**TWINNING PROJECT**

**Support to Development Process in the State Statistics Service of Ukraine with the Objective to Enhance its Capacity and Production**

**Ukraine**



**MISSION REPORT**

**on**

*Component 11: Capital and direct investment*

**Activity 11.1: Observation of capital and direct investment**

Mission carried out by Andrius Ciginas and Daliute Kavaliauskiene,

Statistics Lithuania

 9 - 11 September 2014

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**List of Abbreviations**

ToR Terms of Reference

SSSU State Statistics Service of Ukraine

SL Statistics Lithuania

# Executive summary

The activities of component 11.1 will help SSSU to develop methodologies for implementation of sample survey on capital investments.

The overall purpose of the mission was to jointly become familiar with:

* Experts of Statistics Lithuania – the current state of statistical surveys in the field of investments at the SSSU;
* Experts of State Statistics Service of Ukraine – the European practise in conduction statistical sample surveys in business statistics in general and investment statistics in particular;
* Discussion on organizational and methodological approaches used to assess statistical survey data quality.

The activities in this mission included:

1. Presentation of SSSU staff the methodology on capital investment statistics currently applied at the SSSU.
2. Discussions of the current and planned policies and practices for development of survey sampling methodology and implementation of sampling methods in statistics on capital investments.
3. Practical work conducting simulations on the real data aiming at construction of sample frame and sample design.

The overall conclusion is that very good working relations have been established and an agreement on the main concepts regarding the organizational and methodological approaches to planning and implementation of the sample survey on capital investment has been reached.

The next activity 11:

Study visit of the specialists of SSSU to Statistics Lithuania on 9-11 December 2014.

# 1. General comments

This mission report was prepared within the Twinning Project „Support to Development Process in the State Statistics Service of Ukraine with the Objective to enhance its Capacity and Production”. It was the first mission to be devoted to the Capital investment within Component 11 of the project. The mission is aimed at assessing the current methodology used at the SSSU in the field of Capital investment and outlining further steps to be done for preparing the sample design and implementing the survey sample methodology in this field of statistics.

The concrete objectives of the mission were:

* discuss the current approaches to collecting information in the framework of conducting observations over capital investment applied by the SSSU
* discuss the sample survey methodology applied in investment statistics in the EU countries
* discuss the methodological and technical support to produce the sampling for observation over capital investment and the results of tentative estimates
* draft a working plan for a pilot sample survey in investment statistics

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

The views and observations stated in this report are those of the experts and do not necessarily correspond to the views of EU, SSSU or Statistics Lithuania.

# 2. Assessment and results

The assessment was carried out in accordance with the topic:

Methods used in SSSU to conduct surveys on capital investment.

The participants from SSSU and the experts from SL introduced each other and went through the program for ensuring common understanding of the ToR, especially the expected results.

## 2.1. Methods used in SSSU to conduct statistical survey on Capital Investment

The statistical survey on Capital Investment conducted yearly and quarterly is one of the fundamental surveys at SSSU. Statistical information prepared on the base of the survey corresponds EU regulations and is very important for national and international users.

Subject matter division is responsible for methodology and conduction of investment survey.

The survey covers all economic activities according to the classification NACE rev.2. and all geographical regions (27). The survey unit is a legal entity.

All enterprises with 50 and more employees are surveyed entirely. Enterprises which declared any kind of investments in the past or which performed any kind of construction are also included into the sample. The total sample consists of approximately 80.000 enterprises.

It is assumed (and the assumption is justified) that the part of investments made by the rest of approximately 600.000 enterprises is negligible.

Data of the survey are also used for structural business statistics, for calculation of GDP and for the needs of National Accounts.

Investment estimations are produced at a very detailed level.

The huge sample size and rather complex questionnaire make a considerable statistical response burden for businesses.

# 2.2. Development of the new sampling design

During the mission, some important organizational and methodological issues were discussed concerning implementation of sampling methods in the survey on Capital Investment. The recommendations mentioned below should be seen as supplementary initiatives to facilitate the process which have already been initiated.

A detailed plan for designing and conduction a pilot survey on Capital Investment was developed, including frame construction, sample design, treatment of outliers and possible options for estimation. All the key action points were simulated on the real data.

The pilot survey should start in 2015. Then lessons should be taken from it and some methodological and organizational improvements made. The real sample survey should be started in 2016.

The possible risks and ways to deal with them were discussed during composition of the implementation plan. Detailed recommendations were given concerning main points of the plan.

**3. Conclusions and recommendations**

**I.** **Construction of the sampling frame**.

 The sampling frame consists of:

 - big and medium size enterprises,

 - enterprises which have already had any kind of investments,

 - new enterprises which should be surveyed separately,

 - the question is whether all of them should be surveyed.

It was recommended to assess the impact of newly established enterprises on the estimates of investments.

**II. Construction of the sample design**

1. Explore the necessary level of detail (by territory, NACE and other criterions) of survey estimates. The current level of detail is too high for effective use of sampling survey.
2. Reconsider the definition of “big” enterprise. It can be that conventional size of “big” enterprise (50 employees) is not optimal for stratification in investment survey. Possibly in some economic activities not all enterprises of this size should be surveyed and vice versa.
3. Auxiliary data on investments available from the annual Investment survey have to be used for stratification.
4. Special attention has to be paid to outliers. It is recommended to survey them in the take-all strata.
5. In very small estimation domains (for example, 5 enterprises) all enterprises have to be surveyed.
6. Allocation of the sample into strata should be done with an aim to ensure the same accuracy of estimates in all domains. Inside estimation domains with more than 1 strata Neymann allocation formula should be used for sample allocation.
7. Discussing the possible determination of strata boundaries the method of power stratification was proposed.

## 4. Activities before the next mission

Before the next mission, the following activities need to be completed:

1. The sampling frame for the pilot survey constructed on the base of the updated business register following the recommendations provided during the mission.
2. The sampling design prepared and presented for discussion during the next study visit in Vilnius on 9-11 December 2014.

# Annex 1. Terms of Reference

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**European Union Twinning Project**

**Support to Development Process in the State Statistics Service of Ukraine with the Objective to Enhance its Capacity and Production**

**Twinning No.: UA/13/ENP/ST/38**

**Terms of Reference**

for a short-term mission to the State Statistics Service of Ukraine

*Component 11 Capital and direct investment:*

*Activity 11.1 "Methodology and principles of sampling"*

*and*

*Component 10 Sample Survey:*

*Activity 10.3 Practical methods to design a sample*

**General information**

Statistics Denmark in partnership with INSEE France, Statistics Lithuania, Statistics Finland, Statistics Sweden, Central Statistical Bureau of Latvia, Central Statistical Office of Poland, Italian National Institute of Statistics (ISTAT) and Statistical Office of Spain (INE) is leading the EU-Twinning project on “Support to Development Process in the State Statistics Service of Ukraine with the Objective to Enhance its Capacity and Production” in Ukraine. The beneficiary is the State Statistics Service of Ukraine.

This activity is implemented under the Component 10 Sample Survey and 11 Capital and direct investment.

The purpose of this component is to improve Ukraine’s sample observations over capital investment of small enterprises and to improve the methodology for recording direct investment in Ukraine according to the main principles of the 6th Manual on Balance of Payments of the IMF and the 4th edition of the OECD Benchmark Definition of Foreign Direct Investment.

**Purpose of the mission and expected results:**

The SSSU experts will familiarize the EU expert with current approaches to collecting information in the framework of conducting observations over capital investment, the methodological and technical support to produce the sampling for observation over capital investment and the results of tentative estimates. The expert will analyze the current methodology for sample observation of capital investment and provide the recommendations on its improvement.

The EU expert will familiarize the SSSU experts with the European practice applied to produce the sample and extrapolate the results of the survey over the total population; the procedures and methods to stratify and define the size of the sample, mathematical methods and software used to produce the sample populations; procedures and methods to disseminate the results of the sample observations over the total population, processing of non-responses applying the mathematical methods and software used to disseminate the results of the sample observation over capital investment of small enterprises over the total population.

**Expected results:**

Recommendations for improvement of current methodology for sample observation of capital investment are provided.

# Consultant and partner:

Andrius Čiginas (Statistics Lithuania)

Daliute Kavaliauskiene (Statistics Lithuania)

# Beneficiary Institution:

L. M. Ovdenko – Director of Production Statistics Department;

М. М. Sobko – Deputy Director of Production Statistics Department;

О.А. Myslynsky – Deputy Director of Unit for Statistics of Capital Investments and Fixed Assets;

G.L. Danylenko, O.M.Khmelyovska, O.V.Ilyusha – Chief Experts-Economists of the same unit;

A.V. Tovchenko – Head of Unit for Mathematic Methods of Statistical Data Processing and Analysis;

O.M. Tkachenko – Chief Expert-Economist of the same unit.

**Scheduling**

The mission will take place in September 2014, week 37 in Kyiv, Ukraine.

# Report

The final report on the mission should be submitted no later than two weeks after the completion of the mission.

# Annex 2. Persons met

SSSU:

L. M. Ovdenko – Director of Production Statistics Department;

М. М. Sobko – Deputy Director of Production Statistics Department;

О.А. Myslynsky – Deputy Director of Unit for Statistics of Capital Investments and Fixed Assets;

G.L. Danylenko, O.M.Khmelyovska, O.V.Ilyusha – Chief Experts-Economists of the same unit;

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