

September 2020

INDUSTRIAL TURNOVER AND NEW ORDERS

- In September 2020 the seasonally adjusted turnover index decreased by 3.2% compared to the previous month (-4.9% the domestic market and +0.2% in non-domestic market); the third quarter increased by 33.4% compared to the previous quarter (+35.3% in domestic market and +29.8% in non-domestic market).
- The seasonally adjusted industrial new orders index decreased by 6.4% compared to August (-5.7% in domestic market and -7.3% in non-domestic market); the third quarter increased by 40.7% compared to the previous quarter (+42.6% in domestic market and +38.0% in non-domestic market).
- With respect to the same month of the previous year the calendar adjusted industrial turnover index decreased by 4.6% (-4.5% in domestic market and -4.9% in non-domestic market). Calendar working days in September 2020 were 22, one more than September 2019.
- The unadjusted industrial new orders index increased by 3.2% with respect to the same month of the previous year (+5.1% in domestic market and +0.4% in non-domestic market).
- The seasonally adjusted volume turnover index (only for the manufacturing sector) decreased by 1.0% compared to the previous month, while the third quarter increased by 34.1% compared to the previous quarter. The calendar adjusted volume turnover index decreased by 3.3% with respect to the same month of the previous year.

CHART 1. INDUSTRIAL TURNOVER AND NEW ORDERS: SEASONALLY ADJUSTED INDICES AND THREE MONTH MOVING AVERAGES

January 2015 – September 2020 (index, 2015=100)

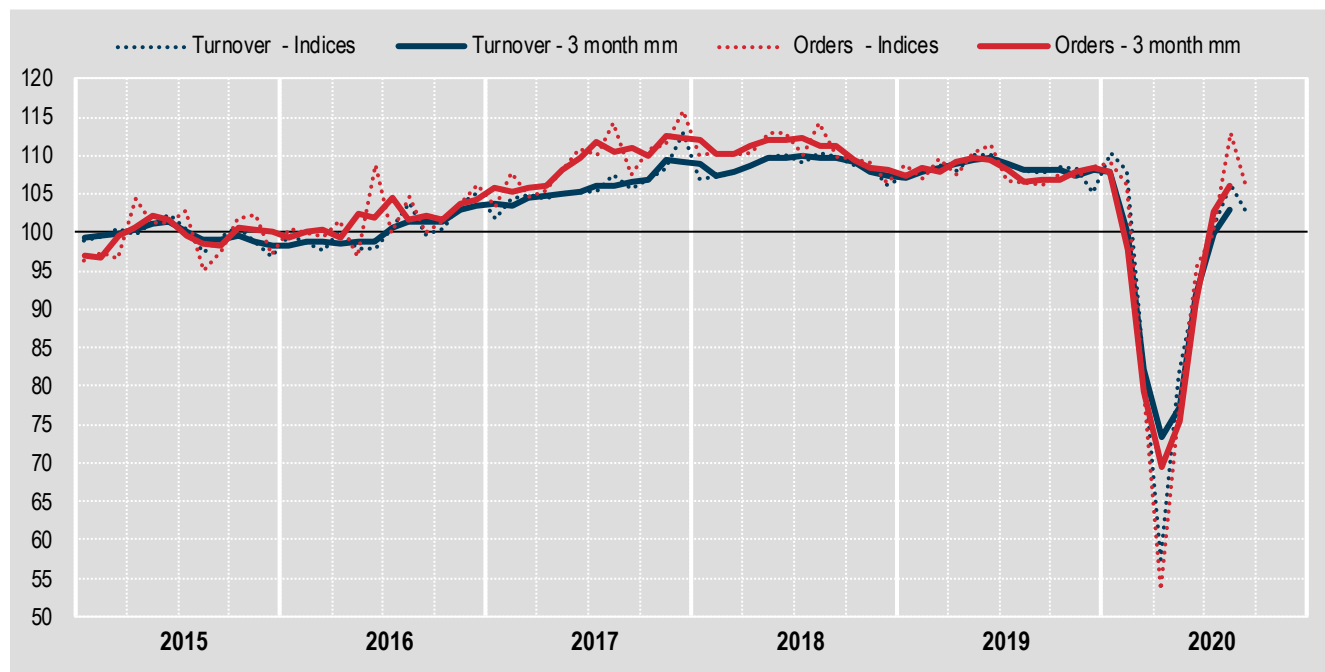


CHART 2. INDUSTRIAL TURNOVER, MONTH ON SAME MONTH A YEAR AGO PERCENTAGE CHANGES

January 2016 – September 2020, calendar adjusted data (index, 2015=100)

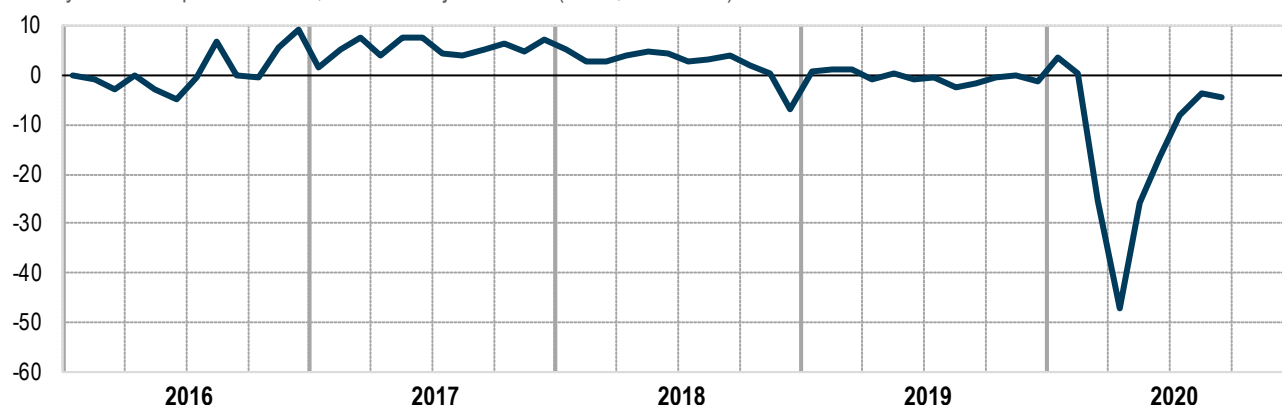


CHART 3. INDUSTRIAL NEW ORDERS, MONTH ON SAME MONTH A YEAR AGO PERCENTAGE CHANGES

January 2015 – September 2020, unadjusted data (index, 2015=100)

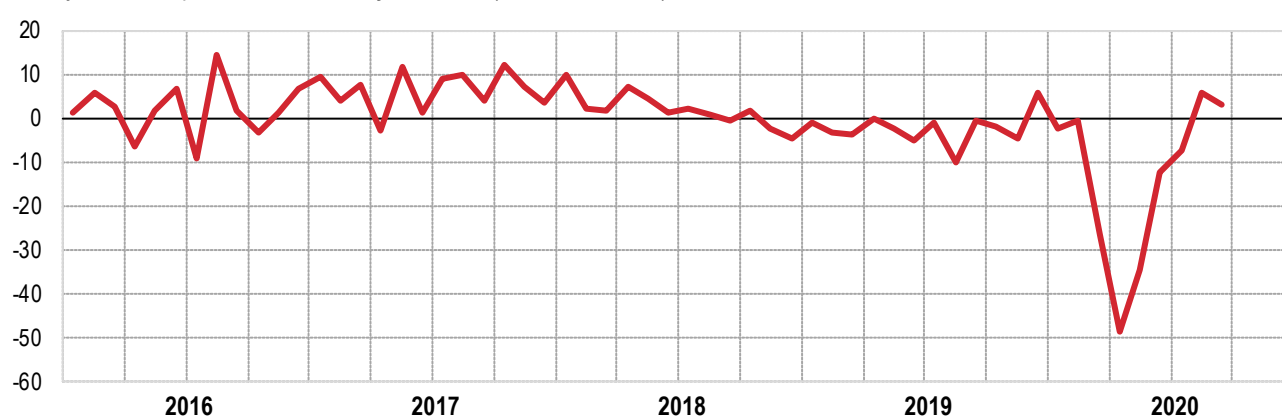


TABLE 1. INDUSTRIAL TURNOVER AND NEW ORDERS, INDICES, MONTHS ON PREVIOUS MONTHS AND ON SAME MONTHS A YEAR AGO PERCENTAGE CHANGES

September 2020 (index, 2015=100)

| | SEASONALLY ADJUSTED | | | CALENDAR ADJUSTED (a) | | | UNADJUSTED | | |
|----------------------------|---------------------|---------------------------|-------------------------|-----------------------|----------------------------------|--------------------------|--------------|----------------------------------|--------------------------|
| | Indices | Months on previous months | | Indices | Months on same months a year ago | | Indices | Months on same months a year ago | |
| | Sep 20 | Sep 20 Aug 20 | Jul-Sep 20 Apr-Jun20 | Sep 20 | Sep 20 Sep 19 | Jan-Sep 20 Jan-Sep 19 | Sep 20 | Sep 20 Sep 19 | Jan-Sep 20 Jan-Sep 19 |
| Turnover index | 102.7 | -3.2 | +33.4 | 109.1 | -4.6 | -14.8 | 110.6 | -1.6 | -14.5 |
| <i>Domestic market</i> | 101.6 | -4.9 | +35.3 | 108.7 | -4.5 | -15.1 | 110.1 | -1.7 | -14.7 |
| <i>Non-domestic market</i> | 104.8 | +0.2 | +29.8 | 109.9 | -4.9 | -14.2 | 111.7 | -1.4 | -13.9 |
| New orders index | 105.8 | -6.4 | +40.7 | - | - | - | 112.3 | +3.2 | -14.4 |
| <i>Domestic market</i> | 107.3 | -5.7 | +42.6 | - | - | - | 114.4 | +5.1 | -14.6 |
| <i>Non-domestic market</i> | 103.6 | -7.3 | +38.0 | - | - | - | 109.2 | +0.4 | -14.2 |

(a) New orders indices are not calendar adjusted because calendar effects are not statistically relevant.

Table 2 below provides routine revisions for August 2020, calculated in percentage points comparing the current percent changes to those released last month. With regard to the month on previous month percent changes calculated on seasonally adjusted indices, an additional source of revision is the updating of the seasonal factors applied to the unadjusted time series.

Updated time series are available at I.Stat data warehouse.

TABLE 2. REVISIONS TO PERCENTAGE CHANGES

August 2020, differences in percentage points (index, 2015=100)

| | Month on previous month (a) | Month on same month a year ago (b) |
|---------------------|-----------------------------|------------------------------------|
| | August 2020 | August 2020 |
| Turnover | | |
| Total | -0.3 | +0.2 |
| Domestic market | -0.5 | +0.1 |
| Non-domestic market | +0.2 | +0.5 |
| New orders | | |
| Total | -1.6 | -0.3 |
| Domestic market | -1.6 | -0.3 |
| Non-domestic market | -1.8 | -0.4 |

(a) Figures are calculated on seasonally adjusted data.

(b) Turnover figures are calculated on calendar-adjusted data, new orders figures are calculated on unadjusted data.

In accordance with the revision policy, time series disseminated with the present press release are revised since January 2015 (see the methodological note for more details).

Table 3 below compares the revised annual percent changes (referred to years 2017, 2018 and 2019) and the month on same month a year ago percent changes (referred to months January-August 2020) with those released on the 15th October 2020. Comparisons are reported for turnover index and its market breakdown and total new order index.

TABLE 3. INDUSTRIAL TURNOVER AND NEW ORDERS, COMPARISON BETWEEN PREVIOUS RELEASE AND CURRENT RELEASE

Annual percent changes and month on same month a year ago percent changes on unadjusted indices (base year 2015)

| | Turnover | | | | | | Total new orders | |
|-------------|-----------------------|---------|-----------------------|---------|-----------------------|---------|-----------------------|---------|
| | Total | | Domestic market | | Non domestic market | | Release 15-10-2020 | Current |
| | Release 15-10-2020 | Current | Release 15-10-2020 | Current | Release 15-10-2020 | Current | | |
| 2017 | +4.9 | +5.1 | +4.5 | +4.6 | +5.8 | +5.9 | +6.4 | +6.4 |
| 2018 | +3.2 | +3.1 | +2.6 | +2.5 | +4.4 | +4.4 | +1.9 | +2.0 |
| 2019 | -0.3 | -0.2 | -0.3 | -0.1 | -0.2 | -0.3 | -1.9 | -2.0 |
| 2020 | | | | | | | | |
| January | +0.6 | +0.6 | +0.3 | +0.3 | +1.0 | +1.0 | -1.9 | -2.0 |
| February | +1.1 | +0.6 | -0.1 | -0.5 | +3.4 | +2.8 | -2.5 | -0.5 |
| March | -22.9 | -23.1 | -25.5 | -25.8 | -18.0 | -17.9 | -26.6 | -26.5 |
| April | -45.4 | -45.5 | -47.0 | -47.1 | -42.5 | -42.4 | -48.6 | -48.7 |
| May | -30.5 | -30.5 | -30.1 | -30.2 | -31.2 | -31.1 | -34.1 | -34.4 |
| June | -13.7 | -13.8 | -13.1 | -13.2 | -14.9 | -14.7 | -11.6 | -12.2 |
| July | -8.1 | -8.2 | -6.3 | -6.5 | -11.4 | -11.1 | -7.6 | -7.1 |
| August | -3.9 | -3.6 | -2.1 | -2.1 | -7.0 | -6.4 | +6.1 | +5.8 |

Consumer durables: examples of consumer durables production 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 years to obtain longitudinal or panel data, considering the actual corporate changes over time.

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

New orders index: new orders index measures the value of incoming industrial new orders in each reference month at current prices.

Industrial turnover index: industrial turnover index measures the monthly changes of industrial sales at current prices.

Industrial turnover volume index: industrial turnover volume index measures the monthly changes of industrial sales at constant prices. It is obtained by dividing the industrial turnover index by the industrial producer price index to remove price effects on turnover. In order to better allow for a comparison, the two indices are based on the same reference population.

Calendar adjusted data: calendar adjusted data are data adjusted for calendar effects such as the number of working days, the occurrence of public holidays (including Easter moving holiday) and of leap years. Calendar adjusted data permit to better compare year-on-year percent changes and average annual percent changes.

Seasonally adjusted data: seasonally adjusted data are data adjusted for seasonal variations (such as weather conditions, administrative measures, etc.) including calendar effects when relevant. Seasonal adjustment permits the comparison of consecutive months.

Non-domestic market: non-domestic market refers to customers operating in foreign countries.

Domestic market: domestic market refers to customers operating in Italy.

Period on previous period percent change: period on previous period percent change compares a period (typically a month or quarter) with the previous period.

Period on same period a year ago percent change: period on the same period a year ago percent change compares a period (typically a month or quarter) with the same period from the previous year.

Main industrial groupings: consumer durables, consumer non-durable, intermediate goods and energy. The main industrial groupings (MIGS), laid down in Commission Regulation (EC) No 656/2007, are based on the statistical classification of economic activities in the European Community (NACE rev. 2), whose Italian version is ATECO 2007. Istat also releases the Consumer Goods Index, calculated as the weighted average of the durable and non-durable components.

Introduction and regulatory framework

The turnover index measures the change over time of the amount of sales of industrial enterprises belonging to mining and quarrying and manufacturing industries. The new orders index estimates the rate of change in the value of new orders that enterprises receive from clients in the reference month. The latter indicator is based on the information provided by the subset of enterprises belonging to the industrial sectors that usually work on order.

[Council Regulation \(EC\) No. 1165/98](#), subsequently amended by [Regulation \(EC\) no 1158/2005 of the European Parliament and of the Council](#), defines the levels of detail, the methodology and the frequency with which the monthly industrial turnover indicators must be produced. In particular it requires indices for both domestic and non-domestic market and with regard to the latter domain, a specific indicator for the Euro zone is also demanded. Turnover definition is based on [Commission Regulation \(EC\) No 1503/2006](#).

Monthly industrial new orders index is no longer required by European Regulations (see Commission Regulation (EU) No 461/2012) and is only provided for domestic and non-domestic market.

The reference list to identify the sample of enterprises is made up of the Italian Business Register, named Statistical Archive of Active Enterprises (Asia).

Reference population and sampling

The panel of enterprises selected for the survey is a purposive sample. It is drawn from the universe of active enterprises of the Italian Business Register involving - for nearly all of the sectors - enterprises with 20 employees and over. For sectors characterised by the presence of small sized companies, the target universe is, however, represented by all the companies without any restriction on the number of employees. The identification of the enterprises belonging to the sample is performed at 3-digit level of the Ateco 2007 classification (the Italian version of NACE rev. 2), using a cut-off criterion and selecting enterprises in descending order representing at least 70% of the total turnover of the sector.

The statistical unit is generally the enterprise; however, when the turnover/orders of the enterprise refer to different economic activities, detailed data for each kind of activity unit are required.

Data processing, indicators

Data provided by the enterprises belonging to the mining and quarrying and manufacturing sectors allow to compile elementary indices referring to the economic activity group. For each variable, turnover and new orders, elementary indices are calculated separately by domestic and non-domestic market and, within the latter, by Euro zone and non-Euro zone. The elementary indices are then aggregated according to the Laspeyres formula, i.e. using the weighting structure that reflects the sectoral distribution of turnover in the base year. For each classification level, the total indices are calculated as weighted averages of domestic and non-domestic indices.

Starting from the press release referring to January 2018, the indices are calculated with 2015 as base year, according to the 2007 Ateco classification of economic activities, the Italian version of Nace Rev. 2.

Weighting structure

The weighting structure of the turnover and new orders indices is based on two sources. Starting from the third digit level of the Ateco 2007 classification up to the total of the industry, the weights are derived from the value of the total turnover¹ of the Italian industrial sectors in 2015, measured by the Structural business statistics that give rise to the data on "[The economic performances of Italian enterprises](#)".

In addition to the total turnover for each economic activity, shares referred to the breakdown between domestic and non-domestic turnover have been calculated, as well as shares for Euro and non-Euro zone within the non-domestic turnover. For these breakdowns, information coming from the monthly survey on foreign trade referring to 2015 is also used.

The following tables show the weighting structures of the main industrial groupings and economic activity sectors used in compilation of aggregated turnover and new orders indices.

TABLE 1. WEIGHTING STRUCTURE FOR THE TURNOVER INDICES BY MAIN INDUSTRIAL GROUPING

Base year 2015

| MAIN INDUSTRIAL GROUPINGS | Weights |
|---------------------------|-----------------|
| Consumer goods | 29.6669 |
| - durable goods | 4.4036 |
| - non durable goods | 25.2633 |
| Capital goods | 28.2860 |
| Intermediate goods | 34.8244 |
| Energy | 7.2227 |
| General Index | 100.0000 |

TABLE 2. WEIGHTING STRUCTURE FOR THE TURNOVER AND NEW ORDERS INDICES BY ECONOMIC ACTIVITY SECTOR (SECTIONS AND ANA/ISIC A38 SUBSECTIONS)

Base year 2015

| ECONOMIC ACTIVITY SECTORS | Weights of turnover | Weights of new orders |
|--|---------------------|-----------------------|
| B Mining and quarrying | 1.0029 | - |
| C Manufacturing | 98.9971 | 100.0000 |
| CA Manufacture of food products, beverages and tobacco products | 14.3406 | - |
| CB Manufacture of textiles, apparel, leather and related products | 8.4548 | 12.9813 |
| CC Manufacture of wood and paper products, and printing | 4.9406 | 5.9026 |
| CD Manufacture of coke and refined petroleum products | 6.7633 | - |
| CE Manufacture of chemicals and chemical products | 5.4602 | 8.3833 |
| CF Manufacture of basic pharmaceutical products and pharmaceutical preparations | 2.7599 | 4.2374 |
| CG Manufacture of rubber and plastic products and other non-metallic mineral products | 7.7932 | - |
| CH Manufacture of basic metals and fabricated metal products, except machinery and equipment | 14.0125 | 21.5146 |
| CI Manufacture of computer, electronic and optical products | 2.1303 | 3.2708 |
| CJ Manufacture of electrical equipment and of non-electric domestic appliances | 4.1659 | 6.3960 |
| CK Manufacture of machinery and equipment n.e.c. | 12.1305 | 18.6252 |
| CL Manufacture of transport equipment | 9.9394 | 15.2604 |
| CM Other manufacturing, and repair and installation of machinery and equipment | 6.1059 | 3.4284 |
| General index | 100.0000 | 100.0000 |

¹ Specifically, it deals with earnings from sales of products manufactured by the enterprise.

Seasonal adjustment

In addition to the unadjusted indices, calendar adjusted time series are also released for the total turnover at the ANA/ISIC A38 level and for total, domestic and non-domestic turnover for main industrial groupings. New orders indices are not calendar adjusted as calendar effects are not significant. In accordance with the guidelines on seasonal adjustment for the European Statistical System, time series are corrected using a regression model (through the TRAMO procedure - LINUX version), 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 per 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 rescaled to report the annual average of the base year 2015=100 (the dynamic profile is unchanged). Moreover, regressors method may generate revisions of the data, since regression parameters are monthly estimated. Given an equal number of working days, the procedures here described may cause discrepancies between year on year percent changes calculated on the unadjusted time series and year on year percent changes calculated on adjusted data. Although negligible differences may be caused by the rounding policy, more relevant differences are due to the the leap year and Easter² effects 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 unadjusted series.

Finally, the seasonally adjusted time series are released both for turnover (general indices and main industrial groupings by domestic, non-domestic and total market) and for new orders (only general indices by domestic, non-domestic and total market). The seasonal adjustment is carried out through the software TRAMO-SEATS (LINUX version released in September 2017). Like other seasonal adjustment procedures, TRAMO-SEATS assumes that every intra-year time series can be decomposed into 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; the irregular component, due to erratic factors. TRAMO-SEATS uses a model-based approach consisting in identifying a suitable reg-ARIMA model for the time series to be seasonally adjusted.

In order to remove the seasonal component, it is necessary to choose a decomposition model for the unadjusted series: turnover and new orders indices are seasonally adjusted using either an additive decomposition (the observed data are equal to the sum of the non-observable components), or a multiplicative decomposition (the observed data are equal to the product of the non-observable components). Domestic and non-domestic turnover indices at the main industrial groupings level and domestic and non-domestic overall new orders indices are directly seasonally adjusted, while the total turnover and new orders indices are obtained by aggregation of the latter.

The statistical models used for seasonal and calendar adjustment are periodically reviewed to ensure a good fitting to time series. Moreover, TRAMO-SEATS specifications are available upon request to allow users to replicate the official seasonally adjusted time series.

Volume of manufacturing turnover

This index is obtained by removing the price component from the industry turnover index, the former is derived from the Producer Price Index. Since this indicator is processed exclusively for the purpose of comparison with the industrial production index, the same domain is considered and the same seasonal adjustment approach is used.

² Since the regressor takes into consideration the week prior to Easter Sunday, the differences may be more or less consistent according to whether the whole week falls completely within one month or not.

Revision policy

The industrial turnover and new orders indices concerning the most recent month are provisional and are subject to a first revision after one month to take into account additional information received from enterprises (revised indices are released through the press release referred to the subsequent month).

A second annual revision is released in November, when the indices referred to September are disseminated; the revision horizon spans all the months from January of the base year. The annual revisions aim at:

- taking into account information received from late respondents after the first revision and any improvements in estimation methodology;
- correcting previously provided data and any possible errors (corrections are often due to events concerning transformation of enterprises, which may have significant effects in the short-term evolution of indices).

Further information on the revision policy is available at <http://www4.istat.it/en/economic-trends/revisions>.

Territorial breakdown

Indices are calculated and disseminated at national level.

Timeliness and dissemination

Industrial turnover and new orders indices are disseminated in a provisional version with a monthly press release approximately 45 days past the end of the reference month. The related time series are available in the excel file "Time series" available in the press release web page. Time series are also available at [I.Stat](#), the Istat data warehouse, in the section "Industry and Construction", from January 2000. With regard to the turnover volume index of the manufacturing sector, data are available starting from January 2002.

Measures adopted to handle the impact of pandemic emergency on the survey

The COVID-19 pandemic emergency did not affect the data collection for businesses involved in this survey. Overall, the majority of them provided the information required. With reference to the seasonally adjustment procedure used to treat the indicators disseminated, the seasonal adjustment models were reviewed to manage the exceptional decreases recorded taking into consideration the Eurostat guidelines, available at the URL:

https://ec.europa.eu/eurostat/documents/10186/10693286/Time_series_treatment_guidance.pdf

Therefore, since March, the unusual size of the changes of the unadjusted time series were taken into account. For this purpose, additional regressors (the so-called additive outliers) were introduced in models for seasonal adjustment when statistically significant. This procedure, which aims at minimizing the revisions of past values of the seasonally adjusted series, was carried out also in September. As soon as the available information will allow an overall evaluation of the great volatility phase, models will be revised/modified if necessary. In that case, revisions of seasonally adjusted data may be larger than usual.

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