

# FEDERAL RESERVE statistical release



G.3 (402)

For Immediate release

## CAPACITY UTILIZATION

**Manufacturing, Mining, Utilities, and Industrial Materials**

January 16, 1984

Capacity utilization in manufacturing, mining, and utilities advanced 0.3 percentage point in December to 79.4 percent, the highest rate since September 1981. The utilization of U.S. industrial capacity continued to rise throughout the fourth quarter of 1983, but the increases were less rapid than those recorded in the spring and summer. The operating rate for manufacturing increased only slightly in December, by 0.1 percentage point to 79.4 percent. In contrast, the rate for mining rose 1-1/2 percentage points to 74.5 percent as oil and gas well drilling activity increased sharply. The rate for utilities jumped 2 percentage points to 86.2 percent, largely as a result of unusually cold weather in December.

Within manufacturing, operating rates for auto assemblies and for the electrical machinery and paper industries advanced strongly. At 81.9 percent, domestic auto plants operated at a higher rate in December than they had since June 1979. Paper producers are utilizing the bulk of their capacity: since late summer operating rates for the paper industry have been in the mid-to-upper 90s. Operating rates decreased for some industries in December, including chemicals, petroleum refining, and primary metals.

The operating rate for producers of industrial materials was up 0.3 percentage point in December to 80.1 percent, reflecting a strong increase in activity among producers of energy materials.

### Capacity Utilization: Summary

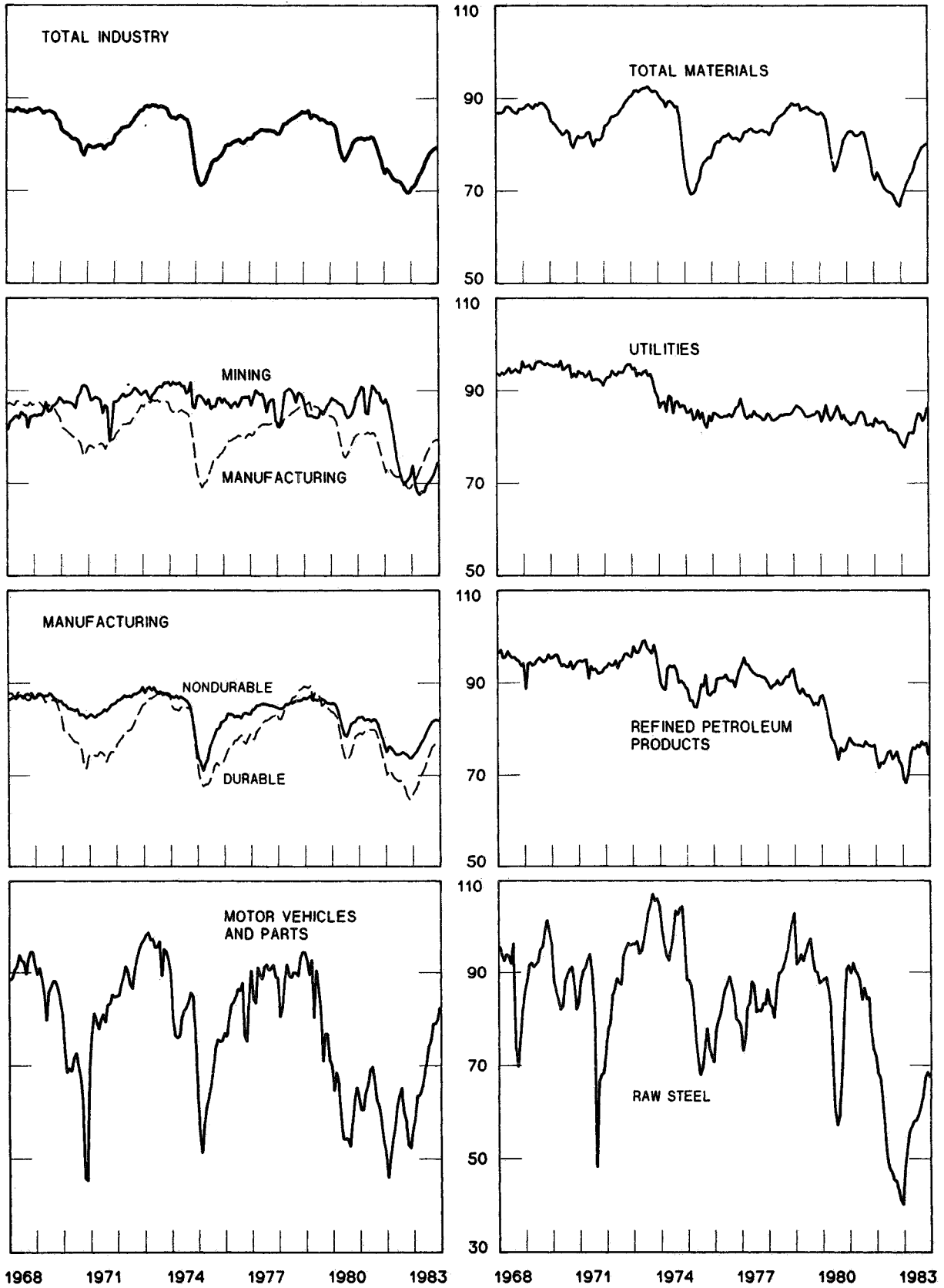
Percent of capacity, seasonally adjusted

Series	1973	1975	1978	1982	1967	1983			
	HIGH	LOW	-80 HIGH	LOW	-82 AVER.	SEP	OCT	NOV	DEC
<b>Total Industry</b>	88.4	71.1	87.3	69.6	82.4.	78.2	78.7	79.1	79.4
<b>Manufacturing</b>	87.9	69.0	87.5	68.8	81.8.	78.4	79.0	79.3	79.4
Durable	87.9	67.6	89.4	64.8	80.5.	76.0	76.6	77.1	77.5
Nondurable	89.1	71.0	87.2	73.8	83.9.	81.5	81.9	82.0	81.9
<b>Mining</b>	91.8	86.0	90.4	69.6	86.5.	70.8	71.7	73.0	74.5
<b>Utilities</b>	94.9	82.0	86.8	79.0	88.6.	84.8	83.4	84.2	86.2
<b>Industrial Materials</b>	92.6	69.3	88.9	66.6	83.3.	78.6	79.4	79.8	80.1

# CAPACITY UTILIZATION

DECEMBER DATA

SEASONALLY ADJUSTED, PERCENT



# MANUFACTURING, MINING AND UTILITIES

Table 1  
**Capacity Utilization**  
 Monthly, seasonally adjusted, percent of capacity

Series	1973	1975	1978	1982	1967	YEAR	1983									
	HIGH	LOW	-80	LOW	-82	AGO	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	
<b>Total Industry</b>	88.4	71.1	87.3	69.6	82.4	69.7	73.1	73.9	74.8	76.3	77.3	78.2	78.7	79.1	79.4	
<b>Manufacturing</b>	87.9	69.0	87.5	68.8	81.8	68.9	72.9	73.8	74.9	76.4	77.3	78.4	79.0	79.3	79.4	
Primary processing	93.7	68.2	91.4	66.2	84.0	66.2	73.4	74.6	75.7	77.1	78.1	79.7	80.6	80.4	80.5	
Advanced processing	85.5	69.4	85.9	70.0	80.6	70.4	72.5	73.4	74.4	76.0	76.9	77.8	78.0	78.7	79.0	
<b>Durable manufacturing</b>	87.9	67.6	89.4	64.8	80.5	65.1	69.7	70.7	71.8	73.6	74.6	76.0	76.6	77.1	77.5	
Stone, clay and glass products	88.0	64.0	90.4	63.0	78.4	63.0	69.1	69.5	70.6	72.6	73.6	75.3	75.3	76.2		
Iron and steel, subtotal	103.3	69.2	97.5	38.8	82.3	38.8	57.0	57.8	58.0	59.7	62.5	65.1	70.0	67.0		
Nonferrous metals, subtotal	99.0	60.8	98.2	62.1	83.8	63.0	73.6	75.7	75.4	74.1	73.9	76.0	77.4	75.8	75.5	
Fabricated metal products	86.3	65.7	90.0	60.7	79.6	60.8	65.0	65.0	66.6	68.9	70.6	71.3	71.1	72.2	72.4	
Nonelectrical machinery	88.3	71.8	83.1	61.6	79.8	61.6	62.9	64.0	65.4	67.3	68.5	68.8	69.2	70.5	70.4	
Electrical machinery	88.7	62.3	90.6	74.7	80.0	74.7	79.3	80.4	81.2	83.6	83.8	86.5	87.6	88.2	89.4	
Motor vehicles and parts	98.7	51.3	94.5	46.1	78.6	56.0	65.0	67.7	70.8	74.1	75.3	78.9	79.0	80.0	82.5	
Autos	NA	NA	91.6	35.8	NA	52.3	61.2	64.0	70.5	77.3	78.6	80.5	77.2	77.1	81.9	
Aerospace and misc. trans. eqp.	76.0	68.0	93.9	69.1	78.1	69.4	68.2	68.0	67.9	68.0	68.3	68.7	69.6	68.7	68.9	
Instruments	89.6	73.7	92.3	73.1	83.5	73.1	72.6	72.9	72.8	74.2	75.1	75.9	76.2	76.4	77.2	
<b>Nondurable manufacturing</b>	89.1	71.0	87.2	73.8	83.9	73.8	76.9	77.7	78.7	79.9	80.8	81.5	81.9	82.0	81.9	
Foods	85.7	77.2	85.2	76.5	83.3	77.9	77.5	78.3	79.2	80.0	79.6	78.8	78.3			
Textile mill products	95.4	61.3	91.3	73.0	86.2	74.6	83.6	85.4	86.8	89.9	90.3	91.2	91.7	90.5		
Paper and products	96.7	69.1	95.1	84.2	89.6	86.1	89.1	91.6	92.3	93.4	95.3	96.3	97.1	97.2		
Chemicals and products	86.2	65.9	83.6	64.0	78.7	64.8	68.2	68.8	69.8	70.8	71.2	72.2	73.3	73.2		
Petroleum products	99.1	84.6	93.0	71.5	89.6	72.2	73.9	76.0	75.6	76.5	76.0	77.3	76.5	77.0	74.4	
Rubber and plastics products	97.4	62.1	91.5	74.0	88.3	74.5	84.1	85.5	87.2	87.8	90.9	92.0	92.6	93.2		
<b>Mining</b>	91.8	86.0	90.4	69.6	86.5	71.7	67.5	68.2	68.1	69.5	70.2	70.8	71.7	73.0	74.5	
<b>Utilities</b>	94.9	82.0	86.8	79.0	88.6	79.0	80.9	80.9	80.8	83.5	85.0	84.8	83.4	84.2	86.2	
Electric utilities	97.6	82.1	87.0	77.9	89.8	77.9	80.1	80.0	79.4	82.9	84.5	83.9	82.4	83.2	85.6	

Table 2  
**Output, Capacity, and Capacity Utilization**  
 Quarterly, seasonally adjusted

Series	OUTPUT					CAPACITY					UTILIZATION				
	1982	1983				1982	1983				1982	1983			
	IV	I	II	III	IV	IV	I	II	III	IV	IV	I	II	III	IV
<b>Total Industry</b>	135.3	138.5	144.5	151.8	156.0	193.7	194.6	195.5	196.4	197.3	69.8	71.2	73.9	77.3	79.1
<b>Manufacturing</b>	134.5	138.4	145.2	152.8	157.1	194.8	195.7	196.6	197.5	198.4	69.0	70.7	73.8	77.4	79.2
Primary processing	129.3	137.0	145.2	152.8	157.7	193.7	194.3	194.8	195.3	195.8	66.8	70.5	74.6	78.3	80.5
Advanced processing	137.3	139.7	145.1	152.8	156.7	195.4	196.5	197.6	198.6	199.7	70.2	71.1	73.5	76.9	78.5
<b>Durable manufacturing</b>	119.8	124.2	131.1	139.1	144.0	184.0	184.7	185.4	186.1	186.8	65.1	67.2	70.7	74.7	77.1
Stone, clay and glass products	126.9	131.8	139.7	148.5		198.8	199.6	200.4	201.1		63.8	66.0	69.7	73.8	
Iron and steel, subtotal	49.4	63.4	69.2	75.0		120.5	120.1	120.1	120.1		41.0	52.8	57.6	62.5	
Nonferrous metals, subtotal	94.3	102.3	111.2	110.9	113.1	148.4	148.4	148.4	148.4	148.4	63.6	68.9	74.9	74.7	76.2
Fabricated metal products	107.3	110.6	116.4	125.4	128.7	176.2	176.9	177.6	178.3	179.0	60.9	62.5	65.5	70.3	71.9
Nonelectrical machinery	139.7	137.6	146.2	156.6	161.8	225.3	226.7	228.1	229.6	231.0	62.0	60.7	64.1	68.2	70.1
Electrical machinery	165.5	170.7	179.9	191.1	201.0	220.9	222.4	224.1	225.7	227.4	74.9	76.8	80.3	84.7	88.4
Motor vehicles and parts	104.5	120.0	130.7	145.8	153.5	194.4	193.7	192.7	191.7	190.7	53.8	62.0	67.8	76.1	80.5
Autos	81.7	101.4	109.5	132.3	132.1	168.2	167.8	167.8	167.8	167.8	48.6	60.4	65.2	78.8	78.7
Aerospace and misc. trans. eqp.	98.7	97.9	98.1	99.2	101.0	142.1	143.1	144.2	145.2	146.3	69.5	68.4	68.0	68.3	69.1
Instruments	156.1	154.0	155.7	161.5	165.6	212.0	213.0	214.1	215.1	216.2	73.7	72.3	72.8	75.1	76.6
<b>Nondurable manufacturing</b>	155.7	159.0	165.5	172.7	176.1	210.5	211.7	212.8	213.9	215.0	74.0	75.1	77.8	80.7	81.9
Foods	152.1	153.1	155.7	159.1		195.8	197.2	198.7	200.2		77.7	77.6	78.3	79.5	
Textile mill products	123.7	129.5	139.3	147.6		163.8	163.6	163.4	163.2		75.5	79.1	85.3	90.4	
Paper and products	153.5	156.9	160.5	168.0		175.3	175.9	176.4	176.9		87.6	89.2	91.0	95.0	
Chemicals and products	194.3	201.9	211.4	220.9		301.3	304.1	306.8	309.4		64.5	66.4	68.9	71.4	
Petroleum products	120.8	113.3	122.5	124.2	122.5	164.6	163.8	163.0	162.1	161.3	73.4	69.2	75.2	76.6	76.0
Rubber and plastics products	252.1	264.1	288.3	304.6		335.0	336.0	336.8	337.7		75.3	78.6	85.6	90.2	
<b>Mining</b>	117.0	116.7	112.3	116.1	121.0	165.1	165.2	165.3	165.4	165.5	70.9	70.6	67.9	70.2	73.1
<b>Utilities</b>	166.2	163.6	169.6	178.2	179.7	207.4	208.5	209.8	211.1	212.4	80.1	78.5	80.8	84.4	84.6
Electric utilities	187.4	185.2	192.5	203.6	205.0	237.7	239.2	241.1	243.0	244.9	78.8	77.4	79.8	83.8	83.7

## INDUSTRIAL MATERIALS

Table 3

### Capacity Utilization

Monthly, seasonally adjusted, percent of capacity

Series	1973	1975	1978	1982	1967	YEAR AGO MONTH	1983									
	HIGH	LOW	-80 HIGH	LOW	-82 AVER.		APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	
Industrial Materials	92.6	69.3	88.9	66.6	83.3	66.6	72.5	73.5	74.4	76.5	77.4	78.6	79.4	79.8	80.1	
Durable goods materials	91.4	63.5	88.4	59.8	79.7	59.8	67.7	68.9	70.0	72.1	73.6	75.2	76.2	76.8	76.9	
Metal materials	97.8	68.0	95.4	46.2	82.2	46.8	59.9	61.0	61.2	62.3	64.0	65.5	68.1	66.6	66.1	
Raw steel	107.1	68.0	102.9	40.2	84.8	40.2	56.9	58.0	58.2	59.4	61.0	63.3	67.5	68.6		
Aluminum	96.8	73.4	97.9	57.9	90.6	57.9	60.5	63.0	64.5	68.0	71.2	73.6	75.1	76.0		
Nondurable goods materials	94.4	67.4	91.7	70.7	86.5	71.6	77.2	78.7	79.6	80.7	81.1	82.9	84.0	83.9	83.7	
Textile, paper, and chemical materials	95.1	65.4	92.3	68.6	86.5	70.0	76.4	78.1	79.2	80.4	80.5	82.6	83.9	83.9	83.9	
Paper materials	99.4	72.4	97.9	86.3	93.4	87.4	91.0	92.9	93.1	96.7	96.9	99.0	100.1	99.9		
Chemical materials	95.5	64.2	91.3	64.0	85.1	65.4	72.6	74.0	75.3	75.9	75.5	77.8	79.0	79.4		
Energy materials	94.5	84.4	88.9	78.5	88.5	78.5	78.9	78.5	78.8	82.6	82.8	81.6	81.3	81.8	83.3	

Table 4

### Output, Capacity, and Capacity Utilization

Quarterly, seasonally adjusted

Series	OUTPUT					1982 IV	CAPACITY				1982 IV	UTILIZATION			
	1982 IV	1983 I	II	III	IV		1982 IV	1983 I	II	III		IV	1982 IV	1983 I	II
Industrial Materials	128.7	134.8	141.7	149.9	154.7	191.7	192.3	192.9	193.4	194.0	67.1	70.1	73.5	77.5	79.8
Durable goods materials	117.1	125.2	134.7	144.2	150.4	194.8	195.2	195.6	196.0	196.5	60.2	64.2	68.9	73.6	76.6
Metal materials	66.5	78.6	84.9	89.3	93.4	140.3	140.2	139.9	139.8	139.6	47.4	56.1	60.7	63.9	66.9
Raw steel	49.9	61.9	68.7	72.7		119.7	119.4	119.1	118.8		41.7	51.9	57.7	61.2	
Aluminum	97.5	99.0	105.1	119.0		167.6	167.7	167.7	167.7		58.1	59.0	62.7	70.9	
Nondurable goods materials	157.0	163.7	171.7	179.1	185.0	216.9	217.8	218.8	219.6	220.6	72.4	75.2	78.5	81.5	83.9
Textile, paper and chemical materials	160.8	169.3	179.6	188.0	195.2	228.3	229.4	230.7	231.6	232.7	70.5	73.8	77.9	81.2	83.9
Paper materials	147.6	149.9	153.4	162.8		164.4	165.3	166.1	166.9		89.7	90.7	92.3	97.5	
Chemical materials	191.9	204.7	219.4	227.8		292.8	294.8	296.6	298.3		65.5	69.4	74.0	76.4	
Energy materials	121.5	122.2	121.5	127.4	127.6	153.3	153.9	154.3	154.7	155.3	79.2	79.5	78.7	82.3	82.2

**Definition.** This release contains estimates of output, capacity, and capacity utilization for the nation's factories, mines, and electric and gas utilities. Estimates of actual output and capacity output are expressed as percentages of 1967 actual output. Estimates of capacity utilization are calculated as ratios, in percent, of the Federal Reserve's seasonally adjusted indexes of industrial production to the indexes of capacity. The capacity indexes are based on a variety of data, including capacity data in physical units, surveys of capacity growth and utilization rates, and estimates of capital stock growth. Instead of a formal definition of capacity the concept of practical capacity is applied, which is 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.

**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. 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 methodology used to estimate the series is discussed in *New Federal Reserve Measures of Capacity and Capacity Utilization*, Federal Reserve Bulletin, July 1983. Revised data from 1967-82 are included in the statistical supplement to the July 1983 capacity utilization release, which may be obtained from Publications Services, Board of Governors of the Federal Reserve System, Washington, D.C. 20551.

**Rounding.** The rounding algorithms applied to the capacity, output, and utilization rate series are independent. Aggregates are derived from unrounded detailed components.

**Release schedule for 1983.** Approximately 11 a.m. on August 17, September 16, October 17, November 16 and December 16.