

TWINNING CONTRACT

BA 12 IB ST 01

Support to the State and Entity Statistical Institutions, phase VI



MISSION REPORT

on

Activity 2.3.1.5

Plan for a regular production and finalization of methodology of producer
(output) prices in construction.
Follow-up on achievements of the component and recommendations for the future

Mission carried out by

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List of Abbreviations

| | |
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| BHAS | Agency for Statistics of Bosnia and Herzegovina |
| BiH | Bosnia and Herzegovina |
| CBBH | Central Bank of Bosnia and Herzegovina |
| EC | European Commission |
| EU | European Union |
| FIS | Federation of Bosnia and Herzegovina |
| FIS | Institute for Statistics of Federation of Bosnia and Herzegovina |
| MS | EU Member State |
| RSIS | Institute for Statistics of Republika Srpska |
| RTA | Resident Twinning Adviser |
| TOR | Terms of Reference |
| CPPI | Construction Producer Price Index |
| SCM | Standard Component Method |
| IPSA | IPSA Institute, private consulting company, Sarajevo, BiH |
| KM | Konvertible Mark |
| VAT | Value Added Tax |

Executive Summary

Experiences from the field for regular survey on CPPI

A quarterly questionnaire for collection of construction prices was designed through the Pilot project, and prices are collected quarterly in the regular survey, and they present the average price of the reporting quarter. Questionnaires for all quarters are sent to the respondents at the beginning of the year. The respondents are given 15 days to answer the questionnaire for one quarter. The data is collected by ordinary mail or in some cases by e-mail.

So far the response rates are good, however, in some cases the reporting units (RU) have misunderstood what information should be put on the questionnaire. The most common issues are:

- The questionnaire has been filled out using the wrong measurement unit, resulting in a wide range of prices among the RU's for the same item
- The RU only put in the price for labor costs – i.e. the price component for materials has been left out
- The RU put the total value of the item rather than the price of the item
- The RU is not reporting prices for the exact same items

These misunderstandings have been clarified by contacting the RUs by phone. This has helped to correct data and to gather experiences about the data collection process. Often some of the RUs are unable to report prices for the exact same items as they do not perform the exact same activity every quarter. In these cases they should be asked to report model prices – i.e. what would the exact same activity cost if they were to make an offer on it in the current quarter.

Not all RUs with wrongful price information have been contacted yet as this task is very demanding with regards to resources. It is the goal to contact all of them throughout the year 2016. It should be mentioned that these problems occur at any questionnaire based survey. Using web-based, individualized questionnaires could help to alleviate the problems with misunderstandings and wrongful report of prices.

For the main part the collected price data shows very little or no change from 2015Q4 to 2016Q1.

Clarification of outstanding issues

Inclusion of new RUs

New RUs should be included when an existing RU is lost, e.g. due to bankruptcy, transfer out of 41 or 43 to a different type of business. Another reason for inclusion of new RUs could be that an existing RU has to be removed because their reported data cannot be trusted or due to non-response. A third reason could be that RUs stop reporting prices for a certain item. The new RU will then, hopefully, provide new prices for the item.

Inclusion of new items

The RUs have the option of defining and reporting prices of items not in the questionnaire. At some point these items could be included in the calculation of the indices. However, there are some criteria that should be met:

- The new item must fit into the bill of quantities

- There should be three or more price observations for the item

New items can **replace** existing items if the RUs stop reporting prices of the particular item, e.g. due to changes in the materials used. A hypothetical example could be if the companies switch from windows with wooden frames to windows with aluminum frames. The new item, i.e. installation of aluminum windows, will then take over the weight from installation of wooden windows. The item should be replaced as described in the methodology paper.

To **include** new items without replacement, the items' weights within the sub group in question should be adjusted. I.e. if a sub group only contains one item which holds the entire weight for the sub group and an additional item is added, the two items must share the weight in accordance with the bill of quantities.

Experts recommend that this type of inclusion should only be done during updates of the weights for the entire CPPI – i.e. when the bill of quantities is replaced by a newer version.

Data for new items should be collected and saved even though they are not included right away. This will ease the data collection when a new bill of quantities is introduced.

What indices should be calculated?

Eurostat only requires quarterly indices at the total level. However, if there are demands from other offices in the BiH statistical institutions, e.g. from national accounts, they should be fulfilled as well.

Two different prices for the same quarter

RUs are asked to report both the price for the current quarter as well as the price for the previous quarter. This will sometimes mean that there are two different prices for one item reported for the same quarter. The rule should be always to use the most recent price as it is the price change which is of interest in the index calculation and not the price level.

Thresholds for extreme price developments

Currently, the threshold is set to 10 pct., meaning if the price development exceeds or falls below 10 pct. The data should be validated by contacting the RU. It was agreed to lower the threshold to 5 pct. instead.

Calculation of average prices for items

Experts do not recommend providing users with average prices for items, i.e. construction activities. First of all, this will potentially compromise the confidentiality of the price data given by the RUs. Secondly, for some items there are great spans in the prices, thus, calculation of averages will not necessarily be meaningful.

Discussion on SPPI and CPPI; methods, concepts and experiences

The purpose of this point in the agenda was to clarify how much the two statistics have in common and encourage that they work together and share experiences and tools.

For the CPPI the FIS has developed an IT application for data entry, data validation and index calculation. A similar application is about to be developed in RSIS as well using the same specification. For FIS this IT development work has been highly prioritized, and it has been performed by the same programmer who has done applications for other price statistics. The result is a very good application. As of now all data collected for 2016Q1 and the data for the base year has been entered into the application and preliminary calculations have been

conducted. The application has furthermore been used to identify outliers by producing a list of minimum and maximum prices reported for each item.

This application contains a lot of features that are absolutely necessary for producing both CPPI and SPPI. The application was presented and SPPI agreed that the app, with a few adjustments, would be very suitable for producing SPPI. Thus, the application should be shared between the two statistics and future development could be conducted using input from both statistics. As the two are very similar it will often be so that e.g. a new data validation technique would apply to both statistics.

At some point a web-based questionnaire could be introduced. As SPPI and CPPI have similar questionnaires, they should develop the web-based questionnaires together.

Furthermore, they should share data collection and data validation experiences regularly.

Development of methodological document on CPPI

The draft version of the methodological document was very thoroughly written and fits quite well with the Eurostat SIMS template. Only a few adjustments were made and the document was adopted as final.

Follow-up on results achieved

See “Assessment and results of the whole component”

Discussions and recommendations for future work

See “Conclusions and recommendations for the whole component”

1. General comments

This mission report was prepared within the Twinning Project “Support to the State and Entity Statistical Institutions, phase VI”. It is the final mission to be completed within Component 2.3.1 of the project.

The purposes of the mission were:

- Presentation of experiences from the field for regular survey on CPPI (data collection process, feedback from reporting units etc.)
- Weighting system and calculation of CPPI – further clarifications
- Clarification of outstanding issues
- Development of Methodological document on CPPI – preparation of final version
- Follow-up on the results achieved in the component
- Sustainability of the achievements
- Discussions and recommendations for future work
- Development plan for future improvements
- Identification of needs for additional support
- Preparation of final report

The consultants would like to express their thanks to all officials and individuals met for the kind support and valuable information which they received during the stay in Bosnia-Herzegovina and which highly facilitated the work of the consultants.

This views and observations stated in this report are those of the consultant and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, Statistics Denmark or Destatis.

2. Assessment and results of the final mission

- The experiences with the regular survey were presented and discussed
 - o Response rates are good
 - o Problems with RUs misunderstanding the questionnaire should be dealt with by contacting the RUs by phone
- All outstanding issues were discussed and experts clarified how they should be handled
- The methodological document was discussed and adopted as final with very few amendments
- The results of the components as a whole was identified
- A development plan was produced with focus on publication of indices and IT development:

| Action | Deadline | Responsible |
|---|---|-------------------|
| Collection of data for 2016Q3 + transmission to Agency | 4 th quarter 2016 | Entities |
| Collection of data for 2016Q4 + transmission to Agency | 1 st quarter 2017 | Entities |
| IT development of applications completed | March 2017 | Entities |
| Collection of data for 2017Q1 + transmission to Agency | 2 nd quarter 2017 | Entities |
| Agreement on publication format and timing | 2 nd quarter 2017 | Entities + Agency |
| Collection of data for 2017Q2 + transmission to Agency | 3 rd quarter 2017 | Entities |
| Publication of indices for 2017Q2 or 2017Q3 | 3 rd or 4 th quarter 2017 | Entities + Agency |
| Begin to develop of CPPI for civil engineering projects (NACE 42) | By end of 2017 (expected) | Entities + Agency |

- The final report was prepared by discussing the results achieved in the component, the sustainability of these results, recommendations for the future and identification of resources needed

3. Assessment and results of the whole component

Status at the beginning of the project

To begin with there was no established survey for data collecting on producer price indices for the state level according to EU STS Regulation. The survey on average price of new completed dwelling

per m² had been carried out for new and completed dwellings by FIS. This price concept comprises land price, construction costs and constructor's profit margin and other costs. However, the survey does not fully meet the EU requirements but could be used as good temporary approximation of the construction producer price index (CPPI) by using construction costs and constructor's profit margin as output price. This was agreed upon by all counterparts to be used as CPPI approximation in short run.

Experts recommended that an index following the Standard Components Method (SCM) should be established to replace the average price of new completed dwelling per m² in the long run.

A pilot survey to be used as input for calculation of CPPI using SCM was agreed to be developed in parallel to ongoing data collection on average price of new finished dwelling per m² in 2015.

Status of project results

The benchmarks for the component were as follows:

1. Plan for development of CPPI done by 2nd project quarter
2. Draft questionnaires and supporting documentation prepared by 2nd project quarter by 1st project quarter
3. Pilot surveys for CPPI conducted 3rd project quarter
4. First results analyzed and questionnaires redesigned by 6th project quarter
5. Methodological document developed by 8th project quarter

A lot has been achieved during this component and the benchmarks have been fulfilled and even exceeded. Below are the results:

Surveys on construction prices per m² have been harmonized across both entities:

- At the beginning of the project only FIS conducted the survey and on a semi-yearly basis
- Now both entities and the Agency for BD conduct the survey on a quarterly basis using same questionnaires
- Figures are being published quarterly by both entities and the Agency for BiH

CPPI has been developed from scratch in BiH:

Methodology:

- It has been decided to use SCM for CPPI which was presented by the German expert
- A typical BiH residential building has been defined using building permits data
- A bill of quantities for this residential building, which is the basis for the data collection and weights, has been produced by IPSA Institute Company from Sarajevo, BiH
 - o The bill of quantities was funded by the IPA – otherwise it could not have been produced

Pilot survey:

- On the basis of the bill of quantities, items for data collection has been selected and the Pilot survey was developed
 - o 4 groups of construction works
 - o Several sub groups
 - o 30 items, i.e. construction activities

- Due to lack of resources, paper questionnaires rather than web-based questionnaires were developed for the Pilot survey and the questionnaires could not be individualized to fit the different RUs
- Sampling criteria has been set up:
 - o Only companies in the NACE groups 41 (except 41.10) and 43
 - o Only companies with >10 employees and a turnover of >100.000KM
- Questionnaires have been tested with selected potential RUs
- The response rates for the Pilot survey were high

Regular survey:

- The regular survey has been adopted into the work plans of all three statistical institutions
- Questionnaires from the pilot survey were adopted for the regular survey without any substantial adjustments
- The regular survey has been conducted for 2016Q1
- One questionnaire is sent out for the entire year
 - o Every quarter RUs must be reminded to report
- It has been agreed that no indices should be published before the end of 2017

IT and transmission:

- IT development of an application for data entry, data validation and index calculation has begun
 - o FIS has developed a preliminary version
 - o RSIS has started the development work
- It has been agreed that data should be transmitted to Agency at price level in a common format. However, all companies are anonymized

Metadata:

- A methodological document describing the CPPI in BiH in detail has been produced
- This document will fit quite well with Eurostat's SIMS template

Sustainability of the achievements

See "Conclusions and recommendations for the whole component"

Recommendations for the future (short and long term)

See "Conclusions and recommendations for the whole component"

Identification of needs for additional support

See "Conclusions and recommendations for the whole component"

Outstanding issues

None

4. Conclusions and recommendations for the whole component

The basis for calculating and publishing CPPI has successfully been made. To continue the good work and eventually produce CPPI sustainably, the following recommendations are given by the EU experts:

Firstly, it is highly recommended that more resources, meaning staff, should be allocated to the CPPI as the data collection is quite demanding due to time demanding data entry and the necessity of contacting the RUs to clarify the reported prices. This could be alleviated, to some extent, by introducing web-based questionnaires; however, more staff is still essential to ensure a high quality of data. Web-based questionnaires will furthermore make it possible to individualize the questionnaires and, thus, make the easier for the RUs to fill them in correctly.

Secondly, funds for updating the bill of quantities within the next 3 to 5 years should be reserved on the budget (approximately € 2.000). Otherwise, the CPPI will soon be outdated, and the quality of the indices will decrease.

Thirdly, experiences with data collection, data validation and index calculations should be exchanged with the colleagues producing SPPI on a regular basis, e.g. by setting up quarterly meetings. This will help ensure that the methodology behind the indices can be up to date and that the production of the indices undergoes ongoing adjustments to further improve the efficiency of the production.

Fourthly, data validation can be refined by creating lists in the application based on the most common mistakes made by the RUs. E.g. a list that presents all prices that exceed or falls below the threshold of 5 pct. The need for other lists will appear naturally, as the staff gets acquainted with the data and the RUs.

Finally, once the CPPI for residential buildings is in production, work can be put into expanding the CPPI to also cover civil-engineering works (NACE 42). This index will follow the same or very similar methodology to the CPPI for residential buildings.

Annex 1. Terms of Reference

EU Twinning Project BA-12-IB-ST-01

Terms of Reference

Component: 2.3.1 Short-Term Statistics

6th – 9th September 2016

Sarajevo, Zelenih beretki 26, I floor, FIS FIS

Activity

2.3.1.5 Plan for a regular production and finalization of methodology of producer (output) prices in construction. Follow-up on achievements of the component and recommendations for the future

Benchmarks

- Plan for development of CPPI done by 2nd project quarter
- Draft questionnaires and supporting documentation prepared by 2nd project quarter
- Pilot surveys for CPPI conducted 3rd project quarter
- First results analyzed and questionnaires redesigned by 6th project quarter
- Methodological document developed by 8th project quarter

Purpose of activity

The expected activities are:

- Presentation of experiences from the field for regular survey on CPPI (data collection process, feedback from reporting units etc.)
- Weighting system and calculation of CPPI – further clarifications
- Clarification of outstanding issues
- Development of Methodological document on CPPI – preparation of final version
- Follow-up on the results achieved in the component
- Sustainability of the achievements
- Discussions and recommendations for future work
- Development plan for future improvements
- Identification of needs for additional support
- Preparation of final report

Expected output

- Analysis of regular survey process made
- Final agreement on all outstanding issues
- Methodology document adopted

- Project results identified
- Development plan for CPIC agreed
- Recommendations for future work made (exit strategy)
- Final report prepared

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| List of Participants |
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Experts

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Agenda

Location: Sarajevo, Zelenih beretki 26, I floor, FIS FIS

| Time | Day | Place | Event | Purpose / Detail of event |
|-------------|----------------------|-------|--------------------------|---|
| 09:00-16:00 | Tuesday Morning | | Workshop with BC Experts | Welcome and Introduction Presentation of experiences from the field for regular survey on CPPI (data collection process, feedback from reporting units etc.) MS experts |
| | Tuesday, afternoon | | Workshop with BC Experts | Weighting system and calculation of CPPI – further clarifications Clarification of outstanding issues MS experts, BC participants |
| 9:00-16:00 | Wednesday, morning | | Workshop with BC Experts | Discussion on SPPI and CPPI (joint part of the mission), methods, concepts and experiences (common practices) MS experts, BC participants |
| | Wednesday, afternoon | | Workshop with BC Experts | Development of Methodological document on CPPI – preparation of final version MS experts, BC participants |
| 9:00-16:00 | Thursday, morning | | Workshop with BC Experts | Follow-up on the results achieved in the component Discussions and recommendations for future work Development plan for future improvements MS experts, BC participants |
| | Thursday, afternoon | | Workshop with BC Experts | Agreement on inputs for final report including: <ul style="list-style-type: none"> - Overview of status at the beginning of the project - Status of project results - Sustainability of the achievements - Recommendations for the future (short and long term) - Identification of needs for additional support MS experts, BC participants |
| 9:30-12:00 | Friday, morning | | Meeting with BC Experts | Adoption of final version of Methodology document and Final report on CPPI MS experts, BC participants |

Annex 2. Persons met

BHAS:

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|----------------|---|
| Fahir Kanlić, | Head of Department for Industry and Construction Statistics |
| Dženita Babić, | Senior adviser in Department for Industry and Construction Statistics |
| Anita Brković, | Senior officer in Department for Industry and Construction Statistics |
| Tanja Miović, | Trainee in Department for Industry and Construction Statistics |

FIS:

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| Edina Dulić, | Senior adviser for Construction Statistics |

RSIS:

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| Želimir Radišić, | Senior officer for Construction Statistics |

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