

## TWINNING CONTRACT

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# Further Support to the Reform of the Statistics System in Bosnia and Herzegovina



## STUDY VISIT REPORT

on

### Component 5 – Monthly Balance of Payment

Activity 5S Study visit to Finland

Date: 04-06 October 2022

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## 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
MS	EU Member State
RSIS	Institute for Statistics of Republika Srpska
RTA	Resident Twinning Adviser
ToR	Terms of Reference

## 1. General comments

This study visit report was prepared within the EU Twinning Project” Further Support to the Reform of the Statistics System in Bosnia and Herzegovina” and organised under component 5 - Monthly Balance of Payment, activity 5S.

The purpose of the study visit was to:

- **Review of compilation and data sources used for compilation and dissemination of monthly Balance of Payment in Statistics Finland**
- **Overview and discussion on processes of data delivery to Eurostat, IMF etc. in Statistics Finland**
- **Review of processes of data collection and data exchange with relevant institutions carried out by Bank of Finland as well as data analyses tools used in Bank of Finland**
- **Review and discussion of practices used for estimation of GEO distribution focusing on monthly BoP Statistics**

The staff of CBBH would like to express thanks to all officials and individuals met for the kind support and valuable information which we received during the stay in Finland.

These views and observations stated in this report are those of the consultant/s and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, CBBH, Statistics Denmark, Statistics Sweden, Statistics Finland and Istat.

## 2. Lessons Learned

**Review of compilation and data sources used for production and dissemination of Balance of Payments and International Investment Position in Statistics Finland** – Mr. Risto Sippola, expert from Statistics Finland, presented entire process of compilation and dissemination of BOP in Statistics Finland. Macro level and disseminated data are stored in MS SQL server while micro level data are stored as SAS data files on SAS server. Basically, all data processing in production system is done with SAS.

For data analysis in MS Visual Studio cubes and Pyramid Business Intelligence tool are used.

All versions of files stored in version control which is applied in BoP production process provide possibility to go back to older versions and to track historical changes.

BoP production system is organized in a way that separates collection of data from those processing and analysing data.

Even the process looks very well developed but due to technical and other (users) requirements it appeared they need more dynamic system, thus Statistics Finland plan to move from SAS to R and/or Python in the future.

Through presentation provided by the CBBH staff attendees of the meeting were introduced with organizational structure of Statistics Department in CBBH and compilation of Balance of Payments Statistics.

**Overview and discussion on processes of data delivery to Eurostat, IMF etc. in Statistics Finland and discussion** Statistics Finland sends BOP/IIP data to several international organisations as ECB, Eurostat, IMF, OECD, World Bank...

A limited number of series are sent on a monthly basis and they also transmit Quarterly and annual datasets which are more extensive.

We have also learned that DSD's published in the SDMX website dictate the content of the transmissions. Beside the Eurostat guidelines, for reporting to the ECB there are additional requirements set up in the ECB guidelines that have to be followed for this particular reporting.

### **Review of processes of data collection carried out by Bank of Finland as well as data analyses tools used in Bank of Finland**

Bank of Finland experts made very comprehensive presentations about data collection carried out by Bank of Finland for purpose of compilation of BOP and other statistics. These presentations covered:

- Securities
- Bank enquiry
- Investment funds
- Payment transaction statistics

In a case of MFI data collection in the Bank of Finland they have an idea to collect granular micro data from banks only once. In that case one data collection cover required data for multiple statistics. Expert from Bank of Finland also presented data analyses tools used in Statistical office on Bank of Finland. For MFS all banks use CSV files to report. Visual inspection of data is done with BI tool. Data on Securities (security by security) and Custodian reporting (holder by holder) data are sent as granular data to ECB and Statistics Finland.

There are five layers in the process:

1. Data Collection Service (DCS) – to ensure valid reports
2. Main Compilation System: Matrix - Checked, Conformed, Enriched, Calculated data
3. Compilation Systems by Statistical areas: MBS, Matrix for SHS Data, Statistics Finland for BOP
4. Final Data Warehouses: DW\_MBS, DW\_SHS
5. Time Series and Data dissemination: TS Database, E9, Statistics Finland (BoP, FA)

The Bank of Finland collects data on payment transactions collect data on cross border money transfer and card payments broken down by:

- payment method used (remote, contactless...)
- merchant category code
- country of origin of the card issuer.

**Review and discussion of practices used for estimation of geo-distribution focusing on estimation of monthly based information in Statistics Finland** - Through an excellent presentation provided by Mr. Risto Sippola and Ms. Reetta Karinluoma we have learned about the best practices used for estimation of monthly based data in Statistics Finland. Out of the sources in production, the Statistics Finland gets SHS (security holdings statistics) and customs data on monthly basis, and everything else is disaggregated.

Disaggregation methods vary from simply dividing annual value by 12 to disaggregation with or without indicator series. Forecast is used to estimate monthly values of the most recent quarter, prior to the quarterly data become available. For insignificant, stationary series data for the same month from previous year is used as an estimate. Usually, the best results are achieved when forecasts are made using a well-behaving aggregated series.

Following BoP system requirements for GEO breakdown the technical validation tool do not accept “unknown” as country information. All estimation of geographical distribution is done in source data ETL processes.

### 3. Conclusions and recommendations

Through the presentations made by Finnish statistics experts, we got familiar with advanced methods of data collection and dissemination. Statistics Finland use one collection for different types of statistical data and this makes the data collection process much easier. Such a method of data collection is made possible thanks to an advanced software application. Advanced data processing and data visualisation programs are in use such as: SAS, SQL, MS Visual Studio, TortoiseSVN.

In order to meet the extensive data requirements, it is necessary to invest in advanced statistical programs as well as in appropriate education of staff for data collection, procession and manipulation.

Even though the MS Excel could be sufficient tool to produce and regularly update all data for monthly BoP against the world, it would not be possible to produce data following EU requirements related to GEO distribution and presentation of data. Geographical distribution of monthly BoP figures would be enormous burden and before acquiring appropriate tool it would not be feasible to produce and transmit data by partner country/group just with MS excel.

Monthly data are estimated based on two methods: temporal disaggregation and data extrapolation. For forecasting of international trade in services data J Demetra (ARIMA) model is in use.

#### Actions needed for moving forward

Action	Deadline	Responsible institution / person
Further development of the draft working document in excel	November 2022	CBBH
Development of the draft plan for GEO distribution	November 2022	CBBH

## Annex 1. Programme

### Component 5 – Study visit agenda

Statistics Finland (Tilastokeskus)

Työpajankatu 13, Helsinki (Kalasatama)

Cabinet: Regressio, 2<sup>nd</sup> floor

Bank of Finland

Snellmanninaukio, Helsinki

Items		Timing*
<b>Tuesday 4<sup>th</sup> of October</b>		
<b>Arrival and registration in the lobby</b>		<b>09:15</b>
<b>1. Welcome to Statistics Finland</b> Presentation The Twinning Project on the Balance of Payments	Ms. Katri Kaaja  Mr. Juha Martikainen	<b>30'</b> <b>09:30-</b> <b>10:00</b>  Coffee
<b>2. Statistics Finland – Economic and Business Statistics</b>	Ms. Katri Kaaja	<b>30'</b> <b>10:00-</b> <b>10:30</b>
<i>Break</i>		<b>15'</b>
<b>3. Bosnia-Herzegovina Central Bank – Statistics Department and Balance of Payments Statistics</b>		<b>45'</b> <b>10:45-</b> <b>11:30</b>
<b>4. The production system of BoP in Statistics Finland</b>	Mr. Risto Sippola	<b>30'</b>  11:30- 12:00
<i>Lunch in Statistic Finland</i>		<b>90'</b>
<b>4. The production system of BoP in Statistics Finland</b>	Mr. Risto Sippola	<b>90'</b> <b>13:30</b> <b>15:00</b>
<b>5. Data Delivery to Eurostat, IMF etc.</b>	Ms. Reetta Karinluoma	<b>60'</b> <b>15:00-</b> <b>16:00</b>

6. Other discussions		30'
<b>Wednesday 5<sup>th</sup> of October (Bank of Finland)</b>		
Arrival and registration in the lobby		9:15
1. Bank of Finland The data collection carried out by Bank of Finland <ul style="list-style-type: none"> <li>• Securities</li> <li>• Bank enquiry</li> <li>• Investment funds</li> <li>• Payment transaction statistics</li> </ul> Data analyses tools used in Statistical office on Bank of Finland	Mr. Ville Tolkki Ms. Anu Karhu Mr. Jaakko Suni Mr. Aki Ojala Ms. Tia Kurtti Mr. Miska Jokinen	2h30' 9:30- 12:00
<i>Lunch in the Bank of Finland</i>		60'
2. Bank of Finland Museum		60' 13:00- 14:00
Walking tour in Helsinki		90' 14:00- 15:30
<b>Thursday 6<sup>th</sup> of October</b>		
1. "Best Practises" Estimation of monthly based information Estimation of geo-information	Mr. Risto Sippola Ms. Reetta Karinluoma	2h30' 09:30- 12:00 Coffee
<i>Lunch break</i>		90'
2. The Twinning Project on the Balance of Payments the way forward		30' 13:30 14:00
3. Other discussion and closing of the study visit		60' 14:00- 15:00

## Annex 2. Terms of Reference of the Next Activity (5.1.C)

<b>Activity 5.1.C</b>	<b>Development of the working document, and outline of the plan of the geo-distributions</b>
<b>Budget section</b>	III. Components Mandatory Results – Component 5
<b>Subject</b>	<ul style="list-style-type: none"> <li>- Presentation of the draft working document in excel including reporting table required by Eurostat</li> <li>- Presentation of the draft plan of the geo-distribution</li> </ul>
<b>Methods</b>	The activity will be conducted in Bosnia-Herzegovina
<b>Resources</b>	MS: Reetta Karinluoma (FIN), and Risto Sippola (FIN), RTA & RTAA. BC: Relevant staff expected to be involved in component 5
<b>Duration</b>	Up to 10 working days for MS staff
<b>Output</b>	<p>Report on the analyses and proposals for the final selection of sources, agreed guidelines for creation of final working document,</p> <p>Guidelines for finalising the plan of the methodology used to create geo-distribution,</p> <p>Mission report</p> <p>Input provided for ToR for next activity</p>
<b>Time schedule</b>	Project Q7, November 2022



## **Annex 3. Persons met**

### **Statistics Finland**

- Juha Martikainen
- Katri Kaaja
- Risto Sippola
- Reetta Karinluoma

### **Bank of Finland:**

- Ville Tolkki
- Anu Karhu
- Jaakko Suni
- Aki Ojala
- Tia Kurtti
- Miska Jokinen

### **Central Bank of Bosnia and Herzegovina participants:**

- Amir Hadziomeragic, Head of department for statistics and publication
- Vedran Milisav, Head of the BoP Section
- Suzana Kozinović-Ličanin, Expert for BoP statistics
- Aida Kalčo, Senior Specialist for BoP statistics
- Dino Bojčanović, Senior Specialist for BoP statistics