

NOTES ON METHODOLOGY

Legal and methodological framework

Short-term business indicators on industry (the industrial production index) can be used to show the monthly market evolution of the products and services produced within industry.

The presented indices were calculated on the basis of the data collected in the Monthly Survey on Industrial Production and Persons Employed (IND-1/KPS/M form), which is directly carried out by the Croatian Bureau of Statistics on the basis of the Official Statistics Act (NN, No. 25/20 and 155/23).

The concepts and definitions used in the IND-1/KPS/M Survey are specified in the Statistical Standards for the Monthly Survey on Industrial Production and Persons Employed (IND-1/KPS/M form) published on the website of the Croatian Bureau of Statistics. The concepts and definitions are harmonised with the EU concepts and definitions and especially with the Regulation (EU) 2019/2152 of the European Parliament and of the Council and the Commission Implementing Regulation (EU) 2020/1197.

Scope and coverage

The IND-1/KPS/M Survey covers enterprises and parts thereof employing 20 or more persons (the so-called 'cut-off' sample) and performing one or several industrial activities listed in the NKD 2007 sections B Mining and quarrying, C Manufacturing, and D Electricity, gas, steam and air conditioning supply, that is, their divisions 05 – 35 except group 35.3 (NN, Nos 58/07 and 72/07).

The Decision on the National Classification of Activities 2007 – NKD 2007 will be used in the survey until 31 December 2027 in accordance with the transitional provision from Article 6 of the Decision on the National Classification of Activities 2025 – NKD 2025 (NN, No. 47/24): "For the statistical and analytical needs of official statistics of the Republic of Croatia in the transitional period until 31 December 2027, the Decision on the National Classification of Activities 2007 – NKD 2007 (NN, Nos 58/07 and 72/07 – correction) will be used simultaneously", and Regulation (EU) 2019/2152 of the European Parliament and of the Council of 27 November 2019 on European business statistics, repealing 10 legal acts in the field of business statistics.

Definition of indicator

The industrial production volume index is an important short-term indicator of a business cycle that measures the monthly results of the industrial sector. Taking into account its periodicity and its rapid availability, it is a central and an up-to-date indicator of the development of the industrial sector, which is one of the most volatile components of economy.

Industrial production volume indices are indices of finished industrial products defined by the Nomenclature of Industrial Products (NIPUM).

A finished product is considered every product that reached a certain level in the production process and listed in the NIPUM under a separate code and heading.

Calculation method¹⁾

Industrial production volume indices for various levels of the NKD 2007 are calculated in two stages according to the Laspeyres formula. In the first stage, indices are calculated from quantity data on the production of individual products according to the NIPUM and an adequate weighting coefficient, which represents an estimated value added of individual products. In the second stage, all indices of groups and higher levels are weighted with the shares of the value added of the individual activities of industrial

production by the NKD 2007 levels. In this way, the relative importance of individual levels is defined and at the same time different levels of coverage are levelled.

MIGs 2009. aggregates

Indices for MIGs 2009. aggregates are calculated in the same way, according to the predominant end-use of products within the same NKD 2007. activity group. Since January 2009, new definitions have been applied for MIGs aggregations in the calculation of aggregated indices in order to facilitate further harmonisation with the EU statistical standards.²⁾

The grouping at the level of the NKD 2007. groups or divisions according to the MIGs 2009., using alphabetic marks of abbreviations, was done as follows:

AI Intermediate goods: the NKD 2007. divisions and groups:

- 07 - Mining of metal ores (excl. 07.21 - Mining of uranium and thorium ores),
- 08 - Other mining and quarrying,
- 09 - Mining support service activities,
- 10.6 - Manufacture of grain mill products, starches and starch products,
- 10.9 - Manufacture of prepared animal feeds,
- 13.1 - Preparation and spinning of textile fibres,
- 13.2 - Weaving of textiles, 13.3 - Finishing of textiles,
- 16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials,
- 17 - Manufacture of paper and paper products,
- 20.1 - Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms,
- 20.2 - Manufacture of pesticides and other agrochemical products,
- 20.3 - Manufacture of paints, varnishes and similar coatings, printing ink and mastics,
- 20.5 - Manufacture of other chemical products,
- 20.6 - Manufacture of man-made fibres,
- 22 - Manufacture of rubber and plastic products,
- 23 - Manufacture of other non-metallic mineral products,
- 24 - Manufacture of basic metals (excl. 24.46 - Processing of nuclear fuel),
- 25.5 - Forging, pressing, stamping and roll-forming of metal; powder metallurgy,
- 25.6 - Treatment and coating of metals; machining,
- 25.7 - Manufacture of cutlery, tools and general hardware,
- 25.9 - Manufacture of other fabricated metal products,
- 26.1 - Manufacture of electronic components and boards,
- 26.8 - Manufacture of magnetic and optical media,
- 27.1 - Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus,
- 27.2 - Manufacture of batteries and accumulators,
- 27.3 - Manufacture of wiring and wiring devices,
- 27.4 - Manufacture of electric lighting equipment and
- 27.9 - Manufacture of other electrical equipment

AE Energy: the NKD 2007. divisions:

- 05 - Mining of coal and lignite,
- 06 - Extraction of crude petroleum and natural gas,
- 19 - Manufacture of coke and refined petroleum products,
- 35 - Electricity, gas, steam and air conditioning supply (excluding 35.3 Steam and air conditioning supply services)

BB Capital goods: the NKD 2007. divisions and groups:

- 25.1 - Manufacture of structural metal products,
- 25.2 - Manufacture of tanks, reservoirs and containers of metal,
- 25.3 - Manufacture of steam generators, except central heating hot water boilers,
- 26.2 - Manufacture of computers and peripheral equipment,

- 26.3 - Manufacture of communication equipment,
- 26.5 - Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks,
- 26.6 - Manufacture of irradiation, electromedical and electrotherapeutic equipment,
- 28 - Manufacture of machinery and equipment n.e.c.,
- 29 - Manufacture of motor vehicles, trailers and semi-trailers,
- 30.2 - Manufacture of railway locomotives and rolling stock,
- 32.5 - Manufacture of medical and dental instruments and supplies and
- 33 - Repair and installation of machinery and equipment

CD Consumer durables: the NKD 2007. divisions and groups:

- 26.4 - Manufacture of consumer electronics,
- 26.7 - Manufacture of optical instruments and photographic equipment,
- 27.5 - Manufacture of domestic appliances, 30.9 - Manufacture of transport equipment n.e.c.,
- 31 - Manufacture of furniture,
- 32.1 - Manufacture of jewellery, bijouterie and related articles and
- 32.2 - Manufacture of musical instruments

CN Consumer non-durables: the NKD 2007. divisions and groups:

- 10.1 - Processing and preserving of meat and production of meat products,
- 10.2 - Processing and preserving of fish, crustaceans and molluscs,
- 10.3 - Processing and preserving of fruit and vegetables,
- 10.4 - Manufacture of vegetable and animal oils and fats,
- 10.5 - Manufacture of dairy products,
- 10.7 - Manufacture of bakery and farinaceous products,
- 10.8 - Manufacture of other food products,
- 11 - Manufacture of beverages,
- 12 - Manufacture of tobacco products,
- 13.9 - Manufacture of other textiles,
- 14 - Manufacture of wearing apparel,
- 15 - Manufacture of leather and related products,
- 18 - Printing and reproduction of recorded media,
- 20.4 - Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations,
- 21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations,
- 32.3 - Manufacture of sports goods,
- 32.4 - Manufacture of games and toys and
- 32.9 - Manufacturing n.e.c.

Weighting system

The weighting coefficients of individual products of the NIPUM used in the calculation of industrial production index represent the value added to the unit production of a respective product. They were calculated on the basis of unit values of the PRODCOM survey on industrial production for 2021 and are revised every five years.

The weighting coefficients used in the period from 2018 to 2023 were calculated on the basis of the PRODCOM Survey on Industrial Production for 2015, while those used in the period from 2012 to 2017 were calculated on the basis of the PRODCOM Survey on Industrial Production for 2010.

In the Republic of Croatia, the structure of industrial activities (division structure) was calculated on the basis of the gross value added of factor costs by the pure activity principle. It was calculated on the basis of the annual statistical results of the Structural Business Survey carried out by the Croatian Bureau of Statistics by processing annual results taken over from the administrative data of Fina – the Annual Accounts of Industrial Enterprises. It was further corrected by the results of the PRODCOM Survey on Industrial

Production and then by the industrial production volume indices. The division structure is updated at the beginning of every year for the calculation of the industrial production volume indices in the current year.

- 1) *Additional information is available in the Studies and Analyses – Short-Term Indicators on Industry, No. 85, Zagreb, 1999, CBS.*
- 2) *Commission Implementing Regulation (EU) 2020/1197 of 30 July 2020 laying down technical specifications and arrangements pursuant to Regulation (EU) 2019/2152 of the European Parliament and of the Council, as regards the definitions of Main Industrial Groupings (MIGs).*

Presentation and interpretation of changes in industrial production volume

The presentation and the interpretation of the industrial production volume indices are in line with Eurostat's requirements for the presentation of short-term business indicators and with the Regulation (EU) 2019/2152 of the European Parliament and of the Council.

The movements of the industrial production volume are presented and interpreted in relation to growth rates calculated on the basis of seasonally adjusted and working-day adjusted indices. Seasonally adjusted indices are used for the monthly comparison of movements of the industrial production volume and working-day adjusted indices for the annual comparison.

Seasonal and working-day adjustment method

Seasonal and working-day adjustment has been done by using the X13 ARIMA method on the monthly index series, which starts with the January 1998 index for the total industry (sections B, C and D, excluding group 35.3 of the NKD 2007) for the divisions of the NKD 2007 as well as for the MIGs 2009. The effect of a random component in the seasonal adjustment process of time series of indices has been excluded.

Due to the character of the implemented seasonal adjustment method, the extension of the index series by adding new monthly observations for each new month could cause subsequent corrections of the already published seasonally and working-day adjusted indices and trend for several previous months.

Gross indices

The term "gross indices" indicates that indices are unadjusted for seasonal and working-day effects. In line with Eurostat's recommendations and requirements for the industrial production volume index, they are not used for the interpretation of the movement of the industrial production volume. Eurostat does not publish them, neither is it the practice in most Members States.

Seasonally and working-day adjusted indices

The term "seasonally and working-day adjusted" indices is used to indicate that gross indices are adjusted for both seasonal and working-day effects. In line with Eurostat's requirements for short-term business indicators, the data that are compared to those of the previous month (that is, monthly comparison) are presented in a seasonally and working-day adjusted form of industrial production indices or growth rates calculated from them.

Working-day adjusted indices

The term "working-day adjusted indices" is used to indicate that gross indices are adjusted only for working-day effects in line with Eurostat's requirements for short-term business indicators, while data compared to those of the same month of a previous year (that is, annual comparison) are presented in a working-day adjusted form of industrial production indices or growth rates calculated from them.

Trend indices

Time series of trend indices are released three times a year.