A REVIEW OF SELECTED ASPECTS OF THE UNITED NATIONS SYSTEM OF NATIONAL ACCOUNTS IN THE LIGHT OF COUNTRIES' EXPERIENCES*

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A review of the United Nations System of National Accounts and its implementation by countries is presently being conducted at the United Nations Statistical Office. This article presents a personal and selective account by the author of the results of that review and its consequences for the present structure of the SNA.

Information is included on the level of response by countries for the tables of the SNA national accounts questionnaire. It shows that this response is at present sparce, except for the tables on GDP by end use, cost structure and kind of economic activity.

On the more detailed level the feasibility of introducing integrated sector accounts into the system has been examined and different approaches compared. Country practices suggest that one way of facilitating the introduction of such accounts would be to eliminate one essential feature of the dual classification of the SNA, i.e., the distinction between quasi-corporate and other unincorporated enterprises. Other modifications of the SNA structure implied below are the introduction on a limited scale of articulation of transactions, the inclusion of additional aggregate income and balancing items, a reallocation of data between the main accounts and the supporting tables, and a better integration of the SNA matrix with the accounts and tables of the system. A reduction of the present number of independent classifications in the SNA is suggested, based on links between categories of different classifications that are assumed in country responses to the questionnaire. A suggestion is made for a uniform valuation of goods and services and income flows, to replace the present complex valuation guidelines on approximate basic and factor values and producers' prices.

INTRODUCTION

This paper discusses some of the major issues that are covered in a review study by the United Nations Statistical Office (UNSO), of its System of National Accounts (SNA).[1] The purpose of the review is to detect apparent shortcomings of the system that have been found while using it, and to assess the consequences of users' changing requirements and new developments in the methods of compiling national accounts estimates. The review started in 1975 when a seminar for national accounting experts of developing countries was convened in Caracas (Venezuela) by UNSO in co-operation with the Banco Central de Venezuela.[2] Since then the issues raised in Caracas were further explored at UNSO and others which came up in the course of the review were examined as well. A comprehensive report on the findings of the review was recently discussed at a meeting of the

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[1]Studies in Methods, Series F, No. 2, Rev. 3, United Nations, New York.

[2]A summary of the discussions at the Caracas Seminar is given in *Report of the Interregional Seminar on the Revised System of National Accounts*, United Nations, 1976 (DP/UN/INT-72-104).

Conference of European Statisticians in Geneva[3] and a revised version has been considered by the United Nations Statistical Commission which met in New York in the beginning of 1979.

The present report is a personal account by the author of the progress of the SNA review project at UNSO, in which he has participated from the very beginning. The questions dealt with here are a very limited selection of those covered in the above mentioned more comprehensive reports. They concern the general structure of the system (section II), and the classification (section III) and valuation (section IV) of production account transactions. To give the reader a general overview of the actual implementation of the SNA by countries, section I presents an analysis of observed country practices in compiling the tables of the SNA national accounts questionnaire.

The main sources from which the SNA review study—and also this paper—draws are the Caracas seminar documentation[4] and the responses to the SNA national accounts questionnaire as summarized in the National Accounts Yearbook[5] published by the United Nations. Comparative analyses have also been made of SNA on the one hand and on the other the European System of Economic Accounts (ESA),[6] the System of Balances of the National Economy[7] applied by members of the Council for Mutual Economic Assistance (CMEA), and the national accounts publications of some individual countries.[8] Partial systems such as those of the International Monetary Fund relating to government finance statistics[9] and balance of payments[10] data were taken into account as well. Furthermore some issues reflect the differences between the SNA recommendations and UNSO guidelines developed for related fields such as input-output tables, public sector accounts, statistics on tangible assets, balance sheet and revaluation accounts, income distribution statistics, welfare-oriented measures in national accounts, recent work on classification schemes and the treatment of non-market transactions.

[3]The relevant documents are "Review of the implementation of the revised System of National Accounts" (CES/WP.22/51, 21 December 1977), "National practices and experience in implementing the revised System of National Accounts" (CES/WP.22/52 and 52/Add.1, 19 January 1978), "Report of the Ninth Session held in Geneva, 13–17 February 1978" (CES/WP.22/55, 27 February 1978). All documents are issued by the Economic Commission for Europe, Conference of European Statisticians, Working Party on National Accounts and Balances.

[4]See Annex III of the Report noted above (footnote 3).

[5]The latest issue is the Yearbook of National Accounts Statistics 1976, United Nations, New York, 1977, Vols, I and II (Sales No. E.77.XVII.2).

[6]Statistical Office of the European Communities, *European System of Integrated Accounts (ESA) 1970*, 2nd edition, Brussels, July 1975.

[7]*Basic Principles of the System of Balances of the National Economy*, United Nations, New York 1971, Studies in Methods, Series F, No. 17.

[8]One of the studies made was a comprehensive analysis of the Netherlands national accounts, which was published in a mimeographed report by the Netherlands Central Bureau of Statistics, under the title "A comparison between the structures and information contents of the Netherlands national accounting system and those developed by the Statistical Offices of the U.N., OECD and EEC." (Nota nr. 984-75-E8).

[9]International Monetary Fund, *A Manual on Government Finance Statistics (Draft)*, June 1974.

[10]International Monetary Fund, *Balance of Payments Manual*, fourth edition, 1977, Washington, D.C.

I. Summary of Responses to the UN National Acounts Questionnaire

This section analyzes the responses by 110 countries—of which for statistical purposes 85 are classed as developing countries and 25 as developed—to the SNA national accounts questionnaire, as summarized in the *Yearbook of National Accounts Statistics*. The analysis focuses on table segments of the SNA questionnaire that have been completed. The table segments are those parts of the tables that can be compiled independently and that are therefore not necessarily all prepared by the countries concerned. Sixty-seven table segments are distinguished. An examination of individual transaction items presented in the table segments will not be dealt with in this section but covered in the remaining parts of this paper.

The results of the analysis are presented in Tables 1 and 2 of the Annex. Table 1 shows the percentage of countries that have completed each of the table segments of the questionnaire. The numbers appearing in the first column of the table are the questionnaire table numbers, supplemented in some instances by an A, B, C or D in order to indicate the segments of the table. The tables have been separated into four groups, i.e. Tables 1–6 which relate to the economy as a whole, Tables 7–9 which present detailed information on final expenditure, Tables 10–16 which cover the income and outlay and capital finance accounts of domestic sectors, and table 17 which relates to transactions with the rest of the world. In Table 2 the same table segments have been ranked according to the number of countries that submitted data for them and grouped together into three categories. The first group of table segments is completed by approximately 50–100 percent of the developing countries, the second group by 15–50 percent and the group of table segments with the lowest response is submitted by less than 15 percent of the countries.

The tables show that the over-all response rate to the SNA questionnaire is rather low at this juncture. Only the three tables on Gross Domestic Product by end use, by cost structure (income shares) and by kind of economic activity are completed by more than 90 percent of the countries. This is the hard core of tables for which near-complete inter-country comparisons are possible. Furthermore more than one third of the tables are compiled by less than 10 percent of the countries.

The summary Tables 1, 2, 3, 4a and 4b, listed in Table 1 under accounts for the nation as a whole, are generally well filled out by developing as well as developed countries. The response rate falls off rapidly, however, as the amount of detail asked for increases. Most of the detailed tables on final expenditures have a low response rate in developing countries, except for the table segments on gross capital formation by type of goods which are reasonably well filled out. The response rate for these tables is much higher among the developed countries. The response rate for information on institutional sectors is highest for general government and somewhat lower for the subsectors of general government. Very few countries provide sector or subsector information for the financial and non-financial enterprise sector or for the household sector. The lack of information on changes in assets and liabilities by sectors is particularly striking. The

various table segments on external transactions have a much better response in both developing and developed countries. This applies in particular to the segments on imports and exports of goods and services and on income and outlay transactions with the rest of the world. The low response rate for both developed and developing countries with regard to the table on supply and disposition of goods and services in current and constant prices, in spite of the availability in many countries of input-output information, is surprising. A possible reason may be that the present table is ill-suited to accommodate the available data.

All table segments, except one—table 4a on Gross Domestic Product by kind of economic activity in current prices—have a higher response rate for developed than for developing countries. The priorities in compiling the various tables are roughly the same for the two groups of countries, although there are some differences in emphasis. For example the developing countries seem to accord a higher priority to all tables on GDP by kind of activity and to the table on gross fixed capital formation by type of goods in current prices. The response rates of developing countries for those tables are much closer to those for the developed countries than those that apply to other tables. The emphasis of the developed countries is more on the detailed presentations of private final consumption expenditure by object, gross fixed capital formation by kind of economic activity and on the sector and subsector tables concerning income and outlay and accumulation and finance transactions.

One should be careful in extending the above conclusions on the response rate to the SNA national accounts questionnaire to national accounting practices in general. One reason is that in the evaluation of the response rates presented in this paper, table segments are assumed to be completed if some—but not necessarily all—information is presented for at least one of the years of the five year period 1969–74. Also the responses to the national accounts questionnaire do not necessarily reflect all national accounting information available in the countries. Where some countries might adjust their data in conformity with the SNA guidelines, others might not make such an adjustment and might limit the information submitted to what is available in exactly the form required in the questionnaire. Furthermore there might be national accounting information which is available in the countries but which is not asked for in the questionnaire. Another bias is introduced by the UNSO policy of not sending all questionnaire tables to all countries, but only slightly more than they have completed in a previous reporting period. Countries with a low response rate in the past therefore tend to continue this low response rate for a considerable period of time.

II. The SNA Structure

A system of national accounts is at the same time an information system and an analytical structure. In an information system, the coverage, classification and valuation of the data are of primary importance. In an analytical structure the emphasis is on the arrangement and presentation of the data and in particular on the identification of useful aggregates and balancing items. The analytical structure is usually embodied in the main accounts. The usefulness of a national accounting framework is, however, not limited to the type of analysis implied by

its structure alone. The user can, if he wishes, rearrange the data so that they become more useful for his specific purposes. Similarly countries might design national accounting schemes of a quite different form, based on a very similar information content. This section will deal with a few of the most important aspects of the analytical structure of the SNA, where country practices and alternative international recommendations differ from the SNA guidelines.

A. *Dual Classification*

The SNA uses two types of major transactor groupings. The production accounts are presented separately for industries, producers of government services and producers of private non-profit services, while for the income and outlay and capital finance accounts an institutional sectoring is used, which distinguishes between corporations and quasi-corporations, general government and private non-profit institutions, as well as households and the rest of the world. The units of classification of the two groupings differ—establishment type units are recommended for classifying production account transactions and enterprise or other institutional units for transactions of the income and outlay and capital finance accounts, and the coverage of the two sets of categories differs as well. This is caused by the different allocation of public and private unincorporated production units, which are included among industries in the classification of the production accounts and, depending on whether they are public or private units, with general government or with households and private non-profit institutions for purposes of the income and outlay and capital finance accounts. An integrated set of production, income and outlay and capital finance accounts for the same transactor grouping is therefore not available in the present SNA. The duality becomes even more pronounced when a further breakdown of the two groupings is attempted. For example, if an activity breakdown were introduced of production accounts on the one hand and income and outlay and capital finance accounts on the other, agriculture in the activity classification would include in addition to the agricultural activities of corporations and quasi-corporations, such activities conducted by private and public unincorporated units; but the non-agricultural secondary activities of the corporations and quasi-corporations in question would be excluded. On the other hand in an activity breakdown of the corporations and quasi-corporations sector, the agricultural sector would cover all activities of the corporations and quasi-corporations mentioned before—i.e. also their secondary non-agricultural activities—while agricultural operations conducted by private and public unincorporated units would be excluded.

Much discussion was devoted at the Caracas Interregional Seminar and also at the recent Geneva meeting of the Conference of European Statisticians to the establishment of integrated sector accounts, not only for the institutional sectors distinguished in the SNA but also for such sectors as the key export sector, the foreign dominated sector, the public sector, the rural sector or other sectors which have a major impact on the development of the country and are therefore a special concern in government policy.

There are three approaches used or discussed that might be followed in introducing such integrated accounts into the main SNA framework. The most radical one is to replace the main framework of the system by integrated sector

accounts. This is to some extent the point of view of Dudley Seers,[11] who suggested that countries start with the compilation of integrated sector accounts for transactor groupings that are a special concern in government policy and for which statistical information is readily available. The number of sectors for which such accounts are established should be gradually expanded following the statistical development in the country, and only at a much later stage should an effort be made to integrate the sector accounts into a national accounting framework. Another method would be to add to the existing framework production accounts that are classified by institutional sectors or subsectors. For example, Venezuela,[12] one of the few countries that has applied these ideas, has developed sector accounts for the public sector which are further subdivided into accounts for central, regional and municipal government, administrative entities and government enterprises—and for the oil sector. These accounts are compiled in addition to the SNA sector and activity accounts. The European System of Economic Accounts (ESA) similarly includes integrated sector accounts for general government, financial institutions and private non-profit institutions serving households. Due to statistical difficulties of separating and integrating with households the production accounts of private unincorporated enterprises, no separate integrated accounts for non-financial corporations and quasi-corporations and for households have been included in that system. The third approach to integration is the one recommended in chapter IX of the SNA, which proposes maintaining the dual classification of the main SNA framework but introducing an additional classification in order to integrate special sector accounts with the main framework. For example in establishing public sector accounts, production accounts are presented separately for producers of government services and public industries, and income and outlay and capital finance accounts are required separately for general government and for public corporations and quasi-corporations. Thus the two types of accounts are not integrated; the only additional distinction that has been introduced in the main framework is that between public and private. Similar sector accounts are recommended for the rural sector by distinguishing between rural and urban units, and also for key kinds of economic activity by distinguishing between units that cover these activities and other units.

From the statistical compilation point of view, the Seers approach is an attractive one, because it keeps pace with the statistical development of the country. Analytically there is, however, the disadvantage that the special sector information cannot be related to data covering the economy as a whole, at least not in the first stages of statistical development. Nor is comparison possible with information covered in accounting structures of other countries as the sector breakdown might differ from country to country. It furthermore would require a change in the priorities of compiling national accounts, where presently countries often start by compiling production account transactions for all transactor groups and only later proceed to the compilation of income and outlay and capital finance

[11]Dudley Seers, "The Structure, Content and Uses of the Revised SNA in the Light of Requirements and Circumstances of Developing Countries", prepared for the Caracas Interregional Seminar on National Accounts, December 1975.

[12]Published in *Informe Economico 1975*, Banco Central de Venezuela.

data. The ESA and Venezuelan approaches are statistically more burdensome as the sector accounts are compiled in addition to the main system. The ESA approach has furthermore the disadvantage that it has avoided setting up integrated sector accounts for the sector for which it would be most useful, i.e. the enterprise sector. The SNA recommendations, although statistically equally burdensome as the previous two, have not resulted in integrated sector accounts and are therefore analytically less useful.

Whatever approach is followed, it seems that the enterprise or institutional unit, rather than the establishment type unit, would have to be used as the statistical unit in separating the key or special sectors from the remaining sectors of the economy. If this is so, more specific requirements as to the coverage of such enterprise units would be required than are included in the present SNA guidelines, as well as criteria for the allocation of such units to the special sector accounts. Further clarification is needed on questions such as the following: Should a foreign corporation that is mainly operating in the country in the field of agriculture but which also covers some non-agricultural activities be allocated for all its activities in the country in question to the agricultural sector or only for its agricultural part? Should enterprises that are only marginally involved in agricultural activities still be counted as a part of the agricultural sector? If not, how large should their agricultural activity be, in order for them to be counted as agricultural enterprises?

A related question concerns the inclusion in the non-financial corporate enterprise sector of large and important unincorporated enterprises which keep accounts separate from those of their owners, i.e. the so-called quasi-corporations. As these units were assumed to act like corporations, this statistical refinement introduced in the SNA was aimed at making the coverage of the enterprise sector more relevant for economic analysis. Instead of having led, however, to clearer economic categories, a survey of country practices shows that considerable heterogeneity among the data presentations of different countries has been the result. A majority of the countries does not distinguish quasi-corporate enterprises at all. Others only make the distinction in the public sector, and of these the majority integrate the remaining unincorporated departmental enterprises with producers of government services, thus eliminating the distinction between this major activity category and general government. Of the few countries that identify private quasi-corporate enterprises, most effectively treat them as unincorporated enterprises by equating withdrawals from entrepreneurial income of such units to their operating surplus, by not distinguishing any additions to their reserves or savings and by treating any finance from such reserves as a liability to the sector of ownership of the enterprise. In other cases capital of quasi-corporations is not included in capital formation of the enterprise sector, or alternatively capital formation of all unincorporated private enterprises is included in the enterprise sector. Furthermore direct taxes of the enterprise sector do not always reflect such taxes paid by quasi-corporate units. In other words, some transactions of the corporate and quasi-corporate units are covered, and others are not.

It seems justified to conclude from these experiences that some simplification is needed. For the public sector the distinction of quasi-corporate enterprises

seems to be in order. However, the remaining public unincorporated enterprises (departmental enterprises) are probably quantitatively so unimportant that it does not seem worthwhile to separate them from producers of government services. This would result in producers of government services and general government having the same coverage, and would facilitate the introduction of integrated sector accounts for the public sector, with a uniform coverage in terms of transactor units of transactions of the production as well as income and outlay and capital finance accounts. On the other hand, in view of the unimportance of quasi-corporations in the private sector and because it is difficult to separate all their transactions from those of households it is advisable not to distinguish them for this sector but to include all private unincorporated enterprises with households. Such treatment seems more adequate than to integrate them with the enterprise sector as is often done, because it leads in a similar manner as in the public sector, to a uniform coverage in terms of transactor units of all transactions, and therefore to integrated enterprise accounts that are analytically more useful.

B. *Aggregate Income Concepts, Balancing Items and the Breakdown of the Accounts*

There is no direct link in the SNA accounts and tables between the presentation of aggregate income concepts in the consolidated accounts for the nation and the presentation of data in the production, income and outlay and capital finance accounts. The consolidated accounts present GDP and national disposable income as income aggregates, but activity contributions to GDP—i.e. value added—are not explicitly presented in the production accounts, nor are sector contributions to national disposable income separately identified in the sector income and outlay accounts. In several national accounts publications of countries and also in the European System of Economic Accounts (ESA) such links have been shown. In ESA furthermore an identical breakdown has been included for the consolidated accounts for the nation on the one hand and the activity and sector accounts on the other. Thus transactions in the consolidated accounts can be derived as simple sums of transaction values in the activity and sector accounts. Such consistency in the accounting breakdown and in the presentation of the aggregate income concepts would help the user to understand much more easily the relation between the data in the two sets of accounts, and it would furthermore have the advantage that mutual checks of data can be easily made in the compilation process. The activity contributions to value added and the sector contributions to national disposable income could be made more explicit in the SNA by a further subdivision of the production and income and outlay accounts as is done in ESA, or by presenting the two aggregates as subtotals in the otherwise unchanged SNA accounting structure. For value added an alternative method is followed in the Dutch national accounts, where the ESA sub-account that shows the composition of value added is integrated with the income and outlay account. As a result of this method, receipts as well as disbursements regarding value added components, which are presently included in different SNA accounts, are both presented as items of the income and outlay accounts. Although this would add to the clarity of the presentation, it is not feasible in the present SNA, as there are no

integrated production and income and outlay accounts for the same transactor groupings.

The other question that arises when the SNA is compared with alternative national accounting schemes is whether all income concepts and balancing items that are relevant in analysing the data are explicitly presented in the system. Various countries still use the former SNA concept of GNP and for reasons of reconciling the SNA data with the information presented by those countries, there would be an advantage in explicitly identifying in the accounts this concept and also national income at market prices, which is in the present system only identified in one of the supporting tables. With regard to the balancing items, the U.S. accounts show profits instead of operating surplus in their enterprise accounts. Though separate identification of such a concept would fit in with the present system—profits would be operating surplus plus net interest and net rent and royalties received—it would present difficulties for those statistically less advanced countries that only compile production accounts. Other countries show alternative breakdowns of the capital finance accounts. Some introduce additionally a balancing item called financial surplus which is defined as the difference between savings on the one hand and fixed capital formation, changes in stocks and net purchases of land and intangible assets on the other. The government accounts presently prepared by the EEC Statistical Office introduce a balancing item called net surplus to be allocated or net deficit to be financed which is the sum of the SNA concept of net lending plus the difference between changes in liabilities and assets in the form of loans, advances and equities. Both concepts have some advantages as against the net lending concept used in the SNA. Financial surplus as a balancing item has the advantage that it avoids the distinction between capital transfers and loans received, which is often difficult to make in the case of developing countries where development loans might be received on soft terms, or where such loans are rescheduled or even cancelled by the donor countries. The concept of net surplus to be allocated or net deficit to be financed similarly makes no distinction between transfers and loans, advances and equities that are intentionally made, while it separates them from transactions in assets and liabilities that have a more residual character.

C. *Articulation of the Transactions*

Articulation of transactions is restricted in the present SNA to the transactions in the consolidated accounts only. In the production accounts for activities and in the sector income and outlay and capital finance accounts this feature has not been included. Articulation as meant here refers to the three-dimensional classification of transactions by type and by accounts of origin and destination. The three-dimensional classification of the production transactions would be available in the supplementary input-output tables of the system, but not in the class II production accounts. In the income and outlay and capital finance accounts articulation is often implicitly available. Certain types of transactions presented there can only originate in or be destined for specific sector accounts. Examples are direct taxes, which can only be paid to general government, and social security contributions which can only originate in the household sector.

Although in general very few countries apply articulation to their national accounts beyond the consolidated accounts for the nation, there are strong arguments for introducing this feature more fully into the system. It would make it possible for example to trace much more effectively the impact of certain government measures on the rest of the economy or the influence of transactions with the rest of the world. Articulation furthermore means that additional accounting identities are added to the system which might be useful as checks in the estimating process. The reason why so few countries produce articulated accounts, however, is that they do not have the necessary statistical information. Articulation generally requires additional detail in the presentation of transactions and its statistical burden increases the more deconsolidated the national accounting framework is. An intermediate solution that would retain some of the advantages is to limit articulation to transactions between an important sector or activity grouping of the economy—e.g. general government, or all transactions with the rest of the world or any other key sector—and the remaining activities and sectors. Transactions among the remaining activities and sectors would then not be articulated.

D. *The SNA Matrix, the Accounts and the Supporting and Supplementary Tables*

There is very little and sometimes conflicting information in the SNA guidelines on the respective roles of the three forms of presentation of the SNA national accounting scheme: the matrix, the accounts and the supplementary and supporting tables. Paragraph 8.4 of the guidelines states that the standard accounts delineate the basic features of the system and furnish guidance concerning the presentation of the main series, while the tables provide more detail and also include data that cannot be appropriately exhibited in the form of accounts. This statement, however, is not completely consistent with the actual presentation in the same document of accounts and tables. Several of the sector (class III) accounts are repeated in slightly different forms in supporting and supplementary tables, and the goods and services and production (class II) accounts are presented in alternative form in the input-output framework of Tables 1, 2 and 3 of the system. About the role of the matrix presentation there is even less certainty. From its exclusive use only in the first three chapters of the system, which contain an exposition of the structure of the SNA, one might infer it to be an instructional device.

Country practices differ considerably, particularly with regard to the use of accounts and tables and the distribution of data between them. Hardly any country applies the complete accounting framework of the new SNA. Several countries that use the present SNA or a similar accounting framework limit the accounts to the consolidated accounts for the nation and the sector income and outlay and capital finance accounts, while some follow the European System of Economic Accounts (ESA) in also including in this main framework production accounts for institutional sectors. In a few countries the main framework has been even further reduced to the consolidated accounts only. Sometimes the distinction between accounts and tables has not been made, but from conceptual descriptions of those countries' systems, it can be inferred which tables are considered the main

core of the scheme. The matrix is generally not used by countries as a form of data presentation. An exception is Norway, which uses the matrix—in modified form though—as a data storage device. National accounting data that are available on tape are referred to in terms of codes that are based on the location of those data in the matrix.

One can conclude from these country practices that countries do use accounts as an integral part of their national accounts data presentation and not just as a scheme that only displays the national accounting structure. The number of accounts presented by most countries, however, is much smaller than recommended in the SNA. A reduction of the present SNA accounting structure therefore may be in order, while more data may be included in the supporting and supplementary tables. The following considerations may be taken into account in establishing a useful allocation of data between the main accounts and the tables:

(i) The main accounts should be the least changeable part of the system, so that long comparable time series are guaranteed for the most important national accounting data. The supplementary tables should contain data that are more easily adaptable to changing circumstances in time and in different countries without affecting the basic analytical structure of the system. Given the complexity of the present SNA accounting framework, any adaptation or revision of its parts would require a drastic change in the system as a whole.

(ii) The main concepts used in the system should be contained in the main accounts. This applies to aggregate income and other concepts such as consumption and capital formation, including net national income at market prices which is presently covered only in one of the supporting tables of the SNA.

(iii) There should be some hierarchy in the detail between the accounts and tables, i.e., less detail and less deconsolidation in the accounts than in the tables. Differing classifications of transactions in the accounts and tables and between the main accounts of the system, of which several examples can be found in the SNA, should be avoided. This will bring to light the existence of hidden information, which at present can only be made explicit by combining data from different accounts or tables. It might, however, be useful to bring together—and thus to repeat—in one table information that is spread over different accounts of the system. For example a table could be introduced—as is presently contained in the ESA—that would show the three-dimensional cross-classification of social security contributions and benefits, employee welfare contributions and benefits and social assistance grants by type, sector of origin and sector of destination. These are all transactions that are also covered in the accounts.

(iv) A last criterion might be to restrict the transaction detail in the main accounts to those which can be articulated. Breakdown of transactions for which no links can be established between the accounts may be moved to the supplementary tables.

A rethinking of the role of the SNA matrix is necessary in view of its very limited use in country practices and also its limited links with the system as a

whole. Should it be an instructional device only, or could it also be used as an integral part of the SNA data presentation together with the accounts and tables, and how useful is it as a data storage device? As an instructional device it is not useful in its present form as shown in table 2.1 of the SNA. That form does not have the advantage of conciseness of presentation, which is generally ascribed to the matrix version of accounts. By incorporating not only actual flows but also reclassification of flows in dummy rows and columns, it has become a complex structure that will certainly not be easily understood by the average user. As an instructional device, it might therefore be reduced to a simpler form—similar to that of Table 1.7 of the SNA guidelines—by only including the actual flows and not the dummy rows and columns. In annotating the elements of such a matrix, they could be described as submatrices, which either incorporate cross-classifications, two or more marginal classifications or single vectors. When used as an integral part of the data presentation, the matrix could serve as an alternative presentation of the main accounts, covering the major aggregates, but excluding any reclassifications. The supplementary tables then serve as the submatrices of this main matrix. As a data storage device the matrix might serve a useful purpose in its present form, though several adjustments are needed in order to align the information contained in the accounts and tables with the information as classified in the matrix. For example cross-classifications of final consumption expenditure of households by object and by type of commodity and of final consumption expenditure of government and private non-profit institutions by purpose and activity categories, as implied by the presentation in the matrix, would have to be eliminated by introducing additional dummy rows and columns. The same applies to the cross-classification of income components by institutional sector of origin and form of income, which is not presented anywhere in the accounts or tables.

III. Classification of Production Account Transactions

The SNA guidelines propose that transactions of the production accounts be classified in several different ways. Each classification represents an independent analytical point of view, which is reflected in different classification categories, in different units of classification or in both. Very few countries use in their data presentation all SNA classification schemes. The question therefore may be asked whether the statistical burden of the countries could be reduced by a reduction of the number of independent breakdowns to only one or two. The remaining ones—i.e. the dependent classifications—could then be derived on the basis of assumed links between the categories of the basic and the derived classification schemes. Naturally the approximation will work better if the units of classification of the basic and derived schemes are the same, while only the classification categories differ. The guiding principle in such a reduction of classifications should be a comparative assessment of the reduction in analytical benefits and costs. Some of the SNA classification schemes are reviewed below in this light.

The commodity classification on the one hand and the classifications of private final consumption expenditure by object and of gross fixed capital formation by type of capital goods are examples of pairs of classifications that only differ in classification categories and not in units of classification. They can

therefore be more easily linked in the sense explained above, and this view is reflected in the practices of many of the countries that reply to the SNA national accounts questionnaire. Instead of using household expenditure and investment surveys in order to derive direct estimates of private final consumption expenditure and gross fixed capital formation, many countries apply as an approximation the commodity flow method which is based on a commodity breakdown. There are several examples that might serve as evidence of this. For instance the object category for expenditures on cafe, restaurant and hotel services should include the food items that are sold through these units. Countries, however, often only include cafe, restaurant and hotel services in this category, while the food items are included with the object category called "food, beverages and tobacco". Similarly the object category for package tours should include various types of expenditures, such as food, lodging, travel and guide services; countries often do not provide information on this object category and instead allocate the commodity components to other object categories. Another example is draperies that are to be allocated to furnishings in the object breakdown, but are often shown by countries as an integral part of textile products. Similar deviations have been observed with regard to the classification of gross fixed capital formation by type. The subclassification of transport equipment into passenger cars and other is often not made, non-residential buildings and other construction are often added together and outlays on reservoirs and dams are frequently included together with outlays on land reclamation and irrigation projects in the subcategory "land improvement and plantation and orchard development" instead of being separately allocated to "other construction". The majority of the remaining categories are closely linked to the commodity categories and can be and are derived by countries through simple rearrangement of those categories. The additional benefit to be derived from three independent classifications beyond the benefits to be gained from the approximate method based on assumed links between the commodity classification and the other two breakdowns therefore might be only marginal. Furthermore the degree of approximation will improve if a more detailed commodity breakdown is used. An example of formally established links between two classifications is contained in the European System of Economic Accounts (ESA), which has defined a link between the NACE-CLIO commodity and activity categories and the type of capital goods categories used in the breakdown of gross fixed capital formation.

A similar question has arisen with regard to the distinction between industries, producers of government services and producers of private non-profit services to households and also between their respective characteristic outputs, i.e. commodities and other goods and services. These distinctions, which are superimposed on the activity and goods and services classifications of the SNA, are meant to identify separately the goods and services output and production account transactions of units that generally produce for the market and of units of government and private non-profit institutions that are assumed to consume their non-marketable community destined output themselves. The majority of countries do not apply the superimposed distinctions and restrict themselves to the allocation of the units of government and private non-profit institutions and their transactions to the appropriate ISIC category only. In other words they assume

that the activity categories to which these units are allocated sufficiently set apart their distinct character and that these categories—which often only include the ISIC categories; public administration and defence; community, social and personal services; and sometimes health and/or education—to a very large extent only refer to activities of government and private non-profit institutions.

The same reason holds of course for not making the distinction between commodities and other goods and services. There are, however, also other reasons. As many countries do not separately identify the output for own consumption of government and private non-profit institutions, there is often no need for the distinction in those cases. Also the SNA requirement that direct purchases abroad by residents and in the domestic market by non-residents be separately identified as purchases of other goods and services as distinct from commodities is often not followed by countries. Many avoid the distinction in private final consumption expenditure—where they apply the object breakdown to the national instead of the domestic concept—and also in exports and imports. Finally it has been argued that the distinction between so-called marketable and non-marketable goods and services is less useful than an alternative distinction between marketed and non-marketed goods and services. The coverage of non-marketed goods and services would be wider than that of non-marketable because it would not only include other goods and services in the SNA sense but also some of the production of commodities that are not actually marketed such as products from subsistence farming, imputed rents of owner-occupied dwellings and own constructed capital goods. As the imputed valuation of these types of non-marketed commodites must differ in character from the valuation of marketed output of commodities, as is the case for non-marketable other goods and services, there is some justification for using the alternative distinction.

Another area of classifications where country practices and SNA recommendations differ concerns the activity and commodity classifications. As the two differ because of differences in the unit of classification, the SNA recommends distinguishing them in the presentation of production account and input-output data. The SNA input-output table consists as a consequence of separate (activity × commodity) output and (commodity × activity) input matrices. On the other hand countries generally use only one type of classification category—i.e. the activity or industry—although in the basic worksheets for the compilation of input-output tables the two types of categories are often distinguished. Also in their responses to the SNA questionnaire they use this one type of breakdown for the presentation of activity contributions to gross domestic product as well as in showing the composition of supply and disposition of commodities. There are strong arguments in favour of conforming to these country practices. One is that the information as presented in the SNA input-output framework is not directly useful for any type of input-output analysis. The SNA does suggest conversion techniques based on alternative sets of assumptions, but they are too mechanical and cannot serve as effective substitutes for the traditional reconciliation procedures in which judgement and additional information can be used. Also the SNA structure is only relevant when there is a wide discrepancy between the coverage of commodity and activity categories. However, in the compilation of the traditional input-output table, efforts are made to make the activity categories

as homogeneous as possible in terms of commodities, so that the remaining discrepancy between the two categories is very small. In a reconciled presentation, the industry breakdown is preferable to the commodity breakdown, as it is closer to the data base. Information is collected from establishments which are basic units for the activity classification. For the compilation of an input-output table therefore fewer artificial assumptions are needed when an industry × industry table is compiled then when a commodity × commodity table is used, as recommended in the European System of Economic Accounts (ESA).

There is a slightly different question with regard to the purpose classification of government expenditures. Of the three tables in the SNA questionnaire that use this classification—government final consumption expenditure by purpose (Table 7), by cost components and purpose (Table 7 supplement) and selected government outlays by purpose (Table 15)—the response rate is particularly low for the more detailed Tables 7 suppl. and 15. This may have been caused by the ambiguity of the SNA guidelines on the analytical role of the purpose classification. Is it a transactor classification similar to the activity breakdown or is it a transaction classification that is more like the commodity, object and type of capital goods classifications reviewed above? The SNA[13] suggests on the one hand a link on the detailed level between the activity and purpose classifications, by which is meant a link between the categories of the two classifications, while the units of classification might differ. On the other hand it recommends some flexibility in choosing the unit of the purpose classification, e.g. an establishment type unit for all production account expenditures and a transaction type unit for classifying income and outlay and capital finance expenditures. However, such a heterogeneity in the classification unit for different transactions makes a comparison between different types of expenditures in a given purpose category impossible. It seems therefore that one of the requirements for eliminating the ambiguity and clarifying the role of this classification, and thus making it analytically more useful, is to adopt a uniform classifying unit. This could be either an establishment or a transaction type unit. If an establishment type unit is used, a close relation can be defined with the other transactor classification, i.e., the activity breakdown of government operations. Under such circumstances all expenditures of an office unit that is for instance in charge of the agricultural development of a certain region would be classified under the purpose category "economic services, agriculture, forestry, fishing and hunting", even if some expenditures are related to health, education or other purposes. Under the other option the different expenditures would have to be allocated to different purpose categories and this would also apply to government final consumption expenditure related to the office in question, and to the component production account expenditures. As such a purpose breakdown of production account expenditures by office unit is statistically not very feasible, the first option is preferable. This alternative will of course lead to the same or similar results as the second option, when the establishment type unit can be defined such that it serves one or approximately one purpose only. This has the same effect as bringing closer together the industry and commodity classifications, discussed earlier.

[13]SNA, paras. 5.86–5.94.

IV. Valuation of Income and Goods and Services Flows

The SNA mentions four types of valuations: purchasers', producers', basic and factor values. The difference between the purchasers' and producers' values are the trade and transport margins. To move from producers' to basic values, a deduction is needed for net commodity taxes—i.e. those indirect taxes minus subsidies that vary with value or volume of the goods and services flows—and to move to factor values a further deduction is needed of indirect taxes minus subsidies which are not commodity taxes.

Purchasers', producers' and basic values are recommended for the valuation of goods and services flows, and income or value added should be, according to the SNA, valued at producers' or factor values. In principle, however, each of the valuations could be used in a consistent manner for goods and services flows as well as for income. In other words for each of the valuations mentioned, one could arrive at an equality in principle between value added per activity category arrived at directly from the income side and value added derived as the difference between gross output of goods and services and intermediate consumption. This consistency always holds for producers' values and—as producers' and purchasers' values are the same for value added—also for purchasers' values. For basic and factor values, however, the consistency only applies when respectively net commodity taxes or the total of indirect taxes minus subsidies that are removed from the value of the goods and services flows relate not only to the last but also to the previous intermediate stages of production. These are the so-called true basic and factor values of the goods and services flows. As such a deduction would require detailed input-output information that is not always available when national accounts are being compiled the SNA recommends using so-called approximate basic or factor values, and deducting respectively those commodity taxes or indirect taxes minus subsidies that are paid or granted at the last stage of production. Value added arrived at from the production side is as a result generally higher than when arrived at from the income side by adding up the value added components. The difference depends on the degree to which commodity or indirect taxes minus subsidies are accounted for in the value of intermediate consumption.[14]

[14]The mathematical formulation of this difference has been worked out in the SNA in paragraphs 4.95 through 4.111. For a traditional input-output table in which no distinction is made between industry and commodity categories or between input and output matrices, true basic values would be derived as follows (the symbols are the same as those used in the SNA):

$$b = A'b + (w + t)$$

or

$$b = (I - A')^{-1}(w + t)$$

and approximate values:

$$b^* = A'p + (w + t)$$

where

$$p = b^* + x$$

so that

$$b^* = (I - A')^{-1}A'x + (I - A')^{-1}(w + t)$$

or

$$b^* = b + (I - A')^{-1}A'x$$

These principles have been implemented in the SNA national accounts questionnaire in somewhat modified form and are further modified in the responses by countries to this questionnaire. Value added is valued in the questionnaire tables in two alternative ways. Table 4 shows a classification by kind of economic activity of gross domestic product in producers' values excluding import duties, while Table 5 requires a similar breakdown of factor incomes (i.e. the factor value version of gross domestic product). The response of countries deviates in varying manners from this prescription. Slightly less than half of the countries only present the factor income breakdown, thus continuing the practice that was recommended in the former SNA. One third of the countries provide an activity breakdown of gross domestic product in producers' values, while the remaining quarter give the activity breakdown for producers' values as well as for factor incomes. Of the countries that provide producers' values about half allocate import duties jointly with other indirect taxes and subsidies to the activity categories. A classification of the goods and services flows is presented in questionnaire Table 6 on the supply and disposition of commodities. There the supply of goods and services is valued in producers' values and in c.i.f. values for imports, while their disposition is in purchasers' values. To link the two data sets, a classification by commodity type is required of import duties and trade and transport margins. The response to this table is very low, certainly when compared with the number of countries that compile input-output tables. This might be an indication that countries are not able to conform to the format of this table. Of the countries that do supply the requested information, about half follow the defined valuation guidelines above. Of the remaining countries, some omit the commodity breakdown either for import duties or for trade and transport margins or for both, and others classify the import duties together with the trade and transport margins.

The heterogeneity of the responses makes cross-country comparisons virtually impossible, which is particularly serious for the activity breakdown of value added which is the core of the national accounting information that is available for most countries. It seems though that this heterogeneity is not so much caused by statistical difficulties but rather by the ambivalence present in the SNA recommendations on valuation and their implementation in the SNA questionnaire, which virtually accommodates any type of valuation that countries might like to present. There does not seem for example to be any overriding statistical reason for using factor incomes instead of producers' values in the activity breakdown. As most countries derive most of the value added contributions of activity categories from the production side—i.e. as the difference between gross output and intermediate consumption—an estimate of factor income would require additional knowledge on the distribution by activity categories of indirect taxes and subisidies, which is not needed for an activity breakdown of gross domestic product in producers' values. Similarly statistical difficulties are no decisive factor

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The difference between true and approximate basic values would then be $(I-A')^{-1}A'x$ and similarly between true and approximate factor values $(I-A')^{-1}A'(t+x)$. This is also the difference between value added arrived at from the income side and that derived as the difference between gross output and intermediate consumption, when approximate basic or factor values are used.

in classifying trade and transport margins in such a manner that supply can be valued in producers' and disposition in purchasers' values. After all trade and transport margins are generally estimated as a percentage charged to the value of the goods and services flows and there is therefore no reason to believe that there are any restrictions on the classifications of these margins apart from those that also apply to the classification of the goods and services flows. The conclusion that one might draw therefore is that either the SNA questionnaire or the countries' practices could be modified in such a manner that one set of valuations would be emphasized throughout the scheme. This would make cross-country comparisons easier. Producers' values could serve as such a unifying type of valuation, which would be in line also with the emphasis placed on it in the SNA guidelines.

In the valuation of value added one might argue[15] that the majority of the indirect taxes and subsidies covered as such in the SNA do not affect the price of the goods produced, but are paid out of the value added contribution of the sector in question and thus affect operating surplus instead. If this argument holds, there is no reason for deducting indirect taxes minus subisidies from the sector contribution, as there is for example no reason for deducting interest payments that are paid out of operating surplus. Following this way of reasoning producers' values would be preferable to factor values for the valuation of income flows. Also when gross domestic product in producers' values is subdivided into its value added components, the user of such data would be able, if he so wished, to derive the factor income breakdown, while the reverse derivation of producers' values from factor incomes is not possible.

The use of producers' values furthermore avoids the inconsistency noted above between the valuation of value added and goods and services flows that goes with the use of approximate basic values. Retaining this consistency is preferable to eliminating some of the price discriminatory commodity taxes. It is difficult to assess how the commodity taxes that were levied in previous stages of production and that remain included in the value of intermediate consumption affect the relative values of the input-output elements and thus the input-output coefficients.[16]

One might further wonder whether the price discriminatory effect of commodity taxes has not been somewhat overstated. Approximate basic values were introduced in order to eliminate price discriminatory effects of indirect taxes and subsidies that vary with the destination of a good or service. However, commodity taxes that are deducted in order to arrive at that value are defined in the SNA to cover not only indirect taxes and subsidies that vary with destination, but in general all such taxes and subsidies that vary with the size or the value of the goods

[15]See also Nancy Ruggles and Richard Ruggles, *The Design of Economic Accounts*, National Bureau of Economic Research, New York, 1970, pages 54–55.

[16]Assessment of this effect is difficult in spite of the mathematical formulation of the difference as presented in footnote 14. There the assumption is made that the tax rate (t) only differs for different rows of the input-output table but does not vary between different elements of one row. The justification for the elimination of commodity taxes from the values of the goods and services flows was, however, that they did vary between elements of the same row. The mathematical formulation therefore does not reflect well the actual effect on input-output coefficients of the use of approximate instead of true basic or factor values.

and services flows, whether they vary with destination or not. Furthermore, the distorting effect that such taxes have in input-output analysis is strongest when they differ by destination within the input-output table proper, i.e. between different types of intermediate demand, where they influence the value of the input-output cells, the derived coefficients and the size of the cells in the Leontief inverse matrix.[17] Most of the discriminatory effects of such taxes, however, appear in practice between different final demand destinations. Goods might be taxed for example when used in final consumption and be free of such taxes when they appear as part of capital formation or are exported. In analysis such discriminatory effects could be easily eliminated, because in most forms of input-output analysis the final demand columns are autonomously determined. Finally the discriminatory effect of other non-tax factors such as the heterogeneous composition of the goods and services flows might be much stronger. The composition of the same goods and services category might differ considerably between exports and final consumption and this has the same effect as price discrimination.

Instead of introducing basic values, one could eliminate some of the more severe price distortions of the producers' valuation by somewhat adjusting the allocation of the indirect taxes and subsidies. In the present SNA they are allocated to the activity categories that pay such taxes or are granted such subsidies. One might maintain this criterion for those indirect taxes and subsidies that do not affect the value of goods and services with different destinations differently. But with regard to indirect taxes and subsidies that introduce serious price discrimination, one might allocate them to their destination instead. Taxes that are specifically levied on consumption might be shown in an input-output table in the consumption column. On the other hand taxes that are levied on all destinations except on exports might be included in the value of exports as well but at the same time shown as subsidies or negative indirect taxes in the export column. This would entail a modification of the coverage of indirect taxes versus subsidies, but this does not essentially affect the SNA concepts as in most cases the net concept of indirect taxes minus subsidies is used.

The only type of indirect taxes that is a clear commodity tax and where there is no doubt that it affects the price of the product rather than being paid out of the operating surplus is the value added tax, which is used by member countries of the European Community and also by some other countries. As this tax was introduced after the SNA guidelines were adopted by the Statistical Commission, these guidelines only superficially deal with this form of indirect taxation. Furthermore the SNA commodity tax rules do not easily apply because of some special features that are not present in other types of indirect taxes. Value added tax (VAT) is generally levied on all domestic sales of goods and services as well as on imports. Exported goods are exempted. The VAT is transferred to the tax authorities after subtraction of so-called deductible VAT. This deductible VAT consists of VAT levied on intermediate consumption and on goods destined for gross capital

[17]The Leontief inverse matrix refers to the inverse matrix that is defined as $(I-A)^{-1}$ in which I is the unit and A the matrix of input-output coefficients.

formation.[18] Recent recommendations issued by the Statistical Office of the European Community, which reflect the major part of VAT experiences, and also country practices as they appear in the responses to the SNA questionnaire, might serve as a guide for future SNA recommendations on this point. In ESA a distinction is made between two forms of registration—i.e., gross and net—that can be used in including VAT in an input-output table. The gross treatment has been recommended in ESA for input-output data up to 1975. In this gross registration the input-output flows include all VAT invoiced to the users of the goods and services acquired from domestic production and imports. Deductible VAT is not subtracted. As exports are exempted from this form of taxation their value does not include VAT. Capital formation does include the levied VAT, but as this amount is to a large extent deductible, the deductible part has been subtracted in a lump-sum and presented as a negative item in a separate VAT row of the table. This row, which is located in the value added section of the input-output table, also registers the net VAT payments by activity (branch) category, that are included in its contributions to gross domestic product in producers' values. The net VAT by activity category is equal to the gross VAT levied on its output minus VAT invoiced on its intermediate consumption plus VAT levied on imports of similar goods and services as produced by this activity. Deductible VAT on gross capital formation is not taken into account in arriving at net VAT by activity category. This system of registration was thought to be the most appropriate one during the first years of introduction of VAT in the member countries.[19] Then still many countries had not implemented the tax to its full extent, and a considerable portion of indirect taxes consisted of other commodity taxes. Gross registration was thought to be more comparable with the registration of other commodity taxes such as sales and turnover tax.

At present all countries of the EEC have implemented the VAT scheme, thus replacing the levying of most other commodity taxes, and therefore from 1978 on—i.e. in the input-output tables concerning 1976 and later years—the net system of registration of VAT flows is recommended. In this form of registration only ultimately charged VAT will be included in the value of the goods and services flows, i.e., after subtracting deductible VAT. The effect of this treatment is that only VAT levied on final consumption will be included. The net VAT

[18]The description given here is somewhat simplified. There are several variations on this general scheme that are applied in different countries. In some countries there are so-called "exempted sectors"—e.g., medical insurance and postal services—that do not invoice VAT on their output, while VAT is included on their inputs which is not deductible. There are furthermore some modifications of the scheme with regard to agricultural activities. In some countries VAT is invoiced on gross output and intermediate inputs in agriculture, while no VAT is paid to the tax authorities. In other countries no VAT is invoiced on agricultural output, while the government reimburses the farmers for VAT on their intermediate consumption and gross fixed capital formation. These special cases require some adaptations of the gross and net forms of registration as described in the text. The treatment of the special cases in agriculture is described in EEC Document OS/4289/77 on "the treatment of the flat rate system of VAT in the input-output tables", which was discussed at the December 1977 meeting of the Working Party National Accounts of the EEC.

[19]The description given here is mainly based on a recently issued revised version of ESA. In an OECD document on "Value Added Tax and National Accounts" (DES/NI/76.3, 30 March 1976) the method described here as the gross system has been called there the modified gross treatment. What is called there the gross treatment is where countries do not subtract any lump sum amount for deductible VAT on gross capital formation. This deduction is treated instead outside the input-output table and included under capital transfers.

registered in the separate row of the input-output table will also only reflect for each activity category that amount that is invoiced on output sold for final consumption purposes.

Country practices as reflected in the responses to SNA questionnaire Table 4 on the activity breakdown of gross domestic product in producers' values do not give a clear picture of which of the two methods are applied by countries. Several countries include net VAT with the activity contributions to gross domestic product. Some of these define net VAT after subtracting deductible VAT on both intermediate consumption and capital formation, while others subtract deductible VAT on intermediate consumption only and present deductible VAT on capital formation as a separate negative item for all activity categories together. A third group does not make the allocation, but subtracts the total of net VAT in one lump-sum. Each of these forms of presentation is compatible with the gross as well as with the net registration described earlier. In a fourth type of response, which is evidently based on the gross registration method, gross VAT on gross output is included with the activity contributions to GDP, while the deductible VAT is subtracted in one lump-sum.

This variety of responses to the SNA questionnaire which is partly due to alternative use of the gross or net registration method and partly to different forms of implementing each of the two methods in the SNA questionnaire table, makes inter-country comparisons of particularly the activity contributions to gross domestic product very difficult. Specific guidelines therefore are needed which are consistent with the structure of the SNA framework. There would be some virtue in following the net treatment as recently recommended by the Statistical Office of the European Community, on the grounds that these recommendations reflect the practices of the majority of the VAT using countries. However, the gross treatment has certain features that fit in better with the SNA framework which was designed for a wider and therefore more heterogeneous type of international community. The gross treatment fits in better with the producers' values discussed earlier, while the net treatment approaches, at least for VAT, the basic value presentation. Advantages similar to those presented earlier for producers' values also hold therefore for the gross registration of VAT. The valuation of the goods and services flows and the distribution of value added over activity categories is more comparable between countries that use VAT and countries that apply alternative systems of indirect taxation when the gross method is used. The gross VAT margins—and not the net margins—levied on the value of the goods and services determine their price in the same manner as when sales or turnover taxes are levied. In the distribution of gross domestic product by activity categories, the gross registration results in a distribution of VAT that is in conformity with the actual payments to tax authorities by the establishments concerned. This fits in with the SNA recommendation in general that indirect taxes be allocated to the activity category that pays them. The net VAT registration, however, would result in a distribution of net VAT which is for each activity category based on the output destined for final consumption. Whichever method is adopted—gross or net—it would have consequences for the questionnaire table on the activity breakdown of GDP. This table would have to be modified in line with the descriptions of the two methods earlier.

A last aspect of valuation has to do with the coverage of value added components. Rather than determining the distribution of value added and of the goods and services flows, as was discussed before, this group of issues influence their absolute size and—for the coverage of indirect taxes and subsidies—the magnitude of the difference between producers' and factor values and between national income (at factor cost) and national income at market prices. Without entering here into very much detail, a few essential differences may be pointed out between country practices and the SNA guidelines which are caused by statistical imperfections, but which have conceptual significance as well.

Two points on the coverage of indirect taxes and subsidies might be raised here. The SNA includes in indirect taxes all payments by business of so-called compulsory fees, such as court fees, airport duties, motor vehicle duties, fees for driving tests, etc. If such payments are made by households they are treated as current transfers. Also included in indirect taxes are above-normal profits of public enterprises with a monopoly in certain markets, and in subsidies all losses of public corporations and those of public quasi-corporate enterprises with a monopolistic character. Losses of all other public quasi-corporations and of the remaining unincorporated public enterprises are dealt with as negative property income.

In both cases countries have followed simplified procedures in the implementation of these guidelines. In the case of compulsory fees they generally do not make the distinction between such payments by business and households and treat all as current transfers. Frequently all profits and losses of public enterprises are treated by countries as indirect taxes or subsidies, and no distinction is made between public enterprises with a monopolistic character or not, between normal and above-normal profits or—as is required for the treatment of losses—between the different institutional character of the public enterprises (i.e., corporate, quasi-corporate, unincorporated). With regard to the treatment of losses these practices are supported by the recommendations contained in the European System of Economic Accounts (ESA). The treatment of public enterprise profits, however, does not differ between SNA and ESA.

The deviating country practices with regard to the coverage of indirect taxes and subsidies might be consistent with the earlier mentioned criterion (see page 182 above) that indirect taxes and subsidies include those payments to or by the government that influence the price of the goods and services in question. Such an influence there is, without doubt, for the commodity taxes such as VAT, sales and turnover taxes. The influence, however, is much less clear for compulsory fees. As the prices of the goods and services generally will be determined in a monopolistic type market, these payments to and by the government will be made out of the revenue received in selling the goods and services. They therefore do not influence the price of the good or service, but rather the operating surplus. This may be less so for losses and profits of public enterprises. But here also the monopolistic "rent" part of the price should not be exaggerated, as the total value of sales (rather than the price) of the good may be influenced by the existence of close substitutes. If statistically the "rent" part cannot be identified separately, it may be more appropriate to treat the whole price as a normal market price and not deal with any part of operating surplus as indirect taxes or subsidies. This may

undervalue the indirect tax and subsidy flows, but this discrepancy may be smaller than the over-valuation that may be result from the SNA or ESA guidelines or from the country practices quoted above.

A similar question, dealt with in the SNA in a very different manner though, has arisen with regard to the treatment of rent. The problem here is which part of the rent value is monopolistically determined "rent" and has nothing to do with the value of gross output—which is a payment for a commodity type service—or with the production cost. This question is behind the distinction in the SNA between on the one hand rent payments for housing, equipment and machinery which are treated as payments for commodity type services, and land rent which is dealt with as a property income flow. Land rent is then defined net, i.e. after deduction of maintenance cost and real estate taxes, provided such deductions are statistically feasible. The maintenance cost and real estate taxes are included as intermediate consumption and indirect taxes of the agricultural sector.

Several countries do not make the distinction between the two types of rent, and treat all—i.e., including land rent—as payments for commodity type services. Accordingly they also treat land as a second-hand fixed asset, the net purchases of which are included with gross fixed capital formation. The latter type of treatment could be justified by considering land as the accumulated value of capital improvements such as drainage, irrigation, flood control, afforestation, etc. If these development costs, which are also in the SNA treated as fixed capital formation, are the main determinants of the value of land, the rent payments may also be looked at as the payments for the use of capital improvements.

On the other hand, if there is included in these land rent payments a "Ricardo type rent", it does not seem sufficient to just deduct the maintenance cost in order to arrive at this "rent". Also normal operating surplus would have to be deducted. Statistically it might be difficult to determine such a "rent" and for similar reasons as mentioned above with regard to the treatment of profits and losses of government enterprises, it might be less distorting to treat the whole of land rent as a commodity type service, rather than as a property income flow, as suggested in the SNA.[20] If the land renting activity is treated as a part of the agricultural sector, and the payments of land rent are excluded from the intra-sectoral transactions of that sector, the modified treatment will have no consequences for the input-output structure of that sector. The only difference will be in the income and outlay account, where the net rent will show up as a part of operating surplus of the land owning sector and will not be included in its receipts of property income.

[20]SNA, para. 7.50.

ANNEX

TABLE 1

PERCENTAGES OF DEVELOPING AND DEVELOPED COUNTRIES RESPONDING TO SNA QESTIONNAIRE, BY TABLE-SEGMENT

Table segment	Description	All (110) countries	85 developing countries	25 developed countries
Accounts for the nation as a whole				
1aA	GDP by end use, current prices	97	96	100
1b	GDP by end use, constant prices	61	51	96
1aB	GDP by cost structure (income shares)	95	93	100
2	Income and outlay, consolidated	85	81	100
3	Capital finance, consolidated	68	61	92
4a	GDP by kind of economic activity, current prices	94	95	88
4b	GDP by kind of economic activity, constant prices	61	59	68
4a suppl.	GDP by kind of economic activity, detailed, current prices	41	38	52
4b suppl.	GDP by kind of economic activity, detailed, constant prices	26	20	48
5	Domestic factor incomes by kind of economic activity	28	25	36
6a	Supply and disposition of commodities, current prices	7	5	16
6b	Supply and disposition of commodities, constant prices	0	0	0
Detailed tables on final expenditures				
7a	Government final consumption expenditure, by purpose, current prices	45	38	72
7 suppl.	Government final consumption expenditure, by cost composition and purpose	22	20	28
8a	Private final consumption expenditure, by object, current prices	43	29	88
8b	Private final consumption expenditure, by object, constant prices	34	18	88
8c	Private final consumption expenditure, by durability	20	11	52
9aAa	Gross capital formation, by type of good, fixed, current prices	83	79	96
9bAa	Gross capital formation, by type of good, fixed, constant prices	48	35	92
9aAb	Gross capital formation, by type of good, change in stocks, current prices	77	72	96
9bAb	Gross capital formation, by type of good, change in stocks, constant prices	45	31	92
9aB	Gross capital formation, by kind of activity, fixed, current prices	45	33	84
9bB	Gross capital formation, by kind of activity, fixed, constant prices	23	13	56

Income and outlay and capital finance accounts of domestic sectors

10		Income and outlay of domestic sectors, by flow and sector	30	18	72
11		Capital finance of domestic sectors, by flow and sector	28	15	72
12a1	A	Non-financial corporate enterprises, all, income and outlay	13	11	20
	B	Non-financial coporate enterprises, all, accumulation and finance	10	7	20
	C	Non-financial corporate enterprises, all, change in assets and liabilities	6	4	16
12a2	A	Non-financial corporate enterprises, private, income and outlay	5	2	12
	B	Non-financial corporate enterprises, private, accumulation and finance	3	0	12
	C	Non-financial corporate enterprises, private, change in assets and liabilities	3	0	12
12a3	A	Non-financial corporate enterprises, public, income and outlay	5	2	12
	B	Non-financial corporate enterprises, public, accumulation and finance	3	0	12
	C	Non-financial corporate enterprises, public, change in assets and liabilities	2	0	8
12b1	A	Financial institutions, all, income and outlay	11	7	24
	B	Financial institutions, all, accumulation and finance	10	6	24
	C	Financial institutions, all, change in assets and liabilities	6	4	16
12b2	A	Financial institutions, private, income and outlay	5	2	12
	B	Financial institutions, private, accumulation and finance	3	1	16
	C	Financial institutions, private, change in assets and liabilities	3	1	8
12b3	A	Financial institutions, public, income and outlay	4	1	12
	B	Financial institutions, public, accumulation and finance	5	1	16
	C	Financial institutions, public, change in assets and liabilities	3	1	8
13		Financial institutions, sub-sectors, financial transactions	11	6	28
14a	A	General government, income and outlay	55	44	92
	B	General government, accumulation and finance	39	14	84
	C	General government, change in assets and liabilities	10	6	24
14b	A	Central government, income and outlay	42	31	80
	B	Central government, accumulation and finance	30	20	64
	C	Central government, change in assets and liabilities	8	7	12
14c	A	State and local government, income and outlay	31	20	68
	B	State and local government, accumulation and finance	23	13	56
	C	State and local government, change in assets and liabilities	5	2	16
14d	A	Social security funds, income and outlay	19	9	52
	B	Social security funds, accumulation and finance	15	4	52
	C	Social security funds, change in assets and liabilities	4	1	12

TABLE 1—(continued)

Table segment		Description	All (110) countries	85 developing countries	25 developed countries
15	A	General government outlays by type and purpose, income and outlay items	15	11	28
	B	General government outlays by type and purpose, accumulation and finance items	14	9	28
	C	General government outlays by type and purpose, acquisition of financial assets	4	4	4
16	A	Households, income and outlay	27	15	68
	B	Households, accumulation and finance	15	8	40
	C	Households, change in assets and liabilities	0	0	0
External relations					
17	A	External transactions, exports and imports of goods and services	65	56	92
	B	External transactions, income and outlay	65	55	96
	C	External transactions, accumulation and finance	47	40	72
	D	External transactions, change in assets and liabilities	22	15	44

TABLE 2

PRIORITY RANKING OF SNA QUESTIONNAIRE TABLE SEGMENTS FOR DEVELOPED AND DEVELOPING COUNTRIES

SNA questionnaire table no.	Description	Percentage of countries supplying data		
		All (110) countries	85 developing countries	25 developed countries
Group 1		≥50%	≥40%	≥90%
1aA	GDP by end use, current prices	97	96	100
1b	GDP by end use, constant prices	61	51	96
1aB	GDP by cost structure (income shares)	95	93	100
4a	GDP by kind of economic activity, current prices	94	95	88
4b	GDP by kind of economic activity, constant prices	61	59	68
9aAa	Gross capital formation, by type of good, fixed, current prices	83	79	96
9bAa	Gross capital formation, by type of good, fixed, constant prices	48	35	92
9aAb	Gross capital formation, change in stocks, current prices	77	72	96
2	Income and outlay, consolidated	85	81	100
14aA	Income and outlay, general government	55	44	92
3	Capital finance, consolidated	68	61	92
17A	External transactions, export and import of goods and services	65	56	92
17B	External transactions, income and outlay	65	55	96
Group 2		15–50%	10–40%	30–90%
10	Domestic sectors, income and outlay	30	18	72
11	Domestic sectors, capital finance	28	15	72
14aB	General government, accumulation and finance	39	14	84
14bA	Central government, income and outlay	42	31	80
14bB	Central government, accumulation and finance	30	20	64
14cA	State and local government, income and outlay	31	20	68
14cB	State and local government, accumulation and finance	23	13	56
14dA	Social security funds, income and outlay	19	9	52
14dB	Social security funds, accumulation and finance	15	4	52
16A	Households, income and outlay	27	15	68
16B	Households, accumulation and finance	15	8	40

TABLE 2—(continued)

SNA questionnaire table no.	Description	Percentage of countries dupplying data		
		All (110) countries	85 developing countries	25 developed countries
17C	External transactions, accumulation and finance	47	40	72
17D	External transactions, change in assets and liabilities	43	15	44
7a	Government final consumption expenditure by purpose, current prices	45	38	72
8a	Private final consumption expenditure, by object, current prices	42	29	88
8b	Private final consumption expenditure, by object, constant prices	34	18	88
8c	Private final consumption expenditure, by durability	20	11	52
9bAb	Gross capital formation, by type, change in stocks, constant prices	45	31	92
9aB	Gross capital formation, by kind of economic activity, fixed, current prices	45	33	84
9bB	Gross capital formation, by kind of economic activity, fixed, constant prices	23	13	56
4a suppl.	GDP by kind of economic activity, detailed, current prices	41	38	52
4b suppl.	GDP by kind of economic activity, detailed, constant prices	26	20	48
5	Domestic factor incomes by kind of economic activity	28	25	36
Group 3		≤15%	≤10%	≤30%
5 segments (tables 7 suppl., 15)	Government outlays by type and purpose (except final consumption, current prices)	4–22	4–20	4–28
12 segments (table 12)	Deconsolidated corporate and quasi-corporate sectors, income and outlay and accumulation and finance	3–13	0–11	12–24
12 segments (parts c of tables 12, 14, 16 and table 13)	Changes in assets and liabilities by sectors and sub-sectors	0–11	0–7	0–28
table 6a	Supply and disposition of commodities, current prices	7	5	16
table 6b	Supply and disposition of commodities, constant prices	0	0	0