

FEDERAL RESERVE statistical release



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INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION

Industrial production increased 0.2 percent in September; because upward revisions were made to estimates for earlier months, the index now shows increases of 0.1 percent in August and 0.2 percent in July. On a quarterly average basis, industrial production in the third quarter grew at nearly the same pace as in the second quarter; however, the average monthly gain during the summer was about one-half of that posted during the preceding quarter. Industrial capacity utilization was unchanged in September at 83.6 percent.

In September, the output of motor vehicles and parts rose 7.5 percent, boosting the indexes for both consumer goods and business equipment. With production of motor vehicles and parts excluded, industrial output edged down in September: output of consumer nondurable goods and energy materials rose sharply, but production in most other major market categories declined in September. During the past year, total industrial output has risen 2.2 percent to 110.7 percent of its 1987 annual average.

Market Groups

Production of consumer goods other than autos and trucks increased 0.5 percent in September. Nondurables, particularly foods, posted noticeable gains, but output of appliances and other goods for the home remained sluggish.

(over)

INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION: SUMMARY

Seasonally adjusted

	Index, 1987=100				Percent change				Sep 89 to Sep 90
	1990 Jun ^f	Jul ^f	Aug ^f	Sep ^P	1990 Jun ^f	Jul ^f	Aug ^f	Sep ^P	
Industrial Production									
Total Index	110.1	110.3	110.4	110.7	0.6	0.2	0.1	0.2	2.2
Previous estimates	110.0	110.0	109.8		0.5	0.0	-0.2		
Major market groups:									
Products, total	110.9	110.8	110.9	111.5	0.3	-0.1	0.1	0.5	2.4
Consumer goods	107.8	107.3	107.8	109.1	0.3	-0.4	0.5	1.2	2.7
Business equipment	124.4	124.6	124.8	125.6	0.7	0.1	0.2	0.6	4.1
Construction supplies	106.0	106.4	105.9	104.9	0.5	0.3	-0.5	-0.9	-0.3
Materials	108.8	109.5	109.7	109.4	1.0	0.7	0.1	-0.2	1.9
Major industry groups:									
Manufacturing	110.8	111.0	111.2	111.4	0.5	0.1	0.2	0.2	2.1
Durable	113.4	113.2	113.6	113.8	0.7	-0.1	0.3	0.2	2.1
Nondurable	107.6	108.1	108.1	108.3	0.2	0.5	-0.1	0.2	2.2
Mining	102.2	103.5	101.8	102.1	0.0	1.3	-1.7	0.4	0.6
Utilities	109.7	109.4	110.8	111.8	2.5	-0.4	1.3	0.9	5.6
	Percent of Capacity								Capacity growth
Capacity Utilization	Average 1967-89	1982 Low	1988-89 High	1989 Sep	1990 Jun ^f	Jul ^f	Aug ^f	Sep ^P	Sep 89 to Sep 90
Total Industry	82.2	71.8	85.0	83.9	83.7	83.7	83.6	83.6	2.6
Manufacturing	81.5	70.0	85.1	83.6	83.0	82.9	82.8	82.8	3.1
Advanced processing	81.1	71.4	83.6	82.5	81.9	81.6	81.5	81.7	3.4
Primary processing	82.3	66.8	89.0	86.1	85.5	86.0	86.0	85.4	2.5
Mining	87.3	80.6	87.2	87.2	88.8	90.0	88.6	89.0	-1.5
Utilities	86.8	76.2	92.3	84.3	86.8	86.4	87.4	88.1	1.0

Excluding motor vehicles, production of business equipment declined 0.3 percent, reflecting not only a decrease in industrial equipment but also a slowing in information processing and related equipment. Both of these equipment sectors had posted large production gains earlier in the summer. Output of construction supplies fell sharply in August and September after rising a bit in the prior two months; since the beginning of the year, production in this market category has fallen nearly 3 percent. Output of both durable and nondurable materials declined in September. Among durables, the largest drop occurred in the production of basic metals, in part because steel output, which had surged in August, dropped back. Output of nondurables declined in the past two months, retracing the sizable gains made in June and July; the production of textiles has been particularly weak. The rise in output of energy materials reflected another jump in electricity generation and a rebound in coal mining.

Industry Groups

Manufacturing output edged up 0.2 percent in September leaving the factory operating rate unchanged at 82.8 percent—about the same level of utilization that has prevailed throughout most of this year. Apart from the sharp rise in motor vehicle assemblies, manufacturing output dropped 0.2 percent, with declines widespread among all primary processing industries except petroleum. Even though the operating rates for both steel and nonferrous metals dropped back in September, they were still well above levels seen earlier in the year. Only construction-related industries have experienced a noticeable decline in their operating rates since the beginning of this year.

Other advanced processing industries that posted gains in September included food, chemical products, and miscellaneous manufacturing. In contrast, the production of nonelectrical machinery declined in September, bringing down the utilization rate, which by August had come close to its 1988–89 high.

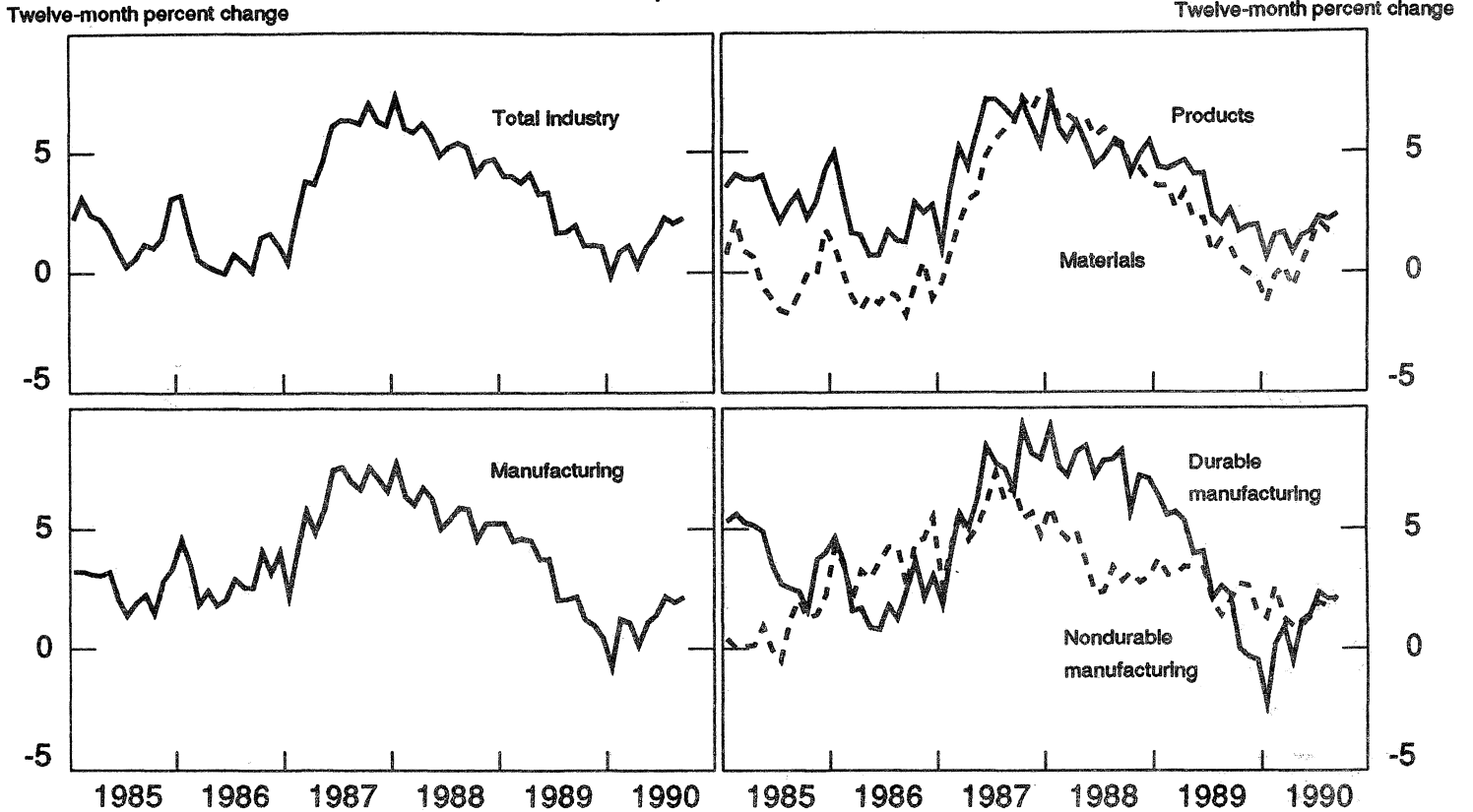
The rise in the output in mining and at utilities moved the operating rate up for both sectors. The utilization rate for mining has changed little, on balance, since last spring, while the rate for utilities has risen sharply.

INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION

Seasonally adjusted

September data

Industrial production indexes

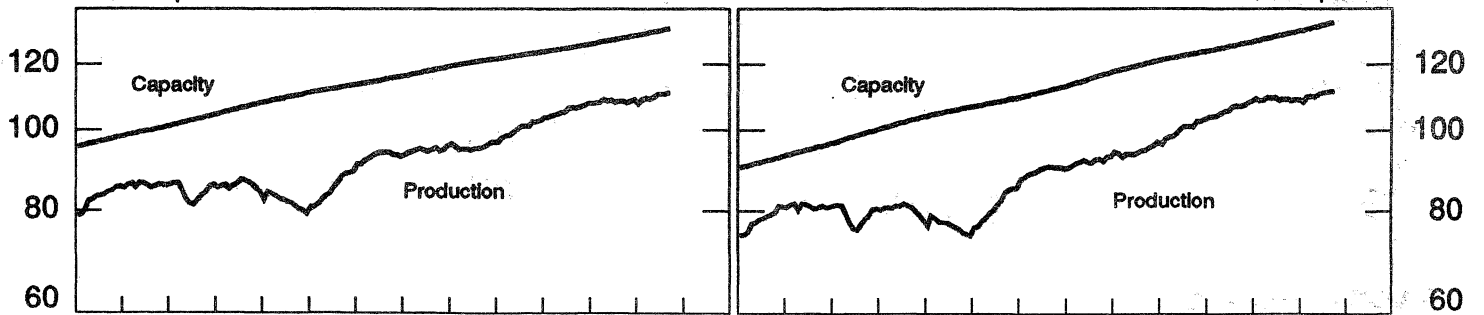


Total industry

Manufacturing

Ratio scale, 1987 production = 100

Ratio scale, 1987 production = 100



Percent of capacity

Percent of capacity

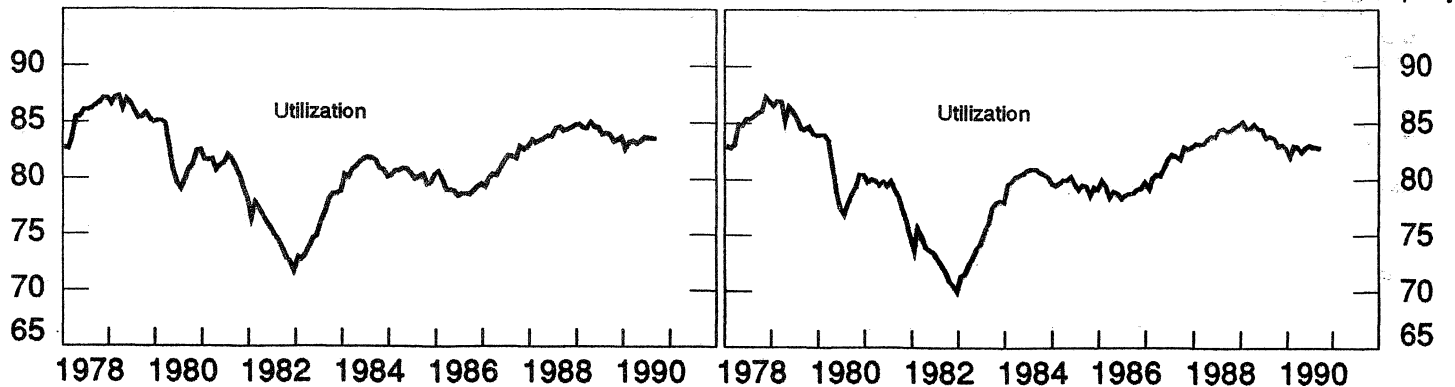


Table 1A
INDUSTRIAL PRODUCTION: MARKET GROUPS

Item	Proportion in Total IP		Index, 1987=100											
	1987	1989	Seasonally adjusted						Not seasonally adjusted					
			1990 Apr	May	Jun ^r	Jul ^r	Aug ^r	Sep ^p	1990 Apr	May	Jun ^r	Jul ^r	Aug ^r	Sep ^p
Total index	100.0	100.0	108.8	109.4	110.1	110.3	110.4	110.7	107.6	107.7	111.9	108.8	112.8	113.4
Products, total	60.8	61.1	109.8	110.5	110.9	110.8	110.9	111.5	107.8	108.3	113.3	110.1	114.9	115.8
Final products	46.0	46.5	110.4	111.2	111.7	111.5	111.7	112.6	108.2	109.1	114.1	110.2	115.5	116.6
Consumer goods	26.0	25.7	107.2	107.4	107.8	107.3	107.8	109.1	104.4	104.6	110.6	106.4	113.1	114.0
Durable	5.6	5.6	107.3	109.3	112.1	108.5	108.0	111.5	109.3	111.3	116.4	96.1	107.8	113.8
Automotive products	2.5	2.4	102.4	107.0	112.2	106.7	104.5	112.5	106.9	112.3	119.7	85.9	101.9	112.9
Autos and trucks	1.5	1.4	95.8	105.6	112.9	104.8	101.5	115.2	103.4	115.4	124.8	72.5	95.7	113.1
Autos	0.9	0.9	87.7	96.8	103.8	98.1	97.2	115.1	95.2	106.5	116.2	63.7	92.3	109.9
Trucks	0.6	0.6	109.3	120.4	128.3	116.2	108.8	115.4	117.2	130.3	139.2	87.1	101.2	118.4
Auto parts and allied goods	1.0	1.0	112.2	108.9	111.2	109.7	108.9	108.4	112.3	107.7	112.1	106.0	111.2	112.8
Other durable goods	3.1	3.1	111.2	111.1	112.0	110.0	110.8	110.8	111.1	110.5	113.8	104.2	112.4	114.5
Appliances, TVs, and air-cond.	0.8	0.8	104.4	103.6	107.5	100.2	102.0	102.0	106.8	106.5	107.1	92.6	99.4	100.0
Carpeting and furniture	0.9	0.9	107.5	107.6	107.8	107.4	108.0	107.1	108.0	105.5	110.8	101.6	110.8	112.1
Miscellaneous	1.4	1.5	117.3	117.5	117.2	117.0	117.5	118.1	115.6	115.9	119.4	112.3	120.8	124.1
Nondurable	20.4	20.1	107.1	106.9	106.6	107.0	107.7	108.5	103.1	102.8	109.0	109.3	114.6	114.1
Foods and tobacco	9.1	8.8	105.6	105.2	104.4	104.5	105.2	105.8	101.7	103.5	109.1	106.0	112.8	113.1
Clothing	2.6	2.4	96.0	96.4	95.7	95.8	96.0	95.7	95.3	95.9	99.6	93.6	101.5	100.0
Chemical products	3.5	3.6	113.5	113.0	112.8	112.5	114.1	115.3	108.3	109.5	119.1	122.7	125.4	126.8
Paper products	2.5	2.7	118.1	118.6	118.3	119.7	119.1	120.7	113.5	115.6	121.0	126.8	131.8	129.5
Energy products	2.7	2.6	104.1	104.1	105.3	106.8	108.4	109.1	98.5	85.8	93.1	101.0	102.7	99.5
Fuels	0.7	0.7	101.6	98.2	102.6	104.6	105.3	105.7	99.7	98.7	104.8	106.4	107.8	106.5
Utilities	2.0	2.0	105.0	106.3	106.3	107.6	109.6	110.3	98.1	81.0	88.7	99.0	100.8	96.9
Equipment, total	20.0	20.8	114.7	116.2	116.8	116.9	116.7	117.1	113.2	114.9	118.7	115.1	118.5	119.9
Business equipment	13.9	15.3	121.6	123.5	124.4	124.6	124.8	125.6	120.0	122.3	127.6	122.9	127.7	129.2
Information processing & related	5.6	6.3	126.4	126.6	126.3	127.5	128.6	128.7	122.8	123.2	129.2	130.9	135.7	133.8
Office and computing	1.9	2.5	149.3	148.9	150.6	152.6	154.5	154.1	142.5	143.0	155.0	159.4	168.9	163.0
Industrial	4.0	4.2	114.2	115.8	116.0	117.1	117.7	117.1	111.4	113.9	118.5	117.0	120.3	121.6
Transit	2.5	2.8	126.2	132.5	137.4	133.8	132.0	138.3	131.2	137.5	142.7	114.6	125.1	135.8
Autos and trucks	1.2	1.2	95.2	105.7	112.2	103.0	100.9	113.7	103.1	113.7	123.1	73.0	96.2	110.5
Other	1.9	2.0	117.6	119.4	119.9	119.7	119.3	117.9	115.7	117.7	122.5	122.9	123.4	123.0
Defense and space equipment	5.4	4.8	97.3	97.6	97.6	97.9	97.4	97.0	97.2	97.2	97.2	96.3	96.0	97.2
Oil and gas well drilling	0.6	0.5	114.3	118.6	119.5	116.2	106.9	107.4	100.7	104.0	108.4	108.8	107.1	113.2
Manufactured homes	0.2	0.1	89.7	91.3	92.8	90.0	93.4	91.9	96.7	98.9	104.1	86.8	107.3	101.0
Intermediate products	14.7	14.6	108.0	108.3	108.3	108.5	108.4	107.9	106.4	105.9	110.8	109.8	113.1	113.2
Construction supplies	6.0	5.9	106.4	105.5	106.0	106.4	105.9	104.9	106.4	106.4	110.1	107.0	108.8	109.2
Business supplies	8.7	8.6	109.1	110.2	109.8	110.0	110.1	110.0	106.4	105.5	111.2	111.8	116.1	115.9
Materials	39.2	38.9	107.3	107.7	108.8	109.5	109.7	109.4	107.4	106.8	109.7	106.8	109.5	109.7
Durable	19.4	20.0	110.9	112.5	113.8	114.1	115.1	114.4	111.6	112.8	115.7	111.3	114.6	115.8
Consumer parts	4.2	4.2	103.2	108.5	108.5	108.3	110.7	109.5	104.2	109.6	109.7	102.6	107.6	109.6
Equipment parts	7.3	7.7	117.4	118.1	119.1	119.1	119.3	119.3	116.6	117.0	119.5	117.0	118.7	119.8
Other	7.9	8.1	108.9	109.6	111.8	112.7	113.6	112.5	110.9	110.6	115.3	110.5	114.6	115.5
Basic metals	2.8	2.9	110.2	109.2	113.6	115.3	117.0	115.1	116.7	112.9	116.6	108.3	112.4	114.5
Nondurable	9.0	8.8	106.1	105.2	106.1	107.7	106.6	106.2	107.7	105.0	107.1	103.8	106.4	107.4
Textile	1.2	1.1	95.6	97.4	99.4	99.0	97.8	97.2	96.1	100.5	103.3	87.0	102.1	100.3
Paper	1.9	1.8	106.0	104.5	104.8	109.0	105.9	105.7	106.9	103.2	104.6	106.6	106.6	105.8
Chemical	3.8	3.8	107.4	105.4	107.3	108.5	108.2	107.7	109.6	105.7	108.0	106.2	105.9	109.0
Other	2.1	2.1	109.8	109.8	108.8	109.8	109.1	108.8	111.3	107.9	109.9	106.6	109.2	109.9
Energy	10.9	10.2	101.8	101.1	102.1	102.9	102.5	103.2	99.7	97.6	101.3	101.2	102.8	100.8
Primary	7.2	6.6	100.3	100.1	101.2	102.7	101.5	102.0	99.9	98.7	100.1	98.6	100.1	99.8
Converted fuel	3.7	3.5	104.6	102.9	103.9	103.3	104.4	105.6	99.3	95.4	103.6	106.2	108.1	102.9
<u>SPECIAL AGGREGATES</u>														
Total excluding:														
Autos and trucks	97.3	97.4	109.2	109.5	110.0	110.5	110.7	110.6	107.8	107.5	111.6	109.8	113.2	113.4
Motor vehicles and parts	95.3	95.5	109.5	109.7	110.2	110.7	110.9	110.8	108.0	107.6	111.8	110.1	113.5	113.7
Office and computing machines	97.5	96.9	107.8	108.4	109.1	109.2	109.3	109.6	106.8	106.8	110.8	107.5	111.3	112.2
Consumer goods excluding:														
Autos and trucks	24.5	24.2	107.9	107.6	107.5	107.5	108.2	108.8	104.5	104.0	109.8	108.5	114.2	114.1
Energy	23.3	23.0	107.5	107.8	108.1	107.4	107.7	109.1	105.1	106.8	112.6	107.1	114.3	115.7
Business equipment excluding:														
Autos and trucks	12.7	14.2	124.2	125.3	125.6	126.7	127.2	126.8	121.7	123.2	128.0	127.8	130.8	131.0
Office and computing equipment	12.0	12.9	117.2	119.4	120.2	120.0	120.0	121.0	116.4	119.0	123.1	117.0	121.0	123.7
Materials excluding:														
Energy	28.4	28.8	109.4	110.2	111.4	112.1	112.4	111.8	110.4	110.3	113.0	108.9	112.0	113.2

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

Percent change

Item	1988 Q4 to 1989 Q4 ¹	Seasonally adjusted annual rate				Seasonally adjusted				Not seasonally adjusted				Sep 89 to Sep 90 ¹
		1989 Q4	1990 Q1	Q2 ^r	Q3 ^p	1990 Jun ^r	Jul ^r	Aug ^r	Sep ^p	1990 Jun ^r	Jul ^r	Aug ^r	Sep ^p	
Total Index	1.1	0.2	0.6	4.2	3.8	0.6	0.2	0.1	0.2	3.9	-2.8	3.6	0.6	2.2
Products, total	1.8	1.3	1.5	4.2	2.3	0.3	-0.1	0.1	0.5	4.6	-2.8	4.3	0.8	2.4
Final products	1.8	0.9	0.9	5.6	2.9	0.4	-0.2	0.2	0.8	4.6	-3.4	4.8	1.0	2.7
Consumer goods	1.8	7.6	-3.1	2.5	2.3	0.3	-0.4	0.5	1.2	5.7	-3.8	6.3	0.8	2.7
Durable	-2.2	0.5	-3.6	16.5	-0.7	2.6	-3.2	-0.5	3.3	4.6	-17.4	12.2	5.6	3.7
Automotive products	-7.8	0.7	-19.0	43.4	2.7	4.9	-4.9	-2.1	7.7	6.6	-28.3	18.6	10.9	7.2
Autos and trucks	-13.1	-4.0	-36.1	93.0	9.5	6.9	-7.2	-3.1	13.4	8.2	-41.9	32.0	18.2	11.7
Autos	-14.5	-0.6	-42.1	78.2	34.3	7.2	-5.5	-0.9	18.4	9.1	-45.2	44.9	19.0	12.8
Trucks	-10.8	-9.0	-26.1	115.4	-18.3	6.5	-9.4	-6.3	6.0	6.8	-37.4	16.2	16.9	9.9
Auto parts and allied goods	0.6	8.1	9.6	-2.6	-6.4	2.1	-1.4	-0.7	-0.4	4.1	-5.4	4.9	1.4	0.9
Other durable goods	2.4	-0.1	9.3	0.2	-3.2	0.8	-1.8	0.8	0.0	2.9	-8.4	7.9	1.8	0.9
Appliances, TVs, and air-cond.	-4.0	-14.8	18.8	-10.4	-13.6	3.7	-6.8	1.8	0.0	0.5	-13.5	7.4	0.6	-6.7
Carpeting and furniture	-1.0	4.6	15.1	11.4	-0.5	0.2	-0.4	0.5	-0.9	5.0	-8.3	9.0	1.2	6.1
Miscellaneous	8.1	5.7	1.7	-0.3	0.7	-0.2	-0.2	0.4	0.5	3.0	-5.9	7.5	2.7	2.0
Nondurable	3.0	9.4	-2.9	-1.0	3.2	-0.3	0.4	0.7	0.7	6.1	0.2	4.9	-0.5	2.3
Foods and tobacco	2.5	11.6	-0.4	-2.9	0.4	-0.7	0.1	0.7	0.6	5.4	-2.8	6.4	0.3	2.0
Clothing	-1.1	-2.4	-5.4	-11.7	-0.8	-0.7	0.1	0.2	-0.3	3.8	-6.0	8.4	-1.4	-5.8
Chemical products	1.8	5.3	4.8	4.4	3.1	-0.1	-0.3	1.5	1.1	8.8	3.0	2.2	1.1	7.0
Paper products	9.2	10.7	-2.3	5.6	5.2	-0.3	1.2	-0.5	1.4	4.7	4.7	4.0	-1.8	3.9
Energy products	4.2	17.8	-18.7	1.2	14.6	1.1	1.5	1.5	0.6	8.5	8.5	1.7	-3.2	2.9
Fuels	-0.5	-4.6	9.4	-13.5	18.6	4.4	2.0	0.6	0.4	6.2	1.6	1.3	-1.2	2.2
Utilities	6.0	27.0	-26.9	7.1	13.2	0.0	1.3	1.8	0.7	9.6	11.5	1.8	-3.9	3.2
Equipment, total	1.9	-6.6	6.1	9.4	3.6	0.6	0.0	-0.2	0.4	3.3	-3.0	2.9	1.2	2.9
Business equipment	2.3	-6.9	6.6	10.7	5.9	0.7	0.1	0.2	0.6	4.3	-3.6	3.9	1.2	4.1
Information processing & related	6.3	-1.0	8.2	5.0	6.0	-0.2	0.9	0.9	0.1	4.8	1.4	3.7	-1.4	4.1
Office and computing	12.9	-1.6	18.2	14.1	11.5	1.1	1.4	1.2	-0.2	8.4	2.9	6.0	-3.5	8.7
Industrial	1.3	-4.6	2.5	6.3	7.0	0.2	1.0	0.5	-0.5	4.0	-1.2	2.7	1.1	2.9
Transit	-6.5	-24.6	13.6	38.9	8.5	3.7	-2.6	-1.3	4.8	3.8	-19.7	9.1	8.6	8.9
Autos and trucks	-13.3	-9.8	-32.4	92.7	5.8	6.2	-8.2	-2.0	12.7	8.2	-40.7	31.8	14.8	10.2
Other	4.5	-1.6	1.6	3.3	0.0	0.4	-0.2	-0.3	-1.1	4.1	0.3	0.4	-0.3	-0.9
Defense and space equipment	-0.2	-8.5	3.8	-0.2	-0.3	0.0	0.3	-0.5	-0.4	0.0	-0.9	-0.3	1.2	-1.9
Oil and gas well drilling	13.2	14.1	9.8	79.4	-22.6	0.8	-2.8	-3.0	0.5	4.3	0.3	-1.6	5.7	10.4
Manufactured homes	-10.9	8.5	15.5	-7.0	2.2	1.7	-3.0	3.8	-1.7	5.3	-16.6	23.7	-5.9	4.9
Intermediate products	1.8	3.4	3.2	-0.1	0.3	0.0	0.2	-0.1	-0.4	4.6	-0.8	3.0	0.1	1.5
Construction supplies	1.7	4.5	3.6	-6.8	-0.9	0.5	0.3	-0.5	-0.9	3.4	-2.8	1.6	0.4	-0.3
Business supplies	1.9	2.7	2.9	4.7	1.2	-0.3	0.1	0.1	-0.1	5.4	0.5	3.8	-0.1	2.8
Materials	-0.1	-2.0	-0.6	4.2	6.2	1.0	0.7	0.1	-0.2	2.8	-2.7	2.5	0.3	1.9
Durable	-0.9	-4.1	-1.1	7.7	7.9	1.1	0.3	0.9	-0.6	2.6	-3.8	3.0	1.0	2.2
Consumer parts	-6.1	-12.3	-13.7	23.4	10.9	0.0	-0.2	2.2	-1.1	0.1	-6.5	4.8	1.9	0.6
Equipment parts	2.1	-0.6	7.3	3.3	3.6	0.8	0.0	0.1	0.0	2.2	-2.1	1.5	0.9	3.3
Other	-1.0	-3.6	-2.3	4.7	10.7	2.0	0.8	0.8	-1.0	4.3	-4.2	3.7	0.8	1.7
Basic metals	-3.2	-11.4	-3.7	9.0	18.4	4.0	1.5	1.5	-1.6	3.3	-7.2	3.8	1.9	1.9
Nondurable	0.9	-1.7	1.3	1.4	3.8	0.9	1.5	-1.0	-0.4	2.0	-3.1	2.4	1.0	1.9
Textile	2.3	-19.5	-6.5	9.8	2.3	2.1	-0.4	-1.3	-0.6	2.8	-15.8	17.3	-1.8	-2.4
Paper	2.0	4.6	-3.4	2.6	6.9	0.3	4.0	-2.8	-0.2	1.4	1.8	0.1	-0.8	1.5
Chemical	-0.4	-4.1	5.2	-0.5	5.4	1.8	1.1	-0.3	-0.5	2.2	-1.7	-0.2	2.9	3.1
Other	1.8	7.7	2.6	0.1	-0.8	-0.9	0.9	-0.6	-0.3	1.9	-3.0	2.4	0.7	2.2
Energy	0.6	3.3	-1.3	0.1	4.9	1.0	0.8	-0.4	0.7	3.8	-0.1	1.6	-2.0	1.6
Primary	-0.9	-5.0	7.0	-3.6	6.2	1.1	1.5	-1.2	0.5	1.4	-1.5	1.5	-0.4	1.3
Converted fuel	3.7	19.9	-15.3	7.7	2.5	1.0	-0.6	1.1	1.2	8.6	2.6	1.8	-4.9	1.9
SPECIAL AGGREGATES														
Total excluding:														
Autos and trucks	1.5	0.3	1.7	2.6	3.7	0.5	0.4	0.2	-0.1	3.8	-1.6	3.1	0.2	2.0
Motor vehicles and parts	1.7	0.5	2.1	2.3	3.7	0.5	0.4	0.2	-0.1	3.8	-1.5	3.1	0.1	2.1
Office and computing machines	0.8	0.1	0.1	3.9	3.5	0.6	0.2	0.1	0.3	3.8	-3.0	3.5	0.7	2.0
Consumer goods excluding:														
Autos and trucks	2.8	8.1	-1.0	-0.9	1.9	-0.1	0.0	0.7	0.5	5.6	-1.1	5.3	-0.1	2.1
Energy	1.6	6.3	-1.1	2.6	1.0	0.2	-0.7	0.3	1.3	5.5	-4.9	6.8	1.2	2.6
Business equipment excluding:														
Autos and trucks	3.7	-6.7	10.4	6.1	5.9	0.3	0.8	0.4	-0.3	4.0	-0.2	2.3	0.2	3.6
Office and computing equipment	0.4	-8.0	4.5	10.0	4.8	0.7	-0.2	0.0	0.8	3.5	-5.0	3.4	2.2	3.2
Materials excluding:														
Energy	-0.3	-3.4	-0.4	5.7	6.6	1.0	0.7	0.3	-0.5	2.4	-3.6	2.8	1.0	2.1

1. Based on seasonally adjusted data.

Table 2A
INDUSTRIAL PRODUCTION: INDUSTRY GROUPS

Item		Proportion in Total IP		Index, 1987=100											
				Seasonally adjusted						Not seasonally adjusted					
				1987	1989	1990 Apr	May	Jun ^f	Jul ^f	Aug ^f	Sep ^p	1990 Apr	May	Jun ^f	Jul ^f
Total Index		100.0	100.0	108.8	109.4	110.1	110.3	110.4	110.7	107.6	107.7	111.9	108.8	112.8	113.4
Manufacturing		84.4	85.1	109.5	110.3	110.8	111.0	111.2	111.4	108.7	109.6	113.6	109.7	114.1	115.2
Primary processing		26.7	26.3	105.9	106.1	107.0	107.9	108.1	107.6	107.4	106.6	109.5	105.3	109.0	109.9
Advanced processing		57.7	58.8	111.3	112.4	112.6	112.4	112.6	113.2	109.3	111.0	115.5	111.7	116.4	117.7
Durable		47.3	48.5	111.1	112.6	113.4	113.2	113.6	113.8	111.0	112.4	115.8	110.1	114.4	116.0
Lumber and products	24	2.0	1.9	103.3	101.7	102.0	102.1	101.5	99.4	104.7	103.8	107.8	101.7	108.1	105.9
Furniture and fixtures	25	1.4	1.4	107.6	108.0	108.7	109.4	108.8	106.9	105.2	103.9	109.4	105.2	113.4	111.8
Stone, clay, and glass products	32	2.5	2.5	105.1	106.4	106.1	105.6	106.5	105.9	105.5	107.1	109.1	106.2	109.7	109.4
Primary metals	33	3.3	3.4	106.4	106.2	109.5	110.2	114.3	112.5	113.8	110.1	113.5	103.7	109.5	111.1
Iron and steel	331,2	1.9	2.0	106.7	105.5	110.3	110.6	117.6	115.3	116.9	110.7	115.8	106.3	112.8	112.7
Raw steel		0.1	0.1	104.9	107.6	111.8	113.8	118.5	112.5	112.3	113.4	112.4	106.2	112.4	111.0
Nonferrous	333-6,9	1.4	1.4	105.9	107.1	108.3	109.7	109.6	108.6	109.4	109.4	110.3	100.1	105.0	109.0
Fabricated metal products	34	5.4	5.3	105.0	107.1	106.7	107.9	108.2	107.3	104.7	106.1	108.2	105.9	108.5	109.4
Nonelectrical machinery	35	8.6	9.6	125.7	126.9	127.5	128.3	129.2	128.6	122.5	124.1	130.5	131.2	134.9	134.1
Office & computing machines	357	2.5	3.1	149.3	149.0	150.6	152.6	154.4	154.1	142.5	143.0	155.0	159.4	168.9	163.0
Electrical machinery	36	8.6	8.7	111.3	112.4	112.8	112.1	112.4	112.5	109.7	111.0	113.2	109.3	112.0	113.6
Transportation equipment	37	9.8	9.7	105.1	109.0	111.0	108.9	107.6	110.7	107.1	111.4	114.2	97.3	103.2	109.6
Motor vehicles and parts	371	4.7	4.5	95.8	104.0	108.0	102.7	100.9	108.5	100.3	109.3	115.1	82.6	96.5	107.1
Autos and light trucks		2.3	2.3	94.6	104.3	111.6	103.8	100.9	115.2	102.2	114.1	123.5	71.2	95.2	112.6
Aerospace and misc.	372-6,9	5.1	5.2	113.4	113.5	113.8	114.5	113.6	112.7	113.2	113.3	113.4	110.6	109.3	111.8
Instruments	38	3.3	3.5	115.8	116.5	115.0	116.1	117.1	117.6	114.1	114.7	117.4	117.6	120.4	120.6
Miscellaneous	39	1.2	1.3	118.6	119.1	119.6	120.4	122.7	124.3	116.0	116.8	123.5	120.7	130.6	131.9
Nondurable	37.2	36.6	107.5	107.4	107.6	108.1	108.1	108.3	105.7	106.1	110.9	109.1	113.7	114.2	
Foods	20	8.8	8.6	107.0	106.8	106.1	106.4	107.0	107.8	103.0	105.2	109.6	108.8	113.7	115.0
Tobacco products	21	1.0	0.9	98.8	97.2	95.6	97.8	95.4	94.0	96.9	94.4	106.8	85.2	102.6	97.3
Textile mill products	22	1.9	1.7	100.9	102.7	103.6	102.8	101.8	101.2	102.2	104.9	109.4	95.8	107.4	106.7
Apparel products	23	2.4	2.3	98.7	99.2	99.3	99.3	99.3	99.0	97.2	98.2	101.3	96.6	102.2	102.5
Paper and products	26	3.6	3.4	105.3	104.0	104.2	107.8	105.5	105.0	107.5	102.8	104.0	105.1	105.7	105.1
Printing and publishing	27	6.4	6.4	112.0	112.8	112.0	111.8	111.6	111.5	107.1	109.3	115.2	118.3	123.4	122.2
Chemicals and products	28	8.6	8.6	110.3	109.2	110.3	110.5	111.2	112.0	110.1	109.5	113.9	113.6	115.1	117.4
Petroleum products	29	1.3	1.3	106.8	104.6	106.5	110.5	109.6	110.5	103.1	106.4	111.5	116.2	116.4	115.1
Rubber and plastics products	30	3.0	3.0	109.0	110.9	112.8	112.3	112.5	112.7	109.6	110.4	115.6	108.1	114.0	116.6
Leather and products	31	0.3	0.3	102.6	103.5	102.0	103.2	104.8	103.3	102.2	104.2	103.7	90.2	110.5	106.6
Mining		7.9	7.4	102.9	102.2	102.2	103.5	101.8	102.1	102.4	100.5	101.1	99.5	101.0	101.4
Metal mining	10	0.3	0.4	152.7	148.7	156.7	163.7	162.1	160.6	158.0	150.5	163.4	159.4	160.3	162.7
Coal	11,12	1.2	1.2	114.2	110.0	113.5	118.5	110.2	113.3	113.0	107.3	114.9	104.7	115.4	116.4
Oil and gas extraction	13	5.7	5.1	95.7	96.0	94.6	94.8	94.5	94.4	94.8	93.8	91.9	92.3	91.8	92.0
Stone and earth minerals	14	0.7	0.7	120.2	119.9	121.1	122.0	120.3	120.5	122.2	122.4	125.3	124.3	124.5	125.0
Utilities		7.6	7.6	106.7	107.1	109.7	109.4	110.8	111.8	101.5	93.9	103.7	108.3	109.8	106.4
Electric	491,3pt	6.0	6.0	109.7	110.3	113.1	112.1	113.8	114.9	102.0	100.4	115.5	121.8	123.7	119.0
Gas	492,3pt	1.6	1.5	95.5	95.2	97.4	99.1	99.9	100.5	99.6	69.6	59.7	58.2	58.5	59.9
SPECIAL AGGREGATES															
Manufacturing excluding:															
Motor vehicles and parts		79.8	80.6	110.3	110.7	111.0	111.5	111.8	111.6	109.2	109.7	113.6	111.2	115.1	115.7
Office and computing machines		82.0	82.0	108.3	109.2	109.6	109.7	109.9	110.1	107.7	108.6	112.4	108.2	112.4	113.8
Memo: Motor vehicle assemblies¹															
Total				9.6	10.6	11.3	10.5	10.2	11.5	10.1	12.3	12.1	7.3	10.2	10.4
Autos				5.8	6.4	6.8	6.4	6.4	7.5	6.1	7.5	7.4	4.2	6.4	6.6
Trucks				3.8	4.2	4.5	4.0	3.8	4.0	4.0	4.8	4.7	3.1	3.8	3.8
Light				3.6	3.9	4.2	3.8	3.5	3.7	3.7	4.5	4.4	2.9	3.5	3.5
Heavy and medium				0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2

¹ 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, nonelectrical machinery, electrical machinery, transportation equipment, instruments, miscellaneous manufactures, and government owned—and—operated ordnance.

Table 2B
INDUSTRIAL PRODUCTION: INDUSTRY GROUPS

Percent change

Item	SIC	1988 Q4 to 1989 Q4 ¹	Seasonally adjusted annual rate				Seasonally adjusted				Not seasonally adjusted				Sep 89 to Sep 90 ¹
			1989 Q4	1990 Q1	Q2 ^r	Q3 ^p	1990 Jun ^r	Jul ^r	Aug ^r	Sep ^p	1990 Jun ^r	Jul ^r	Aug ^r	Sep ^p	
Total Index		1.1	0.2	0.6	4.2	3.8	0.6	0.2	0.1	0.2	3.9	-2.8	3.6	0.6	2.2
Manufacturing		0.9	-0.8	1.9	3.8	3.5	0.5	0.1	0.2	0.2	3.7	-3.5	4.0	1.0	2.1
Primary processing		-0.4	-1.2	1.2	-0.1	5.9	0.9	0.8	0.2	-0.5	2.7	-3.8	3.5	0.8	1.7
Advanced processing		1.4	-0.6	2.2	5.7	2.3	0.2	-0.2	0.1	0.6	4.1	-3.4	4.3	1.1	2.3
Durable		-0.3	-4.2	1.6	7.4	4.2	0.7	-0.1	0.3	0.2	3.0	-5.0	4.0	1.4	2.1
Lumber and products	24	-0.9	8.7	1.2	-10.2	-5.1	0.3	0.1	-0.6	-2.1	3.8	-5.6	6.3	-2.1	-3.1
Furniture and fixtures	25	0.9	-0.2	1.0	11.3	0.9	0.6	0.6	-0.5	-1.7	5.3	-3.9	7.8	-1.4	1.1
Stone, clay, and glass products	32	0.2	4.9	1.5	-9.6	0.6	-0.2	-0.5	0.9	-0.6	1.9	-2.7	3.3	-0.3	-0.6
Primary metals	33	-6.7	-16.3	3.0	4.9	20.0	3.1	0.6	3.7	-1.6	3.1	-8.6	5.6	1.5	2.4
Iron and steel	331,2	-9.9	-15.5	10.2	1.5	28.7	4.6	0.2	6.4	-2.0	4.6	-8.2	6.1	-0.1	5.1
Raw steel		-7.4	-17.2	29.4	-0.7	27.9	3.9	1.9	4.1	-5.0	-0.9	-5.5	5.8	-1.2	9.4
Nonferrous	333-6,9	-1.7	-16.8	-6.5	9.9	8.3	1.2	1.2	0.0	-0.9	0.8	-9.3	4.9	3.8	-1.1
Fabricated metal products	34	-1.7	-1.2	-3.5	3.3	5.7	-0.3	1.0	0.3	-0.8	2.0	-2.1	2.5	0.8	1.2
Nonelectrical machinery	35	4.6	-1.4	8.4	7.8	6.4	0.5	0.6	0.7	-0.5	5.2	0.5	2.8	-0.6	4.2
Office & computing machines	357	12.9	-1.7	18.3	14.1	11.4	1.1	1.3	1.2	-0.2	8.4	2.9	6.0	-3.5	8.6
Electrical machinery	36	1.6	0.3	3.6	3.9	0.6	0.4	-0.6	0.3	0.0	2.0	-3.4	2.5	1.4	1.5
Transportation equipment	37	-5.9	-15.2	-4.2	27.2	2.6	1.9	-1.9	-1.2	2.9	2.5	-14.8	6.1	6.2	2.5
Motor vehicles and parts	371	-11.0	-10.2	-27.6	58.3	5.6	3.8	-4.9	-1.7	7.5	5.4	-28.3	16.8	10.9	5.1
Autos and light trucks		-13.3	-3.4	-37.0	90.9	12.7	6.9	-6.9	-2.8	14.1	8.3	-42.4	33.7	18.3	11.9
Aerospace and misc.	372-6,9	-1.1	-19.2	19.5	7.2	0.1	0.3	0.6	-0.8	-0.8	0.0	-2.4	-1.2	2.3	0.3
Instruments	38	1.2	-5.2	1.6	-0.8	4.1	-1.3	0.9	0.9	0.4	2.4	0.1	2.4	0.2	1.2
Miscellaneous	39	7.4	2.0	4.0	4.1	11.8	0.4	0.7	1.9	1.3	5.8	-2.2	8.2	1.0	7.0
Nondurable		2.3	3.6	2.3	-0.6	2.6	0.2	0.5	-0.1	0.2	4.5	-1.6	4.1	0.5	2.2
Foods	20	3.0	10.6	-1.1	-1.7	1.6	-0.7	0.3	0.6	0.7	4.2	-0.7	4.5	1.2	2.3
Tobacco products	21	-3.0	21.9	9.2	-14.9	-6.0	-1.6	2.3	-2.5	-1.4	13.1	-20.1	20.3	-5.1	0.7
Textile mill products	22	1.7	-7.8	3.3	5.1	-1.8	0.9	-0.8	-1.0	-0.6	4.3	-12.4	12.0	-0.6	-0.3
Apparel products	23	1.0	-4.2	-7.5	-9.1	0.6	0.1	0.0	0.0	-0.3	3.2	-4.7	5.8	0.3	-5.3
Paper and products	26	1.5	4.6	-1.4	2.5	6.1	0.2	3.5	-2.2	-0.5	1.2	1.1	0.6	-0.6	2.8
Printing and publishing	27	4.5	6.0	7.2	3.0	-2.2	-0.7	-0.2	-0.2	-0.1	5.4	2.7	4.3	-1.0	1.9
Chemicals and products	28	1.7	0.0	3.8	-0.1	4.9	1.0	0.2	0.6	0.7	4.9	-0.3	1.4	2.0	4.2
Petroleum products	29	2.3	-4.2	12.1	-13.6	16.9	1.8	3.7	-0.8	0.8	4.8	4.2	0.2	-1.1	1.7
Rubber and plastics products	30	1.9	1.8	1.9	3.9	6.0	1.7	-0.4	0.2	0.2	4.7	-6.5	5.5	2.3	3.8
Leather and products	31	-1.6	-7.2	8.0	-3.1	4.2	-1.5	1.2	1.5	-1.4	-0.5	-13.0	22.5	-3.5	-0.2
Mining		-0.8	-0.5	2.5	4.8	0.1	0.0	1.3	-1.7	0.4	0.5	-1.5	1.4	0.4	0.6
Metal mining	10	9.2	2.9	-12.8	29.2	27.1	5.3	4.5	-1.0	-0.9	8.6	-2.5	0.6	1.5	10.4
Coal	11,12	-1.8	10.3	23.3	-1.4	5.3	3.1	4.5	-7.0	2.8	7.1	-8.9	10.2	0.9	3.4
Oil and gas extraction	13	-2.4	-4.6	-1.1	4.7	-3.6	-1.4	0.2	-0.3	-0.1	-2.1	0.4	-0.4	0.2	-1.6
Stone and earth minerals	14	8.0	11.3	4.9	3.9	1.8	1.0	0.7	-1.4	0.2	2.4	-0.9	0.2	0.4	5.6
Utilities		6.3	17.6	-16.8	8.5	10.9	2.5	-0.4	1.3	0.9	10.4	4.4	1.4	-3.1	5.6
Electric	491,3pt	6.2	15.2	-11.8	10.1	9.5	2.5	-0.9	1.5	1.0	15.0	5.4	1.6	-3.8	7.2
Gas	492,3pt	6.1	28.1	-34.4	1.8	17.0	2.3	1.8	0.8	0.6	-14.3	-2.5	0.5	2.4	-0.4
SPECIAL AGGREGATES															
Manufacturing excluding:															
Motor vehicles and parts		1.6	-0.6	3.6	1.6	3.4	0.3	0.4	0.3	-0.2	3.6	-2.0	3.5	0.5	1.9
Office and computing machines		0.5	-1.0	1.3	3.4	3.2	0.4	0.1	0.1	0.2	3.5	-3.8	3.9	1.2	1.8

1. Based on seasonally adjusted data.

Table 3
CAPACITY UTILIZATION: MANUFACTURING, MINING, AND UTILITIES

Percent of capacity, seasonally adjusted

Item	SIC	1989 Proportion	1967- 1989 Ave.	1973 High	1975 Low	1978- 1980 High	1982 Low	1988 1989 High	1989 Sep	1990 Apr	May	Jun ^r	Jul ^r	Aug ^r	Sep ^p
Total Industry		100.0	82.2	89.2	72.6	87.3	71.8	85.0	83.9	83.1	83.4	83.7	83.7	83.6	83.6
Manufacturing		85.3	81.5	88.9	70.8	87.3	70.0	85.1	83.6	82.5	82.8	83.0	82.9	82.8	82.8
Primary processing		25.5	82.3	92.2	68.9	89.7	66.8	89.0	86.1	85.0	84.9	85.5	86.0	86.0	85.4
Advanced processing		59.9	81.1	87.5	72.0	86.3	71.4	83.6	82.5	81.5	82.0	81.9	81.6	81.5	81.7
Durable		49.3	79.5	88.8	68.5	86.9	65.0	84.0	82.8	81.2	82.1	82.4	82.1	82.1	82.1
Lumber and products	24	1.9	82.7	90.1	62.2	87.6	60.9	91.2	84.3	83.4	81.9	82.0	81.9	81.2	79.3
Furniture and fixtures	25	1.4	82.7	96.8	64.3	86.6	68.9	88.3	85.7	86.1	86.2	86.6	87.0	86.4	84.7
Stone, clay, and glass products	32	2.5	78.3	89.2	67.2	87.0	63.1	86.4	83.0	81.2	82.1	81.8	81.3	81.9	81.4
Primary metals	33	3.3	79.8	100.6	66.2	102.4	46.8	91.6	86.8	83.6	83.4	86.0	86.5	89.7	88.3
Iron and steel	331,2	2.0	79.4	105.8	66.6	110.4	38.3	92.0	83.7	80.8	79.9	83.6	83.7	89.1	87.3
Raw steel		0.1	78.8	102.7	66.0	95.7	35.2	94.1	79.3	80.4	82.3	85.5	87.1	90.6	86.0
Nonferrous	333-6,9	1.3	80.8	92.9	61.3	90.5	62.2	95.0	91.4	87.9	88.8	89.8	90.8	90.7	89.8
Primary copper	3331	0.0	71.2	92.1	55.0	80.8	42.1	97.9	81.6	80.9	81.8	86.4	82.6	87.1	
Primary aluminum	3334	0.1	88.2	95.7	73.3	97.6	58.6	103.5	99.8	97.9	98.7	99.6	101.8	103.8	
Fabricated metal products	34	5.4	77.7	87.8	65.9	83.9	62.9	85.1	81.9	80.4	81.8	81.5	82.2	82.3	81.5
Nonelectrical machinery	35	9.9	81.3	96.4	74.5	92.1	64.9	83.5	82.7	82.3	82.8	82.9	83.1	83.4	82.7
Electrical machinery	36	9.0	80.4	87.8	63.8	89.4	71.1	83.1	82.0	80.5	81.0	81.0	80.3	80.2	80.0
Transportation equipment	37	10.0	75.1	83.8	58.2	82.7	56.7	84.6	81.9	78.6	81.4	82.7	80.9	79.8	81.9
Motor vehicles and parts	371	4.8	76.7	93.4	51.1	93.0	44.5	85.5	78.2	71.9	77.9	80.7	76.5	75.0	80.5
Autos and light trucks ¹		2.6				92.2	40.1	83.6	73.9	67.4	74.1	79.0	73.3	71.0	80.8
Aerospace and misc.	372-6,9	5.3	75.3	77.0	66.6	81.1	66.9	86.2	85.2	84.6	84.5	84.5	84.9	84.0	83.2
Instruments	38	3.6	83.1	89.9	75.2	92.5	79.0	83.9	81.3	78.7	78.9	77.6	78.0	78.4	78.4
Miscellaneous	39	1.3	75.9	82.9	65.4	78.7	66.1	85.5	84.4	85.0	85.2	85.3	85.8	87.2	88.2
Nondurable		36.0	83.7	87.9	71.8	87.0	76.9	86.7	84.7	84.2	83.9	83.8	84.0	83.7	83.7
Foods	20	8.8	82.5	86.0	78.1	84.3	78.8	83.0	81.4	81.4	81.1	80.3	80.4	80.7	81.1
Textile mill products	22	1.6	86.0	92.0	60.4	91.7	73.8	91.2	88.2	86.7	88.1	88.8	87.9	86.9	86.3
Apparel products	23	2.3	81.6	84.2	61.9	86.0	78.9	84.2	83.0	77.3	77.6	77.5	77.4	77.2	76.9
Paper and products	26	3.1	89.7	96.9	69.0	94.2	82.0	95.8	90.5	92.0	90.7	90.6	93.6	91.3	90.7
Pulp and paper	261-3	1.4	92.2	97.1	70.0	98.2	82.1	97.7	92.6	94.6	90.7	90.7	96.6	90.9	
Printing and publishing	27	6.1	87.1	89.7	75.2	92.2	83.0	90.4	87.5	86.8	87.0	86.1	85.5	85.0	84.6
Chemicals and products	28	8.7	79.8	87.9	69.9	85.1	70.1	86.8	81.9	82.2	81.1	81.6	81.6	81.8	82.1
Plastics materials	2821	0.7	85.7	102.0	50.6	90.9	63.4	98.9	85.5	90.8	90.9	90.0	90.5		
Synthetic fibers	2823,4	0.4	84.2	93.8	51.7	98.5	64.4	94.5	81.4	86.6	79.9	83.2	78.4	79.8	
Petroleum products	29	1.2	85.1	96.7	81.1	89.5	68.2	90.3	89.9	88.2	86.4	87.9	91.2	90.5	91.2
Rubber and plastics products	30	2.9	83.9	94.0	58.8	90.4	73.5	90.4	87.2	85.4	86.5	87.7	87.0	86.8	86.7
Leather and products	31	0.3	82.3	81.3	67.7	92.4	78.1	88.4	86.9	87.4	88.3	87.1	88.3	89.8	88.6
Mining		7.2	87.3	94.4	88.4	96.6	80.6	87.2	87.2	89.2	88.7	88.8	90.0	88.6	89.0
Metal mining	10	0.4	76.9	90.3	74.4	87.6	43.4	87.2	82.2	81.3	78.5	81.9	84.9	83.3	81.8
Coal	11,12	1.1	87.3	90.8	82.5	95.7	75.4	94.4	90.5	93.5	90.0	92.7	96.7	89.8	92.2
Oil and gas extraction	13	5.0	87.9	96.6	91.9	96.9	82.5	86.6	86.3	88.3	88.8	87.9	88.4	88.4	88.6
Oil and gas well drilling	138	0.8	74.0	93.0	95.3	104.3	50.8	58.8	55.8	68.4	71.3	72.2	70.6	65.3	65.9
Stone and earth minerals	14	0.6	84.6	93.7	73.3	93.3	63.3	94.3	91.0	93.4	92.9	93.6	93.9	92.3	92.2
Utilities		7.5	86.8	95.6	82.5	88.3	76.2	92.3	84.3	84.5	84.7	86.8	86.4	87.4	88.1
Electric	491,3pt	5.6	89.0	99.0	82.7	88.3	78.7	96.2	88.9	90.3	90.7	92.9	91.9	93.2	94.0
Gas	492,3pt	1.8	83.3	93.2	81.0	93.6	70.8	80.3	70.1	66.3	66.1	67.6	68.8	69.4	69.8

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 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, nonelectrical machinery, electrical machinery, transportation equipment, instruments, miscellaneous manufactures, and government owned—and—operated ordnance.

Table 4
INDUSTRIAL CAPACITY: MANUFACTURING, MINING, AND UTILITIES

Item	SIC	Percent change								Capacity indexes Percent of 1987 output						
		Annual rate			December to December					1989 Sep	1990 Apr	May	Jun	Jul	Aug	Sep
		1967- 1989 Ave.	1967- 1975 Ave.	1975- 1989 Ave.	1985	1986	1987	1988	1989							
Total Industry		3.1	3.7	2.6	2.8	2.1	2.0	2.2	2.4	129.0	130.9	131.2	131.5	131.8	132.1	132.4
Manufacturing		3.5	3.9	3.2	4.0	3.2	2.6	2.8	2.9	130.5	132.8	133.2	133.5	133.9	134.2	134.6
Primary processing		2.3	4.0	1.2	1.0	0.3	1.0	2.0	2.4	122.9	124.7	124.9	125.2	125.4	125.7	126.0
Advanced processing		4.1	3.9	4.2	5.4	4.5	3.3	3.2	3.2	134.0	136.6	137.0	137.4	137.8	138.2	138.6
Durable		3.7	3.7	3.7	5.1	3.9	2.6	2.6	2.7	134.7	136.9	137.2	137.6	137.9	138.3	138.6
Lumber and products	24	2.3	2.9	1.9	2.8	4.0	4.6	4.1	2.8	121.7	123.8	124.1	124.4	124.7	125.0	125.3
Furniture and fixtures	25	3.4	4.5	2.6	2.5	2.2	3.4	2.5	2.7	123.3	125.1	125.3	125.5	125.7	125.9	126.2
Stone, clay, and glass products	32	1.6	2.5	1.1	0.7	0.5	1.0	0.9	1.3	128.4	129.4	129.5	129.7	129.8	130.0	130.1
Primary metals		0.0	1.7	-1.2	-1.1	-6.1	-3.5	0.9	1.5	126.5	127.3	127.3	127.3	127.4	127.4	127.5
Iron and steel	331,2	-1.0	0.7	-2.1	-1.7	-9.9	-5.9	1.3	2.1	131.1	132.0	132.0	132.0	132.1	132.1	132.1
Raw steel		-1.1	0.3	-2.1	-1.9	-10.0	-5.9	1.3	1.8	129.7	130.6	130.6	130.7	130.7	130.8	130.8
Nonferrous	333-6,9	1.5	3.6	0.3	-0.1	-0.4	0.4	0.2	0.5	120.1	120.6	120.6	120.7	120.8	120.9	120.9
Primary copper	3331	-0.1	1.8	-1.3	-4.0	-3.3	-1.1	5.0	6.3	142.8	146.4	146.7	147.0	147.3	147.6	147.9
Primary aluminum	3334	1.5	5.2	-0.9	-5.8	-12.7	0.2	1.0	0.3	120.2	120.4	120.4	120.4	120.4	120.4	120.4
Fabricated metal products		1.8	3.1	1.0	0.7	0.5	0.2	0.4	1.5	129.4	130.7	130.9	131.1	131.2	131.4	131.6
Nonelectrical machinery	35	6.9	4.7	8.3	11.0	8.8	4.0	3.5	3.6	149.2	152.7	153.2	153.8	154.4	154.9	155.5
Electrical machinery	36	5.4	6.1	5.0	4.7	4.1	3.3	3.7	3.8	135.2	138.3	138.8	139.2	139.7	140.2	140.6
Transportation equipment		2.7	3.0	2.5	5.2	3.6	3.1	2.2	1.6	131.9	133.6	133.9	134.2	134.5	134.8	135.2
Motor vehicles and parts	371	2.9	4.5	1.9	5.6	2.9	3.7	1.5	0.0	132.1	133.2	133.5	133.8	134.1	134.5	134.8
Autos and light trucks ¹					10.8	5.4	6.0	1.4	-1.5	139.3	140.3	140.7	141.2	141.7	142.1	142.6
Aerospace and misc.	372-6,9	2.3	1.3	2.9	5.0	4.2	2.5	2.9	3.1	131.8	134.0	134.3	134.6	134.9	135.2	135.5
Instruments	38	6.2	7.6	5.4	6.2	4.7	6.0	5.4	5.1	143.0	147.0	147.6	148.2	148.8	149.4	150.0
Miscellaneous	39	2.2	4.4	0.9	-0.3	0.7	1.5	1.9	2.2	137.6	139.5	139.8	140.1	140.4	140.7	141.0
Nondurable		3.2	4.3	2.5	2.4	2.2	2.6	3.1	3.3	125.2	127.6	128.0	128.3	128.7	129.0	129.4
Foods	20	2.8	3.0	2.7	2.4	2.2	2.2	2.5	2.7	129.4	131.4	131.7	132.1	132.3	132.6	132.9
Textile mill products	22	2.2	4.3	0.9	0.9	0.6	2.2	1.7	2.0	115.1	116.4	116.6	116.7	116.9	117.1	117.3
Apparel products	23	1.8	2.3	1.5	1.5	2.6	1.7	2.4	2.3	126.0	127.6	127.8	128.1	128.3	128.5	128.8
Paper and products	26	2.8	3.9	2.0	2.1	2.5	2.1	2.5	2.0	112.9	114.4	114.7	115.0	115.2	115.5	115.7
Pulp and paper	261-3	2.4	3.0	2.1	0.5	2.1	3.2	3.6	2.4	111.8	113.7	114.0	114.3	114.7	115.0	115.3
Printing and publishing	27	3.8	3.0	4.3	5.9	4.4	5.2	5.7	5.6	125.0	129.0	129.5	130.1	130.7	131.3	131.8
Chemicals and products		4.0	6.8	2.3	1.0	1.1	2.4	3.3	4.0	131.2	134.2	134.7	135.1	135.5	135.9	136.4
Plastics materials	2821	7.7	12.7	4.7	1.7	-0.2	5.7	9.8	8.9	122.0	127.6	128.4	129.1	129.9	130.6	131.4
Synthetic fibers	2823,4	4.4	9.7	1.2	0.5	-3.5	1.7	2.9	1.0	112.6	114.6	115.2	115.7	116.2	116.7	117.2
Petroleum products	29	2.0	4.2	0.7	-0.6	1.0	2.5	-1.2	0.7	120.8	121.1	121.1	121.1	121.1	121.1	121.1
Rubber and plastics products	30	5.9	8.6	4.3	5.3	4.4	3.2	4.9	4.4	124.5	127.7	128.1	128.6	129.1	129.5	130.0
Leather and products	31	-3.4	-1.5	-4.5	-5.4	-6.1	-5.8	-4.6	-3.3	119.2	117.4	117.3	117.1	116.9	116.8	116.6
Mining		0.2	-0.1	0.4	-1.0	-2.5	-3.6	-3.8	-1.9	116.5	115.4	115.2	115.1	115.0	114.8	114.7
Metal mining		1.4	0.7	1.8	0.2	-0.2	2.9	14.3	10.7	176.8	187.8	189.5	191.2	192.9	194.6	196.3
Coal	11,12	2.7	2.5	2.8	1.9	1.8	1.8	1.7	1.6	121.0	122.1	122.3	122.4	122.6	122.7	122.9
Oil and gas extraction	13	-0.4	-1.0	0.0	-1.3	-3.1	-5.6	-6.8	-4.5	111.1	108.4	108.0	107.7	107.3	107.0	106.6
Oil and gas well drilling	138	1.9	0.8	2.7	-3.3	-9.9	-16.4	-25.5	-9.1	174.4	167.1	166.3	165.4	164.6	163.8	162.9
Stone and earth minerals	14	1.3	2.6	0.6	-0.2	0.9	1.5	2.3	5.0	125.4	128.6	129.0	129.4	129.8	130.3	130.7
Utilities		3.2	6.0	1.5	0.9	0.8	1.5	2.2	0.7	125.6	126.2	126.4	126.5	126.6	126.7	126.9
Electric		4.5	7.8	2.4	1.8	1.5	2.3	2.2	0.9	120.6	121.5	121.6	121.8	121.9	122.1	122.2
Gas		0.3	2.3	-0.9	-1.9	-1.3	-0.7	2.0	0.1	144.0	144.0	144.0	144.0	144.0	144.0	144.0

1. Series begins in 1977.

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

Item	SIC	Proportion in total IP		Index, 1987=100											
		1987	1989	Seasonally adjusted						Not seasonally adjusted					
				1990 Mar	Apr	May	Jun'	Jul'	Aug'	1990 Mar	Apr	May	Jun'	Jul'	Aug'
Instruments	38	3.26	3.51	115.7	115.8	116.5	115.0	116.1	117.1	114.0	114.1	114.7	117.4	117.6	120.4
Scientific and medical	381-4	2.21	2.41	119.9	120.0	120.0	118.3	118.4	119.7	117.5	117.4	117.7	121.5	121.7	125.2
Photographic equip. & supplies	386	0.94	0.98	106.6	106.5	109.3	105.8	109.1	109.3	105.5	106.3	107.7	107.8	108.4	109.6
Misc. manufactures	39	1.24	1.32	118.6	118.6	119.1	119.6	120.4	122.7	117.7	116.0	116.8	123.5	120.7	130.6
Consumer goods	391,3,4,6	0.65	0.67	115.8	115.4	113.5	112.4	112.6	115.0	115.5	113.3	112.0	117.4	110.0	122.0
Business supplies	395,9	0.59	0.65	121.6	121.8	125.9	128.1	129.7	131.6	120.1	119.0	122.0	130.3	132.5	140.0
Electric utilities	491,3pt	6.01	6.01	109.7	109.7	110.3	113.1	112.1	113.8	105.2	102.0	100.4	115.5	121.8	123.7
Generation		2.55	2.57	112.3	110.3	111.0	115.7	113.8		107.8	102.0	105.1	119.9	123.5	
Fossil fuel		1.45	1.43	104.9	109.0	105.1	106.4	102.8		95.6	95.8	96.3	114.1	119.2	
Hydro and nuclear		1.10	1.15	122.0	112.0	118.8	127.8	128.2		123.8	110.3	116.8	127.7	129.1	
Sales		3.46	3.44	107.8	109.3	109.7	111.2			103.3	101.9	97.0	112.3		
Residential		1.40	1.38	106.4	107.4	108.8	110.9	109.8		105.5	93.1	86.9	106.2	124.3	
Nonresidential		2.06	2.06	108.8	110.5	110.4	111.4			101.8	107.9	103.9	116.5		
Industrial		0.91	0.91	111.3	110.7	108.9	111.3	112.1		104.9	112.5	107.6	115.9	113.2	
Commercial and other		1.15	1.15	106.8	110.4	111.5	111.4	111.2		99.3	104.3	100.9	117.0	121.6	
Gas utilities	492,3pt	1.62	1.54	93.3	95.5	95.2	97.4	99.1	99.9	126.5	99.6	69.6	59.7	58.2	58.5

Table 7
INDUSTRIAL PRODUCTION: GROSS VALUE OF PRODUCTS

Billions of 1982 dollars at annual rates, seasonally adjusted

Item	1982	1989	1989			1990			1990					
			Q2	Q3	Q4	Q1	Q2'	Q3 ^p	Apr	May	Jun'	Jul'	Aug'	Sep ^p
Products, total	1376.8	1899.8	1894.4	1882.3	1893.6	1896.5	1921.8	1935.8	1906.2	1922.2	1937.0	1927.4	1931.2	1948.7
Final products	1084.5	1480.1	1485.5	1473.7	1480.3	1481.2	1507.8	1522.2	1493.9	1506.0	1523.4	1512.9	1517.2	1536.4
Consumer goods	703.7	884.6	884.2	872.6	890.3	892.1	897.9	893.7	883.9	885.9	893.8	888.8	889.1	903.3
Durable	133.3	226.4	229.8	221.7	221.3	215.2	230.5	229.2	222.2	230.6	238.6	227.9	224.9	235.0
Automotive products	65.8	130.8	133.2	125.8	125.3	117.3	132.9	132.6	125.2	133.2	140.3	132.0	127.8	137.9
Other durable goods	67.4	95.7	96.7	95.9	96.0	97.4	97.6	96.7	97.1	97.4	98.3	95.9	97.1	97.1
Nondurable	570.5	658.2	654.4	650.8	669.0	666.9	657.4	664.5	661.6	655.3	655.2	661.0	664.2	668.3
Equipment, total	380.8	595.5	601.3	601.2	590.0	599.1	619.9	628.4	610.0	620.1	629.6	624.1	628.1	633.1
Business and defense	345.5	577.5	583.1	583.1	571.5	580.1	598.8	608.3	589.5	598.9	608.1	603.2	608.3	613.3
Business	278.0	480.5	485.3	485.1	475.8	483.6	502.4	512.2	493.3	502.4	511.6	506.7	512.3	517.7
Defense and space	67.4	97.1	97.8	98.1	95.7	96.5	96.4	96.1	96.2	96.5	96.5	96.5	96.0	95.6
Intermediate products	292.3	409.7	408.9	408.6	413.3	415.3	414.0	413.6	412.3	416.2	413.6	414.5	414.0	412.4
Construction supplies	108.4	159.0	159.3	158.8	160.3	162.1	158.8	158.7	159.4	158.1	158.9	159.3	159.1	157.6
Business supplies	184.0	250.6	249.7	249.8	253.0	253.2	255.3	254.9	252.9	258.1	254.8	255.1	254.9	254.8
Commercial energy products	63.4	80.6	79.6	80.5	84.0	79.9	81.7	81.3	80.1	84.0	80.8	80.7	81.0	82.1

Table 8 (continued)
ELECTRIC POWER USE: MANUFACTURING AND MINING

Item	SIC	1987 Billion KWH	Index, 1987 = 100											
			Seasonally adjusted						Not seasonally adjusted					
			1990 Mar	Apr	May	Jun ^f	Jul ^f	Aug ^p	1990 Mar	Apr	May	Jun ^f	Jul ^f	Aug ^p
Chemicals and Products (cont.)														
Synthetic materials	282		105.7	102.9	106.7	105.1	105.9	104.7	100.9	103.9	105.7	107.9	109.0	106.3
Plastics materials	2821		102.1	102.3	105.2	106.0	101.3	102.0	99.3	102.9	104.5	105.3	103.4	101.0
Drugs and medicines	283		102.7	109.2	109.7	106.9	102.3	109.5	94.4	102.6	105.9	115.9	114.4	122.4
Soap and toiletries	284		114.2	117.7	109.7	111.0	114.8	115.9	112.1	111.1	106.3	115.0	122.6	125.9
Industrial organic chemicals	286		104.4	108.5	107.9	106.2	104.9	106.2	101.3	105.7	106.5	106.3	107.4	111.5
Agricultural chemicals	287		103.9	98.7	103.0	102.3	106.7	104.0	102.1	103.4	104.4	103.4	102.7	100.7
Petroleum products														
	29		102.8	98.1	97.1	97.0	97.9	100.3	94.4	92.8	95.1	98.7	102.3	105.1
Rubber and plastics products														
	30		109.9	109.4	110.8	112.7	114.2	113.2	110.0	109.1	111.4	115.9	112.2	116.2
Tires	301		108.4	106.0	109.1	108.2	110.4	109.5	104.0	105.5	109.9	113.0	110.7	117.4
Rubber products, nec	306		104.2	100.2	103.2	102.6	105.7	109.5	104.4	100.0	102.4	106.8	102.8	111.6
Plastics products, nec	307		107.1	107.6	108.8	110.8	111.2	110.5	108.1	106.8	109.1	114.0	109.9	112.8
Leather and products														
	31		99.2	98.3	102.5	96.9	105.5	99.4	98.4	95.8	101.0	102.1	100.1	107.8
Shoes	314		91.7	90.5	94.7	92.9	106.3	95.6	91.0	86.9	92.2	97.7	100.5	108.1
Stone, clay, & glass products														
	32		100.9	101.0	103.4	101.8	102.2	101.7	96.1	100.4	104.3	104.9	102.3	106.4
Flat glass	321		108.1	109.7	118.5	117.5	120.6	122.6	106.4	108.0	116.0	119.9	122.0	123.8
Pressed and blown glass	322		98.3	97.8	99.4	95.4	98.9	100.2	97.6	97.3	100.9	98.9	99.5	104.1
Cement	324		93.5	96.7	98.8	100.1	98.0	97.5	81.1	94.9	104.3	104.9	100.9	105.2
Structural clay products	325		110.2	106.7	106.7	107.6	108.2	106.9	105.3	107.0	106.0	108.7	106.2	108.0
Concrete products	327		98.9	102.1	100.5	99.9	99.6	99.3	96.5	101.3	99.6	101.2	99.4	101.2
Primary metals														
	33		112.2	112.6	111.3	112.8	115.3	114.8	114.8	113.4	114.7	112.7	112.4	112.8
Basic steel and mill products	331		111.4	115.6	111.9	113.2	119.9	119.2	117.2	118.1	117.6	113.6	116.0	116.5
Iron and steel foundries	332		102.0	104.0	106.2	107.7	109.0	106.8	105.7	106.7	108.8	111.8	102.0	103.0
Primary nonferrous metals	333		94.7	91.4	91.5	93.0	87.1	89.5	94.8	90.8	94.7	95.2	87.7	88.1
Aluminum	3334		113.0	111.6	111.8	113.5	113.7	114.2	114.9	111.6	114.4	111.6	114.5	114.3
Nonferrous foundries	336		110.8	112.1	113.8	111.3	115.1	111.7	113.7	110.4	113.2	112.9	108.3	112.4
Fabricated metal products														
	34		105.3	105.9	108.0	106.9	107.9	110.0	106.2	105.2	106.6	109.0	108.0	112.1
Metal containers	341		118.2	118.3	113.3	109.0	113.5	115.4	116.4	116.4	113.4	116.5	118.0	119.3
Hardware, tools, and cutlery	342		105.4	109.8	105.4	106.9	108.6	113.5	105.6	107.7	104.7	109.7	108.2	115.9
Structural metal products	344		100.4	101.5	102.6	101.1	99.4	101.2	100.0	100.4	100.3	100.6	99.3	101.2
Fasteners	345		97.3	90.5	97.3	96.3	96.5	100.5	99.6	91.1	95.1	99.8	97.6	104.1
Metal stampings	346		102.9	104.2	111.4	109.7	113.5	116.7	106.8	105.2	110.7	112.3	108.1	114.3
Nonelectrical machinery														
	35		111.0	110.1	111.3	113.5	111.6	111.8	109.3	106.7	109.6	116.0	114.8	118.4
Engines and turbines	351		132.9	133.2	143.4	116.2	113.1	117.3	133.6	126.7	135.8	121.2	117.5	122.0
Farm	352		103.5	105.9	107.1	102.9	101.3	104.5	108.7	105.0	105.6	104.0	99.8	106.6
Construction and allied	353		102.6	100.0	101.0	98.0	100.7	100.5	99.4	94.5	98.4	100.9	104.4	104.3
Metalworking	354		111.9	110.3	113.8	111.3	113.4	116.3	111.9	107.4	109.1	114.5	116.8	122.4
Special industry	355		104.5	106.7	107.1	104.6	108.5	108.7	105.5	103.0	103.4	107.6	110.7	116.7
General industrial	356		100.6	102.2	104.8	105.2	107.3	109.7	99.7	100.8	103.4	108.3	109.0	114.9
Office and computing machines	357		111.9	106.6	108.9	117.7	110.7	110.5	108.3	101.6	108.3	122.1	115.4	121.4
Service industry machines	358		115.2	113.9	115.6	121.2	118.0	120.6	112.9	110.7	114.5	127.4	126.5	127.2
Electrical machinery														
	36		108.0	109.1	108.3	108.0	108.1	109.0	105.8	105.5	106.6	112.2	112.5	115.0
Electrical distribution	361		98.7	105.2	107.7	99.6	107.5	105.5	99.1	100.1	105.0	105.0	106.3	112.1
Electrical industrial	362		109.0	108.2	109.1	105.7	107.9	109.2	109.6	107.3	108.9	109.4	110.3	111.2
Household appliances	363		93.9	94.3	96.1	90.6	96.2	96.2	95.3	92.0	96.7	96.3	93.5	98.6
Lighting and wiring products	364		109.1	105.9	108.3	108.9	110.5	108.8	110.3	107.4	106.0	113.0	110.3	106.5
TV and radio sets	365		110.4	108.9	111.7	106.6	106.0	107.3	105.0	102.1	108.8	111.2	108.7	119.3
Communication equipment	366		101.2	100.6	98.5	101.5	96.6	96.8	95.4	96.3	95.2	104.5	104.8	105.8
Electronic components	367		113.0	114.8	112.0	113.6	112.7	113.4	110.0	110.5	110.0	118.3	118.6	121.1
Transportation equipment														
	37		98.7	101.7	103.4	102.3	105.0	105.3	98.3	99.2	103.7	107.0	104.9	110.6
Motor vehicles and parts	371		92.3	93.8	96.8	96.1	100.3	98.4	93.6	92.3	97.8	101.1	96.4	101.7
Aircraft and parts	372		103.1	110.9	108.4	107.3	111.0	112.9	100.6	106.6	106.1	110.9	115.6	119.3
Ships and boats	373		108.8	104.2	111.6	110.0	112.6	116.0	110.9	108.2	108.6	112.7	115.4	114.2
Instruments														
	38		113.6	115.0	116.6	111.0	111.1	113.1	110.1	108.9	112.7	114.9	118.7	125.4
Photographic equip. & supplies	386		101.6	109.3	108.1	97.0	102.3	104.3	101.4	101.1	106.0	101.1	106.7	113.5
Miscellaneous manufactures														
	39		108.9	110.3	112.5	112.3	116.2	115.9	108.4	107.2	108.8	115.2	116.8	123.0
SUPPLEMENTARY GROUPS														
Total, excluding nuclear nondefense			107.0	107.2	108.3	107.5	109.2	109.6	105.7	106.0	108.0	110.3	109.6	112.6
Utility sales to industry			108.6	108.6	109.5	108.8	109.6	110.4	107.3	107.6	109.7	111.4	110.2	113.4
Industrial generation			113.7	107.4	113.4	111.6	112.5	111.6	115.6	106.2	110.5	108.9	113.8	114.2

*Industrial electric power use in billions of kilowatt hours for 1987 will be provided when data are available from the Bureau of the Census.

Explanatory Note

The **Industrial Production and Capacity Utilization** release reports measures of output, capacity, and capacity utilization in the manufacturing, mining, and electric and gas utilities industries. Survey data on electric power use in manufacturing and mining also are included. Data shown the release are available on the day of issue through the Department of Commerce's online Economic Bulletin Board (202-377-3870). Historical data are available on magnetic tape from the National Technical Information Service (703-487-4650).

Industrial Production

Coverage. The industrial production index (IP) measures output in the manufacturing, mining, and electric and gas utilities industries. The total IP index is constructed from 250 individual series. These individual series are classified and grouped two ways: 1) market groups (shown in table 1), such as consumer goods, equipment, intermediate products, and materials, from which the seasonally adjusted total index is derived; and 2) industry groups (shown in tables 2 and 6), such as two-digit Standard Industrial Classification (SIC) industries and major aggregates of these industries, for example, durable and nondurable manufacturing, mining, and utilities. The 1977 SIC is the basis for industry classification of IP.

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 comprises 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 Bureau of Mines; 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. Physical product data, such as tons of steel or barrels of oil, are obtained from private trade associations, as well as the government agencies listed above; data of this type are used to estimate monthly IP where possible and appropriate. When suitable physical product data are unavailable, estimates of output are based on either production-worker hours, kilowatt hours, or a combination of the two. Hours of production workers are collected in the monthly establishment survey conducted by the Bureau of Labor Statistics. The kilowatt hours data 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 (censuses, annual surveys, and the like); 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 in chronological segments that are linked together to form a continuous index expressed as a percentage of output in a comparison-base year (currently 1987). Each segment, which usually spans five years, is a Laspeyres quantity index showing changes in quantities with prices (Census value added per unit of output) held at base-year values for the segment. For the period from 1987 to the present, IP is aggregated on the basis of 1987 value-added weights. The aggregation of the index for the 1982-86 period is based on 1982 weights, while 1977 weights are used for the 1977-81 period. The other weight years in the postwar period are 1972, 1967, 1963, 1958, 1954, and 1947. The 1987 value-added weights used to aggregate the index are shown in the first column of tables 1, 2, and 6 under the heading "Proportion in total IP - 1987". To the extent that a given industry grows faster (slower) than the total index after 1987, its current proportion will rise (fall). Proportions for the most recent complete year of data are shown in the second column of tables 1, 2, and 6.

Seasonal adjustment. Individual series are seasonally adjusted by the X-11 Arima Method, which was developed at Statistics Canada. The current seasonal factors are based on data through 1988. Individual series and major aggregates are seasonally adjusted independently. The seasonally adjusted total index is calculated by aggregating the seasonally adjusted major market groups, and may not precisely equal an aggregation of the seasonally adjusted industry groups. In addition, because the seasonal adjustment of aggregates is done separately, the seasonally adjusted value of a given market or industry group may not be equal to an aggregation of its seasonally adjusted components.

Reliability. The average revision to the level of the total IP index, without regard to sign, between the preliminary estimate and its third revision (or from the first and the fourth estimates) was 0.36 percent during the 1972-88 period. The average revision to the percent change in total IP, without regard to sign, from the first to the fourth estimates was 0.27 percentage point during the same period. In most cases (about 85 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. In some cases, components may not add to totals because of independent rounding. In addition, the published percent changes are calculated from indexes with three digits of precision to the right of the decimal point, and may not be the same as percent changes calculated from the rounded indexes shown in the release.

References. *Industrial Production - 1986 Edition* contains a more detailed description of the methods used to compile the index, plus a history of its development, a glossary of terms, and a bibliography. To obtain *Industrial Production - 1986 Edition* at a price of \$9.00 per copy, write to Publication Services, Mail Stop 138, Board of Governors of the Federal Reserve System, Washington, D.C. 20551. The 1990 revision to the index is described in Kenneth Armitage and Dixon A. Tranum, "Industrial Production: 1989 Developments and Historical Revision", *Federal Reserve Bulletin*, Vol. 76 (April 1990), pp. 187-204.

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 74 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 stock.

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, 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. Value-added proportions are used to weight the individual capacity indexes in aggregations in the same manner as individual IP series are aggregated to the total index of industrial production. 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 base-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 mining, manufacturing, and utilities as a whole, and for total manufacturing, utilization rates as high as 90 percent have been exceeded only in wartime.

References. The basic methodology used to estimate capacity and utilization is discussed in Richard D. Raddock, "Revised Federal Reserve Rates of Capacity Utilization," *Federal Reserve Bulletin*, Vol. 71 (October 1985), pp. 754-66. The 1990 revision of capacity and capacity utilization is described in Richard D. Raddock, "Recent Developments in Industrial Capacity and Utilization," *Federal Reserve Bulletin*, vol. 76 (June 1990), pp. 412-35.

Electric Power

Electric power (kilowatt hour) data 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 1987. 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 1987 censuses of those industries. The supplementary group, "Total, less nuclear nondefense," is shown separately because the nondefense nuclear material series (part of SIC 2819) accounts for a disproportionately large part of total electric power use. Because the value-added proportion for this industry 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.

Release Schedule for 1990

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