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**Drawing lessons from the experience of the transition economies  
in the field of national accounting (the past, the present and the future)**

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**Abstract**

The paper reviews general situation with development of national accounts in the transition economies with special reference to the experience of the CIS countries. It discusses the progress achieved by them in the course of transition from the MPS to the SNA as well as specific problems which still need to be solved in order to secure further development of their national accounts; special attention is paid to problems of measuring economic growth. The prospect of implementation of selected provisions of the updated SNA 93 is discussed at some length. Finally, it is attempted to formulate the lessons for this group of countries with regard of their future work in this area

**Introduction**

The purpose of this paper is to discuss a range of selected issues of development of national accounting in countries in transition, with special reference to the CIS countries. It is intended, in particular, to consider the progress achieved by them during the last 10-15 years in the context of their transition from the material product system (MPS), which was used by many of them in not so distant past, to the SNA and to review the problems which were encountered in this connection and which still require their solution; finally it is intended to discuss at some length the prospect of implementation of the updated SNA 93. Special attention is paid to the problems of measuring economic growth which existed both in the context of compilation of the MPS in the past and still exist in the context of compilation of the SNA at present time. The problems of computation of measures of economic growth are believed to be somewhat similar to the problems of computation of volume indexes of GDP in the context of international comparisons and in this context the paper reviews briefly some experience and lessons of the CIS countries in connection with their participation in the current round of the ICP for 2005, sources of possible errors and biases due to different factors are briefly discussed.

The past experience of transition economies in their capacity of countries with centrally planned economies (CPEs) which employed the MPS, is discussed at some length. This discussion is intended to highlight the problems which transition economies inherited from the past MPS practices and had to overcome in the context of transit to the SNA; this discussion may also be of some interest in the context of retrospective analysis of economic growth of the former CPEs. The Hitotsubashi University of Japan has been studying for many years retrospectively the economic growth of the former CPEs and, in particular, of the former republics of the USSR and uses for this purpose as a starting point the indicators which were compiled in the past on the basis of the MPS.

Concluding section of the paper contains formulation of some lessons with regard to the future work on national accounts in transition economies.

### **I. National accounting in the former centrally planned economies (CPEs).**

Many countries in transition (in their capacity of the r CPEs in the past) until the beginning of the 1990s compiled the MPS which was de facto recognized at the UN as the system of national accounting alternative to the SNA. Despite the significant differences in the concept of production and other important underlying concepts and definitions, the two systems have a lot of common features and experience in compilation of the MPS helped statisticians of the former CPEs (the former USSR republics, in particular) to master principles of the SNA and to implement them in practice within relatively short period of time.

The most important factors which have to be taken into account in the context of analysis of reliability and comparability of official figures on economic growth of the former CPEs are as follows:

- narrow definition of economic production which in accordance with the MPS excluded the so called non-material services (education, health, art and culture, housing, general administration and defense, financial activities and so forth).
- peculiarities in the price system, which influenced relative weights of individual industries and products-
- peculiarities in the price statistics (and in deflators used to compute figures in constant prices) which was not consistent with the international standards
- peculiarities in organization of statistics in general, in collection of primary data on various aspects of economic process.
- peculiarities in the institutional set up.
- government control over activities of the statistical agencies

Narrow definition of net material product (NMP) (which excluded so called non-material services) does not necessarily mean that the rate of economic growth computed on the basis of this indicator deviates significantly or systematically from the rate of growth of GDP; thus under certain circumstances the volume index of NMP may underestimate the economic growth as compared with the GDP rate for the same period of the same country<sup>1</sup>.

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<sup>1</sup> In fact the difference between volume indexes of these two aggregates depends on: i) the relative rates of growth of output of material goods and output of non-material services, ii) changes in the structure of disposition of output of material goods iii) changes in the structure of disposition of output of non-material services. Thus if the rate of growth of output of non-material services exceeds the rate of growth of the output of material goods the volume index of NMP is likely to be smaller than the volume index of the GDP.

In the opinion of many experts in the West the rates of economic growth computed by the former USSR were upward distorted. It appears, however, that this distortion, the degree of which is difficult to measure, was caused largely not by the concepts of the MPS but should be attributed to the factors which are of more universal nature characteristic for national accounting, such as inadequate deflators, incomplete coverage of non-observed economy, flaws and gaps in primary data; these factors may result in distortion of GDP figures at present time.

The well known American scholar A. Bergson in his analysis of Soviet Union national income statistics (see his article in *Economic statistics for Economies in Transition: Eastern Europe in the 1990s*, sponsored by the US Bureau of Labor Statistics and Eurostat, Washington, 1991) discusses differences between the average annual growth in the Soviet Union calculated by the CIA and USSR official statistics and comes to a conclusion that for the period from 1971 to 1980 the excess of official figures based on the MPS concepts and the CIA estimates based on SNA amounts to 2,4 percentage points, but only 0,1 percentage points can be attributed to the differences in concepts of economic production used in the both systems of national accounting while other factors explain the remaining (2,3) difference. In Bergson's opinion the bulk of the remaining difference is due to the distorting impact of the price systems (of the so called established prices versus market prices). He suggested to use for his analysis imputed "adjusted factor cost" in order to eliminate the impact of distorting price system; these imputed prices were obtained by distributing the profits and turnover tax more evenly between various industries. This approach was criticized by another famous American scholar by name Rosefield; in his view the adjusted factor cost is very subjective instrument which has nothing to do with real economic life and they are not better than actual prices established by the government.

The concept of economic production used in the past in the context of the MPS did not contain specific provisions with regard to accounting underground and illegal activities, although these sectors were a widespread phenomenon (and in practice statistical offices never attempted to introduce any adjustments with regard to the output of these sectors); on the other hand, the reports submitted by the enterprises to statistical offices often contained artificially inflated figures and it is difficult to say what was the balance of omissions and upward distortions (pripiski). At the same time production of goods in the informal economy was well captured. The system of supply and use tables of agricultural products was compiled both in terms of physical units and values in current prices (about 100 products) and this made it possible to estimate output of agricultural production in the informal sector (personal plots of households).

The price statistics compiled by the CPEs was not consistent with the international standards, however these standards were designed for market economies. In the former CPEs establishing prices of major commodities was the under the strict government control and under

these circumstances the use of price lists as a source of data for compilation of CPI was a natural solution. There were systematic collections of prices at the informal farmer markets, the data of which were used for deflation of relevant items of consumption in the MPS. On the other hand, it is clear that the CPIs which were used as deflators often did not take into account the changes in quality of goods, deterioration of some characteristics of goods was not treated as decrease in volume. In the former USSR the computation of output of industry in constant prices was relied on data submitted by enterprises to statistical office and in many cases the current prices of new modifications of products used by the enterprises for compilation of their reports on output in constant prices (which reflected both some improvements in quality and inflation); these prices were not adjusted in the process of compilation of NMP in constant prices. As a result the rates of growth of output and NMP were distorted. One serious problem with computation of volume index of the NMP was associated with the lack of reliable deflators for intermediate consumption; the data on commodity structure of this flow were not often available and when they were available, for example, when detailed input output tables were compiled there was not a consistency between the commodity groupings and price indexes.

On the other hand, the countries using the MPS did not have the problem of computation in constant prices of the non-market services and therefore a possible distortion due to use of some arbitrary methods of imputations was avoided in measuring economic growth<sup>2</sup>.

The major conclusions of this section of the paper can be summarized as follows:

- compilation of the MPS in the former CPEs helped these countries to transit from the MPS to the SNA within relatively short period of time;
- the shortcomings of official rates of economic growth of the former CPEs were largely associated with the low quality of deflators; incomplete coverage of underground economy and with the flaws of the reports submitted by the enterprises to statistical authorities; it is difficult, if not impossible, to measure retrospectively the degree of distortion due to the above factors;
- as will be discussed below, some of these problems seem to have been inherited to some extent by many transition economies in the context of compilation of the SNA.

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<sup>2</sup> Some experts in the West criticized the former CPEs statistics for using comparable rather than constant prices for measuring economic growth. We believe that this criticism is to a considerable extent a result of misunderstanding of the terminology used by the CPEs. In fact the term "comparable prices" was used by them as a synonym of "constant prices". It does not mean, however, that constant or comparable prices were perfect, but the fundamental principle of the MPS was that for computation of volume index of the NMP its components were valued in average current prices of the base period. A. Bergson admitted in his analysis of Soviet Union statistics that "the calculation in comparable prices proceeds just as does one in constant prices (see above mentioned source).

## II. National accounting in countries in transition (transition from the MPS to the SNA)

During the last 10 -15 years the countries in transition (and the CIS countries, in particular), have achieved a noticeable progress in terms of transition from the MPS to the SNA. They managed to introduce into their regular practices the underlying concepts, definitions and classifications of the SNA 93 and, in particular, the concepts of economic production and income as defined by Hicks; they introduced the concept of holding gains/losses in their estimates of GDP. The countries organized the sources of primary data which meet the new requirements. This required considerable efforts because in the new conditions the system of comprehensive statistical reports submitted in the past by all enterprises to statistical offices and which was used for compilation of the MPS ceased to exist, structure of some reports had to be reorganized in order to reflect institutional changes and to take into account the definitions and classifications of the SNA. A system of sample surveys and business registers had to be introduced in order to supplement the data collected with the help of reports. At present time the majority of them compile the key accounts of the SNA 93 and compute GDP in current and constant prices; as a rule, GDP in current prices is computed by the three methods: production method, income distribution method and final use method. However the majority of countries in transition face a number of serious problems the solution of which is essential in order to secure a more comprehensive analysis and better reliability of the key macro variables of national accounts. They can be summarized briefly as follows:

- financial account and other changes in assets account are not compiled;
- balance sheet is not compiled;
- satellite accounts are not compiled;
- the methods of measuring underground and informal economies continue to be rather crude and the countries do not implement all recommendations of the Handbook on measuring non-observed economy released several years ago by the OECD; one limitation in this area is that adjustment for these types of unobserved economy is made only at the data on macro level while the micro level remains unaffected.
- illegal economy is not included in the GDP; Carsten A.Holtz in his paper "China's statistical system in transition: challenges, data problems and institutional innovations (Review of Income and Wealth, number 3, 2004) mentions inability of the NBS to impute the value of illegal activities.
- the methods of estimation of holding gain continue to be rather crude;
- some countries do not use ISIC and these results in incomparability of industrial origin of the GDP data.

- there are considerable problems with compilation of the regional accounts; as a rule there is a substantial difference between the GDP of the country and the sum of gross regional product; this difference is due to the lack of appropriate data and to the lack of clarity on some conceptual issues;
- the treatment of the FISIM is simplified, that is FISIM is allocated to intermediate consumption of the notional industry; this method results in underestimation of GDP
- the methods of computation of consumption of fixed capital continue to be rather crude; the countries did not have in the past experience with the PIM; the data on stocks of fixed assets submitted by the enterprises to statistical offices are often valued in historic costs rather than in replacement prices (current market prices) and this results in distorted estimates of consumption of fixed capital;
- one fundamental problem which is common for the majority of the countries in transition is the lack of harmonization between the national accounts and related system of macroeconomic indicators; this refers, above all, to harmonization between national accounts and government finance statistics; the majority of countries of this group have not implemented the major provision of the latest IMF Handbook on GFS which was harmonized with the SNA 93, as a result they experience considerable problems with compilation of accounts for the general government sector and computation of government final consumption expenditure consistent with the SNA requirements.; in this context they extract some figures from the reports of ministries of finance on execution of the state budget which do not meet international requirements in many respects; their major flaw is the failure to make a clear distinction between the different types of transaction, incomplete coverage of transactions and exclusion of transactions in kind, in particular, incomplete coverage of the institutional units which belong to the general government sector (as defined in the SNA and the GFS), the use of cash basis of registration of transactions rather than accrual basis.
- only simplified indicators of labor productivity are compiled which do not take into account changes in the structure of the labor force; no attempts have been undertaken so far to measure productivity of capital as well as multifactor productivity;
- there are considerable problems with computation of GDP and its components in constant prices which will be discussed below in a more detailed manner;
- although most of the countries compile quarterly accounts these estimates are often produced on the basis of reports of enterprises compiled on a cumulative basis;
- although many countries of this group compile supply and use tables the data from these tables are not integrated into the current estimates of GDP;

- there are some estimates of stocks of assets, however, the coverage of these estimates is limited to fixed assets and inventories while stocks of financial assets and other non-produced assets (both tangible and intangible) are not covered; besides, the methods of valuation of these assets are not often consistent with the SNA requirements.
- only few countries make adjustment on the change in net equity of households in pension funds.
- there is a growing demand on national accounts data on the part of government and business, however, there are many items of data which are available but not used by the government in the context of formulation of economic policy; these refer to data on saving, net borrowing/ net lending, net worth and national wealth., redistribution of income among the sectors and groupings of households

CIS countries participate in the ICP and the problems which arise in this context are discussed below.

It should be reminded that SNA 93 contains a provision for those countries in transition in which the enterprises provide social and cultural services to their employees free of charge; it is suggested to treat the establishments engaged in provision of these services as notional non-commercial organizations serving households and to treat output of these units as social transfers in kind. This recommendation has been implemented by the CIS countries, however at present time these establishments began to sell their services to the general public and therefore the SNA 93 recommendation on this topic should be modified.

## **II. Problems of measuring the rates of economic growth at present time**

As was mentioned above, all the countries of this group compile the GDP and its major components in constant prices in order to compute the rates of economic growth. Broadly speaking they follow the methodology of the SNA 93. It refers to the formulas of indices, choice of base year and frequency of change of base year, the use of chained indices and some other components of the methodology. However some recommendations of the SNA 93 are not implemented or their implementation is not complete. This refers, above all to treatment of the impact of quality differences on the price indices which are used as deflators of some components of the GDP. For example, in many CIS countries the CPI s do not treat properly the changes in the structure of types of outlets and as a result is so called the outlet type bias. In many cases the countries treat this impact as price change while it reflects the differences in quality which should be treated as differences in volume. It seems that appearance of new modifications of goods is not reflected properly in price indices at least it is clear that the hedonic method is not used in majority of countries of this group in order to obtain the so called pure price indices

which do not reflect changes in some parameters of commodities. In most cases the methodology of price statistics is described in a rather general terms and many important aspects are omitted, for example it is not clear whether so called revolutionary new products are covered and if yes what approach is employed for this purpose. It appears that some subtle aspects of quality differences such as the differences in conditions of payments, in the size of packages are disregarded. It is not clear whether the countries make a distinction between the differences in prices which reflect differences in quality of goods and so called price discrimination which should be reflected in the price index. There is no clarity on the methods used to reflect the differences in regional prices. It appears that differences in regional prices in Russia which are quite significant are treated as price differences rather than as differences in volume as recommended in the international standards on price statistics. In some CIS countries the population figures are used for aggregation purposes rather than figures on sales of goods and services; it appears that this approach can secure the satisfactory results only in such cases when distribution of population between the regions is more or less proportional to distribution of sales; at least in CIS countries it is not the case. For example while population of Moscow accounts for 8 percent of the total population of the country, the sales of goods and services in Moscow account for about 30 percent of the total. As a rule the countries use as deflators the Laspeyres CPIs while the SNA 93 recommends to use the Paasche index. The Fisher formula is not used for computation of price index in the majority of the countries of this group. The computation of the non-market services in constant prices is carried out largely by deflating the components of costs or by extrapolating values of base year by using indicators in physical units and no adjustments on changes productivity over time are made. It appears that such adjustments are made in China, however the validity of these adjustments was questioned by some experts.

The methodology of computation of CPI which is used for deflation of final consumption expenditure of households is not entirely consistent with the provisions of Handbook on computation of CPI released by the ILO in 2004; this refers in particular to the choice of formulas intended to be used for computation of elementary indices (at the level of elementary aggregates). Between the CIS countries there are noticeable differences in the choice of formulas used for this purpose: while some countries use Jevons formula the others employ Carli and Dutot formulas which do not meet some important tests of the axiomatic theory of indices. It appears that a distinction between the differences in prices which reflect differences in quality, on one hand, and so called "price discrimination", on the other hand, is not made in practices of many CIS countries. National statistical offices of the CIS countries do not seem to pay sufficient attention to making this distinction. In some countries the collection of prices for computation of the CPI is limited to urban areas and this may result in a serious bias.

CPI is computed to measure price changes with respect of expenditure of household at the territory of the given country while for deflation of national account items CPI should refer to expenditure of the residents of the given country. The analysis of practices of CIS countries in computation of the CPI makes it possible to conclude that all major types of measurement biases are characteristic for them but most important biases are quality adjustment bias, the outlet substitution bias, elementary index bias.

On the top of the conceptual problems there are some practical problems. For example, in the CIS countries the price index used as deflator for exports and imports of goods reflects not only changes in prices but also the changes in composition of commodity group and the deflators for exports and imports of services do not exist at all and some crude conventions are used to derive them. In many CIS countries deflators for intermediate consumption are not available and deflator for gross output is used for this purpose. It results in using simplified procedures of calculation value added in constant prices. One practical problem of compilation of GDP in constant prices is connected with the choice of deflators for output generated in the underground economy since the data on commodity structure of this output is either unavailable or unreliable. In many cases the adjustment for the output generated in the underground economy is introduced only at the very aggregated level.

The problems of computation of volume indexes of GDP as measures of economic growth are somewhat similar to problems of computation of volume indexes of GDP in the context of ICP. They are discussed below.

The majority of the CIS countries participate in the ICP and in the current round of the ICP for 2005, organized by the World Bank. The results of the comparison of GDP of the CIS countries for 2005 (obtained in the framework of global comparison) are shown in the table below.

**Results of comparison of gross domestic product of the CIS countries for 2005**

	<b>GDP at national prices, bln. national currencies</b>	<b>PPP, national currencies per 1 russian ruble</b>	<b>GDP calculated in PPP, bln. rubles</b>	<b>Volume indices of GDP (in %; CIS10=100)</b>	<b>Volume indices of GDP per capita (in %; CIS10=100)</b>
Azerbaijan	62725,5	128,10	489,6	1,7	50,5
Armenia	2242,9	14,02	160,0	0,6	42,4
Belarus	65067,1	61,19	1063,4	3,7	92,8
Georgia	11,3	0,058	194,7	0,7	38,1
Kazakhstan	7590,6	4,523	1678,2	5,8	94,5

Kyrgyzstan	100,9	0,8915	113,2	0,4	18,8
Moldova	37,7	0,3481	108,2	0,4	25,7
Russia	21620,1	1	21620,1	74,8	128,9
Tajikistan	7,2	0,0584	123,3	0,4	15,4
Ukraine	441,5	0,1318	3349,7	11,6	60,7
Total CIS – 10			28900,3	100,0	100,0

Their analysis and interpretation require attention to the following issues:

- reliability and comparability of GDP and its structure by analytical groupings and basic headings;
- quality of data on prices collected for representative items;
- general methodology and possible biases.

As was noted above, data on GDP of the CIS countries and major analytical groupings are broadly internationally comparable; however, the uncertainty with the coverage of underground and informal economy is the possible source of errors; the relative ratio of unobserved economy to the GDP of the CIS countries considerably differs among the countries. Another possible source of errors and incomparability is crude estimates of holding gains since the rates of inflation continue to be high in this region. Another potential source of error in the estimates of GDP is the lack of harmonization between the national GFS and national accounts and the use of some assumptions for estimation of government final consumption expenditure. The problem with breakdown of GDP by basic headings is the lack of comprehensive sources of data and as a result statisticians have to rely on using some conventions.

Data on average national prices of the representative items are obtained, broadly speaking, with the help of procedures recommended by the World bank; these data are checked with the help of Couranta tables and yet some questions remain with regard to coverage of all parts of the territories(rural, urban), and all types of shops. The question also exists whether the prices of representative items correspond to prices which are used for valuation of goods and services in national accounts.

On the other hand, the methodology recommended by the World Bank for the ICP may result in some biases. First of all the principle "a potato is a potato" continues to be used and as a result the relative figures of GDP of transition economies are likely somewhat overestimated as compared with the figures of GDP of developed economies. In the context of comparison of prices of representative items a distinction is not made between the organic and bio modified

products and this is a source of some bias (the distinction between these two types of products is made in the context of the UN system of calculation of post adjustments). The lack of progress with methodology of comparison of the non-market services may again result in a bias in favor of countries in transition where productivity in the non-market services is likely to be less than in developed economies. Finally the use of exchange rates for conversion of the net exports into the common currency is another source of bias. In the CIS countries the share of the net exports in the GDP often differs noticeably from one year to another and this shift influences the results of comparison for the two consecutive years. This factor may influence relative figures on GDP of the countries participating in the ICP. Mention should also be made of the treatment of prices used in national accounts for valuation of consumption from own production which in the CIS countries accounts for a considerable portion of final consumption of households of some important commodities. These prices should be taken into account in order to arrive at average national prices of some commodities. It appears, however, that these prices are not taken into account in many countries due to lack of clear recommendations in the World Bank methodology and this may result in some errors in estimating PPPs for some basic headings.

It is worth noting that international comparability of the GDP can be influenced by the institutional differences between the countries. These differences may refer to different organization and financing of some activities which may result in different pattern of allocation of the output of these activities to intermediate and final use which would then lead to incomparability of the GDP. For example, if activities of the units engaged in research and development finance their costs from the state budget allocation in country A while in the country B they finance these costs from the sales, the GDP of these countries will be different (all other conditions are assumed the same). There are other activities different organization of which in different countries may influence their relative GDP. In practice this factor is not taken into account in the ICP.

### **III. Prospects of implementation of the updated SNA 93 in transition economies**

Most of the 44 proposals for updating SNA 93 (approved by the UN statistical commission) are believed to be conceptually applicable to the majority of countries in transition (and to the CIS countries, in particular), however, there are many practical problems largely associated with collection of primary data which would require solution before specific improvements in the methodology can be introduced into the regular statistical practice. The work on implementation of the specific proposals should be carried out in parallel with the work on improvement of implementation of provisions of the sections of the SNA 93 which are not

directly affected by the substantive updating but which are going to be retained in the structure of the new document and which are essential for raising reliability and analytical usefulness of the accounts. The proposals for updating differ in terms of the possible burden on statistical offices and the amount of resources needed for their implementation. On the other hand some proposals imply certain institutional arrangements in the countries and relatively advanced stage of development of national accounts and statistics in general. Therefore statistical offices of the countries in transition will have to establish priorities in the work on implementation of the updated system, to establish the programs with the specific schedules which envisage participation of other agencies of the country and international organizations. In our view the priority in the work on implementation of the updated SNA should be given to the issues which affect measuring GDP both in current and constant prices, the structure of GDP (various aspects) and productivity. It is also important to improve accounts for institutional sectors, and, in particular, to introduce financial account and balance sheet. Achieving these objectives will require solution of a number of problems. One of them refers, as it is clear from the above, to harmonization of national GFS and national accounts because the lack of this harmonization does not make it possible to secure reliable estimates of government output and government final consumption expenditure as well as many other items of accounts for the general government sector. This harmonization implies in practice similar if not identical treatment of different types of transactions and using the same classifications of the general government sector and its revenue and expenditure but also introduction into the national GFS and consequently in national accounts of balance sheet for the general government sector. Some issues of classification of units by the institutional sectors may require attention in this context. For example, in GFS of Russia, compiled by the ministry of finance, the general government sector is defined to include the units which are financed from the budget while some units controlled by the government are excluded; furthermore some budgetary units allocated in the GFS of Russia to general government sector sell a considerable portion of their output at the market and may have to be allocated to non-financial corporation sector. The definition of subsidies in the Russian GFS is not entirely consistent with the definition of this flow in the SNA. It would be useful for countries in transition to compile major accounts for public sector which is defined to include general government sector and corporations and quasi corporations controlled by the government.

Implementation of a number of proposals is essential for improving exhaustiveness of the figures on GDP, for improving quality of data on the structure of GDP and the rates of economic growth. These refer, for example, to I) clarified definition of underground and informal economy as well as to the improved methods of measuring output of these sectors; II) clarified treatment

of FISIM both in current and constant prices including clarification of institutions and financial assets which generate FISIM, choice of reference rate, the type of information on assets and liabilities which are essential for calculation.

The countries in transition would benefit from: more detailed and specific recommendations on computation of the deflators for major components of GDP which will take into account the provisions of the latest international handbooks on CPI and PPI; this implies suggestion with regard to approaches which are essential to avoid or soften major types of biases; updated recommendations on conceptual and practical aspects of valuation in constant prices of non-market services, exports and imports, output of trade and construction. Finally CIS countries where rates of inflation continue to be rather high would benefit from more specific recommendations on practical procedures required for measuring holding gains and losses`

`Special attention in the process of implementation of the updated SNA 93 should be paid to introduction of indicators of productivity of labor which take into account the changes in the structure of labor force and productivity of capital; statisticians of CIS countries are not familiar with the concept of capital services and assistance from international organizations in this area would be useful.

Implementation of the proposal to reallocate expenditure on research and development from intermediate consumption to capital formation would enhance measuring GDP and economic growth, however, capitalization of these expenditure in balance sheet and calculation of consumption of fixed capital with regard to these assets will require special efforts from statistical offices.

One of the proposals for updating the SNA 93 deals with calculation of output of central banks and its allocation to the categories of disposition; it is suggested, in particular, to make a distinction between the market and non-market components of output of the central banks and to allocate non-market part to final consumption expenditure of the government. The implementation of this proposal would affect the size and rates of growth of GDP, however, making the above distinction in practice is not easy to carry out it in practice Some preliminary research of possibilities of central banks in CIS countries is not entirely optimistic in this respect, many of them say that data on costs of services produced by individual departments are not immediately available and many departments produce a mix of market and non-market services.

Implementation of proposal to treat outlays on durable military goods as capital formation rather than as intermediate consumption of the general government sector (which appears to be sensible in principle) will affect the ratio between final consumption and capital formation and possibly indirectly the volume index of GDP since the deflators for consumption and capital formation may differ. On the other hand, capitalization of expenditures on military

durables will require solution of some practical problems associated with compilation of figures on stocks and fixed capital consumption.

There are a number of proposals for updating the SNA 93 implementation of which would improve quality of sector accounts, facilitate compilation of the accounts which have not been yet compiled on a regular basis. These refer to classification of assets (both non-financial and financial), clarification of some issues pertaining to sectorization of economy, drawing a distinction between market and non-market output and so forth.

### **Conclusions**

During the last 15 years the transition economies have achieved significant progress in transition from the MPS to the SNA. Their experience with the MPS helped them to master underlying concepts, definitions and classifications of the SNA and to introduce them into the regular practices. At the same time it appears that transition economies inherited from the former CPEs (which used the MPS) some problems with estimation of economic growth, such as incomplete coverage of unobserved economy, insufficient quality of deflators. Despite the progress with introduction of the SNA further efforts are needed to introduce some important accounts which are essential for expanding economic analysis as well as for checking overall consistency of entries recorded in different accounts of the System. It is essential to improve quality of the estimates of unobserved economy and of price deflators. One serious obstacle for further progress in development of national accounts in the CIS countries is associated with relatively limited demand on the national accounts data on the part of the government. It appears that attention is paid largely to GDP while a number of important aggregates such as saving and lending/ borrowing are not taken into account in the process of formulating economic policy.

The bulk of proposals for updating the SNA 93 are believed to be conceptually applicable for countries in transition but their implementation will require solution of many serious problems associated with securing the reliable primary data. For implementation of some provisions of the updated system in countries in transition the assistance from the international organizations in their respective areas of their responsibility will be essential.

To summarize the above said, the major lessons which can be drawn from the review of the experience of the countries in transition in the field of national accounting and which may pertain to the future work can be formulated as follows:

- a considerable amount of work on further development of national accounts is ahead for majority of countries in transition and, above all, for the CIS countries and there are many areas which require attention of the national statistical offices on a priority basis in order to raise reliability of major national accounts aggregates, to expand the scope of

macroeconomic analysis and to close existing gaps in terms of missing accounts and aggregates . , this refers , above all, to balance sheet s and financial account:

- more regular compilation of disaggregated resource and use tables as well as input- output tables is essential for raising reliability and internal consistency of data , for obtaining information needed for compilation of various items in constant prices;

- special attention has to be paid to improving price deflators; introduction into regular price statistics of new standards on CPI and PPI is essential in this context since they contain important recommendations on computation of these indexes used among other things for deflation purposes;

- another area important for improvement of national accounts is measuring NOE; it is essential to implement major recommendations of the Handbook on measuring NOE;

- introduction of international classifications such as ISIC, CPC, COFOG, COICOP and so forth would facilitate economic analysis and international comparability of data;

- development of national accounts will require implementation of the relevant sections of the updated 1993 SNA; the selection of the new features of the updated 1993 SNA for implementation on a priority basis can be determined on the basis of analysis of a number of factors such as existing institutional arrangements, resources needed for implementation of selected provisions, a degree of consistency between business accounts and national accounts, critical analysis of possibilities of obtaining (within reasonable period of time) primary data needed for compilation of some accounts, the demand on specific data from the government and other users and so forth;

- one important direction of future work essential for improving national accounts is introduction of measures of productivity (labor, capital and multifactor productivity) which take into account modern concepts and definitions and experience of some countries (e.g., USA, Canada);

- improvement of national accounts implies not only introduction in regular practice of new concepts and definitions but securing appropriate sources of primary data, introduction into the business accounting (data of which are used for preparation of reports by enterprises) the international standards; changes in the structure and contents of statistical reports submitted to statistical agencies in order to meet the requirements of national accountants;

- harmonization of national accounts with other systems of macroeconomic statistics is essential element of future work, this refers above all to harmonization of national accounts with GFS; harmonization of national accounts with statistics of individual branches of economy should also be a priority task of statistical agencies;

- participation of countries in transition in the international comparisons of GDP is important for raising overall efficiency of work of statistical agencies on macroeconomic statistics, including national accounts;
- the work on implementation of specific provisions of the updated 1993 SNA will require assistance from the international organizations; participation of the experts from transition economies in various meetings on national accounts and related topics, exchange of experience;
- the suggested directions of improvement of national accounts can hardly be implemented within short period of time and therefore national statistical offices should establish priorities and time table depending on conditions in their countries.

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