

# TWINNING CONTRACT

BA 15 IPA SR 01 17

## Support to the reform of the statistics system in Bosnia and Herzegovina



## MISSION REPORT

**Activity 2.4.3:**  
**Analysis of pilot surveys results on SPPI**

**Component 2: Business Statistics**  
**Sub-component 2.4: Services Producer Prices Index**

Mission carried out by  
**Susanna Tåg, Statistics Finland**  
**Josipa Kalčić Ivanić, Croatian Bureau of Statistics**

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## **Expert contact information**

***Susanna Tåg***

*Statistics Finland*

*Helsinki, Finland*

*Tel: +358 50 360 4414*

*Email: [susanna.tag@stat.fi](mailto:susanna.tag@stat.fi)*

***Josipa Kalčić Ivanić***

*Croatian Bureau of Statistics*

*Zagreb, Croatia*

*Tel: +385 98 548 387*

*Email: [kalcicj@dzs.hr](mailto:kalcicj@dzs.hr)*

## Table of contents

1. General comments .....	4
2. Assessment and results .....	4
3. Conclusions and recommendations .....	6
Annex 1. Terms of Reference .....	8
Annex 2. Persons met .....	10

## List of Abbreviations

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
FBiH	Federation of Bosnia and Herzegovina
FIS	Institute for Statistics of Federation of Bosnia and Herzegovina
ISP	Index of Services Production
MS	EU Member State
RSIS	Institute for Statistics of Republika Srpska
RTA	Resident Twinning Adviser
SBR	Statistical Business Register
SBS	Structural Business Statistics
SPPI	Services Producer Price Index
ToR	Terms of Reference

## 1. General comments

This mission report was prepared within the EU Twinning Project "Support to the reform of the statistics system in Bosnia and Herzegovina". It was the third mission to be devoted to Services Producer Price Index within Component 2 of the project.

The purposes of the mission were:

- Follow up from the previous mission
- Analysis of first results of pilot survey (data collection process, feedback from reporting units, recalling of reporting units, the most frequent mistakes, etc.)
- Data editing and treatment of non-response
- Quality of first results from the pilot survey
- Preparation of set of formal and logical controls
- Preparation of first version of correspondence tables for deflators

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 consultants and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, CBBH, Statistics Denmark, INSEE, Statistics Finland and Croatian Bureau of Statistics.

## 2. Assessment and results

### First results from the pilot survey assessed

BC experts presented the results of pilot surveys for the NACE industries 71.11 Architectural activities and 71.12 Engineering activities and related technical consultancy. The pilot survey started in the beginning of 2018. The BC experts decided to use cut-off sampling and to enlarge the sample with few smaller enterprises. The samples include 29, 23 and 7 enterprises in FIS, RSIS and BHAS respectively. They collected the data for the first and the second quarter and they are continuing the data collection for the third quarter.

The BC experts encountered misclassifications of enterprises which they reported to the Business Register and they corrected the classifications. For example, 20 percent of the sampled enterprises were misclassified in the FIS. In addition, they had some difficulties to receive the data from the respondents. Some enterprises were reluctant to answer and some respondents, like bookkeepers, were not able to complete the survey because of lack of information on pricing. It is very difficult to get a good and properly filled questionnaire because of its complexity. The questionnaire covers several business areas (turnover and prices) which not always linked within the company. Therefore, because of the unavailability of the data required, interaction and knowledge of more people from different business areas is needed to fill the questionnaire. For this reason it is necessary to contact more persons to obtain all required data, if the data is missing.

Even higher challenge was how to get the actual prices from enterprises, due to confidentiality reasons. Instead, they would report price change percentages. The MS experts suggested to accept also that data if it is the only option to get information about the prices from those enterprises. This practice has been used also in Croatian Bureau of Statistics and Statistics Finland. This may not be the best solution but in this case it is feasible and it improves the co-operation with the respondents by decreasing their response burden. In practice, price statisticians update either a price or an index figure with that percentage change in their data collection system.

The BC experts have agreed on a common way of calculation which is very important for the coherency and comparability of indices. Some further topics related to the index calculation appeared during the mission. Firstly, short-term and long-term price relatives were compared and discussed with the help of examples. There was some discussion when to apply the weights to elementary aggregates in the case of short-term price relatives. After calculating the short-term price relatives (price of the current period/price of the previous period) and taking geometric means, one should multiply these with the previous period elementary indices before applying the weights.

Secondly, the weights used for index calculation were discussed. Turnover weights are surveyed from sampled enterprises annually and the information about the whole population is not available because of the lack of relevant statistics for the weights. The weights seem to fluctuate significantly every year mainly because of the changes in the sample. The BC experts were concerned about the representativeness of samples. The MS experts recommend to consider a more suitable method for a sample selection, for example probability proportional to size (PPS) or other random sampling, in the future.

Another topic related to the weights was a price-updating practice in annual chain-linking. According to the Eurostat's Task Force on chain-linking in STS, it is recommended to price-update the weights up to the fourth quarter of the previous year which is the chaining period. The BC experts received an explanations and example how to implement the price-update for annual weights.

### **EU experiences on data editing and treatment of non-response presented**

During the previous missions, the MS experts presented their experiences in data editing and treatment of non-response. The focus of this mission is to discuss this topic further and prioritize the practices and methods. Following this useful discussion with MS experts, the BC experts decided to use that valuable expertise, experience and recommendations in development of IT application for producer prices.

The mission showed that the BC experts put a lot of effort to minimize non-response rate of the pilot surveys. They have contacted the enterprises in the sample to find a suitable person to fill-in the survey, informed him/her individually about the survey and helped him/her patiently to be able to complete it. Also, the non-responders get reminders if they have not returned a filled-in questionnaire. Furthermore, the BC experts have visited some enterprises to test the questionnaire and to get feedback from them. Despite of this work, the non-response rate has increased significantly after the first quarter. Because of the importance of this topic, the MS experts would like to emphasize that it is crucial to ensure the adequacy of human resources. If there were more full-time statisticians concentrating on these surveys, the quality of data and statistics would be better.

### **Set of formal and logical controls prepared**

Set of formal and logical controls were discussed during the mission. The data collection process is the following in BiH: First, the BC experts send out paper questionnaires to respondents, the respondents fill in the questionnaire and send them back to the statistical institutions. After receiving the filled-in questionnaires, the BC experts enter the data in a forthcoming IT application manually. Most of the errors will be checked in this phase. The statisticians contact the respondents for more information if necessary.

It is important to have formal and logical controls of data on a micro and macro level to facilitate the compilation of statistics and to ensure the quality of data. Different controls in the IT application were discussed based on the previous missions and the last mission report for an activity 2.C.2 IT application development for producer prices. We agreed on a list of controls which they could try to implement in the IT application. These include quarterly and yearly price changes with possible product specific

intervals and detection of inliers in the case prices have been unchanged for a given period of time which can be determined by product. We also discussed a possibility to calculate quarterly and annual contributions of lower level indices to higher level aggregates which could help in analysing the results.

### **First version of correspondence tables for deflators structure prepared**

The BC and MS experts agreed that the statistical institutions are not yet able to create reliable correspondence tables for deflators, due to the lack of necessary resources. There is a lack of data sources for deflators in BiH because many of price indices are still under development and other suitable data is neither available.

### **Input provided to the ToR of next activity**

The topic of next mission (Activity 2.4.5) is the preparation of regular survey on SPPI. The BC experts will continue the pilot survey and analyse the results. They have the needed knowledge to prepare a plan for the regular surveys on SPPI. Based on the experiences of the pilot survey, they are able to determine the pricing methods and calculation of SPPIs, treatment of non-response and proposal for imputation methods. In order to establish regular production of SPPI, it is essential to introduce common SPPI and CPPI IT application.

## **3. Conclusions and recommendations**

The BC experts have a lot of knowledge and expertise on price indices. All three institutions have put a lot of effort into development of SPPI. However, there are challenges to achieve the outputs of the project and to continue with a regular index production in BiH. The mission would like to emphasize that it is crucial to ensure adequate human resources for the production of SPPI. If there were more full-time statisticians, the quality of data and statistics would be better.

Based on the discussions during the mission, the MS experts recommend the following:

- A more suitable method for a sample selection, for example probability proportional to size (PPS) or other random sampling, should be considered in the future to avoid sampling bias.
- Weights should be price-updated up to the fourth quarter of the previous year which is in line with the Eurostat's Task Force on chain-linking in STS.
- Quarterly and yearly price changes, contributions and detection of inliers should be included in the validation process.

The recommendations follow the regulations and recommendations of EU and/or Eurostat-OECD Methodological Guide for Developing Producer Price Indices for Services, and also Croatian and Finnish experiences.

### What to do before the next mission for the BC Counterpart

Action	Deadline	Responsible person
Study methodological documentation in detail to extend the knowledge and understanding of SPPIs	Ongoing process	BHAS, FIS and RSIS
Study methodological documentation on annual chain-linked index elaborated by the STS Task Force on chain-linking	Ongoing process	BHAS, FIS and RSIS
Check the main activity of businesses and make feedback to SBR during the work in the field	End of December 2018	BHAS, FIS and RSIS
Collect both information about availability of prices and turnover to address further decisions about weighting possibilities	End of December 2018	BHAS, FIS and RSIS
Amended methods for the regular surveys on activity M71.1 based on the experiences from the pilot survey	End of December 2018	BHAS, FIS and RSIS
Preparation of final questionnaire for a regular production	End of December 2018	BHAS, FIS and RSIS
Preparation of plan for a regular production	End of December 2018	BHAS, FIS and RSIS
Preparation of output tables (publication forms, transmission formats, etc.)	March 2019	BHAS, FIS and RSIS
Quality of results from the pilot survey	March 2019	BHAS, FIS and RSIS
Sending of the outputs from the IT application to MS experts	March 2019	BHAS, FIS and RSIS

### What to do before the next mission for the MS Counterpart

Action	Deadline	Responsible person
Analyse the results of the pilot survey	Before next mission	Anna-Riikka Pitkänen (FI), Yann Leurs (FR)
Provide practical examples on index calculation, example J61	Before next mission	Anna-Riikka Pitkänen (FI), Yann Leurs (FR)
Analysis of the outputs of the IT application	Before next mission	Anna-Riikka Pitkänen (FI), Yann Leurs (FR)

## **Annex 1. Terms of Reference**

### **Terms of Reference**

**EU Twinning Project BA 15 IPA ST 01 17**

#### **Component 2: Business Statistics**

#### **Sub-component 2.4: Services Producer Prices Index**

**23-26 October 2018**

#### **Hosting institution:**

**FIS – Institute for Statistics of the Federation of Bosnia and Herzegovina**

#### **Activity 2.4.3 Analysis of pilot surveys results on SPPI**

##### **1. Mandatory result and benchmarks for the component**

Mandatory result:

- New indicators for producer prices in services produced by 8<sup>th</sup> project quarter

Benchmarks:

- Plan for development of producer prices in services produced by 1<sup>st</sup> project quarter
- Draft questionnaire and supporting documents for pilot survey prepared by 1<sup>st</sup> project quarter
- Pilot survey conducted by 2<sup>nd</sup> project quarter
- Criteria for an IT application defined by 2<sup>nd</sup> project quarter
- Results of pilot survey analyzed by 4<sup>th</sup> project quarter
- Plan for regular production of producer prices in services developed by 4<sup>th</sup> project quarter
- Indices on producer prices in services compiled by 6<sup>th</sup> project quarter
- Indices on producer prices in services made available to users by 8<sup>th</sup> project quarter
- Methodological document on producer prices in services developed by 8<sup>th</sup> project quarter
- Quality report for producer prices in services developed by 8<sup>th</sup> project quarter

##### **2. Purpose of the activity**

- Follow up from the previous mission
- Analysis of first results of pilot survey (data collection process, feedback from reporting units, recalling of reporting units, the most frequent mistakes, etc.)

- Data editing and treatment of non-response
- Quality of first results from the pilot survey
- Preparation of set of formal and logical controls
- Preparation of first version of correspondence tables for deflators

### **3. Expected output of the activity**

- First results from the pilot survey assessed
- EU experiences on data editing and treatment of non-response presented
- Set of formal and logical controls prepared
- First version of correspondence tables for deflators structure prepared
- Input provided to the ToR of next activity

### **4. Participants**

#### **Agency for Statistics of BiH (BHAS)**

Alen Bajramović, BHAS

#### **Institute for Statistics of Federation of BiH (FIS)**

Merima Hadžalić, FIS

#### **Institute for Statistics of Republika Srpska (RSIS)**

Jelena Glamočika, RSIS

#### **MS Experts**

Susanna Tåg, Statistics Finland

Josipa Kalčić Ivanić, Croatian Bureau of Statistics

#### **Twinning Project Administration**

Katja Møller Hjeltvang, RTA

Đemka Šahinpašić, RTA Assistant

Haris Imamović, Interpreter

## **Annex 2. Persons met**

### **Agency for Statistics of BiH (BHAS)**

Alen Bajramović, BHAS

### **Institute for Statistics of Federation of BiH (FIS)**

Merima Hadžalić, FIS

### **Institute for Statistics of Republika Srpska (RSIS)**

Jelena Glamočika, RSIS

### **MS Experts**

Susanna Tåg, Statistics Finland

Josipa Kalčić Ivanić, Croatian Bureau of Statistics

### **Twinning Project Administration**

Katja Møller Hjelvang, RTA

Đemka Šahinpašić, RTA Assistant

Haris Imamović, Interpreter