

METHODOLOGICAL NOTES

1. The data source is the VAL chapter (The value of the construction works carried out on a contract basis, in the country, by structure element and by construction object) of the monthly statistical survey on short-term indicators in construction (CON TS), in compliance with Council Regulation No 1165/1998, Regulation No 1158/2005 of the European Parliament and of the Council, and Commission Regulation No 1503/2006 concerning short-term statistics.

2. Concepts and definitions

The **value of the construction works carried out** comprises new construction works, capital repair works and maintenance and current repair works carried out by economic operators with their main activity in this field (section F of CANE Rev. 2). This indicator refers to finished construction works by physical stage (not to be confused with the finished construction object or the finished part of the construction object).

The **new constructions** represent the results of those activities that directly determine the creation of new areas (for housing or with other destination) or the creation of new structures for the existing civil constructions.

The **capital repair works on existing constructions** represent all the works carried out on existing buildings and constructions after the end of each functioning cycle provided for in the technical norms and whose purpose is to preserve the technical and economic characteristics of constructions during the normal lifetime.

The **maintenance and current repair works** on existing buildings and constructions represent all the works (painting, dyeing and the repair of insignificant parts) carried out on an existing construction in order to ensure the continuity of its use, to prevent fast depreciation and to achieve a longer lifetime.

The construction works can be carried out on the following construction objects:

- Residential buildings – exclusively or mainly intended for housing purposes (over 50% of the useful floor space or of the built-up volume is used for housing). The buildings for collectivities (elderly people's houses, orphanages, hostels) are considered as residential buildings.
- Non-residential buildings – exclusively or mainly intended for other purposes than the residential ones (industrial halls, shops, cinemas, offices, administrative spaces etc.)
- Engineering works – construction objects that do not meet the characteristics of buildings and whose purpose is to create the conditions for carrying out production activities or social and cultural activities (roads, railways, bridges, airports, stadiums etc.)

3. 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 93.67% of the total number of active units. The data are collected from approximately 2060 economic operators that have construction as their main activity. The sampling volume was determined by imposing, at country level, an accuracy of estimations of $\pm 3\%$, at a confidence level of 95%.

4. Calculation algorithm

The **construction volume indices** are determined by deflating the value data with the construction cost indices by structure element and by construction object. The construction volume indices are calculated for the overall construction branch (section F of CANE Rev. 2), by structure element (new construction works, capital repair works, maintenance and current repair works) and by construction object (residential buildings, non-residential buildings and engineering works).

The construction works indices overall are calculated as a weighted arithmetic mean of indices by structure element or of indices by construction object. The weights used for aggregation are calculated based on turnover in accordance with the results of the Structural Business Survey of the reference year (2015).

The **construction cost indices**, which are used for deflating the value data, are calculated as a weighted mean of the price indices for construction materials, construction machinery, transport expenses, indirect expenses and of the gross nominal earnings index. The weights used for aggregation represent the structure of construction expenses resulting from specific statistical surveys carried out every five years (the latest survey was carried out for the base year 2015).

The construction cost indices are calculated for the overall construction branch (section F of CANE Rev. 2), by structure element (new construction works, capital repair works, maintenance and current repair works) and by construction object (residential buildings, non-residential buildings and engineering works).

5. Beside the gross series of construction volume indices, **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).

6. In order to adjust the data series, the JDEMETRA+ v2.0 software package 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 used for each series involves the recalculation of the adjusted series that were previously disseminated (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).

7. The calculation of the construction works 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 construction works 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 construction works 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.

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