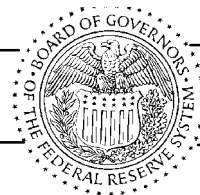


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# FEDERAL RESERVE statistical release

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G.17 (419) 2009 Annual Revision

For release at 2:00 p.m. (EDT)  
March 27, 2009

## Industrial Production and Capacity Utilization: The 2009 Annual Revision

The Federal Reserve has revised the index of industrial production (IP) and the related measures of capacity and capacity utilization. Although rates of change from January 1972 through February 2009 are affected, the revision has its largest impact on data in 2007 and 2008. The overall contour of total IP is little changed by the revision: The index posted moderate increases from 2004 through 2007 but declined sharply in 2008. Relative to earlier estimates, measured from fourth quarter to fourth quarter, total IP is now reported to have increased 0.3 percentage point more slowly in 2007 and to have decreased 0.5 percentage point more rapidly in 2008; the index for February 2009 now stands about 1 percent below its previously published level.

The revision shows that the rates of capacity utilization for total industry in the fourth quarters of 2007 and 2008 were about  $\frac{1}{2}$  percentage point lower than previously estimated. At 74.3 percent, overall utilization in the fourth quarter of 2008 was 6.6 percentage points below its 1972–2008 (long-run) average.

The revision to IP incorporates new data from the following sources: manufacturing data from selected 2007 Current Industrial Reports from the U.S. Census Bureau, annual data on the publishing industry from the Census Bureau's Services Annual Survey, new annual data on mineral extraction for 2006 and 2007 from the U.S. Geological Survey (USGS), annual data on logging for 2007 from the U.S. Forest Service, the 2002 input-output tables from the Bureau of Economic Analysis (BEA), and updated price deflators from the BEA. Comprehensive benchmark data for manufacturing for 2007 are not yet available. The results of both the 2007 Census of Manufactures and the 2008 Annual Survey of Manufactures (both from the Census Bureau) should be available for the 2010 revision to the IP indexes. Results from the 2007 and 2008 Quarterly Surveys of Plant Capacity, however, were used to augment the regular monthly production indicators in the revised production indexes for those years. The new monthly production estimates also reflect the incorporation of updated seasonal factors and monthly and quarterly source data that became available (or were revised) after the closing of the reporting window.

The revised capacity utilization rates incorporate the results from the Census Bureau's Quarterly Survey of Plant Capacity for the fourth quarters of 2007 and 2008. In addition, the revisions to the capacity indexes and capacity utilization rates incorporate the revised production indexes and newly available data on industrial capacity from the USGS, the Energy Information Administration of the U.S. Department of Energy (DOE), and other organizations.

## RESULTS OF THE REVISION

The tables show the summary statistics for the annual revision. Tables 1A and 1B show the monthly, quarterly, and annual average index levels for IP and for capacity and utilization for January 1979 through February 2009, along with percent changes in IP and capacity utilization rates. Tables 2 and 3 show the revised rates of change in IP from 2004 through 2008 for market groups, industry groups, special aggregates, and selected detail. Table 4 shows the revised annual rates of change in IP for the 2004–08 period for selected detail, and table 5 shows the rates of change in capacity by industry groups for the 2005–09 period. Tables 2 through 5

also show the difference between the revised and earlier rates of change. Table 6 shows the revised capacity utilization rates for the final quarters of 2005 through 2008 and the differences between the revised and previous rates. Tables 7A, 7B, 8A, 8B, 9A, and 9B report the revised production, capacity, and utilization series for manufacturing, total industry excluding selected high-technology industries, and manufacturing excluding selected high-technology industries. Table 10 reports the annual proportions in IP by market and industry groups for 2001 through 2008. Table 11 reports revised IP indexes and capacity utilization rates for the major market and industry groups for the most recent six months.

### *Industrial Production*

The changes in total IP were revised slightly for 2007 and 2008 (table 2), but the overall contour for recent years was little changed—moderate gains for 2004 through 2007 are still followed by a drop in the index in 2008.<sup>1</sup> Compared with the previous estimates, the increase in output in 2007 is now reported to have been slower, and the decline in 2008 is now reported to have been faster.<sup>2</sup> The increases for 2004 through 2006 are little changed.

#### *Production by Industry Group*

Manufacturing production expanded, on net, during the 2004–07 period, albeit at a somewhat slower rate than initially reported, before contracting in 2008.<sup>3</sup> For durable goods industries as a whole, output rose in each year from 2004 through 2007, although these gains have been moderated by the recent revision. Durable goods output fell sharply in 2008, and that drop was little changed, on net, compared with the previous estimate. For the 2004–06 period, the revisions to output in most durable goods industries were relatively modest, with the exception of computer and electronic products, in which the gain in output in 2006 is now stated to have been significantly lower. Relative to previous estimates, the current revision reports noticeably lower output indexes in 2007 for wood products, nonmetallic mineral products, computer and electronic products, and furniture and related products but it reports a noticeably higher output index in 2007 for miscellaneous durable goods. For 2008, relative to previous estimates, higher output indexes are reported for electrical equipment, appliances, and components and for furniture and related products, but the production indexes for wood products, primary metals, machinery, and computer and electronic products were revised down moderately.

Production in nondurable manufacturing industries advanced in every year from 2004 through 2007 but fell sharply in 2008. Within the nondurable goods sector, output in most recent years was little changed, on net, compared with previous estimates. The current revision reports noticeably higher rates of change in 2007 in textile and product mills, apparel and leather, and petroleum and coal products but a noticeably lower rate of change in chemicals. For 2008, output is now reported to have fallen markedly faster for apparel and leather, printing and support activities, chemicals, and plastics and rubber products compared with previous estimates.

The revised output index for non-NAICS manufacturing (logging and publishing) fell each year from 2005 through 2008, with a particularly sharp drop in 2008. The rate of change for these industries in 2006 is substantially higher than stated earlier, but revisions to the rates for other years were smaller. The index for mining rose modestly in the past two years after a jump in 2006; the increase in 2006 was revised up relative to previous estimates, but the index is otherwise similar to what was previously reported. The index for utilities is also nearly unchanged from previous estimates, with the exception of 2008, for which the index now shows a small decline rather than a small advance.

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<sup>1</sup>In this section, all the rates of change are calculated from the fourth quarter of the previous year to the fourth quarter of the reference year. Estimates for the fourth quarter of 2008 are subject to further revision in the upcoming monthly releases.

<sup>2</sup>The downward revision to overall IP in 2008 primarily reflects changes to the underlying indexes, but more than 0.1 percentage point of the revision to the rate of change resulted from updating the weights for energy goods to reflect the drop in energy prices in mid-2008.

<sup>3</sup>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 traditionally have been considered to be manufacturing.

The estimates for selected high-technology industries—computers and peripheral equipment, communications equipment, and semiconductors and related electronic components—had sizable revisions over the 2004–08 period (table 3). On net, output in the high-tech sector is still reported to have posted gains in recent years, with robust increases from 2004 through 2007 followed by a moderate contraction in 2008. However, the increases in 2006 and 2007 are now shown to have been slower, and the decrease in 2008 is now shown to have been more rapid, than reported earlier. The index for computers and peripheral equipment rose in each of the years from 2004 through 2007 and then fell in 2008; the rates of change were revised up in each of the past few years except 2005. The output of communications equipment expanded in each of the past few years, but the rates of increase in most years are markedly lower than estimated previously, particularly in 2007. Production of semiconductors and related components rose solidly from 2004 through 2007 but contracted significantly in 2008; the rates of change in 2004, 2006, 2007, and 2008 are notably lower than formerly reported, and the rise in 2005 is now higher.

### *Production by Market Group*

The production index for final products and nonindustrial supplies (table 2) posted moderate gains from 2004 through 2007 and then fell markedly in 2008. The rates of change in the index are a bit lower than previously reported for 2007 and 2008 but are little changed for previous years.<sup>4</sup>

The production of consumer goods rose modestly in 2004 and 2005, was almost unchanged in 2006 and 2007, and then moved down significantly in 2008. Compared with previous estimates, output was revised down noticeably in 2007; the revisions to other recent years were much smaller. The output of durable consumer goods fell slightly, on net, from 2004 through 2007 and then dropped steeply in 2008; the rate of change was revised up somewhat in 2006. Among durable consumer goods, the most significant revisions were in the index for home electronics, which now increases less rapidly in 2005 and 2006, but more rapidly in 2004 and 2007; in 2008, the index now posts an advance instead of a decline.

The index for consumer nondurables shows moderate gains in output for 2004, 2005, and 2006 and modest contractions for 2007 and 2008. The index for consumer nondurable non-energy goods was nearly unaltered in every year except 2007, which now shows a decline. In that year, significantly lower estimates of the output of chemical products and of paper products more than account for the revision. The index for consumer energy products was revised down in 2008 but still posted moderate increases, on net, over the past few years.

The production of business equipment increased solidly from 2004 through 2006, rose modestly in 2007, and then deteriorated in 2008. Relative to previous estimates, the rate of change in the index was noticeably lower in 2005 and 2007; the revisions to other recent years were smaller. For transit equipment, output rose substantially, on net, from 2004 through 2006 and fell back in 2007; the index plummeted in 2008, partly because of weakness in the motor vehicle industry and partly because of a strike at a major aircraft producer in the second half of the year. The rates of change in the index for transit equipment were revised down in 2004, 2005, and 2008; were revised up in 2007; and were little changed in 2006. The production of information processing equipment expanded in each year from 2004 through 2008. The increases in each year were revised down, however, except in 2004 and in 2008, for which the index now posts an advance instead of a small decline. The production of defense and space equipment is now estimated to have risen more slowly in 2004 and more quickly in 2005 and 2007; the declines in 2006 and 2008 are now reported to have been smaller than stated previously.

After posting gains in 2004 and 2005, the output of construction supplies fell back in 2006 and 2007 and then dropped sharply in 2008; relative to earlier estimates, the index decreased less in 2007. The production of business supplies rose modestly from 2004 through 2007 and then slumped in 2008; this index now reports a

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<sup>4</sup>Although aggregate IP was little revised before 2007, some market groups had noticeable revisions. These revisions were often due to the incorporation of the 2002 input-output tables in the IP estimates, which changed the allocation of individual IP indexes among market groups.

small increase for 2006 instead of a small decline, and the rate of change in 2008 is weaker than previously reported.

The index for materials moved up over the years 2004 through 2007, then fell markedly in 2008; the rate of change in 2008 is now somewhat weaker than the previous estimate. The indexes for durable and nondurable materials both fell more than 10 percent in 2008 after having increased moderately, on net, from 2004 through 2007. Relative to earlier estimates, over the 2004–08 window, the rates of change for the index for durable materials are lower, on net, but the rates of change for the index for nondurable materials are higher overall. The index for energy materials only edged up in 2008 after having increased moderately in the previous two years, and it is little changed by the revision.

### *Capacity*

Overall, total industrial capacity posted moderate gains from 2005 through 2008 but is expected to decline in 2009 (table 5). The rates of change in both 2008 and 2009 were revised down noticeably from earlier estimates, but revisions to earlier years were smaller. The contour of manufacturing capacity and the revisions to that contour are similar to those for total industry. Aggregate capacity for the selected high-technology industries rose in each year from 2005 through 2009; the revision shows that, relative to previous reports, capacity in these industries rose less quickly in 2005, 2006, and especially 2008 but increased somewhat more rapidly in 2007 and it is expected to rise in 2009. Excluding high-technology industries, manufacturing capacity expanded from 2005 through 2008 but is expected to decline in 2009. The current estimates are similar to previous reports except for 2009, for which the contraction in capacity is now anticipated to be greater than stated previously.

Capacity at mines is estimated to have fallen in 2005 and to have expanded from 2006 through 2008; it is expected to recede somewhat in 2009. The gains in 2006 and 2008 are now reported to have been stronger than previously published, but the rates of change in 2007 and 2009 have been revised down. Capacity at electric and gas utilities has risen each year since 2004. The current estimates show quicker gains in 2005 and 2006 than reported earlier; revisions to other recent years were negligible.

By stage of processing, capacity in the crude stage is now reported to have risen more in 2006 and 2008 than previously shown but is now expected to fall in 2009. The rates of change for capacity in the primary and semifinished stages were revised down for 2008 and 2009; revisions to earlier years were slight. Relative to previous estimates, increases to the index for finished goods processors were revised up in 2007 and 2008, but capacity is expected to fall more in 2009 than stated previously.

### *Capacity Utilization*

From 2005 through 2007, the capacity utilization rate for total industry stood a little below its long-run (1972 to 2008) average of 80.9 percent but in 2008 fell to a level more than 6½ percentage points below its long-run average (table 6). The utilization rate for total industry was revised down noticeably in 2007 and 2008; revisions to earlier years were slight. Similarly, manufacturing capacity utilization, on balance, spent 2005 through 2007 at a little below its long-run average of 79.6 percent and tumbled to 71.1 percent in the fourth quarter of 2008, 8½ percentage points below its long-run average.

Relative to earlier reports, the factory operating rate was revised down in 2007 and 2008. Within durable goods, utilization rates for most industries were near their long-run averages from 2005 through 2007 and then dropped well below average in 2008; an exception was motor vehicles and parts, in which the utilization rate was significantly below average in 2006 and 2007 and then fell even further in 2008. In the fourth quarter of 2008, three durable goods industries (nonmetallic mineral products, primary metals, and furniture and related products) had utilization rates between 10 and 20 percentage points below their long-run averages, and two durable goods



industries (wood products, and motor vehicles and parts) had utilization rates more than 20 percentage points below their long-run averages. Among durable goods industries, some of the larger downward revisions to utilization over the 2005–08 period were for wood products, nonmetallic mineral products, and motor vehicles and parts. The durable goods industries that reported the largest net upward revisions since 2005 were machinery; electrical equipment, appliances, and components; aerospace and miscellaneous transportation equipment; and furniture and related products.

As with the durable goods industries, utilization rates for most nondurable goods industries were near their long-run averages from 2005 through 2007 but turned down sharply in 2008. In the fourth quarter of 2008, four nondurable goods industries (textile and product mills, paper, printing and support activities, and plastics and rubber products) had utilization rates between 10 and 20 percentage points below their long-run averages. Among nondurable goods industries, the following industries had the largest downward revisions to their utilization rates over the 2005–08 period: food, beverage, and tobacco products; petroleum and coal products; and plastics and rubber products. Textile and product mills, apparel and leather, and printing and support activities had the largest upward revisions to their utilization rates over the 2005–08 period. Capacity utilization in the other (non-NAICS) manufacturing category was revised downward for 2005 and upward for 2006 through 2008.

The operating rates for the selected high-technology industries were slightly above their long-run averages in the fourth quarters of 2006 and 2007 but fell more than 7 percentage points below their long-run averages in 2008. Relative to earlier estimates, capacity utilization is now reported to have been higher in 2005, 2006, and 2008 but lower in 2007. The operating rates for computers and peripheral equipment are now shown to have been higher than previously reported in each of the past few years, particularly 2008. Utilization rates for communications equipment are now higher than previously reported in 2005 and 2006 but lower in 2007 and 2008. Capacity utilization in the semiconductors and related electronic components industry was above or near its long-run average from 2005 through 2007, but, in the fourth quarter of 2008, although it was revised up, it still stood at more than 14 percentage points below its long-run average.

Capacity utilization in mining was generally above its long-run average from 2005 through 2008, and in the fourth quarter of 2008 stood at 89.5 percent, almost 2 percentage points higher than its long-run average. Relative to earlier estimates, the utilization rate for mining was a little lower in 2006 and 2008 but was little changed in 2005 and 2007. At electric and gas utilities, capacity utilization rates were revised down for 2005 through 2008, and capacity utilization in the fourth quarter of 2008 is now estimated to have been nearly 4 percentage points below its long-run average.

## **TECHNICAL ASPECTS OF THE REVISION**

Comprehensive data for 2007 for manufacturing were not available for this revision. After incorporating the limited information that was available, the benchmark indexes for manufacturing—defined for each six-digit NAICS industry as nominal gross output divided by a price index—were little changed before 2007. The principal changes resulted from small revisions to price indexes from the Bureau of Economic Analysis and from improved estimates of price indexes for communications equipment output constructed by the Federal Reserve (discussed below). In addition, the benchmark indexes for logging and publishing (included in the IP index for manufacturing but no longer included in manufacturing under NAICS) were advanced through 2007 and updated for 2006 based on data from the U.S. Forest Service and the Census Bureau.

The IP indexes in recent years did incorporate information from selected Current Industrial Reports for 2007, the revised input-output accounts for 2002 from the BEA, the Quarterly Survey of Plant Capacity for 2007 and 2008, and other annual industry reports. The indexes also incorporated revised monthly and quarterly source data on production, shipments, inventories, and production-worker hours.

As mentioned earlier, the benchmark indexes for most industries incorporate updated price indexes from the industry output program of the BEA. However, the price indexes for pharmaceuticals (NAICS 325412), for semiconductors (NAICS 334413), and for most components of communications equipment (NAICS 3342) are constructed by the Federal Reserve from alternative sources.<sup>5</sup>

### *Changes to the Methodology for Adjusting for Temporary Help Supply Employees.*

The compilation of the initial IP estimate for a given month relies heavily on the hours worked by production workers in the manufacturing sector when the availability of the other IP source data is limited. The hours data are adjusted to account for the labor input of temporary help supply (THS) employees who work in the manufacturing sector. The procedure for implementing this adjustment is as follows. An estimate is made of the component of THS employment that is allocated to manufacturing. This estimate begins with a baseline figure projected from the Current Population Survey but varies based on the cyclical movements of the manufacturing sector and the rest of the economy—THS employment has a cyclical pattern similar to that of manufacturing.<sup>6</sup> The THS employment in manufacturing is then allocated among the NAICS three-digit industries based on each industry's use of THS workers and cyclical patterns. With this revision, the allocation of THS employment among industries within manufacturing was updated based on data from the annual Survey of Plant Capacity for 2002 through 2005.<sup>7</sup>

In addition, this revision updates the method for estimating each industry's monthly baseline share of temporary help employment use in manufacturing. Previously, this share was held constant for each industry at the level estimated according to the method above. With this revision, the share is allowed to evolve based on the industry's share of total manufacturing employment.

An adjusted production-worker hour series for each three-digit manufacturing industry is computed by adding THS hours for an industry (THS employment multiplied by assumptions on hours per week and relative productivity) to the reported production-worker hours for the industry. The percentage adjustment for each three-digit industry's hours is then applied to the hours series for each of its component industries. These adjusted detailed hours series are used in making (1) estimates for those IP series based on labor input for the period for which benchmark output indexes are not yet available and (2) preliminary estimates of those IP series based on physical product data for which the current source data are not yet available.

### *Changes to Individual Production and Capacity Series*

With this revision, the monthly production indicators for some series have changed.

#### *Carpet and Rug Mills*

The index for carpet and rug mills (NAICS 31411) is based on quarterly data on unit shipments from the Carpet and Rug Institute. Formerly, it was based on monthly data from the same source. A cubic spline is used to interpolate monthly values from the quarterly figures, a method similar to that used for the other series for which only quarterly physical product data are available.<sup>8</sup>

#### *High-Technology Goods*

##### Computers

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<sup>5</sup>A table that lists annual and quarterly price indexes for the networking equipment component of communications equipment follows.

<sup>6</sup>See Marcello Estevo and Saul Lach (1999), *Measuring Temporary Labor Outsourcing in U.S. Manufacturing, Finance and Economics Discussion Series 1999-57* (Washington: Board of Governors of the Federal Reserve System, October).

<sup>7</sup>For several years, the Annual Survey of Plant Capacity collected information about the share of production workers that consisted of temporary workers; this information is not collected in the Quarterly Survey of Plant Capacity.

<sup>8</sup>See Richard D. Raddock (1993), *Industrial Production, Capacity, and Capacity Utilization since 1987*, Federal Reserve Bulletin, vol. 79 (June).

The six product-based indexes for electronic computer manufacturing (NAICS 334111) are derived from quarterly data on domestic absorption from International Data Corporation, an industry research group. Previously, to construct the monthly indicator, the nominal absorption data were aggregated to the industry level and converted to domestic industry shipments based on the Census Bureau's trade data (by adding exports and subtracting imports). The industry-level ratio of shipments to domestic absorption was applied to each of the six product-level absorption estimates to obtain product-level shipments. With this revision, domestic absorption is now adjusted to reflect domestic production using the Census Bureau's quarterly Current Industrial Report for computers and peripheral equipment when available, and it is projected forward using a model-based trend.

### Communications equipment

Price indexes for two product classes in the communications equipment industry were revised to incorporate additional product detail. The price index for enterprise and home voice equipment (NAICS 33421, part), which covers the production of telephones, was updated. This price index was previously calculated using average selling prices for two types of phones (corded and cordless) but is now a matched-model index constructed using detailed data, beginning in 1997, from the Consumer Electronics Association on transmission frequency, number of lines, and presence of other features such as caller identification, speakerphone, and integrated answering machine. The price index for wireless system equipment (NAICS 33422, part), which covers mobile phone infrastructure, was improved by folding in additional detail on base-station radio transmission capacity using data from the Dell'Oro Group, a market research firm. The resulting mobile infrastructure price index falls 4 percentage points faster per year, on average, from 2000 to 2008.

### *Capacity*

#### Electricity generation

The capacity index for electric power generation, transmission, and distribution (NAICS 2211) is now based on generation capability data from the Department of Energy; previously it was based on electricity generation capacity data from the North American Electric Reliability Council (NERC). The change was made because the DOE data are compiled using a more consistent definition over time. However, because the DOE data are published with a lag, the capacity projection for the most recent year or two is estimated by extending the DOE generation capability series by the rate of change shown for the NERC electricity generation capacity data.

#### Nonferrous metals (except aluminum)

The capacity index for nonferrous metal (except aluminum) production and processing (NAICS 3314) is now based on copper smelting, copper refining, and zinc smelting data from the U.S. Geological Survey. Formerly the capacity index was based on the USGS data on just copper smelting and copper refining.

#### Natural gas extraction

The DOE no longer publishes physical capacity estimates for natural gas extraction (NAICS 211111, part). Capacity estimates for recent years are based on output projections from the Short-Term Energy Outlook (STEO) and Annual Energy Outlook (AEO) reports of the DOE.

#### Trend-through-peak estimates

The trend-through-peak method of estimating capacity is used for those industries in mining and utilities for which there are no physical capacity sources—seven individual series accounting for about 5 percent of capacity. With this revision, the trend-through-peak method used to estimate capacity indexes for oil extraction (NAICS 211111, part), natural gas liquid extraction (NAICS 211112), and natural gas sales and transmission

(NAICS 2212) is based on production indexes that are extended using output projections from the STEO and AEO reports from the DOE.

The basic method in estimating trend-through-peak capacities for these industries is to construct baseline estimates of capacity by connecting peaks in production, with these peaks representing 100 percent utilization. In practice, the procedure involves a fair degree of judgment and deviates from a strict trend-through-peak approach in a variety of ways. Most importantly, if a peak in production was reached several years ago and production has not subsequently approached that previous maximum, published capacity levels generally will, after a time, trend downward. That is, they will tend to follow recent IP. Second, historically, the capacity levels corresponding to peaks in production for different series have yielded a variety of peak utilization rates.

### ***Weights for Aggregation***

The IP index is a Fisher index. The weights for manufacturing industries are derived from value-added measures from the Census of Manufactures and the Annual Survey of Manufactures. 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. The weights for aggregation, expressed as unit value added, were estimated with the latest data on producer prices for the period after 2006. Table 10 shows the annual value-added proportions in the IP index from 2001 through 2008.

The outputs of most industries are inputs to multiple markets. Although data are sometimes available that directly split the output of an industry by its purchaser, most industry output measures do not provide that detail. With the 2002 annual revision, weights that allocate individual IP indexes into multiple market groups were derived from the 1997 input-output tables from the BEA.<sup>9</sup> With this revision, the weights for the period from 2002 forward were updated using estimates from the 2002 input-output tables. The weights for the period up through 1997 are still computed from the 1997 tables, and the weights between 1997 and 2002 are linear combinations of the 1997 and 2002 weights.

### ***Revised Monthly Data***

This revision incorporates product data that became available or were revised after the regular six-month reporting window for monthly IP was closed. These data were released with too great a lag to be included with monthly IP estimates but were available for inclusion in the annual revision.

### ***Revised Seasonal Factors***

Seasonal factors for all series were reestimated using data that extend into 2008 or 2009. Factors for production-worker hours—which adjust for timing, holiday, and monthly seasonal patterns—were updated with data through February 2009. The updated factors for the physical product series, which include adjustments for holiday and workday patterns, used data through 2008. Seasonal factors for unit motor vehicle assemblies have been updated, and projections through September 2009 are on the Board’s website at [www.federalreserve.gov/releases/g17/mvsf.htm](http://www.federalreserve.gov/releases/g17/mvsf.htm).

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<sup>9</sup>See Carol Corrado (2003), Industrial Production and Capacity Utilization: The 2002 Historical and Annual Revision, Federal Reserve Bulletin, vol. 89 (April).



### **Data Availability and Publication Changes**

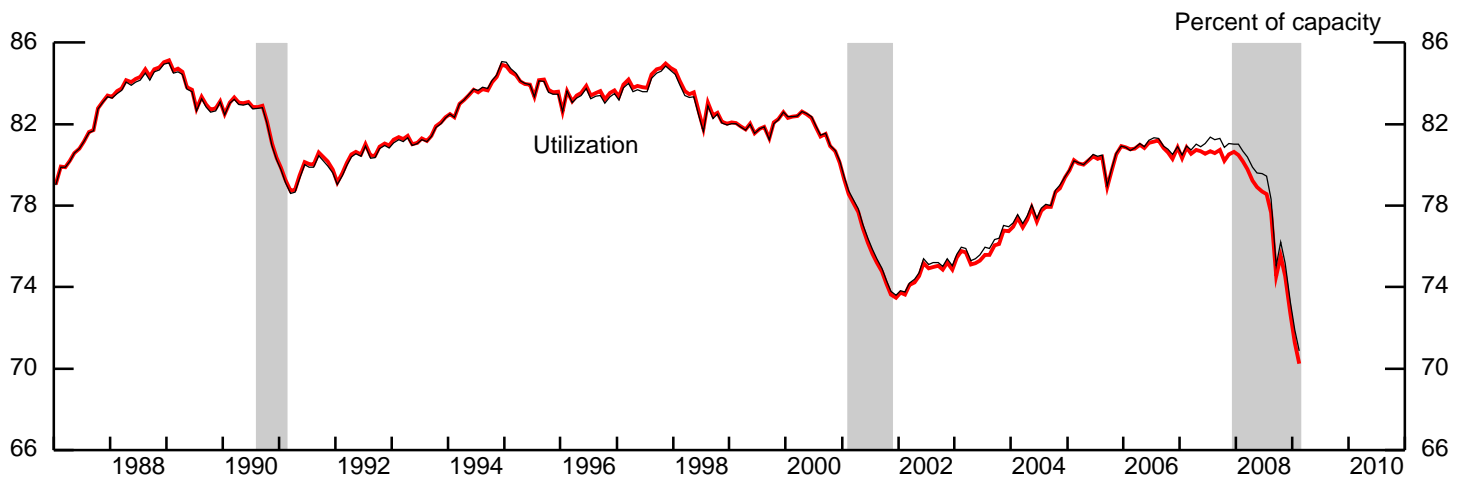
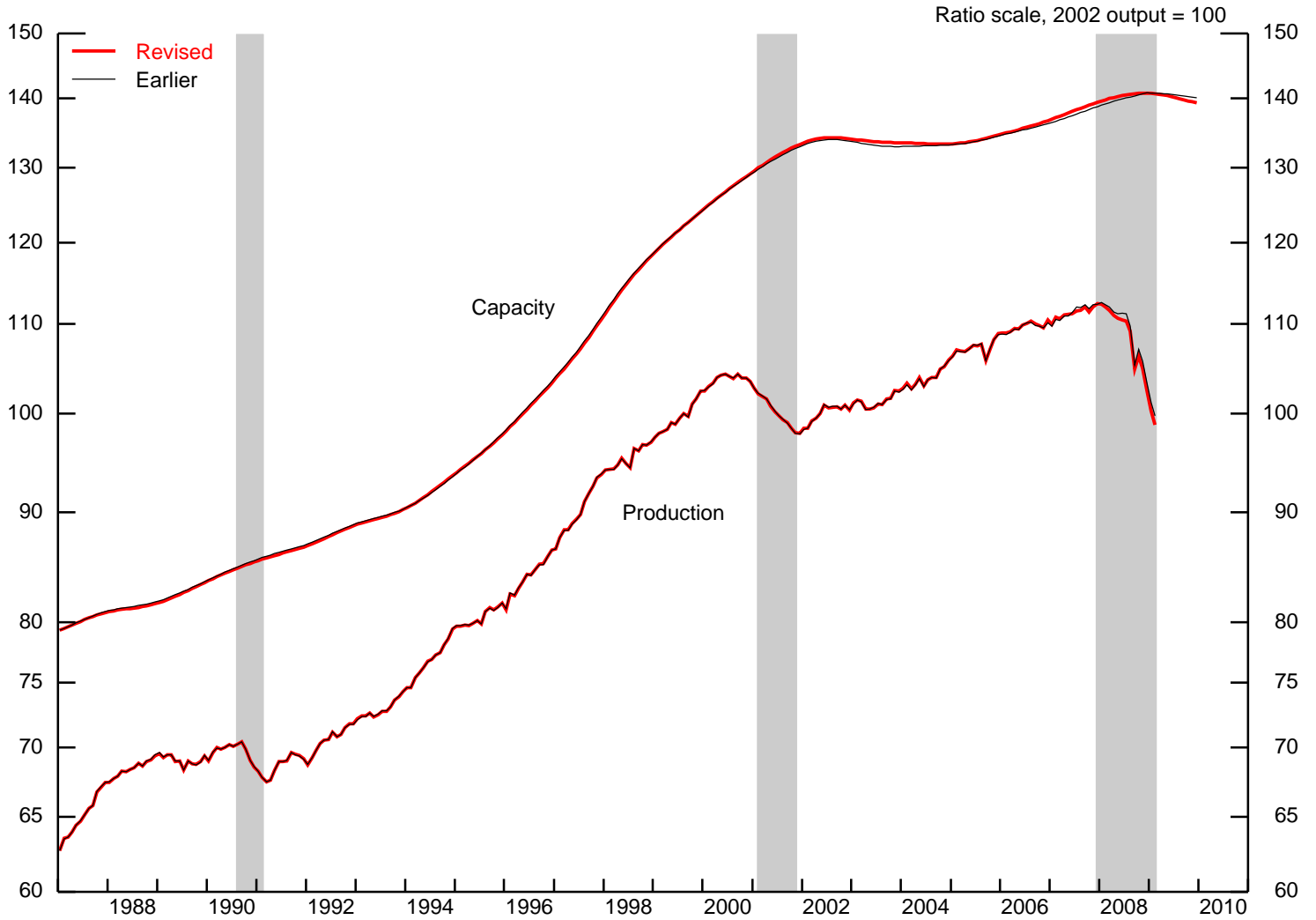
Files containing the revised data and the text and tables from this release are available on the Board's website at [www.federalreserve.gov/releases/g17](http://www.federalreserve.gov/releases/g17), as are updated data for the annual revision and for all of the regularly issued series on industrial production, capacity, and capacity utilization. The revised data will also be available through the STAT-USA website of the Department of Commerce ([www.stat-usa.gov](http://www.stat-usa.gov)). Further information on these revisions is available from the Board's Industrial Output Section (telephone 202-452-3197).

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

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

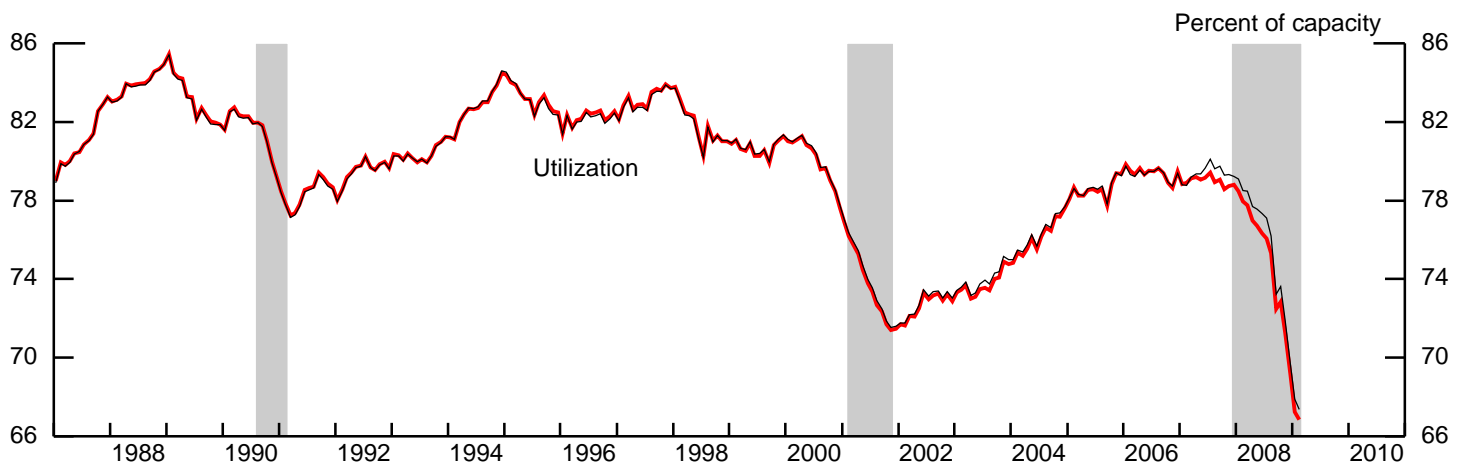
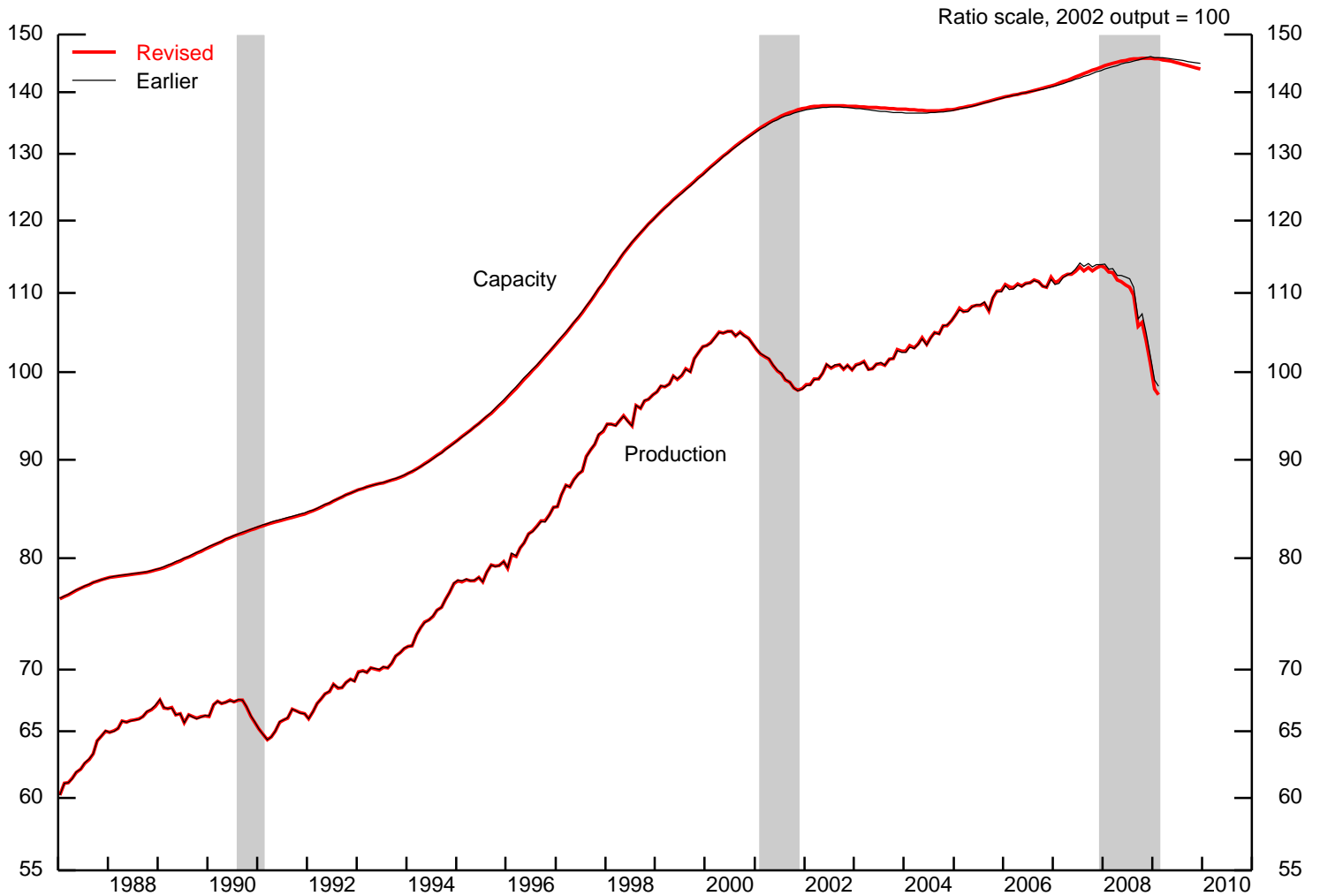
U.S. Networking Equipment, 1998 to 2007			
	Production Index	Price Index	Value of Production (millions of dollars)
Annual Estimates (indexes are 2002=100)			
1998	50.6	234.4	17,220.1
1999	72.9	194.4	20,677.1
2000	101.1	174.1	25,691.3
2001	118.6	133.2	23,103.2
2002	100.0	100.0	14,602.6
2003	110.1	76.6	12,158.9
2004	129.3	59.9	11,322.5
2005	146.2	54.3	11,559.9
2006	242.8	51.4	18,137.0
2007	261.6	50.2	19,219.8
Quarterly Estimates (indexes are 2002=100)			
1998Q1	42.3	261.9	16,107.6
1998Q2	50.7	244.6	18,052.1
1998Q3	54.0	219.0	17,217.1
1998Q4	56.5	213.9	17,589.7
1999Q1	67.7	205.0	20,192.3
1999Q2	73.1	195.9	20,847.5
1999Q3	72.5	195.4	20,604.9
1999Q4	79.4	182.6	21,094.6
2000Q1	92.1	182.8	24,498.6
2000Q2	102.0	172.1	25,530.4
2000Q3	103.1	175.2	26,263.9
2000Q4	108.1	167.8	26,376.7
2001Q1	122.4	147.2	26,217.5
2001Q2	117.7	137.6	23,562.3
2001Q3	118.4	126.9	21,869.4
2001Q4	115.9	122.5	20,666.9
2002Q1	105.1	111.3	17,022.9
2002Q2	95.0	107.9	14,915.6
2002Q3	103.1	92.3	13,836.7
2002Q4	96.7	89.5	12,598.8
2003Q1	92.3	89.2	11,979.4
2003Q2	108.3	81.8	12,886.8
2003Q3	122.7	72.3	12,902.8
2003Q4	116.5	63.6	10,782.7
2004Q1	152.2	61.9	13,699.1
2004Q2	130.8	60.5	11,504.0
2004Q3	121.1	59.6	10,498.2
2004Q4	115.9	57.8	9,737.4
2005Q1	123.9	55.1	9,933.6
2005Q2	135.1	54.3	10,681.3
2005Q3	147.2	54.2	11,608.0
2005Q4	178.2	53.5	13,856.8
2006Q1	190.3	53.2	14,717.0
2006Q2	223.3	51.5	16,719.5
2006Q3	263.2	50.6	19,386.7
2006Q4	292.6	50.2	21,387.0
2007Q1	298.2	50.2	21,775.0
2007Q2	295.5	50.8	21,848.9
2007Q3	265.1	50.3	19,396.7
2007Q4	195.9	49.4	14,091.4

# 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). The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

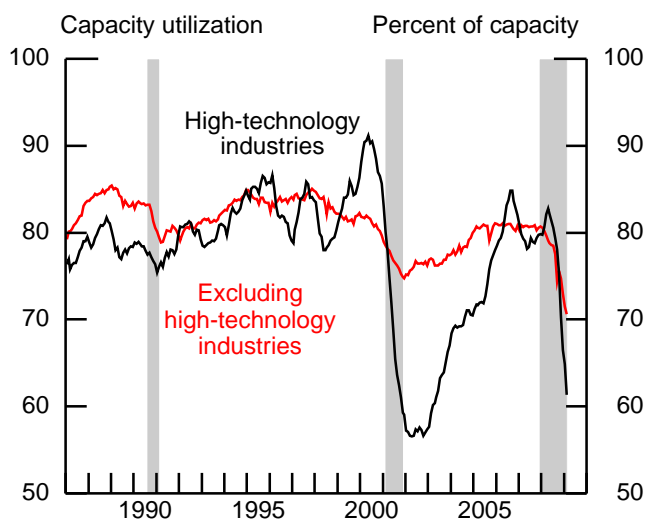
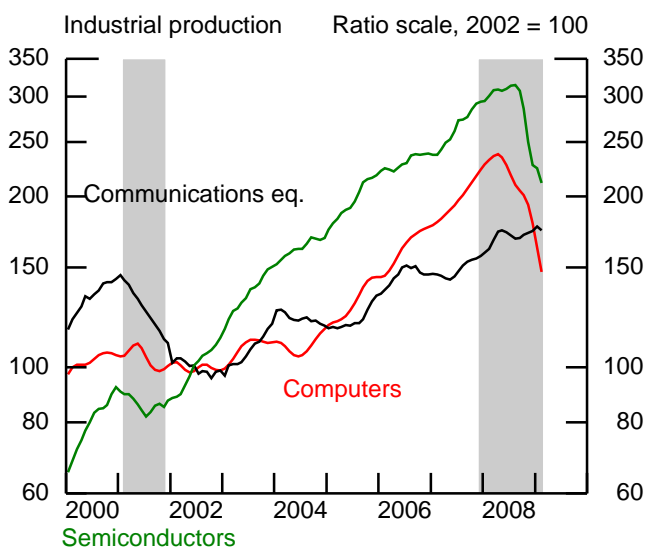
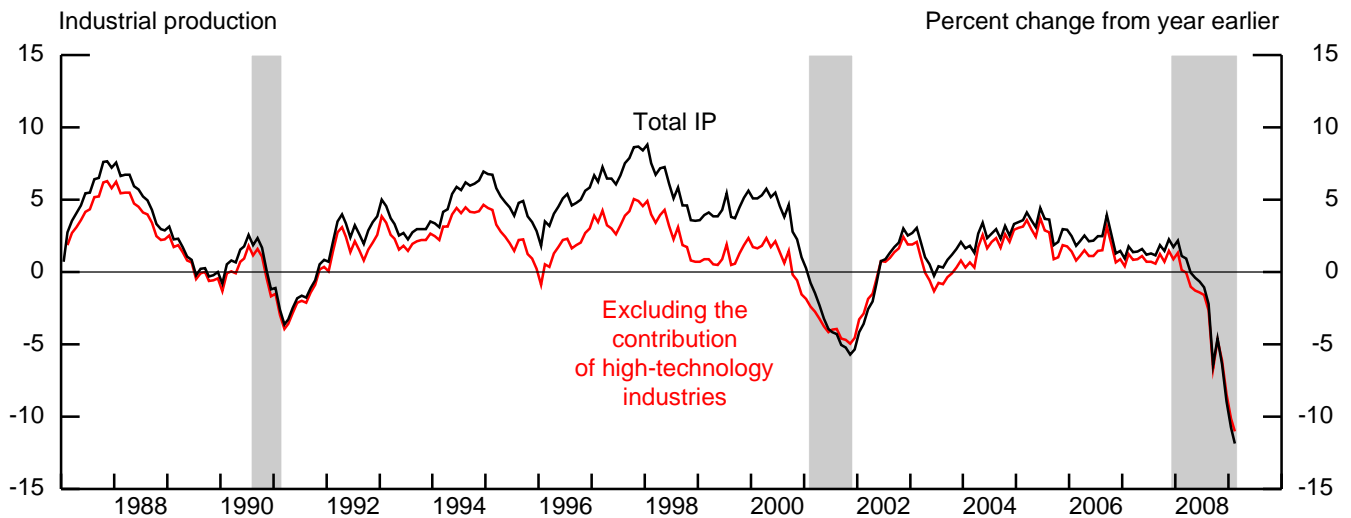
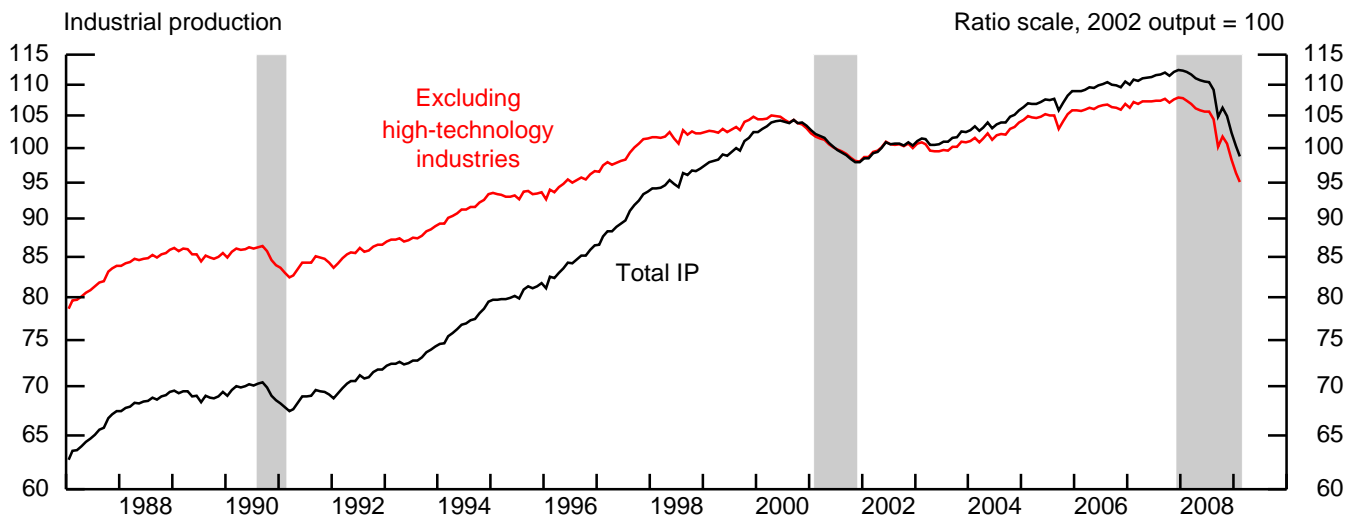
## 2. Manufacturing industrial production, capacity, and utilization



Notes: The shaded areas are periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP. 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.



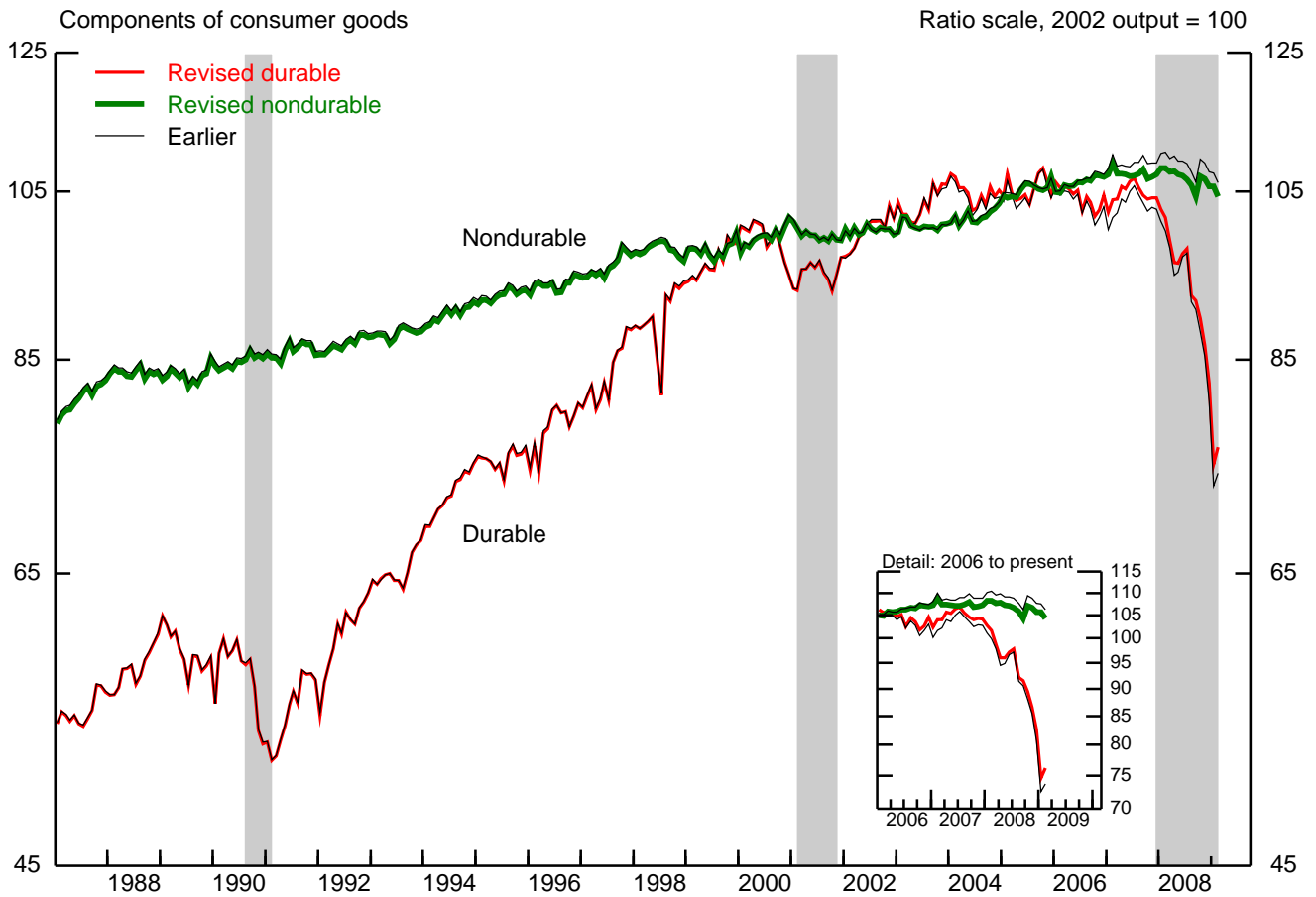
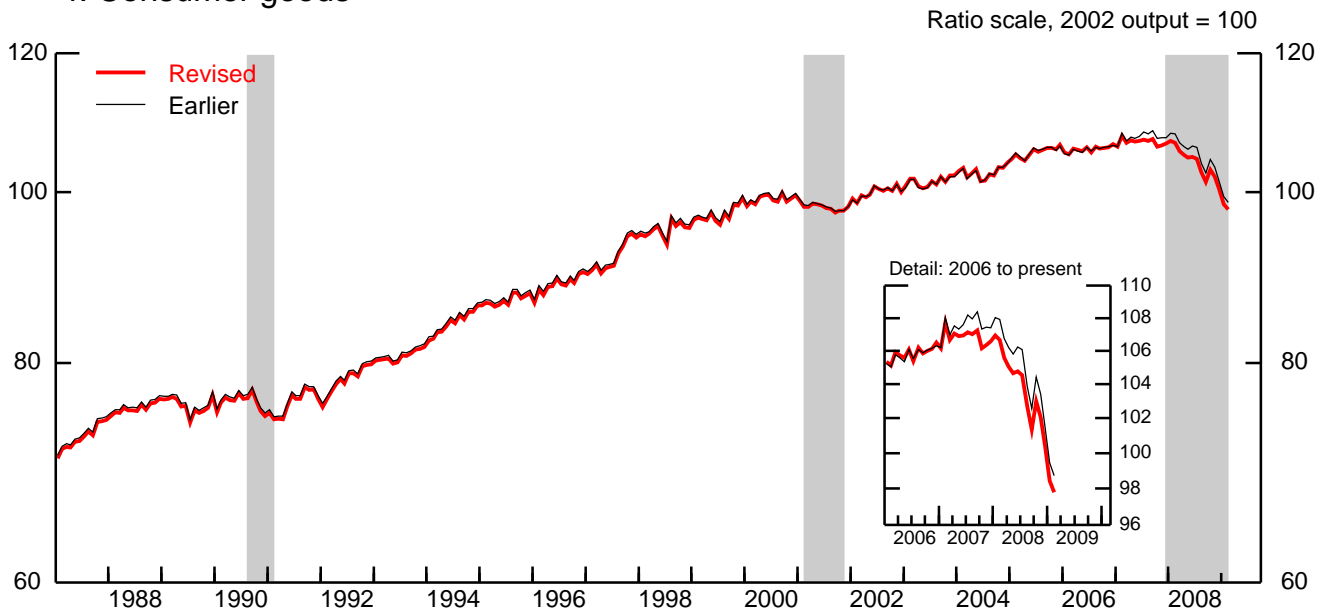
### 3. Industrial production and capacity utilization



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

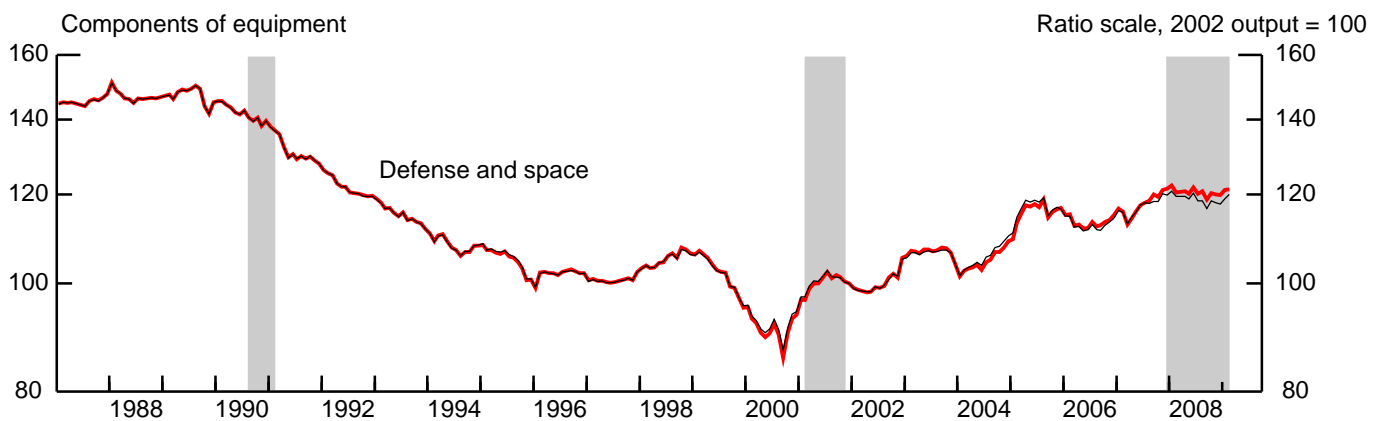
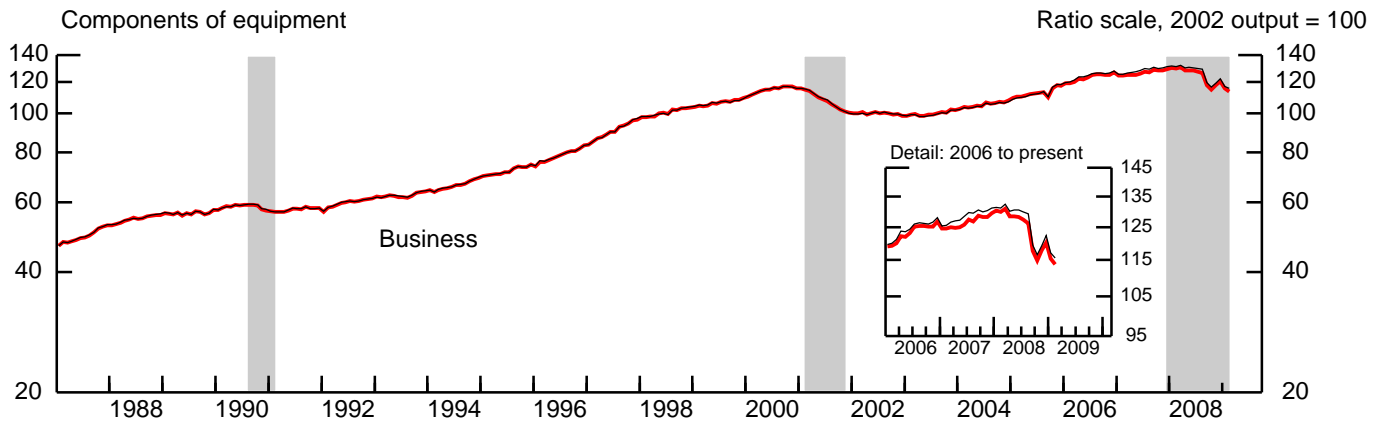
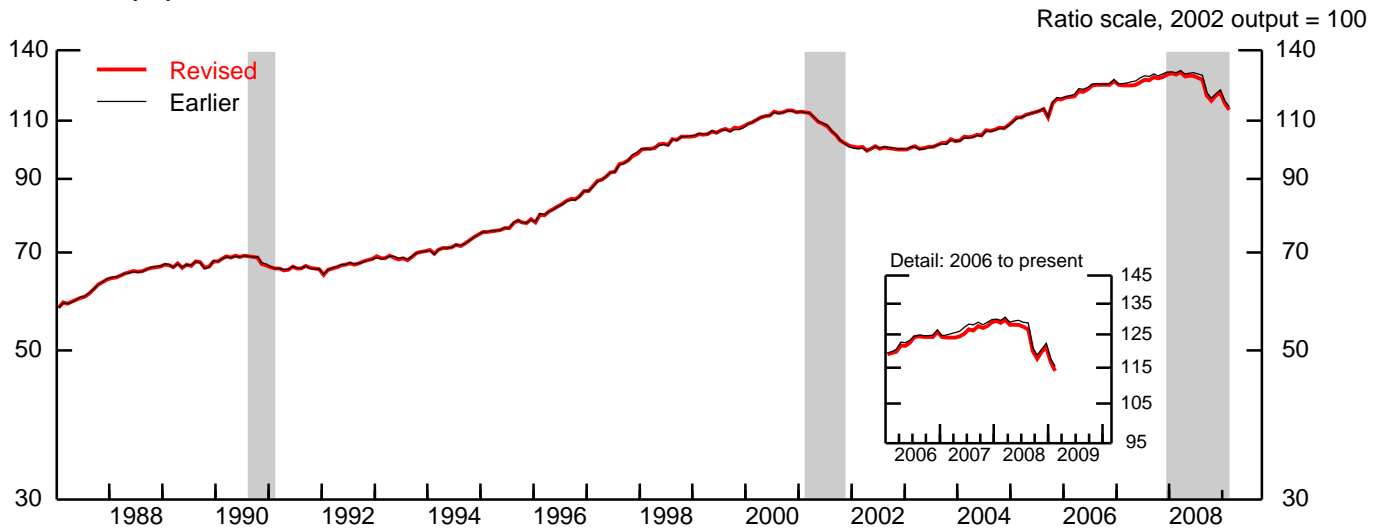
The shaded areas are periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

#### 4. Consumer goods



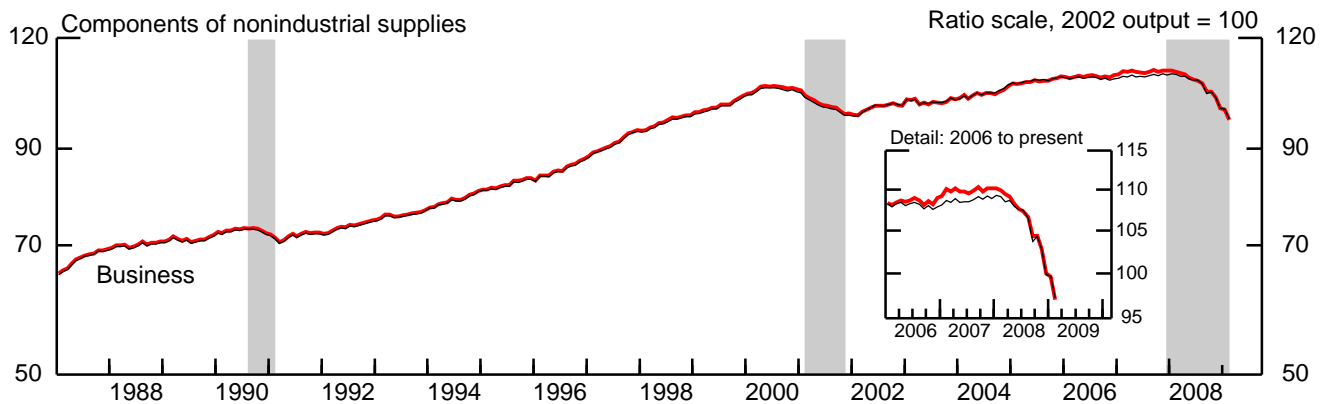
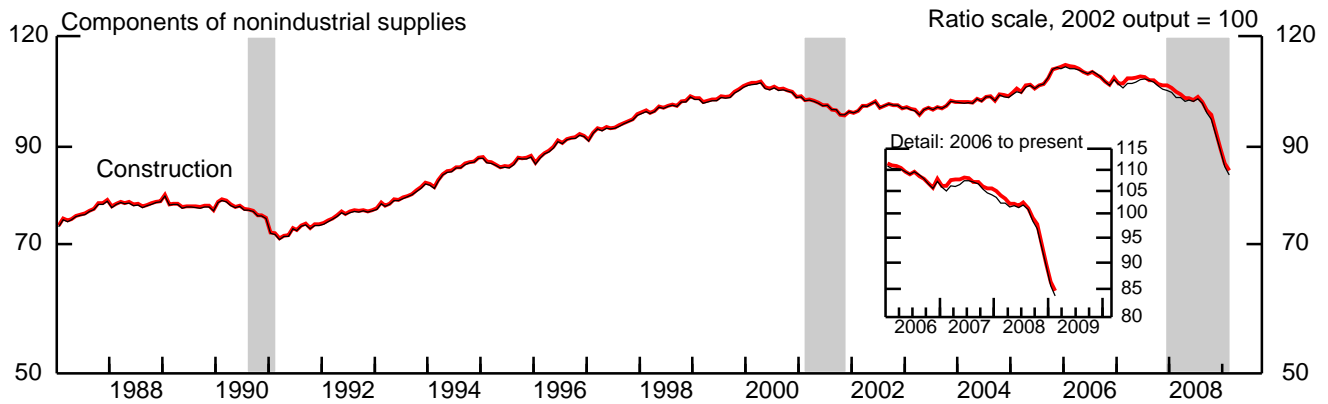
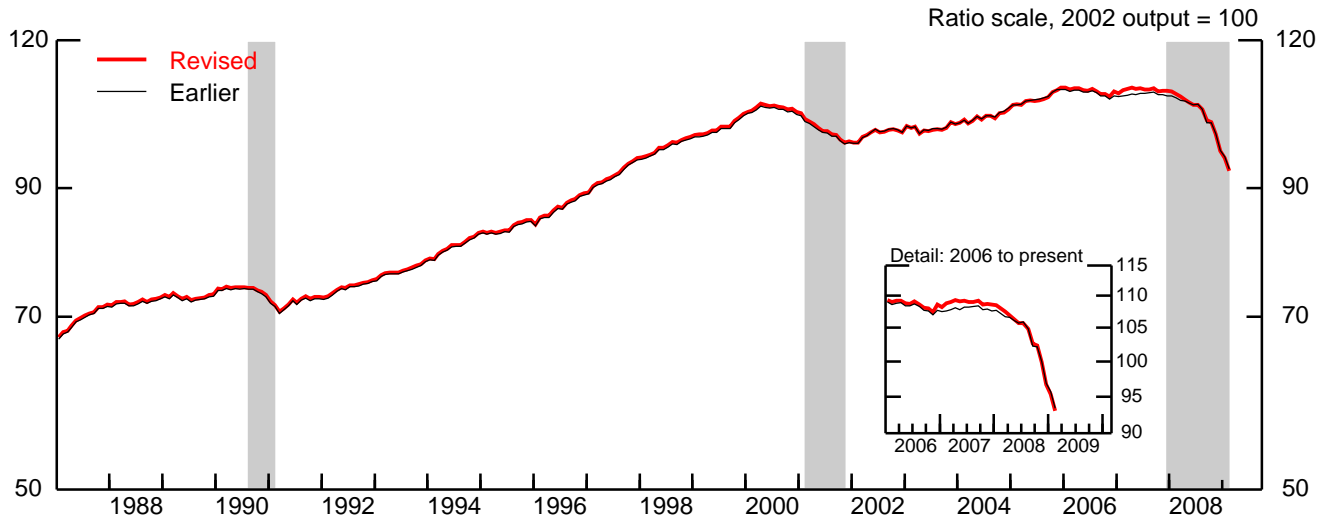
Note: The shaded areas represent periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

## 5. Equipment, total



Note: The shaded areas represent periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

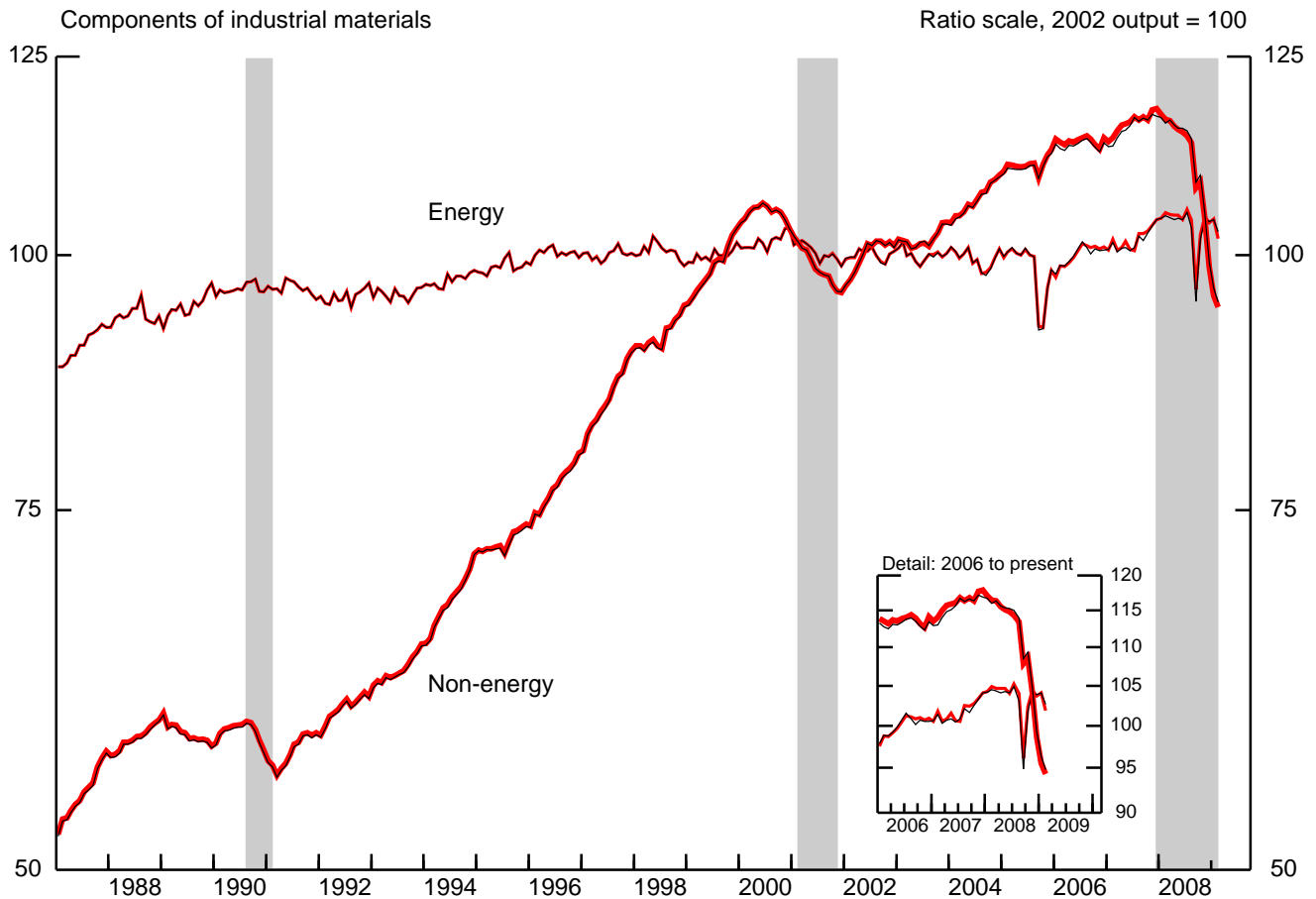
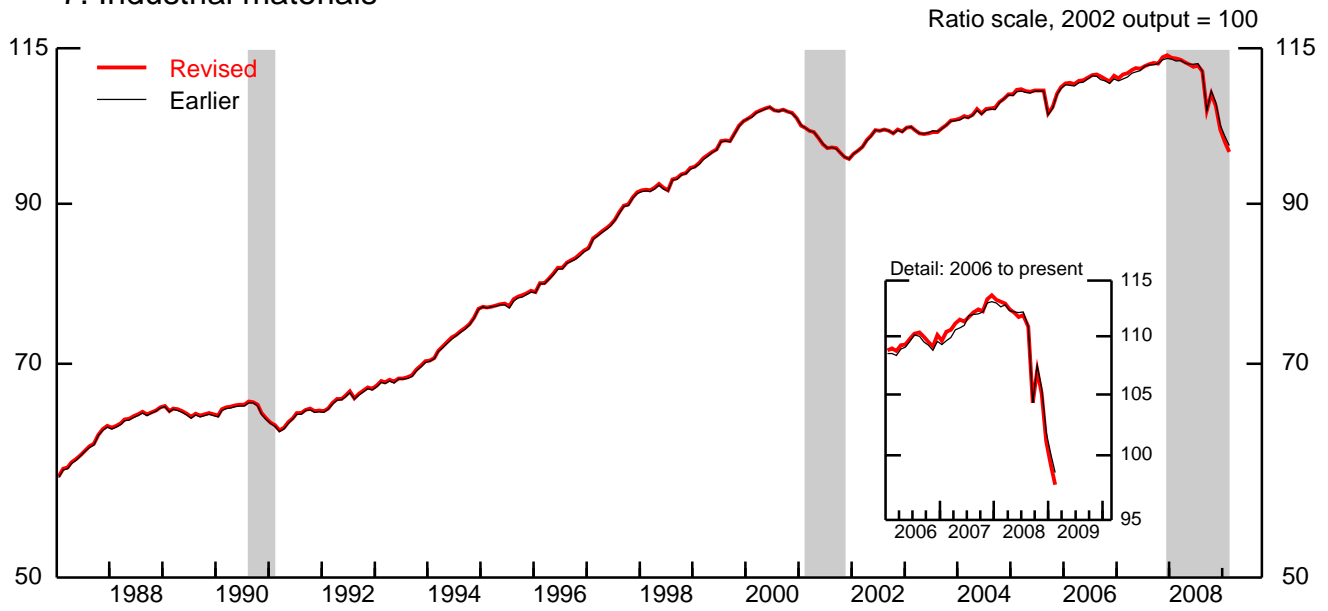
## 6. Nonindustrial supplies



Note: The shaded areas represent periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

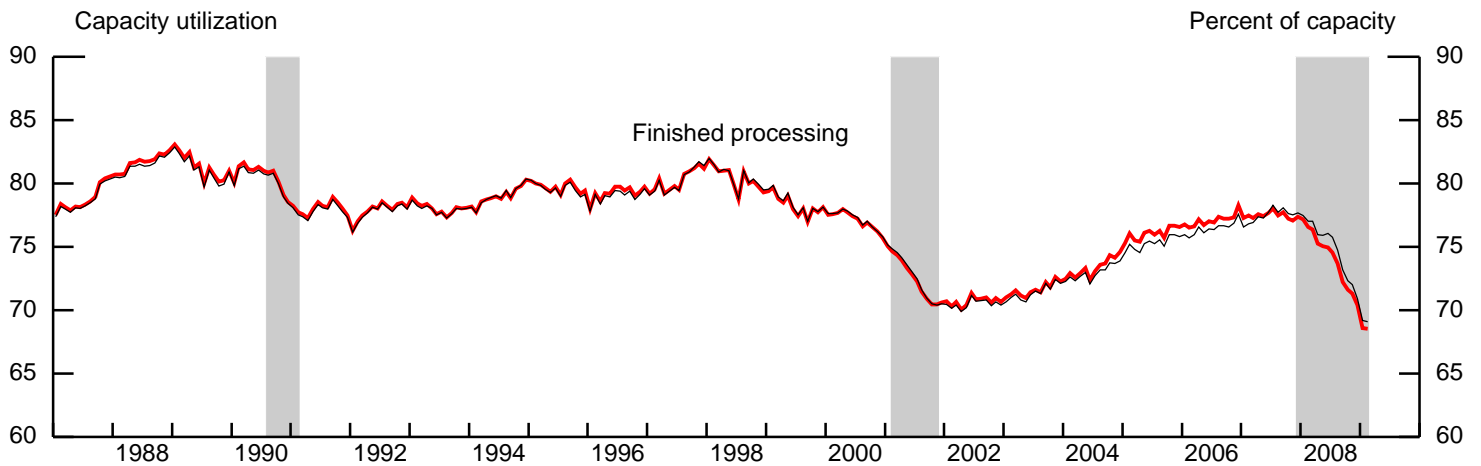
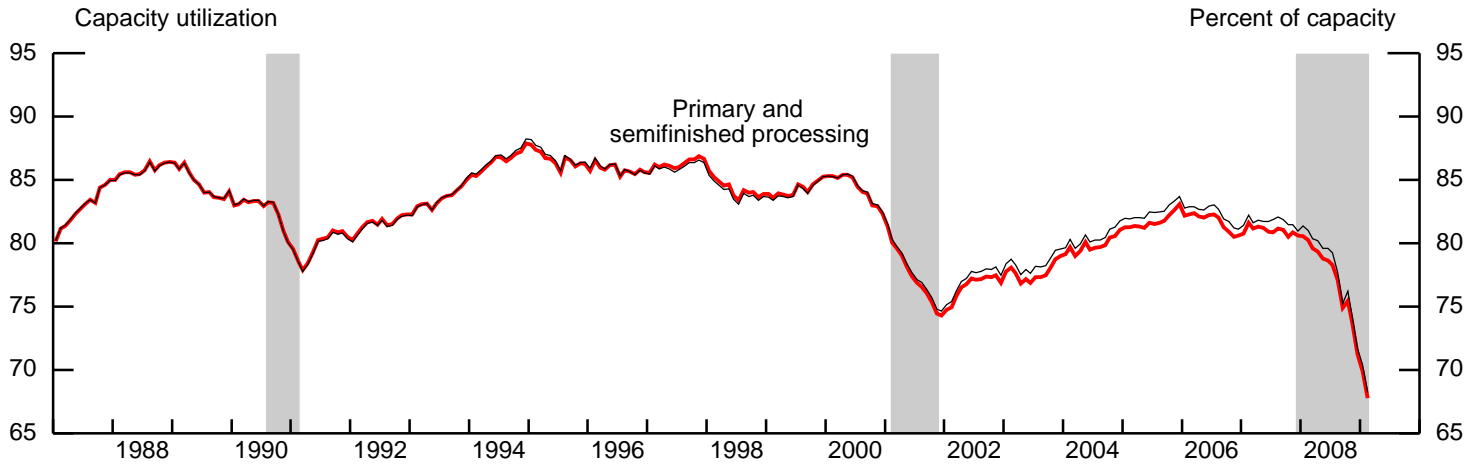
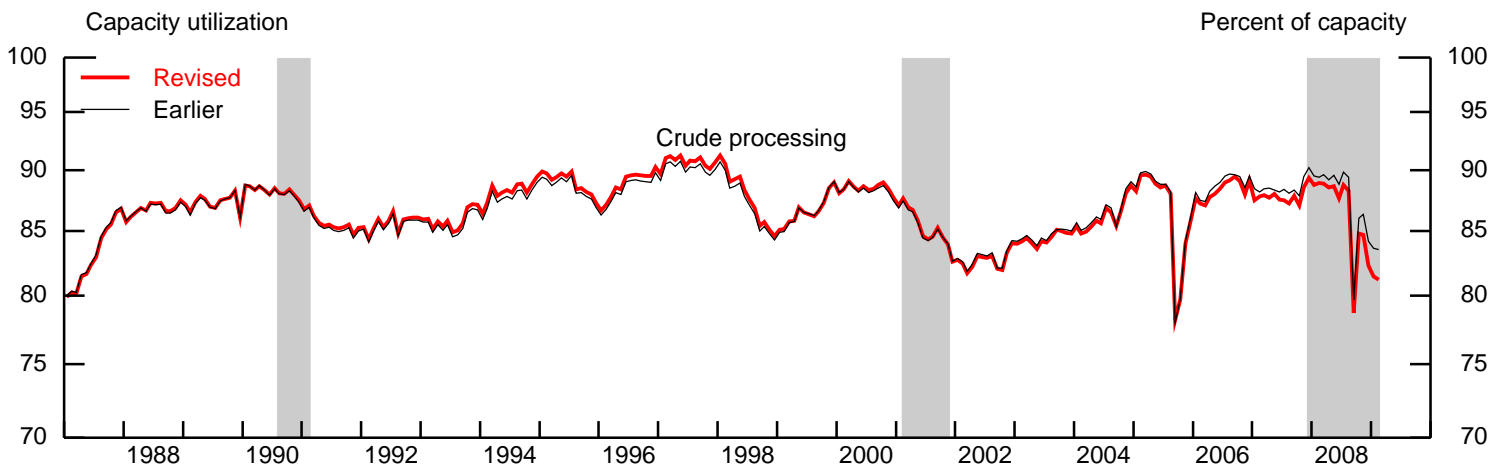


## 7. Industrial materials



Note: The shaded areas represent periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

## 8. Capacity utilization by stage of process



Note: The shaded areas are periods of business recession as defined by the NBER. The last shaded area begins with the peak as defined by the NBER and ends at the trough of a 3 month moving average of manufacturing IP.

**Table 1A**  
**INDUSTRIAL PRODUCTION: Total**  
 Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>1</sup>
<b>IP (percent change)</b>																	
1979	-7	.6	.3	-1.1	.8	.0	-2	-7	.1	.6	-.1	.1	1.7	-.6	-1.4	1.5	3.0
1980	.4	.1	-3	-2.0	-2.5	-1.2	-7	.4	1.6	1.3	1.7	.6	1.7	-15.8	-6.3	16.4	-2.5
1981	-6	-5	.5	-6	.7	.5	.7	.0	-6	-7	-1.1	-1.1	.9	1.0	4.3	-8.5	1.3
1982	-1.9	2.0	-7	-9	-7	-4	-4	-9	-4	-8	-3	-7	-7.7	-5.1	-6.0	-7.1	-5.2
1983	1.9	-.6	.8	1.2	.7	.5	1.5	1.1	1.5	.8	.3	.5	4.9	9.2	14.4	10.8	2.8
1984	2.0	.5	.5	.6	.5	.4	.3	.0	-.1	-.1	.4	.1	12.4	6.3	2.8	.4	8.9
1985	-.3	.5	.1	-.2	.1	.1	-.6	.4	-.5	-.4	.3	1.0	1.0	.4	-.7	2.4	1.2
1986	.5	-.7	-.6	.1	.1	-.3	.6	-.1	.2	.5	.5	.9	2.3	-2.4	1.6	4.7	1.0
1987	-.3	1.3	.1	.6	.7	.5	.6	.7	.3	1.5	.5	.5	5.5	7.0	7.3	10.2	5.2
1988	.0	.4	.2	.5	-.1	.2	.2	.5	-.3	.5	.2	.4	3.6	3.6	2.1	2.9	5.2
1989	.2	-.4	.3	.0	-.7	.0	-.9	.9	-.3	-.1	.3	.6	1.6	-1.7	-2.4	1.8	.9
1990	-.5	-.9	.5	-.1	.2	.3	-.1	.2	.2	-.7	-1.2	-.7	3.1	2.8	1.2	-6.1	1.0
1991	-.5	-.6	-.5	.2	1.0	1.0	.0	.1	.9	-.2	-.1	-.4	-7.4	2.6	5.5	.9	-1.6
1992	-.6	.8	.8	.7	.4	.0	.8	-.5	.2	.7	.4	.0	-.5	7.2	2.9	4.0	2.8
1993	.5	.3	.0	.3	-.4	.2	.4	.0	.4	.7	.4	.5	3.6	.9	2.1	6.0	3.3
1994	.4	.0	1.1	.5	.6	.7	.2	.5	.2	.9	.6	1.1	5.2	7.5	5.1	8.1	5.3
1995	.3	.0	.2	.0	.2	.3	-.4	1.4	.4	-.2	.3	.4	5.1	1.2	3.9	3.4	4.8
1996	-.7	1.7	-.2	.8	.6	.9	-.1	.6	.6	.0	.8	.6	2.9	8.1	5.4	5.6	4.4
1997	.1	1.2	.8	.0	.7	.5	.5	1.4	.9	.7	.9	.4	7.9	6.4	9.6	10.4	7.3
1998	.5	.0	.1	.4	.7	-.6	-.4	2.1	-.3	.7	-.1	.3	4.4	3.2	2.9	5.1	5.9
1999	.5	.4	.2	.2	.7	-.2	.6	.5	-.3	1.4	.6	.8	4.4	3.7	4.1	8.1	4.3
2000	.0	.4	.4	.6	.2	.1	-.2	-.2	.5	-.4	.0	-.4	4.8	4.9	-.3	-1.2	4.2
2001	-.7	-.6	-.3	-.3	-.7	-.6	-.4	-.4	-.3	-.6	-.5	.0	-5.7	-5.3	-5.7	-5.0	-3.4
2002	.5	.0	.8	.3	.5	.9	-.3	.1	.1	-.3	.4	-.5	2.5	5.9	2.1	-.4	-.1
2003	.7	.3	-.1	-.8	.0	.1	.4	-.1	.6	.1	.9	-.1	2.9	-3.0	2.6	4.1	1.3
2004	.3	.5	-.6	.5	.7	-.9	.7	.2	.0	.9	.2	.7	2.8	1.8	1.9	5.7	2.5
2005	.4	.6	-.1	.0	.3	.4	-.1	.2	-1.7	1.1	1.1	.6	5.7	1.7	-.7	4.0	3.3
2006	.0	.0	.2	.4	-.1	.4	.2	.2	-.3	-.1	-.2	.8	3.6	2.2	2.0	-.6	2.3
2007	-.5	.8	-.2	.4	.1	.0	.3	.1	.4	-.5	.6	.3	1.8	2.4	2.1	.8	1.5
2008	-.1	-.3	-.4	-.6	-.3	-.2	-.1	-.1.1	-.4.0	1.4	-1.3	-.2.4	.2	-.4.6	-.9.0	-12.7	-2.2
2009	-2.0	-1.5															
<b>IP (2002=100)</b>																	
1979	57.6	57.9	58.1	57.5	57.9	57.9	57.8	57.4	57.5	57.8	57.8	57.8	57.9	57.8	57.6	57.8	57.7
1980	58.0	58.1	57.9	56.8	55.3	54.6	54.3	54.5	55.3	56.1	57.0	57.3	58.0	55.6	54.7	56.8	56.3
1981	57.0	56.7	57.1	56.7	57.1	57.4	57.8	57.8	57.4	57.0	56.4	55.8	56.9	57.1	57.7	56.4	57.0
1982	54.7	55.8	55.4	54.9	54.5	54.3	54.1	53.6	53.4	53.0	52.8	52.4	55.3	54.6	53.7	52.7	54.1
1983	53.4	53.1	53.6	54.2	54.6	54.9	55.7	56.4	57.2	57.7	57.9	58.1	53.4	54.6	56.4	57.9	55.6
1984	59.3	59.6	59.9	60.3	60.6	60.8	60.9	61.0	60.9	60.8	61.1	61.1	59.6	60.5	60.9	61.0	60.5
1985	60.9	61.2	61.3	61.2	61.2	61.3	60.9	61.1	61.4	61.1	61.3	62.0	61.2	61.2	61.1	61.5	61.3
1986	62.3	61.8	61.4	61.5	61.6	61.4	61.7	61.6	61.8	62.0	62.3	62.9	61.8	61.5	61.7	62.4	61.9
1987	62.7	63.5	63.6	64.0	64.4	64.7	65.1	65.6	65.8	66.8	67.1	67.4	63.3	64.4	65.5	67.1	65.1
1988	67.5	67.7	67.9	68.3	68.2	68.4	68.5	68.8	68.6	69.0	69.1	69.4	67.7	68.3	68.6	69.1	68.4
1989	69.6	69.3	69.4	69.4	68.9	69.0	68.3	69.0	68.8	68.7	68.9	69.4	69.4	69.1	68.7	69.0	69.1
1990	69.0	69.6	70.0	69.9	70.0	70.2	70.1	70.2	70.4	69.9	69.0	68.6	69.5	70.0	70.2	69.2	69.7
1991	68.2	67.8	67.5	67.6	68.3	68.9	68.9	69.0	69.6	69.5	69.4	69.1	67.8	68.3	69.2	69.3	68.7
1992	68.7	69.2	69.8	70.3	70.6	70.6	71.2	70.8	71.0	71.5	71.8	71.8	69.3	70.5	71.0	71.7	70.6
1993	72.2	72.4	72.4	72.6	72.3	72.5	72.8	72.8	73.1	73.6	73.9	74.3	72.3	72.5	72.9	73.9	72.9
1994	74.6	74.6	75.4	75.8	76.2	76.7	76.9	77.3	77.4	78.1	78.6	79.4	74.9	76.2	77.2	78.7	76.8
1995	79.7	79.7	79.8	79.7	79.9	80.1	79.9	80.9	81.3	81.1	81.3	81.7	79.7	79.9	80.7	81.4	80.4
1996	81.1	82.4	82.3	83.0	83.5	84.2	84.2	84.7	85.1	85.2	85.9	86.4	82.0	83.6	84.7	85.8	84.0
1997	86.5	87.6	88.3	88.3	88.9	89.3	89.8	91.0	91.9	92.5	93.3	93.7	87.5	88.8	90.9	93.2	90.1
1998	94.1	94.2	94.2	94.6	95.3	94.8	94.4	96.3	96.1	96.7	96.6	97.0	94.2	94.9	95.6	96.8	95.4
1999	97.5	97.9	98.1	98.3	99.0	98.8	99.5	100.0	99.7	101.0	101.6	102.4	97.8	98.7	99.7	101.7	99.5
2000	102.4	102.9	103.3	103.9	104.1	104.3	104.0	103.8	104.3	103.9	103.9	103.5	102.9	104.1	104.0	103.7	103.7
2001	102.7	102.1	101.8	101.5	100.8	100.1	99.7	99.3	99.0	98.4	97.9	97.9	102.2	100.8	99.3	98.1	100.1
2002	98.4	98.4	99.2	99.5	100.0	100.9	100.6	100.6	100.7	100.4	100.9	100.4	98.7	100.1	100.6	100.6	100.0
2003	101.1	101.4	101.3	100.5	100.5	100.6	101.0	100.9	101.5	101.6	102.5	102.4	101.3	100.5	101.2	102.2	101.3
2004	102.7	103.3	102.7	103.1	103.9	103.0	103.7	103.9	103.9	104.8	105.1	105.8	102.9	103.3	103.8	105.3	103.8
2005	106.3	107.0	106.9	106.8	107.1	107.5	107.5	107.7	105.8	107.0	108.2	108.9	106.7	107.2	107.0	108.0	107.2
2006	108.9	108.9	109.1	109.5	109.4	109.9	110.1	110.3	110.0	109.8	109.6	110.5	109.0	109.6	110.1	110.0	109.7
2007	109.9	110.8	110.6	111.1	111.1	111.2	111.5	111.6	112.0	111.4	112.1	112.4	110.5	111.1	111.7	112.0	111.3
2008	112.3	112.0	111.6	111.0	110.7	110.4	110.4	109.2	104.8	106.3	104.9	102.4	112.0	110.7	108.1	104.5	108.8
2009	100.3	98.8															

NOTE Estimates from October 2008 through February 2009 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.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>Capacity (percent of 2002 output)</b>																	
1979	67.1	67.3	67.4	67.6	67.8	67.9	68.1	68.2	68.4	68.5	68.6	68.8	67.3	67.8	68.2	68.6	68.0
1980	68.9	69.1	69.2	69.3	69.5	69.6	69.8	69.9	70.1	70.2	70.4	70.5	69.1	69.5	69.9	70.4	69.7
1981	70.7	70.9	71.0	71.2	71.4	71.5	71.7	71.9	72.1	72.2	72.4	72.6	70.9	71.4	71.9	72.4	71.6
1982	72.7	72.9	73.0	73.2	73.3	73.4	73.5	73.6	73.7	73.8	73.9	73.9	72.9	73.3	73.6	73.9	73.4
1983	74.0	74.0	74.0	74.1	74.1	74.1	74.1	74.2	74.2	74.2	74.3	74.4	74.0	74.1	74.2	74.3	74.1
1984	74.5	74.5	74.7	74.8	74.9	75.1	75.2	75.4	75.6	75.7	75.9	76.1	74.6	74.9	75.4	75.9	75.2
1985	76.3	76.5	76.7	76.9	77.1	77.2	77.4	77.6	77.7	77.8	78.0	78.1	76.5	77.1	77.6	78.0	77.3
1986	78.2	78.3	78.4	78.5	78.5	78.6	78.7	78.8	78.9	79.0	79.1	79.2	78.3	78.5	78.8	79.1	78.7
1987	79.3	79.5	79.6	79.8	79.9	80.1	80.2	80.4	80.5	80.6	80.7	80.8	79.5	79.9	80.4	80.7	80.1
1988	80.9	81.0	81.1	81.1	81.2	81.2	81.2	81.3	81.4	81.4	81.5	81.6	81.0	81.2	81.3	81.5	81.2
1989	81.7	81.8	82.0	82.1	82.3	82.4	82.6	82.8	82.9	83.1	83.3	83.5	81.8	82.3	82.8	83.3	82.5
1990	83.7	83.8	84.0	84.2	84.3	84.5	84.6	84.8	84.9	85.1	85.2	85.3	83.8	84.3	84.8	85.2	84.5
1991	85.5	85.6	85.7	85.8	85.9	86.0	86.1	86.2	86.3	86.5	86.6	86.7	85.6	85.9	86.2	86.6	86.1
1992	86.8	87.0	87.1	87.3	87.5	87.7	87.9	88.0	88.2	88.4	88.5	88.7	87.0	87.5	88.0	88.5	87.8
1993	88.8	89.0	89.1	89.2	89.3	89.4	89.5	89.6	89.7	89.9	90.1	90.2	89.0	89.3	89.6	90.1	89.5
1994	90.4	90.6	90.9	91.1	91.4	91.7	92.0	92.3	92.6	92.9	93.2	93.5	90.6	91.4	92.3	93.2	91.9
1995	93.9	94.2	94.5	94.8	95.1	95.5	95.8	96.2	96.5	96.9	97.3	97.7	94.2	95.1	96.2	97.3	95.7
1996	98.1	98.6	99.0	99.5	99.9	100.4	100.9	101.4	101.8	102.3	102.8	103.3	98.6	99.9	101.4	102.8	100.7
1997	103.8	104.3	104.9	105.4	106.0	106.6	107.2	107.8	108.5	109.1	109.8	110.5	104.3	106.0	107.8	109.8	107.0
1998	111.2	112.0	112.7	113.4	114.1	114.7	115.4	116.0	116.6	117.1	117.7	118.2	112.0	114.1	116.0	117.7	114.9
1999	118.8	119.3	119.8	120.3	120.7	121.2	121.7	122.1	122.6	123.1	123.5	124.0	119.3	120.7	122.1	123.5	121.4
2000	124.5	124.9	125.4	125.8	126.2	126.7	127.1	127.5	127.9	128.3	128.7	129.2	124.9	126.2	127.5	128.7	126.9
2001	129.6	129.9	130.3	130.7	131.1	131.4	131.8	132.1	132.4	132.7	133.0	133.3	129.9	131.1	132.1	133.0	131.5
2002	133.5	133.7	133.9	134.0	134.1	134.2	134.2	134.2	134.2	134.2	134.1	134.1	133.7	134.1	134.2	134.1	134.0
2003	134.0	133.9	133.8	133.8	133.7	133.6	133.6	133.6	133.5	133.5	133.5	133.5	133.9	133.7	133.6	133.5	133.7
2004	133.5	133.5	133.4	133.4	133.4	133.4	133.3	133.3	133.3	133.3	133.3	133.3	133.5	133.4	133.3	133.3	133.4
2005	133.3	133.4	133.4	133.5	133.6	133.7	133.8	134.0	134.1	134.3	134.4	134.6	133.4	133.6	134.0	134.4	133.8
2006	134.7	134.9	135.0	135.2	135.4	135.5	135.7	135.9	136.1	136.3	136.5	136.7	134.9	135.4	135.9	136.5	135.7
2007	136.9	137.1	137.3	137.6	137.8	138.0	138.3	138.5	138.7	139.0	139.2	139.4	137.1	137.8	138.5	139.2	138.1
2008	139.6	139.8	139.9	140.1	140.2	140.4	140.5	140.6	140.7	140.7	140.7	140.7	139.8	140.2	140.6	140.7	140.3
2009	140.7	140.7															
<b>Utilization (percent)</b>																	
1979	85.8	86.1	86.1	85.0	85.5	85.3	84.9	84.1	84.1	84.4	84.1	84.0	86.0	85.3	84.4	84.2	85.0
1980	84.2	84.1	83.7	81.9	79.7	78.5	77.8	77.9	79.0	79.8	81.0	81.3	84.0	80.0	78.2	80.7	80.7
1981	80.7	80.1	80.3	79.7	80.0	80.2	80.6	80.4	79.7	79.0	77.9	76.9	80.3	80.0	80.2	77.9	79.6
1982	75.2	76.5	75.8	75.0	74.4	73.9	73.6	72.8	72.5	71.8	71.5	70.9	75.9	74.4	72.9	71.4	73.7
1983	72.2	71.8	72.3	73.2	73.7	74.1	75.2	76.0	77.1	77.7	77.9	78.2	72.1	73.6	76.1	77.9	74.9
1984	79.7	80.0	80.2	80.6	80.8	81.0	81.0	80.9	80.6	80.3	80.4	80.3	80.0	80.8	80.8	80.3	80.5
1985	79.9	80.0	79.9	79.6	79.5	79.3	78.7	78.8	79.0	78.5	78.7	79.4	79.9	79.5	78.8	78.9	79.3
1986	79.6	79.0	78.4	78.3	78.4	78.1	78.4	78.2	78.3	78.6	78.8	79.4	79.0	78.3	78.3	78.9	78.6
1987	79.0	79.9	79.9	80.2	80.6	80.8	81.2	81.6	81.7	82.8	83.1	83.4	79.6	80.5	81.5	83.1	81.2
1988	83.4	83.6	83.8	84.2	84.1	84.2	84.3	84.7	84.3	84.7	84.8	85.0	83.6	84.2	84.4	84.8	84.3
1989	85.1	84.6	84.7	84.6	83.8	83.7	82.8	83.3	83.0	82.7	82.8	83.1	84.8	84.0	83.0	82.9	83.7
1990	82.5	83.1	83.3	83.0	83.0	83.1	82.8	82.9	82.9	82.2	81.0	80.3	83.0	83.1	82.9	81.2	82.5
1991	79.9	79.2	78.7	78.8	79.5	80.1	80.0	80.0	80.6	80.4	80.2	79.8	79.3	79.5	80.2	80.1	79.8
1992	79.1	79.6	80.1	80.5	80.6	80.5	81.0	80.4	80.5	80.9	81.1	80.9	79.6	80.6	80.6	81.0	80.4
1993	81.2	81.4	81.3	81.4	81.0	81.1	81.3	81.2	81.4	81.9	82.1	82.3	81.3	81.2	81.3	82.1	81.5
1994	82.5	82.3	83.0	83.2	83.4	83.7	83.6	83.7	83.6	84.1	84.3	84.9	82.6	83.4	83.6	84.4	83.5
1995	84.9	84.6	84.4	84.1	84.0	83.9	83.3	84.2	84.2	83.7	83.6	83.6	84.6	84.0	83.9	83.6	84.0
1996	82.6	83.6	83.1	83.4	83.5	83.9	83.4	83.5	83.6	83.2	83.5	83.7	83.1	83.6	83.5	83.5	83.4
1997	83.3	83.9	84.2	83.8	83.9	83.8	83.8	84.4	84.7	84.7	85.0	84.7	83.8	83.8	84.3	84.8	84.2
1998	84.6	84.1	83.6	83.5	83.6	82.6	81.8	83.1	82.4	82.6	82.1	82.0	84.1	83.2	82.4	82.2	83.0
1999	82.1	82.1	81.9	81.7	82.0	81.5	81.8	81.9	81.3	82.1	82.2	82.6	82.0	81.8	81.6	82.3	81.9
2000	82.3	82.4	82.4	82.6	82.5	82.3	81.8	81.4	81.5	80.9	80.7	80.1	82.4	82.5	81.6	80.6	81.7
2001	79.3	78.6	78.1	77.7	76.9	76.2	75.7	75.2	74.7	74.1	73.6	73.5	78.7	76.9	75.2	73.7	76.1
2002	73.7	73.6	74.1	74.2	74.5	75.2	74.9	75.0	75.0	74.9	75.2	74.9	73.8	74.7	75.0	75.0	74.6
2003	75.5	75.8	75.7	75.1	75.2	75.3	75.6	75.6	76.0	76.1	76.8	76.7	75.6	75.2	75.7	76.5	75.8
2004	77.0	77.4	76.9	77.3	77.9	77.2	77.7	77.9	77.9	78.7	78.8	79.4	77.1	77.5	77.9	79.0	77.9
2005	79.7	80.2	80.1	80.0	80.2	80.4	80.3	80.4	78.9	79.7	80.5	80.9	80.0	80.2	79.9	80.4	80.1
2006	80.9	80.8	80.8	81.0	80.8	81.1	81.1	81.2	80.8	80.6	80.3	80.9	80.8	81.0	81.1	80.6	80.9
2007	80.3	80.8	80.6	80.7	80.7	80.6	80.7	80.6	80.7	80.2	80.5	80.6	80.6	80.6	80.7	80.4	80.6
2008	80.5	80.2	79.8	79.2	78.9	78.7	78.6	77.6	74.5	75.5	74.6	72.7	80.1	78.9	76.9	74.3	77.6
2009	71.3	70.2															

NOTE Estimates from October 2008 through February 2009 are subject to further revision in the upcoming monthly releases.



**Table 2**  
**RATES OF CHANGE IN INDUSTRIAL PRODUCTION, MARKET AND INDUSTRY GROUP SUMMARY: 2004–08<sup>1</sup>**

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
<b>Total IP</b>	3.0	2.6	1.8	1.8	-6.6	-1	.0	.1	-3	-5
<b>MARKET GROUPS</b>										
<b>Final products and nonindustrial supplies</b>	2.5	4.4	1.1	.8	-5.8	-1	.0	.0	-5	-4
<b>Consumer goods</b>	1.5	2.5	.1	.2	-4.3	-1	.1	-1	-1.0	-3
<b>Durable</b>	-5	1.2	-3.2	1.1	-17.2	.2	-2	.7	.2	.3
Automotive products	-3.2	-1.5	-5.2	3.2	-22.5	-4	.5	.2	-4	-1
Home electronics	7.4	7.8	8.8	15.3	1.3	4.9	-3.2	-2.7	1.2	3.1
Appliances, furniture, carpeting	1.6	1.5	-5.6	-5.1	-19.9	.0	-1	.5	.9	.7
Miscellaneous goods	2.5	4.4	-7	-1.0	-10.8	.6	-1.2	2.0	.5	-2
<b>Nondurable</b>	2.3	2.9	1.2	-1	-4	-3	.2	-4	-1.3	-3
Non-energy	1.9	3.4	1.6	-9	-1.6	-3	.3	-5	-1.8	.0
Foods and tobacco	2.3	4.0	.0	1.1	-9	.0	.1	-3	-4	.7
Clothing	-13.9	-5.8	-4.8	-5	-6.6	-4.1	-3.7	-5.1	1.4	.8
Chemical products	3.5	4.2	5.8	-4.2	-2.1	-4	1.2	-1.9	-4.2	-1.4
Paper products	.9	-4	.1	-1.8	-3.9	-1.3	.5	2.6	-2.9	.0
Energy	4.0	1.7	-1	1.9	2.8	.0	.0	.1	.0	-6
<b>Business equipment</b>	5.3	9.2	7.4	2.3	-8.5	.1	-1.1	-3	-6	.0
Transit	6.2	15.0	9.2	-1.4	-29.3	-1.0	-9	.1	2.0	-1.7
Information processing	7.0	12.1	10.8	6.6	2.1	.7	-2.6	-1.9	-2.3	2.2
Industrial and other	4.0	5.6	4.8	1.1	-7.5	.0	-4	.4	-6	-8
<b>Defense and space equipment</b>	1.7	8.0	-1.9	5.7	-4	-1.4	1.1	.7	.5	.7
<b>Construction supplies</b>	2.0	7.3	-3.3	-1.0	-11.4	.3	-2	.2	.6	-2
<b>Business supplies</b>	2.9	3.0	.4	1.3	-6.9	-3	.3	.7	.2	-8
<b>Materials</b>	3.7	.4	2.7	3.2	-7.6	.0	.1	.2	-1	-7
<b>Non-energy</b>	5.4	2.6	1.4	3.5	-11.6	.0	.1	.1	.0	-1.0
<b>Durable</b>	5.8	5.9	.4	4.7	-11.5	-3	.5	-7	-7	-1.5
Consumer parts	.0	.6	-5.7	-2.2	-19.6	.0	.1	.1	-2	.2
Equipment parts	10.3	12.7	6.9	10.3	-5.7	-8	1.4	-2.4	-2.1	-3.0
Other	5.0	3.0	-1.8	3.2	-12.9	.0	.1	.1	.1	-9
<b>Nondurable</b>	4.8	-2.6	3.1	1.8	-11.6	.5	-4	1.5	1.3	-2
Textile	-8	.5	-11.5	-6.9	-13.7	.1	.0	.7	2.5	.8
Paper	3.8	-1.0	1.8	-1.4	-10.8	.0	.2	.2	-1	.1
Chemical	9.6	-7.3	6.9	4.3	-15.4	1.0	-1.5	2.1	2.3	-7
<b>Energy</b>	-5	-4.1	5.5	2.5	.1	.0	.0	.3	-2	.1
<b>INDUSTRY GROUPS</b>										
<b>Manufacturing</b>	3.6	3.8	1.2	1.9	-8.5	-1	.1	.1	-4	-6
<b>Manufacturing (NAICS)</b>	31–33	3.7	4.0	1.3	2.0	-8.5	-1	.0	-1	-4
<b>Durable manufacturing</b>		3.8	7.0	1.2	3.2	-10.9	-2	.0	-3	-6
Wood products	321	1.4	11.8	-13.0	-7.5	-20.7	.0	.1	.3	-7
Nonmetallic mineral products	327	4.4	5.5	-3.6	-1.2	-10.3	.0	.1	-1	-2.0
Primary metal	331	8.3	-7	-4.2	4.3	-26.0	.2	.4	.0	.2
Fabricated metal products	332	1.8	6.1	3.3	3.3	-6.9	.0	-1	.1	-1
Machinery	333	5.2	8.3	2.8	-1.0	-10.8	.0	.0	.3	-3
Computer and electronic products	334	9.7	15.3	9.3	11.0	-1.8	-5	.1	-2.9	-2.2
Electrical equip., appliances, and components	335	2.4	1.7	-4	3.3	-2.9	.1	-1	.1	-4
Motor vehicles and parts	3361–3	-1.8	.1	-6.2	-1.9	-23.0	-4	.5	-3	.4
Aerospace and miscellaneous transportation equipment	3364–9	2.9	10.9	5.6	11.1	-12.9	-5	-6	1.1	.1
Furniture and related products	337	3.4	1.6	-1.7	-2.6	-17.8	.0	.0	-1	-9
Miscellaneous	339	1.8	6.4	3.5	2.9	-2.3	.1	-2	.8	1.3
<b>Nondurable manufacturing</b>		3.5	.7	1.4	.8	-6.0	.0	.0	.1	-2
Food, beverage, and tobacco products	311,2	1.3	4.2	.2	1.9	-1.2	.0	.1	-2	-3
Textile and product mills	313,4	.5	-3	-11.4	-7.3	-12.6	.0	-1	.3	.8
Apparel and leather	315,6	-8.9	-1.4	-4	-8	-8.2	.1	-1	.4	1.3
Paper	322	2.9	-5	.5	-2.1	-10.9	.0	.2	.2	.1
Printing and support	323	2.5	.6	2.4	-1.5	-9.6	.1	.1	.4	-2
Petroleum and coal products	324	10.5	-3.7	2.3	.3	.5	.0	.0	.0	.7
Chemical	325	6.6	-1.2	5.1	.7	-9.5	.1	.0	.1	-7
Plastics and rubber products	326	.9	2.5	-3.0	4.5	-11.9	.0	-1	.7	.1
<b>Other manufacturing (non-NAICS)</b>	<b>1133,5111</b>	1.4	-3	-1.2	-1.8	-8.7	-7	.2	3.3	-5
<b>Mining</b>	<b>21</b>	-9	-4.9	8.7	.3	.7	.0	.0	.5	.1
<b>Utilities</b>	<b>2211,2</b>	1.8	2.0	-6	3.1	-4	.0	.0	.1	.1
Electric	2211	2.4	3.5	-1.1	3.5	-1.5	.1	.1	.1	.2
Natural gas	2212	-1.2	-4.8	1.4	1.6	4.8	-1	-2	-1	-4

NOTE. Estimates for the fourth quarter of 2008 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.

**Table 3**  
**RATES OF CHANGE IN INDUSTRIAL PRODUCTION, SPECIAL AGGREGATES AND SELECTED DETAIL: 2004–08<sup>1</sup>**

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
<b>Total industry</b>	3.0	2.6	1.8	1.8	-6.6	-.1	.0	.1	-.3	-.5
<b>Energy</b>	1.3	-1.8	3.9	2.1	1.0	.0	.0	.2	-.1	-.1
Consumer products	4.0	1.7	-.1	1.9	2.8	.0	.0	.1	.0	-.6
Commercial products	4.5	.4	1.2	1.9	.1	.0	.0	.0	-.1	.1
Oil and gas well drilling	213111	8.4	11.9	14.9	-.7	6.9	.0	.0	.1	-.1
Converted fuel		2.3	-2.6	2.6	5.7	-4.3	.0	.0	.0	.4
Primary energy		-1.7	-4.7	6.8	1.2	1.8	.0	.0	.4	-.4
<b>Non-energy</b>	3.4	4.0	1.2	1.7	-9.1	-.1	.0	.1	-.4	-.5
<b>Selected high-technology industries</b>	8.6	22.6	13.1	18.2	-5.6	-.7	.2	-4.2	-4.1	-5.2
Computers and peripheral equipment	3341	3.5	25.3	22.1	24.2	-12.1	1.8	-3.6	4.2	7.4
Communications equipment	3342	2.6	8.9	12.4	6.6	10.7	1.9	-4.8	-8.2	-14.0
Semiconductors and related electronic components	334412-9	13.8	28.4	9.8	22.3	-12.4	-3.5	4.3	-5.7	-3.7
<b>Excluding selected high-technology industries</b>	3.0	2.7	.4	.7	-9.4	-.1	.1	.3	-.1	-.2
<b>Motor vehicles and parts</b>	3361-3	-1.8	.1	-6.2	-1.9	-23.0	-.4	.5	-.3	.4
Motor vehicles	3361	-3.4	-1.4	-7.6	-1.9	-30.3	-.7	.9	-.6	.8
Motor vehicle parts	3363	-1.0	-.6	-4.3	.3	-14.3	-.2	.0	.0	-.3
<b>Excluding motor vehicles and parts</b>	3.5	3.0	.9	.9	-8.4	.0	.0	.4	-.1	-.2
Consumer goods	2.1	3.2	.8	-1.1	-4.0	-.2	.1	-.2	-1.4	.0
Business equipment	5.1	6.6	6.2	2.3	-8.9	-.1	-.7	.4	-.5	-.1
Construction supplies	1.9	7.4	-3.4	-1.0	-11.6	.2	-.2	.3	.9	-.1
Business supplies	1.9	2.7	-.6	.4	-9.7	-.3	.3	1.1	.5	-.8
Materials	5.3	.5	1.4	2.4	-11.0	.3	-.1	.7	.6	-.3
<b>Measures excluding selected high-technology industries</b>										
Total industry	2.7	1.6	1.2	1.1	-6.7	-.1	.0	.3	-.1	-.3
Manufacturing <sup>2</sup>	3.2	2.5	.4	.9	-8.7	-.1	.1	.3	-.2	-.3
Durable	3.1	4.8	-.4	1.4	-11.6	-.1	.1	.1	-.2	.0
<b>Measures excluding motor vehicles and parts</b>										
Total industry	3.4	2.8	2.3	2.0	-5.8	-.1	.0	.1	-.4	-.5
Manufacturing <sup>2</sup>	4.1	4.0	1.8	2.1	-7.5	-.1	.0	.1	-.5	-.6
Durable	4.9	8.1	2.5	4.0	-9.1	-.1	.0	-.4	-.8	-.6
<b>Measures excluding selected high-technology industries and motor vehicles and parts</b>										
Total industry	3.1	1.7	1.7	1.2	-5.8	.0	.0	.3	-.2	-.3
Manufacturing <sup>2</sup>	3.7	2.7	1.0	1.1	-7.7	.0	.0	.3	-.2	-.3
<b>Measure of non-energy material inputs to finished processors</b>										
Finished processors	5.6	6.2	1.7	4.0	-10.5	-.4	.7	-1.1	-1.2	-1.6
Primary and semifinished processors	5.3	-.2	1.3	3.2	-12.3	-.4	-.3	1.0	.9	-.6
<b>STAGE-OF-PROCESS GROUPS</b>										
Crude	2.6	-6.5	7.6	1.2	-4.6	.0	.0	.3	-.5	-.3
Primary and semifinished	3.5	3.5	-.8	2.5	-7.9	-.2	.2	.2	-.1	-1.0
Finished	2.5	5.2	3.3	1.1	-5.7	.1	-.2	-.1	-.6	.1

NOTE. Estimates for the fourth quarter of 2008 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.

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****ANNUAL RATES OF CHANGE FOR INDUSTRIAL PRODUCTION: 2004–08<sup>1</sup>**

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	2004	2005	2006	2007	2008	2004	2005	2006	2007	2008
<b>Total IP</b>	2.5	3.3	2.3	1.5	-2.2	.0	.0	.1	-.2	-.4
<b>MARKET GROUPS</b>										
<b>Consumer goods</b>	1.2	2.7	.4	1.0	-2.7	-.1	-.1	.1	-.7	-.5
Durable	1.4	.5	-1.0	.4	-9.9	.3	.0	.3	.7	-.1
Nondurable	1.2	3.4	.9	1.1	-.5	-.2	-.1	.1	-1.1	-.5
Business equipment	5.3	7.0	9.4	2.7	-1.1	.1	-.3	-1.0	-.7	.2
Defense and space equipment	-1.8	10.6	-2.1	3.7	2.5	-1.0	.0	1.2	.0	1.2
Construction supplies	2.3	4.5	2.3	-1.9	-6.3	.1	.0	.0	.6	-.1
Business supplies	2.1	3.3	1.2	1.3	-2.9	-.1	-.1	.6	.7	-.7
<b>Materials</b>	3.1	2.4	2.4	2.0	-1.8	.1	.1	.1	.1	-.4
Non-energy	4.5	4.0	2.7	2.1	-3.6	.2	.1	.2	.0	-.7
Energy	-.4	-1.2	1.7	1.8	1.8	.0	.0	.0	.2	.2
<b>INDUSTRY GROUPS</b>										
<b>Manufacturing<sup>2</sup></b>	3.0	4.0	2.5	1.4	-3.1	.0	-.1	.1	-.3	-.5
Manufacturing (NAICS)	3.1	4.2	2.7	1.5	-3.0	.0	.0	-.1	-.3	-.6
Durable manufacturing	4.1	5.5	4.4	2.1	-3.2	.1	.0	-.2	-.6	-.6
Nondurable manufacturing	1.9	2.8	.8	1.0	-2.8	.0	.0	.0	.0	-.4
Other manufacturing (non-NAICS)	.8	-.3	-1.0	-1.3	-5.7	.0	-1.0	3.3	.1	.2
Mining	-.6	-1.3	3.3	.6	2.0	.0	.0	.2	.5	.2
Utilities	1.4	2.1	-.6	3.4	.1	.0	.0	.0	.1	-.1

1. The rates of change are calculated as the percent change in the annual averages of not seasonally adjusted industrial production indexes, rather than as the percent change between the fourth quarter of one year and the fourth quarter of the next.

2. See footnote 2 to table 3.

**Table 5****RATES OF CHANGE IN CAPACITY, BY INDUSTRY GROUPS: 2005–09<sup>1</sup>**

Item	Revised change (percent)					Difference between revised and earlier changes (percentage points)				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
<b>Total industry</b>	.8	1.5	2.0	1.1	-.9	.0	.2	.2	-.4	-.6
<b>Manufacturing<sup>2</sup></b>	1.3	1.4	2.2	1.3	-1.2	-.1	.1	.3	-.5	-.6
Manufacturing (NAICS)	1.4	1.4	2.3	1.3	-1.2	-.1	.1	.3	-.5	-.6
Durable manufacturing	2.4	2.0	3.7	2.0	-.6	-.2	-.4	.4	-1.0	-.2
Nondurable manufacturing	.5	.8	1.0	.8	-1.7	.1	.5	.2	.1	-1.0
Other manufacturing (non-NAICS)	-.2	1.1	.6	-.9	-.9	.0	.0	.0	.7	.1
Mining	-1.1	2.3	1.4	1.1	-.7	.0	1.0	-.4	.4	-1.5
Utilities	1.5	1.3	1.3	2.3	1.8	.8	.5	.0	.1	.1
<b>Selected high-technology industries</b>	11.9	5.7	22.9	6.3	8.4	-1.2	-4.7	1.5	-11.2	1.2
Manufacturing <sup>2</sup> ex. selected high-technology industries	.6	1.1	1.0	1.0	-1.6	.0	.3	.3	.2	-.7
<b>STAGE-OF-PROCESS GROUPS</b>										
Crude	-.9	1.5	1.4	1.2	-1.2	-.1	.6	.0	.7	-1.4
Primary and semifinished	1.0	1.3	2.0	.8	-1.0	.2	.1	-.1	-1.1	-.5
Finished	1.9	1.8	2.4	2.2	-.6	-.3	.1	.7	.4	-.5

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****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)			
	1972-2008 Ave.	2005 Q4	2006 Q4	2007 Q4	2008 Q4	2005 Q4	2006 Q4	2007 Q4	2008 Q4
<b>Total industry</b>	80.9	80.4	80.6	80.4	74.3	.0	-.1	-.5	-.6
<b>Manufacturing<sup>1</sup></b>	79.6	79.2	79.0	78.7	71.1	.0	.0	-.6	-.6
<b>Manufacturing (NAICS) 31-33</b>	79.4	78.9	78.8	78.6	71.0	.0	-.1	-.6	-.7
<b>Durable manufacturing</b>	77.8	77.9	77.3	77.0	67.3	.0	.0	-.8	-.5
Wood products 321	79.2	89.2	75.2	68.6	54.8	-.7	-.7	-1.5	-1.6
Nonmetallic mineral products 327	77.7	78.1	72.6	70.5	63.1	-5.3	-6.3	-7.5	-5.9
Primary metal 331	80.5	83.3	80.4	84.1	62.0	-.6	-.4	.3	-.9
Fabricated metal products 332	77.5	77.6	79.5	80.5	74.2	-.4	-.4	-.8	-.6
Machinery 333	78.6	79.8	81.8	79.8	70.2	1.3	2.4	2.6	1.4
Computer and electronic products 334	78.3	75.3	78.4	75.4	69.9	.6	.4	-2.5	.0
Electrical equip., appliances, and components 335	83.2	83.1	82.2	82.8	78.4	-.1	.2	-.6	.7
Motor vehicles and parts 3361-3	76.7	76.4	70.3	70.2	53.8	-1.9	-2.0	-2.1	-2.0
Aerospace and miscellaneous transportation equipment 3364-9	73.2	73.2	77.3	84.2	71.8	3.2	4.5	3.9	2.7
Furniture and related products 337	78.4	79.8	79.0	77.6	65.1	.8	1.5	1.0	2.1
Miscellaneous 339	76.5	77.0	76.3	74.4	69.4	.2	-.2	-.4	-2.4
<b>Nondurable manufacturing</b>	81.5	80.1	80.6	80.5	75.0	.1	-.2	-.5	-1.0
Food, beverage, and tobacco products 311,2	81.5	80.3	79.4	79.7	77.4	-.5	-.9	-1.4	-1.6
Textile and product mills 313,4	81.6	78.5	73.1	71.3	65.6	-1.2	.6	2.5	3.5
Apparel and leather 315,6	79.5	75.2	76.8	77.7	72.2	5.7	4.9	4.7	2.4
Paper 322	87.6	84.4	84.2	82.6	74.4	.4	-.1	.0	.5
Printing and support 323	83.4	78.3	79.7	78.4	72.7	.6	1.1	1.9	3.5
Petroleum and coal products 324	86.1	88.4	88.8	87.1	85.7	1.1	-.1	-1.7	-3.7
Chemical 325	78.2	75.7	79.0	78.5	70.3	.2	-.1	-.5	-1.0
Plastics and rubber products 326	83.6	85.2	81.9	84.1	72.7	-.7	-.4	-.5	-1.5
<b>Other manufacturing (non-NAICS) 1133,5111</b>	84.2	84.1	82.2	80.2	72.6	-1.2	1.5	1.1	.6
<b>Mining 21</b>	87.6	85.4	90.8	89.8	89.5	-.1	-.5	-.1	-.4
<b>Utilities 2211,2</b>	86.8	85.3	83.7	85.2	83.0	-.4	-.7	-.7	-1.2
<b>Selected high-technology industries</b>	78.2	77.4	82.8	79.6	70.7	2.2	2.9	-.9	2.4
Computers and peripheral equipment 3341	78.1	74.3	79.5	81.6	74.0	.0	2.0	3.0	13.6
Communications equipment 3342	76.2	67.5	82.3	77.3	74.5	5.7	8.9	-3.6	-5.1
Semiconductors and related electronic components 334412-9	80.6	84.6	84.9	80.0	66.4	.4	-.3	-1.3	1.1
<b>Measures excluding selected high-technology industries</b>									
Total industry	81.0	80.5	80.5	80.5	74.4	-.2	-.3	-.5	-.8
Manufacturing <sup>1</sup>	79.7	79.3	78.8	78.7	71.1	-.2	-.2	-.5	-.8
<b>STAGE-OF-PROCESS GROUPS</b>									
Crude	86.6	83.1	88.7	88.3	83.9	-.2	-.4	-.8	-1.6
Primary and semifinished	82.0	82.6	80.7	80.7	73.5	-.7	-.7	-.6	-.6
Finished	77.7	76.6	77.6	77.2	71.1	.7	.6	-.4	-.6

NOTE. Estimates for the fourth quarter of 2008 are subject to further revision in the upcoming monthly releases.

1. See footnote 2 to table 3.



**Table 7A**  
**INDUSTRIAL PRODUCTION: Manufacturing** <sup>1</sup>  
 Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>2</sup>
<b>IP (percent change)</b>																	
1979	-9	.5	.4	-1.5	1.2	.2	.1	-1.3	.3	.4	-.2	.3	1.6	-.8	-.9	.1	3.1
1980	.4	.0	-.7	-2.1	-3.0	-1.5	-1.0	.7	1.6	1.8	1.9	.3	1.0	-18.6	-7.8	19.6	-3.5
1981	-.4	-.6	.4	.3	.6	-.5	.2	.2	-.5	-1.0	-1.1	-1.7	.7	2.6	.2	-9.8	1.1
1982	-2.3	2.7	-.8	-.7	-.2	-.3	-.1	-.9	-.3	-1.1	-.6	-.3	-9.0	-2.3	-4.1	-7.9	-5.4
1983	2.4	-.1	1.0	1.1	1.3	.7	1.5	.8	1.9	1.1	.3	.2	9.4	12.0	15.0	12.5	4.8
1984	1.8	1.1	.5	.5	.3	.5	.4	.1	-.1	.4	.3	.4	12.7	6.2	3.6	2.8	9.8
1985	-.4	-.3	.8	-.3	.1	.2	-.5	.5	.1	-.3	.6	.4	.0	.8	.0	2.2	1.6
1986	1.1	-.6	-.3	.4	.1	-.3	.5	.3	.2	.4	.5	.9	4.5	-.1	2.5	5.2	2.2
1987	-.3	1.4	.1	.5	.7	.4	.7	.5	.6	1.6	.6	.6	6.1	6.7	7.1	11.7	5.7
1988	-.2	.2	.3	.9	-.1	.1	.1	.1	.3	.5	.3	.4	2.6	4.5	1.4	4.5	5.4
1989	.8	-.9	-.1	.1	-.9	.2	-1.1	.9	-.2	-.2	.2	.1	1.8	-3.1	-2.9	.6	.8
1990	-.1	1.4	.5	-.3	.1	.2	-.2	.2	.0	-.8	-1.1	-.8	4.6	2.7	.6	-6.7	.8
1991	-.8	-.6	-.7	.3	.7	1.1	.2	.2	1.1	-.2	-.3	-.1	-8.8	2.1	7.1	1.6	-2.0
1992	-.6	.9	1.0	.5	.6	.3	.8	-.4	.1	.6	.4	-.2	.6	8.2	4.0	2.8	3.6
1993	1.1	.1	-.2	.6	-.1	-.1	.3	-.1	.6	.8	.4	.5	4.5	1.4	1.3	6.8	3.5
1994	.2	.1	1.3	.8	.7	.3	.4	.7	.3	1.0	.8	1.1	5.0	9.5	5.9	9.8	5.9
1995	.3	-.1	.2	-.1	.0	.4	-.6	1.2	.9	-.1	.1	.4	5.4	.6	3.2	4.2	5.2
1996	-.8	1.7	-.2	1.0	.7	1.1	.3	.6	.7	-.1	.8	.9	2.1	9.1	7.8	5.8	4.8
1997	.1	1.4	1.2	-.2	.9	.7	.4	1.7	.9	.6	1.1	.5	9.4	7.6	10.8	11.1	8.5
1998	.8	.0	-.1	.6	.6	-.7	-.5	2.5	-.3	.9	.2	.5	6.0	2.7	3.0	7.3	6.7
1999	.4	.7	-.1	.3	.9	-.4	.5	.8	-.3	1.6	.7	.7	5.0	4.2	3.8	9.8	5.0
2000	.1	.3	.7	.6	-.1	.2	.0	-.5	.5	-.4	-.3	-.7	5.3	4.7	-.5	-2.8	4.5
2001	-.6	-.6	-.3	-.2	-.8	-.7	-.3	-.7	-.3	-.7	-.2	.2	-6.6	-5.5	-6.3	-4.8	-4.1
2002	.4	.0	.7	.0	.7	1.1	-.4	.3	.1	-.5	.4	-.5	3.0	5.2	2.9	-.9	-.1
2003	.6	.1	.3	-1.0	.1	.5	.1	-.2	.8	.1	1.1	-.2	2.4	-2.0	2.3	4.6	1.3
2004	.1	.7	-.3	.5	.7	-.8	.8	.6	-.2	1.0	.0	.7	2.5	2.9	3.6	5.2	3.0
2005	.7	.8	-.4	.1	.5	.2	.0	.3	-1.0	1.6	.9	.1	6.2	1.9	.5	6.6	4.0
2006	.7	-.3	-.1	.5	-.3	.3	.1	.3	-.2	-.5	-.2	1.2	3.3	1.0	1.4	-.9	2.5
2007	-.6	.3	.4	.3	.0	.3	.6	-.4	.4	-.4	.4	.3	1.7	3.2	2.4	.1	1.4
2008	-.3	-.5	-.1	-.9	-.2	-.4	-.3	-.9	-3.7	.5	-2.2	-2.9	-1.2	-5.4	-9.3	-17.3	-3.1
2009	-2.8	-.7															
<b>IP (2002=100)</b>																	
1979	53.6	53.9	54.1	53.3	53.9	54.0	54.0	53.3	53.5	53.7	53.5	53.7	53.8	53.7	53.6	53.6	53.7
1980	53.9	53.9	53.5	52.4	50.8	50.0	49.5	49.9	50.7	51.6	52.6	52.7	53.8	51.1	50.0	52.3	51.8
1981	52.6	52.3	52.5	52.6	52.9	52.7	52.8	52.9	52.6	52.1	51.5	50.7	52.4	52.8	52.8	51.4	52.4
1982	49.5	50.8	50.4	50.1	50.0	49.8	49.8	49.3	49.2	48.7	48.4	48.2	50.2	49.9	49.4	48.4	49.5
1983	49.4	49.3	49.8	50.4	51.0	51.4	52.1	52.6	53.5	54.2	54.3	54.5	49.5	50.9	52.7	54.3	51.9
1984	55.5	56.1	56.4	56.6	56.8	57.0	57.3	57.4	57.3	57.5	57.7	57.9	56.0	56.8	57.3	57.7	57.0
1985	57.7	57.5	58.0	57.8	57.8	57.9	57.6	57.9	58.0	57.8	58.2	58.4	57.7	57.8	57.8	58.2	57.9
1986	59.1	58.7	58.6	58.8	58.9	58.7	59.0	59.2	59.3	59.5	59.8	60.3	58.8	58.8	59.1	59.9	59.2
1987	60.2	61.1	61.1	61.4	61.9	62.1	62.5	62.8	63.2	64.2	64.6	65.0	60.8	61.8	62.9	64.6	62.5
1988	64.9	65.0	65.2	65.8	65.7	65.8	65.9	65.9	66.2	66.5	66.7	67.0	65.0	65.8	66.0	66.7	65.9
1989	67.5	66.8	66.8	66.8	66.3	66.4	65.7	66.3	66.1	66.0	66.1	66.2	67.0	66.5	66.0	66.1	66.4
1990	66.1	67.1	67.4	67.2	67.3	67.4	67.3	67.5	67.5	66.9	66.2	65.7	66.9	67.3	67.4	66.3	67.0
1991	65.1	64.8	64.3	64.5	65.0	65.7	65.9	66.0	66.7	66.6	66.4	66.4	64.7	65.1	66.2	66.5	65.6
1992	65.9	66.6	67.2	67.5	68.0	68.2	68.7	68.4	68.5	68.9	69.2	69.0	66.6	67.9	68.6	69.0	68.0
1993	69.8	69.9	69.8	70.1	70.0	69.9	70.2	70.1	70.5	71.1	71.4	71.8	69.8	70.0	70.3	71.4	70.4
1994	71.9	72.0	73.0	73.6	74.1	74.3	74.6	75.1	75.4	76.1	76.7	77.6	72.3	74.0	75.1	76.8	74.5
1995	77.8	77.8	77.9	77.8	77.9	78.2	77.7	78.7	79.4	79.3	79.3	79.7	77.8	78.0	78.6	79.4	78.5
1996	79.0	80.3	80.2	81.0	81.5	82.4	82.6	83.1	83.7	83.6	84.3	85.0	79.8	81.6	83.1	84.3	82.2
1997	85.1	86.3	87.3	87.1	87.9	88.5	88.8	90.4	91.2	91.7	92.7	93.2	86.3	87.8	90.1	92.5	89.2
1998	93.9	93.9	93.8	94.4	94.9	94.3	93.8	96.1	95.8	96.6	96.8	97.3	93.9	94.5	95.2	96.9	95.1
1999	97.7	98.4	98.3	98.6	99.5	99.2	99.6	100.4	100.1	101.7	102.4	103.1	98.1	99.1	100.0	102.4	99.9
2000	103.3	103.6	104.3	104.9	104.8	105.0	105.0	104.5	104.9	104.5	104.2	103.5	103.7	104.9	104.8	104.1	104.4
2001	102.8	102.2	101.9	101.6	100.8	100.1	99.8	99.1	98.8	98.1	97.9	98.1	102.3	100.9	99.2	98.0	100.1
2002	98.5	98.5	99.2	99.2	99.9	100.9	100.5	100.8	100.9	100.4	100.8	100.3	98.8	100.0	100.7	100.5	100.0
2003	100.9	101.1	101.3	100.4	100.5	101.0	101.1	100.8	101.6	101.7	102.8	102.5	101.1	100.6	101.2	102.3	101.3
2004	102.6	103.3	103.0	103.5	104.2	103.4	104.3	104.9	104.7	105.8	105.7	106.4	103.0	103.7	104.6	106.0	104.3
2005	107.2	108.0	107.6	107.7	108.2	108.4	108.3	108.7	107.6	109.3	110.2	110.3	107.6	108.7	108.2	110.0	108.5
2006	111.1	110.8	110.6	111.2	110.9	111.3	111.3	111.7	111.5	110.9	110.8	112.1	110.9	111.1	111.5	111.3	111.2
2007	111.4	111.7	112.2	112.5	112.5	112.9	113.5	113.0	113.4	112.9	113.3	113.7	111.7	112.6	113.3	113.3	112.7
2008	113.4	112.8	112.7	111.7	111.5	111.0	110.8	109.7	105.7	106.2	103.9	100.9	113.0	111.4	108.7	103.7	109.2
2009	98.0	97.4															

NOTE Estimates from October 2008 through February 2009 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: Manufacturing** <sup>1</sup>  
 Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>Capacity (percent of 2002 output)</b>																	
1979	63.0	63.2	63.4	63.5	63.7	63.9	64.0	64.2	64.4	64.5	64.7	64.8	63.2	63.7	64.2	64.7	63.9
1980	65.0	65.1	65.3	65.4	65.6	65.7	65.9	66.1	66.3	66.4	66.6	66.8	65.1	65.6	66.1	66.6	65.9
1981	67.0	67.2	67.4	67.6	67.8	67.9	68.1	68.3	68.5	68.6	68.8	68.9	67.2	67.8	68.3	68.8	68.0
1982	69.1	69.2	69.4	69.5	69.7	69.8	69.9	70.0	70.1	70.2	70.3	70.3	69.2	69.7	70.0	70.3	69.8
1983	70.4	70.4	70.5	70.5	70.5	70.6	70.6	70.6	70.6	70.7	70.8	70.8	70.4	70.5	70.6	70.8	70.6
1984	70.9	71.0	71.1	71.3	71.4	71.6	71.7	71.9	72.1	72.3	72.5	72.8	71.0	71.4	71.9	72.5	71.7
1985	73.0	73.2	73.4	73.6	73.8	74.0	74.2	74.4	74.5	74.7	74.8	74.9	73.2	73.8	74.4	74.8	74.0
1986	75.0	75.1	75.1	75.2	75.3	75.4	75.4	75.5	75.6	75.8	75.9	76.0	75.1	75.3	75.5	75.9	75.4
1987	76.2	76.4	76.6	76.8	76.9	77.1	77.3	77.5	77.7	77.8	77.9	78.1	76.4	76.9	77.5	77.9	77.2
1988	78.1	78.2	78.3	78.3	78.4	78.4	78.5	78.5	78.6	78.7	78.7	78.8	78.2	78.4	78.5	78.7	78.5
1989	79.0	79.1	79.2	79.4	79.6	79.7	79.9	80.1	80.3	80.5	80.7	80.9	79.1	79.6	80.1	80.7	79.9
1990	81.1	81.2	81.4	81.6	81.8	82.0	82.1	82.3	82.4	82.6	82.7	82.9	81.2	81.8	82.3	82.7	82.0
1991	83.0	83.2	83.3	83.4	83.5	83.7	83.8	83.9	84.0	84.1	84.2	84.4	83.2	83.5	83.9	84.2	83.7
1992	84.5	84.7	84.9	85.1	85.3	85.5	85.7	85.9	86.1	86.3	86.5	86.7	84.7	85.3	85.9	86.5	85.6
1993	86.8	87.0	87.1	87.2	87.4	87.5	87.6	87.7	87.8	88.0	88.2	88.3	87.0	87.4	87.7	88.2	87.6
1994	88.6	88.8	89.0	89.3	89.6	89.9	90.2	90.5	90.8	91.2	91.5	91.9	88.8	89.6	90.5	91.5	90.1
1995	92.2	92.6	92.9	93.3	93.6	94.0	94.4	94.8	95.2	95.6	96.1	96.6	92.6	93.6	94.8	96.1	94.3
1996	97.1	97.6	98.1	98.6	99.2	99.7	100.3	100.8	101.3	101.9	102.5	103.0	97.6	99.2	100.8	102.5	100.0
1997	103.6	104.2	104.8	105.4	106.1	106.8	107.4	108.2	108.9	109.7	110.5	111.3	104.2	106.1	108.2	110.5	107.2
1998	112.1	112.9	113.7	114.5	115.3	116.1	116.8	117.5	118.2	118.9	119.5	120.1	112.9	115.3	117.5	119.5	116.3
1999	120.7	121.3	121.9	122.5	123.0	123.6	124.1	124.7	125.2	125.8	126.3	126.9	121.3	123.0	124.7	126.3	123.8
2000	127.5	128.0	128.6	129.1	129.7	130.2	130.7	131.2	131.7	132.2	132.7	133.2	128.0	129.7	131.2	132.7	130.4
2001	133.7	134.1	134.6	135.0	135.4	135.7	136.0	136.3	136.6	136.8	137.0	137.2	134.1	135.3	136.3	137.0	135.7
2002	137.4	137.5	137.6	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.6	137.5	137.7	137.7	137.7	137.6
2003	137.6	137.6	137.5	137.5	137.5	137.4	137.4	137.3	137.3	137.3	137.2	137.2	137.6	137.5	137.3	137.2	137.4
2004	137.1	137.1	137.0	137.0	137.0	136.9	136.9	136.9	136.9	137.0	137.0	137.1	137.1	137.0	136.9	137.0	137.0
2005	137.2	137.3	137.5	137.6	137.8	137.9	138.1	138.3	138.5	138.7	138.8	139.0	137.3	137.8	138.3	138.8	138.1
2006	139.2	139.3	139.5	139.6	139.8	139.9	140.1	140.3	140.4	140.6	140.8	141.0	139.3	139.8	140.3	140.8	140.1
2007	141.3	141.5	141.8	142.0	142.3	142.6	142.9	143.2	143.4	143.7	144.0	144.2	141.5	142.3	143.1	144.0	142.7
2008	144.5	144.7	144.9	145.1	145.3	145.5	145.6	145.7	145.8	145.8	145.8	145.8	144.7	145.3	145.7	145.8	145.4
2009	145.7	145.7															
<b>Utilization (percent)</b>																	
1979	85.0	85.2	85.3	85.8	84.6	84.5	84.4	83.1	83.1	83.2	82.8	82.8	85.2	84.3	83.5	82.9	84.0
1980	83.0	82.8	82.0	80.1	77.5	76.1	75.1	75.5	76.5	77.7	78.9	78.9	82.6	77.9	75.7	78.5	78.7
1981	78.4	77.8	77.8	77.9	78.1	77.6	77.5	77.5	76.9	76.0	74.9	73.5	78.0	77.9	77.3	74.8	77.0
1982	71.6	73.4	72.7	72.0	71.7	71.4	71.2	70.5	70.1	69.3	68.8	68.6	72.6	71.7	70.6	68.9	70.9
1983	70.2	70.1	70.7	71.5	72.4	72.8	73.9	74.4	75.8	76.6	76.8	76.9	70.3	72.2	74.7	76.8	73.5
1984	78.2	79.0	79.2	79.5	79.5	79.7	79.9	79.8	79.4	79.5	79.5	79.6	78.8	79.6	79.7	79.6	79.4
1985	79.0	78.6	79.0	78.5	78.3	78.3	77.7	77.9	77.8	77.5	77.8	78.0	78.9	78.3	77.8	77.8	78.2
1986	78.8	78.3	78.0	78.2	78.2	77.9	78.2	78.3	78.4	78.6	78.8	79.4	78.3	78.1	78.3	78.9	78.4
1987	79.0	79.9	79.8	80.0	80.4	80.5	80.8	81.1	81.4	82.5	82.9	83.3	79.6	80.3	81.1	82.9	81.0
1988	83.0	83.1	83.3	84.0	83.8	83.9	84.0	84.0	84.2	84.6	84.7	84.9	83.2	83.9	84.0	84.7	84.0
1989	85.4	84.5	84.3	84.2	83.3	83.3	82.2	82.7	82.3	82.0	82.0	81.9	84.7	83.6	82.4	82.0	83.2
1990	81.6	82.6	82.8	82.4	82.3	82.3	82.0	82.0	81.8	81.0	80.0	79.2	82.3	82.3	81.9	80.1	81.7
1991	78.5	77.9	77.2	77.4	77.8	78.5	78.6	78.7	79.4	79.2	78.9	78.7	77.9	77.9	78.9	78.9	78.4
1992	78.0	78.6	79.2	79.4	79.7	79.8	80.2	79.7	79.6	79.9	80.0	79.7	78.6	79.6	79.8	79.8	79.5
1993	80.4	80.3	80.1	80.4	80.2	80.0	80.1	79.9	80.3	80.8	81.0	81.2	80.2	80.2	80.1	81.0	80.4
1994	81.2	81.1	82.0	82.4	82.7	82.7	82.7	83.0	83.0	83.5	83.8	84.5	81.4	82.6	82.9	83.9	82.7
1995	84.4	84.0	83.9	83.5	83.2	83.2	82.4	83.0	83.4	82.9	82.5	82.5	84.1	83.3	82.9	82.6	83.2
1996	81.4	82.3	81.7	82.1	82.2	82.6	82.4	82.5	82.6	82.1	82.3	82.5	81.8	82.3	82.5	82.3	82.2
1997	82.1	82.8	83.3	82.6	82.9	82.9	82.7	83.5	83.7	83.6	83.9	83.7	82.8	82.8	83.3	83.7	83.2
1998	83.8	83.2	82.5	82.4	82.3	81.2	80.3	81.8	81.0	81.3	81.0	81.0	83.2	82.0	81.0	81.1	81.8
1999	80.9	81.1	80.6	80.5	80.9	80.3	80.3	80.5	79.9	80.8	81.0	81.3	80.9	80.6	80.3	81.0	80.7
2000	81.0	80.9	81.1	81.3	80.8	80.7	80.3	79.6	79.6	79.0	78.5	77.7	81.0	80.9	79.9	78.4	80.1
2001	76.9	76.2	75.7	75.3	74.5	73.8	73.4	72.7	72.3	71.7	71.4	71.5	76.3	74.5	72.8	71.5	73.8
2002	71.7	71.7	72.1	72.1	72.5	73.3	73.0	73.2	73.3	72.9	73.2	72.9	71.8	72.6	73.1	73.0	72.7
2003	73.3	73.5	73.7	73.0	73.1	73.5	73.6	73.4	74.0	74.1	74.9	74.8	73.5	73.2	73.7	74.6	73.7
2004	74.8	75.4	75.2	75.6	76.1	75.5	76.2	76.6	76.5	77.2	77.2	77.6	75.1	75.7	76.4	77.3	76.2
2005	78.1	78.7	78.3	78.3	78.5	78.6	78.4	78.6	77.7	78.8	79.4	79.4	78.3	78.5	78.2	79.2	78.6
2006	79.8	79.5	79.3	79.6	79.3	79.5	79.5	79.6	79.4	78.9	78.7	79.5	79.6	79.5	79.5	79.0	79.4
2007	78.8	78.9	79.1	79.2	79.1	79.1	79.4	78.9	79.1	78.6	78.7	78.8	79.0	79.1	79.1	78.7	79.0
2008	78.5	78.0	77.8	77.0	76.7	76.3	76.1	75.3	72.5	72.8	71.3	69.2	78.1	76.7	74.6	71.1	75.1
2009	67.3	66.8															

NOTE Estimates from October 2008 through February 2009 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 Industries<sup>1</sup>**  
 Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>2</sup>
<b>IP (percent change)</b>																	
1979	-8	.5	.2	-1.1	.7	-.1	-.3	-.9	.0	.5	-.2	.0	.6	-1.3	-2.7	.3	2.1
1980	.4	.0	-.4	-2.2	-2.6	-1.3	-.8	.3	1.7	1.2	1.7	.5	.6	-16.9	-7.0	16.2	-3.6
1981	-.7	-.6	.5	-.7	.6	.5	.7	-.1	-.7	-.8	-1.1	-1.2	.1	.1	3.7	-9.5	.6
1982	-2.0	1.8	-.8	-1.0	-.7	-.5	-.5	-.8	-.5	-.9	-.4	-.8	-8.5	-6.0	-6.7	-7.8	-6.0
1983	1.9	-.7	.7	1.1	.7	.4	1.4	1.3	1.3	.8	.2	.4	3.9	8.2	13.5	9.6	1.8
1984	2.0	.4	.4	.5	.4	.3	.2	-.1	-.2	-.2	.3	.1	11.5	5.1	1.6	-.2	7.9
1985	-.4	.6	.1	-.1	.1	.0	-.5	.3	.5	-.4	.3	1.1	.9	1.0	-.3	2.5	1.0
1986	.5	-.7	-.7	.1	.1	-.2	.3	-.2	.1	.4	.4	.8	2.4	-2.6	.5	4.1	.9
1987	-.5	1.2	.2	.5	.6	.4	.5	.6	.2	1.4	.5	.4	4.5	6.2	6.0	9.1	4.3
1988	.0	.4	.2	.5	-.1	.2	.1	.5	-.4	.5	.2	.4	3.1	2.8	1.5	2.6	4.4
1989	.3	-.4	.3	-.1	-.7	.0	-1.1	.9	-.3	-.2	.2	.6	1.9	-1.8	-3.3	1.0	.6
1990	-.7	.9	.5	-.2	.1	.2	-.2	.2	.2	-.8	-1.3	-.7	2.3	2.3	.9	-6.7	.3
1991	-.4	-.7	-.6	.2	1.0	1.0	.0	.0	.9	-.2	-.2	-.5	-8.0	2.2	5.4	.5	-2.0
1992	-.8	.7	.8	.6	.3	-.1	.8	-.6	.1	.6	.3	.0	-2.0	6.1	1.8	2.9	1.9
1993	.5	.3	-.1	.3	-.5	.2	.4	-.1	.3	.7	.3	.5	3.2	.2	1.5	5.1	2.5
1994	.4	.0	.9	.3	.4	.6	.0	.3	.0	.6	.4	.9	4.4	5.4	3.2	5.6	4.0
1995	.2	-.2	-.1	-.3	.0	.1	-.5	1.1	.1	-.5	.1	.2	3.0	-1.4	1.4	.4	2.4
1996	-1.0	1.4	-.3	.7	.5	.7	-.4	.4	.4	-.3	.8	.5	-.4	6.2	2.2	3.2	1.7
1997	-.1	.9	.5	-.4	.3	.2	.2	1.1	.7	.6	.7	.1	5.1	2.2	6.0	7.9	4.2
1998	.2	-.1	-.1	.2	.6	-.9	-.8	2.0	-.6	.5	-.3	.0	1.9	1.0	-.3	2.0	3.1
1999	.2	.1	-.1	-.1	.6	-.5	.3	.4	-.5	1.2	.3	.5	.8	.3	1.2	5.8	1.2
2000	-.4	.1	.1	.4	-.1	.0	-.5	-.4	.4	-.5	-.2	-.6	.4	1.7	-2.7	-2.7	1.1
2001	-.7	-.5	-.3	-.1	-.7	-.5	-.3	-.3	-.4	-.6	-.4	-.1	-6.3	-4.4	-4.6	-4.9	-4.0
2002	.7	-.1	.8	.2	.5	.8	-.4	.0	.1	-.3	.4	-.6	2.8	5.4	1.3	-1.0	-.1
2003	.7	.1	-.3	-1.0	-.1	.0	.2	-.1	.6	-.1	.8	-.1	1.5	-4.5	1.3	3.2	.2
2004	.2	.5	-.6	.5	.8	-.9	.7	.2	-.1	.9	.3	.7	2.0	1.9	1.5	5.4	1.8
2005	.4	.6	-.2	-.1	.2	.3	-.2	.0	-2.0	1.1	1.1	.6	5.0	.9	-2.1	2.8	2.6
2006	.0	-.1	.2	.3	-.2	.3	.2	.1	-.4	-.1	-.2	.9	3.1	1.5	1.2	-.9	1.5
2007	-.5	.8	-.3	.3	.0	-.1	.2	.0	.3	-.7	.5	.3	1.7	1.8	1.0	-.1	.9
2008	-.1	-.4	-.5	-.7	-.3	-.2	.0	-.1	-.4	1.6	-1.1	-2.3	-.6	-5.3	-9.0	-11.6	-2.8
2009	-2.0	-1.4															
<b>IP (2002=100)</b>																	
1979	76.4	76.8	77.0	76.1	76.7	76.6	76.4	75.7	75.7	76.1	76.0	75.9	76.7	76.5	75.9	76.0	76.3
1980	76.2	76.2	75.9	74.3	72.3	71.4	70.8	71.0	72.2	73.1	74.4	74.8	76.1	72.7	71.4	74.1	73.6
1981	74.2	73.8	74.2	73.7	74.2	74.5	75.0	74.9	74.4	73.8	73.0	72.1	74.1	74.1	74.8	73.0	74.0
1982	70.7	72.0	71.4	70.7	70.2	69.9	69.5	69.0	68.6	68.0	67.7	67.2	71.3	70.3	69.0	67.6	69.6
1983	68.4	68.0	68.5	69.2	69.7	70.0	71.0	71.9	72.8	73.3	73.5	73.8	68.3	69.6	71.9	73.6	70.8
1984	75.3	75.6	75.9	76.3	76.6	76.8	76.9	76.9	76.7	76.6	76.9	76.9	75.6	76.5	76.8	76.8	76.4
1985	76.7	77.1	77.2	77.1	77.2	77.2	76.8	77.1	77.5	77.2	77.4	78.2	77.0	77.2	77.1	77.6	77.2
1986	78.6	78.0	77.5	77.5	77.6	77.5	77.7	77.5	77.7	78.0	78.3	79.0	78.1	77.5	77.6	78.4	77.9
1987	78.6	79.6	79.7	80.1	80.5	80.9	81.3	81.8	81.9	83.1	83.5	83.8	79.3	80.5	81.7	83.5	81.2
1988	83.8	84.2	84.3	84.7	84.6	84.7	84.8	85.2	84.9	85.3	85.5	85.8	84.1	84.7	85.0	85.5	84.8
1989	86.1	85.7	86.0	85.9	85.3	85.3	84.4	85.2	84.9	84.7	84.9	85.4	85.9	85.5	84.8	85.0	85.3
1990	84.9	85.6	86.0	85.9	86.0	86.2	86.0	86.2	86.3	85.7	84.6	83.9	85.5	86.0	86.2	84.7	85.6
1991	83.6	82.9	82.4	82.6	83.4	84.2	84.2	84.3	85.0	84.9	84.7	84.3	83.0	83.4	84.5	84.6	83.9
1992	83.6	84.2	84.8	85.3	85.6	85.5	86.1	85.6	85.7	86.3	86.5	86.5	84.2	85.4	85.8	86.4	85.5
1993	87.0	87.2	87.2	87.4	87.0	87.1	87.4	87.4	87.7	88.3	88.5	89.0	87.1	87.2	87.5	88.6	87.6
1994	89.3	89.3	90.1	90.3	90.7	91.2	91.2	91.5	91.6	92.1	92.5	93.4	89.5	90.7	91.4	92.7	91.1
1995	93.5	93.4	93.2	93.0	93.0	93.2	92.7	93.7	93.8	93.4	93.5	93.6	93.4	93.1	93.4	93.5	93.3
1996	92.6	93.9	93.6	94.3	94.7	95.4	95.0	95.3	95.7	95.4	96.2	96.6	93.4	94.8	95.3	96.1	94.9
1997	96.5	97.4	97.9	97.6	97.8	98.1	98.3	99.4	100.1	100.7	101.3	101.5	97.3	97.8	99.2	101.2	98.9
1998	101.7	101.6	101.5	101.8	102.4	101.5	100.7	102.7	102.1	102.5	102.2	102.2	101.6	101.9	101.8	102.3	101.9
1999	102.5	102.6	102.5	102.4	103.0	102.5	102.8	103.2	102.7	104.0	104.3	104.8	102.5	102.6	102.9	104.4	103.1
2000	104.4	104.4	104.5	105.0	104.9	104.9	104.3	103.9	104.3	103.8	103.6	103.0	104.5	104.9	104.2	103.5	104.3
2001	102.3	101.7	101.4	101.3	100.6	100.1	99.8	99.5	99.1	98.6	98.1	98.0	101.8	100.7	99.5	98.2	100.1
2002	98.7	98.6	99.4	99.7	100.1	100.9	100.6	100.5	100.6	100.3	100.6	100.0	98.9	100.2	100.5	100.3	100.0
2003	100.7	100.8	100.6	99.6	99.5	99.5	99.7	99.6	100.2	100.2	101.0	100.8	100.7	99.5	99.9	100.7	100.2
2004	101.0	101.5	100.9	101.4	102.2	101.2	101.9	102.1	102.0	102.9	103.2	103.9	101.2	101.6	102.0	103.4	102.0
2005	104.3	104.9	104.7	104.6	104.8	105.2	105.0	105.0	103.0	104.1	105.2	105.9	104.6	104.9	104.3	105.0	104.7
2006	105.8	105.8	105.9	106.3	106.1	106.4	106.6	106.7	106.3	106.2	105.9	106.8	105.8	106.2	106.6	106.3	106.2
2007	106.3	107.2	106.9	107.2	107.3	107.2	107.4	107.4	107.7	107.0	107.5	107.8	106.8	107.2	107.5	107.5	107.2
2008	107.7	107.3	106.8	106.1	105.8	105.6	105.6	104.4	100.2	101.8	100.7	98.3	107.3	105.8	103.4	100.3	104.2
2009	96.3	95.0															

NOTE Estimates from October 2008 through February 2009 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 Industries<sup>1</sup>**  
 Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>Capacity (percent of 2002 output)</b>																	
1979	88.9	89.1	89.2	89.4	89.5	89.7	89.8	90.0	90.1	90.3	90.4	90.5	89.0	89.5	90.0	90.4	89.7
1980	90.7	90.8	90.9	91.1	91.2	91.4	91.5	91.6	91.8	91.9	92.1	92.2	90.8	91.2	91.6	92.1	91.4
1981	92.4	92.5	92.7	92.8	93.0	93.2	93.3	93.5	93.6	93.8	93.9	94.1	92.5	93.0	93.5	93.9	93.2
1982	94.2	94.3	94.5	94.6	94.7	94.8	94.9	94.9	95.0	95.0	95.0	95.0	94.3	94.7	94.9	95.0	94.7
1983	95.0	95.0	95.0	94.9	94.9	94.9	94.8	94.8	94.8	94.8	94.8	94.8	95.0	94.9	94.8	94.8	94.9
1984	94.9	94.9	95.0	95.1	95.2	95.3	95.4	95.6	95.7	95.9	96.0	96.2	94.9	95.2	95.6	96.0	95.4
1985	96.3	96.5	96.7	96.9	97.0	97.2	97.4	97.5	97.7	97.8	97.9	98.1	96.5	97.0	97.5	97.9	97.2
1986	98.2	98.3	98.4	98.5	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.1	98.3	98.5	98.8	99.1	98.7
1987	99.2	99.3	99.4	99.5	99.6	99.7	99.8	99.9	100.0	100.1	100.1	100.2	99.3	99.6	99.9	100.1	99.8
1988	100.2	100.2	100.3	100.3	100.3	100.3	100.3	100.4	100.4	100.5	100.6	100.6	100.2	100.3	100.4	100.6	100.4
1989	100.7	100.9	101.0	101.1	101.3	101.4	101.6	101.8	101.9	102.1	102.3	102.4	100.9	101.3	101.8	102.3	101.5
1990	102.6	102.8	102.9	103.1	103.2	103.3	103.5	103.6	103.7	103.9	104.0	104.1	102.8	103.2	103.6	104.0	103.4
1991	104.3	104.4	104.5	104.7	104.8	104.9	105.0	105.2	105.3	105.4	105.5	105.6	104.4	104.8	105.2	105.5	105.0
1992	105.7	105.8	105.9	106.0	106.1	106.2	106.3	106.4	106.5	106.6	106.7	106.7	105.8	106.1	106.4	106.7	106.3
1993	106.8	106.9	107.0	107.1	107.2	107.3	107.4	107.5	107.6	107.7	107.8	107.9	106.9	107.2	107.5	107.8	107.3
1994	108.1	108.2	108.3	108.5	108.7	108.8	109.0	109.2	109.4	109.6	109.8	110.0	108.2	108.7	109.2	109.8	109.0
1995	110.2	110.3	110.5	110.7	110.9	111.1	111.3	111.5	111.7	111.9	112.0	112.2	110.3	110.9	111.5	112.0	111.2
1996	112.4	112.6	112.8	113.0	113.2	113.4	113.6	113.9	114.1	114.4	114.7	114.9	112.6	113.2	113.9	114.7	113.6
1997	115.2	115.6	115.9	116.3	116.6	117.0	117.4	117.9	118.3	118.7	119.2	119.6	115.6	116.6	117.9	119.2	117.3
1998	120.1	120.5	120.9	121.4	121.8	122.2	122.6	123.0	123.4	123.7	124.1	124.4	120.5	121.8	123.0	124.1	122.3
1999	124.7	125.0	125.3	125.6	125.8	126.1	126.4	126.6	126.8	127.0	127.2	127.4	125.0	125.8	126.6	127.2	126.2
2000	127.6	127.8	128.0	128.1	128.3	128.5	128.6	128.8	128.9	129.1	129.2	129.4	127.8	128.3	128.8	129.2	128.5
2001	129.5	129.7	129.8	130.0	130.1	130.3	130.5	130.6	130.8	130.9	131.1	131.2	129.7	130.1	130.6	131.0	130.4
2002	131.3	131.4	131.5	131.5	131.6	131.6	131.6	131.5	131.5	131.4	131.3	131.2	131.4	131.6	131.5	131.3	131.4
2003	131.1	130.9	130.8	130.7	130.6	130.5	130.4	130.4	130.3	130.3	130.3	130.3	130.9	130.6	130.4	130.3	130.6
2004	130.3	130.3	130.3	130.3	130.2	130.2	130.2	130.2	130.1	130.1	130.0	130.0	130.3	130.2	130.2	130.0	130.2
2005	130.0	130.0	129.9	129.9	130.0	130.0	130.0	130.1	130.2	130.3	130.4	130.5	130.0	130.0	130.1	130.4	130.1
2006	130.7	130.8	131.0	131.1	131.3	131.5	131.6	131.7	131.9	132.0	132.1	132.3	130.8	131.3	131.7	132.1	131.5
2007	132.4	132.5	132.6	132.7	132.8	132.9	133.0	133.1	133.2	133.4	133.5	133.6	132.5	132.8	133.1	133.5	133.0
2008	133.8	133.9	134.0	134.2	134.3	134.4	134.5	134.6	134.7	134.7	134.7	134.7	133.9	134.3	134.6	134.7	134.4
2009	134.7	134.6															
<b>Utilization (percent)</b>																	
1979	85.9	86.2	86.3	85.2	85.7	85.4	85.0	84.2	84.1	84.3	84.0	83.9	86.2	85.4	84.4	84.1	85.0
1980	84.0	83.9	83.5	81.6	79.3	78.1	77.4	77.5	78.7	79.5	80.8	81.1	83.8	79.7	77.9	80.5	80.5
1981	80.4	79.8	80.1	79.4	79.7	80.0	80.4	80.2	79.5	78.7	77.7	76.7	80.1	79.7	80.0	77.7	79.4
1982	75.0	76.3	75.6	74.8	74.1	73.7	73.3	72.7	72.3	71.6	71.3	70.7	75.6	74.2	72.7	71.2	73.4
1983	72.0	71.6	72.1	72.9	73.5	73.8	74.9	75.8	76.8	77.4	77.5	77.9	71.9	73.4	75.8	77.6	74.7
1984	79.4	79.6	79.9	80.2	80.5	80.6	80.6	80.5	80.2	79.9	80.1	80.0	79.6	80.4	80.4	80.0	80.1
1985	79.6	79.9	79.8	79.6	79.5	79.4	78.9	79.0	79.3	78.9	79.0	79.8	79.7	79.5	79.1	79.2	79.4
1986	80.1	79.4	78.8	78.7	78.8	78.5	78.7	78.5	78.5	78.8	79.1	79.6	79.4	78.7	78.6	79.2	79.0
1987	79.2	80.1	80.1	80.4	80.8	81.1	81.4	81.8	81.9	83.0	83.4	83.7	79.8	80.8	81.7	83.4	81.4
1988	83.6	84.0	84.1	84.5	84.3	84.5	84.5	84.9	84.5	84.9	85.0	85.3	83.9	84.4	84.7	85.1	84.5
1989	85.4	85.0	85.2	85.0	84.2	84.1	83.1	83.7	83.3	83.0	83.0	83.4	85.2	84.4	83.3	83.1	84.0
1990	82.7	83.3	83.6	83.3	83.3	83.4	83.1	83.2	83.2	82.5	81.3	80.6	83.2	83.3	83.2	81.4	82.8
1991	80.1	79.4	78.9	78.9	79.6	80.3	80.2	80.1	80.8	80.5	80.3	79.8	79.5	79.6	80.4	80.2	79.9
1992	79.0	79.6	80.1	80.5	80.6	80.5	81.0	80.5	80.5	80.9	81.1	81.1	79.6	80.5	80.7	81.0	80.4
1993	81.4	81.6	81.4	81.6	81.1	81.2	81.4	81.3	81.5	82.0	82.1	82.4	81.5	81.3	81.4	82.2	81.6
1994	82.6	82.5	83.1	83.2	83.4	83.8	83.7	83.8	83.7	84.1	84.3	84.9	82.8	83.5	83.7	84.4	83.6
1995	84.9	84.6	84.4	84.0	83.9	83.8	83.2	84.0	84.0	83.5	83.4	83.4	84.6	83.9	83.8	83.4	83.9
1996	82.4	83.4	83.0	83.4	83.7	84.1	83.6	83.7	83.8	83.4	83.9	84.1	82.9	83.7	83.7	83.8	83.5
1997	83.8	84.3	84.5	83.9	83.9	83.8	83.7	84.3	84.6	84.8	85.0	84.8	84.2	83.9	84.2	84.9	84.3
1998	84.7	84.3	84.0	83.8	84.1	83.0	82.1	83.5	82.7	82.9	82.4	82.2	84.3	83.7	82.8	82.5	83.3
1999	82.2	82.1	81.8	81.5	81.8	81.3	81.3	81.5	81.0	81.9	81.9	82.3	82.0	81.5	81.3	82.0	81.7
2000	81.8	81.7	81.7	81.9	81.7	81.6	81.1	80.7	80.9	80.4	80.2	79.6	81.7	81.8	80.9	80.1	81.1
2001	79.0	78.5	78.1	77.9	77.3	76.8	76.5	76.2	75.8	75.3	74.9	74.7	78.5	77.4	76.2	75.0	76.7
2002	75.2	75.1	75.6	75.8	76.1	76.7	76.4	76.4	76.5	76.3	76.7	76.2	75.3	76.2	76.5	76.4	76.1
2003	76.8	77.0	76.9	76.2	76.2	76.2	76.5	76.4	76.9	76.9	77.5	77.4	76.9	76.2	76.6	77.3	76.7
2004	77.6	77.9	77.4	77.9	78.5	77.7	78.3	78.4	78.4	79.1	79.4	79.9	77.6	78.0	78.4	79.5	78.4
2005	80.2	80.7	80.6	80.5	80.7	80.9	80.7	80.7	79.1	79.9	80.7	81.1	80.5	80.7	80.2	80.5	80.5
2006	81.0	80.8	80.9	81.0	80.8	81.0	81.0	81.0	80.6	80.4	80.2	80.8	80.9	80.9	80.9	80.5	80.8
2007	80.3	80.9	80.6	80.8	80.8	80.7	80.7	80.7	80.8	80.2	80.6	80.7	80.6	80.7	80.7	80.5	80.6
2008	80.5	80.2	79.7	79.1	78.8	78.6	78.5	77.6	74.4	75.5	74.7	73.0	80.1	78.8	76.8	74.4	77.5
2009	71.5	70.6															

NOTE Estimates from October 2008 through February 2009 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: Manufacturing<sup>1</sup> Excluding Selected High-Technology Industries<sup>2</sup>**  
 Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual <sup>3</sup>
<b>IP (percent change)</b>																	
1979	-1.1	.4	.4	-1.6	1.2	.0	.0	-1.5	.2	.3	-.4	.2	.3	-1.8	-2.5	-1.4	1.9
1980	.3	-1.	-9	-2.3	-3.2	-1.6	-1.1	.6	1.7	1.8	1.9	.2	-.4	-20.1	-8.7	19.4	-4.9
1981	-.5	-.7	.3	.2	.5	-.5	.2	.0	-.6	-1.1	-1.2	-1.8	-.4	1.5	-.8	-11.1	.1
1982	-2.4	2.5	-.8	-.8	-.3	-.3	-.3	-.8	-.4	-1.2	-.7	-.5	-10.2	-3.4	-5.0	-9.0	-6.6
1983	2.4	-.2	.8	1.0	1.2	.6	1.3	.9	1.5	1.1	.2	.2	8.4	10.7	13.8	11.0	3.7
1984	1.8	1.0	.3	.4	.1	.3	.3	.0	-.2	.4	.2	.4	11.6	4.6	2.1	2.0	8.5
1985	-.5	-.2	.8	-.2	.1	.1	-.4	.5	.2	-.3	.6	.4	-.3	1.7	.6	2.3	1.4
1986	1.2	-.6	-.4	.4	.1	-.2	.2	.2	.2	.3	.4	.8	4.8	-.3	1.1	4.4	2.2
1987	-.4	1.4	.1	.4	.6	.2	.6	.4	.5	1.5	.6	.5	4.9	5.7	5.5	10.5	4.6
1988	-.2	.2	.2	.8	-.2	.1	.0	.1	.3	.5	.3	.4	2.0	3.6	.6	4.2	4.4
1989	.8	-1.0	.0	.0	-.9	.2	-1.3	.9	-.3	-.3	.1	.0	2.2	-3.4	-4.0	-.5	.4
1990	-.2	1.4	.4	-.3	.1	.2	-.2	.2	-.1	-.9	-1.2	-.8	3.7	2.0	.1	-7.5	.0
1991	-.8	-.7	-.8	.4	.6	1.1	.3	.1	1.1	-.2	-.3	-.3	-9.6	1.5	7.1	1.2	-2.6
1992	-.9	.9	.9	.4	.5	.1	.8	-.5	-.1	.4	.3	-.2	-1.2	6.9	2.6	1.4	2.6
1993	1.1	.0	-.3	.5	-.2	-.2	.3	-.2	.5	.8	.3	.5	4.1	.5	.5	5.7	2.5
1994	.1	.1	1.2	.5	.5	.2	.3	.5	.1	.7	.5	.9	4.0	7.1	3.7	6.9	4.4
1995	.2	-.3	-.1	-.4	-.2	.2	-.8	.9	.6	-.4	-.1	.1	3.0	-2.5	.3	.8	2.5
1996	-1.2	1.4	-.5	1.0	.5	.8	.0	.3	.5	-.4	.7	.7	-1.9	7.0	4.2	3.0	1.5
1997	-.2	1.1	.9	-.7	.5	.4	.0	1.4	.6	.5	.9	.2	6.2	2.7	6.5	8.3	4.9
1998	.6	-.2	-.3	.3	.5	-1.1	-.9	2.4	-.7	.7	-.1	.2	3.1	.1	-.6	3.8	3.5
1999	.0	.4	-.4	.0	.8	-.7	.0	.7	-.5	1.5	.4	.4	.8	.2	.4	7.2	1.4
2000	-.4	-.1	.3	.4	-.5	.1	-.3	-.8	.4	-.5	-.6	-.9	.1	.9	-.3	-4.7	.8
2001	-.6	-.5	-.3	-.1	-.7	-.5	-.1	-.7	-.3	-.7	-.2	.1	-7.4	-4.5	-5.0	-4.8	-4.9
2002	.6	-.1	.8	-.1	.6	1.0	-.5	.2	.1	-.5	.3	-.7	3.5	4.6	1.9	-1.7	.0
2003	.6	-.1	.1	-1.1	.0	.4	-.1	-.3	.8	-.1	1.0	-.3	.7	-3.8	.8	3.6	.0
2004	-.1	.7	-.3	.5	.8	-.9	.9	.6	-.3	1.0	.0	.6	1.5	3.1	3.3	4.9	2.2
2005	.6	.7	-.5	.0	.4	.1	-.2	.1	-1.3	1.5	.8	.0	5.5	.9	-1.2	5.1	3.2
2006	.7	-.4	-.2	.5	-.4	.2	.0	.2	-.3	-.5	-.2	1.2	2.6	.0	.3	-1.2	1.5
2007	-.7	.3	.4	.2	.0	.2	.4	-.5	.3	-.6	.3	.2	1.5	2.4	1.0	-1.2	.7
2008	-.3	-.7	-.2	-1.0	-.2	-.4	-.2	-.9	-3.8	.7	-1.9	-2.8	-2.3	-6.4	-9.3	-16.3	-4.0
2009	-2.9	-.5															
<b>IP (2002=100)</b>																	
1979	75.2	75.5	75.8	74.6	75.5	75.5	75.4	74.3	74.4	74.6	74.3	74.4	75.5	75.2	74.7	74.4	75.0
1980	74.6	74.6	73.9	72.2	69.9	68.8	68.0	68.5	69.6	70.9	72.2	72.4	74.4	70.3	68.7	71.8	71.3
1981	72.0	71.5	71.8	71.9	72.3	71.9	72.0	72.0	71.6	70.8	69.9	68.6	71.8	72.0	71.9	69.8	71.3
1982	67.0	68.7	68.1	67.6	67.4	67.1	66.9	66.4	66.1	65.3	64.9	64.6	67.9	67.3	66.5	64.9	66.7
1983	66.1	66.0	66.6	67.3	68.1	68.5	69.4	70.0	71.1	71.9	72.1	72.2	66.3	68.0	70.2	72.0	69.1
1984	73.5	74.2	74.5	74.7	74.8	75.1	75.4	75.3	75.2	75.5	75.6	75.9	74.1	74.9	75.3	75.7	75.0
1985	75.5	75.4	76.0	75.8	75.9	76.0	75.7	76.1	76.3	76.1	76.5	76.8	75.6	75.9	76.0	76.5	76.0
1986	77.8	77.3	77.0	77.3	77.4	77.3	77.4	77.6	77.7	77.9	78.3	78.9	77.4	77.3	77.5	78.4	77.7
1987	78.6	79.7	79.7	80.0	80.5	80.7	81.2	81.5	81.9	83.1	83.6	84.0	79.3	80.4	81.5	83.6	81.2
1988	83.8	84.0	84.1	84.8	84.7	84.7	84.7	84.8	85.0	85.4	85.7	86.0	84.0	84.7	84.8	85.7	84.8
1989	86.7	85.9	85.9	85.9	85.1	85.3	84.2	84.9	84.7	84.4	84.5	84.5	86.2	85.4	84.6	84.5	85.2
1990	84.3	85.5	85.9	85.6	85.7	85.8	85.6	85.8	85.7	85.0	83.9	83.2	85.2	85.7	85.7	84.0	85.2
1991	82.6	82.0	81.3	81.6	82.1	83.0	83.3	83.4	84.3	84.2	83.9	83.7	82.0	82.3	83.7	83.9	83.0
1992	82.9	83.7	84.4	84.8	85.2	85.3	86.0	85.5	85.5	85.8	86.1	85.9	83.7	85.1	85.6	85.9	85.1
1993	86.8	86.9	86.7	87.1	86.9	86.7	87.0	86.8	87.3	87.9	88.2	88.6	86.8	86.9	87.0	88.3	87.2
1994	88.7	88.8	89.8	90.3	90.8	90.9	91.1	91.6	91.7	92.4	92.9	93.8	89.1	90.7	91.5	93.0	91.1
1995	93.9	93.7	93.6	93.2	93.0	93.2	92.5	93.3	93.8	93.4	93.3	93.4	93.7	93.1	93.2	93.4	93.4
1996	92.2	93.5	93.1	94.0	94.4	95.2	95.2	95.5	95.9	95.5	96.2	96.9	92.9	94.5	95.5	96.2	94.8
1997	96.7	97.7	98.6	97.9	98.3	98.7	98.8	100.1	100.8	101.3	102.1	102.3	97.7	98.3	99.9	101.9	99.4
1998	102.9	102.7	102.4	102.8	103.3	102.1	101.2	103.6	102.9	103.5	103.4	103.6	102.7	102.7	102.6	103.5	102.9
1999	103.6	104.0	103.6	103.5	104.3	103.6	103.6	104.3	103.8	105.3	105.7	106.1	103.7	103.8	103.9	105.7	104.3
2000	105.7	105.6	105.9	106.3	105.8	105.8	105.5	104.7	105.1	104.5	103.9	103.0	105.7	106.0	105.1	103.8	105.2
2001	102.3	101.8	101.4	101.3	100.6	100.1	99.9	99.3	99.0	98.2	98.1	98.2	101.8	100.7	99.4	98.2	100.0
2002	98.8	98.8	99.5	99.4	100.0	101.0	100.5	100.7	100.7	100.2	100.5	99.9	99.0	100.1	100.6	100.2	100.0
2003	100.4	100.3	100.4	99.3	99.3	99.7	99.6	99.2	100.0	99.9	100.9	100.6	100.4	99.4	99.6	100.5	100.0
2004	100.5	101.2	100.9	101.4	102.2	101.3	102.2	102.8	102.4	103.5	103.5	104.1	100.8	101.6	102.5	103.7	102.2
2005	104.7	105.5	105.0	105.0	105.4	105.6	105.4	105.5	104.2	105.8	106.6	106.6	105.1	105.3	105.0	106.3	105.4
2006	107.4	106.9	106.7	107.3	106.8	107.0	107.0	107.3	107.0	106.5	106.3	107.6	107.0	107.0	107.1	106.8	107.0
2007	106.9	107.1	107.5	107.8	107.7	107.9	108.4	107.8	108.1	107.5	107.8	108.0	107.2	107.8	108.1	107.7	107.7
2008	107.7	107.0	106.7	105.6	105.4	105.0	104.8	103.8	99.9	100.6	98.6	95.9	107.1	105.4	102.8	98.4	103.4
2009	93.1	92.7															

NOTE Estimates from October 2008 through February 2009 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: Manufacturing<sup>1</sup> Excluding Selected High-Technology Industries<sup>2</sup>**

Seasonally adjusted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Q1	Q2	Q3	Q4	Annual
<b>Capacity (percent of 2002 output)</b>																	
1979	88.3	88.5	88.7	88.8	89.0	89.2	89.3	89.5	89.7	89.8	90.0	90.1	88.5	89.0	89.5	90.0	89.2
1980	90.3	90.4	90.6	90.8	90.9	91.1	91.3	91.4	91.6	91.8	92.0	92.2	90.4	90.9	91.4	92.0	91.2
1981	92.4	92.5	92.7	92.9	93.1	93.2	93.4	93.5	93.7	93.8	93.9	94.0	92.5	93.1	93.5	93.9	93.3
1982	94.2	94.3	94.4	94.5	94.6	94.6	94.7	94.8	94.8	94.8	94.8	94.8	94.3	94.6	94.8	94.8	94.6
1983	94.8	94.8	94.8	94.7	94.7	94.6	94.6	94.5	94.5	94.5	94.5	94.5	94.8	94.7	94.5	94.5	94.6
1984	94.5	94.6	94.6	94.7	94.8	94.9	95.1	95.2	95.4	95.6	95.7	95.9	94.6	94.8	95.2	95.7	95.1
1985	96.1	96.3	96.5	96.7	96.9	97.1	97.3	97.4	97.6	97.7	97.8	97.9	96.3	96.9	97.4	97.8	97.1
1986	98.0	98.1	98.2	98.3	98.4	98.4	98.5	98.6	98.7	98.8	98.9	99.1	98.1	98.4	98.6	99.0	98.5
1987	99.2	99.4	99.5	99.7	99.8	99.9	100.1	100.2	100.3	100.4	100.4	100.5	99.4	99.8	100.2	100.4	99.9
1988	100.5	100.6	100.6	100.6	100.6	100.6	100.6	100.7	100.7	100.8	100.8	100.9	100.5	100.6	100.7	100.8	100.7
1989	101.0	101.2	101.3	101.5	101.6	101.8	102.0	102.2	102.4	102.5	102.7	102.9	101.2	101.6	102.2	102.7	101.9
1990	103.1	103.2	103.4	103.6	103.7	103.9	104.0	104.2	104.3	104.5	104.6	104.8	103.2	103.7	104.2	104.6	103.9
1991	104.9	105.1	105.2	105.4	105.5	105.7	105.8	105.9	106.1	106.2	106.3	106.4	105.1	105.5	105.9	106.3	105.7
1992	106.5	106.7	106.8	106.9	107.0	107.1	107.2	107.3	107.4	107.5	107.7	107.8	106.7	107.0	107.3	107.7	107.2
1993	107.9	108.0	108.1	108.2	108.3	108.4	108.5	108.6	108.7	108.8	108.9	109.0	108.0	108.3	108.6	108.9	108.4
1994	109.2	109.3	109.5	109.6	109.8	109.9	110.1	110.3	110.5	110.7	110.9	111.1	109.3	109.8	110.3	110.9	110.1
1995	111.3	111.5	111.7	111.9	112.1	112.3	112.6	112.8	113.0	113.2	113.4	113.7	111.5	112.1	112.8	113.4	112.5
1996	113.9	114.1	114.4	114.6	114.8	115.1	115.4	115.6	115.9	116.2	116.5	116.9	114.1	114.8	115.6	116.5	115.3
1997	117.2	117.6	118.0	118.4	118.8	119.3	119.7	120.2	120.7	121.2	121.7	122.3	117.6	118.8	120.2	121.7	119.6
1998	122.8	123.3	123.8	124.3	124.8	125.2	125.7	126.1	126.6	127.0	127.4	127.7	123.3	124.8	126.1	127.4	125.4
1999	128.1	128.5	128.8	129.1	129.5	129.8	130.1	130.4	130.6	130.9	131.2	131.4	128.5	129.5	130.4	131.2	129.9
2000	131.7	131.9	132.2	132.4	132.6	132.8	133.0	133.2	133.4	133.6	133.8	133.9	131.9	132.6	133.2	133.7	132.9
2001	134.1	134.2	134.3	134.5	134.6	134.7	134.8	134.8	134.9	134.9	135.0	135.0	134.2	134.6	134.8	135.0	134.6
2002	135.0	135.0	135.0	135.0	134.9	134.9	134.8	134.8	134.7	134.6	134.5	134.4	135.0	134.9	134.7	134.5	134.8
2003	134.3	134.2	134.1	134.0	133.9	133.8	133.7	133.7	133.6	133.5	133.5	133.4	134.2	133.9	133.7	133.5	133.8
2004	133.4	133.4	133.3	133.3	133.3	133.2	133.2	133.2	133.2	133.2	133.2	133.2	133.4	133.3	133.2	133.2	133.3
2005	133.2	133.3	133.3	133.4	133.4	133.5	133.6	133.7	133.8	133.9	134.1	134.2	133.3	133.4	133.7	134.1	133.6
2006	134.3	134.5	134.6	134.7	134.9	135.0	135.1	135.3	135.4	135.5	135.6	135.7	134.5	134.9	135.3	135.6	135.0
2007	135.8	135.9	136.0	136.1	136.2	136.3	136.4	136.5	136.7	136.8	137.0	137.1	135.9	136.2	136.5	137.0	136.4
2008	137.3	137.5	137.6	137.8	137.9	138.1	138.2	138.3	138.3	138.4	138.3	138.3	137.5	137.9	138.3	138.3	138.0
2009	138.2	138.1															
<b>Utilization (percent)</b>																	
1979	85.2	85.4	85.5	84.0	84.8	84.6	84.4	83.0	83.0	83.1	82.6	82.6	85.4	84.5	83.5	82.7	84.0
1980	82.7	82.4	81.6	79.6	76.9	75.5	74.6	74.9	76.0	77.2	78.5	78.5	82.2	77.3	75.1	78.1	78.2
1981	77.9	77.3	77.4	77.4	77.7	77.1	77.1	77.0	76.4	75.4	74.4	73.0	77.5	77.4	76.8	74.3	76.5
1982	71.1	72.9	72.2	71.5	71.2	70.9	70.7	70.1	69.7	68.9	68.4	68.1	72.1	71.2	70.2	68.5	70.5
1983	69.8	69.7	70.3	71.0	71.9	72.4	73.4	74.1	75.3	76.1	76.3	76.4	69.9	71.8	74.3	76.3	73.1
1984	77.8	78.5	78.7	78.9	78.9	79.1	79.3	79.1	78.8	79.0	79.0	79.1	78.3	79.0	79.1	79.0	78.9
1985	78.6	78.2	78.7	78.4	78.4	78.3	77.9	78.1	78.2	77.8	78.2	78.5	78.5	78.4	78.1	78.2	78.3
1986	79.3	78.8	78.4	78.7	78.7	78.5	78.5	78.6	78.7	78.9	79.1	79.6	78.9	78.6	78.6	79.2	78.8
1987	79.2	80.2	80.1	80.3	80.7	80.8	81.1	81.3	81.7	82.8	83.2	83.6	79.8	80.6	81.4	83.2	81.3
1988	83.4	83.5	83.7	84.3	84.2	84.2	84.2	84.4	84.8	85.0	85.2		83.5	84.2	84.3	85.0	84.3
1989	85.9	84.9	84.8	84.7	83.8	83.7	82.5	83.1	82.7	82.3	82.3	82.1	85.2	84.1	82.8	82.2	83.6
1990	81.8	82.9	83.0	82.6	82.6	82.6	82.3	82.3	82.2	81.3	80.2	79.4	82.6	82.6	82.2	80.3	81.9
1991	78.7	78.0	77.3	77.4	77.8	78.6	78.7	78.7	79.5	79.3	78.9	78.6	78.0	78.0	79.0	78.9	78.5
1992	77.8	78.4	79.1	79.3	79.6	79.7	80.2	79.7	79.5	79.8	80.0	79.7	78.5	79.5	79.8	79.8	79.4
1993	80.5	80.5	80.2	80.5	80.3	80.0	80.2	80.0	80.3	80.8	81.0	81.3	80.4	80.3	80.2	81.0	80.5
1994	81.3	81.2	82.1	82.4	82.7	82.7	82.8	83.1	83.0	83.5	83.8	84.4	81.5	82.6	83.0	83.9	82.7
1995	84.4	84.0	83.8	83.3	83.0	83.0	82.2	82.7	83.1	82.5	82.3	82.2	84.1	83.1	82.6	82.3	83.0
1996	81.0	81.9	81.4	82.0	82.2	82.7	82.5	82.6	82.7	82.2	82.6	82.9	81.4	82.3	82.6	82.6	82.2
1997	82.5	83.1	83.6	82.7	82.8	82.8	82.5	83.3	83.5	83.5	83.9	83.7	83.1	82.7	83.1	83.7	83.1
1998	83.8	83.3	82.7	82.7	82.8	81.5	80.5	82.1	81.3	81.5	81.2	81.1	83.3	82.3	81.3	81.3	82.1
1999	80.9	81.0	80.4	80.2	80.6	79.8	79.7	80.0	79.4	80.4	80.6	80.7	80.8	80.2	79.7	80.6	80.3
2000	80.3	80.0	80.2	80.3	79.8	79.7	79.3	78.6	78.8	78.3	77.7	76.9	80.2	79.9	78.9	77.6	79.1
2001	76.3	75.8	75.5	75.4	74.8	74.3	74.2	73.6	73.4	72.8	72.7	72.8	75.9	74.8	73.7	72.7	74.3
2002	73.2	73.1	73.7	73.7	74.1	74.9	74.5	74.7	74.8	74.5	74.8	74.3	73.3	74.2	74.7	74.5	74.2
2003	74.8	74.8	74.9	74.1	74.1	74.5	74.5	74.3	74.9	74.8	75.6	75.4	74.8	74.2	74.5	75.3	74.7
2004	75.3	75.9	75.7	76.1	76.7	76.0	76.7	77.1	76.9	77.7	77.7	78.2	75.6	76.3	76.9	77.8	76.7
2005	78.6	79.2	78.7	78.7	79.0	79.1	78.9	78.9	77.9	79.0	79.5	79.4	78.8	78.9	78.5	79.3	78.9
2006	79.9	79.5	79.3	79.6	79.2	79.3	79.2	79.3	79.0	78.6	78.4	79.3	79.6	79.4	79.2	78.8	79.2
2007	78.7	78.8	79.1	79.2	79.1	79.2	79.4	78.9	79.1	78.5	78.7	78.8	78.9	79.2	79.2	78.7	79.0
2008	78.4	77.8	77.5	76.6	76.4	76.1	75.8	75.1	72.2	72.7	71.3	69.3	77.9	76.4	74.4	71.1	74.9
2009	67.4	67.1															

NOTE Estimates from October 2008 through February 2009 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	2001	2002	2003	2004	2005	2006	2007	2008
<b>Total IP</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MARKET GROUPS								
<b>Final products and nonindustrial supplies</b>	59.0	58.9	58.2	57.0	56.9	56.8	56.2	57.0
<b>Consumer goods</b>	30.0	31.0	31.0	30.2	29.8	29.3	29.2	29.5
<b>Durable</b>	8.1	8.9	8.7	8.0	7.4	7.1	6.8	6.3
Automotive products	4.0	4.7	4.6	4.0	3.6	3.3	3.2	2.9
Home electronics	.4	.4	.4	.4	.4	.4	.3	.3
Appliances, furniture, carpeting	1.4	1.4	1.3	1.3	1.3	1.2	1.1	1.0
Miscellaneous goods	2.3	2.4	2.3	2.3	2.2	2.2	2.1	2.1
<b>Nondurable</b>	21.8	22.1	22.2	22.2	22.4	22.2	22.4	23.2
Non-energy	18.0	18.2	18.0	17.3	16.7	16.4	16.2	17.1
Foods and tobacco	9.8	9.6	9.6	9.3	8.9	8.7	8.8	9.4
Clothing	1.1	.8	.7	.6	.5	.4	.4	.4
Chemical products	4.6	5.2	5.2	5.1	5.0	5.1	4.8	5.1
Paper products	2.1	2.1	2.0	1.9	1.8	1.7	1.7	1.7
Energy	3.8	3.9	4.2	4.9	5.7	5.8	6.2	6.1
<b>Business equipment</b>	11.2	10.2	9.6	9.4	9.3	9.6	9.3	9.5
Transit	2.0	1.8	1.6	1.6	1.6	1.8	1.6	1.5
Information processing	3.9	3.2	3.0	3.0	2.8	2.9	2.8	2.9
Industrial and other	5.3	5.2	5.0	4.9	4.8	5.0	4.9	5.0
<b>Defense and space equipment</b>	1.6	1.6	1.6	1.5	1.6	1.5	1.5	1.7
<b>Construction supplies</b>	4.8	4.9	4.9	4.8	4.9	5.0	4.9	4.9
<b>Business supplies</b>	11.0	10.8	10.8	10.6	10.6	10.5	10.5	10.7
<b>Materials</b>	41.0	41.1	41.8	43.0	43.1	43.2	43.8	43.0
<b>Non-energy</b>	30.3	30.1	29.6	29.7	29.3	29.3	29.2	29.0
<b>Durable</b>	19.2	18.7	18.3	18.2	17.8	17.7	17.2	16.8
Consumer parts	3.8	4.0	3.8	3.6	3.3	3.2	2.9	2.7
Equipment parts	7.2	6.5	6.4	6.3	6.2	6.0	5.8	5.9
Other	8.2	8.1	8.1	8.3	8.3	8.5	8.4	8.2
<b>Nondurable</b>	11.1	11.4	11.3	11.4	11.5	11.6	12.0	12.2
Textile	.8	.8	.7	.7	.7	.6	.5	.5
Paper	2.8	2.8	2.5	2.4	2.3	2.3	2.3	2.3
Chemical	4.1	4.4	4.5	5.1	5.3	5.5	5.9	5.9
<b>Energy</b>	10.7	11.0	12.2	13.3	13.8	13.8	14.6	14.0
INDUSTRY GROUPS								
<b>Manufacturing</b>	83.5	83.2	81.7	80.5	79.5	79.3	78.6	79.0
<b>Manufacturing (NAICS) 31–33</b>	78.6	78.5	77.2	76.2	75.5	75.4	74.8	75.3
<b>Durable manufacturing</b>	44.0	43.2	42.0	40.7	39.7	39.6	38.4	38.1
Wood products 321	1.4	1.5	1.6	1.6	1.5	1.4	1.2	1.0
Nonmetallic mineral products 327	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2
Primary metal 331	2.3	2.3	2.3	2.7	2.6	2.8	2.7	2.5
Fabricated metal products 332	5.8	5.7	5.5	5.3	5.3	5.5	5.6	5.9
Machinery 333	5.5	5.3	5.0	4.9	4.9	5.0	4.9	4.9
Computer and electronic products 334	9.3	8.1	7.9	7.8	7.4	7.2	6.7	6.9
Electrical equip., appliances, and components 335	2.4	2.2	2.0	1.9	1.9	1.9	1.9	2.0
Motor vehicles and parts 3361–3	6.5	7.4	7.2	6.4	5.9	5.5	5.1	4.5
Aerospace and miscellaneous transportation equipment 3364–9	3.7	3.5	3.3	3.1	3.2	3.2	3.4	3.5
Furniture and related products 337	1.7	1.8	1.7	1.6	1.6	1.5	1.4	1.3
Miscellaneous 339	3.1	3.3	3.3	3.1	3.1	3.1	3.1	3.3
<b>Nondurable manufacturing</b>	34.6	35.3	35.2	35.5	35.8	35.7	36.5	37.2
Food, beverage, and tobacco products 311,2	11.3	11.3	11.4	10.9	10.6	10.4	10.7	11.5
Textile and product mills 313,4	1.3	1.4	1.3	1.2	1.2	1.1	.9	.9
Apparel and leather 315,6	1.2	1.0	.9	.7	.6	.6	.6	.6
Paper 322	3.1	3.1	2.9	2.7	2.6	2.6	2.5	2.6
Printing and support 323	2.6	2.4	2.2	2.1	2.0	1.9	1.9	1.8
Petroleum and coal products 324	1.7	1.8	2.1	3.2	4.2	4.5	5.0	4.7
Chemical 325	9.7	10.7	10.8	11.2	11.3	11.4	11.7	12.1
Plastics and rubber products 326	3.7	3.8	3.6	3.4	3.3	3.2	3.1	3.1
<b>Other manufacturing (non-NAICS) 1133,5111</b>	4.8	4.7	4.5	4.3	4.1	4.0	3.8	3.7
<b>Mining 21</b>	7.1	7.2	8.5	9.8	10.7	11.0	11.7	10.6
<b>Utilities 2211,2</b>	9.4	9.6	9.8	9.7	9.8	9.7	9.7	10.4
Electric 2211	8.0	8.2	8.2	8.0	8.0	8.0	8.1	8.6
Natural gas 2212	1.4	1.4	1.6	1.7	1.8	1.6	1.7	1.7

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 2008 and 2009 would account for a 0.381 percent increase in total IP.

Table 11

**INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION: SUMMARY**

Seasonally adjusted

Industrial production	2002=100						Percent change						Feb. '08 to Feb. '09
	2008 Sept. <sup>r</sup>	Oct. <sup>r</sup>	Nov. <sup>r</sup>	Dec. <sup>r</sup>	2009 Jan. <sup>r</sup>	Feb. <sup>r</sup>	2008 Sept. <sup>r</sup>	Oct. <sup>r</sup>	Nov. <sup>r</sup>	Dec. <sup>r</sup>	2009 Jan. <sup>r</sup>	Feb. <sup>r</sup>	
<b>Total index</b>	104.8	106.3	104.9	102.4	100.3	98.8	-4.0	1.4	-1.3	-2.4	-2.0	-1.5	-11.8
<i>Previous estimates</i>	105.3	107.0	105.7	103.2	101.2	99.7	-4.1	1.7	-1.3	-2.4	-1.9	-1.4	-11.2
<u>Major market groups</u>													
Final Products	106.3	107.0	106.8	105.9	103.3	102.2	-2.4	.6	-.2	-.9	-2.4	-1.1	-9.2
Consumer goods	101.4	103.0	102.1	100.4	98.4	97.8	-1.3	1.6	-.9	-1.7	-1.9	-.6	-8.3
Business equipment	117.7	114.9	117.9	120.2	115.5	113.7	-6.7	-2.4	2.6	2.0	-3.9	-1.6	-12.4
Nonindustrial supplies	102.6	102.3	99.9	96.7	95.3	93.1	-2.1	-.3	-2.4	-3.2	-1.4	-2.4	-13.8
Construction	99.1	97.8	93.7	89.7	86.3	84.7	-2.1	-1.3	-4.2	-4.2	-3.8	-1.8	-18.5
Materials	104.3	107.1	105.1	101.2	99.3	97.7	-5.9	2.7	-1.9	-3.7	-1.9	-1.6	-13.6
<u>Major industry groups</u>													
Manufacturing (see note below)	105.7	106.2	103.9	100.9	98.0	97.4	-3.7	.5	-2.2	-2.9	-2.8	-.7	-13.7
<i>Previous estimates</i>	106.6	107.3	104.9	101.8	99.1	98.3	-3.7	.6	-2.2	-2.9	-2.7	-.7	-13.1
Mining	96.4	103.5	105.2	103.2	101.9	101.2	-9.3	7.3	1.6	-1.9	-1.2	-.7	-3.7
Utilities	105.7	106.8	108.9	109.4	112.3	103.8	1.4	1.0	2.0	.4	2.6	-7.6	-6.9
	Percent of capacity												Capacity growth
<b>Capacity utilization</b>	Average 1972- 2008	1988- 89 high	1990- 91 low	1994- 95 high	2001- 02 low	2008 Feb.	2008 Sept. <sup>r</sup>	Oct. <sup>r</sup>	Nov. <sup>r</sup>	Dec. <sup>r</sup>	2009 Jan. <sup>r</sup>	Feb. <sup>r</sup>	Feb. '08 to Feb. '09
<b>Total industry</b>	80.9	85.1	78.7	84.9	73.5	80.2	74.5	75.5	74.6	72.7	71.3	70.2	.6
<i>Previous estimates</i>	80.9	85.0	78.6	85.1	73.6	80.7	75.0	76.2	75.2	73.3	71.9	70.9	1.1
Manufacturing (see note below)	79.6	85.4	77.2	84.5	71.4	78.0	72.5	72.8	71.3	69.2	67.3	66.8	.7
<i>Previous estimates</i>	79.6	85.4	77.1	84.6	71.5	78.5	73.2	73.6	71.9	69.7	67.9	67.4	1.2
Mining	87.6	86.5	83.8	89.1	84.9	91.2	83.1	89.1	90.5	88.8	87.7	87.0	.9
Utilities	86.8	92.8	84.2	93.3	84.2	86.7	81.2	81.9	83.4	83.6	85.7	79.1	2.1
<u>Stage-of-process groups</u>													
Crude	86.6	88.3	84.7	89.9	81.7	88.9	78.7	84.8	84.7	82.3	81.4	81.2	.8
Primary and semifinished	82.0	86.5	77.9	87.9	74.3	80.3	74.9	75.5	73.7	71.3	69.9	67.8	.3
Finished	77.7	83.0	77.2	80.3	70.0	76.6	72.2	71.6	71.3	70.4	68.6	68.5	1.5

r Revised. p Preliminary.

Note. The statistics in this release cover output, capacity, and capacity utilization in the U.S. industrial sector, which is defined by the Federal Reserve to comprise manufacturing, mining, and electric and gas utilities. Mining is defined as all industries in sector 21 of the North American Industry Classification System (NAICS); electric and gas utilities are those in NAICS sectors 2211 and 2212. Manufacturing comprises NAICS manufacturing industries (sector 31-33) plus the logging industry and the newspaper, periodical, book, and directory publishing industries. Logging and publishing are classified elsewhere in NAICS (under agriculture and information respectively), but historically they were considered to be manufacturing and were included in the industrial sector under the Standard Industrial Classification (SIC) system. In December 2002 the Federal Reserve reclassified all its industrial output data from the SIC system to NAICS.

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. More detailed descriptions of industrial production and capacity utilization are available at [www.federalreserve.gov/releases/G17](http://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 2002. 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 312 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](http://www.federalreserve.gov/releases/G17/About.html)).

**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 production-worker hours by industry. Data on hours worked by production workers are collected in the monthly establishment survey conducted by the Bureau of Labor Statistics. 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 *The 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 monthly 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 8 percent. If output in this industry increased 10 percent in a month, then this gain would boost growth in total IP by 8/10 percentage point (0.08 x 10% = 0.8%). 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](http://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, beginning with the release of March 2008 data, subject to revision in each of the subsequent five 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 72 percent of the source data (in value-added terms) are available; the fraction of available source data increases to 86 percent for estimates in the second month that the estimate is published, 95 percent in the third month, 98 percent in the fourth month, 99 percent in the fifth month, and 99 percent in the sixth month. Data availability by data type, based on the six-month reporting window used in 2008, is summarized in the table below:

**Availability of Monthly IP Data in Publication Window**  
(Percent of value added in 2008)

Type of data	Month of estimate					
	1st	2nd	3rd	4th	5th	6th
Physical product	30	44	54	56	57	57
Production-worker hours	42	42	42	42	42	42
IP data received	72	86	95	98	99	99
IP data estimated	28	14	5	2	1	1

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 (30 percent out of total of 57 percent). Of the 30 percent, about two-thirds (19 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.

**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 February 2009; for other series, the factors were estimated with data through at least September 2008. 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 0.26 percent during the 1987–2008 period. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates was 0.21 percentage point during the 1987–2008 period. In most cases (about 85 percent), the direction of change in output indicated by the first estimate for a given month is the same as that shown by the fourth estimate.

**Rounding.** 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 87 detailed industries (69 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 25 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 *Quarterly Survey of Plant Capacity* (QSPC); these industries account for a bit less than 70 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 5 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/CapNotes.html](http://www.federalreserve.gov/releases/G17/CapNotes.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 annual Survey of Plant Capacity (the primary source of factory operating rates through 2006, after which it was discontinued) for the fourteen years they overlapped. Adjustments have been made to keep the industry utilization rates currently reported by the Federal Reserve (now based on the QSPC) 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 Census utilization surveys.

**Perspective.** Over the 1972–2007 period, the average total industry utilization rate was 81.0 percent; for manufacturing, the average factory operating rate was 79.7 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.

## REFERENCES AND RELEASE DATES

**References.** The annual revision published in March 2008 is described in an article published in the *Federal Reserve Bulletin*, vol. 94, pp. A41–A60. A summary of the annual revision that incorporated back to 1972 production and capacity indexes reclassified according to the North American Industry Classification System is available in an article in the *Federal Reserve Bulletin*, vol. 89 (April 2003), pp.151-176. 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/CapitalStockDocLatest.pdf](http://www.federalreserve.gov/releases/g17/CapitalStockDocLatest.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, Winter 2004, Winter 2005).

## Release Schedule

At 9:15 a.m. on

**2009:** January 16, February 18, March 16, April 15, May 15, June 16, July 15, August 14, September 16, October 16, November 17, and December 15.