TWINNING CONTRACT

BA 17 IPA ST 01 20

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

MISSION REPORT

Activity 3G: Use of administrative - VAT turnover data for the production of STS turnover indices in Bosnia and Herzegovina III

Component 3 - Administrative Data Sources

Mission carried out by
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26 – 28 September 2023

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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
ITA	Indirect Tax Authority of BiH
MoU	Memorandum of Understanding
MS	EU Member State
RSIS	Institute for Statistics of Republika Srpska
RTA	Resident Twinning Adviser
ToR	Terms of Reference

1. General comments

This mission report was prepared within the EU Twinning Project "Further Support to the Reform of the Statistics System in Bosnia and Herzegovina". It was the seventh mission to be devoted to the Administrative Data Sources Component of the Project.

The purposes of the mission were:

- Presentation of the activities carried out since the last mission on signing MoU of FIS and RSIS with ITA BiH for getting access to VAT turnover database
- Presentation of conducted activities on comparison of VAT with survey turnover time series including both total values and year-on-year growth rates, conducted by RSIS
- Enabling direct access to de-individualized VAT and survey database for the purpose of practical analysis by using R
- Practical work on individual level comparison of Survey and VAT Turnover data for Republika Srpska (possible reasons for discrepancies between the VAT and survey data)
- Exercise: Importing a sample VAT dataset and excel sheet into the R-Program, an actual data processing step and exporting results to Excel (example script), by using VAT and survey data for Republika Srpska
- Classification of NACE categories by how well VAT Turnover data can be used to replace survey data
- Work on preparation of STS standardized operation procedures (SOP) for the purpose of integrating admin VAT data into regular statistical production process in BiH
- Updating of detailed Plan of activities for Component 3, Activity: Use of administrative VAT turnover data for production of STS turnover indices in BiH
- Preparation of the list of activities that will be conducted after this mission
- Discussions on next activity
- Preparation of Mission report

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 consultant.

These 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, CBBH, Statistics Denmark, Statistics Finland, Statistics Sweden and The Italian National Institute of Statistics.

2. Assessment and results

The purpose of the third mission in this activity was to assess the current situation with regards the production of STS statistics in BiH. Currently STS is produced at the three statistical institutions in BiH using surveys and national STS turnover statistics are produced and reported to Eurostat at monthly and quarterly frequency. The transitional period for complying with EBS regulations concerning STS turnover ends 2023 after which reporting should be monthly. Assisting the beneficiaries meeting this requirement using VAT administrative data in the process is the overall objective of this activity.

STS surveys are currently carried out in paper format and no electronic solutions exits. The three statistical institutions in BiH are responsible for their own STS production, and these are aggregated for national statistics by BHAS.

At present VAT administrative data is delivered monthly to BHAS but has yet to be utilized in the production process. Since the previous mission, RSIS and FIS have both signed separate MoU's with the indirect tax authorities of BiH. RSIS has also received the first two data transfers of VAT data and carried out a comparison with survey data. FIS still awaits the first data transfer, expected shortly. This should be marked as a noted milestone to achieve their reporting requirements to EUROSTAT for monthly statistics of services at the national level using administrative data. Monthly surveys place a huge response burden on the respondents as well as the staff of the statistical offices. Every effort should still be made to assure FIS promptly starts to receive VAT administrative data from ITA.

The suitability of VAT data to replace (parts of) the STS surveys has been investigated and the results are very promising for many NACE categories. Identified differences can be thoroughly investigated once access to micro-level data is possible. This should increase the number of NACE categories where VAT data could be used to replace survey data, reducing the response burden and freeing up staff resources at the statistical institutions in BiH.

Description and assessment of the situation as basis for conclusions and recommendations in section 3 below.

- The current situation of data exchange between the three statistical institutions in BiH was discussed.
- Comparisons of VAT data with survey data by RSIS were presented and discussed.
- Practical examples on how to validate the differences between the data sets and the data in general in regular statistical production were presented and discussed. Demos were made on how to carry out the same steps with R software. The use of R would eliminate considerable amount of manual work and free time for analyzing the results.
- Adequate NACE categorization was discussed on several occasions during the mission. It is crucial that the NACE categorization represents the actual activity of the business. This is sometimes not the case if the original NACE codes are being used. If corrections are made, it is important that the new same code is recorded in the SBR to be used in other business statistics as well.
- Additional purposes of using VAT data besides STS turnover was discussed. For instance, the usability in compilation of Industrial production index. The delay of VAT data can present difficulties with that specific indicator.
- A model R-script was demonstrated for the use of unit level imputation for missing values in STS data sets. This could be used/adopted for this purpose in BiH.

The activities were fruitful and productive. No problems or delays were identified in carrying out the activities. The participants were highly active and involved.

3. Conclusions and recommendations

Based on the preliminary analyses of VAT data compared to survey data, many NACE categories show full or strong correlation. For some categories, results clearly identify some discrepancies. The root causes can only be investigated once access to micro-level administrative data is made available. Some of them have already been identified.

The deadline for the implementation of monthly STS statistics in services is the end of 2023 for EU NSI's and for BiH should be implemented as soon as possible. As a first step to reach this deadline in BiH and after further analysis of the correlation between VAT turnover data and survey turnover data, certain industries (services and trade) monthly STS turnover data might be produced quite effectively using mainly VAT data.

It would be extremely important that micro-level VAT data is made available to all statistical institutions in BiH in good collaboration with the Indirect Tax Authority (ITA).

Difficulties in reaching data delivery agreements have been the main bottleneck to moving forward with this process and now all three statistical institutions in BiH have achieved this objective after considerable effort. Congratulations to them for this endeavor and a big thank you to their management, the Twinning Project and all other parties that have assisted in this process.

In addition:

- Since statisticians are entitled to access administrative data by law and they have each signed individual non-disclosure agreements they should be granted wider permissions to access all micro level data within their statistical institutions needed for them to carry out their duties.
- Wherever possible, bureaucracy should be streamlined to this regard. This would reduce the workload burden on already limited IT resources and speed up the work of individual statisticians.
- Not only for STS statistical experts, but throughout the statistical institutions in BiH a decision should be made on standardizing the software used for carrying out the different processes in statistical production.
- There is benefit for all three statistical institutions of uniform and shared procedures within their production processes. These goals are also common within the NSI's of the EU.
- For the effective national production of STS statistics in BiH, it is recommended that the statistical institutions maximize their collaboration and interaction further. This could include regular status meetings, cooperation on the development of new methods and sharing experiences as well as findings. This might additionally include transferring knowledge learned from STS Working Group meetings (new EU regulations and recommendations).
- It is important to receive long time series of VAT data from ITA for validation and analyzing purposes. In regular data transmission a shorter time span is adequate (e.g., 13 months).
- When the VAT data has been received and analyzed, the next step is to make a draft surveying strategy. In other words, decide which companies will still be surveyed when the VAT data is used for regular compilation of STS turnover index. The turnover indices can then be recalculated using this strategy and comparisons can be made to the already published STS turnover results.
- Incoming VAT data should be monitored to see if the transmissions are on time and if there are notable revisions to the data. It would be very useful to have the data transmitted to the statistical institutes with electronic line transfer to save time and to avoid manual phases in the input of administrative data.
- These electronic transfers should be standardized for all administrative data sources (carried out in a uniform manner, unified validation and notification procedures).
- Surveys for STS indicators (including turnover) should be carried out in electronic format to save time and resources.
- In developing the STS production process further, IT support and methodologists support would be extremely beneficial for the efficient development of the process

4. What to do next for the BC Counterpart

Actions needed for moving forward as well as for preparing the next mission

Action	Deadline	Responsible person
Direct access to statistical databases for statistical experts	ongoing	BHAS, FIS, RSIS experts and IT
Further comparison analysis of survey and VAT data at the unit level	ongoing	BHAS, FIS, RSIS STS experts
Classification of NACE categories by how well VAT Turnover data can be used to replace survey data (eg. well-suited, minor issues, problematic)	TBD	BHAS, FIS, RSIS STS experts
Draft a plan for future surveying strategy for each STS domain. (This can be finalized when the testing phase for VAT data use has been ongoing for 6-12 months.)	TBD	BHAS, FIS, RSIS

Added by the RTA:

The MS STE's are available for online consultation(s)/meeting(s) on BC request

The MS STE's will forward a methodological paper on STS (translated from Finnish to English) and the sample R code to the participants

Annex 1. Terms of Reference for the current mission

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Terms of Reference

EU Twinning Project BA 17 IPA ST 01 20

Component 3 – Administrative data sources
26th September (10 a.m.) – 28th September (15:30) 2023

On-site meeting
Venue: Republika Srpska Institute of Statistics, Vladike Platona bb, Banja Luka

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Activity 3G: Use of administrative - VAT turnover data for the production of STS turnover indices in Bosnia and Herzegovina III

1. **Mandatory results**

Inventory of administrative sources for all statistical domains prepared.

Indicator / Relevant Milestones / Internal deadlines:

Inventory of administrative sources available

Overall purpose of VAT activities:

Analysis of available monthly/quarterly statistical data and monthly VAT turnover data from Indirect Taxation Authority of Bosnia and Herzegovina (ITA BiH) conducted

Revised methodology for calculation of STS turnover indices in Bosnia and Herzegovina by using statistical and monthly VAT turnover data developed

Experimental calculation of STS turnover indices for Industry, Construction, Trade and Services for Bosnia and Herzegovina based on available administrative data sources performed

Outcome of VAT activities:

Methodology for using administrative data in production of STS turnover indices for Bosnia and Herzegovina prepared

2. **Purpose of the activities planned for the third mission**

- Presentation of the activities carried out since the last mission on signing MoU of FIS and RSIS with ITA BiH for getting access to VAT turnover database
- Presentation of conducted activities on comparison of VAT with survey turnover time series including both total values and year-on-year growth rates, conducted by RSIS
- Enabling direct access to de-individualized VAT and survey database for the purpose of practical analysis by using R
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- Classification of NACE categories by how well VAT Turnover data can be used to replace survey data
- Work on preparation of STS standardized operation procedures (SOP) for the purpose of integrating admin VAT data into regular statistical production process in BiH
- Updating of detailed Plan of activities for Component 3, Activity: Use of administrative VAT turnover data for production of STS turnover indices in BiH
- Preparation of the list of activities that will be conducted prior the next mission
- Preparation of ToR for next activity *(See below)*
- Preparation of Mission report for the first mission

3. Expected output of the activity

- Activities carried out for the purpose of signing MoUs and getting access to ITA's VAT database for FIS and RSIS presented
- Results of preliminary analysis on comparison of VAT and survey data for Republika Srpska presented
- Access to de-individualized VAT and survey database to the MS experts, for the purpose of practical analysis by using R, granted
- Further analysis of micro VAT and survey data conducted by using R
- Proposal of NACE industries for appropriate classification of VAT data for the purpose of replacing survey data prepared
- Work on preparation of STS standardized operation procedures (SOP) started
- Mission report prepared
- ToR for the next mission/activity defined *(RAT comment: it time schedules allows. An online mission is, though not preferable, an option)*

Annex 2. Persons met

BHAS:
Alen Bajramovic, Head of Department for Services Statistics
Fahir Kanlic, Head of Department for Industry and Construction Statistics
Maja Hadzi-Stojanov, Senior Officer in Department for Services Statistics

FIS:
Merima Beganovic, Senio Adviser for Business Statistics
Nusreta Imamovic, Head of Department for Industry, Construction and Energy Statistics
Adnan Lusija, Junior Associate

RSIS:
Sanela Borojevic, Senior Statistician
Andrea Erak Latinovic, Head of Department for Industry, Construction and Energy Statistics
Jelena Glamocika, Head of Department for Services Statistics

MS experts:
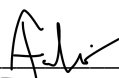Ulla Virtanen, Statistics Finland
Ville-Matti Pilviö, Statistics Finland

RTA Team:
Niels Madsen, RTA
Biljana Strika, Interpreter

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, BHAS

Beganović Merima
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Component leader, FIS

Sanela Borojevic
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Component leader, RSIS

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RTA

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MS Expert

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MS Expert