TWINNING CONTRACT

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

Ukraine

MISSION REPORT

on

Recalculation of time series II

1.4.4 Working mission

Mission carried out by
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<13-15.11.2012>

Version: Final

		STATISTICS DENMARK

IPA 2007

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List of Abbreviations

ToR   Terms of Reference

SSSU   State Statistics Service of Ukraine

INE   Statistical Office of Spain

SBS   Structural business statistics

SL   Statistics Lithuania

Executive Summary

If report-core text- exceeds 4 pages

Include information to Project Leaders and the RTA.
Main conclusions and highlights from findings.

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 mission to be devoted to recalculation of structural business statistics time series in order to implement NACE rev.2 within Component II – Activity 1.4 "Recalculation of time series II" of the project. The mission was aimed at quality assessment of retrospective information on NACE-2010 of structural business statistics, of conversion matrixes, and processing the requirements as defined by the EC Regulation № 275/2010 from 30.03.2010 concerning the criteria of assessment of quality of structural business statistics.

The concrete objectives of the mission were:
- Quality assessment of retrospective information on NACE-2010 of structural business statistics.
- Quality assessment of conversion matrixes. Application of the fractional error formula.
- Assessment of the level of comparison of retrospective information on NACE-2010 with the data for 2012 that will be received next year in the course of structural business surveys based on NACE-2010.
- Discussing the order of making data recalculation for 2012 based on NACE-2005.
- Processing the requirements as defined by the EC Regulation № 275/2010 from 30.03.2010 concerning the criteria of assessment of quality of structural business statistics.
- Presenting the SSSU report on quality of results of annual sampling structural survey of small enterprises. Discussing its possible improvements taking into consideration introduction of NACE-2010 and the requirements of the EC Regulation № 275/2010 from 30.03.2010.
- Specifying the topics of the seminar concerning the transition to new classification Nace rev.2 that will be held the next year (2013).

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 the 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 / Statistics Finland / Statistics Lithuania / Central Statistical Bureau of Latvia / Statistical Office of the Slovak Republic / INE / Statistics Sweden.

2. Assessment and results

After the first mission (*Classifications on Structural Statistics*, 01-03.08.2012) the specialists of SSSU prepared the conversion matrix of coefficients and recalculated the statistical data for Ukraine and two counties for the period 2011. The data base contained indicators of turnover, number of employed persons and number of enterprises, and conversion coefficients form Nace1.1 to Nace 2 (and vice versa). The values of the indicators were produced in Nace 1.1 and Nace 2 classification.

The experts made the analysis of the indicators and coefficients (by different Nace activities) separately by counties and Ukraine. After the analysis it was noted that the data base was prepared correctly. The analysis showed that there are big differences between coefficients of different counties and Ukraine. Also there are differences between coefficients of different indicators of the particular county.

The specialists of SSSU presented the methodology of the recalculation data from Nace 1.1 to Nace 2. The main aspects of methodology were discussed: methods and models, double coding, micro methods (level of enterprise) macro methods (level of activity), characteristics of data quality.

The advantages and disadvantages of fractional error (relative error) were discussed. Such type of errors is useful when time series (having time period) are recalculated of one county. Still it may be used in order to compare the differences between the indicators of different counties.

The specialists of SSSU made the analysis of recalculation the indicator turnover in macro and micro level. During the experimental recalculation the "mini matrix" of structure for every activity of enterprise (when the enterprise has more than one activity) was estimated. The analysis showed that the difference between the results of two methods is not significant therefore it was decided to use macro level for the recalculation of different indicators.

For the recalculation the action plan was prepared:
1) The variables were defined
2) The conversion matrix for every indicator (3 indicators) and every region was prepared.
3) The various tables (checking, analysis, aggregation) were prepared. At the end the table of Ukraine using all regions is formed.

The regulation of business statistics (Commission regulation No 275/2010 of 30 March 2010) was analysed and discussed. According to the Nace activity the statistical data have to be prepared in 2, 3, or 4-digit level.

Publications to the users
The structure of publications of SBS was discussed. There are two types of publications. In June *the basic publication* of preliminary data of period t-1 is released. The publication contains the short description of methodology; the values of main indicators: number of employees in Ukraine and separate regions; and the coefficient of variation of every indicator. The second *full publication* is released in October. The full publication provides the comprehensive description of the methodology, description of quality indicators, the data of main indicators, and comparison of the regions.

The experts provided the information about the Press releases of SBS indicators and Quality reports of SBS indicators of SL.

The experience of Statistics Lithuania (SL)
The experts presented the stages of recalculation process that was carried out in SL. Double survey (in Nace 1.1 and Nace 2) was performed in 2008. The enterprises in the business register of SL were double coded for the period 2005-2007. SL performed testing methods for the back-casting. The SBS data was recalculated only for the period of 2005-2007. The recalculation of SBS data was performed at micro level. SL analysed the accuracy of the re-estimation models. For the period 2005-2008 the coefficient of variation was estimated. For the earlier periods (e.g. short term statistics) the absolute relative error was used.

The experts made the theoretical analysis of all activities at section level from Nace 1.1 to Nace 2. The inequalities were obtained that may be used to compare and to explain the relations of different activities. The theoretical restrictions means that after the recalculation the indicator's value of the particular activity should be larger or smaller than it was before the recalculation.

E.g. We analyse the indicator turnover. The activity C (mining) from Nace 1.1 went to activities B (mining), C (manufacturing), and H (transport and storage). That means that the restriction for the variables exist: C (1) >= B (2), here 1 stands for Nace 1.1 and 2 stands for Nace 2.

Using the inequalities there is a possibility to check whether the recalculation was made properly. Such inequalities may be used in any field of recalculation (SBS, short term statistics). Also the restrictions may be analysed in the opposite side: Nace 2 to Nace 1.1.

Concerning the quality of SBS data

The quality of recalculated data should be assessed at the separate activity level, county level and country level. If there is recalculated data only for 1-2 years, it is difficult to apply the measures of quality. It is possible to check the mentioned theoretical restrictions for the activities.

At this time there is no EU regulation concerning the quality of administrative data. The experts presented various documents and methodologies of Eurostat concerning the quality requirements and metadata standards of SBS: Quality indicators of administrative data (*Essnet project on Use of Administrative and Accounts Data in Business Statistics*). The Eurostat's structure of the metadata of SBS (*Structural business statistics Reference Metadata in Euro SDMX Metadata Structure*) was analysed.

Concerning the Nace activity K *(real estate, renting and business activities)*

SL publishes separately indicators of SBS and indicators of activity K.

Concerning the seminar next year (2013)

The main objectives of the seminar will be to analyse the differences between the classifications Nace 1.1 and Nace 2.

It was decided that experts of SL will present the process of SBS data recalculation in SL and practices of other European countries. The information concerning the double coding of the business register will be provided. Also the experts will present the recalculation methods (double coding, conversion matrix, micro and macro level)

3. Conclusions and recommendations

List conclusions and recommendations related to the activities mentioned in the ToR.

Concerning the coefficients of conversion matrixes of different regions.

It is recommended to prepare different conversion matrixes of coefficients for different region. After the recalculation the indicators of the regions the total sum will be equal to the indicator of Ukraine.

Concerning the conversion matrix of coefficients

When the register shows that the enterprise is liquidated, but other administrative sources show that it is working. It is recommended to analyse the particular cases individually and determine the concrete actions.

Concerning the number of digit-level of the recalculation

If there is a possibility it is recommended to provide the recalculation of the data at the level one digit lower than it is needed for the publications.

Concerning the natural persons

According to the regulation the natural persons may be grouped into micro (no turnover), small or medium enterprises. The recalculation of indicators within the groups becomes more complicated.

If the activity of the natural person is not indicated in the Register (usually small part) it is recommended to evaluate them according to the structure and use the same conversion matrix as Ukraine.

Concerning the publications to the users

There are no strict requirements or guidelines for the publications. We provided some recommendations concerning the publications of SBS. These recommendations are based on the experiences of other EU statistical institutions. The internet links of different countries are provided as well.

1. The graphical analysis is very important to users therefore it should be clear and not misleading. It is recommended to use the starting point 0 per cent or 100 per cent for the comparison of the changes of particular indicators during time period or comparing the regions. (active link, 19.11.2012, http://www.bis.gov.uk/assets/biscore/statistics/docs/b/bpe_2010_stats_release.pdf)

2. It is recommended to put in the publication concrete date of the next publication instead of providing the internet link.

3. It is recommended to separate the full and short methodology from the publications. Many EU statistical institutions provide the methodology separately from publications (active link, 19.11.2012, http://www.bis.gov.uk/assets/biscore/statistics/docs/b/24maymethodology_note.pdf).

4. It is recommended to publish the indicators that present the estimate the burden of respondents. The most of Statistics of EU publish the time how long does it take to fill a questionnaire. (Some years ago Statistics Ukraine publishes such information.)

5. It is recommended to analyse the revisions of transition from Nace 1.1 to Nace 2 and to provide the information to the users.

Annex 1. Terms of Reference

Twinning Project

"Development of new statistical methodologies and indicators in selected areas of statistics in line with EU statistical standards"
Terms of Reference
For Short-term Mission to the State Statistics Service of Ukraine

Action – Component 1.4 Classification in Structural Statistics

Activity 1.4.4 Recalculation of time series II

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 being implemented under Component 1.4 "Classification in Structural Statistics". The purpose of this Component is to recalculate the times series of structural statistics of enterprises that is harmonised with EU standards.

This action will contribute to achieving the abovementioned objective and reference indicators specified in the contract, namely:
- Improved knowledge and practical skills of SSSU experts in back-casting analysis of data of enterprise structural statistics based on NACE, rev. 2;
- Drafted methodology of recalculation of time series of structural statistics of enterprises.

Purpose of the Mission

The prior purpose of the mission is:

- Determining the assessment methods on quality of retrospective information based on NACE-2010 of structural business statistics.
- Discussing the level of comparison of retrospective information based on NACE-2010 for 2010 and 2011 with the data for 2012 that will be received in the course of structural surveys of enterprises using NACE-2010.

- Processing the requirements as defined by the EC Regulation № 275/2010 from 30.03.2010 concerning the criteria of assessment of quality of structural business statistics.
- Discussing the issue of improvement of a report on quality of results of annual sampling structural survey of small enterprises in connection with introduction of NACE-2010 and taking into consideration the requirements of the EC Regulation № 275/2010 from 30.03.2010.

Expected Results

- MS experts made an assessment of the quality of retrospective information on NACE-2010 of structural business statistics, provided experts' recommendations on improvement of a report on quality of results of annual sampling structural survey of small enterprises in connection with introduction of NACE-2010
- SSSU staff got acquainted with the EU requirements concerning the criteria of quality assessment of structural business statistics.

Actions

The tentative schedule of the mission is the following:

13.11.2012

Quality assessment of retrospective information on NACE-2010 of structural business statistics.

Meeting with Mr Anton Tovchenko, Head of Devision of mathematic processing methods and analysis of statistical data.

Questions to be discussed:
- applied methods of retrospective analysis of short-term statistics;
- quality of conversion matrix calculated on the basis of a supplement to the structural statistics (used fractional error formula and received results).
- possible methods for calculation of interpolated conversion matrix.

14.11.2012

Assessment of the level of comparison of retrospective information on NACE-2010 with the data for 2012 that will be received next year in the course of structural business surveys based on NACE-2010.

Discussing the order of making data recalculation for 2012 based on NACE-2005.

15.11.2012

Processing the requirements as defined by the EC Regulation № 275/2010 from 30.03.2010 concerning the criteria of assessment of quality of structural business statistics.

Presenting the SSSU report on quality of results of annual sampling structural survey of small enterprises. Discussing its possible improvements taking into consideration introduction of NACE-2010 and the requirements of the EC Regulation № 275/2010 from 30.03.2010.

Discussing the experts' recommendations on mission results.

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

Calculations of specific indicators of structural business statistics will be made. Translation of the EC Regulation № 275/2010 from 30.03.2010 on structural business provided.

Consultant and Partner

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- Olena Kolpakova, Deputy Director of Department – Head of Unit, O.Kolpakova@ukrstat.gov.ua tel. 287-14-33, 64-02;
- Anton Tovchenko, Head of Devision of mathematic processing methods and analysis of statistical data, a.tovchenk@ukrstat.gov.ua

Timing

The mission will be carried out on 13-15 November 2012 року 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.