

Index of the stock of orders in manufacturing

Base 2021=100



2024

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Summary

1 General information on the statistics Page 5

- Scope: selected branches of manufacturing
- Presentation unit: Results are presented for classes (four-digit items) of the Classification of Economic Activities.
- Reference area: Germany
- Reference period: Time series with monthly values from January 2015, the individual time series values refer to the end of the respective reporting month.
- Frequency of data collection: monthly
- Legal acts and other agreements: Industry Statistics Act (ProdGewStatG)

2 Content and user needs Page 6

- Statistical presentation: Monthly development of the stock of orders in selected branches of manufacturing. A distinction is made between unfilled domestic orders and orders received from foreign customers. The results are available as a value index and a (price-adjusted) volume index, and in addition in calendar and/or seasonally adjusted versions.
- User needs: Indicators of the short-term economic development in Germany.

3 Methodology Page 7

- Basic data: Survey data on the stock of orders are collected in the monthly report incl. survey of new orders for local units in manufacturing, mining and quarrying (EVAS No. 42111).
- Calculation of indices for economic branches: Current stock of unfilled orders in an economic branch in relation to the respective stock of orders in the base year. Indices at higher levels of breakdown: weighted average of the branch indices included. Weights: average stock of orders in the base year.
- Price adjustment: Division by suitable price indices (producer and export price indices, EVAS No. 61241 resp. 61421).
- Seasonal adjustment: Influences that occur regularly and to a similar extent in the course of the year as well as calendar effects are eliminated from the time series by means of the mathematical-statistical method X 13 JD+.

4 Accuracy and reliability Page 8

- Accuracy: the monthly survey covers more than 15,000 local units. In some economic branches, especially concerning intermediate consumption and consumer goods, it is somewhat difficult to measure the stock of unfilled orders (e. g. in the case of framework supply contracts).
- Revisions: Both unadjusted and seasonally adjusted indices are subject to revision (see comprehensive version).

5 Timeliness and punctuality Page 9

- Timeliness: the results are available within 50 days after the end of the reference month.
- Punctuality: release dates are scheduled for a whole year and published in advance in the release calendar of the Federal Statistical Office. In the last few years, adherence to delivery dates has been 100%, and the announced dates have always been met.

6 Comparability Page 9

- Indices of the same base year are comparable over time. In formal terms, indices of different base years are comparable over time. Changes in the weighting structures, the groups of respondents and the territorial status however impair the analysis of long time series.

7 Coherence

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- The indices can be combined with the results of other economic statistics where these relate to the Classification of Economic Activities (WZ 2008) and to local kind-of-activity units.

8 Dissemination and communication

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- The first results are published in a press release (www.destatis.de/presse). Upon publication, the results can also be accessed in table 42155 of the GENESIS-Online database (www.destatis.de/genesis).

9 Comment

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- None

1 General information on the statistics

1.1 Statistical population

The statistics refer to the following selected manufacturing branches of the Classification of Economic Activities (WZ 2008):

WZ 13 Man. of textiles,

WZ 14 Man. of wearing apparel,

WZ 17 Man. of paper and paper products,

WZ 20 Man. of chemicals and chemical products,

WZ 21 Man. of basic pharmaceutical products and pharmaceutical preparations,

WZ 24 Man. of basic metals,

WZ 25 Man. of fabricated metal products, except machinery and equipment,

WZ 26 Man. of computer, electronic and optical products,

WZ 27 Man. of electrical equipment,

WZ 28 Man. of machinery and equipment n.e.c.,

WZ 29 Man. of motor vehicles, trailers and semi-trailers,

WZ 30 Man. of other transport equipment.

1.2 Statistical unit

Presentation unit: results are published for classes (four-digit items) of the Classification of Economic Activities (WZ 2008).

Survey unit: the underlying data are collected from local production units with 50 or more persons employed of enterprises in manufacturing or other enterprises.

Tabulating unit: for the purpose of processing the collected data, local kind-of-activity units are formed as tabulating units. A kind-of-activity unit includes all activities of a local unit which belong to the same class (four-digit item) of the Classification of Economic Activities.

1.3 Reference area

The results are published by the Federal Statistical Office for the whole of Germany.

1.4 Reference period

The data relate to the stock of orders at the end of the reference month. The time series begins in January 2015.

1.5 Frequency of data collection

The stock-of-orders indices are released on a monthly basis.

1.6 Legal acts and other agreements

Industry Statistics Act (ProdGewStatG) in the version promulgated on 21 March 2002 (Federal Law Gazette I, p. 1181), last amended by Article 7 of the Act of 22 February 2021 (Federal Law Gazette I, p. 266).

1.7 Confidentiality

1.7.1 Confidentiality - policy

The confidentiality rules of the relevant surveys apply to the basic data underlying the calculations; they are described in the respective quality reports.

1.7.2 Confidentiality - data treatment

There are no confidentiality procedures in place as this set of statistics is an accounting system based on aggregated results of the underlying basic data.

1.8 Quality management

1.8.1 Quality assurance

The data collection and calculation process provides for several phases in which the statistical offices of the Federation and the Länder revise the results available at the time. Aspects of data collection and processing are discussed at the annual expert meetings of representatives from the statistical offices of the Federation and the Länder. The decisions taken are laid down in the minutes of the expert meetings.

1.8.2 Quality assessment

The results are based on monthly surveys of more than 15,000 local units and therefore are highly accurate. In some economic branches, especially concerning intermediate consumption and consumer goods, it is somewhat difficult to measure the stock of unfilled orders (e.g. in the case of framework supply contracts). The comparability over time may be impaired due to structural changes which occurred in the relevant period (e.g. changes in the way local units report their data), see section 6.2. Besides, the index results are subject to the conflicting requirements of rapid availability and accuracy. If they were provided earlier, they would inevitably contain a large share of estimates, thereby necessitating revisions.

2 Content and user needs

2.1 Statistical presentation

2.1.1 Data description

The indices of the stock of orders measure the monthly development of unfilled orders in selected branches of manufacturing. To analyse domestic demand and export demand, a distinction is made between unfilled domestic orders and orders received from foreign customers. The results are available as a value index and a (price-adjusted) volume index, and in addition in calendar and/or seasonally adjusted versions.

2.1.2 Classification system

Data are collected and results are presented in a breakdown by economic activity in accordance with the Classification of Economic Activities (WZ 2008). In addition, a breakdown by main industrial grouping is used (see Commission Regulation (EC) No 1197/2020).

2.1.3 Statistical concepts and definitions

The indices of the stock of orders reflect the ratio of the current values of unfilled orders to the corresponding values in the base year. For instance, a stock-of-orders index value of 110 means that the stock of orders is 10% higher than in the base year.

The overall index is constructed as the weighted average of the results for individual economic branches. The weights reflect the proportion of unfilled orders in the individual economic branches in the base year. The index is constructed as a fixed-base index which is rebased every five years. The weights are maintained for five years to make sure that structural shifts between the economic branches have no impact on the index development during that period.

As a rule, the indices are published as volume indices to eliminate the effects of price changes; value indices are available in addition.

The following definitions apply to the underlying variables:

- The stock of orders in an economic branch comprises the total of new orders at the end of the reference month which have neither led to turnover nor been cancelled by that time.
- New orders are defined as the total value of all orders definitely accepted by the local units in the reference month which refer to the supply of products manufactured either by themselves or through contract work.

2.2 User needs

The indices are important indicators of short-term economic development in Germany on account of their monthly periodicity, detailed breakdown by economic branch and country of destination, the clear cyclical development in manufacturing, and the strong interrelationship between manufacturing and industry-related services.

Main users include the federal ministries, the European Central Bank, the Deutsche Bundesbank, Eurostat and other international institutions, business associations, enterprises, research institutes, universities, and the general public.

2.3 User satisfaction

The interests of the main users are represented by the Statistical Advisory Committee and by the bodies it appoints. Pursuant to Section 4 of the Federal Statistics Act, the Committee advises the Federal Statistical Office on fundamental issues. The Statistical Advisory Committee consists of representatives from the federal ministries, the German Supreme Audit Institution and the Deutsche Bundesbank, the heads of the statistical offices of the Länder and the Federal Commissioner for Data Protection, representatives from central municipal organisations, trade and industry, the liberal professions, employers' associations, trade unions, and from agriculture, economic institutes and higher education institutions. There is also regular direct contact with the Deutsche Bundesbank and the Federal Ministry for Economic Affairs and Energy.

3 Statistical processing

3.1 Source data

The data used to calculate index numbers and weights come from the monthly report incl. survey of new orders for local units in manufacturing, mining and quarrying (EVAS No. 42111). Results of price statistics are used for price adjustment, in particular the index of producer prices of industrial products, domestic sales (EVAS No. 61241) and the index of export prices (EVAS No. 61421).

3.2 Data compilation

In a first step, indices are calculated for economic branches (branch indices) by relating the current stock of orders in an economic branch to the respective stock of orders in the base year (mean value of the base year's months). The level of detail of the branch indices is that of classes (four-digit headings) of the Classification of Economic Activities. For the stock-of-orders index, roughly 130 branch indices are computed, separately for the domestic territory and other countries.

In a next step, these branch indices are aggregated to form indices at higher levels of breakdown (aggregates). An aggregated index is constructed as the weighted average of the branch indices included. Weights are also referred to as weighting factors and the total of weights of an index as its weighting pattern or structure. The weights are derived from the average stock of orders in the respective economic branches, calculated as the average of all months of the base year.

The indices are rebased every five years to base years ending in 0 or 5 for reasons of international comparability. Regular rebasing is required in particular for the updating of weights. This is to account for structural changes in Germany's economy that took place in the previous years. Rebasing includes the recalculation of indices as of January of the new base year and the linking of these indices to indices of earlier years that were moved to the new base year beforehand.

The base year is changed about two years after the end of the base year period. When the rebased index is released, the index values published previously are revised as of January of the new base year. As regards the indices of periods before January of the new base year, rebasing causes changes in the index level while the change rates (change on the previous month and on the same month a year earlier) remain unchanged.

3.3 Adjustment

For price adjustment purposes, the branch indices are divided by suitable price indices (producer and export price indices).

As a rule, results are published in a calendar and seasonally adjusted form. The original (not seasonally adjusted) values can also be retrieved. For seasonal adjustment purposes, influences that occur regularly and to a similar extent in the course of the year are eliminated from the time series by means of the mathematical-statistical method X13 JD+. The purpose is to highlight the short-term economic, trend and extraordinary developments. The procedure may also include calendar adjustment to eliminate predictable calendar influences.

For seasonal adjustment, version 2.2 of the JDemetra+ software is used. It is recommended for seasonal adjustment within the European Statistical System and the European System of Central Banks. The underlying mathematical-statistical method does not differ fundamentally from the previous X-12-ARIMA procedure.

The first stage of the procedure is RegARIMA modelling; unadjusted values at the ends are extended by estimates and, where required, adjusted for outliers. Extending the time series by estimates is required, for instance, for the second stage of the procedure, where centred moving averages are calculated. Seasonal adjustment as such is carried out in the second stage of the procedure. It is an iterative process for smoothing the unadjusted data by means of trend and seasonal filters which are calculated from centred weighted moving averages. The seasonal factors of a specific month are obtained by smoothing the deviations of the unadjusted values from the trend values of that month. The trend values, in turn, are smoothed unadjusted values.

There may also be calendar adjustment in the first stage. For that purpose, the number of working days in the current month is determined after deducting holidays; the result is compared with the long-term average of that period. Public holidays that are relevant only in some Länder are weighted using the number of employees in those Länder as a proportion of the total number of employees in Germany. The percentage effect of an additional working or trading day on the unadjusted value is estimated from past values of the relevant set of statistics under RegARIMA modelling. These estimates are used to eliminate the impact of variations in the number of working days in the respective month or quarter from the unadjusted data. The effects of bridging days (days between a public holiday and a weekend), movable school holidays and the weather are not taken into account.

3.4 Cost and burden

As the calculations use data that are available, there is no additional response burden for enterprises and local units. Information on the response burden caused by the collection of the underlying basic data is contained in the quality reports of the respective statistics.

4 Accuracy and reliability

4.1 Overall accuracy

The results are based on monthly surveys of more than 15,000 local units and therefore are highly accurate. In some economic branches, especially concerning intermediate consumption and consumer goods, it is somewhat difficult to measure the stock of unfilled orders, e.g. in the case of framework supply contracts. In addition, there may be valuation problems, as any cancellations of orders received in previous months must be deducted from the stock of orders indicated in the current report (cf. WISTA - Wirtschaft und Statistik, 1/2016, "Neue Statistik zum Auftragsbestand in der Industrie", p. 38, Dr. Stefan Linz, Peter Mehlhorn, Siglinde Wolf-Göbel). In addition, the value of an order at the time it is placed may differ from its value at the time of sale due to price escalation clauses. From a survey point of view it is hardly feasible to accurately describe such changes in value. Due to the large number of local units in which surveys are carried out, the quality of the data on the stock of orders is generally high. Due to the above-mentioned survey difficulties, however, the quality of the data on the stock of orders is to be rated somewhat lower than that of the data on new orders.

4.2 Sampling error

The main data source is the monthly report incl. survey of new orders for local units in manufacturing, mining and quarrying (EVAS No. 42111). It covers all local units with 50 or more persons employed. The monthly report has been integrated into a system of cross-checks in the field of manufacturing, mining and quarrying to ensure that uniform quality standards are observed. As a result, the quality of the data published is very high. The first data release may still contain estimates of the local units and the statistical offices of the Länder, which are replaced by final values later.

4.3 Data revision

4.3.1 Data revision - policy

Unadjusted indices of a base year:

Corrections during the reference year are accounted for once a year in an annual revision. The results of the annual revision of the original (not seasonally adjusted) values are published in April of the following year at the latest; then they are final.

Rebasing of unadjusted indices:

In addition to the above-mentioned revisions, the base year is changed every five years, about two years after the end of the base year period. When the rebased index is released, the index values published previously are revised as of January of the new base year. As regards the indices of periods before January of the base year, rebasing causes changes in the index level while the change rates (change on the previous month and on the same month a year earlier) remain unchanged.

Seasonally adjusted indices:

Additional revisions can also occur due to calendar and seasonal adjustments. All calendar and seasonal factors are estimated one year in advance. As a rule, the estimated factors are used for current adjustment. Regarding the results for main industrial groupings, there are monthly checks to ensure that the factors are representative. Where necessary, they are re-estimated. Such re-estimation may cause changes in the adjusted current results, but also in earlier results. Results of past periods may be revised back to January of the base year; earlier results are not revised.

4.3.2 Data revision - practice

Unadjusted indices of a base year:

Reporting errors which occurred in the data collection process and could be corrected afterwards are accounted for when the annual revision is carried out.

Rebasing of unadjusted indices:

When an index is rebased, the weights are updated and, where necessary, methodological changes are implemented. This can result in revisions of previously published results.

Seasonally adjusted indices:

The aggregates of the main industrial groupings and divisions of economic activity are subjected to monthly checks to ensure that the seasonal factors are representative, while the factors of other aggregates are checked once a year. Adjusting the seasonal factors can result in revisions of previously published results.

4.3.3 Data revision - analysis

A revision difference is measured as the difference between the last published and the first published value of the previous month's rates. Usual revision measures are the "mean revision (MR)" and the "mean absolute revision (MAR)", which determine the arithmetic mean of the observed deviations. In the MAR, the sign is not taken into account. Further information can be found in the article: "Analyse der Revisionen ausgewählter Konjunkturindikatoren", in: Statistisches Bundesamt, Wirtschaft und Statistik 5/2009, pp. 406-415.

On the basis of the mean revision, the previous month's rates of the non-seasonally adjusted index of stock of orders in manufacturing were revised by an average of 0.0 percentage points. The mean absolute revision results in a value of 0.2 percentage points. For the previous month's rates of the seasonally adjusted index of stock of orders in manufacturing, this results in a mean revision of 0.0 and a mean absolute revision of 0.2 percentage points (period: reporting month January 2021 to reporting month February 2024).

5 Timeliness and punctuality

5.1 Timeliness

The results are available within 50 days after the end of the reference month. Provisional data are not published. The final data for the previous year is published in April of the following year (annual revision).

5.2 Punctuality

Release dates are scheduled for a whole year and published in advance in the release calendar of the Federal Statistical Office. There was 100% adherence to time schedules in the last few years; results could always be released on the dates published.

6 Comparability

6.1 Comparability - geographical

The breakdown by economic activity and main industrial grouping is based on classifications of the European Union and is generally comparable across the EU.

6.2 Comparability over time

The time series with monthly values starts from January 2015, the individual time series values refer to the end of the respective reporting month. However, only the indices of a base year can be compared over time. There has been no break in the time series since the current base year 2015 (length of the time series with comparable values: 76; status: May 2021; the value is increased by one for each additional month until the next base changeover). Structural changes, for instance due to changes in the way local units report their data, are eliminated by adjusting the reference variable of the branch indices where this can be done with the information available. In formal terms, indices of different base years are comparable over time. Changes in the weighting structures, the groups of respondents and the territorial status impair the analysis of long time series which comprise indices of different base years.

7 Coherence - cross domain

The indices can be combined with the results of other economic statistics where these relate to the Classification of Economic Activities (WZ 2008) and to local kind-of-activity units.

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8 Dissemination and communication

8.1 Dissemination format

News release

The first results are published in a press release (www.destatis.de/presse).

Publications

None

Online database

Upon publication of the press release, the results can also be accessed in table 42155 of the GENESIS-Online database (www.destatis.de/genesis).

Micro-data access

The calculation is based on aggregated data of the source statistics.

Other

None

8.2 Documentation on methodology

Linz, Stefan; Mehlhorn, Peter; Wolf-Göbel, Siglinde: Neue Statistik zum Auftragsbestand in der Industrie, in: Statistisches Bundesamt, Wirtschaft und Statistik, 1/2016, pp. 33-45.

(English translation available: New statistics on unfilled orders in industry)

Papers on the subject of index calculation have been published in the scientific journal "Wirtschaft und Statistik" of the Federal Statistical Office. See for example: Linz, Stefan; Möller, Hans-Rüdiger; Mehlhorn, Peter: Umstellung der Konjunkturindizes im Produzierenden Gewerbe auf das Basisjahr 2015, in: Statistisches Bundesamt, Wirtschaft und Statistik, April 2018.

(English translation available: Rebasing the short-term indices for industry to the year 2015).

8.3 Release policy

Release calendar

Release dates are scheduled for a whole year and published in advance in the annual release calendar of the Federal Statistical Office.

Release calendar access

The annual release calendar is provided on the website of the Federal Statistical Office at www.destatis.de/presse > Annual release calendar.

User access

Online via www.destatis.de

9 Comment

None