

CONSTRUCTION INPUT PRICE INDEX INDICATOR: QUALITY DESCRIPTION

Name, definition, periodicity of the indicator

The construction input price index (CIPI) is a relative indicator reflecting the overall change in input prices for new construction cost components (materials, exploitation of construction machines and mechanisms, wages and salaries and other costs) over a certain period of time.

The CIPI is calculated and published monthly.

The CIPI is produced by the Price Statistics Division of Statistics Lithuania.

Statistical data sources

The main statistical data sources for the compilation of the CIPI are statistical data of the construction and trade enterprises selected and information on prices of representative costs items. The main statistical information source for preparation of specific weights system are data on the volume of works completed, construction of new buildings and cost estimation documentation of representative buildings prepared by an expert. Construction enterprises selected for the statistical survey on construction input prices submit data on prices in a monthly report on prices of construction materials and products and in a monthly report on the cost of the working hours of employees and machinery (hereinafter referred to as reports KA-19 and KA-20), while selected trade enterprises – in a monthly report on the sale prices of construction materials and products (hereinafter referred to as a report KA-21). The reports KA-19, KA-20 and KA-21 are submitted to Data Preparation Division of Statistics Lithuania.

The average time spent by respondents to fill in the above mentioned reports is approximately 46 min.

Methods used

Calculation methods

The CIPI is computed by applying the modified Laspeyres formula. The CIPI is computed from the lowest level (i.e. from representative items of construction input) to the highest level (the total national CIPI).

The lowest level price index is the average price ratio of each representative costs item i , i.e., the weighted arithmetic average of prices in the reporting month m is compared to the weighted arithmetic average of prices in the previous month $m-1$. The obtained short-term price ratio is multiplied by the long-term price ratio for the representative costs item i in the previous month $m-1$ (month $m-1$ compared to December of the base year). The individual price indices of representative costs items are aggregated into a higher level price indices (groups of costs items: materials, exploitation of machinery, labour costs) according to the Laspeyres formula using the base weightings. Each higher level index is computed as a weighted arithmetic average of the lower level price indices. The total CIPI, as well as the CIPI of 7 groups, 3 divisions, and 2 sections of the Classification of types of Construction (CC) is calculated in accordance with the same scheme but by use of different weighting systems.

Estimation of missing prices

Each month, on average, about 7 per cent of prices are not collected for various reasons (seasonality, changes in the structure of works, disturbances in supply, termination of enterprise activities etc.).

For seasonal costs items (asphaltic concrete, asphalt layers), for the months when they are not used (not sold), the last registered price is repeated. Price indices are not seasonally adjusted.

For the estimation of prices of costs items which were not reported for other reasons, the following methods are used:

- the price of the previous month may be repeated if the price of a similar costs item in other enterprises has not changed or changed very inconsiderably;
- the missing price may be estimated on the basis of the short-term price ratio of a similar costs item (or of a group of such items), i.e. the price of the previous month is multiplied by a short-term price ratio of a similar costs item or the short-term price ratio of a higher level.

Quality adjustment methods

Where, in the view of changes in the range of construction materials and products or machinery used in construction, an enterprise needs to select a new costs item for the price survey, and the quality of such item is remarkably different from the quality of the original item, the impact of change in quality upon the increase or decrease of price shall be assessed. In order to maintain the comparability of both the new and the original costs item, the previous monthly price is adjusted by eliminating the impact of the change in quality. The following quality adjustment and price correction methods may be used:

- *overlap method*. According to this method, the prices of the original and the new items are collected within the same month that is deemed the linking month for the backward price index series of the original item and the forward price index series of the new item. It is considered that the price change before the linking month is represented by the change in the price of the original item, and that after the linking month is represented by the change in the price of the new item. The difference between the prices of the original item and the new item in the linking month is considered as the change in prices caused by the change in quality and does not influence the time series.
- *expert estimation method*. In this case, the impact of changes in quality on prices is estimated by an employee of an enterprise. The specialists of the Price Statistics Division, having in mind the impact of changes in quality, recalculate the price of the original item of the previous month and compare the price with the price of the new item in the reporting month.

Minor changes in quality are disregarded.

Compliance with EU legislation

The CIPI complies with the EU requirements set out in Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics, as last amended by Regulation (EC) No 596/2009 of the European Parliament and of the Council of 18 June 2009 (hereinafter referred to as “Regulation (EC) No 1165/98”).

Purpose and users

The CIPI is used for the calculation of the macroeconomic indicators at constant prices, as well as for analysis of economic development and assessment of inflation processes in the construction sector.

Users – national public authorities and agencies, Eurostat, other international organisations, the media, representatives of business and science.

Comparability

Length and characteristics of CIPI time series

The CIPI has been produced since 1992. The time series of the total CIPI and the CIPI by type of construction is computed beginning from January 1991; the times series by the groups of the main costs items – beginning from August 1994.

In 2013, the CIPI reference period were changed. The CIPI is computed on the basis of the 2010 index reference period (2010 = 100). Statistics Lithuania reviewed the previous CIPI time series and recalculated them on the basis of the 2010 index reference period (2010 = 100).

An index reference period refers to the period for which the index is equated to 100. Having price index time series computed with one reference period, it is possible to estimate price indices of various periods.

Coherence

The CIPI has been harmonised with the CIPIs compiled by other EU countries in compliance with the requirements of Regulation (EC) No 1165/98.

No other institutions of Lithuania produce such an indicator.

Accessibility

The CIPI is published in a separate press release, at 11 a.m. on the penultimate working day after the end of the reporting month on the website of Official Statistics portal, at <http://osp.stat.gov.lt/home>; in the Database of Indicators of Official Statistics portal, at <http://osp.stat.gov.lt/rodikliai37>; in a monthly publication *Economic and Social Development in Lithuania*; in the *Statistical Yearbook of Lithuania*; in the Eurostat's database. The information published includes the price changes over a month, for the period from the beginning of the year, over twelve months, as well as index time series and weights, used for the price index calculations by type of construction and by groups of the main costs items.

Timeliness and punctuality

Construction enterprises report average monthly prices of selected costs items on the 8th day of the end of the reporting month; trade enterprises – on the 3rd day of the end of the reporting month.

Statistical information is published in accordance with schedules approved by the Director General of Statistics Lithuania.

Accuracy

The CIPI time series based on the 2010 index reference period are calculated accurate to all decimal places. The CIPIs obtained are rounded to four decimal places, and such CIPIs are published in the Database of Indicators of Statistics Lithuania and submitted to Eurostat. Monthly, annual, average annual and other periods' price changes are calculated using CIPI time series accurate to all decimal places and published rounded to one decimal place.

Quality of the statistical indicator

Reporting period	Punctuality (date of publication)		Non-response rate, number of reports, %	Prices collected from enterprises	of which		Prices not submitted for various reasons, %	of which	
	press release	submission to Eurostat			changed, against the previous period, %	estimated due to changes in quality of input, %		due to seasonality and changes in works structure, %	due to other reasons, %
January	27 February	28 February	–	3400	26.2	1.8	8.8	5.3	3.5

February	28 March	28 March	-	3400	21.5	1.5	9.2	5.5	3.7
March	29 April	30 April	-	3380	21.7	1.4	6.8	4.1	2.7
April	30 May	30 May	-	3360	26.6	2.1	4.6	2.8	1.8
May	27 June	27 June	-	3410	23.6	1.6	3.8	2.3	1.5
June	30 July	30 July	-	3420	21.8	1.4	3.8	2.2	1.6
July	29 August	30 August	-	3420	22.0	1.4	3.2	1.9	1.3
August	27 September	30 September	-	3420	22.0	1.4	5.1	3.1	2.0
September	30 October	31 October	-	3360	21.8	1.6	3.5	2.1	1.4
October	28 November	29 November	-	3360	22.8	1.6	3.9	2.3	1.6
November	30 December	2 January	-	3360	29.8	1.2	2.9	1.8	1.1
December	30 January	30 January	-	3340	20.3	1.1	4.8	2.9	1.9

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30 January 2014