statistics f!ash

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January 2025

INDUSTRIAL PRODUCTION

- The industrial production indices are calculated using the chaining method introduced starting from the publication of the data relating to the month of January 2022. From January 2025, the calculation base is set to the year 2024, while the reference base, in line with the other short term indicators, remains the year 2021. Indices are produced according to Ateco 2007 classification (Italian edition of Nace Rev. 2). The purpose of this review and any resulting updates is to guarantee that the indices remain robust and to adapt them to economic or technical developments, in particular by including the monitoring of new products and by eliminating those whose production has become irrelevant. Furthermore for the branches monitored in working hours, productivity coefficients have been revised. Finally, the seasonal and working day adjustment (SA-WDA) models have also been revised over the recent past to improve the quality of the indices. The methodological aspects connected to the update of the 2024 calculation base are illustrated in the *Information Note* released together with this flash statistic.
- In January 2025 the seasonally adjusted industrial production index increased by 3.2% compared with the previous month. The change of the average of the last three months with respect to the previous three months was unchanged.
- The calendar adjusted industrial production index decreased by 0.6% compared with January 2024 (calendar working days being 21 versus 22 days in January 2024).
- The unadjusted industrial production index decreased by 3.6% compared with January 2024.

CHART 1. INDUSTRIAL PRODUCTION, SEASONALLY ADJUSTED INDEX AND THREE-MONTH MOVING AVERAGE
January 2020 – January 2025 (index, 2021=100)

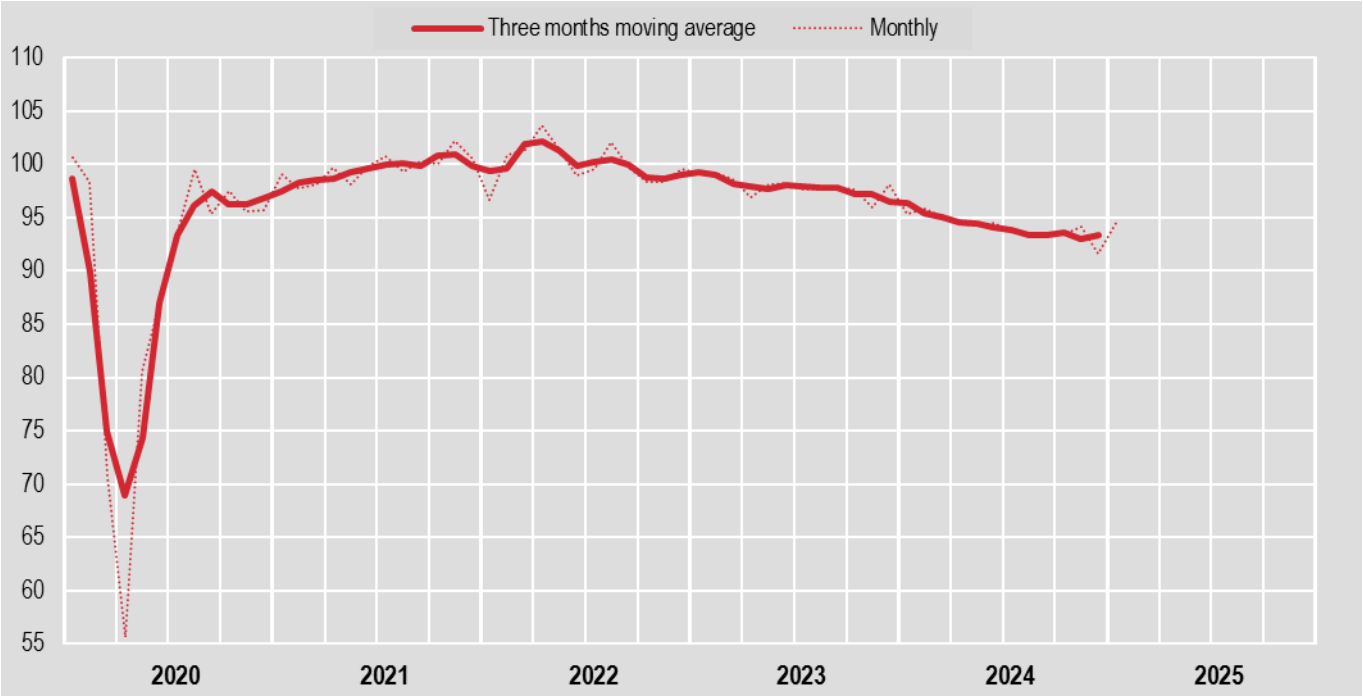


CHART 2. INDUSTRIAL PRODUCTION, MONTH ON SAME MONTH A YEAR AGO PERCENTAGE CHANGES

January 2021 – January 2025, calendar adjusted data (index, 2021=100)

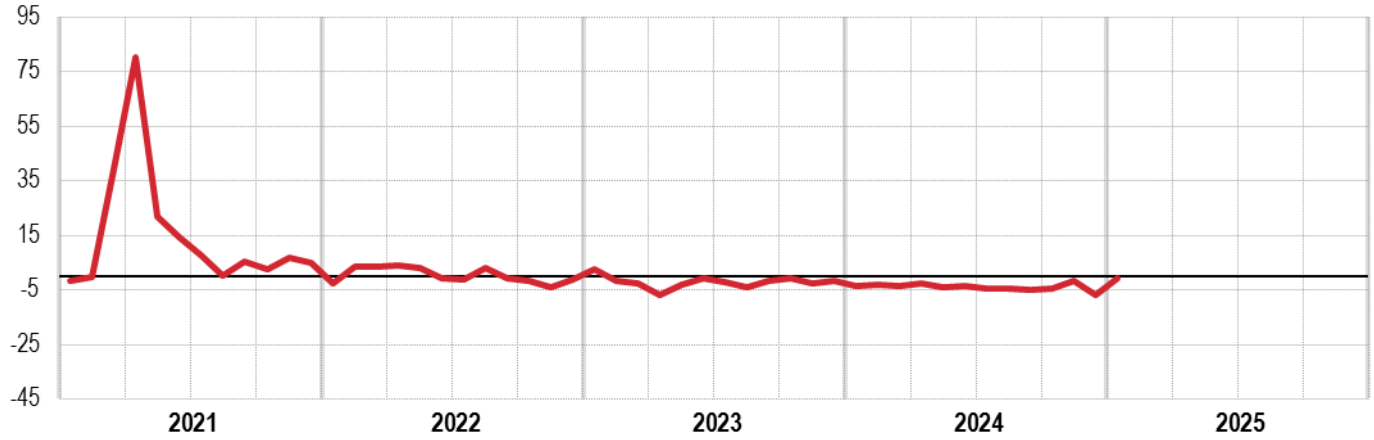


TABLE 1. INDUSTRIAL PRODUCTION INDICES (a), MONTHS ON PREVIOUS MONTHS AND ON SAME MONTHS A YEAR AGO PERCENTAGE CHANGES

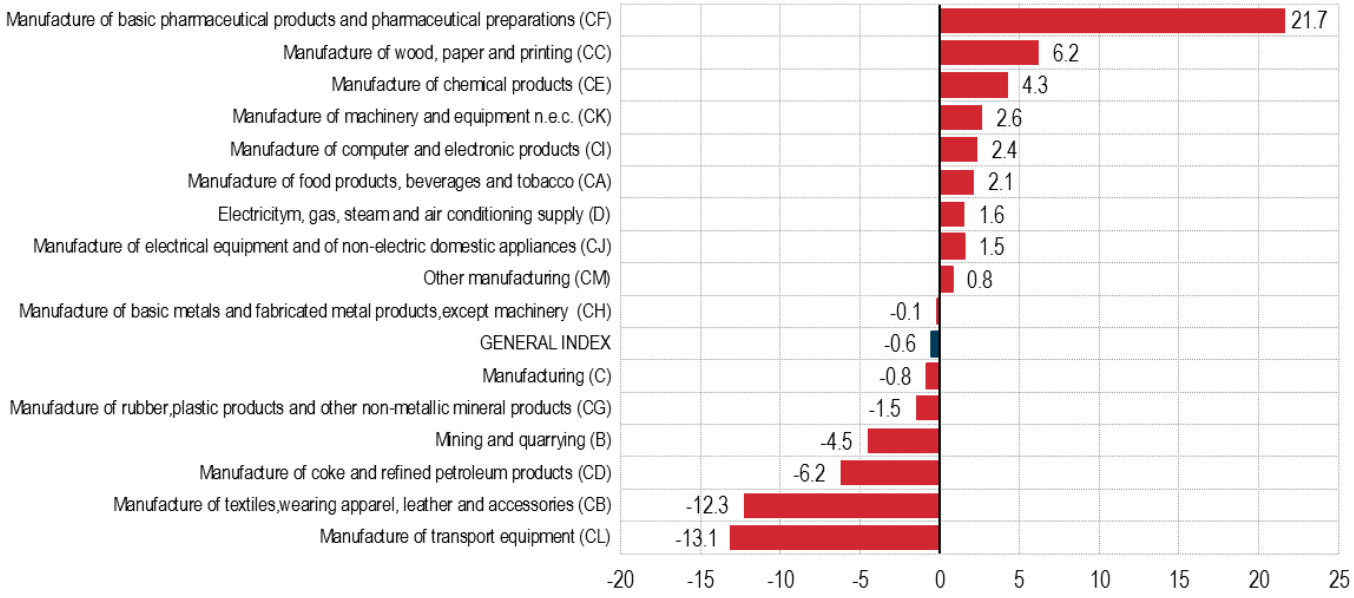
January 2025 (b) (index, 2021=100)

INDICES	Index (2021=100)	Months on previous months		Months on same months a year ago
		Jan 25 / Dec 24	Nov 24-Jan 25 / Aug 24-Oct 24	Jan 25 / Jan 24
Industrial production seasonally adjusted	94.5	+3.2	0.0	-
Industrial production calendar adjusted	90.1	-	-	-0.6
Industrial production non – seasonally adjusted	90.4	-	-	-3.6
Calendar working days	21			

(a) Excluding construction.
(b) Data are provisional and subject to revisions. The first revision takes place with the dissemination of the following month and takes into account additional information received from enterprises. Since 2022 data undergo also an annual revision of the previous year.

CHART 3. YEAR-ON-YEAR GROWTH RATE BY INDUSTRIAL GROUPINGS

January 2025, calendar adjusted (index, 2021=100)



Consumer durables: examples of consumer durables include household appliances, furniture, motorcycles and audio and video equipment.

Consumer non-durables: examples of consumer non-durables include food and beverages processing and preservation, several kinds of textile manufacturing and pharmaceutical manufacturing.

Intermediate goods: examples of intermediate goods include chemical industry, metal fabrication, metal products and electrical appliances manufacturing, wood industry and textiles processing.

Capital goods: examples include production of machinery and manufacturing equipment, measuring and test equipment and vehicles.

Survey sample: subset of statistical units selected from a larger population in order to conduct a survey. In short-term statistics, a theoretical sample is defined when rebasing the indices every five year to obtain longitudinal or panel data, considering the actual corporate changes over time.

Calendar adjusted data: calendar adjusted data refer to the correction for calendar effect in a reference period (month or quarter) that may vary from year to year. This method allows a reconciliation of asymmetries for calendar differences such as the number of working days, the week days distribution in the reference period and the occurrence of public holidays (including moving holidays like Easter) and of a leap year. Working day adjusted data permit to better compare year-on-year growth rate and average annual growth rate.

Seasonal adjusted data: seasonal adjusted data refer to the statistical technique designed to remove fluctuations related to seasonal factors (such as weather conditions, administrative measures, etc.…) and calendar effects when relevant. Seasonal adjustment provides a clearer view for a trend analysis of a short-term index.

Energy: examples of energy industries include extraction of raw materials (petroleum, natural gas, coal) and refining processes and electricity, gas, steam and air conditioning supply.

Working days: calendar days of the month, not including Saturdays, Sundays, religious and secular public holidays.

Industrial production index: industrial production index measures the monthly evolution of physical volume of production made by industrial establishments (excluding construction).

Main industrial groupings: consumer durables, consumer non-durables, intermediate goods and energy. the Commission Implementing Regulation 2020/1197 defines, for the whole European Community, the Main Industrial Groupings (MIGS): each industrial group and industrial activity division head to a different category of this aggregate classification. Istat also releases the Consumer Goods Index, calculated as the weighted average of the durable and non-durable components.

Economic activities sections: according to classification ANA/ISIC A38. The statistical classification of economic activities in the European Community (NACE Rev. 2) – from which Ateco classification derives – do not include subsections in the structure of the aggregates.

Month on month growth rate: short-term growth rate compares a period (typically a month or quarter) with the previous period, measuring the percentage change.

Year-on-year growth rate: Y-o-Y compares a period (typically a month or quarter) with the same period from the previous year, measuring the percentage change.

Regulatory framework

The industrial production index measures the change of the volume of goods produced over time by industry (excluding construction).

Starting from January 2021 the legal basis for this indicator is the Regulation (EU) 2019/2152 of the European Parliament and of the Council on European business statistics, and the Commission Implementing Regulation 2020/1197 establishes the level of detail, methodology and frequency with which the cyclical indicators must be produced and transmitted to Eurostat.

The survey is provided by the current National Statistical Programme in force, accessible on the Istat internet site at https://www.sistan.it/index.php?id=52 (Italian only).

Sources, population, analysis and survey units

For the indices of the year 2025, the calculation base is set at the year 2024 while the reference base, in line with the other economic indicators, has been updated to the year 2021.

The industrial production index is based on the results of a sample statistical survey, conducted among enterprises (survey units), that measures the volume of production of the goods included in a representative basket of products (analysis units). This allows the calculation of indices for product line items that, in turn, are grouped by business activity according to the Laspeyres formula and using a weighting structure that reflects the sector distribution of the industrial value added in the year set as the base period, which now is 2024. The reference base, in line with the other economic indicators, remains the year 2021.

The reference list for identification of the enterprises that take part in the sample is made up from the Statistical Archive of Active Companies (Asia), while the selection is made upon the results of the annual PRODCOM[1] survey. Starting from calculation base 2023, for some groups of economic activity[2], the survey on industrial production uses information deriving from the survey on industrial turnover, appropriately deflated. With the new calculation basis, the number of groups detected through the survey on industrial turnover has increased, in total there are 30 with an overall weight of 10.8% compared to the total.

Survey design and data collection

With reference to the 2024, calculation base the monthly survey of industrial production is conducted directly on a panel of approximately 5,200 companies, which provides the data concerning more 9,200 monthly production flows, generally defined in terms of physical quantity. Further statistical sources are used for the estimating production trends of specific industrial sectors. Amongst others, the survey on livestock slaughtered for red and white meat, conducted by Istat; the information provided by the National Offices for Mineral Resources, Hydrocarbons and Geothermal Energy of the Ministry of Environment (MASE); the data of electrical energy production surveyed by TERNA (National Electric Network).

With the transition to turnover data, the share - expressed in terms of the relative weight on the general index - of the products recorded in value increases compared to the other two measures with which the products are measured (hours and physical quantities). Referring to the weighting system updated with the data of Frame-SBS 2022 and Prodcom2023, the incidence of products recorded in quantity remains predominant, however decreasing compared to the previous base (70.5% compared to 73.6%), followed by products recorded in value of production (18.9%), whose share instead, grows by almost 4.5 percentage points compared to the 2023 base. Finally, the incidence of production measure through hours worked is 10.6%.

Indicators, weighting structures and classification systems

The innovations introduced are in line with the indications of the main methodological manuals and with the orientation of Eurostat. In detail they concern the introduction of the new weighting system and the renewal of the sample of companies used in the survey. Companies provide detailed information on a monthly basis regarding the production of specific products, belonging to a reference basket chosen so as to be representative of all the production activities present in the Italian industry. The data received, appropriately aggregated, give rise to the index numbers relating to the individual product items. The elementary indices are then summarized by economic activity, according to the Laspeyres formula, using a weight structure that reflects the sectoral distribution of industrial added value in the base year of calculation (2024 in the current version). The index is built according to

[1] Annual survey of industrial production
[2] Ateco groups 81, 89, 131, 133, 161, 202, 203, 206, 232, 237, 253, 254, 262, 264, 266, 321, 322, 323, 324 have been added 102, 120, 142, 211, 212, 267, 272, 274, 283, 325, 332.

Ateco 2007 classification of economic activities, the Italian version of Nace Rev. 2. To ensure the compliance with Regulation (EU) 2019/2152 the reference base year for IPI is presently 2021.
The adoption of the 2024 calculation base was an opportunity to review the panel of survey products. Specifically, 83 products were eliminated, of which 65 due to their replacement with the data collected from the turnover survey. At the same time, to increase coverage in the ATECO classes, 18 new products have been introduced which have become significant.
With the transition to the 2024 calculation base, the previous basket of 593 product macro-items has been reduce to 584. Against 38 eliminated macroproducts, among the 29 that entered, 11 represent fictitious macro-product items and correspond to the indices of the classes and/or groups of economic activity surveyed on industrial turnover, appropriately deflated.
The number of elementary macroproducts of the new base is therefore equal to 584. Through the results of the investigation, the indices of the macroproducts are calculated and, by aggregating the latter, the indices of economic activity (according to the Ateco 2007 classification of economic activities), the general one and those for the Main Industrial Groupings (MIGS). Main Industrial Groupings are: durable consumer goods, non-durable consumer goods, capital goods, intermediate goods and energy. The Community Regulation has established, for all member countries, the criteria for the definition of MIGS: entire groups and/or divisions of economic activity are attributed to each of them, according to the prevalence criterion. The Consumer Goods Index, obtained as the weighted average of the consumer durable goods and consumer non-durable goods indices. The following table shows the weights, allocated within the weighting system used for the calculation of the industrial production index, the Main Industrial Groupings and the economic activity sectors.

TABLE 1. WEIGHTING STRUCTURE BY ECONOMIC ACTIVITY Link period 2024 (a), percentage values

Main Industrial Groupings		**Year 2024**
	Consumer goods	24.4123
	Consumer durable goods	20.3966
	Consumer non-durable goods	4.0157
	Capital goods	28.2451
	Intermediate goods	35.0074
	Energy	12.3353
Economic activity sectors		
B	**Mining and quarrying**	**0.6026**
C	**Manufacturing**	**90.1650**
CA	Manufacture of food products, beverages and tobacco products	9.0601
CB	Manufacture of textiles, apparel, leather and accessories	7.5612
CC	Manufacture of wood and paper products, and printing	5.0570
CD	Manufacture of coke and refined petroleum products	2.9157
CE	Manufacture of chemicals and chemical products	4.0269
CF	Manufacture of basic pharmaceutical products and pharmaceutical preparations	3.0816
CG	Manufacture of rubber and plastic products and other non-metallic mineral products	8.4277
CH	Manufacture of basic metals and fabricated metal products, except machinery and equipment	16.3720
CI	Manufacture of computer, electronic and optical products	2.7826
CJ	Manufacture of electrical equipment and of non-electric domestic appliances	3.6904
CK	Manufacture of machinery and equipment n.e.c.	12.5743
CL	Manufacture of transport equipment	7.4290
CM	Other manufacturing, and repair and installation of machinery and equipment	7.1865
D	**Electricity, gas, steam and air conditioning supply**	**9.2324**
General index		**100.0000**

(a) For the current base, the reported one represents the provisional version of the weight structure. The chaining methodology provides for an annual review of the weight structure, in which the updated versions of the Prodcome and Frame-SBS information sources are used. The revised version of the weight structure is developed on the occasion of the annual review of the indices and will be made available with the January 2026 press release. For further information, see the Information Note associated with the flash statistic.

Seasonally and calendar adjusted series

In addition to the raw indices, calendar adjusted time series are also released. In accordance with the guidelines on seasonal adjustment for the European Statistical System, time series are corrected using a regression model, which identifies the effect of the working days (calendar days of the month excluding Saturdays, Sundays and secular and religious holidays not coinciding with Saturdays and Sundays), the leap years and Easter through the introduction of a set of regressors in the univariate model that describes the trend of the series. Since the effect due to the working days is not a zero mean value on an annual basis, the calendar adjusted series calculated through this method would not present an average of 100 for the reference base year. To release a set of indices with a common base and therefore allowing Eurostat to estimate the European aggregates, the adjusted time series are reported on a base of 2021=100 through a redistribution that maintains the dynamic profile unchanged. Moreover, regressors method results in the revision of the data, since each new monthly information added to the series may require new estimates of the regression parameters.

Given an equal number of working days, the procedures here described may cause discrepancies between y-o-y growth rate calculated on the raw time series and y-o-y growth rate calculated on adjusted data. Negligible differences may be determined from the redistribution and from the subsequent rounding; more relevant differences are due to the effects of the leap year and Easter, and to the type of model used for the correction of the calendar effects. In the case of the additive model, in fact, the differences are inversely proportional to the level of the indices and directly proportional to the absolute value of the trend variations calculated on the raw series.

In continuity with the choices already made on the occasion of the previous base change, the estimation period of the series is set at January 2001 and the indices relating to the period 1990-2000 will not be subject to further changes.

Finally, the seasonally adjusted indices are obtained through the TRAMO-SEATS+ procedure. Like the other seasonal adjustment procedures, also TRAMO-SEATS+ assumes that each intra-year time series is constituted of three different components, not directly observable: the trend-cycle, that represents the underlying medium and long-term movement; the combined seasonal and calendar effects, which are intra-year fluctuations; an irregular component, due to erratic factors. TRAMO-SEATS+ uses a model-based approach consisting in identifying a reliable and representative model for the time series to be seasonally adjusted.

In order to eliminate the seasonal component, it is necessary to select a decomposition model of the raw series into the previously listed different elements: the industrial production indices are seasonally adjusted using either an additive decomposition (the observed data are equal to the sum of the non-observable elements), or a multiplicative decomposition (the observed data are equal to the product of the non-observable elements).

The industrial production indices are calendar and seasonally adjusted separately for each economic activity sector, Main Industrial Groupings and for the general index, therefore the most aggregated indices are not calculated as synthesis of the seasonally adjusted data referring to lower classification levels. Since the addition of new monthly information allows a better evaluation of the different components of the series, each month previously published data concerning the most recent years are subject to revisions.

The statistical models used for the seasonal adjustment and for the correction are reviewed at the beginning of each year to ensure their ability to correctly represent the trend of the single time series. With the release of January 2025 data, not only unadjusted series have been updated, but also models for seasonally adjustment have been revised up to NACE Economic activity sectors level. In the next months, revision of models will be performed at division, group and class level.

The exceptional variations in raw data recorded during the 2020-21 health emergency were handled according to the guidelines issued by Eurostat, available at the URL:
https://ec.europa.eu/eurostat/documents/10186/10693286/Time_series_treatment_guidance.pdf

To allow the user to adopt the same processing specifications used by Istat in the context of the TRAMO-SEATS+ procedure, specifications are available upon request for analytical purposes.

Revision of the indices

The industrial production indices concerning the most recent month are provisional and subject to revision that takes place with the dissemination of the following month and takes into account additional information received from enterprises (revised indices are released on occasion of the press release).

A second type of revision occurs annually and concerns the time series of the indices. This revision aims at

incorporating three types of information into the indices available after the publication of the first revision. Specifically, the elements considered in the revision process are the following:

- Responses received from the enterprises after the dissemination of the revised indices (which usually occurs around 60 days from the end of the reference period); it involves a very limited number of responses, which accounts, on average, for 0.7% of the sample (measured in terms of production volume) but which may determine corrections on the disaggregated indices.
- The ex-post corrections of information already received from the companies, and which, on the basis of successive verifications, result to be affected by errors in the measurement of the phenomenon. Usually these modifications have a minor effect on the aggregated indices, however they occasionally may cause significant revisions for specific sectors.
- The update and periodic revision of the short-term statistics (turnover index and hours worked), on which the used annual productivity coefficients are based, as previously mentioned, for the products indicated through the monthly flows of hours worked. These products, whose weight is 12% (referring for the 2023 calculation basis to the revised version of the weighting system), are concentrated in some sectors, particularly in machinery and mechanical equipment, electrical equipment and, specifically, transport vehicles, repairs and systems installation. As a consequence, the effect of the coefficient revision may be significant for those specific sectors.

From the year 2022 the annual reviews only concern the immediately previous year. Therefore the revision carried out with press release of January 2025 data concerns the monthly indices for the year 2024, which in addition to the effects described above also incorporates the revision of the weight system.

Territorial breakdown

The indices are calculated and disseminated on a national level.

Timeliness

Dissemination of the monthly industrial production indices is made with a press release and series are published on the Istat data warehouse I.stat, 40 days past the end of the reference period.

Dissemination

The press releases are available on the internet site at http://www.istat.it. The monthly industrial production indices are available at IstatData, the Istat data warehouse, in the section “Industry and Construction /Production/Industrial Production Index”.

The historical series relating to the general index and the Main Industrial Groupings, in raw form, corrected for calendar effects and destagionalized, are also available for the most recent period on the web page of the press release in the excel file “Serie storiche”.

The description of the execution method of the survey and the activities performed to guarantee the quality of information produced is available in the Quality Information System (SIQual) of the Istat statistical processes https://siqual.istat.it/SIQual/visualizza.do?id=0026000.

For technical and methodological information

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