

TWINNING CONTRACT

2023/447-234



EU for Further Development of Statistics System in BiH



MISSION REPORT

Activity 1.3.1D: Wholesale trade deflators III - part II
Subcomponent 1.3.1 – Wholesale Trade Deflators and Service Producer Price Indices
Component 1 - Business Statistics

Mission carried out by:

Štefan Rot, Statistical Office of the Republic of Slovenia

09-11 December 2025

Including an online session from 09:00 to 12:00 hrs. on 19 September 2025, as the part I of the mission

Version: Final

EU FOR FURTHER DEVELOPMENT OF STATISTICS SYSTEM IN BIH



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List of Abbreviations

BC	Beneficiary Country (Bosnia and Herzegovina)
BHAS	Agency for Statistics of Bosnia and Herzegovina
BiH	Bosnia and Herzegovina
CBBH	Central Bank of Bosnia and Herzegovina
EU	European Union
EUD	European Union Delegation to Bosnia and Herzegovina
FIS	Institute for Statistics of the Federation of Bosnia and Herzegovina
LA	Language Assistant
MS	EU Member State
RSIS	Institute for Statistics of Republika Srpska
RTA	Resident Twinning Advisor
RTAA	Resident Twinning Advisor Assistant
SURS	Statistical office of the Republic of Slovenia
ToR	Terms of Reference



Executive Summary

The mission, which lasted 2.5 days, focused on the work done since the previous mission and both current issues of developing deflators and future tasks beyond the scope of the current project. Due to external factors (i.e. availability of data), some work agreed during the previous mission has not yet been completed, but other actions were initiated instead, i.e. initial work with a contracting company for an IT solution which will, among other solutions, enable calculations of both deflators and indices.

Examples of current issues discussed are acquisition of deflator sources of suitable quality, especially in the case of Unit Value of Imports Indices (UVII), and preparation of documentation for the contracting company which will produce applications for several tasks, including deflator calculation. The MS expert provided consultations regarding such topics.

The focus on future tasks is visible in the presentations prepared by the MS expert - indices calculation and implementation of NACE rev. 2.1 in trade statistics. The discussion about indices calculation and about the plans for the period beyond the project also supports this focus. It was agreed that the plan should aim at the production of indicators fully synchronized with new legislative requirements in 2028.

1. General comments

This mission report was prepared within the EU Twinning Project "Further Development of the Statistics System in Bosnia and Herzegovina". It was the 3rd mission (divided in two parts) to be devoted to the Wholesale Trade Deflators and Service Producer Price Indices subcomponent of the Project.

The purposes of the mission were:

- Presentation of volume index calculation at SURS
- Follow-up on the tasks given during the previous mission
- Discussion on common calculation of deflators
- Implementation of NACE Rev. 2.1: Experience from Slovenia and way forward for STS production in BiH
- Instructions for preparation of Activity Plan (how to continue the work on WTD after the project)
- Practical work on weighting structure
- Mission Report

The consultant would like to express his thanks to all officials and individuals from Bosnia and Herzegovina met for the kind support and valuable information, which highly facilitated the work of the consultant.

The views and observations stated in this report are those of the consultant and the RTA and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, CBBH, Statistics Denmark, Statistics Finland, Statistical Office of the Republic of Slovenia and The Italian National Institute of Statistics.

2. Assessment and results

The mission in Banja Luka started with a short follow-up on the work done since the online meeting in September. The MS expert prepared some illustrative examples of documentation prepared by programmers and methodologist at SURS and sent them to the three BiH statistical institutions. Since the meeting the beneficiary institutions continued with the work on the common weighting structure for the deflators and identification of important companies in certain activities. Since there was a delay with the acquisition of PRODCOM data for the year 2024, which was not available until the end of September, the calculation of weighting structure will be prepared by the end of January 2026. Consultations on the development of a solution for the calculation of UVII at lower levels of CPA (classification of products by activity) continued. The beneficiary country also initiated the process of developing the IT solutions for calculation of deflators and wholesale volume indices; the documentation is being prepared and initial work with the contracting company started.

Afterwards the presentation of the wholesale volume index calculation at SURS followed. Besides the purely mathematical formula and illustrative examples, the broader situation regarding the legislative frame and availability of the data was presented, since they influenced the development of the production system. Eurostat's recommendations for calculation of volume indices were also presented as well as the practice for Index of Service Production (ISP) calculation in Slovenia, since its methodology is different, but possibly applicable for the calculation of wholesale volume indicator. Both Slovenian methods and Eurostat's recommendation are based on chain-linking of indices. The attendees actively followed the presentation by commenting on the topic and asking questions regarding the calculation methods.

The next topic was the implementation of NACE rev. 2.1 at SURS with its influence on trade indicators. First the process of revision, legislature development and implementation was presented. Major changes regarding Section G Wholesale and Retail trade were pointed out and changed definition of factoryless goods producers presented. Due to this change the classification of some previously trade enterprises can be changed to industry. Afterwards, its implementation at national level was presented, with focus on both Business Register (BR) and Statistical Business Register (SBR). SBR is the source for every sampling of enterprises at SURS. The approaches of both the Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES; responsible for BR) and SURS during the implementation of NACE rev. 2.1 in SBR were presented. Backcasting of time series is also an important part of NACE rev. 2.1 implementation and SBR is one of its pillars. The MS expert presented two main approaches (at micro and macro levels) of backcasting and how double coverage of NACE versions in SBR and calculation of conversion matrices from it are used. This presentation was finalized with the overview of the current state and work done on backcasting at SURS and trade statistics in particular. During and after the presentation the participants shared their experiences regarding the approaches on implementation and how changes influence production of trade indicators.

On the second day more concrete discussion on issues regarding the development of deflators and volume indices continued. The presentations from the previous day raised some questions regarding the calculation of indices. The MS expert explained some details regarding chain-linking of the data, changes in the structure of weights through years and how can they be addressed. Since the last mission also some new questions arose regarding the aggregation from microdata to higher levels of aggregates using different methodologies (aggregation of every aggregate from microdata or calculation of higher-level aggregates via weighting lower-level aggregates). Also, some parts of the indices production process were presented and discussed at a more detailed level, for example imputation methods, calculation of quality indicators for controlling of the aggregates, measures regarding controlling of deflator calculations during the production process, etc.

The representatives of the beneficiary country also wanted some consulting regarding the preparation of instructions for IT developers. The MS expert suggested that IT solutions are often based on quite basic logical/mathematical functions (IF, AND, OR, etc.), which are similar in different programming

languages. Therefore, preparation of such instructions can also be made using simple rules built using such functions, since programmers can easily adapt them to the programming language they are using. Additionally, examples of calculations can be done in Excel for the illustrative purposes.

The UVII calculation at 4-digit level is not yet guaranteed. But even in case it will be initiated, it could happen that the calculation can't be made for all cases, or the values could be very volatile. Therefore, substitute options should be identified. Suggested options are: higher level aggregates, similar aggregates at the same level, use of only industrial producer prices indices (IPPI) indices at the input side of deflator calculation or the use of only consumer price indices (CPI) for the same or similar product. During the discussion the comparison of import prices indices (IMP) and IPPI for a group of products at different levels of aggregation in Slovenian case was made. Additionally, some test calculations of deflators at 2-digit and 3-digit levels were made and compared. The comparison showed that indices movements are not similar in all cases and that values of calculated deflators can be quite different when they are calculated at 2-digit or lower levels, therefore, there is a need for production of UVII at 3- and 4-digit level. This assures the observation of the relevant products and production of deflators of required quality. Nevertheless, such *ad hoc* analysis could be made during identification of possible deflators.

Finally, future steps were considered. Since the new NACE classification is being implemented, the beneficiary country is considering starting the production of wholesale volume indicators in year 2028 (the year of NACE rev. 2.1 implementation in Short-Term Business Statistics - STS). It is also the year of new base year implementation in STS. This would reduce the burden of developing the production of the indicator according to current requirements first. The MS expert agrees with the proposal, as far as the BR and all other needed data would allow the calculation of indices for the period required by the legislation (back to previous base year, from 2021 onwards).

3. Conclusions and recommendations

BiH successfully completed part of the tasks given after the previous mission and online meeting in September. The tasks that remain to be completed can be attributed to the outside factors, for example availability of the data. However, as soon the required data are available, the tasks should be initiated. On the other hand, some steps were done in addition to previously agreed, for example start of initial work with a contracting company for the development of the appropriate STS application which should include some modules for deflation and indices calculations.

The work on the calculation of UVII at more detailed level should be emphasized, since this is one of the three major deflator sources BiH will use in calculation of the deflators. A fast *ad hoc* analysis showed us that in certain cases the availability of UVII at 4-digit level is crucial for quality results.

The discussion about volume indices calculations and the application about possible methods indicates that attendees are involved in the process and are invested into achieving the end goal of production of volume wholesale indices, which aims beyond the scope of the current project (i.e. calculation of deflators). The proposal of a plan for the production of volume wholesale indices according to future requirements of EU legislation also supports that. In order to synchronize the implementation of NACE rev. 2.1 and the new base year, it should be assessed if the plan is feasible and synchronized with the proposed start of regular production and transmission to Eurostat in 2028.

The plan features calculation of monthly volume wholesale indices with the next change of the base year for STS indicators in 2028. This coincides with the implementation of NACE rev. 2.1 and backcasting from 2021 on. It also proposes change of the deflator weights every five years if the analysis of the structure through years confirms its stability.

Continuous tasks regarding developing methods for temporal disaggregation for quarterly deflator sources, development of monthly calculation of turnover and volume indicators, and the decision on the use of direct or indirect approach of calculation have still to be done.

4. What to do before the next mission

Action	Deadline	Responsible person
Test weights calculations for all NACE 4-digit level activities have to be made for years 2023 and 2024	Until the next mission	BHAS, FIS, RSIS
Test calculations of chain-linked indices using made-up data	Until the next mission	BHAS, FIS, RSIS
Preparation of activity plan for the period 2026-2028	Until the next mission	BHAS, FIS, RSIS

Annex 1. Terms of Reference for the current mission

Terms of Reference

EU Twinning Project BA 19 IPA ST 01 23

Component 1 - Business Statistics

Subcomponent 1.3.1 – Wholesale Trade Deflators and Service producer Price Indices

Timing: 09 (10 a.m.) – 11 December 2025

**Venue: Republika Srpska Institute of Statistics – Vladike Platona bb, Banja Luka
Bosnia and Herzegovina**

Activity 1.3.1D: Wholesale Trade Deflators III - part II

In line with the current EBS Regulation, the volume of sales (for small countries) are required on 2-digit NACE level, for NACE Section G, divisions G45 Wholesale and retail trade; repair of motor vehicles and motorcycles and G46 Wholesale trade, except of motor vehicles and motorcycles on monthly level.

Deflators are appropriate price indices that are used to transform nominal turnover into real (deflated) turnover by deflation procedure. The aim of the project is to identify the most appropriate price indices that will be used for construction of trade deflators. Those price indices are in most cases internally available price indicators, such as, monthly consumer price indices (CPI), quarterly agriculture price index (API), monthly import price index (IPI), monthly producer price index (PPI) and auxiliary source i.e. index of average gross salaries (IAS).

1. Mandatory result

The component 1.3.1 Short Term Business Statistics – covers deflators for G45 wholesale and retail trade; repair of motor vehicles and motorcycles and G46 wholesale trade, except of motor vehicles and motorcycles, since volume indicators for G45 and G46 are currently not calculated in BiH. It is therefore a major priority in the project to develop deflators for G45 and G46 at the of the project period.

Deflators for G45 wholesale and retail trade; repair of motor vehicles and motorcycles and G46 wholesale trade, except of motor vehicles and motorcycles, prepared.

2. Purpose of the activity:

- Presentation of volume index calculation at SURS
- Follow-up on the tasks given during the previous mission
- Discussion on common calculation of deflators
- Implementation of NACE Rev. 2.1: Experience from Slovenia and way forward for STS production in BiH

- Instructions for preparation of Activity Plan (how to continue the work on WTD after the project)
- Practical work on weighting structure
- Mission report

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

- Presentation of volume index calculation at SURS delivered
- Follow-up on the tasks given during the previous mission performed
- Discussion on common calculation of deflators carried out
- Implementation of NACE Rev. 2.1: Experience from Slovenia and way forward for STS production in BiH presented and discussed
- Instructions for preparation of Activity Plan (how to continue the work on WTD after the project) provided
- Practical work on weighting structure done
- Mission report drafted

Annex 2. (input for the) Terms of Reference for the next mission

Activity 1.3.1 E	Wholesale trade deflators IV
Budget section	III. Components Mandatory Results – Component 1 subcomponent 1.3.1
Subject	<ul style="list-style-type: none"> • Evaluation of tasks given during previous mission • Mission report
Methods	Online/onsite STE mission in BiH
Resources	MS: Štefan Rot (SIRTA, RTAA and LA) BC: Relevant staff expected to be involved in component 1.3.1
Duration	Up to 2 MS STEs x 3.5 working days
Output	<ul style="list-style-type: none"> • Evaluation of tasks given during previous mission done • Mission report
Time schedule	Expected for arch 2026

Annex 3. Notes from the online mission held on 19 September 2025

Attendees:

SURS:

Stefan Rot, STE

BHAS:

Alen Bajramović

Maja Hadzi-Stojanov

FIS:

Aida Halilovic

Muhidin Hadziahmetovic

Adnan Lušija

Elvir Juljevic

RSIS:

Sanela Borojević

During the meeting the following has been agreed:

- The next mission will take place in the week 8-12 December 2025

- By 17 November 2025 the three BiH institutions will send a common calculation of deflators to STE, to analyse it and to be able to discuss it all together during the next mission. Since the PRODCOM data for 2024 will be available by the end of September, weighting structure for 2023 and 2024 should be prepared before the next mission.

- One of the proposed topics for the next mission will be preparation of Activity Plan, STE will provide recommendations to BiH's experts how to continue their work on WTD after the project ends.
- Implementation of new NACE Rev 2.1: what is done in Slovenia and way forward for STS production in BiH. It was proposed to conduct Ad-hoc survey on trade and services (by using structure of new CPA) at the beginning of 2026 to collect data for referent 2025, for the biggest companies.
- Currently, import unit value indices (UVII) are available only on 2-digit level. Recalculation to more detailed CPA level (3-digit or 4-digit) should be done in order to produce WTD.
- Before the next mission STE will send available documentation used for WTD IT application (maintenance and upgrading).



Annex 4. Persons met

BHAS:

Alen Bajramović, Head of Department for Services Statistics
Maja Hadži-Stojanov, Senior Officer for Producer Prices in Services
Žana Perković, Junior Officer for Distributive Trade

FIS:

Elvir Juljević, Expert Consultant for Communication Statistics and Information Society
Adnan Lušija, Expert Associate at Business Statistics Department

RSIS:

Jelena Glamočika, Head of Department for Services Statistics
Jelena Kljajić, Senior Officer for Consumer Prices in Services
Aleksandra Đonlaga, Senior Officer for Consumer Prices in Services
Sanela Borojević, Senior Statistician for Trade Statistics
Vesna Grubor, Senior Officer for Distributive Trade

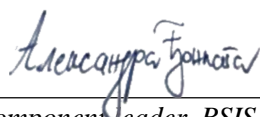
RTA Team:

Niels Madsen, RTA
Senka Ahmetovic-Palic, RTA Language Assistant

Signatures

For the approval of the contents of this report, representatives from BHAS, FIS and RSIS as well as MS experts and the RTA sign here:





Component leader, RSIS



Component leader, FIS



RTA

MS Expert