

TWINNING CONTRACT

2023/447-234



EU for Further Development of Statistics System in BiH



MISSION REPORT

Activity 5B: Final Monthly Balance of Payments Outputs Against Rest of the World and Revised Methodology Component 5 - Monthly Balance of Payments Statistics

Mission carried out by

Antti Santaharju, Statistics Finland
Risto Sippola, Statistics Finland

06-08 May 2025

Version: Final

EU FOR FURTHER DEVELOPMENT OF STATISTICS SYSTEM IN BIH



Funded by
the European Union



STATISTICS
DENMARK



REPUBLIC OF SLOVENIA
STATISTICAL OFFICE

Statistics Finland

European Union Member State Expert (consultants) Contact Information

Antti Santaharju
Statistics Finland
antti.santaharju@stat.fi

Risto Sippola,
Statistics Finland
risto.sippola@stat.fi

Table of contents

Executive Summary	4
1.General comments	4
2. Assessment and results	5
3. Conclusions and recommendations	6
4. What to do before the next mission	6
Annex 1. Terms of Reference for the current mission	7
Annex 2. (input for the) Terms of Reference for the next mission	9
Annex 3. Persons met	10

List of Abbreviations

BC	Beneficiary Country (Bosnia and Herzegovina)
BiH	Bosnia and Herzegovina
CBBH	Central Bank of Bosnia and Herzegovina
EU	European Union
EUD	European Union Delegation of Bosnia and Herzegovina
LA	Language Assistant
MS	EU Member State
RTA	Resident Twinning Adviser
RTAA	Resident Twinning Adviser Assistant
ToR	Terms of Reference



Executive Summary

CBBH has readiness to produce monthly BoP against rest of the world. During this project their aim is to further analyze and improve the methodology used in the compilation and to produce the monthly BoP outputs for the years beginning from 2015 with the revised methodology. After this task, CBBH will proceed to producing monthly BoP figures with the geographical breakdown included for a selected reference year. It is recommended that the methodologies are analyzed and revised also in the future, aiming towards preparedness to be able to meet the monthly BoP requirements following the data transmission calendar published by Eurostat.

For this project it is recommended that data collection and processing, and data transmission processes are compared and if possible linked to the General Statistical Business Process Model (GSBPM) published by UNECE to further improve the general adaptivity of statistical production. The aim is to construct a logical framework, with which one can define technical infrastructure.

Data transmission process to Eurostat presented by CBBH staff follows the process set by Eurostat. One way of improving the data consistency between other countries and international organisations could be the use Fusion Metadata Registry software. It allows the national agencies to download BoP DSD information defined by Eurostat and ECB in the system. Fusion Metadata Registry can also be used in the automation of dissemination and there is a working solution provided to CBBH.

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 second mission to be devoted to the Monthly Balance of Payments Statistics Component of the Project.

The purposes of the mission were:

- Presentation of monthly BOP outputs for reference years 2015-2019
- Presentation of revised monthly BOP methodology based on analysis made from reference years 2015-2019
- Planning of the next steps to meet monthly BOP requirements including GEO distribution for a selected reference year
- Preparation of ToR for next activity

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

Views and observations stated in this report are those of the consultant(s) and the RTA and do not necessarily correspond to the views of EU, CBBH, Statistics Denmark or Statistics Finland.

2. Assessment and results

CBBH staff presented their monthly BOP figures for years 2015-2018. The methodology used was based on the methodology developed during production of monthly BoP for pilot statistical year 2019. Overall, the results were relatively satisfactory, but certain challenging BoP items to estimate were identified. These items were mainly services debits, re-invested earnings and financial account, other investments in particular, in which found errors seemed to be systematic. CBBH staff will further analyse the results to find explanations for systematic errors and thereby improve the methodology used and revise the models. New methodology is still under work and therefore the methodological note was not yet updated.

CBBH has also a plan on deriving the counterpart area distribution for selected year. The geographical distribution is required only on highly aggregated level in current account items. The counterpart area breakdown is only on EU vs. non-EU level and Euro area vs. non-Euro area. CBBH is planning to follow the revision policy of monthly data to provide consistency with quarterly/annual data, although it is not required by BoP Vademecum.

The consultants presented the architecture of Statistics Finland statistical production process. Statistics Finland has created a standardized reference model at the logical level for its processes and organisation of information. All new statistical processes to be built follow this framework. This reference model is based on UNECE's GSBPM (Generic Statistical Business Process Model), according to which statistical production is divided into four main phases: Collection, Processing, Analysis, and Dissemination.

Statistics Finland's reference model identifies three steady states for the information flow. Metadata of the datasets of these steady states are described at the variable level for:

- raw data arriving at the agency
- processed, analysis-ready data
- Analysed dissemination-ready data, as well as the unit-level data underlying them.

Data corresponding to these steady states is stored in the shared data repositories used across all statistical processes. The aim is to collect and process data only once, but to utilize it in multiple statistical processes.

The purpose of the presentation was to emphasize the benefits of using reference models and standardizing processes. All statistical processes follow the same phases and structure. This enables:

- A shared language across different processes and agencies
- A common operational model
- Reuse of data that has been collected and processed once in various statistical processes
- Sharing of practices and tools across different statistical processes and statistical agencies

UNECE's GSBPM reference model was presented in its entirety by the consultants. In the same context was shown examples of how this GSBPM reference model is applied at Statistics Finland. It was also emphasized that implementing the GSBPM reference model is best started by linking the tasks of the existing process descriptions to the sub-processes defined in the GSBPM.

One of the objectives mentioned in work plan is the improvement of automatization in dissemination phase. To promote this objective the consultants gave a short introduction to Fusion Metadata Registry (FMR), which is a free to use structural metadata registry for SDMX supporting EDI, SDMX 1.0, 2.0, 2.1 and 3.0. Registry includes data structure definitions for BoP, as well as dataflows to be transmitted to international organizations in BoP area. The codelists used for dimensions and their constraints can be also downloaded from the registry, assuming that international organizations have defined them in the system. FMR also has a tool which converts datafiles into sdmx-format and it can be used automatically with API. Consultants showed a case of R program, which converts cvs-file to

sdmx-format. In this case the file included the datalines of Statistics Finland monthly BoP data transmission (with OBS_STATUS=A and OBS_VALUE=1) and the sdmx-file received as output from this process has been tested in Eurostat edamis acceptance environment and it passed the structural validation.

3. Conclusions and recommendations

The consultants acknowledge the challenges in estimating monthly BoP items identified by CBBH staff. These items are generally challenging to estimate, especially in small economies, as they are dominated by single major events. The consultants encourage CBBH staff to continue their work on monitoring their methodology and models in the future to further improve the monthly estimates. Consultants recommend that CBBH staff will keep the methodological note up-to-date as soon as new methodologies are implemented.

The consultants and CBBH jointly concluded that the GSBPM framework could serve as a useful tool for reviewing the CBBHs processes. CBBH decided that the tool could be demonstrated to describe the processes of the monthly BOP statistics. The consultants and CBBH used the template provided by the consultants (annex 4) and documented the first tasks of the monthly BOP statistics as an example. The documented tasks were linked to the GSBPM sub-processes. It was agreed that CBBH continues to describe their tasks on the template after the mission. The results of this work (tasks and their links to the GSBPM) will be reviewed together during the next mission.

Regarding counterpart area breakdown required in BoP Vademecum, the consultants recommend that the process is described following the recommendations given in prior paragraph.

Consultants recommend CBBH staff to explore the tools and definitions defined in Fusion Metadata Registry (<https://registry.sdmx.org>). To increase the level of automation in the dissemination phase the consultants recommend CBBH staff to investigate the R-program (annex 5) provided by consultants. This program should be easily translated to Python-language using AI tools.

4. What to do before the next mission

Action	Deadline	Responsible person
Draft plan for GEO distribution	October 2025	CBBH staff
Develop GSBPM diagram for several processes	October 2025	CBBH staff

Annex 1. Terms of Reference for the current mission

Terms of Reference

EU Twinning Project BA 19 IPA ST 01 23

Component 5 - Monthly Balance of Payments Statistics

Timing: 06 (at 10 a.m.) - 08 May 2025

Venue: Central Bank of Bosnia and Herzegovina, Mehmeda Spahe Street, Sarajevo

Bosnia and Herzegovina

Activity 5B: Final Monthly Balance of Payments Outputs Against Rest of the World and Revised Methodology

The Project will start with a status on the progress made on monthly BoP since the previous Twinning Project, when a pilot compilation for the year 2019 was made. Based on the status, a work plan for the Project will be made. The objective is to calculate monthly BoP for more years and to potentially include geographical distributions. A needs analysis for automated data transmission and for meeting the BoP Vademecum requirements is planned to be carried out during the Project.

1. Mandatory result (as stated in the Project description/Twinning Fiche)

Plan for further improvements in data collection and processing related to external sector statistics developed in line with the EU BoP Vademecum requirements.

Defined IT infrastructure and procedure required for automated data transmission and data availability.

2. Purpose of the activity:

- Presentation of monthly BOP outputs for reference years 2015-2019
- Presentation of revised monthly BOP methodology based on analysis made from reference years 2015-2019
- Planning of the next steps to meet monthly BOP requirements including GEO distribution for a selected reference year
- Preparation of ToR for next activity

3. Expected output of the activity:

- Presentation of monthly BOP outputs for reference years 2015-2019 given
- Presentation of revised monthly BOP methodology based on analysis made from reference years 2015-2019 given

- Planning of the next steps to meet monthly BOP requirements including GEO distribution for a selected reference year carried out
- ToR for next activity prepared
- Mission report



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

Activity 5.D	Final Monthly Balance of Payments Output with Geographical Distribution
Budget section	III. Components Mandatory Results – Component 5
Subject	- Presentation of monthly BOP process according GSBPM - Presentation of monthly BOP outputs including GEO requirements for selected reference year - Discussion on improvements made in data collection and processing - Discussion on process for data transmission
Methods	Expert mission
Resources	- MS: Risto Sippola (FI) and Antti Santaharju (FI), RTA, RTAA - BC: Key staff as set out above Venue: in Sarajevo
Duration	Up to 2 MS STE x 3 working days for MS staff
Output	- Monthly BOP process description following GSBPM - Monthly BOP outputs including GEO requirements for selected reference year - Notes on improvements in data collection and validation - Notes on the process of data transmission - Final mission report
Time schedule	October 2025
Status	Upcoming

Annex 3. Persons met

CBBH:

- Vedran Milisav, Head of BoP Section
- Sabina Hasanovic, Expert for BoP Statistics
- Aida Kalco, Expert for BoP Statistics

RTA Team:

- Niels Madsen, RTA
- Larisa Muslimovic, RTA Assistant
- Senka Ahmetovic-Palic, RTA Assistant

Signatures

For the approval of the contents of this summarized report, representative from CBBH as well as the MS experts and the RTA sign here:

Date:



Component leader, CBBH



RTA



MS Expert



MS Expert

Annex 4. Template for process description

Number	GSBPM	Process name	Description	Input (Pre conditions)	Output
1	5.1	Integrate annual transport data from previous periods		BOP data series from previous periods	
2	5.4	Estimate annual transport data for current year			
3	5.3	Review annual estimates and monthly distribution for current year			
4	5.4	Edit manually annual estimates and monthly distribution for current year			
5	4.3	Collect monthly goods data as an indicator for monthly distribution in transport			

Annex 5. R-program for automated sdmx conversion

```
library(httr)

url <- "https://registry.sdmx.org/ws/public/data/transform"
headers <- c(
  "Content-Type" = "application/text",
  "Accept" = "application/vnd.sdmx.structurespecificdata+xml;version=2.1",
  "Data-Format" = "csv;delimiter=comma",
  "Structure" =
"urn:sdmx:org.sdmx.infomodel.datastructure.Dataflow=ESTAT:BPM6_BOP_M(2.3)",
  "Content-Test" = "false",
  "Sender-Id" = "FI1",
  "Sender" = "lahettaja",
  "Receiver-Id" = "vastaanottaja"
)

infile <- "C:/csv_file.csv"
outfile <- "C:/sdmx_file.xml"

response <- POST(url, add_headers(.headers = headers), encoding='UTF-8', body =
upload_file(infile))
writeBin(content(response, "raw"), outfile)
```