Industrial Production and Capacity Utilization

Performance Evaluation of the Federal Reserve G.17 (419) Statistical Release

June 2026

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Washington, D.C. 20551

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I. Overview

The Federal Reserve statistical release "Industrial Production and Capacity Utilization" G.17 (419) reports monthly measures of output (IP) for major market and industry groups in the industrial sector, which the Federal Reserve defines as the manufacturing, mining, and electric and gas utilities industries. Monthly measures of capacity and capacity utilization for major industry groups are provided as well. More detailed industry data for these indicators are published concurrently in a supplement to the G.17.

The production and capacity indexes are expressed as percentages of output relative to a base year, which currently is 2017. The component IP and capacity indexes are aggregated into market and industry groups with weights that are derived from their proportion in the total value added of all industries. The release also includes gross values of industrial products expressed in billions of chained (2017) dollars, gross-value-weighted production indexes by stage-of-process, diffusion indexes of industrial production, supplementary data on motor vehicle assemblies in millions of units, and reliability measures for total IP and the major industry aggregates. The G.17 release and the supplement to the release are published about 15 days after the reference month ends; for example, preliminary estimates for May are released in mid-June. The release is available on the Federal Reserve's public website at the time of publication.

The production indexes and utilization rates are widely reported in the media and are used by analysts in government, businesses, and universities to follow current developments and trends in real output and operating rates in the industrial sector. The production indexes are also used by the Bureau of Labor Statistics (BLS) to estimate manufacturing productivity and by the Bureau of Economic Analysis (BEA) to estimate several components of the national income and product accounts including investment in computers and peripheral equipment, transportation equipment inventories, proprietors' income, and rental income. The Federal Reserve Bank of Atlanta uses IP indexes in its GDPNow measure, a model-based "nowcast" of the BEA's official estimate of the growth rate of gross domestic product. In addition, IP may be used by the Business Cycle Dating Committee of the National Bureau of Economic Research as one of the economic indicators that identifies peaks and troughs of business cycles.

Data from both the G.17 and the supplement to the G.17 are currently made available online through the Federal Reserve's Data Download Program (DDP) and the Federal Reserve Bank of St. Louis's Federal Reserve Economic Data (FRED). The DDP is scheduled to be discontinued over the course of 2026; after this process is complete, the Federal Reserve will continue to post the files with the complete data from the release on the G.17 public website and FRED will host the data on their website.

II. Changes in Indexes since June 2023

Since mid-2023, when the Federal Reserve most recently reported to the Office of Management and Budget (OMB) on the G.17 statistical release, the methods for estimating a number of industrial production indexes and capacity series were changed in response to either the availability of new data or the discontinuance of previous data sources.

The 2024 annual revision incorporated newly available annual data on output for logging and mining industries as well as annual data on shipments for publishing industries, while the 2025 annual revision incorporated benchmark information from the 2022 *Census of Manufactures*.

The following subsections summarize additional methodological improvements that were part of these annual revisions. Detailed descriptions of the revised IP and capacity measures and of the methodology changes for the indexes are available in the press releases for the 2024 and 2025 annual revisions.

II.A. Conversion to the 2022 North American Industry Classification

With the 2025 annual revision, the IP and capacity indexes were classified according to the 2022 version of the North American Industry Classification System (NAICS); previously they were classified according to the 2017 version of NAICS. For the industrial sector, there were several differences between the 2017 and the 2022 NAICS.

A few IP indexes were reclassified to reflect the new NAICS structure, including two previously unpublished indexes that were dropped because of the new structure.

Those series that underwent some classification changes included gold and silver ore mining; hosiery, sock, and other apparel knitting mills; cut and sew apparel manufacturing; battery manufacturing; automobile and light duty motor vehicle manufacturing; paper mills; and publishing. In the 2017 system, gold and silver ore mining were separate six-digit industries (NAICS 212221 and NAICS 212222, respectively); under the 2022 system, they were consolidated into a single NAICS category (NAICS 212220). Similarly, storage battery manufacturing and primary battery manufacturing were consolidated into a single 2022 NAICS category; automobile manufacturing and light truck and utility vehicle manufacturing were consolidated; and paper (except newsprint) mills and newsprint mills were consolidated. In each of these cases, IP indexes were reclassified but continue to be produced at the same level of detail such that the number of IP indexes was unaffected.

In the apparel subsector, two five-digit industries were combined into a single 2022 NAICS category (apparel knitting mills, NAICS 31512) and three other five-digit industries were combined into a single category (cut and sew apparel manufacturing (except contractors), NAICS 31525). In each of these cases, due to (1) the lack of reliable product-level data tracking each index separately and (2) the small value-added proportion of each separate index, IP

indexes separately tracking the 2017 NAICS categories were combined to follow the 2022 NAICS classification.

In publishing industries, two 2017 NAICS categories—newspaper, periodical, book, and directory publishers (NAICS 5111) and other information services (NAICS 5191)—were combined into a single 2022 NAICS category: newspaper, periodical, book, and directory publishers (NAICS 5131). Despite the consolidation, benchmark data from the 2022 Service Annual Survey provided sufficient industry detail for the number and content of relevant IP indexes to remain the same. Each IP index linked to a 2022 NAICS code beginning with 5131 includes all activities that fall under the scope of the corresponding 2017 NAICS code beginning with 5111 and omits all activities that fall outside of that scope.

II.B. Conversion to the 2022 North American Product Classification System

The IP system utilizes data on product shipments to construct annual benchmarks and value-added weights for those IP indexes that are defined as subsets of a given six-digit NAICS industry. These weights are based on product shipments for all products associated with the particular IP index, where products are defined following the North American Product Classification System (NAPCS).

With the 2025 annual revision, annual benchmarks and value-added weights for relevant IP indexes were calculated at the level of 2022 NAPCS categories; previously, they were calculated based on the 2017 NAPCS. The Census Bureau produces a two-directional mapping between the 2017 and 2022 NAPCS codes. Where a 2017 NAPCS code was discontinued, the closest matching 2022 NAPCS code(s) produced within the relevant NAICS industry (or industries) was (were) included in product shipments for the benchmarks. Where the 2022 NAPCS data were not disclosed at the desired industry disaggregation, the closest appropriate industry aggregate for the product was used to construct the benchmarks.

II.C. Other Changes to the Indexes

In addition to the incorporation of the 2022 NAICS and adoption of NAPCS product-level data, the methods for estimating several other indexes were revised in the three years since the 2023 report to the OMB.

The following changes were instituted with the 2024 annual revision:

1. The source data for storage batteries (NAICS 335911 under the 2017 NAICS classification) were updated to reflect growth in the production of lithium-ion batteries for automobiles. Previously, the indexes reflected data on production of lead acid motor vehicle batteries from Battery Council International. These data continue to be used and are supplemented with data on production-worker hours for the industry and annual estimates of lithium-ion battery production from Benchmark Mineral Intelligence.

2. The source data for ball and roller bearings (NAICS 332991) were updated. The index for ball and roller bearings previously reflected data on the production of bearings from the American Bearing Manufacturers Association (ABMA) in addition to data on production-worker hours. The ABMA report was discontinued, so beginning in 2017 the series is based just on production-worker hours for the industry.

3. The price indexes used to deflate the nominal output for three semiconductor (chip) categories were modified, and the source data used to estimate the product mix within the semiconductor industry were changed.

The following changes were instituted with the 2025 annual revision:

The source data for the index for speed changers, industrial high-speed drive, and gear manufacturing and for mechanical power transmission equipment manufacturing (NAICS 333612 and NAICS 333613, respectively) were updated. This index previously reflected data on shipments of gears from the American Gear Manufacturers Association (AGMA) in addition to data on production-worker hours. The AGMA report was discontinued, so beginning in 2022 the series is based on production-worker hours for the industry.

III. Analysis of Revisions

III.A. Industrial Production

The monthly indexes of industrial production are first estimated based on only a portion of their ultimate full set of monthly data; they are revised to incorporate more complete monthly data that become available over the six-month window and then again to incorporate more comprehensive information and annual data in an annual revision that may affect data for several years.

Information about revisions to the index of industrial production is presented in three ways.

First, dating back to the G.17 released on April 18, 2017, the Federal Reserve has published reliability estimates of the recent levels and rates of change for the total index and for major industry aggregates. These estimates are published in Table 15 of the G.17 release, and real-time estimates for these reliability measures are included in a file with other data for the aggregate IP indexes with each release.

Second, the release includes a discussion of the reliability of the total IP index in the Explanatory Note section of the G.17. The average revision to the *level* of the total IP index, without regard to sign, between the first and the fourth estimates, was 0.30 percent during the period from January 1987–December 2025. The average revision to the *percent change* in total IP, without regard to sign, from the first to the fourth estimates, was 0.24 percentage point during the January 1987–December 2025 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. The monthly revision history for total IP back to 1972 (as well as shorter revision histories for manufacturing, mining, and utilities) is available on the Federal Reserve's public website.

Third, the annual revision press releases discuss the effects of incorporating the benchmark data on the industrial production indexes. The incorporation of benchmark data has the potential to noticeably change the interpretation of activity in the industrial sector in the years covered by these data. Currently, the most comprehensive benchmark data that have been incorporated are from the U.S. Census Bureau's 2022 Economic Census, and these data were incorporated in November 2025. For the period from 1994 through 2022, the annual rate of change for total IP has ranged from a drop of 11.2 percent (in 2009) to a gain of 6.4 percent (in 1997). Over that period, the index prior to the incorporation of manufacturing benchmark data has been essentially unbiased; the average revision to the annual rates of change upon inclusion of the benchmarks for those years is negative 0.4 percentage point. In 19 of those 29 years, the absolute value of the revision was less than 1 percentage point; the mean absolute revision for the entire period was 0.9 percentage point, with the maximum upward revision being 1.6 percentage points (in 1995) and the maximum downward revision being 1.9 percentage points (in 2009).

III.B. Capacity Utilization

On a monthly basis, utilization rates are updated to reflect revisions to the underlying production series during the usual reporting window of the production index. Excluding revisions due to the publication of an annual revision, from 1983 to 2025, the average revision between the first and second estimates of total industry capacity utilization was 0.01 percentage point, and the average revision without regard to sign was 0.15 percentage point. Between the second and third estimates, the average revisions with and without regard to sign were 0.02 percentage point and 0.13 percentage point, respectively. And, between the third and fourth estimates, the average revisions with and without regard to sign were 0.01 percentage point and 0.07 percentage point, respectively. The average cumulative revision over a four-month reporting window, if no annual revision occurred during the window, was 0.03 percentage point, and without regard to sign, the average cumulative revision was 0.22 percentage point.

On a longer-term basis, the revisions to the measures of capacity utilization can be examined by comparing the capacity utilization rates published before and after the incorporation of benchmark data for each year. Revisions to the operating rates for total industry were calculated for the final quarters of the year for which benchmark data was being incorporated. For the period from 1994 through 2022, the total industry capacity utilization rate has ranged from 70.3 percent (in 2009) to 84.4 percent (in 1994). Over that period, the operating rate prior to the incorporation of manufacturing benchmark data has been essentially unbiased; the average revision to the fourth quarter utilization rate upon inclusion of the benchmarks for those years is negative 0.2 percentage point. In 26 of those 29 years, the absolute value of the

revision was less than 1 percentage point; the mean absolute revision for the entire period was 0.5 percentage point, with the maximum upward revision being 1.2 percentage points (in 2020) and the maximum downward revision being 2.2 percentage points (in 2022).

IV. Data Publication and Availability

IV.A. Description of the Statistical Release, G.17 (419)

The statistical release "Industrial Production and Capacity Utilization" is usually 18 to 20 pages. It provides timely monthly data on industrial production and capacity utilization on a regular schedule. The release includes a text summary of the latest changes in output and utilization by market group (IP) and by industry group (IP and utilization), special announcements, a summary table and related charts, and more detailed tables showing seasonally adjusted industrial production classified by market and industry groups. In addition, special analytical aggregates, such as for high technology, energy, and motor vehicles, are shown; industries grouped into stage of processing are reported as well. IP indexes for more detailed industries and market groups are available in the supplement to the G.17. Indexes of capacity and capacity utilization also are presented, as is supplementary information on motor vehicle assemblies, the gross value of products, and diffusion indexes of IP. Finally, a table displaying reliability measures for the major aggregates is also presented.

Detailed explanations of the annual revisions to IP and capacity were described in the press releases issued on June 28, 2024, and November 24, 2025. Announcements about upcoming annual revisions to the G.17 appear at least two months before the publication of the revised data in each year. Besides the regular annual revisions, users are notified in the G.17 of any significant interim changes, such as any midyear updating of seasonal factors or capacity indexes; notifications are also provided online via RSS feeds and on Facebook, Instagram, LinkedIn, X, Threads, and Bluesky. For each annual revision, the new data and updated documentation were available at the time of issue on the website of the Federal Reserve Board.

IV.B. G.17 Webpage

The Federal Reserve Board's public website meets the requirements of Section 508 of the Rehabilitation Act of 1973 (amended). Section 508 requires federal agencies to provide comparable access to persons with disabilities (both employees and members of the public) to electronic and information technology developed, procured, maintained, or used by the agency unless an undue burden would be imposed on the agency. Electronic and information technology is broadly defined and covers web pages.

The webpage for the G.17 displays a release schedule for the current year with a link to the current release, a link to a page showing historical release dates back to 1947, and links to historical releases. In addition, below the heading near the top of this page that says "Industrial Production and Capacity Utilization - G.17" are links to other main sections (or pages): the

current release, the supplement to the G.17 with additional detail, the latest annual revision release, options for downloading industrial production and related data, other data not directly related to the G.17 release, documentation, a brief history celebrating 100 years of industrial production data, announcements, and technical questions and answers.

Monthly IP releases are available on the webpage for the G.17 dating back to December 1997. Annual revision releases are available dating back to January 1997. In addition to the current format of the G.17, which was introduced in February 2001, a supplemental release, which provides more detailed industry data, for each month is available on the webpage. All of these releases are available in ASCII and PDF formats. "Screen reader" versions (compliant with section 508 of the Rehabilitation Act of 1973, amended) are available for releases beginning with the one issued September 14, 2001.

The Data Download page provides links to current and historical data through the Data Download Program (DDP) and on the text file pages. The DDP allows data users to selectively download any of the statistics published in the G.17 using a variety of formats, including a comma-separated-value file (.csv), an Excel 2003 spreadsheet (.xls), or an Extensible Markup Language file (.xml) based on the Statistical Data and Metadata Exchange (SDMX) schema. Data users can also download predetermined packages, including one that includes all new or revised data in the latest G.17. As noted in Section I, the DDP is expected to be discontinued in 2026; after this process is complete the Federal Reserve will continue to post the files with the complete data from the release on the G.17 webpage and FRED will host the data on their website.

The Data Files section provides links to text files of data, documentation on how to access the data, and information on file format and directions for loading the data into an Excel spreadsheet. Relative importance weights also are provided; an example of their use is provided in the "Aggregation Methodology and Weights" subsection of the Explanatory Note section of the release. In 2025, a link to auxiliary data was added to the list of data files. These data are IP and capacity series that are not published in the official G.17 release, but were previously available to the public upon request.

Also on the Data Download page are links to data and documentation relating to revisions to IP from initial to final (as described in section III, above) and links to data formatted for International Monetary Fund and United Nations releases. The data files for the UN include not seasonally adjusted and seasonally adjusted IP indexes on an International Standard Industrial Classification (ISIC) basis. The data files for the IMF include not seasonally adjusted and seasonally adjusted data for Total IP and Manufacturing IP as part of their Special Data Dissemination Standard Plus (SDDS+) program. The Data Download page also links to discontinued data and the Other Data page.

The Other Data page provides links to industrial data that are not part of the G.17 release. The pages for the seasonal factors for domestic auto and truck production, seasonal factors for motor vehicle sales, computer storage equipment price index, and manufacturing investment

and capital are updated on a regular basis, while the pages for the quality-adjusted price indexes for communications equipment and the microprocessor price index are not being maintained and show their last historical updates.

The About page provides documentation on the methods and source data used to compile the industrial production and capacity utilization statistics.

For each monthly production and capacity series, the series source and pertinent metadata are detailed in tables listed in the Source and Description Tables section. This material is updated with each annual revision.

The Source and Description tables are as follows: Table 1 covers the "Industry structure of industrial production: classification, value-added weights, and description of series." For each series and NAICS industry group, the following attributes are shown: the industry name, the market and industry classifications, the value-added weights in 2022 dollars and as proportions of the total index, the type of data (physical product or production-worker hours), and the units of measure, source for the series, and the beginning date. Table 2, "Market structure of industrial production: classification, weights, and descriptions of series" shows the individual production series arranged by major market group. It includes 2022 value added in dollars and proportions for all series, as well as gross value weights in 2022 dollars for product series. Table 3, "Industry structure of capacity and capacity utilization: classification, value-added proportions, and description of series" shows sources used to compile each individual capacity index. Stage-of-processing classifications and starting dates for each capacity and utilization series are shown as well.

The explanatory note published as part of the release is also provided on the G.17 About page in the "Summary of Methods" section. Moreover, its section on capacity utilization contains an expanded description of the methods used to construct the capacity indexes. Documentation regarding capital stock estimates, used in constructing the capacity figures, is available as well.

The Technical Q&As page provides in-depth information on technical aspects of the estimation procedures for IP and capacity. New technical Q&As are added to the page as necessary to explain new or revised methodology. Additions to the technical Q&As since the 2023 report to the OMB include detail on the auxiliary data tables and information about releases that were delayed due to the 2025 government shutdown.

IV.C. Publication Statistics

Most of the inquiries about industrial production and capacity utilization data are electronic. During 2025, the main G.17 webpage has averaged about 15,000 "page views" per month. The page views count represents only a fraction of overall data users, as G.17 data are often accessed from other sources, including the Federal Reserve Bank of St. Louis's Federal Reserve Economic Data (FRED) website and a variety of private-sector data providers.

IV.D. Release Schedule

The industrial production index is typically released around the middle of each month, usually at 9:15 a.m. A schedule is included in the explanatory note in the G.17 and on the Release Dates page. Three releases in 2025 were delayed due to a lack of source data resulting from the 2025 government shutdown. The release scheduled for October 17, 2025, was delayed until December 3, 2025, while the scheduled November 18, 2025, and December 16, 2025, releases were combined and issued together on December 23, 2025. Announcements regarding the revised timing of these delayed releases were on the webpage in advance of their publication. An announcement that the October 17, 2025, release would be delayed was first posted on October 10, 2025. An announcement that the November 18, 2025, release would be delayed followed on November 14, 2025. The announcement that the release scheduled for October 17, 2025, would be issued on December 3, 2025, was posted on November 20, 2025, and the revised release date for the combined November 18, 2025, and December 16, 2025, releases was posted on December 3, 2025.

Advance notices of the revision issued on June 28, 2024, appeared in the G.17 releases published mid-month from January 2024 through April 2024, with the exact publication date being announced on May 16, 2024. Notices of the November 24, 2025, annual revision were in the G.17 releases published in April 2025 through September 2025, with the exact publication date being announced on November 12, 2025.

IV.E. Inquiries about IP or Capacity Utilization

The Industrial Output Section receives outside requests for information about the index of industrial production or the rate of capacity utilization. Most requests come by email. These requests are generally for data, for methodological descriptions, for interpretation of the data, or for information regarding other related statistics.

The requests for data frequently involve data availability and access. In a typical month, a few emails are received on or near the day of release. Outside inquiries are often received between release dates from users wanting to know more about the structure and detail of the index; many of these requests are satisfied by directing users to information available on the G.17 website. Owing to the widespread availability of the data in public and private databases, these users may not have seen the explanatory notes to the G.17 or the methodologies in previously published detailed material, such as *Industrial Production—1986 Edition, with a Description of the Methodology* or various relevant Federal Reserve Bulletin articles. For most questions, Industrial Output Section staff email a response within a day. If a question is likely to be of broad interest, or if answering it requires use of information not yet made public, then the answer may be posted using the Technical Q&A section of the website.

V. Security of Data and Release Procedures

The G.17 is continuously monitored for compliance with the Federal Information Security Management Act and the Federal Reserve Board's Information Security Program. In addition, the operations involved in producing the G.17 were reviewed by the Office of the Inspector General of the Federal Reserve Board in the summer of 2005. Once the compilation of current IP has begun, internal access to the IP data files is limited to a pre-determined group of individuals within the Industrial Output Section. Individual user access of the division's systems requires two-factor authentication; that is, access to the user's account requires inserting the user's government-issued personal identity verification card into the user's computer and also requires the user to enter a passcode.

V.A. Standard Security and Release Procedures

During the monthly IP process, interim reports may be provided to division officers, the Chair of the Federal Reserve, and a few select others. Once IP is finalized, senior division staff members are briefed—usually the day before the publication day—and the Chair is provided with summary tables. All of these updates are classified as "Internal FR" within the Federal Reserve. The press release text and summary tables are provided to a member of the Economic Editing Section and to the Office of Public Affairs for review on the day before publication. In the early afternoon on the day before the release day, encrypted tables are sent to the Council of Economic Advisers through a secure link; later that day, an encrypted copy of the final release is sent to them through the same link.

Measures are in place to ensure information is protected until its official release time. A limited number of staff directly involved in preparing and reviewing the release for publication have access before its release. In the event information were inadvertently released before the scheduled publication time, the Federal Reserve has a procedure where the release would be published on its website as soon as possible.

V.B. Off-Schedule Releases

On July 17, 2024, a revision to the motor vehicle assembly data published earlier in the day for the period of June 2024 had to be updated to correct for a reporting error. The June industrial production index for motor vehicle and parts production was unaffected. On July 26, 2024, files from the Data Download program were updated to correct the labels for the Gross Value of Products and Industrial Supplies series in the Data Download Program for the same July 17, 2024, release; in this case, the Gross Value of Products and Industrial Supplies series were mislabeled as being in 2012 dollars when they should have been labeled as being in 2017 dollars.

As discussed in section IV.D, above, three releases in late 2025 were delayed due to lack of source data availability resulting from the 2025 government shutdown.

VI. Supplemental Information

A bibliography of articles generated by Federal Reserve staff and featuring industrial production and capacity utilization can be found on the Federal Reserve's website. Likewise, a history of the development of the index and a detailed methodology for the statistics in the G.17 are available on the website.