

**TWINNING CONTRACT**

**BA 12 IB ST 01**

**Support to the State and Entity Statistical  
Institutions, phase VI**



**MISSION REPORT**

**on**

**Activity 2.1.3  
Business Demography II**

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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

## **Executive Summary**

Production of the Business Demography, including the actual programming in SAS and how the data is stored in Denmark was presented. RSIS hosts gave an overview of the SBR application.

Presentation of work done so far in BiH was presented and discussed. Populations of births and deaths were calculated as agreed in the previous mission. Also administrative data and the matching process as described in the BD manual were applied to the births to remove false creations. Different demographic events were discussed and clarified.

Organizing and timing the work were discussed and the next mission was tentatively planned.

## 1. General comments

This mission report was prepared within the Twinning Project "Support to the State and Entity Statistical Institutions, phase VI". It was the second mission to be devoted to Business Demography within Component 2.1 of the project.

The purposes of the mission were:

- Presentation and discussion of the work done on production of basic BD events: active enterprises, enterprise births and deaths
- Discussion on the use of SBR for the compilation of BD statistics
- Discussion on technical upgrade of SBR application
- Preparation of topics for the next mission

The consultants would like to express their thanks to all officials and individuals for the kind support and valuable information which he/she received during the stay in Bosnia-Herzegovina and which highly facilitated the work of the consultants.

Views and observations stated in this report are those of the consultants' and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS or Statistics Denmark or Statistics Finland.

## 2. Assessment and results

### *General overview*

BHAS, FIS and RSIS have successfully produced tables of enterprises that have been active, born or died for most recent years possible, as agreed during the previous mission. The methodology that was used follows the standard business demography rules. Also some enterprise births and deaths were checked for false creations and deletions. Thus the basis for continuing development and tentative production of business demography data has been established.

The sharing work between departments and organizations was now also organized for the first time. The process was coordinated and started by the BHAS. IT staff participated in creating the tables of active, new and dead enterprises. SBR experts checked manually some of the births and deaths to remove false events. The manual checking focused on enterprises with 20 or more employees, which were also directly contacted when necessary. The results of the work so far are presented in the following tables:

**Table 1. Enterprise deaths**

Year	Number of active enterprises	Number of all enterprise deaths	Incorrect deaths determined by matching and using other method	Incorrect deaths determined using SBR / admin. Data	Total number of incorrect deaths	Total number of real deaths
2010	27 434	2331	295	33	328	2003
2011	27 063	2116	332	39	371	1745

**Table 2. Enterprise births**

Year	Number of active enterprises	Number of all enterprise creations	Incorrect births determined by matching and using other method	Incorrect births determined using SBR / admin. Data	Total number of incorrect births	Total number of real births
2012	26 836	1 764	116	5	121	1 643
2013	26 336	1 821	90	3	93	1 728

As the first steps have now been taken, the next goal should be to aim for more efficient and automated process to ensure that all births and deaths are tested by matching.

### ***Methodological issues***

Certain situations were discussed, such as imputation of employment variables and matching in situations with multiple possible matches. When using the SBR data, it is recommended that as a general principle, all data sources are used so that the maximum coverage of the register is achieved.

Furthermore, methodological issues regarding how to treat certain demographic events were discussed and clarified. The local experts expressed the need for practical examples of demographic events and how to treat them. Therefore a list of different demographic events has been made. The examples are derived from events occurred in Denmark and neither examples or solutions are exhaustive. The examples are usefull in situations were it is not possible to follow employment across diffrent units. The list has been sent to the Twinning Project Administration for further distribution and it has been attached this report as Annex 3.

### ***Process documentation and preparation for regular production***

The experts in BiH were asked to create documentation of the production process and to create common rules especially for handling complex situations in matching. The purpose of this is to ensure standardized process in all organizations involved in the work. This documentation should be kept up to date as the work progresses.

### ***Organization and sharing of work***

The work related to the Business Demography can be organized in different ways.

When organizing the work we recommend keeping in mind that the Business Register is the back bone of all business statistics and it is a living register with its own regulation. In the same sense, the SBS and the BD are statistics under the same regulation and they are dependent of data input from the SBR.

The work of the Business Demography should be organized the best way possible to fit all involved entities. The work could be placed under the SBR unit or the SBS unit or it could be divided between both units. Below, two different ways of organizing the work is described. These are only meant as recommendation and suggestions to how it could be done.

1. SBR deliver a dataset including all enterprise registrations in a certain period with information on demographic events, including registration dates de-registrations dates, code for activity and so on. The SBS will then do the actual production of the BD including the matching, deleting of certain demographic events, aggregating data according to the manual, confidentiality treatment and transmitting the data to Eurostat.
2. SBR delivers separately final datasets respectively for new births, deaths and active enterprises. The SBS unit makes the aggregations, the confidentiality treatment and the transmission of data to Eurostat.

A mix of the two suggestions is also possible. We recommend that the experts in Bosnia and Herzegovina find the best way possible that works for all the local experts involved.

### ***Updating the IT tools***

It is strongly advised to make matching process automatic and to cover larger degree of births and deaths. This task may require new software tools or tailor-made programs. Often SAS – software products are used for this purpose. However, it may not be feasible to recommend acquiring SAS as it may prove to be too costly to maintain. Therefore learning from experiences in countries using the same tools as Bosnia and Herzegovina by the way of a study visit, for example, can be an effective way of developing the statistics in Bosnia and Herzegovina.

In addition to the matching process, also the reporting phase would benefit from automation. However, it is likely that efficient reporting is quite possible already with the existing tools (MS Access, MS SQL) as the output does not differ much from other statistical publications.

### ***Updating the SBR and SBS***

The quality and coverage of Business Demography data will get better as SBR and SBS statistics develop. Therefore continuous development of these areas will in time show in BD statistics. In the meantime, the BD statistics should be produced with the best possible quality and coverage.

The SBR should be updated to store enterprise addresses in a standardized way. This would benefit the matching in BD production where addresses are useful in identifying demographic events. Especially matching using computer programs or scripts would benefit most from standard addresses. Understandably, addresses where house numbers are recorded as ‘bb’ may be problematic for matching and analysis. Most complicated cases may have to be verified manually.

Depending on how the work is shared, either SBS or SBR should take the responsibility for storing the BD microdata. Therefore either SBS or SBR may have to be updated to store this information. The aim is to store the results of matching – especially if it is done manually – and to be able to create comparable time-series of the data.

This microdata should contain for each enterprise at least years of birth and death, a variable to indicate a real or false birth. Also, the enterprise ID of the predecessor or successor should also be stored for each enterprise, if one can be determined. The purpose of these two additional enterprise-IDs is to be able to find cases where an enterprise survives by take-over.

This information can be stored, for example, in annual tables for births, deaths and active enterprises. These tables would then be used to calculate the final transmission to Eurostat or national publication. The data storage should enable automatic regular updating with IT tools and also automatic matching. Editing the tables should be possible with SBR or other application.

### ***Topics for the next mission***

The next mission was tentatively planned.

The next mission should focus on data storage, maintenance and regular updating. For these purposes, IT experts should be present to discuss the development of editing tool for BD within SBR application or elsewhere.

Another topic for the next mission is producing the transmission to Eurostat from the data storage. Discussion of this topic depends on results from discussions on data storage.

As a new methodological topic, production of data on employer and high growth enterprises can be discussed.

It was agreed that the length of the next mission should be 4,5 days.

## **3. Conclusions and recommendations**

After the second mission it can now be concluded that the statistical organizations in Bosnia and Herzegovina have tested the production of Business Demography micro-level data. The SBS and SBR do contain all the required elements for the regular production. Also the organization of practical work related to BD production has now been preliminarily tested.

The next step forward is to prepare a regular work process and related documentation for regular BD data production. The goal should be a uniform handling of demographic events.

As there is now more experience in matching and other BD related issues, it is now recommended to look for ways to automatize the matching process to as large extent as possible. This will require evaluating software tools or writing tailor-made software programs for matching. The tools or programs should be able to cover all or at least considerable majority of enterprise births and deaths.

It is further recommended to plan for the business demography data storage. The responsible department should be decided.

And finally, it is also recommended that the address storage in SBR is developed to store the addresses as codes or in a standardized format to enable more efficient matching.

<b>Action</b>	<b>Deadline</b>	<b>Responsible person</b>
Write process documentation for business demography	Before next mission (planned March 2016)	BHAS, FIS, RSIS
Write a check list of rules for standardized matching	Before next mission	BHAS, FIS, RSIS

## Annex 1. Terms of Reference

### EU Twinning Project BA-12-IB-ST-01

#### Terms of Reference

#### **Component: 2.1. Statistical Business Register and Structural Business Statistics**

**14 – 18.12.2015.**

**Institute for Statistics of Republika Srpska  
Veljka Mladenovića 12d, Banja Luka**

#### **Activity**

#### **2.1.3 Business Demography II**

#### **Benchmarks**

- 5-year development plan updated by 1st project quarter and by 8th project quarter (partly achieved)
- Methodology for linking SBR with the compilation of SBS business demography characteristics available by 4th project quarter (partly achieved)
- Methodology for enterprise groups in SBR available by 8th project quarter
- Institutional sectors code assigned to the SBR units by 8th project quarter
- SBR is ready to be used for analysis of business demography by 8th project quarter

#### **Purpose of activity**

The expected activities are:

- Introductory speech on Business Demography by MS experts
- Presentation and discussion of the work done on production of basic BD events:
  - Presentation of data on enterprise births and discussion on issues raised during the production of the data in three statistical institutions
  - Presentation of data on enterprise deaths and discussion on issues raised during the production of the data in three statistical institutions
  - Presentation of data on active enterprises and discussion on issues raised during the production of the data in three statistical institutions
- Discussion on development of methodology for linking SBR with the compilation of SBS business demography
  - Use of SBR for compilation of BD statistics

- Discussion on technical upgrade of SBR application in order to improve procedure for production of BD
  - Discussion on existing procedures and establishment of the new ones
- Next mission
  - Preparation of the list of activities to be done before the next mission

<b>Expected output</b>
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- General overview on BD data prepared
- All methodological and practical issues, raised during the work, discussed and explained
- Understanding among SBR and SBS staff of principles for Business Demography and using of SBR for this purpose
- Linkages SBR with SBS on business demography agreed
- Plan for regular updating defined
- Methodology for linking SBR with the compilation of SBS business demography characteristics adopted
- Technical upgrade of SBR application agreed in order to improve procedure for production of BD
- The list of activities to be done before the next mission on Business Demography (SBS Activity 2.2.4 – Integrating business demography into SBS survey) prepared and agreed by all partners (BHAS-BD/ FIS/RSIS participants, SBS participants, MS experts and RTA)
- Draft ToR for the next mission prepared and agreed by all partners (BHAS-BD/ FIS/RSIS participants, MS experts and RTA)

## **Annex 2. Persons met**

### **Agency for Statistics of BiH**

#### **Statistical Business Register:**

Dženita Mustafić	Specialist for SBR (Coordinator for SBR Component, BHAS)
Mevlija Odobasić	Senior Advisor for SBR
Senija Fačić	Head of Branch Office in Brčko District
Vedad Osmanović	Senior Advisor for IT

#### **Structural Business Statistics:**

Tima Karačić	Head of Unit for SBS (Coordinator for SBS Component)
Bojana Cicović	Senior Official for SBS

### **Institute for Statistics of Federation of BiH (FIS)**

#### **Statistical Business Register:**

Enisa Rastić	Head of Unit for SBR (Coordinator for SBR Component, FIS)
Emira Beširević	Senior Official for SBR
Razija Bičakčić	Senior Advisor for IT

#### **Structural Business Statistics:**

Aida Ljuca	Senior Official for SBS
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### **Institute for Statistics of Republika Srpska (RSIS)**

#### **Statistical Business Register:**

Nataša Teinović	Senior Official for SBR
Slavica Josipović	Specialist for SBR

#### **Structural Business Statistics:**

Sladana Nikić	Senior Official for SBS
Danica Babić	Specialist for SBS

### **Twinning Project Administration**

Søren Leth-Sørensen	RTA
Đemka Šahinpašić	RTA Assistant
Svjetlana Pavičić	Interpreter

### **Annex 3. Examples of demographic events in Business Statistics**

To decide if any given demographic event should be treated as an enterprise birth, in general it is possible to answer three questions. Further, if two out of three of the questions can be answered with a yes, the event should be considered a new enterprise birth.

The questions need to be answered are:

- Has the location of the enterprise changed?
- Has the principal activity (NACE) changed?
- Has the legal ownership changed?

Please be aware that the examples and solutions given are not exhaustive. It is recommended to continue the list as new events occur and solutions are found. It is good for documentation and others can benefit from the work.

#### **Examples:**

##### **1. The Mall-case**

A clothing store (e.g. H&M) located in a large mall closes down. In the same period another clothing store (e.g. Zara) opens up a new store at the same location. Even though we are dealing with two different owners the new store will not be treated as a new enterprise birth. The reason for that is that the two stores are located in the same place and share the same NACE code (in the same NACE group). The event does not contribute to the economy in sense of for example the creation of new jobs.

##### **2. The Pizza-restaurant-case**

In the same sense as the Mall-case but in different settings; a pizza restaurant owned by a man called Mr. A is taken over by a man called Mr. B. The restaurant gets a new name and Mr. B asks the Business Authorities for a new enterprise ID. All the people employed by Mr. A are fired and Mr. B. hires new employees for his new pizza-restaurant.

The new pizza-restaurant is not considered a new enterprise birth and the closing pizza-restaurant is not considered an enterprise death. As we must assume that Mr. B needs about the same amount of employees to run his restaurant as Mr. A did, no new jobs are created and no jobs are lost.

##### **3. The lawyer-case**

Three lawyers are partners in the same agency. One of them decides to start a new company in another city. The new company is still in the lawyer industry and he takes 1/3 of the employees with him. Even though the new enterprise gets a new name, new location and a new enterprise ID, the event are not considered a new enterprise birth. The event can be categorised as a split-off. If the lawyer had chosen to start his new company in a different industry, let's say in engineering, the event would have been treated as an enterprise birth. The remaining enterprise continue as normal (in both cases), but the decline in employment would be treated as a decline due to split-off (used when calculating growth).

##### **4. The bakery-case**

Two small bakeries in the same city decide to merge together and start a new larger bakery. Even if the new bakery is placed at a different location than the two old bakeries, this event is

not considered as an enterprise birth as well as the two closing bakeries is not considered enterprise deaths.

**5. The franchise-case**

McDonalds opens up a new restaurant. Before that a clothing store was placed at the same location. We all know that McDonalds is not a new enterprise, however if the newly opened restaurant does not take over the location and market of another closing fast-food restaurant and if the franchise owner does not operate other restaurants, the event must be considered as a new enterprise birth. We have a new location, new owner-ship and a new activity at the location.

**6. The New-owner-case**

An enterprise is sold to another person and the enterprise is given an en-terprise ID and a new name. There are no other enterprises involved in the event. The only thing changed here is the legal ownership of the enterprise; therefore the event should not be treated as an enterprise birth or an enterprise death.

**7. The Foreign-owned-enterprise-case**

A foreign owned enterprise opens up a local factory. The enterprise is registered with several employees. If the given company did not have any other activity in the country before the event, the factory should be considered a new enterprise birth.