Concurrent Session 2B: *The Non-observed Economy in Transition Economies*

Paper 4.

Measurement of the non-observed economy in transition economies with special references to the CIS countries

Tatiana Khomenko
Deputy Chief
Department of Economic Statistics
CISSTAT

Introduction

The purpose of this paper is to review the general situation with measuring the non-observed economy (NOE) carried out by the statistical agencies of the CIS countries in the context of compilation of the national accounts. In this work they rely on international standards and, in particular, on recommendations of the Interstate Statistical Committee of the Commonwealth of Independent States (CISSTAT); these recommendations represent adaptation of the international standards to conditions of the CIS countries.

The paper discusses experience of the CIS countries with measuring the major components of the NOE, such as underground production, illegal production, informal sector production and production of households for own final use. The paper identifies a list of the most important for the CIS region non-observed activities.

The paper contains the review of the major sources of data and methods which are used for obtaining estimates of the NOE in order to adjust figures on GDP computed by production, income and final use methods.

In concluding section of the paper problems and limitations of the current estimates of the NOE as well as prospects of further work on improvement measuring the NOE are discussed.

Finally the paper systematizes the official data of the statistical agencies of the CIS countries on the estimates of the NOE which are briefly commented.

Background

The work on measuring the NOE commenced in the CIS region at the second half of 1990s in the context of transition from the material product system (MPS) which was used in the former USSR to the SNA. The work on compilation of key accounts of the SNA was initiated at the beginning of 1990s but it took several years to realize importance of measuring the NOE in order to secure exhaustiveness of GDP and its components as well as to get some knowledge on the possible approaches.

It should be noted that the NOE existed in the former Soviet Union republics on a large scale but the official figures on net material product (NMP) included only a fraction of it – production

of agricultural goods by households and construction of dwellings by households on own account. Underground and illegal activities were not included in the NMP estimates and official methodology of compilation of the MPS did not contain specific provisions on this matter. Therefore the experience with recording the NOE was very limited.

Transition from centrally planned economies to market oriented ones stimulated the growth of various types of the NOE. In more specific terms the major factors which contributed to this growth were liberalization of economy, violation of laws in connection with privatization process, appearance of numerous small enterprises which did not provide any information to statistical authorities on their activities. Decrease of the standards of living of the population urged many households to expand their informal activities in order to secure additional sources of income. At the same time the adaptation of statistical observation to changing situation required considerable time.

As a result the official statistics failed to capture the significant part of increased activities of the NOE. Although at the beginning of 1990s the statistical authorities in response to pressure of public opinion started making some estimates of underground economy, these estimates were not comprehensive and in any case they were not included in NMP. Some estimates of the underground economy were made by private researches. Thus, according to T.Koryagina who was considered a leading expert on the underground economy in the USSR, the size of the underground economy varied between 5 billion roubles at the end of 1960s (which equalled to 2% of NMP) and 90 billion roubles (12% of NMP) at the end of 1980s. The bulk of these figures referred to activities in the sphere of material production (such as industry, agriculture, construction, cargo transportation, trade). Other experts in this field held the view that in the period from the 1960s to the 1990s the underground economy grew by 3-4 times faster than the official economy reaching approximately 15-20 percent of GDP.

Important contribution to studying the NOE in Russia was made by the Institute of Strategic Analysis and Business Development. It was organised in 1994 to promote development of private business on the basis of economic, sociological and political researches. The results of these researches were presented in a number of publications devoted to development of private and informal sectors in the Russian economy in the second half of 1990s.

These attempts to assess underground and informal activities were not carried out on a regular basis; besides concepts, definitions and classifications of these activities used by various researchers were not reconciled with each other and with those used in the national accounting. However, these researches represented the useful experience because they gave notion about significant volumes of the economic activity not taken into account which essentially influenced volume, structure and reconciliation of the macroeconomic data, and, first of all, GDP and its components. Different approaches to measuring underground and informal activities could result in incomparability of macroeconomic variables of various countries. Therefore the unification of accounting of the NOE was perceived as the urgent problem of national accounting of the CIS countries.

CISSTAT responded to this challenge by preparing a number of methodological papers on the underground economy and informal sector in the context of the development of recommendations for the CIS countries on various aspects of the implementation of the SNA; they are as follows:

- Methodological principles of treatment in the SNA of the underground economy and methodical recommendations on estimating some of its indicators (1995);

- Recommendations on treatment in the SNA of activity of the informal sector of economy (1997);

- Recommendations on assessment of the impact of the activities in the informal sector and underground economy on the estimates of the final use of gross domestic product (with the account of the experience of the Goskomstat of Russian Federation) (1998).

These documents were developed on the basis of definitions and concepts of the 1993 SNA with the use of the available international experience. At the same time it was taken into

account that the opportunities and approaches to measuring the NOE in the CIS countries under existed conditions might differ from the practice of countries with highly organized and stable economic systems which supposed the sound tax system and prognosticated behavior of all economic agents including the state.

The main purposes of these papers were as follows:

- to provide the unified approach to the definition of the underground economy and informal sector accordingly to the concepts of the 1993 SNA;

- to formulate the general methodological principles of treatment of the underground and informal sector activities in the national accounts of the CIS countries;

- to describe the main sources of information and methods of estimating selected elements of the underground and informal sector production for adjusting GDP and its components;

- to suggest priorities in organization of regular monitoring and measuring underground and informal sector activities.

While determining priorities it was considered expedient on the initial stage to concentrate efforts on estimating the legal activity which included both purposely concealed activity and activity non-accounted due to deficiencies of traditional statistical observation. The estimations of illegal activities were left for the time being outside the framework of SNA indicators. The CISSTAT proceeded from the assumption that inclusion of this element required additional study, as for its estimation other sources of the information and methods obviously should be used, than for the estimation of the legal activity. Besides the majority of the countries outside CIS did not include such estimations in the SNA.

The special attention was given to the informal sector which is very important in the CIS countries; a significant part of the NOE refers to the production of this sector. The perfection of methods of its estimation has the important meaning for completeness and reliability of the SNA data.

The work on measuring the NOE at the initial stage resulted in introduction of corresponding adjustments into the regular estimates of GDP in the end of 1990s. These results were discussed and summarized in the papers presented at the meetings organized in 1999 in Chishineu (Moldova) and in 2000 in Sochi (Russia).

The next stage of the work on measuring the NOE was closely related to publication of the Handbook on Measuring the Non-observed Economy which was developed by OECD in co-operation with other international organizations including the CISSTAT. It was published in 2002, however, at the meeting in Sochi its draft was discussed. The results of this discussion as well as the information collected from the CIS countries in the course of the special survey of their practices were taken into account in the paper "Recommendations on improvement of assessments of the non-observed economy" developed by the CISSTAT in 2000.

The Handbook proved to be very useful both from the conceptual and practical points of view. Conceptually it introduced the term "non-observed economy" and gave more clear and precise definition of this notion and its structural components, descriptions of their coverage, interrelations and differences. As a useful practical tool it provided information on possible sources of data and methods of their collecting and processing.

CISSTAT organized translation of this document into Russian which facilitated the access to it for statisticians in the CIS countries and allowed them to get more knowledge about the international experience in this area, to find better approaches to its practical implementation, to define the general strategy and priorities in measuring the NOE.

It is necessary to mention significant technical and financial assistance continuously provided by the international organizations (OECD, EUROSTAT, World Bank, IMF) and their experts to the CIS countries in the implementation and improvement of the NOE measurement.

In the recent years the CIS countries showed interest to measuring illegal activities. CISSTAT responded by developing in 2005 "Methodological recommendations for measuring illegal activities of the basis of the SNA concepts'.

At present CISSTAT continues to monitor the work on measuring the NOE carried out by the CIS countries with the help of periodical surveys. The information recently collected shows changes in the scope of economic activities, sources and methods, the degree of desaggregation of estimates. More detailed review of the current situation in measuring the NOE by the statistical organisations of the CIS countries and how it changed in length of time is given below.

Current situation

The review of the current situation with measuring the NOE in the CIS countries is based on information collected by the CISSTAT with the help of a questionnaire in July 2007 as well as on materials presented by countries participated in the seminar on the NOE issues organized by the UN ECE in April 2007 in Byshkek (Kyrghyzstan).

Coverage of the estimates

All the CIS countries carry out estimates of the NOE on a regular basis since the end of 1990s and include them into GDP. These estimates are based on concepts, definitions and classifications contained in the 1993 SNA and further developed in the Handbook on Measuring the Non-Observed Economy. From this point of view they are comparable both within the CIS and at the more broad international level.

All countries claim covering the following types of NOE: underground production, informal sector production, production by households for own consumption, production not covered due to deficiencies in the basic statistical data collection programme. Selected types of illegal production are estimated by 3 countries (Belarus, Turkmenistan, Ukraine); only Belarus and Turkmenistan include these estimates into GDP.

Some countries implemented the analytical frameworks of the NOE recommended in the Handbook (which are used by EUROSTAT or ISTAT). However, in some cases it seems difficult to draw a line between their categories. For example, the data presented by Azerbaijan at the meeting in Byshkek showed that the most part of the NOE is allocated to the group "other types of the NOE" containing in fact the data which could not be allocated to any other group more clearly defined.

The adjustment of GDP for the NOE estimates from production side are carried out by all countries. Their share in GDP varies from 10% in Belarus to 30-32% in Tajikistan and Uzbekistan. The difference in the NOE shares is connected with peculiarities in economic policies, various relative size of household sector (which is responsible for the most part of the NOE estimates) as well as with differences in organisation of statistical observation and the progress in measuring the NOE. The degree of responsibility of these factors for the magnitude of the NOE measured by the countries is not clear which creates some uncertainty about the level of comparability between countries both these measurements and GDP.

In general the difference between minimum and maximum shares of the NOE in GDP of the CIS countries did not change since the first review of these estimates at the end of 90s. At the same time the fluctuations of the NOE share in GDP of selected countries were significant. For

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example, in Georgia and Moldova it raised correspondingly from 26% and 15% in 1998 to 33-32% in 2002 and dropped by now to 20-24%. In Kyrghyzstan it raised from 10% in 1998 to 18% in 2005 (excluding agriculture), in Turkmenistan – from 16% in 1998 to 26% in 2002. In Russia and Ukraine it decreased from 22-20% to 18% in 2005. Such fluctuations show that the measurement of the NOE has not stabilized yet and the countries are still searching the most adequate sources of data and methods of estimations.

The NOE estimates from the production side cover a wide range of activities. The important part of the NOE estimates referring to the informal sector production and production of households for own final use includes in most countries the following kinds of activities:
- production of agricultural goods (including primary processing) at household individual plots and small farms;
- construction and repair of dwellings and other buildings by households on own account and by informal contractors;
- trade activity at the city markets (including "shuttle" trade);
- market services on the repair of cars and home appliances;
- production of food-stuff and alcohol; of clothes, footwear, furniture;
- transportation of passengers and cargos by individual motor transport;
- renting dwellings;
- health care services of private doctors, additional payments to doctors and other medical personnel in medical institutions;
- educational services of private teachers.

As a result, the industries with the most significant share of the adjustments for the NOE are as follows: agriculture, trade, manufacturing, construction, transport, health care, education, real estate (owner-occupied and renting dwelling services).

The adjustments for the NOE to GDP by final use are carried out by almost all countries (except for Azerbaijan and Tajikistan). They refer, as a rule, to household final consumption expenditure and gross fixed capital formation. Data on exports and imports are adjusted in many countries by national banks. The share of the adjustments in GDP varies from 9% in Belarus to 23% in Kazakhstan and Moldova; in the household final consumption expenditure it varies from 12% in Belarus to 24-25 in Kyrghyzstan, Moldova and Georgia; in gross fixed capital formation it varies from 1% in Belarus to 19% in Armenia.

The adjustments for the NOE of income components of GDP resulting from the adjustments made to GDP from the production side touch directly operating surplus and mixed income. 6 countries (Armenia, Belarus, Moldova, Russia, Turkmenistan, Ukraine) carry out additional adjustments referring to compensation of employees (so called "hidden wages"). The corresponding data of enterprises are considered as underreported; in particular they do not account "wages in envelope". These adjustments do not change the value of GDP but they influence its structure and consequently the productivity figures.

As it was mentioned earlier estimates of illegal activities are carried out on a regular basis by 3 countries. These estimates differ by kinds of activities covered. For example, in Belarus they refer only to illegal production of alcohol while in Ukraine they cover a wide range of other "classical" illegal activities, such as drugs, smuggling, prostitution, resale of stolen goods. In Turkmenistan illegal activities include (in addition to illegal production of alcohol and fishing) services of lawyers, medical and educational services. It looks like at least a part of these services should be considered as underground and not illegal. In the nearest future Turkmenistan is going to start measuring trade in drugs, jewelry and prostitution. However, due to moral considerations measures of trade in drugs and prostitution are not supposed to be included to GDP.

Measuring illegal economy represents the area of the NOE which the CIS countries only recently started to explore. It could be expected that in the nearest future more countries will be involved in this process. For example, Tajikistan has recently made experimental estimates of smuggling. Kazakhstan and Moldova plans to start estimates of illegal activities soon.

The estimates of NOE in most countries refer only to the activities on production, distribution and disposal of goods and services. The part of the NOE related to redistribution of income and wealth is not covered by these estimates. Only Armenia adjusts for NOE other SNA aggregates except for GDP, namely, current transfers from the rest of the world.

Methods and sources

The adjustments to GDP for the NOE in most countries are carried out by several steps. As a first step, the data of statistics of industries based on information submitted by economic units in accordance with the programme of collecting the basic data are adjusted. These data are used by the national accounting divisions for the estimates of GDP and at this stage additional adjustments for the NOE are introduced. However, the practice of adjusting GDP in some countries deviates from the general scheme, For example, in Tajikistan all adjustments are carried out by the divisions of statistics of industries. In Moldova and Ukraine adjustments for the NOE are carried out only by divisions of macroeconomic statistics in the process of computing GDP. In Azerbaijan, Belarus, Georgia, Moldova and Russia the final adjustments for the NOE are introduced when compiling the resource and use tables.

The countries use different approaches to reconciliation of accounting the final adjustments for the NOE in GDP and in the statistics of industries. In Azerbaijan, Belarus, Georgia, Kyrghyzstan, Turkmenistan the final adjustments for the NOE to GDP are later accounted by the statistics of corresponding industries which allows to reconcile the time series of industrial and macroeconomic statistics while other countries do not achieve such reconciliation. Armenia plans to achieve it in the nearest future.

At present the statistical agencies of the CIS countries do not carry out the estimates of the NOE as a whole based on some models or trends of selected indicators. Such estimates were carried out by some CIS countries at the initial stage of measuring the NOE. For example, Belarus used monetary method, Ukraine – method based on the growth rates of consumption of electricity. However, these approaches were considered as unreliable in the conditions of the CIS countries, besides it was impossible to allocate their results to individual components of GDP. Now they are employed only by independent researchers.

The most common methods of measuring the NOE in the CIS countries are as follows:
- the supply based methods;
- the demand based methods;
- the income based methods;
- the labour input method;
- the commodity flow method.

The supply based methods are usually used for estimating output in agriculture and construction on the basis of data on inputs such as seeds, forage or cement consumed by producers.
The demand based methods are used, for example, when estimating the output of individuals providing transportation services of the basis of administrative data on motor vehicles registrations.

The income based methods are used for the assessments of output of self-employed persons on the basis of the data of tax authorities.

The labour input method is applied to measuring output in a wide range of industries. It relies upon the data of employment and labour force surveys as well as of surveys of performance of small-size enterprises.

The commodity flow method is used for measuring the NOE in the framework of resource and use tables in 5 countries (Azerbaijan, Belarus, Georgia, Moldova and Russia) and in the format of balances of selected products in 8 countries (Azerbaijan, Georgia, Kazakhstan, Kyrghyzstan, Moldova, Russia, Turkmenistan and Ukraine).

The major sources of information for estimates of the NOE in the CIS countries are as follows:
- business registers (data on a number and the size of registered enterprises);
- reports of enterprises;
- surveys of small-size enterprises;
- household sample surveys;
- combined sample surveys of households and household unincorporated enterprises;
- special sample surveys of household expenditure;
- surveys of employment and labour force;
- special sample surveys of selected activities (construction by households, sales at the city markets, payments for services of individuals).
- administrative sources (land, dwellings, cars registers);
- records of tax authorities.

Business registers provide the data on a number and the size of registered enterprises which are used mostly for sampling purposes.

The reports of enterprises submitted to statistical agencies as a part of the regular statistical observation provide information on the important indicators of their performance (output, cost, number of employed). These data are grouped by industries and size of enterprises and used for comparative analysis which allows to reveal the unreliable data. For example, ratios between output and cost, output and number of employed persons for selected enterprises are compared with the average data for corresponding group of enterprises. These ratios are also applied to non-reporting enterprises to assess underestimated output and other indicators.

The system of statistical observation for small-size enterprises includes various types of surveys, such as:
- regular (usually quarterly) sample surveys by the standard brief programme;
- special sample surveys on specific issues;
- total surveys of the whole set of enterprises;
- total special surveys of selected groups of enterprises on specific issues.

The sample surveys of households are the source of data which is widely used by all the CIS countries and provides the bulk of information on the household production activity. At the initial stage they were mostly general household income and expenditure (budget) surveys which allowed as well to collect the data on production of households, on purchases of goods and services from individuals. Later other types of sample household surveys were implemented by the CIS countries with the special purpose to provide information for measuring the NOE. In particular, combined surveys of households and household unincorporated enterprises were introduced by Azerbaijan, Armenia, Georgia, Moldova, Turkmenistan and Ukraine. Special surveys of households in their capacity either as producers or consumers are practiced widely

now in all the CIS countries and this tendency is developing. Examples of such surveys are as follows:

- surveys of agricultural activity of households individual plots and small farms (Kyrghyzstan, Moldova, Tajikistan);

- surveys of individuals engaged in production of foodstuff, clothes and shoes, in wood processing, construction, motor transport, trade, provision of personal services (Tajikistan, Turkmenistan);

- surveys of household expenditure on purchasing goods and services at city markets and from individuals (Belarus, Turkmenistan, Ukraine),

- surveys of household expenditure on construction, repairs of cars and home equipment, on meals at catering enterprises (Georgia);

- surveys of household expenditure on health care and education (Armenia, Tajikistan);

- surveys of consumption of forest goods, fish and game (Belarus).

Surveys of employment or labour force are implemented by all the CIS countries. These surveys allow to receive the data on non-registered employment as well as on a number of employed at jobs with regular additional income: medical personnel, hairdressers, taxi drivers, waiters, etc.

Administrative sources (such as registers of land, dwellings, cars, licenses, etc.) as well as data of the tax authorities (a number of the registered individuals engaged in the production activities, their income, results of check-ups of concealment by them of income) are used for measuring household production.

Armenia, Belarus, Kyrghyzstan, Moldova, Turkmenistan use the data of controls carried out by some state authorities (statistical bodies, tax authorities). Only Ukraine practice the inquiries of opinions of managers of enterprises on the share of underground transactions.

Problems and limitations

As it follows from the above, the CIS countries implement the sources and methods of measuring the NOE which are commonly used by other countries. However, in general the application of these methods remains rather crude. It depends to a great extent on the quality of basic data which needs improvement. The problems and limitations of sources and methods used by the CIS countries for measuring the NOE are discussed below.

The commodity flow method on the basis of the resource and use tables is considered as the most effective method of accounting the NOE in the estimates of GDP if the commodity groups are significantly desaggregated. However, in the CIS countries the level of aggregation of commodity groups in the resource and use tables of is too high. The desaggregation of commodity groups should improve the reliability of this useful tool and increase its analytical value. Besides the resource and use tables provide the commodity structure for the NOE measurement which is necessary for the proper valuation of GDP in constant prices. Unfortunately the resource and use tables are not compiled yet by all the CIS countries and those ones which compile them do not do it on a regular basis. It makes difficult the analysis of the commodity structure and finally influences the volume indexes of GDP.

As it was mentioned above, household production of agricultural goods is a very important part of the NOE in the CIS countries. In the past the detailed system of balances of about 100 agricultural goods existed which showed in details resources and uses of these goods and ensured their reconciliation. Unfortunately later this system was reduced to a very simplified one due to lack of labour and financial resources. It would be useful to restore it as a part of the commodity flow method.

The problems with business registers refer to their coverage and timely updating. Improvement of business registers implies concentration on the coverage of large and medium size enterprises leaving outside the small units (which do not have employees or are under some other limits) taking into account the industrial and territorial peculiarities). It is more important to focus the efforts on the quality of information about the enterprises which are responsible for the bulk of production in the given industry or region. For this purpose the information in the business register should be timely updated at least by comparing it with the data of the tax authorities and other administrative sources.

Identification and monitoring the specific types of enterprises (public, privatized, established as private, household unincorporated enterprises) by industries and regions would provide useful information on the possible scale of the NOE in the given industry or region; it could also serve as a basis for choice of strategy for collecting the data from the enterprises: total or sample survey, frequency of reporting, volume and content of submitted data.

Household surveys need improvement in the quality of sampling. All the CIS countries plan to organize the population censuses in the year close to 2010 and it would be desirable to use the data of the censuses for updating the framework for household sampling. It is also important to monitor the key characteristics of sampling (in terms of income, age, industry, occupation, etc.) in order to avoid systematic non-coverage of certain types of households.

Limitations of the labour input method are as follows:
- the basic data on output, number of employed and time worked are not reconciled; besides these data may be underreported;
- households sometimes cannot identify correctly the kind of activity they are engaged in;
- it is difficult to estimate the productivity of labour for units engaged in the industries with the high share of non-market services (such as education, health care, research and development, etc.) as well as in financial intermediation and insurance;
- it is necessary to take into account the employment of households in such kinds of activities as hunting, forestry, fishing, primary processing of agricultural goods, construction on own account.
As a result, the experimental estimates by this method, in particular, in Russia provided the controversial data and showed the necessity of additional efforts for its full implementation.

Adjustments for "hidden wages" in some countries (for example, in Russia) are being derived at first at the level of the economy as a whole as the balance of household money expenditure and income and then they are allocated to industries and regions proportionally to output. In fact, the above balance may contain not only hidden wages but other kinds of not accounted income (mixed income, current transfers, etc.).

The level of co-operation of statistical organisations with other government agencies (tax and customs authorities, ministries of internal affairs, etc.) as well with the national banks, research and non-profit institutions dealing with measuring the NOE is not always satisfactory. Its improvement would allow to expand and diversify the sources of information for the NOE estimates. Some of these institutions carry out the estimates of selected elements of the NOE and it is highly desirable for the statistical organizations to participate in this work to ensure its reconciliation with the SNA requirements. For example, national banks in some countries compile the balance of payments and make adjustments for the NOE to the value of exports and imports. In Russia the Central Bank carries out experimental estimates of illegal activities related to drugs. Ministries of internal affairs collect and analyze the information on various aspects of

illegal activities which should be used as a basis for the assessments of such activities by the statistical organizations.

The analysis of the NOE figures is needed not only for the SNA estimates. It should be used by the government agencies in the context of formulating economic policy, in particular, for improvement of tax and custom system, etc. The problem is that the NOE estimates still do not satisfy the requirements of such analysis. Improvement of analytical value of the NOE estimates implies separation in the components of GDP the parts resulted from the collection of basic statistical data and from the adjustments for the NOE; monitoring the changes in their shares and analyzing their reasons; reconciliation of accounting the NOE in the SNA and other areas of statistics. Implementation of the unified analytical framework for the NOE figures by all the CIS countries would also improve the international comparability of analysis of the NOE.

The plans of the CIS countries to develop measuring the NOE in the foreseeable future are bound to the activity included in GDP. Acknowledging these intentions as the first priority it appears important to think about accounting the NOE in other aggregates of the SNA, in particular, related to redistribution of income and wealth. Compilation of financial accounts would allow to control the reconciliation of the NOE measurements in various aggregates of the SNA.

Plans for future

In general the priorities in measuring the NOE defined by the CIS countries for the nearest future refer to improvement of assessment of the NOE in GDP and its components. The ways of achievement of this general goal are chosen independently by each country.

Azerbaijan, Armenia and Kyrghyzstan are going to use more widely the data of statistics of employment and labour force as an alternative source of information. Azerbaijan plans to implement on this basis the labour input method. Kyrghyzstan has carried out the experimental estimates of the elements of the NOE on the basis of the data of labour force survey and plans to proceed with this work.

Armenia is going to organize compilation of the resource and use tables on a regular basis and to use them for measuring the NOE while Belarus and Georgia plan to develop compilation of balances of selected goods in addition to using the resource and use tables. Both Armenia and Belarus intend to pay more attention to reconciliation of accounting the NOE in the SNA and in the statistics of industries.

Belarus and Georgia are going to develop special statistical surveys. In this connection Belarus applied to IMF and World Bank for technical assistance.

Russia is going to carry out estimates of the NOE in the context of computation of gross regional product for 2004-2005 and compilation of resource and use tables for 2004 in accordance with the recently adopted industrial classification. The total survey of small-size enterprises and the further work on the implementation of the labour input method is also planned.

Tajikistan plans to carry out the pilot survey of enterprises to assess the scale of avoiding the tax payments by enterprises. This survey will be carried out jointly by the statistical and tax bodies with the financial assistance of EUROSTAT in the framework of TACIS Programme.

Kazakhstan and Moldova are going to start measuring illegal activities while Turkmenistan and Ukraine plan to expand their work in this area.

Concluding remarks

During the past ten years the statistical organizations of the CIS countries achieved considerable progress in introducing the NOE estimates into their practice starting from a

scratch. These estimates are carried out and included into GDP by all the CIS countries. The main part of the NOE estimates refers to the informal sector production and production of households for own final use. Some countries carry out estimates of illegal activities which part of them includes into GDP while others do not include. At least one country plans to start measuring the illegal activities in the nearest future.

The ratios of the NOE estimates to GDP differ a lot between the countries and for a number of the countries they varied significantly during the period under consideration especially at the level of selected industries and components of final use of GDP. Volatility of these figures shows the unstable character of the NOE estimates which influence the comparability of GDP both in geographical and time terms.

Although the CIS countries use sources and methods adopted in the international practice they need improvement. It implies:

- improvement in collecting basic data (business registers, quality of sampling for household and enterprises surveys);

- improvement in analysis of the basic data (desaggregation and monitoring data for groups of enterprises and households);

- improvement in methods of the NOE estimates (desaggregation of commodity groups in resource and use tables, development of the system of balances of agricultural goods, adaptation of the labour input method);

- improvement in co-operation with other government agencies and non-government institutions dealing with the NOE estimates (getting access to their database, participation in the joint projects);

- improvement in the analysis of the NOE estimates (drawing the borderline between the NOE figures and basic data, reconciliation of accounting the NOE in the SNA and other areas of statistics, implementation of the unified analytical framework of the NOE).

It appears important to extend measuring the NOE outside the boundaries of GDP to account it in other aggregates of the SNA, in particular, related to redistribution of income and wealth.

Technical and financial assistance from the international organisations would be useful to speed up the progress in measuring the NOE in the CIS countries.

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Table 1. Share of the non-observed economy in gross domestic product by the production method in the CIS countries, 2005 (%)

	Azer-baijan	Arme-nia	Bela-rus	Geor-gia (1st quarter 2007)	Ka-zakh-stan (2006)	Kyr-ghyz-stan	Mol-dova	Russia	Taji-kistan	Turk-meni-stan (2002)	Uzbe-kistan (2002)	Uk-raine
Gross domestic product	**17**	**27**	**10**	**20**	**20**	**26**[1]	**24**	**18**	**30**	**26**[2]	**32**	**18**
of which by industries:												
Agriculture, hunting and forestry	3,8	4,6	4,1		3,3	7,9	11,7	2,9	13,2			10[5]
Fishing	0,2				0,1			0,2				
Mining and quarrying					1,0							
Manufacturing	5,5	5,7	0,5		1,6	1,8	2,6	1,8	3,9		6	3[6]
Electricity, gas and water supply					0,1		0,2					
Construction	2,6	7,1	0,4		2,1	0,2	1,2	1,0	0,7			1
Wholesale and retail trade; repairs of motor vehicles, etc.	2,0	6,3	3,3[3]		2,8	13,7	4,0	6,9	5,0[3]			3[7]
Hotels and restaurants	0,2				0,4	0,4	0,3	0,4				
Transport, storage and communication	0,9	1,1	0,3		2,5	1,3	1,6	0,9	2.6			
Transport			0,3		1,9	1,3			2,6			
Communication					0,6							
Financial intermediation					0,3	0,1	0,3					
Real estate, renting and business activities	0,3	0,6	1,0[4]		4,1	0,1	1,6	3,0				1[8]
Public administration and defense; compulsory social security												
Education	0,4	0,1	0,2		0,6	0,1	0,1	0,1	1,0			
Health and social work	0,2	1,3			0,3	0,2	0,3	0,3	0,6			
Other community, social and personal service activities	0,5	0,5	0,2		0,6	0,2	0,3	0,1	3,6			
Private households with employed persons												

[1] Excluding agriculture – 18%

[2] Excluding production in personal plots – 14%

[3] Trade and catering

[4] Housing, information and computing services, general commercial activities

[5] Including fishing

[6] Mining and quarrying, manufacturing, electricity, gas and water supply

[7] Including hotels and restaurants

[8] Other services n.e.c.

Table 2. Share of the non-observed economy in gross value added by industries in the CIS countries, 2005 (%)

	Azer-baijan	Arme-nia	Bela-rus	Geor-gia (1st quarter 2007)	Ka-zakh-stan (2006)	Kyr-ghyz-stan	Mol-dova	Russia	Taji-kistan	Turk-meni-stan (2002)	Uzbe-kistan (2002)	Uk-raine
Agriculture, hunting and forestry	44	24		3	61	28	72	65				67[3]
Agriculture			*49*						*62*	*60*	*69*	
Forestry			*45*									
Fishing	34	13			82		45	66		44		
Mining and quarrying				10	6		5					
Manufacturing	85	43	2	15	14	14	20	11	17	16	6	15[4]
Electricity, gas and water supply				2	3		9					
Construction	28	36	6		21	7	36	21	15	11	3	30
Wholesale and retail trade; repairs of motor vehicles, etc.[1]	33	55	35[1]	57	25	64	39	41	31[1]	77[1]	42[1]	25[5]
Hotels and restaurants	35			50	44	21	27	47				
Transport, storage and communication	12	19			22	18	13	10				9
Transport			4	40	21				47	34	17	
Communication				6	26							
Financial intermediation				5	8	10	7					
Real estate, renting and business activities	21	21		43	28	2	25	36				
Housing			*46*									
Information and computing services			*4*									
General commercial activities			*6*									
Public administration and defense; compulsory social security												
Education	16	7	3	33	17	2	1	4	31			
Health and social work	14	56		31	18	8	8	11				
Other community, social and personal service activities	38	43		51	34	13	16	5			13[25]	9[25]
Personal services			*3*							*51*		
Culture and art			*12*							*20*		
Private households with employed persons												

Note. Data for Belarus, Tajikistan, Turkmenistan and Uzbekistan are presented in accordance with the Classification of Industries of the National Economy (CINE). This classification was used by the former Soviet Union republics and it is still used by the CIS countries which did not introduce the national industrial classifications based on the ISIC or NACE. In cases when data submitted by these countries could not be directly related to the ISIC industries they are shown separately in italics.
[1] Trade and catering.
[2] Other services n.e.c..
[3] Including fishing.
[4] Mining and quarrying, manufacturing, electricity, gas and water supply
[5] Including hotels and restaurants.

Table 3. Share of the non-observed economy in gross domestic product by final use in the CIS countries, 2005
(as percentage of GDP and its final use components)

	Arme-nia	Bela-rus	Geor-gia (1st quarter 2007)	Ka-zakh-stan (2006)	Kyr-ghyz-stan	Mol-dova	Russia	Uk-raine
Gross domestic product by final use	**16**	**9**		**23**	**20**	**23**	**17**	**12**
Household final consumption expenditure	13	12	20-25		24	24	37	19
Gross fixed capital formation	19	1			2	3	11	6
Change in inventories	15	9					2	
Exports of goods and services			10-12					
Imports of goods and services			15-20				17	