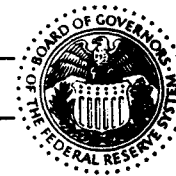


# FEDERAL RESERVE statistical release



G.3 (402)

For immediate release

## CAPACITY UTILIZATION

### Manufacturing, Mining, Utilities, and Industrial Materials

February 17, 1987

Capacity utilization in manufacturing, mining, and utilities increased 0.2 percentage point to 79.7 percent in January; it had risen 0.5 percentage point during the two preceding months after five months of little change. In January, utilization rates rose most for fabricated metal products and petroleum products; moreover, the already high rate for textile, paper, and chemical materials rose 0.7 percentage point further. The largest decline was for automobile assemblies, which retraced part of their December advance, and the rate for energy materials fell a percentage point.

Although the January utilization rate for total industry was the highest since last February, it was about 2 percentage points below the peak for this expansion, which was attained in the summer of 1984, and that high only equalled the average utilization rate for the 1967-86 period. The January operating rate in manufacturing, at 80.3 percent, was near the average rate for 1967-1986, but utilization rates in mining and utilities were about 14 and 7 percentage points, respectively, below their 1967-1986 averages. Within manufacturing the January rate for nondurables increased 0.3 percentage point to 85.4 percent, approximately 2 percentage points above its average for the last 20 years. In contrast the rate for durables, which rose 0.2 percentage point in January, remained nearly 2 percentage points below its 20-year average.

### Capacity Utilization: Summary

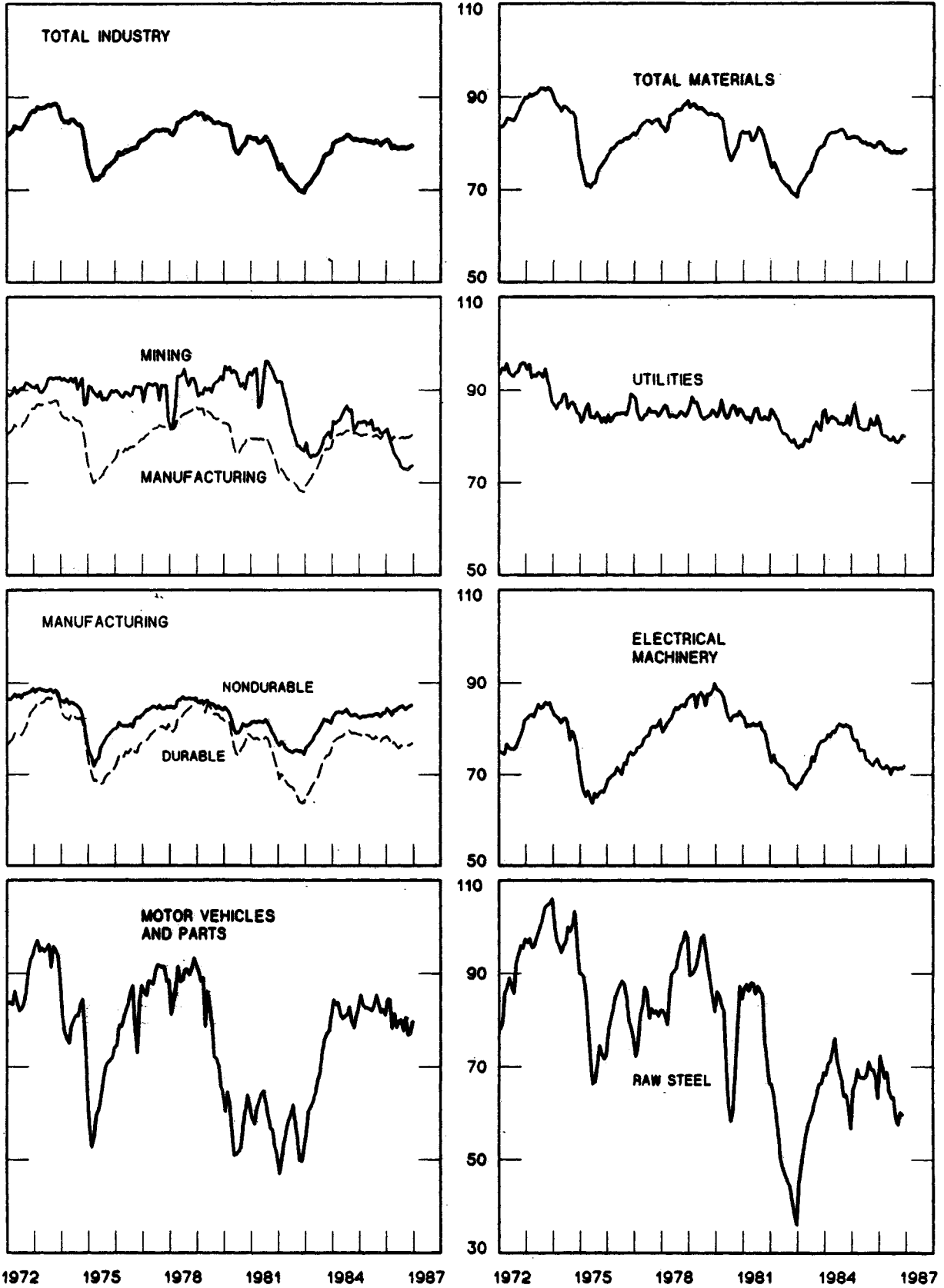
Percent of capacity, seasonally adjusted

Series	1973 High	1975 Low	1978 -80 High	1982 Low	1967 -86 Avg.	1986			1987
						OCT	NOV	DEC	JAN
Total Industry	88.6	72.1	86.9	69.5	81.5	79.0	79.4	79.5	79.7
Manufacturing	87.7	69.9	86.5	68.0	80.6	79.6	79.8	80.1	80.3
Durable	87.4	67.9	86.3	63.7	78.6	76.3	76.5	76.7	76.9
Nondurable	88.8	71.8	87.0	74.4	83.5	84.7	84.8	85.1	85.4
Mining	92.8	87.8	95.2	76.9	87.1	72.5	73.4	72.5	72.7
Utilities	95.6	82.9	88.5	78.0	87.5	79.3	80.5	80.4	80.2
Industrial Materials	92.0	70.5	89.1	68.4	82.3	77.8	78.4	78.4	78.4

# CAPACITY UTILIZATION

JANUARY DATA

SEASONALLY ADJUSTED, PERCENT



**MANUFACTURING, MINING AND UTILITIES**

Table 1

**Capacity Utilization**  
Monthly, seasonally adjusted, percent of capacity

Series	1973	1975	1978	1982	1987	1986	1986												1987
	High	Low	-80	Low	-86	JAN	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN				
<b>Total Industry</b>	88.6	72.1	86.9	69.5	81.5	80.9	79.1	79.0	79.2	79.2	79.0	79.0	79.4	79.5	79.7				
<b>Manufacturing</b>	87.7	69.9	86.5	68.0	80.6	80.8	79.4	79.3	79.7	79.7	79.6	79.6	79.8	80.1	80.3				
Primary processing	91.9	68.3	89.1	65.1	81.8	84.4	82.9	82.7	82.9	83.2	83.7	83.8	84.4	84.7					
Advanced processing	86.0	71.1	85.1	69.5	80.0	79.2	78.0	77.7	78.4	78.0	77.6	77.8	77.7	77.9					
<b>Durable manufacturing</b>	87.9	67.9	86.3	63.7	78.6	78.4	76.3	75.7	76.3	76.2	76.4	76.3	76.5	76.7	76.9				
Stone, clay and glass products	89.3	67.1	86.6	62.9	78.0	83.0	82.4	82.7	81.7	81.6	82.8	80.2	81.8	82.3					
Primary metals	101.9	67.0	97.1	45.8	79.6	74.7	68.1	65.1	67.2	67.1	67.8	68.0	70.5	68.7	68.4				
Iron and steel, subtotal	105.8	66.6	100.3	37.6	78.5	69.9	58.9	57.1	60.7	59.9	60.4	61.6	64.3	61.7					
Nonferrous metals, subtotal	95.6	62.1	91.1	60.8	81.2	82.2	82.5	77.6	77.2	78.3	79.3	77.8	80.0	79.4					
Fabricated metal products	85.0	64.7	87.4	61.3	78.0	81.8	79.7	79.8	79.1	79.2	80.2	81.0	80.1	81.0	81.8				
Nonelectrical machinery	89.0	68.2	86.0	62.9	78.1	73.7	71.1	70.5	71.4	71.2	70.2	70.6	70.2	69.6	69.9				
Electrical machinery	85.7	63.7	89.9	66.9	78.0	72.1	71.5	70.1	71.5	71.5	71.2	71.4	71.5	72.1	71.9				
Motor vehicles and parts	97.1	52.7	93.3	47.0	78.0	84.5	78.4	79.7	80.0	77.1	80.5	76.8	77.2	79.7	80.1				
Automobiles			93.3	36.6		83.8	75.6	79.3	76.1	70.2	77.0	73.7	74.1	79.9	76.5				
Aerospace and misc. trans. eqp.	77.0	69.6	87.1	70.7	77.0	87.2	87.3	87.0	87.1	88.7	89.0	89.4	89.3	88.9	88.7				
Instruments	89.2	74.9	88.9	77.8	83.2	82.0	80.2	79.7	80.5	80.4	80.0	78.9	79.1	79.5	79.4				
Other durables	87.7	69.0	81.0	69.1	81.8	83.3	83.5	82.9	83.0	83.2	84.0	84.9	85.6	86.1	86.6				
<b>Nondurable manufacturing</b>	88.8	71.8	87.0	74.4	83.5	84.5	84.1	84.7	84.8	85.0	84.3	84.7	84.8	85.1	85.4				
Food and kindred products	85.8	77.6	85.1	76.5	82.2	78.7	78.9	79.3	78.9	79.1	78.5	77.9	77.9	78.2					
Textile mill products	92.1	58.9	88.3	70.6	84.9	87.5	90.1	91.1	91.6	92.0	93.6	93.7	95.1	94.9					
Paper and products	95.6	67.7	92.7	80.8	88.7	94.6	93.6	96.2	96.0	96.8	95.4	95.8	96.8	98.0					
Chemicals and products	88.6	69.2	82.9	67.6	78.7	80.3	79.6	81.1	80.9	81.0	80.5	80.4	79.6	79.9					
Petroleum products	99.6	83.7	91.7	69.7	87.8	92.8	93.9	90.1	89.0	92.3	91.7	89.6	90.0	91.1	92.0				
Rubber and plastics products	97.5	59.5	89.4	71.2	84.7	86.5	85.0	85.9	87.4	87.0	86.3	87.5	87.9	88.1					
Other nondurables	86.4	72.3	92.4	78.9	86.1	88.3	87.2	87.3	87.9	87.3	86.1	86.4	86.6	88.7	88.9				
<b>Mining</b>	92.8	87.8	95.2	76.9	87.1	81.6	75.5	74.9	73.5	73.1	72.9	72.5	73.4	72.5	72.7				
<b>Utilities</b>	95.6	82.9	88.5	78.0	87.5	82.7	79.3	79.2	79.9	78.8	78.7	79.3	80.5	80.4	80.2				
Electric utilities	98.7	83.0	87.6	78.2	88.4	81.5	82.2	83.0	84.3	82.1	82.2	82.7	83.4	83.5	83.0				

Table 2

**Output, Capacity, and Capacity Utilization**  
Quarterly, seasonally adjusted

Series	OUTPUT					CAPACITY					UTILIZATION				
	1985 Q4	1986 Q1	Q2	Q3	Q4	1985 Q4	1986 Q1	Q2	Q3	Q4	1985 Q4	1986 Q1	Q2	Q3	Q4
<b>Total Industry</b>	124.7	125.0	124.4	125.0	125.9	155.4	156.3	157.1	157.9	158.7	80.2	80.0	79.2	79.1	79.3
<b>Manufacturing</b>	127.4	128.4	128.4	129.4	130.4	159.5	160.5	161.4	162.4	163.4	79.9	80.0	79.5	79.7	79.8
Primary processing	110.3	111.5	111.1	112.1	113.9	133.1	133.6	134.0	134.6	135.1	82.9	83.5	82.9	83.3	84.3
Advanced processing	137.8	138.5	138.9	139.7	140.8	175.3	176.7	177.9	179.1	180.4	78.6	78.4	78.0	78.0	77.8
<b>Durable manufacturing</b>	127.9	128.3	127.1	127.7	128.7	164.5	165.5	166.4	167.3	168.2	77.7	77.5	76.4	76.3	76.5
Stone, clay and glass products	117.0	119.8	120.8	120.3	120.8	144.1	144.9	145.8	146.6	147.5	81.2	82.6	82.9	82.1	81.4
Primary metals	82.2	79.7	74.8	73.7	75.2	110.6	110.2	109.8	109.4	108.9	74.3	72.3	68.1	67.4	69.1
Iron and steel, subtotal	72.6	68.7	61.4	61.2	63.0	103.7	103.0	102.2	101.5	100.7	70.0	66.7	60.0	60.3	62.6
Nonferrous metals, subtotal	100.3	100.5	100.0	97.2	98.4	123.8	123.9	124.1	124.2	124.4	81.0	81.1	80.6	78.3	79.1
Fabricated metal products	107.9	108.4	107.1	106.3	107.9	133.4	133.5	133.6	133.7	133.8	80.9	81.2	80.1	79.5	80.7
Nonelectrical machinery	144.3	143.5	140.9	142.0	141.5	195.7	197.2	198.7	200.2	201.7	73.7	72.8	70.9	70.9	70.1
Electrical machinery	166.6	165.4	165.3	166.9	168.6	228.9	230.7	232.2	233.7	235.2	72.4	71.7	71.2	71.4	71.7
Motor vehicles and parts	111.8	113.7	110.6	110.5	108.8	137.0	138.1	138.6	139.2	139.7	81.0	82.3	79.8	79.4	77.9
Automobiles	108.4	116.6	112.2	106.2	107.9	142.9	143.6	143.1	142.7	142.2	75.9	81.2	78.4	74.5	75.9
Aerospace and misc. trans. eqp.	140.6	143.0	144.8	147.3	149.5	164.7	165.4	166.1	166.9	167.6	85.3	86.5	87.2	88.3	89.2
Instruments	139.6	141.8	140.9	141.8	141.2	171.5	173.2	174.9	176.6	178.3	81.4	81.9	80.5	80.3	79.2
Other durables	123.6	126.0	127.2	128.4	132.6	150.6	151.7	152.8	153.9	155.0	82.1	83.1	83.2	83.4	85.5
<b>Nondurable manufacturing</b>	126.8	128.6	130.2	131.8	132.9	152.4	153.5	154.5	155.6	156.6	83.2	83.8	84.3	84.7	84.8
Food and kindred products	131.0	132.3	133.8	134.6	134.2	166.7	168.1	169.4	170.7	172.0	78.6	78.7	79.0	78.8	78.0
Textile mill products	108.5	108.6	111.8	114.7	117.2	123.2	123.4	123.6	123.8	124.0	88.1	88.0	90.4	92.6	94.5
Paper and products	129.3	132.8	134.8	137.9	139.6	140.6	141.4	142.3	143.2	144.1	92.0	93.9	94.7	96.3	96.9
Chemicals and products	127.9	131.3	132.8	134.1	133.4	163.4	164.3	165.2	166.0	166.9	78.2	79.9	80.4	80.8	80.0
Petroleum products	88.2	91.1	93.0	92.6	91.7	102.3	102.0	101.9	101.8	101.7	86.2	89.3	91.2	91.0	90.2
Rubber and plastics products	149.5	149.7	149.7	155.3	158.9	172.1	174.3	176.5	178.7	180.9	86.8	85.9	84.8	86.9	87.8
Other nondurables	129.4	129.9	131.8	132.5	135.8	148.4	149.6	150.9	152.1	153.4	87.2	86.8	87.3	87.1	88.6
<b>Mining</b>	107.1	105.4	99.9	96.6	95.9	132.5	132.4	132.1	131.9	131.7	80.9	79.6	75.6	73.2	72.8
<b>Utilities</b>	112.8	110.5	108.9	108.8	110.6	135.7	136.3	136.9	137.5	138.1	83.2	81.1	79.5	79.1	80.1
Electric utilities	120.6	119.6	122.2	123.5	124.8	146.0	147.1	148.1	149.0	150.0	82.6	81.3	82.5	82.9	83.2

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	1986	1987									
	High	Low	-80 High	Low	-86 Avg.	JAN	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	
Industrial Materials	92.0	70.5	89.1	68.4	82.3	80.1	78.1	78.0	78.3	77.9	78.1	77.8	78.4	78.4	78.4	
Durable goods materials	91.8	64.4	89.8	60.9	79.1	76.5	73.7	73.2	73.7	73.5	73.5	73.6	74.2	74.1	74.3	
Metal materials:	99.2	67.1	93.6	45.7	77.8	71.0	65.2	63.2	63.8	63.8	64.8	65.2	68.4	67.1	67.0	
Raw steel	106.0	66.4	98.9	36.1	80.3	72.4	64.9	63.2	63.5	58.9	57.6	60.1	59.7	57.9		
Aluminum	95.7	73.0	97.4	58.8	87.0	68.6	72.4	64.7	61.4	62.6	62.4	63.8	65.2	66.4		
Nondurable goods materials	91.1	66.7	88.1	70.6	83.3	83.7	83.5	84.3	85.0	85.5	86.1	85.8	85.6	86.5	87.1	
Textile, paper, and chemical materials	92.8	64.8	89.4	68.0	83.7	84.3	84.2	85.1	85.6	86.5	87.4	87.0	86.7	87.7	88.4	
Pulp and paper materials	98.4	70.6	97.3	79.9	91.6	94.6	93.1	95.9	97.8	97.9	96.1	95.7	96.0	98.2		
Chemical materials	92.5	64.4	87.9	63.3	80.8	80.8	80.2	80.4	80.2	81.2	82.6	82.5	81.7	82.9		
Energy materials	94.6	86.9	94.0	82.2	89.3	85.1	82.9	83.1	82.3	80.6	80.7	79.7	81.2	80.4	79.4	

Table 4

## Output, Capacity, and Capacity Utilization Quarterly, seasonally adjusted

Series	OUTPUT					CAPACITY					UTILIZATION				
	1985 Q4	1986 Q1	Q2	Q3	Q4	1985 Q4	1986 Q1	Q2	Q3	Q4	1985 Q4	1986 Q1	Q2	Q3	Q4
Industrial Materials	114.3	114.5	113.3	113.4	114.0	143.6	144.2	144.7	145.3	145.8	79.6	79.4	78.3	78.1	78.2
Durable goods materials	121.1	120.9	118.8	118.8	120.0	159.0	159.9	160.7	161.5	162.2	76.2	75.6	73.9	73.6	74.0
Metal materials:	82.6	79.0	75.1	73.1	75.9	115.5	115.0	114.5	114.0	113.4	71.5	68.7	65.6	64.2	66.9
Raw steel	68.6	71.4	66.2	60.0	58.6	102.7	101.8	100.9	99.9	98.9	66.8	70.1	65.6	60.0	59.2
Aluminum	78.6	79.1	77.7	68.1	70.3	114.7	113.2	111.4	109.7	107.9	68.5	69.9	69.7	62.1	65.2
Nondurable goods materials	113.9	115.7	116.9	119.7	120.7	138.6	139.0	139.5	139.9	140.4	82.2	83.2	83.8	85.6	86.0
Textile, paper and chemical materials	114.0	116.2	117.0	120.4	121.6	138.0	138.4	138.8	139.2	139.6	82.7	83.9	84.3	86.5	87.1
Pulp and paper materials	124.8	128.8	130.1	135.1	135.0	136.5	137.3	138.1	138.9	139.7	91.4	93.8	94.2	97.3	96.7
Chemical materials	113.4	115.3	115.4	117.7	119.5	143.6	144.0	144.3	144.7	145.0	79.0	80.1	80.0	81.4	82.4
Energy materials	102.6	102.2	100.6	98.6	97.8	120.9	121.1	121.3	121.4	121.6	84.9	84.4	82.9	81.2	80.4

### Explanatory Notes

**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 Richard D. Rad-dock, "Revised Federal Reserve Rates of Capacity Utilization," *Federal Reserve Bulletin*, Vol. 71 (October 1985), pp. 754-68. Revised data for 1984-85 as well as historical utilization rates since 1967 (1948 in the case of manufacturing) are included in the statistical supplement to the September 1986 capacity utilization release. Copies 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 1987.** Approximately 11 a.m. on January 20, February 17, March 16, April 16, May 18, June 17, July 16, August 17, September 16, October 19, November 16, and December 16.