

# FEDERAL RESERVE statistical release



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## INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION

Industrial production declined another 0.6 percent in July after a drop of 1.1 percent in June that is larger than previously estimated. Some of the downward revision for June was the result of more complete information on production losses associated with strikes at key General Motors parts plants, which began in early June and were settled in late July. Motor vehicle assemblies dropped from a seasonally adjusted annual rate of 12.4 million units in May, to 8.3 million units in July; output of motor vehicle parts also contracted sharply. Excluding motor vehicles and parts, industrial production edged up in July after having declined 0.4 percent in June; included in this special aggregate are industries, such as primary and fabricated metals and tires, that supply the automobile industry and were affected by the shutdowns. At 126.8 percent of its 1992 average, industrial production in July was 1.8 percent higher than it was in July 1997; excluding the output of motor vehicles and parts, the twelve-month increase was 3.0 percent. From May to July, capacity utilization in manufacturing, mining, and electric and gas utilities dropped 1.9 percentage points, to 80.5 percent.

(over)

### INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION: SUMMARY

Seasonally adjusted

Industrial Production	Index, 1992=100				Percent change				July 97 to July 98
	1998 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>p</sup>	1998 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>p</sup>	
<b>Total index</b>	128.4	128.9	127.5	126.8	.3	.4	-1.1	-6	1.8
Previous estimates	128.5	128.9	128.1		.4	.3	-6		
<b>Major market groups:</b>									
Products, total	121.8	122.3	121.3	120.4	.4	.5	-.9	-.7	2.0
Consumer goods	116.5	117.0	115.3	114.3	.4	.5	-1.5	-.9	.3
Business equipment	150.2	150.3	150.8	149.4	1.0	.0	.3	-.9	5.6
Construction supplies	124.7	126.1	125.7	126.1	.4	1.1	-.3	.3	4.0
Materials	139.1	139.6	137.6	137.0	.3	.4	-1.4	-.4	1.5
<b>Major industry groups:</b>									
Manufacturing	131.6	131.7	130.2	129.3	.6	.1	-1.2	-.7	1.8
Durable	149.7	150.2	147.9	146.2	.7	.4	-1.5	-1.2	2.7
Nondurable	113.2	113.0	112.1	111.9	.5	-.2	-.7	-.2	.9
Mining	107.4	107.7	105.7	106.1	-.5	.2	-1.9	.4	-.4
Utilities	111.8	116.8	117.5	117.4	-2.2	4.5	.6	.0	3.2
<b>Capacity Utilization</b>	Percent of capacity								Capacity growth
	Average 1967-97	1982 Low	1988-89 High	1997 July	1998 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>p</sup>	July 97 to July 98
<b>Total industry</b>	82.1	71.1	85.4	82.6	82.4	82.4	81.2	80.5	4.5
Previous estimates					82.4	82.4	81.6		
Manufacturing	81.1	69.0	85.7	81.5	81.4	81.1	79.9	79.0	5.1
Advanced processing	80.5	70.4	84.2	79.6	79.6	79.5	78.0	76.9	6.0
Primary processing	82.4	66.2	88.9	86.0	85.4	85.0	84.1	83.6	3.2
Mining	87.5	80.3	88.0	90.3	90.6	90.8	89.0	89.3	.7
Utilities	87.3	75.9	92.6	89.9	87.6	91.4	91.9	91.8	1.1

## Market Groups

The output of consumer goods, which declined 0.9 percent in July, reflected the drop in motor vehicles. In other categories of consumer goods, the production of appliances and air conditioners rebounded from a dip, and the output of home electronics continued to advance. The production of consumer nondurables eased slightly further after a loss in June. Within this group, the output of nonenergy products, which includes foods, clothing, chemical products, and paper products, has been weak, on balance, over the past few months.

The production of business equipment fell 0.9 percent, largely because of the drop in business vehicles. The output of industrial equipment declined after a large gain in June. Led by gains in computers and farm machinery, the production of information processing and other equipment advanced again.

The output of construction supplies rose 0.3 percent and was 4 percent above the level last July. The production of materials, which had declined 1.4 percent in June, eased another 0.4 percent. The weakening was most evident in durable goods materials used to make motor vehicles; the output of consumer durable parts fell another 5-1/2 percent after having declined nearly 10 percent in June. In addition, basic metals fell for a third month. The output index for nondurable materials eased for a third month, with widespread weakness in textile, paper, and chemical materials. Energy materials rebounded 1.0 percent from a decline of the same size in June.

## Industry Groups

Manufacturing output fell 0.7 percent in July, having declined 1.2 percent in June; the production of motor vehicles and parts fell about 15 percent in each month, and the output of primary and fabricated metals weakened as well. The output of most other durable goods industries, such as computers, aircraft, instruments, and lumber, advanced in July. The production of nondurables eased for a third month; it has fallen about 1 percent since April, with declines in the output of paper and products, foods, apparel, and leather and products. In July, mining recouped a bit of its June drop while the output at utilities was flat.

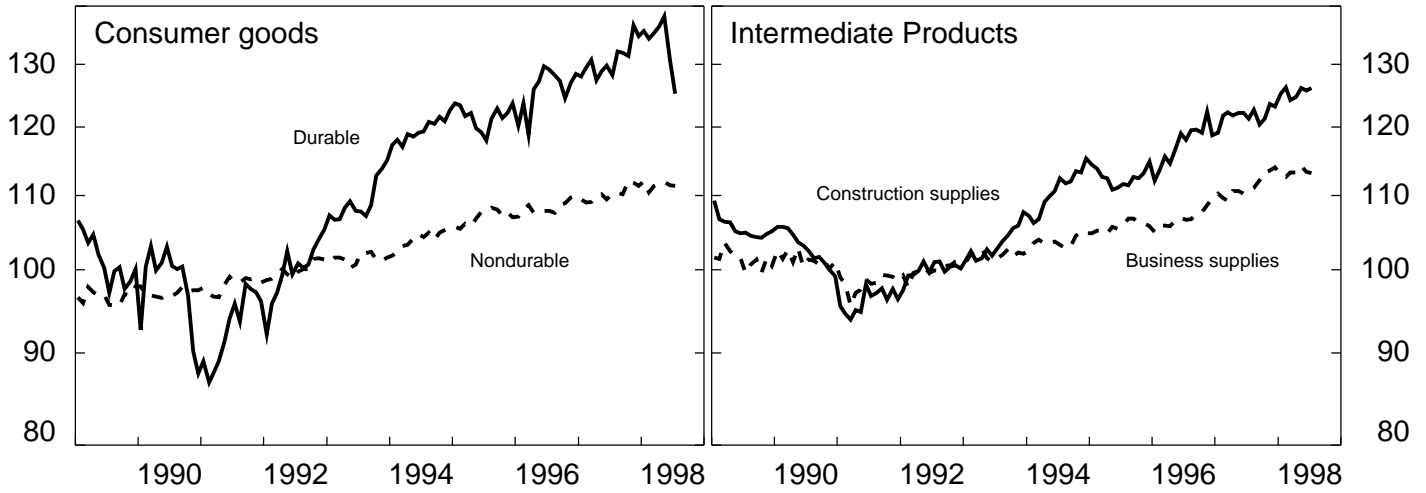
The factory operating rate fell 0.9 percentage point, to 79.0 percent, and was more than 2 percentage points below the level in May. Much of this drop-off reflects the effects of the strike-induced plunge in the output of motor vehicles and related parts and materials. However, the operating rates in miscellaneous manufactures, paper and products, and some other nondurable industries have also moved lower in recent months, as has the rate for oil and gas well drilling. Utilization rates remained relatively high for petroleum refining and electric utilities.

# Industrial Production

(July data, seasonally adjusted)

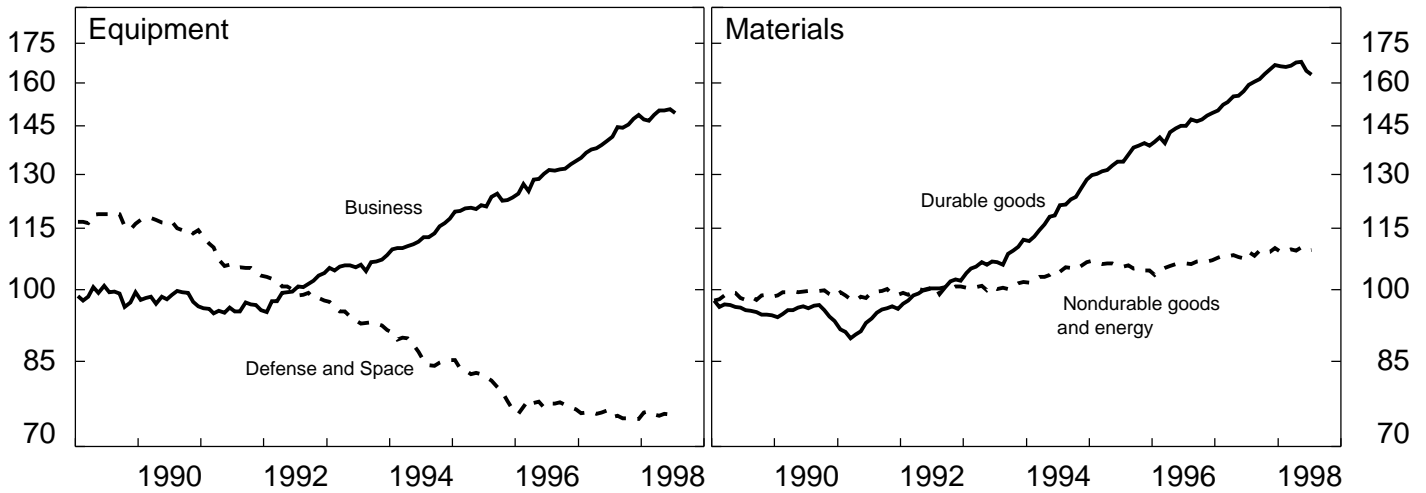
Ratio scale, 1992 = 100

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Ratio scale, 1992 = 100

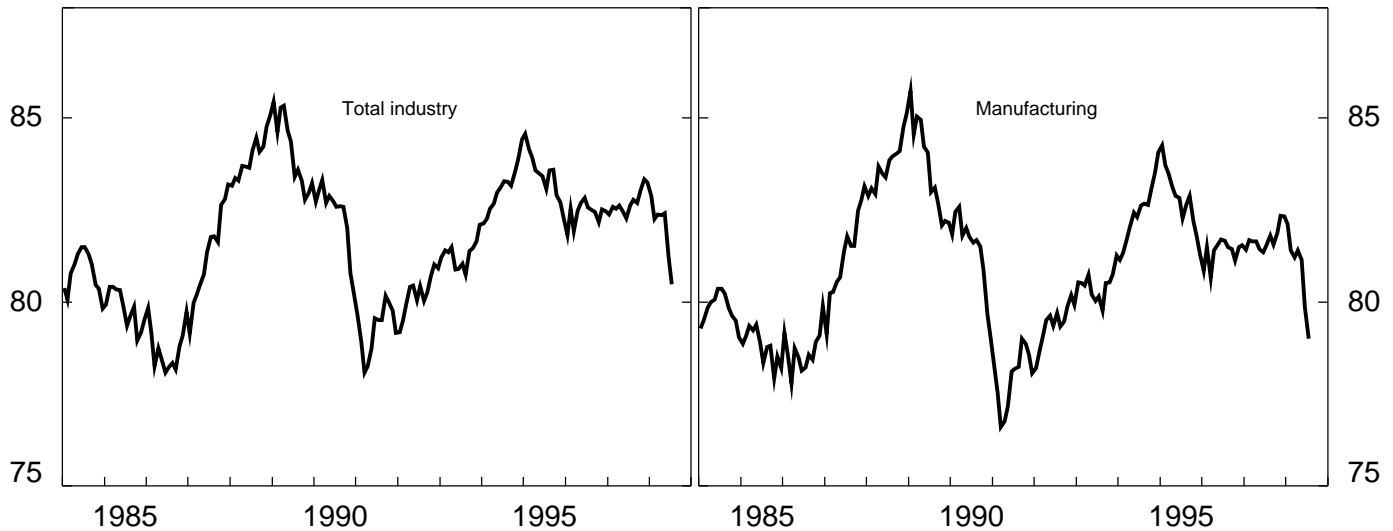
Ratio scale, 1992 = 100



## Capacity Utilization

Percent of capacity

Percent of capacity





**Table 1B**  
**INDUSTRIAL PRODUCTION: MARKET GROUPS**

Percent change

Item	1996 Q4 to 1997 Q4	Seasonally adjusted annual rate				Seasonally adjusted				Not seasonally adjusted				July 97 to July 98
		1997 Q3	Q4	1998 Q1	Q2 <sup>r</sup>	1998 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>p</sup>	1998 Apr. <sup>r</sup>	May <sup>r</sup>	June <sup>r</sup>	July <sup>p</sup>	
<b>Total index</b>	5.8	6.0	7.2	1.2	1.9	.3	.4	-1.1	-.6	-1.3	1.0	1.7	-2.9	1.8
<b>Products, total</b>	4.7	4.4	7.0	.9	2.4	.4	.5	-.9	-.7	-1.3	1.1	2.9	-2.5	2.0
<b>Final products</b>	5.1	5.6	7.0	.6	2.5	.5	.3	-.9	-.9	-2.0	.8	2.5	-3.5	1.7
<b>Consumer goods</b>	2.8	2.6	6.6	-.9	1.3	.4	.5	-1.5	-.9	-2.4	.5	2.8	-2.9	.3
<b>Durable</b>	6.0	6.6	11.1	2.5	.0	.8	1.3	-5.4	-4.1	-2.5	.8	-5.0	-14.9	-2.3
Automotive products	8.7	12.5	20.9	-7.2	-2.6	1.6	1.6	-10.7	-11.1	-4.7	2.3	-12.8	-27.9	-9.8
Autos and trucks	11.1	18.2	35.5	-13.5	-13.5	1.8	1.6	-17.5	-20.1	-7.5	4.3	-21.9	-48.3	-21.9
Autos	3.7	22.9	-2.3	-21.3	-18.9	.8	1.0	-13.5	-16.2	-7.4	5.8	-19.8	-42.3	-29.9
Trucks	15.8	14.6	69.0	-8.3	-10.1	2.3	1.9	-19.8	-22.5	-7.5	3.5	-23.2	-52.0	-15.4
Auto parts and allied goods	5.0	4.2	.7	4.2	16.7	1.3	1.7	-.1	.0	.1	-1.1	2.7	-2.5	6.7
Other durable goods	4.0	2.3	3.8	10.8	2.0	.3	1.0	-1.3	1.1	-.5	-.4	1.4	-5.4	3.3
Appliances and electronics	7.7	12.2	12.0	36.3	9.0	.7	-.1	-.6	4.9	-1.2	-.2	4.1	-5.0	15.4
Appliances and air cond.	-.9	-4.8	5.8	29.5	-2.0	.2	3.1	-5.6	5.5	-3.4	1.0	-2.4	-12.5	3.9
Home electronics	19.1	38.8	19.7	44.4	22.2	1.2	-3.6	5.1	4.0	1.3	-1.7	11.9	5.1	30.0
Carpeting and furniture	2.4	-3.5	5.9	1.5	.1	.5	4.4	-3.9	1.5	3.7	-4.3	2.2	-3.0	2.3
Miscellaneous	2.8	.4	-1.4	2.9	-1.1	-.1	.0	-.3	-1.1	-2.2	1.7	-.7	-6.8	-2.6
<b>Nondurable</b>	2.0	1.6	5.4	-1.8	1.6	.3	.2	-.4	-.1	-2.4	.5	5.0	.1	1.0
Nonenergy	2.0	1.2	5.1	1.8	-1.3	.7	-.3	-.8	-.1	.0	1.5	5.0	-1.3	.6
Foods and tobacco	1.5	1.1	4.1	7.2	-2.3	.5	.1	-1.5	-.2	-.4	1.9	5.1	-3.6	.5
Clothing	-1.5	.1	-1.6	-4.4	-2.3	.1	-1.3	-.3	-.3	-.3	3.1	3.4	-5.2	-2.8
Chemical products	4.0	-.6	11.5	1.0	5.2	1.5	-.5	.5	-.5	.9	2.1	9.1	3.8	5.2
Paper products	2.8	4.8	2.8	-10.1	-7.7	.5	-.9	-.6	1.1	.2	-1.6	-.7	.7	-4.0
Energy products	1.9	3.9	7.4	-20.4	21.1	-2.1	3.6	1.7	.0	-14.9	-5.9	5.0	9.7	3.3
Fuels	1.7	-2.2	-3.1	4.8	2.4	.4	-.7	.0	1.9	4.9	1.1	.6	1.1	4.0
Utilities	1.9	7.0	12.9	-30.5	31.7	-3.4	5.8	2.4	-.9	-23.1	-9.9	7.7	14.8	3.0
<b>Equipment, total</b>	8.8	10.6	7.7	3.1	4.6	.5	.0	-.1	-1.0	-1.3	1.3	2.0	-4.6	3.9
<b>Business equipment</b>	10.8	13.5	10.7	1.1	7.8	1.0	.0	.3	-.9	-1.2	1.4	2.7	-4.9	5.6
Information processing & related	12.2	16.4	9.4	6.3	15.6	1.8	.4	1.3	1.2	1.4	1.4	5.8	2.1	11.2
Computer and office	34.5	48.3	26.8	53.1	55.6	3.8	2.6	3.5	3.1	7.1	3.1	11.8	7.2	44.8
Industrial	5.6	9.0	6.8	-2.0	5.6	.1	-.9	2.4	-.9	-2.5	.7	5.2	-4.7	3.5
Transit	17.6	21.4	25.8	1.5	-2.2	.9	1.4	-5.3	-6.9	-3.8	3.5	-7.6	-18.1	-.7
Autos and trucks	8.5	14.0	21.8	-15.5	-10.3	1.9	.7	-12.3	-17.1	-4.7	3.5	-18.0	-38.9	-21.6
Other	9.5	3.4	1.5	-8.8	6.3	.8	-1.1	1.6	3.0	-1.6	-.3	3.7	-6.1	3.3
<b>Defense and space equipment</b>	-2.6	-4.2	-1.5	5.8	-1.9	-.3	.5	-.2	-.1	-3.0	1.5	.5	-1.5	.4
Oil and gas well drilling	9.1	4.8	-11.1	26.0	-26.8	-5.1	-1.6	-7.1	-4.0	-.1	-.9	-5.9	-2.1	-13.2
Manufactured homes	-1.2	-3.5	-11.7	33.7	6.2	1.1	1.1	.3	-1.5	4.7	-1.1	5.8	-18.5	2.3
<b>Intermediate products</b>	3.7	1.0	6.9	1.6	1.9	.1	1.0	-.6	.0	1.0	1.8	4.2	.6	2.9
Construction supplies	2.2	-2.0	4.1	8.5	1.0	.4	1.1	-.3	.3	2.0	4.3	4.5	-2.6	4.0
Business supplies	4.6	2.9	8.7	-2.5	2.4	.0	.9	-.8	-.2	.4	.2	3.9	2.7	2.2
<b>Materials</b>	7.3	8.4	7.6	1.7	1.1	.3	.4	-1.4	-.4	-1.3	.8	.0	-3.6	1.5
<b>Durable</b>	11.2	12.1	12.1	3.0	1.1	.7	.2	-2.0	-.9	-1.2	1.4	-1.0	-5.6	2.3
Consumer parts	7.0	12.5	10.8	-12.3	-3.7	1.2	1.5	-9.9	-5.4	-2.3	2.2	-10.9	-21.2	-12.4
Equipment parts	21.5	20.9	19.1	15.9	6.2	.8	.3	-.1	1.0	-1.8	2.2	1.3	-1.1	12.5
Other	4.6	4.8	6.9	-.6	-1.2	.4	-.5	-.4	-.7	-.2	.4	1.4	-3.3	.3
Basic metals	4.7	5.2	5.6	3.8	-8.5	.0	-.6	-1.5	-.9	-1.1	-1.1	-1.7	-4.2	-1.7
<b>Nondurable</b>	3.5	2.8	5.3	-.8	-3.1	.3	-.6	-.3	-.8	1.0	-2.0	.8	-3.7	-1.3
Textile	3.9	11.0	3.9	-12.9	-3.0	.0	.1	-1.3	-.5	.2	1.8	-3.4	-8.2	-5.9
Paper	3.3	5.7	-1.9	-1.4	-4.3	.0	-.9	.7	-2.5	-.2	-1.8	2.4	-4.3	-4.4
Chemical	3.3	2.0	7.0	3.3	-4.6	.6	-.9	-.3	-.2	2.0	-2.6	-.1	-2.0	.3
Other	3.8	-1.9	9.7	-3.1	1.6	.2	.2	-.7	-.6	.2	-2.5	3.6	-4.9	.3
<b>Energy</b>	1.1	4.4	-1.5	.8	5.7	-.9	1.8	-1.0	1.0	-4.0	2.2	2.1	1.8	2.3
Primary	.4	2.7	-3.9	8.2	.9	-.7	.9	-1.0	1.1	-2.9	1.1	1.1	-.4	2.0
Converted fuel	2.2	7.5	3.1	-11.6	15.1	-1.2	3.6	-1.0	.8	-5.9	4.3	3.9	5.8	2.7
<b>SPECIAL AGGREGATES</b>														
<b>Total excluding:</b>														
Autos and trucks	5.6	5.7	6.6	1.7	2.3	.3	.4	-.7	-.1	-1.1	.9	2.5	-1.9	2.5
Motor vehicles and parts	5.4	5.3	6.4	2.4	2.7	.3	.4	-.4	.1	-1.1	.9	2.9	-1.2	3.0
Computers	5.3	5.4	6.9	.4	1.0	.3	.4	-1.2	-.6	-1.4	.9	1.5	-3.1	1.1
Computers and semiconductors	4.1	4.2	6.1	-.6	.6	.2	.3	-1.3	-.7	-1.5	.9	1.5	-3.2	.4
<b>Consumer goods excluding:</b>														
Autos and trucks	2.4	1.8	5.0	-.1	2.2	.3	.4	-.5	.1	-2.1	.3	4.5	-.6	1.5
Energy	3.0	2.4	6.4	2.0	-1.0	.8	.1	-1.9	-1.0	-.6	1.3	2.5	-4.4	-.1
<b>Business equipment excluding:</b>														
Autos and trucks	11.0	13.5	9.6	3.0	9.8	.9	.0	1.6	.6	-.9	1.2	4.9	-1.8	8.3
Computer and office equipment	9.0	11.1	9.6	-2.4	4.2	.7	-.2	.0	-1.2	-1.9	1.3	1.8	-5.8	2.8
<b>Materials excluding:</b>														
Energy	9.0	9.4	10.1	2.0	.0	.6	.0	-1.6	-.9	-.6	.5	-.5	-5.1	1.3

Note—Percent changes shown in the first and last columns are based on seasonally adjusted data.

**Table 2A**  
**INDUSTRIAL PRODUCTION: INDUSTRY GROUPS**

Item	SIC	1997 IP Proportion <sup>1</sup>	Index, 1992=100											
			Seasonally Adjusted						Not seasonally adjusted					
			1998 Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	July <sup>p</sup>	1998 Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	July <sup>p</sup>
<b>Total index</b>		100.00	127.3	128.0	128.4	128.9	127.5	126.8	127.2	127.6	126.0	127.2	129.4	125.7
<b>Manufacturing</b>		85.97	130.6	130.8	131.6	131.7	130.2	129.3	129.4	130.2	129.8	131.0	133.0	127.7
<b>Primary processing</b>		27.58	120.1	119.8	120.5	120.2	119.3	118.9	119.3	119.4	120.3	120.1	121.5	117.3
<b>Advanced processing</b>		58.39	135.8	136.3	137.2	137.6	135.7	134.4	134.4	135.6	134.5	136.4	138.7	132.9
<b>Durable</b>		46.43	147.8	148.6	149.7	150.2	147.9	146.2	149.0	150.4	148.4	150.5	150.6	141.3
Lumber and products	24	2.08	116.7	115.6	116.7	116.7	117.2	118.0	114.0	114.5	116.9	115.3	121.0	116.4
Furniture and fixtures	25	1.39	120.4	123.0	122.3	121.8	122.4	122.6	120.2	120.6	120.3	118.3	123.5	121.0
Stone, clay, and glass products	32	2.24	121.4	120.7	120.2	120.9	120.5	120.6	115.7	117.3	120.3	122.0	125.0	121.7
<b>Primary metals</b>		3.47	128.1	127.1	128.2	126.1	123.3	122.2	131.8	130.8	130.0	127.3	123.5	117.0
Iron and steel	331,2	1.86	127.0	126.7	126.4	124.0	120.4	119.9	131.4	130.7	130.0	125.6	120.5	115.7
Raw steel		.09	123.7	119.5	122.8	122.3	115.9	115.6	128.5	124.8	125.3	122.5	116.1	110.7
Nonferrous	333-6,9	1.61	129.4	127.5	130.4	128.7	126.8	125.0	132.2	131.0	130.1	129.3	127.1	118.6
Fabricated metal products	34	5.25	124.3	125.0	125.6	126.4	125.7	125.0	122.5	123.8	122.0	125.0	128.0	123.8
Industrial machinery and equipment	35	8.66	179.4	183.8	186.3	188.2	190.5	191.0	181.5	185.2	184.8	188.5	197.4	189.7
Computer and office equip.	357	1.48	476.6	500.5	520.1	534.2	553.7	571.8	461.0	470.1	503.8	519.9	582.1	624.9
Electrical machinery	36	8.33	254.1	254.9	257.5	257.9	258.4	261.3	253.3	253.8	250.6	254.6	260.0	256.0
Semiconductors	3672-9	3.37	584.0	586.0	593.4	599.2	601.6	611.3	582.6	585.9	581.1	595.2	604.1	600.5
Transportation equipment	37	8.95	118.8	118.7	119.4	120.7	110.8	102.3	125.6	127.6	122.1	125.6	112.5	88.0
Motor vehicles and parts	371	5.16	136.7	136.6	138.3	140.2	119.9	101.5	150.4	154.0	146.3	150.6	122.6	74.2
Autos and light trucks		2.59	126.7	127.4	129.5	131.4	109.3	88.1	143.2	147.4	136.4	142.6	111.9	59.1
Aerospace and misc.	372-6,9	3.79	101.1	101.0	100.7	101.4	101.4	102.3	101.3	101.9	98.4	101.1	102.0	100.1
Instruments	38	4.68	109.6	109.9	110.4	110.3	109.9	110.9	108.2	108.7	107.5	108.3	111.6	112.6
Miscellaneous	39	1.37	128.4	128.5	129.1	127.3	127.0	127.0	126.1	127.9	125.4	126.3	127.3	123.0
<b>Nondurable</b>		39.54	113.0	112.6	113.2	113.0	112.1	111.9	109.6	109.9	110.9	111.3	115.0	113.3
Foods	20	9.30	112.0	111.4	112.2	112.3	110.7	110.3	106.1	106.8	107.7	109.8	113.0	112.7
Tobacco products	21	1.30	115.9	114.7	114.0	114.0	113.1	113.9	119.8	121.3	110.3	108.7	128.6	97.1
Textile mill products	22	1.52	109.6	108.9	109.2	111.5	108.0	108.6	108.0	108.5	112.9	114.1	113.3	106.1
Apparel products	23	1.77	97.7	98.2	98.3	97.2	97.1	96.8	95.9	97.2	94.9	97.5	99.8	95.4
Paper and products	26	3.42	114.6	112.4	113.2	112.7	112.1	110.4	115.8	113.0	114.0	111.1	113.7	109.1
Printing and publishing	27	6.58	105.6	105.0	104.8	104.5	103.3	103.8	100.8	100.2	102.9	101.4	104.6	108.0
Chemicals and products	28	10.01	117.6	117.7	118.7	118.2	118.2	117.7	114.7	114.9	116.5	116.5	121.4	122.2
Petroleum products	29	1.82	111.9	114.8	114.4	112.7	113.3	114.1	103.4	107.0	112.5	114.6	118.0	118.9
Rubber and plastics products	30	3.65	129.4	129.7	131.9	131.5	130.7	130.6	129.5	130.2	129.0	131.2	132.8	126.5
Leather and products	31	.18	70.8	69.4	67.7	67.3	66.6	65.4	69.2	69.2	67.1	67.8	68.5	62.8
<b>Mining</b>		6.40	108.8	108.0	107.4	107.7	105.7	106.1	107.1	105.8	105.4	107.5	107.1	106.2
Metal mining	10	.42	119.5	105.5	103.0	104.7	105.1	104.5	117.7	105.0	101.8	104.6	107.9	106.0
Coal mining	12	.86	108.4	109.4	110.6	118.2	111.7	114.8	113.8	114.7	110.4	111.6	110.8	106.5
Oil and gas extraction	13	4.53	105.9	106.5	105.3	104.3	102.4	102.6	106.3	105.4	104.8	103.8	101.9	101.6
Stone and earth minerals	14	.60	122.6	117.2	120.8	120.0	121.5	121.6	90.8	90.8	101.3	130.1	141.0	140.4
<b>Utilities</b>		7.62	108.2	114.3	111.8	116.8	117.5	117.4	119.8	118.2	103.1	103.8	110.4	118.6
Electric	491,3pt	6.08	110.6	115.6	114.2	118.8	118.1	117.9	110.5	110.2	102.8	110.1	122.4	133.3
Gas	492,3pt	1.55	99.0	109.5	102.4	108.8	115.1	115.8	157.3	150.4	105.6	80.7	65.1	63.0
<b>SPECIAL AGGREGATES</b>														
Computers, communications eq. and semiconductors		6.90	408.4	412.4	421.6	426.1	432.5	439.4	405.6	406.9	411.8	421.3	439.0	443.5
<b>Manufacturing excluding:</b>														
Motor vehicles and parts		80.82	130.2	130.5	131.2	131.3	130.8	130.9	128.2	128.8	128.8	129.8	133.6	130.9
Computer and office equipment		84.50	127.1	127.2	127.9	127.9	126.3	125.3	125.9	126.7	126.1	127.2	128.8	123.5
Computers and semiconductors		81.12	119.0	119.0	119.7	119.6	118.0	117.0	117.9	118.6	118.1	119.0	120.5	115.4
Computers, communications eq. and semiconductors		79.08	117.8	117.9	118.4	118.4	116.7	115.6	116.7	117.5	116.9	117.8	119.3	114.1
<b>Memo: Motor vehicle assemblies<sup>2</sup></b>														
Total			12.0	12.0	12.2	12.4	10.3	8.3	12.3	13.9	12.9	12.8	10.6	5.9
Autos			5.4	5.4	5.5	5.5	4.8	4.0	5.5	6.3	5.8	5.8	4.9	2.9
Trucks			6.6	6.6	6.7	6.8	5.5	4.3	6.8	7.7	7.1	7.0	5.7	3.0
Light			6.3	6.3	6.4	6.5	5.2	4.0	6.5	7.3	6.8	6.7	5.4	2.7
Heavy and medium			0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3

1. The IP proportion data are estimates of the industries' relative contributions to overall IP growth in the following year.

2. Millions of units at an annual rate.

Note—Primary processing manufacturing includes textile mill products, paper and products, industrial chemicals, synthetic materials, and fertilizers, petroleum products, rubber and plastics products, lumber and products, primary metals, fabricated metals, and stone, clay, and glass products. Advanced processing manufacturing includes foods, tobacco products, apparel products, printing and publishing, chemical products and other agricultural chemicals, leather and products, furniture and fixtures, industrial machinery and equipment, electrical machinery, transportation equipment, instruments, and miscellaneous manufactures.

**Table 2B**  
**INDUSTRIAL PRODUCTION: INDUSTRY GROUPS**

Percent change

Item	SIC	1996 Q4 to 1997 Q4	Seasonally adjusted annual rate				Seasonally adjusted				Not seasonally adjusted				July 97 to July 98
			1997 Q3	Q4	1998 Q1	Q2 <sup>r</sup>	1998 Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	July <sup>p</sup>	1998 Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	July <sup>p</sup>	
<b>Total index</b>		5.8	6.0	7.2	1.2	1.9	.3	.4	-1.1	-6	-1.3	1.0	1.7	-2.9	1.8
<b>Manufacturing</b>		6.3	6.1	8.1	2.3	1.1	.6	.1	-1.2	-7	-.3	.9	1.5	-4.0	1.8
<b>Primary processing</b>		3.5	2.6	4.5	1.2	-6	.6	-.3	-.8	-.3	.8	-.2	1.2	-3.5	.5
<b>Advanced processing</b>		7.6	7.8	9.8	2.8	1.8	.6	.3	-1.4	-9	-.8	1.4	1.7	-4.2	2.5
<b>Durable</b>		9.5	10.1	10.3	2.6	2.8	.7	.4	-1.5	-1.2	-1.3	1.4	.0	-6.1	2.7
Lumber and products	24	2.1	-5.1	-7	3.4	4.0	.9	.0	.5	.7	2.1	-1.4	5.0	-3.8	1.7
Furniture and fixtures	25	3.6	-3.2	4.8	-5.9	.5	-.6	-.4	.5	.2	-.3	-1.6	4.4	-2.0	-1.3
Stone, clay, and glass products	32	4.6	2.4	4.3	-2.2	-3.1	-.4	.6	-.3	.1	2.6	1.4	2.5	-2.6	-.3
Primary metals	33	5.6	5.7	7.5	1.0	-6.9	.9	-1.6	-2.2	-.9	-.6	-2.1	-2.9	-5.3	-2.4
Iron and steel	331,2	5.7	.8	12.6	2.3	-10.9	-.2	-1.9	-2.9	-.4	-.6	-3.4	-4.0	-4.0	-1.9
Raw steel		7.3	6.5	8.3	9.4	-5.4	2.8	-.4	-5.2	-.3	.4	-2.2	-5.2	-4.7	.1
Nonferrous	333-6,9	5.5	11.8	1.9	-.4	-1.9	2.3	-1.3	-1.5	-1.4	-.7	-.6	-1.6	-6.8	-3.0
Fabricated metal products	34	3.7	1.0	8.9	-.9	2.9	.4	.6	-.5	-.6	-1.4	2.5	2.4	-3.2	2.1
Industrial machinery and equipment	35	11.3	14.3	8.7	8.3	16.8	1.4	1.0	1.2	.3	-.2	2.0	4.7	-3.9	10.9
Computer and office equip.	357	36.3	50.2	28.3	56.6	58.1	3.9	2.7	3.7	3.3	7.2	3.2	12.0	7.4	47.2
Electrical machinery	36	18.5	19.0	16.9	13.6	6.4	1.0	.2	.2	1.1	-1.3	1.6	2.1	-1.5	11.0
Semiconductors	3672-9	39.8	40.3	31.5	30.8	11.1	1.3	1.0	.4	1.6	-.8	2.4	1.5	-.6	22.5
Transportation equipment	37	12.2	17.2	18.8	-6.3	-7.2	.6	1.1	-8.2	-7.6	-4.3	2.9	-10.5	-21.7	-8.8
Motor vehicles and parts	371	11.9	20.5	23.1	-17.7	-12.1	1.3	1.4	-14.5	-15.3	-5.0	2.9	-18.6	-39.5	-21.9
Autos and light trucks		9.6	19.0	27.8	-14.9	-14.4	1.6	1.5	-16.8	-19.4	-7.5	4.6	-21.6	-47.2	-23.3
Aerospace and misc.	372-6,9	12.7	12.7	13.1	11.3	-.5	-.3	.7	-.1	.9	-3.4	2.7	.9	-1.9	8.1
Instruments	38	3.2	5.1	2.6	.4	2.6	.4	.0	-.4	.9	-1.1	.8	3.1	.9	2.7
Miscellaneous	39	4.8	3.3	1.6	3.9	-1.5	.5	-1.4	-.2	.0	-1.9	.7	.8	-3.3	.0
<b>Nondurable</b>		2.6	1.5	5.5	1.8	-1.1	.5	-.2	-.7	-.2	.9	.4	3.4	-1.5	.9
Foods	20	1.8	.4	4.3	6.6	-1.3	.7	.1	-1.5	-.4	.8	2.0	2.9	-.2	.2
Tobacco products	21	1.9	1.9	12.3	3.2	-7.2	-.6	-.1	-.8	.7	-9.1	-1.5	18.3	-24.5	3.0
Textile mill products	22	4.1	9.3	2.1	-4.9	-2.0	.3	2.1	-3.2	.6	4.0	1.1	-.7	-6.4	-1.9
Apparel products	23	-1.9	-1.8	-1.0	-2.6	-3.6	.1	-1.1	-.1	-.3	-2.4	2.7	2.4	-4.4	-2.9
Paper and products	26	3.1	6.9	-2.1	-1.3	-1.7	.6	-.4	-.5	-1.6	.9	-2.6	2.3	-4.0	-3.4
Printing and publishing	27	4.0	.9	9.9	-4.9	-5.6	-.2	-.3	-1.1	.5	2.7	-1.5	3.1	3.3	-.3
Chemicals and products	28	2.9	.1	8.3	3.1	1.0	.8	-.4	.0	-.4	1.4	.0	4.2	.7	2.9
Petroleum products	29	2.2	-5.0	1.0	12.2	1.7	-.3	-1.5	.5	.7	5.1	1.9	3.0	.7	4.8
Rubber and plastics products	30	3.8	6.6	5.2	2.2	5.9	1.7	-.3	-.6	-.1	-.9	1.7	1.2	-4.8	3.7
Leather and products	31	-7.3	-15.3	-2.4	-9.4	-14.4	-2.4	-.6	-1.1	-1.8	-3.1	1.1	1.0	-8.4	-11.6
<b>Mining</b>		2.1	1.8	-2.1	9.9	-5.2	-.5	.2	-1.9	.4	-.3	1.9	-.4	-.8	-.4
Metal mining	10	2.7	-5.6	15.4	2.6	-19.5	-2.3	1.6	.4	-.5	-3.0	2.8	3.1	-1.8	-.7
Coal mining	12	4.7	.6	11.2	-5.1	8.4	1.1	6.8	-5.4	2.7	-3.7	1.1	-.7	-3.9	2.4
Oil and gas extraction	13	1.9	3.0	-6.2	13.7	-6.6	-1.1	-1.0	-1.8	.1	-.6	-.9	-1.9	-.2	-1.3
Stone and earth minerals	14	.6	-.7	.4	9.9	-2.0	3.1	-.7	1.2	.1	11.6	28.5	8.4	-.4	3.2
<b>Utilities</b>		2.4	8.3	5.5	-16.5	19.1	-2.2	4.5	.6	.0	-12.7	.7	6.3	7.5	3.2
Electric	491,3pt	2.8	11.1	5.1	-11.7	18.7	-1.2	4.1	-.6	-.2	-6.7	7.2	11.1	8.9	3.5
Gas	492,3pt	.8	-2.0	7.1	-33.3	20.5	-6.4	6.3	5.7	.6	-29.7	-23.6	-19.3	-3.3	2.0
<b>SPECIAL AGGREGATES</b>															
Computers, communications eq. and semiconductors		30.6	34.2	24.6	26.6	20.3	2.2	1.1	1.5	1.6	1.2	2.3	4.2	1.0	22.9
<b>Manufacturing excluding:</b>															
Motor vehicles and parts		6.0	5.2	7.2	3.7	1.9	.6	.0	-.3	.1	.0	.8	2.9	-2.0	3.3
Computer and office equipment		5.8	5.4	7.8	1.4	.0	.6	.0	-1.3	-.8	-.5	.9	1.3	-4.2	1.1
Computers and semiconductors		4.4	4.0	6.8	.2	-.5	.5	.0	-1.4	-.9	-.5	.8	1.3	-4.3	.2
Computers, communications eq. and semiconductors		4.2	3.7	6.7	.2	-.7	.5	.0	-1.5	-.9	-.5	.8	1.3	-4.4	.0

Note—Percent changes shown in the first and last columns are based on seasonally adjusted data.

**Table 3**  
**CAPACITY UTILIZATION: MANUFACTURING, MINING, AND UTILITIES**

Percent of capacity, seasonally adjusted

Item	SIC	1997 Proportion	1967- 1997 Ave.	1973 High	1978- 1980 High	1982 Low	1988- 1989 High	1990- 1991 Low	1997 July	1998 Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	July <sup>p</sup>
<b>Total industry</b>		100.00	82.1	89.2	87.3	71.1	85.4	78.1	82.6	82.2	82.4	82.4	82.4	81.2	80.5
<b>Manufacturing</b>		87.20	81.1	88.5	86.9	69.0	85.7	76.6	81.5	81.4	81.2	81.4	81.1	79.9	79.0
<b>Primary processing</b>		26.38	82.4	91.2	88.1	66.2	88.9	77.7	86.0	85.5	85.1	85.4	85.0	84.1	83.6
<b>Advanced processing</b>		60.83	80.5	87.2	86.7	70.4	84.2	76.1	79.6	79.6	79.5	79.6	79.5	78.0	76.9
<b>Durable</b>		47.85	79.4	89.2	87.7	63.9	84.6	73.1	80.8	80.2	80.2	80.3	80.1	78.3	77.0
Lumber and products	24	2.10	82.6	88.7	87.9	60.8	93.6	75.5	83.2	82.0	81.2	81.9	81.8	82.1	82.6
Furniture and fixtures	25	1.43	81.5	96.8	85.5	68.9	86.6	72.5	81.5	77.2	78.7	78.1	77.6	77.9	77.9
Stone, clay, and glass products	32	2.24	78.2	88.8	88.0	64.3	83.5	69.7	82.2	80.7	80.1	79.5	79.8	79.3	79.2
Primary metals	33	3.11	81.2	100.2	94.2	45.1	92.7	73.7	91.5	91.4	90.3	90.8	89.0	86.6	85.5
Iron and steel	331,2	1.70	81.0	105.8	95.8	37.0	95.2	71.8	89.7	91.1	90.5	89.9	87.8	84.9	84.1
Raw steel		.08	80.9	102.7	95.8	35.2	92.7	71.5	88.9	91.9	88.4	90.4	89.7	84.6	84.0
Nonferrous	333-6.9	1.41	81.5	90.8	91.1	60.1	89.3	74.2	93.8	92.0	90.3	92.1	90.6	88.9	87.3
Primary copper	3331	.07	74.9	93.4	81.5	42.1	86.3	73.5	96.4	93.8	90.9	92.1	88.7	87.1	
Primary aluminum	3334	.13	88.4	95.7	97.6	58.6	100.4	97.3	85.8	86.4	87.3	88.5	88.6	88.9	
Fabricated metal products	34	5.42	77.9	87.8	83.9	63.7	82.0	71.9	79.1	78.0	78.1	78.2	78.4	77.7	77.0
Industrial machinery and equipment	35	8.64	81.4	96.0	93.2	64.0	85.4	72.3	85.0	83.1	84.4	84.9	85.0	85.3	84.9
Computer and office equip.	357	1.76	81.0	90.9	92.6	65.5	86.9	66.9	81.4	81.6	83.3	84.1	83.9	84.4	84.7
Electrical machinery	36	8.89	81.0	89.2	89.4	71.6	84.0	75.0	82.7	80.5	79.7	79.4	78.5	77.6	77.5
Semiconductors	3672-9	3.68	79.8	95.6	91.7	75.7	81.0	75.5	86.8	84.1	82.4	81.4	80.2	78.6	78.0
Transportation equipment	37	9.78	75.8	86.1	84.8	57.2	85.8	68.5	73.1	75.9	75.6	75.8	76.4	69.9	64.4
Motor vehicles and parts	371	5.67	76.6	93.4	95.0	45.5	89.1	55.9	70.7	72.4	72.1	72.7	73.5	62.6	52.8
Autos and light trucks <sup>1</sup>		2.66			94.6	40.6	92.3	53.3	71.2	77.4	77.6	78.7	79.7	66.1	53.2
Aerospace and misc.	372-6.9	4.11	75.2	78.4	81.9	66.6	87.3	79.2	76.4	80.6	80.4	79.9	80.3	80.1	80.6
Instruments	38	4.84	81.7	89.9	92.7	78.4	81.4	77.2	80.1	80.2	80.2	80.3	80.0	79.5	80.0
Miscellaneous	39	1.40	75.4	82.9	79.4	65.4	79.0	71.7	81.2	80.5	80.4	80.5	79.2	78.8	78.5
<b>Nondurable</b>		39.36	83.4	87.8	87.5	76.4	87.3	80.7	82.3	82.8	82.4	82.7	82.4	81.7	81.4
Foods	20	9.50	82.9	86.0	84.6	79.1	85.4	82.7	80.8	81.2	80.7	81.1	81.1	79.8	79.4
Textile mill products	22	1.51	85.5	91.4	91.2	72.3	90.4	77.7	84.2	82.5	81.9	82.1	83.7	81.0	81.5
Apparel products	23	1.93	81.0	84.2	87.5	77.5	85.1	75.5	75.8	74.3	74.8	74.9	74.1	74.1	73.9
Paper and products	26	3.13	89.3	97.1	96.1	80.6	93.5	85.0	90.8	90.0	88.1	88.5	88.0	87.4	85.9
Pulp and paper	261-3	1.37	92.4	97.2	98.3	82.0	98.0	89.9	93.8	93.7	91.6	92.1	91.0	90.8	
Printing and publishing	27	6.49	85.7	89.7	93.9	82.0	91.7	79.6	81.9	82.7	82.2	81.9	81.6	80.7	81.0
Chemicals and products	28	10.40	79.5	87.6	84.6	69.9	86.2	79.3	78.4	79.1	79.0	79.5	79.1	79.0	78.5
Plastics materials	2821	.82	86.7	102.0	90.9	63.4	97.0	74.8	94.4	90.3	89.0	91.8	90.2		
Synthetic fibers	2823,4	.33	85.1	93.8	98.6	64.4	99.7	77.6	90.9	91.5	89.9	91.6	85.7	87.2	
Petroleum products	29	1.57	86.6	96.7	90.0	66.8	88.5	85.1	94.7	96.3	98.6	97.9	96.2	96.4	96.9
Rubber and plastics products	30	3.44	84.8	95.5	91.2	72.7	89.6	77.4	86.8	87.2	87.2	88.5	88.0	87.2	87.0
Leather and products	31	.21	80.8	81.3	92.1	75.8	83.3	76.1	69.5	67.7	66.7	65.3	65.3	64.9	64.0
<b>Mining</b>		5.84	87.5	94.3	96.0	80.3	88.0	87.0	90.3	91.9	91.2	90.6	90.8	89.0	89.3
Metal mining	10	.38	79.0	89.6	87.9	44.4	89.4	79.9	89.1	100.4	88.5	86.4	87.7	87.9	87.3
Coal mining	12	.82	86.9	91.0	99.4	76.6	91.5	83.4	88.7	84.9	85.6	86.4	92.2	87.1	89.3
Oil and gas extraction	13	4.07	88.6	96.9	97.3	82.3	88.2	88.7	91.4	93.3	93.7	92.7	91.7	90.0	90.1
Oil and gas well drilling	138	.82	74.2	93.0	104.3	50.9	69.3	60.0	86.9	90.1	89.9	85.1	83.7	77.6	74.5
Stone and earth minerals	14	.57	84.8	95.0	92.7	63.3	89.0	79.4	84.5	86.1	82.1	84.4	83.6	84.3	84.2
<b>Utilities</b>		6.96	87.3	96.2	89.1	75.9	92.6	83.4	89.9	84.9	89.6	87.6	91.4	91.9	91.8
Electric	491,3pt	5.43	89.1	99.0	88.2	78.9	95.0	87.1	91.2	87.9	91.8	90.7	94.3	93.6	93.4
Gas	492,3pt	1.52	82.4	94.1	93.7	69.1	85.0	67.1	83.8	72.4	79.9	74.7	79.2	83.7	84.1
<b>SPECIAL AGGREGATES</b>															
Computers, communications eq. and semiconductors		7.71	80.1	84.0	90.9	77.3	81.9	72.4	82.5	80.8	79.8	79.8	79.0	78.4	78.0
Manufacturing ex. computers, communications eq., and semiconductors		79.50	81.2	88.8	87.0	68.0	86.1	76.8	81.5	81.6	81.4	81.7	81.5	80.1	79.2

1. Series begins in 1977.

Note—Primary processing manufacturing includes textile mill products, paper and products, industrial chemicals, synthetic materials, and fertilizers, petroleum products, rubber and plastic products, lumber and products, primary metals, fabricated metals, and stone, clay, and glass products.

Advanced processing manufacturing includes foods, tobacco products, apparel products, printing and publishing, chemical products and other agricultural chemicals, leather and products, furniture and fixtures, industrial machinery and equipment, electrical machinery, transportation equipment, instruments, and miscellaneous manufactures.











**Table 6 (continued)**  
**INDUSTRIAL PRODUCTION: INDUSTRY SUBTOTALS AND INDIVIDUAL SERIES**

Item	SIC	1997 IP Proportion <sup>1</sup>	Index, 1992 = 100											
			Seasonally adjusted						Not seasonally adjusted					
			1998 Jan.	Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	1998 Jan.	Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>
<b>Furniture and fixtures</b>	<b>25</b>	1.39	122.5	120.4	123.0	122.3	121.8	122.4	117.9	120.2	120.6	120.3	118.3	123.5
Household furniture	251	.63	120.1	118.5	120.5	120.5	121.5	120.9	116.0	120.6	120.9	121.3	117.9	121.6
<b>Paper and products</b>	<b>26</b>	3.42	112.4	114.6	112.4	113.2	112.7	112.1	113.8	115.8	113.0	114.0	111.1	113.7
Pulp and paper	261-3	1.57	113.2	114.4	112.0	112.7	111.5	111.4	114.3	116.1	112.5	112.6	110.6	113.0
Wood pulp	261	.14	101.6	103.0	101.2	102.2	104.5	99.2	103.6	104.0	99.4	103.1	102.0	99.9
Paper	262	.93	109.1	112.0	109.3	110.5	109.7	109.2	110.7	113.3	110.0	110.5	108.3	109.7
Paperboard	263	.51	124.7	122.3	120.3	120.0	116.9	119.2	124.6	124.9	121.1	119.4	117.5	123.2
Paper products	265.7	1.85	111.5	114.6	112.6	113.4	113.5	112.6	113.2	115.4	113.2	115.0	111.3	114.0
Paperboard containers	265	.63	113.6	118.1	118.5	116.6	119.4	118.4	113.9	117.6	118.9	120.9	114.5	121.8
Converted paper products	267	1.22	110.3	112.7	109.5	111.6	110.4	109.6	112.5	114.0	110.1	111.7	109.4	109.8
<b>Printing and publishing</b>	<b>27</b>	6.58	106.5	105.6	105.0	104.8	104.5	103.3	101.0	100.8	100.2	102.9	101.4	104.6
Newspapers	271	1.53	97.9	98.1	98.3	98.3	98.7	97.7	92.8	97.7	94.2	103.2	96.4	96.0
Periodicals, books, and cards	272,3,7	2.08	111.0	107.9	106.1	105.2	104.7	103.8	109.0	107.5	107.0	106.1	104.6	103.2
Job printing	274-6,8,9	2.97	108.2	108.2	107.8	108.0	107.4	106.1	100.1	98.0	98.8	100.4	101.9	110.2
<b>Chemicals and products</b>	<b>28</b>	10.01	118.7	117.6	117.7	118.7	118.2	118.2	115.3	114.7	114.9	116.5	116.5	121.4
Industrial chemicals and synthetic materials	281,2,6	3.83	116.7	114.6	113.8	114.3	112.9	112.0	115.8	116.3	115.0	116.6	113.3	113.1
Basic chemicals	281	.75	97.1	93.2	92.5	92.3	91.2	88.6	93.8	95.7	90.7	92.7	89.9	90.4
Alkalies and chlorine	2812	.08	123.3	120.9	117.2	112.8	121.3	109.0	122.2	120.9	116.6	112.4	117.8	110.7
Inorganic pigments	2816	.08	97.5	99.1	92.7	101.4	88.5	97.4	96.1	99.9	93.6	104.3	90.3	100.7
Inorganic chemicals, nec	2819	.46	91.5	85.6	85.8	85.2	85.1	81.6	87.4	89.0	83.1	85.5	83.2	83.6
Acids and other		.35	114.3	106.6	104.7	105.5	105.9	105.9	107.9	111.9	100.6	106.0	103.0	109.0
Synthetic materials	282	1.41	126.7	124.6	123.4	126.5	124.0	123.4	124.6	127.4	127.2	130.4	125.4	125.5
Plastics materials	2821	.92	134.3	129.7	128.3	132.7	130.7		131.2	132.8	132.7	137.5	132.0	
Synthetic fibers	2823,4	.35	110.5	114.1	112.3	114.6	107.3	109.3	109.2	116.0	112.9	115.1	108.2	111.1
Industrial organic chemicals	286	1.67	120.6	119.4	118.9	117.8	117.1	116.8	121.8	119.8	119.7	119.8	117.6	116.7
Chemical products	283-5,9	5.56	121.7	121.3	122.1	123.5	123.2	123.7	116.0	114.6	115.9	117.4	119.7	129.1
Drugs and medicines	283	3.01	125.1	123.7	123.7	125.0	124.9	124.8	117.0	114.8	115.0	116.4	120.0	131.5
Soap and toiletries	284	1.52	118.2	117.8	119.1	122.0	120.4	122.2	116.3	113.5	115.1	115.5	115.4	124.7
Paints	285	.41	107.9	112.3	112.7	111.3	111.9	109.7	92.1	108.4	113.0	120.2	122.2	126.0
Agricultural chemicals	287	.62	105.3	104.1	104.0	103.4	106.8	108.1	105.8	105.4	105.0	107.1	107.8	106.0
<b>Petroleum products</b>	<b>29</b>	1.82	112.3	111.9	114.8	114.4	112.7	113.3	104.0	103.4	107.0	112.5	114.6	118.0
Petroleum refining and misc.	291,9	1.65	110.3	108.6	111.4	111.6	109.9	110.5	103.8	101.9	105.4	110.7	111.8	114.6
Miscellaneous petroleum products		.39	116.8	112.5	113.3	111.7	109.1	110.7	95.9	98.3	106.0	113.2	116.6	124.8
Distillate fuel oil		.29	116.2	118.0	119.1	116.0	117.5		111.7	110.9	113.9	116.0	118.5	
Residual fuel oil		.05	78.3	71.4	92.2	100.8	89.9		85.9	75.4	88.4	95.5	86.6	
Aviation fuel and kerosene		.15	105.5	105.6	115.0	113.5	111.7		110.8	105.3	109.4	108.1	107.0	
Automotive gasoline		.76	108.3	106.9	108.4	110.1	108.6		105.1	102.2	102.9	109.3	110.1	
Paving and roofing materials	295	.18	129.0	140.9	144.8	138.8	137.4	138.1	103.6	115.3	119.4	127.2	139.7	148.3
<b>Rubber and plastics products</b>	<b>30</b>	3.65	129.3	129.4	129.7	131.9	131.5	130.7	127.3	129.5	130.2	129.0	131.2	132.8
Tires	301	.32	120.6	123.8	124.6	127.2	135.4	120.8	123.8	135.9	137.7	129.1	132.7	126.0
Other rubber products	302,5,6	.63	126.4	123.4	124.6	128.3	126.7	126.1	117.5	123.1	124.5	126.0	124.9	129.9
Plastics products, nec	308	2.70	131.3	131.7	131.8	133.5	132.3	133.2	130.2	130.5	130.8	129.9	132.7	134.5
<b>Leather and products</b>	<b>31</b>	.18	69.4	70.8	69.4	67.7	67.3	66.6	67.6	69.2	69.2	67.1	67.8	68.5
Shoes	314	.07	64.6	66.3	64.5	62.2	61.9	62.4	63.4	64.0	63.2	60.7	62.4	64.3
<b>Stone, clay, and glass products</b>	<b>32</b>	2.24	122.3	121.4	120.7	120.2	120.9	120.5	114.7	115.7	117.3	120.3	122.0	125.0
Pressed and blown glass	322	.30	106.1	103.3	103.7	104.9	103.4	104.1	102.2	104.1	104.3	106.2	105.4	108.1
Glass containers	3221	.11	77.7	76.8	76.8	76.9	75.0	72.8	73.2	79.9	80.0	80.0	78.4	79.6
Cement	324	.19	138.0	132.8	128.1	132.9	128.8		81.9	93.6	110.8	132.6	141.2	
Structural clay products	325	.12	119.0	117.1	116.0	120.7	123.3	124.1	107.4	113.9	117.8	125.5	131.3	134.1
Concrete and miscellaneous	326-9	1.35	125.9	126.8	126.1	123.6	125.1	124.7	124.0	122.8	122.8	123.7	124.3	126.7

1. The IP proportion data are estimates of the industries' relative contributions to overall IP growth in the following year.



**Table 6 (continued)**  
**INDUSTRIAL PRODUCTION: INDUSTRY SUBTOTALS AND INDIVIDUAL SERIES**

Item	SIC	1997 IP Proportion <sup>1</sup>	Index, 1992 = 100											
			Seasonally adjusted						Not seasonally adjusted					
			1998 Jan.	Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	1998 Jan.	Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>
<b>Instruments</b>	<b>38</b>	4.68	109.0	109.6	109.9	110.4	110.3	109.9	106.4	108.2	108.7	107.5	108.3	111.6
Scientific and medical	381-4	3.83	107.9	108.5	108.9	109.3	110.2	109.9	104.9	107.0	107.5	106.1	107.8	111.8
Medical instruments	384	1.42	108.8	110.4	112.1	112.0	114.2	114.7	101.4	104.9	106.8	107.0	109.8	120.4
<b>Misc. manufactures</b>	<b>39</b>	1.37	128.0	128.4	128.5	129.1	127.3	127.0	123.6	126.1	127.9	125.4	126.3	127.3
Consumer goods	391,3,4,6	.67	122.1	121.6	124.0	124.0	122.0	121.7	118.4	120.1	124.1	121.5	120.9	120.7
Business supplies	395,9	.70	133.9	135.2	133.2	134.4	132.7	132.5	129.0	132.0	131.7	129.4	131.7	134.0
<b>Electric utilities</b>	<b>491,3pt</b>	6.08	110.2	110.6	115.6	114.2	118.8	118.1	117.2	110.5	110.2	102.8	110.1	122.4
Generation		2.47	108.3	110.7	115.1	112.3	116.9	116.7	113.5	113.3	110.3	102.9	112.2	123.6
Fossil fuel		1.18	107.5	106.7	114.4	112.8	120.7		109.6	104.8	104.9	99.4	111.1	
Hydro and nuclear		1.29	109.2	114.7	116.0	112.2	113.6		117.5	121.6	115.7	106.4	113.5	
Sales		3.60	111.6	110.5	116.0	115.5	120.2	119.1	119.9	108.6	110.2	102.8	108.8	121.7
Residential		1.51	110.3	106.5	117.2	115.4	121.7		132.1	111.5	110.6	95.4	99.8	
Nonresidential		2.09	112.6	113.4	115.1	115.6	119.2	117.4	111.1	106.6	109.9	108.2	115.4	122.5
Commercial and other		1.29	116.7	115.7	119.7	120.1	124.4		116.4	108.4	112.5	109.8	117.5	
Industrial		.80	106.7	110.1	108.4	109.2	111.7		103.5	104.0	106.2	105.9	112.3	
<b>Gas utilities</b>	<b>492,3pt</b>	1.55	103.0	99.0	109.5	102.4	108.8	115.1	182.3	157.3	150.4	105.6	80.7	65.1
Residential		.70	93.2	89.2	101.6	93.8	100.0	108.7	201.1	169.9	158.6	101.0	63.3	41.7
Commercial and other		.27	109.7	107.3	115.4	108.2	117.8	125.5	201.1	180.8	165.5	113.8	85.7	66.5
Gas transmission		.48	107.6	103.2	112.6	106.1	110.8	113.1	152.2	132.4	133.4	105.8	95.9	88.3

1. The IP proportion data are estimates of the industries' relative contributions to overall IP growth in the following year.

**Table 7**  
**INDUSTRIAL PRODUCTION: GROSS VALUE OF PRODUCTS**

Billions of 1992 dollars at annual rates, seasonally adjusted

Item	1992	1997	1997 Q1	Q2	Q3	Q4	1998 Q1	Q2 <sup>f</sup>	1998 Feb.	Mar.	Apr. <sup>f</sup>	May <sup>f</sup>	June <sup>f</sup>	July <sup>p</sup>
<b>Products, total</b>	2001.9	2384.3	2343.8	2361.5	2389.1	2431.2	2437.7	2450.9	2427.7	2442.6	2454.7	2465.2	2432.7	2402.8
<b>Final products</b>	1552.1	1863.3	1828.0	1840.7	1868.0	1902.1	1906.1	1916.3	1895.0	1911.5	1922.9	1928.2	1897.6	1867.2
Consumer goods	1049.6	1201.0	1188.3	1190.7	1199.8	1218.6	1217.8	1219.0	1209.6	1219.2	1225.3	1228.9	1202.8	1185.9
Durable	238.3	314.0	309.4	305.4	311.8	322.1	322.3	320.0	320.0	322.4	325.5	328.9	305.5	287.0
Automotive products	123.8	162.5	160.5	154.7	159.9	168.7	164.8	162.4	163.4	165.0	167.6	170.2	149.5	130.3
Other durable goods	114.4	151.8	149.1	151.1	152.2	153.5	157.9	158.0	157.0	157.8	158.2	158.9	157.0	159.2
Nondurable	811.3	887.4	879.3	885.4	888.5	897.4	896.5	899.8	890.6	897.7	900.9	901.4	897.0	896.7
Equipment, total	502.5	662.0	639.3	649.6	668.0	683.6	688.5	697.6	685.5	692.6	697.9	699.6	695.4	681.6
Business and defense	483.9	634.8	612.3	621.8	640.3	657.1	659.7	670.7	656.2	663.6	670.2	672.2	669.6	656.8
Business	399.2	570.8	547.9	557.4	576.8	593.9	595.6	607.2	591.8	599.9	606.9	608.5	606.1	593.3
Defense and space	84.7	64.1	64.5	64.5	63.7	63.5	64.4	63.9	64.6	64.0	63.7	64.0	63.9	63.7
Intermediate products	449.9	521.7	516.1	521.1	521.9	530.1	532.4	535.5	533.3	532.1	533.0	537.9	535.5	535.1
Construction supplies	177.2	215.9	214.3	216.6	215.3	217.4	222.3	223.2	224.4	220.8	221.9	224.2	223.4	224.2
Business supplies	272.7	305.5	301.6	304.2	306.3	312.3	309.8	311.9	308.5	310.9	310.7	313.4	311.7	310.6
Commercial energy products	70.4	81.5	80.3	81.9	82.2	84.2	81.4	83.8	79.8	83.0	82.4	84.3	84.8	83.8

**Table 8**  
**DIFFUSION INDEXES OF INDUSTRIAL PRODUCTION**

Percent												
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>One Month Earlier</b>												
1996	38.9	63.8	56.6	57.4	59.6	61.9	54.0	55.5	54.3	50.6	57.0	56.4
1997	50.2	64.9	54.0	54.2	50.2	52.8	57.2	52.3	54.4	55.7	62.1	50.4
1998	54.5	46.2	47.5	58.7	49.2	39.4						
<b>Three Months Earlier</b>												
1996	43.0	53.6	54.0	69.1	66.0	67.5	62.3	60.8	56.6	58.1	55.8	58.9
1997	53.2	63.0	58.9	63.0	54.7	52.8	55.1	59.3	55.9	54.2	66.7	62.9
1998	61.7	48.5	50.4	51.5	52.7	46.2						
<b>Six Months Earlier</b>												
1996	48.7	49.4	55.5	58.9	61.5	69.1	67.5	63.8	66.0	60.4	60.8	57.0
1997	63.0	65.3	64.2	60.8	59.1	61.5	63.9	60.8	60.1	60.8	66.2	64.3
1998	59.5	60.6	61.4	59.8	51.9	47.0						

Note—The diffusion indexes are calculated as the percentage of series that increased over the indicated span (one, three, or six months) plus one-half the percentage that were unchanged.







## Explanatory Note

The statistical release of **Industrial Production and Capacity Utilization** reports measures of output, capacity, and capacity utilization in manufacturing, mining, and the electric and gas utilities industries. The release also includes monthly indexes on the use of electric power in manufacturing and mining. Data in the release and historical data are available under statistical releases at <http://www.federalreserve.gov>, the Board's World Wide Web site. These data are also available on line on the day of issue through the Economic Bulletin Board of the Department of Commerce. For information, call (202) 482-1986. Diskettes containing historical data and the data published in this release are available from the Board of Governors of the Federal Reserve System, Publications Services, (202) 452-3245.

### Industrial Production

**Coverage.** The industrial production (IP) index measures output in the manufacturing, mining, and electric and gas utilities industries; the reference period for the index is 1992. For the period since 1992, the total IP index has been constructed from 264 individual series based on the 1987 Standard Industrial Classification (SIC). These individual series are classified in two ways: (1) market groups (shown in table 1), such as consumer goods, equipment, intermediate products, and materials; and (2) industry groups (shown in tables 2 and 6), such as two-digit SIC industries and major aggregates of these industries—for example, durable and nondurable manufacturing, mining, and utilities.

**Market groups.** For purposes of analysis, the individual IP series are grouped into final products, intermediate products, and materials. Final products are assumed to be purchased by consumers, businesses, or government for final use. Intermediate products are expected to become inputs in nonindustrial sectors, such as construction, agriculture, and services. Materials are industrial output requiring further processing within the industrial sector. Total products comprise final and intermediate products, and final products are divided into consumer goods and equipment.

**Timing.** The first estimate of output for a month is published around the 15th of the following month. The estimate is preliminary (denoted by the superscript "p" in tables) and subject to revision in each of the subsequent three months as new source data become available. (Revised estimates are denoted by the superscript "r" in tables.) After the fourth month, indexes are not revised further until the time of an annual revision or a benchmark revision. The last three benchmark revisions were published in 1990, 1985, and 1976.

**Source data.** In annual or benchmark revisions, the individual IP indexes are constructed from a variety of source data, such as the quinquennial *Censuses of Manufactures and Mineral Industries* and the *Annual Survey of Manufactures*, prepared by the Bureau of the Census; the *Minerals Yearbook*, prepared by the Department of the Interior; and publications of the Department of Energy. On a monthly basis, the individual indexes of industrial production are constructed from two main types of source data: (1) output measured in physical units and (2) data on inputs to the production process, from which output is inferred. Data on physical products, such as tons of steel or barrels of oil, are obtained from private trade associations as well as from government agencies including those listed above; data of this type are used to estimate monthly IP where possible and appropriate. When suitable data on physical product are unavailable, estimates of output are based on either production-worker hours or electric power use by industry. Data on hours worked by production workers are collected in the monthly establishment survey conducted by the Bureau of Labor Statistics. The data on electric power use are described below. The factors used to convert inputs into estimates of production are based on historical relationships between the inputs and the comprehensive data used to benchmark the IP indexes; these factors also may be influenced by technological or cyclical developments. Especially for the first and second estimates for a given month, the available source data are limited and subject to revision.

**Weights.** In the index, series that measure the output of an individual industry are weighted according to their proportion in the total value-added output of all industries. The industrial production index, which extends back to 1919, is built as an annually weighted chain-type index since 1977. The components of IP are combined using estimates of value added per unit of output. For months from January to June, the weights are drawn from the year containing the month being estimated and the preceding year; for months from July to December, the weights are drawn from the current and following year. The IP proportions shown in column 1 of tables 1A, 2A, and 6 are estimates of the industries' relative contributions to overall growth in the following year. For example, a 1 percent increase in durable goods manufacturing in 1997 would account for an increase in total IP of nearly 1/2 percent.

**Seasonal adjustment.** Individual series are seasonally adjusted by the X-11 ARIMA method, developed at Statistics Canada. For series based on production-worker hours, the current seasonal factors were estimated with data through October 1997; for other series, the factors were estimated with data through at least June 1997. In some cases, series were preadjusted for the effects of holidays or the business cycle before using X-11 ARIMA. For the data since 1977, all seasonally adjusted aggregate indexes are calculated by aggregating the seasonally adjusted indexes of the individual series.

**Reliability.** The average revision to the *level* of the total IP index, without regard to sign, between the first and the fourth estimates was 0.28 percent during the 1987-96

period. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates was 0.21 percentage point during the 1987-96 period. In most cases (about 81 percent), the direction of change in output indicated by the first estimate for a given month is the same as that shown by the fourth estimate.

**Rounding.** The published percent changes are calculated from unrounded indexes, and may not be the same as percent changes calculated from the rounded indexes shown in the release.

### Capacity Utilization

**Definition.** Capacity utilization is calculated for the manufacturing, mining, and electric and gas utilities industries. For a given industry, the utilization rate is equal to an output index divided by a capacity index. Output is measured by seasonally adjusted indexes of industrial production. The capacity indexes attempt to capture the concept of sustainable practical capacity, which is defined as the greatest level of output that a plant can maintain within the framework of a realistic work schedule, taking account of normal downtime, and assuming sufficient availability of inputs to operate the machinery and equipment in place. The 76 individual capacity indexes are based on a variety of data, including capacity data measured in physical units compiled by trade associations, surveys of utilization rates and investment, and estimates of growth of the capital input.

**Groups.** Estimates of capacity and utilization are available for a variety of groups, including primary and advanced processing industries within manufacturing, durable and nondurable manufacturing, total manufacturing, mining, utilities, and total industry. Component industries of the primary and advanced processing groups within manufacturing are listed in the note on tables 2 and 3 of the release.

**Weights.** Although each utilization rate is the result of dividing an IP series by a corresponding capacity index, aggregate utilization rates are equivalent to combinations of individual utilization rates aggregated with proportions that reflect current capacity levels of output valued in current-period value added per unit of actual output. The implied proportions of individual industry operating rates in the rate for total industry for the most recent year are shown in the first column of table 3.

**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 total industry and total manufacturing, utilization rates have exceeded 90 percent only in wartime.

### Electric Power

Data on electric power (expressed in kilowatt hours) are collected by the Federal Reserve District Banks from electric utilities and also from manufacturing and mining establishments that generate electric power for their own use (cogenerators). The indexes of power use shown in table 9 are sums of kilowatt hours used by an industry or industry group expressed as a percentage of that industry's or group's usage in 1992. The first column of the table shows, for reference, electric power use in billions of kilowatt hours as reported by manufacturing and mining industries in the 1992 censuses of those industries. The supplementary group, "Total, less nuclear nondefense," is shown separately because the value-added proportion for the nondefense nuclear material series (part of SIC 2819) in total IP is considerably smaller than its share of total electric power use. Excluding this component from total power use facilitates comparisons with total IP.

### References

The annual revision published on December 9, 1997 is described more completely in the February 1998 *Federal Reserve Bulletin*.

A description of the aggregation methods for industrial production and capacity utilization is included in an article in the *Federal Reserve Bulletin*, vol. 83 (February 1997), pp. 67-92. *Industrial Production—1986 Edition* contains a more detailed description of the other methods used to compile the industrial production index, plus a history of its development, a glossary of terms, and a bibliography. To obtain *Industrial Production—1986 Edition* (\$9.00 per copy), write to Board of Governors of the Federal Reserve System, Publications Services, Washington, DC 20551. The major revisions to the IP indexes and capacity utilization since 1990 have been described in the *Federal Reserve Bulletin* (April 1990, June 1990, June 1993, March 1994, January 1995, and January 1996). The basic methodology used to estimate capacity and utilization is discussed in the June 1990 *Federal Reserve Bulletin*.

### Release Schedule for 1998

At 9:15 a.m. on January 16, February 17, March 17, April 17, May 15, June 16, July 16, August 14, September 16, October 16, November 16, and December 16.