

TWINNING CONTRACT

BA 17 IPA ST 01 20



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



MISSION REPORT

Activity 1.1.C: Enterprise Groups
Component 1: Business Statistics
Sub-component 1.1: Statistical Business Register

Mission carried out by
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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 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 first mission devoted to Enterprise Groups in the Statistical Business Register subcomponent (1.1) of the Project.

The purposes of the mission were:

- Volume of characteristics in Statistical Business Register (SBR) increased and quality of data improved, in line with new EBS Regulation
- Review of Enterprise groups

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 do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, CBBH, Statistics Denmark, Statistics Finland, and Statistics Sweden..

2. Assessment and results

This is a mission is a follow up on a series of missions from March to December 2019 in the previous twinning project with the aim of introducing Enterprise Groups to the Statistical Business register.

One of the objectives of this mission was to examine if the new version of EU Recommendations for Statistical Business Register would have an impact on this project or the existing SBR. However, these seems not to be the case, as the new recommendation mainly consists of clarification of the existing requirements.

It was further discussed who would be the main users (within the statistical system) of Enterprise Groups. National Account and Structural Business Statics was mentioned, but they have only expressed the interest in rather vague terms. The main reason at this stage seems to be to satisfy the requirements of EU.

In the report from December 2019 in was noted that the data that could be obtained by FIS and District of Brčko from the Tax Authority only contained one of the founders for each Legal Unit. It was recommended to look for alternative sources, however so far it has not been possible to reach an agreement with the potential data provider.

A new potential provider, the High Judicial and Prosecutorial Council of BiH has been found and needs further examination.

It was decided to make a final attempt or at least to get knowledge about why the data provider could not deliver the data requested. One reason may be that the provider is at the

state level using data originating at entity level. In that case it may be possible instead to seek a provider at entity level (within the federation) to obtain the data.

During the mission an attempt was made to get an indicator for the impact of the quality of the Enterprise group when such data was not available, but no conclusion could be reached. It is however clear, that with the data currently available not all Enterprise Groups will be found, and some will not be complete or split into several groups.

However, in order not to further the delay of the creation of Enterprise Groups, it was decided to create the first version of EG's in SBR with the data presently available.

The process is described in the mission report from December 2019. The process was reviewed, and some clarifications were done, including the delimitation of public units. During this review the question of natural persons as head of an EG was discussed and it was concluded that within the model it would be possible to handle this. The prerequisite would be, that those persons were identified with an ID number. This is however not the case, so the rule to eliminate references to natural persons was sustained,

Finally, a provisional timetable for the inclusion of EGs in SBR and the necessary modifications to the data model and the online application was setup. The goal is to complete this work before July 1st, starting the work immediately after this mission. The timetable are included in section 4 of this report.

From Intermediary Agency for IT and financial service (APIF) and Tax-authority data is received on a quarterly basis. The CBBH seems only to maintain their register of foreign units once a year and they may first be available in the 4th quarter, so presently this data reflects the status ultimo 2020. It may in the future be considered to perform the update of EGs after this data has become available, but at this stage it is recommended to disregard this problem and start the process right away.

3. Conclusions and recommendations

The basis for establishing EGs in SBR is now in place, both regarding methodology and data available. Implementation of this solution and inclusion of EGs in the SBR should be started without any further delay and finalized before July 1st.

When the first version of SBR was completed a steering group for the further development and improvement of SBR was created consisting of the heads of SBR from Agency, FIS and RSIS respectively. The group has not been active for quite some time, but it seems relevant to reactivate the group.

It is not anticipated that there will be a need for further physical missions in this project. However, the current possibility of holding internet meetings should be utilized. During the implementation, it may be useful to have a set of meetings between the consultant and the project team in order to review the timetable and discuss and solve any problems that may arise to avoid delays in the progress. The consultant recommended that such meetings should

be held towards the end of the month of April, May and June. They will be held as online meetings. It was agreed to go ahead with this in replacement of the missions originally anticipated.

4. What to do before the next mission for the BC Counterpart

The three institutes should move forward according to the timetable outlined below. During the online meetings, the results achieved will be discussed as well as the steps to follow. If needed the timetable will be revised.

Week	Dates	Action	Responsible
14-15	04/04-15/04	Normalise and standardise input from APIF	RSIS
14-15	04/04-15/04	Normalise and standardise input from Tax	FIS, Brcko
14	04/04-08/04	Request data from CBBH	BHAS
16	18/04-22/04	Normalise and standardise data from CBBH	BHAS
17	25/4-29/04	Create register of foreign units Filter out relations not meeting the criteria for further processing Check for Circular references	BHAS
18-20	02/05-20/05	Assign Share of ownership (semi- automatic)	FIS RSIS
21	23/05-27/05	Create EGs using algorithm Create transactions to update SBR Update SBR	BHAS
15-21	04/04-27/05	Prepare SQL-procures for update of SBR	BHAS
15-21	04/04-27/05	Update SBR-app to handle EGs	RSIS
22	30/05-03/06	Activity code and status	RSIS (FIS, RSIS)

Annex 1. Terms of Reference for the current mission

Terms of Reference

EU Twinning Project BA 17 IPA ST 01 20

Component 1: Business Statistics

Sub-component 1.1: Statistical Business Register

28 March – 01 April 2022

Venue: Federal Institute for Statistics of FBiH (FIS),
Zelenih beretki 26, Sarajevo
Bosnia and Herzegovina

Activity 1.1.C: Enterprise Groups

- **Mandatory result and benchmarks for the component**

Mandatory result:

- Volume of characteristics in Statistical Business Register (SBR) increased and quality of data improved, in line with new EBS Regulation

Benchmarks:

- Characteristics on first set of enterprise groups available in SBR
 - The revised five-year development plan (2018-2022) available
-
- Purpose of the activity
 - Characteristics on Enterprise groups (EG) further implemented in SBR, in accordance with new EBS Regulation
 - Follow up on EG from the previous Project
 - Plan for finalizing of the procedures for creation and updating of EGs in SBR
 - Review of the model, procedures and rules for creation and updating of EGs in SBR
 - Any other issues that may occur during implementation
-
- **Expected output of the activity**
 - ✓ Developed a plan for further implementation of EG in the SBR data model
 - ✓ A plan for further adjustment of the SBR has been developed

Annex 2. Persons met

BHAS:

Dzenita Mustafic, SBR Coordinator
Mevlija Odobasic, SBR
Ivana Tavra Colo, SBR
Branislava Cvijetic, IT BHAS
Senija Facic, IT Branch Office Brcko District

FIS:

Emira Beširevic, SBR Coordinator
Amar Bisic, SBR
Elvir Musinovic, SBR
Razija Bicakcic, IT FIS

RSIS:

Nada Malinović, SBR Coordinator
Stevan Marjanović, SBR
Pero Kazanović, IT RSIS
Nataša Kecman, SBR

MS expert:

Søren Netterstrøm, Statistics Denmark

RTA Team:

Niels Madsen
Larisa Muslimovic

Haris Imanovic, Interpreter

Annex 3. Model for creation of EGs and updating of SBR.

The results of the work done, and experiences gathered since last mission was discussed during the mission. Based on that discussion the model has been updated.

The purpose of the task described is to create and update Enterprise Groups (EGs) in SBR based data from administrative sources on the structure of ownership between legal units.

The work is split up in the 9 steps

1. Normalise and standardise input from sources to a common format and using standard classifications.
2. Update of (creation of) register of Foreign Legal Units
3. Filter out relations not meeting the criteria for further processing
4. Check for circular references
5. Assign Share of ownership (manual or(semi)- automatic)
6. Use the algorithm to create Enterprise Groups.
7. Create transactions to update SBR
8. Process the transactions
9. Activity codes and status

Data about relation between two domestic legal units can be found in APIF (RS) and Tax-register (FS,DB). The registers contain data about child units in the respective entity.

Data from Central Bank (CBBH) is selected as the source for data on relations between domestic legal units (partly) owned by foreign units, as it covers all of BiH.

APIF does contain the same information regarding for units in RS and has the benefit of adding ID numbers to foreign units. However, it was decided, that the benefit of these ID numbers could not justify the extra complexity involved in using two (or more) different sources.

As mentioned in a previous report, it is not anticipated that BiH will be partner in the EEG for a foreseeable future. At present focus will be on domestic EGs, but also truncated EGs where the head of the group is a foreign (legal) units.

It has currently not been possible to find a source for foreign units controlled by domestic unit, so the SBR will not contain any information regarding such units. However, it seems that CBBH is about to collect that such data and when available they may be processed.

All the data that is used for this task is can be obtained from public registers (on the internet) so there is no need to consider data confidentially as data is exchanged between the statistical institutions as part of the process. An exception is the data on number of employed persons needed to establish the correct activity code, se note in step 9.

Step 1a. Check data from APIF and Tax regarding domestic unit

This step is carried out on Entity level. (see note above).

It should be noted that relations where one (or both) units is a natural person, public sector or a foreign unit are not processed (filtered out). Only relations between domestic legal units are considered.

It should be checked that the ID of Parent and Child units are valid IDs (For process Tax_ID will be used by FIS, DB and RS)

If an ID number has no match, the record is removed. The supplier may be given a list of these relations with information about whether parent and/or child ID is invalid.

The following transactions are created

- Parent Unit identified by Tax_ID.
- Child unit identified in the same way

In order to filter out public sector a table with the Tax-ID of public sector units should be established. Sector code (of the Enterprise) may be used to find these units.

Step 1b. Normalise and standardise data from CBBH

This process is carried out by BHAS.

The relations to foreign unit will hold the ID of the domestic unit. The foreign unit is identified by country code and the name of the unit. The foreign unit is the parent (owner) and the child must be a domestic legal unit.

Some of the ID numbers received from CBBH are invalid, that is there is no match in SBR legal units. The first subtask is to validate the ID numbers. If an ID number has no match, the record from CBBH is removed. CBBH may be given a list of these relations with information about whether parent and/or child ID is invalid.

CBBH has their own classification for country codes. However, it seems that the data received may contain codes that are not in the classification. Similar to above such records are removed and CBBH may be given feedback.

Since this operation is in fact done by a lookup in a table of valid code, the opportunity should be taken to transform valid codes into the standard used by Eurostat (based on ISO).

The following transactions are created

- FLE_SBR_ID (to be added in step 2)
- Country code of Foreign unit (ISO)
- Name of the foreign unit
- Child Unit identified by Tax_ID

Step 2. Update (or Create) register of foreign units

This step is also carried out by BHAS to complete the set of transactions created in step 1b.

ID for foreign units is added to the transactions.

Central in this process is the register (table) of Foreign Legal Units (FLE).

It contains

- *FE_SBR_ID*
- Country Code
- Name of Unit
- Year entered in register
- Year of cessation (not mentioned in any relation)
- ID of Foreign unit (not yet available)

Transactions is matched by country code and name.

If match, the ID from FLE (*FE_SBR_ID*) is inserted in the transaction.

If there is no match in FLE, a new unit is created in FLE. The *FE_SBR_ID* is created using the same procedure as is used for Enterprise ID in SBR, but first digit is set to 4. The ID of the new unit is then transferred to the transaction.

It should be noted, that FLE is likely to contain ‘duplicates’ as the name may be spelled with slight differences. If ID number would be added at some future day, they should be used instead of Name, hoping that this (at least partly) will solve the problem. However, there will not be any way to automatically validate the ID of foreign units, by Name and ID.

As a result, for EGs with a foreign head in some case there may be several EG’s established in cases where there ideally should only be one.

Step 3. Filter out relations not meeting the criteria for further processing

The transactions created in step 1a and step 1b need to be transferred to a single data set for further processing.

Because this step requires that all transaction for BiH is processed it is carried out by BHAS.

Because data on share of ownership is not easily available, it is decided only to process units with an employment above a certain threshold (And any unit related directly or indirectly to such units) and units that is already part of an Enterprise Group is SBR.

The first step is for each transaction to determine, by consulting SBR, if any domestic unit (parent or child) is having an employment above the threshold. The threshold is defined as employment class size ≥ 4 .

Step 3a

All Domestic IDs (both child and parent) for transactions with employment above or equal the threshold are added to a table of IDs (if not already there).

Step 3b

To this table is then, from SBR, added to IDs of Legal Units (Tax_ID or RS_ABR_ID as relevant) that is part of any existing Enterprise group (active or inactive).

Step 3c

Now transactions need to be processed again. If one (only one) of the IDs is in the table of ID's, the other ID is added to the table.

This step is repeated as long any ID is added to the table.

Step 3d

A new set of transaction is containing transactions where parent or child is in the list of IDs
The new set of transaction is input to step 4.

Step 4. Check for Circular references

Before proceeding, it should be checked that the material does not contain circular references, both directly and indirectly. I.e. 1 is parent of 2, 2 is parent of 3 and 3 is parent of 1.

If this is the case, the reason for this should be examined and corrected or the transactions should be removed.

Step 5. Assign Share of ownership (semi- automatic)

This process is taken its offset from the Child units. It is carried out on the level of the entities based on the entity of the child. Agency will transfer relevant transactions to each entity. An exception may be cases where the parent is a foreign unit, they may be processed by BHAS having access to data from CBBH.

A prerequisite for this step is, that all relations between child and parents are known, or at least all relations where child and parent is legal units.

In this step information about share of ownership should be added to the transactions.

This information may potentially be obtained from APIF, Tax authority or Court registration or (in case of foreign units) from CBBH.

It still must be further examined to what extent it may be possible to obtain this information in electronic form, potentially by sending a list of requests listing the relations where the information is needed.

If the information about amount of invested capital can be found for all parents (founders), then the data is simply added to each relation and then converted to % and this step is completed.

If for some reason not all data can be obtained, the following procedure is may be carried out.

The information at this stage is obtained in absolute values (KM).

It could be expected, that for a (large) number of the child units there is actually only 1 parent. In this case there is no need to obtain data about the contribution, as the result anyway will be 100% ownership in the end.

After the first year, data from previous year is also a potential source (also in absolute value). But data older than previous year will not be useful, so there is no reason to have a register that is updated, just a simple table with data from previous year.

Based on this the following table is constructed (using all sources available in electronic format)

Child_ID
Parent_ID
Share
Source 1
Source 2
Source 3

...

Data from the different sources are put into Source 1, 2 etc.

The order of sources indicates the priority of the source

Now

CASE data is available from Source 1, this is copied to Share
CASE data is available from Source 2, this is copied to Share
Etc

This table is now converted to an Excel spreadsheet for manual inspection and correction. Most important is to handle relations where there is no share (that is no sources gives any information). Such rows could be highlighted in the spreadsheet.

It should be noted, that in the case values from previous year is used, if the structure of ownership has changed (some units is no longer parents), the assumption will be that the relative part of ownership between remaining partners is unchanged. In the case where there is data for only some of the parents, the whole structure should be re-examined.

When the spreadsheet is completed, it is converted to a table. Data is absolute values are saved (for use in next year) and share is then converted to %.
Data set aside above (1 parent only) is then added to the table with share as 100 (%).

When this step is completed all transactions should now be combined into a single register for further processing.

Step 6. Use algorithm to create EG

Using the algorithm in annex 6 of the previous report the Enterprise groups are created. (Taken from the mission report on 2.1.5 17-26 October 2016 (from previous twinning project) the Enterprise groups are created.

Note that the input to that process is the transactions created in step 5.

The output from this process is

Relations

RootID (Tax_ID or RS_ABR_ID or FE_SBR_ID)

ChildID (Tax_ID or RS_ABR_ID)

Type Of Control (Direct or indirect)

RootIDs is the same as enterprise ID.

Step 7 Create transactions to update SBR

In order to update SBR, transactions are created by comparing the relations created in step 6 with the existing relations between Enterprises and EnterpriseGroups.

First, in the relations, Tax_ID is converted to Enterprise_ID

The root may be domestic or Foreign. Any relations where child is a Foreign Unit is not processed.

The table in SBR contains fk_.. as UID, make a copy where these are replaced by Enterprise_ID and EG_ID.

Remove duplicates.

Now by comparing this three types of transactions may be constructed

1. New relation (does not exist in SBR)
2. Continuation (exist in SBR and relations)
3. Discontinued relation (exists only in SBR)

The transactions should contain EG_ID (parent), Enterprise_ID (child) and type of control. If parent is a foreign unit, the name, address etc. as needed to build/update an EG should be included as well.

Step 8 Update SBR

For new relations (type1), it must first be examined if the relation is a relation to an existing EG. If this is not the case, a new EG should be build and the relation to root is that is a domestic unit.

Next the relation between child Enterprise and EG should be established.

For continuation (type 2) if should be examined, if the old relation is terminated. If that is the case, a new relation should be build.

Type of control (direct/indirect), if changed, Terminate and create new

For discontinued relations (type 3), the relation in SBR is closed.

For transactions of type 1 and 3, a new transaction, check activity code, should be created.

The transaction contains the EG_ID.

These transactions are processed (in step 10) when all transactions of type 1 and 3 has been processed.

Step 9. Activity code and status

Activity code

It was decided, that activity code for the EG only will be updated in relation to the yearly update of EGs and will be left unchanged until next update.

The transactions created in step 8 reflects EGs that is either new or where the structure has changed.

However, in the period between two updates, some enterprises may change their activity code. EGs related to such Enterprises should also have their activity code examined.

To find those EGs you may either

- 1) Scan SBR for Enterprises (being part of an EG) that has changed activity code since last update of EGs
- 2) As part of the update of SBR (from administrative sources or online) perform a test
IF the Enterprise is part of an EG and the 2-digit activity code is changed THEN
 Save the ID of the EG in a new table EGs_to_test_for_activity_code.
END IF
If this approach is used, the table is cleared after step 10 is performed.

The two set of transactions are merged and duplicates are removed.

The activity code of an Enterprise is a 2-digit NACE-code.

the 2 digit activity code of all active Enterprises with an active relation to the EG.

IF they all have the same 2-digit code

 THEN this code is assigned to the EG

ELSE

 Examine 2 digit activity code of all active Enterprises with an active relation to the EG where the activity code in in the range 10-39

 IF there is any and they all are the same

 THEN this code is assigned to the EG

 ELSE

 Find the highest number of employees (as category)

 Examine 2 digit activity code of all active Enterprises with an active relation to the EG where number of employees are the sane as the highest number

 IF there is one or all is the same

 THEN this code is assigned to the EG

 ELSE

 Create unfinished transaction

 END IF

ENDI IF

END IF

The unfinished transactions need to be dealt with manually. This requires using the actual number of employees as this is the final resource used to determine the activity code.

Unfinished transaction could either be dealt with by BHAS, this would require BHAS to obtain the actual number of employees for the enterprises involved (by request to RSIS and FIS respectively).

An alternate approach may be to have the entities process those mission transaction belonging to units that all entity-resident. This could be automated. Then only a few cross-entity EGs may need to be processed by BHAS.

Status

For all EGs the activity status should be updated.

If the EG have 1 or more active relations to an active Enterprise, the EG is active, else if the EG have 1 or more active relations to dormant units, the EG is dormant, else the EG is inactive (as all relations will be to inactive units).

Enterprises and Enterprise groups

Currently the status of SBR is, that an Enterprise is just connected to a single Legal Unit. However, this may change over time and the Enterprise Group may be a starting point to examine if 'real' Enterprises should be constructed. As the Enterprise in many of the EU regulations is seen as the observation unit (where data regarding turnover, value added etc is obtained) this leads to the conclusion, that Enterprises should consist only of legal units within a single entity as (most) surveys are done and will be done at the level of Entity.

The Enterprise Group may consist of units from more than one Entity.

The approach taken now is, that EGs are constructed as described in the process outlined above.

Enterprises, Local Units, Legal Units and Local Legal Units in SBR are handled (is the responsibility) of the Entities and this should not be changed.

For the EG however, it seems appropriate that they are handled by BHAS, whether the actual EG is a multi-entity EG or not.

This is possible, because there will be no automated update from EG to Enterprise and (except for Name and activity status) from Enterprise to EG.

Because EGs are established based in relations between Legal Units, in the case where 'real' Enterprises is established, not all the 'Legal Units' of the Enterprise will be part of Enterprise group (as established in Step 7) after an update of Enterprise Groups.

However, to follow the rules of responsibility, this cannot be handled in an automated way, as the responsibility for this is at the level of Enterprises.

It is suggested, that after the EGs has been revised, a test is performed (reusing the transactions on the level of Legal Units) to identify and examine such Enterprise to consider if they should be split or not. This task must be carried out on the Entity Level.

Annex 4. Changes to existing SBR system

Update of SBR, consequences

If the activity code of an Enterprise (that is part of an Enterprise group) is changed the activity code of the EG may need to be changed (using the same rules as above).

As described in Annex 3, it was decided to do this as part of the yearly update of EGs.

As described under process 9, the ID of Enterprises with changes may be saved.

If the name of an Enterprise changes, and the enterprise is Head of group, it should be considered to automatically update the name of the group (that by definition is the same).

If an Enterprise that is part of an Enterprise Group becomes active, dormant and inactive the activity status of the Enterprise should be examined (using the rules in process 9) and updated as needed.

Online system

A new window needs to be added to the system holding information about EG.

Similar to the way used for Enterprises (and other units), the top part of the window will display information about the EG. The bottom part will list all relations to enterprises with ID of Enterprise, name, date of start of relation and date of termination of relation, date of cessation of enterprise.

In the Enterprise window, the ID Enterprise Group should be added and in the lower part a list of all relations to EGs (actual and historical) should be added as a new tab.

For EGs the only element of the window that it should be able to update is the Activity Code. All other elements are created in the yearly update or (if chosen) when an enterprise changes as described above.