



METHODOLOGICAL EXPLANATION

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INDICES OF THE VALUE OF CONSTRUCTION PUT INPLACE

This methodological explanation relates to the data releases:

Indices of the value of construction put in place, Slovenia, monthly (First Release)



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1 PURPOSE

The purpose of publishing data on construction put in place is to show monthly changes in construction activity in Slovenia.

Key statistics of the monthly survey on construction are:

- Indices of the value of construction put in place
- Indices of the value of construction put in place for buildings
- Indices of the value of construction put in place for civil engineering works
- Indices of the value of construction put in place for specialised construction activities

2 LEGAL FRAMEWORK

- [Annual Programme of Statistical Surveys \(LPSR\)](#) (only in Slovene)
- [National Statistics Act](#) (OJ RS, No. 45/95 and 9/01)
- Regulation 2019/2152 European Parliament and Council (CELEX: 32019R2152)

3 UNIT DESCRIBED BY THE PUBLISHED DATA

The unit described by the published data is construction works and services performed by construction companies and their units engaged in construction activity as the main contractor in Slovenia. Data on performed construction works and services are collected according to the NACE classification (NACE Rev. 2).

4 SELECTION OF OBSERVATION UNIT

Observation units are construction companies (sector F according to NACE Rev. 2) as well as their units engaged in construction and some non-construction companies performing construction work. In 2022, we also included foreign affiliates. The GRAD/M survey includes approximately 400 units.

Observation units are selected for the GRAD/M survey based on the threshold. In this way we determine a sufficient number of units that are included in the survey in an individual year. They are selected on the basis of the value of turnover for determining the value added tax and distributed in descending order of turnover, so that as many units are selected from the beginning of the list that their turnover exceeds the selected share (around 60%) of the total turnover of all units.

5 SOURCES AND METHODS OF DATA COLLECTION

Data are collected monthly.

Data are collected with the Survey on Construction activity (GRAD/M). Observation units are registered in the e-STAT application (a web application for electronic reporting of data to the Statistical Office of the Republic of Slovenia) and fill in the GRAD/M questionnaire on the website. They must complete it with data for the previous month and send it to the Statistical Office of the Republic of Slovenia not later than the 20th day of the current month.

Data for the survey are not obtained from administrative sources.

6 DEFINITIONS

Value of construction put in place covers the value of the following construction works:

- Organisation of the execution of building projects, i.e. services of collecting financial, technical and other material means for the construction of residential and non-residential buildings to be sold afterwards
- Construction of residential and non-residential buildings
- Civil engineering works
- Specialised construction activities: demolition and site preparation, construction installation activities, building completion and finishing (plastering, joinery installation, floor and wall covering, painting and glazing), roofing activities and other specialised construction activities.

Value of construction put in place is given at current prices, without value added tax, in EUR (in whole figures without cents). It does not cover the costs of purchasing the land, moving costs and costs of rents for the time of replacement construction, project services, and costs of interior design.

Construction includes the value of construction put in place for buildings and civil engineering works made from construction products and natural material, including built-in installations and technological equipment and specialised construction activities.

Buildings are structures with one or more rooms into which people can enter and are intended for residence or for performing activities.

A **residential building** is a building in which at least half of the useful floor space is used for residential purposes. If less than half of the useful floor space is used for residential purposes, the building is classified as a non-residential building by the predominant purpose for which it was designed.

A **non-residential building** is a building in which more than half of the useful floor space is used for performing activities. If at least half of the useful floor space is used for residential purposes, the building is classified as a residential building.

Civil engineering works are constructions intended for satisfying material and spiritual needs and interests of people other than residence or performing activities in buildings.

7 EXPLANATIONS

7.1 CLASSIFICATIONS

Data are collected and published according to the Standard Classification of Activities (SKD 2008), which is the Slovene version of the European statistical classification of economic activities NACE Rev. 2. SKD is also published on the SURS website (Classifications and Code Lists – Economic Classifications): <http://www.stat.si/StatWeb/en/Methods/Classifications>

7.2 DATA PROCESSING

DATA EDITING

Data were statistically edited with the combination of systematic corrections and imputation procedures. The following imputation methods were used: the historical imputation method with adjustments for the increase in the donor, the logical imputation method, the structural method by taking into account the share in the historic data and the hot-deck method for several variables.

For more, see the general methodological explanations [Statistical data editing](#).

WEIGHTING

For calculating the total construction index, construction values added are used as weights. The weights for construction put in place for buildings, for civil engineering works and for specialised construction activities are appropriately calculated from the value added. Since 2013 for every reference year new weights have been calculated.

SEASONAL ADJUSTMENT

Six time series are seasonally adjusted, all of them directly. For all 6 directly seasonally adjusted series the seasonal and calendar effects are characteristic. For none of the directly seasonally adjusted series calendar effects are characteristic.

For seasonal adjustment of time series, we use the TRAMO/SEATS method. A time series model is set up, which is revised in detail and corrected about once a year. Using the model the time series is decomposed into:

- the trend-cycle component (which consists of the trend and cyclical movements over a period longer than one year),
- the seasonal component (which consists of the seasonal effects and the calendar effects; the calendar effects are composed of the working day effect, the leap-year effect, the holiday effect and the Easter effect),
- the irregular component (which consists of random fluctuations and some outliers).

Seasonally adjusted data are original data from which the seasonal and calendar effects are eliminated.

For more, see the general methodological explanations [Seasonal adjustment of time series](#).

7.3 INDICES

The basic index for a group of activities is calculated by comparing the value of the current month with the average value of this group in the previous year:

$$I_{M/\emptyset Y-1} = \frac{\sum_{i=1}^N \text{value}_M}{\text{value}} * 100$$

whereby:

<i>value</i>	...	value that belongs to an individual activity in month M of the current year,
$\emptyset \text{value}_{Y-1}$...	<u>average</u> value for an individual activity in the previous year.

From basic indices of groups of activities, with weighted arithmetic mean we calculate the total index for construction:

$$I_{M/\emptyset Y-1}^{ag} = \frac{\sum_{i=1}^{n_{ag}} I_{M/\emptyset Y-1} * w}{\sum_{i=1}^{n_{ag}} w}$$

whereby:

$I_{M/\emptyset Y-1}^{ag}$...	index current month / average of the previous year for the higher level,
$I_{M/\emptyset Y-1}$...	index current month / average of the previous year for the basic level,
<i>w</i>	...	weight for the basic level of activity,
n_{ag}	...	<u>number</u> of groups of activities at the basic level.

The base index, which shows by how much on average the value in the current month changed compared to the average value of 2021, is calculated indirectly from this index using chain linking. All indices are derived and calculated on the basis of the 2021 average.

Calculation of the indices published in the First Release:

Indices of construction put in place 'on the previous month', which are seasonally adjusted, are calculated by the following formula:

$$I_{MONt,SA} = \frac{I_{BAZt,SA}}{I_{BAZt-1,SA}} * 100$$

Indices of construction put in place 'on the same month of the previous year', which are working day adjusted, are calculated by the following formula:

$$I_{YEART,YCal} = \frac{I_{BAZt,YCal}}{I_{BAZt-12,YCal}} * 100$$

Whereby:

t	month
t-1	previous month
t-12	the same month of the previous year
<u>I_YEARt,YCal</u>	index of construction put in place 'on the same month of the previous year', data are working day adjusted
<u>I_MONt,SA</u>	index of construction put in place 'on the previous month', data are seasonally adjusted
<u>I_BAZt, YCal</u>	index of construction put in place 'average of base year', data are working day adjusted
<u>I_BAZt, SA</u>	index of construction put in place 'average of base year', data are seasonally adjusted

Deflators for calculating real indices of the value of construction put in place are calculated on the basis of indices of differences in the price of construction services prepared by the Chamber of Construction and Building Materials Industry of Slovenia. This is a construction costs index, with which the changes in construction prices are monitored through the prices of materials, fixed

assets, transport, and labour invested in construction. For deflation, we use the indices for assembly and installation works, finishing works, the average index for residential construction and the average index for civil engineering construction.

7.4 PRECISION

In statistical surveys different kinds of errors can occur (e.g. sampling error, nonresponse error, measurement error) influencing the reliability and accuracy of the statistical results. Errors deriving from the random mechanisms determine the precision and consequently the reliability of the statistical estimates. The precision of the statistical estimate is estimated by calculating the standard error (SE). The Statistical Office of the Republic of Slovenia draws attention to less reliable estimates by flagging them with a special sign.

If the table contains estimated indices, publishing limitations are determined by the standard errors of the estimates (SE) of the indices. In such cases it holds:

If the standard error (SE) of the estimate of a proportion is

- 10 or below ($SE \leq 10$), the estimate is reliable enough and is published without limitations;
- between 10 and up to 30 ($10 < SE \leq 30$), the estimate is less reliable and is flagged for caution with letter M;
- over 30 ($SE > 30$), the estimate is too unreliable to be published and therefore suppressed for use by letter N.

If the table contains an estimated number of units with certain characteristics or estimated proportions of units with a certain characteristic (expressed with values between 0 and 1), publishing limitations are determined by the standard errors of the estimates (SE) of the proportions. In such cases it holds:

If the standard error (SE) of the estimate of a proportion is

- 0.05 or below ($SE \leq 0.05$), the estimate is reliable enough and is published without limitations;
- between 0.05 and up to 0.15 ($0.05 < SE \leq 0.15$), the estimate is less reliable and is flagged for caution with letter M;
- over 0.15 ($SE > 0.15$), the estimate is too unreliable to be published and therefore suppressed for use by letter N.

For more, see the general methodological explanations [Precision of statistical estimates](#).

7.5 OTHER EXPLANATIONS

8 PUBLISHING

- SiStat Database: [Construction](#) – Construction works and costs – Monthly data on construction: Indices of value of construction put in place

Data are published according to the Standard Classification of Activities (SKD 2008).

- First Release (Construction, Construction works and costs): »Indices of the value of construction put in place, Slovenia, monthly«.
- Eurostat.

9 REVISION OF THE DATA

9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA

Data for the last 6 months are provisional. With each release the data for the last 6 months can be corrected and supplemented with new data.

Publishing of provisional and final data is planned. Due to the needs of users for timely information, provisional data are published that meet the criteria of the quality of official statistical data but do not meet the quality that can be met with complete coverage. Data are revised when recent, more complete and better data can significantly contribute to the quality of data-based decision-making.

9.2 FACTORS INFLUENCING COMPARABILITY OVER TIME

In 2021, a major revision of the survey was carried out. The main reason for performing the revision is the new requirement of the EBRD (European Business Statistics Regulation), which entered into force in 2021. With the introduction of the new legislation, Eurostat's requirement for reporting and publishing data has changed and data will no longer be collected according to the CC classification, but according to the Nace Rev.2 classification. With the introduction of the new classification, it will be necessary to publish data separately for specialised construction activities. In order to keep comparability with the data already disseminated, all time series for the 2000 - 2020 period were back-cast and published. The backcasting was carried out with a combination of calculation at the micro and macro levels. For the time periods between 2015 and 2021, the calculation at the micro level was used, which means that in the micro data we estimated the share of buildings and civil engineering, which is according to the new methodology appropriately reallocated to specialised construction activities. Using these shares, we then

estimated the decrease in value in the first two groups and at the same time also the nominal value in the new group. In order to estimate the respective shares, we used the data obtained for three months (February - April 2020) with a special ad-hoc survey, where we asked all observed units in 2020 about the appropriate shares of specialised construction activities, which have so far been involved in works on buildings and civil engineering. For data before 2015, we performed calculations with a macro-level model, namely we estimated the share of “shrinkage” of the first two groups for each month of the year from the previously estimated micro data. These “fixed” shares were then used on the aggregates, obtained by the old methodology, to estimate the new nominal aggregates in all three groups.

In 2022, the method of reporting data changed. It is now again comparable to 2020, as the main contractors again report data on the value of construction put in place for themselves and for their subcontractors. In 2021, the data were reported by the contractors that actually carried out the construction work, regardless of whether they were the main contractors or subcontractors. To ensure the comparability of the time series, for 2021 we adjusted the data to the new methodology. The analysis of reported data in 2021 showed the volume of reported values to be much smaller than in previous years. This was due to the fact that many subcontractors that were supposed to report values previously reported by the main contractors were not covered as they were below the coverage threshold. The value of construction put in place in 2021 was therefore recalculated by estimating the share of values lost due to changes in the reporting method using various external sources and increasing the reported data for this share in 2021. Based on these adjusted values and the reported values of construction put in place in 2021, we then recalculated all index series for 2021.

Methodological explanation on revision of statistical data is available on

<https://www.stat.si/dokument/5299/RevisionOfStatisticalDataMEgeneral.pdf>.

10 OTHER METHODOLOGICAL MATERIALS

Methodological materials on SURS's website are available at <https://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>.

- Questionnaire (only in Slovene):
 - Construction activity (GRAD/M)
Theme: Construction, Subtheme: Construction works and costs
- Quality report for the survey:
 - Construction activity (GRAD/M).
Theme: Construction, Subtheme: Construction works and costs

- Reference Metadata in Euro SDMX Metadata Structure: (ESMS):
STSCONS_ESMS_11_A_2020,

https://ec.europa.eu/eurostat/cache/metadata/EN/sts_cons_pro_esms_si.htm