

**THE SYSTEMATIC APPROACHE TO MEASURING HIDDEN
ECONOMY IN POLAND**

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Workshop on
Measurement of the Non-Observed Economy (NOE)
16 - 20 October 2000

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At the recent years the priority task of CSO of Poland was the adjustment of the Polish statistics to the requirements of the market economy and simultaneously, the implementation of the international standards, in particular - SNA'93 rules.

On the other hand, the importance of the hidden economy grew up at the same time. So, relatively early CSO was asked to estimate the size of this phenomenon.

The period of transformation of economy from a centrally planned economy to a market economy creates favorable conditions for expansion of hidden economy.

The transition period to a market economy is characterized, first of all, by a substantial growth of private firms, and particularly small firms owned by natural persons (which are not limited liability or joint stock companies). Whereas in the second half of the 80's the number of small firms amounted to ca. 0,5 million at the end of 1996 it rose to 2,0 million.

1. Our first main task was to create the sources of information about these small enterprises.

1. 1. The very first survey of economic activity of small enterprises was performed by Central Statistical Office in November, 1990. In consecutive years it underwent evolution both in a method of sampling and organization of enquiries. The subjective and objective scope of survey was broadened.

In 1993 the radical change in the enquiry method took place: for the first time an intentional sample selection was replaced with a random selection, the organization of survey (enabling significant increase in response acquisition rate) and a result generalization principle were changed.

- Scope of the Survey

The survey comprises: civil law partnerships in which number of persons employed does not exceed 5 persons and natural persons conducting economic activity for these local units for which number of persons employed does not exceed 5 persons, if their activities are classified under following sections: A (division 02), C, D, E, F, G, H, I, K (division 74), M, N (classes 8512-8520, group 853), O (divisions 90, 92, 93).

A questionnaire, standing since 1993, contains questions concerning basic data of the subject itself and its economic results (date of origin, number of activity months, type of book-keeping used, employment, wages, investments, fixed assets, incomes and costs).

Apart from the basic data, the special data were collected in dependence on the sector of conducting activity: construction-installation, trade, transport, health services and veterinary.

- **Registration and Sampling Methods**

Due to the great number of small enterprises and the necessity to minimize costs of the survey and the statistical reporting strains, the economically active units employing up to 5 persons do not come within a complete survey.

The sampling principle was a random selection method under the algorithm by Mathematical Statistics Laboratory of Economic and Statistical Survey Department. The drawings were performed centrally using the card index created on the ground of the registry of economic objects (Regon), state as on August, 25 of each surveyed year. The sampled enterprises were grouped in sets in accordance with basic types of their economic activities (at the levels of divisions, groups, classes or sets of divisions, groups and classes by the NACE). In 1993, the sample was drawn in 120 sets, and from 1994 the number of sets amounted to 78 after some of the approximate types of activities, had been combined. The sample was selected proportionally in all our 49 provinces, but its quantity and structure were to assure representativeness of the whole territory of Poland. In 1993 the sample represented approx. 10% enterprises of each province, and thereby of the whole Poland's territory, and from 1994 it was cut down to 5%. The selection was not applied to less quantitative sets. In that case the drawing fraction was 1, i. e. all the selected units of the sets were sampled.

Some of the enterprises were failed to acquire response from. The group comprises the units which refused to answer and those which were failed to contact with because of invalid addresses or when nobody was presented under the address given.

Together with a decrease in quantity of samples, introduced in 1994, and direct enquiry of those enterprises that had not responded by mail, and identification (using registry

of Taxation Offices and local civil administration) of units actually economically inactive, the ratio of sample examination was significantly increased. In 1993 the ratio was approx. 70% whereas in the last years it has remained at the level of 90%.

All the enterprises which had been liquidated, suspended or had not started their activities, were counted among the examined sample of which structure was in turn transposed to whole set. The sample to generalize the data obtained is a set of positive reports showing records in at least a few basic predetermined fields of the questionnaire. The set excluded those reports which has been obtained from the enterprises which during the survey turned out to be the units outside the scope of the survey, due to the size (over 5 persons employed) either the types of activities (outside the scope determined in 1. 1. point).

– Principles of Generalization of the Results

Each unit of the sample, being an estimation basis, was assigned a respectively rectified weight ratio. As ground was taken the reciprocal of the drawing fraction related to each particular type of original activity (in accordance to which the drawing was performed), rectified by the given set's non-response ratio.

The number of active units in the whole set was calculated as a sum of units' weights grouped in accordance with their actual types of activities (accordingly to the corrected sets).

Individual data obtained from the active units of the sample, when multiplied by respective weights (i. e. by the number of units representative to the whole drawing set), allow to calculate generic data.

Small enterprises are characterized by a great differentiation in the scope of book-keeping. This differentiation and changes of regulations concerning book-keeping or a release from the obligation of book-keeping might have caused errors in data expressed in the reports related to incomes, costs and investments. These types of errors are hard to determine and affect the quality of survey results.

1. 2. The second important source of information about small enterprises in Poland is a **labour force survey (LFS)**. This survey was started in May 1992 and is run on a quarterly basis. We applied the ILO recommendations on basic definitions and classifications.

According to the ILO recommendations, the employed in questionnaire labour force surveys include all persons aged 15 and over who in the reference week:

- performed for at least one hour any work generating pay or income, i. e. were employed as hired employee, worked in own or leased farm, or run their own business outside agriculture, or were unpaid family workers in and outside agriculture,
- did not worked (e. g. due to illness, leave, break in the enterprise activity, bad weather conditions, strike etc.), but had been formally employed or self-employed.

Thus, the employed include all persons aged 15 and over who in the reference week worked (or formally were employed) regardless of the working hours of the employment and the formal character of a labour contract. This means that persons who work without any contract, thus - according to our definition - work in the hidden economy, are treated as employed.

2. Estimating the hidden economy in Poland in fact we provide estimates for this part of informal sector, which constitutes statistically non observed economy. The hidden economy exists in various forms and the possibilities to capture information about it are limited and not uniform. Due to this we decided that the best way to estimate the hidden economy is a partial survey with the application of various methods.

The first experimental research on hidden economy was done in the 1994 -1995.

Two basic methods were used:

- direct method,
- labour market survey method.

2. 1. Direct method

The direct method was used to estimate the concealed production of registered units in the market sphere. We assumed that large enterprises keep a reliable book-keeping and they correctly report the scale of their economic activity. Thus, we focussed on the evaluating the concealed production of small economic units (up to 5 persons) and of the medium-size private enterprises in which the number of employment does not exceed 20 persons (50 persons in industry).

The direct method which is used to evaluate the value of concealed production of small and medium-size enterprises consists in the evaluation by experts of the average sales and the average remuneration. These opinions are used for the estimate of gross output, intermediate consumption and gross value added.

As we assumed that the data from small and medium-size units are underestimated, we decided to use these "normative estimates". This method was elaborated by our experts from the Statistical Office in Kielce province, thus it is called "Kielce method".

"Kielce method" is based on the following general assumptions:

1. Average labour productivity should ensure profitability of the given activity,
2. Small enterprises do flexibly adapt to changes in the market,
3. Wages and salaries of persons employed in these enterprises do not diverge essentially from the average remuneration within the branch in the medium-size enterprises and in the localities of a given type,
4. Income of the owner is higher than the average wage.

Elaboration of the "normative tables" themselves had been preceded by the detailed and in-depth analysis of labour productivity, levels of wages and their percentage share in the revenues with distinction of the public and private sector as well as the size of the respective units. Experience gained through the questionnaire based studies has also been used in the construction of the tables mentioned.

Construction of the tables was done with distinction of:

1) Sections according to the NACE classification:

- | | |
|-----------------------------------|---------------------------|
| industry | - sections C, D and E |
| construction | - section F |
| transport | - section I |
| trade | - sections G and H |
| real estate and business services | - section K |
| remaining sections of the NACE | - sections A, M, N and O. |

2) Kinds of locality:

- rural gminas
- urban - rural gminas
- urban gminas.

3) Number of persons employed:

- 1 - 2 persons
- 3 - 4 persons
- 5 persons
- more than 5 persons.

In the calculation of estimates of revenues in small firms, for every section (or group of sections) of the NACE nine levels of normative revenues per one person employed were established.

The highest level of revenues per 1 person employed was assumed for the magnitude group of 1 - 2 persons per firm, based on the expectation that in this case almost all those employed are owners (or co-owners) and that their productivity is higher than that of the salaried staff, they usually work longer hours, and adapt their working hours to local needs. A somewhat lower level of revenues per 1 person was assumed for the magnitude group of 3 - 4 persons employed and the lowest one for 5 employees.

The thus obtained estimates of the monthly normative revenues and the level of wages per one person employed were then presented to the experts of the fiscal and social insurance agencies. Their assessment confirmed entirely the correctness of the concept and the appropriateness of the estimates obtained.

Estimation of the basic national data on the economic agents of up to 5 persons employed required the knowledge of the specific features of individual provinces (voivodships). It was therefore necessary to construct numerous tables of normative revenue per one working person with distinction of the differentiating features mentioned. Thus, 22 tables of revenues were constructed for groups of voivodships featuring similar specific properties.

Selection of voivodshis for individual groups was done on the basis of the following criteria:

- structure of agents according to the nature of locality and the number of persons employed,
- number of cities and their size,
- number of agents,
- number of persons employed,
- level of gross monthly wages and salaries in the sector of enterprises.

Resulting from application of the above criteria the following numbers of groups of voivodships were established in particular sections (group of sections) of the NACE:

industry	- 4 groups
construction	- 3 groups
trade	- 5 groups
transport	- 5 groups
real estate and business services	- 5 groups
other sections	- 4 groups

Within the population of economic agents employing more than five persons, estimation of revenues was also carried out with distinction of sections, kinds of localities and the number of persons employed. Consequently, nine levels of normative revenues were obtained for industry (up to 50 persons employed per establishment) and six levels for the other sections (up to 20 persons employed in a firm). Distinction according to voivodships was in this case not introduced.

Having the adequate number of tables we were able to carry out the estimation of the revenues for up to 5 persons employed according to sections for each voivodship. The estimates encompass the whole population of small agents (the establishments of natural persons and the civil code companies), while the population of the medium-size agents was considered with exclusion of the totality of the cooperative sector as well as the wholesale activities and the budget-financed units.

After the first experimental studies we started (from 1998) to conduct special regular survey in order to update "the normative tables".

On the basis of the sample for small units and of the population of medium - size units we chose another small sample (about 2,6%) for 4 - 5 voivodships (every year the voivodships are changed) and we asked the owners of small enterprises about the reasonable levels of income, wages, trade margins and costs which allow to continue their activity with a reasonable profits.

The results of these surveys are compared then with the labour productivity measures compiled directly from basic surveys. Finally the new updated "normative tables" are constructed.

2. 2. Labour market survey method

This method is used for estimation of the missing production because of intentionally non-registration. Such kind of production is created by non-registered work and it is estimated using Labour market survey method.

This method uses the following data sources:

1. Labour Force Survey (LFS),
2. Employment statistics,
3. Registered unemployment,
4. Module survey carried out within the framework of Labour Force Survey.

The number of employed persons in the hidden economy is estimated in the first step, then the income of employed persons is calculated. The number of employed persons is compiled on the base of Labour Force Survey, employment statistics and registered unemployment.

On the basis of the LFS there is no direct possibility to distinguish between persons being registered and unregistered as employed, because no question is asked about the formal character of the contract. Due to this, it is necessary to use also other sources of information on the working population.

The first method of estimating the number of the employed in the hidden economy is based on the discrepancy method and relies on the comparison of the number of the employed taken from the LFS, which - according to the adopted approach - covers all the employed

(including the hidden economy) and the number of the employed reported from the enterprise statistics, which in turn covers - due to obvious reasons - only persons formally employed. The number of the employed, according to the LFS, should be higher by the number of the employed in the hidden economy.

However, the application of the procedure is more complicated in practice. This results mainly from the subject scope of both sources of information. First of all, the LFS covers exclusively private households. This means that a part of the working population, who lives in collective households is not covered with this survey. This concerns first of all to persons living in hostels for workers, who should be included in the working population. The second group of persons living in the collective households constitute high school and university students who more frequently take a paid job to supplement their budgets. In the LFS they are included into the category of the employed, if in the reference week they performed this type of work. At present, only high school and university students who live in private households who comply with the corresponding criteria are included into the employed. The rest are not covered with the survey, so they are not included into the working population. The LFS also does not include persons working abroad on behalf of the Polish employers, who are rendered in the reporting on employment. Due to this results derived from the LFS are slightly underestimated as compared to the enterprise reports. Thus, the first objective in the estimation of the number of persons working in the hidden economy using this method is to make those two sources of data comparable from the point of view of the subject scope. In the present practice, the corrections are made to the number of the employed persons according to the LFS, because there is an empirical basis for making such estimates. The number of the employed persons determined, according to the LFS criteria, is comparable with the data deriving from the reporting. The difference is interpreted as the number of persons working in the hidden economy.

The second method of estimating the number of the employed in the hidden economy also based on the discrepancy method, derives from the general belief that a part (supposedly the majority) of the total number of the unemployed registered in labour offices is performing the unregistered work. An unemployed person can be at the same time employed informally and the LFS methodology forbids such an approach.

The category of population which is used for estimation of the unregistered employment with the second method is population of the unemployed. In the LFS,

unemployed population is defined differently than in the Law on Employment and Unemployment which serves as a basis for the registration of the unemployed in the local labour offices. According to the ILO recommendations applied commonly in the countries with the market economy, the unemployed person must fulfil three criteria, namely:

- firstly, he/she cannot have any job providing earnings or income or help in the family economic activity during the reference week,
- secondly, he/she should seek job actively, i. e. in the period of the last 4 weeks (including the week of the survey) take concrete measures to find a job,
- thirdly, he/she should be ready (able) to take a job - in the reference or the following week.

From the point of view of the issues under consideration the most important criterion of including a person into the category of the unemployed is the lack of a job. According to the ILO recommendations this means that unemployed person must not work even 1 hour a week. Thus, this is a very strict definition of an unemployed person stating that the unemployed person can actually have no job of any kind (occasional, seasonal or unregistered). The methodological differences lying beyond the two sources of information about the unemployment (the records and the LFS) stemming from the various definitions of an unemployed person can serve as a basis for the estimation of the number of the unemployed. This was possible because the LFS provides also information on person who are registered as unemployed in the labour offices.

The calculated estimates of the number of persons employed in the hidden economy turned out to be very interesting from the point off view of the assessment of the scale of phenomenon. Still, the scope of the information gathered was limited to the total number of employed exclusively in the hidden economy. The potential influence of the hidden economy on the overall situation on the labour market and the high public interest in this subject as well as the needs of national accounts made us look for the additional source of information on the hidden labour. The decision was made to go on with **special module survey** carried out within the framework of the LFS.

For the first time a survey on the unregistered employment was conducted in August 1995. The significance of this survey and usefulness of its results made us repeat this survey

in 1998. Its methodology was the same as in 1995, although the questionnaire was slightly modified.

An advantage of the module survey of the unregistered employment is not only a large population covered by the survey and its nation-wide character but also a broad scope of information on this phenomenon. First of all, it is worth noting that it was possible to obtain information concerning both: the employed in the hidden economy (supply of the labour) and employers making use of the unregistered employment (demand for the unregistered employment) from the same survey. In the first case the information was directly collected from the persons who declared the fact of the unregistered employment, in the second case - from households and persons maintaining private economical activity (private companies) who were asked about employing persons without a formal contract (including foreigners).

In the module surveys **the unregistered employment** was defined as:

- work performed without entering formal labour relationship i. e. without formal labour contract, commission agreement, work-piece agreement or any other written agreement between an employer and an employee regardless an ownership sector (including also natural persons and individual agricultural holdings); work cannot be also performed on the basis of call-up, appointment or election. The unregistered employment does not entitle persons performing unregistered jobs to benefits from social security, thus they cannot participate in social security benefits. Moreover, during the period of the unregistered employment employers do not pay obligatory taxes due to Social Insurance Institution and Labour Fund taxes, employees do not pay personal income taxes from incomes gained through the unregistered employment,
- own - account work providing the financial obligations to the state due to maintained economic activities are not fulfilled (e. g. taxes).

According to the assumed conception of the survey the module questionnaire included questions covering three blocks of problems:

- opinions on the unregistered employment in Poland,
- appliance of services provided by persons performing the unregistered work,
- performance of the unregistered work.

Information concerning reasons for taking the unregistered employment and the most frequent jobs performed in the hidden economy were gathered in both module surveys. Opinions were expressed by persons, who were employed in the hidden economy as well as those who either employed informally or knew the phenomenon from the first-hand observation.

For the purposes of diagnosing the labour market and particular for the comparison of the results with the previous estimates - it was important to distinguish the persons who work exclusively in the hidden economy (main job) from these who treated unregistered jobs as additional. Information also was collected on types of jobs performed in the hidden economy and on distribution of hidden labour over the consecutive months of the year (seasonality). Especially important for national accounts purposes was the information on income gained from unregistered work and the expenditure of households on such work.

At the national level both surveys covered about 11 thousand households which amounted to more than 25 thousand persons aged 15 and over. According to the surveys conceptions, this was a half of households (i. e. half of the population) selected for the quarterly LFS in August 1995 and 1998. In both module surveys, a principle was adopted that the module surveys covers the subsample of persons who were to finish their co-operation with the CSO within the framework of the LFS (those who took part in the survey for the fourth time) and the subsample which had a half year break in the participation in the survey. In this way, we tried to minimize the overburdening of those respondents with an additional surveys which might have negative consequences for their further co-operation with the CSO. Despite our reservations, the respondents were very keen to co-operate. It is worth mentioning that in 1998 survey only 482 persons in 175 households refused to take part in the survey.

Finally - in 1998 survey - 25304 persons were examined through the questionnaire on the unregistered employment which amounted to 91.2 per cent of population covered by module survey, i. e. persons, who were interviewed in the basic survey. Only 1.8 per cent of respondents refused to participate in the survey. Remaining (7.0 per cent) persons who were not interviewed were absent at the time of the survey.

The results of the surveys mentioned above give us initial statistical data for estimation **income from non-registered work**. Estimates of income generated by non-registered work were calculated by multiplying the estimated number of working days within a year according to the kind of activity by adequate average remuneration. This was done separately for the groups of persons who worked exclusively in the hidden economy - main job and who treated the unregistered jobs as additional ones.

2. The scope of the estimates of the hidden economy in Poland

In our estimates of the hidden economy in Poland we concentrated on the concealed production. Taking into consideration different methods which were used we have separately estimated the value added in the hidden economy in the registered units which concealed their real product and income and separately the hidden economy in non-registered units (black market activity and persons working on their own-account).

Starting from the "Statistical Yearbook 1998" the Central Statistical Office of Poland includes activities of the hidden economy into regular estimates of GDP in national accounts.