METHODOLOGICAL EXPLANATIONS

1. The **data source** is the PROD (Industrial products and services) chapter of the monthly statistical survey on short-term indicators in industry (IND TS), in accordance with Council Regulation (EC) No 1165/1998, Regulation (EC) No 1158/2005 of the European Parliament and of the Council, and Commission Regulation (EC) No 1503/2006 concerning short-term statistics.

2. The statistical survey is a sample survey. The stratified sampling with simple random selection without replacement within each stratum, where the stratification variables are the economic activity and the size class of the enterprise according to the number of employees, is used as type of sampling and as procedure for drawing the sample. Due to the need for comparability of results by groups of homogenous activities as well as at enterprise level from one period to another, the category of economic operators with a high economic potential (50 or more employees) is surveyed exhaustively. The sampling frame ensures a degree of representativeness (calculated according to turnover) of 94.62% of the total number of active units. The data are collected from approximately 10700 economic operators that have industry as their main activity. The maximum accepted estimation error is ±3%.

3. Concepts and definitions. The industrial production index is known as an output index or a production volume index which aims to identify the changes in the production volume. Industrial production indices measure the evolution of production overall, by CANE Rev. 2 sections (mining and quarrying, manufacturing and electricity, gas, steam and air conditioning supply) and divisions (divisions 05÷35, excluding group 353) as well as by main industrial groupings.

***The nomenclatures used in the calculation of the industrial production index are*:**

- *Classification of the Activities of the National Economy (CANE Rev. 2)*
- *Classification of Products and Services related to Activities (CPSA 2015)*
- *Main industrial groupings* (intermediate goods, capital goods, consumer durables, consumer non-durables, energy), which represent an aggregate nomenclature of CANE Rev. 2 divisions or groups used in European statistics to characterise industry according to the purpose of the goods produced

Intermediate goods include the following CANE Rev. 2 divisions and groups, respectively: 07, 08, 09, 106, 109, 131, 132, 133, 16, 17, 201, 202, 203, 205, 206, 22, 23, 24, 255, 256, 257, 259, 261, 268, 271, 272, 273, 274, 279.

Capital goods include the following CANE Rev. 2 divisions and groups, respectively: 251, 252, 253, 254, 262, 263, 265, 266, 28, 29, 301, 302, 303, 304, 325, 33.

Consumer durables include the following CANE Rev. 2 divisions and groups, respectively: 264, 267, 275, 309, 31, 321, 322.

Consumer non-durables include the following CANE Rev. 2 divisions and groups, respectively: 101, 102, 103, 104, 105, 107, 108, 11, 12, 139, 14, 15, 18, 204, 21, 323, 324, 329.

Energy includes the following CANE Rev. 2 divisions and groups, respectively: 05, 06, 19, 351, 352.

- *PRODROM (Industrial products and services list)* – used in the collection of data on industrial production; it is fully harmonised with the nomenclature used in EU countries, namely the PRODCOM list. The positions within the PRODROM result from the breakdown of the elementary subclasses of CPSA 2015. All PRODROM positions are at the same level, the potential groups requested for analysis and dissemination purposes being obtained by means of processing, on the basis of the structuring criteria used to define each position.

The industrial products list (PRODROM) includes 3359 products and characterises the industrial activities from CANE Rev. 2 sections B, C and D.

The CPSA elementary subclass level is the first level in the calculation of the IPI. The 3359 PRODROM products are aggregated into 1185 CPSA elementary subclasses, of which 718 are taken into account for the calculation of the IPI.

- *Nomenclature of economic operators* – it monthly provides data on physical industrial production; it includes a representative sample of enterprises that have industry as their main activity (CANE Rev. 2: 05÷35) and is made up of all enterprises with 50 or more employees and of a sample of enterprises whose number of employees ranges from 4 to 49, so as to ensure a degree of representativeness of approximately 90% for industry overall and at least 80% at the level of CANE Rev. 2 divisions, representativeness calculated on the basis of turnover.

For a better representation of food industry, due to the specific nature of this sector, the sample of industrial enterprises also includes the trading companies which have agriculture as their main activity, but which have subunits specialised in making agro-food products.

4. Calculation algorithm

The aggregation of the first indices of industrial production is done through a system of successive weightings, using, for the aggregation at the level of CPSA elementary subclasses (higher aggregation level of PRODROM), the unit average price of the base year (2015) and, for the higher aggregation levels (CANE Rev. 2 class, group, division, section, or main industrial grouping), as a weighting element, the base-year (2015) gross value added at factor cost (GVAFC), according to the results of the national accounts of the base year (2015). The first aggregation level is the CANE Rev. 2 class level, the next aggregation levels being determined as an arithmetic mean of the indices of CANE Rev. 2 classes, groups, divisions, sections, of main industrial groupings, weighted by the corresponding GVAFC of the base year (2015).

The indices for the main industrial groupings are obtained by aggregating the indices at the level of CANE Rev. 2 component groups, weighted by the corresponding GVAFC. The industrial production indices for industry overall are obtained by aggregating the indices calculated at the level of CANE Rev. 2 divisions.

IMPORTANT! In order to show the changes in the structure of the economy, starting with the publication of the data for the reference month **January 2018**, the base year used in the calculation of indices for all short-term indicators was changed from 2010 to 2015.

The change in the base year also involves the updating of the weighting system, in order to reflect the structural changes that occurred in the activities of the national economy. These changes led to the adequate recalculation and revision of the previously published data series.

The change in the base year was made in two steps, namely the rescaling of the indices for the period 2005-2014 to the new reference year (2015=100) and the recalculation of the indices on the basis of the new weighting system starting with January 2015 and up to now.

Due to the shift to the new base year and the new weighting system (2015), the time series with 2010 as base year will no longer be available. The new data series, with 2015 as base year, will gradually be available in the TEMPO online database, starting with March 2018, when the data for January 2018 will be disseminated. These changes will also appear in the press releases, the statistical publications produced by the NIS and the TEMPO online database.

The Statistical Office of the EU (Eurostat) and the other EU Member States will similarly and simultaneously change the base year, with a view to ensuring comparability between Member States.

5. Beside the gross indices of industrial production, **indices that are adjusted by number of working days and seasonality** are also calculated on a monthly basis, through the **regressive method**, a method recommended by the European regulations concerning short-term indicators (Council Regulation No 1165/1998).

In order to adjust the series, the JDEMETRA+ v2.0 software package (the TRAMO/SEATS method) was used, which estimates the effect of the number of working days, which differs from one month to another, and the calendar effect (leap years and other national holidays), identifies and corrects the outliers (occasional, transitory or permanent changes in level) and interpolates the missing values.

The series adjusted by number of working days was obtained by removing these effects from the gross series, by means of correction coefficients determined depending on the regression model used (additive or multiplicative).

The setting of the regression models to be used for each series takes place at the beginning of each year and involves the recalculation of the adjusted series that were calculated the previous year (recalculation due to changes in the models adopted, in the number of regressors used and in the number of available observations).

The adjustment of the aggregated levels was made through the **direct method**, which involves the direct adjustment of the aggregated series. The use of the direct method may lead to inconsistencies in the data series (namely, the aggregates are not always comprised between the values of the components they come from).

6. The calculation of the industrial production indices, compared to those of the previous month or compared to those of the same month of the previous year, is done starting from the indices with fixed base (year 2015=100) as follows:
- the industrial production indices compared to the previous month: by dividing the index with fixed base (year 2015=100) of the month concerned by the index with fixed base (year 2015=100) of the previous month, multiplied by 100;
- the industrial production indices compared to the same month of the previous year: by dividing the index with fixed base (year 2015=100) of a certain month of the year concerned by the index with fixed base (year 2015=100) of the same month of the previous year, multiplied by 100.

7. The data are provisional and can be revised periodically on the basis of rectifications performed retroactively by the economic operators included in the sample.