

## **TWINNING CONTRACT**

# **Development of new statistical methodologies and indicators in selected areas of statistics in line with EU statistical standards**

## **Ukraine**



## **MISSION REPORT**

**on**


### **Recoding of Economic Activities in Statistical Business Register**

#### **Component no 1.3.1**

Mission carried out by  
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		 <b>STATISTICS DENMARK</b>

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## List of Abbreviations

ToR	Terms of Reference
SSSU	State Statistics Service of Ukraine
INE	Statistical Office of Spain
KVED	Ukrainian version of NACE rev2
NSI	National Statistical Institute

## 1. General comments

This mission report was prepared within the Twinning Project „Development of new statistical methodologies and indicators in selected areas of statistics in line with EU statistical standards”. It was the first mission to be devoted to the Statistical Business Register within Component 1.3 of the project. The mission was aimed at defining a strategic plan forming the base of the further implementation of the project in this statistical area.

The concrete objectives of the mission were:

- Evaluation of procedures and methods of procedures related to recoding of economic activities for units in statistical business register

The consultants would like to express their thanks to all officials and individuals met for the kind support and valuable information which they received during their stay in Ukraine, and which highly facilitated the work of the consultants.

This views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, SSSU or Statistics Denmark.

## 2. Assessment and results

### The Ukrainian Statistical Business Register

#### *Units*

The SBR in Ukraine was established in 2003. In 2004 the Institute for State Register was established with the responsibility of keeping an administrative business register. A regulation from 1993 laid down the rules for assigning identifications numbers to all administrative units. The identification number used for enterprises was reused from SSSU identification and is used universally for administrative contact. In principle the identification number remains unchanged in case of a change of owner, but of course in case of a takeover a change may occur. Often a new enterprise is registered in this case because liquidation procedures are quite lengthy. In some cases the same unit is given more than one identification number.

The administrative register covers all enterprises established in 2005 and forward but are not complete before that and contains 1.0m units. The SBR contain 1.3m units, of which 650,000 to 700,000 are active. These figures do not include the roughly 3,000,000 individual entrepreneurs, which contribute with 5-10 percent of the economy. They are primarily involved in various trades, services, and small production (small vendors, building maintenance, small crafts, agriculture etc.). They can employ persons and are registered with the tax authorities.

Public sector and enterprises are treated in the same way as private enterprises. The legal unit equals always the enterprise.

Enterprise groups are not registered in SBR but work has started.

Local units are only registered on a voluntary basis in the administrative register. They are given an identifier consisting of the identification number of the enterprise and a continuous number.

When an enterprise registers in the administrative register, they can indicate up to 30 different activities.

#### *Activity codes*

There is no limit in the number of secondary activities an enterprise can choose making more than 50 not uncommon in the register. In the first place the primary and eventually secondary activities are estimated on the basis of information from the State register. Information from SBR surveys is afterwards used to decide the activity codes. In SBR up to 5 secondary activities are registered.

Since it rarely is necessary to divide the economic activity of an enterprise up into too many activities, it is recommended that SSSU determines rules on the number of secondary activities and threshold on the economic importance of these before registration is needed. For example, in Denmark a maximum of three secondary activities are allowed. The activity shall have some extent, normally at least 4,000 Euro and account for at least 10 % of the total turnover of the enterprise.. It should be noted as well that the registered kind of activities should be related to market activities, i.e. the product should be sold outside the enterprise and not only be input internally to other activities. Public administration etc. is as such not a market activity but is in this context considered as an activity.

#### *Updating the SBR*

The administrative register is replicated to the SBR in SSSU daily. Between 2,000 and 6,000 changes are received daily. About 59,000 new enterprises are registered and about 23,000 enterprises are ceased. Dataflow moves only from State register and not back so changes in for instance activity codes in SSSU are not shared with the State register meaning that there are differences between the two.

The last two years populations for statistics are determined centrally coordinating the samples between the various statistics.

The SBR contains statistical information like turnover and employment. These data are available to users internally in SSSU according to the subset of units relevant to them. The primary source of statistical information is the Structural Business Statistics (SBS), whereas tax information is confidential and not available to SSSU. Some information is provided on groups for use by NA and other statistics are received from Tax. Information from The Pensions Fund on contribution to a pension fund is used to a) indicate whether the enterprise has economic activity and b) calculate number of employees. The financial reports delivered to SBS contribute to information on employment and income. Using this the enterprises can be split into groups: Small, Medium size and Large. Small enterprises are by law defined as enterprises with less than 50 employees and special protection is imposed on these. In most statistics the actual threshold is set lower. A national code exists from where information about legal form might be drawn. The name of the enterprise includes information about the legal form.

In order to increase the quality of the SBR, it is very important to solve dispute with tax authority on access to tax data. The current trend in Europe is to allow NSI to access all administrative data for statistical purposes as a way to decrease the cost of statistics with both the NSIs and the enterprises.

SBR contains information about the dates for changing characteristics. If a change in address in reality has happened 2 January and reported 2 February, it is received in the SBR 3 February and is registered as changed 1 February in the SBR.

Frozen (fixed) versions of the SBR are prepared.

It is investigated if the characteristics of a liquidated enterprise can be found among new registered enterprises. If this is the situation the new take over the place of the liquidated enterprise indication of take over.

## **The change to NACE rev 2**

### *Recoding*

In 1996 Nace Rev 1 was introduced. It was revised in 2001. In 2005 Nace Rev 1.1 was introduced.

In 2010 it was decided that all authorities should introduce Nace Rev 2 from January 1<sup>st</sup> 2012. SSSU began the work in 2010 on the shift from NACE rev1.1 to NACE rev2.

The first year was used to define the Ukrainian version of NACE Rev 2, KVED2010, discuss it internally in SSSU and externally by publishing at the website of SSSU. It was passed as a national standard to be used as the standard for publishing economic data. The new KVED 2010 does not contain any national subdivisions. Each statistic has the possibility to make local subdivision but no one have done that.

Afterwards the KVED 2010 was introduced in the SBR. Recoding the primary activity code of enterprises was done in 2011 based on different sources:

Group	# Units	Recoding method
1	414,373	One-to-one and many-to-one
2	36,863	SBS Survey
3	15,764	SBR survey
4	23,021	Statistical reports
5	93,567	Manually processed based on internet search, name, etc.
6	2,002	Input from regional experts on non-simple units
7	46,482	Probabilistic methodology based on result of group 1-4

Principles used for coding the enterprise follow the recommendations in Nace Rev 2. Turnover and employment are used as primary indicators for value added. Within NACE groups A-F (Agriculture and Construction) employment are used in classifying the units and turnover is used for the remaining units.

Classification of outsourcing is a special topic of concern in the Ukrainian SBR. Both sides of outsourcing is found in Ukraine: both outsourcing enterprises and the enterprises doing the outsourced work.

The Nace Rev 2 requirements is summerazed in EU's BR recommondations manual Chapter 5:

- „The principal (company) which completely outsources the transformation process should be classified under manufacturing only if it owns the raw material used as input to the production process (and therefore owns the final output).

- A principal who outsources only part of the transformation process is to be classified under manufacturing.
- In all other cases, the principals should be classified according to the value added principle: It might be in Section G 'Wholesale and retail trade' (according to the activity and the specific good sold) or in other sections such as, e.g., M 'Professional, scientific and technical activities', or N 'Administrative and support service activities'.
- In the case of outsourcing of employment services, a distinction should be made between outsourcing on a temporary or a long-term and permanent basis (detailed instructions: See NACE Rev. 2 Introductory guidelines)."<sup>1</sup>

The Contractor should according to Nace Rev 2 be classified according to its own activity.

In Ukraine the chosen activity is kept fixed for an enterprise throughout a year. All tables are fixed on 15 November after which time the population for surveys can be established.

During 2012, KVED 2010 will be introduced in the statistics to be published in 2013.

An appendix was introduced to SBS survey in 2011 and 2012 in which enterprises has been asked to subdivide their employment and turnover by activities according to both KVED 2005 and KVED 2010. This survey includes all medium-sized and large enterprises covering approximately 90 per cent of total turnover.

A survey in 2011 on SBR included small enterprises. They were asked to provide the same type of information as in the SBS surveys.

During 2012 all enterprises in the administrative register will convert to KVED 2010. Each enterprise has to register themselves. Currently only 40,000 enterprises has done this out of 1.3m in the register. A comparison between the administrative register and SBR will be done in June 2012 and the final converted administrative register should be available to SSSU in 2013.

During 2013 a survey will be performed to identify local kind of activity units (LKAUs). 100,000 enterprises will be contacted with prefilled tables based on already known information on LKAUs from existing statistics. The enterprise will be asked to confirm or correct the information. The sample covers all medium-sized and large enterprise and one tenth of small enterprises.

In order to ensure a high quality of the final SBR, checks on the quality of the conversion in the administrative register should be done.

SSSU is hosting an online service at their website where enterprises can find new KVED 2010 codes corresponding to their known KVED 2005 codes and vice versa. An activity code can also be identified by browsing through the classification. The conversion table only makes it possible to finds codes for 1-to-1 changes.

### *Backcasting*

SSSU expects to backcast statistics to 2007. An investigation has been started by asking all statistical divisions. On the basis on this a discussion will be taken.

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<sup>1</sup> Annex II.

Based on double coding in 2011 conversion matrices has been produced based on the following indicators:

- Number of enterprises
- Employment by main activities
- Employment by main and secondary activities
- Turnover by main activities
- Turnover by main and secondary activities

Matrices are based on 2010 data. The matrices used should be calculated on the most recent data. However, if new data becomes available during the process of backcasting statistics, it is recommended that backcasting of the remaining statistics are done with the same matrices as the first statistics to keep the backcasting consistent. If it is chosen not to follow the recommendation, at least the two sets of matrices (the first and the revised set) should be analysed for changes.

There are basically two backcasting methods: micro and macro. Both require a reference period with double coding and at least the micro approach requires backcasting of the SBR. A more qualified macro approach also requires backcasting the SBR.

The main difference is that in the case of the micro approach, the statistics are recalculated a new with the recoded units, whereas the macro approach proportionally distributes the statistical results according to conversion matrices. The former is thus more resource demanding but also much more accurate in its results whereas the latter is cheaper but cruder in its redistribution. The macro approach also has a tendency to create a break in the time series between the last historical year and the reference year with double coding. A break in the time series must be treated.

A third way to the macro approach is to qualify the conversion tables by recoding the SBR and produce conversion matrices for each year and even to use separate conversion tables for each statistical indicator.

It is recommended to double code the SBR back to 2007 and calculate backcasting matrices for each year to get a better result. The micro approach should be used in SBR but in most cases it will be much too expensive to consider a micro approach for statistics.

In the recoding procedure the starting point is the year where information on both codes is available. That is the base year. Afterwards the first year before the base year is considered. The units which have the same old code in both years are also going to have the same new codes. Ceased small units have to be recoded by random according to the backcasting matrix while the bigger units have to be handled manually. Units which have changed code must be assigned a code in the same way. The same kind of backcasting matrix has to be produced for each year.

In order to plan the backcasting the statistics are surveyed in order to get information on the structure and requirements of each statistics. If one statistic has a special variable this subdivision might draw up a special backcasting matrix – but in this case the variable has to be connected to the unit each year. If a statistic only is available at a group of activities the best possible matrix has to be chosen.



The problem concerning enterprises which come into or go out of a sector was touched. There is no problem concerning enterprises leaving the sector. But in Statistics Denmark the enterprises going into the sector has been taking into account by raising the key-transformed result by  $100/(100-x)$ , where  $x$  is the per cent of its value which the KVED 2010 activity receive from KVED 2005 activities outside the area of coverage of the statistics.

The register unit has provided statistics with conversion tables and awaits reactions to the use of them. It is recommended that the register unit actively participate in a pilot test for a selected statistics to gain knowledge of the problems, challenges and methodology of backcasting to improve guidelines and recommendations.

The different statistics in Ukraine has to transform to KVED 2010 from 2012. But it is important to transform SBR before the statistics as well as to backcast the SBR before the statistics.

It is important in order to insure consistency between statistics to use the same reference in all statistics.

Another way to ensure good quality in recoding and backcasting is to check the results – compare new and old figures.

#### *Dissemination of the knowledge to the changed activity classification*

The users of statistics should be informed in advance about the change from KVED 2005 to KVED 2010 and the consequences. In addition thorough information should be given when a statistics is published the first time based on KVED 2010. It could be considered to produce a short common description of the transition process to be used by all and to be supplemented with statistic-specific information.

#### *Organisation and workplan*

A work plan has been set up for the work leading to revision and backcasting of the National Account. This work is being led by the National Accounts Statistical Department. No strategy has yet been developed.

It is recommended that SBR division takes the responsibility for the recoding and the backcasting. But the different statistical domains have to be involved. A general discussion and an overall decision on which activities should be defined as agriculture, industry etc. has to be carried through. But the rules is very clearly described in Nace rev 2. This will – as the consultants see the situation – result in a major break in the time series from the previous activity code to Nace Rev 2.

A suggestion for a plan to involve the different statistical domains in recoding and backcasting could be:

- Describe backcasting steps
- Coordinate schedules.
- Select a person from a specific statistics who are willing to participate in a case study: the purpose is to work through the process, find problems and solution, and document it. The final product will be a guide for other statisticians. An example from Denmark has been provided. Organise a workshop presenting results and the guidelines

- Any specific problems should be discussed in the workshop to find common solutions – problems are seldom limited to one. Any problems arising afterwards should be handled in the same way.

- Point out to statisticians the topics that needs special attention

Decide on the backcasting period based on the result of the quistionnaire and discussions.

- 3. Conclusions and recommendations

### **Conclusions**

The consultants would like to acknowledge the huge work that has already been put into the transition from one classification to another. Within a relatively short time a lot of results have already been achieved among which:

- Development of a Ukrainian classification of activities, KVED 2010 based on NACE rev2
- Recoding of active units in the Ukrainian SBR including manual treatment of almost 100,000 units
- Creation of conversion matrices based on different statistical indicators

The plan developed for the introduction of the KVED 2010 by SSSU leading to the publication of revised National Accounts had been followed with only a few delays and the plan seems feasible.

The consultants found that the Ukrainian SBR in SSSU seemed to be well-functioning with consistent and regular sources of input and seemed to cover the majority of the business activities.

### **Recommendations**

The first recommendations relates to the SBR itself:

1. A large group of self-employed entrepreneurs (3m persons) are not registered in the SBR. These entrepreneurs cover various activities like trades, services, building maintenance, transport, agriculture, etc. and can employ others. Due to restrictions in access to data from Tax authorities, this group is not part of the SBR although their joint economic activities cannot be said to be negligible. It is acknowledged that currently restrictions are imposed on the access to tax data, but *it is recommended that SSSU tries to include this activity in the realm of business statistics.*
2. *It is recommended to reduce the number of secondary activities by introducing rules on when to include secondary activities.*

The work on the transition from KVED 2005 to KVED 2010 is progressing well and the recommendations related to this are:

3. *It is recommended to perform a pilot test of the backcasting on a selected statistics*
4. *It is recommended to ensure users are informed on the transition both in advance and in connection to each statistics. For the latter common formulations could be developed.*
5. *It is recommended to backcast the SBR in order to produce conversion matrices for each year statistics are backcasted. Differentiate between enterprise characteristics, eg. size.*
6. *It is recommended to develop a coordinated strategy on methods and requirements for backcasting statistics and update and expand the time table for implementation.*

Besides these recommendations a number of specific methodological issues were discussed. Treatment of these problems is discussed in detail in the annexes to this report.

*Actions needed for preparing the next mission – fill out and add tables as needed.*

<b>Action</b>	<b>Deadline</b>	<b>Responsible person</b>
Rules for double coding in SBR and a test application of the rules	31 May 2012	SBR
Describe backcasting rules and work on the first draft of guidelines	31 May 2012	SBR
Select a pilot statistics as case study	31 May 2012	SBR

## Annex 1. Terms of Reference



This Project is financed by  
European Union



### **Twinning Project**

### ***“Development of Ukrainian Statistical Methodologies in line with EU Standards”***

Terms of Reference

*For Short-term Mission to the State Statistics Service of Ukraine*

#### **Action 1.3.1. “Recoding of Economic Activities in Statistical Business Register”**

##### **Background Information**

Statistics Denmark in partnership with Statistics Finland, Statistics Lithuania, Central Statistical Bureau of Latvia, Statistical Office of Slovak Republic, INE Spain - National Statistical Institute of Spain and Statistics Sweden, implements in Ukraine "Development of New Statistical Methodologies and Indicators in Selected Areas of Statistics in Line with EU Statistical Standards" Twinning Project. The State Statistics Service of Ukraine (State Statistics of Ukraine) is the Beneficiary of this Project.

This action is implemented under Component 1.3. “Statistical Business Register”.

The purpose of this Component is to introduce Classification of economic activities based on NACE rev.2 in statistical business register.

This action will contribute to achieving the abovementioned objective and reference indicators specified in the contract. On the results of the action it is envisaged to draft the document for formalization and description of procedures related to recoding of economic activities for units in statistical business register.

##### **Purpose of the Mission**

The prior purpose of the mission is to evaluate the results of recoding of economic activities in statistical business register by all used sources. Usage of available statistical and administrative information to recode economic activities of enterprises and local units and introduction of double coding of economic activities of enterprises in statistical business register.

##### **Expected Results**

Evaluation of procedures and methods of procedures related to recoding of economic activities for units in statistical business register.

**Actions**

The tentative schedule of the mission is the following:

1-t day	10:00 - 17:00
27 February Monday	Current situation and problems of implementation of classification of economic activities into Statistical business register in Ukraine  Presenting the actions related to activities and introduction of NACE Rev.2 in Denmark
2-d day 28 February Tuesday	10:00 - 17:00  Coordinating the actions for introduction of NACE Rev.2 in other areas of statistics  Introducing NACE Rev.2 in statistical business register, methods and procedures
3-d day 29 February Wednesday	10:00 - 17:00  Discussing the methods for recoding of economic activities of enterprises and local units  Preparing the probabilistic model to recode enterprises and usage of such model
4-th day 1 March Thursday	10:00 - 17:00  Double coding of economic activities in statistical business register  Discussions and recommendations

**Tasks to be fulfilled by the State Statistics to facilitate the mission**

The SSSU specialists will get familiarized experts with:

- programme and forms of special surveys of statistical business register to recode economic activities in statistical business register and the results of recoding by all used sources;
- preparation of probabilistic model to recode enterprises.

During the action the SSSU specialists will arrange meetings in sectoral departments, which are users of statistical business register; besides that it will be necessary to demonstrate how NACE Rev.2 is introduced in Denmark.

**Consultant and Partner**

The Mission will be conducted jointly with:

Mr. Peter Ottosen, Statistics Denmark

Mr. Vibeke Skov Moller, Statistics Denmark

The partner from the Country-Beneficiary will be:

Alla Varnidis – Deputy Director of Statistical Methodology Department - Head of Statistical Classifications Unit – Head of Component

Anton Tovchenko – Head of Unit for Mathematical Methods of Statistical Data Processing and Analysis

Olga Ponomarenko – Chief Specialist – Economist of Unit for Statistical Units Registers

Olena Timofeeva – Chief Specialist – Economist of Unit for Generation of Statistical Observation Populations

Olga Sushich – Head of Division for Keeping the Statistical Units Register of Main Inter-Regional Statistics Administration in the City of Kyiv

The specialists of sectoral statistics departments, which are users of statistical business register, will also attend the meetings.

### **Timing**

The mission shall be conducted during 4 days from 27 February till 1 March 2012 in Ukraine.

### **Report**

The summary report on the results of the mission should be submitted not later than two weeks after the mission is completed.

## **Annex 2. Persons met**

### SSSU:

Alla Varnidis – Deputy Director of Statistical Methodology Department - Head of Statistical Classifications Unit – Head of Component

Anton Tovchenko – Head of Unit for Mathematical Methods of Statistical Data Processing and Analysis

Olga Ponomarenko – Chief Specialist – Economist of Unit for Statistical Units Registers

Olena Timofeeva – Chief Specialist – Economist of Unit for Generation of Statistical Observation Populations

Olga Sushich – Head of Division for Keeping the Statistical Units Register of Main Inter-Regional Statistics Administration in the City of Kyiv

The specialists of sectoral statistics departments, which are users of statistical business register, will also attend the meetings.

### RTA Team:

Irina Bernstein , RTA

Volodymyr Kuzka, RTA Assistant

Oleg Sliusarenkio, Interpreter