.7	81.2	81.7	80.3
Nonelectrical machinery	147.9	147.7	144.9	144.6	141.2	194.3	196.9	199.4	201.4	202.8	76.1	75.0	72.6	71.8	69.6
Electrical machinery	169.2	165.6	168.6	166.3	165.1	228.5	231.5	234.5	236.9	238.8	74.1	71.5	71.9	70.2	69.1
Motor vehicles and parts	110.6	115.0	113.9	115.4	112.9	133.9	135.4	137.0	138.6	140.3	82.7	84.9	83.1	83.2	80.4
Automobiles	112.5	114.6	109.2	116.3	112.3	139.2	141.0	142.9	143.6	143.1	80.8	81.2	76.4	81.0	78.4
Aerospace and misc. trans. eqp.	135.4	140.0	142.4	143.1	145.6	162.8	162.9	163.1	163.8	165.0	83.2	85.9	87.3	87.4	88.2
Instruments	139.7	140.8	140.4	141.8	141.8	167.9	169.8	171.7	173.5	175.2	83.2	82.9	81.8	81.7	81.0
Other durables	122.7	123.9	124.7	125.7	126.3	147.4	148.5	149.7	150.8	151.8	83.3	83.4	83.3	83.4	83.2
Nondurable manufacturing	124.9	126.4	127.2	128.6	130.1	150.2	151.2	152.3	153.3	154.4	83.1	83.6	83.6	83.9	84.3
Food and kindred products	131.3	132.4	131.5	133.3	134.5	164.0	165.3	166.7	168.1	169.5	80.1	80.1	78.9	79.3	79.3
Textile mill products	100.8	105.7	106.4	108.7	110.7	122.7	122.9	123.2	123.3	123.4	82.1	86.0	86.4	88.2	89.8
Paper and products	125.4	128.4	129.3	132.4	133.2	139.1	139.9	140.6	141.4	142.1	90.2	91.8	91.9	93.6	93.7
Chemicals and products	126.3	127.9	128.1	130.8	131.9	161.5	162.4	163.3	164.2	165.0	78.2	78.7	78.4	79.7	80.0
Petroleum products	87.2	87.5	87.9	89.6	92.5	102.3	101.6	100.9	100.5	100.2	85.2	86.0	87.1	89.2	92.3
Rubber and plastics products	144.9	147.4	149.7	150.1	149.3	167.9	170.0	172.1	174.4	176.7	86.3	86.7	87.0	86.1	84.5
Other nondurables	127.6	128.2	130.9	129.9	132.7	145.8	147.0	148.3	149.6	150.9	87.6	87.2	88.3	86.9	88.0
Mining	110.0	108.5	107.6	105.1	100.3	133.6	133.9	134.1	134.3	134.3	82.3	81.0	80.2	78.3	74.7
Utilities	113.6	111.4	113.7	113.1	111.8	134.5	135.4	136.3	136.9	137.3	84.4	82.3	83.4	82.6	81.4
Electric utilities	119.3	118.3	120.8	119.4	121.7	144.2	145.5	146.9	148.0	148.7	82.8	81.3	82.2	80.7	81.8

Note. Data for output are percentages of 1977 output as shown in the Federal Reserve's seasonally adjusted indexes of industrial production. Capacity is also expressed as a percentage of

1977 actual output. Capacity utilization percentages are calculated as ratios of production to capacity.

INDUSTRIAL MATERIALS

Table 3

Capacity Utilization

Monthly, seasonally adjusted, percent of capacity

Series	1973	1975	1978	1982	1987	1985	1985		1986						
	High	Low	-80 High	Low	-85 Avg.	JUL	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
Industrial Materials	92.0	70.5	89.1	68.4	82.5	79.5	79.2	80.1	80.2	79.6	78.5	78.6	78.0	77.9	77.9
Durable goods materials	91.8	64.4	89.8	60.9	79.4	75.8	75.8	75.8	76.4	75.2	74.2	74.2	73.2	72.8	72.6
Metal materials	99.2	67.1	93.6	45.7	78.4	66.4	70.8	70.7	71.3	68.4	66.4	66.8	65.5	64.3	64.2
Raw steel	106.0	66.4	98.9	36.1	81.1	67.2	66.4	61.8	71.9	69.8	65.8	69.1	64.9	63.3	
Aluminum	95.7	73.0	97.4	58.8	88.0	71.0	66.0	65.7	66.0	67.4	68.4	69.5	69.3	60.2	
Nondurable goods materials	91.1	66.7	88.1	70.6	83.2	81.7	81.5	82.7	83.5	83.7	82.4	83.5	83.3	83.7	83.8
Textile, paper, and chemical materials	92.8	64.8	89.4	68.6	83.6	82.7	82.1	83.5	84.3	84.6	83.4	84.3	84.1	84.4	84.8
Pulp and paper materials	98.4	70.6	97.3	79.9	91.3	91.7	90.1	94.7	94.8	93.7	92.9	94.0	93.1	95.1	
Chemical materials	92.5	64.4	87.9	63.3	80.8	80.1	78.8	80.1	81.1	80.9	79.9	80.4	80.4	80.1	
Energy materials	94.6	86.9	94.0	82.2	89.7	85.8	84.7	87.4	85.9	85.7	84.7	84.1	83.9	84.2	84.5

Table 4

Output, Capacity, and Capacity Utilization

Quarterly, seasonally adjusted

Series	OUTPUT					CAPACITY					UTILIZATION				
	1985 Q2	Q3	Q4	1986 Q1	Q2	1985 Q2	Q3	Q4	1986 Q1	Q2	1985 Q2	Q3	Q4	1986 Q1	Q2
Industrial Materials	114.5	114.2	114.8	115.2	113.8	142.5	143.4	144.3	145.0	145.5	80.4	79.6	79.5	79.4	78.2
Durable goods materials	121.4	120.7	121.4	121.0	119.1	157.4	158.9	160.5	161.6	162.2	77.1	76.0	75.6	75.3	73.4
Metal materials	80.2	79.4	82.4	80.2	75.7	117.3	117.3	117.3	116.7	115.6	68.4	67.7	70.3	68.7	65.5
Raw steel	71.2	70.7	68.3	71.9	67.1	104.9	104.8	104.8	103.8	102.0	67.9	67.4	65.2	69.2	65.8
Aluminum	86.4	83.5	78.8	79.1	77.5	118.6	118.3	118.1	117.6	116.7	72.9	70.6	66.7	67.3	66.4
Nondurable goods materials	111.2	113.7	113.8	115.7	116.4	137.8	138.2	138.7	139.1	139.4	80.7	82.2	82.0	83.2	83.5
Textile, paper and chemical materials	111.0	114.1	114.0	116.2	116.6	137.0	137.4	137.8	138.1	138.4	81.0	83.0	82.7	84.1	84.3
Pulp and paper materials	121.8	123.8	124.5	128.3	129.3	136.2	136.3	136.5	136.8	137.4	89.4	90.8	91.2	93.8	94.1
Chemical materials	112.6	114.6	114.2	115.7	115.4	142.0	142.6	143.1	143.5	143.7	79.3	80.4	79.8	80.6	80.3
Energy materials	105.2	103.2	104.2	103.6	102.1	120.3	120.6	120.9	121.2	121.5	87.5	85.5	86.1	85.4	84.0

Definition. This release contains estimates of output, capacity, and capacity utilization for the nation's factories, mines, and electric and gas utilities. Output data are the Federal Reserve's seasonally adjusted indexes of industrial production, which express output as percentages of 1977 output. The capacity estimates are expressed as percentages of 1977 output as well. Capacity utilization percentages are calculated as ratios of production to capacity. The capacity indexes are based on a variety of data, including capacity data in physical units compiled by trade associations, private and government surveys of capacity growth and utilization rates, and estimates of capital stock growth. The concept of practical capacity is applied, which is defined as the greatest level of output that a plant can maintain within the framework of a realistic work pattern, taking account of normal downtime, and assuming sufficient availability of inputs to operate machinery and equipment in place. When the capacity indexes for individual industries are aggregated—for example to total manufacturing—no explicit account is taken of possible general equilibrium constraints such as emerging industry bottlenecks. Because of the large and heterogeneous database, changes in utilization rates may be more meaningful in the analysis of business conditions than any particular level of these rates.

Groupings. Estimates of capacity and industrial production for manufacturing industries are aggregated to primary processing and advanced processing industries, to durable and nondurable manufacturing industries, and to total manufacturing. The mining, manufacturing, and utilities estimates aggregate to the total index. Primary processing includes textile mill products, paper and products, industrial chemicals, petroleum products, rubber and plastics products, lumber and products, primary metals, fabricated metal products, and stone, clay, and glass products. Advanced processing includes foods, tobacco products, apparel products, printing and publishing, chemical products such as drugs and toiletries, leather and products, furniture and fixtures, machinery, transportation equipment, instruments, miscellaneous manufactures, and government-owned-and-operated ordnance facilities. Industrial materials are items produced and used as inputs by manufacturing plants, mines, and utilities. Industrial materials include many of the items included in the primary processing grouping of manufacturing, as well as some of the output of the advanced processing industries, mines, and utilities—such as iron ore, crude oil, semiconductors, and electricity sold to industry.

Perspective. The historical highs and lows in capacity utilization shown in the tables above are specific to each series and did not all occur in the same month. Industrial plants usually operate at capacity utilization rates that are well below 100 percent; none of the broad aggregates has ever reached 100 percent. For mining, manufacturing, and utilities as a whole, and for total manufacturing, utilization rates as high as 90 percent have been exceeded only in wartime.

Revisions. The first estimates for a month are published about the 17th of the following month. These estimates may revise in each of the next three months as new data become available. After the fourth month no further revisions are undertaken until an annual or benchmark revision. The median of the revisions in the total manufacturing utilization rate between the first and fourth estimate is 0.3 of a percentage point; that is, in about half of the cases, the absolute value of the revision from the first to the fourth estimate is less than 0.3 of a percentage point.

Sources. The basic methodology used to estimate the series is discussed in "Revised Federal Reserve Rates of Capacity Utilization", *Federal Reserve Bulletin*, October 1985. Revised data from 1948-84 are included in the statistical supplement to the July 1985 capacity utilization release, which may be obtained from Publications Services, Board of Governors of the Federal Reserve System, Washington, D.C. 20551

Rounding. Utilization rates are calculated from unrounded capacity and production indexes. Aggregates are derived from unrounded detailed components.

Release schedule for 1986. Approximately 11 a.m. on January 17, February 18, March 17, April 16, May 16, June 16, July 16, August 18, September 17, October 17, November 17, and December 17.