

---

# FEDERAL RESERVE statistical release

---



**G.17 (419)**

**For release at 11:00 a.m. (EST)  
December 5, 2000**

## **Industrial Production and Capacity Utilization: A Revision**

The Federal Reserve has revised the index of industrial production (IP) and the related measures of capacity and utilization for the period 1992 to October 2000. In the third quarter of 2000 (2000:Q3), the revision places the production index at 148.4 percent of output in 1992, compared with 145.8 percent reported previously; it places the 2000:Q3 capacity index at 180.1 percent of output in 1992, compared with 177.1 percent reported previously. Because IP was revised up slightly more than capacity over this period, the rate of industrial capacity utilization—the ratio of production to capacity—was revised up 0.1 percentage point, to 82.4 percent for 2000:Q3 (chart 1 and table 1).

The updated measures of industrial production reflect the incorporation of newly available, more comprehensive source data, the introduction of new series, and changes in methods. For this revision, two new years of comprehensive data on manufacturing became available; otherwise, the statistical updating was typical of annual revisions.

The statistical revisions to the IP index are principally derived from the inclusion of information contained in annual reports issued by the Bureau of the Census: the 1997 Census of Manufactures, the 1998 Annual Survey of Manufactures, and selected 1999 Current Industrial Reports. Revised annual data from the U.S. Geological Survey on minerals (except fuels) for 1998 and new data for 1999 have also been introduced.

The capacity indexes and capacity utilization rates now incorporate the preliminary results from the 1999 Survey of Plant Capacity, issued by the Bureau of the Census; the survey covers manufacturing and provides data for the fourth quarter of the year. The revised measures also include newly available 1999 data on industrial capacity, expressed in physical units, from the U.S. Geological Survey, the Department of Energy, and other organizations.

New production measures were introduced for individual series in four industries: communications equipment, computer and office equipment, drugs and medicines, and bearings. The new series measure production using detailed information on the major products of the industries. The revision also incorporates improved source data for three existing production series: electricity generation, electrical housewares, and truck trailers.

With this revision, the weights used to calculate the production and capacity aggregates change every month, rather than once a year. The refined aggregation method begins with data for 1992 and has a small effect on the intra-year changes in monthly IP. Finally, the definitions of advanced- and primary-processing industries were modified; the change alters the utilization rates for these groups in the recent period.

## **Results of the Revision**

Total industrial output increased 5.4 percent per year, on average, over the 1996–2000:Q3 period. The rates of increase in output and capacity are now estimated to have been more rapid than previously shown. For most manufacturing industries, the annual reports issued by the Bureau of the Census implied stronger output growth in 1997 and 1998 than had been previously reported. Textiles and industrial machinery and equipment,

which includes computers, are the only two-digit industry groups whose production in 2000:Q3 is now lower than shown previously. Within industrial machinery and equipment, the output of the computer industry was lowered noticeably in 1998 because of the inclusion of the new Census data.

The Survey of Plant Capacity indicated that the factory operating rate was higher in the fourth quarter of 1999 than previously estimated. The revised utilization rate for manufacturing was 81.6 percent in 2000:Q3, a level 0.5 percentage point more than the 1967–99 average. After having incorporated the revised production indexes and new information on manufacturing capital spending, manufacturing capacity is now estimated to have increased 5.1 percent in 1999 and to be increasing 5 percent in 2000 (here and in subsequent references, growth rates for 2000 are measured from the fourth quarter of 1999 to the third quarter of 2000 and annualized). The previous estimates reported that manufacturing capacity was growing 1/2 percentage point more slowly in 2000 than in 1999.

The capacity utilization rate for mining was revised up, on balance, while the rate for utilities in 2000:Q3 was slightly lower than previously reported.

### **Production by Market Groups**

After having been held down in 1998 by aftershocks from economic turmoil in Asia, growth in industrial production rebounded in 1999 and accelerated further in 2000. In 1999, robust domestic demand, a rebound in foreign demand, and the easing of import competition combined to boost the change in IP over the four quarters of the year, to 5.1 percent. IP has risen 6.0 percent in 2000, with all the acceleration in the first half of the year; output growth slowed noticeably in the third quarter. Although the acceleration in 1999 was fairly broad-based, the pickup in the first half of 2000 was concentrated in the production of high-technology goods (table 5).

Among major market groups, the revised indexes show that the production of consumer durable goods advanced strongly from 1997 to 1999 and has fallen back in 2000. The decline in the index over the first three quarters of 2000 reflected declines in the production of automotive products and other durable goods. The output of automotive products has edged down 1.3 percent this year from the high level reached in 1999. The output of other consumer durables has fallen so far in 2000, with weakness in appliances, home electronics, and miscellaneous consumer durables partly offset by an increase in the production of carpeting and furniture.

After stabilizing in 1999 from a broad-based decline in the second half of 1998, the production of nondurable consumer goods has increased 2.4 percent in 2000, pulled up by rebounds in the production of both energy and non-energy items. The rise in the output of non-energy nondurable consumer goods in 2000 has been led by rebounds in the production of paper and food and by continued gains in the production of consumer chemicals—notably pharmaceutical preparations.

After having decelerated in response to weak export demand and heightened import competition in 1998–99, the output of business equipment accelerated in 2000, increasing at an annual rate of 12.6 percent. This year's pickup has reflected not only another robust gain in the production of information processing and related equipment but also rebounds in the production of industrial equipment and other business equipment; the output of transit equipment has fallen at a 5.4 percent rate this year, after a drop of nearly 9 percent in 1999. Among other types of equipment, production of defense and space equipment and of manufactured homes have declined further in 2000, while the drilling of oil and gas wells increased a brisk 22.5 percent, largely in response to higher oil prices.

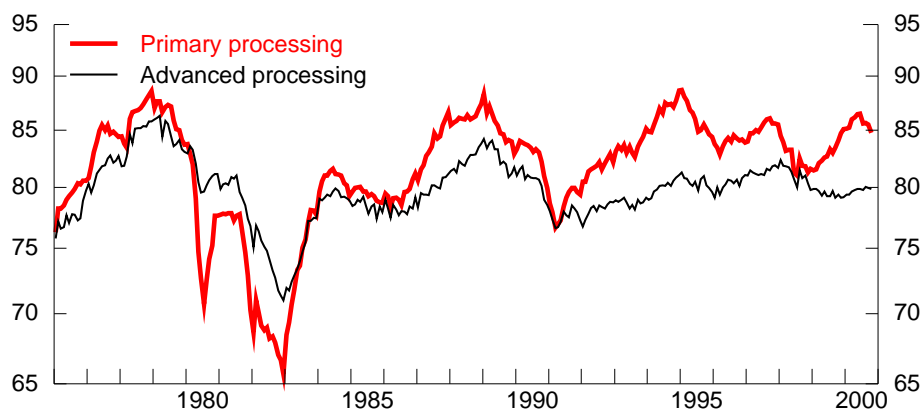
After posting growth rates of 4.0 percent or more for four years, the output of construction supplies, which peaked in the spring, has risen at only a 2.0 percent rate in 2000, a deceleration that has largely reflected the slowdown in residential construction. In contrast, the output of durable goods materials has accelerated further as a result of the surge in the production of semiconductor chips; the output of other durable goods materials has been little changed, on balance, so far this year. The production of nondurable goods materials has dropped back 4.2 percent in 2000; the widespread declines in the underlying series stem, in part, from heightened foreign competition. The output of energy materials has increased modestly so far this year.

## Capacity and Capacity Utilization

The growth of manufacturing capacity is now estimated to have accelerated from 6.1 percent in 1996 to 7.2 percent in 1998 and then to have eased to around 5.0 percent in 1999 and 2000 (table 7). The most rapid expansion of capacity was concentrated in durable manufacturing, especially in the computer, communications equipment, and semiconductor industries. Over the 1997–2000:Q3 period, the capacity increase in these industries averaged more than 40 percent per year, while the capacity increase in the rest of manufacturing averaged only about 3.0 percent per year. The capacity expansion in mining and utilities was slower. In particular, the capacity at mines contracted over the 1998–2000:Q3 period after having risen only 1.9 percent in 1997—a pattern that reflected changes in the capacity for oil and gas well drilling. An increase in capacity at utilities moved up from 1.0 percent in 1997 to more than 3.0 percent in 2000—a pickup that reflected the expansion of electricity generating capacity.

The rate of manufacturing capacity utilization—the ratio of output to capacity—was revised up 0.3 percentage point in the fourth quarter of 1998, 0.6 percentage point in the fourth quarter of 1999, and 0.2 percentage point in the third quarter of 2000 (table 8). Utilization in manufacturing in the third quarter of this year was 81.6 percent, a level 0.5 percentage point more than the 1967–99 average. The utilization rate for primary processing industries increased throughout 1999 and into 2000, rising above 86 percent (in the second quarter) for the first time since 1995. In contrast, the operating rate for advanced-processing industries fell though most of 1999 before picking up some this year.

In this revision, the definitions of advanced- and primary-processing industries were modified to more accurately reflect the distinction between industries that produce final products and those producing goods for further processing. Specifically, the measures for production, capacity, and capacity utilization in primary processing now include the series for semiconductors and related electronic components (SIC 3672–9) and for motor vehicle parts (SIC 3714); previously, these industries were included in the measures for advanced-processing industries.<sup>1</sup>



Utilization rates for the modified aggregates are shown in the chart above. The utilization rate for primary-processing industries averaged 82.1 percent from 1967 to 1999, and the rate for advanced-processing industries averaged 80.6 for the same period. These long-term averages are about the same as those for the previously published measures. In more recent periods, capacity utilization rates for the modified aggregates differ from the measures that were previously reported: The operating rate for advanced-processing industries in the third quarter of 2000:Q3 is now 79.9 percent, below the long-term average and lower than the previously published rate.

1. The new utilization rates for primary and advanced processing were recomputed from January 1967 on and spliced to the earlier aggregates from January 1948 to December 1966. The new production and capacity indexes for primary and advanced processing begin with data for January 1967.

Primary-processing industries are now shown operating at 85.6 percent in the same period, above their long-term average and higher than previously reported.

After having fallen sharply between the fourth quarters of 1997 and 1998, utilization in mining rose more than 2.5 percentage points from 1998:Q4 to 2000:Q3. In the third quarter of 2000, operating rates in mining and gas utilities were at below-average levels; in contrast, the rate of utilization in electric utilities was 93.6 percent, still a high level.

### **Technical Aspects of the Annual Revision**

The revision incorporated the updating of the comprehensive annual data and of the revised monthly source data used in the estimation of production, capacity, and utilization. More up-to-date results were obtained from the 1997 Census of Manufactures, the 1998 Annual Survey of Manufactures, the 1999 Survey of Plant Capacity, other annual industry reports, recent information on prices, and revised monthly source data on physical production and on labor and electricity inputs.<sup>2</sup> Along with the individual production series and seasonal factors, the annual value-added weights used in aggregating the indexes to market and industry groups were also updated.

The Bureau of the Census reported its 1997 and 1998 data on industry output according to the new North American Industrial Classification System (NAICS). Before being included in the IP index, the manufacturing data for both years were placed on the 1987 Standard Industrial Classification (SIC) basis. The conversion was developed from information provided by the Census.

### **Changes to Individual Production Series**

In this revision, the production indicators for several industries have been improved. Output in three of the new industries (telephone and telegraph apparatus, computer printers, and pharmaceutical preparations) are now measured as chain-type quantity indexes that are calculated using highly detailed monthly or quarterly physical product data obtained from industry sources. In addition, the bearings industry is now represented by a weighted combination of unit bearings counts, and the electric houseware industry is represented by deflated shipments.

The production of telephone and telegraph apparatus (SIC 3661) is now based on two components: a series for routers, switches, and hubs—computer equipment used for local-area networks (LANs)—and a series for all other telephone and telegraph apparatus. The new index for LAN equipment is based on (1) quarterly data from Dataquest on the revenue and unit counts of sales of different types of these devices and (2) annual price indexes for routers and switches developed from hedonic regressions that used data from a variety of sources. The incorporation of the new index for LAN equipment into the broader IP index for communications equipment (SIC 366) resulted in a faster rise in output in recent years than had been shown by the previously published index. The monthly indicator for the other component of telephone and telegraph apparatus continues to be production-worker hours.

Similarly, the production of computer and office equipment (SIC 357) is now measured as the aggregate of three components: Computers, computer printers, and other computer and office equipment. The index for computer output is based on the data that previously were used to measure the production of computer and office equipment as a whole; these data are highly detailed quarterly estimates from Dataquest on the revenue and unit count of sales of personal computers, notebook computers, and workstations/servers.

The revision introduces a new index for computer printers based on similar data—that is, highly detailed quarterly figures on the revenue and unit count of sales of computer printers, also from Dataquest. The

---

2. Information about the sources of monthly data used to calculate the indexes can be found in table 1, “Industry structure of industrial production: classification, value-added weights, and description of series,” on the Board’s web site at [www.federalreserve.gov/releases/g17/About.htm](http://www.federalreserve.gov/releases/g17/About.htm).

index for other computer and office equipment is represented by combining the data for computers and computer printers.

This revision also includes a new method for estimating the production of pharmaceutical preparations (SIC 2834). The production of drugs and medicines (SIC 283) is now measured as the aggregate of two components: pharmaceutical preparations and other drugs and medicines. The production index for pharmaceutical preparations is based on monthly data from IMS-Health covering dollar shipments and price measures for 500 product classes. IMS-Health provided chain-type price indexes for each product class that it constructed using highly detailed product data; we then used these indexes to create a chain-type index for pharmaceutical preparations as a whole. The other drugs and medicines series (medicinals, botanicals, diagnostic substances, and biological products—SIC 2833,5,6,9) is derived from Bureau of Labor Statistics monthly data on production-worker hours and productivity trends determined by annual output data.

We have also improved the production estimates for two other industries by obtaining and incorporating new source data. The production of electrical housewares (SIC 3634) is now measured using data provided by the Association of Home Appliance Manufacturers; the production of ball and roller bearings (SIC 3562) is now measured using quarterly data from the American Bearing Manufacturers Association. Previously, these series were derived from monthly input data.

Finally, our measure for electric power generation (SIC 491) has been expanded to include electricity generation by plants owned by non-utilities (the so-called “power brokers”), a growing segment of this industry. Finally, the source data for three other physical product series have changed. For two series—textiles (SIC 226) and metal cans (SIC 341), the sources now report data quarterly, rather than monthly. The source for the production of truck trailers (SIC 3715) is now Americas Commercial Transportation Research.

## **Aggregation and Weights**

This revision includes a refinement to the method used for aggregating industrial production. Previously, the aggregate industrial production indexes were annually weighted chain-type indexes with annual weights that were reestimated in the middle of the year.<sup>3</sup> With the publication of this revision, the weights change monthly rather than at midyear for the period since July 1992. This change affects industry weights within each year and does not affect weights from one year to the next.

The value-added weights for the aggregation of IP and capacity utilization, which are derived from annual estimates of industry value added, were updated and extrapolated. Reports from the 1997 Census of Manufactures and the 1998 Annual Survey of Manufactures, as well as revenue and expense data reported by the Department of Energy and the American Gas Association, provided industry value-added data for selected manufacturing industries and utilities through 1998. The latest value-added data for mining came from reports from the Census of Mineral Industries for 1997. Generally, the unit value-added measures track broad changes in corresponding producer prices. The weights required for aggregating IP in the most recent period are estimated from available data on producer prices through the most recent month.

## **Revised Monthly Data**

The monthly physical product data that are used to measure the monthly movements of many IP indexes have been updated to capture data that became available after the closing of the regular four-month reporting window. Monthly data on production-worker hours or sales of electric power in kilowatt-hours to industry groups, along with estimates of trends in output per worker-hour or kilowatt-hour, are used to indicate the

---

3. The aggregation procedures are described in Carol Corrado, Charles Gilbert, and Richard Raddock, “Industrial Production and Capacity Utilization: Historical Revision and Recent Developments,” *Federal Reserve Bulletin*, vol .83 (February 1997), pp. 67–92.

monthly change in output for many individual IP indexes. The Bureau of Labor Statistics benchmark of the employment data for March 1999 was incorporated in this revision. Revised data on the sales of electricity to industries since 1996 were incorporated as well. Large upward revisions in the reported data for 1999 generated a 1.3 percentage point upward revision to the change in electric power use that year; revisions to data for earlier years were small (table 10). Seasonal factors for all series were reestimated using more recent data.<sup>4</sup>

## Measurement of Capacity

The initial step in constructing a capacity index for an individual industry is to divide a production index by a utilization rate obtained from a survey for the end-of-year period, thereby obtaining a preliminary, implied end-of-year index of capacity. Those preliminary indexes are expressed, like the indexes of industrial production, as percentages of production in 1992, and they give the general level and trend of the individual capacity estimates.

Once the preliminary implied capacity indexes are calculated, measures of physical capacity or of capital input are used to refine the annual movements in capacity and to extrapolate the annual changes in the capacity indexes beyond the most recent Census survey date. For most manufacturing industries, physical measures of capacity are not available; in these cases, the annual changes in the capacity estimates are related to the changes in an industry's capital input. The capital input measures are developed principally from investment data reported in the Annual Survey of Manufactures and Census of Manufactures; also used were revised estimates of business investment from the Bureau of Economic Analysis and its deflators by asset type through mid-2000.

### Data Availability and Publication Changes

Files containing the revised data and the text and tables from this release are available on the Board's web site, at [www.federalreserve.gov/releases/g17](http://www.federalreserve.gov/releases/g17), and on diskettes from Publications Services (telephone 202-452-3245). The revised data will also be available through the STAT-USA web site of the Department of Commerce ([www.stat-usa.gov](http://www.stat-usa.gov)). Further information on these revisions is available from the Board's Industrial Output Section (telephone 202-452-3197).

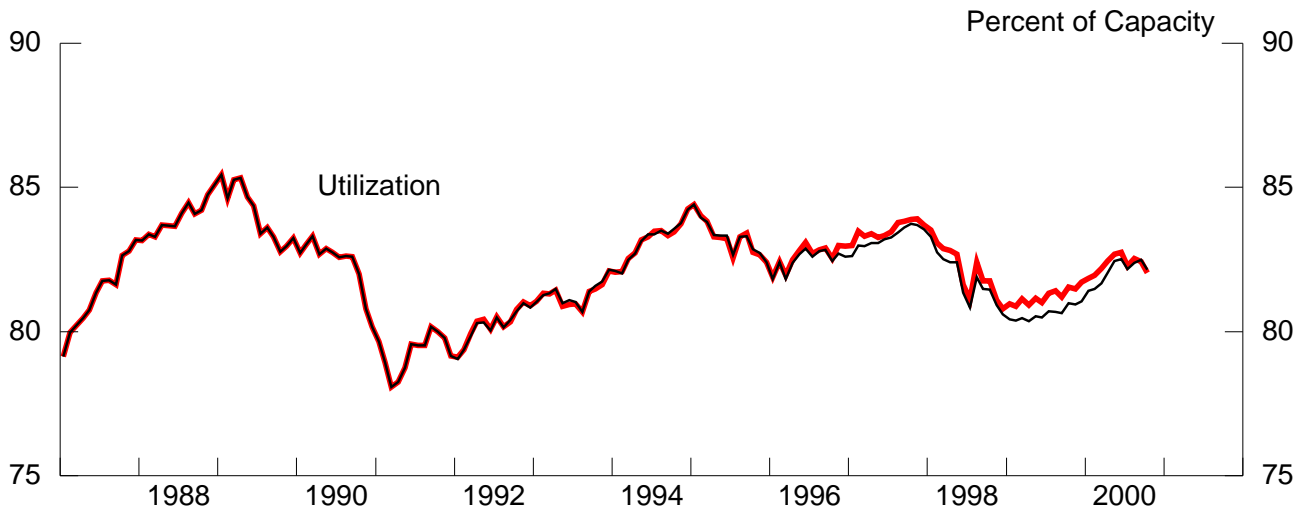
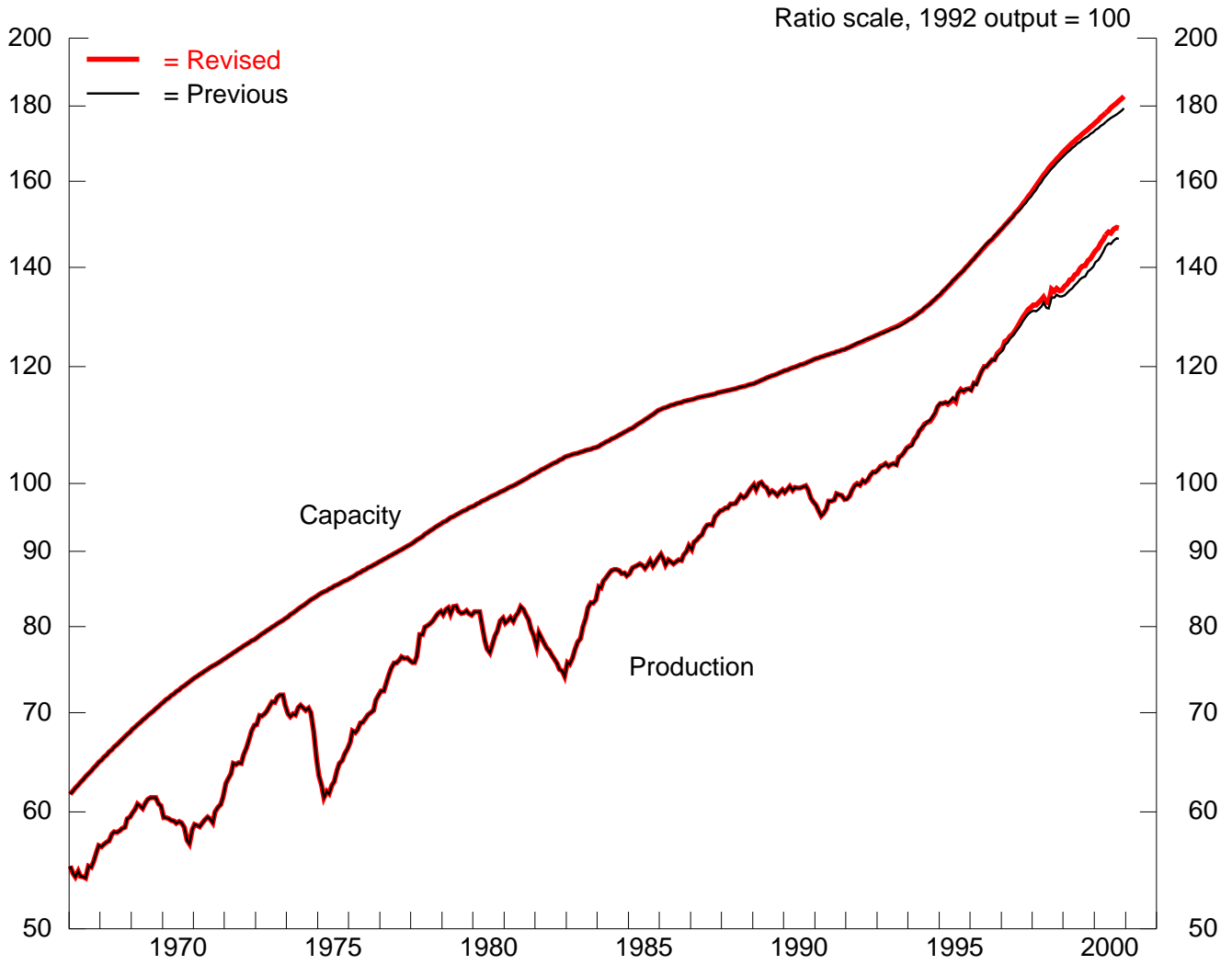
A document with printed tables of the revised estimates of series shown in the G.17 release is available upon request to the Industrial Output Section, Mail Stop 82, Division of Research and Statistics, Board of Governors of the Federal Reserve System, Washington, DC 20551.

An expanded version of this release will be published in a forthcoming article in the Federal Reserve Bulletin.

---

4. Seasonal factors for the production worker hours were based on data through October 2000; factors for the electric power series were reestimated using data through May 2000; and factors for the monthly physical product series were based on data through June (or later in the summer) 2000.

# 1. Industrial production, capacity, and utilization



**Table 1**  
**INDUSTRIAL PRODUCTION, CAPACITY AND UTILIZATION: 1988–2000<sup>1</sup>**

**TOTAL INDUSTRY**

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>2</sup>
<b>Industrial Production, Percent Change</b>																	
1988	.1	.3	.0	.6	.1	.1	.7	.5	-.4	.3	.8	.5	3.2	3.1	3.9	3.6	4.5
1989	.6	-.8	.9	.2	-.6	-.2	-1.0	.4	-.2	-.5	.4	.5	3.8	.5	-4.4	-.1	1.8
1990	-.5	.5	.5	-.6	.4	.0	.0	.2	.1	-.6	-1.3	-.6	2.0	.6	1.0	-5.8	-.2
1991	-.5	-.8	-.9	.3	.8	1.2	.1	.1	1.0	-.1	-.1	-.6	-8.3	1.5	6.2	1.1	-2.0
1992	.1	.5	.9	.7	.3	-.2	.7	-.3	.4	.7	.5	.0	1.0	6.5	2.4	5.0	3.1
1993	.4	.5	.2	.3	-.5	.3	.2	-.2	1.1	.3	.4	.8	3.8	1.5	1.9	6.2	3.5
1994	.2	.3	.8	.5	.8	.4	.6	.3	.1	.5	.7	1.0	5.5	7.7	5.8	6.3	5.4
1995	.6	-.1	.2	-.2	.4	.4	-.4	1.3	.6	-.4	.3	.1	6.0	1.1	4.4	2.9	4.8
1996	-.2	1.1	-.1	1.1	.8	.8	.0	.6	.5	.0	1.0	.4	2.8	9.2	5.4	5.3	4.6
1997	.5	1.0	.2	.6	.3	.6	.7	.9	.6	.6	.6	.3	7.6	6.1	7.9	7.3	6.8
1998	.4	.0	.3	.5	.4	-.7	-.1	2.1	-.3	.5	-.4	.1	3.6	3.0	3.4	2.9	4.9
1999	.6	.3	.7	.1	.7	.2	.8	.4	.1	.8	.3	.7	3.9	4.9	5.8	5.7	4.2
2000	.5	.5	.7	.7	.7	.5	-.2	.7	.2	-.1			6.7	7.9	3.5		
<b>Industrial Production</b>																	
1988	95.9	96.2	96.3	96.8	96.9	97.0	97.6	98.1	97.8	98.0	98.8	99.3	96.1	96.9	97.8	98.7	97.4
1989	99.8	99.0	100.0	100.2	99.6	99.4	98.4	98.8	98.6	98.2	98.6	99.0	99.6	99.7	98.6	98.6	99.1
1990	98.6	99.1	99.6	99.0	99.4	99.3	99.3	99.5	99.6	99.1	97.7	97.2	99.1	99.2	99.5	98.0	98.9
1991	96.7	95.9	95.0	95.4	96.1	97.2	97.3	97.4	98.4	98.3	98.1	97.5	95.9	96.2	97.7	98.0	97.0
1992	97.6	98.1	99.0	99.7	100.0	99.7	100.4	100.2	100.5	101.3	101.8	101.8	98.2	99.8	100.4	101.6	100.0
1993	102.2	102.7	102.9	103.2	102.7	102.9	103.2	103.0	104.1	104.4	104.9	105.7	102.6	102.9	103.4	105.0	103.5
1994	105.9	106.2	107.1	107.6	108.5	109.0	109.6	110.0	110.2	110.7	111.5	112.6	106.4	108.4	109.9	111.6	109.1
1995	113.3	113.2	113.4	113.1	113.6	114.0	113.6	115.1	115.7	115.3	115.7	115.9	113.3	113.6	114.8	115.6	114.3
1996	115.6	116.9	116.8	118.1	119.0	120.0	119.9	120.6	121.2	121.2	122.4	122.9	116.4	119.0	120.6	122.2	119.6
1997	123.5	124.8	125.0	125.8	126.2	126.9	127.7	128.8	129.5	130.3	131.1	131.5	124.4	126.3	128.7	131.0	127.7
1998	132.0	132.0	132.4	133.1	133.6	132.7	132.5	135.3	134.9	135.5	135.0	135.1	132.1	133.1	134.2	135.2	134.0
1999	135.9	136.3	137.3	137.4	138.4	138.6	139.7	140.3	140.4	141.5	141.9	142.8	136.5	138.1	140.1	142.1	139.6
2000	143.6	144.3	145.2	146.3	147.2	147.9	147.6	148.6	149.0	148.8			144.4	147.1	148.4		
<b>Capacity</b>																	
1988	115.3	115.5	115.6	115.7	115.8	115.9	116.0	116.2	116.3	116.4	116.5	116.7	115.5	115.8	116.2	116.5	116.0
1989	116.8	117.0	117.2	117.4	117.6	117.8	118.0	118.2	118.4	118.6	118.8	119.0	117.0	117.6	118.2	118.8	117.9
1990	119.2	119.3	119.5	119.7	119.9	120.1	120.2	120.4	120.6	120.8	121.0	121.2	119.3	119.9	120.4	121.0	120.2
1991	121.4	121.6	121.7	121.9	122.1	122.2	122.4	122.6	122.7	122.9	123.0	123.2	121.6	122.1	122.6	123.0	122.3
1992	123.4	123.6	123.8	124.1	124.3	124.5	124.7	124.9	125.2	125.4	125.6	125.8	123.6	124.3	124.9	125.6	124.6
1993	126.0	126.3	126.5	126.7	126.9	127.2	127.4	127.7	127.9	128.2	128.5	128.8	126.3	126.9	127.7	128.5	127.3
1994	129.1	129.4	129.7	130.1	130.5	130.9	131.3	131.8	132.2	132.7	133.2	133.7	129.4	130.5	131.8	133.2	131.2
1995	134.2	134.7	135.3	135.8	136.4	137.0	137.6	138.2	138.8	139.4	140.0	140.6	134.7	136.4	138.2	140.0	137.3
1996	141.2	141.9	142.5	143.1	143.8	144.4	145.0	145.6	146.2	146.9	147.5	148.1	141.9	143.8	145.6	147.5	144.7
1997	148.8	149.4	150.1	150.8	151.5	152.3	153.0	153.8	154.6	155.4	156.2	157.1	149.4	151.5	153.8	156.2	152.7
1998	158.0	158.9	159.8	160.7	161.6	162.5	163.4	164.2	165.0	165.7	166.5	167.2	158.9	161.6	164.2	166.5	162.8
1999	167.9	168.6	169.2	169.9	170.5	171.1	171.7	172.3	172.9	173.5	174.1	174.8	168.6	170.5	172.3	174.1	171.4
2000	175.4	176.1	176.7	177.4	178.1	178.7	179.4	180.1	180.7	181.4			176.1	178.1	180.1		
<b>Utilization</b>																	
1988	83.2	83.4	83.3	83.7	83.7	83.6	84.1	84.5	84.1	84.2	84.8	85.1	83.3	83.7	84.2	84.7	84.0
1989	85.4	84.6	85.3	85.3	84.7	84.4	83.4	83.6	83.3	82.8	83.0	83.2	85.1	84.8	83.4	83.0	84.1
1990	82.7	83.0	83.3	82.7	82.9	82.7	82.6	82.6	82.6	82.0	80.8	80.2	83.0	82.8	82.6	81.0	82.3
1991	79.6	78.9	78.1	78.2	78.7	79.6	79.5	79.5	80.2	80.0	79.8	79.2	78.9	78.8	79.7	79.6	79.3
1992	79.1	79.4	79.9	80.4	80.4	80.1	80.5	80.2	80.3	80.8	81.0	80.9	79.5	80.3	80.3	80.9	80.2
1993	81.0	81.3	81.3	81.4	80.9	80.9	81.0	80.7	81.4	81.5	81.6	82.1	81.2	81.1	81.0	81.7	81.3
1994	82.1	82.1	82.5	82.7	83.2	83.3	83.5	83.5	83.3	83.5	83.7	84.3	82.2	83.1	83.4	83.8	83.1
1995	84.4	84.0	83.8	83.3	83.3	83.2	82.5	83.3	83.4	82.8	82.7	82.4	84.1	83.3	83.1	82.6	83.3
1996	81.9	82.4	82.0	82.5	82.8	83.1	82.7	82.8	82.9	82.5	83.0	83.0	82.1	82.8	82.8	82.8	82.6
1997	83.0	83.5	83.3	83.4	83.3	83.3	83.5	83.8	83.8	83.9	83.9	83.7	83.3	83.3	83.7	83.8	83.5
1998	83.5	83.1	82.9	82.8	82.7	81.6	81.1	82.4	81.8	81.8	81.1	80.8	83.2	82.4	81.8	81.2	82.1
1999	81.0	80.9	81.1	80.9	81.2	81.0	81.3	81.4	81.2	81.5	81.5	81.7	81.0	81.0	81.3	81.6	81.2
2000	81.9	82.0	82.2	82.5	82.7	82.7	82.3	82.5	82.4	82.0			82.0	82.6	82.4		

1. Estimates from August 2000 through October 2000 are subject to further revision in the upcoming monthly releases.

2. Annual averages of industrial production are calculated from not seasonally adjusted indexes.



**Table 2**  
**INDUSTRIAL PRODUCTION, CAPACITY AND UTILIZATION: 1988–2000<sup>1</sup>**

**MANUFACTURING**

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>2</sup>
<b>Industrial Production, Percent Change</b>																	
1988	-.2	.4	-.1	1.0	-.1	.0	.7	.3	.2	.2	.9	.6	2.3	4.1	3.7	5.2	4.7
1989	.9	-1.2	.8	.1	-.7	.0	-1.1	.3	-.3	-.6	.4	.1	4.3	-.7	-4.5	-1.4	1.9
1990	-.2	.9	.3	-.8	.4	-.1	.0	.3	-.1	-.6	-1.3	-.6	2.9	-.1	.8	-6.3	-.5
1991	-.9	-.7	-1.1	.3	.7	1.4	.2	.2	1.1	-.1	-.2	-.5	-9.7	1.2	7.8	1.7	-2.4
1992	.3	.6	1.0	.6	.4	-.1	.7	-.2	.3	.7	.5	-.1	2.4	7.3	3.0	4.5	4.0
1993	.7	.3	.2	.5	-.4	.0	.2	-.2	1.3	.2	.5	.9	4.4	2.0	1.5	6.6	3.7
1994	.0	.4	1.0	.8	.9	.2	.8	.5	.2	.6	.9	1.0	5.6	9.4	6.6	7.6	6.0
1995	.6	-.2	.3	-.3	.2	.5	-.6	1.3	.9	-.3	.2	.1	6.5	.7	3.9	3.6	5.3
1996	-.2	1.0	-.2	1.3	.9	.9	.2	.6	.6	.0	1.0	.6	2.3	10.1	7.1	5.7	4.9
1997	.5	1.2	.4	.5	.3	.8	.6	1.1	.5	.6	.7	.4	8.5	6.7	9.0	7.7	7.8
1998	.6	.0	.2	.6	.3	-.8	-.1	2.3	-.2	.7	-.2	.2	4.8	2.8	3.9	4.7	5.6
1999	.5	.5	.5	.2	.8	.2	.6	.6	.1	.9	.5	.6	4.1	5.4	6.0	6.8	4.8
2000	.6	.4	.9	.6	.6	.4	-.1	.6	.3	.0			7.1	8.0	3.7		
<b>Industrial Production</b>																	
1988	95.4	95.8	95.7	96.7	96.6	96.6	97.3	97.5	97.7	97.9	98.9	99.4	95.6	96.6	97.5	98.7	97.1
1989	100.3	99.1	99.9	100.0	99.4	99.4	98.3	98.7	98.4	97.8	98.2	98.3	99.8	99.6	98.5	98.1	99.0
1990	98.1	99.0	99.3	98.6	99.0	98.9	98.8	99.1	99.0	98.4	97.2	96.6	98.8	98.8	99.0	97.4	98.5
1991	95.8	95.1	94.1	94.4	95.0	96.3	96.6	96.8	97.8	97.8	97.6	97.1	95.0	95.2	97.0	97.5	96.2
1992	97.3	97.9	98.9	99.5	99.9	99.9	100.6	100.4	100.6	101.3	101.9	101.7	98.1	99.8	100.5	101.6	100.0
1993	102.5	102.8	103.0	103.5	103.1	103.1	103.4	103.1	104.4	104.6	105.1	106.1	102.7	103.2	103.6	105.3	103.7
1994	106.1	106.5	107.6	108.4	109.4	109.6	110.5	111.0	111.3	111.9	112.9	114.1	106.7	109.2	110.9	113.0	109.9
1995	114.8	114.6	114.9	114.6	114.9	115.4	114.8	116.2	117.3	116.9	117.1	117.3	114.8	115.0	116.1	117.1	115.7
1996	117.1	118.3	118.0	119.5	120.6	121.7	122.0	122.7	123.4	123.4	124.6	125.3	117.8	120.6	122.7	124.4	121.4
1997	125.9	127.3	127.8	128.4	128.9	129.9	130.7	132.1	132.8	133.6	134.5	135.0	127.0	129.1	131.9	134.4	130.8
1998	135.8	135.9	136.1	136.9	137.4	136.3	136.2	139.4	139.0	139.9	139.6	139.8	135.9	136.9	138.2	139.8	138.2
1999	140.5	141.2	141.9	142.2	143.4	143.6	144.5	145.3	145.6	146.8	147.5	148.4	141.2	143.1	145.1	147.6	144.8
2000	149.2	149.9	151.3	152.2	153.1	153.8	153.7	154.6	155.0	155.0			150.1	153.0	154.4		
<b>Capacity</b>																	
1988	115.2	115.3	115.4	115.6	115.7	115.8	116.0	116.1	116.3	116.5	116.6	116.8	115.3	115.7	116.1	116.6	115.9
1989	117.0	117.3	117.5	117.8	118.0	118.3	118.5	118.7	119.0	119.2	119.5	119.7	117.3	118.0	118.7	119.5	118.4
1990	119.9	120.1	120.3	120.5	120.7	120.9	121.1	121.3	121.5	121.7	122.0	122.2	120.1	120.7	121.3	122.0	121.0
1991	122.4	122.6	122.8	123.0	123.1	123.3	123.5	123.7	123.8	124.0	124.2	124.3	122.6	123.1	123.7	124.2	123.4
1992	124.6	124.8	125.0	125.3	125.5	125.8	126.0	126.3	126.5	126.7	127.0	127.2	124.8	125.5	126.3	127.0	125.9
1993	127.5	127.7	128.0	128.2	128.5	128.8	129.0	129.3	129.6	129.9	130.2	130.5	127.7	128.5	129.3	130.2	128.9
1994	130.9	131.3	131.6	132.1	132.5	132.9	133.4	133.9	134.4	134.9	135.5	136.1	131.3	132.5	133.9	135.5	133.3
1995	136.6	137.3	137.9	138.5	139.2	139.8	140.5	141.2	141.9	142.6	143.3	144.0	137.3	139.2	141.2	143.3	140.2
1996	144.7	145.4	146.2	146.9	147.7	148.4	149.1	149.8	150.5	151.2	151.9	152.7	145.4	147.7	149.8	151.9	148.7
1997	153.4	154.2	154.9	155.7	156.5	157.4	158.2	159.1	160.0	160.9	161.9	162.9	154.2	156.5	159.1	161.9	157.9
1998	163.9	164.9	165.9	167.0	168.0	169.0	170.0	171.0	171.9	172.8	173.6	174.5	164.9	168.0	171.0	173.6	169.4
1999	175.3	176.0	176.8	177.5	178.3	179.0	179.7	180.3	181.0	181.7	182.4	183.1	176.0	178.3	180.3	182.4	179.3
2000	183.8	184.6	185.3	186.1	186.9	187.6	188.4	189.1	189.9	190.7			184.6	186.9	189.2		
<b>Utilization</b>																	
1988	82.9	83.1	82.9	83.7	83.5	83.4	83.8	84.0	84.0	84.1	84.8	85.1	83.0	83.5	83.9	84.7	83.8
1989	85.7	84.5	85.0	85.0	84.2	84.1	83.0	83.1	82.7	82.1	82.2	82.1	85.1	84.4	82.9	82.1	83.6
1990	81.8	82.5	82.6	81.8	82.0	81.8	81.6	81.7	81.5	80.9	79.7	79.0	82.3	81.9	81.6	79.9	81.4
1991	78.2	77.5	76.6	76.8	77.1	78.1	78.2	78.2	79.0	78.9	78.6	78.1	77.5	77.3	78.5	78.5	77.9
1992	78.1	78.5	79.1	79.5	79.6	79.4	79.8	79.5	79.6	79.9	80.2	79.9	78.6	79.5	79.6	80.0	79.4
1993	80.4	80.4	80.4	80.7	80.2	80.1	80.1	79.7	80.6	80.6	80.7	81.3	80.4	80.3	80.1	80.9	80.4
1994	81.1	81.1	81.7	82.1	82.6	82.5	82.8	82.9	82.8	83.0	83.3	83.8	81.3	82.4	82.8	83.4	82.5
1995	84.0	83.5	83.3	82.7	82.5	82.6	81.7	82.3	82.7	82.0	81.7	81.4	83.6	82.6	82.2	81.7	82.5
1996	80.9	81.3	80.7	81.4	81.7	82.0	81.8	81.9	82.0	81.6	82.0	82.1	81.0	81.7	81.9	81.9	81.6
1997	82.1	82.6	82.5	82.5	82.3	82.5	82.6	83.1	83.0	83.0	83.1	82.9	82.4	82.5	82.9	83.0	82.7
1998	82.9	82.4	82.0	82.0	81.8	80.6	80.1	81.5	80.9	81.0	80.4	80.2	82.4	81.5	80.8	80.5	81.3
1999	80.2	80.2	80.3	80.1	80.4	80.2	80.4	80.6	80.4	80.8	80.9	81.0	80.2	80.3	80.5	80.9	80.5
2000	81.2	81.2	81.6	81.8	81.9	82.0	81.6	81.7	81.6	81.3			81.3	81.9	81.6		

1. Estimates from August 2000 through October 2000 are subject to further revision in the upcoming monthly releases.  
2. Annual averages of industrial production are calculated from not seasonally adjusted indexes.

**Table 3**  
**INDUSTRIAL PRODUCTION, CAPACITY AND UTILIZATION: 1988–2000<sup>1</sup>**

**TOTAL INDUSTRY EXCLUDING SELECTED HIGH-TECHNOLOGY INDUSTRIES<sup>2</sup>**

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>3</sup>
<b>Industrial Production, Percent Change</b>																	
1988	.1	.2	.1	.4	-.2	.1	.6	.5	-.3	.4	.6	.5	2.8	1.8	3.3	3.5	3.9
1989	.5	-.7	.9	.1	-.7	-.3	-.9	.4	-.3	-.3	.2	.3	3.5	-.3	-4.8	-.4	1.4
1990	-.4	.5	.5	-.5	.3	-.1	.0	.1	.2	-.6	-1.4	-.7	1.7	.6	.7	-6.4	-.5
1991	-.5	-.9	-1.0	.4	.8	1.2	.1	.0	1.0	-.2	-.2	-.7	-8.8	1.4	6.1	.4	-2.4
1992	-.2	.4	.8	.7	.2	-.4	.6	-.4	.3	.6	.4	.0	-6	5.7	1.3	3.9	2.2
1993	.4	.5	.1	.3	-.6	.2	.2	-.2	1.0	.2	.4	.7	3.7	.8	1.2	5.0	2.8
1994	.1	.3	.6	.3	.7	.3	.4	.2	.0	.4	.6	.8	4.5	5.6	4.0	4.2	4.1
1995	.3	-.3	-.1	-.4	.2	.3	-.6	1.1	.3	-.7	.1	-.1	2.9	-1.3	2.2	-.5	2.4
1996	-.3	.9	-.3	1.0	.6	.6	-.3	.3	.2	-.4	.8	.2	.7	7.0	2.2	2.0	2.0
1997	.3	.8	-.1	.4	.1	.3	.4	.8	.5	.6	.4	.1	5.2	3.0	5.4	6.4	4.1
1998	.1	-.2	.3	.4	.3	-1.1	-.5	2.0	-.6	.2	-.6	-.2	1.0	1.8	-.1	.0	2.7
1999	.4	.0	.5	-.3	.5	-.1	.4	.3	.0	.6	.0	.3	.9	1.4	2.9	3.4	1.2
2000	.1	.1	.2	.3	.3	.0	-.7	.4	-.1	-.4			1.7	2.9	-1.4		
<b>Industrial Production</b>																	
1988	98.2	98.4	98.5	98.9	98.7	98.9	99.5	99.9	99.6	99.9	100.6	101.0	98.4	98.8	99.6	100.5	99.4
1989	101.6	100.8	101.8	101.9	101.2	100.9	99.9	100.3	100.0	99.7	100.0	100.3	101.4	101.3	100.1	100.0	100.7
1990	99.9	100.4	100.9	100.4	100.7	100.6	100.6	100.7	100.9	100.3	98.8	98.2	100.4	100.6	100.7	99.1	100.2
1991	97.7	96.9	95.9	96.3	97.0	98.2	98.3	98.3	99.3	99.1	98.9	98.2	96.8	97.2	98.6	98.7	97.8
1992	98.0	98.4	99.2	99.9	100.1	99.8	100.4	100.0	100.4	100.9	101.4	101.4	98.6	99.9	100.3	101.2	100.0
1993	101.8	102.3	102.4	102.7	102.1	102.3	102.5	102.2	103.3	103.5	103.8	104.5	102.2	102.4	102.7	103.9	102.8
1994	104.7	105.0	105.6	105.9	106.6	107.0	107.4	107.6	107.6	108.0	108.6	109.5	105.1	106.5	107.6	108.7	107.0
1995	109.7	109.4	109.3	108.9	109.1	109.4	108.8	110.0	110.3	109.5	109.6	109.6	109.5	109.1	109.7	109.6	109.5
1996	109.2	110.2	109.9	111.0	111.7	112.3	112.0	112.3	112.5	112.1	113.0	113.3	109.8	111.7	112.3	112.8	111.6
1997	113.7	114.6	114.5	115.0	115.0	115.3	115.9	116.7	117.3	118.1	118.6	118.7	114.3	115.1	116.6	118.5	116.2
1998	118.8	118.6	119.0	119.5	119.8	118.6	117.9	120.3	119.5	119.8	119.1	118.9	118.8	119.3	119.3	119.3	119.4
1999	119.3	119.4	119.9	119.6	120.2	120.1	120.6	120.9	120.9	121.7	121.7	122.1	119.5	119.9	120.8	121.8	120.9
2000	122.2	122.3	122.6	123.0	123.4	123.4	122.5	123.0	122.9	122.4			122.4	123.2	122.8		
<b>Capacity</b>																	
1988	117.6	117.6	117.7	117.7	117.8	117.9	118.0	118.0	118.1	118.2	118.3	118.4	117.6	117.8	118.0	118.3	117.9
1989	118.5	118.7	118.8	119.0	119.1	119.3	119.5	119.6	119.8	119.9	120.1	120.2	118.7	119.1	119.6	120.1	119.4
1990	120.4	120.5	120.6	120.8	120.9	121.0	121.2	121.3	121.5	121.6	121.8	122.0	120.5	120.9	121.3	121.8	121.1
1991	122.1	122.2	122.4	122.5	122.6	122.8	122.9	123.0	123.1	123.3	123.4	123.5	122.2	122.6	123.0	123.4	122.8
1992	123.6	123.7	123.9	124.0	124.2	124.3	124.5	124.6	124.8	124.9	125.1	125.3	123.7	124.2	124.6	125.1	124.4
1993	125.4	125.6	125.7	125.9	126.0	126.1	126.3	126.4	126.6	126.8	127.0	127.1	125.6	126.0	126.5	127.0	126.2
1994	127.3	127.5	127.8	128.0	128.2	128.5	128.7	129.0	129.3	129.5	129.8	130.1	127.5	128.2	129.0	129.8	128.6
1995	130.3	130.6	130.9	131.1	131.4	131.7	131.9	132.2	132.5	132.7	133.0	133.3	130.6	131.4	132.2	133.0	131.8
1996	133.6	133.8	134.1	134.4	134.6	134.9	135.2	135.4	135.7	136.0	136.3	136.5	133.8	134.6	135.4	136.3	135.0
1997	136.8	137.1	137.5	137.8	138.2	138.5	138.9	139.3	139.8	140.3	140.8	141.3	137.2	138.2	139.4	140.8	138.9
1998	141.8	142.3	142.8	143.3	143.9	144.4	144.8	145.3	145.7	146.1	146.4	146.8	142.3	143.9	145.3	146.4	144.5
1999	147.1	147.3	147.6	147.8	148.1	148.3	148.5	148.7	148.9	149.1	149.3	149.5	147.3	148.1	148.7	149.3	148.3
2000	149.6	149.8	150.0	150.2	150.3	150.5	150.7	150.8	150.9	151.1			149.8	150.3	150.8		
<b>Utilization</b>																	
1988	83.6	83.7	83.7	84.0	83.8	83.9	84.3	84.6	84.3	84.6	85.0	85.3	83.7	83.9	84.4	85.0	84.2
1989	85.7	85.0	85.6	85.6	84.9	84.6	83.6	83.9	83.5	83.2	83.3	83.4	85.4	85.0	83.7	83.3	84.4
1990	83.0	83.3	83.7	83.1	83.3	83.1	83.0	83.0	83.0	82.4	81.1	80.5	83.3	83.2	83.0	81.4	82.7
1991	80.0	79.2	78.4	78.6	79.1	80.0	80.0	79.9	80.6	80.4	80.2	79.5	79.2	79.2	80.2	80.0	79.7
1992	79.3	79.5	80.1	80.6	80.6	80.2	80.7	80.3	80.4	80.8	81.0	81.0	79.7	80.5	80.4	80.9	80.4
1993	81.2	81.5	81.5	81.6	81.0	81.1	81.2	80.9	81.6	81.6	81.8	82.2	81.4	81.2	81.2	81.9	81.4
1994	82.2	82.3	82.7	82.7	83.2	83.3	83.5	83.5	83.3	83.4	83.7	84.2	82.4	83.1	83.4	83.7	83.1
1995	84.2	83.8	83.5	83.0	83.0	83.1	82.5	83.2	83.3	82.5	82.4	82.2	83.8	83.0	83.0	82.4	83.1
1996	81.8	82.4	81.9	82.6	82.9	83.3	82.8	82.9	82.9	82.5	83.0	83.0	82.0	82.9	82.9	82.8	82.7
1997	83.1	83.6	83.3	83.4	83.3	83.3	83.4	83.8	83.9	84.2	84.2	84.0	83.3	83.3	83.7	84.2	83.6
1998	83.8	83.3	83.3	83.3	83.3	82.1	81.4	82.8	82.1	82.0	81.3	81.0	83.5	82.9	82.1	81.4	82.5
1999	81.1	81.0	81.2	80.9	81.2	81.0	81.2	81.3	81.2	81.7	81.5	81.7	81.1	81.0	81.3	81.6	81.3
2000	81.6	81.6	81.7	81.9	82.1	82.0	81.3	81.6	81.4	81.0			81.7	82.0	81.4		

1. Estimates from August 2000 through October 2000 are subject to further revision in the upcoming monthly releases.  
 2. Computers, communications equipment, and semiconductors and related electronic components.  
 3. Annual averages of industrial production are calculated from not seasonally adjusted indexes.

**Table 4**  
**INDUSTRIAL PRODUCTION, CAPACITY AND UTILIZATION: 1988–2000<sup>1</sup>**

**MANUFACTURING EXCLUDING SELECTED HIGH-TECHNOLOGY INDUSTRIES<sup>2</sup>**

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>3</sup>
<b>Industrial Production, Percent Change</b>																	
1988	-.2	.2	.1	.8	-.4	.0	.6	.1	.3	.4	.8	.5	1.8	2.6	2.9	5.3	4.0
1989	.9	-1.1	.8	.0	-.7	-.1	-1.0	.3	-.3	-.4	.2	-.1	4.1	-1.7	-5.0	-1.8	1.4
1990	-.1	.9	.4	-.7	.4	-.2	.1	.2	.0	-.7	-1.4	-.7	2.7	-.1	.4	-7.1	-.9
1991	-.8	-.8	-1.2	.4	.7	1.5	.2	.1	1.2	-.2	-.3	-.6	-10.3	1.0	7.8	1.0	-2.8
1992	.0	.5	1.0	.6	.3	-.2	.6	-.3	.2	.5	.5	-.1	.6	6.3	1.7	3.1	2.9
1993	.8	.3	.1	.5	-.5	.0	.2	-.4	1.2	.1	.4	.8	4.3	1.3	.6	5.2	2.9
1994	.0	.4	.8	.5	.8	.0	.6	.3	.1	.4	.7	.8	4.5	7.1	4.5	5.2	4.5
1995	.3	-.5	-.1	-.5	.1	.3	-.8	1.0	.6	-.7	-.1	-.1	2.9	-2.0	1.3	-.3	2.4
1996	-.3	.8	-.5	1.2	.7	.7	-.1	.2	.3	-.4	.8	.4	-.2	7.6	3.6	2.0	1.9
1997	.3	.9	.0	.3	.0	.5	.4	.9	.4	.6	.5	.1	5.8	3.2	6.2	6.7	4.7
1998	.3	-.2	.2	.6	.2	-1.2	-.5	2.2	-.6	.4	-.5	-.1	2.0	1.4	.0	1.6	3.2
1999	.2	.2	.2	-.2	.6	-.1	.3	.4	.1	.7	.2	.2	.7	1.4	2.7	4.4	1.5
2000	.1	.0	.5	.1	.2	.0	-.7	.3	-.1	-.4			1.5	2.4	-1.8		
<b>Industrial Production</b>																	
1988	98.1	98.4	98.4	99.2	98.8	98.8	99.5	99.6	99.9	100.2	101.0	101.6	98.3	98.9	99.6	100.9	99.5
1989	102.5	101.3	102.1	102.0	101.3	101.2	100.1	100.4	100.1	99.7	99.8	99.8	101.9	101.5	100.2	99.8	100.9
1990	99.7	100.6	101.0	100.2	100.6	100.3	100.4	100.6	100.5	99.8	98.4	97.7	100.4	100.4	100.5	98.6	100.0
1991	96.9	96.1	95.0	95.3	96.0	97.4	97.6	97.7	98.9	98.7	98.4	97.8	96.0	96.2	98.1	98.3	97.2
1992	97.8	98.3	99.2	99.8	100.1	99.9	100.5	100.2	100.4	100.9	101.4	101.3	98.5	100.0	100.4	101.2	100.0
1993	102.0	102.3	102.4	103.0	102.4	102.4	102.6	102.2	103.4	103.5	103.9	104.7	102.3	102.6	102.7	104.0	102.9
1994	104.7	105.0	105.9	106.4	107.3	107.3	108.0	108.3	108.3	108.8	109.6	110.4	105.2	107.0	108.2	109.6	107.5
1995	110.8	110.2	110.2	109.7	109.7	110.1	109.2	110.3	111.0	110.2	110.1	110.0	110.4	109.8	110.2	110.1	110.1
1996	109.6	110.5	110.0	111.3	112.1	112.9	112.8	113.0	113.3	112.9	113.8	114.2	110.0	112.1	113.1	113.6	112.2
1997	114.5	115.6	115.5	115.9	116.0	116.5	117.0	118.1	118.6	119.4	120.0	120.1	115.2	116.1	117.9	119.8	117.5
1998	120.5	120.2	120.4	121.1	121.4	119.9	119.3	121.9	121.2	121.7	121.1	121.0	120.4	120.8	120.8	121.3	121.2
1999	121.2	121.5	121.7	121.5	122.2	122.0	122.4	122.9	123.0	123.9	124.1	124.3	121.5	121.9	122.7	124.1	123.0
2000	124.3	124.3	124.9	125.1	125.4	125.3	124.5	124.8	124.7	124.2			124.5	125.2	124.7		
<b>Capacity</b>																	
1988	117.8	117.8	117.9	118.0	118.1	118.2	118.3	118.4	118.5	118.6	118.8	118.9	117.8	118.1	118.4	118.8	118.3
1989	119.0	119.2	119.4	119.7	119.9	120.1	120.3	120.5	120.7	120.8	121.0	121.2	119.2	119.9	120.5	121.0	120.1
1990	121.4	121.5	121.7	121.8	122.0	122.2	122.3	122.5	122.6	122.8	123.0	123.2	121.5	122.0	122.5	123.0	122.3
1991	123.4	123.5	123.6	123.8	123.9	124.0	124.2	124.3	124.4	124.5	124.7	124.8	123.5	123.9	124.3	124.7	124.1
1992	124.9	125.0	125.2	125.3	125.5	125.6	125.8	126.0	126.1	126.3	126.5	126.7	125.0	125.5	126.0	126.5	125.7
1993	126.8	127.0	127.2	127.3	127.5	127.7	127.8	128.0	128.2	128.4	128.5	128.7	127.0	127.5	128.0	128.5	127.8
1994	129.0	129.2	129.4	129.7	129.9	130.2	130.5	130.8	131.1	131.4	131.7	131.9	129.2	129.9	130.8	131.7	130.4
1995	132.2	132.5	132.8	133.1	133.4	133.7	134.0	134.3	134.6	134.9	135.3	135.6	132.5	133.4	134.3	135.3	133.9
1996	135.9	136.2	136.5	136.8	137.1	137.4	137.7	138.0	138.3	138.6	138.9	139.2	136.2	137.1	138.0	138.9	137.6
1997	139.6	139.9	140.2	140.6	141.0	141.4	141.8	142.3	142.8	143.3	143.9	144.4	139.9	141.0	142.3	143.9	141.8
1998	145.0	145.6	146.2	146.8	147.3	147.9	148.4	148.9	149.4	149.8	150.3	150.6	145.6	147.3	148.9	150.2	148.0
1999	151.0	151.3	151.6	151.8	152.1	152.3	152.5	152.7	153.0	153.2	153.4	153.5	151.3	152.1	152.7	153.4	152.4
2000	153.7	153.9	154.1	154.3	154.4	154.6	154.8	154.9	155.0	155.2			153.9	154.4	154.9		
<b>Utilization</b>																	
1988	83.3	83.5	83.4	84.0	83.6	83.6	84.1	84.1	84.3	84.5	85.1	85.4	83.4	83.8	84.2	85.0	84.1
1989	86.1	85.0	85.5	85.3	84.5	84.3	83.2	83.4	82.9	82.5	82.5	82.3	85.5	84.7	83.2	82.4	83.9
1990	82.1	82.8	83.0	82.3	82.4	82.1	82.1	82.1	81.9	81.3	80.0	79.3	82.6	82.3	82.0	80.2	81.8
1991	78.5	77.8	76.8	77.0	77.5	78.5	78.6	78.6	79.5	79.3	78.9	78.4	77.7	77.7	78.9	78.9	78.3
1992	78.3	78.6	79.3	79.7	79.8	79.5	79.9	79.6	79.6	79.9	80.1	79.9	78.7	79.7	79.7	80.0	79.5
1993	80.4	80.5	80.5	80.9	80.3	80.2	80.3	79.9	80.7	80.6	80.8	81.3	80.5	80.5	80.3	80.9	80.5
1994	81.2	81.3	81.8	82.1	82.6	82.4	82.7	82.8	82.7	82.8	83.2	83.7	81.4	82.3	82.7	83.2	82.4
1995	83.8	83.2	82.9	82.4	82.2	82.3	81.5	82.1	82.5	81.7	81.4	81.1	83.3	82.3	82.0	81.4	82.3
1996	80.7	81.1	80.6	81.3	81.7	82.1	81.9	81.9	81.9	81.4	81.9	82.0	80.8	81.7	81.9	81.8	81.6
1997	82.1	82.6	82.4	82.4	82.2	82.4	82.5	83.0	83.1	83.3	83.4	83.1	82.4	82.4	82.8	83.3	82.7
1998	83.1	82.6	82.4	82.5	82.4	81.1	80.4	81.8	81.1	81.2	80.6	80.3	82.7	82.0	81.1	80.7	81.6
1999	80.3	80.3	80.3	80.0	80.4	80.1	80.2	80.4	80.4	80.9	80.9	80.9	80.3	80.2	80.4	80.9	80.4
2000	80.9	80.8	81.0	81.1	81.2	81.0	80.4	80.6	80.4	80.1			80.9	81.1	80.5		

1. Estimates from August 2000 through October 2000 are subject to further revision in the upcoming monthly releases.  
2. Computers, communications equipment, and semiconductors and related electronic components.  
3. Annual averages of industrial production are calculated from not seasonally adjusted indexes.

**Table 5**  
**RATES OF GROWTH IN INDUSTRIAL PRODUCTION, BY MAJOR MARKET GROUPS, 1996–2000<sup>1</sup>**

Item	Revised growth rate (percent)					Difference between revised and earlier growth rates (percentage points)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
<b>Total index</b>	5.6	7.2	3.2	5.1	6.0	.3	.5	.3	.9	-.1
<b>Products, total</b>	4.7	6.0	3.2	3.4	4.0	.4	.8	.7	.9	.1
<b>Final products</b>	4.9	6.5	2.9	3.4	4.7	.5	.8	.6	.8	.0
<b>Consumer goods</b>	2.2	4.0	.2	3.1	1.6	.2	1.2	1.1	1.1	.2
<b>Durable</b>	2.7	8.4	4.3	8.2	-1.2	.9	2.9	-8	1.4	.0
Automotive products	3.0	10.6	5.4	3.3	-1.3	.6	.3	.7	.6	1.0
Autos and trucks	4.1	15.0	5.5	2.5	-1.5	1.6	2.0	1.2	.6	2.5
Autos	-4.7	5.1	4.1	-5.5	3.8	1.5	1.5	1.4	.6	-.1
Trucks	10.8	21.1	6.3	6.7	-3.8	1.6	2.0	1.3	.6	3.3
Auto parts and allied goods	1.0	2.5	6.1	4.4	-1.0	-1.1	-3.4	.1	.7	-.9
Other durable goods	2.5	6.6	3.4	12.4	-1.0	1.2	4.8	-1.7	1.8	-.8
Appliances and electronics	5.8	12.1	10.2	32.5	-4.3	1.7	10.7	-13.6	3.0	-3.5
Appliances and air cond.	.9	4.2	8.2	11.5	-6.0	1.8	6.3	-1.6	3.5	5.2
Home electronics	10.9	19.8	11.7	53.3	-1.6	1.5	14.2	-27.7	-7.0	-14.0
Carpeting and furniture	3.0	4.2	6.2	2.8	4.7	-1	1.2	3.7	-5	2.1
Miscellaneous	.4	4.5	-2.5	4.6	-1.7	1.6	2.7	.8	.2	.2
<b>Nondurable</b>	2.1	2.7	-1.0	1.6	2.4	.1	.7	1.5	.9	.3
Nonenergy	2.0	2.9	-.5	1.5	2.0	.1	.8	1.8	.9	.7
Foods and tobacco	.6	2.2	.6	.2	1.6	-6	.0	1.9	.9	.4
Clothing	-4	-3.1	-8.1	-4.9	-4.3	.0	-.7	-.1	-2.7	2.7
Chemical products	5.2	5.5	3.3	5.8	3.6	.4	3.1	3.4	1.8	.6
Paper products	3.5	5.2	-5.4	2.6	3.6	2.1	.7	.0	1.4	.3
Energy products	2.6	1.8	-4.1	2.5	4.8	.1	-.1	-.2	1.2	-3.0
Fuels	3.6	1.8	-.4	1.9	1.4	.0	.0	.2	.0	-.4
Utilities	2.1	1.6	-5.5	2.5	7.0	.2	.0	-.4	1.7	-3.9
<b>Equipment, total</b>	9.3	10.4	7.3	3.9	10.1	.7	.1	.1	.4	.3
<b>Business equipment</b>	11.6	13.2	9.1	5.7	12.6	.8	.4	-.9	1.0	.9
Information processing & related	20.7	16.5	16.8	21.0	24.5	2.2	.5	-3.2	-.5	2.2
Computer and office	57.6	24.1	56.0	55.3	51.8	4.1	-8.1	-21.6	4.7	5.1
Industrial	1.7	5.5	-1.0	-.9	8.9	.5	.7	-1.7	2.0	1.4
Transit	15.4	23.5	12.9	-8.9	-5.4	-.4	1.7	2.2	3.0	.3
Autos and trucks	-2.0	13.2	9.0	1.6	-7.6	1.7	1.5	2.6	2.6	-1.5
Other	4.3	7.9	2.9	-3.5	11.5	-1.7	-2.8	4.5	4.6	3.7
<b>Defense and space equipment</b>	-1.8	-5.0	8.2	-3.1	-5.5	.7	-1.0	7.6	.6	-.2
Oil and gas well drilling	7.9	8.6	-26.3	5.6	22.5	.0	-1.0	-1.1	-.5	-1.2
Manufactured homes	3.5	9.5	9.2	-17.4	-26.4	-.3	.6	2.5	.5	1.5
<b>Intermediate products</b>	4.1	4.5	4.1	3.2	1.7	.3	.9	1.0	1.2	.5
Construction supplies	6.1	4.0	7.6	4.5	2.0	.2	1.2	2.0	1.3	.2
Business supplies	2.8	4.8	1.8	2.3	1.5	.4	.7	.4	1.2	.6
<b>Materials</b>	7.0	9.4	3.7	8.0	9.2	.1	.2	.2	.9	-.4
<b>Durable</b>	10.6	14.1	7.2	10.9	17.2	.1	-.3	-.1	1.2	.0
Consumer parts	1.5	10.3	.1	7.1	1.9	-.3	.7	2.9	1.7	1.4
Equipment parts	23.8	26.1	20.5	22.0	47.0	.4	-.4	-1.6	1.0	1.8
Semiconductors, printed circuit boards, and oth. elec. comps.	53.4	55.1	53.7	54.6	110.6	1.2	.9	-2.9	2.7	3.5
Other	3.9	5.4	-.6	3.4	1.0	-.1	-.6	.1	1.3	-.2
Basic metals	4.1	5.5	-3.0	6.5	-1.6	-.6	.0	2.6	1.5	-.3
<b>Nondurable</b>	3.5	5.3	-2.8	5.6	-4.2	.1	1.0	.1	-.4	.5
Textile	1.4	3.4	-8.5	-1.2	-2.4	-.9	.3	1.1	-1.7	4.2
Paper	4.4	4.5	-2.9	4.2	-4.9	.1	.0	-.3	.2	-.1
Chemical	4.7	6.3	-4.0	9.4	-4.6	.1	1.9	-.4	-1.3	-.8
Other	1.3	4.8	2.8	2.0	-3.5	.7	.5	1.2	.5	2.2
<b>Energy</b>	.7	.1	-.7	.5	.9	.0	.0	.3	1.3	.1
Primary	-1.0	-.1	-1.0	-.7	.2	-.2	.0	-.6	.1	-.5
Converted fuel	4.0	.4	-.2	2.8	2.4	.2	.0	2.0	3.8	1.3
<b>SPECIAL AGGREGATES</b>										
<b>Total excluding:</b>										
Autos and trucks	5.8	7.0	3.1	5.2	6.3	.3	.4	.3	.9	-.1
Motor vehicles and parts	6.0	6.8	3.2	5.0	6.4	.3	.4	.2	.8	-.2
Computers	4.8	7.0	2.3	4.0	5.0	.2	.6	.8	1.0	.1
Computers and semiconductors <sup>2</sup>	3.2	5.4	.9	2.4	1.8	.2	.7	1.0	.9	.2
Computers, communications eq. and semiconductors	3.0	5.0	.7	2.2	1.1	.2	.6	1.1	1.0	.3
<b>Consumer goods excluding:</b>										
Autos and trucks	2.1	3.2	-.1	3.1	1.8	.2	1.1	1.1	1.1	.1
Energy	2.2	4.3	.6	3.2	1.2	.3	1.3	1.2	1.1	.5
<b>Business equipment excluding:</b>										
Autos and trucks	13.1	13.3	9.1	6.1	14.8	.7	.3	-1.2	.8	1.4
Computer and office equipment	7.6	12.2	4.8	.5	7.8	.5	1.2	.8	1.3	1.5
<b>Materials excluding:</b>										
Energy	8.7	11.7	4.5	9.5	11.2	.2	.3	.0	.7	-.5

1. Growth rates are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading. For 2000, the growth rates are calculated from the fourth quarter of 1999 to the third quarter of 2000 and annualized.

2. Semiconductors include related electronic components.

**Table 6**  
**RATES OF GROWTH IN INDUSTRIAL PRODUCTION, BY INDUSTRY GROUPS, 1996–2000<sup>1</sup>**

Item	SIC	Revised growth rate (percent)					Difference between revised and earlier growth rates (percentage points)				
		1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
<b>Total index</b>		5.6	7.2	3.2	5.1	6.0	.3	.5	.3	.9	-.1
<b>Manufacturing</b>		6.3	8.0	4.0	5.6	6.3	.3	.5	.3	.8	.0
<b>Primary processing<sup>2</sup></b>		8.3	10.4	4.3	8.8	9.2	4.2	5.9	4.8	5.3	10.6
<b>Advanced processing<sup>2</sup></b>		5.0	6.4	3.9	3.7	4.4	-1.9	-2.6	-1.8	-1.6	-5.3
<b>Durable</b>		9.2	11.5	8.0	8.2	11.6	.3	.0	.3	1.2	.1
Lumber and products	24	1.8	3.7	5.4	.5	-5.5	.0	-.8	1.2	.7	.7
Furniture and fixtures	25	5.2	7.8	6.2	3.1	5.5	.6	4.1	2.9	.6	3.3
Stone, clay, and glass products	32	5.6	3.4	5.6	2.3	2.6	-.2	.1	.7	1.1	.6
Primary metals	33	5.0	6.1	-3.4	8.0	-1.7	-.6	.0	3.0	.5	.2
Iron and steel	331,2	4.4	5.8	-8.4	12.6	-2.1	-.8	-.2	3.1	.3	.8
Raw steel		-1.1	7.5	-9.4	16.6	-3.5	-1.0	.3	3.4	-1.2	1.4
Nonferrous	333-6,9	5.8	6.4	2.6	3.0	-1.3	-.4	.4	2.7	.8	-.5
Fabricated metal products	34	4.2	6.2	1.5	1.6	2.8	-.1	.3	1.5	1.4	1.0
Industrial machinery and equipment	35	10.9	7.3	11.6	13.6	16.7	.3	-3.8	-4.5	2.4	-.6
Computer and office equip.	357	51.5	21.5	54.0	54.3	48.4	4.9	-6.3	-24.9	3.1	2.5
Electrical machinery	36	24.3	28.4	20.4	25.2	48.7	.9	2.3	-1.1	2.5	1.9
Communications equipment	366	18.1	24.6	9.0	13.4	38.0	1.4	3.8	-.8	-.2	5.9
Semiconductors and related electronic components	3672-9	47.7	49.0	45.7	47.8	98.1	.8	-.9	-2.8	3.5	3.1
Transportation equipment	37	4.7	14.7	5.9	-1.4	-1.0	-.1	1.5	3.7	1.6	1.0
Motor vehicles and parts	371	-.5	16.0	3.3	5.9	.0	-.9	2.2	2.3	1.9	1.6
Autos and light trucks		3.2	13.5	5.4	1.5	-.9	1.6	2.2	1.4	1.0	1.6
Aerospace and misc.	372-6,9	13.3	12.9	10.4	-11.6	-2.7	-1.7	.5	6.3	.5	.0
Instruments	38	3.8	2.9	3.9	4.5	1.5	1.4	-.4	1.9	-.4	2.2
Miscellaneous	39	2.7	3.1	.7	6.6	1.1	.1	.0	1.3	2.3	2.1
<b>Nondurable</b>		2.9	4.2	-.4	2.5	.0	.4	1.3	.8	.6	.4
Foods	20	.3	2.2	3.7	.9	1.9	-.5	.3	1.9	1.0	.6
Tobacco products	21	-.3	5.5	-15.9	-1.9	-.7	-.9	.2	2.5	.9	-.1
Textile mill products	22	.7	1.5	-6.5	-.2	-3.1	-1.2	-2.3	-.1	-4.7	5.0
Apparel products	23	-.3	-.2	-6.3	-4.0	-4.8	.9	2.3	.9	.9	-.3
Paper and products	26	3.6	4.9	-.1	3.0	-4.6	.6	.8	1.1	.0	.4
Printing and publishing	27	3.0	5.1	-1.8	1.8	.8	1.2	1.2	-.2	1.3	.2
Chemicals and products	28	5.4	5.3	.2	6.7	-.5	.7	2.7	.9	.9	-.2
Petroleum products	29	4.0	3.1	2.1	.2	3.1	-.1	.4	.0	.2	-.3
Rubber and plastics products	30	5.1	7.0	1.6	3.6	1.0	1.0	2.4	-1.5	-.2	.0
Leather and products	31	4.3	-5.4	-10.1	-6.0	-3.2	2.2	1.7	-1.9	3.8	4.5
<b>Mining</b>		1.6	1.5	-5.3	-.5	2.1	-.2	-.3	-.3	.4	-1.9
Metal mining	10	3.2	3.2	-2.3	-8.8	-4.2	-.8	.3	-.2	3.2	-4.9
Coal mining	12	2.4	1.7	2.4	-1.3	.6	-.2	-.2	-.4	-.1	.7
Oil and gas extraction	13	1.0	1.3	-8.7	.3	3.0	-.1	-.3	-.2	.2	-3.0
Stone and earth minerals	14	5.1	2.4	4.3	.6	-1.8	.3	-.7	.6	1.1	-.2
<b>Utilities</b>		1.4	2.2	-.4	2.3	5.6	.1	.1	.1	2.1	.1
Electric	491,3pt	1.1	3.2	1.6	1.7	4.3	.1	.3	.8	1.7	.1
Gas	492,3pt	2.5	-1.5	-11.9	4.6	9.9	.2	.3	.4	3.5	-2.9
<b>SPECIAL AGGREGATES</b>											
Computers, communications eq., and semiconductors <sup>3</sup>		41.0	35.7	37.2	40.6	68.7	1.9	-.9	-6.7	3.2	7.1
<b>Manufacturing excluding:</b>											
Motor vehicles and parts		6.7	7.5	4.1	5.5	6.7	.3	.4	.2	.7	-.1
Computer and office equipment		5.3	7.7	3.0	4.4	5.2	.3	.7	.8	.9	.3
Computers and semiconductors <sup>3</sup>		3.5	5.9	1.4	2.6	1.4	.3	.8	1.1	.9	.4
Computers, communications eq., and semiconductors <sup>3</sup>		3.2	5.4	1.2	2.3	.7	.2	.8	1.2	1.0	.5

1. Growth rates are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading. For 2000, the growth rates are calculated from the fourth quarter of 1999 to the third quarter of 2000 and annualized.

2. The difference between revised and earlier growth rates primarily reflect the modification to the definition of advanced and primary processing industries.

3. Semiconductors include related electronic components.

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, stone, clay, and glass products, semiconductors and related electronic components, and motor vehicle parts.

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 and commercial machinery and computer equipment, electrical machinery except semiconductors and related electronic components, transportation equipment except motor vehicle parts, instruments, and miscellaneous manufactures.

**Table 7**  
**RATES OF GROWTH IN CAPACITY, BY INDUSTRY GROUPS, 1996–2000<sup>1</sup>**

Item	SIC	Revised growth rate (percent)					Difference between revised and earlier growth rates (percentage points)				
		1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
<b>Total index</b>		5.4	5.9	6.5	4.6	4.6	-.1	.5	.3	.4	.8
<b>Manufacturing</b>		6.1	6.5	7.2	5.1	5.0	-.1	.5	.2	.4	.8
<b>Primary processing<sup>2</sup></b>		9.2	8.5	9.4	4.9	8.0	-.7	.1	-.5	-.8	1.5
<b>Advanced processing<sup>2</sup></b>		4.0	4.9	5.7	5.2	3.0	.3	.2	.5	1.3	-.4
<b>Durable</b>		9.3	9.3	10.2	8.4	8.8	.0	.5	-.5	1.1	1.3
Lumber and products	24	3.4	3.3	3.7	1.6	1.2	-.3	.0	.6	-1.3	1.0
Furniture and fixtures	25	4.3	5.4	10.0	2.9	3.9	.0	1.6	6.8	.9	3.3
Stone, clay, and glass products	32	3.0	3.5	3.9	2.1	2.4	-.4	.4	1.1	-1.4	.2
Primary metals	33	5.3	3.4	5.1	3.3	.6	-.4	.0	1.6	.8	-1.2
Iron and steel	331,2	4.8	3.9	5.8	3.1	.9	-.3	.0	.6	-.8	-1.5
Raw steel		2.4	6.1	6.5	2.8	1.7	-.4	.1	.4	1.2	-.5
Nonferrous	333-6,9	6.0	2.9	4.4	3.4	.4	-.4	-.2	2.9	2.6	-1.0
Primary copper	3331	.6	1.0	-1.1	-3.1	-2.9	5.7	.3	-.6	-.9	3.0
Primary aluminum	3334	.3	.1	.7	1.5	1.3	-.1	.0	.7	1.5	.9
Fabricated metal products	34	4.4	6.3	6.0	1.8	2.5	-.8	.2	.2	1.5	2.5
Industrial machinery and equipment	35	12.0	11.4	11.8	18.1	10.6	-.3	-2.9	-4.0	2.8	-1.7
Computer and office equip.	357	39.3	44.3	37.0	72.7	39.0	-3.2	-6.6	-21.8	10.8	-3.2
Electrical machinery	36	30.4	26.5	28.2	18.4	33.2	-.5	3.7	-2.3	1.2	7.8
Semiconductors and related electronic components	3672-9	57.6	46.3	55.2	31.8	69.8	-1.5	3.3	-5.8	.2	16.2
Transportation equipment	37	1.4	3.6	4.1	2.2	1.1	1.0	1.2	1.4	2.3	1.0
Motor vehicles and parts	371	2.8	6.2	4.7	2.7	2.1	1.3	2.5	2.0	2.5	.2
Autos and light trucks		-2.1	5.2	4.4	.5	.9	2.4	1.0	1.8	2.1	-.3
Aerospace and misc.	372-6,9	-.2	.6	3.1	1.6	-.4	.9	.0	.3	2.3	1.6
Instruments	38	1.2	1.1	3.4	5.8	1.8	.9	.3	1.2	1.8	-.1
Miscellaneous	39	2.4	1.7	2.9	2.4	1.3	.0	1.2	1.4	1.2	1.0
<b>Nondurable</b>		2.2	3.4	4.1	1.3	.9	.0	.8	1.6	.1	.6
Foods	20	2.4	2.3	2.8	2.2	.4	.2	.0	.6	.3	-.1
Textile mill products	22	.7	-.2	-.2	-.5	-1.7	-1.2	-2.4	-.5	-.8	-1.8
Apparel products	23	.0	.8	.8	-.9	-2.2	-.3	.2	.1	.0	.2
Paper and products	26	2.3	3.3	4.3	.9	.8	1.0	.0	1.2	-1.4	.7
Pulp and paper	261-3	2.6	1.6	.3	.9	.7	1.4	-.7	-1.1	-.3	.5
Printing and publishing	27	1.0	3.0	3.5	.9	-.1	.3	1.2	1.9	1.1	-.8
Chemicals and products	28	3.4	5.5	7.0	1.4	2.5	.0	2.7	4.2	.4	1.6
Plastics materials	2821	3.3	6.8	9.6	1.3	.5	.1	5.1	6.0	-2.4	-2.7
Synthetic fibers	2823,4	-3.3	2.0	2.8	-1.5	1.4	-1.3	1.0	2.3	-3.2	3.7
Petroleum products	29	1.1	2.4	2.4	1.9	.0	-.3	.1	-.5	.3	-.6
Rubber and plastics products	30	3.9	5.2	5.7	3.8	3.5	-.3	-.2	.6	-1.6	.1
Leather and products	31	-1.8	-.6	-2.0	-3.5	-4.4	-.3	1.2	.8	1.4	.7
<b>Mining</b>		.6	1.9	-.1	-1.5	-.8	.2	.3	-1.0	-1.3	.7
Metal mining	10	3.2	3.0	.8	-.1	-1.8	1.7	-.2	-.3	1.4	.7
Coal mining	12	1.1	.9	.3	.8	.6	-.7	.7	-.1	.4	.4
Oil and gas extraction	13	.1	1.5	-.8	-2.4	-1.1	.4	.3	-1.3	-1.8	1.0
Oil and gas well drilling	138	-.5	3.5	1.4	-1.9	-.4	.7	2.5	-.5	1.2	-1.2
Stone and earth minerals	14	3.3	4.8	2.0	.4	.0	-.3	.5	-.9	-1.2	-.4
<b>Utilities</b>		.9	1.0	1.1	2.4	3.3	-1.0	.8	.4	1.0	2.1
Electric	491,3pt	1.1	.2	1.1	3.2	4.4	-.8	.4	.4	1.8	2.7
Gas	492,3pt	1.1	1.1	.5	.1	-.1	-.7	-.4	-.7	-.9	-1.1
<b>SPECIAL AGGREGATES</b>											
Computers, communications eq, and semiconductors <sup>3</sup>		44.2	40.3	39.5	37.8	48.0	-1.4	2.4	-8.7	2.1	9.0
Manufacturing ex. computers, communications eq., and semiconductors <sup>3</sup>		2.7	3.6	4.4	2.1	1.3	.1	.5	1.4	.8	.8

1. Growth rates are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading.

2. The difference between revised and earlier growth rates primarily reflect the modification to the definition of advanced and primary processing industries.

3. Semiconductors include related electronic components.

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, stone, clay, and glass products, semiconductors and related electronic components, and motor vehicle parts.

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 and commercial machinery and computer equipment, electrical machinery except semiconductors and related electronic components, transportation equipment except motor vehicle parts, instruments, and miscellaneous manufactures.

**Table 8**  
**REVISED AND EARLIER CAPACITY UTILIZATION RATES, BY INDUSTRY GROUPS**

Percent of capacity, seasonally adjusted

Item	SIC	Revised rate						Difference between revised and earlier rates (percentage points)		
		1967-1999 Ave.	1988-1989 High	1990-1991 Low	1998 Q4	1999 Q4	2000 Q3	1998 Q4	1999 Q4	2000 Q3
<b>Total index</b>		82.1	85.4	78.1	81.2	81.6	82.4	.2	.6	.1
<b>Manufacturing</b>		81.1	85.7	76.6	80.5	80.9	81.6	.3	.6	.2
<b>Primary processing</b>		82.1	88.3	76.7	81.6	84.6	85.6	.9	1.9	1.3
<b>Advanced processing</b>		80.6	84.2	76.6	80.4	79.2	79.9	.5	.2	.3
<b>Durable</b>		79.6	84.6	73.1	81.0	81.0	82.6	.6	.7	.0
Lumber and products	24	82.6	93.6	75.5	84.2	83.3	79.2	.5	2.1	2.0
Furniture and fixtures	25	81.3	86.6	72.5	78.6	78.8	79.8	.0	-.3	-.1
Stone, clay, and glass products	32	78.7	83.5	69.7	85.1	85.2	85.4	-.4	1.7	2.1
Primary metals	33	81.5	92.7	73.7	84.8	88.6	87.0	1.6	1.3	2.2
Iron and steel	331,2	81.3	95.2	71.8	79.9	87.2	85.2	1.6	2.6	3.9
Raw steel		80.9	92.7	71.5	76.3	86.6	83.2	2.1	.5	1.6
Nonferrous	333-6,9	81.9	89.3	74.2	90.8	90.4	89.1	1.5	-.1	.0
Primary copper	3331	76.2	86.3	73.5	106.4	77.5	71.8	19.6	2.1	9.9
Primary aluminum	3334	88.4	100.4	97.3	88.4	89.7	81.4	-.2	-1.5	-2.0
Fabricated metal products	34	78.0	82.0	71.9	77.0	76.9	77.1	1.5	1.5	.6
Industrial machinery and equipment	35	81.4	85.4	72.3	83.0	79.8	82.6	-1.1	-1.3	-1.0
Computer and office equip.	357	81.3	86.9	66.9	85.6	76.5	79.1	-.1	-3.5	-1.5
Electrical machinery	36	81.2	84.0	75.0	79.0	83.4	91.6	1.1	2.0	-.5
Semiconductors and related electronic components	3672-9	79.6	81.1	75.6	76.8	86.1	98.4	-1.7	.1	-5.8
Transportation equipment	37	76.0	85.8	68.5	81.7	78.8	77.5	1.0	.5	.4
Motor vehicles and parts	371	76.9	89.1	55.9	80.4	82.9	81.5	-.2	-.7	.1
Autos and light trucks <sup>1</sup>			92.3	53.3	86.6	87.5	86.3	-.4	-1.5	-.2
Aerospace and misc.	372-6,9	75.3	87.3	79.2	83.7	72.8	71.5	2.9	1.3	.4
Instruments	38	81.7	81.4	77.2	81.4	80.4	80.1	1.0	-.7	.6
Miscellaneous	39	75.8	79.0	71.7	78.3	81.6	81.4	-.8	-.1	.6
<b>Nondurable</b>		83.3	87.3	80.7	80.1	81.0	80.4	-.3	.2	.0
Foods	20	82.8	85.4	82.7	81.2	80.2	81.0	1.1	1.6	2.0
Textile mill products	22	85.6	90.4	77.7	82.2	82.4	81.4	.9	-2.1	2.2
Apparel products	23	80.8	85.1	75.5	74.0	71.7	70.2	3.0	3.6	3.3
Paper and products	26	88.9	93.5	85.0	85.0	86.7	83.2	-1.1	.0	.1
Pulp and paper	261-3	92.4	98.0	89.9	90.9	94.0	89.1	.1	.5	-.3
Printing and publishing	27	85.5	91.7	79.6	80.1	80.8	81.3	-1.1	-.9	-.4
Chemicals and products	28	79.3	86.2	79.3	74.5	78.4	76.6	-2.5	-2.3	-3.3
Plastics materials	2821	86.8	97.0	74.8	89.4	94.0	89.6	-2.4	-.7	4.0
Synthetic fibers	2823,4	85.1	99.7	77.6	79.9	87.6	84.1	2.9	5.3	2.1
Petroleum products	29	87.1	88.5	85.1	94.7	93.2	95.3	.6	.5	.7
Rubber and plastics products	30	84.7	89.6	77.4	85.5	85.3	83.7	.4	1.5	1.6
Leather and products	31	80.9	83.3	76.1	71.2	69.3	69.9	.4	2.3	4.3
<b>Mining</b>		87.4	88.0	87.0	83.8	84.7	86.4	.5	1.9	.2
Metal mining	10	79.4	89.4	79.9	87.1	79.6	78.1	-.6	1.2	-2.3
Coal mining	12	86.7	91.5	83.4	87.3	85.4	85.4	-.5	-.9	-.6
Oil and gas extraction	13	88.4	88.2	88.7	82.4	84.7	87.2	.9	2.5	.0
Oil and gas well drilling	138	73.9	69.3	60.0	62.0	66.8	78.1	-1.3	-2.6	-3.1
Stone and earth minerals	14	84.8	89.0	79.4	86.4	86.6	85.4	.6	2.6	2.7
<b>Utilities</b>		87.5	92.6	83.4	89.3	89.2	90.6	-.1	.9	-.4
Electric	491,3pt	89.6	95.0	87.1	95.0	93.6	93.6	1.2	1.2	-.5
Gas	492,3pt	82.0	85.0	67.1	72.2	75.4	81.0	1.3	4.5	4.0
<b>SPECIAL AGGREGATES</b>										
Computers, communications eq, and semiconductors <sup>2</sup>		80.2	81.9	72.4	79.2	80.8	89.9	-.3	.3	-.3
Manufacturing ex. computers, communications eq., and semiconductors <sup>2</sup>		81.2	86.1	76.8	80.7	80.9	80.5	.2	.3	.1

1. Series begins in 1977.

2. The difference between revised and earlier growth rates primarily reflect the modification to the definition of advanced and primary processing industries.

3. Semiconductors include related electronic components.

Note—The "high" column refers to periods in which utilization generally peaked; the "low" column refers to recession years in which utilization generally bottomed out. The monthly highs and lows are specific to each series, and all did not occur in the same month.

**Table 9**  
**ANNUAL PROPORTIONS IN INDUSTRIAL PRODUCTION, BY INDUSTRY GROUPS**

Item	SIC	1992	1993	1994	1995	1996	1997	1998	1999
<b>Total index</b>		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>Manufacturing</b>		85.4	85.9	86.7	86.9	87.0	88.2	88.9	88.4
<b>Primary processing</b>		31.0	31.8	33.4	33.7	33.5	34.0	33.7	34.1
<b>Advanced processing</b>		54.5	54.1	53.3	53.2	53.5	54.1	55.2	54.3
<b>Durable</b>		44.8	45.6	46.3	46.8	47.6	48.3	48.9	48.4
Lumber and products	24	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1
Furniture and fixtures	25	1.4	1.4	1.4	1.4	1.4	1.5	1.6	1.6
Stone, clay, and glass products	32	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4
Primary metals	33	3.1	3.3	3.6	3.5	3.5	3.6	3.4	3.4
Iron and steel	331,2	1.8	1.9	2.0	1.9	1.9	2.0	1.8	1.8
Raw steel		.1	.1	.1	.1	.1	.1	.1	.1
Nonferrous	333-6,9	1.4	1.4	1.6	1.6	1.6	1.6	1.6	1.6
Fabricated metal products	34	5.0	5.1	5.2	5.3	5.5	5.7	5.7	5.6
Industrial machinery and equipment	35	7.8	8.1	8.4	8.9	9.1	9.0	9.1	9.0
Computer and office equip.	357	1.6	1.6	1.6	1.7	1.8	1.9	2.0	2.3
Electrical machinery	36	7.1	7.4	7.8	8.3	8.6	8.8	8.6	8.5
Semiconductors and related electronic components	3672-9	2.5	2.6	2.9	3.4	3.6	3.7	3.5	3.6
Transportation equipment	37	9.4	9.5	9.3	8.9	8.9	9.3	9.9	9.7
Motor vehicles and parts	371	4.7	5.1	5.5	5.4	5.5	5.7	5.6	5.9
Autos and light trucks		2.5	2.5	2.8	2.8	2.9	3.0	2.7	2.9
Aerospace and misc.	372-6,9	4.7	4.4	3.8	3.5	3.4	3.6	4.3	3.9
Instruments	38	5.4	5.3	4.9	4.8	4.9	4.7	4.8	4.7
Miscellaneous	39	1.3	1.3	1.3	1.3	1.4	1.3	1.3	1.3
<b>Nondurable</b>		40.6	40.3	40.4	40.2	39.4	39.9	40.1	40.0
Foods	20	9.6	9.6	9.3	9.2	9.1	9.0	9.2	9.0
Tobacco products	21	1.6	1.1	1.2	1.3	1.3	1.4	1.7	1.7
Textile mill products	22	1.8	1.8	1.8	1.7	1.6	1.6	1.5	1.4
Apparel products	23	2.2	2.1	2.1	2.0	1.9	1.8	1.7	1.5
Paper and products	26	3.5	3.5	3.8	3.9	3.5	3.4	3.4	3.4
Printing and publishing	27	6.8	6.8	6.6	6.6	6.6	6.9	6.8	6.6
Chemicals and products	28	10.0	10.0	10.0	9.9	9.8	10.1	10.2	10.4
Petroleum products	29	1.4	1.5	1.6	1.5	1.7	1.6	1.5	2.0
Rubber and plastics products	30	3.5	3.6	3.8	3.7	3.7	3.8	3.8	3.8
Leather and products	31	.3	.3	.2	.2	.2	.2	.2	.2
<b>Mining</b>		6.8	6.3	5.9	6.0	6.3	5.6	5.0	5.6
Metal mining	10	.4	.4	.4	.4	.4	.3	.3	.2
Coal mining	12	1.0	.9	.9	.8	.8	.7	.7	.6
Oil and gas extraction	13	4.8	4.4	4.0	4.1	4.5	3.9	3.5	4.2
Stone and earth minerals	14	.6	.6	.6	.6	.6	.6	.6	.6
<b>Utilities</b>		7.8	7.7	7.4	7.1	6.7	6.3	6.1	5.9
Electric	491,3pt	6.2	6.1	5.8	5.6	5.3	4.9	4.8	4.6
Gas	492,3pt	1.6	1.6	1.6	1.5	1.4	1.4	1.3	1.3
<b>SPECIAL AGGREGATES</b>									
Computers, communications eq., and semiconductors <sup>1</sup>		5.7	5.8	6.2	6.9	7.3	7.6	7.5	7.8
<b>Manufacturing excluding:</b>									
Motor vehicles and parts		80.7	80.9	81.2	81.5	81.5	82.4	83.3	82.5
Computer and office equipment		83.8	84.3	85.1	85.2	85.2	86.3	86.9	86.1
Computers and semiconductors <sup>1</sup>		81.3	81.7	82.2	81.8	81.6	82.6	83.4	82.5
Computers, communications eq., and semiconductors <sup>1</sup>		79.8	80.1	80.5	80.1	79.7	80.5	81.4	80.6

1. Semiconductors include related electronic components.

Note—The IP proportion data are estimates of the industries' relative contributions to overall IP growth in the following year. For example, a 1 percent increase in durable goods manufacturing in 2000 would account for a 0.485 percent increase in total IP.



**Table 10**  
**RATES OF GROWTH IN ELECTRIC POWER USE, 1996–2000<sup>1</sup>**

Item	Revised growth rate (percent)					Difference between revised and earlier growth rates (percentage points)				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
<b>Total</b>	1.6	1.0	-1.2	1.0	.3	.1	-.1	-.3	1.3	.0
<b>Manufacturing</b>	1.6	1.2	-1.2	1.1	.4	.2	-.1	-.3	1.4	.0
<b>Durable</b>	.3	3.8	-1.8	1.3	2.6	.6	-.9	-.5	1.9	.5
Lumber and products	24	4.7	1.0	2.1	-.1	3.9	.5	-2.5	.4	.9
Furniture and fixtures	25	4.8	2.7	1.0	1.9	4.8	.7	1.1	.4	.8
Stone, clay, & glass products	32	4.1	1.1	2.2	-.4	3.8	.6	-.5	-.3	1.8
Primary metals	33	-3.0	5.5	-4.8	1.9	2.2	.8	-1.2	-1.0	2.4
Fabricated metal products	34	3.9	4.1	-.7	.9	2.9	.2	-.5	.5	2.0
Industrial machinery and equipment	35	1.3	4.1	.5	.1	3.3	.1	-.1	-.5	2.1
Electrical machinery	36	2.9	2.6	-2.6	-.4	5.1	.4	-.3	-.6	1.8
Transportation equipment	37	-.1	4.2	-1.0	3.6	-1.4	.6	-1.4	-.1	1.6
Instruments	38	-2.6	.3	1.5	-1.9	3.8	.3	-.7	-2.3	-3.0
Miscellaneous manufactures	39	8.5	.4	6.4	11.6	6.5	1.3	-1.7	-1.8	7.7
<b>Nondurable</b>	2.7	-.9	-.8	1.0	-1.3	-.1	.5	-.1	.9	-.4
Foods	20	3.4	3.7	3.0	2.2	1.6	1.7	.4	.7	2.6
Tobacco products	21	1.3	.1	-1.7	-6.7	-.5	1.3	-.6	.1	.8
Textile mill products	22	.7	-.2	-2.3	-2.4	.8	-2.0	-3.4	-.9	-.5
Apparel products	23	-.7	.1	-2.4	2.7	-2.1	1.1	1.8	1.0	9.0
Paper and products	26	.6	1.6	-2.5	1.6	-4.0	-.5	-.9	-1.7	4.5
Printing and publishing	27	-.1	1.5	1.5	.8	-.5	-.9	-1.4	-.8	3.0
Chemicals and products	28	5.6	-3.8	-1.6	.8	-3.9	-.4	1.8	.7	.3
Petroleum products	29	-2.6	-1.5	-2.1	1.1	3.7	.6	1.9	-.9	-4.3
Rubber and plastics products	30	3.8	1.3	3.3	1.7	1.8	.5	-.6	-.3	1.2
Leather and products	31	-2.2	-1.4	-4.4	-2.4	6.2	-.7	.0	-.6	5.6
<b>Mining</b>	1.7	-.8	-.3	-.6	-.7	-1.4	-.6	.3	.5	.1
Metal mining	10	-1.2	.0	.6	-1.1	2.8	-3.8	-.4	.8	.5
Coal mining	12	.0	-.6	.6	-4.4	4.0	.1	-.6	-.4	.4
Oil and gas extraction	13	3.6	.5	-5.8	1.7	-3.1	-.8	-1.0	-.9	-.2
Stone and earth minerals	14	4.2	-4.6	8.4	-.1	-6.3	-.2	.2	-1.0	1.4
<b>SUPPLEMENTARY GROUPS</b>										
Total, excluding nuclear nondefense	1.2	2.3	-1.5	1.1	.9	.2	-.1	-.2	1.1	.0
Utility sales to industry	2.1	1.0	-1.3	1.1	1.0	.1	-.2	-.5	1.4	.0
Industrial generation	-5.5	.8	.5	-1.1	-3.1	.2	.1	2.4	-2.6	.7

1. Growth rates are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading. For 2000, the growth rates are calculated from the fourth quarter of 1999 to the third quarter of 2000 and annualized.

## 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. Files containing data in the release and historical data are available under statistical releases at <http://www.federalreserve.gov>, the Board's World Wide Web site. For paid access to these files through the Department of Commerce's Economic Bulletin Board or World Wide Web site, please call STAT-USA at 1-800-STAT-USA or (202) 452-1986. 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 267 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 1998; for other series, the factors were estimated with data through at least June 1998. Series are preadjusted for the effects of holidays or the business cycle where appropriate. 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 1987-97 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 1987-97

period. In most cases (about 83 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

This annual revision will be described more completely in an upcoming *Federal Reserve Bulletin*. The annual revision published on November 30, 1999 is described more completely in the *Federal Reserve Bulletin*, vol.86 (March 2000). The basic methodology used to estimate capacity and utilization is discussed in this article.

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, February 1997, February 1998, January 1999).

### Release Schedule for 2000

At 9:15 a.m. on:

January 14, February 15, March 15, April 14, May 15, June 15, July 14, August 15, September 15, October 17, November 15, and December 15

### Release Schedule for 2001

At 9:15 a.m. on:

January 17, February 16, March 16, April 17, May 14, June 15, July 17, August 15, September 14, October 16, November 16, and December 14