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INTRODUCTION OF THE SNA INTO THE OFFICIAL STATISTICS OF THE COMMONWEALTH OF INDEPENDENT STATES

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The work on the introduction of the elements of the SNA into the official statistical practice of the former U.S.S.R. began in 1988 when estimates of the GDP using conversion keys were prepared. In 1991 the decision was made to implement the entire SNA gradually on the basis of the international standards. The methodology of compilation of the main accounts was formulated by the Statistical Committee of the C.I.S. with the assistance of the OECD. It originally drew on the ESA with introduction of elements of the revised SNA and adaption to specific economic processes in the country. It required solution of a number of conceptual and statistical problems referring to the treatment, allocation and valuation of selected activities. The estimates of the main accounts were made for the former U.S.S.R. by sectors and by industries for 1988–90. This project has provided the basis for further work on implementation of the SNA in C.I.S. countries.

INTRODUCTION

The purposes of this paper are: (i) to review briefly the current status of work, originally undertaken by the Goskomstat of the U.S.S.R. and later taken over by Statistical Committee of the Commonwealth of Independent States (C.I.S.) to introduce the system of national accounts into official statistical practice and to describe, in particular, the outline of the emerging accounting structure, (ii) to present the results of the compilation of the major aggregates and accounts for a number of recent years and (iii) to discuss selected conceptual and practical problems which arise in the context of this project.

A. THE REVIEW OF THE RECENT DEVELOPMENTS

The first efforts to introduce the elements of the SNA into official statistical practice of the country were undertaken in 1988 when the Goskomstat of the U.S.S.R., together with other government agencies, formulated the methodology of computation of the GNP/GDP.[1] The latter relied on the 1968 SNA as far as the major definitions are concerned but the computation procedures were based on application of the conversion keys between the corresponding categories of the MPS and the SNA, set forth earlier by the UNSO. The estimates of the GDP

[1]Though at the beginning of 1992 the Goskomstat of the U.S.S.R. ceased to exist, some of its functions have been absorbed by the Statistical Committee of the C.I.S. The latter is expected, for example, to provide technical and methodological assistance to statistical offices of the member states of the C.I.S. The SNA is clearly an area where this assistance is expected and therefore the work of the Statistical Committee of the C.I.S. is likely to have an impact on development of national accounts in individual member states of the C.I.S.

of the country, prepared on the basis of this methodology, were included in official publications of the Goskomstat.[2]

Three years later in 1991 a new round of work in this area commenced. In May 1991 a team from the OECD joined the experts of Goskomstat (in the framework of an agreed programme of technical assistance) in order to accelerate the work. More specifically, the joint efforts were to focus on (i) improvement of the methodology, introduction to it of those new elements resulting from the revision of the SNA and (ii) preparation of the major accounts for the years 1988–90, which could be regarded as benchmark estimates. It was also hoped that the work would be useful for statistical offices of the individual republics (later member states of C.I.S.).

The decision was made to introduce the entire system of accounts on the basis of international standards. This decision was clearly linked to economic reforms aimed at the transformation of an administrative economy into a market one and the gradual integration of the country into the world economic system. It was also understood that future membership of the country in international economic organizations such as the IMF, World Bank and others would require such substantive transformations of previously established statistics.

The ESA was taken as a starting point for preparation of the methodology, but it was adapted to conditions existing at that time in the U.S.S.R. The draft

[2]It is worth noting that the authors of "A Survey of Soviet Economy" published by the World Bank, OECD, IMF and EBRD in 1991 pointed to a number of drawbacks in this methodology. They refer specifically to the following deficiencies:

—the failure to include net factor income from abroad in the computation of GNP;

—the failure to cover the shadow economy.

They also observe that the ratio of GDP to NMP of the country is higher than in other Eastern European countries and conclude that possible overestimation of stocks of fixed assets and consumption of fixed assets might be the reason for overestimation of the GDP.

The first deficiency is not, in our view, of a methodological nature, because the document clearly defines the procedure needed to derive the GNP from the GDP data. However, the lack of data did not allow proper estimation of net factor income from abroad. It should be admitted, however, that Goskomstat did fail to explain that the published figures referred to GDP rather than to GNP.

The criticism for the failure to cover the shadow economy may be accepted with the remark that is is a common problem for many countries.

Finally, the arguments for the reasons behind the relatively high ratio of GDP to NMP are very interesting but they do not seem to be complete or entirely convincing. For example, the scope of the non-material sphere in the U.S.S.R. is in practice broader than, say, in Hungary or other countries because the passenger transportation and communication serving households are included in the non-material sphere in the U.S.S.R., but not in Hungary or other countries with which the comparison was made.

The other factor which may also have been overlooked is that coverage of the consumption of fixed assets is not the same in different countries. For example, contrary to many countries the U.S.S.R. included depreciation of roads, dams etc.

Finally, the suggestion that overestimation of the stock of fixed assets (and thus of depreciation) may be indirectly responsible for the size of the GDP to NMP ratio requires further investigation.

Overestimation of depreciation may result in overestimation of GDP in non-market services where output is valued at cost. However, any overestimation of depreciation in respect to the production of market goods and services does not affect the measurement of GDP, but only figures on NMP or NDP, which are defined excluding consumption of fixed assets. A more accurate relationship between GDP and capital stock could have been obtained if the data on written-down (depreciated) value of stocks of fixed assets were contrasted with the GDP. Although the ratio of consumption of fixed assets to GDP is higher in the U.S.S.R. than in some other countries, this does not necessarily mean that GDP is overestimated; it may simply reflect the proportion of productive activity that is capital intensive and the degree of this intensity.

of the document, which contains the description of the methodology, adopted by the Goskomstat as a provisional one, was published in "Vestnik statistiki," vol. 6–10 1991.

The work on this stage of the project is complete. The results are described in a joint publication by the Statistical Committee of the C.I.S. and OECD entitled "National Accounts for the Former Soviet Union; Sources, Methods and Estimates." It includes the detailed description of the methodology of compilation and of the sources of information for the core accounts: production account, generation of income account, distribution of income account, use of income account, capital account and rest of the world account. It also includes tables of consolidated accounts, accounts by sectors and industries, tables of main aggregates with cross-classification by sectors and industries for 1988–90 as well as production accounts for individual industries and other worksheets.

The developments in the area of national accounts at the Statistical Committee of the C.I.S. has already had a noticeable impact on the work in this area in the individual member states of the C.I.S. This refers, above all, to the Russian Federation, where the Parliament instructed the statistical office to start introduction of national accounts into official statistics in the year 1993, but also to Ukraine, Belarus, Kazakhstan, Uzbekistan and other states. In some states the efforts are likely to focus in the immediate future on computation of the selected aggregates of the SNA possibly with the help of the conversion tables.

Outline of the Adopted Accounting Structure

As we noted above, the draft methodology, worked out by the Statistical Committee of C.I.S. with the assistance of the OECD, originally relied heavily on the ESA, but it also adapted the general categories and definitions of the ESA to specific forms of organization of economic process in the country. This refers especially to taxation, subsidization, the price system and the methods of income distribution. It should be emphasized that the instruments and mechanisms in this area are undergoing rapid changes as a result of economic reforms and therefore a number of adjustments will have to be introduced in the methodology to reconcile it with the evolving situation. For example, the introduction of value added tax and excise taxes instead of such taxes as turnover tax or taxes on fixed assets require certain amendments to the methodology dealing with the valuation of output and generation of income. The institutional changes which will emerge as a result of privatization of the economy and of introduction of genuine market mechanisms will also require changes in the methodology.

The original general structure of accounts and underlying concepts and classifications have been already modified to ensure consistency with the revised SNA. This includes, for example, the distinction between final consumption expenditure and actual final consumption, the introduction of the concepts of social transfers in kind and mixed income and the enlargement of the concept of fixed capital formation.

At the same time one may expect that some limitations of the present draft of the methodology, are likely to remain in the immediate future. These limitations largely consist of certain aggregations, simplifications and in some cases even

omissions imposed by the transitional nature of institutions and statistical constraints. The limitations especially affect the accumulation accounts and balance sheets. Thus, there is no analysis of other changes of assets in any form and the concept of change in net worth is restricted to changes due to saving and capital tansfers. The analysis of assets and liabilities is restricted for the time being to stocks of produced non-financial assets. In practice, the accounting structure adopted includes:

—the set of accounts for institutional sectors (with the above mentioned limitations);
—production accounts and generation of income accounts for industries;
—the goods and services account;
—the rest of the world account (fragmentary in practice);
—consolidated accounts (production account, generation of income account, distribution of income account, use of income account, capital account);
—input–output table;
—a supporting table with the data on stocks of produced (tangible) non-financial assets.

It should be noted that the introduction of the SNA has not stopped compilation of the conventional MPS balances and computation of the MPS major aggregates such as net material product. It has been decided to integrate the material balance into the framework of the relevant SNA accounts by making a systematic distinction, where relevant, between the flows of material goods and non-material services, as well as between material and non-material industries. This distinction is intended to ensure a degree of consistency and continuity between the estimates of the NMP and the GDP.

The notion of integration is based on the understanding that there is much in common between the SNA and the MPS and that a considerable amount of data, needed for the compilation of the SNA accounts, is available in the MPS. In many cases only limited adjustments and rearrangements are needed to meet SNA requirements.

A brief review of the other elements of the adopted accounting structure is given below.

The classification of institutional units by sectors includes five sectors: non-financial enterprises; financial institutions; general government; households and private non-profit institutions serving households. Further subsectoring is not envisaged for the immediate future largely due to statistical constraints.

The producers of goods and services are classified by the industries, distinguished in the All-Union Classification of Branches of National Economy (CBNE) which makes a clear distinction between the material and non-material spheres. In principle, the work on the introduction of the ISIC into the statistical practice was initiated some time ago, but it will clearly take a number of years before transition from the CBNE to the ISIC (Rev. 3) is achieved.

The classification of transactions adopted in the accounts includes:

—transactions in goods and services;
—distributive tansactions;
—financial transactions.

The valuation of major flows of transactions and stocks is carried out, in principle, in both current and constant prices. Gross output is valued at basic

prices and all items of disposition of goods and services, including intermediate consumption, are valued at purchaser's prices. This means that taxes on products, net, are not part of value added of industries. In other words, the sum of value added of all industries has to be increased by taxes on products (turnover tax, taxes on sales and similar taxes on products), net of subsidies on products to arrive at GDP at market prices.

The major aggregates, included in the general accounting structure, are as follows:

—GDP at market prices;
—Net domestic product at market prices;
—Gross national product (GNP) at market prices;
—National income at market prices;
—National disposable income at market prices;
—National saving;
—National expenditure (final consumption plus gross capital formation);
—Net lending/net borrowing;
—Current external trade balance;
—Current balance of the rest of the world account.

Thus, it is clear that the accounting structure is not yet complete and is designed only for the transition period. It is understood that due to the practical problems of valuating consumption of fixed assets at replacement prices the emphasis in analyses should be on the aggregates computed on gross basis.

B. Major Results of Compilation of the Accounts for 1988–90 Years

As noted above, the definitions underlying the accounts reflect to a considerable extent the recommendations of the revised SNA (available in a draft form). Thus, the accounts and figures registered in them are apparently the first attempt to implement the new SNA.

They are displayed in several tables below with brief explanatory comments.

Table 1 shows the production account for 1990. In accordance with the revised SNA, gross output is valued at basic prices and a distinction is made between taxes (subsidies) on products and other taxes (subsidies) linked to production. Intermediate consumption is computed excluding the outlays on mineral exploration which are allocated to fixed capital formation.

A special procedure has been chosen for the treatment of output of banks to take care of institutional pecularities: while the gross output of state banks (valued at cost) is allocated to general government final consumption expenditure, the imputed output of commercial banks is allocated to intermediate consumption of a notional industry, the gross output of which is taken equal to zero. For all industries the figures of gross output include only measures of legal production.

Table 2 contains summary estimates of the GDP by industries and spheres for 1988–90 extracted from the production account. Industries are defined in terms of the industrial classification adopted in the U.S.S.R. A distinction is made between material and non-material spheres to ensure links with the MPS.

The categories of final use of GDP, shown in Table 3, are computed largely in accordance with the revised SNA. Some exceptions pertaining to the treatment of banks have been mentioned above.

TABLE 1

PRODUCTION ACCOUNT BY INDUSTRIES, 1990, U.S.S.R.
(Billions of Roubles)

Industries	Gross Output at Basic Prices	Intermediate Consumption	Gross Value Added (Gross Domestic Product)
Material Production	1,661.4	882.7	778.7
Industry	956.6	614.5	342.2
Agriculture, forestry	320.6	111.6	208.9
Construction	174.6	80.5	94.1
Goods transportation	74.6	15.6	59.1
Maintenance of roads	5.6	0.9	4.7
Communication	3.1	0.2	2.9
Wholesale trade, material supply, procurement	32.0	15.6	16.6
Retail trade and catering	75.3	38.1	37.2
Information and computing services	3.3	1.3	2.0
Other branches of material production	15.6	4.5	11.1
Non-material Services	331.4	134.7	196.7
Market Services	151.4	43.8	107.6
Passenger transportation	23.9	6.3	17.6
Communication	9.8	0.8	9.0
Housing services	29.9	5.5	24.4
Public utilities and personal services	20.4	6.0	14.4
Health care, social security, physical culture and sports	15.0	5.8	9.2
Education, culture and art	14.8	3.3	11.6
Science and scientific services	30.2	15.0	15.2
Credit, insurance, general administration	7.2	1.0	6.2
Non-market Services	180.0	90.9	89.2
Health care, social security, physical culture and sports	26.7	10.5	16.1
Education, culture and art	43.3	10.0	33.3
Science and scientific services	29.8	13.8	16.0
Credit, general administration and defence	72.5	52.6	20.0
NPIs serving households	7.8	3.9	3.9
Imputed service charge of financial intermediaries		3.3	−3.3
Total of Industries	1,992.8	1,020.7	972.1
Taxes (+), subsidies (−) on products			−1.4
Net taxes on imports			55.6
Total			1,026.3

The final consumption expenditure of households includes imputed houseing services produced by owner-occupiers.

Final consumption expenditure of NPIs includes, inter alia, the value of social and cultural services provided by enterprises to their employees free of charge. The units engaged in provision of these services are allocated to the same sector as the enterprises which own them (non-financial enterprises). The non-market

TABLE 2

GROSS DOMESTIC PRODUCT BY INDUSTRIES AND SPHERES OF PRODUCTION, 1988–90, U.S.S.R.

	Billions of Roubles			Percentage		
	1988	1989	1990	1988	1989	1990
Material Production	678.5	731.0	778.7	77.1	76.3	75.9
Industry	321.0	339.2	342.2	36.5	35.4	33.3
Agriculture, forestry	165.5	182.7	208.9	18.8	19.1	20.4
Construction	85.4	92.9	94.1	9.7	9.7	9.2
Goods transportation	48.6	50.4	59.1	5.5	5.3	5.7
Maintenance of roads	4.0	4.4	4.7	0.5	0.5	0.5
Communication	2.5	2.7	2.9	0.3	0.3	0.3
Wholesale trade, material supply, procurement	13.7	15.0	16.6	1.5	1.6	1.6
Retail trade and catering	30.4	34.6	37.2	3.5	3.6	3.6
Information and computing services	1.1	1.9	2.0	0.1	0.2	0.2
Other branches of material production	6.4	7.2	11.1	0.7	0.8	1.1
Non-material Services	153.8	174.8	196.7	17.5	18.3	19.2
Market Services	82.5	99.4	107.6	9.4	10.4	10.5
Passenger transportation	14.9	16.9	17.6	1.7	1.8	1.7
Communication	8.0	8.5	9.0	0.9	0.9	0.9
Housing services	21.5	23.2	24.4	2.4	2.4	2.4
Public utilities and personal services	11.4	12.9	14.4	1.3	1.3	1.4
Health care, social security, physical culture and sports	6.0	8.0	9.2	0.7	0.8	0.9
Education, culture and art	7.8	10.5	11.6	0.9	1.1	1.1
Science and scientific services	8.8	14.9	15.2	1.0	1.6	1.5
Credit, insurance, general administration	4.1	4.5	6.2	0.5	0.5	0.6
Non-market Services	71.2	75.4	89.2	8.1	7.9	8.7
Health care, social security, physical culture and sports	13.0	13.4	16.1	1.5	1.4	1.6
Education, culture and art	28.2	28.5	33.3	3.2	3.0	3.2
Science and scientific services	11.1	13.6	16.0	1.3	1.4	1.5
Credit, general administration and defence	16.3	17.1	20.0	1.9	1.8	1.9
NPIs serving households	2.6	2.8	3.9	0.3	0.3	0.4
Imputed service charge of financial intermediaries	−2.0	−2.6	−3.3	−0.2	−0.3	−0.3
Total of Industries	830.2	903.1	972.1	94.4	94.3	94.7
Taxes (+), subsidies (−) on products	−0.1	−2.8	−1.4		−0.3	−0.1
Net taxes on imports	49.6	57.3	55.6	5.6	6.0	5.4
Gross Domestic Product at Market Prices	879.7	957.7	1,026.3	100.0	100.0	100.0

part of their services is shown as purchases of notional NPIs and then as social transfers in kind to the households. An alternative treatment, also recommended in the revised SNA, suggests treating units of enterprises engaged in the provision of social and cultural services to their employees directly as notional NPIs.

No attempts have been made to remove price appreciation of stocks from the measurement of changes in inventories. However, inflation during the period was small and therefore the distortion should be limited.

TABLE 3

GROSS DOMESTIC PRODUCT BY FINAL USE, 1988–90, U.S.S.R.

	Billions of Roubles			Percentage		
	1988	1989	1990	1988	1989	1990
Final consumption expenditure	587.0	629.8	704.7	66.7	65.8	68.7
Households	412.3	446.3	504.5	46.9	46.6	49.2
General government	154.7	161.1	172.8	17.6	16.8	16.8
NPIs serving households	20.0	22.4	27.4	2.3	2.3	2.7
Gross fixed capital formation	290.4	308.2	316.2	33.0	32.2	30.8
Change in stocks	8.3	14.6	19.1	0.9	1.5	1.9
Exports of goods and services	69.9	72.3	65.1	7.9	7.5	6.3
Imports of goods and services (−)	63.2	70.7	70.8	7.2	7.4	6.9
Discrepancy	−12.6	3.5	−8.1	−1.4	0.4	−0.8
Gross Domestic Product	879.7	957.7	1,026.3	100.0	100.0	100.0

C. SELECTED CONCEPTUAL ISSUES

Transition from the MPS to the SNA requires consideration and solution of a number of conceptual, methodological and statistical problems. They pertain to sectorization of the economy, introduction of new classifications, computation and allocation of the output of selected activities, valuation of transactions and stocks. In a number of cases the solutions of the issues, adopted by the Statistical Committee, are tentative and require further study. Some of these issues are briefly discussed below.

(a) *Measuring of Agricultural Output*

Agricultural output accounts presently for about one-fifth of total value added and therefore the methods of measuring of it deserve some attention. The definition of gross output of agriculture, adopted by the Statistical Committee, differs somewhat from those of the SNA but is consistent with the MPS. It includes own intermediate consumption of seeds and fodder. In other words, it is defined on the gross basis.

Gross output includes the value of all agricultural goods irrespective of where they are produced: by agricultural enterprises, by subsidiary plots of households or by industrial enterprises (as secondary output); on the other hand, non-agricultural goods produced by agricultural enterprises are excluded and recorded elsewhere. That is, the output of the agricultural industry is strictly consistent with the output of agricultural products.

In principle, the data needed for estimation of own intermediate consumption of agricultural goods are available; they can be obtained from the supply and use tables which are compiled annually for a considerable number of agricultural products or goups of products both in physical and value terms. These tables cover about 90 percent of total output. The estimates of own intermediate consumption could be used, in principle, to derive gross output figures net of own intermediate consumption. However, the advantages of such a conversion are not entirely clear under the present circumstances.

Firstly, the concept of gross output seems to be suitable and useful for the compilation of input–output tables. Secondly, the figures of gross output are more

invariant than gross output to the changes in organization of the economy: mergers and divisions of enterprises etc. One may expect in the immediate future dissolution of many collective farms and the emergence of numerous relatively small private farms in their place. Under these circumstances the gross gross output figures would reflect the picture more consistently during the change. In any case, computation of output on the gross gross basis does not affect the measurement of value added because of symmetrical treatment of output and intermediate consumption.

The gross output of agriculture also includes the value of agriculture services. Market agricultural services are included also in the intermediate consumption of the industry. However, a significant part of the services is provided in the country by budgetary institutions free, or almost free, of charge (e.g. irrigation systems services, testing laboratories, services of aviation to agriculture, etc.). Therefore the gross output of these units is valued at cost and treated as general government final consumption expenditure rather than as intermediate consumption of the agricultural producers which benefit from these services. This is another example of the effect on the international comparability of GDP of different institutional arrangements in the economy. The changes in financing of the above units which may occur as a result of the current reforms may also complicate comparisons of the GDP over time.

(b) *Treatment of Selected Activities*

There are a number of economic activities which are highly subsidized or entirely financed by the government, the treatment of whch seems to require some discussion. The allocation of the units engaged in these activities to various sectors and valuation of their output are not always immediately clear and recommendations of the SNA have to be applied with care. The decisions on the above issues often depend on the way the activities are organized and their expenses are financed, but there are many borderline cases.

Probably the most important such activity is housing services. There is great diversity in the organization and financing of these services. Housing units are owned by: (i) local government, (ii) cooperatives, (iii) enterprises and agencies and (iv) households. Differences in ownership and mode of financing of the costs should affect allocation of the units to institutional sectors and the appropriate methods of valuation of output.

Housing units owned by local government cover their costs partly from the rent (about 30 percent) and partly from state subsidies. Thus, the first question which arises here is whether the producers are market or non-market. The rent, low as it is, is still believed to be sufficient to affect demand for rental housing. So, in accordance with SNA recommendations, the allocation of housing units in question to non-market producers would be not an appropriate solution. Therefore the housing units owned by local government have been allocated to non-financial enterprises (rather than to the general government sector). The gross output of housing units owned by local government is valued at basic prices, but consumption of housing services, as an item of final consumption expenditures of households, is taken to be equal to actual rent. The difference is treated as a subsidy on production.

Some of the housing units owned by enterprises and government agencies provide their services free or almost free. These units are considered as establishments of the enterprises concerned and are not treated as separate institutional units. Their output is valued at cost and that part not covered by actual rent paid is allocated to final consumption expenditure of non-profit institutions financed by transfers from the enterprises or final consumption expenditure of general government. Both of these latter are included in social transfers in kind, so the total value of the housing services forms part of actual final consumption of households.

Dwellings occupied by their owners are considered as unincorporated enterprises of households, as the SNA suggests. The output is imputed on the basis of costs (rather than in terms of market rent). One of the reasons for this is that many dwellings owned by households are located in rural or semi-rural areas and it is difficult to find an appropriate market rent for similar buildings. The data which would make possible stratification of dwellings occupied by owners are not currently available either. The costs include the estimates of consumption of fixed capital and intermediate consumption including payments for current repairs of buildings; no imputation for compensation of labour is made.

Forestry is another area where certain conventions are necessary to deal with the issues of sectorization and valuation. The units engaged in forestry are controlled and financed by the government but by convention they are allocated to non-financial enterprises, because their output are goods and not services. The output is taken equal to the costs and recorded on the disposition side as an item of capital formation.

Government units engaged in maintenance of roads are allocated to the general government sector. Their services are considered to be non-market output which is valued at cost and allocated to general government final consumption expenditures.

(c) *Computation and Allocation of Output of Financial Intermediaries*

This topic, controversial for market economies with a long history of national accounts, is even more complex in countries in transition, such as any member state of the C.I.S., where formation of the two-tier banking system is not yet complete. In the recent past the State Bank (Gosbank) was not entirely autonomous from the government and in fact was an integral part of the state budgetary system. The bank automatically financed the state budget deficits, provided interest free credits to state agencies and its many functions were similar to other government bodies engaged in general management and regulation of the economy.

In 1988 commercial and cooperative banks were allowed by special government decree and their number started to grow rapidly. However, at the beginning of the 1990 the State Bank still retained many former functions and the role of commercial banks was still limited.

Under these circumstances the accounting procedures currently adopted with respect to activities of financial intermediation have been somewhat simplified. They are described briefly below.

All the financial institutions are subdivided into: (i) state banks (Gosbank and a number of other state banks with similar functions) and (ii) commercial banks. The latter include commercial and cooperative banks, but also some state banks which operate on a commercial basis. On the basis of the functions performed by the banks the first group is allocated to the general government sector (as a subsector), the second group is allocated to financial institutions.

The non-market output of state banks is valued at cost and allocated to general government final consumption expenditure. Gross output of the financial institutions includes the following components:

—market output of commercial banks associated with financial intermediation;

—market output of state and commercial financial auxiliaries.

The market output of commercial banks (intermediation) is imputed, i.e. taken equal to an excess of property income received (excluding property income on own funds) over interest paid out. In practice, however, the output is computed as a difference between all interest received and all interest paid out because the other types of property income received by banks are negligible for the time being and it is not feasible in practice to separate interest received on own funds.

The imputed output of intermediation is allocated to the intermediate consumption expenditure of a notional industry, the gross output of which is taken equal to zero. The output of financial auxiliary services is taken equal to actual payments for service and allocated to both intermediate and final consumption.

The treatment adopted for activities of banks is regarded as provisional and will be revised in the foreseeable future in response to forthcoming changes in organization of the banking system and implementation of the recommendations of the revised SNA, which prescribe allocation of imputed output of financial intermediation to both intermediate and final consumption (as well as to exports and imports). A simplified approach is likely to be used for this allocation, say, proportionally to the volume of assets of various depositors.

The procedure currently adopted for computation and allocation of gross output of insurance institutions is also somewhat simplified. Thus gross output of non-life insurance is taken equal to an excess of premiums over claims, that is for simplification sake the interest on reserves and increase in reserves of these kinds of insurance are disregarded for the time being.

The treatment of activities of insurance institutions is also likely to be revised as soon as institutional changes assume a more tangible form: the emergence of private companies competing with the state insurance body, transformation of the latter from a state monopoly integrated into the state budgetary system into autonomous self-accounting entities etc. The monopolistic position of the state insurance body makes it possible to realize a considerable surplus, which may implicitly include an element of tax on product similar to the position of a fiscal monopoly. This element may be computed as a difference between the surplus and normal profit. The issue deserves further exploration and discussion.

(d) *Measurement of Production Activity of Households*

The level of activity of this sector is likely to increase in the near future and therefore it is essential to ensure accurate measurement of its output.

The household sector is difined in accordance with the SNA to include unincorporated enterprises owned by households (except those which can be classified as quasi-corporations). The output of households, as defined in the SNA, includes: (i) the production of all goods, (ii) the production of services (material and non-material) delivered to other households or other institutional units (either as sales or barter), (iii) the production of housing services by owner-occupiers for own consumption and (iv) domestic services provided by paid domestic staff.

In practice, there are some deviations from these definitions due to statistical constraints, but they are relatively unimportant from a quantitative point of view; nevertheless they will be mentioned below.

The production of goods, which in practice is recorded in the production account of households, includes:

—production of raw agricultural goods (at subsidiary plots of households and private farms);
—processing of agricultural goods (production of meat, dairy goods, wine, cooking oil etc.);
—own construction of buildings;
—collecting of wild berries, mushrooms, plants, fire-wood, wastes etc.;
—fishing;
—activity of craftsmen (furniture, utensils, toys, souvenirs etc.).

TABLE 4

PRODUCTION ACCOUNT OF HOUSEHOLDS BY INDUSTRIES, 1990, U.S.S.R.
(Billions of Roubles)

	Gross Output	Intermediate Consumption	Gross Value Added
Material production	98.2	30.4	67.8
Industry	3.3	1.1	2.2
Agriculture	89.3	25.8	63.5
Construction	4.6	3.5	1.1
Other branches of material production	1.0	—	1.0
Non-material services	8.3	1.7	6.6
Housing services	8.1	1.7	6.4
Personal services, health care, education, culture and art	0.2	—	0.2
Total	106.5	32.1	74.4

The production of the above mentioned items is also normally recorded in the material balance and the sources of data were established long ago. For example, a system of supply and use tables for major groups of agricultural commodities is compiled in both physical and monetary terms and a wide range of sources is used for this purpose (e.g. records of procurement agencies, surveys of households, surveys of sales of goods at the free market etc.).

The gross output of goods is defined to include: (i) sales, (ii) goods used as remuneration of labour in kind, (iii) own final consumption and (iv) own capital formation. This applies especially to computation of agricultural output. However, in some other cases the output is taken equal to sales for practical reasons.

Despite these limitations there is a reason to believe that coverage of output of goods is rather satisfactory (putting aside illegal production).

More complex problems are encountered in the measurement of output of services. The case of housing services produced by owner-occupiers for own consumption was discussed above.

The other component of output of services is the output produced by individuals, or unincorporated units owned by households (doctors, teachers, lawyers, accountants, typists, photographers etc.) and rendered to other institutional units. The major sources of data used for calculation of this type of output (households, data on taxes etc.) are not yet well established and the estimates obtained on the basis of these sources may need adjustment.

When people engaged in literary and artistic work are employees, their income is counted as compensation of employees. The income of persons who work on own account should be recorded as gross output of unincorporated enterprises of households but efforts to collect data on this income have not yet been successful.

As noted above, the gross output figures recorded in the production account of households do not include illegal production. Thus, the output of illegally produced spirits or income obtained as a result of prohibited transactions with foreign currencies are excluded. Though some estimates of output of illegal activities are available at the Goskomstat, they are not regarded as reliable enough to be included in GDP. Besides, the decision on which illegal transactions should in practice be included in the measurement of GDP has not been made yet and require further study and discussion.

(e) *Sources of Data*

One of the important issues associated with the introduction of national accounts refers to the adaptation of the existing reporting system to the requirements of the SNA as well as to the introduction of new sources of data. This problem has a more general connotation because of economic reforms in the country and the necessity to ensure consistency between the information system and emerging institutions and mechanisms.

The statistical reporting system of the country was established as a part of the administrative management of the economy and focussed on these aspects of economic analysis which were of the immediate interest for the state planning authorities, i.e. on production and distribution of material resources. Considerably less attention was paid to financial aspects for the simple reason that the role of the financial institutions and instruments is a rather limited one in a "command" economy and investments are financed primarily with the help of funds allocated from the state budget rather than obtained on the financial market.

The existing reporting system provided an adequate data base for compilation of the MPS balances where the emphasis was put on recording flows of material goods and where analysis of financial transactions and financial assets was never among the priorities. These data were used for compilation of national accounts of the country for the period covered.

These data do not always meet the definitions of the SNA and certainly do not correspond one to one to the categories of the SNA.

Despite these and other limitations the available information allowed compilation of major current accounts and capital account both for the sectors and economy as a whole. However, the information on financial transactions was

thought to be inadequate and compilation of the financial accounts was postponed. The same applies to the compilation of the balance sheets where in addition to information problems, relating mainly to financial assets and liabilities, there was a lack of experience, difficulties with valuation of assets, etc.

At the begining of the 1990s the reporting system started to undergo considerable changes: the volume of information submitted by enterprises to the statistical authorities was reduced; in particular, the enterprises were allowed not to submit their bookkeeping data on many financial aspects of their activities. The number of new enterprises not covered by the regular reporting system continued to grow rapidly. These include commercial banks, "small" private enterprises, cooperatives, joint ventures, commodity exchanges etc. A special "reduced" system of collecting information from these units was established for cooperatives in 1988, for joint ventures in 1989, for "small" enterprises and commodity exchanges in 1992 and it continues to be modified.

Further transformation of the economy will require further changes in the information system. They will be introduced by the authorities of the individual members of C.I.S. Thus, there is an intention to introduce registers of all types of enterprises which would serve as a base for organization of economic censuses and surveys. There is also an intention to introduce the new system of bookkeeping for enterprises and banks which would, among other things, facilitate compilation of national accounts. Many of the C.I.S. countries have reinstated the practice of receiving and processing of bookkeeping reports of enterprises by the statistical agencies to recover information on the financial aspects of enterprises' activity.

(f) *Computation of Data in Constant Prices*

Broadly speaking, the problems of compilation of the national accounts and of the MPS balances in constant prices are similar and therefore certain practical experience in this area has been accumulated earlier. There are, however, several aspects which are new. One of them refers to valuation of non-market services in constant prices. This is a familiar topic to the countries with a long history of national accounts and the general approaches which are employed to deal with it are well-known. The methodology adopted by the Statistical Committee of the C.I.S. relies on this experience and international recommendations. In other words, current values of non-market services are converted into constant prices with the help of price indices compiled for the input components or by extrapolating base year current values with the help of physical indicators. The Statistical Committee of the C.I.S. keeps experimenting with both approaches, but no final decisions have been made. No attempts were made to introduce the adjustments which would take care of the possible changes in productivity.

Basic questions arise when services which are provided free of charge in the base year are marketed in the current year or when considerable changes occur in the mode of financing the costs of the services; for example, when the share of households in financing of the costs of services increases noticeably over the period. The approach, adopted by the Statistical Committee to deal with such cases, rests on the assumption that the changes in the mode of financing of costs should not affect the volume indices of services. It is understood that the problem requires further study because such cases are rather common at present time.

Another important methodological problem refers to the treatment of price discrimination. There are many cases when the same commodity is distributed to users through different channels and at different prices. If changes in the pattern of distribution occur, the question arises whether the resulting increase/decrease of the GDP should be regarded as a volume change or a price change. The situation is complicated by the fact that in practice price discrimination coexists with the variations in prices which also reflect differences in quality of goods and it is not easy to isolate "pure" price discrimination.

A more fundamental problem in the area relates to the organization of entirely new price statistics since in the past price statistics were designed to monitor changes in prices registered in the price lists rather than changes of prices of actual transactions.

The other serious deficiency of the price statistics was the failure to record hidden changes in prices when new modifications of the old commodities appeared on the market at higher prices. As a consequence, the volume indices of the NMP were, as a rule, overestimated.

With economic reforms in full swing, the old methods of price statistics are gradually replaced by those which are internationally recommended. The first results of compilation of new price statistics (based on the concept of a consumer basket) resulted in a downward revision of the volume indices of the NMP and the ability to obtain more accurate deflators for the GDP.

It is clear that the work in this area is at its very early stages and many of the above mentioned deficiencies of the price statistics have not been removed.

Conclusions

The work on the introduction of national accounts into the regular statistical practices of the member states of the C.I.S. is far from complete. However the first steps have been made and there are some results which provide the basis for further work. It is hoped that the publication of the results of the compilation of the accounts for the former U.S.S.R. are useful as a guide to the staff in the C.I.S. countries who are introducing the SNA into their statistical practices and are faced now with the same tasks.

The Statistical Committee of the C.I.S. intends to continue work in this area. As noted above, some solutions adopted are tentative and are likely to be revised to reflect forthcoming changes in the economy. Efforts will be made to apply all aspects of the new SNA which are deemed suitable for conditions of countries of the C.I.S. Valuation at constant prices is among the most urgent needs and it will be the subject of the further cooperation between the Statistical Committee of the C.I.S. and OECD. Most of the accumulation accounts and in particular the financial account are yet to be introuduced. New sources of data needed for compilation of the national accounts will have to be developed.

Statistical offices of individual member states of the C.I.S. continue to undertake urgent steps in order to introduce the SNA into their regular statistical practices. Considerable progress has been achieved, for example, by the State Committee on Statistics of the Russian Federation which is engaged in introducing of the main accounts of the SNA. Some tentative estimates of the major accounts

for the Russian Federation were produced and published by the World Bank for 1989–90. The statistical authorities of Russia are guided by the governmental programme of the transformation of statistics according to international standards which was approved by the Russian Parliament at the end of 1992. Similar programmes which envisage the introduction of the SNA are adopted in some other C.I.S. countries. The Statistical Committee of the C.I.S. is undertaking efforts to coordinate work of the statistical offices of the individual member states in this area. It convenes periodical meetings of the statisticians from the C.I.S. member countries to provide training and explanations of the meterials design to ensure the comparability of data among member countries. It also undertakes efforts to collect data from statistical services of C.I.S. member countries on GDP and other important national accounts aggregates and to disseminate this information both inside and outside the C.I.S.