

FEDERAL RESERVE statistical release



G.17 (419) 2003 Historical and Annual Revision

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Industrial Production and Capacity Utilization: The 2003 Annual Revision

The Federal Reserve revised the index of industrial production (IP) and the related measures of capacity and capacity utilization for the period from January 1972 to September 2003. Overall, the changes are small, and most of the revisions appear in the period beginning with 2000.

Measured from fourth quarter to fourth quarter, industrial output is now reported to have increased at a slower rate in 2000, and to have contracted a bit more slowly in 2001, than reported earlier. The changes to total industrial production in other years are slight. The revision still places the most recent peak in IP in June 2000 and the corresponding trough in December 2001. After reaching the trough, the total index recorded gains in the first half of 2002, only to trend downward again until mid-2003 and then head up.

The rate of industrial capacity utilization—the ratio of production to capacity—in the third quarter of 2003 was little changed by the revision; at 74.6 percent, the rate is 4 percentage points below the low of the 1990–91 recession and 6.7 percentage points below its 1972–2002 average.¹ The operating rates in manufacturing in the fourth quarter of 2002 and the third quarter of 2003 were also close to previous estimates. Capacity utilization at mines was slightly lower in the fourth quarter of 2002, and a bit higher in the third quarter of 2003, than previously reported. The current revision found that the utilization rates at utilities in the fourth quarters of 2001 and 2002 were higher than reported earlier but that the rates in the third quarter of 2003 were little changed from those reported previously.

The new overall measures of capacity are also only minimally different from those estimated earlier. The current figures suggest that industrial capacity expanded slightly faster in 1999 and 2002, and slightly slower in 2000 and 2001, than reported earlier.

The updated measures introduce improved methods for compiling a few series and incorporate newly available and more comprehensive source data. The new source data generally cover the years from 2000 on, and the modified methods affect indexes from 1992 forward.

The statistical revisions to the IP index were principally derived from the inclusion of information contained in annual reports issued by the Bureau of the Census: the 2001 Annual Survey of Manufactures (ASM), the 2001 Services Annual Survey (for publishing), and selected 2002 Current Industrial Reports. In addition, revised annual data from the U.S. Geological Survey (USGS) on minerals (except fuels) for 2001 and some new data for 2002 were introduced. Annual data from the U.S. Forest Service were used to generate estimates for logging. In addition, the new monthly production estimates for 2002 and 2003 reflect updated seasonal factors and the inclusion of monthly source data that became available (or were revised) after the closing of the regular four-month reporting window.

The capacity indexes and capacity utilization rates were calculated using the revised production indexes, results from the Census Bureau's 2002 Survey of Plant Capacity for the fourth quarter of the year, and newly available 2002 data on industrial capacity from the USGS, the Energy Information Agency of the Department of Energy, and other organizations. In addition, the relationships used to estimate the current changes in manufacturing capacity were derived from Census data on capital spending by industry for 2001 and indicators of the rates of change in manufacturers' capital spending in 2002 and 2003.

1. These comparisons use quarterly average data.

Finally, the revision included updates to the value-added weights used to aggregate individual indexes to the major industry and the market group subtotals and to the index for total industry.

RESULTS OF THE REVISION

For the third quarter of 2003, the revision places the production index at 111.0 percent of output in 1997 (table 1A) and the capacity index at 148.8 percent of output in 1997 (table 1B); both indexes are slightly higher than reported previously (chart 1). As noted earlier, the utilization rate for total industry was little changed for the third quarter of 2003.

Tables 2 and 3 show the revised rates of change of industrial production for market groups, industry groups, special aggregates, and selected detail for the years 1999 through 2003:Q3. Tables 4, 5, and 6 show the revised figures for capacity utilization, capacity, and electric power use. The tables also show the difference between the revised and earlier rates of change. For capacity utilization, the tables show the difference between revised and previous rates for the final quarter of the year (the third quarter was used for 2003). Tables 7, 8, and 9 report the revised production, capacity, and utilization series for manufacturing, for total industry excluding selected high-technology industries, and for manufacturing excluding selected high-technology industries.

Industrial Production

The revision to industrial output reduced the gain in 2000 as well as the decline in 2001 (table 2). The cumulative recovery in total IP since the end of 2001 was, on balance, unchanged. The somewhat slower increase in IP now shown for 2000 largely reflects the incorporation of recently issued annual Census data. Among major manufacturing groups, the new data indicated weaker increases in production of a few industries, such as machinery, computer and electronic products, and nonmetallic mineral products. In 2001, the slightly slower decline in total IP partly reflects an upward revision in the output of aerospace and miscellaneous transportation equipment.

The revision now shows that the rise in the output of high-technology industries—computers and office equipment, communications equipment, and semiconductors and related electronic components—was about 15 percent in 2002 and 20 percent in 2003. In general, these industries recorded rapid gains in output in the late 1990s, only to fall back a bit in 2001. The production of computers and semiconductors picked up again in 2002 and 2003, but the production of communications equipment continued to fall in 2002 before posting a modest increase this year. Relative to earlier estimates, the output of all high-technology components increased at a faster rate in 2002. In 2003, although the gain in the output of computers now appears to have been weaker than previously reported, the output of other high-technology industries expanded more rapidly during the same period.

Among major market groups, the revised production index for consumer goods rose somewhat more slowly in 2002 and 2003 than earlier reports had suggested; the estimates for earlier years were little changed.² The rise in the production of business equipment in 1999 and 2000 is now shown to have been, on balance, somewhat less than previously reported, and the subsequent contraction in 2001 and 2002 to have been less steep. On balance, the output of information processing equipment has been stronger over the 1999–2003 period than previously estimated, while the production of industrial equipment has been weaker. The production of defense and space equipment is now estimated to have declined more steeply in 1999 and 2000, and to have bounced back more rapidly in 2001 and 2002, than reported earlier. The output of materials is little changed from previous estimates.

Capacity Utilization

The revised indexes of capacity utilization are generally close to the previous estimates. The current revision places the factory operating rate at 73.5 percent for the fourth quarter of 2002 and at 73.0 percent for the third quarter of 2003—nearly identical to earlier reports and among the lowest rates since the early 1980s. The revisions to the operating rate at mines were also small. The utilization rate at electric and gas utilities was 83.3 percent in the third quarter of 2003, 0.1 percentage point lower than the rate reported previously. New estimates of the utilization at utilities in 2001 and 2002 were somewhat higher than indicated in earlier reports.

2. As discussed below, the market groups were revised to incorporate the new 1997 input-output tables issued by the Bureau of Economic Analysis.

Among high-technology industries, capacity utilization in the third quarter of 2003 remained at a low rate but was higher than the rate for the fourth quarters of 2001 and 2002. Relative to earlier estimates, the utilization rates for the third quarter of 2003 were lower for computers but a bit higher for communications equipment and semiconductors. For the fourth quarter of 2002, the current revision shows lower estimates for all three high-technology components than earlier estimates suggested.

Capacity

The revisions to manufacturing capacity from 1999 to 2003 are small. The general contour of the series shows rapid acceleration during the second half of the 1990s and a slowing since then. Manufacturing capacity is now estimated to have decelerated somewhat more in 2000 and 2001 than previously indicated, but in 2002 and 2003 it is estimated to have risen about 1.0 percent per year, a touch more than earlier estimates suggested. Within the technology sector, the rapid expansion that characterized the late 1990s has trailed off somewhat since then, although the revised capacity estimates show less of a slowdown, particularly in 2002, than was previously estimated. Excluding high-technology industries, manufacturing capacity has contracted slightly since 2001.

Relative to the earlier reports, capacity in mines expanded at a slightly slower pace in 1999, 2000, and 2003 and at a slightly faster rate in 2001 and 2002. The new measures of capacity at electric and gas utilities show a lower rate of increase in the 2000–03 period than previously reported.

The revisions to the capacity estimates for stage-of-process groups was small. Compared with the earlier estimates, the current capacity measures for 2003 reflect weaker expansion among producers of crude goods and a bit of an increase for producers of primary, semifinished, and finished goods. For 2002, the rate of change for all categories is currently estimated to have been a bit stronger than previously reported.

TECHNICAL ASPECTS OF THE REVISION

As noted earlier, the annual revision incorporated comprehensive annual data on industry output, utilization, value added, and capital spending for 2001 and 2002, along with an update of all seasonal factors and monthly data on production, production worker hours, and electric power use. Annual data on output and prices for previous years that were revised by the original source were also included.

As noted above, the current revision incorporated data from the 2001 ASM, along with revisions to the 2000 ASM. These new data, deflated by industry-specific price indexes, largely formed the basis for the annual estimates of manufacturing output for those years. After incorporating these data and other annual output measures into IP, the annual average change in total IP between 1999 and 2000 was revised down 0.3 percent, and the rate of change between 2000 and 2001 was revised up 0.1 percent.

The industrial production and capacity data are based on the new 2002 North American Industry Classification System (NAICS). Last year's historical revision reclassified production and capacity indexes back to 1972 for individual industries from the Standard Industrial Classification system to NAICS.³ The Federal Reserve's accompanying indexes of industrial electric power use are also based on the 2002 NAICS. As in the 2002 revision, all indexes are expressed as percentages of output in 1997.

Revised Monthly Data

This revision incorporates the product data that become available after the regular four-month reporting window for monthly IP has closed. For example, monthly data from the Gas Appliance Manufacturers Association on the production of water heaters and storage batteries are unavailable initially but become available for inclusion in the annual revision.

The measures of inputs used to estimate monthly production were also updated. These included revised data on monthly production worker hours (based on the BLS benchmark of employment to March 2002 comprehensive

3. A complete summary of the revisions and general methods used to prepare the 2002 historical and annual revision of the IP index are found in the *Federal Reserve Bulletin*, vol.89 (April 2003), pp. 151–76 (www.federalreserve.gov/pubs/bulletin/2003/0403lead.pdf).

measures) and on monthly electric power use since 1997. In June 2003, the BLS issued on a NAICS basis national employment, hours, and earnings data from the Current Employment Statistics program, which includes data on monthly production worker hours. Most of the individual hours series were restated on a NAICS basis back to 1990. For years before 1990, the Federal Reserve derived NAICS-based production worker hours series from a historical SIC-NAICS concordance developed from plant-level data records maintained by the Census Bureau. This concordance was created first by converting to NAICS the industry assignment of each establishment in the Censuses of Manufactures from 1963 to 1992 and then by cross-tabulating production worker hours, on both an SIC and a NAICS basis.⁴

Seasonal factors for all series were reestimated using data that extend into 2003. Factors for production worker hours, which adjust for timing, holiday, and monthly seasonal patterns, were updated with data through September 2003. A new holiday factor was incorporated into seasonal adjustment of production worker hours. Specifically, measured production worker hours tend to be less in Julys when Independence Day falls on a Friday; an adjustment for this effect had been incorporated into the seasonal factors for recent monthly IP releases. Factors for the electric power series were reestimated using data through June 2003. The updated factors for the physical product series, which include adjustments for holiday and workday patterns, used data through at least June 2003. Seasonal factors for unit motor vehicle assemblies have been updated through June 2004 and are on the Board's web site at www.federalreserve.gov/releases/g17/mvsf.htm.

Revisions by the Department of Energy (DOE) to the data for electric power producers resulted in new methods for constructing the output indexes for the related series. Previously, the DOE provided pooled monthly information for all nonutility power producers. In the past, the Federal Reserve estimated monthly power output for industrial and commercial power producers and then subtracted this amount from the combined DOE total. Recently, the DOE began providing explicit monthly production totals for independent power producers and for industrial and commercial power producers; thus, independent estimates are no longer necessary.

Weights for Aggregation

The IP index is an annually weighted Fisher index. This revision incorporates updated estimates of the industry value-added weights used in the aggregation of IP indexes and capacity utilization rates. The Census Bureau provides annual measures for manufacturers and quinquennial measures for mining, and the Federal Reserve derives estimates of value added for the electric and gas utility industries from annual revenue and expense data issued by other organizations. Annual data through 2001 were used in the estimation of industry value added. The weights for aggregation, expressed as unit value added, were estimated using the latest data on producer prices. Table 10 shows the annual value-added proportions incorporated in the IP index from 1995 through 2002.

Changes to Market Groups

This revision adjusts the market group structure to incorporate the 1997 input-output (I-O) tables issued by the Bureau of Economic Analysis earlier this year.⁵ Beginning with the 2002 revision, the IP market groups were restructured to allow for the assignment of one industry to multiple market groups. The rationale is that a market group index reflects the *input* to a defined economic activity, and an industry's output is often related to more than a single market group. The share of each industry's output that contributes to a single market group was derived using the new interindustry relationships described by the new 1997 I-O tables.

Changes to Individual Series

Beginning with this revision, the capacity index includes new Department of Energy data for coal, which accounts for about 11-1/2 percent of mining capacity in 2002. The new data produced estimates that were little changed from those of the previous reports.

4. A more thorough discussion of the historical SIC-NAICS concordance can be found in the April 2003 *Bulletin* article.

5. The revision scheduled for fall 2004 will update the stage-of-process groups to reflect the 1997 I-O relationships.

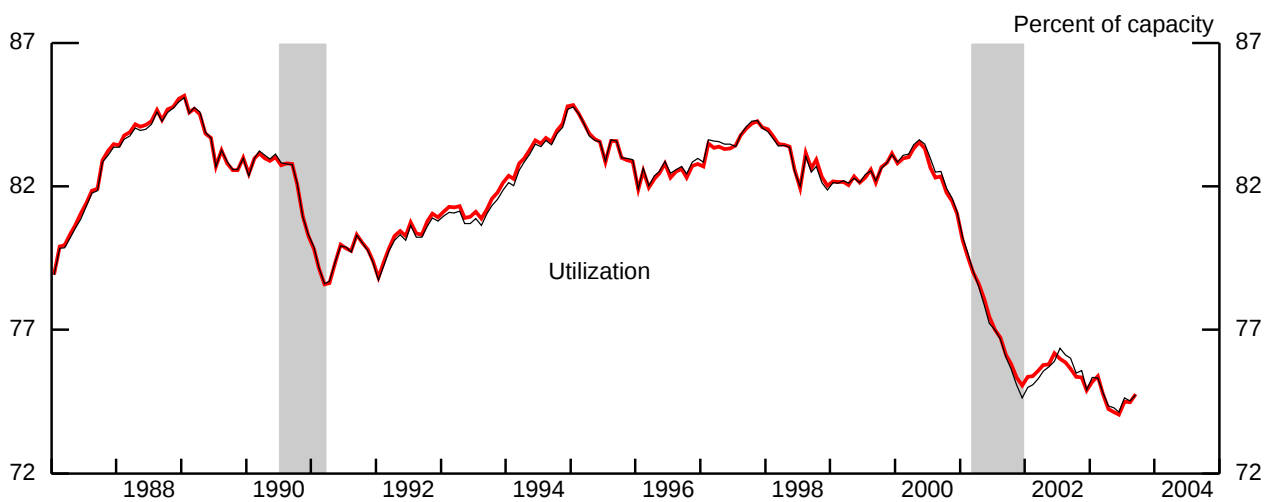
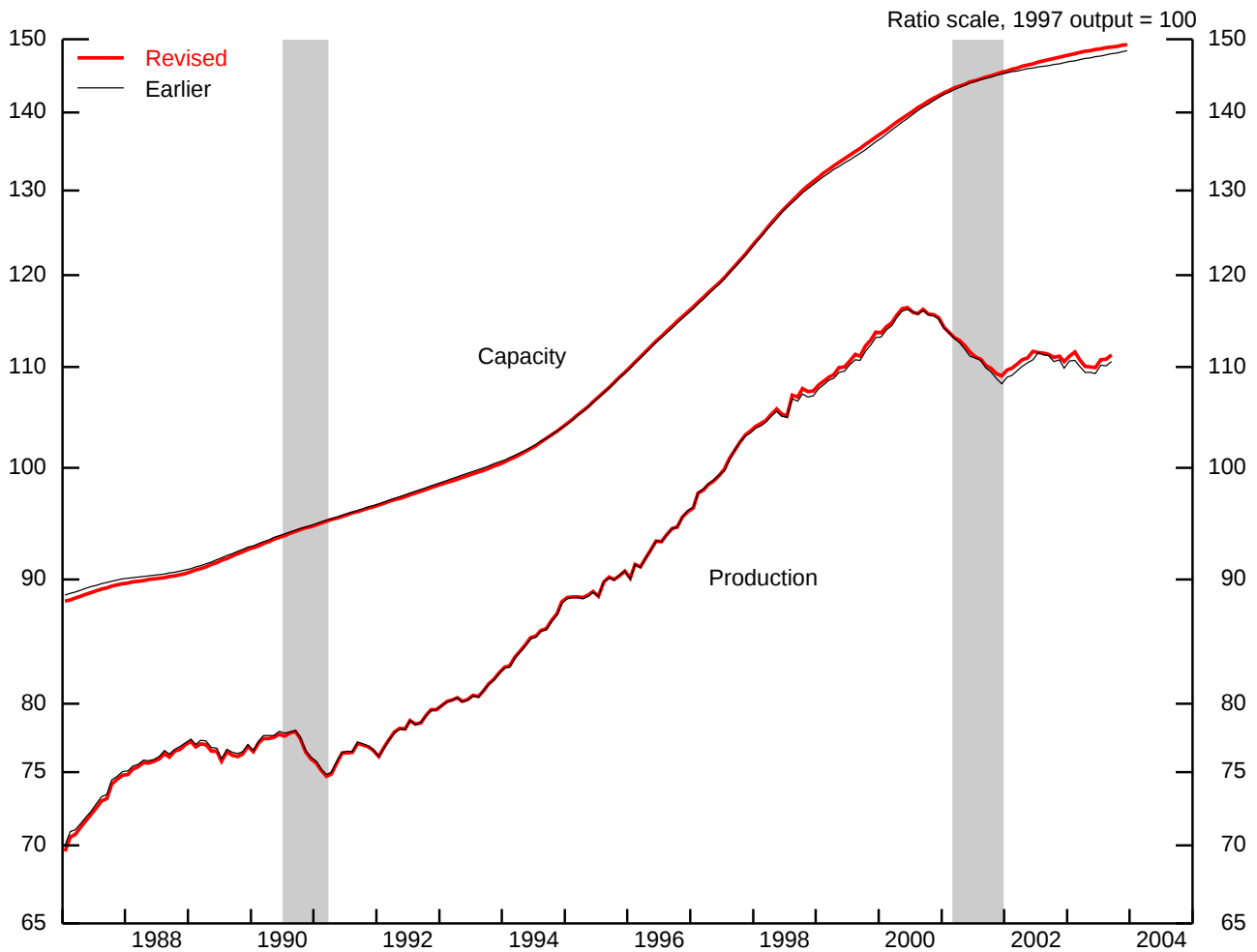
Data Availability and Publication Changes

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, and on diskettes from Publications Services (telephone 202-452-3245). Updated data for all of the regularly issued series on industrial production, capacity, capacity utilization, and electric power use are available on the website. The revised data will also be available through the STAT-USA web site of the Department of Commerce (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.

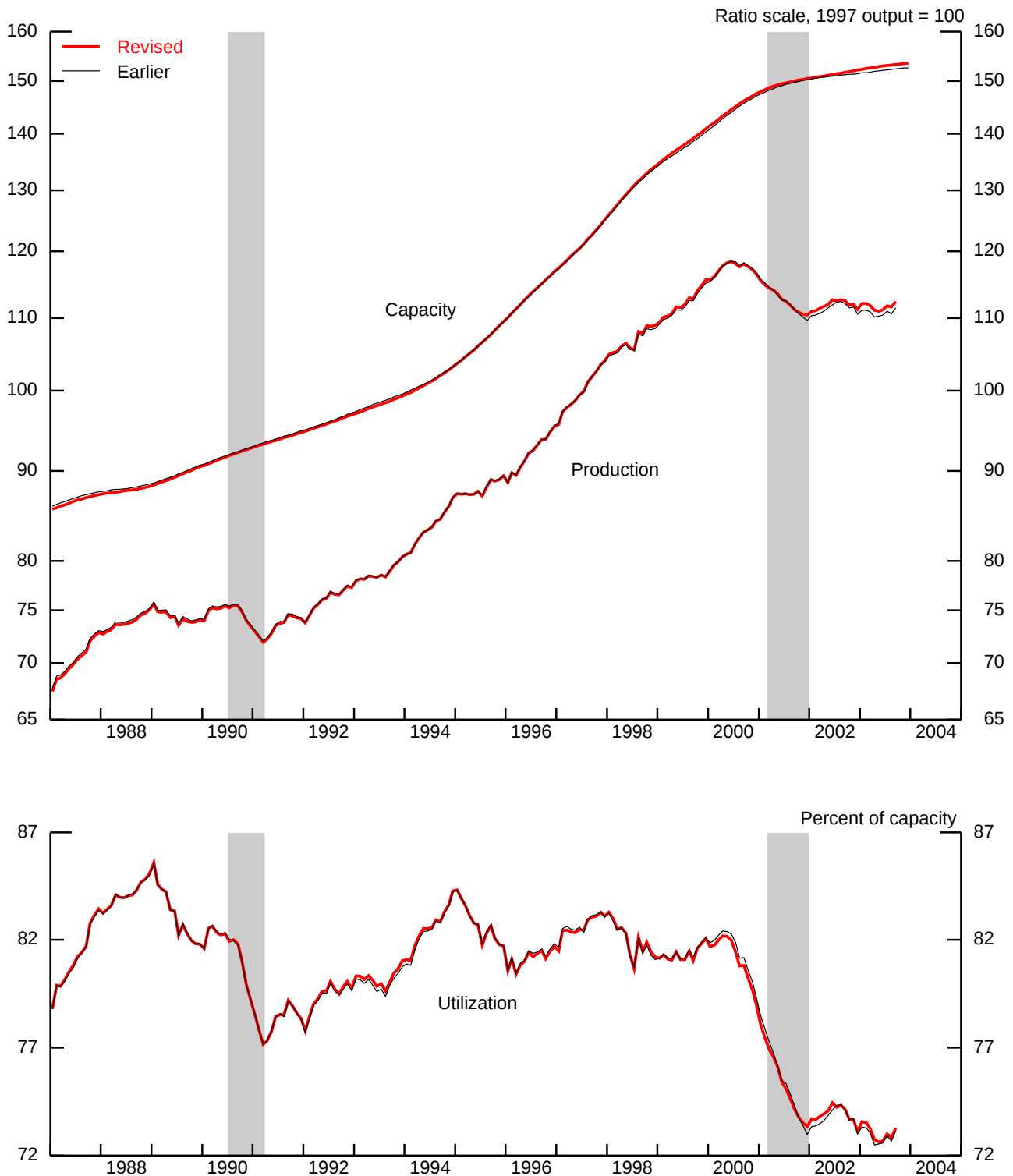
An expanded version of this release will be published in a forthcoming article in the Federal Reserve Bulletin.

1. Total industrial production, capacity, and utilization



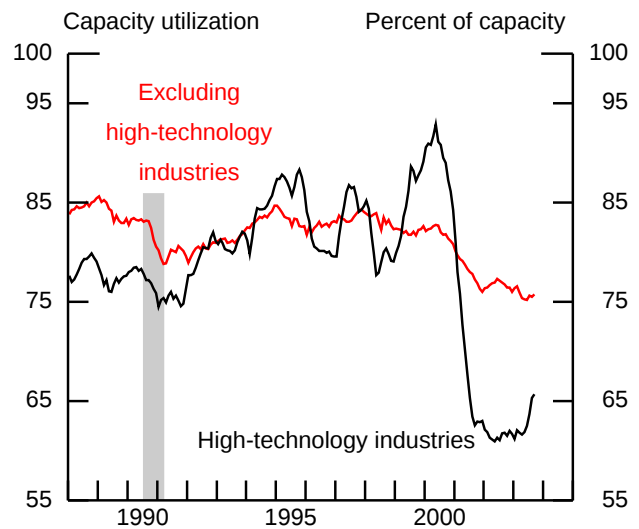
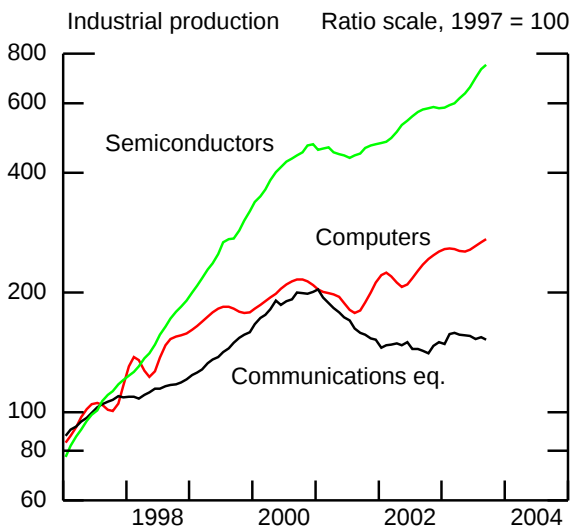
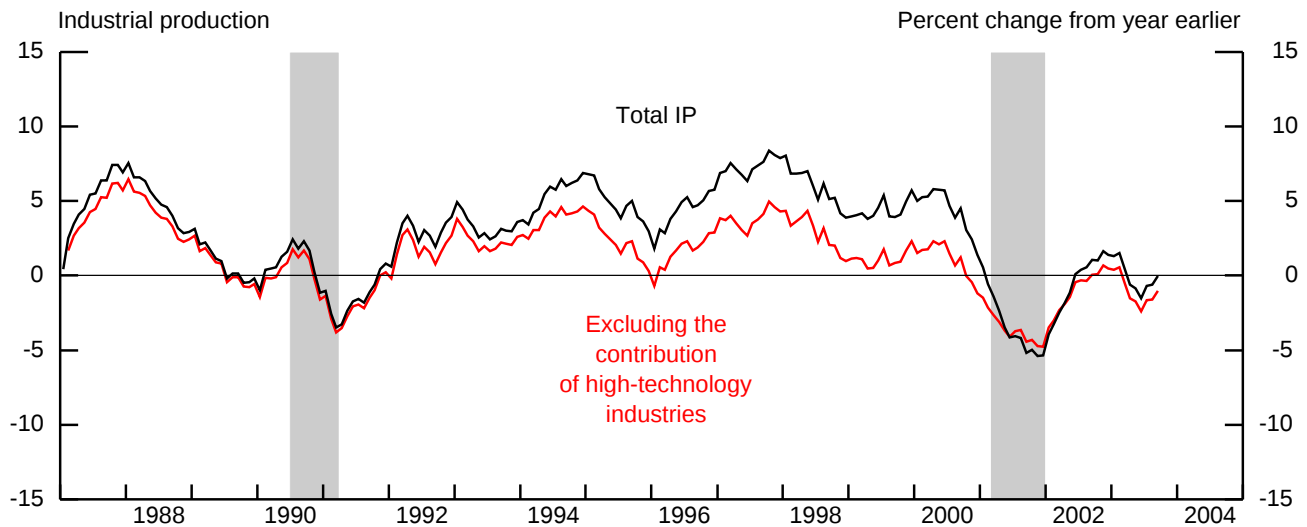
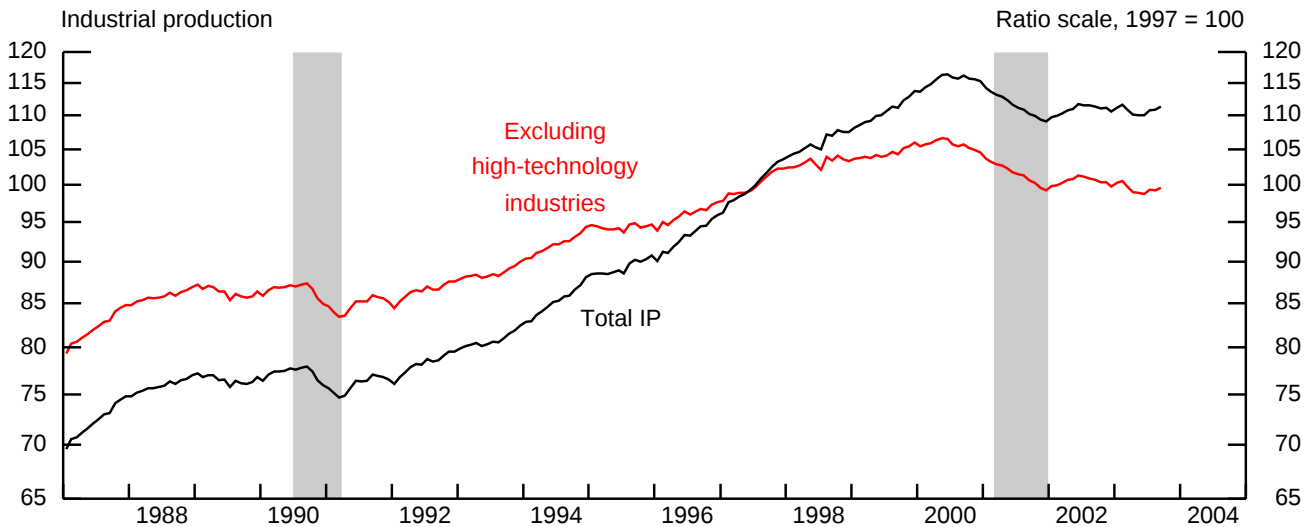
Note: The shaded areas are periods of business recession as defined by the National Bureau of Economic Research (NBER).

2. Manufacturing industrial production, capacity, and utilization



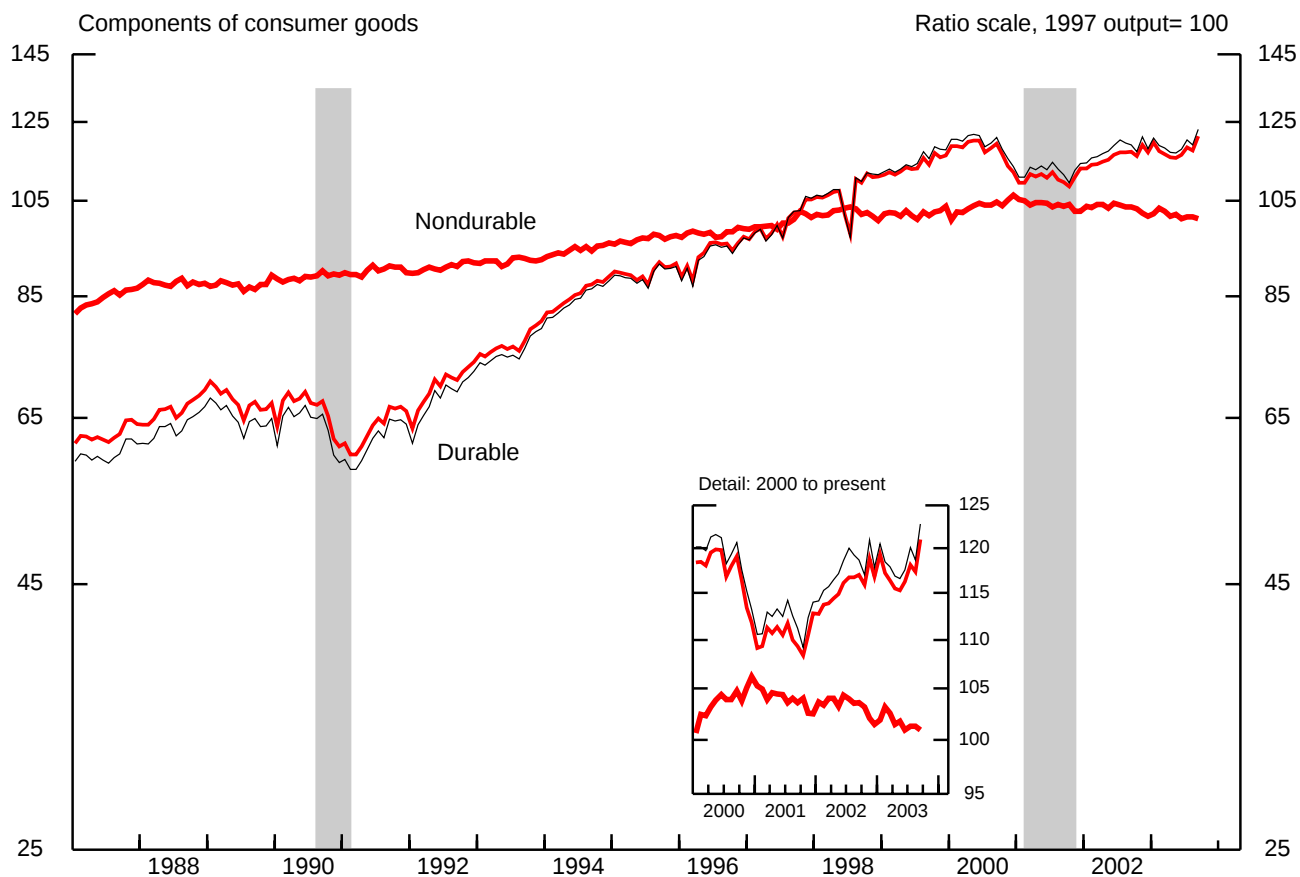
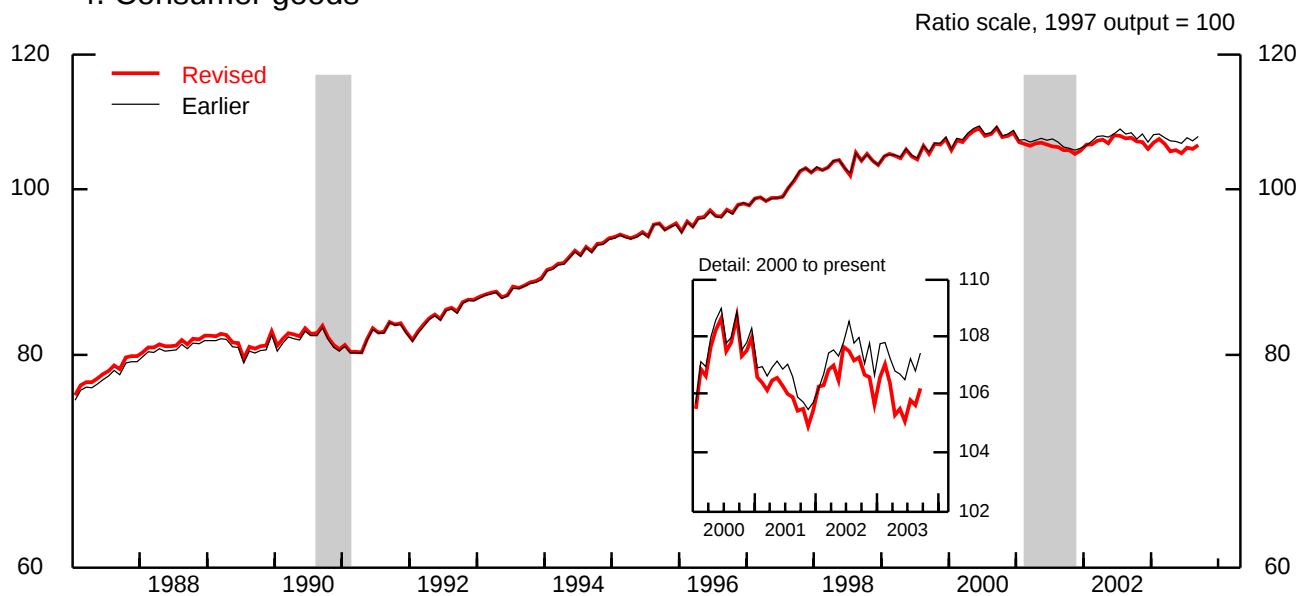
Notes: The shaded areas are periods of business recession as defined by the NBER.
 Manufacturing consists of those industries in the North American Industry Classification System, or NAICS, definition of manufacturing plus those industries--logging and newspaper, periodical, book and directory publishing--that have traditionally been considered to be manufacturing and included in the industrial sector.

3. Industrial production and capacity utilization



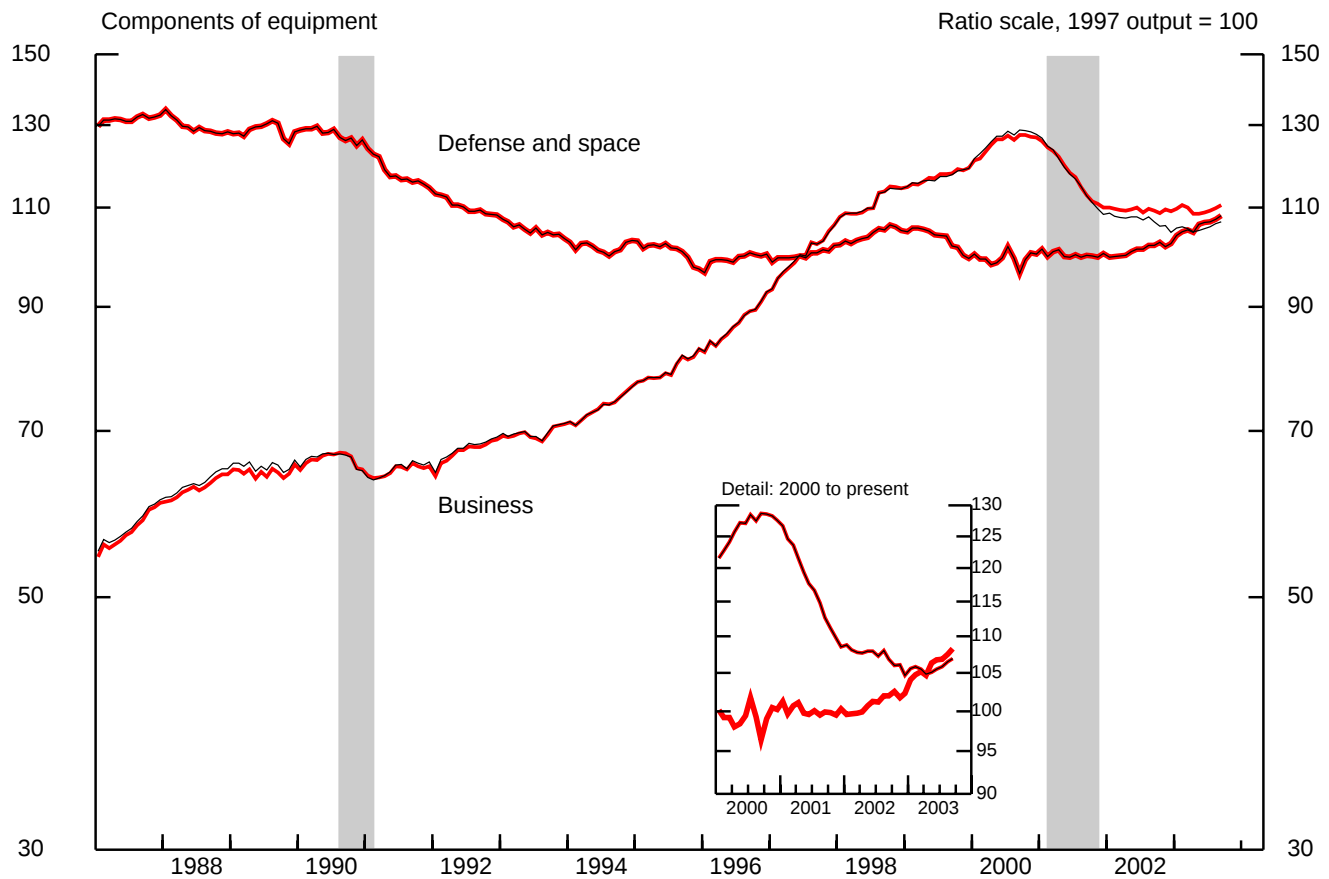
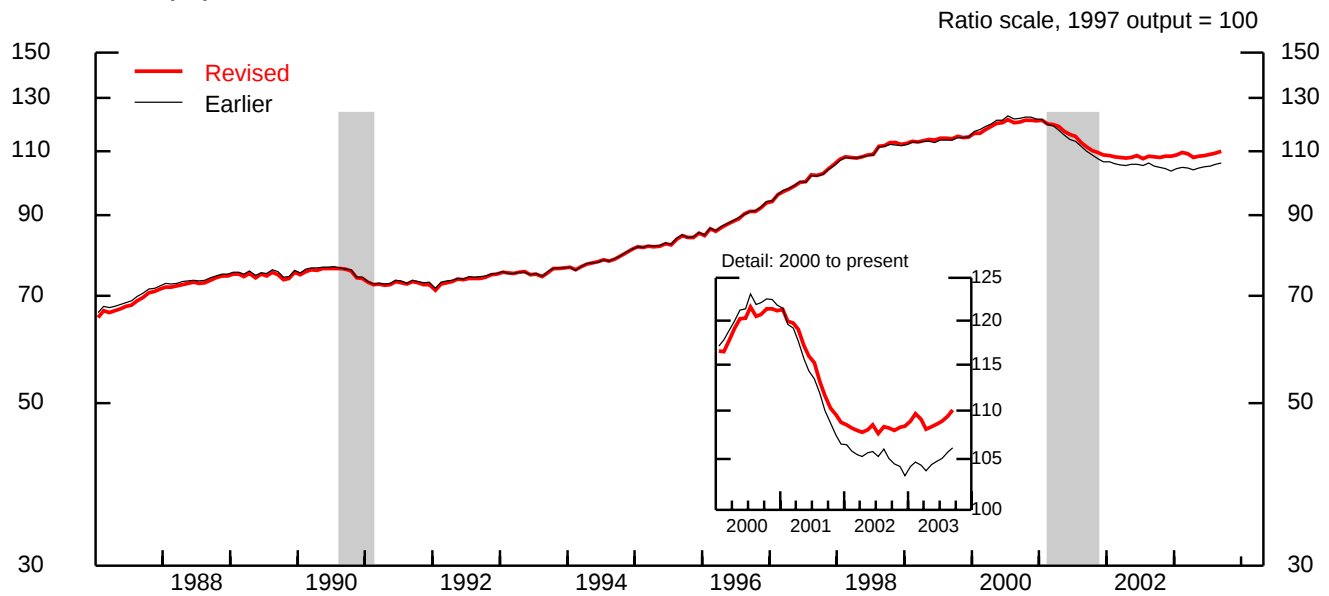
Notes: High-technology industries are defined as semiconductors and related electronic components (NAICS 334412-9), computers (NAICS 3341), and communications equipment (NAICS 3342). The shaded areas are periods of business recession as defined by the NBER.

4. Consumer goods



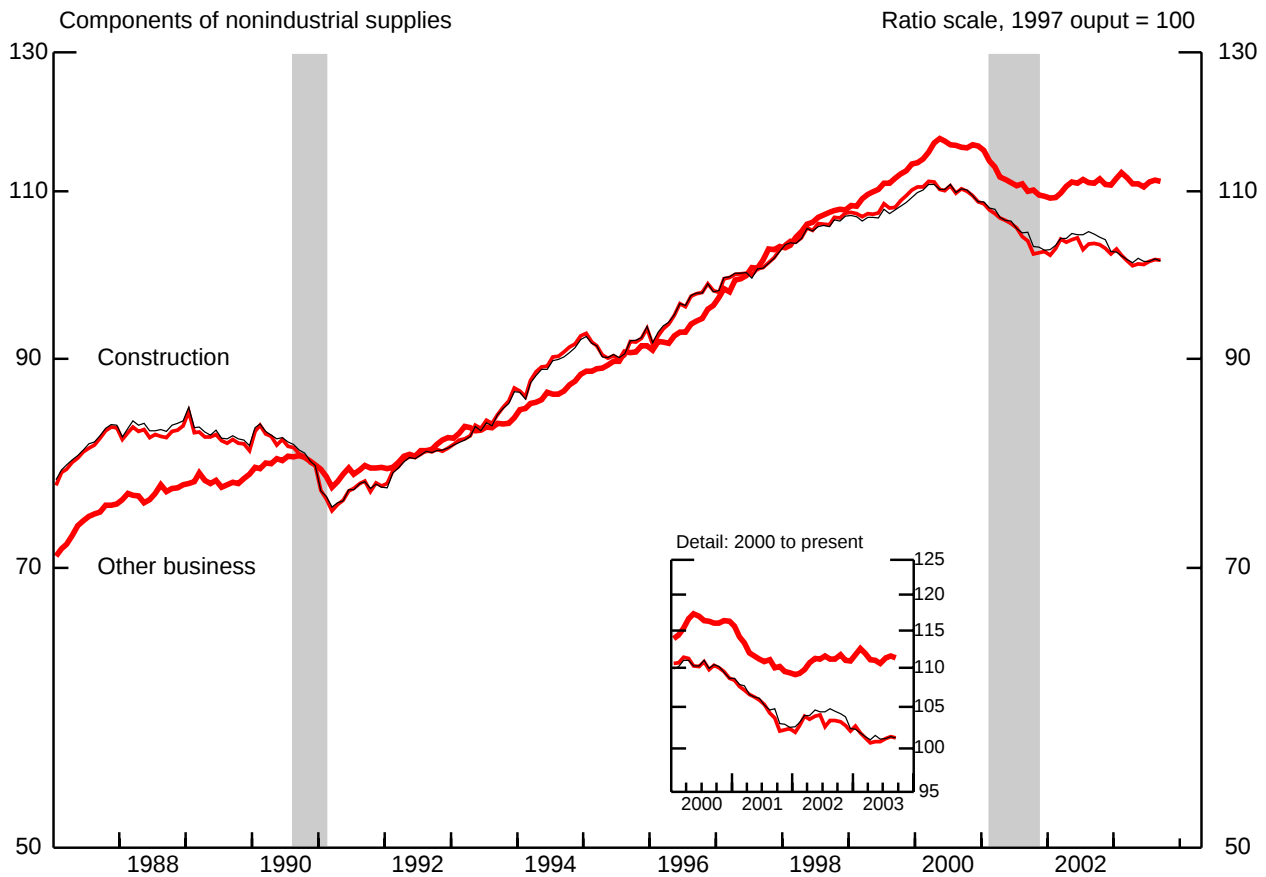
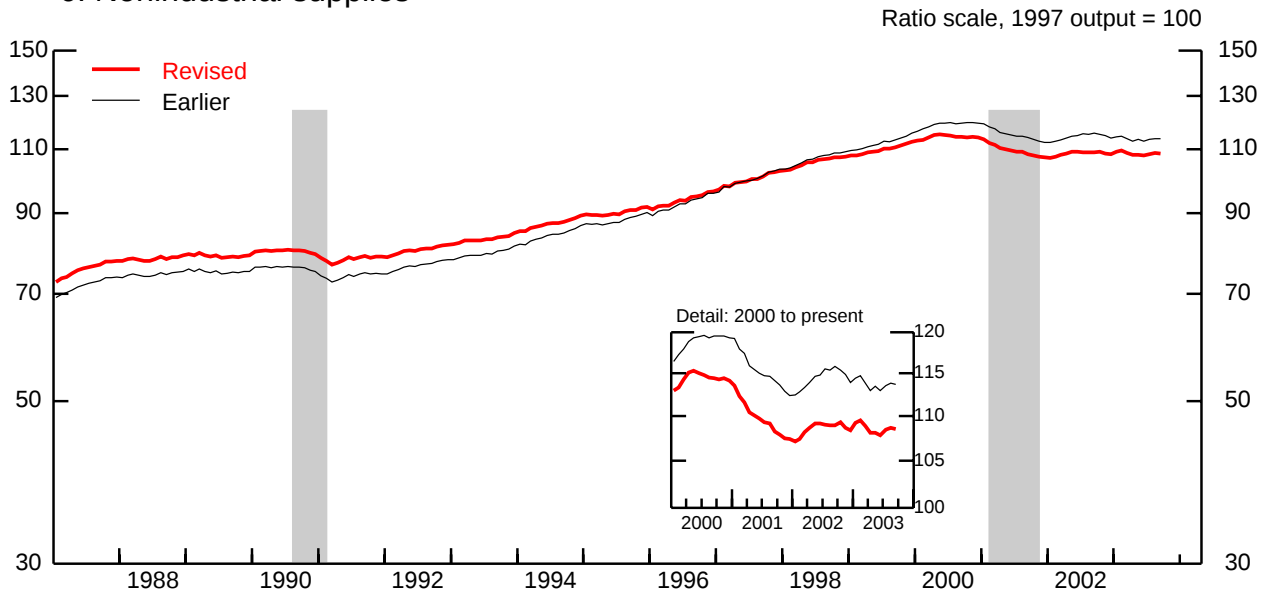
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5. Equipment, total



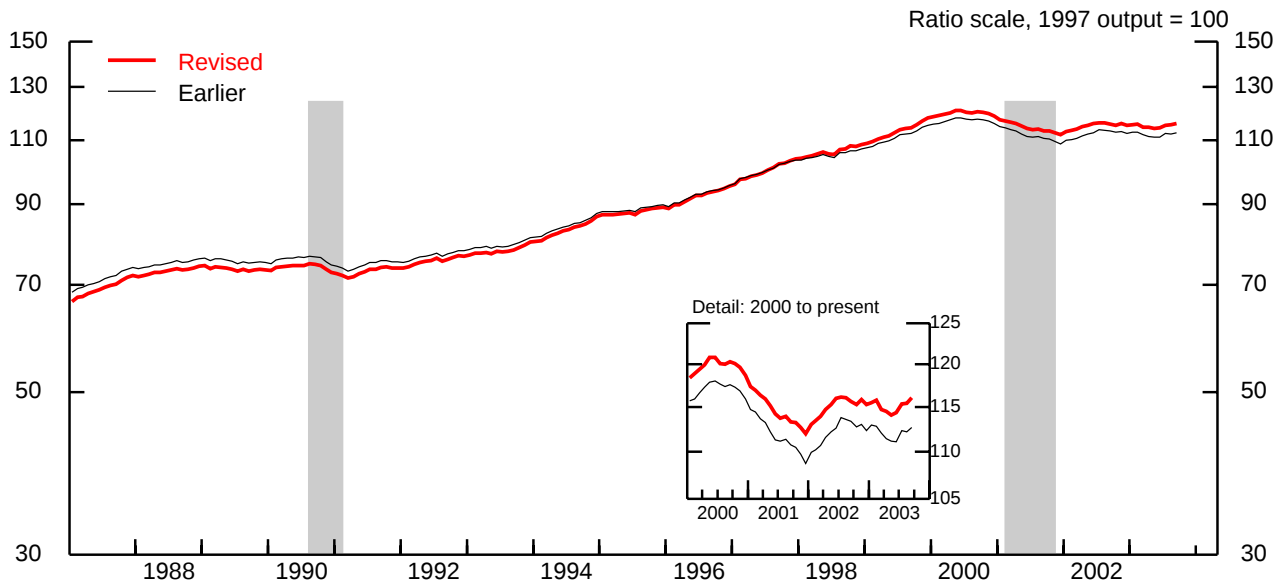
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6. Nonindustrial supplies

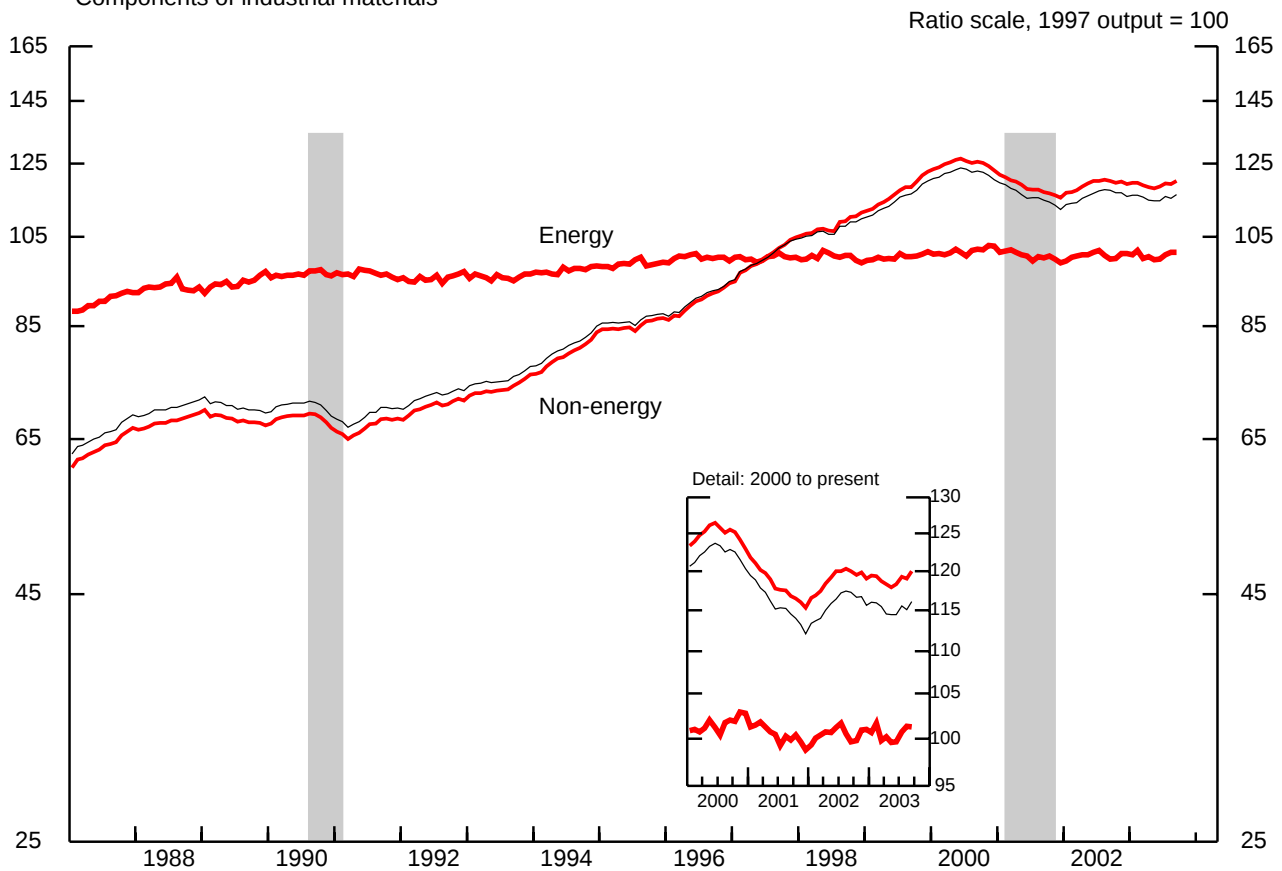


Note: The shaded areas represent periods of business recession as defined by the NBER.

7. Industrial materials

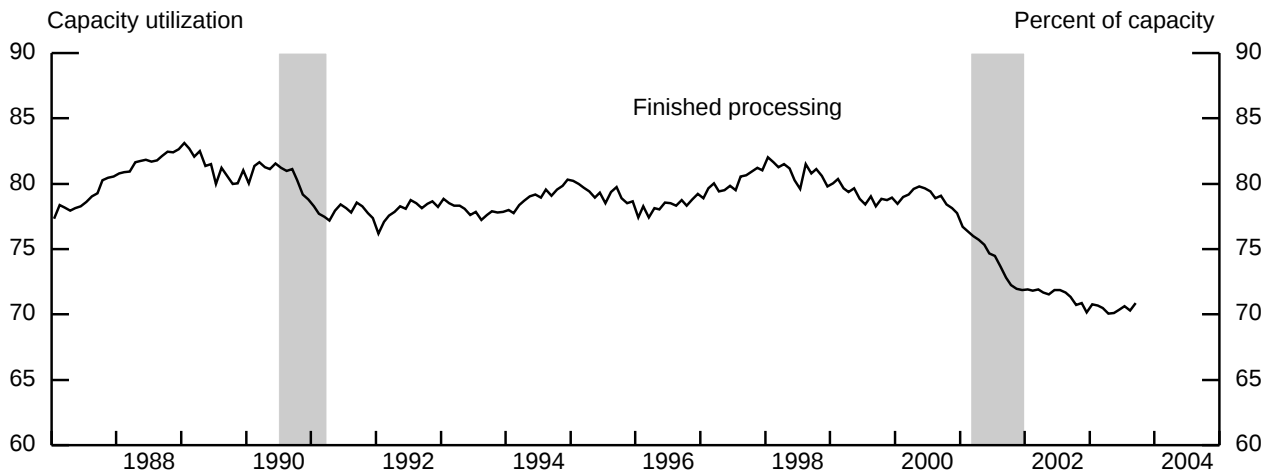
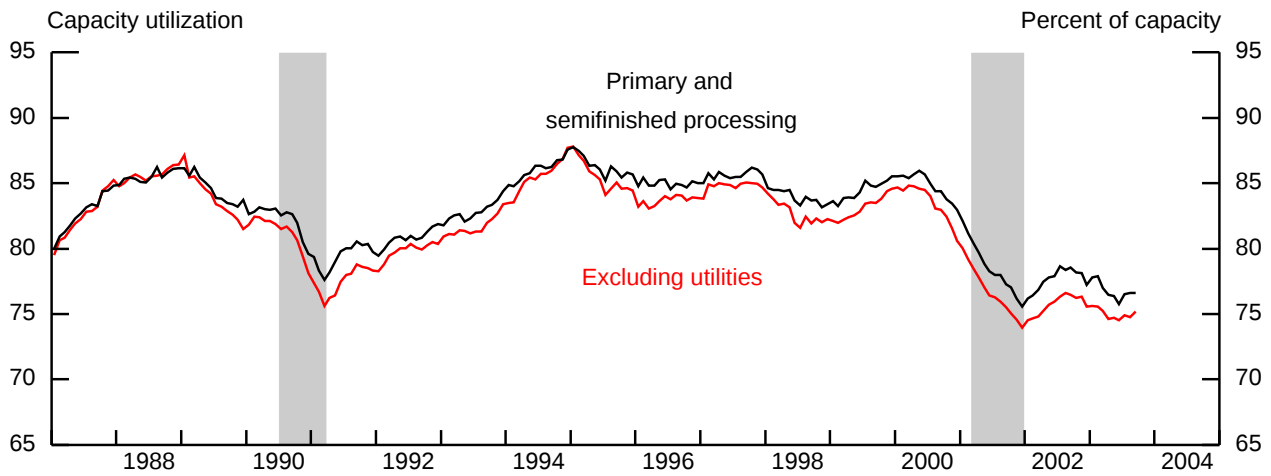
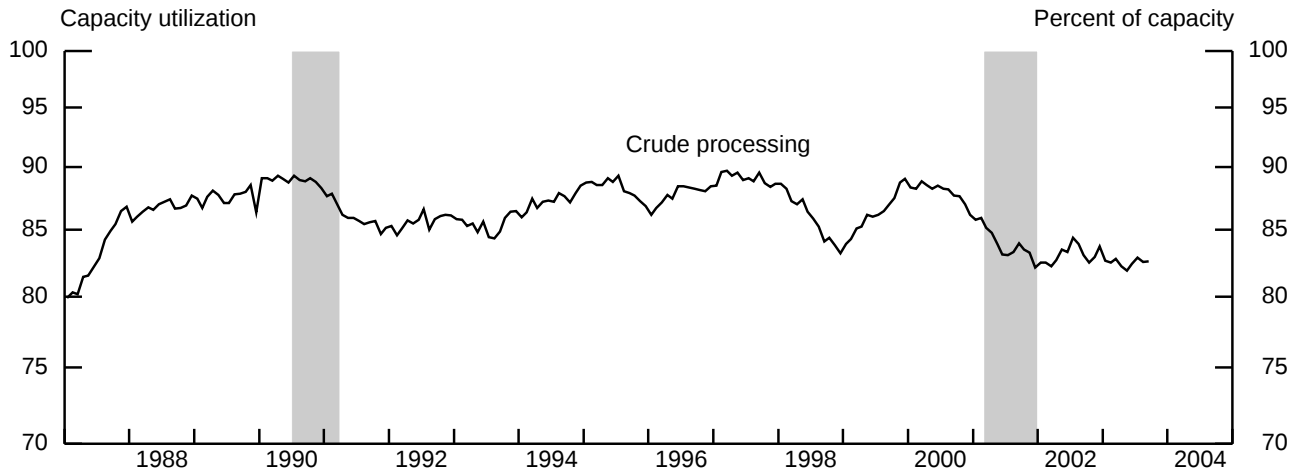


Components of industrial materials



Note: The shaded areas represent periods of business recession as defined by the NBER.

8. Capacity utilization by stage of process



Note: The shaded areas are periods of business recession as defined by the NBER.

Table 1A

INDUSTRIAL PRODUCTION: Total

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual ¹
IP (percent change)																	
1973	.8	1.4	.1	-.3	.7	.1	.4	-.2	.8	.6	.4	-.2	13.0	2.8	3.1	5.2	8.2
1974	-.5	-.4	.1	.0	.5	-.1	-.1	-.9	.0	-.5	-.3.2	-.3.5	-2.9	1.0	-2.6	-15.2	-.4
1975	-1.1	-2.2	-1.1	-.1	-.2	.7	1.0	.8	1.2	.2	.3	1.4	-22.8	-5.8	9.7	7.7	-8.9
1976	1.5	1.2	.0	.7	.4	.0	.5	.7	.1	.2	1.5	1.2	13.8	5.7	4.6	7.7	7.8
1977	-.5	1.4	1.3	.9	.7	.7	.3	.0	.4	.2	.0	.2	9.0	12.5	4.7	2.6	7.7
1978	-1.2	.3	1.9	1.9	.5	.7	.0	.3	.2	.7	.7	.6	-.7	16.5	3.6	6.8	5.5
1979	-.5	.6	.3	-.9	.7	.0	-.3	-.7	.0	.4	-.1	.1	2.4	-.1	-2.0	.6	3.0
1980	.6	.1	-.3	-2.0	-2.4	-1.3	-.6	.2	1.6	1.0	1.7	.6	2.2	-15.6	-6.2	15.2	-2.6
1981	-.6	-.3	.5	-.4	.7	.5	.7	-.1	-.7	-.8	-1.1	-1.1	1.3	1.8	4.0	-9.1	1.3
1982	-1.8	1.9	-.7	-.8	-.7	-.3	-.4	-.9	-.5	-.9	-.4	-.8	-7.2	-4.7	-6.1	-7.7	-5.1
1983	1.8	-.5	.8	1.3	.7	.6	1.5	1.1	1.5	.8	.3	.7	4.3	10.0	14.4	10.7	2.6
1984	2.0	.3	.7	.6	.6	.4	.3	.1	-.2	-.2	.3	.1	12.4	6.8	3.0	-.1	9.1
1985	-.3	.5	.1	.0	.1	.0	-.6	.5	.4	-.5	.3	1.0	1.0	1.0	-.6	1.9	1.3
1986	.6	-.7	-.7	.1	.2	-.3	.6	-.2	.2	.4	.5	.9	2.6	-2.4	1.6	4.5	1.0
1987	-.5	1.4	.2	.7	.6	.7	.6	.7	.2	1.4	.5	.4	4.9	7.7	7.3	9.1	5.0
1988	.1	.5	.2	.4	.0	.2	.2	.5	-.3	.5	.2	.5	3.6	3.0	2.2	3.1	5.0
1989	.3	-.5	.3	-.1	-.6	.0	-1.0	.9	-.3	-.1	.2	.7	1.6	-1.7	-2.8	1.5	.9
1990	-.5	.9	.4	.0	.1	.3	-.2	.3	.2	-.7	-1.2	-.7	3.0	3.0	1.3	-5.9	.9
1991	-.4	-.7	-.5	.2	1.0	1.0	.0	.0	.9	-.2	-.1	-.3	-7.4	2.6	5.3	.7	-1.5
1992	-.6	.9	.7	.7	.4	-.1	.8	-.3	.1	.7	.5	.0	-.1	7.0	2.7	4.3	2.8
1993	.4	.4	.1	.2	-.3	.2	.4	-.1	.6	.6	.4	.6	3.5	1.1	2.1	6.2	3.3
1994	.5	.1	.9	.5	.6	.7	.2	.6	.2	.8	.6	1.1	5.9	7.2	5.1	7.8	5.4
1995	.4	.0	.0	.0	.2	.3	-.4	1.4	.5	-.2	.4	.4	5.7	.9	3.7	3.7	4.8
1996	-.7	1.3	-.2	.9	.7	.9	-.1	.7	.6	.1	.9	.5	2.0	8.0	5.8	6.3	4.3
1997	.3	1.4	.3	.5	.4	.5	.6	1.0	.8	.8	.7	.3	8.5	6.5	8.3	9.2	7.4
1998	.5	.3	.3	.6	.5	-.4	-.2	2.0	-.2	.8	-.3	.0	5.0	4.2	3.7	4.9	5.9
1999	.6	.4	.4	.2	.7	.1	.5	.7	-.2	1.0	.5	.8	3.6	4.4	4.9	7.0	4.4
2000	-.1	.6	.4	.7	.6	.1	-.5	-.1	.4	-.4	-.1	-.3	4.6	6.7	-.6	-1.3	4.4
2001	-.9	-.5	-.4	-.3	-.5	-.6	-.4	-.2	-.6	-.2	-.5	-.2	-6.3	-5.0	-5.2	-4.5	-3.4
2002	.6	.2	.4	.4	.2	.6	-.1	.0	-.1	-.3	.1	-.5	1.9	4.2	1.2	-1.9	-.6
2003	.5	.4	-.7	-.6	-.1	.0	.7	.1	.4				.9	-4.0	3.4		
IP (1997=100)																	
1973	54.9	55.7	55.8	55.6	56.0	56.0	56.2	56.1	56.5	56.9	57.1	57.0	55.5	55.8	56.3	57.0	56.1
1974	56.7	56.5	56.6	56.5	56.8	56.8	56.7	56.2	56.2	55.9	54.1	52.2	56.6	56.7	56.3	54.1	55.9
1975	51.6	50.5	49.9	49.9	49.8	50.1	50.6	51.0	51.6	51.7	51.9	52.6	50.7	49.9	51.1	52.1	50.9
1976	53.3	54.0	54.0	54.4	54.6	54.6	54.9	55.2	55.3	55.4	56.2	56.9	53.8	54.5	55.1	56.2	54.9
1977	56.6	57.4	58.2	58.7	59.1	59.5	59.7	59.7	60.0	60.1	60.1	60.3	57.4	59.1	59.8	60.2	59.1
1978	59.6	59.7	60.9	62.1	62.4	62.8	62.8	63.0	63.1	63.6	64.0	64.4	60.1	62.4	63.0	64.0	62.4
1979	64.1	64.4	64.6	64.1	64.5	64.5	64.3	63.9	63.9	64.2	64.1	64.2	64.4	64.4	64.0	64.1	64.2
1980	64.5	64.6	64.4	63.1	61.6	60.8	60.4	60.5	61.5	62.2	63.2	63.6	64.5	61.8	60.8	63.0	62.5
1981	63.2	63.0	63.4	63.1	63.5	63.9	64.3	64.2	63.8	63.3	62.6	61.9	63.2	63.5	64.1	62.6	63.4
1982	60.8	62.0	61.5	61.0	60.6	60.4	60.2	59.7	59.4	58.9	58.6	58.2	61.4	60.7	59.8	58.6	60.1
1983	59.2	58.9	59.4	60.2	60.6	61.0	61.9	62.6	63.5	64.0	64.2	64.6	59.2	60.6	62.7	64.3	61.7
1984	65.9	66.1	66.6	67.0	67.4	67.6	67.8	67.9	67.7	67.6	67.8	67.9	66.2	67.3	67.8	67.8	67.3
1985	67.7	68.1	68.1	68.1	68.2	68.2	67.7	68.1	68.3	68.0	68.2	68.9	68.0	68.1	68.1	68.4	68.1
1986	69.3	68.8	68.3	68.4	68.5	68.3	68.7	68.6	68.7	69.0	69.3	70.0	68.8	68.4	68.7	69.4	68.8
1987	69.6	70.6	70.7	71.2	71.6	72.0	72.5	73.0	73.1	74.1	74.5	74.8	70.3	71.6	72.9	74.5	72.3
1988	74.8	75.2	75.4	75.7	75.7	75.8	75.9	76.3	76.1	76.5	76.6	77.0	75.1	75.7	76.1	76.7	75.9
1989	77.2	76.8	77.0	77.0	76.5	76.5	75.8	76.5	76.2	76.1	76.3	76.8	77.0	76.7	76.1	76.4	76.6
1990	76.5	77.1	77.4	77.4	77.5	77.7	77.6	77.8	78.0	77.4	76.5	76.0	77.0	77.6	77.8	76.6	77.2
1991	75.7	75.1	74.7	74.9	75.7	76.4	76.4	76.4	77.1	76.9	76.8	76.6	75.2	75.7	76.6	76.8	76.1
1992	76.1	76.8	77.4	77.9	78.2	78.1	78.7	78.5	78.6	79.2	79.6	79.6	76.8	78.1	78.6	79.4	78.2
1993	79.9	80.2	80.3	80.5	80.2	80.4	80.7	80.6	81.0	81.6	81.9	82.4	80.1	80.3	80.8	82.0	80.8
1994	82.9	82.9	83.7	84.1	84.6	85.2	85.3	85.8	85.9	86.6	87.2	88.1	83.2	84.6	85.7	87.3	85.2
1995	88.5	88.5	88.5	88.5	88.7	89.0	88.6	88.8	89.0	90.0	90.3	90.7	88.5	88.7	89.5	90.4	89.3
1996	90.1	91.3	91.1	91.9	92.5	93.4	93.2	93.9	94.5	94.5	95.4	96.0	90.8	92.6	93.9	95.3	93.1
1997	96.3	97.6	97.9	98.4	98.8	99.3	99.9	100.9	101.7	102.5	103.2	103.5	97.3	98.8	100.8	103.1	100.0
1998	104.0	104.3	104.6	105.2	105.7	105.3	105.0	107.1	106.9	107.8	107.5	107.5	104.3	105.4	106.4	107.6	105.9
1999	108.2	108.6	109.0	109.2	110.0	110.1	110.6	111.4	111.1	112.3	112.8	113.7	108.6	109.7	111.1	112.9	110.6
2000	113.6	114.3	114.7	115.6	116.3	116.4	115.8	115.7	116.2	115.7	115.6	115.3	114.2	116.1	115.9	115.5	115.4
2001	114.2	113.6	113.2	112.8	112.3	111.6	111.1	110.9	110.2	109.9	109.4	109.1	113.7	112.2	110.7	109.5	111.5
2002	109.7	109.9	110.3	110.8	110.9	111.7	111.5	111.5	111.3	111.0	111.2	110.6	110.0	111.1	111.5	110.9	110.9
2003	111.2	111.6	110.8	110.1	110.0	110.0	110.8	110.8	111.3				111.2	110.0	111.0		

NOTE: Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

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

Table 1B

CAPACITY AND UTILIZATION: Total

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
Capacity (percent of 1997 output)																	
1973	62.5	62.7	62.9	63.1	63.3	63.5	63.7	63.9	64.1	64.3	64.5	64.7	62.7	63.3	63.9	64.5	63.6
1974	64.9	65.1	65.3	65.5	65.6	65.8	66.0	66.1	66.3	66.4	66.6	66.7	65.1	65.6	66.1	66.5	65.9
1975	66.8	66.9	67.0	67.2	67.3	67.4	67.5	67.6	67.7	67.9	68.0	68.1	66.9	67.3	67.6	68.0	67.5
1976	68.3	68.4	68.5	68.7	68.8	69.0	69.1	69.3	69.4	69.6	69.7	69.9	68.4	68.8	69.3	69.7	69.1
1977	70.0	70.2	70.4	70.5	70.7	70.9	71.1	71.3	71.4	71.6	71.8	72.0	70.2	70.7	71.3	71.8	71.0
1978	72.2	72.4	72.6	72.8	73.0	73.2	73.4	73.6	73.8	74.0	74.2	74.4	72.4	73.0	73.6	74.2	73.3
1979	74.5	74.7	74.9	75.1	75.3	75.4	75.6	75.7	75.9	76.1	76.2	76.4	74.7	75.3	75.7	76.2	75.5
1980	76.5	76.6	76.8	76.9	77.1	77.2	77.4	77.5	77.6	77.8	77.9	78.1	76.6	77.1	77.5	78.0	77.3
1981	78.3	78.4	78.6	78.8	79.0	79.1	79.3	79.5	79.7	79.9	80.1	80.3	78.4	79.0	79.5	80.1	79.3
1982	80.5	80.7	80.8	81.0	81.2	81.4	81.5	81.6	81.8	81.9	82.0	82.1	80.7	81.2	81.6	82.0	81.4
1983	82.2	82.2	82.3	82.3	82.4	82.4	82.5	82.5	82.6	82.6	82.7	82.8	82.2	82.4	82.5	82.7	82.4
1984	82.8	82.9	83.1	83.2	83.3	83.4	83.6	83.8	83.9	84.1	84.3	84.5	82.9	83.3	83.8	84.3	83.6
1985	84.7	84.9	85.1	85.2	85.4	85.6	85.8	86.0	86.2	86.3	86.5	86.6	84.9	85.4	86.0	86.5	85.7
1986	86.7	86.9	87.0	87.1	87.2	87.3	87.4	87.5	87.6	87.8	87.9	88.0	86.9	87.2	87.5	87.9	87.4
1987	88.2	88.3	88.4	88.6	88.7	88.9	89.0	89.2	89.3	89.4	89.5	89.6	88.3	88.7	89.2	89.5	88.9
1988	89.7	89.8	89.9	89.9	90.0	90.0	90.1	90.2	90.2	90.3	90.4	90.5	89.8	90.0	90.2	90.4	90.1
1989	90.7	90.8	90.9	91.1	91.3	91.4	91.6	91.8	92.0	92.2	92.4	92.6	90.8	91.3	91.8	92.4	91.6
1990	92.7	92.9	93.1	93.3	93.5	93.7	93.8	94.0	94.2	94.3	94.5	94.6	92.9	93.5	94.0	94.5	93.7
1991	94.8	94.9	95.1	95.2	95.4	95.5	95.7	95.8	96.0	96.1	96.3	96.4	94.9	95.4	95.8	96.3	95.6
1992	96.6	96.7	96.9	97.0	97.2	97.4	97.5	97.7	97.8	98.0	98.2	98.3	96.7	97.2	97.7	98.2	97.4
1993	98.5	98.6	98.8	99.0	99.1	99.3	99.4	99.6	99.8	100.0	100.2	100.4	98.6	99.1	99.6	100.2	99.4
1994	100.6	100.8	101.0	101.3	101.6	101.9	102.2	102.5	102.8	103.2	103.5	103.9	100.8	101.6	102.5	103.5	102.1
1995	104.3	104.7	105.1	105.6	106.0	106.5	106.9	107.4	107.9	108.4	109.0	109.5	104.7	106.0	107.4	109.0	106.8
1996	110.0	110.6	111.1	111.6	112.2	112.7	113.3	113.8	114.3	114.9	115.4	115.9	110.6	112.2	113.8	115.4	113.0
1997	116.4	117.0	117.5	118.0	118.6	119.2	119.8	120.4	121.0	121.7	122.4	123.1	117.0	118.6	120.4	122.4	119.6
1998	123.9	124.6	125.3	126.1	126.8	127.5	128.1	128.8	129.4	130.0	130.6	131.1	124.6	126.8	128.8	130.6	127.7
1999	131.7	132.2	132.6	133.1	133.5	134.0	134.4	134.9	135.3	135.8	136.3	136.7	132.1	133.5	134.9	136.3	134.2
2000	137.2	137.7	138.2	138.7	139.2	139.7	140.1	140.6	141.0	141.5	141.9	142.2	137.7	139.2	140.6	141.8	139.8
2001	142.6	142.9	143.2	143.5	143.8	144.0	144.3	144.5	144.7	144.9	145.2	145.4	142.9	143.8	144.5	145.2	144.1
2002	145.6	145.8	146.0	146.2	146.4	146.6	146.8	147.0	147.2	147.3	147.5	147.7	145.8	146.4	147.0	147.5	146.7
2003	147.8	148.0	148.1	148.3	148.4	148.5	148.7	148.8	148.9				148.0	148.4	148.8		
Utilization (percent)																	
1973	87.9	88.8	88.7	88.1	88.4	88.2	88.2	87.8	88.2	88.5	88.5	88.0	88.5	88.3	88.1	88.3	88.3
1974	87.3	86.7	86.6	86.4	86.6	86.3	85.9	84.9	84.8	84.2	81.3	78.3	86.9	86.4	85.2	81.2	84.9
1975	77.3	75.4	74.5	74.3	74.0	74.4	75.0	75.5	76.2	76.2	76.3	77.2	75.7	74.2	75.6	76.6	75.5
1976	78.1	78.9	78.8	79.2	79.3	79.1	79.4	79.7	79.7	79.6	80.6	81.4	78.6	79.2	79.6	80.5	79.5
1977	80.8	81.7	82.6	83.2	83.6	83.9	84.0	83.8	83.9	83.9	83.7	83.6	81.7	83.6	83.9	83.7	83.2
1978	82.5	82.5	83.8	85.2	85.4	85.8	85.5	85.5	85.5	85.9	86.3	86.6	82.9	85.4	85.5	86.3	85.0
1979	85.9	86.2	86.3	85.3	85.7	85.5	85.1	84.3	84.2	84.4	84.1	84.0	86.2	85.5	84.5	84.2	85.1
1980	84.3	84.2	83.8	82.0	79.9	78.7	78.1	78.1	79.3	79.9	81.1	81.5	84.1	80.2	78.5	80.8	80.9
1981	80.8	80.4	80.6	80.1	80.4	80.7	81.1	80.8	80.0	79.2	78.1	77.1	80.6	80.4	80.6	78.2	79.9
1982	75.5	76.8	76.1	75.3	74.7	74.3	73.9	73.1	72.6	71.9	71.5	70.9	76.2	74.8	73.2	71.4	73.9
1983	72.1	71.7	72.2	73.1	73.6	74.0	75.1	75.9	77.0	77.5	77.7	78.1	72.0	73.6	76.0	77.8	74.8
1984	79.6	79.7	80.2	80.5	80.9	81.0	81.1	81.1	80.7	80.4	80.5	80.4	79.8	80.8	81.0	80.4	80.5
1985	80.0	80.2	80.1	79.9	79.8	79.6	79.0	79.2	79.3	78.8	78.9	79.5	80.1	79.8	79.1	79.1	79.5
1986	79.9	79.2	78.6	78.5	78.6	78.3	78.6	78.4	78.4	78.6	78.9	79.5	79.2	78.4	78.5	79.0	78.8
1987	78.9	79.9	79.9	80.3	80.7	81.0	81.4	81.8	81.9	82.9	83.2	83.5	79.6	80.7	81.7	83.2	81.3
1988	83.4	83.8	83.9	84.2	84.1	84.2	84.3	84.7	84.3	84.7	84.8	85.0	83.7	84.1	84.4	84.8	84.3
1989	85.2	84.6	84.7	84.5	83.8	83.7	82.7	83.3	82.8	82.6	82.6	83.0	84.8	84.0	82.9	82.7	83.6
1990	82.4	83.0	83.1	83.0	82.9	83.0	82.7	82.8	82.8	82.1	81.0	80.3	82.9	83.0	82.8	81.1	82.4
1991	79.8	79.1	78.6	78.6	79.3	80.0	79.8	79.8	80.3	80.0	79.8	79.4	79.2	79.3	80.0	79.7	79.6
1992	78.8	79.4	79.9	80.3	80.4	80.3	80.8	80.4	80.3	80.8	81.1	80.9	79.4	80.3	80.5	80.9	80.3
1993	81.1	81.3	81.3	81.3	80.9	80.9	81.1	80.9	81.2	81.6	81.8	82.1	81.2	81.1	81.1	81.8	81.3
1994	82.4	82.3	82.8	83.0	83.3	83.6	83.5	83.7	83.6	83.9	84.2	84.8	82.5	83.3	83.6	84.3	83.4
1995	84.8	84.5	84.2	83.8	83.7	83.6	82.8	83.6	83.6	83.0	82.9	82.9	84.5	83.7	83.3	82.9	83.6
1996	81.9	82.6	82.0	82.3	82.5	82.8	82.3	82.5	82.6	82.3	82.7	82.8	82.1	82.5	82.5	82.6	82.4
1997	82.7	83.5	83.4	83.4	83.3	83.3	83.4	83.8	84.0	84.2	84.3	84.1	83.2	83.3	83.7	84.2	83.6
1998	84.0	83.7	83.5	83.5	83.4	82.6	81.9	83.2	82.6	82.9	82.3	82.0	83.7	83.1	82.6	82.4	83.0
1999	82.2	82.1	82.2	82.1	82.3	82.1	82.3	82.6	82.1	82.7	82.8	83.2	82.2	82.2	82.3	82.9	82.4
2000	82.8	83.0	83.0	83.3	83.5	83.3	82.7	82.3	82.4	81.8	81.5	81.0	82.9	83.4	82.4	81.4	82.6
2001	80.1	79.5	79.0	78.6	78.1	77.5	77.0	76.7	76.1	75.8	75.3	75.1	79.5	78.0	76.6	75.4	77.4
2002	75.4	75.4	75.6	75.8	75.8	76.2	76.0	75.9	75.7	75.4	75.4	74.9	75.4	75.9	75.8	75.2	75.6
2003	75.2	75.4	74.8	74.2	74.1	74.0	74.5	74.5	74.8				75.1	74.1	74.6		

NOTE Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

Table 2

RATES OF CHANGE IN INDUSTRIAL PRODUCTION, MARKET AND INDUSTRY GROUP SUMMARY: 1999–2003¹

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total IP	4.9	2.3	-5.2	1.3	.0	.0	-.4	.4	-.1	.1
MARKET GROUPS										
Final products and nonindustrial supplies	2.8	2.3	-4.9	.5	-.1	-.6	-.9	.5	.1	-.1
Consumer goods	2.4	1.0	-2.2	1.0	-.5	-.2	-.1	-.1	-.5	-.5
Durable	4.6	-1.9	-2.9	6.0	1.9	-1.1	.1	.1	.0	-.3
Automotive products	5.1	-5.1	1.1	9.9	4.4	-.4	-.3	-.6	.3	-.1
Home electronics	11.9	15.7	-10.3	4.4	12.8	-7.9	6.6	3.2	6.2	-1.6
Appliances, furniture, carpeting	2.3	-.5	-2.0	1.8	2.3	.0	.5	2.6	.1	1.2
Miscellaneous goods	3.7	-.3	-8.1	2.4	-4.6	-.6	-.9	1.4	.2	.8
Nondurable	1.5	2.1	-1.9	-.8	-1.4	.1	-.1	-.1	-.7	-.7
Non-energy	1.2	1.0	-1.0	-2.8	-1.1	.0	-.1	.0	-1.2	-.1
Foods and tobacco	.2	.7	-.6	-3.9	-1.4	-.1	1.1	1.6	-2.9	.7
Clothing	-3.1	-5.6	-15.1	-2.4	-18.1	-.3	.6	-2.5	2.2	-2.4
Chemical products	4.5	4.4	3.0	-1.8	-.1	-.3	-2.1	-1.8	1.3	-3.5
Paper products	3.2	-1.2	-3.2	-.9	5.5	1.2	-2.2	-3.0	-.5	4.8
Energy	3.1	7.1	-5.8	8.7	-2.7	.1	-.5	-.6	.6	-3.2
Business equipment	3.8	6.8	-12.8	-1.4	1.0	-.2	-1.1	1.5	2.4	-.1
Transit	-11.5	-11.2	-5.9	-15.2	-9.1	-1.3	-2.6	6.2	.4	-2.9
Information processing	19.0	19.2	-12.8	5.5	8.2	.4	-.8	.6	7.1	.4
Industrial and other	-.5	4.9	-15.0	-1.0	-.3	-.7	-1.4	.7	-.3	.2
Defense and space equipment	-9.5	-3.1	12.4	3.6	5.5	-4.4	-2.7	12.4	1.3	-1.6
Construction supplies	2.6	-.1	-6.5	.4	-1.8	.5	-.9	-.5	-.2	1.0
Business supplies	4.9	2.9	-5.6	1.4	.3	-2.6	-3.5	-.5	-.8	.4
Materials	8.0	2.2	-5.7	2.5	.2	.7	.2	.3	-.3	.5
Non-energy	9.7	2.3	-6.6	3.0	.0	.9	.1	.3	.2	.8
Durable	12.9	5.6	-7.2	4.2	1.6	1.1	.0	.6	.4	1.3
Consumer parts	7.2	-7.1	-7.2	6.7	-.1	.3	-.8	-3.4	-1.2	-.2
Equipment parts	25.6	23.0	-7.4	5.9	9.2	2.3	-.3	2.8	2.2	2.6
Other	3.6	-3.9	-6.8	1.5	-3.6	-.3	-.3	.4	-.4	.2
Nondurable	3.7	-3.7	-5.6	.9	-2.7	.0	-.2	-.2	-.4	.0
Textile	.6	-9.7	-11.6	-1.0	-16.4	.3	-.1	1.0	-1.1	-.9
Paper	2.3	-4.7	-6.1	1.5	-5.0	-.4	-.9	-.5	-1.5	.2
Chemical	7.4	-3.9	-5.1	1.7	-1.1	.0	.2	.3	.5	-.9
Energy	1.3	1.7	-2.9	1.0	.7	.1	.7	.5	-1.6	-.6
INDUSTRY GROUPS										
Manufacturing	5.5	2.0	-5.6	1.0	.2	.0	-.5	.5	.1	.4
Manufacturing (NAICS)	5.5	2.2	-5.5	1.2	-.1	.0	-.4	.7	.1	.2
Durable manufacturing	7.8	4.8	-7.3	3.0	1.7	.0	-.7	1.0	1.1	.6
Wood products 321	1.7	-6.5	-2.2	-1.8	1.2	-.1	.3	.9	-.7	2.2
Nonmetallic mineral products 327	.3	-1.7	-5.6	2.1	-1.8	.3	-1.4	-5.7	-.5	-.6
Primary metal 331	3.6	-9.1	-10.6	3.5	-7.5	-.3	.4	.9	-.1	1.3
Fabricated metal products 332	2.6	.0	-8.4	-.1	-4.0	.0	-.4	-.6	-1.2	.3
Machinery 333	.1	2.5	-17.1	-.9	.5	-.2	-2.4	.7	-.1	-1.3
Computer and electronic products 334	31.0	29.4	-7.5	10.8	14.6	.4	-1.4	2.0	6.8	3.2
Electrical equip., appliances, and components 335	3.5	2.3	-12.7	-2.3	-2.9	.6	-.4	-1.9	-.3	.3
Motor vehicles and parts 3361–3	5.8	-9.1	-2.8	9.9	1.9	.1	-.7	-1.6	-1.0	-1.0
Aerospace and other miscellaneous transportation equipment 3364–9	-12.4	-3.9	4.9	-9.7	-1.7	-1.2	.9	9.8	.9	-3.2
Furniture and related products 337	2.0	.6	-7.4	-.4	-2.8	-.3	.0	1.4	1.4	2.1
Miscellaneous 339	2.2	6.1	-2.8	3.5	.7	.2	2.3	2.9	1.7	2.5
Nondurable manufacturing	2.4	-1.4	-3.3	-.9	-2.2	-.1	-.1	.2	-1.1	-.3
Food, beverage, and tobacco products 311,2	.1	.6	-.4	-3.5	-1.2	-.1	1.0	1.4	-2.8	.6
Textile and product mills 313,4	2.1	-6.4	-10.3	-1.3	-10.4	.2	-.1	2.2	-1.0	-.4
Apparel and leather 315,6	-3.4	-5.4	-15.5	-2.0	-17.3	-.3	.5	-2.5	2.5	-2.3
Paper 322	1.8	-4.8	-6.0	2.9	-3.6	-.3	-.7	-.3	-.1	-.8
Printing and support 323	.4	-1.4	-6.7	-1.7	-6.5	.0	-.6	-1.1	-4.7	1.0
Petroleum and coal products 324	2.6	-1.7	-2.5	1.2	.6	1.0	-1.2	-2.1	-.1	.6
Chemical 325	5.1	-.2	-1.3	-.1	.0	-.4	-.6	-.1	.9	-1.9
Plastics and rubber products 326	6.1	-3.2	-5.7	2.2	-1.3	-.2	-1.2	.0	-.5	.1
Other manufacturing (non-NAICS) 1133,5111	4.6	-1.5	-6.3	-2.2	4.2	.8	-1.9	-2.4	-.4	4.0
Mining 21	.2	1.1	-1.0	-2.3	.5	.0	.3	-.4	-.4	.5
Utilities 2211,2	2.3	6.1	-5.2	6.6	-1.7	.3	.1	.3	-1.1	-2.5
Electric 2211	2.1	4.9	-3.7	5.5	-.1	.4	.1	.3	-1.6	-2.1
Natural gas 2212	3.8	12.9	-12.8	13.4	-9.0	-.3	.1	-.3	1.5	-3.1

NOTE. Estimates for the third quarter of 2003 are subject to further revision in the upcoming monthly releases.

1. Rates of change 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 2003, the rates are calculated from the fourth quarter of 2002 to the third quarter of 2003 and annualized.

Table 3

RATES OF CHANGE IN INDUSTRIAL PRODUCTION, SPECIAL AGGREGATES AND SELECTED DETAIL: 1999–2003¹

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total industry	4.9	2.3	-5.2	1.3	.0	.0	-.4	.4	-.1	.1
Energy	2.0	3.9	-3.6	2.9	-.4	.1	.2	-.1	-.9	-1.4
Consumer products	3.1	7.1	-5.8	8.7	-2.7	.1	-.5	-.6	.6	-3.2
Commercial products	2.2	6.0	-1.6	3.5	-1.7	.4	-1.1	-2.0	-1.1	-1.8
Oil and gas well drilling	9.6	29.3	-10.9	-14.8	5.2	-.2	-.1	.0	.1	1.1
Converted fuel	2.1	5.4	-7.9	3.7	-1.0	-.2	.1	-.2	.8	-5.7
Primary materials	.7	-.3	-.2	-.4	1.6	.2	1.0	.8	-2.8	2.1
Non-energy	5.4	2.0	-5.6	1.0	.1	.0	-.5	.5	.1	.4
Selected high-technology industries	42.4	38.2	-8.4	15.3	20.0	.8	-1.9	1.2	8.2	4.6
Computers and office equipment 3341	14.1	19.1	-5.7	24.0	10.4	-5.6	1.4	.2	4.1	-10.7
Communications equipment 3342	31.5	27.7	-22.8	-5.5	6.8	4.4	-2.6	-2.7	11.1	8.5
Semiconductors and related electronic components 334412-9	64.6	52.8	.8	24.9	33.1	2.6	-3.0	4.2	5.1	8.4
Excluding selected high-technology industries	1.8	-1.5	-5.2	-.1	-1.1	-.1	-.3	.4	-.5	.1
Motor vehicles and parts 3361-3	5.8	-9.1	-2.8	9.9	1.9	.1	-.7	-1.6	-1.0	-1.0
Motor vehicles 3361	2.6	-12.2	1.5	11.6	3.2	.0	-.2	-.5	-.5	.0
Motor vehicle parts 3363	8.3	-5.7	-5.3	7.8	.7	.4	-1.5	-3.1	-.9	-1.9
Excluding motor vehicles and parts	1.4	-.8	-5.5	-1.0	-1.4	-.1	-.3	.6	-.4	.3
Consumer goods	2.3	-.2	-1.5	-.3	-.2	.5	-1.0	.7	1.0	.9
Business equipment	-3.5	3.8	-11.5	-4.6	-.6	-.7	-1.6	2.3	1.3	.3
Construction supplies	2.4	-.4	-6.4	.5	-1.9	.4	-.8	-.4	-.3	.8
Business supplies	2.1	.5	-5.5	.7	-.7	.1	-.7	-.6	-.6	.9
Materials	3.1	-2.9	-7.2	.3	-2.8	-.1	-.1	.1	-.6	.0
Measures excluding selected high-technology industries										
Total industry	1.8	-.6	-4.9	.4	-1.0	.0	-.2	.3	-.6	-.1
Manufacturing ²	1.8	-1.5	-5.2	-.1	-1.0	-.1	-.3	.4	-.5	.1
Durable	1.1	-1.6	-6.9	1.0	-.8	-.1	-.3	.9	-.1	.0
Measures excluding motor vehicles and parts										
Total industry	4.9	3.1	-5.4	.8	-.1	.0	-.4	.5	.1	.2
Manufacturing ²	5.4	3.0	-5.8	.3	.1	.0	-.5	.7	.2	.6
Durable	8.0	7.2	-7.9	1.8	1.6	.0	-.6	1.4	1.5	1.0
Measures excluding selected high-technology industries and motor vehicles and parts										
Total industry	1.5	.1	-5.1	-.2	-1.2	-.1	-.2	.5	-.5	.0
Manufacturing ²	1.5	-.7	-5.5	-.9	-1.3	-.1	-.3	.5	-.5	.3
Measure of non-energy material inputs to										
Finished processors	15.4	8.1	-7.4	5.0	2.4	1.7	.1	.5	.4	1.7
Semifinished and primary processors	4.1	-3.3	-5.8	1.2	-2.1	-.2	-.2	.1	-.1	.0
STAGE-OF-PROCESS GROUPS										
Crude	1.6	-2.8	-2.8	-.8	-.5	-.9	.4	.9	-.5	.5
Primary and semifinished	7.5	2.7	-6.3	3.0	-.2	.4	-.7	-.4	-.5	.4
Finished	2.3	3.0	-4.4	-.3	.5	-.3	-.3	1.3	.7	-.3

NOTE. Estimates for the third quarter of 2003 are subject to further revision in the upcoming monthly releases.

1. Rates of change 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 2003, the rates are calculated from the fourth quarter of 2002 to the third quarter of 2003 and annualized.

2. Manufacturing consists of those industries included in the North American Industry Classification System, or NAICS, definition of manufacturing plus those industries – logging and newspaper, periodical, book and directory publishing – that have traditionally been considered to be a part of manufacturing and are included in the industrial sector.

Table 4
REVISED AND EARLIER CAPACITY UTILIZATION RATES, BY INDUSTRY GROUPS

Percent of capacity, seasonally adjusted

Item		Revised Rate					Difference between revised and earlier rates (percentage points)			
		1972–2002 Ave.	1988–1989 High	1990–1991 Low	2001 Q4	2002 Q4	2003 Q3	2001 Q4	2002 Q4	2003 Q3
Total industry		81.3	85.2	78.6	75.4	75.2	74.6	.3	-.1	-.1
Manufacturing		80.2	85.6	77.2	73.5	73.5	73.0	.2	.0	.1
Manufacturing (NAICS)		80.0	85.5	77.0	73.2	73.2	72.5	.3	.2	.2
Durable manufacturing		78.5	84.5	73.4	70.3	70.5	70.1	.3	.8	.9
Wood products	321	80.4	88.8	73.0	74.1	73.4	74.4	.6	.9	2.5
Nonmetallic mineral products	327	79.4	85.7	72.1	76.3	77.9	76.9	-4.0	-3.5	-3.5
Primary metal	331	81.0	95.3	75.2	73.5	77.1	72.6	.5	-.4	.5
Fabricated metal products	332	77.2	80.3	71.1	70.2	69.7	67.4	-.4	-1.1	-1.0
Machinery	333	79.8	84.6	72.8	66.5	66.7	67.5	-.8	.0	-.4
Computer and electronic products	334	79.5	81.1	76.3	64.4	63.1	65.2	.3	.8	.9
Electrical equip., appliances, and components	335	83.2	87.4	75.0	74.8	74.1	73.0	-1.1	-1.4	-1.1
Motor vehicles and parts	3361–3	77.6	89.7	56.5	75.4	81.3	80.6	.2	.4	.5
Aerospace and other miscellaneous transportation equipment	3364–9	73.2	88.9	81.9	70.8	64.3	63.5	5.5	5.6	4.2
Furniture and related products	337	79.2	84.0	67.9	71.7	71.1	69.7	.3	1.0	2.2
Miscellaneous	339	76.9	81.7	77.7	74.3	76.7	77.1	-.4	2.0	4.6
Nondurable manufacturing		82.2	87.0	81.8	77.1	76.7	75.9	.1	-.8	-.9
Food, beverage, and tobacco products	311,2	82.3	85.5	81.3	79.6	77.3	77.1	.6	-1.3	-.9
Textile and product mills	313,4	83.7	91.4	77.2	74.1	74.9	70.7	2.2	1.8	2.1
Apparel and leather	315,6	80.1	84.2	77.3	64.6	67.2	62.1	-.9	4.0	4.8
Paper		88.4	93.7	85.2	80.8	84.9	83.4	-.2	.7	.2
Printing and support	323	84.7	91.6	82.7	75.5	74.4	71.3	-.7	-6.5	-5.3
Petroleum and coal products	324	86.3	88.9	82.5	87.2	88.1	87.6	-1.4	-.8	-.2
Chemical	325	78.6	85.6	80.8	74.0	72.9	72.3	-.7	-.8	-2.1
Plastics and rubber products	326	83.8	91.3	77.2	77.2	79.5	79.9	1.3	.1	.1
Other manufacturing (non-NAICS)	1133,5111	83.7	90.7	79.1	79.4	78.9	82.3	-2.5	-3.5	-1.0
Mining	21	86.9	85.6	83.4	86.9	84.6	85.2	.3	-.5	.4
Utilities	2211,2	87.0	92.8	84.1	86.7	87.2	83.3	1.7	1.2	-.1
Selected high-technology industries		79.2	79.9	74.5	62.9	61.7	64.9	-.2	-.4	.3
Computers and office equipment	3341	78.4	79.3	67.2	68.6	71.6	70.5	-.1	-5.5	-11.0
Communications equipment	3342	78.6	81.7	73.2	58.8	48.2	50.2	-1.9	-1.6	.8
Semiconductors and related electronic components	334412–9	81.0	80.5	78.1	63.4	66.7	72.8	.2	-.3	1.9
Measures excluding selected high-technology industries										
Total industry		81.4	85.6	78.8	76.4	76.3	75.6	.1	-.5	-.3
Manufacturing ¹		80.2	86.1	77.3	74.5	74.6	74.1	.0	-.4	-.1
STAGE-OF-PROCESS GROUPS										
Crude		86.4	88.5	84.7	83.8	83.1	83.8	.8	.0	1.1
Primary and semifinished		82.4	86.4	77.5	76.3	77.5	76.4	.1	-.4	-.2
Finished		78.4	83.2	77.2	72.6	71.1	70.8	.6	.5	.2

NOTE. Estimates for the third quarter of 2003 are subject to further revision in the upcoming monthly releases.

1. See footnote 2 to table 3.

Table 5
RATES OF CHANGE IN CAPACITY, BY INDUSTRY GROUPS: 1999 to 2003¹

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total industry	4.4	4.1	2.3	1.6	1.1	.2	-.2	-.1	.5	.0
Manufacturing ²	5.0	4.8	2.2	1.1	1.0	.2	-.1	-.2	.3	.2
Durable	7.5	8.3	4.7	2.6	2.5	.1	.0	.1	.4	.4
Nondurable	2.2	.9	-.4	-.4	-.7	.3	-.3	-.4	.2	-.2
Mining	-2.8	-1.2	2.7	.3	-.5	-.2	-.8	.5	.5	-.9
Utilities	1.9	2.5	3.7	6.0	4.4	.6	-.4	-.4	-.5	-.6
Selected high-technology industries	27.8	42.3	24.9	17.6	11.8	-.7	1.9	1.7	8.9	2.0
Manufacturing ² ex. selected high-technology industries	2.6	1.2	.4	-.1	-.2	.3	-.3	.0	.0	-.4
STAGE-OF-PROCESS GROUPS										
Crude	-2.1	-1.3	1.2	-.3	-1.1	.1	-.9	.4	.3	-1.0
Primary and semifinished	5.5	5.1	2.8	1.8	1.8	.5	-.5	-.3	.1	.3
Finished	4.3	4.3	1.8	1.7	.8	-.1	.2	-.2	.7	.1

1. Rates of change 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. See footnote 2 to table 3.

Table 6
RATES OF CHANGE IN ELECTRIC POWER USE: 1999 to 2003¹

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total Industry	2.2	1.0	-7.7	.5	-5.8	1.1	3.0	1.6	-.2	1.5
Manufacturing²	2.6	1.2	-8.0	.9	-5.8	1.2	3.2	1.7	-.2	1.8
Durable	3.0	-.1	-8.3	2.2	-7.1	1.3	3.2	1.9	-.8	2.7
Nondurable	2.2	2.4	-7.9	-.1	-4.8	1.2	3.3	1.6	.2	1.0
Mining	-3.1	-2.7	-3.2	-4.7	-5.2	.0	-.1	.1	.1	-2.8
Total ex. nuclear nondefense	2.3	.2	-6.7	.4	-5.8	1.1	3.2	1.6	-.4	1.9
Utility sales to industry	1.9	.6	-8.5	.4	-6.3	1.0	2.9	1.5	-.5	3.3
Industrial generation	5.9	9.1	.2	2.1	-1.8	1.2	3.8	1.9	1.5	2.6

NOTE. Estimates for the third quarter of 2003 are subject to further revision in the upcoming monthly releases.

1. Rates of change 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 2003, the percent change is calculated from the fourth quarter of 2002 to the second quarter of 2003.

2. See footnote 2 to table 3.

Table 7A

INDUSTRIAL PRODUCTION: Manufacturing¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual ²
IP (percent change)																	
1973	.8	1.6	.3	-.3	.7	.0	.4	-.3	.8	.7	.6	.1	14.8	3.2	2.5	6.6	9.0
1974	-.6	-.4	.1	-.1	.5	.1	-.3	-.8	.0	-.9	-2.9	-4.5	-2.5	.4	-2.6	-16.8	-.3
1975	-1.7	-2.7	-1.3	-.4	.0	.9	1.4	.8	1.5	.2	.3	1.4	-27.5	-7.3	12.9	9.1	-10.6
1976	1.3	1.7	.1	.8	.4	.1	.7	.6	.1	.1	1.3	1.2	15.1	7.4	5.3	6.6	8.9
1977	-.2	1.6	1.6	1.1	.7	.7	.2	.4	.1	.2	.1	1.2	11.2	14.4	5.3	3.8	8.7
1978	-1.2	.1	1.8	1.5	.5	.8	.0	.4	.4	.6	.9	.8	1.0	13.9	4.3	7.8	6.0
1979	-.6	.4	.4	-1.2	1.1	.1	.0	-1.3	.1	.2	-.3	.3	2.6	-.3	-1.6	-1.1	3.1
1980	.5	.0	-.7	-2.0	-3.0	-1.5	-.9	.6	1.6	1.5	1.9	.3	1.6	-18.2	-7.7	17.8	-3.7
1981	-.4	-.3	.3	.6	.6	-.4	.3	-.1	-.6	-1.1	-1.2	-1.7	1.1	3.8	-.2	-10.8	1.0
1982	-2.2	2.8	-.8	-.6	-.3	-.1	-.2	-.9	-.4	-1.2	-.6	-.4	-8.3	-1.5	-4.3	-8.8	-5.4
1983	2.4	-.1	1.0	1.2	1.4	.8	1.4	.7	1.9	1.1	.3	.3	9.1	12.6	14.9	12.1	4.6
1984	1.9	.9	.8	.5	.4	.5	.5	.2	-.3	.3	.2	.4	13.1	7.0	3.9	2.0	10.0
1985	-.4	-2.2	.7	-.1	.2	.2	-.6	.6	.1	-.4	.6	.4	.0	1.8	.1	1.5	1.7
1986	1.2	-.5	-.4	.4	.2	-.3	.5	.3	.2	.3	.5	.9	4.8	.0	2.5	4.9	2.2
1987	-.6	1.6	.1	.6	.6	.6	.7	.4	.5	1.4	.6	.5	5.3	7.6	7.2	10.4	5.5
1988	-.2	.3	.3	.7	-.1	.0	.2	.1	.3	.6	.3	.5	2.7	3.8	1.6	4.7	5.1
1989	.8	-1.0	-.1	.1	-.8	.2	-1.1	.9	-.3	-.1	.1	.2	1.8	-3.1	-3.3	.2	.7
1990	-.1	1.4	.3	-.1	.1	.3	-.2	.3	-.1	-.7	-1.2	-.7	4.5	2.8	.7	-6.6	.7
1991	-.7	-.7	-.7	.4	.7	1.1	.3	.1	1.0	-.2	-.3	-.1	-8.7	2.1	6.9	1.4	-2.0
1992	-.6	1.1	.9	.5	.6	.2	.8	-.2	-.1	.6	.5	-.2	1.1	8.0	3.7	3.2	3.7
1993	.9	.2	.0	.4	-.1	-.2	.3	-.2	.8	.7	.5	.7	4.4	1.6	1.2	6.9	3.5
1994	.3	.2	1.1	.8	.8	.3	.4	.8	.2	.9	.8	1.2	5.9	9.2	5.9	9.5	6.1
1995	.5	.0	.1	-.1	.0	.4	-.6	1.2	.9	-.2	.2	.5	6.2	.3	3.1	4.6	5.3
1996	-.8	1.3	-.3	1.1	.8	1.1	.3	.7	.7	.0	.9	.8	1.0	9.1	8.3	6.7	4.7
1997	.3	1.7	.6	.4	.5	.7	.5	1.2	.8	.7	.9	.4	10.0	7.8	9.2	9.7	8.6
1998	.9	.3	.1	.7	.3	-.6	-.3	2.4	-.3	1.0	-.1	.2	6.9	3.8	3.9	6.8	6.8
1999	.4	.6	.2	.3	.9	-.1	.4	.9	-.2	1.1	.7	.7	3.9	4.9	4.7	8.4	5.0
2000	.0	.5	.7	.6	.4	.2	-.3	-.4	.4	-.4	-.4	-.6	5.1	6.7	-.7	-2.8	4.7
2001	-.9	-.5	-.4	-.3	-.5	-.7	-.3	-.5	-.6	-.3	-.3	-.1	-7.4	-4.9	-5.7	-4.3	-4.0
2002	.6	.1	.3	.2	.3	.6	-.2	.2	-.1	-.5	.0	-.6	2.1	3.4	1.7	-2.9	-.7
2003	.7	.0	-.3	-.6	-.1	.2	.5	-.2	.7				1.0	-3.2	2.9		
IP (1997=100)																	
1973	51.0	51.8	52.0	51.8	52.1	52.1	52.3	52.2	52.6	53.0	53.3	53.3	51.6	52.0	52.3	53.2	52.3
1974	53.0	52.8	52.8	52.7	53.0	53.0	52.8	52.4	52.4	52.0	50.5	48.2	52.9	52.9	52.6	50.2	52.1
1975	47.4	46.1	45.5	45.3	45.3	45.7	46.4	46.7	47.5	47.6	47.7	48.4	46.3	45.5	46.9	47.9	46.6
1976	49.0	49.9	49.9	50.3	50.6	50.6	50.9	51.2	51.3	51.3	52.0	52.6	49.6	50.5	51.2	52.0	50.8
1977	52.5	53.4	54.2	54.8	55.2	55.6	55.7	56.0	56.0	56.2	56.2	56.9	53.4	55.2	55.9	56.4	55.2
1978	56.2	56.3	57.3	58.1	58.4	58.8	58.8	59.0	59.3	59.7	60.2	60.7	56.6	58.4	59.1	60.2	58.6
1979	60.3	60.5	60.8	60.1	60.7	60.8	60.8	60.0	60.1	60.2	60.0	60.2	60.6	60.5	60.3	60.1	60.4
1980	60.5	60.5	60.0	58.9	57.1	56.2	55.7	56.1	57.0	57.8	58.9	59.1	60.3	57.4	56.3	58.6	58.2
1981	58.8	58.6	58.8	59.2	59.5	59.3	59.4	59.4	59.1	58.4	57.7	56.7	58.8	59.3	59.3	57.6	58.8
1982	55.5	57.0	56.6	56.3	56.1	56.1	56.0	55.5	55.2	54.6	54.3	54.0	56.4	56.2	55.6	54.3	55.6
1983	55.4	55.3	55.8	56.5	57.3	57.7	58.5	58.9	60.0	60.7	60.9	61.1	55.5	57.2	59.2	60.9	58.2
1984	62.2	62.8	63.3	63.6	63.8	64.2	64.5	64.6	64.4	64.6	64.8	65.0	62.8	63.9	64.5	64.8	64.0
1985	64.7	64.6	65.1	65.0	65.1	65.2	64.8	65.2	65.3	65.0	65.4	65.6	64.8	65.1	65.1	65.3	65.1
1986	66.4	66.1	65.8	66.1	66.2	66.0	66.4	66.5	66.7	66.9	67.2	67.8	66.1	66.1	66.5	67.3	66.5
1987	67.4	68.5	68.6	69.0	69.5	69.9	70.4	70.7	71.0	72.1	72.5	72.8	68.2	69.5	70.7	72.5	70.2
1988	72.7	72.9	73.1	73.6	73.6	73.6	73.8	73.9	74.1	74.5	74.7	75.1	72.9	73.6	73.9	74.8	73.8
1989	75.6	74.9	74.8	74.9	74.3	74.4	73.5	74.2	73.9	73.8	73.9	74.0	75.1	74.5	73.9	73.9	74.4
1990	74.0	75.0	75.3	75.2	75.2	75.4	75.3	75.5	75.4	74.9	74.0	73.5	74.7	75.3	75.4	74.1	74.9
1991	72.9	72.5	71.9	72.2	72.7	73.5	73.7	73.8	74.6	74.5	74.3	74.2	72.4	72.8	74.0	74.3	73.4
1992	73.8	74.5	75.2	75.6	76.1	76.2	76.8	76.6	76.6	77.0	77.4	77.3	74.5	75.9	76.6	77.2	76.1
1993	78.0	78.1	78.1	78.5	78.4	78.3	78.6	78.4	79.0	79.5	79.9	80.5	78.1	78.4	78.6	80.0	78.8
1994	80.7	80.9	81.8	82.4	83.0	83.3	83.6	84.3	84.5	85.3	85.9	87.0	81.1	82.9	84.1	86.1	83.6
1995	87.4	87.3	87.4	87.3	87.3	87.7	87.1	88.2	89.0	88.8	89.0	89.4	87.4	87.4	88.1	89.1	88.0
1996	88.7	89.8	89.5	90.5	91.2	92.2	92.5	93.1	93.8	93.8	94.7	95.4	89.3	91.3	93.1	94.7	92.1
1997	95.7	97.3	97.8	98.2	98.7	99.4	99.9	101.1	101.9	102.6	103.5	103.9	96.9	98.8	101.0	103.3	100.0
1998	104.8	105.1	105.2	106.0	106.4	105.8	105.5	108.0	107.7	108.9	108.8	109.0	105.1	106.1	107.1	108.9	106.8
1999	109.4	110.1	110.3	110.6	111.6	111.5	111.9	112.9	112.7	114.0	114.8	115.6	109.9	111.3	112.5	114.8	112.1
2000	115.6	116.2	117.0	117.8	118.2	118.4	118.1	117.6	118.1	117.6	117.1	116.5	116.2	118.1	117.9	117.1	117.4
2001	115.4	114.8	114.3	114.1	113.5	112.7	112.4	111.8	111.2	110.8	110.5	110.4	114.9	113.4	111.8	110.5	112.7
2002	111.0	111.0	111.4	111.6	111.9	112.6	112.4	112.6	112.5	111.9	111.9	111.3	111.1	112.1	112.5	111.7	111.8
2003	112.0	112.1	111.8	111.1	111.0	111.2	111.7	111.5	112.3				112.0	111.1	111.9		

NOTE. Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

1. See footnote 2 to table 3.

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

Table 7B

CAPACITY AND UTILIZATION: Manufacturing¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
Capacity (percent of 1997 output)																	
1973	58.7	58.9	59.1	59.2	59.4	59.6	59.8	60.0	60.2	60.4	60.6	60.8	58.9	59.4	60.0	60.6	59.7
1974	61.0	61.2	61.4	61.6	61.8	61.9	62.1	62.3	62.4	62.5	62.7	62.8	61.2	61.8	62.3	62.7	62.0
1975	62.9	63.0	63.2	63.3	63.4	63.5	63.6	63.7	63.8	64.0	64.1	64.2	63.0	63.4	63.7	64.1	63.6
1976	64.4	64.5	64.6	64.8	64.9	65.1	65.3	65.4	65.6	65.7	65.9	66.0	64.5	64.9	65.4	65.9	65.2
1977	66.2	66.4	66.5	66.7	66.8	67.0	67.2	67.3	67.5	67.7	67.9	68.1	66.4	66.8	67.3	67.9	67.1
1978	68.2	68.4	68.6	68.8	69.0	69.2	69.4	69.6	69.7	69.9	70.2	70.4	68.4	69.0	69.6	70.2	69.3
1979	70.6	70.8	71.0	71.2	71.4	71.6	71.7	71.9	72.1	72.3	72.5	72.7	70.8	71.4	71.9	72.5	71.6
1980	72.8	73.0	73.2	73.3	73.5	73.7	73.9	74.0	74.2	74.4	74.6	74.8	73.0	73.5	74.0	74.6	73.8
1981	75.0	75.2	75.4	75.6	75.8	76.0	76.2	76.4	76.5	76.7	76.9	77.1	75.2	75.8	76.4	76.9	76.1
1982	77.2	77.4	77.6	77.7	77.9	78.0	78.2	78.3	78.4	78.5	78.6	78.7	77.4	77.9	78.3	78.6	78.0
1983	78.7	78.8	78.9	78.9	79.0	79.0	79.0	79.1	79.2	79.2	79.3	79.4	78.8	79.0	79.1	79.3	79.0
1984	79.5	79.7	79.8	80.0	80.1	80.3	80.5	80.7	80.9	81.1	81.4	81.6	79.7	80.1	80.7	81.4	80.5
1985	81.8	82.0	82.3	82.5	82.7	82.9	83.1	83.3	83.5	83.6	83.8	83.9	82.0	82.7	83.3	83.8	82.9
1986	84.0	84.2	84.3	84.4	84.5	84.6	84.7	84.9	85.0	85.1	85.3	85.4	84.2	84.5	84.9	85.3	84.7
1987	85.6	85.8	85.9	86.1	86.3	86.5	86.6	86.8	86.9	87.1	87.2	87.3	85.8	86.3	86.8	87.2	86.5
1988	87.4	87.4	87.5	87.6	87.6	87.7	87.7	87.8	87.9	88.0	88.1	88.2	87.4	87.6	87.8	88.1	87.7
1989	88.4	88.5	88.7	88.9	89.1	89.3	89.5	89.7	89.9	90.1	90.3	90.5	88.5	89.1	89.7	90.3	89.4
1990	90.7	90.9	91.1	91.3	91.5	91.7	91.8	92.0	92.2	92.4	92.6	92.7	90.9	91.5	92.0	92.6	91.7
1991	92.9	93.1	93.2	93.4	93.6	93.7	93.9	94.0	94.2	94.3	94.5	94.7	93.1	93.6	94.0	94.5	93.8
1992	94.8	95.0	95.2	95.3	95.5	95.7	95.9	96.1	96.3	96.5	96.7	96.9	95.0	95.5	96.1	96.7	95.8
1993	97.1	97.3	97.5	97.7	97.8	98.0	98.2	98.4	98.6	98.8	99.1	99.3	97.3	97.8	98.4	99.1	98.2
1994	99.5	99.8	100.0	100.3	100.6	100.9	101.3	101.6	102.0	102.4	102.8	103.2	99.8	100.6	101.6	102.8	101.2
1995	103.6	104.0	104.5	105.0	105.5	106.0	106.5	107.1	107.6	108.2	108.8	109.4	104.0	105.5	107.1	108.8	106.4
1996	110.1	110.7	111.3	111.9	112.6	113.2	113.8	114.4	115.0	115.6	116.2	116.8	110.7	112.6	114.4	116.2	113.5
1997	117.4	118.0	118.6	119.2	119.8	120.5	121.2	121.9	122.7	123.4	124.2	125.1	118.0	119.9	121.9	124.2	121.0
1998	125.9	126.7	127.6	128.4	129.2	130.0	130.8	131.5	132.2	132.9	133.6	134.2	126.7	129.2	131.5	133.6	130.3
1999	134.8	135.4	135.9	136.5	137.0	137.5	138.0	138.6	139.1	139.7	140.3	140.9	135.4	137.0	138.6	140.3	137.8
2000	141.5	142.1	142.7	143.3	143.9	144.5	145.0	145.6	146.1	146.6	147.1	147.5	142.1	143.9	145.6	147.1	144.6
2001	147.9	148.3	148.6	148.9	149.2	149.4	149.6	149.8	150.0	150.2	150.3	150.4	148.3	149.2	149.8	150.3	149.4
2002	150.6	150.7	150.9	151.0	151.1	151.3	151.4	151.6	151.7	151.9	152.0	152.2	150.7	151.1	151.6	152.0	151.4
2003	152.3	152.4	152.6	152.7	152.8	153.0	153.1	153.2	153.3				152.4	152.8	153.2		
Utilization (percent)																	
1973	87.0	88.1	88.0	87.4	87.7	87.4	87.4	86.9	87.3	87.6	87.9	87.7	87.7	87.5	87.2	87.7	87.5
1974	86.8	86.2	86.0	85.6	85.8	85.6	85.1	84.2	84.0	83.1	80.5	76.7	86.3	85.7	84.4	80.1	84.1
1975	75.3	73.1	72.0	71.6	71.5	72.0	72.9	73.4	74.4	74.4	74.4	75.4	73.5	71.7	73.5	74.7	73.4
1976	76.2	77.3	77.2	77.7	77.9	77.7	78.1	78.3	78.2	78.1	78.9	79.7	76.9	77.8	78.2	78.9	77.9
1977	79.3	80.4	81.5	82.2	82.6	83.0	82.9	83.1	83.0	83.0	82.8	83.6	80.4	82.6	83.0	83.1	82.3
1978	82.3	82.2	83.5	84.5	84.6	85.1	84.8	84.9	85.0	85.3	85.8	86.3	82.7	84.7	84.9	85.8	84.5
1979	85.5	85.6	85.7	84.4	85.1	85.0	84.7	83.4	83.3	83.2	82.8	82.8	85.6	84.8	83.8	82.9	84.3
1980	83.1	82.9	82.1	80.3	77.7	76.3	75.5	75.7	76.8	77.7	79.0	79.0	82.7	78.1	76.0	78.6	78.8
1981	78.5	78.0	78.0	78.3	78.5	78.0	78.0	77.8	77.1	76.1	75.1	73.6	78.2	78.3	77.7	74.9	77.3
1982	71.9	73.7	73.0	72.4	72.1	71.9	71.6	70.9	70.4	69.5	69.0	68.7	72.8	72.1	71.0	69.1	71.3
1983	70.3	70.1	70.8	71.6	72.5	73.1	74.1	74.5	75.8	76.6	76.8	76.9	70.4	72.4	74.8	76.8	73.6
1984	78.3	78.9	79.3	79.6	79.7	79.9	80.1	80.0	79.6	79.6	79.6	79.7	78.8	79.7	79.9	79.6	79.5
1985	79.1	78.8	79.1	78.8	78.7	78.6	78.0	78.3	78.2	77.8	78.1	78.2	79.0	78.7	78.2	78.0	78.5
1986	79.0	78.5	78.1	78.3	78.4	78.0	78.3	78.4	78.5	78.6	78.8	79.4	78.6	78.2	78.4	78.9	78.5
1987	78.8	79.9	79.9	80.2	80.5	80.8	81.2	81.4	81.7	82.8	83.2	83.5	79.5	80.5	81.5	83.1	81.2
1988	83.2	83.4	83.6	84.1	84.0	84.0	84.1	84.3	84.7	84.8	85.1		83.4	84.0	84.2	84.9	84.1
1989	85.6	84.6	84.4	84.2	83.4	83.3	82.2	82.7	82.3	82.0	81.8	81.8	84.8	83.7	82.4	81.9	83.2
1990	81.6	82.5	82.6	82.3	82.2	82.3	81.9	82.0	81.8	81.0	79.9	79.2	82.3	82.3	81.9	80.1	81.6
1991	78.5	77.9	77.2	77.3	77.8	78.5	78.5	78.5	79.2	78.9	78.6	78.4	77.8	77.8	78.8	78.6	78.3
1992	77.8	78.5	79.0	79.3	79.6	79.6	80.1	79.7	79.5	79.8	80.1	79.8	78.4	79.5	79.8	79.9	79.4
1993	80.3	80.3	80.2	80.4	80.2	79.9	80.0	79.6	80.1	80.5	80.7	81.0	80.3	80.1	79.9	80.7	80.3
1994	81.1	81.0	81.8	82.2	82.5	82.5	82.6	82.9	82.8	83.3	83.6	84.3	81.3	82.4	82.8	83.7	82.6
1995	84.3	83.9	83.6	83.1	82.8	82.7	81.8	82.3	82.7	82.1	81.8	81.7	84.0	82.9	82.3	81.9	82.7
1996	80.6	81.1	80.4	80.8	81.0	81.4	81.2	81.4	81.5	81.1	81.5	81.7	80.7	81.1	81.4	81.4	81.1
1997	81.5	82.4	82.5	82.4	82.4	82.5	82.5	82.9	83.1	83.1	83.3	83.1	82.1	82.4	82.8	83.2	82.6
1998	83.3	83.0	82.5	82.6	82.3	81.3	80.7	82.1	81.5	81.9	81.4	81.2	82.9	82.1	81.4	81.5	82.0
1999	81.2	81.3	81.1	81.1	81.5	81.1	81.1	81.5	81.0	81.6	81.9	82.1	81.2	81.2	81.2	81.9	81.4
2000	81.7	81.8	82.0	82.2	82.2	82.0	81.4	80.8	80.8	80.2	79.6	79.0	81.8	82.1	81.0	79.6	81.1
2001	78.0	77.4	76.9	76.6	76.1	75.4	75.1	74.6	74.1	73.8	73.5	73.4	77.5	76.0	74.6	73.5	75.4
2002	73.7	73.7	73.8	73.9	74.1	74.4	74.3	74.3	74.2	73.7	73.6	73.1	73.7	74.1	74.2	73.5	73.9
2003	73.6	73.5	73.3	72.7	72.6	72.7	73.0	72.8	73.3				73.5	72.7	73.0		

NOTE. Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

1. See footnote 2 to table 3.

Table 8A

INDUSTRIAL PRODUCTION: Total Industry Excluding Selected High-Technology Industries¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual ²
IP (percent change)																	
1973	.8	1.3	.1	-.4	.6	-.1	.4	-.3	.8	.6	.3	-.3	12.6	2.0	2.3	4.5	7.7
1974	-.6	-.4	.1	.0	.5	-.1	-.1	-.8	-.2	-.4	-.3.2	-.3.6	-.3.9	.8	-.2.4	-.15.4	-.9
1975	-1.0	-2.1	-1.1	.0	-.2	.7	1.0	.8	1.2	.1	.2	1.3	-22.7	-5.4	9.9	7.3	-8.8
1976	1.4	1.2	-.1	.7	.3	.0	.4	.6	.0	.1	1.5	1.2	13.4	4.9	3.7	6.9	7.3
1977	-.5	1.2	1.3	.8	.7	.5	.3	-.1	.4	.2	.0	.2	8.5	11.5	3.9	1.9	6.9
1978	-1.2	.2	1.9	1.9	.4	.6	-.1	.2	.2	.7	.6	.5	-1.4	16.0	2.8	5.9	4.8
1979	-.6	.5	.2	-.9	.6	-.1	-.4	-.8	-.1	.4	-.2	.0	1.3	-.9	-.3.2	-.4	2.1
1980	.5	.0	-.4	-2.1	-2.5	-1.3	-.6	-.1	1.7	1.0	1.7	.5	1.2	-16.7	-6.8	15.0	-3.6
1981	-.7	-.4	.5	-.6	.6	.5	.7	-.3	-.8	-.9	-1.2	-1.2	.4	.9	3.4	-10.0	.6
1982	-1.9	1.8	-.7	-.9	-.8	-.4	-.5	-.9	-.5	-.9	-.4	-.9	-8.1	-5.7	-6.8	-8.3	-5.9
1983	1.7	-.5	.7	1.3	.7	.5	1.4	1.2	1.2	.7	.2	.6	3.5	9.1	13.5	9.6	1.8
1984	1.9	.1	.6	.5	.5	.2	.2	.0	-.3	-.2	.3	.1	11.3	5.3	1.8	-.8	7.9
1985	-.4	.6	.0	.1	.1	.0	-.5	.5	.5	-.5	.2	1.0	.8	1.5	-.1	2.0	1.0
1986	.6	-.7	-.8	.1	.1	-.1	.3	-.2	.2	.4	.4	.8	2.6	-2.7	.7	4.0	.9
1987	-.7	1.4	.2	.6	.5	.6	.5	.6	.2	1.3	.5	.3	3.9	7.0	6.3	8.4	4.2
1988	.0	.5	.2	.3	-.1	.1	.2	.5	-.4	.5	.2	.5	3.3	2.3	1.6	2.9	4.4
1989	.3	-.5	.4	-.2	-.6	.0	-1.1	.9	-.4	-.2	.2	.7	1.8	-1.9	-3.6	.8	.6
1990	-.6	.8	.4	-.1	.1	.3	-.2	.3	.1	-.8	-1.3	-.7	2.3	2.4	1.0	-6.5	.3
1991	-.4	-.8	-.6	.2	1.0	1.0	.0	.0	.9	-.2	-.2	-.5	-7.9	2.0	5.1	.1	-2.0
1992	-.8	.9	.7	.6	.3	-.2	.7	-.4	.1	.6	.4	.0	-1.6	6.1	1.5	3.2	1.9
1993	.4	.3	.1	.2	-.4	.2	.3	-.2	.5	.5	.3	.6	3.0	.6	1.2	4.9	2.5
1994	.5	.1	.7	.2	.4	.6	.0	.4	.0	.6	.5	.9	5.1	4.8	3.2	5.6	4.0
1995	.2	-.2	-.2	-.2	.0	.2	-.6	1.1	.1	-.6	.2	.3	3.1	-1.4	1.3	.4	2.4
1996	-.9	1.2	-.4	.7	.5	.7	-.4	.5	.3	-.2	.8	.3	.1	5.6	2.5	3.4	1.7
1997	.1	1.1	-.1	.2	.0	.3	.5	.8	.7	.7	.4	.0	5.3	2.2	5.6	7.0	4.2
1998	.1	.1	.2	.5	.4	-.8	-.7	1.8	-.5	.7	-.5	-.2	1.6	2.6	-.3	2.1	3.1
1999	.3	.1	.1	-.2	.5	-.3	.1	.6	-.3	.8	.3	.5	.5	.6	1.5	4.5	1.2
2000	-.5	.3	.2	.4	.3	.0	-.8	-.3	.2	-.5	-.2	-.3	.7	3.0	-3.2	-2.8	1.2
2001	-.8	-.4	-.4	-.1	-.4	-.5	-.3	-.1	-.7	-.4	-.6	-.4	-6.0	-3.8	-4.3	-5.5	-3.9
2002	.6	.1	.4	.3	.1	.6	-.2	-.2	-.2	-.3	.0	-.6	1.3	3.6	.0	-3.0	-1.1
2003	.5	.3	-.8	-.7	-.1	-.1	.6	-.1	.4				.1	-5.0	2.0		
IP (1997=100)																	
1973	68.4	69.3	69.4	69.1	69.6	69.5	69.8	69.5	70.1	70.5	70.7	70.5	69.1	69.4	69.8	70.6	69.7
1974	70.1	69.7	69.8	69.8	70.1	70.1	70.0	69.4	69.3	69.0	66.8	64.4	69.9	70.0	69.6	66.7	69.0
1975	63.7	62.3	61.7	61.7	61.5	62.0	62.6	63.1	63.8	63.9	64.1	64.9	62.6	61.7	63.2	64.3	62.9
1976	65.8	66.6	66.6	67.0	67.2	67.2	67.5	67.9	67.9	68.0	69.0	69.8	66.4	67.2	67.8	68.9	67.6
1977	69.4	70.3	71.2	71.8	72.3	72.7	72.9	72.8	73.1	73.3	73.2	73.4	70.3	72.3	73.0	73.3	72.2
1978	72.5	72.6	74.0	75.4	75.7	76.2	76.2	76.3	76.5	77.0	77.4	77.8	73.0	75.8	76.3	77.4	75.6
1979	77.4	77.7	77.9	77.2	77.7	77.6	77.3	76.7	76.6	76.9	76.7	76.7	77.7	77.5	76.9	76.8	77.2
1980	77.1	77.1	76.8	75.2	73.3	72.3	71.8	71.9	73.1	73.9	75.2	75.6	77.0	73.6	72.3	74.9	74.4
1981	75.0	74.7	75.1	74.6	75.1	75.5	76.0	75.8	75.3	74.6	73.7	72.9	74.9	75.1	75.7	73.7	74.9
1982	71.5	72.8	72.3	71.6	71.1	70.8	70.4	69.8	69.5	68.8	68.5	67.9	72.2	71.2	69.9	68.4	70.4
1983	69.1	68.7	69.2	70.1	70.6	70.9	71.9	72.8	73.7	74.2	74.4	74.9	69.0	70.5	72.8	74.5	71.7
1984	76.3	76.4	76.8	77.2	77.6	77.8	77.9	77.9	77.7	77.5	77.7	77.8	76.5	77.5	77.8	77.7	77.4
1985	77.5	78.0	78.0	78.1	78.2	78.2	77.7	78.1	78.5	78.1	78.3	79.1	77.8	78.1	78.1	78.5	78.2
1986	79.6	79.0	78.4	78.4	78.5	78.4	78.7	78.5	78.6	78.9	79.3	79.9	79.0	78.5	78.6	79.4	78.9
1987	79.4	80.4	80.6	81.1	81.5	82.0	82.4	82.9	83.0	84.1	84.5	84.8	80.1	81.5	82.8	84.5	82.2
1988	84.8	85.2	85.4	85.7	85.6	85.6	85.8	86.2	85.9	86.3	86.5	86.9	85.1	85.6	86.0	86.6	85.8
1989	87.2	86.7	87.0	86.9	86.4	86.4	85.4	86.1	85.8	85.7	85.8	86.4	87.0	86.6	85.8	85.9	86.3
1990	85.9	86.6	86.9	86.8	86.9	87.1	87.0	87.2	87.3	86.7	85.6	84.9	86.4	87.0	87.2	85.7	86.6
1991	84.6	83.9	83.4	83.6	84.4	85.2	85.2	85.2	86.0	85.8	85.6	85.1	84.0	84.4	85.5	85.5	84.8
1992	84.5	85.2	85.8	86.3	86.5	86.4	87.0	86.6	86.6	87.2	87.6	87.6	85.1	86.4	86.7	87.4	86.4
1993	87.9	88.1	88.2	88.4	88.0	88.2	88.5	88.3	88.7	89.2	89.5	90.0	88.1	88.2	88.5	89.5	88.6
1994	90.4	90.5	91.1	91.3	91.7	92.2	92.2	92.6	92.5	93.1	93.6	94.4	90.7	91.7	92.4	93.7	92.1
1995	94.6	94.5	94.2	94.0	94.1	94.2	93.7	94.7	94.8	94.3	94.5	94.7	94.4	94.1	94.4	94.5	94.4
1996	93.9	95.0	94.6	95.3	95.8	96.4	96.0	96.4	96.8	96.6	97.4	97.7	94.5	95.8	96.4	97.2	96.0
1997	97.8	98.9	98.8	98.9	98.9	99.2	99.6	100.4	101.1	101.8	102.2	102.3	98.5	99.0	100.4	102.1	100.0
1998	102.4	102.5	102.7	103.2	103.6	102.8	102.1	103.9	103.3	104.1	103.5	103.3	102.5	103.2	103.1	103.6	103.1
1999	103.7	103.8	103.9	103.7	104.2	103.9	104.1	104.6	104.3	105.1	105.4	105.9	103.8	103.9	104.3	105.5	104.4
2000	105.4	105.7	105.9	106.3	106.6	106.5	105.7	105.4	105.7	105.1	104.9	104.6	105.7	106.5	105.6	104.9	105.7
2001	103.7	103.2	102.9	102.7	102.3	101.8	101.5	101.3	100.6	100.2	99.6	99.2	103.3	102.3	101.1	99.7	101.6
2002	99.8	99.9	100.3	100.7	100.7	101.3	101.1	100.9	100.7	100.3	100.3	99.8	100.0	100.9	100.9	100.1	100.5
2003	100.3	100.5	99.7	99.0	98.9	98.7	99.3	99.2	99.6				100.2	98.9	99.4		

NOTE. Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

1. High technology industries include computers, communications equipment, and semiconductors and related electronic components.

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

Table 8B

CAPACITY AND UTILIZATION: Total Industry Excluding Selected High-Technology Industries¹

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
Capacity (percent of 1992 output)																	
1973	77.6	77.8	78.0	78.2	78.4	78.6	78.9	79.1	79.3	79.5	79.8	80.0	77.8	78.4	79.1	79.8	78.8
1974	80.2	80.4	80.6	80.8	81.0	81.2	81.4	81.5	81.7	81.8	82.0	82.1	80.4	81.0	81.5	82.0	81.2
1975	82.3	82.4	82.5	82.7	82.8	82.9	83.0	83.1	83.2	83.4	83.5	83.6	82.4	82.8	83.1	83.5	82.9
1976	83.7	83.9	84.0	84.1	84.3	84.4	84.5	84.7	84.8	85.0	85.1	85.3	83.9	84.3	84.7	85.1	84.5
1977	85.4	85.6	85.8	85.9	86.1	86.3	86.5	86.7	86.9	87.1	87.3	87.5	85.6	86.1	86.7	87.3	86.4
1978	87.7	87.9	88.2	88.4	88.6	88.8	88.9	89.1	89.3	89.5	89.7	89.8	87.9	88.6	89.1	89.7	88.8
1979	90.0	90.2	90.3	90.5	90.6	90.7	90.9	91.0	91.1	91.3	91.4	91.5	90.2	90.6	91.0	91.4	90.8
1980	91.6	91.7	91.9	92.0	92.1	92.2	92.3	92.5	92.6	92.7	92.8	93.0	91.7	92.1	92.5	92.8	92.3
1981	93.1	93.2	93.4	93.5	93.7	93.8	94.0	94.1	94.3	94.5	94.6	94.8	93.2	93.7	94.1	94.6	93.9
1982	94.9	95.1	95.2	95.4	95.5	95.6	95.7	95.8	95.9	96.0	96.0	96.1	95.1	95.5	95.8	96.0	95.6
1983	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.2	96.1	96.1	96.1	96.1	96.1
1984	96.2	96.2	96.3	96.3	96.4	96.5	96.6	96.7	96.8	96.9	97.1	97.2	96.2	96.4	96.7	97.1	96.6
1985	97.4	97.5	97.7	97.8	98.0	98.1	98.3	98.4	98.6	98.7	98.8	99.0	97.5	98.0	98.4	98.8	98.2
1986	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.8	99.9	100.0	100.1	99.2	99.5	99.8	100.0	99.6
1987	100.2	100.3	100.4	100.5	100.6	100.7	100.8	100.9	101.0	101.0	101.1	101.1	100.3	100.6	100.9	101.1	100.7
1988	101.2	101.2	101.3	101.3	101.3	101.4	101.4	101.4	101.5	101.6	101.7	101.8	101.2	101.3	101.4	101.7	101.4
1989	101.9	102.0	102.1	102.3	102.4	102.6	102.8	103.0	103.1	103.3	103.5	103.7	102.0	102.4	103.0	103.5	102.7
1990	103.8	104.0	104.1	104.3	104.5	104.6	104.8	104.9	105.0	105.2	105.3	105.5	104.0	104.5	104.9	105.3	104.7
1991	105.6	105.7	105.9	106.0	106.1	106.3	106.4	106.5	106.6	106.7	106.8	107.0	105.7	106.1	106.5	106.8	106.3
1992	107.1	107.2	107.3	107.4	107.5	107.6	107.7	107.8	107.9	108.0	108.1	108.2	107.2	107.5	107.8	108.1	107.6
1993	108.3	108.4	108.5	108.6	108.8	108.9	109.0	109.1	109.2	109.3	109.4	109.5	108.4	108.8	109.1	109.4	108.9
1994	109.6	109.8	109.9	110.0	110.2	110.3	110.5	110.7	110.9	111.1	111.3	111.5	109.8	110.2	110.7	111.3	110.5
1995	111.8	112.0	112.3	112.5	112.8	113.1	113.4	113.6	113.9	114.2	114.4	114.7	112.0	112.8	113.6	114.4	113.2
1996	114.9	115.2	115.4	115.6	115.9	116.1	116.3	116.6	116.8	117.0	117.3	117.6	115.2	115.9	116.6	117.3	116.2
1997	117.8	118.1	118.5	118.8	119.1	119.5	119.8	120.2	120.6	121.0	121.3	121.7	118.1	119.1	120.2	121.3	119.7
1998	122.1	122.5	122.8	123.1	123.5	123.8	124.1	124.4	124.7	125.0	125.3	125.6	122.5	123.5	124.4	125.3	123.9
1999	125.8	126.1	126.4	126.6	126.9	127.1	127.3	127.5	127.7	127.9	128.1	128.2	126.1	126.9	127.5	128.1	127.1
2000	128.3	128.5	128.6	128.7	128.8	128.9	129.0	129.1	129.1	129.2	129.3	129.4	128.5	128.8	129.1	129.3	128.9
2001	129.5	129.6	129.7	129.8	129.9	130.0	130.1	130.2	130.3	130.4	130.5	130.6	129.6	129.9	130.2	130.5	130.0
2002	130.7	130.8	130.8	130.9	131.0	131.0	131.1	131.2	131.2	131.2	131.3	131.3	130.8	131.0	131.1	131.3	131.0
2003	131.3	131.3	131.3	131.4	131.4	131.4	131.4	131.4	131.5				131.3	131.4	131.4		
Utilization (percent)																	
1973	88.2	89.1	89.0	88.4	88.7	88.4	88.5	87.9	88.4	88.6	88.7	88.2	88.8	88.5	88.2	88.5	88.5
1974	87.4	86.8	86.6	86.4	86.6	86.3	86.0	85.2	84.9	84.3	81.4	78.4	86.9	86.4	85.3	81.4	85.0
1975	77.4	75.7	74.7	74.6	74.3	74.7	75.4	75.9	76.7	76.7	76.7	77.6	75.9	74.6	76.0	77.0	75.9
1976	78.6	79.4	79.3	79.7	79.8	79.6	79.8	80.2	80.1	80.0	81.0	81.8	79.1	79.7	80.0	81.0	80.0
1977	81.3	82.1	83.1	83.6	84.0	84.2	84.3	84.0	84.1	84.1	83.9	83.8	82.2	83.9	84.2	83.9	83.5
1978	82.6	82.6	83.9	85.3	85.5	85.9	85.6	85.6	85.6	86.0	86.3	86.7	83.0	85.6	85.6	86.3	85.1
1979	86.0	86.2	86.3	85.3	85.7	85.5	85.0	84.2	84.1	84.2	83.9	83.8	86.1	85.5	84.4	84.0	85.0
1980	84.1	84.0	83.6	81.7	79.5	78.4	77.8	77.8	79.0	79.7	81.0	81.3	83.9	79.9	78.2	80.6	80.7
1981	80.6	80.1	80.4	79.8	80.2	80.5	80.9	80.6	79.8	79.0	77.9	76.9	80.4	80.2	80.4	77.9	79.7
1982	75.3	76.6	75.9	75.1	74.4	74.0	73.6	72.9	72.4	71.7	71.3	70.7	75.9	74.5	73.0	71.2	73.7
1983	71.9	71.5	72.0	72.9	73.4	73.8	74.8	75.7	76.7	77.2	77.4	77.8	71.8	73.4	75.7	77.5	74.6
1984	79.3	79.4	79.8	80.1	80.5	80.6	80.7	80.6	80.2	80.0	80.1	80.0	79.5	80.4	80.5	80.0	80.1
1985	79.6	80.0	79.9	79.9	79.8	79.7	79.1	79.4	79.7	79.2	79.2	79.9	79.8	79.8	79.4	79.4	79.6
1986	80.3	79.7	79.0	78.9	78.9	78.8	79.0	78.7	78.8	79.0	79.3	79.8	79.7	78.9	78.8	79.4	79.2
1987	79.2	80.2	80.3	80.7	81.0	81.4	81.8	82.2	82.2	83.3	83.6	83.8	79.9	81.0	82.0	83.6	81.6
1988	83.8	84.2	84.3	84.6	84.4	84.5	84.6	85.0	84.6	85.0	85.1	85.4	84.1	84.5	84.7	85.2	84.6
1989	85.6	85.0	85.2	85.0	84.3	84.2	83.1	83.6	83.2	82.9	82.9	83.3	85.3	84.5	83.3	83.0	84.0
1990	82.7	83.3	83.4	83.3	83.2	83.3	83.0	83.1	83.1	82.4	81.2	80.5	83.1	83.3	83.1	81.4	82.7
1991	80.1	79.4	78.8	78.9	79.5	80.2	80.1	80.0	80.6	80.4	80.1	79.6	79.4	79.5	80.2	80.0	79.8
1992	78.9	79.5	80.0	80.4	80.5	80.3	80.8	80.3	80.3	80.7	81.0	80.9	79.5	80.4	80.5	80.9	80.3
1993	81.1	81.3	81.3	81.4	80.9	81.0	81.2	80.9	81.2	81.6	81.8	82.1	81.2	81.1	81.1	81.8	81.3
1994	82.5	82.4	82.9	83.0	83.2	83.6	83.4	83.6	83.5	83.9	84.1	84.7	82.6	83.2	83.5	84.2	83.4
1995	84.6	84.3	84.0	83.6	83.4	83.3	82.6	83.4	83.3	82.6	82.5	82.6	84.3	83.4	83.1	82.6	83.4
1996	81.7	82.5	82.0	82.4	82.6	83.0	82.5	82.8	82.9	82.5	83.0	83.1	82.1	82.7	82.7	82.9	82.6
1997	83.0	83.7	83.4	83.3	83.1	83.0	83.2	83.5	83.9	84.2	84.3	84.0	83.3	83.1	83.5	84.2	83.5
1998	83.9	83.7	83.6	83.8	83.9	83.0	82.2	83.5	82.9	83.2	82.6	82.3	83.7	83.6	82.9	82.7	83.2
1999	82.4	82.3	82.2	81.9	82.1	81.8	81.7	82.1	81.7	82.2	82.3	82.6	82.3	81.9	81.8	82.4	82.1
2000	82.1	82.3	82.4	82.6	82.8	82.7	82.0	81.7	81.8	81.3	81.1	80.8	82.3	82.7	81.8	81.1	82.0
2001	80.1	79.7	79.3	79.1	78.8	78.3	78.0	77.8	77.2	76.9	76.3	76.0	79.7	78.7	77.7	76.4	78.1
2002	76.4	76.4	76.7	76.9	76.9	77.3	77.1	76.9	76.7	76.4	76.4	76.0	76.5	77.0	76.9	76.3	76.7
2003	76.4	76.5	75.9	75.4	75.3	75.1	75.6	75.5	75.8				76.3	75.3	75.6		

NOTE. Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

1. High technology industries include computers, communications equipment, and semiconductors and related electronic components.

Table 9A

INDUSTRIAL PRODUCTION: Manufacturing¹ Excluding Selected High-Technology Industries²

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual ³
IP (percent change)																	
1973	.8	1.5	.2	-.4	.6	-.2	.4	-.5	.8	.7	.5	.1	14.2	2.3	1.6	5.8	8.5
1974	-.8	-.5	.0	-.1	.4	.1	-.3	-.5	-.2	-.9	-2.9	-4.6	-3.6	.1	-2.4	-17.1	-1.0
1975	-1.7	-2.6	-1.3	-.3	.0	.9	1.4	.8	1.6	.2	.3	1.4	-27.5	-6.9	13.2	8.6	-10.5
1976	1.3	1.7	.0	.8	.3	.0	.6	.5	-.1	.0	1.2	1.2	14.7	6.5	4.2	5.5	8.4
1977	-.2	1.5	1.6	.9	.7	.6	.2	.3	.0	.2	.0	1.2	10.6	13.2	4.3	2.9	7.8
1978	-1.3	.0	1.7	1.5	.4	.7	-.1	.3	.3	.6	.8	.8	.2	13.2	3.3	6.8	5.2
1979	-.8	.3	.4	-1.3	1.0	.0	-.1	-1.5	.0	.1	-.5	.2	1.2	-1.3	-3.0	-2.5	1.9
1980	.4	-.1	-.9	-2.2	-3.1	-1.6	-.9	.5	1.7	1.5	1.9	.2	.3	-19.7	-8.5	17.6	-4.9
1981	-.6	-.4	.3	.5	.5	-.5	.2	-.2	-.7	-1.2	-1.3	-1.9	-.1	2.7	-1.2	-12.1	.1
1982	-2.3	2.6	-.8	-.7	-.4	-.1	-.4	-.8	-.5	-1.3	-.7	-.6	-9.7	-2.6	-5.1	-9.7	-6.5
1983	2.5	-.2	.9	1.1	1.3	.7	1.2	.9	1.5	1.1	.2	.3	8.3	11.6	13.7	10.7	3.7
1984	1.8	.8	.6	.3	.2	.3	.4	.1	-.4	.3	.2	.3	11.6	5.0	2.3	1.1	8.5
1985	-.5	-.1	.7	.0	.2	.1	-.4	.7	.2	-.4	.5	.3	-.3	2.5	.7	1.6	1.4
1986	1.3	-.5	-.5	.4	.1	-.1	.2	.2	.2	.3	.4	.8	5.0	-.2	1.3	4.3	2.2
1987	-.8	1.6	.2	.5	.5	.5	.6	.3	.5	1.4	.5	.4	4.0	6.7	5.9	9.6	4.6
1988	-.2	.3	.2	.6	-.2	-.1	.1	.1	.3	.5	.3	.5	2.2	3.0	.8	4.6	4.4
1989	.8	-1.1	.0	.0	-.8	.1	-1.4	.8	-.3	-.3	.0	.2	2.1	-3.5	-4.4	-.7	.4
1990	-.2	1.4	.3	-.2	.0	.2	-.2	.3	-.1	-.8	-1.3	-.8	3.8	2.1	.3	-7.3	.0
1991	-.7	-.8	-.8	.4	.7	1.1	.3	.1	1.1	-.2	-.4	-.3	-9.4	1.4	6.7	.7	-2.6
1992	-.8	1.1	.8	.4	.5	.1	.7	-.3	-.2	.5	.4	-.2	-.7	6.9	2.3	1.8	2.5
1993	.9	.1	-.1	.4	-.1	-.3	.3	-.4	.6	.6	.3	.6	3.8	1.0	.2	5.4	2.5
1994	.3	.2	.9	.5	.5	.1	.2	.6	.0	.7	.6	1.0	4.9	6.4	3.7	6.9	4.4
1995	.2	-.3	-.2	-.3	-.2	.3	-.9	.9	.6	-.6	-.1	.3	3.1	-2.4	.1	.7	2.5
1996	-1.1	1.1	-.5	.9	.5	.8	.0	.4	.4	-.3	.8	.6	-1.3	6.2	4.5	3.3	1.6
1997	.0	1.3	.1	.0	.1	.4	.3	1.0	.6	.6	.6	.1	6.2	2.8	6.1	7.2	4.9
1998	.5	.0	.0	.6	.3	-1.0	-.8	2.1	-.7	.9	-.3	-.1	3.0	2.0	-.8	3.8	3.5
1999	.1	.3	-.2	-.1	.6	-.5	-.1	.8	-.3	.9	.4	.3	.4	.6	.8	5.7	1.4
2000	-.5	.2	.5	.2	-.1	.0	-.6	-.6	.2	-.5	-.6	-.6	.5	2.4	-3.8	-4.7	1.0
2001	-.8	-.4	-.4	-.1	-.3	-.6	-.2	-.4	-.6	-.5	-.4	-.3	-7.2	-3.5	-4.6	-5.7	-4.6
2002	.6	.0	.3	.2	.2	.5	-.3	.0	-.2	-.6	-.1	-.7	1.4	2.5	.3	-4.3	-1.3
2003	.7	-.1	-.3	-.7	-.2	.0	.4	-.4	.6				.1	-4.3	1.1		
IP (1997=100)																	
1973	66.6	67.6	67.8	67.5	67.9	67.8	68.0	67.7	68.2	68.7	69.0	69.1	67.3	67.7	68.0	68.9	68.0
1974	68.5	68.2	68.2	68.1	68.4	68.4	68.2	67.8	67.7	67.1	65.2	62.2	68.3	68.3	67.9	64.8	67.3
1975	61.1	59.5	58.7	58.5	58.6	59.1	60.0	60.4	61.4	61.5	61.6	62.5	59.8	58.7	60.6	61.8	60.2
1976	63.3	64.4	64.4	64.9	65.1	65.1	65.5	65.8	65.8	65.8	66.6	67.4	64.0	65.0	65.7	66.6	65.3
1977	67.3	68.2	69.3	70.0	70.4	70.9	71.0	71.2	71.3	71.4	71.4	72.2	68.3	70.4	71.2	71.7	70.4
1978	71.3	71.3	72.5	73.6	73.9	74.4	74.3	74.6	74.8	75.2	75.8	76.4	71.7	74.0	74.6	75.8	74.0
1979	75.8	76.0	76.3	75.3	76.0	76.0	75.9	74.8	74.9	74.9	74.6	74.7	76.0	75.8	75.2	74.7	75.4
1980	75.1	75.0	74.3	72.7	70.4	69.3	68.7	69.0	70.2	71.2	72.5	72.7	74.8	70.8	69.3	72.1	71.8
1981	72.3	72.0	72.1	72.5	72.8	72.5	72.7	72.5	72.0	71.1	70.2	68.9	72.1	72.6	72.4	70.1	71.8
1982	67.3	69.1	68.5	68.1	67.8	67.7	67.5	66.9	66.6	65.7	65.3	64.9	68.3	67.9	67.0	65.3	67.1
1983	66.5	66.4	67.0	67.7	68.6	69.1	69.9	70.5	71.6	72.4	72.5	72.7	66.6	68.5	70.7	72.5	69.6
1984	74.0	74.6	75.0	75.3	75.4	75.7	76.0	76.0	75.7	75.9	76.1	76.3	74.5	75.5	75.9	76.1	75.5
1985	75.9	75.8	76.4	76.4	76.5	76.6	76.3	76.8	76.9	76.6	77.0	77.3	76.0	76.5	76.7	77.0	76.5
1986	78.3	77.9	77.5	77.8	77.9	77.8	77.9	78.1	78.3	78.5	78.8	79.5	77.9	77.8	78.1	78.9	78.2
1987	78.8	80.1	80.2	80.6	81.0	81.4	81.9	82.1	82.5	83.7	84.1	84.5	79.7	81.0	82.2	84.1	81.8
1988	84.3	84.6	84.8	85.3	85.2	85.1	85.2	85.3	85.5	86.0	86.3	86.7	84.5	85.2	85.3	86.3	85.3
1989	87.4	86.5	86.4	86.4	85.7	85.8	84.7	85.4	85.1	84.9	84.9	85.0	86.8	86.0	85.0	84.9	85.7
1990	84.8	86.0	86.2	86.1	86.1	86.3	86.1	86.3	86.2	85.5	84.4	83.8	85.7	86.1	86.2	84.6	85.7
1991	83.2	82.5	81.8	82.2	82.7	83.6	83.8	83.9	84.8	84.6	84.3	84.0	82.5	82.8	84.2	84.3	83.5
1992	83.3	84.2	84.9	85.3	85.7	85.7	86.3	86.0	85.9	86.3	86.6	86.4	84.2	85.6	86.1	86.5	85.6
1993	87.2	87.3	87.3	87.6	87.5	87.3	87.6	87.2	87.8	88.3	88.6	89.2	87.3	87.5	87.5	88.7	87.7
1994	89.4	89.5	90.4	90.8	91.3	91.4	91.6	92.2	92.2	92.9	93.4	94.3	89.8	91.2	92.0	93.5	91.6
1995	94.5	94.2	94.0	93.7	93.5	93.8	92.9	93.8	94.4	93.8	93.8	94.0	94.3	93.7	93.7	93.9	93.9
1996	93.0	94.1	93.6	94.4	94.9	95.7	95.6	96.1	96.5	96.2	96.9	97.4	93.6	95.0	96.1	96.8	95.4
1997	97.4	98.7	98.8	98.8	98.9	99.3	99.6	100.6	101.2	101.8	102.4	102.5	98.3	99.0	100.5	102.2	100.0
1998	103.0	103.0	103.0	103.7	103.9	102.9	102.1	104.3	103.6	104.5	104.2	104.1	103.0	103.5	103.3	104.3	103.5
1999	104.2	104.5	104.3	104.3	104.9	104.4	104.3	105.1	104.8	105.8	106.2	106.6	104.4	104.5	104.7	106.2	105.0
2000	106.0	106.2	106.7	107.0	106.9	107.0	106.3	105.6	105.8	105.3	104.7	104.0	106.3	107.0	105.9	104.6	106.0
2001	103.1	102.7	102.3	102.2	101.9	101.3	101.1	100.7	100.0	99.5	99.1	98.8	102.7	101.8	100.6	99.1	101.1
2002	99.4	99.4	99.7	99.8	100.0	100.5	100.2	100.3	100.0	99.4	99.3	98.6	99.5	100.1	100.2	99.1	99.7
2003	99.3	99.2	98.8	98.1	97.9	98.0	98.4	98.0	98.6				99.1	98.0	98.3		

NOTE. Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

1. See footnote 2 to table 3.

2. High technology industries include computers, communications equipment, and semiconductors and related electronic components.

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

Table 9B**CAPACITY AND UTILIZATION: Manufacturing¹ Excluding Selected High-Technology Industries²**

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
Capacity (percent of 1997 output)																	
1973	76.3	76.5	76.7	76.9	77.1	77.4	77.6	77.8	78.0	78.2	78.5	78.7	76.5	77.1	77.8	78.5	77.5
1974	78.9	79.1	79.3	79.5	79.7	79.9	80.1	80.3	80.5	80.6	80.8	80.9	79.1	79.7	80.3	80.8	80.0
1975	81.1	81.2	81.3	81.4	81.5	81.7	81.8	81.9	82.0	82.1	82.2	82.4	81.2	81.5	81.9	82.2	81.7
1976	82.5	82.6	82.8	82.9	83.0	83.2	83.3	83.5	83.6	83.8	83.9	84.1	82.6	83.0	83.5	83.9	83.3
1977	84.3	84.4	84.6	84.8	84.9	85.1	85.3	85.5	85.7	85.8	86.0	86.2	84.4	84.9	85.5	86.0	85.2
1978	86.4	86.6	86.8	87.0	87.2	87.4	87.6	87.8	87.9	88.1	88.3	88.5	86.6	87.2	87.8	88.3	87.5
1979	88.7	88.9	89.1	89.2	89.4	89.6	89.8	89.9	90.1	90.2	90.4	90.5	88.9	89.4	89.9	90.4	89.7
1980	90.7	90.8	91.0	91.1	91.3	91.5	91.6	91.8	91.9	92.1	92.3	92.4	90.8	91.3	91.8	92.3	91.6
1981	92.6	92.8	92.9	93.1	93.3	93.4	93.6	93.7	93.9	94.0	94.1	94.3	92.8	93.3	93.7	94.1	93.5
1982	94.4	94.5	94.6	94.7	94.8	94.9	94.9	95.0	95.1	95.1	95.1	95.1	94.5	94.8	95.0	95.1	94.8
1983	95.1	95.1	95.1	95.1	95.1	95.0	95.0	95.0	95.0	95.0	95.0	95.1	95.1	95.1	95.0	95.0	95.0
1984	95.1	95.2	95.2	95.3	95.4	95.6	95.7	95.8	96.0	96.1	96.3	96.5	95.2	95.4	95.8	96.3	95.7
1985	96.6	96.8	97.0	97.1	97.3	97.5	97.6	97.8	97.9	98.0	98.2	98.3	96.8	97.3	97.8	98.2	97.5
1986	98.4	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	99.3	99.4	99.5	98.5	98.8	99.1	99.4	99.0
1987	99.7	99.8	99.9	100.0	100.1	100.3	100.4	100.4	100.5	100.6	100.6	100.7	99.8	100.1	100.4	100.6	100.3
1988	100.7	100.8	100.8	100.8	100.8	100.9	100.9	101.0	101.0	101.1	101.2	101.3	100.8	100.9	101.0	101.2	101.0
1989	101.5	101.6	101.8	101.9	102.1	102.3	102.5	102.7	102.9	103.1	103.3	103.5	101.6	102.1	102.7	103.3	102.4
1990	103.6	103.8	104.0	104.1	104.3	104.5	104.6	104.8	105.0	105.1	105.3	105.4	103.8	104.3	104.8	105.3	104.5
1991	105.6	105.7	105.9	106.0	106.2	106.3	106.4	106.5	106.7	106.8	106.9	107.0	105.7	106.2	106.5	106.9	106.3
1992	107.1	107.2	107.4	107.5	107.6	107.7	107.8	108.0	108.1	108.2	108.4	108.5	107.2	107.6	108.0	108.4	107.8
1993	108.6	108.8	108.9	109.1	109.2	109.3	109.5	109.6	109.7	109.8	110.0	110.1	108.8	109.2	109.6	110.0	109.4
1994	110.2	110.4	110.5	110.6	110.8	111.0	111.1	111.3	111.5	111.7	111.9	112.2	110.4	110.8	111.3	111.9	111.1
1995	112.4	112.7	113.0	113.3	113.5	113.9	114.2	114.5	114.8	115.1	115.4	115.7	112.7	113.6	114.5	115.4	114.0
1996	116.0	116.2	116.5	116.8	117.0	117.3	117.6	117.8	118.1	118.3	118.6	118.9	116.2	117.0	117.8	118.6	117.4
1997	119.2	119.6	119.9	120.3	120.6	121.0	121.4	121.8	122.3	122.7	123.1	123.6	119.6	120.6	121.9	123.1	121.3
1998	124.0	124.4	124.8	125.2	125.5	125.9	126.2	126.6	126.9	127.2	127.5	127.8	124.4	125.5	126.6	127.5	126.0
1999	128.2	128.5	128.8	129.1	129.3	129.6	129.9	130.1	130.4	130.6	130.8	131.0	128.5	129.3	130.1	130.8	129.7
2000	131.2	131.4	131.5	131.7	131.8	131.9	132.0	132.1	132.2	132.3	132.4	132.5	131.4	131.8	132.1	132.4	131.9
2001	132.6	132.7	132.7	132.8	132.8	132.9	132.9	133.0	133.0	133.0	133.0	133.0	132.7	132.8	133.0	133.0	132.9
2002	133.0	133.0	133.0	133.0	133.0	132.9	132.9	132.9	132.9	132.9	132.8	132.8	133.0	133.0	132.9	132.8	132.9
2003	132.8	132.8	132.7	132.7	132.7	132.7	132.7	132.6	132.6				132.8	132.7	132.6		
Utilization (percent)																	
1973	87.3	88.4	88.3	87.7	88.0	87.6	87.7	87.0	87.4	87.8	88.0	87.8	88.0	87.8	87.4	87.9	87.7
1974	86.9	86.2	85.9	85.6	85.8	85.6	85.1	84.5	84.1	83.2	80.7	76.8	86.3	85.7	84.6	80.2	84.2
1975	75.4	73.3	72.2	71.9	71.8	72.4	73.3	73.8	74.8	74.8	74.9	75.8	73.7	72.0	74.0	75.2	73.7
1976	76.7	77.9	77.8	78.3	78.4	78.3	78.6	78.8	78.6	78.5	79.3	80.1	77.5	78.3	78.7	79.3	78.4
1977	79.8	80.8	81.9	82.6	82.9	83.3	83.3	83.4	83.2	83.2	83.0	83.8	80.9	82.9	83.3	83.3	82.6
1978	82.5	82.4	83.6	84.6	84.8	85.2	84.9	85.0	85.1	85.4	85.8	86.3	82.8	84.9	85.0	85.8	84.6
1979	85.5	85.5	85.7	84.4	85.1	84.9	84.6	83.2	83.1	83.0	82.5	82.5	85.6	84.8	83.6	82.7	84.2
1980	82.8	82.5	81.7	79.8	77.1	75.8	74.9	75.2	76.3	77.3	78.6	78.6	82.3	77.6	75.5	78.2	78.4
1981	78.0	77.6	77.6	77.8	78.1	77.6	77.7	77.4	76.7	75.7	74.6	73.1	77.7	77.9	77.2	74.5	76.8
1982	71.4	73.1	72.5	71.9	71.6	71.4	71.1	70.4	70.0	69.1	68.6	68.2	72.3	71.6	70.5	68.7	70.8
1983	69.9	69.8	70.4	71.2	72.2	72.7	73.6	74.3	75.4	76.2	76.3	76.5	70.0	72.0	74.4	76.3	73.2
1984	77.8	78.4	78.8	79.0	79.1	79.2	79.4	79.3	78.9	79.0	79.0	79.1	78.3	79.1	79.2	79.0	78.9
1985	78.6	78.3	78.8	78.7	78.7	78.6	78.1	78.5	78.6	78.1	78.4	78.6	78.6	78.6	78.4	78.4	78.5
1986	79.6	79.1	78.6	78.9	78.9	78.7	78.7	78.8	78.9	79.0	79.3	79.8	79.1	78.8	78.8	79.4	79.0
1987	79.1	80.3	80.3	80.6	80.9	81.2	81.6	81.8	82.1	83.2	83.6	83.9	79.9	80.9	81.8	83.5	81.5
1988	83.7	83.9	84.1	84.6	84.4	84.4	84.4	84.5	84.7	85.0	85.2	85.5	83.9	84.5	84.5	85.3	84.5
1989	86.1	85.1	84.9	84.8	84.0	83.9	82.6	83.1	82.7	82.3	82.2	82.1	85.4	84.2	82.8	82.2	83.7
1990	81.9	82.9	82.9	82.6	82.5	82.6	82.2	82.4	82.1	81.3	80.2	79.5	82.6	82.6	82.3	80.3	81.9
1991	78.8	78.1	77.3	77.5	77.9	78.7	78.8	78.7	79.5	79.2	78.9	78.5	78.1	78.0	79.0	78.9	78.5
1992	77.8	78.5	79.1	79.3	79.6	79.6	80.0	79.7	79.4	79.7	79.9	79.7	78.5	79.5	79.7	79.8	79.4
1993	80.3	80.3	80.1	80.4	80.1	79.8	80.0	79.6	80.0	80.4	80.6	81.0	80.2	80.1	79.9	80.6	80.2
1994	81.1	81.1	81.8	82.1	82.4	82.4	82.4	82.8	82.7	83.2	83.5	84.1	81.3	82.3	82.7	83.6	82.5
1995	84.1	83.6	83.2	82.8	82.4	82.4	81.4	82.0	82.2	81.5	81.2	81.3	83.6	82.5	81.9	81.4	82.3
1996	80.2	80.9	80.3	80.9	81.1	81.6	81.4	81.5	81.7	81.3	81.7	81.9	80.5	81.2	81.5	81.6	81.2
1997	81.7	82.5	82.4	82.1	82.0	82.0	82.0	82.5	82.8	83.0	83.2	82.9	82.2	82.1	82.5	83.0	82.4
1998	83.1	82.8	82.6	82.8	82.8	81.7	80.9	82.4	81.6	82.1	81.7	81.4	82.8	82.5	81.6	81.8	82.2
1999	81.3	81.4	81.0	80.8	81.1	80.5	80.3	80.8	80.4	81.0	81.2	81.3	81.2	80.8	80.5	81.2	80.9
2000	80.8	80.8	81.1	81.2	81.1	81.1	80.5	79.9	80.0	79.5	79.0	78.5	80.9	81.1	80.1	79.0	80.3
2001	77.8	77.4	77.1	77.0	76.7	76.2	76.1	75.7	75.2	74.8	74.5	74.3	77.4	76.6	75.7	74.5	76.1
2002	74.7	74.7	74.9	75.1	75.2	75.6	75.4	75.4	75.3	74.8	74.7	74.2	74.8	75.3	75.4	74.6	75.0
2003	74.8	74.7	74.5	73.9	73.8	73.9	74.1	73.8	74.3				74.7	73.9	74.1		

NOTE. Estimates from July 2003 through September 2003 are subject to further revision in the upcoming monthly releases.

1. See footnote 2 to table 3.

2. High technology industries include computers, communications equipment, and semiconductors and related electronic components.

Table 10

ANNUAL PROPORTIONS IN INDUSTRIAL PRODUCTION, MARKET AND INDUSTRY GROUP SUMMARY

Item		1995	1996	1997	1998	1999	2000	2001	2002
Total IP		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MARKET GROUPS									
Final products and nonindustrial supplies		56.0	56.4	56.9	58.2	57.7	57.7	59.3	58.9
Consumer goods		27.6	27.7	27.6	28.1	28.3	28.6	30.3	31.1
Durable		7.6	7.8	7.9	7.9	8.0	7.9	7.8	8.1
Automotive products		3.4	3.6	3.7	3.7	3.9	3.7	3.7	4.0
Home electronics		.4	.4	.4	.4	.4	.4	.3	.3
Appliances, furniture, carpeting		1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Miscellaneous goods		2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3
Nondurable		20.0	19.9	19.7	20.2	20.2	20.7	22.5	23.0
Non-energy		16.4	16.3	16.4	16.9	16.7	16.9	18.4	18.6
Foods and tobacco		8.8	8.7	8.8	9.2	9.2	9.4	10.2	10.4
Clothing		1.9	1.8	1.6	1.5	1.3	1.2	1.1	1.0
Chemical products		3.6	3.7	3.7	3.8	3.8	3.9	4.5	4.6
Paper products		1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.1
Energy		3.6	3.7	3.4	3.2	3.5	3.8	4.1	4.4
Business equipment		10.9	11.2	11.8	12.3	11.9	11.7	11.1	10.0
Transit		1.8	1.8	2.0	2.4	2.3	2.0	2.0	1.7
Information processing		3.5	3.7	4.0	4.1	4.1	4.1	3.8	3.2
Industrial and other		5.6	5.7	5.8	5.8	5.5	5.6	5.4	5.1
Defense and space equipment		2.1	2.0	1.9	1.9	1.8	1.5	1.9	1.9
Construction supplies		4.0	4.1	4.1	4.3	4.3	4.3	4.3	4.3
Business supplies		11.1	11.0	11.1	11.1	11.1	11.2	11.2	11.2
Materials		44.0	43.6	43.1	41.8	42.3	42.3	40.7	41.1
Non-energy		34.0	33.4	33.8	33.3	33.2	32.3	30.7	30.5
Durable		21.2	21.4	21.7	21.5	21.4	20.9	19.5	19.1
Consumer parts		4.1	4.1	4.2	4.2	4.4	4.1	3.8	4.0
Equipment parts		8.0	8.1	8.3	8.2	8.1	8.1	7.3	6.7
Other		9.1	9.1	9.2	9.1	9.0	8.6	8.4	8.4
Nondurable		12.8	12.1	12.1	11.9	11.7	11.4	11.2	11.3
Textile		1.1	1.1	1.1	1.0	1.0	.9	.8	.8
Paper		3.3	3.0	2.9	2.8	2.9	2.8	2.8	2.7
Chemical		5.0	4.8	4.9	4.6	4.5	4.3	4.1	4.2
Energy		9.9	10.2	9.3	8.5	9.2	10.1	10.0	10.6
INDUSTRY GROUPS									
Manufacturing		84.5	84.4	85.7	86.6	85.9	84.6	84.1	83.5
Manufacturing (NAICS)		80.4	80.2	81.2	81.8	81.1	79.7	79.1	78.4
Durable manufacturing		44.8	45.5	46.5	47.1	46.6	45.5	43.8	42.6
Wood products	321	1.5	1.5	1.5	1.5	1.6	1.4	1.4	1.4
Nonmetallic mineral products	327	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.3
Primary metal	331	3.0	3.0	3.1	3.0	2.8	2.5	2.3	2.2
Fabricated metal products	332	5.8	6.0	6.1	6.1	6.0	6.1	6.0	5.9
Machinery	333	6.2	6.2	6.2	6.2	5.8	6.0	5.6	5.2
Computer and electronic products	334	9.7	9.9	10.4	10.3	10.3	10.3	9.0	8.1
Electrical equip., appliances, and components	335	2.6	2.6	2.6	2.6	2.5	2.5	2.4	2.3
Motor vehicles and parts	3361-3	6.4	6.5	6.7	6.6	7.0	6.6	6.2	6.7
Aerospace and other miscellaneous transportation equipment	3364-9	3.3	3.2	3.5	4.1	3.8	3.3	3.8	3.6
Furniture and related products	337	1.4	1.5	1.6	1.7	1.7	1.7	1.7	1.7
Miscellaneous	339	2.7	2.8	2.8	2.8	2.8	2.9	3.1	3.2
Nondurable manufacturing		35.6	34.7	34.8	34.7	34.4	34.2	35.3	35.8
Food, beverage, and tobacco products	311,2	10.3	10.1	10.1	10.6	10.5	10.7	11.7	11.9
Textile and product mills	313,4	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.3
Apparel and leather	315,6	2.0	1.9	1.8	1.6	1.4	1.3	1.2	1.1
Paper	322	3.7	3.3	3.2	3.2	3.2	3.2	3.1	3.1
Printing and support	323	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.5
Petroleum and coal products	324	1.5	1.6	1.6	1.5	1.8	1.9	2.0	2.2
Chemical	325	10.1	10.0	10.1	9.9	9.6	9.4	9.7	10.0
Plastics and rubber products	326	3.6	3.6	3.7	3.7	3.8	3.7	3.7	3.8
Other manufacturing (non-NAICS)	1133,5111	4.1	4.1	4.4	4.7	4.8	4.9	5.1	5.1
Mining	21	5.7	6.1	5.4	4.8	5.6	6.5	6.5	6.8
Utilities	2211,2	9.8	9.6	9.0	8.6	8.5	8.9	9.4	9.8
Electric	2211	8.3	8.1	7.6	7.4	7.3	7.5	8.0	8.3
Natural gas	2212	1.5	1.4	1.3	1.2	1.2	1.4	1.4	1.5

NOTE. The IP proportion data are estimates of the industries' relative contributions to overall IP change between the reference year and the following year. For example, a 1 percent increase in durable goods manufacturing between 2002 and 2003 would account for a 0.426 percent increase in total IP.

EXPLANATORY NOTE

The **Industrial Production and Capacity Utilization** statistical release, which is published around the middle of the month, 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. More detailed descriptions of industrial production, capacity utilization, and electric power are available at www.federalreserve.gov/releases/G17 at the Board's World Wide Web site. In addition, files containing data shown in the release, more detailed series that were published in the G.17 prior to December 2000, and historical data are available at the Board's Web site. Instructions for searching for and downloading specific series are provided as well. For paid access to the data 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 also 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 the real output of the manufacturing, mining, and electric and gas utilities industries; the reference period for the index is 1997. Manufacturing consists of those industries included in the North American Industry Classification System, or NAICS, definition of manufacturing *plus* those industries—logging and newspaper, periodical, book and directory publishing—that have traditionally been considered to be manufacturing and included in the industrial sector. For the period since 1997, the total IP index has been constructed from 295 individual series based on the 2002 North American Industrial Classification System (NAICS) codes. These individual series are classified in two ways: (1) market groups, and (2) industry groups. Market groups consist of products and materials. Total products are the aggregate of final products, such as consumer goods and equipment, and nonindustrial supplies (which are inputs to nonindustrial sectors). Materials are inputs in the manufacture of products. Major industry groups include three-digit NAICS industries and aggregates of these industries—for example, durable and nondurable manufacturing, mining, and utilities. A complete description of the market and industry structures, including details regarding series classification, relative importance weights, and data sources, is available on the Board's web site (www.federalreserve.gov/releases/G17/About.html). Changes in output for the market and industry groups are summarized in table 1 and the levels of output (in index form) are shown in table 4. Special aggregates, that highlight the relative importance and contributions of several key industries, such as high-technology and motor vehicles, are summarized in tables 2 and 5. For a detailed description of the contents of the statistical tables, see below.

Source data. 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 and from government agencies; data of this type are used to estimate monthly IP wherever possible and appropriate. Production indexes for a few industries are derived by dividing estimated nominal output (calculated using unit production or sales and unit values) by a corresponding Fisher price index; the most notable of these fall within the high-technology grouping and include computers, communications equipment, and semiconductors. When suitable data on physical product are not available, 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 annual data used to benchmark the IP indexes; these factors also may be influenced by technological or cyclical developments. The annual data used in benchmarking 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 United States Geological Survey of the Department of the Interior; and publications of the Department of Energy.

Aggregation Methodology and Weights. The aggregation method for the IP index is a version of the Fisher-ideal index formula. (For a detailed discussion of the aggregation method, see *Federal Reserve Bulletin* February 1997 and March 2001.) In the IP index, series that measure the output of an individual industry are combined using weights derived from their proportion in the total value-added output of all industries. The IP index, which extends back to 1919, is built as a chain-type index since 1972. The current formula for the growth in monthly IP (or any of the sub-aggregates) since 1972 is the geometric mean of the change in output (*I*), and, as can be seen below, is computed using the unit value added estimate for the current month (*p_m*) and the estimate for previous month:

$$\frac{I_m^A}{I_{m-1}^A} = \sqrt{\frac{\sum I_m p_{m-1}}{\sum I_{m-1} p_{m-1}} \times \frac{\sum I_m p_m}{\sum I_{m-1} p_m}}$$

The IP proportions (typically shown in the first column of the relevant tables in the G.17 release) are estimates of the industries' relative contributions to overall growth in the following year. For example, the relative importance weight of the motor vehicles and parts industry is about 5 percent. If output in this industry increased 10 percent in a month, then this gain would boost growth in total IP by ½ percentage point (0.05 × 10% = 0.5%). To assist users with calculations, the Federal Reserve's web site provides supplemental monthly statistics that represent the exact proportionate contribution of a monthly change in a component index to the monthly change in the total index (www.federalreserve.gov/releases/G17/ipdisk/ipweights.sa).

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.) For the first estimate of output for a given month, about 55 percent of the source data (in value-added terms) are available; the fraction of available source data increases to about 84 percent for estimates in the second month that the estimate is published, 95 percent in the third month, and 96 percent in the fourth month. Data availability by data type is summarized in the table below:

Availability of Monthly IP Data in Publication Window
(Percent of value added in 2002)

Type of data	Month of estimate			
	1st	2nd	3rd	4th
Physical product	24	34	46	46
Production-worker hours	31	31	31	31
Electric power use	0	19	19	19
IP data received	55	84	95	96
IP data estimated	45	16	5	4

NOTE—The physical product group includes series based on either monthly or quarterly data. As can be seen in the first line of the table, in the first month, a physical product indicator is available for about half of the series (in terms of value added) that ultimately are based on physical product data (24 percent out of total of 46 percent). Of the 24 percent, about two-thirds (15 percent of total IP) include series that are derived from weekly physical product data and for which actual monthly data may lag up to several months. On average, quarterly product data are received for the third estimate of industrial production. Specifically, quarterly data are available for the second estimate of the last month of a quarter, the third estimate of the second month of a quarter, and the fourth estimate of the first month of a quarter. About 4 percent of the source data for monthly IP—all physical product measures—are available too late for direct inclusion in the current index and are incorporated at the time of an annual historical revision.

Seasonal adjustment. Individual series are seasonally adjusted using Census X-12 ARIMA. For series based on production-worker hours, the current seasonal factors were estimated with data through September 2003; for other series, the factors were estimated with data through at least June 2003. Series are pre-adjusted for the effects of holidays or the business cycle when appropriate. For the data since 1972, 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 1987–2001 period. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates was 0.22 percentage point during the 1987–2001 period. In most cases (about 84 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

Overview. The Federal Reserve Board constructs estimates of capacity and capacity utilization for industries in manufacturing, mining, and electric and gas utilities. For a given industry, the capacity utilization rate is equal to an output index (seasonally adjusted) divided by a capacity index. The Federal Reserve Board's capacity indexes attempt to capture the concept of *sustainable maximum output*—the greatest level of output a plant can maintain within the framework of a realistic work schedule, after factoring in normal downtime and assuming sufficient availability of inputs to operate the capital in place.

Coverage. Capacity indexes are constructed for 85 detailed industries (67 in manufacturing, 16 in mining, and 2 in utilities), which mostly correspond to industries at the three- and four-digit NAICS level. Estimates of capacity and utilization are available for a variety of groups, including durable and nondurable manufacturing, total manufacturing, mining, utilities, and total industry. Manufacturing consists of those industries included in the North American Industry Classification System, or NAICS, definition of manufacturing *plus* those industries—logging and newspaper, periodical, book and directory publishing—that have traditionally been considered to be manufacturing and included in the industrial sector. Also, special aggregates are available, such as high-tech industries and manufacturing excluding high-tech industries.

Source Data. The monthly rates of capacity utilization are designed to be consistent with both the monthly data on production and the periodically available data on capacity and utilization. Because there is no direct monthly information on overall industrial capacity or utilization rates, the Federal Reserve first estimates annual capacity indexes from the source data. Capacity data reported in physical units from government sources (primarily from the U.S. Geological Survey and the Department of Energy's Energy Information Administration) and trade sources are available for portions of several industries in manufacturing (*e.g.*, paper, industrial chemicals, petroleum refining, motor vehicles), as well as for electric utilities and mining; these industries represent about 18 percent of total industrial capacity. When physical product data are unavailable for manufacturing industries, capacity indexes are based on responses to the Bureau of the Census's *Survey of Plant Capacity* (SPC); these industries account for a bit less than 78 percent of total industry capacity. In the absence of utilization data for a few mining and petroleum series, capacity is based on trends through peaks in production (roughly 4 percent of total industry capacity). A detailed description of the methodology used to construct the capacity indexes is available on the Board's web site (www.federalreserve.gov/releases/G17/cap_notes.html).

Aggregation Methodology. Monthly capacity aggregates are calculated in three steps: (1) utilization aggregates are calculated on an annual basis through the most recent full year as capacity-weighted aggregates of individual utilization rates; (2) the annual aggregate capacity is derived from the corresponding production and utilization aggregates; (3) the monthly capacity aggregate is obtained by interpolating with a Fisher index of its constituent monthly capacity series. Utilization rates for the

individual series and aggregates are calculated by dividing the pertinent monthly production index by the related capacity index.

Consistency. A major aim is that the Federal Reserve utilization rates be consistent over time so that, for example, a rate of 85 percent means about the same degree of tightness that it meant in the past. A major task for the Federal Reserve in developing reasonable and consistent time series of capacity and utilization is dealing with inconsistencies between the movements of the industrial production index and the survey-based utilization rates. The McGraw-Hill/DRI Survey, now discontinued, was the primary source of manufacturing utilization rates for many years. This was a survey of large companies that reported, on average, higher utilization rates than those reported by establishments covered by the SPC (currently the primary source of factory operating rates) for the fourteen years they overlapped. Adjustments have been made to keep the industry utilization rates currently reported by the Federal Reserve roughly in line with rates formerly reported by McGraw-Hill. As a consequence, the rates reported by the Federal Reserve tend to be higher than the rates reported in the SPC.

Perspective. Over the 1972–2002 period, the average total industry utilization rate is 81.3 percent; for manufacturing, the average factory operating rate has been 80.2 percent. 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. The highs and lows in capacity utilization shown in table 7 are specific to each series and do not all occur in the same month.

ELECTRIC POWER

Coverage. Electric power data for sales by utilities to industry users and for electric power produced by cogenerators (manufacturing and mining firms that produce electricity for their own use or to sell to a utility) are generally collected at the 4-digit NAICS and 3-digit SIC level for mining and manufacturing. Aggregates for 3-digit industries, as well as for total mining, durable, nondurable, total manufacturing and total industrial electric power use, are computed. Manufacturing consists of those industries included in the North American Industry Classification System, or NAICS, definition of manufacturing *plus* those industries—logging and newspaper, periodical, book and directory publishing—that have traditionally been considered to be manufacturing and included in the industrial sector. An aggregate showing total industry excluding nuclear nondefense is shown separately because the value-added proportion for the nondefense nuclear material series (part of NAICS 3251) in total IP is considerably less than its share of total electric power use. In addition, aggregates for utility sales to industrial users and industry generation are computed. While only the major aggregates are shown in the release, data for the 3- and 4-digit industries are available on the Board's web site (www.federalreserve.gov/releases/G17).

Source Data. Electric power data are collected from a sample of utilities and cogenerators covering all twelve Federal Reserve Districts. The primary criterion for inclusion of a utility in the panel is whether the utility provides electric power to industrial customers. A comparison of Federal Reserve kilowatt-hour aggregates to estimates from the 1997 *Census of Manufactures* (the most recent available) and recent reporting panel statistics suggests the Federal Reserve data cover about 50 percent of the overall sales to manufacturing in that year. The cogeneration panel covers about 50 percent of cogeneration used directly by manufacturers. In order to provide more complete coverage and correct for any shortcomings of the survey, the series are benchmarked at the 4-digit industry level to the latest available data from the *Annual Survey of Manufactures* and the *Census of Manufactures*.

Methodology. The data we receive from utilities and cogenerators are edited for anomalies and aggregated, using self weights, to the 4-digit NAICS industry levels and above. Where reports are late or unavailable for some reason, responses are estimated.

Seasonal Adjustment. Series are seasonal adjusted at the 4-digit NAICS level, with seasonally-adjusted aggregates typically computed as sums of seasonally adjusted components. The seasonal adjustment procedure (Census X-12 program) is used without trading-day adjustments because the reporting periods of the various utilities are not the same. A leap year adjustment is also made where appropriate.

REFERENCES AND RELEASE DATES

References. The annual revision published in November 2003 will be described in an article published in an upcoming *Federal Reserve Bulletin*. A description of the aggregation methods for industrial production and capacity utilization is included in an article in the Federal Reserve Bulletin, vol. 83 (February 1997), pp. 67–92. The Federal Reserve methodology for constructing industry-level measures of capital is detailed in “Capital Stock Estimates for Manufacturing Industries: Methods and Data” by Mike Mohr and Charles Gilbert (1996), which can be obtained at www.federalreserve.gov/releases/g17/capital_stock_doc-latest.pdf.

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. 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, January 1996, February 1997, February 1998, January 1999, March 2000, March 2001, March 2002, April 2003).

Release Schedule

At 9:15 a.m. on

2003: January 17, February 14, March 14, April 15, May 15, June 17, July 16, August 15, September 15, October 16, November 14, and December 16.

2004: January 16, February 17, March 15, April 16, May 14, June 16, July 15, August 17, September 15, October 15, November 17, and December 14.

