Industrial Production and Capacity Utilization: The 2003 Annual Revision

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On November 10, 2003, the Board of Governors of the Federal Reserve issued revisions to its 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 them appear after 2000 (chart 1).[1] The levels, but not the rates of change, for years before 1972 were also revised.

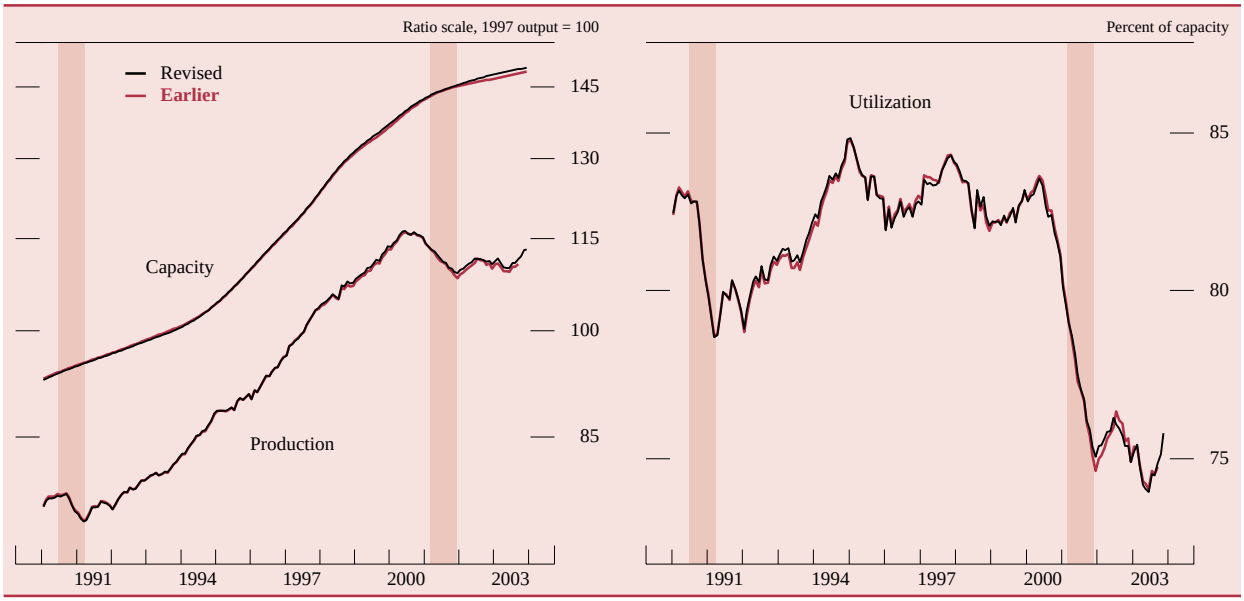
Measured from fourth quarter to fourth quarter, industrial output is now reported to have increased at a slower rate in 2000 and to have contracted a bit more slowly in 2001 than reported earlier (table 1). The changes to total industrial production in other years are slight. The revision still places the most recent peak in total IP in June 2000 and the corresponding trough in December 2001; the 6¼ percent peak-to-trough decline is about ½ percentage point less than the previous estimate. After the trough, the total index showed gains in the first half of 2002, only to trend down again until mid-2003 and then to head up.

The revised measures of overall capacity are only minimally different from earlier estimates. The rate of increase of industrial capacity was revised up, on average, 0.1 percentage point per year over 1999–2002. The general contour of the series shows a rapid acceleration during the second half of the 1990s and a slowing since then. The rate of industrial capacity

NOTE. Charles Gilbert directed the 2003 revision and, with David Byrne, William Cleveland, Elizabeth Kiser, Paul Lengermann, and Dixon Tranum, prepared the revised estimates of industrial production. Norman Morin, John Stevens, and Daniel Vine prepared the revised estimates of capacity and capacity utilization.

1. Data referred to in the text and shown in table 1 are based on IP and utilization rates as published on December 16, 2003. Statements about previously reported estimates refer to data published on October 16, 2003.

1. Total industrial production and capacity utilization



NOTE. The shaded areas are periods of business recession as defined by the National Bureau of Economic Research.

The lines that reflect "revised" figures correspond to the data as published on December 16, 2003. The lines that correspond to "earlier" figures reflect the data as published prior to the November 10, 2003, annual revision. The "earlier" line for capacity extends the entire date range because the capacity indexes are based on annual projections that are converted to a monthly basis.

utilization remained at a low level in the third quarter of 2003—the last full quarter of data—and was unchanged by the revision; at 74.6 percent, the rate is 4 percentage points below the trough of the 1990–91 recession and 6.7 percentage points below its 1972–2002 average.[2] The operating rates in manufacturing during 2002 and 2003 were also close to previous estimates. Capacity utilization at mines was slightly lower in 2002 and a bit higher by the third quarter of 2003 than previously reported. The revision found that the utilization rates at utilities during 2001 and 2002 were higher than those reported earlier but that the rates in the third quarter of 2003 were a bit lower than those reported previously.

The statistical revisions to the IP index were derived principally from information in recent annual releases from the U.S. Census Bureau: the revision to the 2000 Annual Survey of Manufactures (ASM), the 2001 ASM, the 2001 Services Annual Survey (for publishing), and selected 2002 Current Industrial Reports. Revised annual data from the U.S. Geological Survey (USGS) on minerals (except fuels) for 2001 and some new data for 2002 were also introduced. Annual data from the U.S. Forest Service were used to generate estimates for logging. Also, the revised 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.

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

The revision included a rearrangement of the market groups based on the 1997 input–output tables recently issued by the Bureau of Economic Analysis (BEA). Finally, the revision included updates to the value-added weights used in aggregating 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 111.1 percent of output in 1997 and the capacity index at 148.8 percent of output in 1997; both indexes are slightly higher

2. These comparisons use quarterly average data.

1. Revised rates of change in industrial production and capacity and the revised rate of capacity utilization, 1999–2003

Item	2002 proportion	Revised rates of change (percent)					Difference between revised and earlier rates of change (percentage points)				
		1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Production											
Total industry	100.0	4.9	2.3	–5.2	1.3	.2	.0	–.4	.4	–.1	.3
Manufacturing	84.6	5.5	2.0	–5.6	1.0	.4	.0	–.5	.5	.1	.7
Excluding high-tech industries	79.3	1.8	–1.5	–5.2	–.1	–.8	–.1	–.3	.4	–.5	.3
High-tech industries	5.3	42.4	38.2	–8.4	15.3	20.7	.8	–1.9	1.2	8.2	5.2
Mining and utilities	15.4	1.6	4.0	–3.5	3.0	–1.2	.2	.2	–.1	–.8	–1.8
Capacity											
Total industry	100.0	4.4	4.1	2.3	1.6	1.1	.2	–.2	–.1	.5	.0
Manufacturing	86.4	5.0	4.8	2.2	1.1	1.0	.2	–.1	–.2	.3	.2
Excluding high-tech industries	79.3	2.6	1.2	.4	–.1	–.2	.3	–.3	.0	.0	–.4
High-tech industries	7.2	27.8	42.3	24.9	17.6	11.8	–.7	1.9	1.7	8.9	2.0
Mining and utilities	13.6	.4	1.2	3.1	3.7	2.4	.3	–.5	–.2	–.3	–.3
Capacity utilization (percent)											
Total industry	100.0	82.9	81.4	75.4	75.2	74.6	.0	–.1	.3	–.1	.0
Manufacturing	86.4	81.9	79.6	73.5	73.5	73.2	.0	–.4	.2	.0	.3
Excluding high-tech industries	79.3	81.2	79.0	74.5	74.6	74.2	–.2	–.3	.0	–.4	.0
High-tech industries	7.2	88.3	85.9	62.9	61.7	65.2	2.1	–.2	–.2	–.4	.5
Mining and utilities	13.6	90.2	92.7	86.8	86.2	83.9	.5	1.1	1.1	.7	–.2

NOTE. The revised rates of change for production and capacity 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 for industrial production are calculated from the fourth quarter of 2002 to the third quarter of 2003 and are annualized. The revised rates for capacity utilization refer to the fourth quarter, except in 2003, where they refer to the third quarter.

High-tech industries include the manufacturers of semiconductors and related devices, computers and computer peripherals, and communications equipment.

than reported previously (chart 1). As noted earlier, the utilization rate for total industry—the ratio of IP to capacity—was unchanged for the third quarter of 2003.

Appendix tables A.1 and A.2 report the revised production, capacity, and utilization series for total industry. Appendix table A.3 shows the revised rates of change of industrial production for market and industry groups for the years 1999 through the third quarter of 2003. Appendix table A.4 shows the revised rates of change of industrial production for special aggregates and selected detail for the same time period. Appendix tables A.5, A.6, and A.7 show the revised figures for capacity utilization, capacity, and electric power use. Appendix tables A.3, A.4, A.6, and A.7 also show the difference between the revised and earlier rates of change. Appendix table A.5 also shows the difference between the revised and previous rates of capacity utilization for the final quarter of the year (the third quarter was used for 2003). Appendix table A.8 shows the annual proportions in total IP by market groups and industry groups.

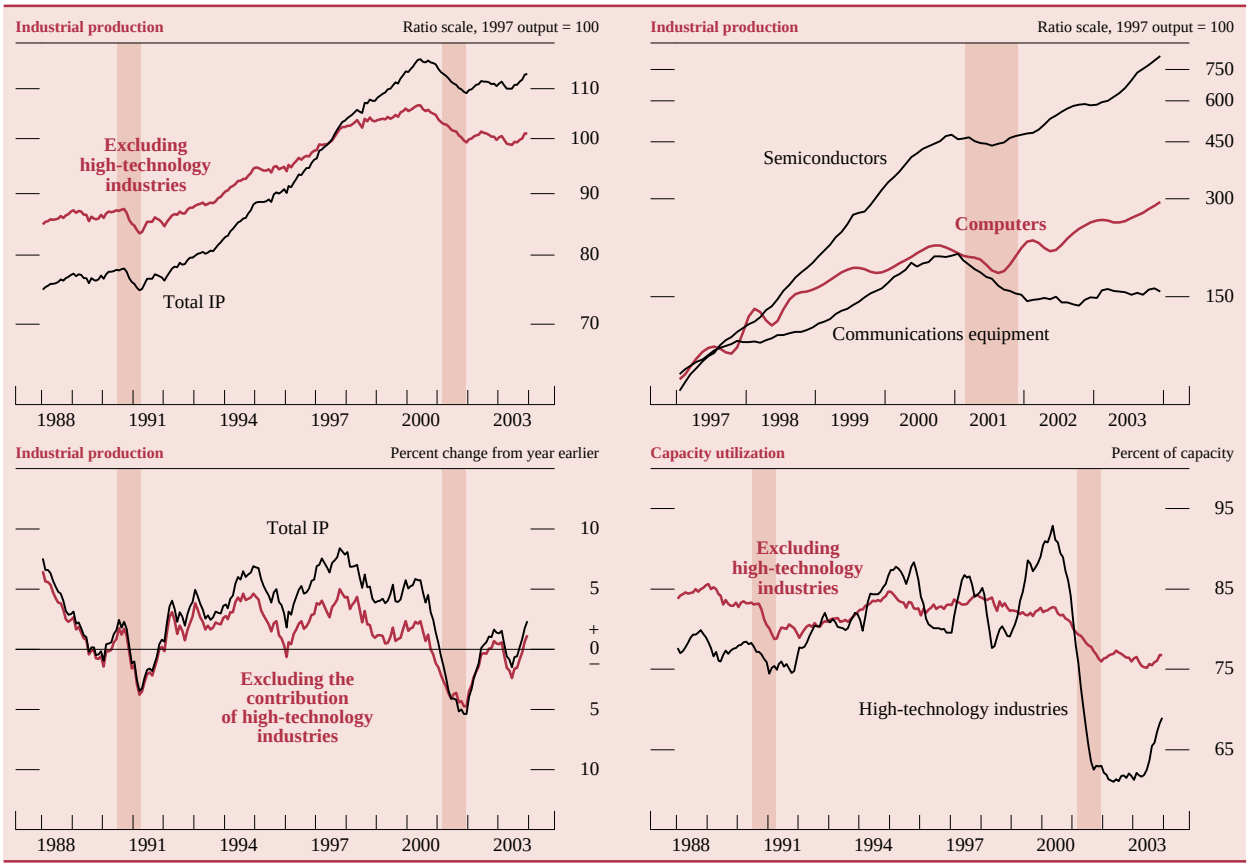
Industrial Production

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

The revision now places the rise in the production of high-technology industries at about 15 percent in 2002 and at 21 percent in 2003, rates notably higher than earlier estimates but still well below the rapid gains recorded in the late 1990s (chart 2).[3] The pro-

3. For 2003, the rates are calculated from the fourth quarter of 2002 to the third quarter of 2003 and are annualized.

2. High-technology industrial production and capacity utilization



NOTES. The shaded areas are periods of business recession as defined by the National Bureau of Economic Research.

High-technology industries are defined as semiconductors and related electronic components (NAICS 334412–9), computers (NAICS 3341), and communications equipment (NAICS 3342).

3. Industrial production by market groups, 1988–2003

NOTE. The shaded areas are periods of business recession as defined by the National Bureau of Economic Research.

duction of computers and semiconductors picked up again in 2002 and 2003, but the production of communications equipment continued to fall, on balance, throughout 2002 before posting a modest increase in 2003. Relative to earlier estimates, the output of computers and semiconductors increased at a faster rate in 2002, and the decline in communications equipment was not as steep. 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.

Among the major market groups, the revised production index for consumer goods rose somewhat more slowly in 2002 and was weaker in 2003 than previous reports had suggested; the estimates for earlier years were little changed. The rise in the production of business equipment in 1999 and 2000 is now shown to have been, on balance, a bit less than previously reported and the subsequent contraction in 2001 to have been less steep. On balance, output for the series flattened out in 2002 and 2003 (chart 3). Within the business equipment category, the output of information processing equipment, on balance, has been stronger over 1999–2003 than previously estimated, whereas 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 rebounded more rapidly in 2001 and 2002 than reported earlier. The output of industrial materials is little changed from previous estimates.

Capacity and Capacity Utilization

The revised indexes of capacity and capacity utilization are generally close to the previous estimates. Manufacturing capacity is now estimated to have decelerated a bit more in 2000 and 2001 than previously indicated and to have risen a touch more in 2002 and 2003 than earlier estimates suggested. For capacity utilization, the revision places the factory operating rate at 73.5 percent for the fourth quarter of 2002 and at 73.2 percent for the third quarter of

2003—rates little different from earlier reports and among the lowest since the early 1980s.

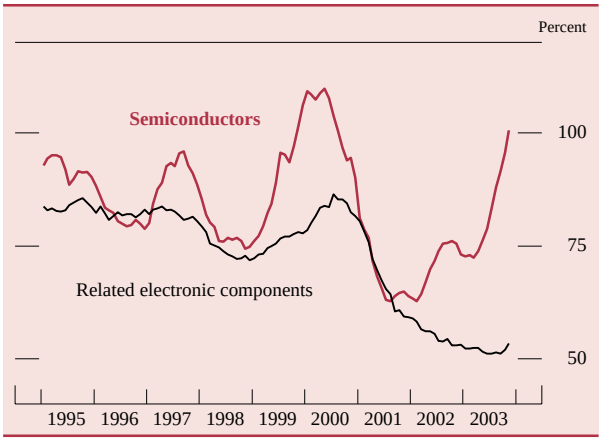
Within manufacturing, excluding the motor vehicles and parts and the high-technology industries, capacity is estimated to have contracted in 2002 and 2003. In the past three decades, capacity in this large category, which accounts for about three-quarters of industrial capacity, declined in only one other year—1983. The loss of productive capability in recent years has been widespread among the nondurable goods industries, particularly food, beverage, and tobacco products; textiles; apparel; paper; and basic chemicals. Among the durable goods industries, capacity has contracted for machinery and electrical equipment producers; but elsewhere, on balance, productive capability has increased. In the second quarter of 2003, utilization rates in both the nondurable and durable manufacturing industries reached twenty-year lows. Utilization rates among nondurable manufacturers were little changed in the third quarter, but rates among durable manufacturers rose about 1 percentage point.

The capacity of motor vehicles and parts producers continued to expand but was revised down noticeably in 2002 and 2003. The slower rate of increase in capacity for this industry is attributable primarily to lower unit capacity figures for both autos and light trucks. For the fourth quarter of 2002 and the third quarter of 2003, capacity utilization rates in the motor vehicles and parts industry were a bit higher than those reported previously, and the industry was operating at rates above its long-term average.

Among the high-technology industries, capacity expanded somewhat faster in most years, particularly in 2002, than earlier estimates suggested. Still, the rate of expansion in the past few years is substantially lower than it had been in the late 1990s. Capacity utilization in the third quarter of 2003 remained low but was higher than the rates for the fourth quarters of 2001 and 2002 (chart 2). Relative to earlier estimates, the revision shows lower utilization rates for the fourth quarter of 2002 in all three high-technology components. Utilization rates for the third quarter of 2003 were lower for computers but a bit higher for communications equipment and semiconductors.

The utilization rates among high-technology industries reflect the divergent patterns of production in recent years. For example, utilization rates for the two series that comprise the published aggregate for semiconductors and related components have differed sharply in the last year. The utilization rate for producers of semiconductors—about 60 percent of the aggregate—began to rebound in 2002, and by the end of the third quarter of 2003, the rate stood at

4. Utilization rates for selected high-technology industries

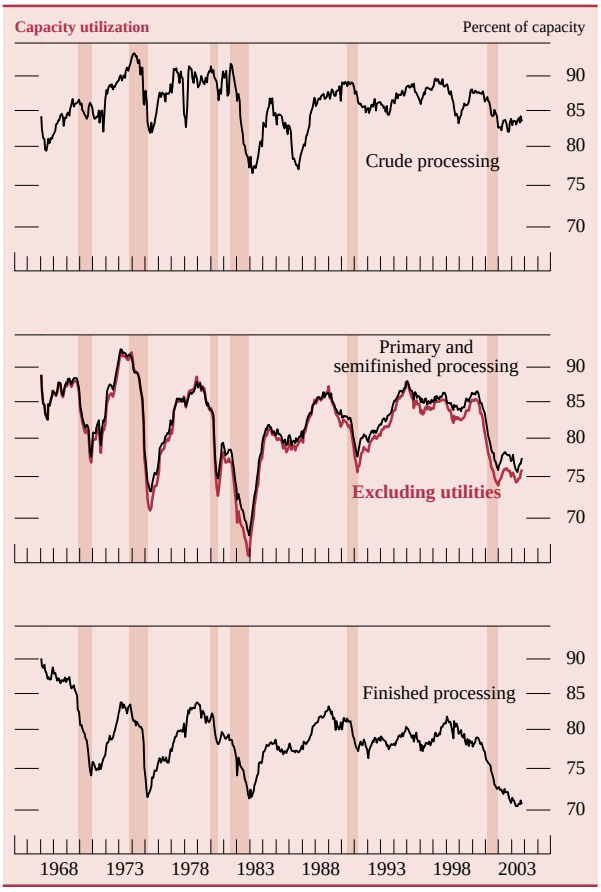


about 100 percent. However, as a result of a three-year slide in output, capacity utilization at plants making and assembling ‘‘other’’ related electronic components—the remaining 40 percent of the aggregate—is barely above 50 percent (chart 4). After falling in 2001, the utilization rate for computer manufacturers has been trending up from very low levels, but the utilization rate in the communications equipment industry continued to edge down during 2002 and hovered around 50 percent for most of 2003.

Outside manufacturing, capacity at mines, relative to earlier reports, contracted at a slightly faster pace in 1999, 2000, and 2003 and increased at a slightly faster rate in 2001 and 2002. The revised measures of capacity at electric and gas utilities show a slower rate of increase in 2000–03 than previously reported. The revision found that the capacity utilization rates at mines and utilities are generally higher than earlier estimates suggested. In particular, as a result of an upward revision to electricity generation, operating rates at utilities were revised up, on average, about 1 percent between 1999 and 2002, and utilization rates for natural gas extraction, after weakening at the end of 2001, strengthened considerably over the past year and a half.

The revisions to the capacity estimates for the stage-of-process groups were small. Compared with the earlier estimates, the revised capacity measures for 2003 reflect a larger contraction among producers of crude goods and a bit more 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. The utilization rates for producers of crude goods, which make up the smallest category, were higher in the third quarter of 2003 than earlier estimates suggested, but they remained

5. Capacity utilization by stage of process



NOTE. The shaded areas are periods of business recession as defined by the National Bureau of Economic Research.

a bit below their long-term average. The utilization rates for producers of primary and semifinished goods and of finished goods remained well below their long-term averages (chart 5).

Relative to earlier reports, the utilization rates for producers of primary and semifinished goods were a bit lower in the fourth quarter of 2002 and the third quarter of 2003, and the utilization rates for finished processors were a bit higher over the same period.

TECHNICAL ASPECTS OF THE REVISION

Benchmarks

As noted earlier, the annual revision incorporated comprehensive annual data on industry output, utilization, value added, and capital spending for 2001 and, in some instances, 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 before, the revision incorporated data from the 2001 ASM and the revised 2000 ASM. These new data, deflated by industry-specific price indexes, are the basis for the annual estimates of manufacturing output for those years. After the incorporation of other annual output measures into IP, the average annual 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 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.[4] 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.

Changes to Market Groups

This revision adjusted the market group structure to incorporate the 1997 input–output (I–O) tables issued by the BEA in December 2002.[5] Beginning with the 2002 revision, the IP market groups were restructured to allow for the assignment of the output 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 the input to more than a single market group. The revision derives the share of each industry's output that contributes to a single market group from the interindustry relationships described by the new 1997 I–O tables. One change in market groups is in the composition of consumer goods. With market group assignments based on the new 1997 I–O tables, the market group for consumer goods now contains portions of the output of the veneer and plywood, flooring, brick, concrete, gypsum, and hardware industries. Previously, the market group for

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

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

A complete list of the industries with output included in each market group can be found at www.federalreserve.gov/releases/g17/sdtab2.pdf. A similar list for detailed industry groups can be found at www.federalreserve.gov/releases/g17/sdtab1.pdf.

consumer goods did not include production from these industries.

Weights for Aggregation

The IP index is an annually weighted Fisher index. The current 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 of value added for manufacturing and quinquennial measures for mining, and the Federal Reserve Board 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. Appendix table A.8 shows the annual value-added proportions incorporated in the IP index from 1995 through 2002.

Revised Monthly Data

This revision incorporates the product data that become available or are revised 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 later 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 Bureau of Labor Statistics [BLS] benchmark of employment to March 2002 comprehensive measures) and on monthly electric power use since 1997. In June 2003, the BLS issued on a NAICS basis the national employment, hours, and earnings data from the Current Employment Statistics program. Most of the data on monthly production-worker hours were restated on a NAICS basis back to 1990. For years before 1990, the Federal Reserve Board derived NAICS-based series on production-worker hours 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 the bases of both SIC and NAICS.[6]

Seasonal factors for all series were re-estimated 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 revised holiday factor was incorporated into the seasonal adjustment of production-worker hours. Specifically, measured production-worker hours tend to be less in those July months 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 re-estimated using data through June 2003. For the physical product series, the updated factors, 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.

Changes to Individual Series

Beginning with this revision, the capacity index for coal, which accounts for about 11½ percent of mining capacity in 2002, is based on new physical capacity data from the Department of Energy (DOE). The new data produced estimates that were little different from those of the previous reports.

The production indexes for electricity generation reflect two changes. First, revisions by the DOE to the data for electric power producers resulted in new methods for constructing the output indexes for electricity generation. The index is constructed from the sum of generation by electric utilities and of that by independent power producers (IPP). Previously, the DOE provided pooled monthly information for all non-utility power producers, which includes both IPPs and industrial and commercial power producers (which produce electricity for their own use). In the past, the Federal Reserve Board estimated monthly power output for the industrial and commercial power producers and then subtracted this amount from the DOE non-utilities total. Recently the DOE began providing separate monthly generation figures for IPPs and for industrial and commercial power producers; thus, independent estimates of the contribution of the industrial and commercial power producers to the non-utilities total are no longer necessary.

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

These changes are reflected in the electricity generation indexes from 1989 to the present.

Second, a change to the calculation of the output index for the nuclear power industry and the construction of its value-added weight resulted in an increase in the average rate of change of the aggregate generation series. The revised aggregate electricity generation index increased between 0.3 and 0.4 percentage point per year faster than did the previous series.

A new price deflator for photocopiers was also introduced. The revision incorporates a hedonic price index developed by the BEA that covers 1992 to the present. The Federal Reserve Board extended the BEA index back to 1972 based on annual data on the average cost per page and pages per minute provided by the School of Print Media of the Rochester Institute of Technology. These data were converted to a measure comparable to the BEA price deflator and were retrended to align with the BEA index for the period in which the two series overlap, 1992–2002. The adjusted price measure was then used to retrend the monthly deflator based on the producer price index for this industry. The resulting new price index was then used to deflate photocopier output back to 1972. The Federal Reserve neither maintains nor publishes a detailed production index for photographic and photocopying equipment manufacturing (NAICS 333315); the most detailed series that includes photocopiers is the aggregate of commercial and service industry machinery manufacturing (NAICS 3333). However, an annual benchmark output index, derived from the ASM, is computed for each six-digit NAICS industry in NAICS 3333 as gross output (cost of materials plus value added) divided by a price deflator. The six-digit NAICS output indexes are then aggregated to the IP industry level with the appropriate value-added weights. □

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APPENDIX A: TABLES BASED ON THE G.17 RELEASE, DECEMBER 16, 2003

A.1. Revised data for industrial production for total industry

Seasonally adjusted data except as noted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual avg.[1]
	Industrial production (percent change)																
1972	2.4	1.0	.8	.9	.0	.2	.0	1.2	.7	1.3	1.2	1.4	18.4	7.9	4.7	14.5	9.6
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	.8	.0	.6	.4	.9	. . .	.9	–4.0	3.8	. . .	. . .
	Industrial production (1997 = 100)																
1972	50.0	50.5	50.9	51.3	51.4	51.5	51.5	52.1	52.4	53.1	53.7	54.5	50.4	51.4	52.0	53.8	51.9
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	89.8	90.2	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	110.9	111.5	111.9	112.9	. . .	111.2	110.0	111.1	. . .	. . .

NOTE. Monthly percent change figures show the change from the previous month; quarterly figures show the change from the previous quarter at a compound annual rate of growth. Production and capacity indexes are expressed as percentages of output in 1997.

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

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

. . . Not available as of December 16, 2003.

A.2. Revised data for capacity and utilization for total industry

Seasonally adjusted data except as noted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual avg.[1]
	Capacity (percent of 1997 output)																
1972	60.6	60.8	60.9	61.0	61.2	61.3	61.5	61.6	61.8	62.0	62.1	62.3	60.8	61.2	61.6	62.1	61.4
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	149.0	149.1	. . .	148.0	148.4	148.8	. . .	. . .
	Utilization (percent)																
1972	82.4	83.1	83.5	84.1	84.0	83.9	83.7	84.5	84.9	85.7	86.5	87.5	83.0	84.0	84.4	86.6	84.5
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	74.9	75.1	75.7	. . .	75.1	74.1	74.6	. . .	. . .

NOTE. See also general note to table A.1.

. . . Not available as of December 16, 2003.

A.3. Rates of change in industrial production, by market and industry group, 1999–2003[1]

Item	NAICS code[2]	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
		1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total industry	. . .	**4.9**	**2.3**	**–5.2**	**1.3**	**.2**	**.0**	**–.4**	**.4**	**–.1**	**.3**
MARKET GROUP											
Final products and nonindustrial supplies	. . .	2.8	2.3	–4.9	.5	.0	–.6	–.9	.5	.1	–.1
Consumer goods	. . .	2.4	1.0	–2.2	1.0	–.6	–.2	–.1	–.1	–.5	–.5
Durable	. . .	4.6	–1.9	–2.9	6.0	1.7	–1.1	.1	.1	.0	–.6
Automotive products	. . .	5.1	–5.1	1.1	9.9	4.3	–.4	–.3	–.6	.3	–.2
Home electronics	. . .	11.9	15.7	–10.3	4.4	10.7	–7.9	6.6	3.2	6.2	–3.7
Appliances, furniture, carpeting	. . .	2.3	–.5	–2.0	1.8	1.6	.0	.5	2.6	.1	.5
Miscellaneous goods	. . .	3.7	–.3	–8.1	2.4	–4.4	–.6	–.9	1.4	.2	1.0
Nondurable	. . .	1.5	2.1	–1.9	–.8	–1.3	.1	–.1	–.1	–.7	–.6
Non-energy	. . .	1.2	1.0	–1.0	–2.8	–.9	.0	–.1	.0	–1.2	.1
Foods and tobacco	. . .	.2	.7	–.6	–3.9	–1.5	–.1	1.1	1.6	–2.9	.5
Clothing	. . .	–3.1	–5.6	–15.1	–2.4	–18.4	–.3	.6	–2.5	2.2	–2.7
Chemical products	. . .	4.5	4.4	3.0	–1.8	1.1	–.3	–2.1	–1.8	1.3	–2.2
Paper products	. . .	3.2	–1.2	–3.2	–.9	5.4	1.2	–2.2	–3.0	–.5	4.7
Energy	. . .	3.1	7.1	–5.8	8.7	–2.9	.1	–.5	–.6	.6	–3.4
Business equipment	. . .	3.8	6.8	–12.8	–1.4	1.1	–.2	–1.1	1.5	2.4	.0
Transit	. . .	–11.5	–11.2	–5.9	–15.2	–7.3	–1.3	–2.6	6.2	.4	–1.2
Information processing	. . .	19.0	19.2	–12.8	5.5	8.1	.4	–.8	.6	7.1	.3
Industrial and other	. . .	–.5	4.9	–15.0	–1.0	–.5	–.7	–1.4	.7	–.3	.0
Defense and space equipment	. . .	–9.5	–3.1	12.4	3.6	5.9	–4.4	–2.7	12.4	1.3	–1.2
Construction supplies	. . .	2.6	–.1	–6.5	.4	–1.0	.5	–.9	–.5	–.2	1.7
Business supplies	. . .	4.9	2.9	–5.6	1.4	.1	–2.6	–3.5	–.5	–.8	.2
Materials	. . .	8.0	2.2	–5.7	2.5	.3	.7	.2	.3	–.3	.7
Non-energy	. . .	9.7	2.3	–6.6	3.0	.3	.9	.1	.3	.2	1.2
Durable	. . .	12.9	5.6	–7.2	4.2	1.7	1.1	.0	.6	.4	1.4
Consumer parts	. . .	7.2	–7.1	–7.2	6.7	–.7	.3	–.8	–3.4	–1.2	–.8
Equipment parts	. . .	25.6	23.0	–7.4	5.9	10.0	2.3	–.3	2.8	2.2	3.4
Other	. . .	3.6	–3.9	–6.8	1.5	–3.5	–.3	–.3	.4	–.4	.3
Nondurable	. . .	3.7	–3.7	–5.6	.9	–2.0	.0	–.2	–.2	–.4	.7
Textile	. . .	.6	–9.7	–11.6	–1.0	–15.8	.3	–.1	1.0	–1.1	–.4
Paper	. . .	2.3	–4.7	–6.1	1.5	–4.8	–.4	–.9	–.5	–1.5	.4
Chemical	. . .	7.4	–3.9	–5.1	1.7	.3	.0	.2	.3	.5	.4
Energy	. . .	1.3	1.7	–2.9	1.0	.3	.1	.7	.5	–1.6	–1.0
INDUSTRY GROUP											
Manufacturing[3]	. . .	5.5	2.0	–5.6	1.0	.4	.0	–.5	.5	.1	.7
Manufacturing (NAICS)	31–33	5.5	2.2	–5.5	1.2	.2	.0	–.4	.7	.1	.4
Durable manufacturing	. . .	7.8	4.8	–7.3	3.0	1.8	.0	–.7	1.0	1.1	.7
Wood products	321	1.7	–6.5	–2.2	–1.8	.3	–.1	.3	.9	–.7	1.3
Nonmetallic mineral products	327	.3	–1.7	–5.6	2.1	–.4	.3	–1.4	–5.7	–.5	.8
Primary metal	331	3.6	–9.1	–10.6	3.5	–6.4	–.3	.4	.9	–.1	2.4
Fabricated metal products	332	2.6	.0	–8.4	–.1	–4.2	.0	–.4	–.6	–1.2	.1
Machinery	333	.1	2.5	–17.1	–.9	.8	–.2	–2.4	.7	–.1	–1.0
Computer and electronic products	334	31.0	29.4	–7.5	10.8	14.7	.4	–1.4	2.0	6.8	3.3
Electrical equipment, appliances, and components	335	3.5	2.3	–12.7	–2.3	–2.0	.6	–.4	–1.9	–.3	1.2
Motor vehicles and parts	3361–3	5.8	–9.1	–2.8	9.9	2.1	.1	–.7	–1.6	–1.0	–.8
Aerospace and miscellaneous transportation equipment	3364–9	–12.4	–3.9	4.9	–9.7	–.8	–1.2	.9	9.8	.9	–2.3
Furniture and related products	337	2.0	.6	–7.4	–.4	–3.2	–.3	.0	1.4	1.4	1.8
Miscellaneous	339	2.2	6.1	–2.8	3.5	–1.7	.2	2.3	2.9	1.7	.1
Nondurable manufacturing	. . .	2.4	–1.4	–3.3	–.9	–1.7	–.1	–.1	.2	–1.1	.1
Food, beverage, and tobacco products	311,2	.1	.6	–.4	–3.5	–1.1	–.1	1.0	1.4	–2.8	.6
Textile and product mills	313,4	2.1	–6.4	–10.3	–1.3	–10.7	.2	–.1	2.2	–1.0	–.7
Apparel and leather	315,6	–3.4	–5.4	–15.5	–2.0	–17.6	–.3	.5	–2.5	2.5	–2.6
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	–5.5	.0	–.6	–1.1	–4.7	2.0
Petroleum and coal products	324	2.6	–1.7	–2.5	1.2	1.0	1.0	–1.2	–2.1	–.1	1.1
Chemical	325	5.1	–.2	–1.3	–.1	1.2	–.4	–.6	–.1	.9	–.6
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	4.3	.8	–1.9	–2.4	–.4	4.1
Mining	21	.2	1.1	–1.0	–2.3	.2	.0	.3	–.4	–.4	.1
Utilities	2211,2	2.3	6.1	–5.2	6.6	–2.2	.3	.1	.3	–1.1	–3.0
Electric	2211	2.1	4.9	–3.7	5.5	–.4	.4	.1	.3	–1.6	–2.4
Natural gas	2212	3.8	12.9	–12.8	13.4	–10.3	–.3	.1	–.3	1.5	–4.4

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 are annualized.

2. North American Industry Classification System.

3. Manufacturing comprises those industries included in the 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.

. . . Not applicable.

A.4. Rates of change in industrial production, special aggregates and selected detail, 1999–2003[1]

Item	NAICS code[2]	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
		1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Total industry	**. . .**	**4.9**	**2.3**	**–5.2**	**1.3**	**.2**	**.0**	**–.4**	**.4**	**–.1**	**.3**
Energy	. . .	2.0	3.9	–3.6	2.9	–.8	.1	.2	–.1	–.9	–1.8
Consumer products	. . .	3.1	7.1	–5.8	8.7	–2.9	.1	–.5	–.6	.6	–3.4
Commercial products	. . .	2.2	6.0	–1.6	3.5	–3.1	.4	–1.1	–2.0	–1.1	–3.2
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	.2	–.2	.1	–.2	.8	–4.5
Primary materials	. . .	.7	–.3	–.2	–.4	.5	.2	1.0	.8	–2.8	1.0
Non-energy	. . .	5.4	2.0	–5.6	1.0	.4	.0	–.5	.5	.1	.7
Selected high-technology industries	. . .	42.4	38.2	–8.4	15.3	20.7	.8	–1.9	1.2	8.2	5.2
Computers and office equipment	3341	14.1	19.1	–5.7	24.0	10.1	–5.6	1.4	.2	4.1	–11.0
Communications equipment	3342	31.5	27.7	–22.8	–5.5	6.9	4.4	–2.6	–2.7	11.1	8.6
Semiconductors and related electronic components	334412–9	64.6	52.8	.8	24.9	34.7	2.6	–3.0	4.2	5.1	10.0
Excluding selected high-technology industries	. . .	1.8	–1.5	–5.2	–.1	–.9	–.1	–.3	.4	–.5	.4
Motor vehicles and parts	3361–3	5.8	–9.1	–2.8	9.9	2.1	.1	–.7	–1.6	–1.0	–.8
Motor vehicles	3361	2.6	–12.2	1.5	11.6	3.6	.0	–.2	–.5	–.5	.5
Motor vehicle parts	3363	8.3	–5.7	–5.3	7.8	.9	.4	–1.5	–3.1	–.9	–1.8
Excluding motor vehicles and parts	. . .	1.4	–.8	–5.5	–1.0	–1.2	–.1	–.3	.6	–.4	.5
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	.4
Construction supplies	. . .	2.4	–.4	–6.4	.5	–1.1	.4	–.8	–.4	–.3	1.6
Business supplies	. . .	2.1	.5	–5.5	.7	–.9	.1	–.7	–.6	–.6	.7
Materials	. . .	3.1	–2.9	–7.2	.3	–2.4	–.1	–.1	.1	–.6	.3
Measures excluding selected high-technology industries											
Total industry	. . .	1.8	–.6	–4.9	.4	–.9	.0	–.2	.3	–.6	.0
Manufacturing[3]	. . .	1.8	–1.5	–5.2	–.1	–.8	–.1	–.3	.4	–.5	.3
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	.0	.0	–.4	.5	.1	.4
Manufacturing[3]	. . .	5.4	3.0	–5.8	.3	.3	.0	–.5	.7	.2	.8
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	–1.1	–.1	–.2	.5	–.5	.1
Manufacturing[3]	. . .	1.5	–.7	–5.5	–.9	–1.1	–.1	–.3	.5	–.5	.5
Measures of non-energy material inputs to											
Finished processors	. . .	15.4	8.1	–7.4	5.0	2.6	1.7	.1	.5	.4	1.9
Semifinished and primary processors	. . .	4.1	–3.3	–5.8	1.2	–1.6	–.2	–.2	.1	–.1	.5
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	.0	.4	–.7	–.4	–.5	.6
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 are annualized.

2. North American Industry Classification System.

3. See footnote 3 to table A.3.

. . . Not applicable.

A.5. Capacity utilization rates, by industry group, 1972–2003

Item	NAICS code[1]	Revised rate (percent of capacity, seasonally adjusted)						Difference between rates: revised minus earlier (percentage points)		
		1972–2002 avg.	1988–89 high	1990–91 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**	**.0**
Manufacturing[2]	. . .	80.2	85.6	77.2	73.5	73.5	73.2	.2	.0	.3
Manufacturing (NAICS)	31–33	80.0	85.5	77.0	73.2	73.2	72.6	.3	.2	.3
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	73.9	.6	.9	2.0
Nonmetallic mineral products	327	79.4	85.7	72.1	76.3	77.9	77.7	–4.0	–3.5	–2.7
Primary metal	331	81.0	95.3	75.2	73.5	77.1	73.2	.5	–.4	1.1
Fabricated metal products	332	77.2	80.3	71.1	70.2	69.7	67.2	–.4	–1.1	–1.1
Machinery	333	79.8	84.6	72.8	66.5	66.7	67.6	–.8	.0	–.3
Computer and electronic products	334	79.5	81.1	76.3	64.4	63.1	65.2	.3	.8	1.0
Electrical equipment, appliances, and components	335	83.2	87.4	75.0	74.8	74.1	73.4	–1.1	–1.4	–.6
Motor vehicles and parts	3361–3	77.6	89.7	56.5	75.4	81.3	80.7	.2	.4	.6
Aerospace and miscellaneous transportation equipment	3364–9	73.2	88.9	81.9	70.8	64.3	63.9	5.5	5.6	4.6
Furniture and related products	337	79.2	84.0	67.9	71.7	71.1	69.5	.3	1.0	2.1
Miscellaneous	339	76.9	81.7	77.7	74.3	76.7	75.7	–.4	2.0	3.2
Nondurable manufacturing	. . .	82.2	87.0	81.8	77.1	76.7	76.1	.1	–.8	–.6
Food, beverage, and tobacco products	311,2	82.3	85.5	81.3	79.6	77.3	77.2	.6	–1.3	–.9
Textile and product mills	313,4	83.7	91.4	77.2	74.1	74.9	70.4	2.2	1.8	1.8
Apparel and leather	315,6	80.1	84.2	77.3	64.6	67.2	61.9	–.9	4.0	4.6
Paper	322	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	71.9	–.7	–6.5	–4.7
Petroleum and coal products	324	86.3	88.9	82.5	87.2	88.1	87.9	–1.4	–.8	.1
Chemical	325	78.6	85.6	80.8	74.0	72.9	72.9	–.7	–.8	–1.4
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	82.4	–2.5	–3.5	–1.0
Mining	21	86.9	85.6	83.4	86.9	84.6	85.0	.3	–.5	.2
Utilities	2211,2	87.0	92.8	84.1	86.7	87.2	83.0	1.7	1.2	–.4
Selected high-technology industries	. . .	79.2	79.9	74.5	62.9	61.7	65.2	–.2	–.4	.5
Computers and office equipment	3341	78.4	79.3	67.2	68.6	71.6	70.4	–.1	–5.5	–11.1
Communications equipment	3342	78.6	81.7	73.2	58.8	48.2	50.2	–1.9	–1.6	.9
Semiconductors and related electronic components	334412-9	81.0	80.5	78.1	63.4	66.7	73.4	.2	–.3	2.6
Measures excluding selected high-technology industries										
Total industry	. . .	81.4	85.6	78.8	76.4	76.3	75.7	.1	–.5	–.2
Manufacturing[2]	. . .	80.2	86.1	77.3	74.5	74.6	74.2	.0	–.4	.0
Stage-of-process groups										
Crude	. . .	86.4	88.5	84.7	83.8	83.1	83.7	.8	.0	1.1
Primary and semifinished	. . .	82.4	86.4	77.5	76.3	77.5	76.5	.1	–.4	–.1
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. North American Industry Classification System.

2. See footnote 3 to table A.3.

. . . Not applicable.

A.6. Rates of change in capacity, by industry group, 1999–2003[1]

Industry group	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (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
Other manufacturing (non-NAICS)	.7	–.3	–1.0	–1.5	–1.5	.8	.6	.5	.7	–.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 except selected high-technology industries[2]	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 3 to table A.3.

A.7. Rates of change in electric power use, by industry group, 1999–2003[1]

Industry group	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (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**
Manufacturing[2]	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
Other manufacturing (non-NAICS)	–.4	–.5	–6.8	–2.3	.3	.7	–2.2	–.2	–.8	–4.0
Mining	–3.1	–2.7	–3.2	–4.7	–5.2	.0	–.1	.1	.1	–2.8
Total excluding 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 rates are calculated from the fourth quarter of 2002 to the second quarter of 2003 and are annualized.

2. See footnote 3 to table A.3.

A.8. Annual proportion in industrial production, by market groups and industry groups, 1995–2002

Item	NAICS code[1]	1995	1996	1997	1998	1999	2000	2001	2002
Total industry	. . .	**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[2]	. . .	84.5	84.4	85.7	86.6	85.9	84.6	84.1	83.5
Manufacturing (NAICS)	31–33	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 equipment, 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 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 the 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.

1. North American Industry Classification System.
2. See footnote 3 to table A.3.
. . . Not applicable.