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Construction Cost Index, Q4 2017

Construction Cost Index (CCI) for the fourth quarter of 2017

The total Kosovo Construction Cost Index (CCI) rose by (0.7%) in the fourth quarter of Q4 2017 compared to Q3 2017. Compared to Q4 2016, the Construction Cost Index had an average increase of 2.8%.

Fourth quarter of 2017- Third quarter of 2017 0.7%

The total Kosovo Construction Cost Index (CCI) rose by 0.7% in the Q4 2017 Q4 compared to Q3 2017. The largest increase was in the category of energy (2.9%), materials (0.9%) and other costs (0.3%). A slight fall was observed in the category of machinery (-0.1%).

Fourth quarter of 2016 - Fourth quarter of 2017 2.8%

The total Construction Cost Index (CCI) rose to (2.8%) in Q4 2017 compared to Q4 2016. The increase in the index was mainly observed in the categories: transport (16.7%), materials (3.5%), energy (4.0%) and other costs (0.7%). Meanwhile, the category of machinery decreased by (-2.9%).

Construction Cost Index, Q4 2017

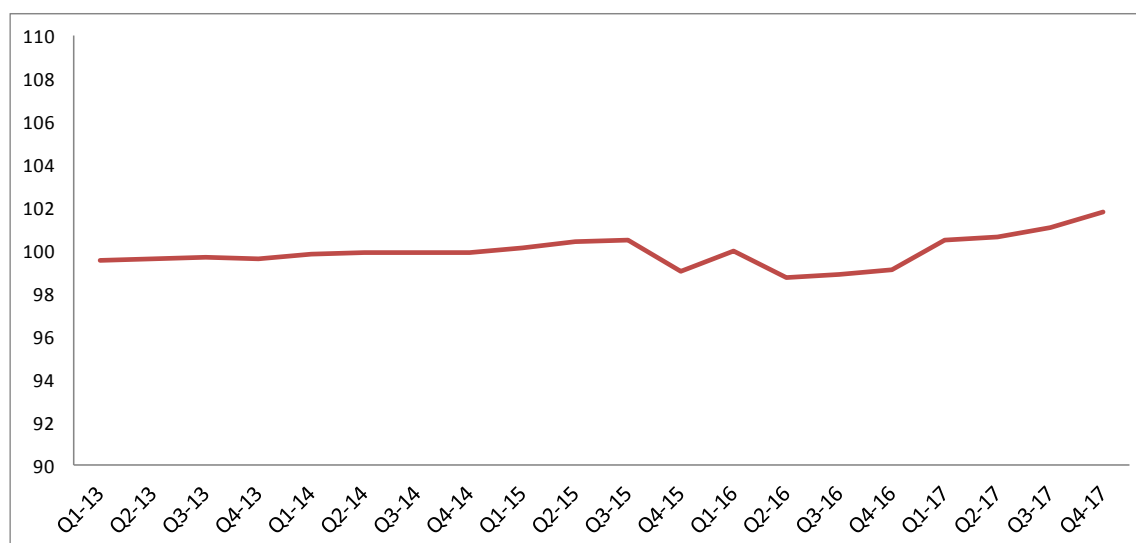
Tab. 1. Construction Cost Index for multi-storey buildings

2015=100

%

		Categories of costs									
		1 Materials (a+b+c)	(a).Construction materials	(b).Electrical materials	(c).Hydro- sanitary materials	2 Wages	3 Machinery	4 Transport	5 Energy	6 Other costs	Total (1+2+3+4+5+6)
Weight		69,8	60,4	5,1	4,3	16,4	5,9	3,8	1,4	2,7	100,0
2013 Periods	Q1	100,4	100,7	96,4	99,8	96,8	95,5	105,3	86,2	100,8	99,5
	Q2	100,6	101,0	96,7	99,5	96,8	95,5	105,3	81,8	99,8	99,6
	Q3	100,8	101,3	95,8	99,5	96,8	95,5	105,3	81,8	99,5	99,7
	Q4	100,5	101,0	95,7	99,4	96,8	95,5	105,3	88,9	100,3	99,6
2014 Periods	Q1	100,7	101,4	95,7	97,8	96,8	96,1	105,3	89,0	101,0	99,8
	Q2	100,8	101,3	97,4	97,8	96,8	98,4	105,3	86,4	100,2	99,9
	Q3	100,7	101,2	97,7	97,8	96,8	98,4	105,3	87,2	100,5	99,9
	Q4	100,3	100,6	98,7	97,8	97,0	99,8	105,3	99,4	100,4	99,9
2015 Periods	Q1	100,5	100,6	100,4	99,5	97,0	99,8	105,3	99,4	100,6	100,1
	Q2	100,1	100,2	99,2	99,5	101,0	99,8	105,3	100,0	99,8	100,4
	Q3	100,2	100,2	100,9	100,5	101,0	100,1	105,3	100,1	99,6	100,5
	Q4	99,2	99,0	99,5	100,5	101,0	100,2	84,2	100,4	100,0	99,0
2016 Periods	Q1	100,4	100,6	97,4	100,5	101,0	102,9	84,2	100,4	100,6	100,0
	Q2	99,3	99,2	98,2	101,4	101,0	103,2	70,2	102,5	99,7	98,7
	Q3	99,5	99,4	98,5	102,1	101,0	103,6	70,2	102,8	99,8	98,9
	Q4	99,6	99,4	100	102,6	101,0	104,4	70,2	101,2	101,1	99,1
2017 Periods	Q1	101,0	100,9	100,6	102,8	101,0	104,3	81,9	101,4	102,3	100,5
	Q2	101,1	100,9	100,1	103,8	101,0	104,3	81,9	104,7	101,6	100,6
	Q3	102,2	101,8	100,1	109,2	101,0	101,4	81,9	102,3	101,5	101,1
	Q4	103,1	102,8	100,4	109,2	101,0	101,3	81,9	105,2	101,8	101,8

Graph 1. Development of CCI, Q1 2013-Q4 2017 (2015 = 100), by quarters



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Tab. 2. Quarterly and yearly changes of Construction Cost Index

%

Year	Periods	Index (2015=100)	Quarterly changes in percentage %	Yearly changes in percentage %
2013	Q1	99,5	:	:
	Q2	99,6	0,1	:
	Q3	99,7	0,1	:
	Q4	99,6	-0,1	:
Annual average 2013		99,6	:	:
2014	Q1	99,8	0,2	0,3
	Q2	99,9	0,1	0,3
	Q3	99,9	0,0	0,2
	Q4	99,9	0,0	0,3
Annual average 2014		99,9	:	0,3
2015	Q1	100,1	0,2	0,3
	Q2	100,4	0,3	0,5
	Q3	100,5	0,1	0,6
	Q4	99,0	-1,5	-0,9
Annual average 2015		100,0	:	0,1
2016	Q1	100,0	1,0	-0,1
	Q2	98,7	-1,3	-1,7
	Q3	98,9	0,2	-1,6
	Q4	99,1	0,2	0,1
Annual average 2016		99,2		-0,8
2017	Q1	100,5	1,4	0,5
	Q2	100,6	0,1	1,9
	Q3	101,1	0,5	2,2
	Q4	101,8	0,7	2,7
Annual average 2017		101,0	:	1,8

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Tab.3. Weights, quarterly and yearly changes by categories of costs

%

Code	Cost categories	Weights	Q4 2017 2015=100	<u>Q4 2017</u> <u>Q3 2017</u>	<u>Q4 2017</u> <u>Q4 2016</u>
1	Materials (a+b+c)	69,8	103,1	0,9	3,5
	a. Construction materials	60,4	102,8	1,0	3,5
	b. Electrical materials	5,1	100,4	0,2	0,4
	c. Hydro-sanitary materials	4,3	109,2	0,0	6,4
2	Wages	16,4	101,0	0,0	0,0
3	Machinery	5,9	101,3	-0,1	-2,9
4	Transportation	3,8	81,9	0,0	16,7
5	Energy	1,4	105,2	2,9	4,0
6	Other costs	2,7	101,8	0,3	0,7
Total		100,0	101,8	0,7	2,8

Methodological description of the Construction Cost Index for residential multi-storey buildings

Construction Cost Index measures the price development of production factors of the raw material, wages, machinery, transport, energy and other costs that are used in construction projects. The index measures the change in price for individual factors of production and weighs them according to a set measuring system. The index does not measure productivity changes such as better exploitation of materials or other factors, and neither reflects its profit margins.

Population

Construction Cost Index is limited to newly build multi-storey buildings, which is the most common type of construction project in Kosovo. The index is calculated for the whole of Kosovo.

Categories of costs

Construction Cost Index for multi-storey buildings includes six categories of costs as follows:

- Materials
- Wages
- Machinery
- Transport
- Energy
- Other costs

The model index

From the first quarter of 2016, the index model for the Construction Cost Index has been changed from a fixed base index with Laspeyres chain type of index with annual link. The main reason for the change of model-based index of the fixed index with the chain index is that it allows the inclusion of new items or delete old items that are no longer important. The second reason is CCI's harmonization with other price indices produced by KAS which use the chain index.

Reference period of the reference index (base period) at the same time is changed from the first quarter of 2013 with the average of 2015 (base year 2015 = 100).

Laspeyres index is defined as

$$I^t = \frac{\sum_{i=1}^n P_i^t Q_i^0}{\sum_{i=1}^n P_i^0 Q_i^0} = \sum_{i=1}^n \frac{P_i^0 Q_i^0}{\sum_{i=1}^n P_i^0 Q_i^0} \times \frac{P_i^t}{P_i^0}$$

Where P^0 and P^t are the price per unit in the base period (0) and the comparison period (t), respectively, and Q^0 is the amount of the base period. Summation is across the n products. In the first element above, the index is expressed as the ratio between the value of the amounts collected during the period under comparison and, respectively, the price level of the base period. The index can also be expressed, as in the second element, as the average of the prices of products weighted with the values of the base period.

Links of the index are calculated with the current quarter q in year y as the comparison period, and the fourth quarter in year $y-1$ as price reference period. The weighting period is the first quarter of 2013. Therefore, the connection is defined as:

$$I_{y-1,q4}^{y,q} = \sum_{s=1}^k \frac{V_s}{\sum_{s=1}^k V_s} \times \frac{I_s^{y,q}}{I_s^{y-1,q4}}$$

Where the value of weight V_s is the value of transactions in Q1 2013 represented by the item's cost s . Summation is across the k cost items. Index price of the reference period for the comparison period is calculated in two steps:

$$\frac{I_s^{y,q}}{I_s^{y-1,q4}} = \frac{I_s^{y,q}}{I_s^{y,q-1}} \times \frac{I_s^{y,q-1}}{I_s^{y-1,q4}}$$

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Calculation of the chained index

The chained index number is calculated for quarters and indicates the particular level of the price of the quarter compared to the average price level in the year 2015 (2015 = 100).

$$I_{2015}^{y,q} = \frac{100}{\frac{1}{4} \sum_{q=1}^4 I_{2014,q}^{2015}} \times \prod_{Y=2015}^{y-1} I_{Y-1,q}^{Y,q} \times I_{y-1,q}^{y,q}$$

Calculation of changes

The quarterly change is calculated as:

$$\left[\left(\frac{CCI_{2015}^{Y,q}}{CCI_{2015}^{Y,q-1}} \right) - 1 \right] * 100 = \text{Change of the percentage in the quarter}$$

The annual change is calculated as:

$$\left[\left(\frac{CCI_{2015}^{Y,q}}{CCI_{2015}^{Y-1,q}} \right) - 1 \right] * 100 = \text{Change of the percentage in the year}$$

$CCI_{2015}^{Y,q}$ = The chained index of construction costs for the current quarter q

$CCI_{2015}^{Y,q-1}$ = The chained index of construction cost for the previous quarter q-1

$CCI_{2015}^{Y-1,q}$ = The chained index of construction cost for the previous year y-1 and the quarter q

Data collection

For construction materials, the prices are collected from suppliers of construction materials. Suppliers deal directly with the contractor. In order to collect price information, questionnaires are sent to companies where KAS specifically indicates for what product the price information is collected. Data suppliers can see what price they delivered to KAS in the last quarter. KAS requires companies to provide their average prices for their products, every three months.

Wage costs are collected from construction companies.

For the cost of machinery, KAS collect prices for small machinery used in the construction sector.

KAS collects prices for transport for transport services of the construction materials from some logistic companies.

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Calculation of **Energy** Index category is made from data Producer Price Index, which is in accordance with the standard classification of activities NACE rev.2, and which is based on "Regulation no. 11/2013 Article 7 ", within KAS.

In the category of **other costs**, the calculation is done by the performance indices of the harmonized indices of consumer prices within KAS.

Weights

Weights for the Construction Cost Index are based on a questionnaire for construction companies. As mentioned above, the weights are from the first quarter of 2013.

Using the Construction Cost Index

Construction Cost Index for multi-storey buildings is an important indicator for stakeholders, as well as the construction sector analysis. Can be used as a price deflator to the national accounts for the construction of multi-storey buildings.

Symbols and Abbreviations

KAS	Kosovo Agency of Statistics
CCI	Construction Cost Index
SIDA	Swedish International Development Cooperation Agency
:	Figure not available
-	Not applicable
%	Percentage

Publication of results

Results of the construction cost index are published on the KAS website online every three months.

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